NSF

Certified to NSF/ANSI/CAN 61 & NSF/ANSI 372

CERTIFIED
OPEN & ENCLOSED
LINESHAFT CONFIGURATIONS

SIMFLO®

VERTICAL LINESHAFT + SUBMERSIBLE TURBINE PUMPS

SIMFLO®

Table of Contents

For more information,
or the location of your nearest SIMFLO distributor,
please contact:

Texas:
2605 Interstate 27
Lubbock, TX 79404
ph. 806.747.3411

Arizona:
754 E. Maley St.
Willcox, AZ 85643
ph. 520.384.2273

Kansas:
2726 Jones Ave.
Garden City, KS 67846
ph. 620.275.4107

www.SIMFLO.com

General Policy

Terms and Conditions

SIMFLO, LLC. is herein referred to as the "Seller" and the customer purchasing goods ("Goods") from the Seller is referred to as the "Buyer." The Terms and Conditions as set forth herein, and the Seller's quotation, estimate or bid to Buyer, shall collectively and exclusively govern all of the rights, duties and obligations of Seller and Buyer related to Buyer's purchase order for the Goods Seller is agreeing to sell to Buyer. Any terms and conditions set forth in Buyer's purchase order which are different or inconsistent with Seller's Terms and Conditions and/or Seller's quotation, estimate or bid, shall be null and void. Buyer's receipt of the Goods, and/or payment, or partial payment, to Seller for the Goods being sold to Buyer, shall evidence Buyer's acceptance of the terms and conditions of the sale as set forth herein. Seller reserves the right, in its sole discretion, to refuse any purchase order.

1. **PRICES:** Prices for Goods shall apply to the specific quantities stated in Seller's quotation, estimate or bid. Prices shall include standard packing according to Seller's specification for packing and delivery. All costs and taxes for special packing requests by Buyer, including packing for exports, shall be paid by Buyer as an additional charge. Prices for Goods are subject to change without notice based on any subsequent changes in the cost to Seller for sub-supplier materials, supplies or other related increases, and the adjusted price will be based on the cost to Seller in effect at the time of the requested shipment date, and each shipment will be invoiced at such increased price. All prices for Goods are exclusive of, and do not include, any applicable sales, use, excise, GST, VAT or similar taxes, duties or levies, or transportation or insurance costs, and all such costs are the sole responsibility of, and shall be paid by, Buyer.

2. **TAXES:** Any current or future tax or government charge, or increase in same, affecting Seller's costs of production, sales, delivery or shipment, or which Seller is otherwise required to pay or collect in connection with the sale, purchase, delivery storage, processing, use of consumption of Goods, shall be paid by Buyer and shall either be added to the purchase price of the Goods or billed to Buyer separately, at Seller's election.

3. **ARBITRATION:** Seller and Buyer agree that any controversy or claim, excluding collections and past due accounts, arising out of or relating to the agreed terms as provided herein to sell Goods, or the breach thereof, shall be submitted to mandatory arbitration in accordance with the Texas Arbitration Act, and the arbitration award or dispositive order, shall be final and binding and may be entered in any court of competent jurisdiction in the State of Texas. The exclusive place of arbitration shall be within Lubbock County, Texas, and the parties hereby submit to such jurisdiction and venue. Collections and past due accounts may be filed in the appropriate court located in Lubbock County, Texas, and Buyer hereby submits to the exclusive jurisdiction and venue in Lubbock County, Texas.

4. **TERMS OF PAYMENT:** Seller reserves the right to require payment in advance or C.O.D., and otherwise modify credit terms should Buyer's credit standing not meet Seller's credit requirements. Unless otherwise specified in writing by Seller, the terms of payment are net thirty (30) days from the date of Seller's invoice to be paid in U.S. currency. All credit sales are subject to prior approval by Seller. Seller may, at its option, require copies of pertinent contracts, financial statements and other documents relative to any given sale of Goods in order to evaluate and determine, in its sole discretion, Buyer's credit status or the credit status of any third party with whom Buyer has a contractual relationship concerning the Goods to be furnished to Buyer. Failure or delay in delivery of this information will postpone production and delivery of Goods, and may result in a price increase. In the event payment is not made when due, Buyer agrees to pay Seller a service or finance charge of the lessor of: (i) one and one-half percent (1.5%) per month (18% per annum); or (ii) the highest rate permitted by applicable law, on the unpaid balance of the invoice from and after the invoice due date. Buyer shall be responsible for all costs and expenses associated with any checks returned due to insufficient funds. If, during the performance hereunder with Buyer, the financial responsibility or condition of Buyer is such that Seller in good faith deems itself insecure, or if Buyer becomes insolvent, or if a material change in the ownership of Buyer occurs, or if Buyer fails to make any payments in accordance with the terms as provided herein, then, in any such event, Seller is not obligated to continue performance under the agreed terms as provided herein, and may stop Goods in transit and defer or decline to make delivery of Goods, except upon receipt of satisfactory security or cash payments in advance, or Seller may terminate Buyer's purchase order upon written notice to Buyer without further obligation to Buyer whatsoever. Payment by Buyer to Seller shall not be conditioned upon Buyer receiving payment from any third party.

5. **Quotation, (Estimate or Bid), Withdrawal, Expiration.** Quotations, estimates or bids are valid for thirty (30) calendar days from the date of issuance, unless otherwise provided therein. Seller reserves the right to cancel or withdraw any quotation, estimate or bid at any time, with or without notice or cause, prior to acceptance by Buyer. There is no agreement if any conditions specified within the quotation, estimate or bid are not completed by Buyer to Seller's satisfaction within thirty (30) calendar days of Seller's written acknowledgement of a purchase order by Buyer. Seller, nevertheless, reserves its right to accept any contractual documents received from Buyer after this 30-day period.

6. **SELLER'S RIGHTS IN DEFAULT:** In the event Buyer fails to make any payment when due, Seller shall have the right among other remedies, either to terminate its agreement with Buyer, or suspend further performances under the agreed terms as provided herein and/or any other agreements with Buyer. Buyer shall be liable for all expenses, including attorneys' fees, relating to the collection of past due amounts. Additionally, upon any payment default by Buyer, Buyer shall immediately pay to Seller the entire unpaid amounts for any and all shipments made to Buyer irrespective of the terms of said shipment and whether said shipments are made pursuant to the agreed terms as provided herein, or any other agreement between Seller and Buyer, and Seller may also withhold all subsequent shipments until the full amount due is paid by Buyer. Acceptance by Seller of less than full payment shall not be a waiver of any of its rights hereunder. Buyer shall not assign or transfer its rights, duties or obligations, or any interest in it, or monies payable under it, without the written consent of Seller, and any assignment made without such written consent shall be null and void.

7. **SHIPMENT AND DELIVERY:** While Seller will use all responsible commercial efforts to maintain the delivery date(s) acknowledged or quoted by Seller, all shipping dates are proximate and not guaranteed. Shipment dates are best, estimates only at the time of the proposal, and are subject to change based on manufacturing load and sub-supplier schedules at Seller's date of order and/or full release to manufacture. Seller reserves the right to make partial shipments. Seller, at its option, shall not be bound to tender delivery of any Goods p postponed or delayed by Buyer for any reason. Buyer agrees to reimburse Seller for any and all storage costs and other additional expenses resulting therefrom. Risk of loss and legal title to the Goods shall transfer to Buyer for sales in which the end destination of the Goods is outside the United States immediately after the Goods have passed beyond the territorial limits of the United States. For all other shipments, risk of loss for damage and responsibility shall pass from Seller to Buyer upon delivery to and receipt by a carrier at Seller's shipping point. All shipments are F.O.B. Seller's shipping point. Any claims for shortages or damages suffered in transit are the responsibility of the Buyer and shall be submitted by Buyer directly to the carrier. Shortages or damages must be identified and signed for at the time of delivery. Seller is not responsible for any such shortages or loss. Seller shall not be responsible to Buyer for any loss, whether direct, indirect, incidental or consequential in nature, including without limitation loss of profits or liquidated damages, arising out of or relating to any failure of the Goods to be delivered by the specified delivery date. In the absence of specific instructions,

Seller will select the carrier. Buyer shall reimburse Seller for the additional cost of its performance resulting from inaccurate or lack of delivery instructions, or by any act or omission on Buyer's part. Any such additional cost may include, but is not limited to, storage, insurance, protection, re-inspection and delivery expenses. Buyer further agrees that any payment due on delivery shall also be made if the Goods are delivered into storage as though the Goods had been delivered in accordance with the purchase order. Buyer grants to Seller a continuing security interest in and a lien upon the Goods and the proceeds thereof (including insurance proceeds), as security for the payment of all such amounts and the performance by Buyer of all of its obligations to Seller pursuant to this the agreed terms as provided herein and all such other sales, and Buyer shall have no right to sell, encumber or dispose of the Goods. Buyer shall execute any and all financing statements and other documents and instruments and do and perform any and all other acts and things which Seller may consider necessary, desirable or appropriate to establish, perfect or protect Seller's title, security interest and lien. In addition, Buyer authorizes Seller and its agents and employees to execute any and all such documents and instruments, and do and perform any and all such acts and things, at Buyer's expense, in Buyer's name and on its behalf related to its security interest in the Goods. Such documents and instruments may also be filed without the signature of Buyer to the extent permitted by law.

8. **LIMITED WARRANTY:** Subject to the limitations of Section 9, below, Seller warrants that the Goods manufactured by Seller will be free from defects in material and workmanship, and meet Seller's published specifications at the time of shipment under normal use and regular service and maintenance, for a period of eighteen (18) months from the date of shipment of the Goods by Seller, or one year from start-up, whichever occurs first, unless otherwise specified by Seller in writing. Products and Special Coating Applications purchased by the Seller from a third party for resale to Buyer ("Resale Products") shall carry only the warranty extended by the original manufacturer or supplier. **ANY ITEM OF THE PRODUCT(S) WHICH IS NOT MANUFACTURED OR APPLIED BY SELLER IS NOT WARRANTED BY SELLER and shall be covered only by the express warranty, if any, of the manufacturer or applicator thereof. THE WARRRANTY SET FORTH IN THIS SECTION 8 AND THE WARRANTY SET FORTH IN SECTION 9, BELOW, ARE THE SOLE AND EXCLUSIVE WARRANTIES GIVEN BY SELLER WITH RESPECT TO THE GOODS, AND ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, MERCHANTABLITY AND FITNESS FOR A PARTICULAR PURPOSE, WHETHER OR NOT THE PURPOSE OR USE HAD BEEN DISCLOSED TO SELLER IN SPECIFICATIONS, DRAWINGS OR OTHERWISE, AND WHETHER OR NOT SELLER'S GOODS ARE SPECIFICALLY DESIGNED AND/OR MANUFACTURED BY SELLER FOR BUYER'S USE OR PURPOSE**. This warranty does not extend to any losses or damages due to misuse, accident, abuse, neglect, normal wear and tear, negligence (other than Seller's), unauthorized modification or alteration, use beyond rated capacity, unsuitable power sources or environmental conditions, improper installation, repair, handling, maintenance or application or any other cause not the fault of the Seller. To the extent that Buyer, or its agents, has supplied specifications, information, representation of operating conditions or other conditions or other data to Seller in the selection or design of the Goods and the preparation of Seller's quotation, estimate or bid, or in the event that actual operating conditions or other conditions differ from those represented by Buyer, any warranties or other provisions contained herein which are affected by such conditions shall be null and void. Equipment performance is not warranted unless separately agreed to in writing by the Seller. Seller manufactures engineered-to-order Goods based on the design point specified by the Buyer. Warranty on performance results will be based on laboratory tests performed at Sellers location. Due to the inaccuracies of field testing, if there are any conflicts between the results of field testing conducted and laboratory testing conducted, the laboratory tests results will control. Seller will not provide or furnish any equipment for field testing. (See Section 16) If within thirty (30) days after Buyer's discovery of any claimed warranty defects within the warranty period, and Buyer notifies Seller thereof in writing; Seller shall, at its option and as Buyer's exclusive remedy, repair, correct, replace or refund the purchase price for that portion of the Goods found by Seller to be defective. Failure by Buyer to give such written notice within the applicable time period shall be deemed absolute and unconditional waiver of Buyer's claims for such defects. Seller shall have the right to require the Buyer to deliver the Goods to Seller's designated repair center or manufacturing facility. All responsibility and expenses associated with removal, dismantling, reinstallation and transportation to and from Seller's designated repair center or manufacturing facility, and the time and expense of Seller's personnel and representatives for site travel and diagnosis under this warranty, shall be paid by Buyer. Goods repaired or replaced during the warranty period shall be covered by the foregoing warranty for the remainder of the original warranty period, or ninety (90) days from the shipment date that the Goods are returned to Buyer, whichever is longer. Buyer assumes all other responsibility for any loss, damage, or injury to persons or property arising out of, connected with, or resulting from the use of the Goods, whether alone or in combination with other products/components. Buyer agrees to provide any subsequent transferee of the Goods conspicuous, written notice of Section 8 and 9 herein. Sections 8 and 9 shall apply to any entity or person who may buy, acquire or use the Goods, including any entity or person who obtains Goods from Buyer, and such entity or person shall be bound by the limitations as provided herein.

9. **LIMITATION OF REMEDY AND LIABLITY: BUYER'S SOLE AND EXCLUSIVE REMEDY FOR BREACH OF ANY WARRANTY HEREUNDER SHALL BE LIMITED TO REPAIR, CORRECTION, REPLACEMENT OR REFUND OF THE PURCHASE PRICE UNDER SECTION 8. SELLER SHALL NOT BE LIABLE FOR DAMAGES CAUSED BY DELAY IN PERFORMANCE, AND THE REMEDIES OF BUYER UNDER THE AGREED TERMS AS PROVIDED HEREIN ARE EXCLUSIVE. IN NO EVENT, REGARDLESS OF THE FORM OF THE CLAIM OR CAUSE OF ACTION (WHETHER BASED IN CONTRACT, INFRINGEMENT, NEGLIGENCE, STRICT LIABLITY, ANY OTHER TORT OR OTHERWISE), SHALL SELLER'S LIABLITY TO BUYER AND/OR ITS CUSTOMERS EXCEED THE PRICE PAID BY BUYER FOR THE SPECIFIC GOODS PROVIDED BY SELLER GIVING RISE TO THE CLAIM OR CAUSE OF ACTION. BUYER AGREES THAT IN NO EVENT SHALL SELLER'S LIABILTY TO BUYER AND/OR ITS CUSTOMERS EXTEND TO INCLUDE LIQUIDATED, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY OR SPECIAL DAMAGES, INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS OR ANTICIPATED PROFITS, LOSS OF ANTICIPATED SAVINGS OR REVENUE, LOSS OF INCOME, LOSS OF BUSINESS AND BUSINESS INTERUPTION, LOSS OF USE, LOSS OF PRODUCTION, LOSS OF OPPORTUNITY, LOSS OF REPUTATION, AND/OR LOSS OR DAMAGE TO PROPERTY OR EQUIPMENT. THE FOREGOING LIMITATIONS OF LIABILITY SHALL BE EFFECTIVE WITHOUT REGARD TO SELLER'S ACTS OR OMISSIONS OR NEGLIGENCE OR STRICT LIABILITY IN THE PERFORMANCE OR NON-PERFORMANCE HEREUNDER.** It is expressly understood that any technical advice furnished by Seller with respect to the use of the Goods is given without charge, and Seller assumes no obligation or liability for the advice given, or result obtained, and all such advice being given is accepted at Buyer's risk.

10. **Buyer Warranty:** Buyer warrants the accuracy of any and all information relating to the details of its operating conditions, including temperatures, pressures, and where applicable, the nature of all hazardous materials. Seller can justifiably rely upon the accuracy of Buyer's information in its performance. Should Buyer's information prove inaccurate, Buyer agrees to reimburse Seller for any losses, liabilities, damages and expenses that Seller may have incurred as a result of any inaccurate information provided by Buyer to Seller.

11. **EXCUSE OF PERFORMANCE/FORCE MAJEURE:** Seller shall not be liable for delays in performance or for nonperformance due to acts of God; acts of Buyer; war; fire; flood; weather; natural disasters; terrorism; sabotage; strikes; labor disputes; civil disturbances or riots; currency restrictions; pandemics; disease; governmental requests, restrictions, allocations, laws, regulations, orders or actions; unavailability of or delays in transportation or in obtaining materials, fuel, power and energy; default of suppliers; or unforeseen circumstances or any events or causes beyond Seller's reasonable control. Deliveries or other performances may be suspended for an appropriate period of time or canceled by Seller upon notice to Buyer in the event of any occurrence of the foregoing, but the balance of the agreement shall otherwise remain unaffected as a result of the foregoing. If Seller determines that its ability to supply the total demand for the Goods, or to obtain material used directly or indirectly in the manufacture of the Goods, is hindered, limited or made impracticable due to causes set forth hereinabove, Seller may allocate its available supply of the Goods or such material (without obligation to acquire other supplies of any such Goods or material) among itself and its buyers on such a basis as Seller determines to be equitable, in its sole discretion, without liability for any failure of performance which may result therefrom.

12. **CANCELLATION:** Except as otherwise provided herein, no order may be cancelled on special or made-to-order Goods unless requested in writing by either party and accepted in writing by the other party. In the event of a cancellation by Buyer, Buyer shall, within thirty (30) days of such cancellation, pay Seller a cancellation fee, which shall include all costs and expenses incurred by Seller prior to the receipt of the request for cancellation, including but not limited to, all commitments to its suppliers, subcontractors and others, all fully burdened labor and overhead expended by Seller, plus a reasonable profit charge. Return of Goods shall be in accordance with Seller's most current return policy and subject to a minimum thirty percent (30%) restocking fee, unless otherwise agreed to by the parties in writing. Notwithstanding anything to the contrary herein, in the event that: (i) there is a commencement by or against Buyer of any voluntary or involuntary proceedings in bankruptcy or insolvency; (ii) it is determined Buyer is insolvent; (iii) Buyer makes a general assignment for the benefit of its creditors; (iv) a receiver is appointed on account of Buyer's insolvency; (v) Buyer fails to make payment when due under the agreed terms as provided herein; or (vi) Buyer does not correct or, if immediate correction is not possible, commence and diligently continue action to correct any default of Buyer to comply with any of the provisions or requirements of the agreed terms as provided herein within ten (10) calendar days after being notified in writing of such default by Seller, Seller may, by written notice to Buyer, without prejudice to any other rights or remedies which Seller may have, terminate its further performance hereunder. In the event of such termination, Seller shall be entitled to receive payment as if Buyer has cancelled its purchase order pursuant to this paragraph. Seller may nevertheless elect to complete its performance of under the agreed terms provided herein by any means it chooses. Buyer agrees to be responsible for any additional costs incurred by Seller in so doing. Upon termination of the agreed terms as provided herein, the rights, obligations and liabilities of the parties, which shall have arisen or been incurred hereunder prior to its termination, shall survive such termination.

13. **CHANGES:** Buyer may request changes or additions to the Goods consistent with the Seller's specifications and criteria. In the event Seller accepts such changes or additions, Seller may revise the price and dates of delivery. Seller reserves the right to change the design and specifications for the Goods without prior notice to the Buyer, except with respect to Goods being made-to-order for Buyer. Seller s shall have no obligation to install or make such change in any Goods manufactured prior to the date of notification of such change.

14. **NUCLEAR/FIRE/MEDICAL:** GOODS SOLD HEREUNDER ARE NOT FOR USE IN CONNECTION WITH ANY NUCLEAR, FIRE SYSTEMS, MEDICAL, LIFE-SUPPORT AND RELATED APPLICATIONS. Buyer accepts Goods with the foregoing understanding, and agrees to communicate same in writing to any subsequent purchasers or users, and to defend, indemnify and hold harmless Seller for any claims, losses, suits, judgments and damages, including incidental and consequential damages, arising from such use, whether the cause be based in tort, contract or otherwise, including allegations that the Seller's liability is based on negligence or strict liability.

15. **ASSIGNMENT:** Buyer shall not assign its rights or delegate its duties hereunder, or any interest herein, without the prior written consent of Seller, and any such assignment, without such consent, shall be null and void.

16. **INSPECTION/TESTING:** Buyer shall have the right to inspect the Goods upon their receipt. When delivery is to Buyer's site or to a project site ("Site"), Buyer shall notify Seller in writing of any nonconformity of the Goods with the quotation, estimate or bid, or the agreed terms as provided herein, within three (3) days from receipt of the Goods by Buyer, unless a shorter period is required in Seller's quotation, estimate or bid. For all other deliveries, Buyer shall notify Seller in writing of any nonconformity of the Goods with the quotation, estimate or bid, or the agreed terms as provided herein, within fourteen (14) days from receipt of the Goods by Buyer. Failure to give such applicable notice shall constitute a waiver of Buyer's right to inspect and/or reject the Goods for nonconformity, and shall be equivalent to an irrevocable acceptance of the Goods by Buyer. Claims for loss of or damage to Goods in transit must be made to the carrier, and not to Seller. Buyer, at its option and sole expense, may inspect and observe the testing by Seller of the Goods for compliance with Seller's standard test procedures prior to shipment, which inspection and testing shall be conducted at Seller's plant at such reasonable time as is determined by Seller. Any rejection of the Goods must be made promptly by Buyer before shipment. Tests shall be deemed to be satisfactorily completed, and the test fully met, when the Goods meet Seller's criteria for such procedures. Acceptance by Buyer, or Buyer's representative, of any witnessed testing or coatings will preclude any future rejection.

17. **STANDARD, TOLERANCE:** Except for made-to-order Goods specified by the Buyer in writing and expressly agreed to in writing by Seller, all Goods furnished hereunder are produced in accordance with the standard manufacturing practices in the country of origin of the Goods. All materials incorporated into the Goods are subject to mill tolerances and variations consistent with normal manufacturing practices for dimension, weight, straightness, section, composition and mechanical properties, normal surface and internal conditions, and deviations in quality resulting from practical testing. Seller is not responsible for any deterioration in quality as a result of the foregoing tolerances and variations.

18. **DRAWINGS:** Seller's prints and drawings (including without limitation, the underlying technology) furnished by Seller to Buyer in connection with Seller's quotation, estimate or bid are the property of Seller, and Seller retains all rights, including without limitation, exclusive rights of use and license. Buyer shall return all copies (in whatever medium) of such prints or drawings to Seller immediately upon request by Seller. Seller does not supply detailed or shop working drawings of the Goods; however, Seller will supply necessary installation drawings. The drawings and bulletin illustrations submitted with Seller's quotation, estimate or bid, show general type, arrangement and approximate dimensions of the Goods to be furnished for Buyer's information only, and Seller makes no representation or warranty regarding their accuracy. Unless expressly stated to the contrary within the quotation, estimate or bid, all drawings, illustrations, specifications or diagrams form no part of the agreed terms as provided herein. Seller reserves the right to alter such details in design or arrangement of its Goods which, in its sole discretion, constitute an improvement in construction, application or operation of the Goods. All engineering information necessary for installation of the Goods shall be forwarded by Seller to Buyer at the time

the Goods are shipped. After Buyer's acceptance of Seller's quotation, estimate or bid, any changes requested by Buyer in the type of Goods, the arrangement of the Goods, or the application of the Goods will be made at Buyer's expense. Instructions necessary for installation, operating and maintenance will be supplied when the Goods are shipped.

19. **EXPORT/IMPORT:** Buyer agrees that all applicable import and export control laws, regulations, orders and requirements, including without limitation those of the United States and the European Union, and the jurisdictions in which the Seller and Buyer are established, or from which the Goods may be supplied, will apply to the Goods receipt and use. In no event shall Buyer use, transfer, release, import or export any Goods in violation of such applicable laws, regulations, orders or requirements. The Buyer shall not, and shall not permit any third parties to, directly or indirectly, export, re-export or release any Goods to any jurisdiction or country to which, or any party to whom, the export, re-export or release of any Goods is prohibited by applicable law, regulation or rule. The Buyer shall be solely responsible for any breach of this Section 19.

20. **Proprietary Information, Injunction:** Seller's designs, illustrations, drawings, specifications, technical data, catalogues, "know-how", economic or other business or manufacturing information (collectively "**Proprietary Information**") disclosed to Buyer shall be deemed proprietary and confidential to Seller. Buyer agrees not to disclose, use or reproduce any Proprietary Information without first having obtained Seller's express written consent. Buyer's agreement to refrain from disclosing, using or reproducing Proprietary Information shall survive completion of the work and delivery of the Goods under the agreed terms as provided herein. Buyer acknowledges that its improper disclosure of Proprietary Information to any third party will result in Seller's suffering irreparable harm. Seller may seek injunctive or equitable relief to prevent Buyer's unauthorized disclosure of Proprietary Information.

21. **Installation and Start-up:** Unless otherwise agreed to in writing by Seller, installation of the Goods shall be the sole responsibility of Buyer. In the event Buyer has engaged Seller to provide an engineer for start-up supervision, such engineer will function in a supervisory capacity only, and Seller shall have no responsibility for the quality of workmanship of the installation. Buyer understands and agrees that it shall furnish, at Buyer's sole expense, all necessary foundations, supplies, labor and facilities that might be required to install and operate the Goods.

22. **INSURANCE:** Buyer agrees to do all acts necessary to protect Seller's interest by adequately insuring the Goods against loss or damage from any external cause, with Seller named as insured, additional insured or co-insured. Seller and Buyer agree to maintain liability insurance in commercially reasonable amounts covering claims of any kind or nature for damage to property or personal injury, including death, made by anyone that may arise from activities performed or facilitated related to the Goods, whether these activities are performed by that company, its employees, agents, or anyone directly engaged or employed by that party or its agents.

23. **GENERAL PROVISIONS:** These terms and conditions herein supersede all other communications, negotiations, and prior oral or written statements regarding the subject matter of the agreed terms as provided herein. No change, modification, rescission, discharge, abandonment, or waiver of these terms and conditions shall be binding upon the Seller, unless made in writing and signed on its behalf by a duly authorized officer of Seller. No conditions, usage of trade, course of dealing or performance, understanding or agreement purporting to modify, vary, explain, or supplement these terms and conditions shall be binding unless hereafter made in writing and signed by the party to be bound, and no modification or additional terms shall be applicable to the agreed terms as provided herein by Seller's receipt, acknowledgement, or acceptance of purchase orders, shipping instruction forms, or other documentation containing terms at variance with or in addition to those set forth herein. Any such modifications or additional terms are specifically rejected and deemed a material alteration hereof. If this document shall be deemed an acceptance of a prior offer by Buyer, such acceptance is expressly conditional upon Buyer's assent to any additional or different term set forth herein. There is no waiver by either party with respect to any other breach or default of any other right or remedy, unless such waiver be expressed in writing and signed by the party to be bound. All typographical or clerical errors made by Seller in any quotation, estimate or bid, acknowledgement or publication are subject to correction. No action, regardless of form, arising out of transactions relating to this contract, may be brought by either party more than two years after the cause of action has accrued.

24. **GOVERNING LAW:** THE AGREED TERMS AS PROVIDED HEREIN, AND THE VALIDITY, PERFORMANCE, AND ALL OTHER MATTERS RELATING TO THE INTERPRETATION AND EFFECT OF AND ALL RIGHTS AND OBLIGATION HEREUNDER, SHALL BE GOVERNED BY THE LAWS OF THE STATE OF TEXAS, WITHOUT REFERENCE TO PRINCIPLES OF CONFLICTS OF LAW. SUBJECT TO THE ARBITRATION PROVISION AS PROVIDED HEREINABOVE, THE JURISDICTION OF ANY PROCEEDING RELATED TO THE GOODS SHALL BE IN THE STATE OF TEXAS AND VENUE SHALL BE LUBBOCK COUNTY, TEXAS. THE RIGHTS AND OBLIGATIONS OF THE PARTIES HEREUNDER SHALL NOT BE GOVERNED BY THE 1980 U.N. CONVENTION ON CONTRACTS FOR THE INTERNATIONAL SALE OF GOODS.

25. **Titles:** The section titles herein are for reference only, and shall not limit or restrict the interpretation or construction of this Agreement.

26. **Waiver:** Seller's failure to insist, in any one or more instances, upon Buyer's performance of this Agreement, or to exercise any rights conferred, shall not constitute a waiver or relinquishment of any such right or right to insist upon Buyer's performance in any other regard.

27. **Severability:** The partial or complete invalidity of any one or more provisions of this Agreement shall not affect the validity or continuing force and effect of any other provision.

SIMFLO®

Pump Model Designation And Cross Reference

SIMFLO	Simmons Pump	Simflo Pump
SM4M	SM4M	SM4C
SM4H	SM4H	SP4C
SM4HO	SM4HO	SP4S
SP5XXL	SM5XXL	---
SP5XL	SM5xL	SM5C
SP5L	SM5L	SP5C
SM5M	SM5M	SR5C
SM5H	SM5H	SS5C
SP5LO	SP5LO	SN5S
SP6LL	SM6L	---
SP6L	SH6L	SG6C
SP6M	SM6M	SM6C
SP6H	SM6H	SP6C
SP6LO	SP6LO	---
SP6MO	SP6MO	---
SK6HH	---	---
SP7L	SP7L	SD7C
SP7H	SP7H	SE7C
SK7L	SF7L	SJ7C
SK7M	SF7M	SL7C
SK7H	SF7H	SP7C
SM7M	SM7M	SG7C
SP8L	SP8L	SF8C
SP8M	SP8M	SG8C
SP8H	SP8H	SH8C
SM8H	S800	SL8C
SR8MO	S807	---
SR8HO	S805	SJ8S
SK8H	SK8H	SR8C
SP9L	SP9L	SC10C
SP9M	SP9M	SE10C
SM9L	SM9L	SA10C
SM9M	SM9M	SB10C
SR9HO	SL9S	SG10S
SL9H	SL9H	SL9C
SF9H	SL10H	SI10C
SK9M	SK10M	SV10C
SK9H	SK10H	---

SIMFLO	Simmons Pump	Simflo Pump
SP10L	SP10L	SD10C
SP10M	SP10M	SF10C
SP10H	SP10H	SH10C
SM10MO	---	---
SM10HO	S1000	SP10S
SM10M	SM10M	SJ10C
SM10H	SM10H	SR10C
SM11M	SM11	SL10C
SM11H	SM03	SU10C
SL11H	SL11H	SW10C
SR11MO	SR13M	SN12S
SR11HO	SR13H	ST12S
SP11L	SM13L	SP12C
SP11M	SM13M	SR12C
SP11H	SM13H	SV12C
SW12L	SW12L	SC12C
SW12M	SW12M	SD12C
SP12M	SP12M	SH12C
SP12H	SP12H	SJ12C
SL12M	SL12M	SI12C
SL12H	SK12C	SK12C
SJ12M	SJ12M	SS12C
SJ12H	SJ12H	SU12C
SM14LL	SM14LL	SD14C
SM14L	SM14L	SG14C
SM14M	SM14M	SJ14C
SM14H	SM14H	SR14C
SM14HH	SM14HH	SU14C
SM16MO	SW16MS	SG16S
SM16HO	SW16HS	SP16S
SM16M	SW16MC	SK16C
SM16H	SW16HC	SR16C
SM20M	SW20M	SK20C
SM20H	SW20H	SR20C
SM24M	SW24M	SK24C
SM24H	SW24H	SR24C
SM28H	SW28H	SR28C

v18.2

In January 2018, Simmons Pump and Simflo Pumps, Inc. merged to become SIMFLO. The charts above provide a cross reference for model designations from before and after the merger.

3450 RPM
Selection Chart

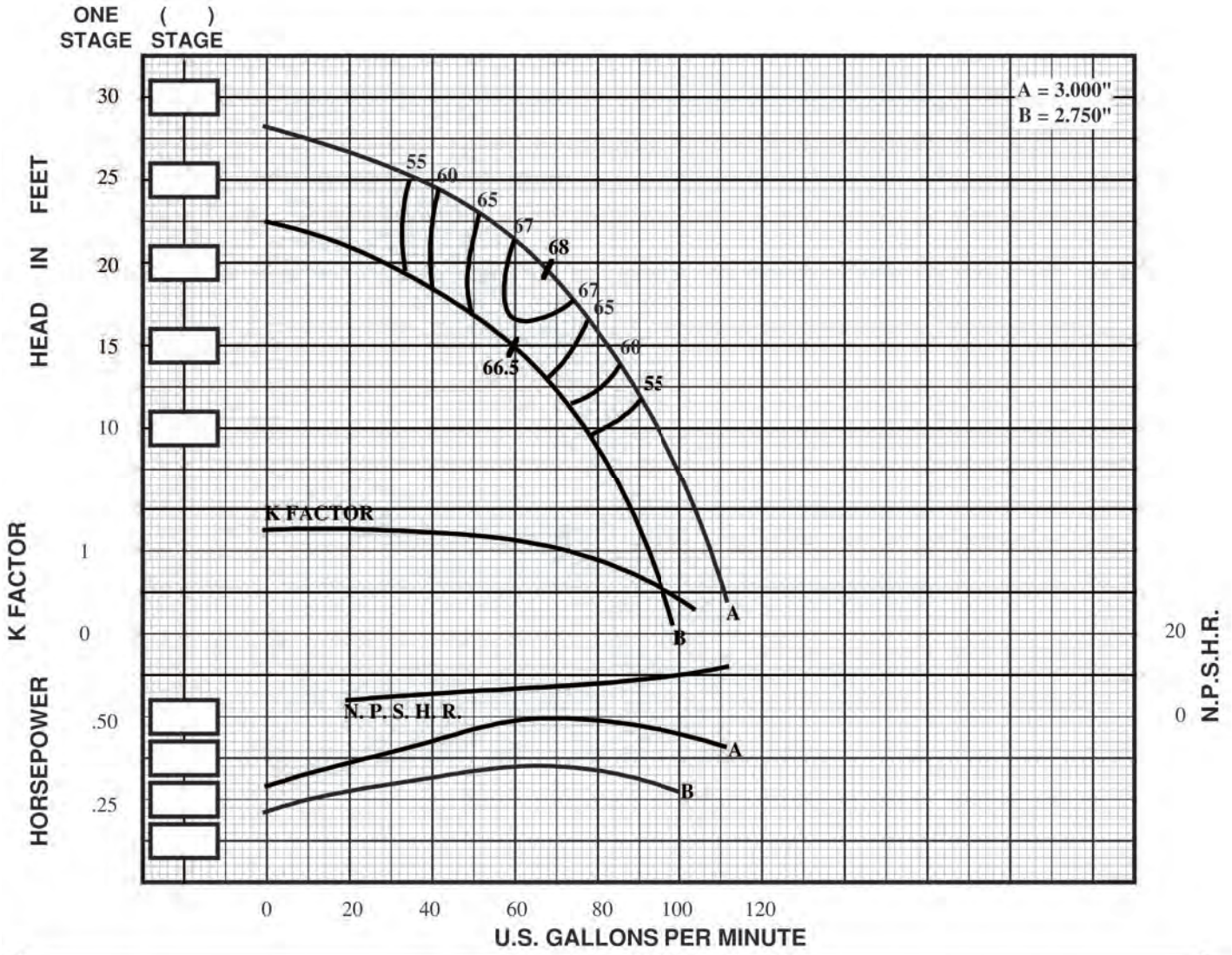
Model Number	Bowl Dia. (in.)	Peak Eff. (full dia.)	BEP Flow (gpm)	BEP Head (ft./ stage)	BEP NPSHr (full dia.)	POR (gpm)	Ns	Nss
SP5XXL	5.25	70.5	81.4	46.1	4.88	57-98	1759	9480
SP5XL	5.25	78.0	104	51.5	8.43	73-125	1830	7112
SP5L	5.25	76.0	129	59.2	11.1	90-155	1836	6443
SM5M	5.25	78.0	202	30.4	11.0	141-242	3787	8118
SM5H	5.25	78.0	270	37.9	20.3	189-324	3711	5928
SP5LO	5.25	76.5	95.0	48.5	8.59	67-114	1830	6702
SP6LL	6.00	72.0	104	45.8	8.50	73-125	1998	7068
SP6L	6.00	74.0	138	63.3	10.3	97-166	1806	7049
SP6M	6.00	74.0	150	67.0	10.7	105-180	1804	7142
SP6H	6.00	77.0	212	80.7	13.9	148-254	1866	6978
SP6LO	6.00	76.0	160	60.0	16.5	112-192	2024	5330
SP6MO	6.00	75.0	179	63.9	15.5	125-215	2042	5909
SM6M	6.00	77.0	181	57.5	11.8	126-217	2220	7280
SM6H	6.00	79.0	221	68.9	13.5	154-265	2143	7251
SK6HH	5.50	78.7	436	41.7	25.5	305-523	4383	6342
SP7L	7.19	82.0	359	100	14.9	251-431	2067	8619
SP7H	7.19	82.0	450	113	18.3	315-540	2112	8272
SK7L	6.56	79.0	395	60.1	21.5	277-474	3177	6867
SK7M	6.56	78.0	452	60.6	6.87	316-542	3377	17285
SK7H	6.56	78.0	567	68.8	10.5	397-680	3439	14048
SM7M	7.00	77.0	522	61.8	22.5	365-626	3576	7630
SP8L	7.88	76.0	277	109	15.3	194-332	1702	7422
SP8M	7.88	77.0	315	106	12.9	221-378	1854	8996
SP8H	7.88	78.5	354	125	17.1	248-425	1736	7719
SM8H	7.69	78.0	556	109	20.6	389-667	2411	8413
SR8HO	7.69	78.0	582	100	25.9	407-698	2632	7249
SK8H	7.50	78.0	1140	83.4	65.9	798-1368	4221	5036
SP9L	9.50	84.0	576	199	26.5	403-691	1563	7089
SP9M	9.50	85.0	646	226	31.4	452-775	1504	6611
SM9L	9.50	75	626	182	29.7	438-751	1742	6785
SM9M	9.50	77.5	725	201	41.8	508-870	1740	5651
SL9H	9.00	79.5	1035	165	42.7	725-1242	2411	6645
SF9H	9.50	81.0	1194	200	67.4	836-1433	2242	5068
SK9M	9.44	80.0	1810	129	39.9	1267-2172	3835	9245
SP10L	10.19	76.0	685	158	64.4	480-822	2026	3972
SP10M	10.19	79.5	763	186	33.0	534-916	1892	6921
SP10H	10.19	81.0	922	212	35.6	645-1106	1886	7188
SM10MO	10.19	79.7	1240	196	40.0	868-1488	2319	7638
SM10HO	10.19	77.8	1496	189	50.7	1028-1763	2618	7023
SM10M	10.19	81.5	1324	174	35.6	927-1589	2620	8613
SM10H	10.19	80.0	1496	193	40.8	1047-1795	2577	8266
SM11M	10.63	79.0	1378	194	78.1	965-1654	2464	4875
SL11H	10.88	82.0	1980	246	25.2	1386-2376	2471	13649

SIMFLO®

Section 201
Date 7/1/99

SM4M

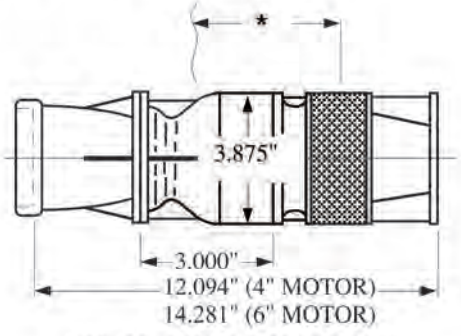
3450 RPM



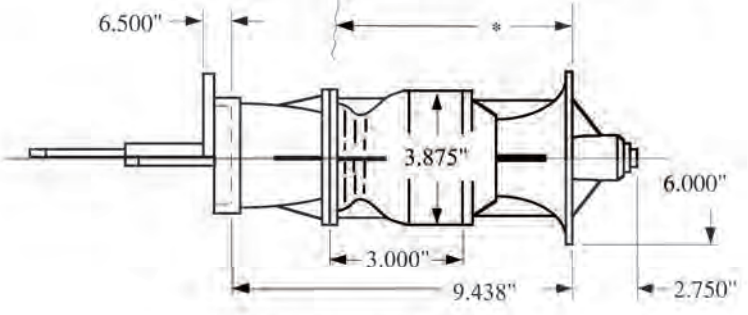
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM4M	MAX. SHAFT DIA. = .875"	1	-6.5	IMP. - C.I.	-5
IMPELLER WT. - LBS. = 0.90	STD. LATERAL = .16"	2	-5	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 20.0	DISCHARGE SIZES = 2.5"/3"	3	-3.5	IMP. - S.S.	NOT RECOM.
ADD'L STAGE WT. - LBS. = 5.80	SUCTION SIZES = BELL	4	-2	BOWL - BRZ.	0
MAX. SPHERE SIZE = .25"	ONE STAGE WR^2 = .005	5	-1	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 6"	=			BOWL - S.S.	NOT RECOM.

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

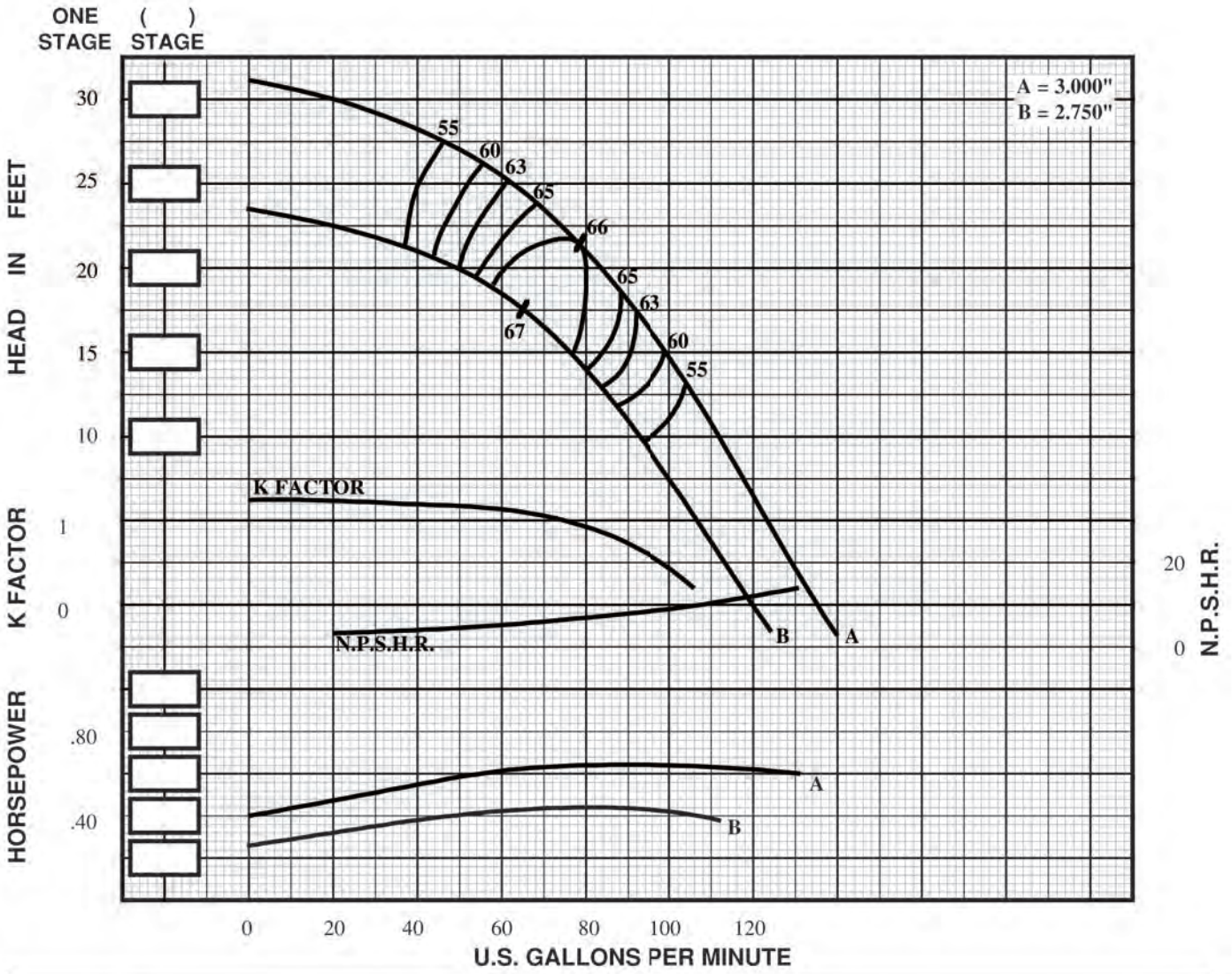


LINESHAFT TURBINE

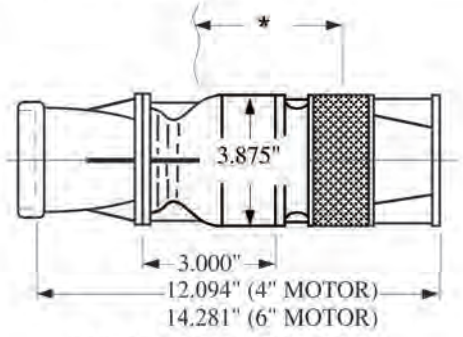
SIMFLO®

Section 201
Date 6/3/04

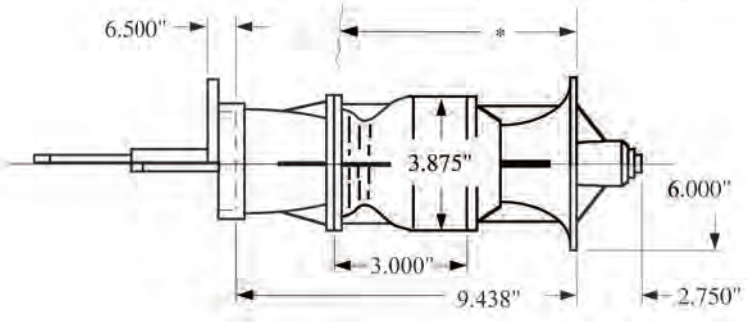
SM4H
3450 RPM



				NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER TYPE = ENCLOSED		STD. SHAFT DIA. = .875"					
IMPELLER NO. = SM4H		MAX. SHAFT DIA. = .875"					
IMPELLER WT. - LBS. = 0.75		STD. LATERAL = .16"		1	-6.5	IMP. - C.I.	-5
ONE STAGE WT. - LBS. = 20.0		DISCHARGE SIZES = 2.5"/ 3"		2	-5	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 5.65		SUCTION SIZES = BELL		3	-3.5	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .25"		ONE STAGE WR^2 = .004		4	-2	BOWL - BRZ.	0
MIN. SUBMERGENCE* = 6"		=		5	-1	BOWL - NI-RI	-1
Δ CONSULT FACTORY			v18.1			BOWL - S.S.	NOT RECOM.



SUBMERSIBLE TURBINE

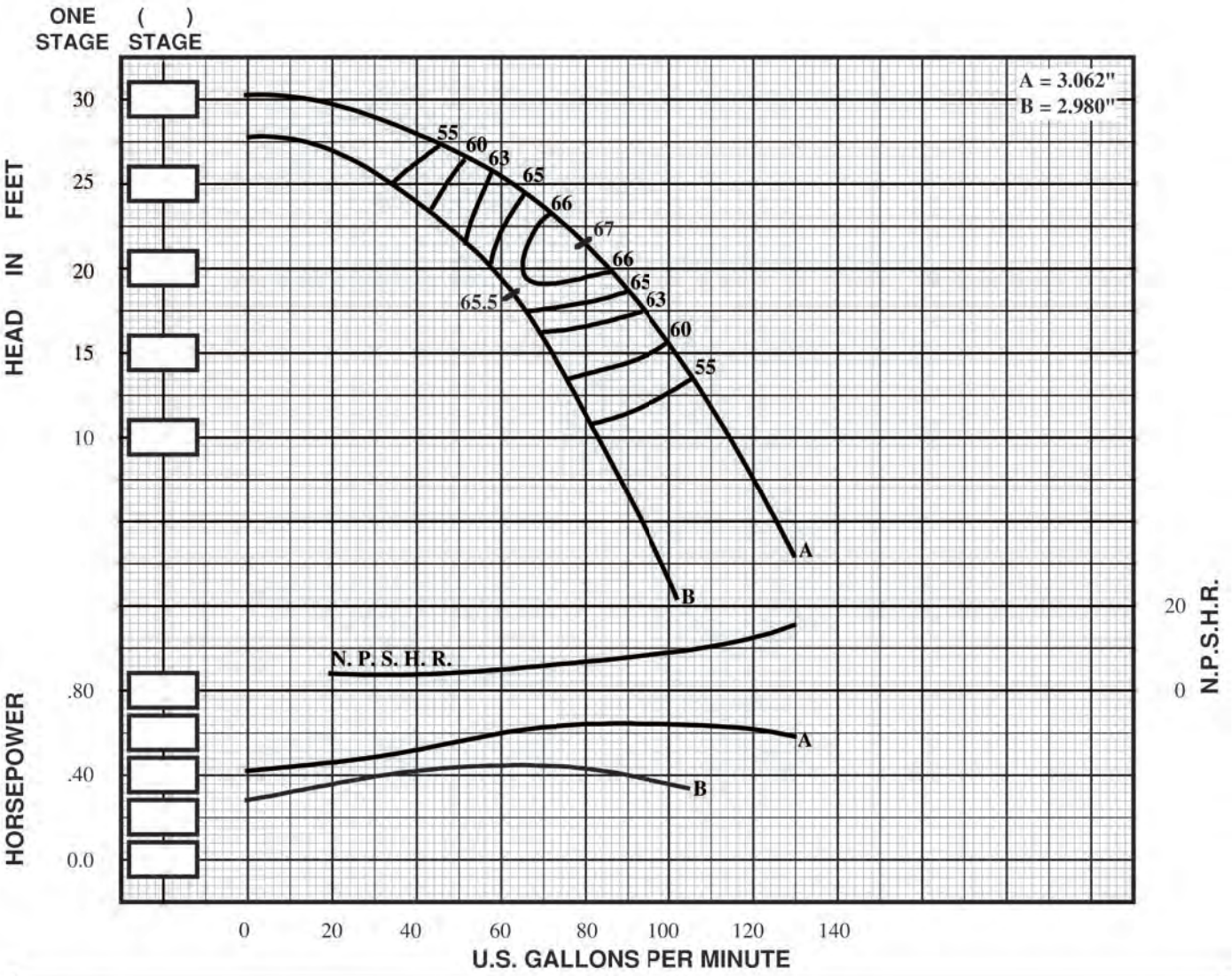


LINESHAFT TURBINE

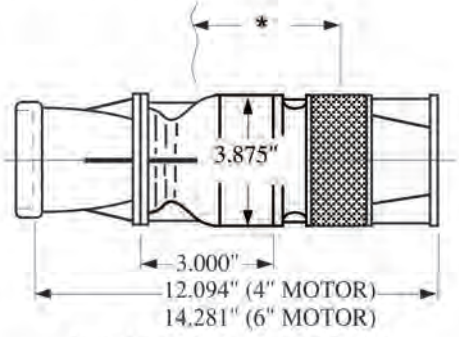
SIMFLO®

Section 201
Date 6/3/04

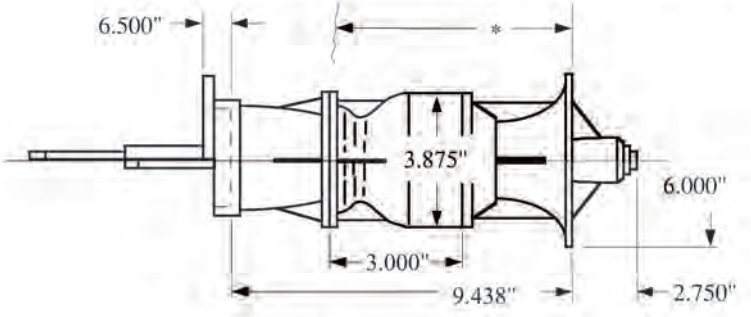
SM4HO
3450 RPM



IMPELLER TYPE = SEMI - OPEN	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM4HO	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 0.72	STD. LATERAL = .20"	1	-6.5	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 20.0	DISCHARGE SIZES = 2.5"/ 3"	2	-5.0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 5.62	SUCTION SIZES = BELL	3	-3.5	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .25"	ONE STAGE WR^2 = .003	4	-2.0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 6"	K FACTOR, MAX = 1.50	5	-1.0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE



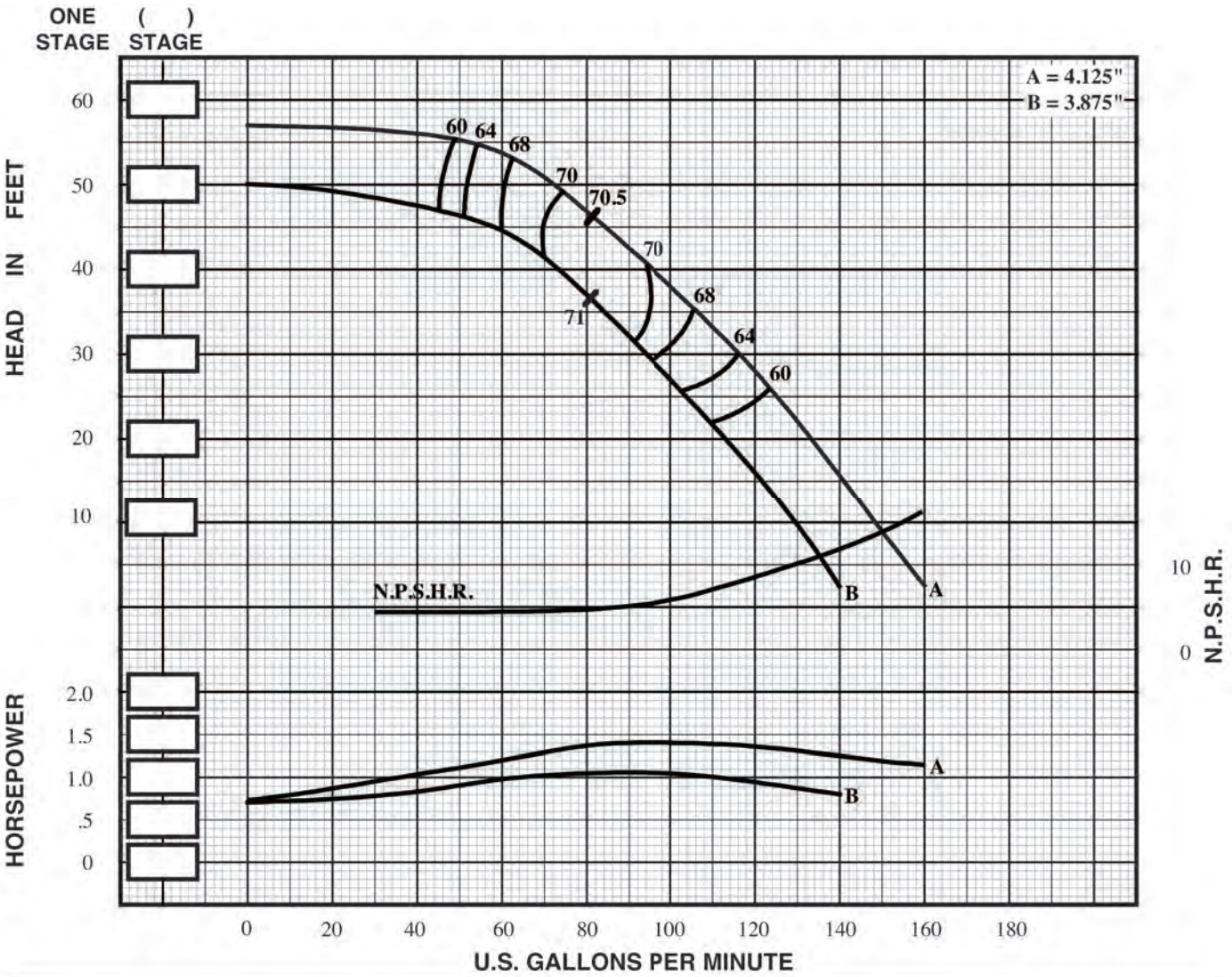
LINESHAFT TURBINE

SIMFLO®

Section 201
Date 3/30/18

SP5XXL

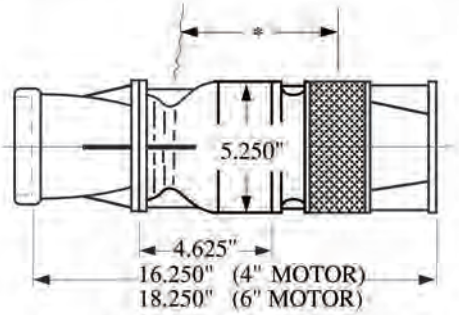
3450 RPM



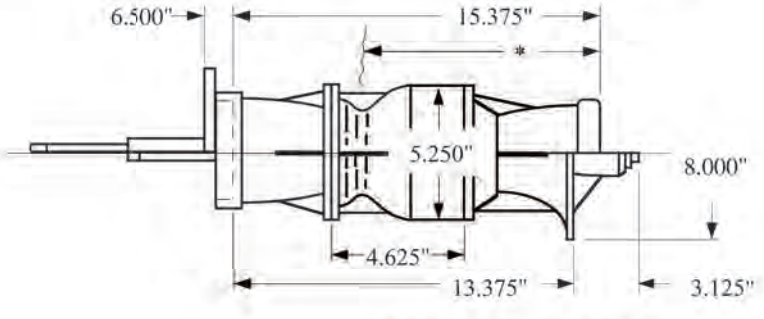
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP5XXL	MAX. SHAFT DIA. = .875"	1	-4	IMP. - C.I.	Δ
IMPELLER WT. - LBS. = 1.85	STD. LATERAL = 0.30"	2	-3	IMP. - NI-RI	Δ
ONE STAGE WT. - LBS. = 50.0	DISCHARGE SIZES = 3" / 4"	3	-2	IMP. - S.S.	Δ
ADD'L STAGE WT. - LBS. = 14.0	SUCTION SIZES = 4" / BELL	4	-1	BOWL - BRZ.	Δ
MAX. SPHERE SIZE = .34"	ONE STAGE WR^2 = .014	5	0	BOWL - NI-RI	Δ
MIN. SUBMERGENCE = 10"	K FACTOR (max) = 1.78			BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE



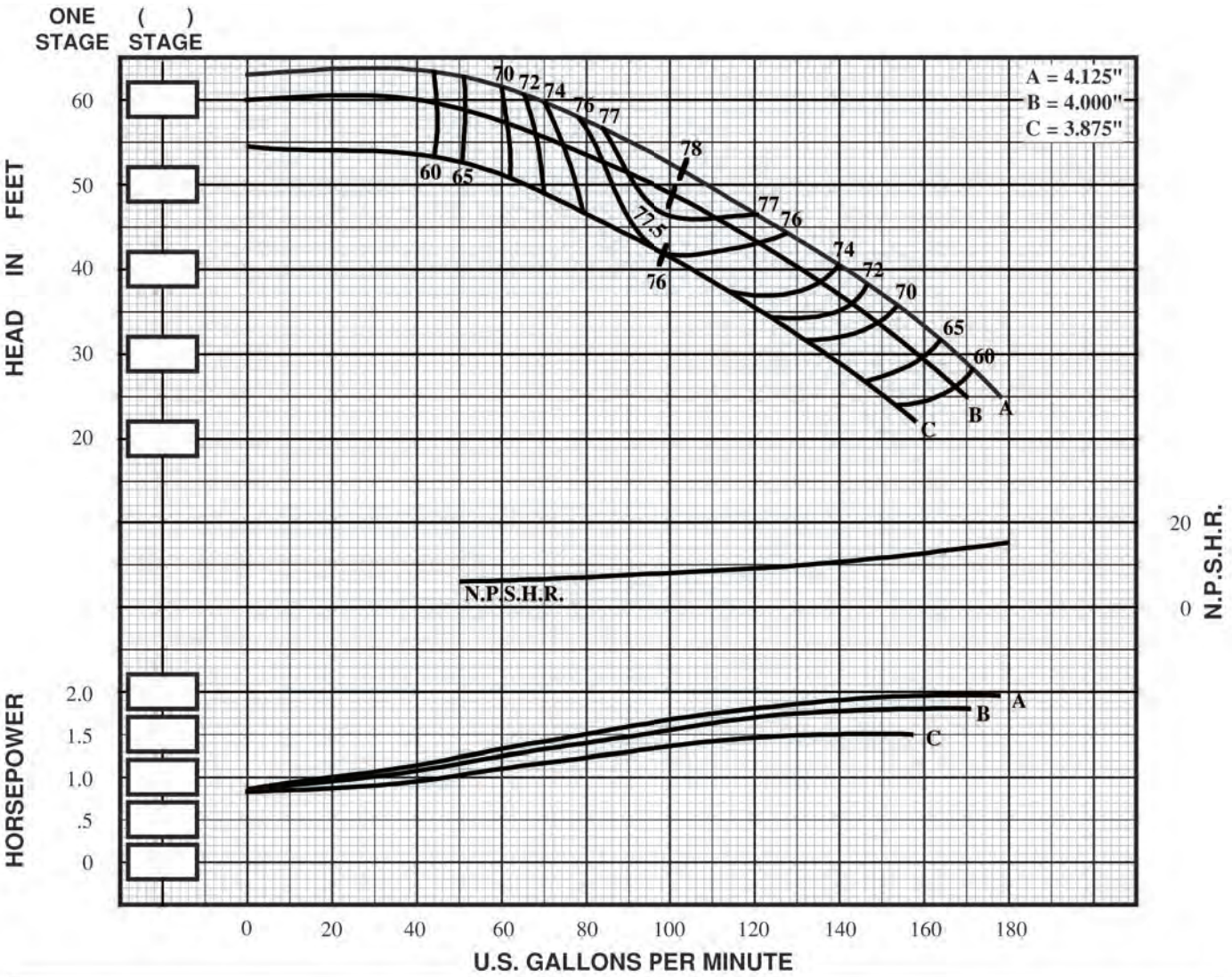
LINESHAFT TURBINE

SIMFLO®

Section 201
Date 9/1/06

SP5XL

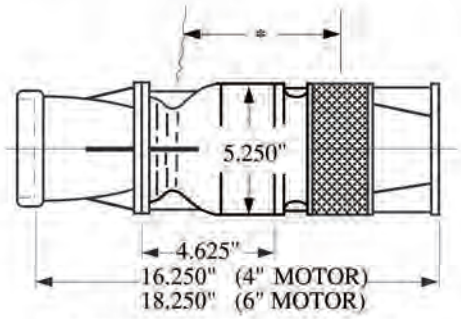
3450 RPM



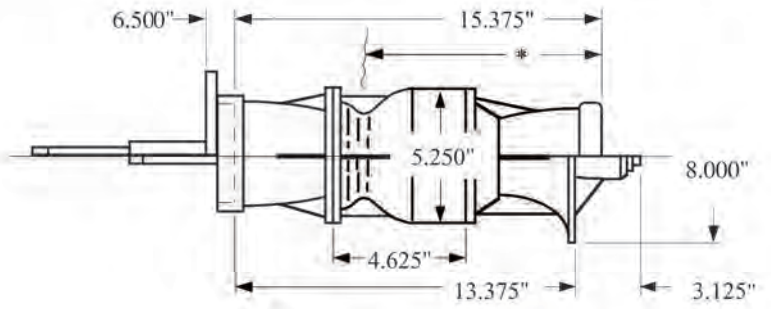
				NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER TYPE	= ENCLOSED	STD. SHAFT DIA.	= .875"				
IMPELLER NO.	= SP5XL	MAX. SHAFT DIA.	= .875"				
IMPELLER WT. - LBS.	= 1.70	STD. LATERAL	= .30"	1	-4	IMP. - C.I.	Δ
ONE STAGE WT. - LBS.	= 50.0	DISCHARGE SIZES	= 3"/ 4"	2	-3	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS.	= 14.0	SUCTION SIZES	= 4"/ BELL	3	-2	IMP. - S.S.	Δ
MAX. SPHERE SIZE	= .38"	ONE STAGE WR^2	= .015	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE	= 10"	K FACTOR, MAX	= 2.30	5	0	BOWL - NI-RI	Δ
						BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

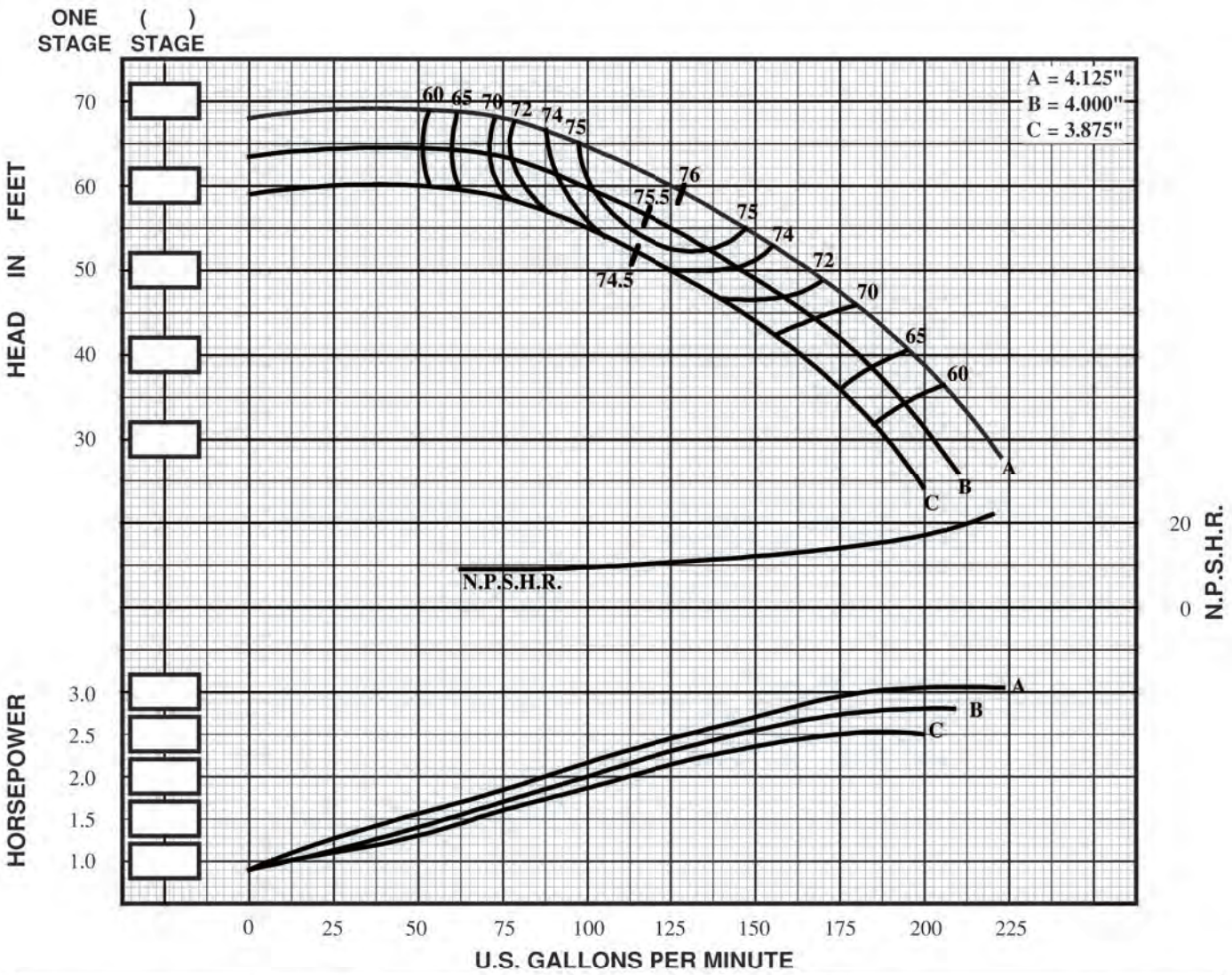


LINESHAFT TURBINE

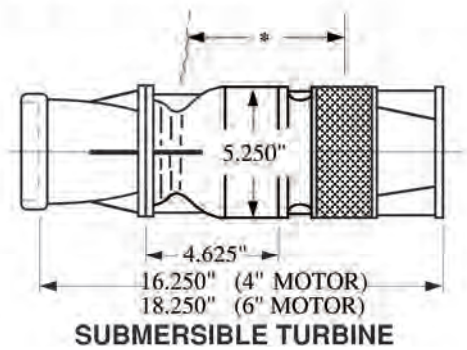
SIMFLO®

Section 201
Date 9/1/06

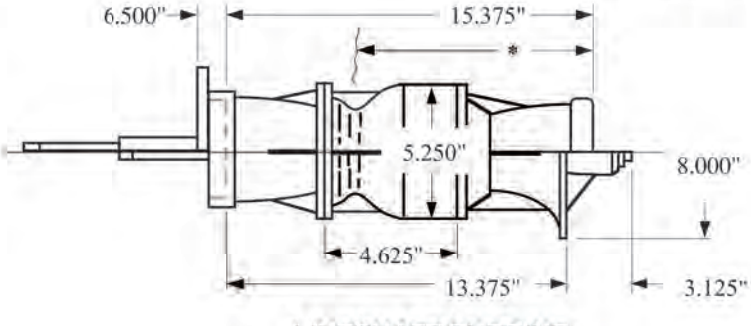
SP5L
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP5L	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 1.75	STD. LATERAL = .30"	1	-4	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 50.0	DISCHARGE SIZES = 3"/ 4"	2	-3	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 14.0	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .38"	ONE STAGE WR^2 = .015	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE = 10"	K FACTOR, MAX = 2.40	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE



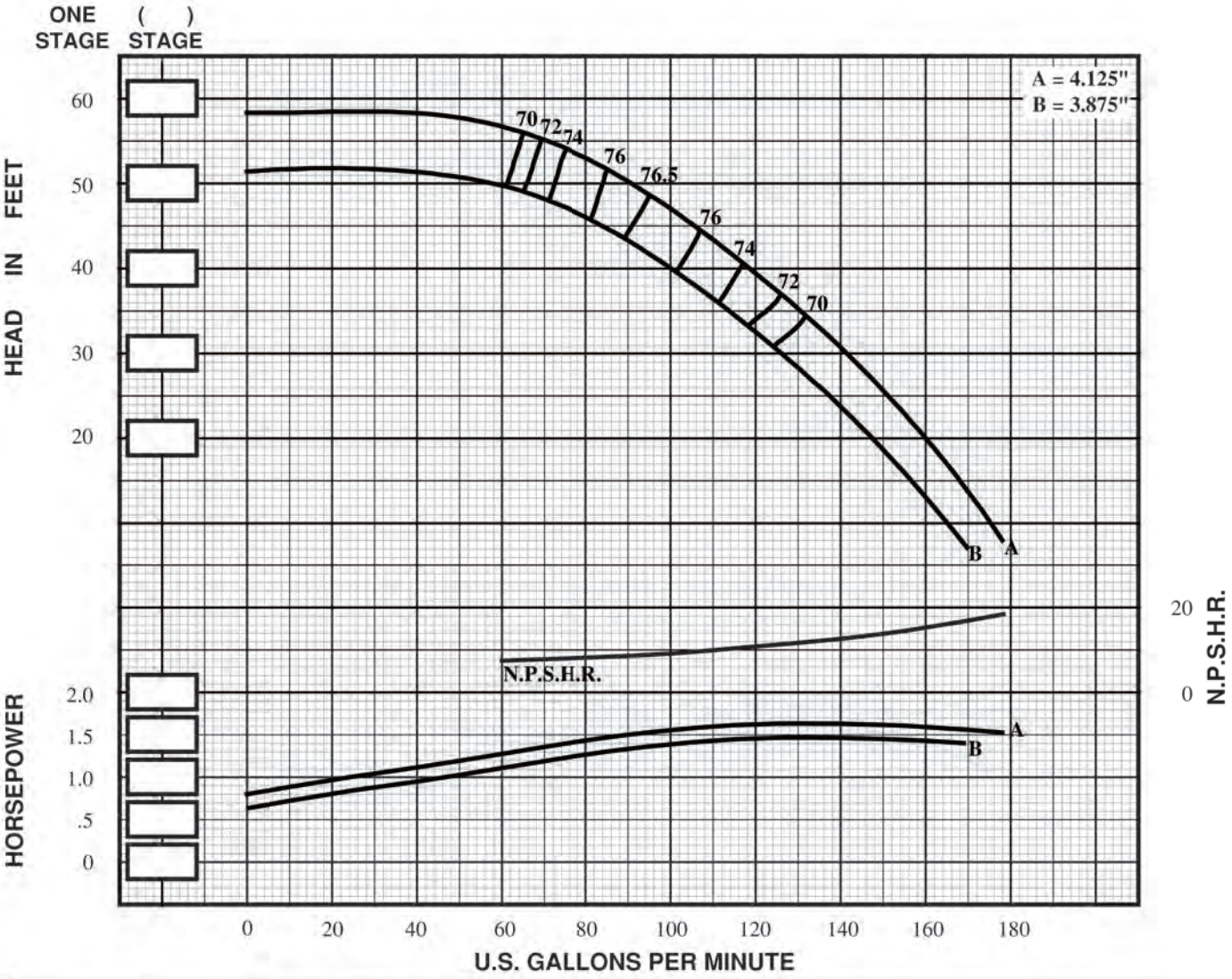
LINESHAFT TURBINE

SIMFLO®

Section 201
Date 9/1/06

SP5L0

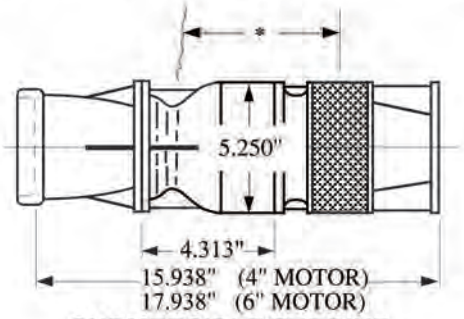
3450 RPM



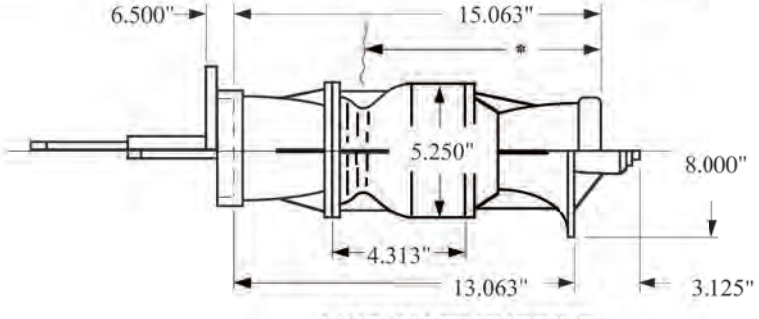
IMPELLER TYPE = SEMI - OPEN	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP5LO	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 1.40	STD. LATERAL = .16"	1	-6	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 50.0	DISCHARGE SIZES = 3" / 4"	2	-4	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 14.0	SUCTION SIZES = 4"/ BELL	3	-3	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .31"	ONE STAGE WR^2 = .014	4	-1.5	BOWL - BRZ.	Δ
MIN. SUBMERGENCE = 10"	K FACTOR, MAX = 4.70	5	0	BOWL - NI-RI	Δ
				BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

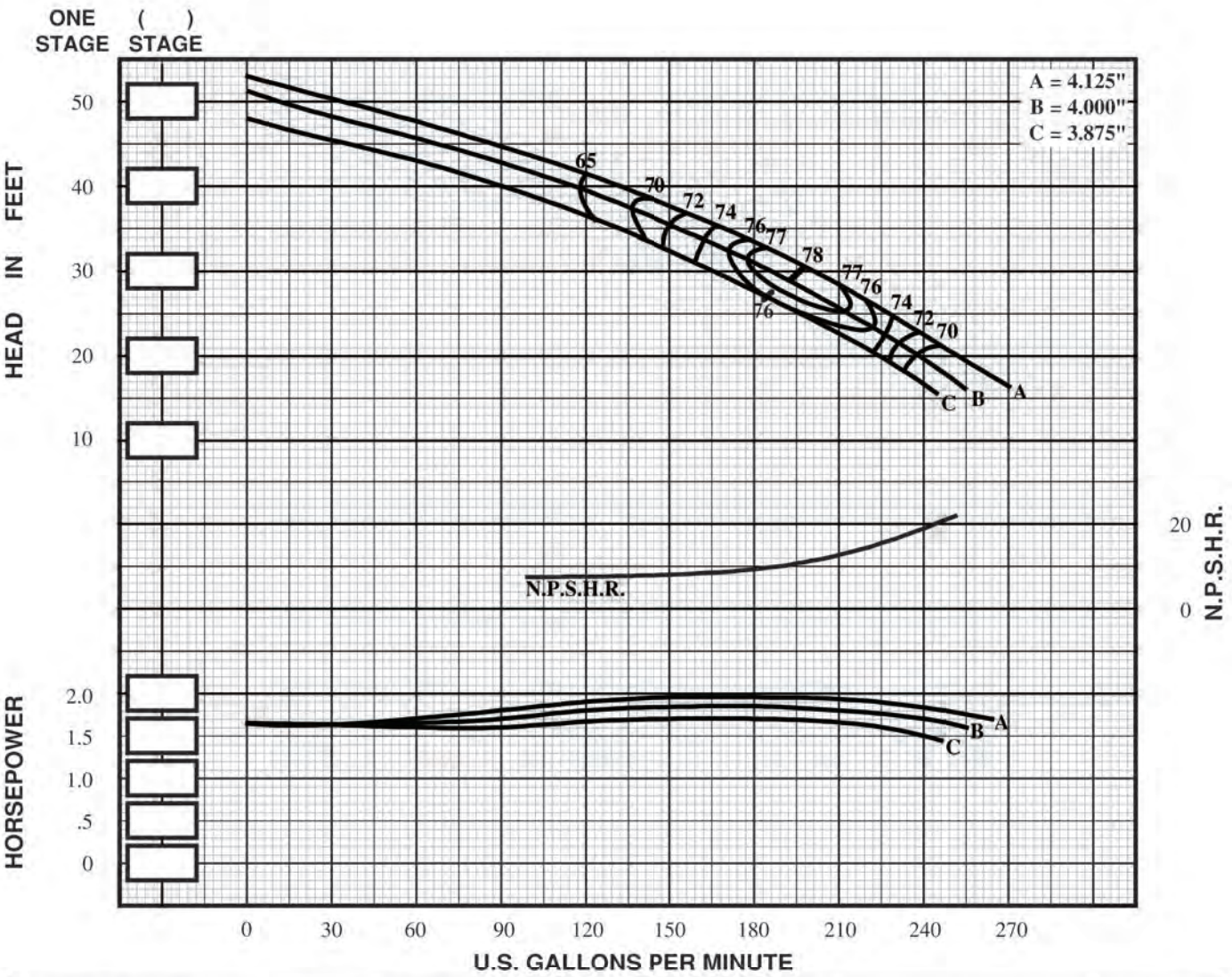


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 9/1/06

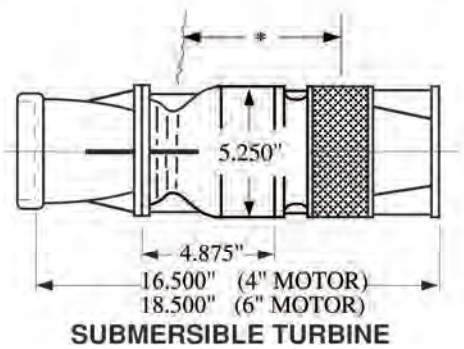
SM5M
3450 RPM



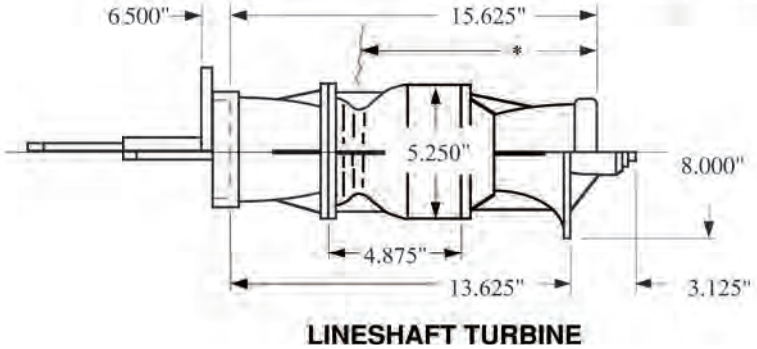
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM5M	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 1.85	STD. LATERAL = .55"	1	-4	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 50.0	DISCHARGE SIZES = 3"/ 4"	2	-3	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 14.0	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .63"	ONE STAGE WR^2 = .015	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE = 10"	K FACTOR, MAX = 2.50	5	0	BOWL - NI-RI	Δ
				BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

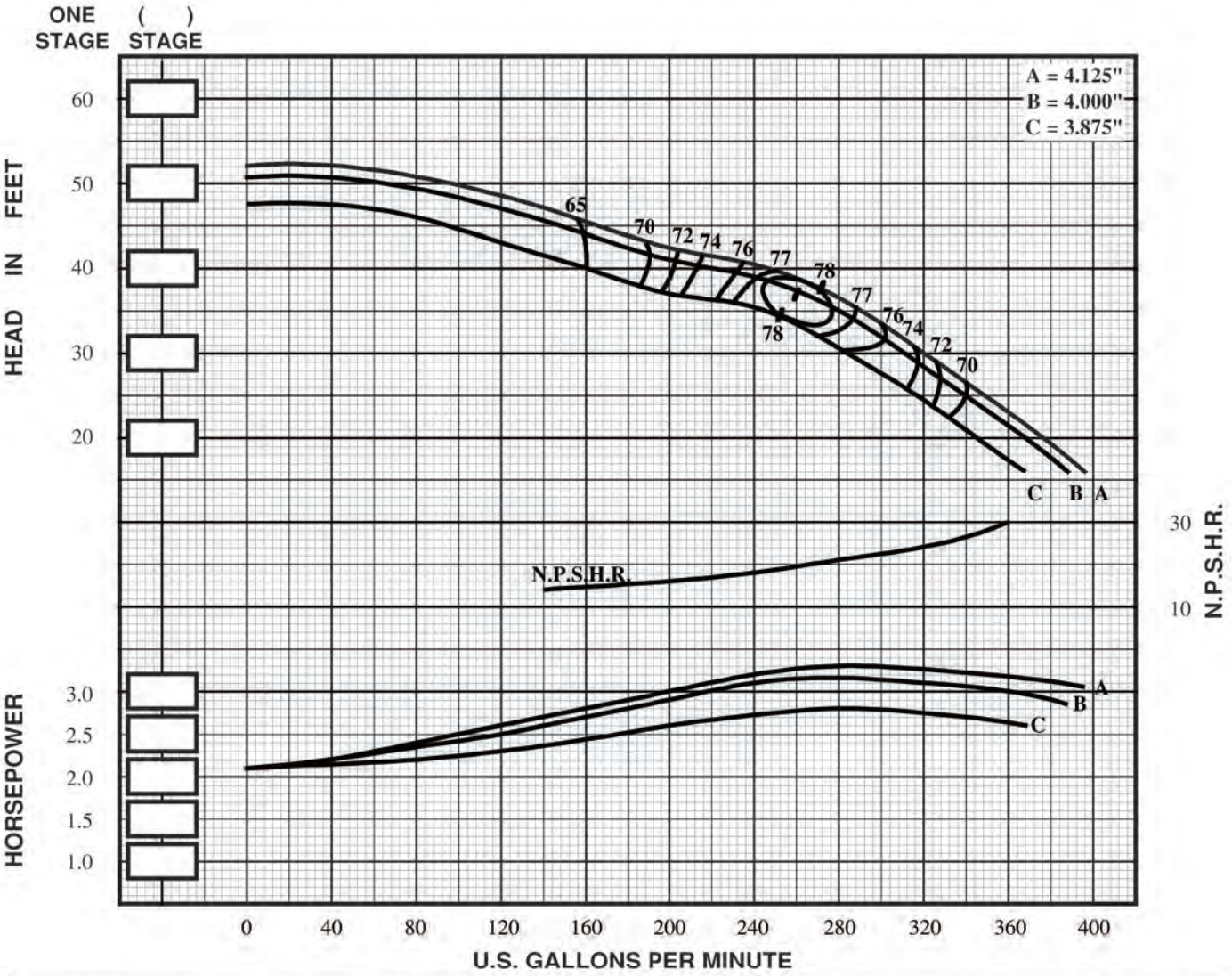


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 9/1/06

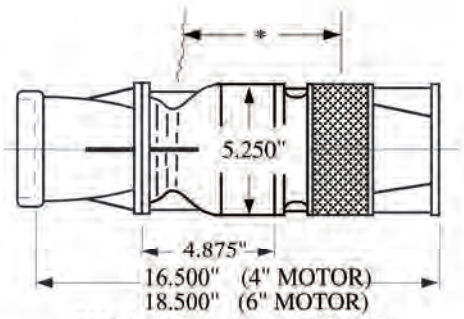
SM5H
3450 RPM



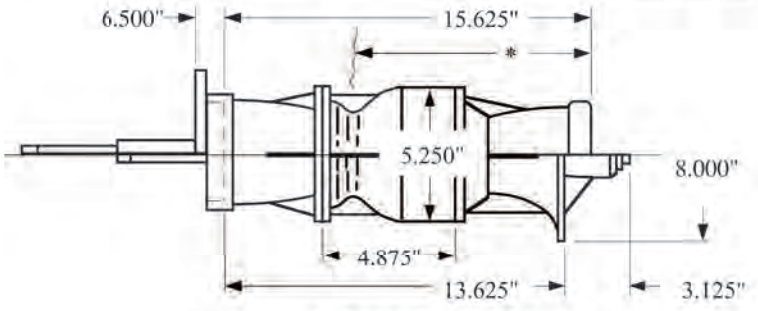
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM5H	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 1.95	STD. LATERAL = .55"	1	-4	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 50.0	DISCHARGE SIZES = 3" / 4"	2	-3	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 14.0	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .50"	ONE STAGE WR^2 = .015	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE = 10"	K FACTOR, MAX = 2.50	5	0	BOWL - NI-RI	Δ
				BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

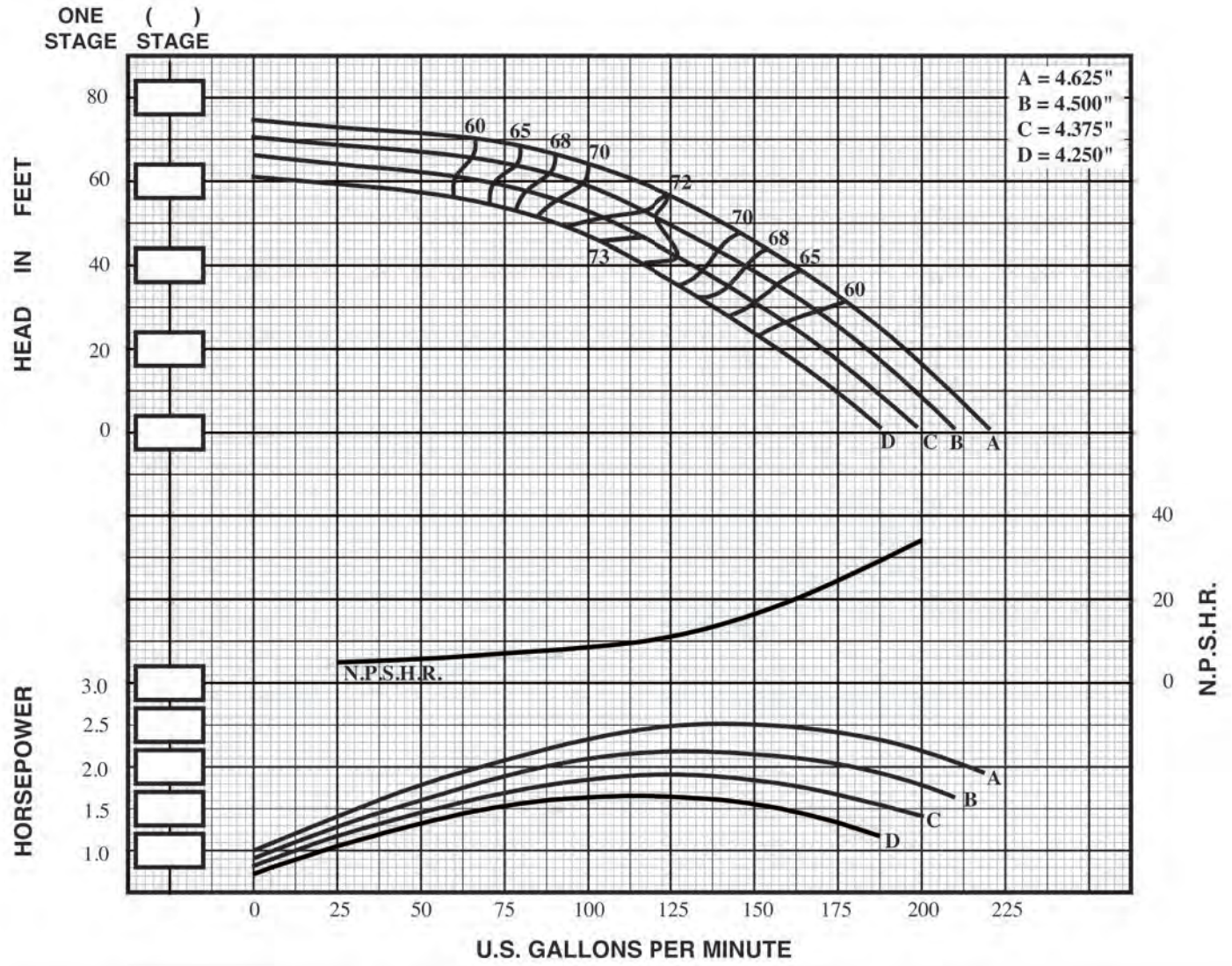


LINESHAFT TURBINE

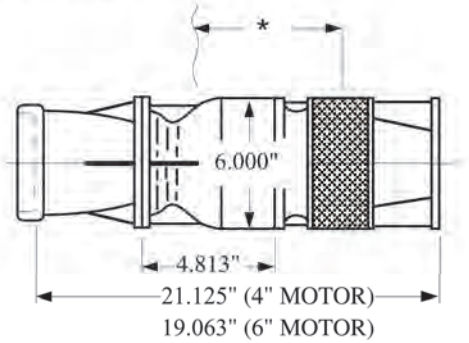
SIMFLO®

Section 201
Date 3/30/18

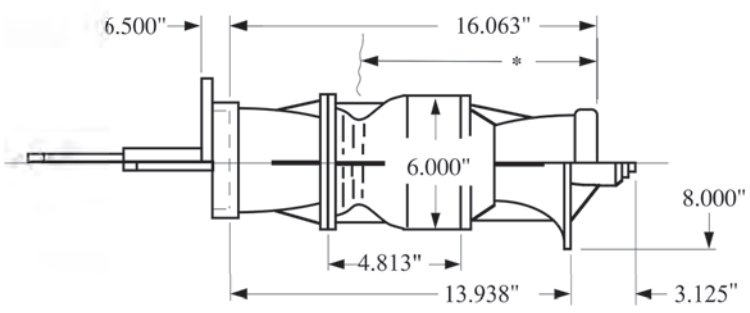
SP6LL
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP6LL	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 2.60	STD. LATERAL = .66"	1	-4	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 55.0	DISCHARGE SIZES = 3" / 4"	2	-3	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 18.5	SUCTION SIZES = 4" / BELL	3	-2	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .38"	ONE STAGE WR^2 = .037	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX = 2.70	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.2			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

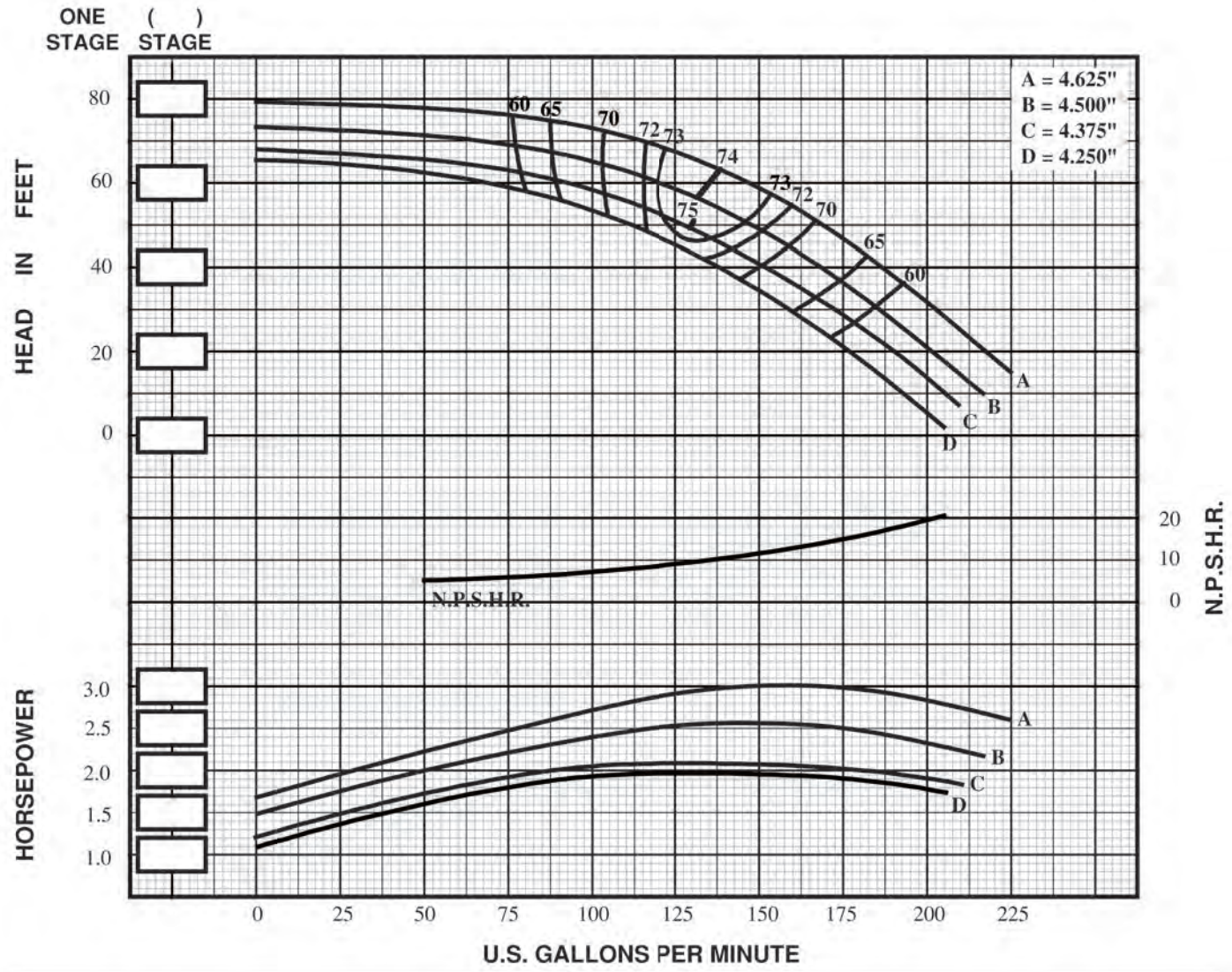


LINESHAFT TURBINE

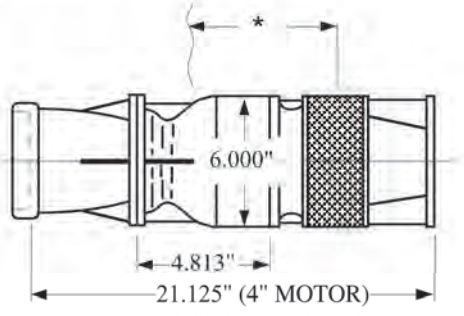
SIMFLO®

Section 201
Date 6/13/00

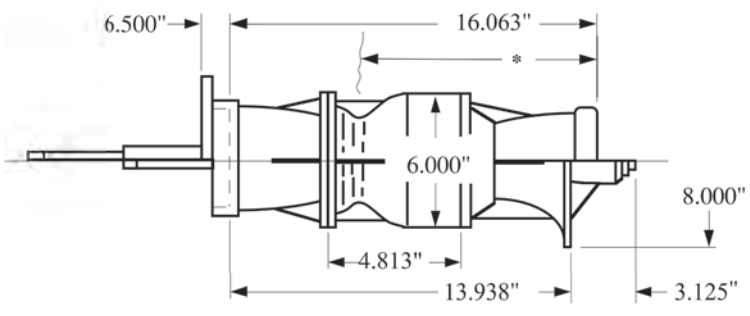
SP6L
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP6L	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 2.60	STD. LATERAL = .54"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 55.0	DISCHARGE SIZES = 3" / 4"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 18.5	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .38"	ONE STAGE WR^2 = .033	4	-1	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX = 2.30	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.2			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

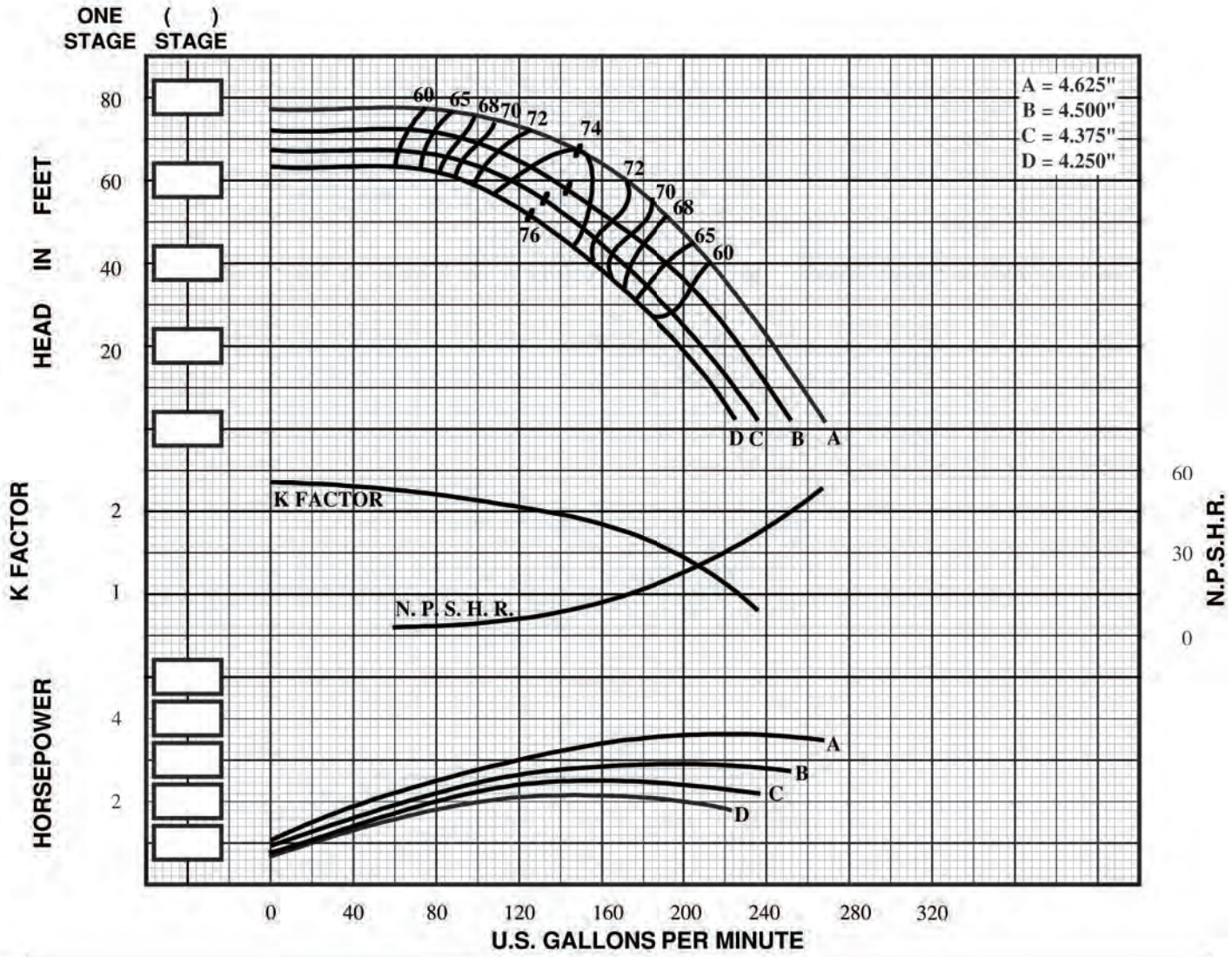


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 9/1/06

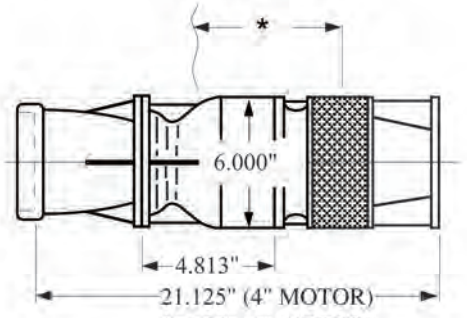
SP6M
3450 RPM



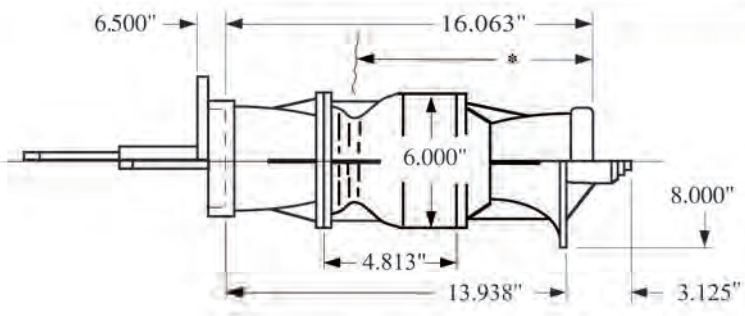
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP6M	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 2.95	STD. LATERAL = .41"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 56.0	DISCHARGE SIZES = 3" / 4"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 19.0	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .31"	ONE STAGE WR^2 = .037	4	-1	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 11"	=	5	0	BOWL - NI-RI	-1
	=			BOWL - S.S.	-4

Δ CONSULT FACTORY

v18.2



SUBMERSIBLE TURBINE

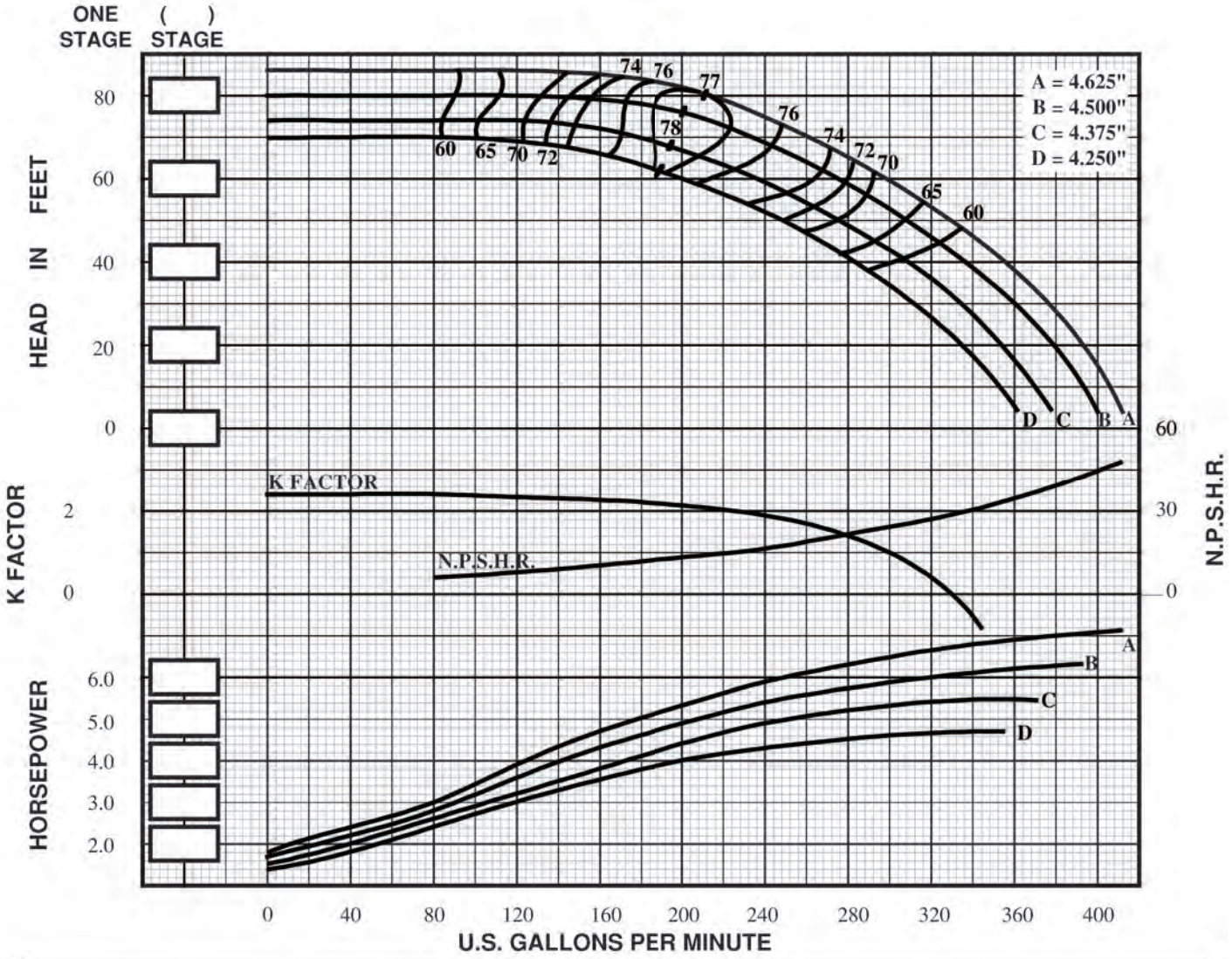


LINESHAFT TURBINE

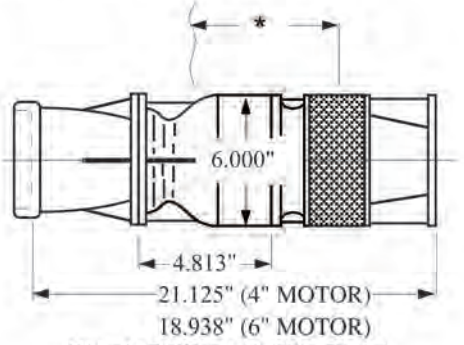
SIMFLO®

Section 201
Date 9/1/06

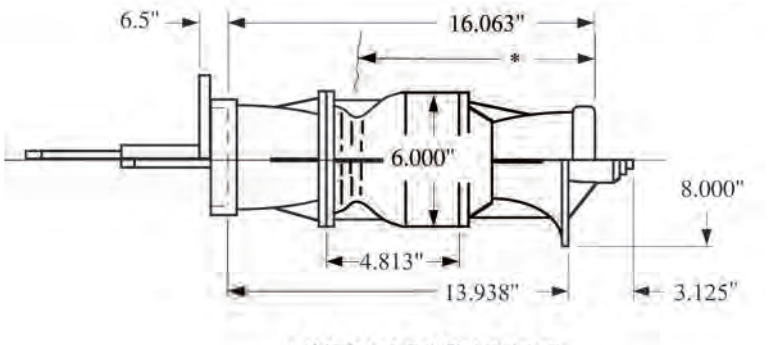
SP6H
3450 RPM



IMPELLER TYPE = ENCLOSED		STD. SHAFT DIA. = 1.000"		NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP6H		MAX. SHAFT DIA. = 1.000"					
IMPELLER WT. - LBS. = 2.75		STD. LATERAL = .28"		1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 55.0		DISCHARGE SIZES = 3"/ 4"		2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 18.7		SUCTION SIZES = 4" / BELL		3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .38"		ONE STAGE WR^2 = .034		4	-1	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 11"		=		5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY		v18.2				BOWL - S.S.	-4



SUBMERSIBLE TURBINE

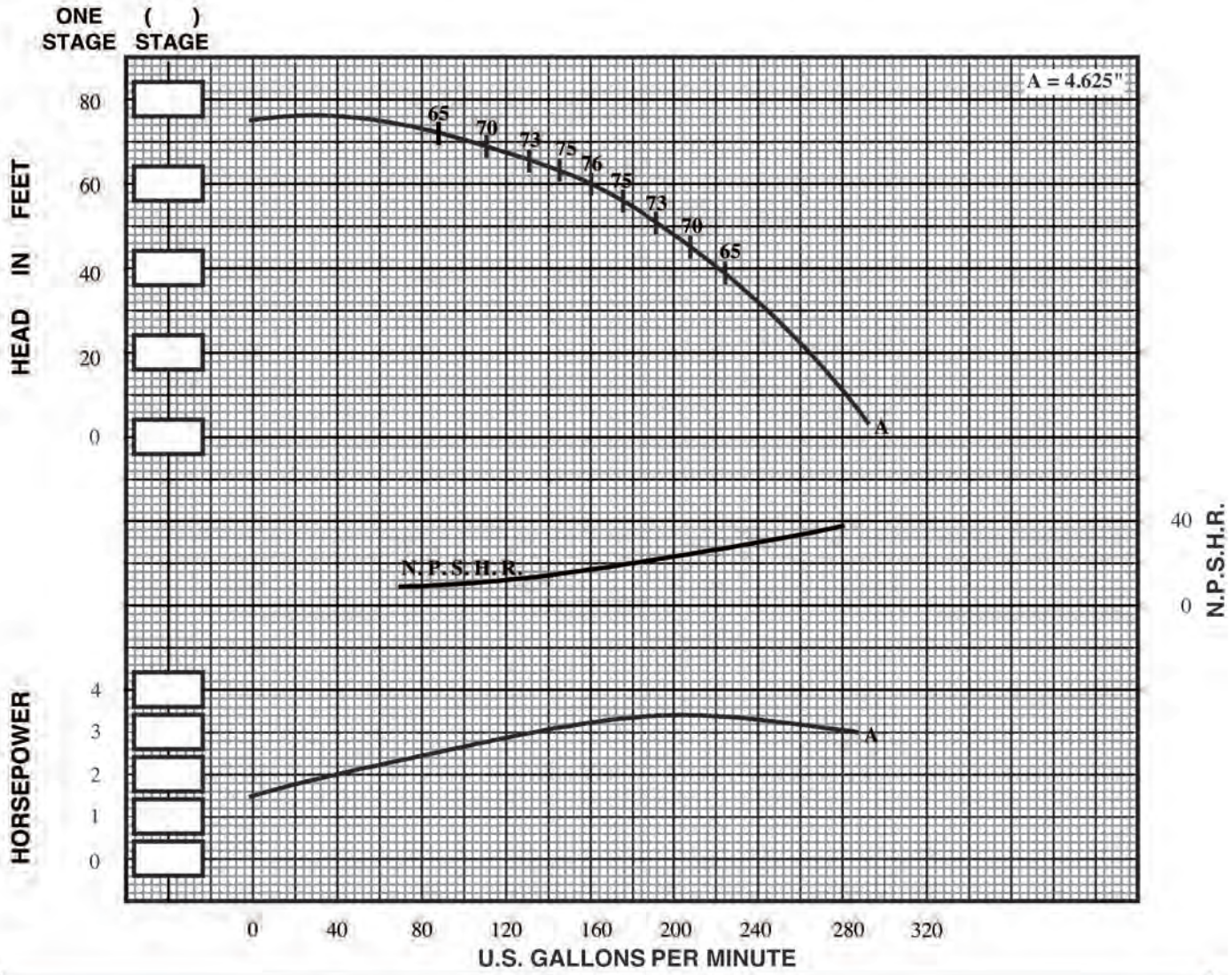


LINESHAFT TURBINE

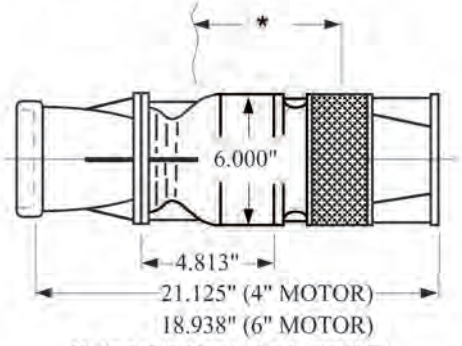
SIMFLO®

Section 201
Date 3/30/18

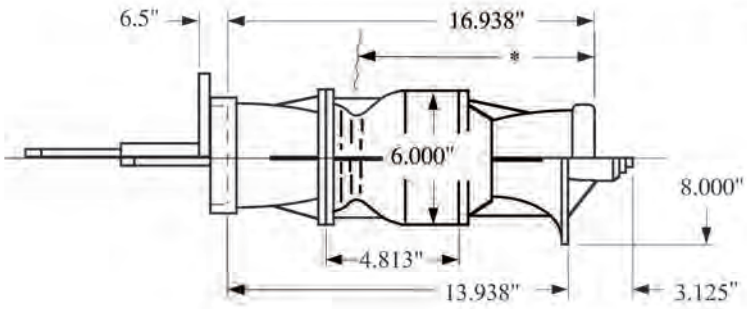
SP6L0
3450 RPM



IMPELLER TYPE = SEMI - OPEN	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP6LO	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 1.60	STD. LATERAL = .70"	1	-5.5	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 53.0	DISCHARGE SIZES = 3" / 4"	2	-4	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 17.7	SUCTION SIZES = 4" / BELL	3	-3	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .44"	ONE STAGE WR^2 = .019	4	-1.5	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX. = 3.4	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

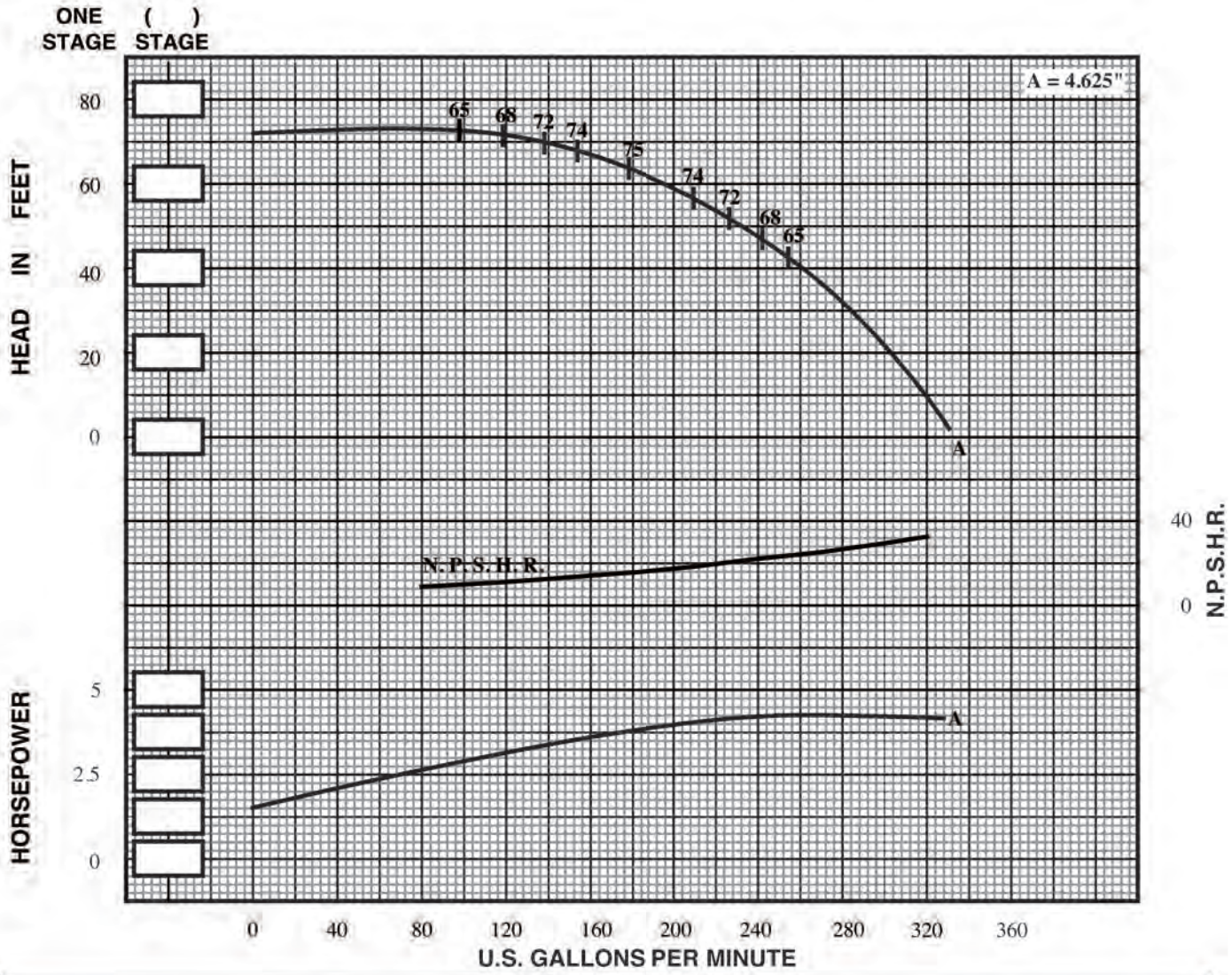


LINESHAFT TURBINE

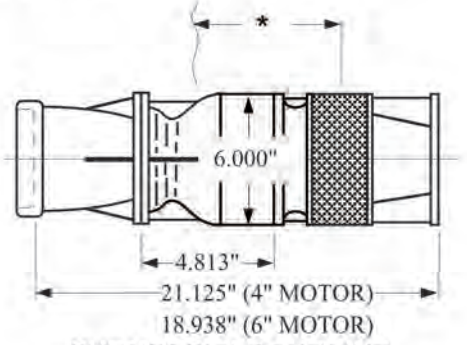
SIMFLO®

Section 201
Date 3/30/18

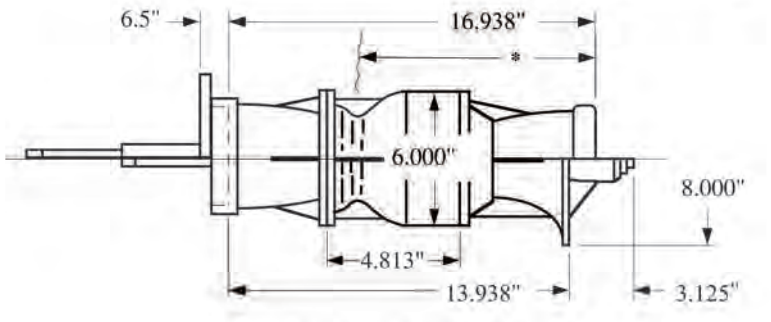
SP6MO
3450 RPM



IMPELLER TYPE = SEMI - OPEN	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP6MO	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 1.40	STD. LATERAL = .56"	1	-5	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 53.0	DISCHARGE SIZES = 3" / 4"	2	-4	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 17.5	SUCTION SIZES = 4" / BELL	3	-3	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .34"	ONE STAGE WR^2 = .018	4	-1.5	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX. = 5.0	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE



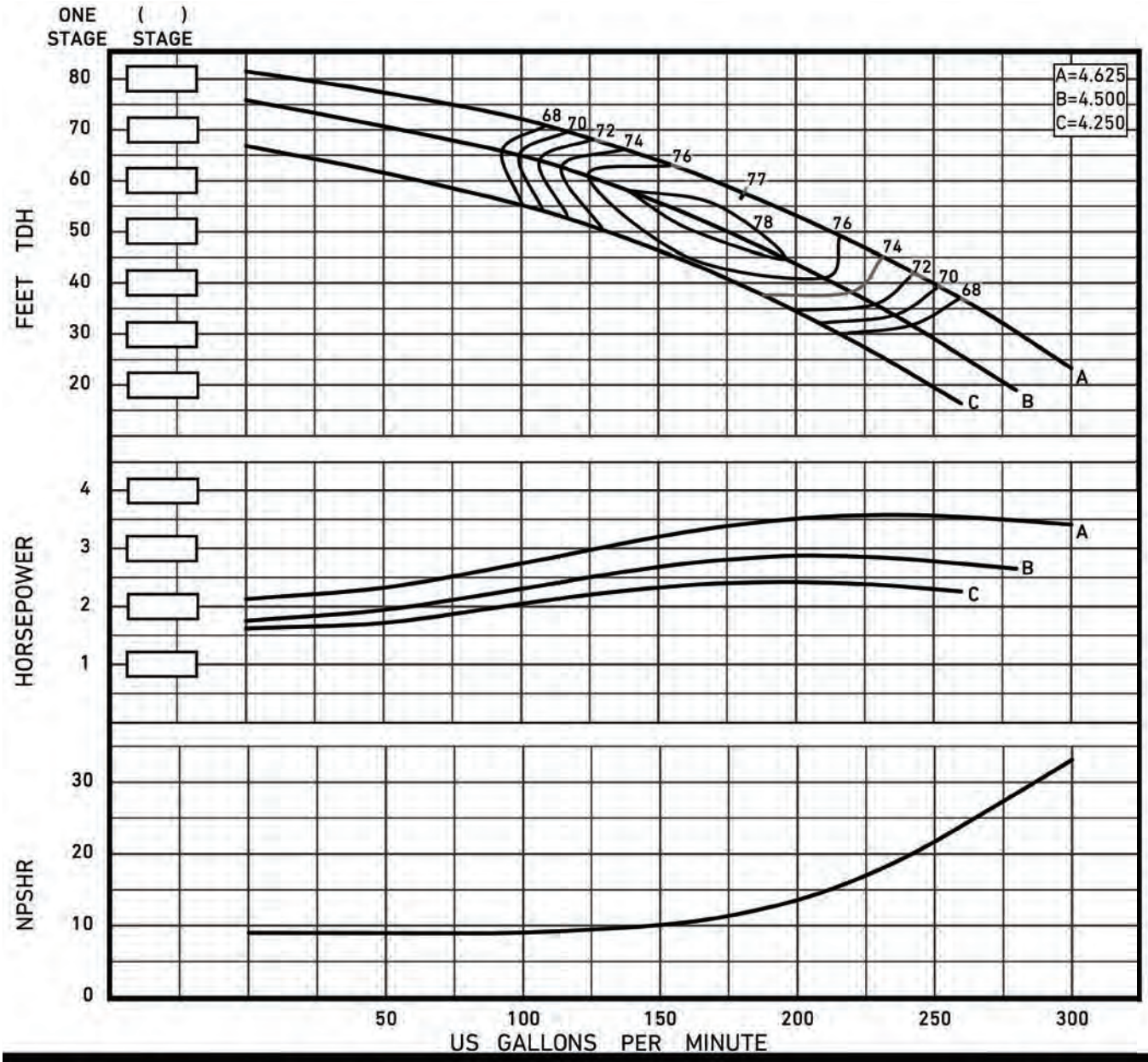
LINESHAFT TURBINE

SIMFLO®

Section 201
Date 1/21/21

SM6M

3450 RPM



Impeller Type	Enclosed	Bowl OD (in.)	6.00	PEI cl	.884	Qty. Stages	Eff. Change
Impeller Model	SM6M	Thd'd Discharge Size	3" / 4"	Ns	2220		
One Stage Weight (lb)	57.6	Thd'd Suction Size	4"	Nss	7280	1	-3
Add'l Stage Wt. (lb)	19.9	Bell Suction Size	8" / 6"	Shaft Size (in.)	1.0	2	-2
Impeller Wt. (lb)	2.40	Sub. Mtr. Size	6" / 8"	Lateral (in)	.56	3	-1
Std. Impeller Mtrl.	316 SS	C.I. Bowl Rating (psi)	615	Setting (in)	.125		
One Stage Length (in)	~ 21	D.I. Bowl Rating (psi)	Δ1332	K-Factor (lb/ft tdh)	2.1		
Add'l Stage Length (in)	5.25	S.S. Bowl Rating (psi)	Δ1434	Imp. WR² (lb-ft²)	.039		

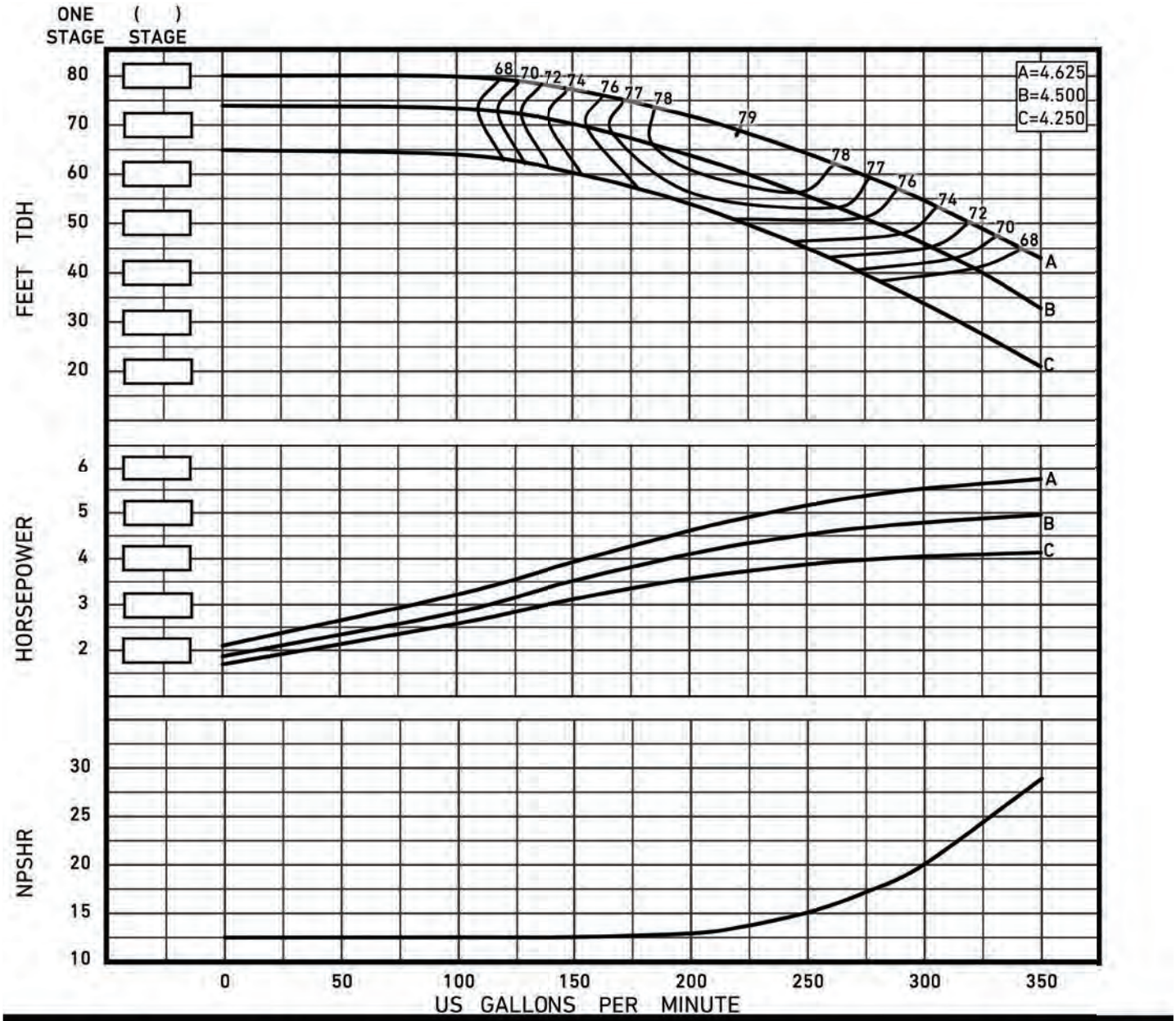
Δ Consult foctory for availabiity

*Curve reflects achievable efficiency. Changes to materials and construction may affect performance.

SIMFLO®

Section 201
Date 1/21/21

SM6H
3450 RPM



Impeller Type	Enclosed	Bowl OD (in.)	6.00	PEI cl	.882	Qty. Stages	Eff. Change
Impeller Model	SM6H	Thd'd Discharge Size	3" / 4"	Ns	2143		
One Stage Weight (lb)	57.6	Thd'd Suction Size	4"	Nss	7251	1	-3
Add'l Stage Wt. (lb)	19.9	Bell Suction Size	8" / 6"	Shaft Size (in.)	1.0	2	-2
Impeller Wt. (lb)	2.45	Sub. Mtr. Size	6" / 8"	Lateral (in)	.56	3	-1
Std. Impeller Mtrl.	316 SS	C.I. Bowl Rating (psi)	615	Setting (in)	.125		
One Stage Length (in)	~ 21	D.I. Bowl Rating (psi)	Δ1332	K-Factor (lb/ft tdh)	2.1		
Add'l Stage Length (in)	5.25	S.S. Bowl Rating (psi)	Δ1434	Imp. WR² (lb-ft²)	.039		

Δ Consult foctory for availabiity

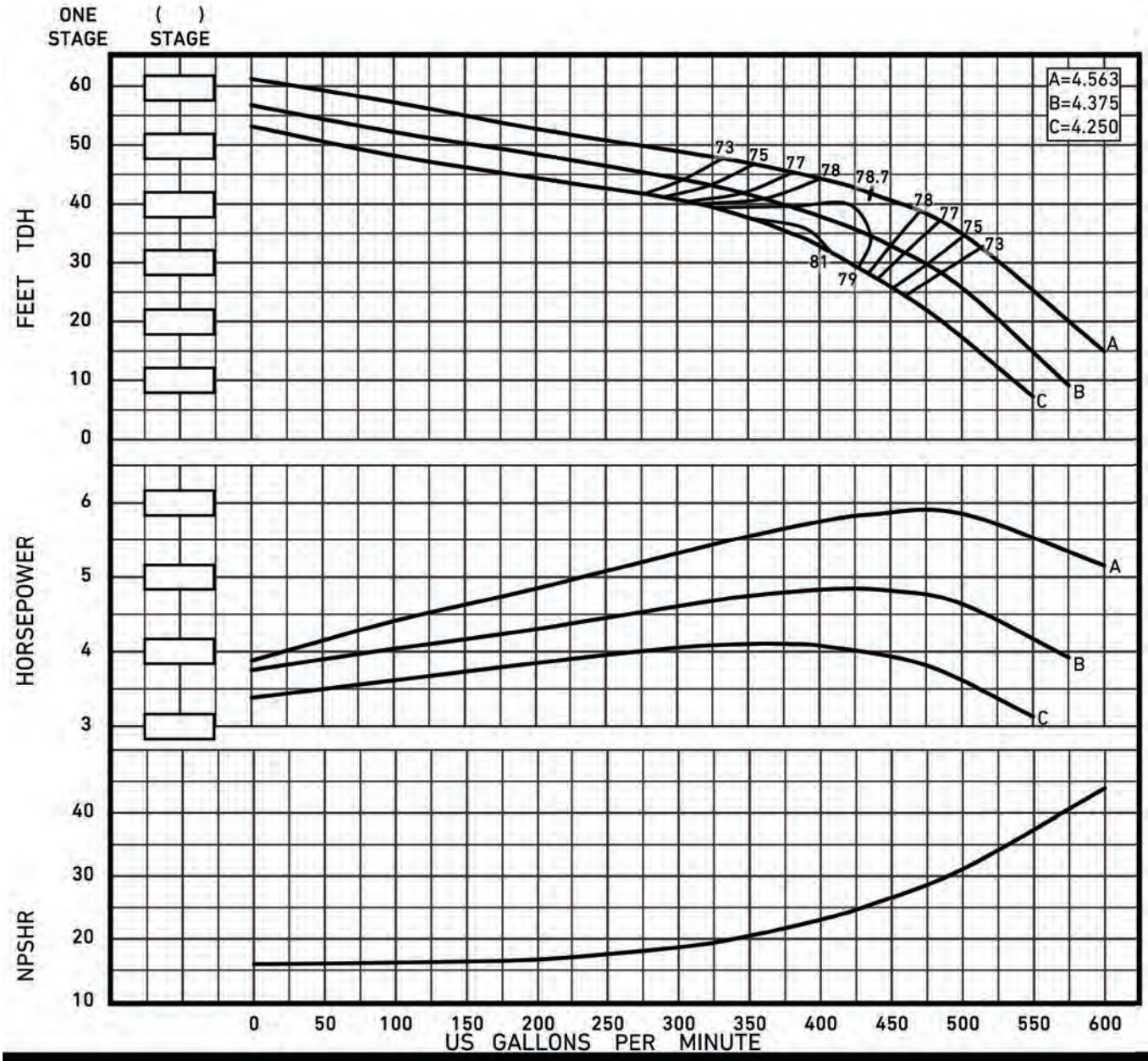
*Curve reflects achievable efficiency. Changes to materials and construction may affect performance.

SIMFLO®

Section 201
Date 1/21/21

SK6HH

3450 RPM



Impeller Type	Enclosed	Bowl OD (in.)	5.50	PEI cl	.905	Qty. Stages	Eff. Change
Impeller Model	SK6HH	Thd'd Discharge Size	3" / 4"	Ns	4383		
One Stage Weight (lb)	51.3	Thd'd Suction Size	4"	Nss	6342	1	-2
Add'l Stage Wt. (lb)	15.8	Bell Suction Size	8" / 6"	Shaft Size (in.)	1.0	2	-1.5
Impeller Wt. (lb)	2.90	Sub. Mtr. Size	6" / 8"	Lateral (in)	.50	3	-1
Std. Impeller Mtrl.	316 SS	C.I. Bowl Rating (psi)	521	Setting (in)	.075		
One Stage Length (in)	~22	D.I. Bowl Rating (psi)	Δ1130	K-Factor (lb/ft tdh)	5.5		
Add'l Stage Length (in)	5.5	S.S. Bowl Rating (psi)	Δ1217	Imp. WR² (lb-ft²)	.031		

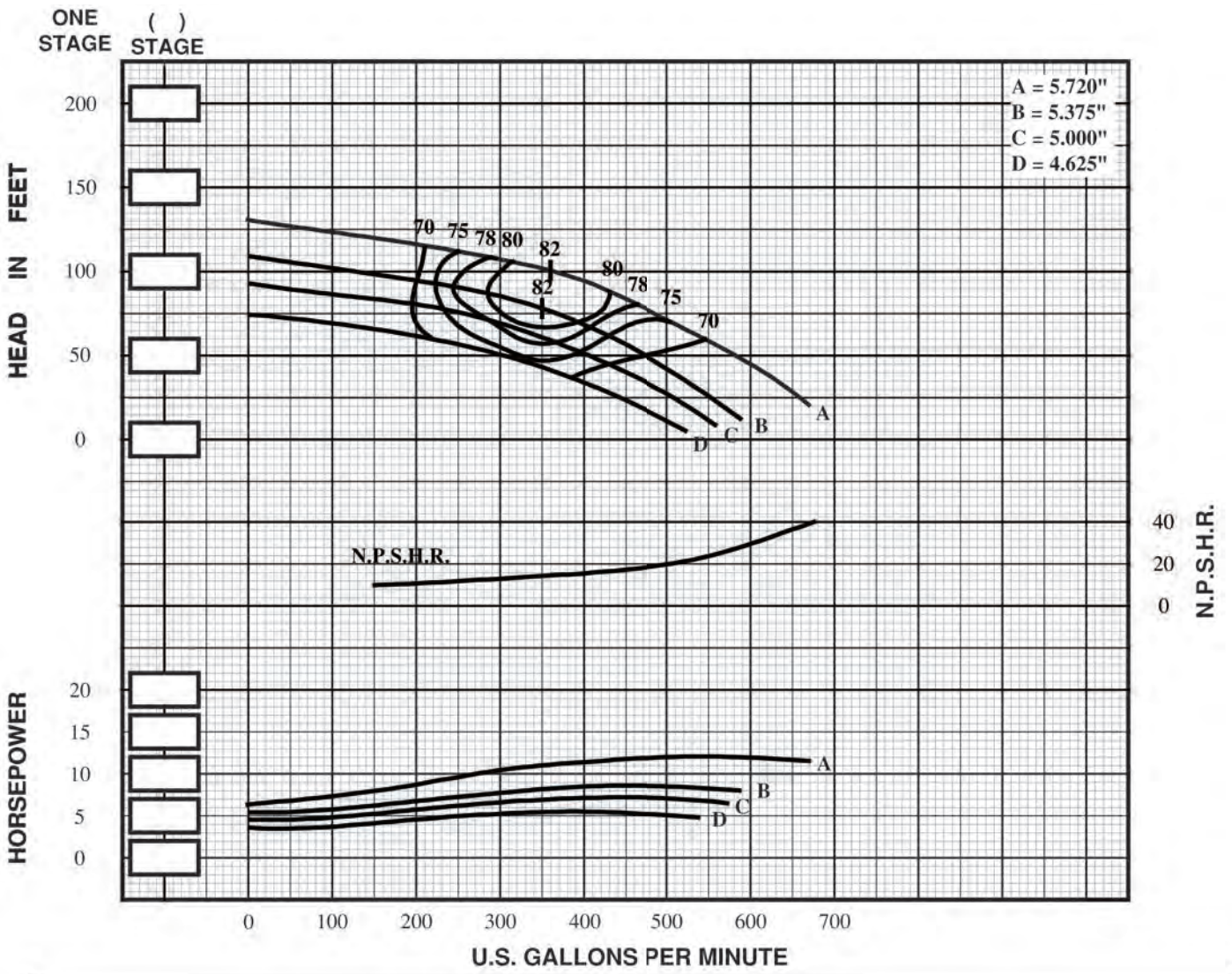
Δ Consult foctory for availabiity

*Curve reflects achievable efficiency. Changes to materials and construction may affect performance.

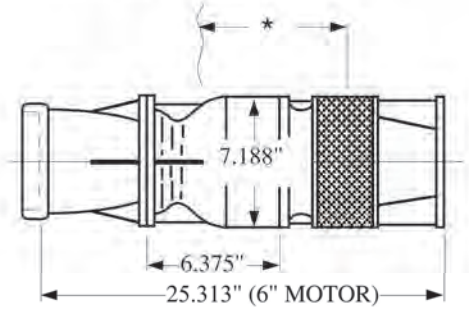
SIMFLO®

Section 201
Date 9/1/06

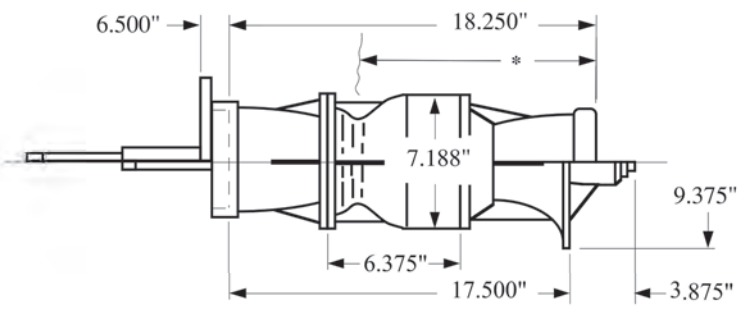
SP7L
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP7L	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 4.05	STD. LATERAL = .59"	1	-4	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 34.0	SUCTION SIZES = 5" / BELL	3	0	IMP. - S.S.	-5
MAX. SPHERE SIZE = .53"	ONE STAGE WR^2 = .073	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX = 4.20	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

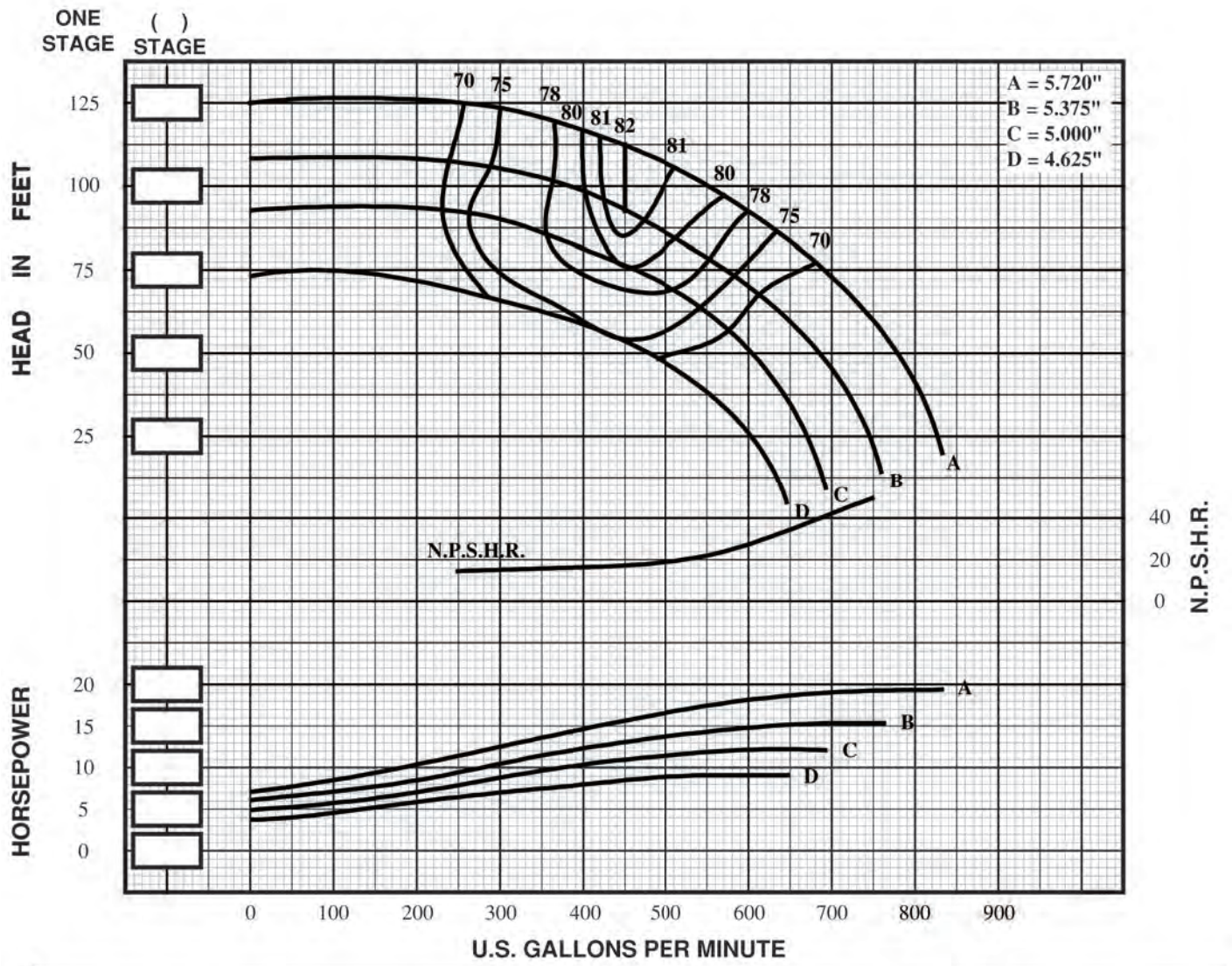


LINESHAFT TURBINE

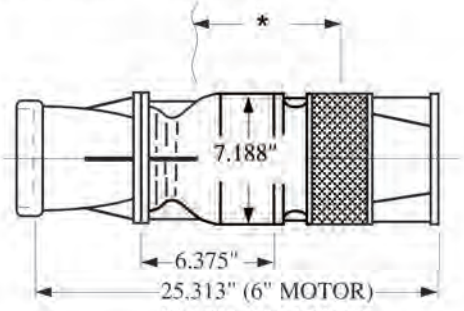
SIMFLO®

Section 201
Date 9/1/06

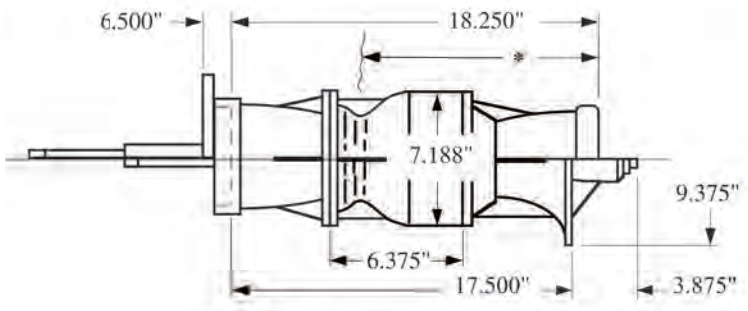
SP7H
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP7H	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 4.00	STD. LATERAL = .59"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-1	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 34.0	SUCTION SIZES = 5"/ BELL	3	0	IMP. - S.S.	-5
MAX. SPHERE SIZE = .53"	ONE STAGE WR^2 = .072	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX = 4.30	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

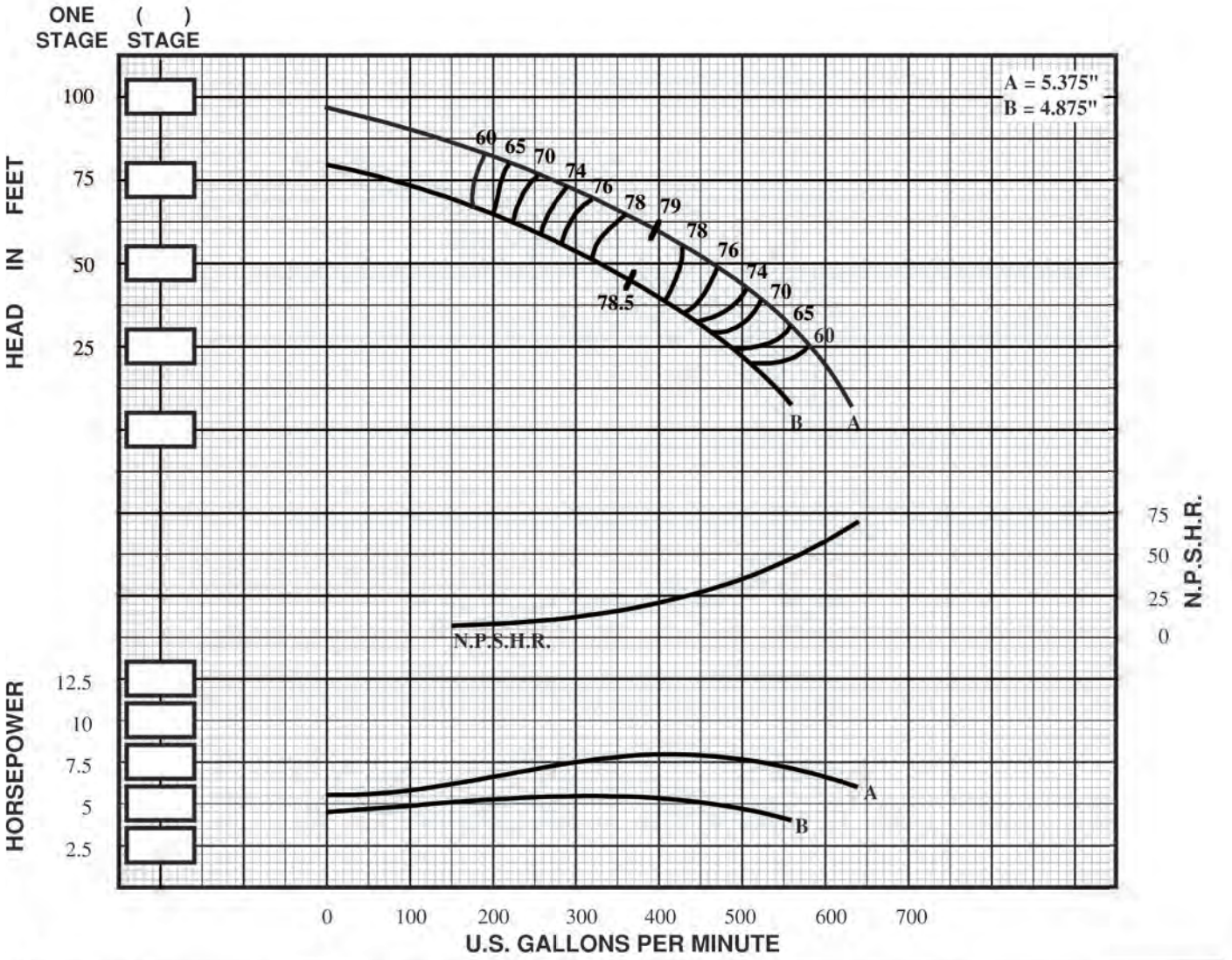


LINESHAFT TURBINE

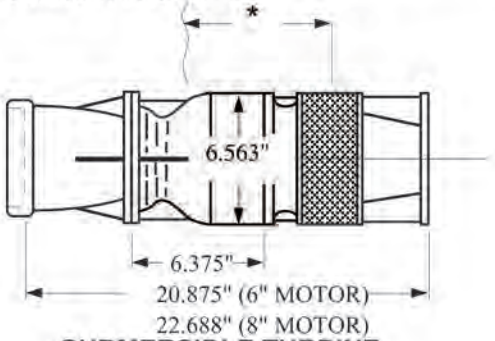
SIMFLO®

Section 201
Date 9/1/06

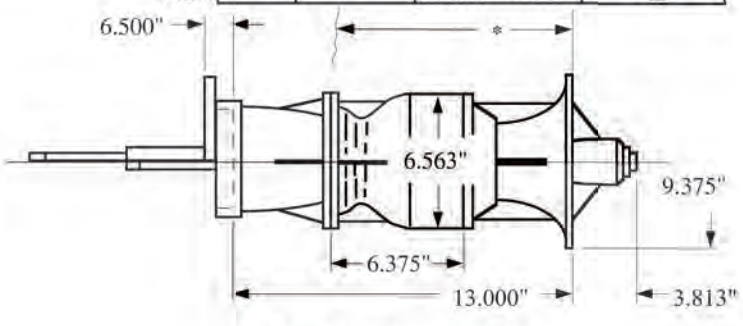
SK7L
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK7L	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 3.35	STD. LATERAL = .94"	1	-3.5	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 61.0	DISCHARGE SIZES = 4"/ 5"	2	-2.0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 22.0	SUCTION SIZES = BELL	3	-1.0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .44"	ONE STAGE WR² = .051	4	-0.5	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 20"	K FACTOR = 4.49	5	0.0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

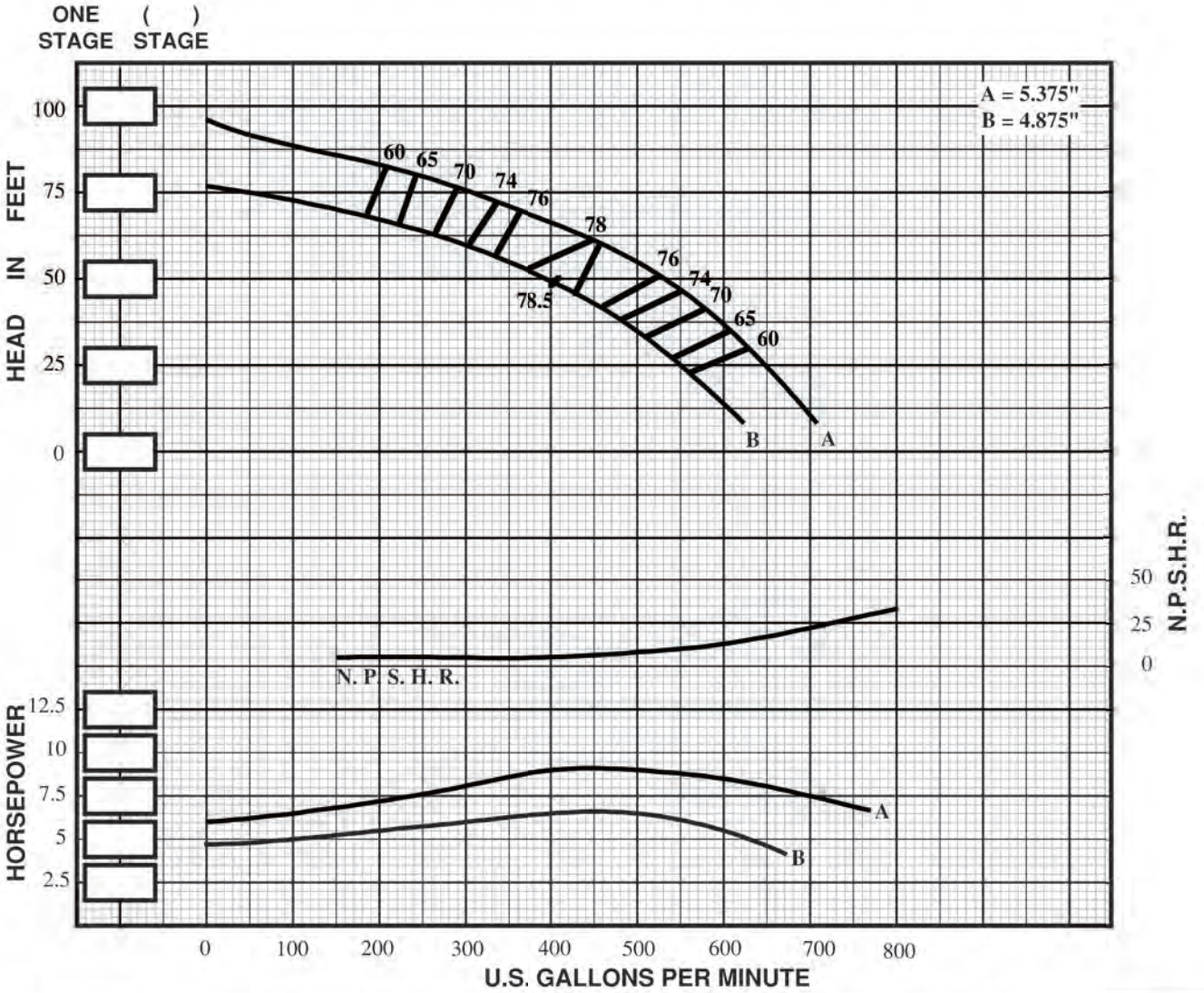


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 9/1/06

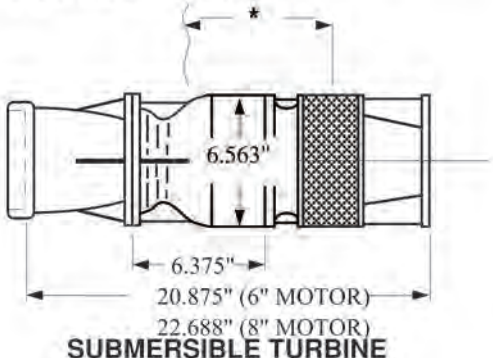
SK7M
3450 RPM



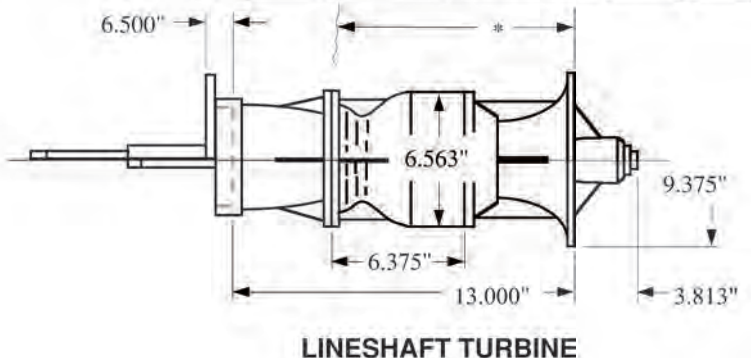
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK7M	MAX. SHAFT DIA. = 1.000"	1	-3.5	IMP. - C.I.	Δ
IMPELLER WT. - LBS. = 2.90	STD. LATERAL = .75"	2	-2.0	IMP. - NI-RI	Δ
ONE STAGE WT. - LBS. = 59.0	DISCHARGE SIZES = 4"/ 5"	3	-1.0	IMP. - S.S.	Δ
ADD'L STAGE WT. - LBS. = 20.0	SUCTION SIZES = BELL	4	-0.5	BOWL - BRZ.	Δ
MAX. SPHERE SIZE = .56"	ONE STAGE WR^2 = .046	5	0.0	BOWL - NI-RI	Δ
MIN. SUBMERGENCE* = 20"	K FACTOR = 4.29			BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

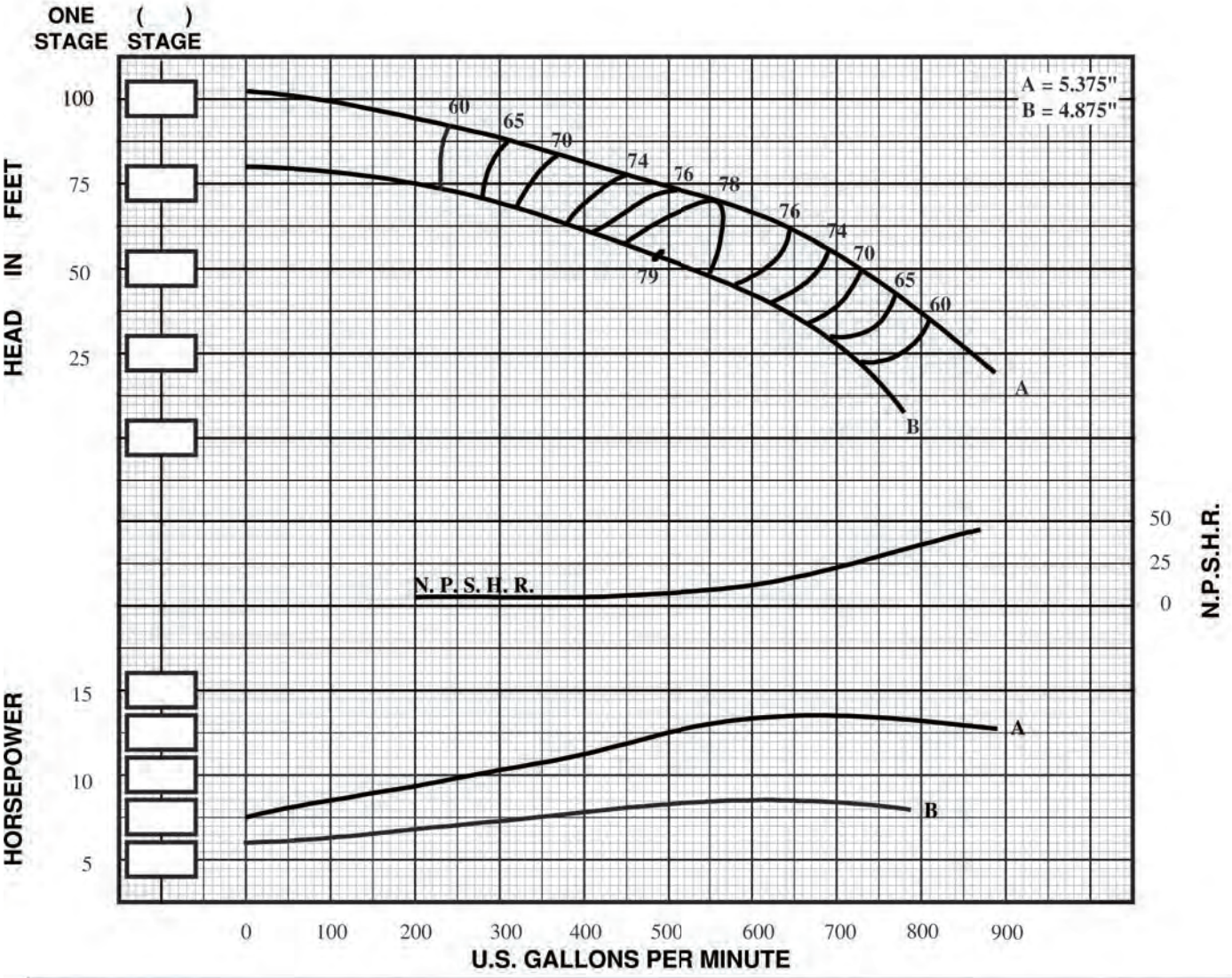


LINESHAFT TURBINE

SIMFLO®

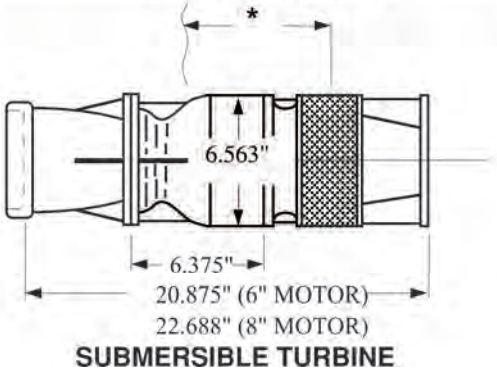
Section 201
Date 9/1/06

SK7H
3450 RPM

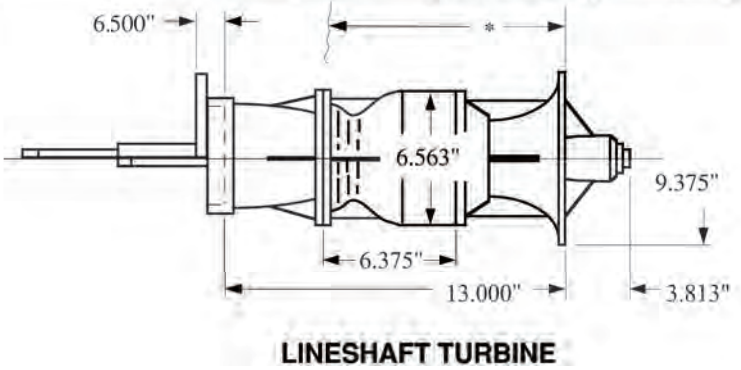


IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK7H	MAX. SHAFT DIA. = 1.000"	1	-3.5	IMP. - C.I.	Δ
IMPELLER WT. - LBS. = 3.25	STD. LATERAL = .75"	2	-2.0	IMP. - NI-RI	Δ
ONE STAGE WT. - LBS. = 60.0	DISCHARGE SIZES = 4"/ 5"	3	-1.0	IMP. - S.S.	Δ
ADD'L STAGE WT. - LBS. = 21.0	SUCTION SIZES = BELL	4	-0.5	BOWL - BRZ.	Δ
MAX. SPHERE SIZE = .56"	ONE STAGE WR^2 = .050	5	0.0	BOWL - NI-RI	Δ
MIN. SUBMERGENCE* = 20"	K FACTOR = 4.27			BOWL - S.S.	Δ

Δ CONSULT FACTORY



SUBMERSIBLE TURBINE

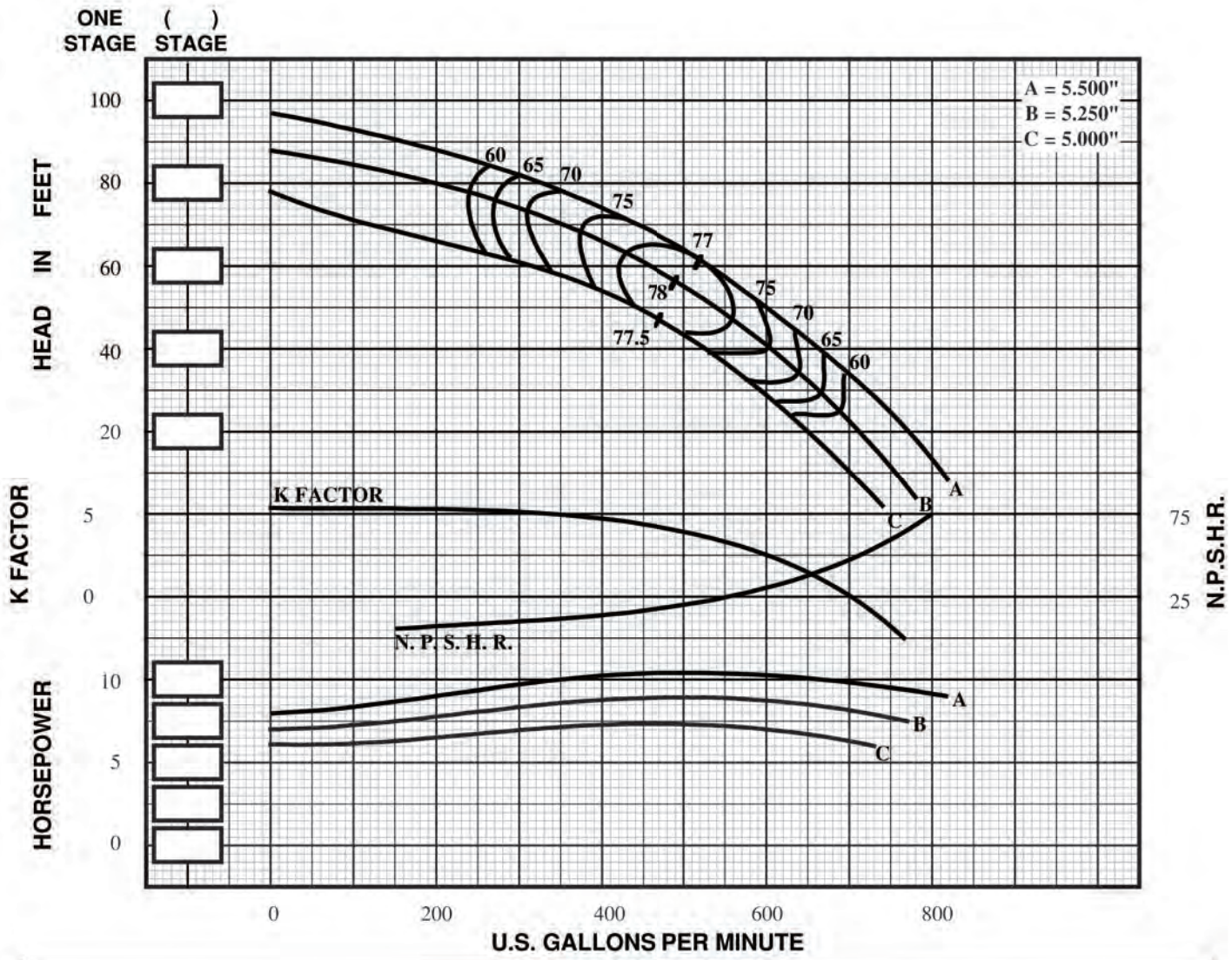


LINESHAFT TURBINE

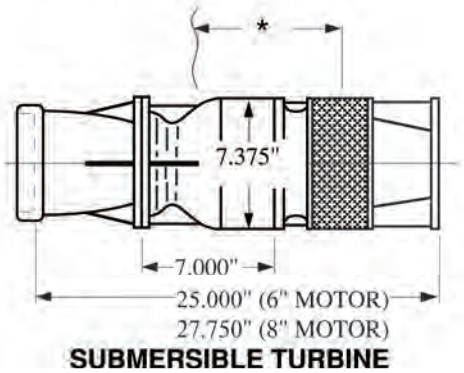
SIMFLO®

Section 201
Date 6/13/00

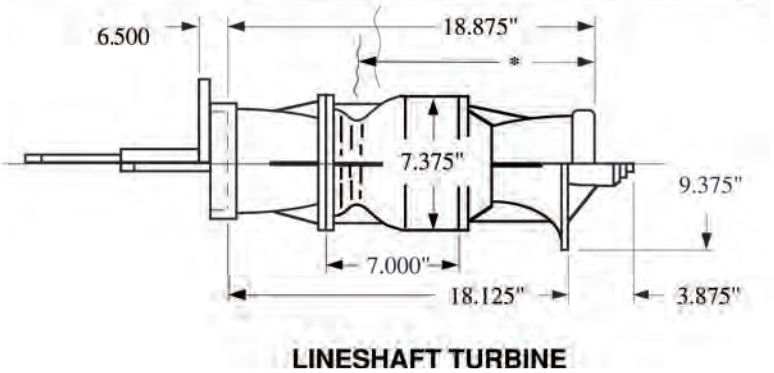
SM7M
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM7M	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 6.2	STD. LATERAL = .94"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5" / 6"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5" / BELL	3	-1	IMP. - S.S.	-5
MAX. SPHERE SIZE = .50"	ONE STAGE WR^2 = .100	4	0	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 12"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-5



SUBMERSIBLE TURBINE

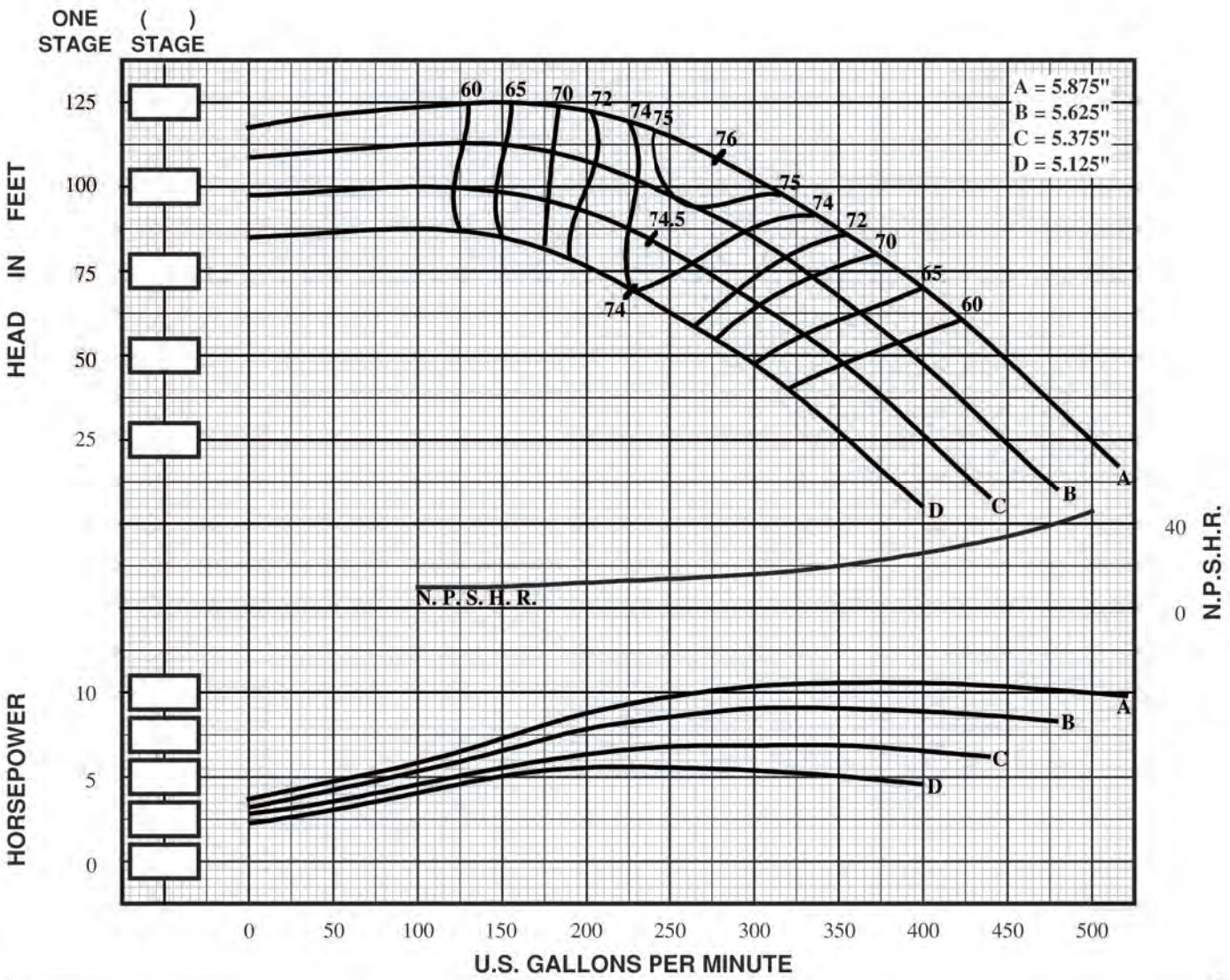


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 9/1/06

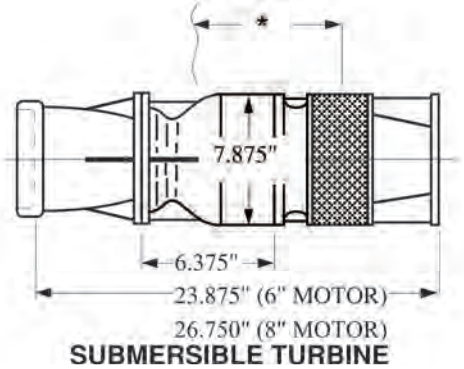
SP8L
3450 RPM



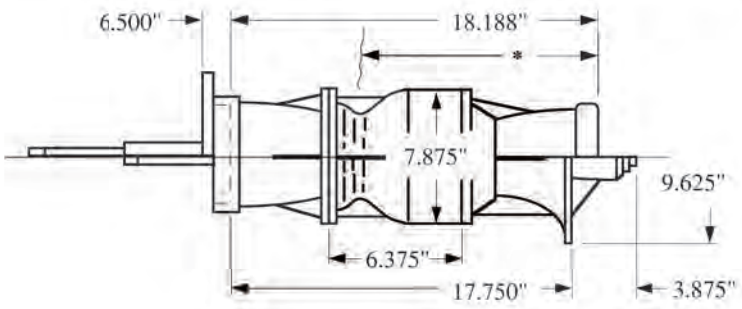
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP8L	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 5.40	STD. LATERAL = .88"	1	-4	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 122.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-3	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5"/ BELL	3	-2	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .31"	ONE STAGE WR^2 = .108	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX. = 3.60	5	0	BOWL - NI-RI	Δ
				BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

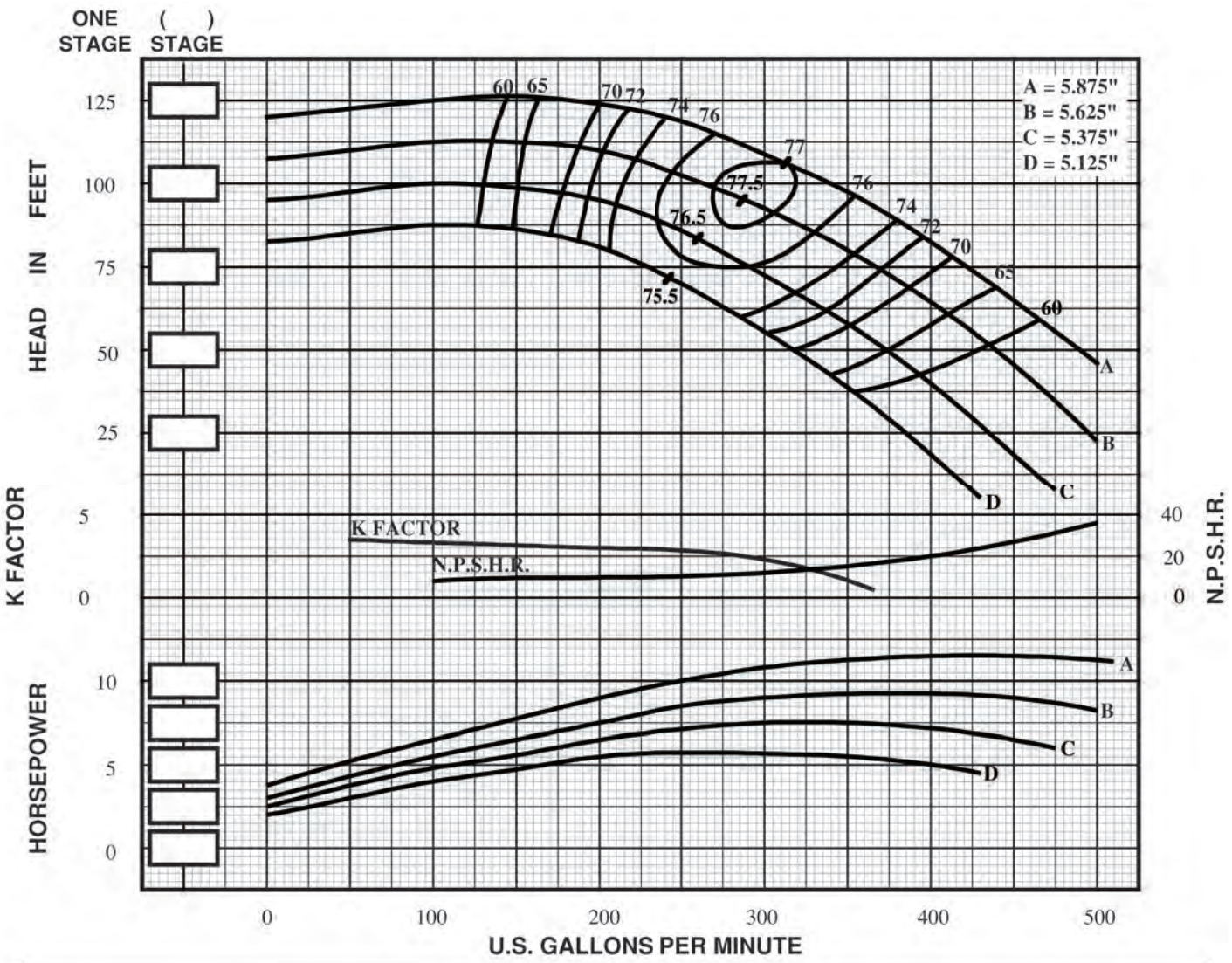


LINESHAFT TURBINE

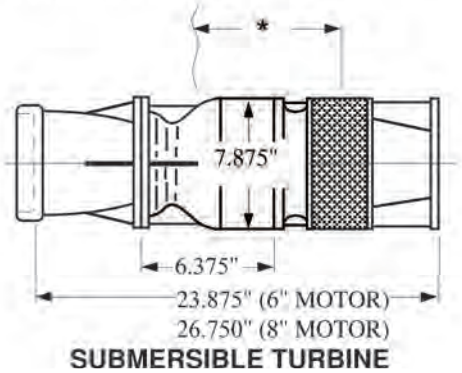
SIMFLO®

Section 201
Date 9/1/06

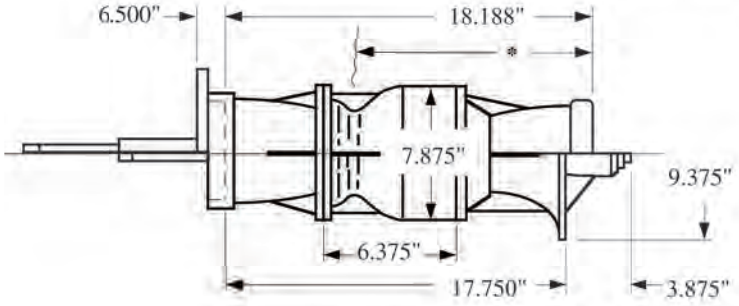
SP8M
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP8M	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 5.15	STD. LATERAL = .75"	1	-4	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5" / BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .56"	ONE STAGE WR^2 = .105	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

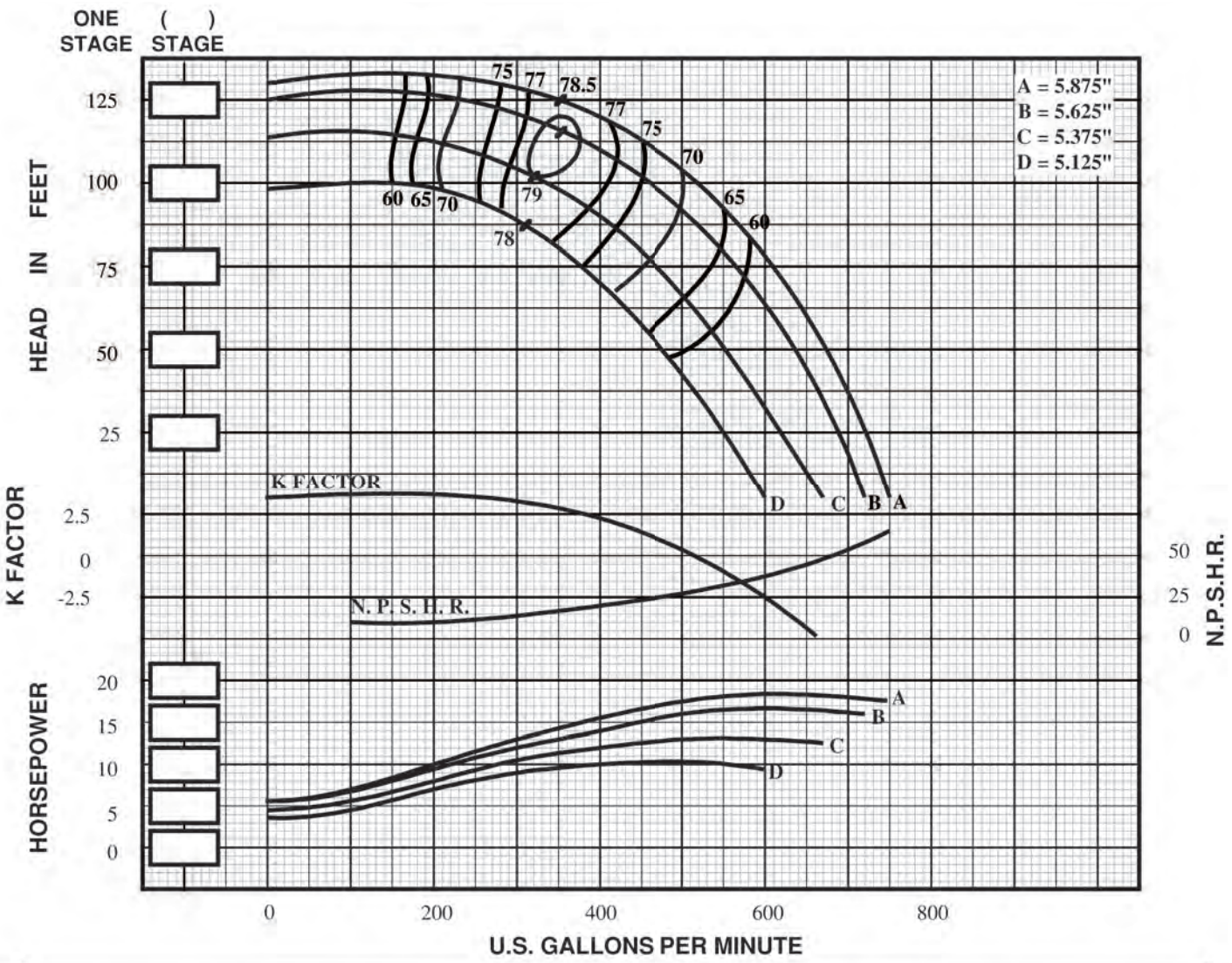


LINESHAFT TURBINE

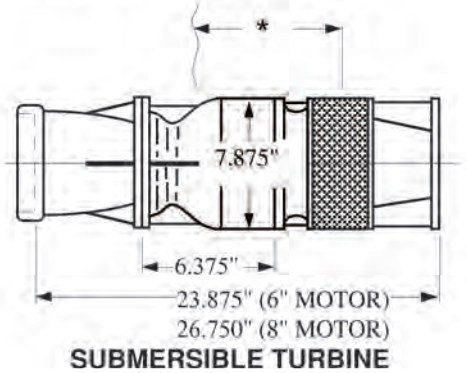
SIMFLO®

Section 201
Date 9/1/06

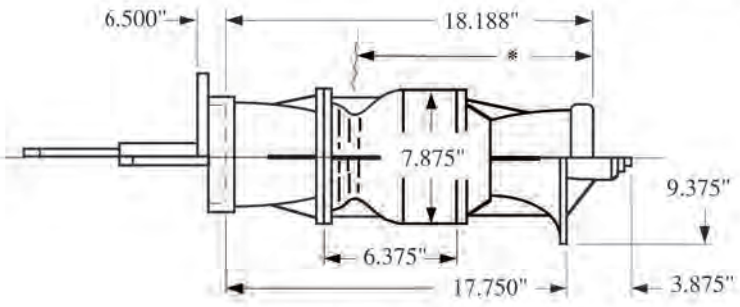
SP8H
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP8H	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 5.20	STD. LATERAL = .56"	1	-4	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5" / BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .75"	ONE STAGE WR^2 = .105	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

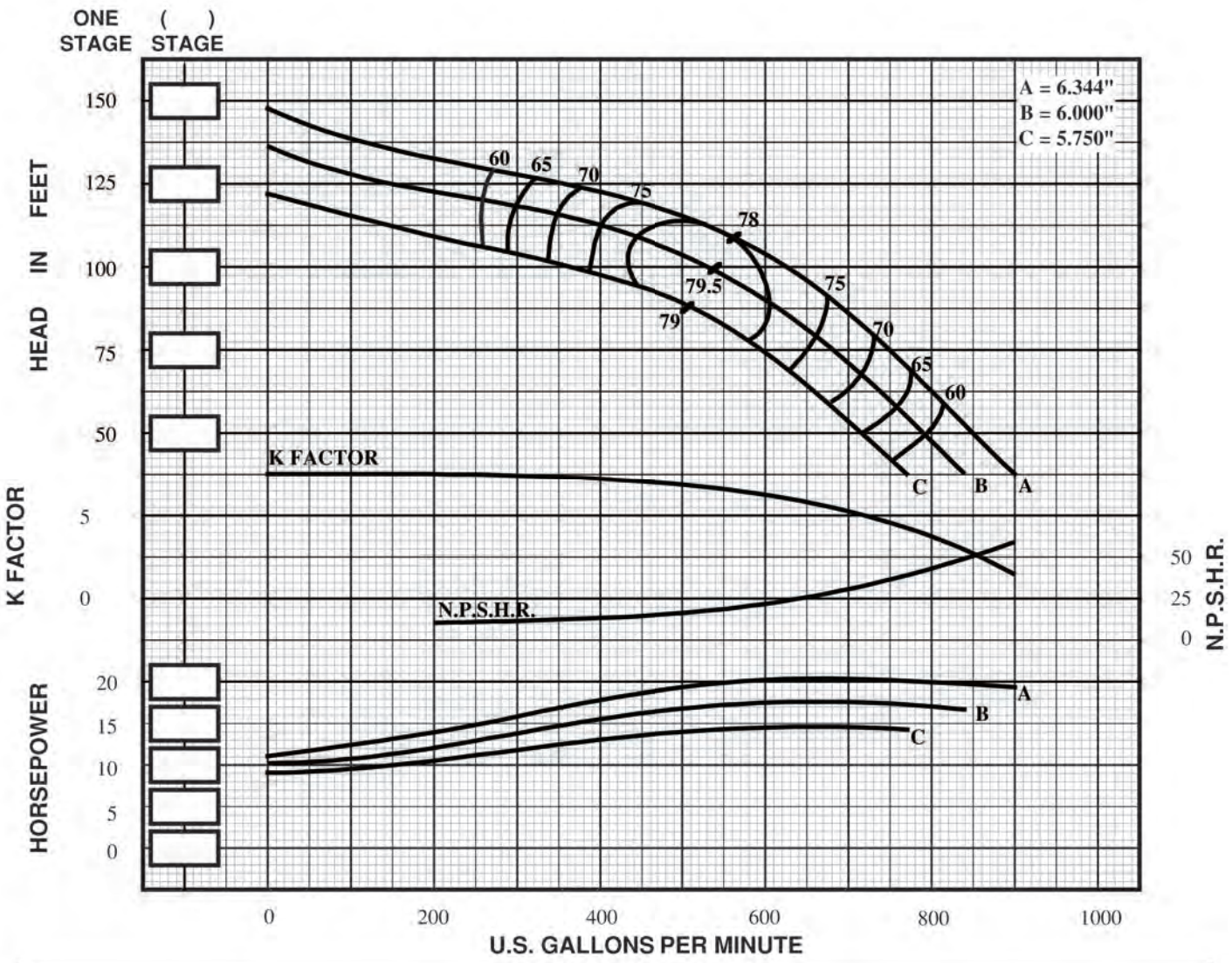


LINESHAFT TURBINE

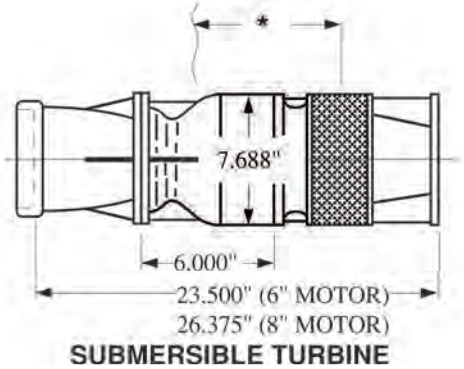
SIMFLO®

Section 201
Date 9/1/06

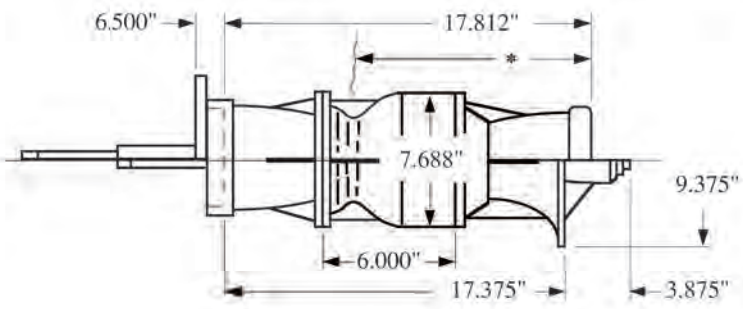
SM8H
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM8H	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 7.3	STD. LATERAL = .58"	1	-4	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .66"	ONE STAGE WR^2 = .158	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE



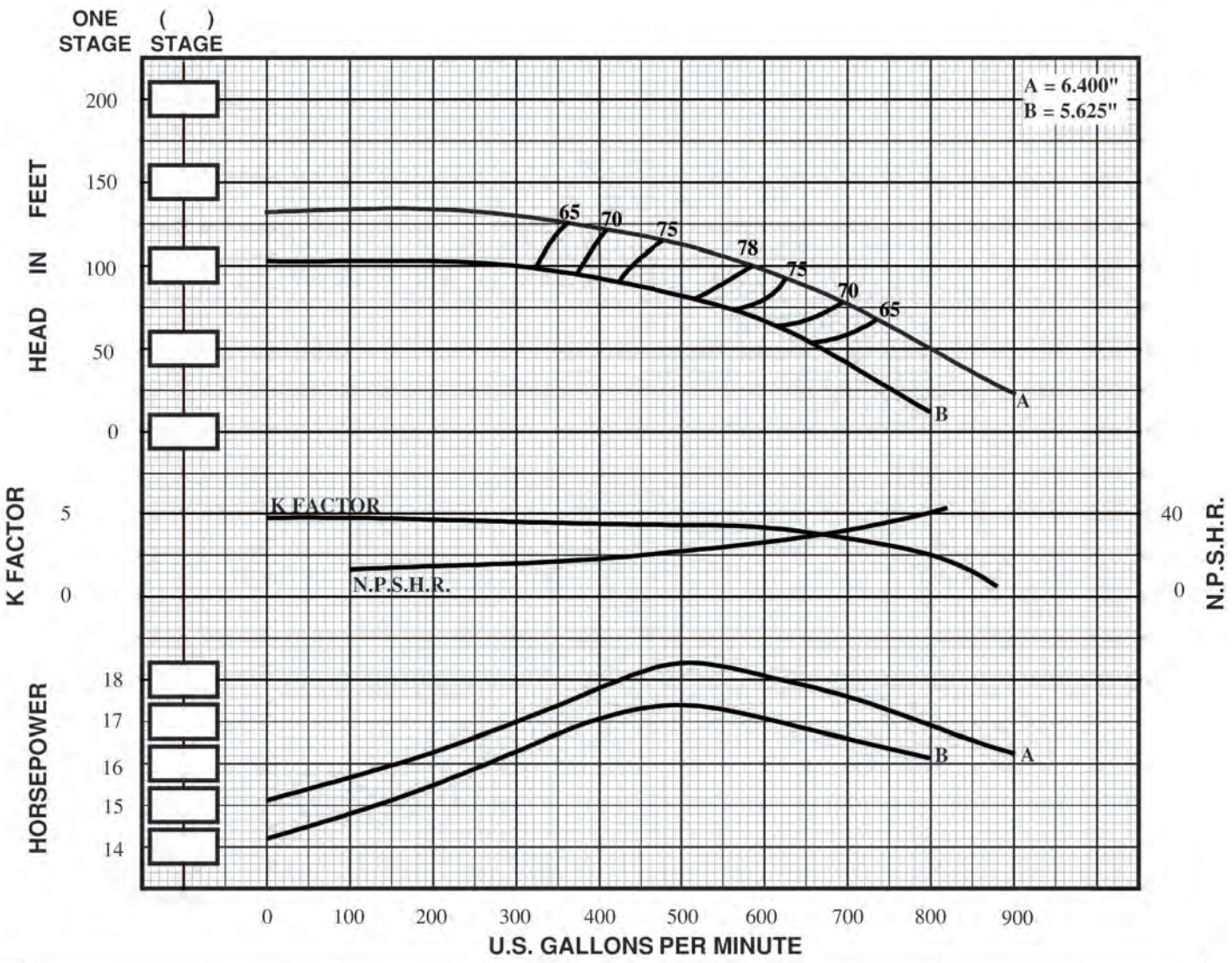
LINESHAFT TURBINE

SIMFLO®

Section 201
Date 9/1/06

SR8HO

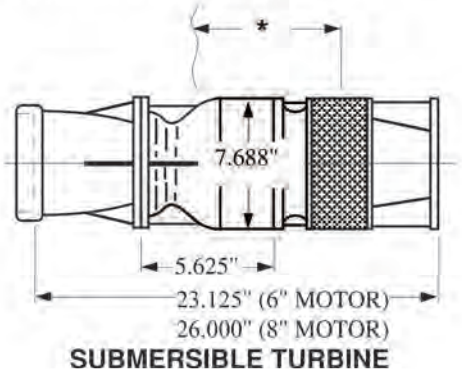
3450 RPM



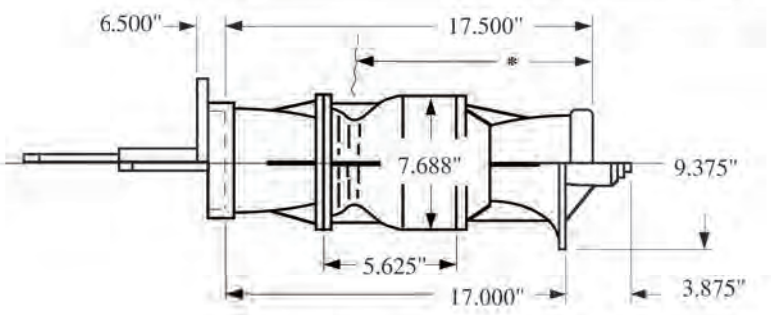
IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SR8HO	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 5.00	STD. LATERAL = .61"	1	-4	IMP. - C.I.	-4
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5"/ BELL	3	-2	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .59"	ONE STAGE WR^2 = .112	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"		5	0	BOWL - NI-RI	-1
				BOWL - S. S.	-3

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

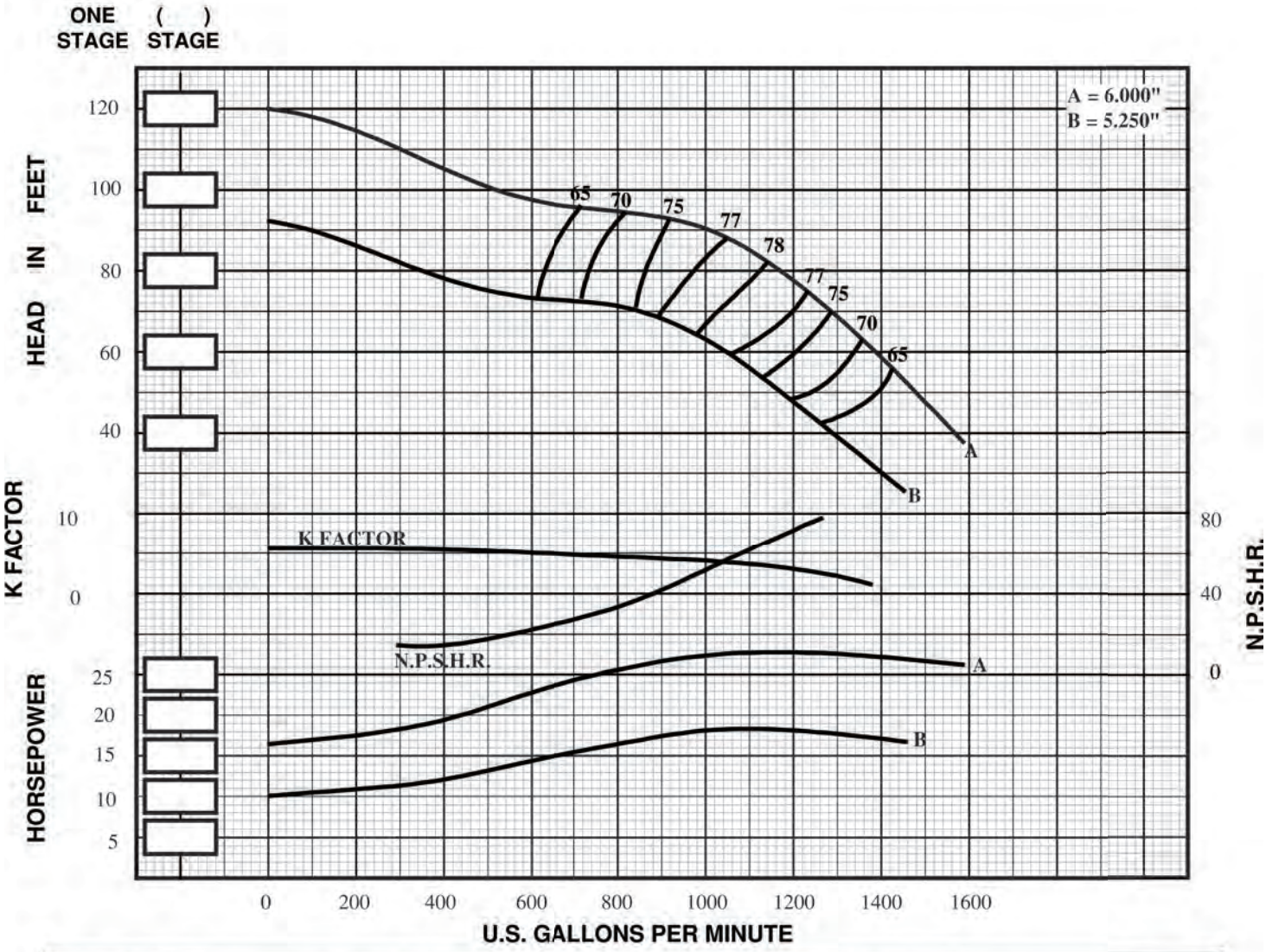


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 9/1/06

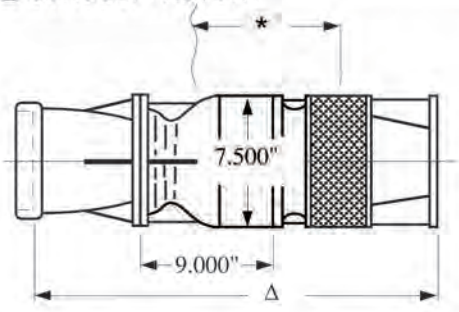
SK8H
3450 RPM



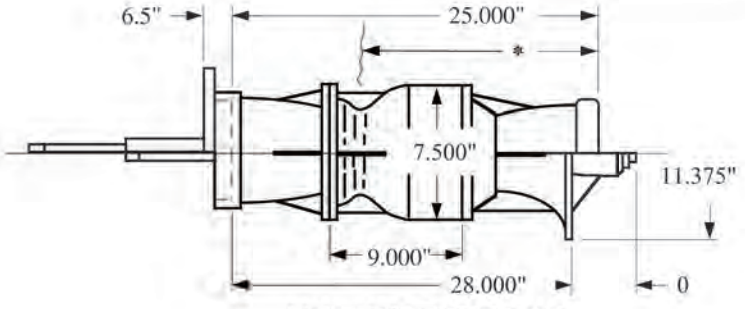
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK8H	MAX. SHAFT DIA. = 1.500"	1	-4	IMP. - C.I.	-5
IMPELLER WT. - LBS. = 6.6	STD. LATERAL = 1.00"	2	-3	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 180.0	DISCHARGE SIZES = 6"	3	-2	IMP. - S.S.	NOT RECOM.
ADD'L STAGE WT. - LBS. = 60.0	SUCTION SIZES = 6"	4	-1	BOWL - BRZ.	-3
MAX. SPHERE SIZE = .75"	ONE STAGE WR² = .133	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 16"	=			BOWL - S.S.	-4

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

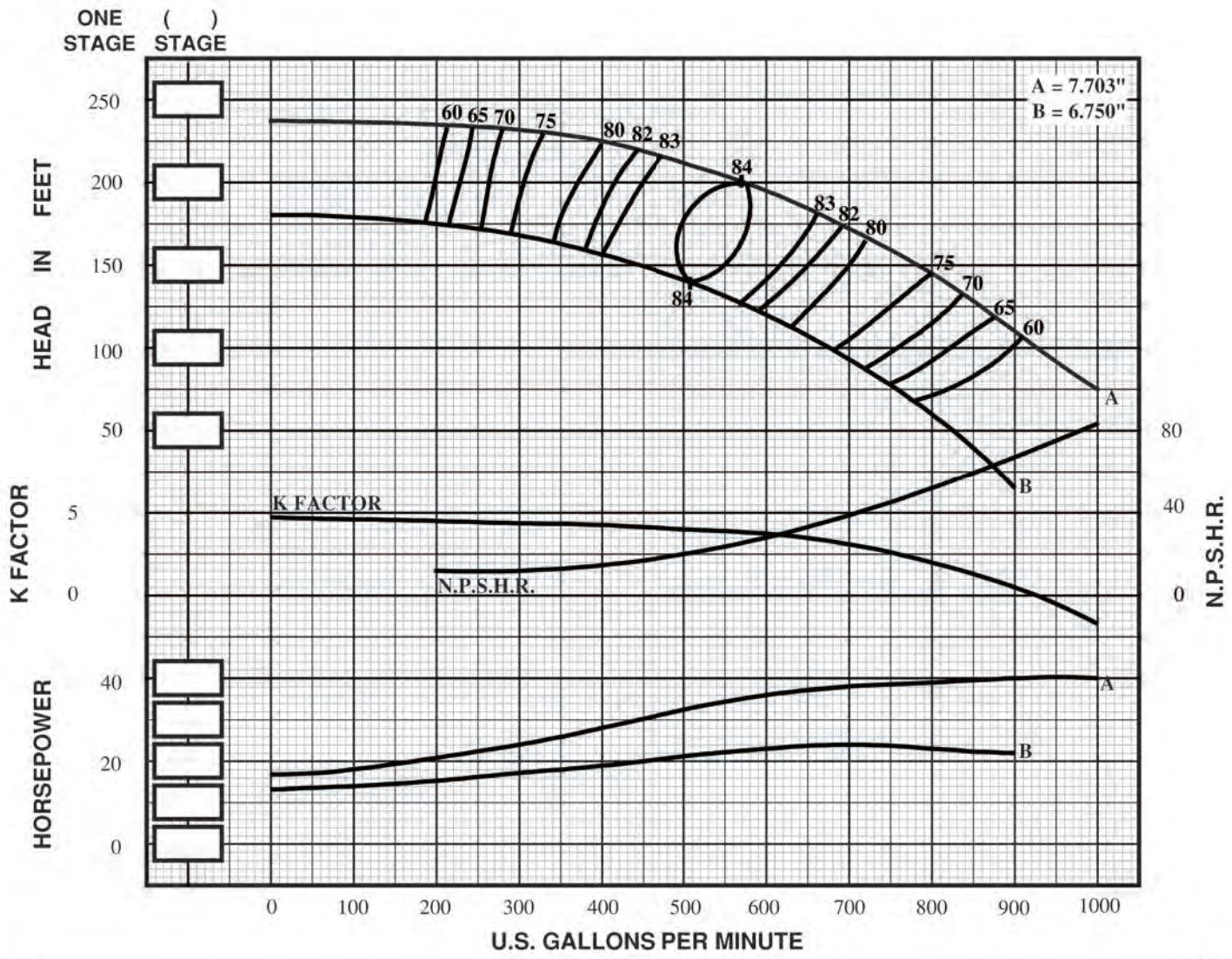


LINESHAFT TURBINE

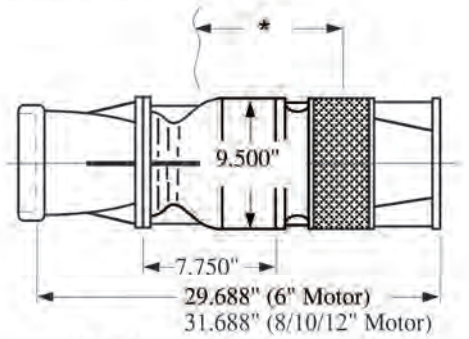
SIMFLO®

Section 201
Date 9/1/06

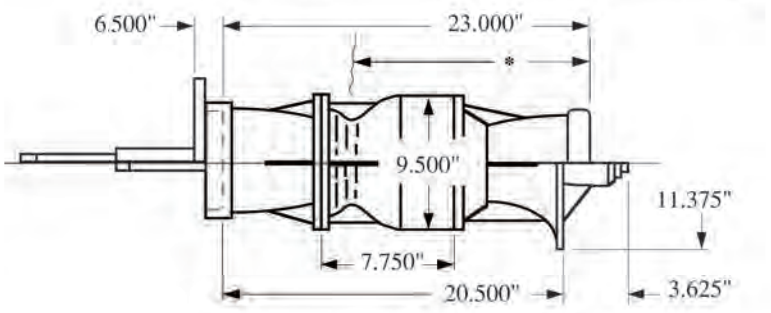
SP9L
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP9L	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 9.0	STD. LATERAL = 1.19"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 150.0	DISCHARGE SIZES = 6" / 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 60.0	SUCTION SIZES = 6"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .53"	ONE STAGE WR^2 = .286	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.2			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

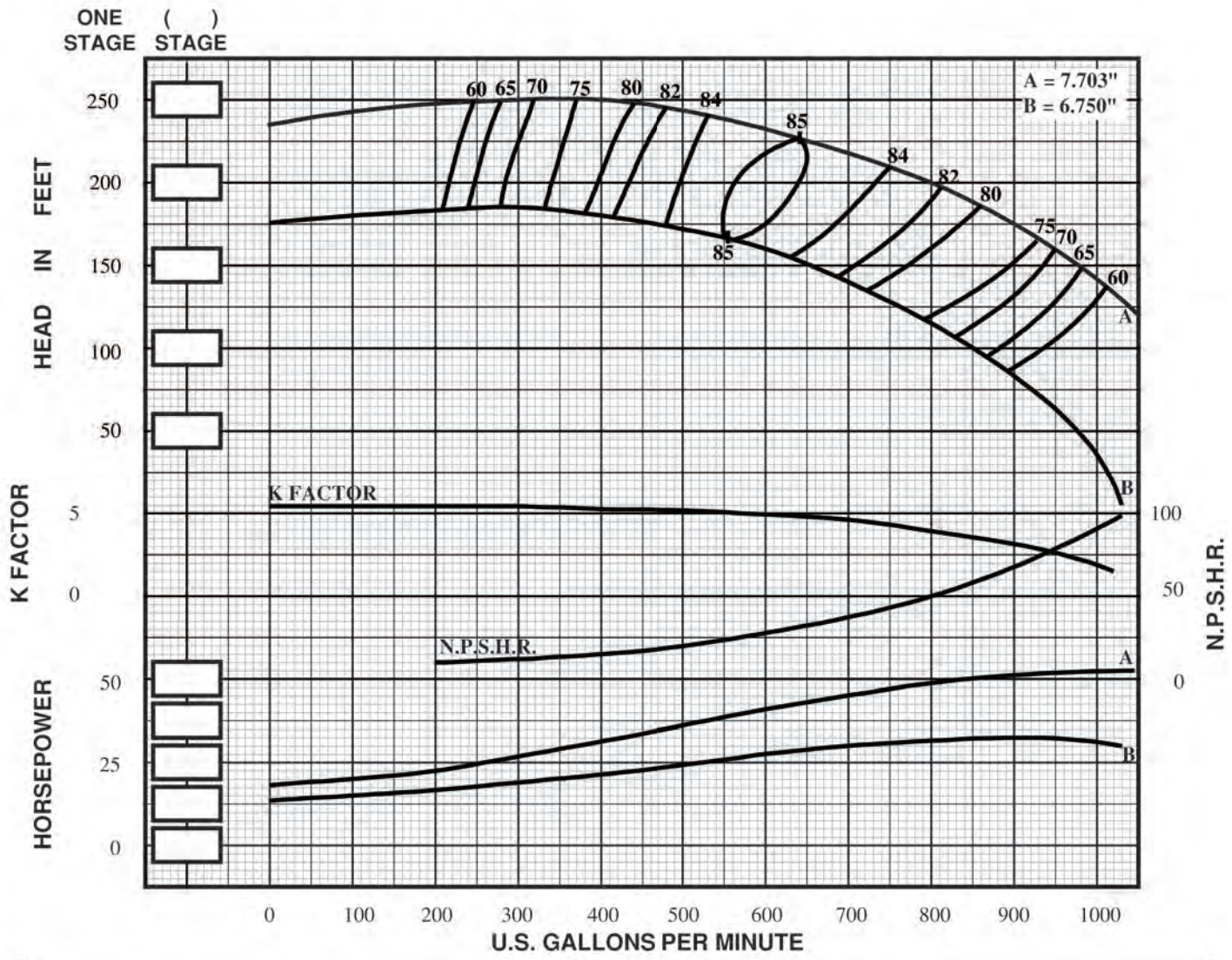


LINESHAFT TURBINE

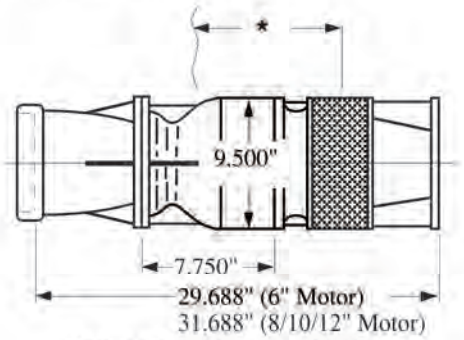
SIMFLO®

Section 201
Date 9/1/06

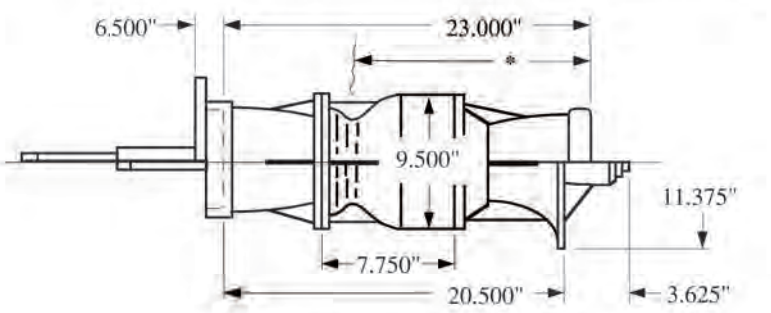
SP9M
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP9M	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 9.5	STD. LATERAL = 1.19"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 150.0	DISCHARGE SIZES = 6" / 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 60.0	SUCTION SIZES = 6"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .53"	ONE STAGE WR^2 = .303	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.2			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

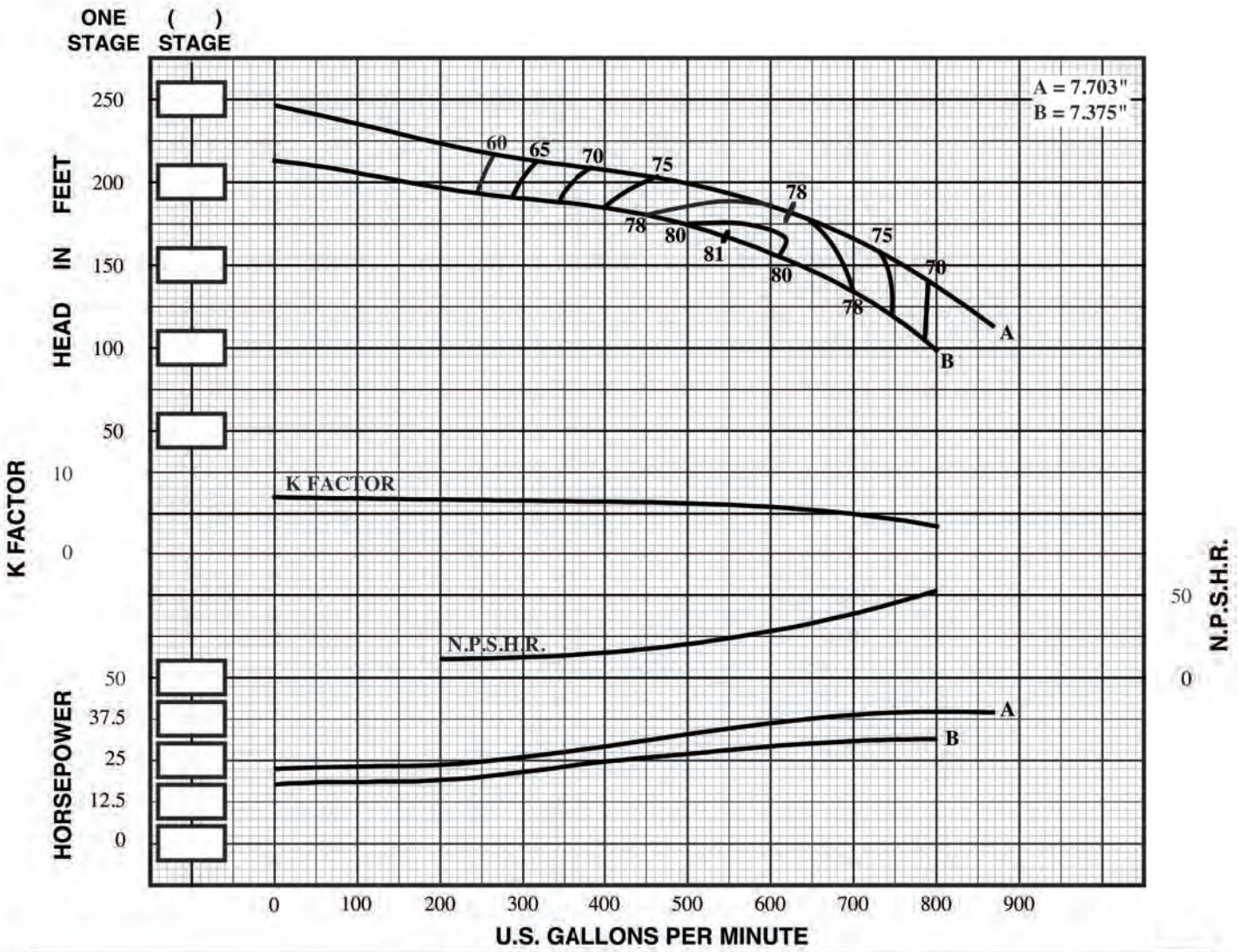


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 9/1/06

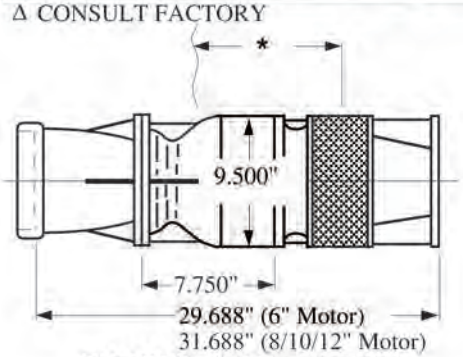
SM9L
3450 RPM



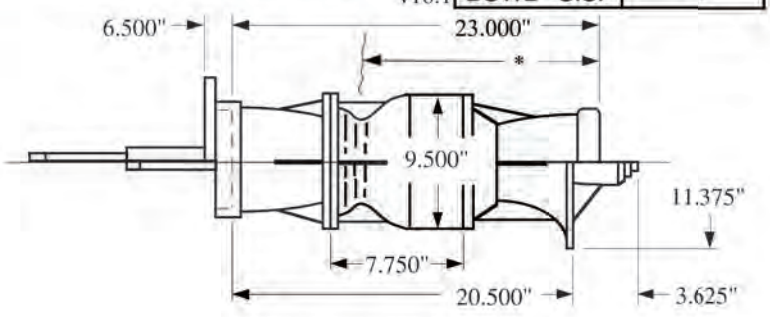
IMPELLER TYPE	= ENCLOSED	STD. SHAFT DIA.	= 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO.	= SP9L	MAX. SHAFT DIA.	= 1.500"	1	-3	IMP. - C.I.	-2
IMPELLER WT. - LBS.	= 9.0	STD. LATERAL	= 1.13"	2	-2	IMP. - NI-RI	-2
ONE STAGE WT. - LBS.	= 150.0	DISCHARGE SIZES	= 6" / 8"	3	-1	IMP. - S.S.	-3
ADD'L STAGE WT. - LBS.	= 60.0	SUCTION SIZES	= 6" / BELL	4	0	BOWL - BRZ.	-2
MAX. SPHERE SIZE	= .53"	ONE STAGE WR^2	= .286	5	0	BOWL - NI-RI	-1
* MIN. SUBMERGENCE	= 15"		=			BOWL - S.S.	-3

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

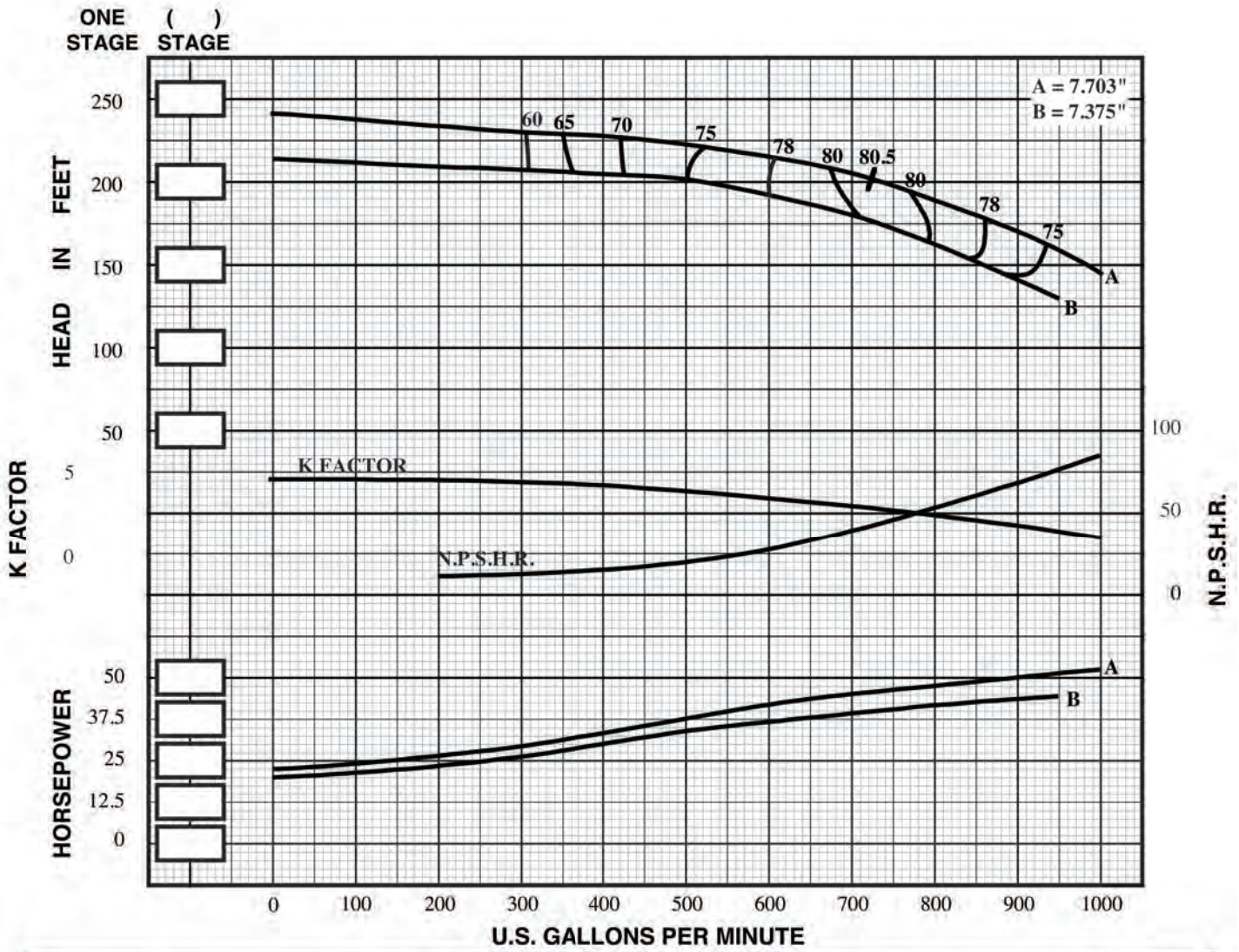


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 2/12/18

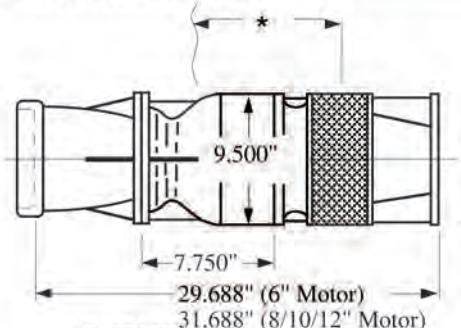
SM9M
3450 RPM



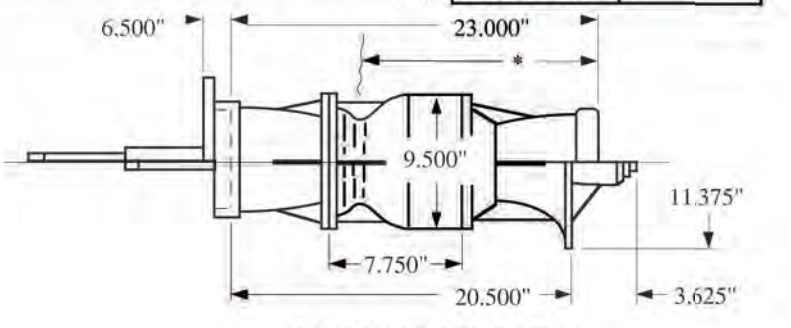
				NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER TYPE	= ENCLOSED	STD. SHAFT DIA.	= 1.500"				
IMPELLER NO.	= SP9M	MAX. SHAFT DIA.	= 1.500"	1	-3	IMP. - C.I.	-2
IMPELLER WT. - LBS.	= 9.5	STD. LATERAL	= 1.13"	2	-2	IMP. - NI-RI	-2
ONE STAGE WT. - LBS.	= 150.0	DISCHARGE SIZES	= 6" / 8"	3	-1	IMP. - S.S.	-3
ADD'L STAGE WT. - LBS.	= 60.0	SUCTION SIZES	= 6" / BELL	4	0	BOWL - BRZ.	-2
MAX. SPHERE SIZE	= .53"	ONE STAGE WR^2	= .303	5	0	BOWL - NI-RI	-1
* MIN. SUBMERGENCE	= 15"		=			BOWL - S.S.	-3

Δ CONSULT FACTORY

v18.2



SUBMERSIBLE TURBINE



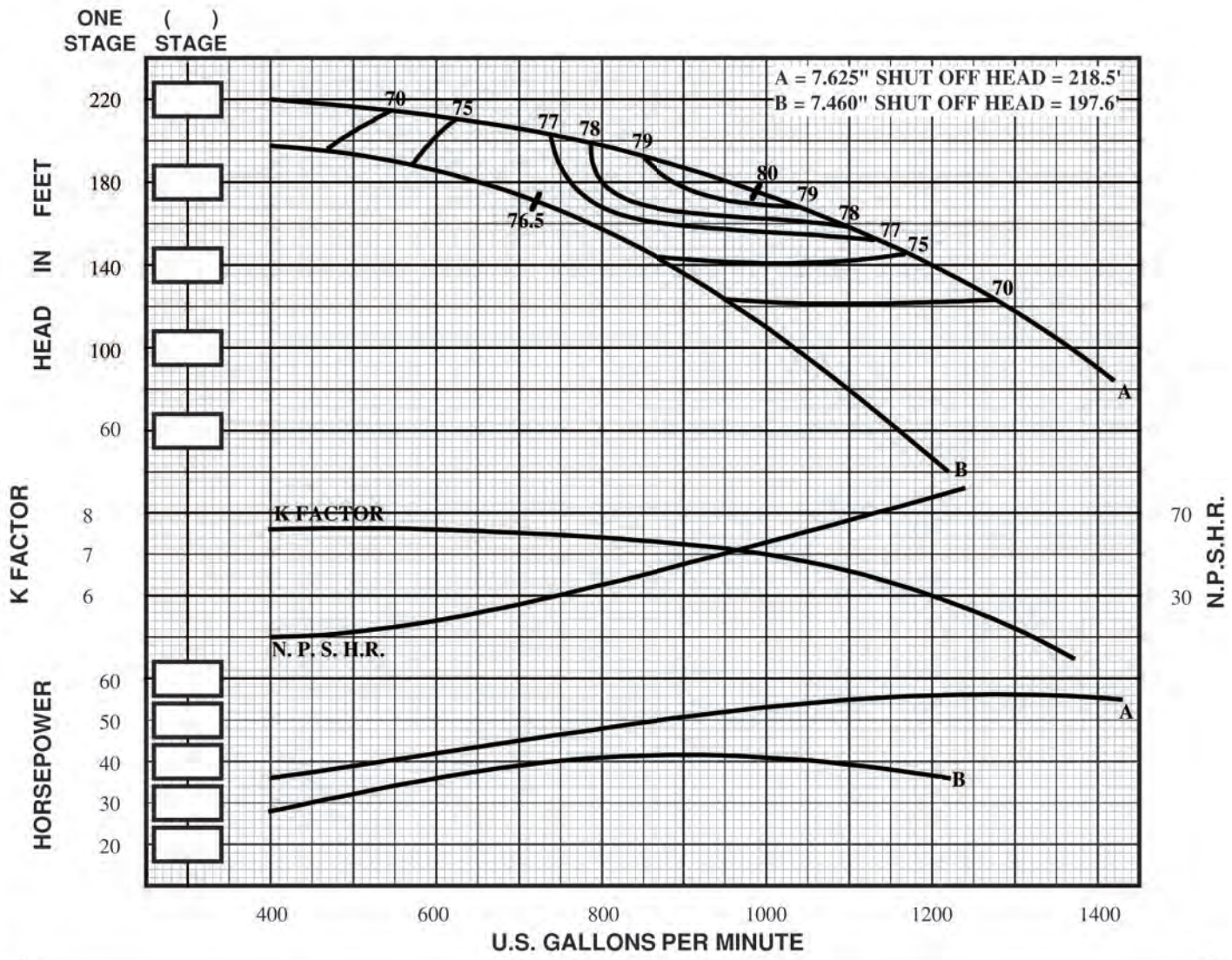
LINESHAFT TURBINE

SIMFLO®

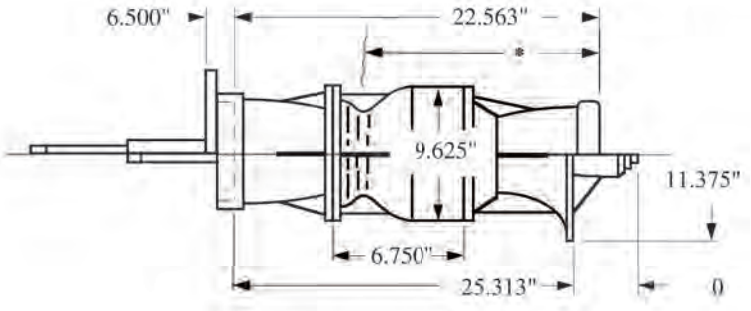
Section 201
Date 2/12/18

SR9H0

3450 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SR9HO	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 6.2	STD. LATERAL = .70"	1	-3	IMP. - C.I.	-4
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6" / 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 60.0	SUCTION SIZES = 6"	3	-1	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .75"	ONE STAGE WR^2 = .193	4	0	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 14.5"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-4

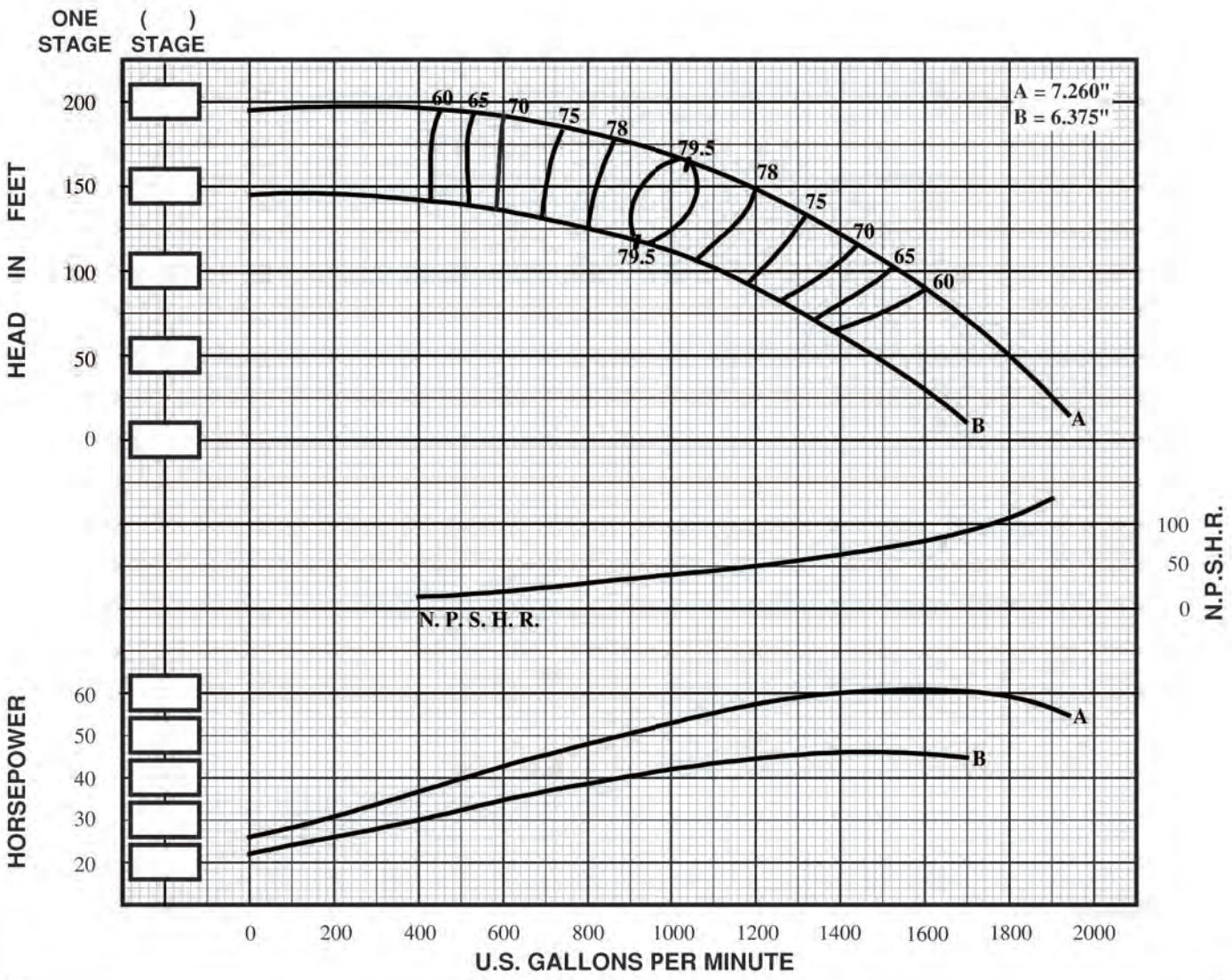


LINESHAFT TURBINE

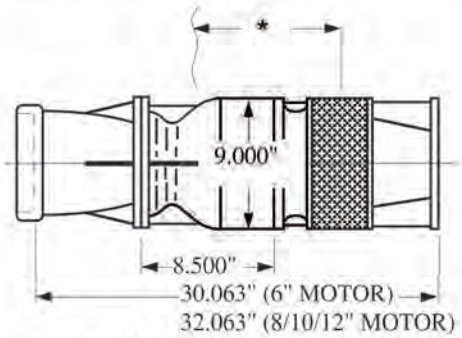
SIMFLO®

Section 201
Date 9/1/06

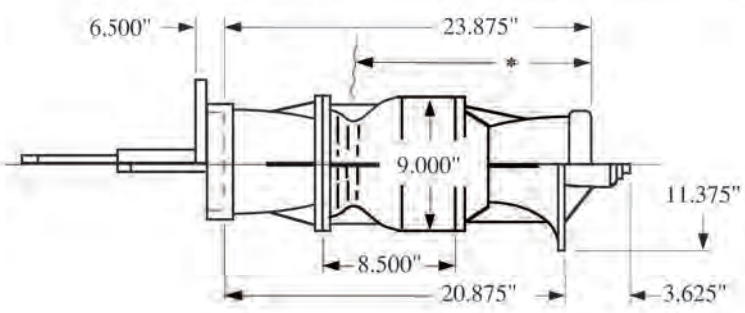
SL9H
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SL9H	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 8.7	STD. LATERAL = .94"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 135.0	DISCHARGE SIZES = 6" / 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 53.0	SUCTION SIZES = 6" / BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .248	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 15"	K-FACTOR, MAX. = 5.70	5	0	BOWL - NI-RI	-2
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

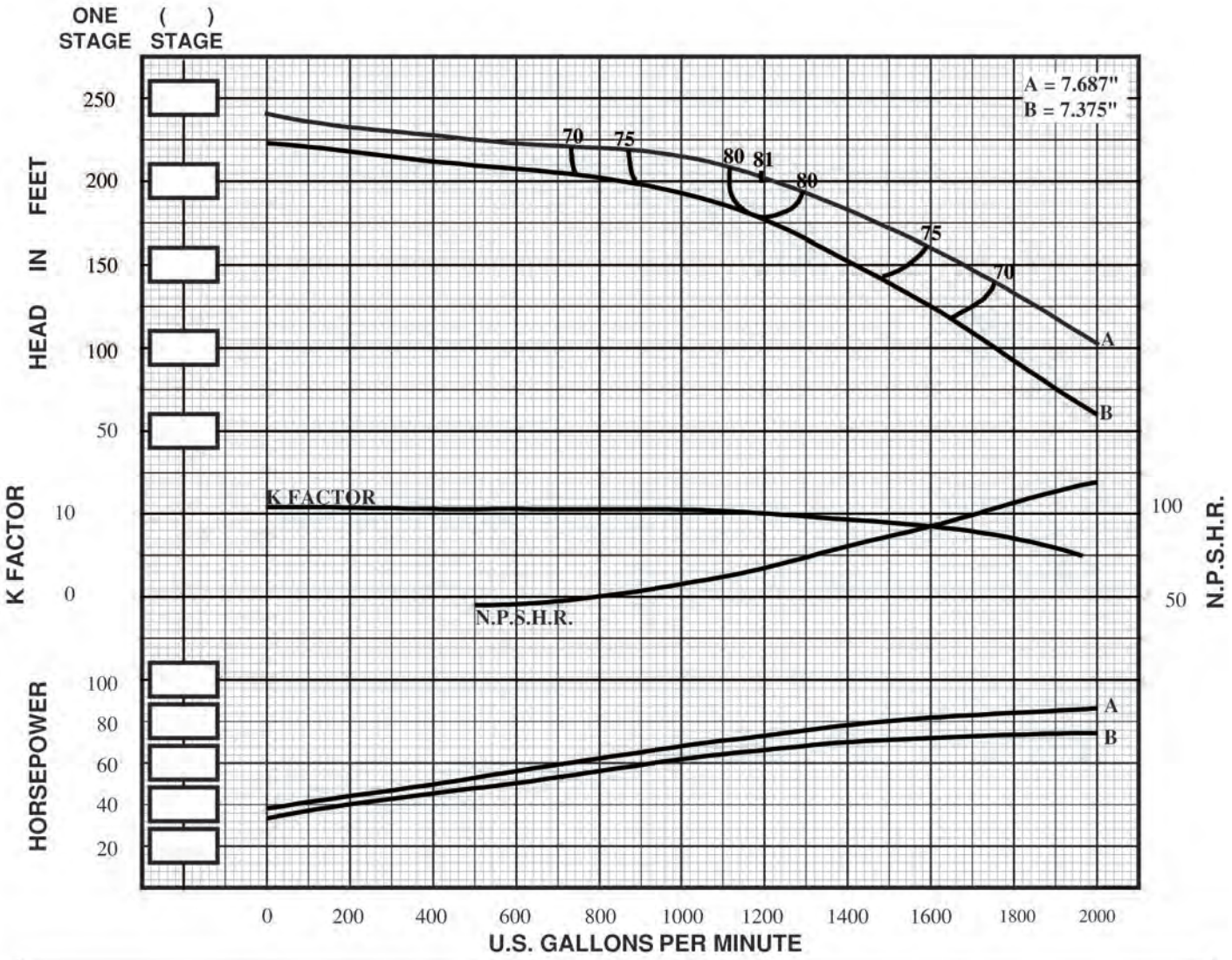


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 12/1/97

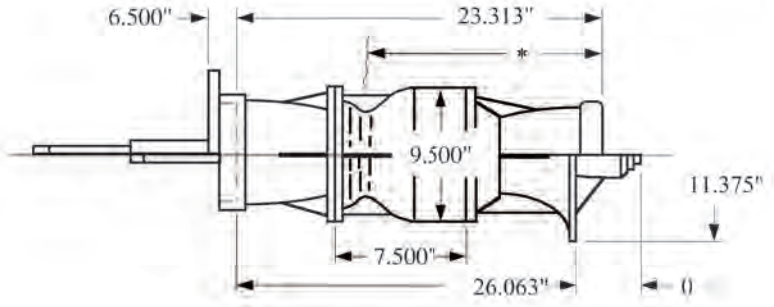
SF9H
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SF9H	MAX. SHAFT DIA. = 1.500"	1	-3	IMP. - C.I.	-2
IMPELLER WT. - LBS. = 9.0	STD. LATERAL = .94"	2	-2	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 185.0	DISCHARGE SIZES = 6"/ 8"	3	-1	IMP. - S.S.	-3
ADD'L STAGE WT. - LBS. = 67.0	SUCTION SIZES = 6"	4	0	BOWL - BRZ.	-2
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .291	5	0	BOWL - NI-RI	-2
MIN. SUBMERGENCE* = 15"	=			BOWL - S.S.	-3

Δ CONSULT FACTORY

v18.1



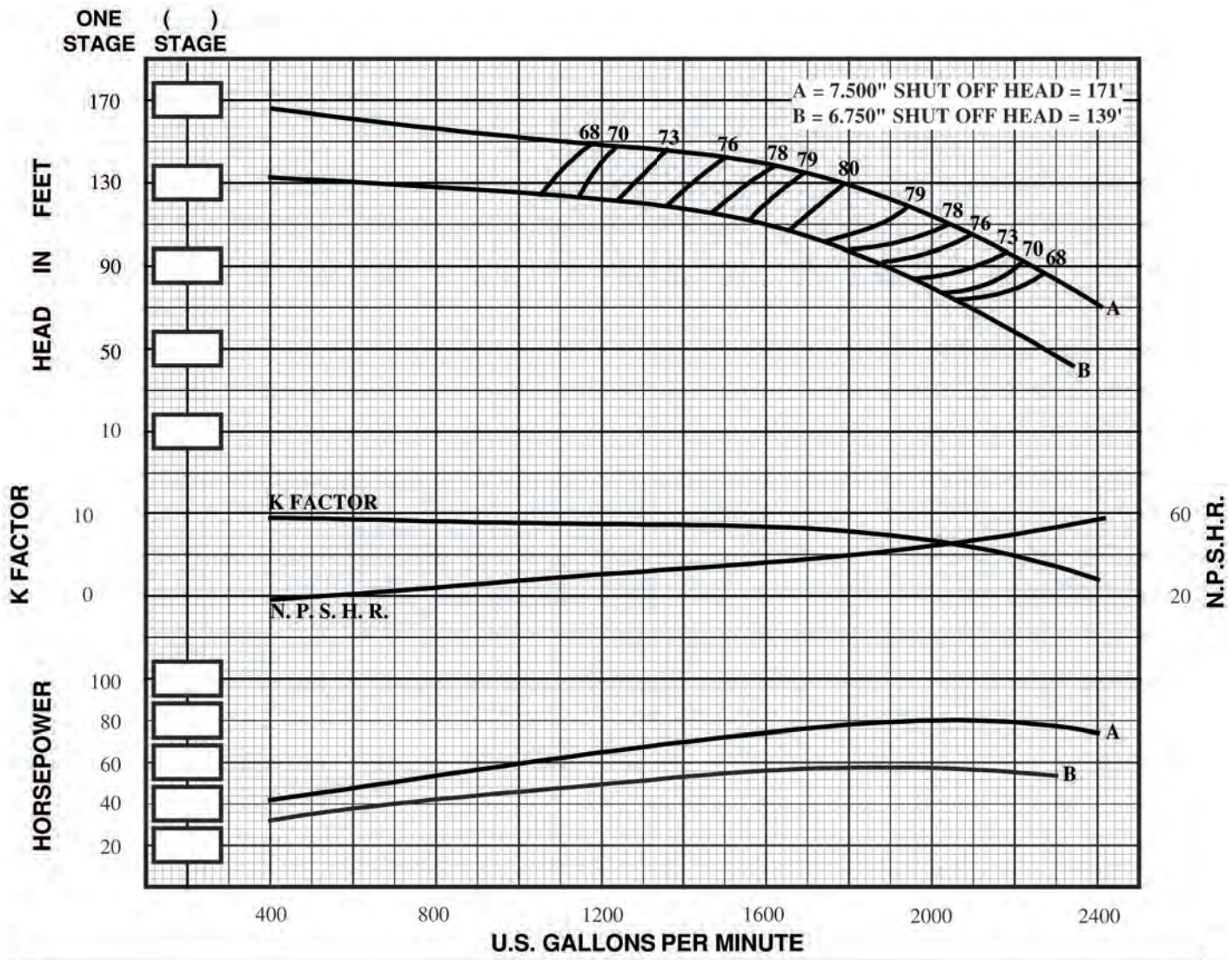
LINESHAFT TURBINE

SIMFLO®

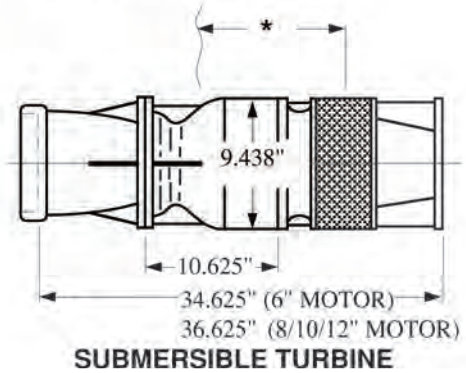
Section 201
Date 12/1/97

SK9M

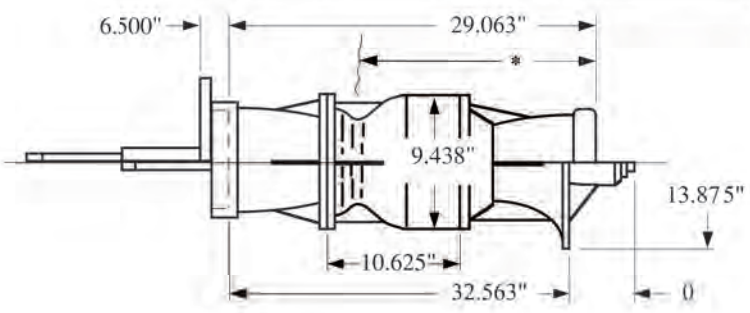
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.688"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK9M	MAX. SHAFT DIA. = 1.688"				
IMPELLER WT. - LBS. = 14.9	STD. LATERAL = 1.44"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 250.0	DISCHARGE SIZES = 8"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 85.0	SUCTION SIZES = 8"	3	-2	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = 1.13"	ONE STAGE WR^2 = .462	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 18"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

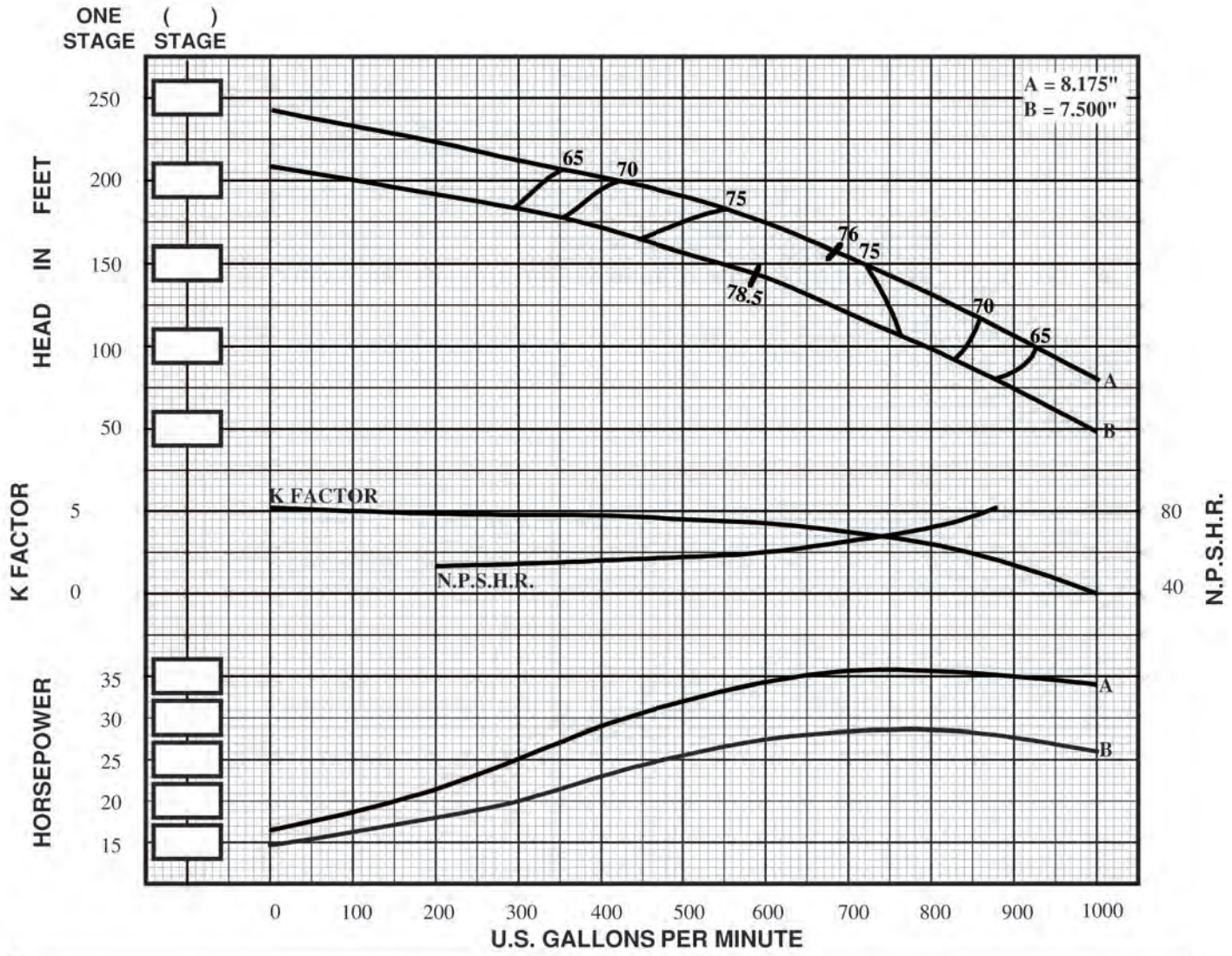


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 12/1/97

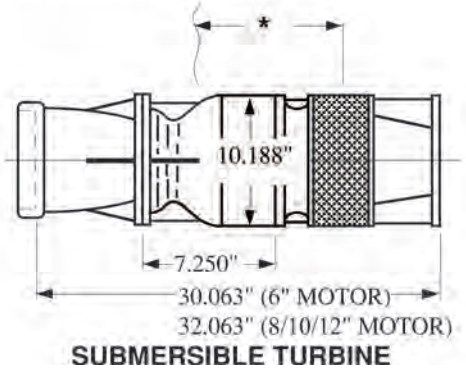
SP10L
3450 RPM



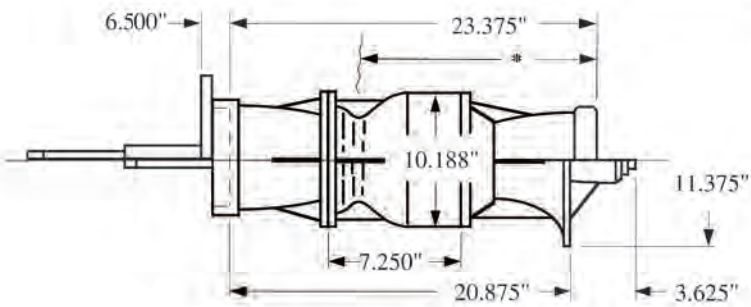
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP10L	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 8.1	STD. LATERAL = .94"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6" / 8"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6"/ BELL	3	-2	IMP. - S.S.	-3
MAX. SPHERE SIZE = .50"	ONE STAGE WR^2 = .295	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 14"	=	5	0	BOWL - NI-RI	-1
	=			BOWL - S.S.	-3

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

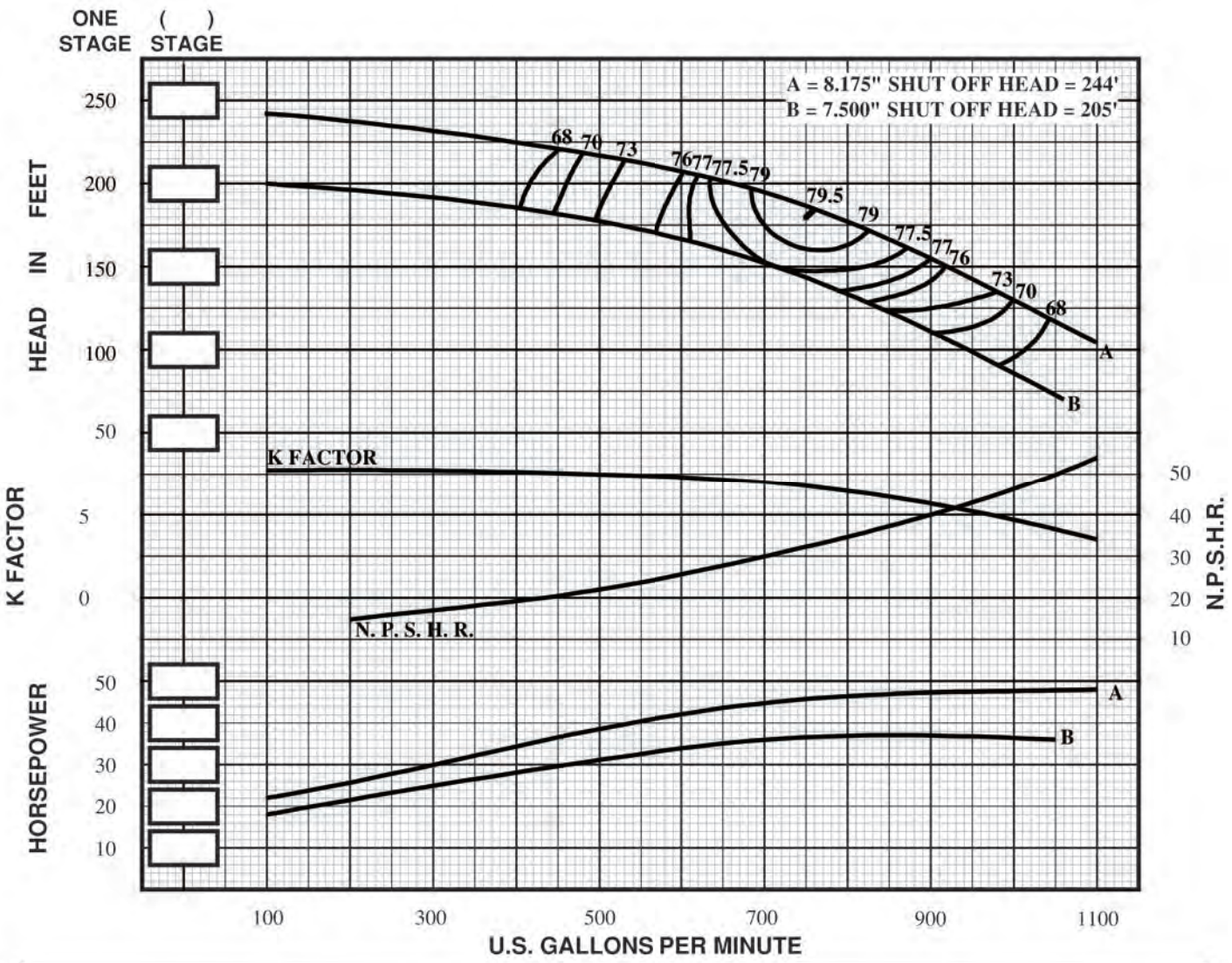


LINESHAFT TURBINE

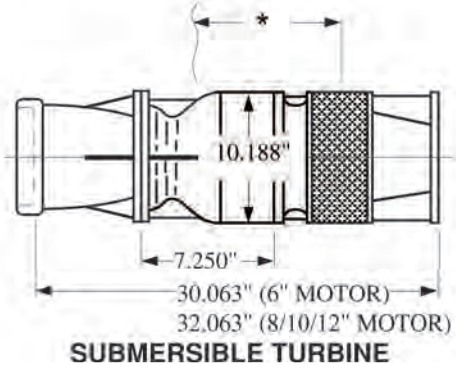
SIMFLO®

Section 201
Date 12/1/97

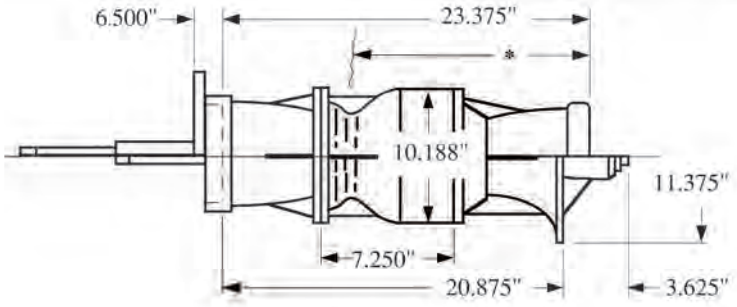
SP10M
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP10M	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 8.9	STD. LATERAL = .94"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6" / 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .50"	ONE STAGE WR^2 = .324	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 14"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

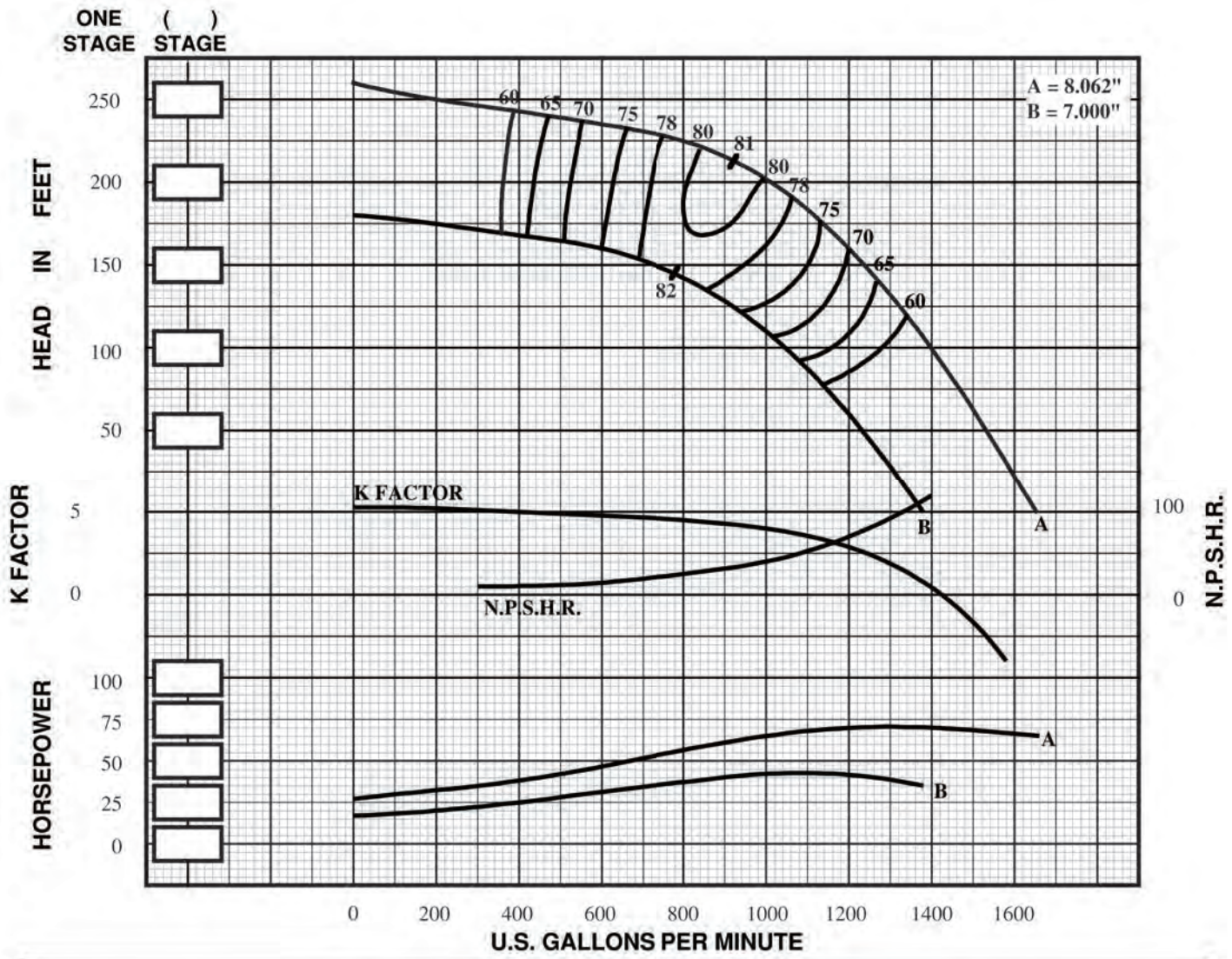


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 12/1/03

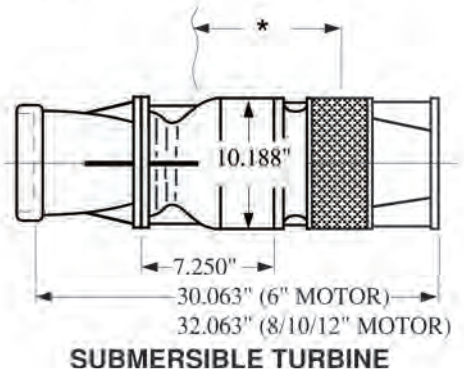
SP10H
3450 RPM



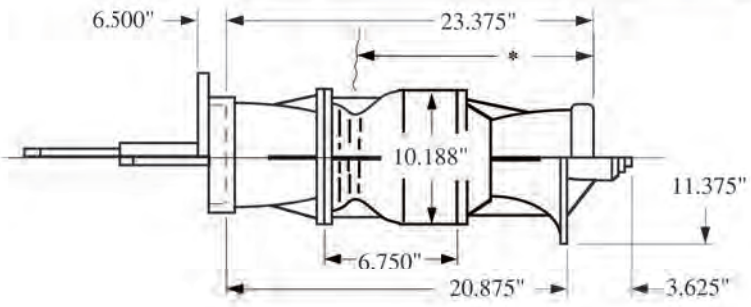
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP10H	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 9.0	STD. LATERAL = .63"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6" / 8"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6"/ BELL	3	-2	IMP. - S.S.	-2
MAX. SPHERE SIZE = .63"	ONE STAGE WR^2 = .315	4	-1	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 14"	=	5	0	BOWL - NI-RI	-1
				BOWL - S.S.	-3

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE



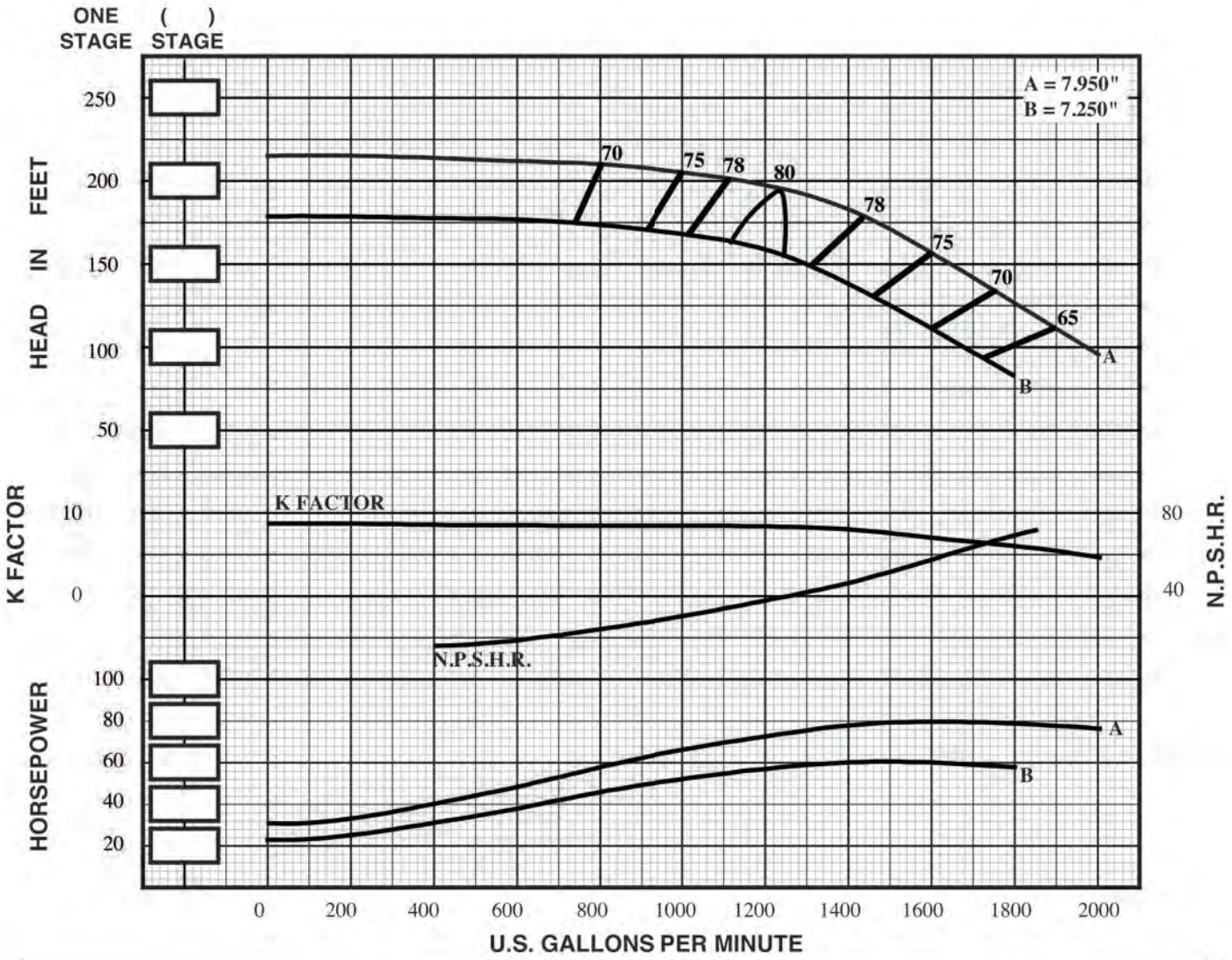
LINESHAFT TURBINE

SIMFLO®

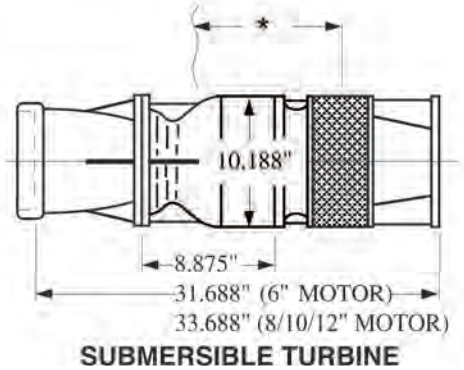
Section 201
Date 3/30/18

SM10MO

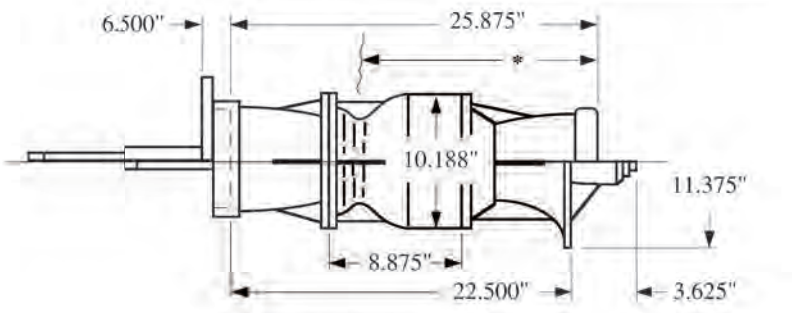
3450 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM10MO	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 6.1	STD. LATERAL = 1.25"	1	-4	IMP. - C.I.	-4
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6" / 8"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6" / BELL	3	-2	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .81"	ONE STAGE WR^2 = .217	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v21.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

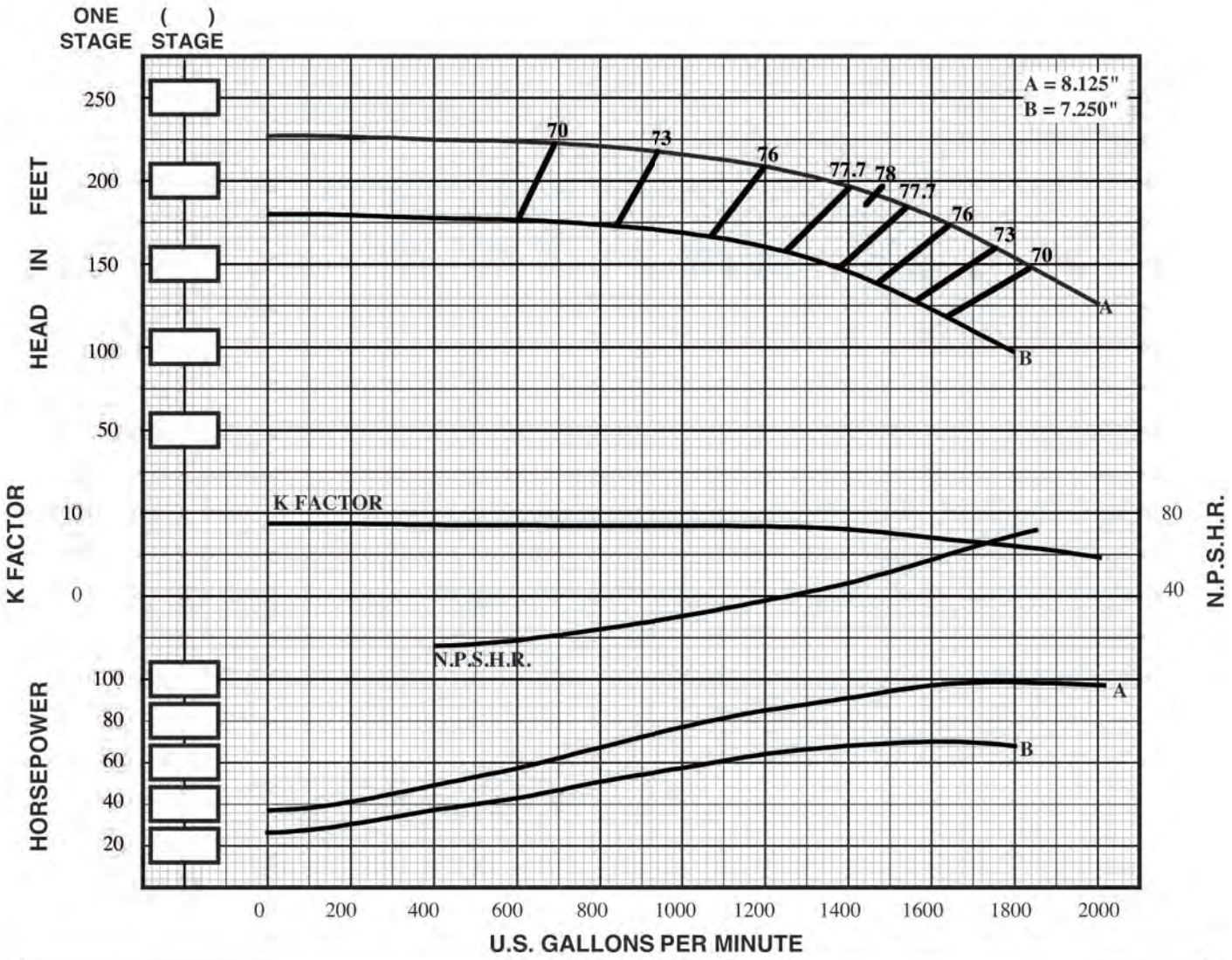


LINESHAFT TURBINE

SIMFLO®

Section 201
Date 3/30/18

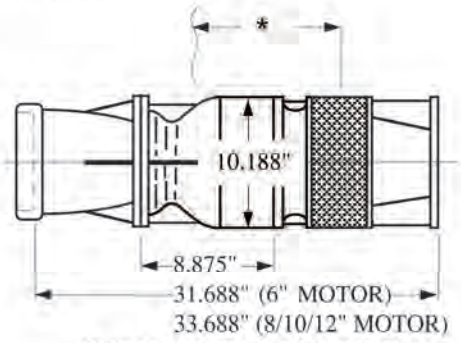
SM10HO
3450 RPM



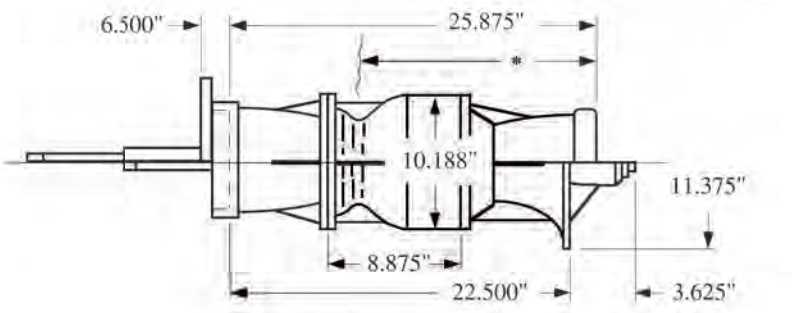
IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM10HO	MAX. SHAFT DIA. = 1.500"	1	-4	IMP. - C.I.	-4
IMPELLER WT. - LBS. = 6.1	STD. LATERAL = 1.56"	2	-3	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6" / 8"	3	-2	IMP. - S.S.	NOT RECOM.
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6" / BELL	4	-1	BOWL - BRZ.	-2
MAX. SPHERE SIZE = .81"	ONE STAGE WR^2 = .217	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 16"	=			BOWL - S.S.	-3

Δ CONSULT FACTORY

v21.1



SUBMERSIBLE TURBINE

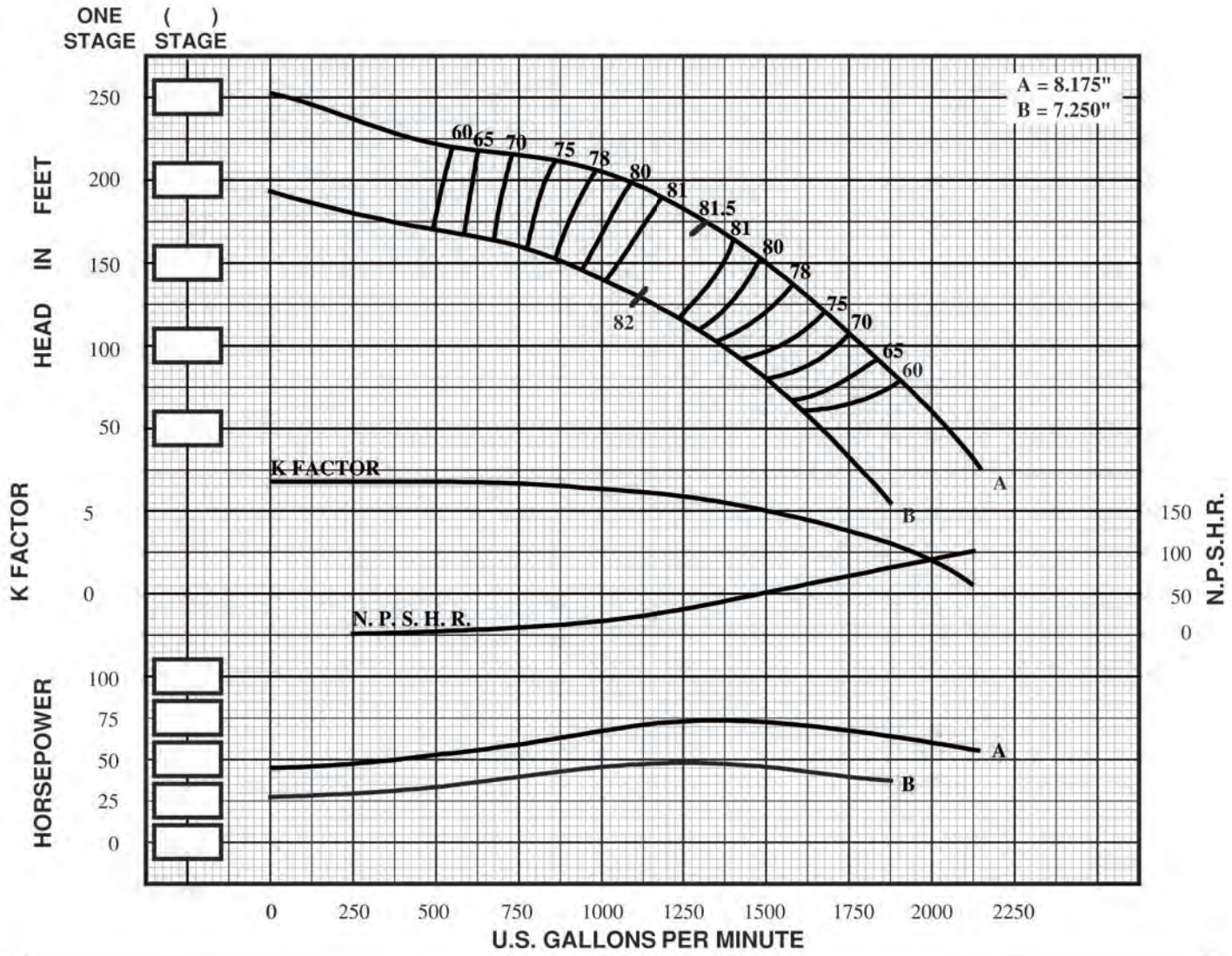


LINESHAFT TURBINE

SIMFLO®

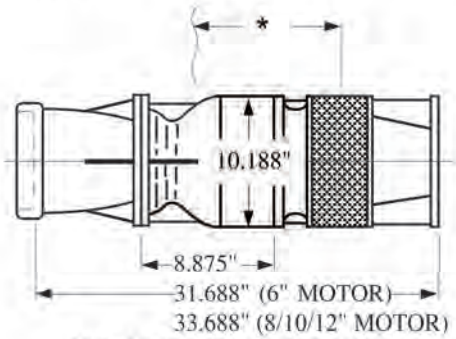
Section 201
Date 12/1/97

SM10M
3450 RPM

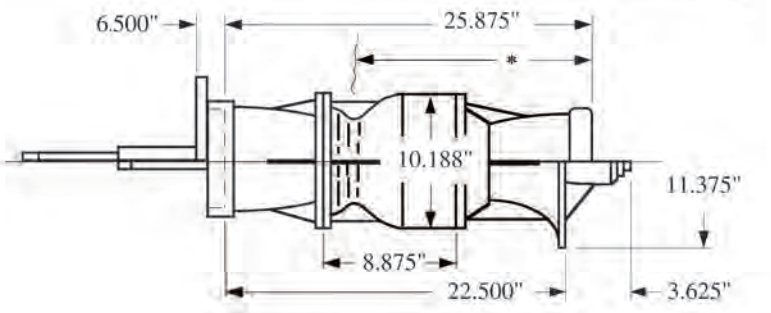


IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM10M	MAX. SHAFT DIA. = 1.500"	1	-4	IMP. - C.I.	-3
IMPELLER WT. - LBS. = 9.7	STD. LATERAL = 1.06"	2	-3	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 195.0	DISCHARGE SIZES = 6" / 8"	3	-2	IMP. - S.S.	-4
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6" / BELL	4	-1	BOWL - BRZ.	-2
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .347	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 16"	=			BOWL - S.S.	-2

Δ CONSULT FACTORY v21.1



SUBMERSIBLE TURBINE

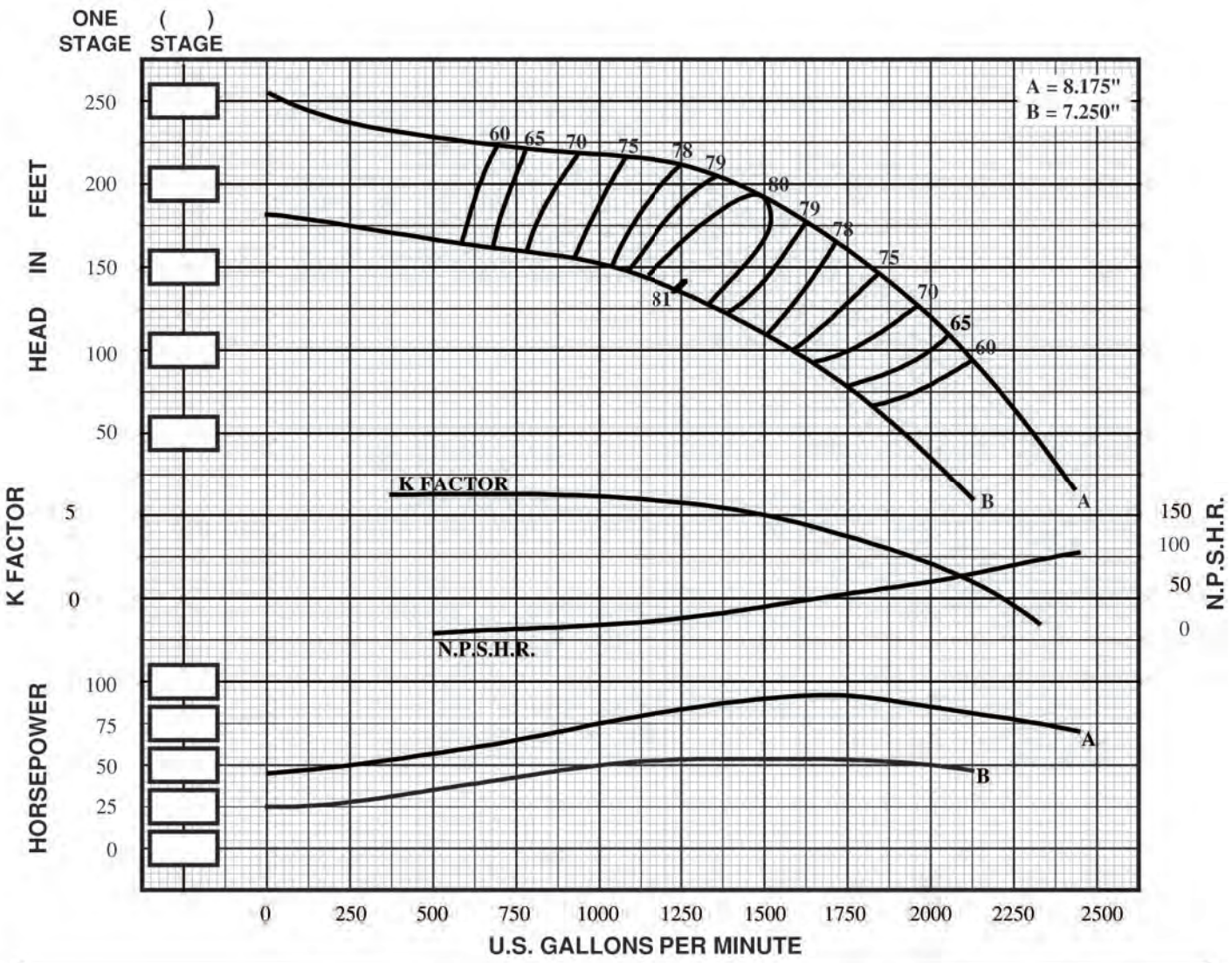


LINESHAFT TURBINE

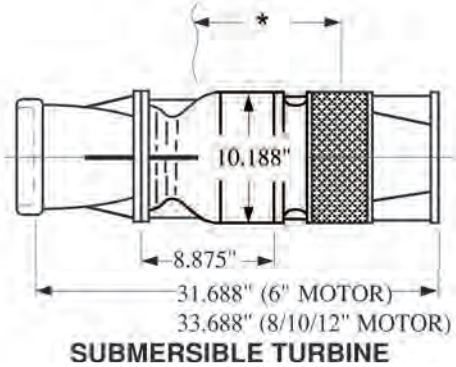
SIMFLO®

Section 201
Date 12/1/97

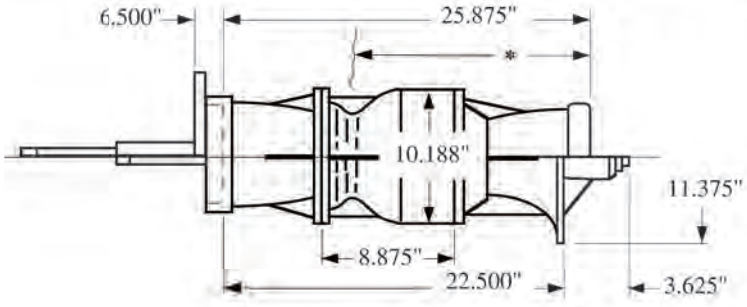
SM10H
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM10H	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 10.8	STD. LATERAL = 1.06"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 240.0	DISCHARGE SIZES = 6" / 8"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 76.0	SUCTION SIZES = 6"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .386	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v21.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



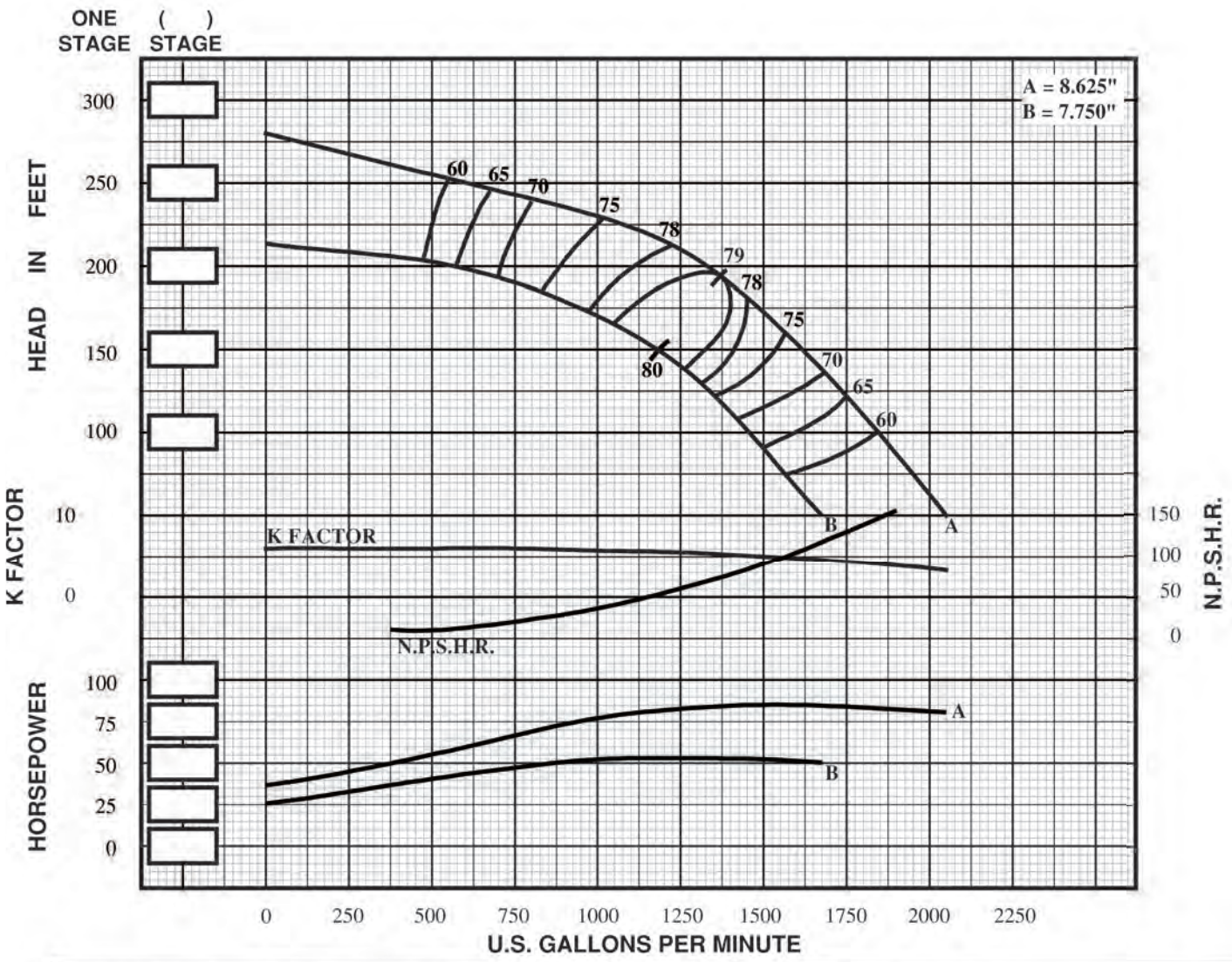
LINESHAFT TURBINE

SIMFLO®

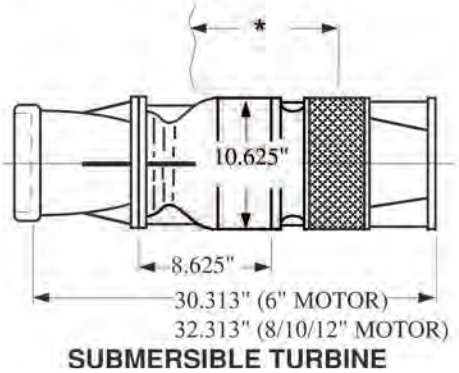
Section 201
Date 9/1/06

SM11M

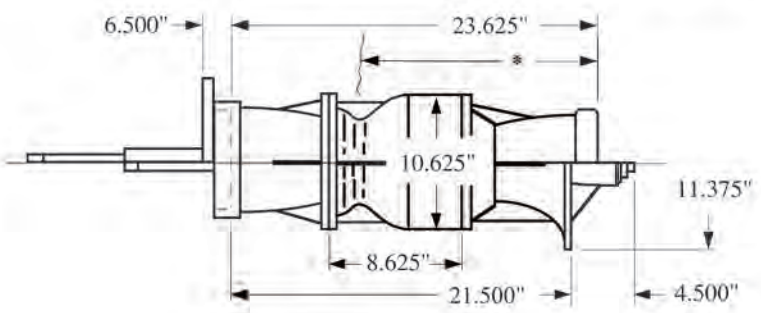
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM11M	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 9.5	STD. LATERAL = .88"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 195.0	DISCHARGE SIZES = 6"/ 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6" / BELL	3	-1	IMP. - S.S.	-4
MAX. SPHERE SIZE = .81"	ONE STAGE WR^2 = .382	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 14"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE



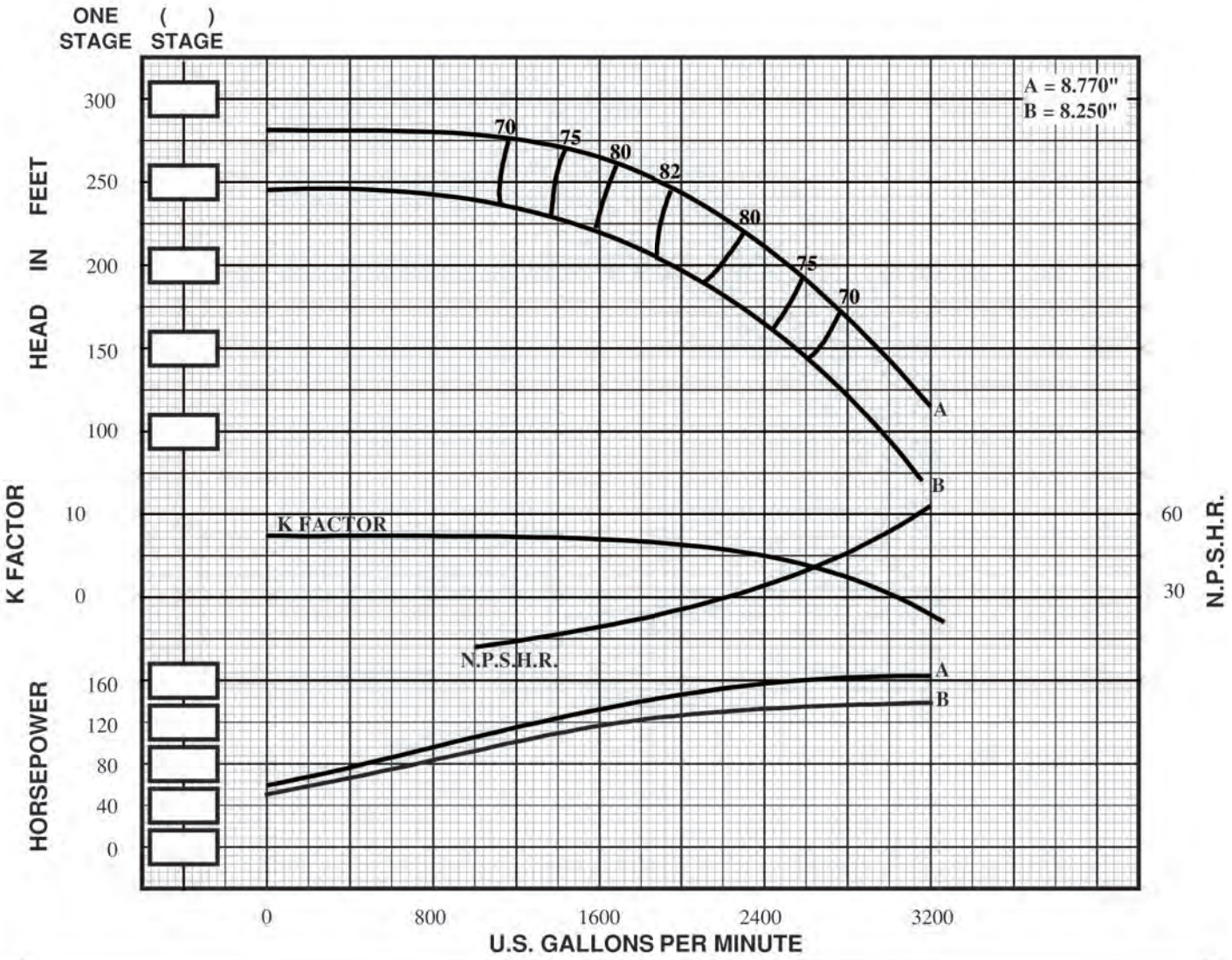
LINESHAFT TURBINE

SIMFLO®

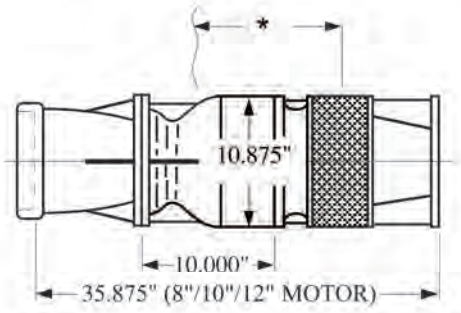
Section 201
Date 9/1/06

SL11H

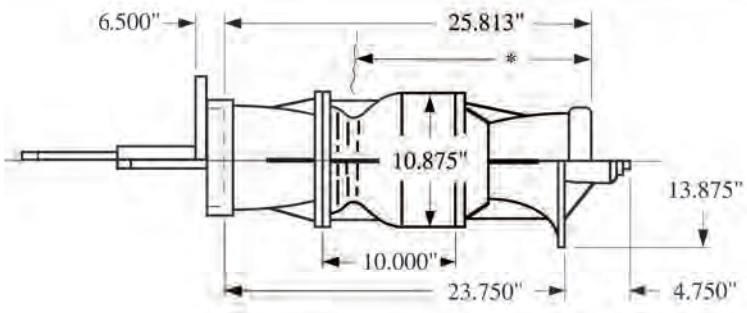
3450 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.688"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SL11H	MAX. SHAFT DIA. = 1.688"				
IMPELLER WT. - LBS. = 13.0	STD. LATERAL = 1.44"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 200.0	DISCHARGE SIZES = 6" /8" /10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 81.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .532	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



LINESHAFT TURBINE

1770 RPM
Selection Chart

Model Number	Bowl Dia. (in.)	Peak Efficiency (full dia.)	BEP Flow (gpm)	BEP Head (ft. / stage)	BEP NPSHr (full dia.)	POR (gpm)	Ns	Nss
SP5XL	5.25	78.0	52.4	13.7	2.07	37-63	1799	7424
SP5L	5.25	76.0	66.7	15.5	2.16	47-80	1850	8113
SM5M	5.25	78.0	101	7.86	3.42	71-121	3789	7073
SM5H	5.25	78.0	141	9.60	4.54	99-169	3854	6758
SP5LO	5.25	76.5	48.8	12.8	2.22	34-59	1827	6799
SP6LL	6.00	73.0	65.0	13.4	4.28	46-78	2038	4796
SP6L	6.00	74.0	71.1	17.3	2.87	50-85	1759	6769
SP6M	6.00	74.0	83.5	17.8	3.99	58-100	1866	5729
SP6H	6.00	78.0	120	20.3	15.4	84-144	2027	2494
SP7L	7.19	80.0	206	24.9	3.79	144-247	2279	9352
SP7H	7.19	82.0	273	28.5	5.86	191-328	2371	7765
SK7L	6.56	78.0	204	17.8	7.71	143-245	2917	5464
SK7M	6.56	78.0	230	16.2	2.46	161-276	3324	13666
SK7H	6.56	78.0	287	18.5	2.75	201-344	3362	14042
SM7M	7.00	78.0	287	16.8	4.35	201-344	3614	9955
SP8L	7.88	76.0	142	28.9	9.72	99-170	1692	3831
SP8M	7.88	78.0	162	29.9	3.41	113-194	1762	8978
SP8H	7.88	78.0	202	32.0	6.28	141-242	1870	6341
SM8H	7.69	80.0	290	28.8	10.3	203-348	2425	5243
SR8MO	7.69	76.5	248	26.2	6.54	174-298	2407	6816
SR8HO	7.69	78.0	299	25.7	7.01	209-359	2681	7104
SK8H	7.50	78.0	579	22.1	18.9	405-695	4178	4699
SP9L	9.50	86.0	280	54.5	4.72	196-336	1477	9249
SP9M	9.50	85.0	312	60.4	5.94	218-374	1443	8217
SM9L	9.50	84.0	299	49.6	5.69	209-359	1638	8308
SM9M	9.50	86.0	338	55.2	7.37	237-406	1607	7275
SM9H	9.50	81.5	440	49.5	11.0	308-528	1984	6116
SL9H	9.00	78.5	529	43.6	11.6	370-635	2399	6477
SF9H	9.50	81.0	611	52.5	17.3	428-733	2243	5158
SK9M	9.44	80.0	904	36.4	11.1	633-1085	3591	8751
SK9H	9.44	77.5	1094	37.5	16.5	766-1313	3863	7151
SP10L	10.19	76.0	353	41.7	18.1	247-424	2027	3790
SP10M	10.19	80.0	401	47.8	9.05	281-481	1950	6793
SP10H	10.19	83.0	499	54.3	9.03	349-599	1977	7590
SM10MO	10.19	80.5	620	51.7	10.5	434-744	2286	7556
SM10HO	10.19	78.0	670	53.2	11.6	469-804	2326	7289
SM10M	10.19	84.5	673	48.6	11.0	471-808	2495	7602
SM10H	10.19	82.0	809	50.4	13.2	566-971	2661	7270

1770 RPM
Selection Chart

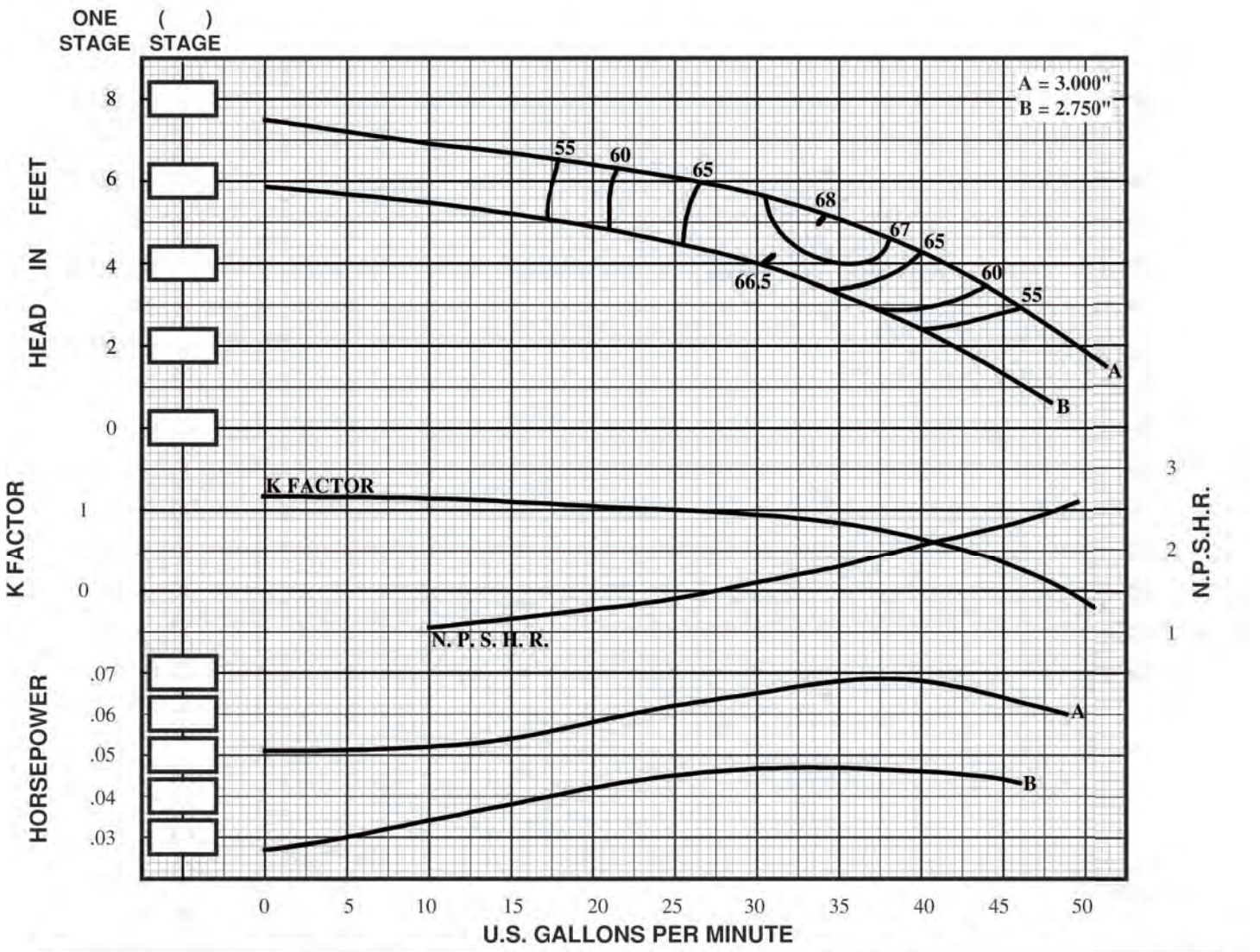
Model Number	Bowl Dia. (in.)	Peak Efficiency (full dia.)	BEP Flow (gpm)	BEP Head (ft. / stage)	BEP NPSHr (full dia.)	POR (gpm)	Ns	Nss
SM11M	10.63	81.5	661	55.5	12.2	463-793	2238	6971
SM11H	10.63	82.0	798	60.5	19.2	559-958	2305	5451
SL11H	10.88	82.0	1012	64.9	7.30	708-1214	2463	12679
SR11MO	11.50	81.0	993	64.5	18.8	695-1192	2451	6178
SR11HO	11.50	83.0	1201	74.5	19.5	841-1441	2428	6635
SP11L	11.25	84.5	1129	54.4	11.8	790-1355	2969	9341
SP11M	11.25	85.0	1193	58.2	10.2	835-1432	2901	10711
SP11H	11.25	83.7	1580	58.0	17.9	1106-1896	3348	8085
SW12L	12.00	85.0	486	72.1	8.28	340-583	1577	7994
SW12M	12.00	86.0	596	84.1	9.43	417-715	1556	8030
SP12M	11.88	82.0	750	88.7	11.2	525-900	1677	7918
SP12H	11.88	81.0	801	92.7	12.0	561-961	1677	7770
SL12M	11.75	86.0	885	61.8	10.2	620-1062	2389	9226
SL12H	11.75	86.0	984	79.4	9.11	689-1181	2087	10588
SJ12M	12.00	85.0	1196	69.7	16.7	837-1435	2538	7410
SJ12H	12.00	82.0	1391	80.6	21.6	974-1669	2454	6589
SM14LL	14.00	81.5	1798	74.2	15.7	1259-2158	2969	9516
SM14L	14.00	83.4	2108	64.8	18.5	1476-2530	3558	9110
SM14M	14.00	84.5	2255	83.0	19.2	1579-2706	3057	9164
SM14H	14.00	85.0	2648	87.8	23.6	1854-3178	3175	8506
SM14HH	14.00	83.5	2970	90.2	24.2	2079-3564	3296	8841
SM16MO	15.25	86.0	3708	96.5	22.9	2596-4450	3501	10296
SM16HO	15.25	86.0	4351	103	28.5	3046-5221	3611	9465
SM16M	15.25	85.0	4020	95.0	22.9	2814-4824	3688	10720
SM16H	15.25	85.0	4548	109	28.6	3184-5458	3538	9652
SM20M	19.25	85.0	6195	158	47.1	4337-7434	3126	7749
SM20H	19.25	85.0	6859	167	63.3	4801-8231	3155	6532

v21.1

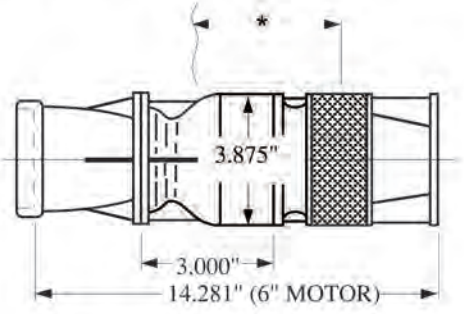
SIMFLO®

Section 202
Date 9/1/06

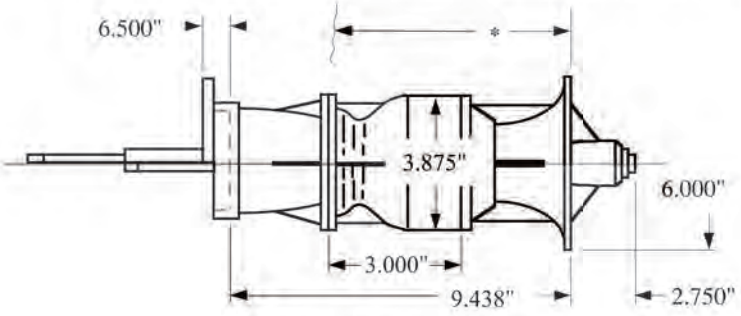
SM4M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM4M	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 0.90	STD. LATERAL = .16"	1	-6.5	IMP. - C.I.	-5
ONE STAGE WT. - LBS. = 20.0	DISCHARGE SIZES = 2.5"/3"	2	-5	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 5.80	SUCTION SIZES = 3"/ BELL	3	-3.5	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .25"	ONE STAGE WR^2 = .005	4	-2	BOWL - BRZ.	0
MIN. SUBMERGENCE* = 6"	=	5	-1	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	NOT RECOM.



SUBMERSIBLE TURBINE

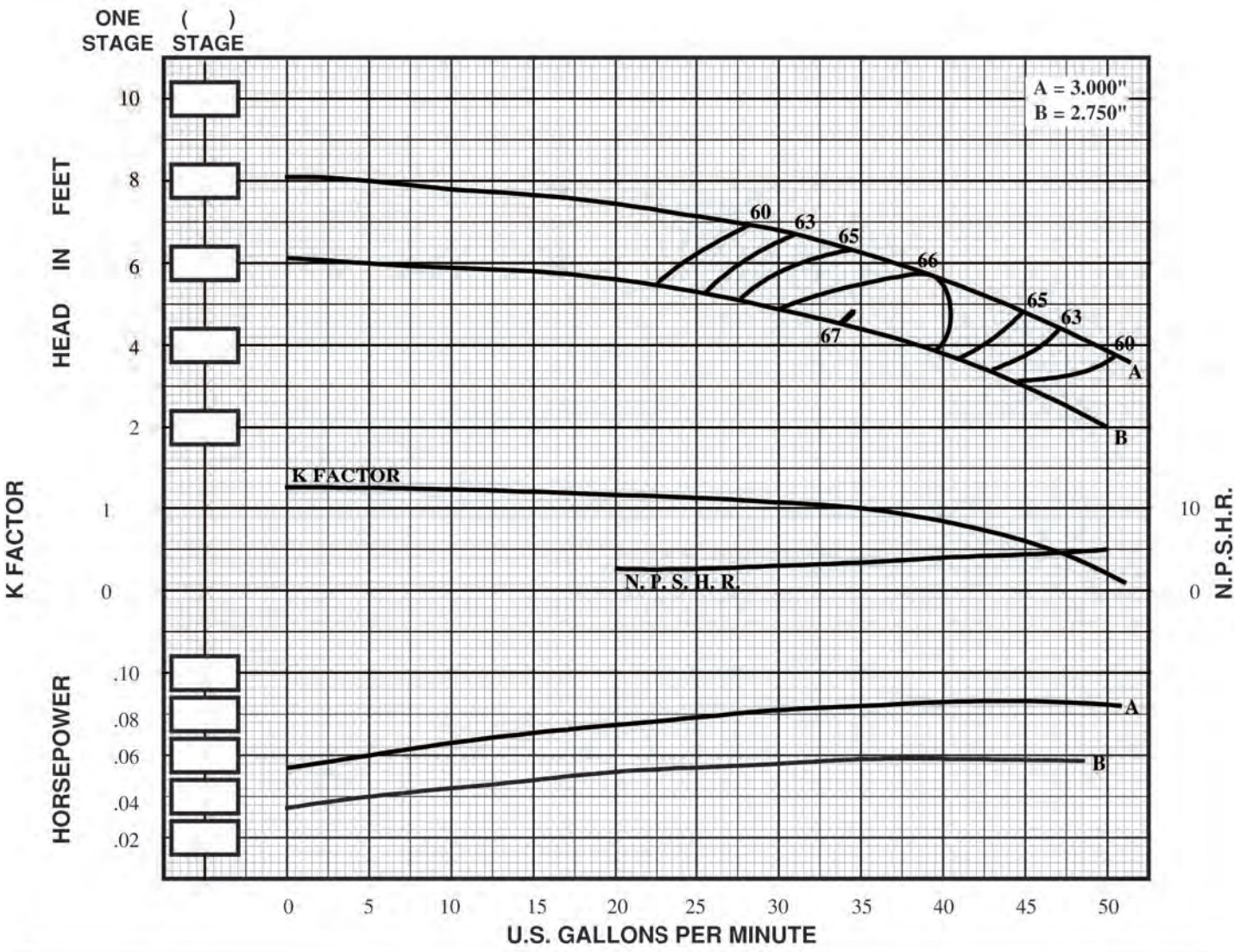


LINESHAFT TURBINE

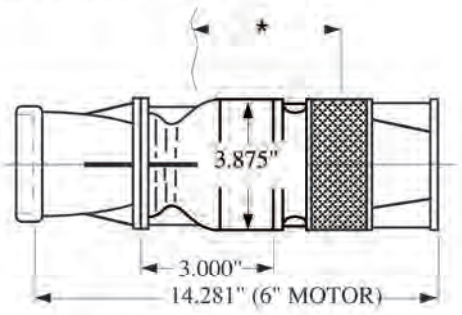
SIMFLO®

Section 202
Date 9/1/06

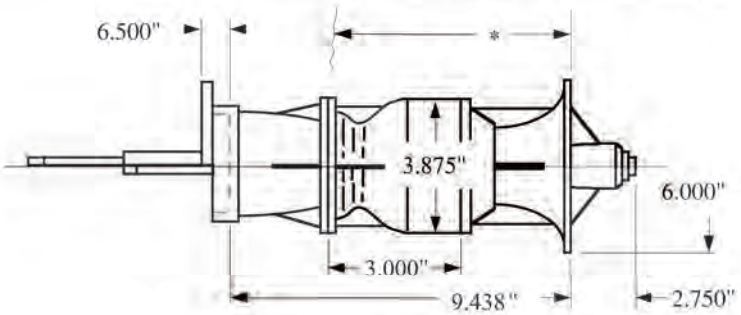
SM4H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM4H	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 0.75	STD. LATERAL = .16"	1	-6.5	IMP. - C.I.	-5
ONE STAGE WT. - LBS. = 20.0	DISCHARGE SIZES = 2.5"/ 3"	2	-5	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 5.65	SUCTION SIZES = 3"/ BELL	3	-3.5	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .25"	ONE STAGE WR^2 = .004	4	-2	BOWL - BRZ.	0
MIN. SUBMERGENCE* = 6"	=	5	-1	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	NOT RECOM.



SUBMERSIBLE TURBINE

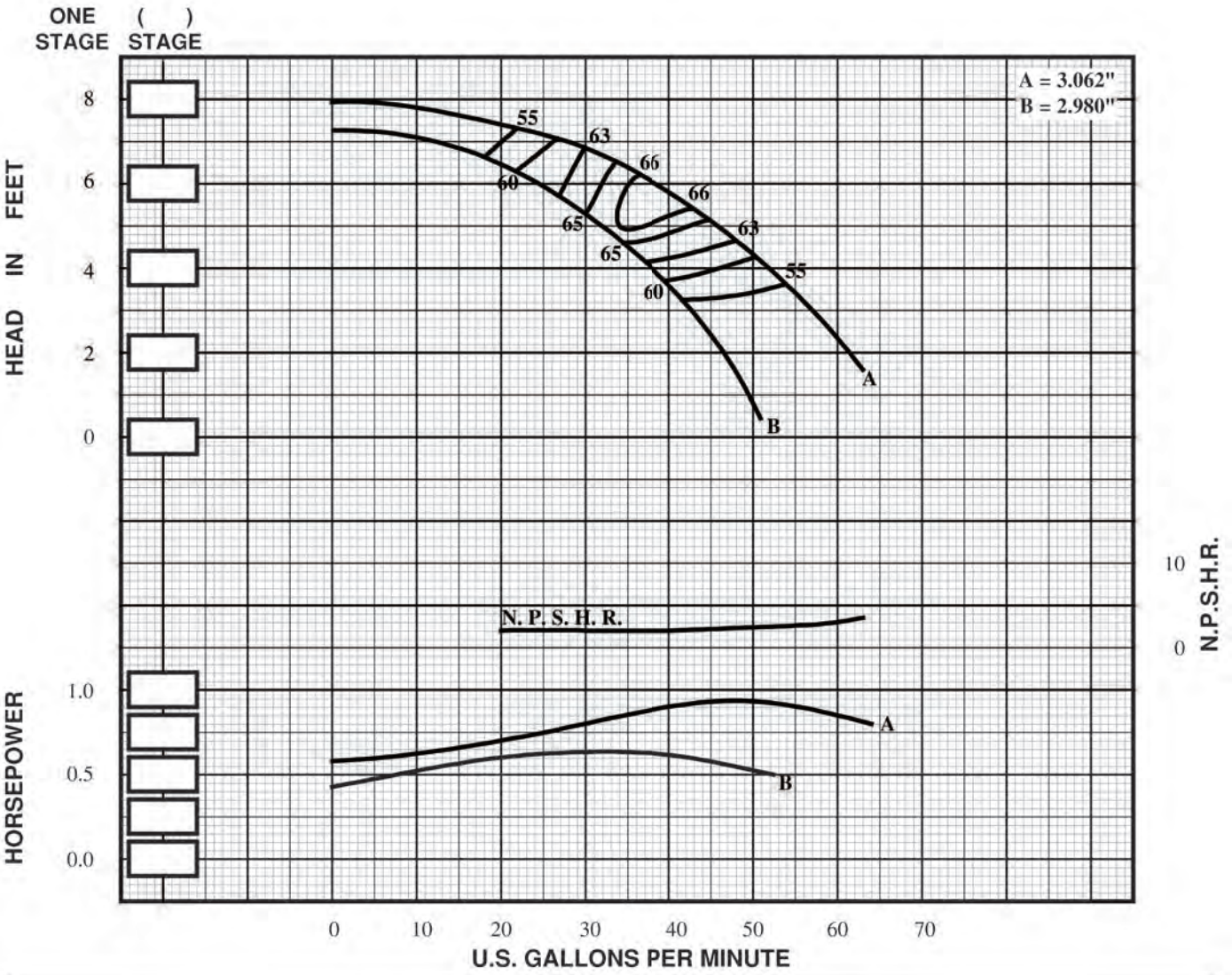


LINESHAFT TURBINE

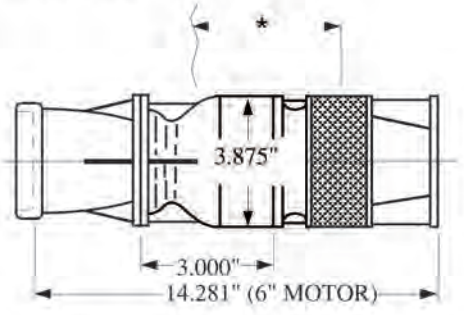
SIMFLO®

Section 202
Date 9/1/06

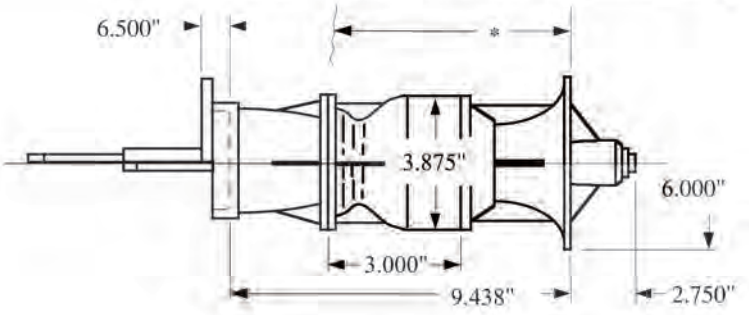
SM4HO
1770 RPM



IMPELLER TYPE = SEMI - OPEN	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM4HO	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 0.72	STD. LATERAL = .20"	1	-6.5	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 20.0	DISCHARGE SIZES = 2.5"/ 3"	2	-5.0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 5.62	SUCTION SIZES = 3"/ BELL	3	-3.5	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .25"	ONE STAGE WR^2 = .003	4	-2.0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 6"	K FACTOR = 1.50	5	-1.0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

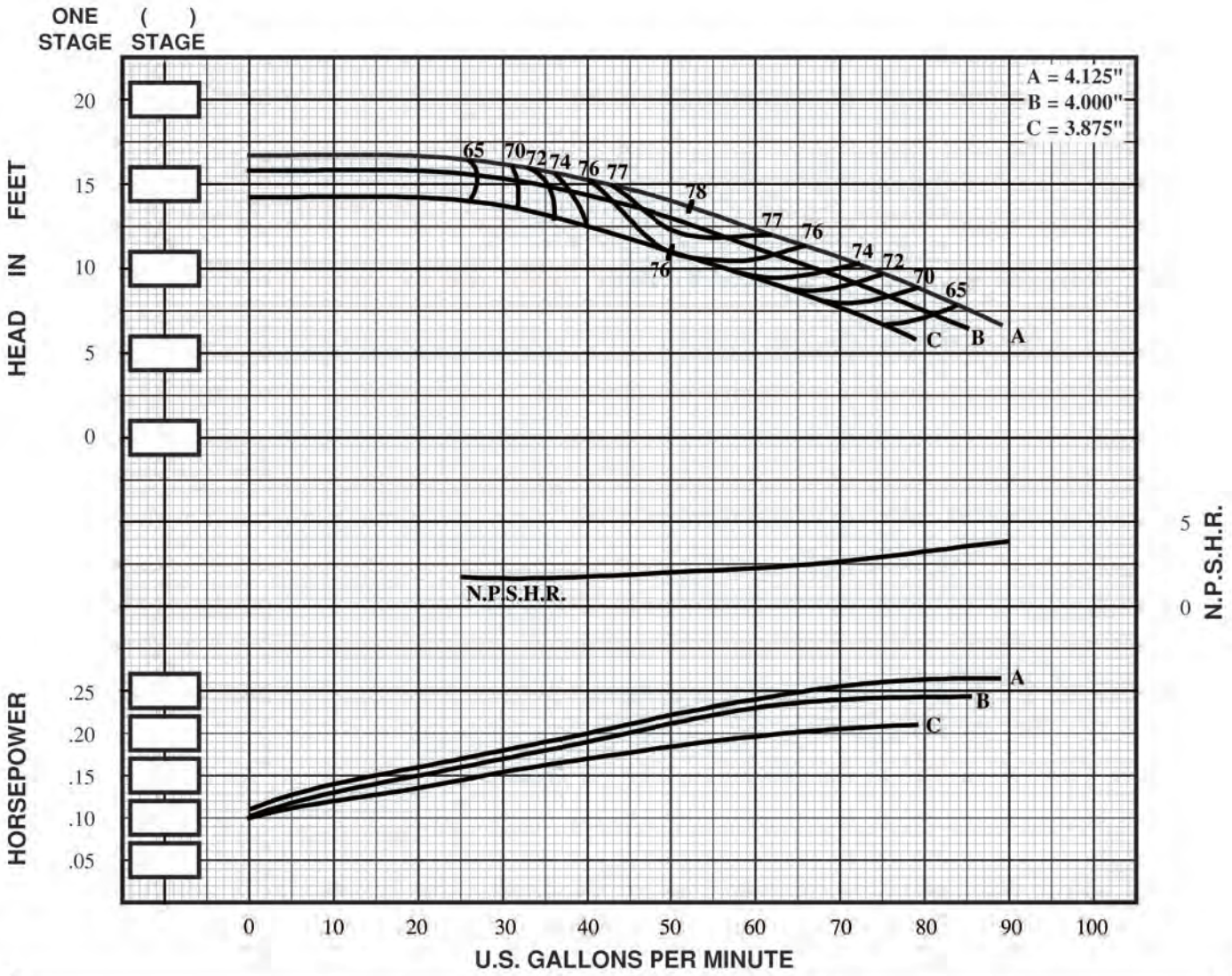


LINESHAFT TURBINE

SIMFLO®

Section 202
Date 9/1/06

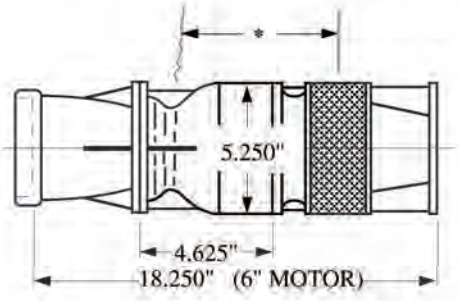
SP5XL
1770 RPM



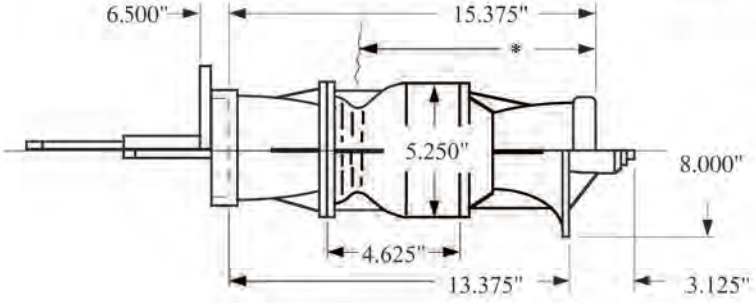
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP5XL	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 1.70	STD. LATERAL = .30"	1	-4	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 50.0	DISCHARGE SIZES = 3"/ 4"	2	-3	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 14.0	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .38"	ONE STAGE WR^2 = .015	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE = 10"	K FACTOR (max) = 2.30	5	0	BOWL - NI-RI	Δ
				BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

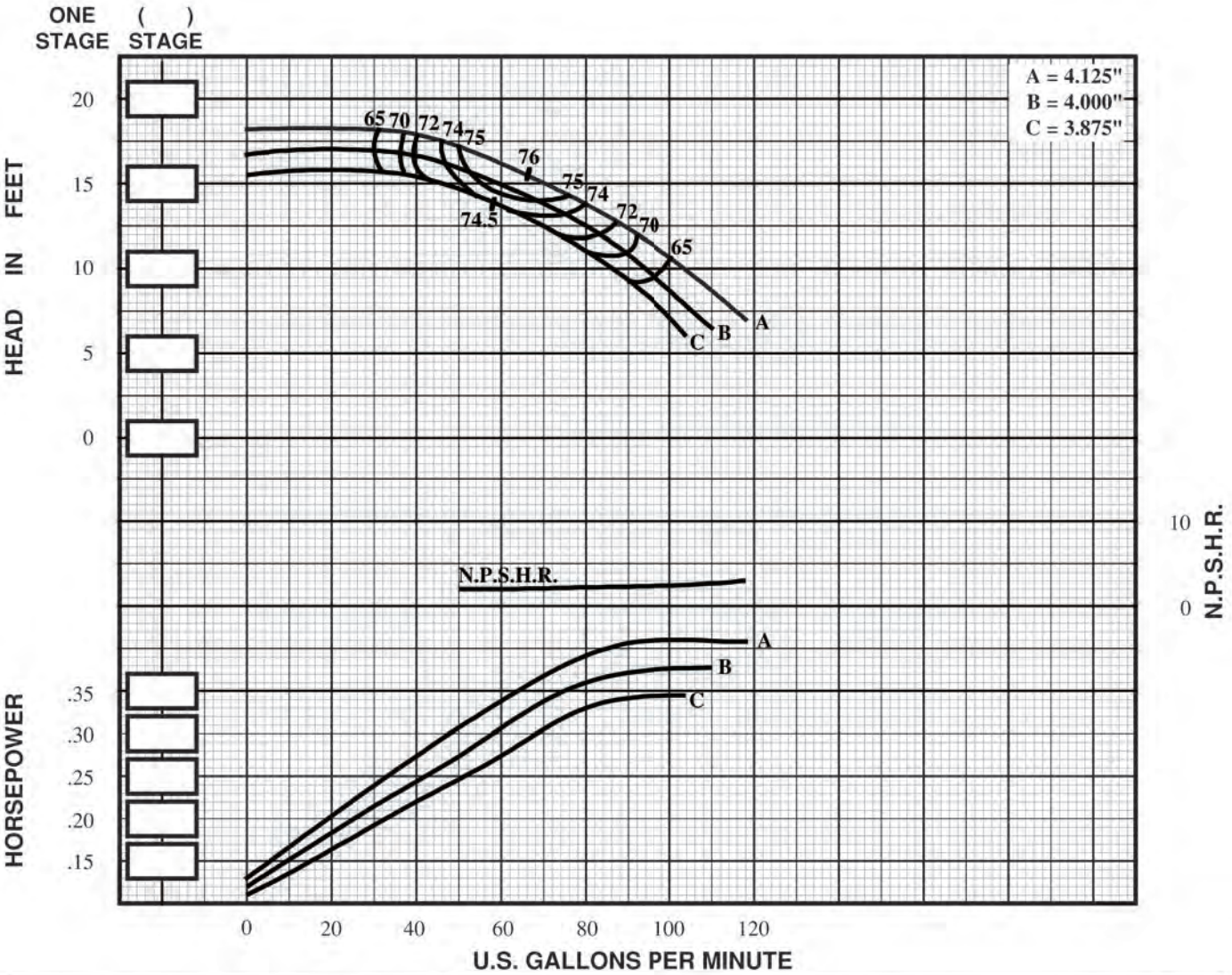


LINESHAFT TURBINE

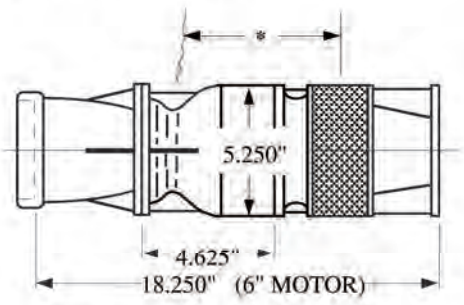
SIMFLO®

Section 202
Date 9/1/06

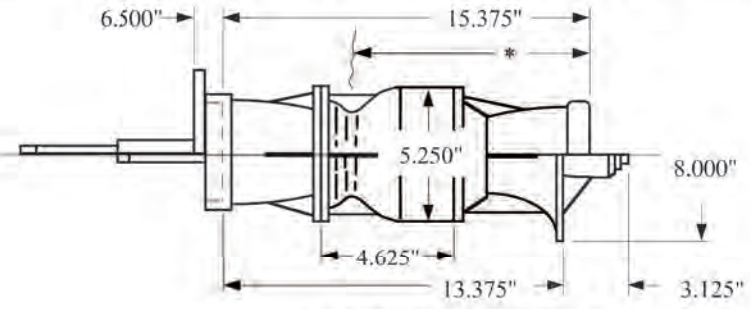
SP5L
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP5L	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 1.75	STD. LATERAL = .30"	1	-4	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 50.0	DISCHARGE SIZES = 3"/ 4"	2	-3	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 14.0	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .38"	ONE STAGE WR^2 = .015	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE = 10"	K FACTOR (max) = 2.40	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

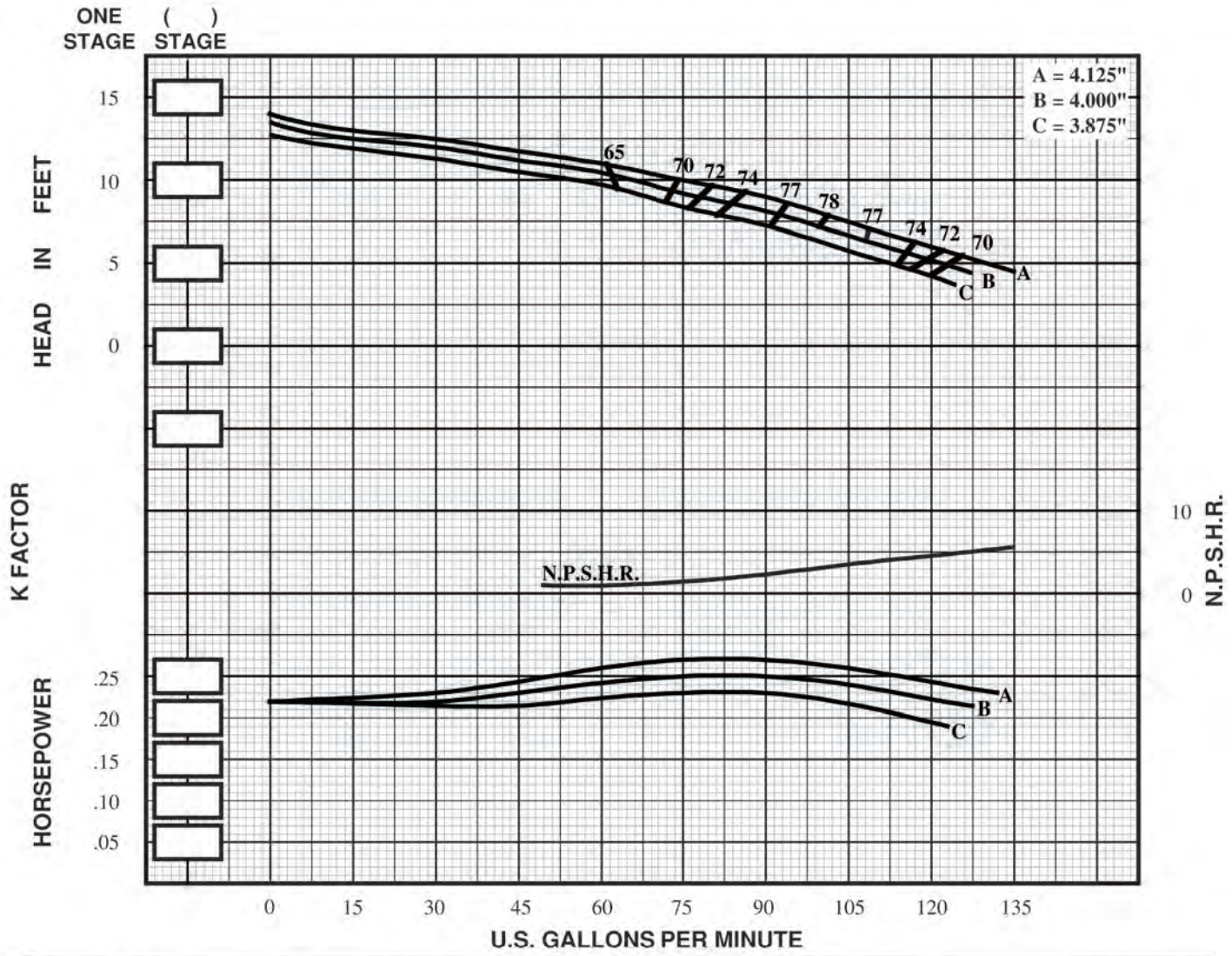


LINESHAFT TURBINE

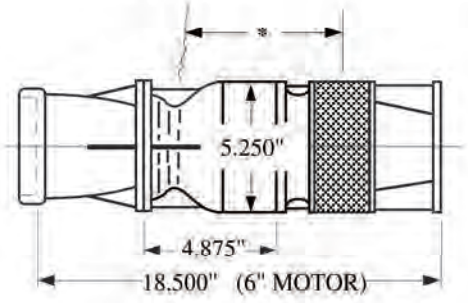
SIMFLO®

Section 202
Date 9/1/06

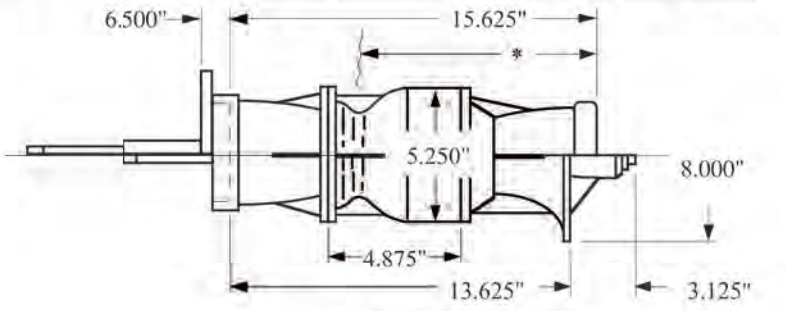
SM5M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM5M	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 1.85	STD. LATERAL = .55"	1	-4	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 50.0	DISCHARGE SIZES = 3"/4"	2	-3	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 14.0	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .63"	ONE STAGE WR^2 = .015	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE = 10"	K FACTOR (max) = 2.50	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

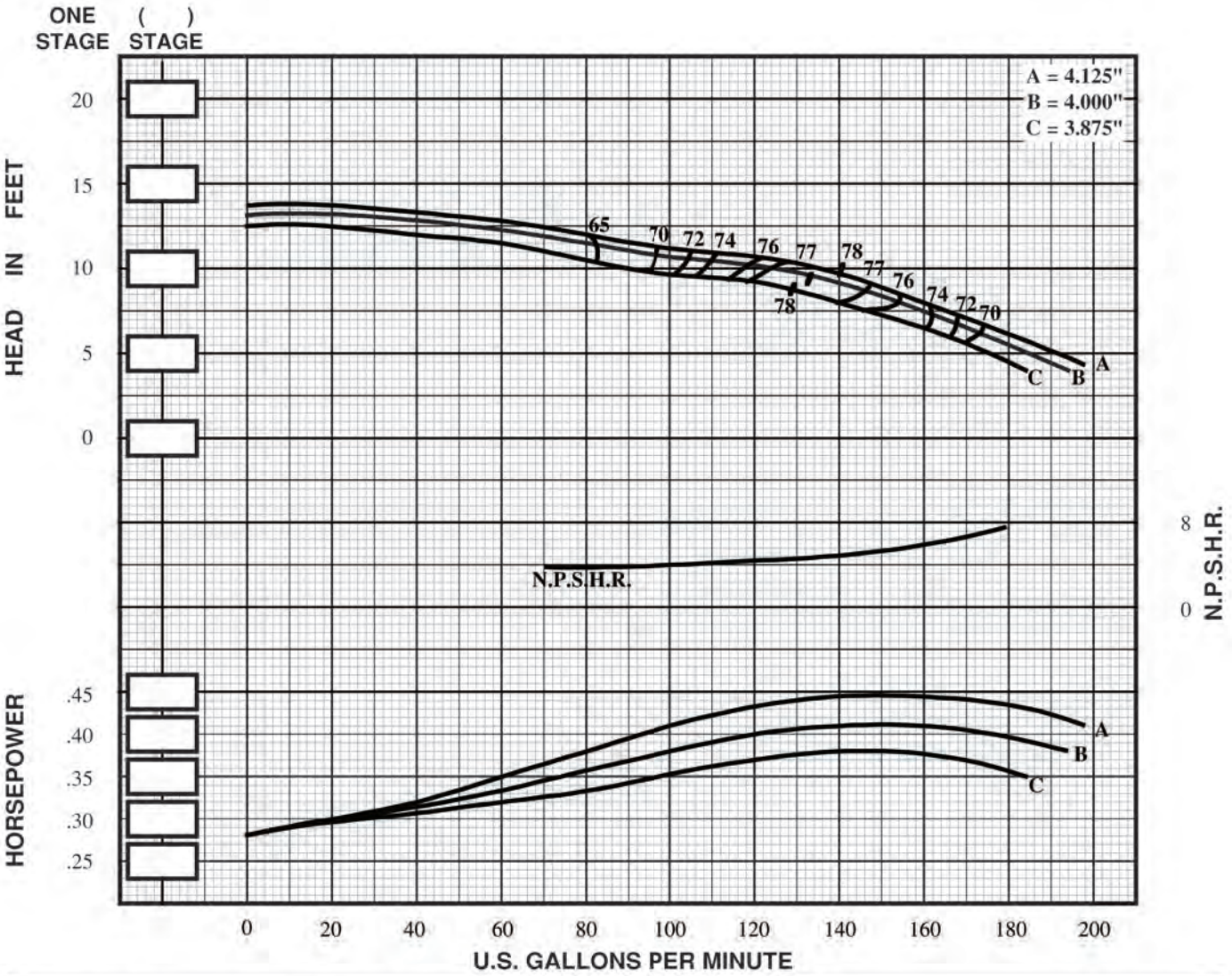


LINESHAFT TURBINE

SIMFLO®

Section 202
Date 9/1/06

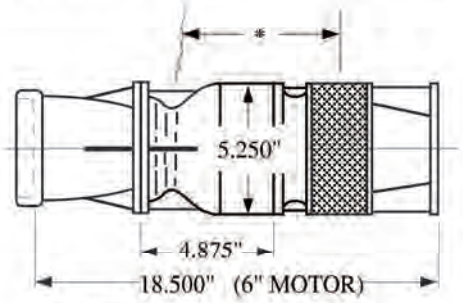
SM5H
1770 RPM



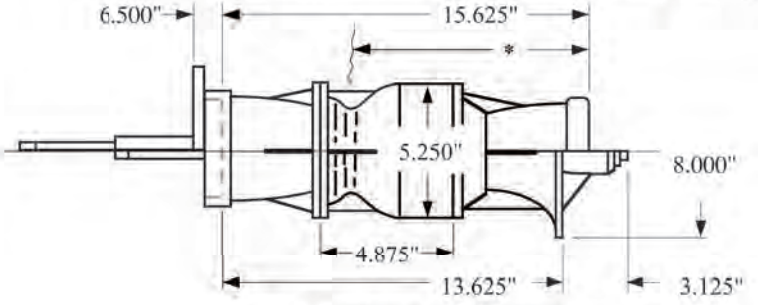
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM5H	MAX. SHAFT DIA. = .875"	1	-4	IMP. - C.I.	Δ
IMPELLER WT. - LBS. = 1.95	STD. LATERAL = .55"	2	-3	IMP. - NI-RI	Δ
ONE STAGE WT. - LBS. = 50.0	DISCHARGE SIZES = 3"/ 4"	3	-2	IMP. - S.S.	Δ
ADD'L STAGE WT. - LBS. = 14.0	SUCTION SIZES = 4"/ BELL	4	-1	BOWL - BRZ.	Δ
MAX. SPHERE SIZE = .50"	ONE STAGE WR^2 = .015	5	0	BOWL - NI-RI	Δ
MIN. SUBMERGENCE = 10"	K FACTOR (max) = 2.50			BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE



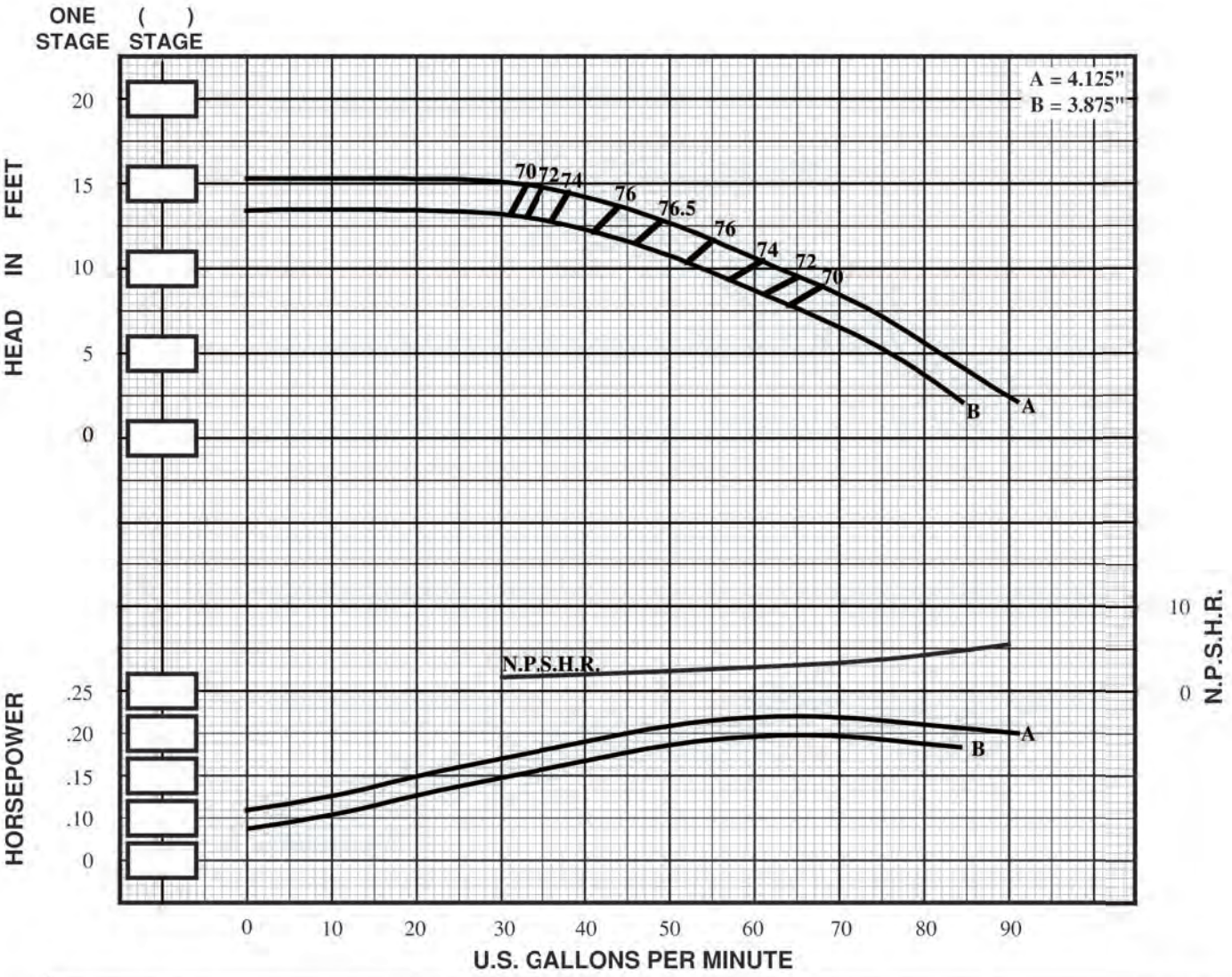
LINESHAFT TURBINE

SIMFLO®

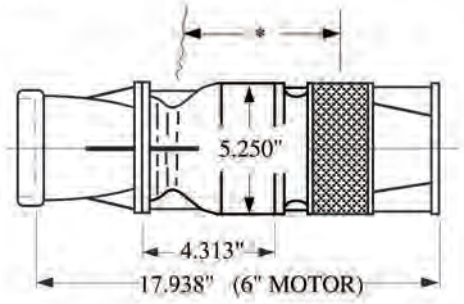
Section 202
Date 9/1/06

SP5L0

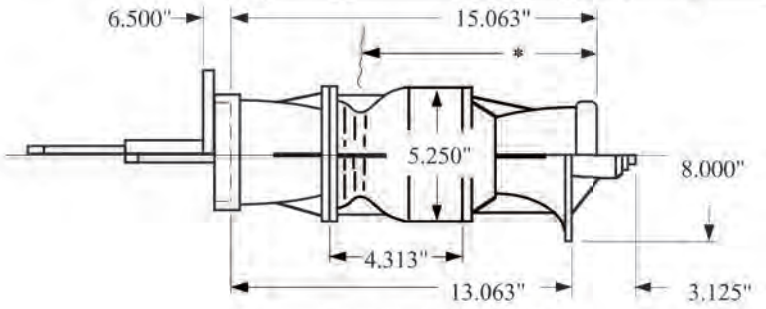
1770 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = .875"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP5LO	MAX. SHAFT DIA. = .875"				
IMPELLER WT. - LBS. = 1.40	STD. LATERAL = .16"	1	-6	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 50.0	DISCHARGE SIZES = 3" / 4"	2	-4	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 14.0	SUCTION SIZES = 4"/ BELL	3	-3	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .31"	ONE STAGE WR^2 = .014	4	-1.5	BOWL - BRZ.	Δ
MIN. SUBMERGENCE = 10"	K FACTOR (max) = 4.70	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

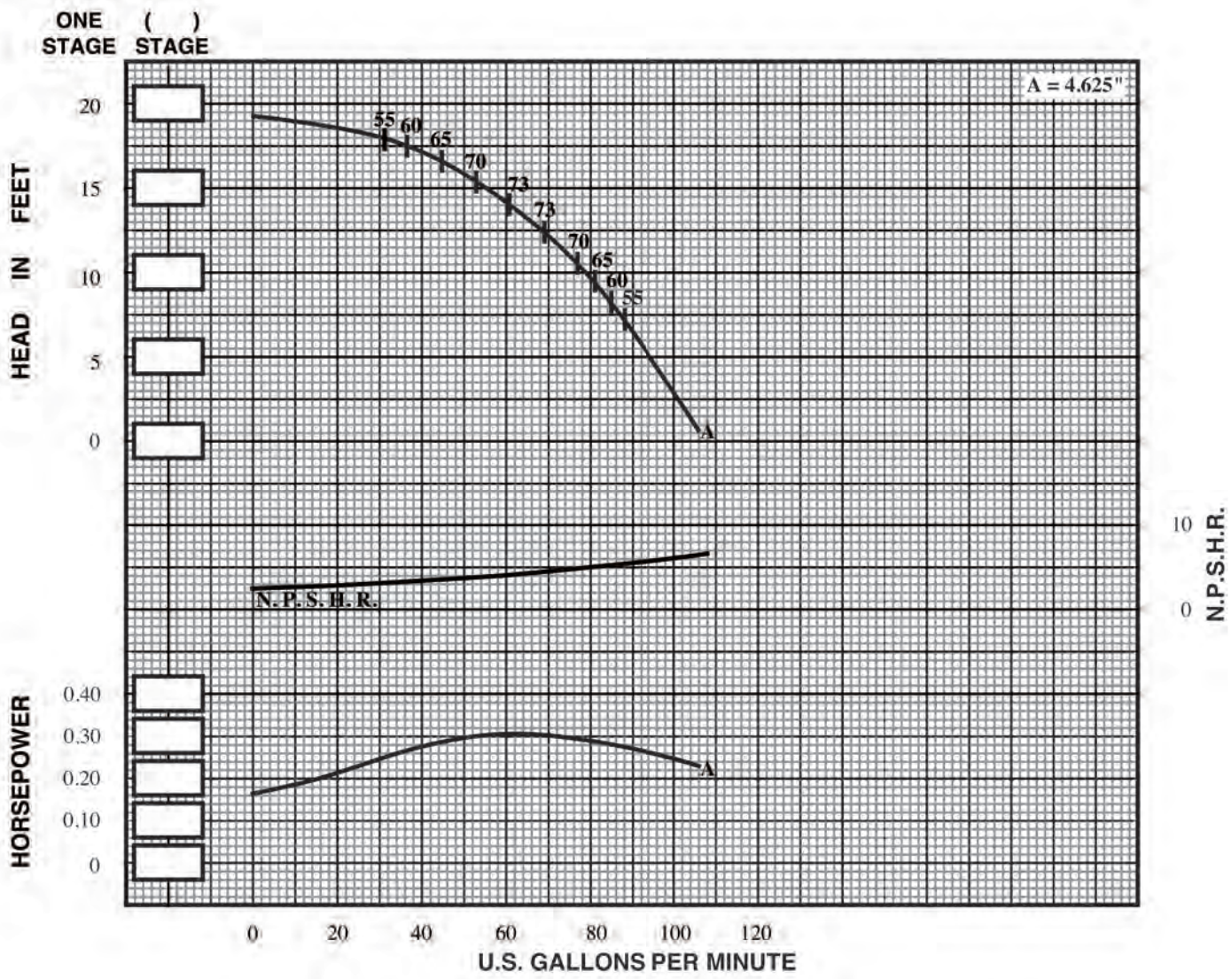


LINESHAFT TURBINE

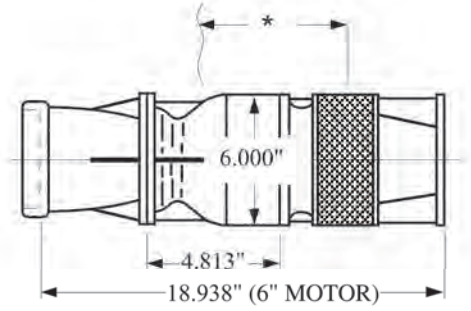
SIMFLO®

Section 202
Date 3/30/18

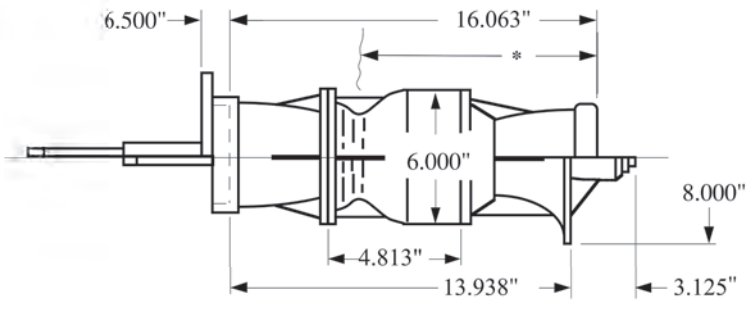
SP6LL
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP6LL	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 2.60	STD. LATERAL = .66"	1	-5	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 55.0	DISCHARGE SIZES = 3" / 4"	2	-4	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 18.5	SUCTION SIZES = 4" / BELL	3	-3	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .38"	ONE STAGE WR^2 = .037	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX = 2.70	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.2			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

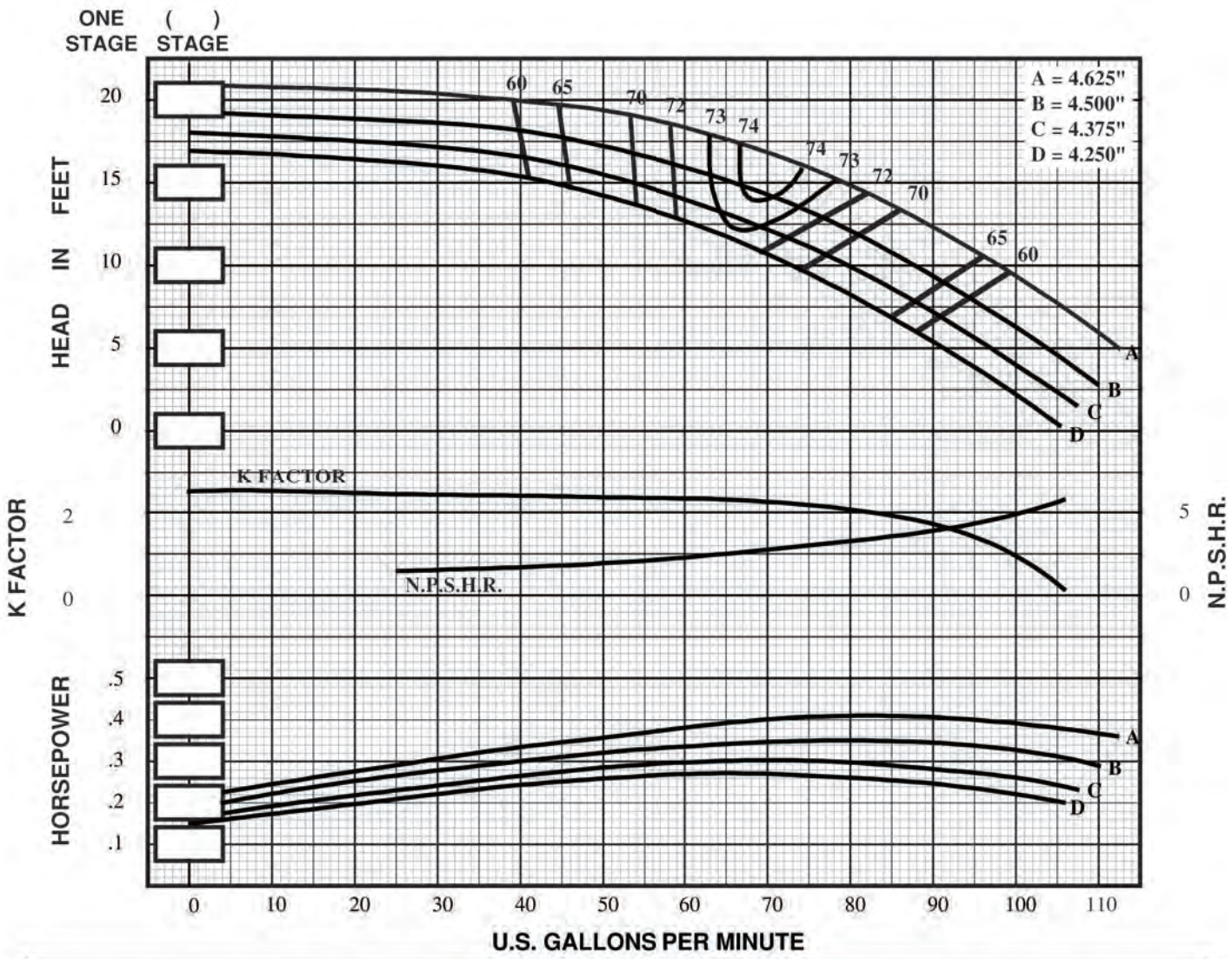


LINESHAFT TURBINE

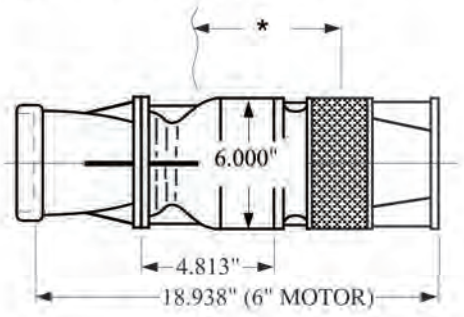
SIMFLO®

Section 202
Date 9/1/06

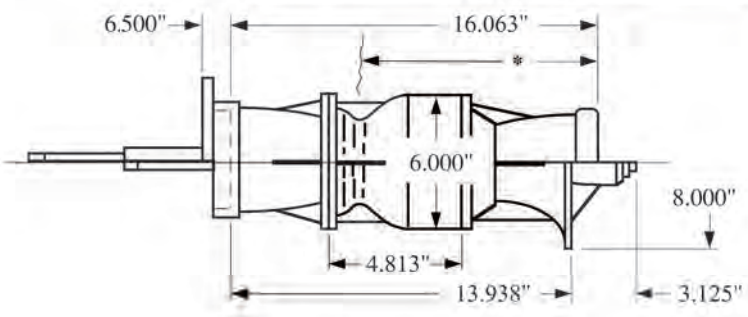
SP6L
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP6L	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 2.60	STD. LATERAL = .54"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 55.0	DISCHARGE SIZES = 3"/ 4"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 18.5	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .38"	ONE STAGE WR^2 = .033	4	-1	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 11"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.2			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

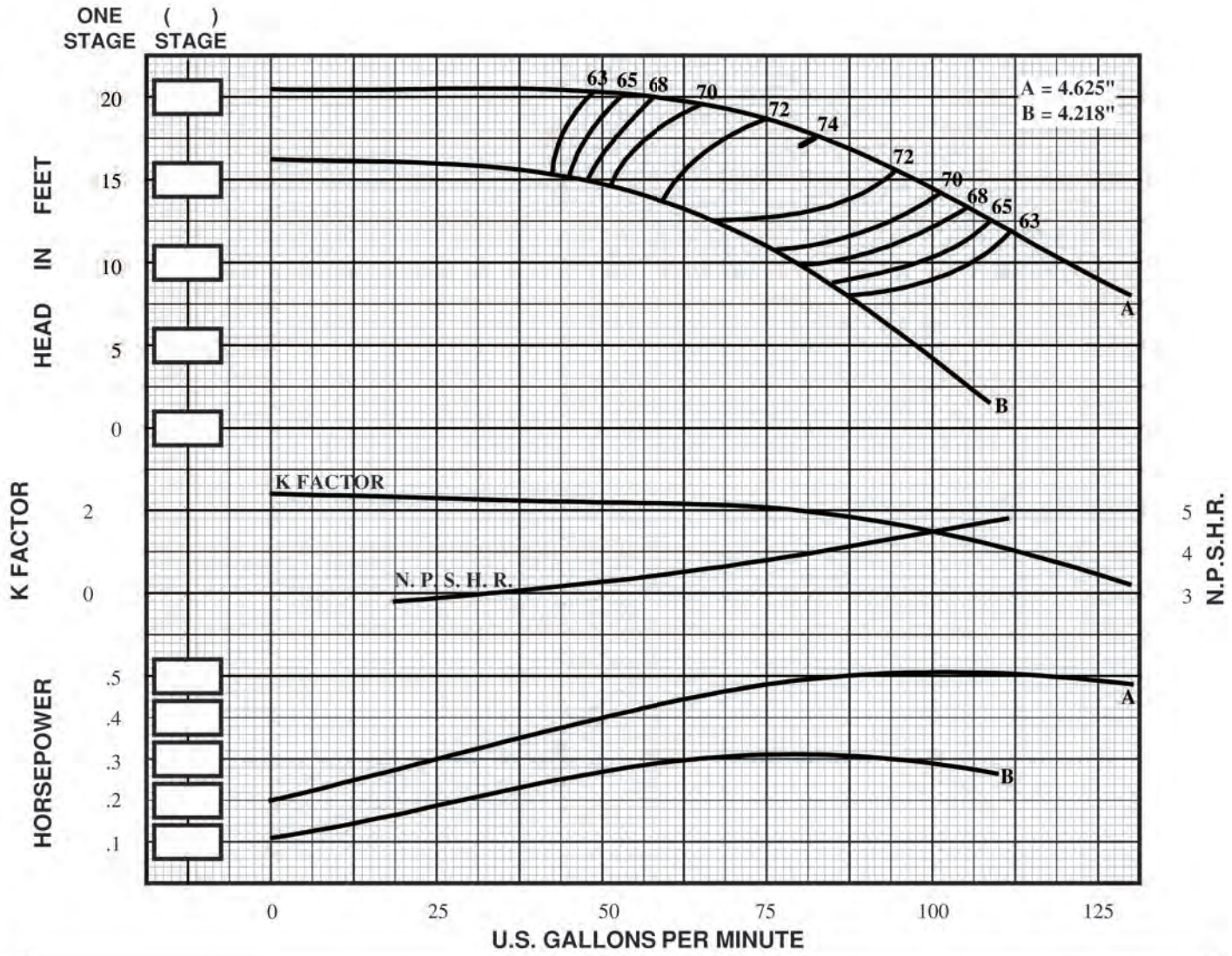


LINESHAFT TURBINE

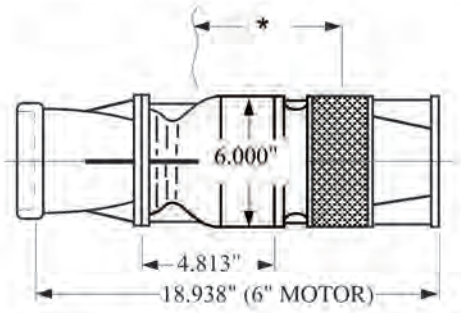
SIMFLO®

Section 202
Date 9/1/06

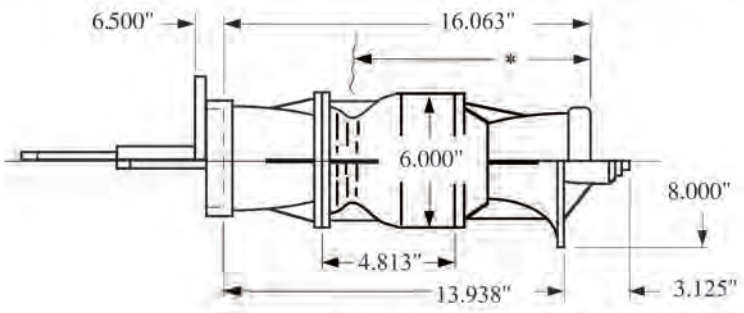
SP6M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP6M	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 2.95	STD. LATERAL = .41"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 60.0	DISCHARGE SIZES = 3"/ 4"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 20.0	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .31"	ONE STAGE WR^2 = .037	4	-1	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 11"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.2			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

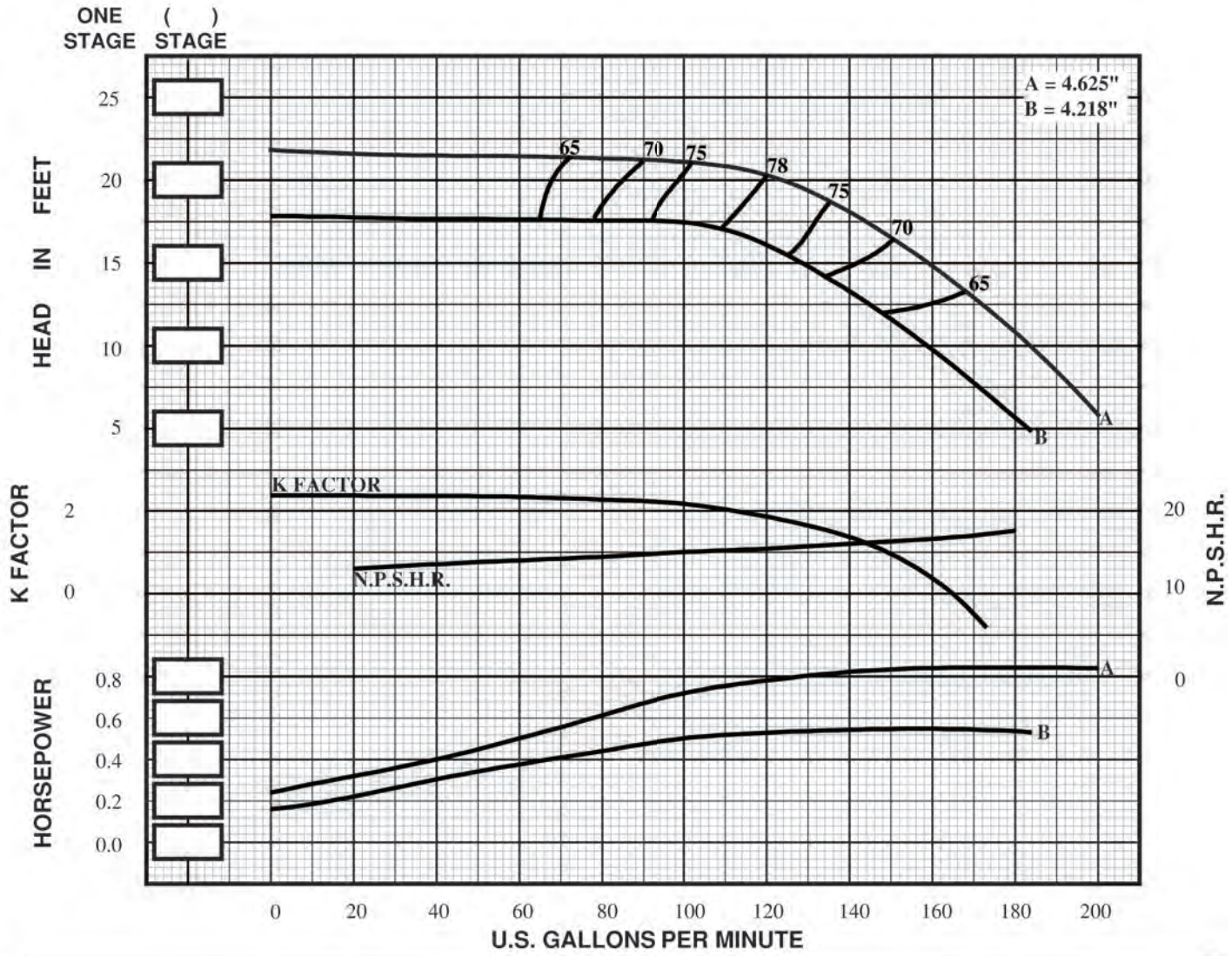


LINESHAFT TURBINE

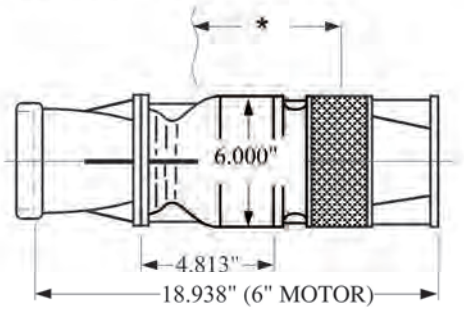
SIMFLO®

Section 202
Date 9/1/06

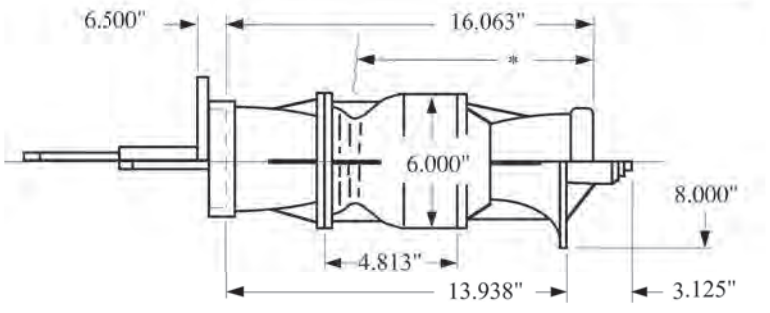
SP6H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP6H	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 2.75	STD. LATERAL = .28"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 60.0	DISCHARGE SIZES = 3"/ 4"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 20.0	SUCTION SIZES = 4"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .38"	ONE STAGE WR^2 = .034	4	-1	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 11"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.2			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

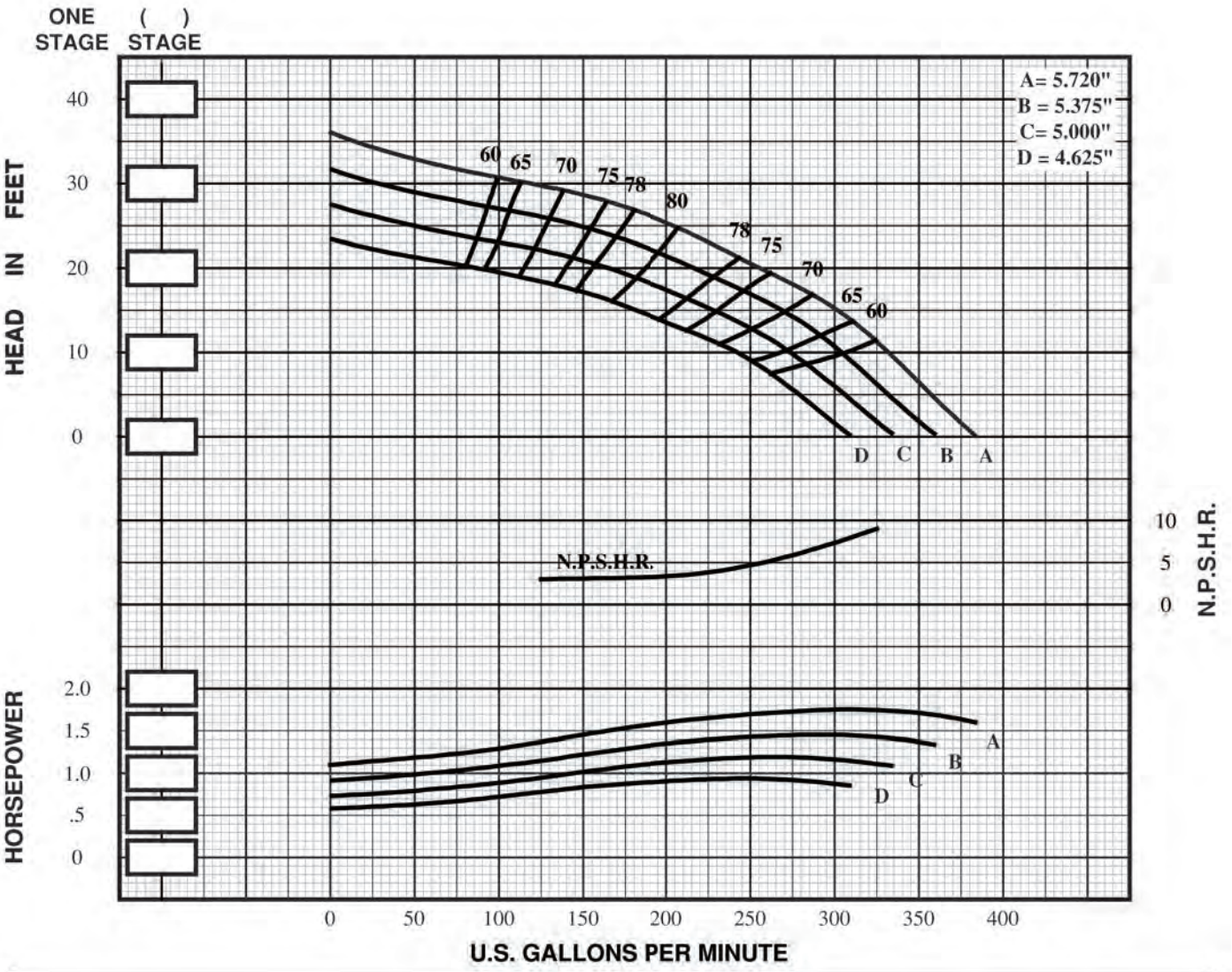


LINESHAFT TURBINE

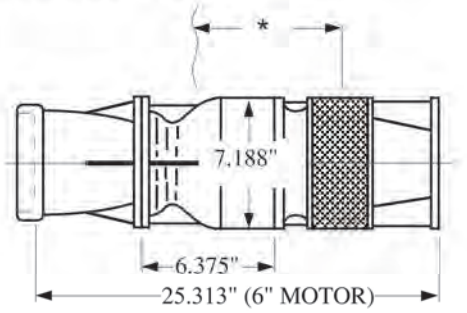
SIMFLO®

Section 202
Date 9/1/06

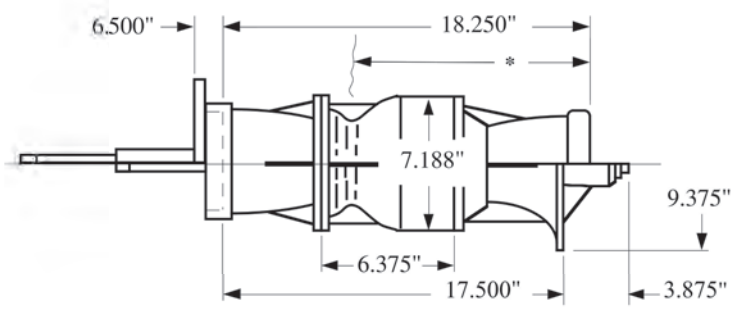
SP7L
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP7L	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 4.05	STD. LATERAL = .59"	1	-4	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 34.0	SUCTION SIZES = 5"/ BELL	3	0	IMP. - S.S.	-5
MAX. SPHERE SIZE = .53"	ONE STAGE WR^2 = .073	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX = 4.20	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

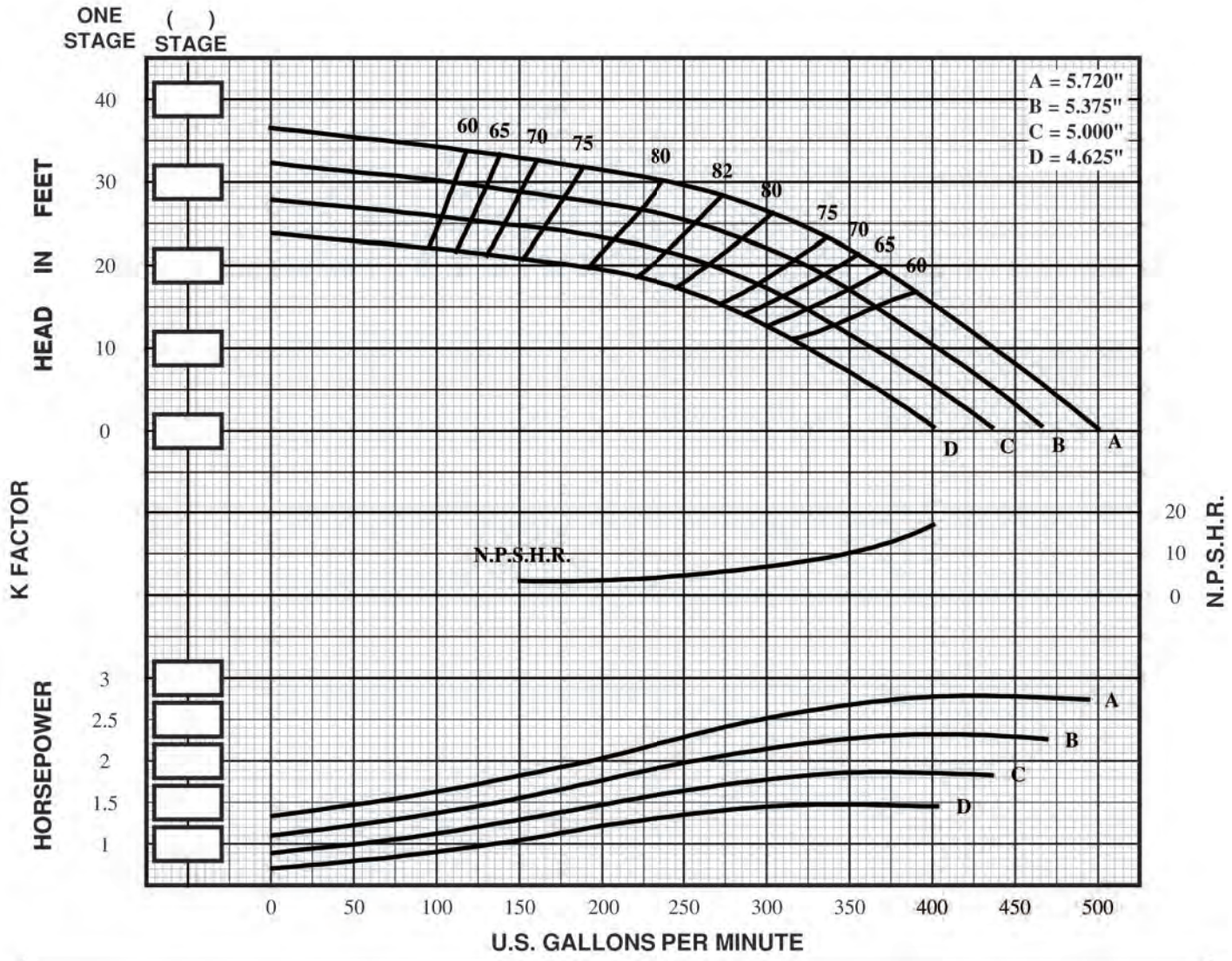


LINESHAFT TURBINE

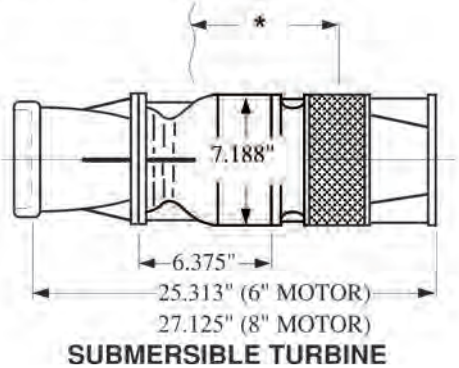
SIMFLO®

Section 202
Date 9/1/06

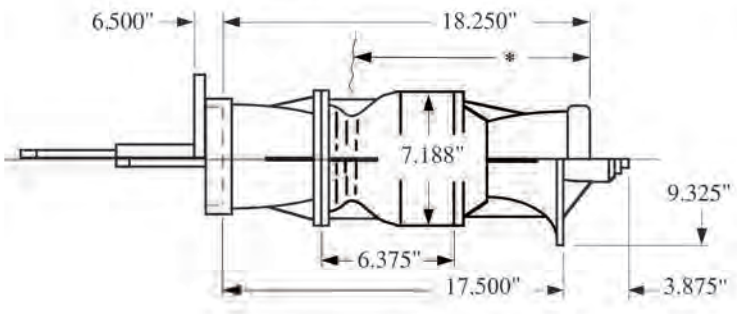
SP7H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP7H	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 4.00	STD. LATERAL = .59"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-1	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 34.0	SUCTION SIZES = 5"/ BELL	3	0	IMP. - S.S.	-5
MAX. SPHERE SIZE = .53"	ONE STAGE WR^2 = .072	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX = 4.30	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

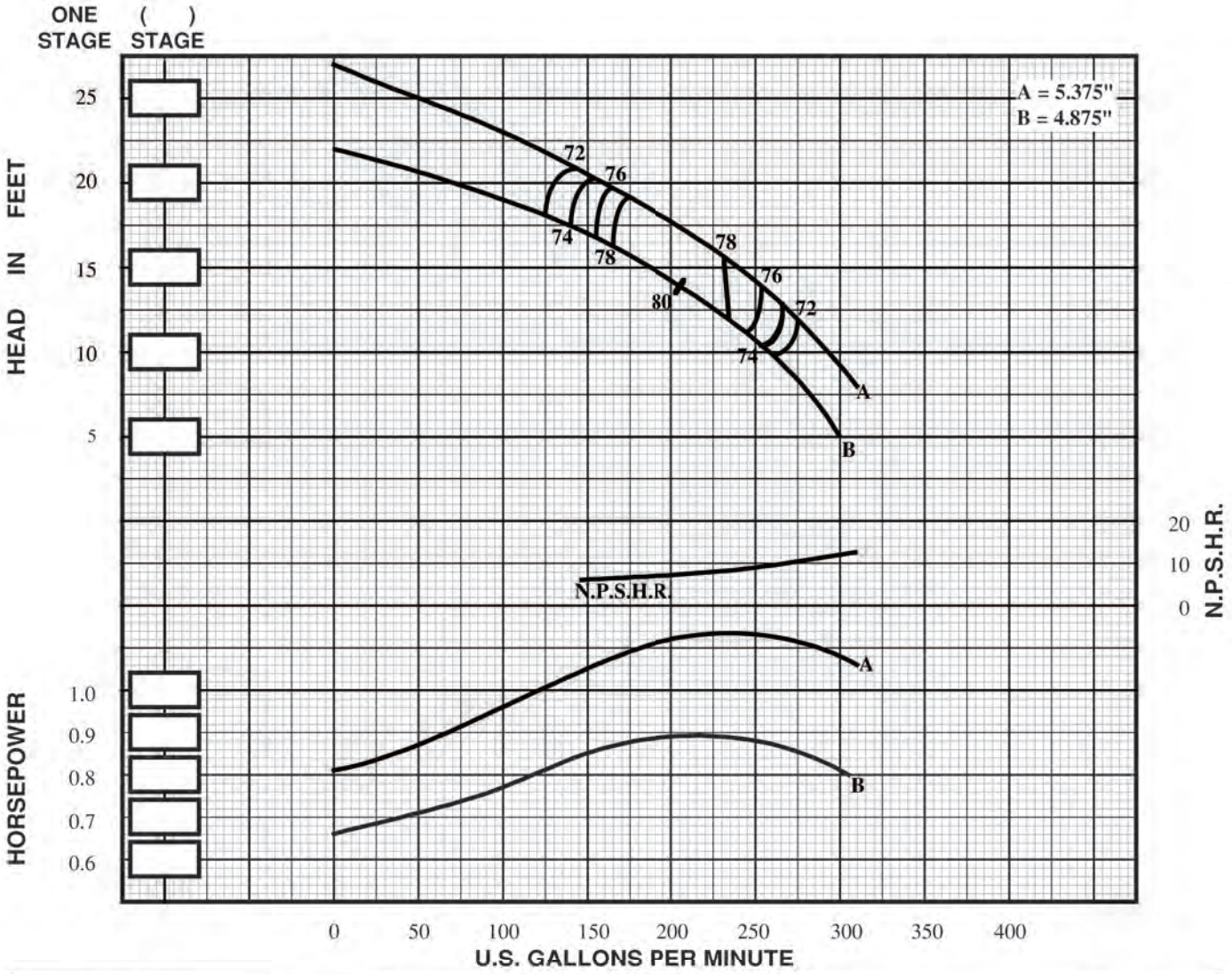


LINESHAFT TURBINE

SIMFLO®

Section 202
Date 9/1/06

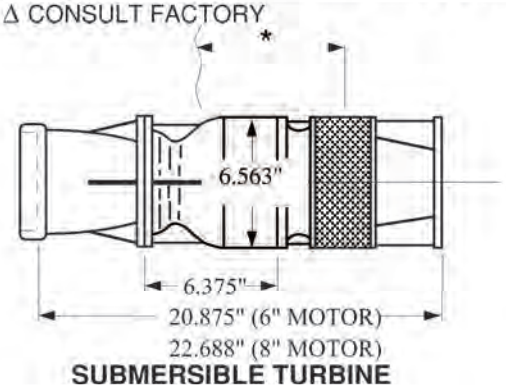
SK7L
1770 RPM



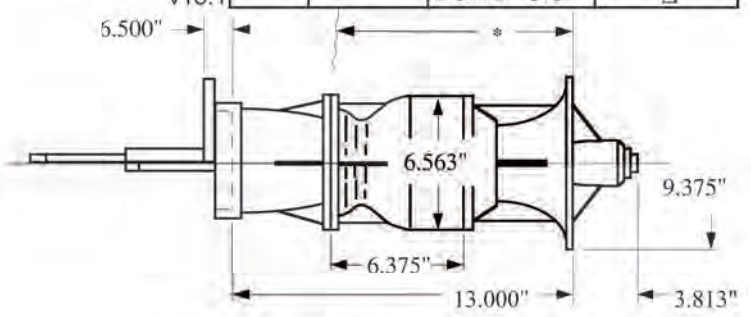
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK7L	MAX. SHAFT DIA. = 1.000"	1	-3.5	IMP. - C.I.	Δ
IMPELLER WT. - LBS. = 3.35	STD. LATERAL = .94"	2	-2.0	IMP. - NI-RI	Δ
ONE STAGE WT. - LBS. = 61.0	DISCHARGE SIZES = 4"/ 5"	3	-1.0	IMP. - S.S.	Δ
ADD'L STAGE WT. - LBS. = 22.0	SUCTION SIZES = BELL	4	-0.5	BOWL - BRZ.	Δ
MAX. SPHERE SIZE = .44"	ONE STAGE WR^2 = .051	5	0.0	BOWL - NI-RI	Δ
MIN. SUBMERGENCE* = 20"	K FACTOR = 4.49			BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

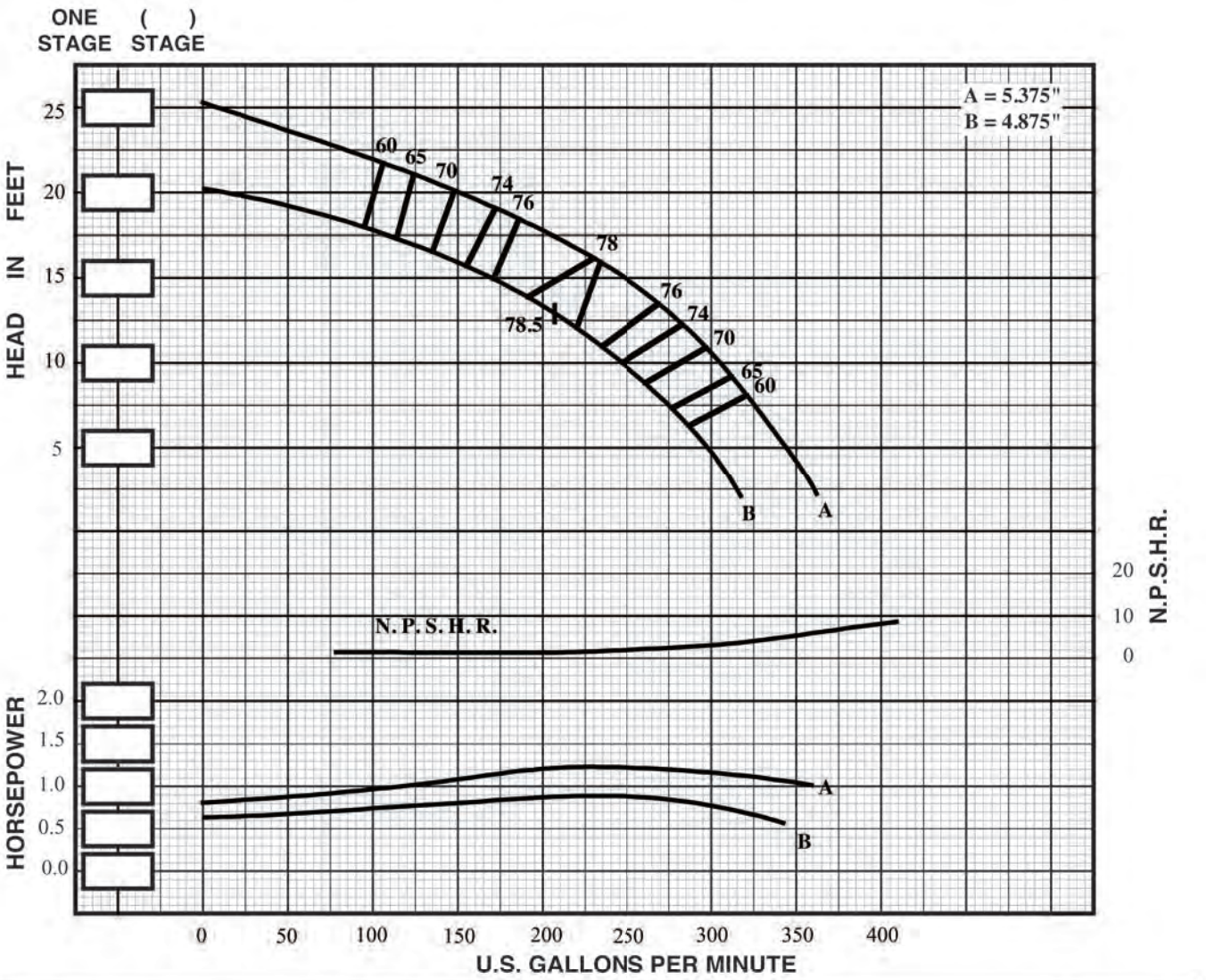


LINESHAFT TURBINE

SIMFLO®

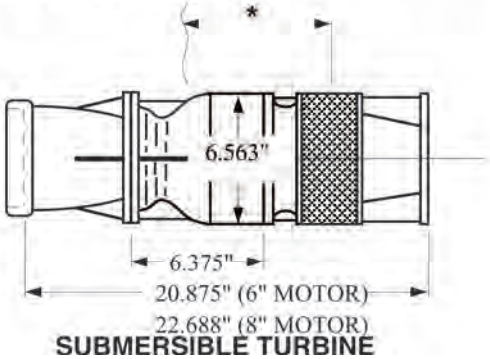
Section 202
Date 1/1/12

SK7M
1770 RPM

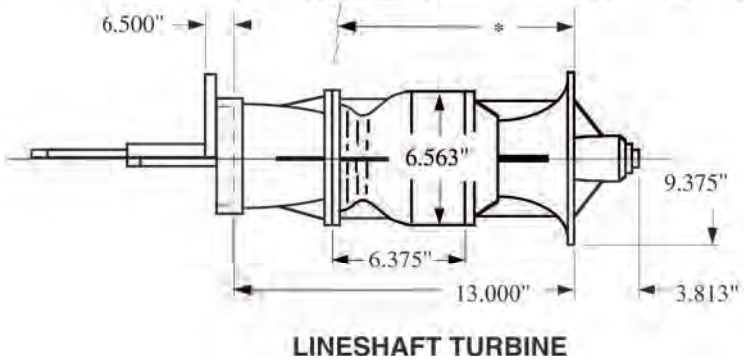


IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK7M	MAX. SHAFT DIA. = 1.000"	1	-3.5	IMP. - C.I.	Δ
IMPELLER WT. - LBS. = 2.90	STD. LATERAL = .75"	2	-2.0	IMP. - NI-RI	Δ
ONE STAGE WT. - LBS. = 59.0	DISCHARGE SIZES = 4"/ 5"	3	-1.0	IMP. - S.S.	Δ
ADD'L STAGE WT. - LBS. = 20.0	SUCTION SIZES = BELL	4	-0.5	BOWL - BRZ.	Δ
MAX. SPHERE SIZE = .56"	ONE STAGE WR^2 = .046	5	0.0	BOWL - NI-RI	Δ
MIN. SUBMERGENCE* = 20"	K FACTOR = 4.29			BOWL - S.S.	Δ

Δ CONSULT FACTORY v18.1



SUBMERSIBLE TURBINE

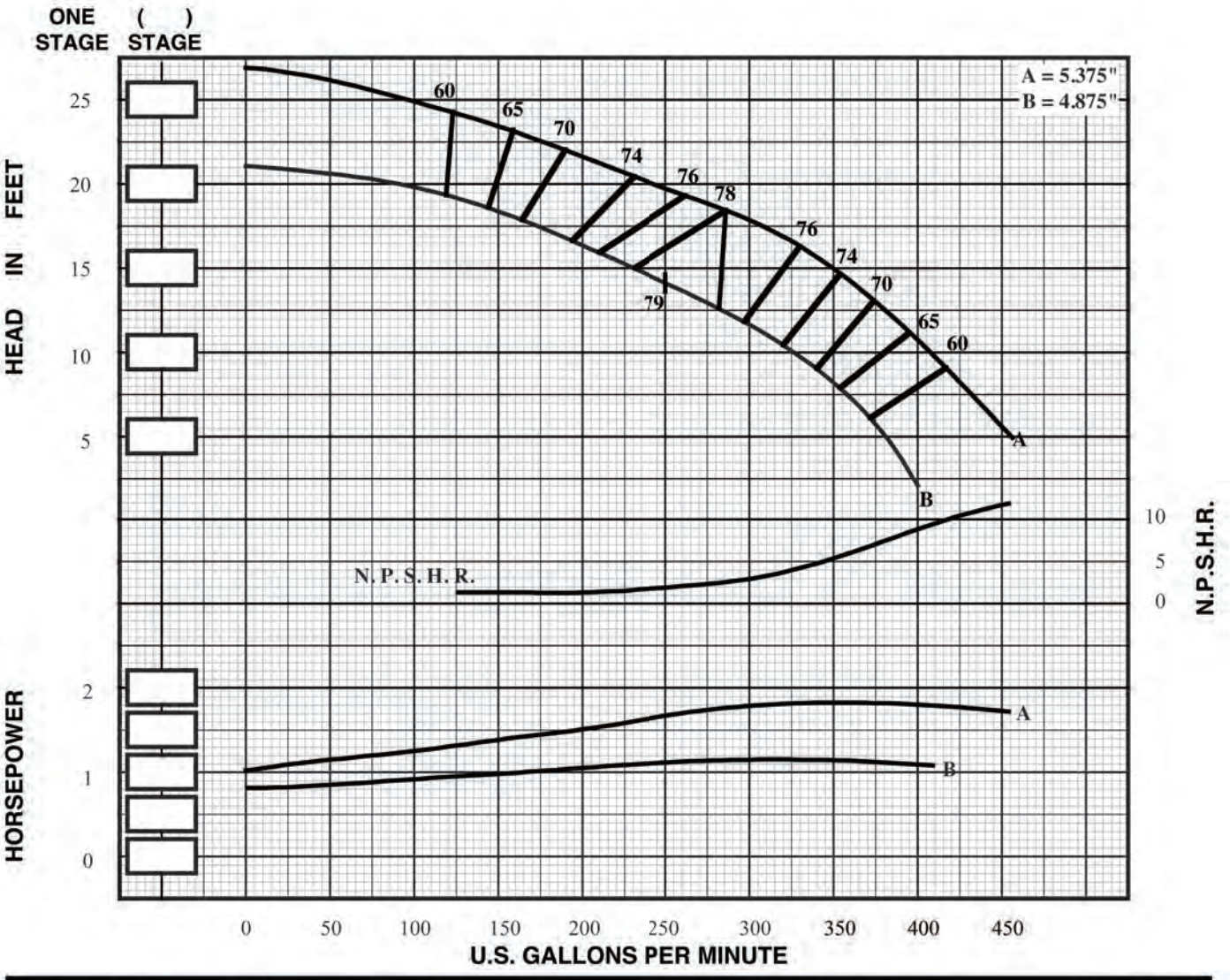


LINESHAFT TURBINE

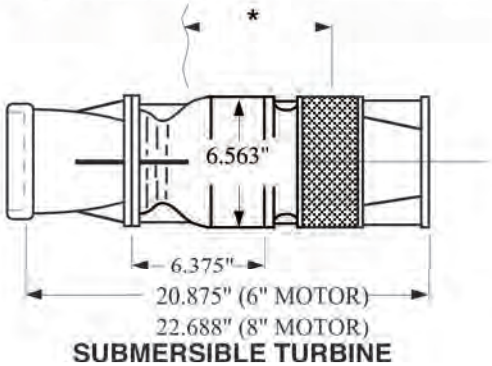
SIMFLO®

Section 202
Date 1/1/12

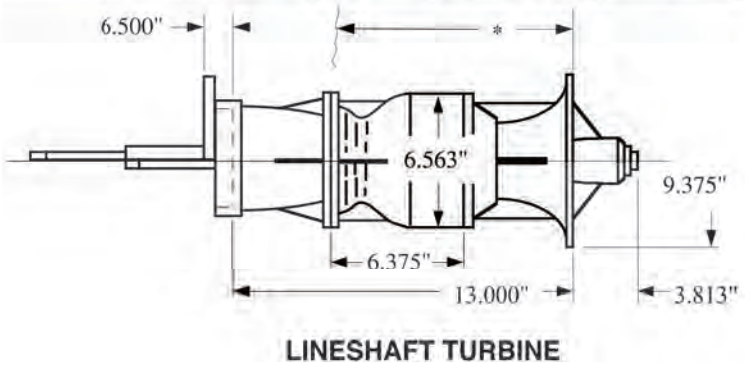
SK7H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.000"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK7H	MAX. SHAFT DIA. = 1.000"				
IMPELLER WT. - LBS. = 3.25	STD. LATERAL = .75"	1	-3.5	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 60.0	DISCHARGE SIZES = 4"/ 5"	2	-2.0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 21.0	SUCTION SIZES = BELL	3	-1.0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .56"	ONE STAGE WR^2 = .050	4	-0.5	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 20"	K FACTOR = 4.27	5	0.0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

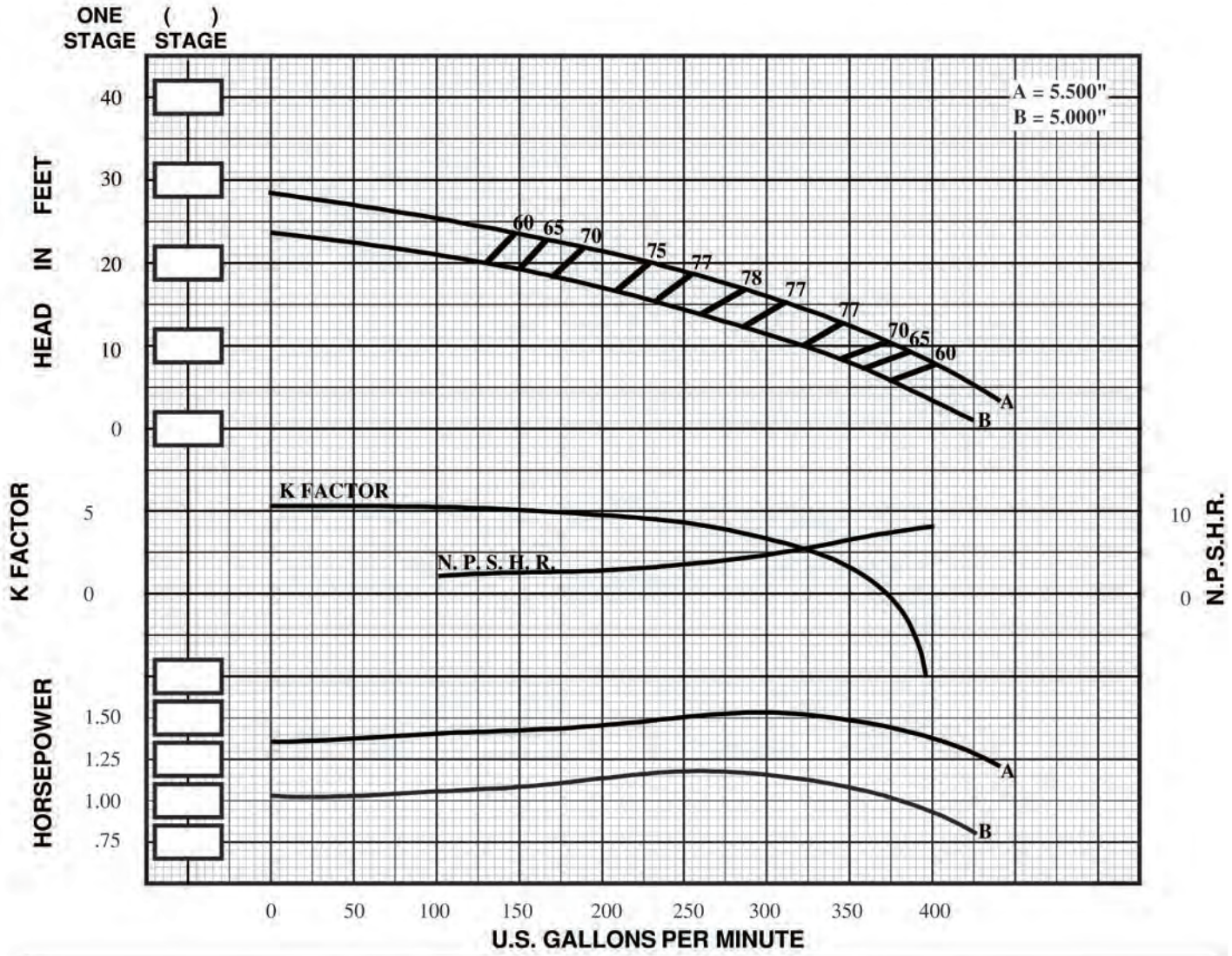


LINESHAFT TURBINE

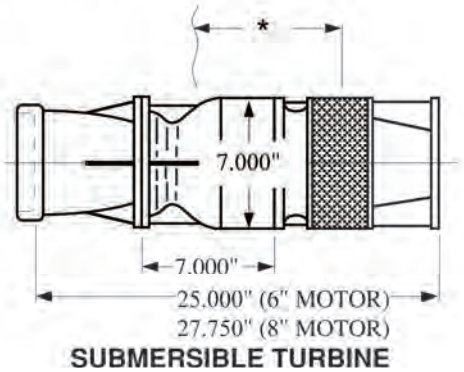
SIMFLO®

Section 202
Date 9/1/06

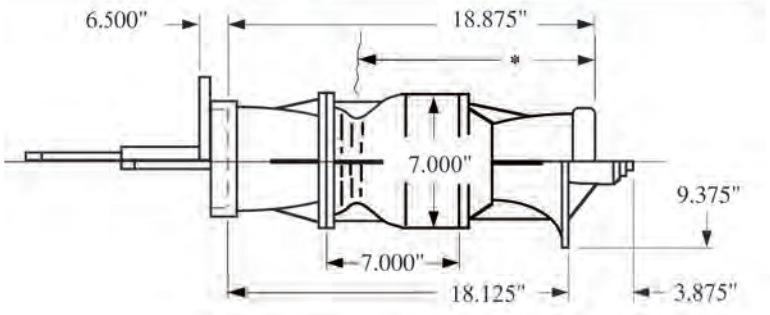
SM7M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM7M	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 6.2	STD. LATERAL = .94"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5"/ BELL	3	-1	IMP. - S.S.	-5
MAX. SPHERE SIZE = .50"	ONE STAGE WR^2 = .100	4	0	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 12"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-5



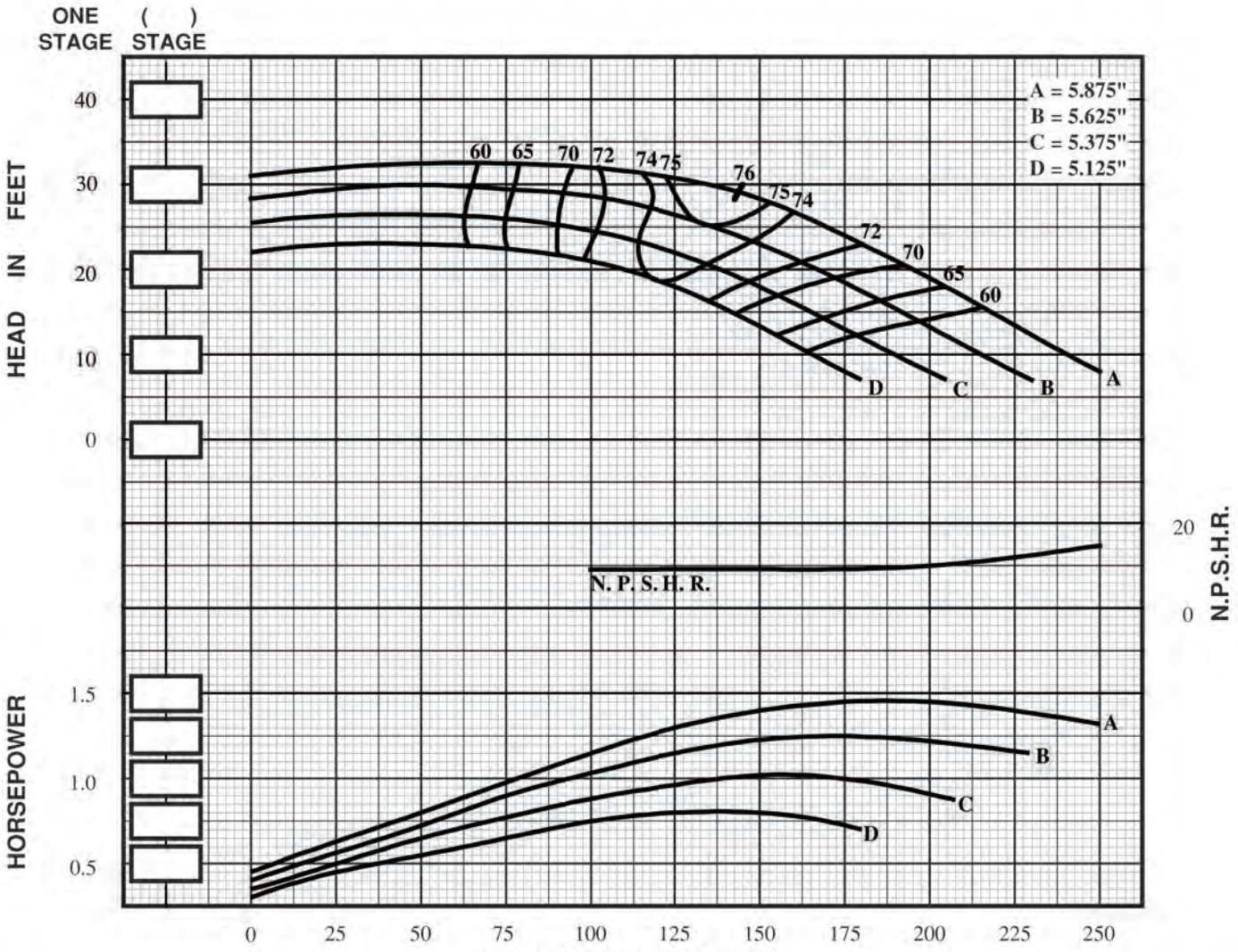
SUBMERSIBLE TURBINE



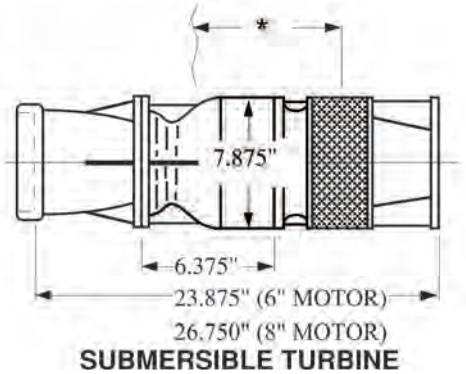
LINESHAFT TURBINE

SP8L

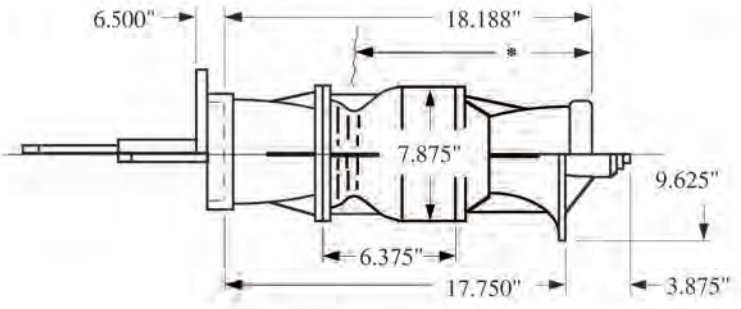
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP8L	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 5.40	STD. LATERAL = .88"	1	-4	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 122.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-3	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5"/ BELL	3	-2	IMP. - S.S.	Δ
MAX. SPHERE SIZE = .31"	ONE STAGE WR^2 = .108	4	-1	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX. = 3.60	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

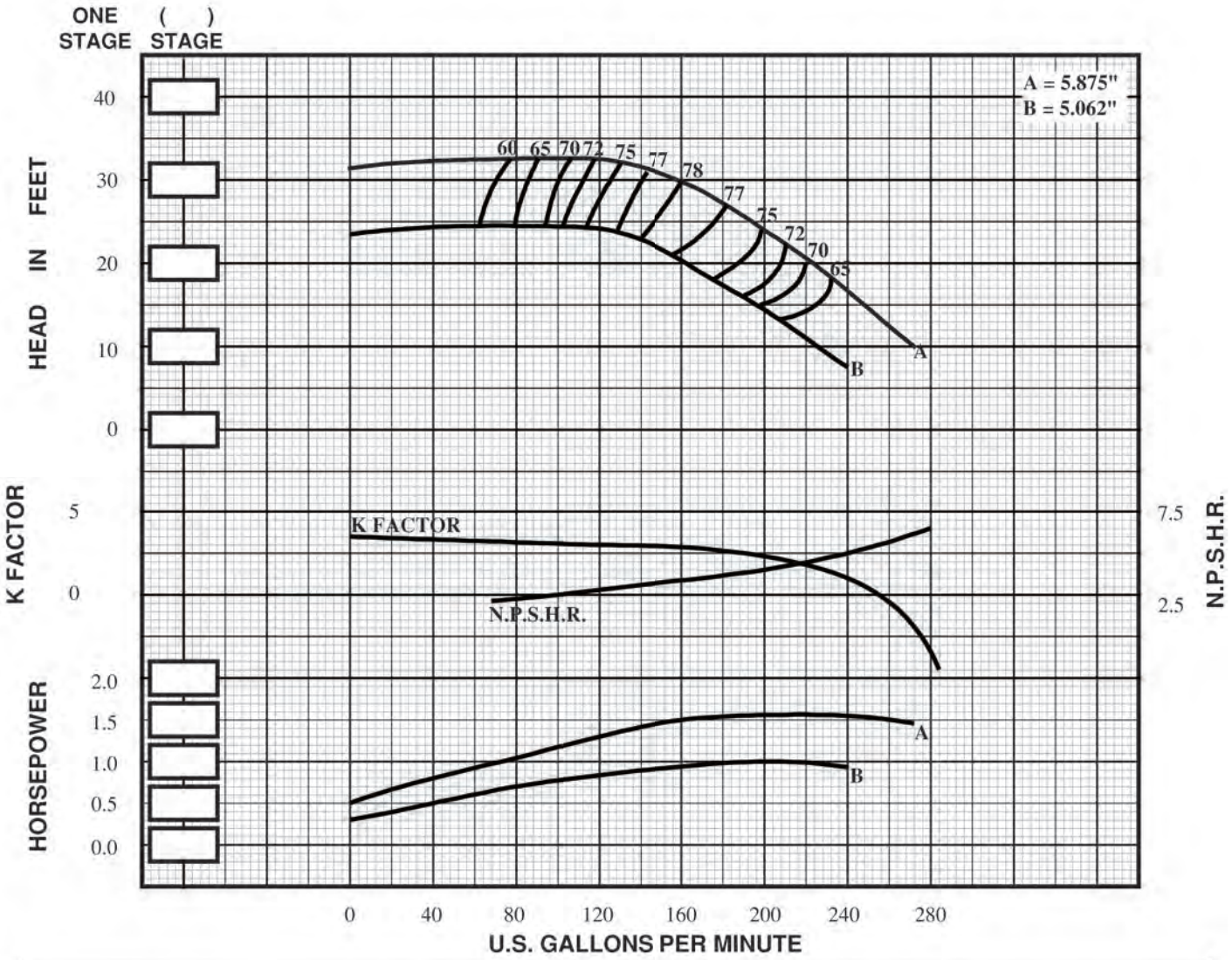


LINESHAFT TURBINE

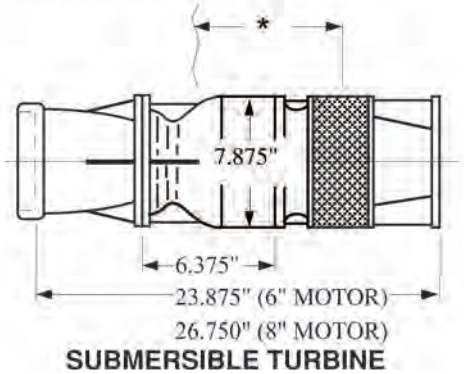
SIMFLO®

Section 202
Date 9/1/06

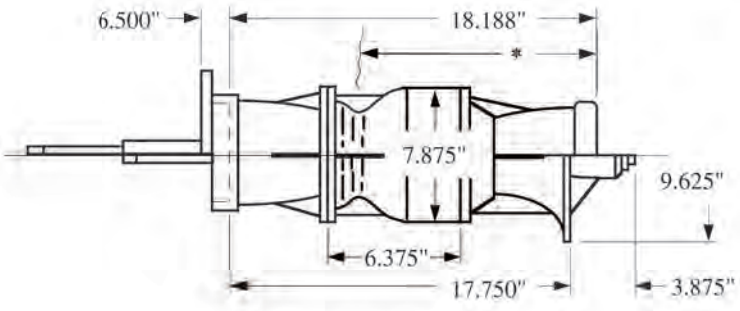
SP8M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP8M	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 5.15	STD. LATERAL = .75"	1	-4	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .56"	ONE STAGE WR^2 = .105	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

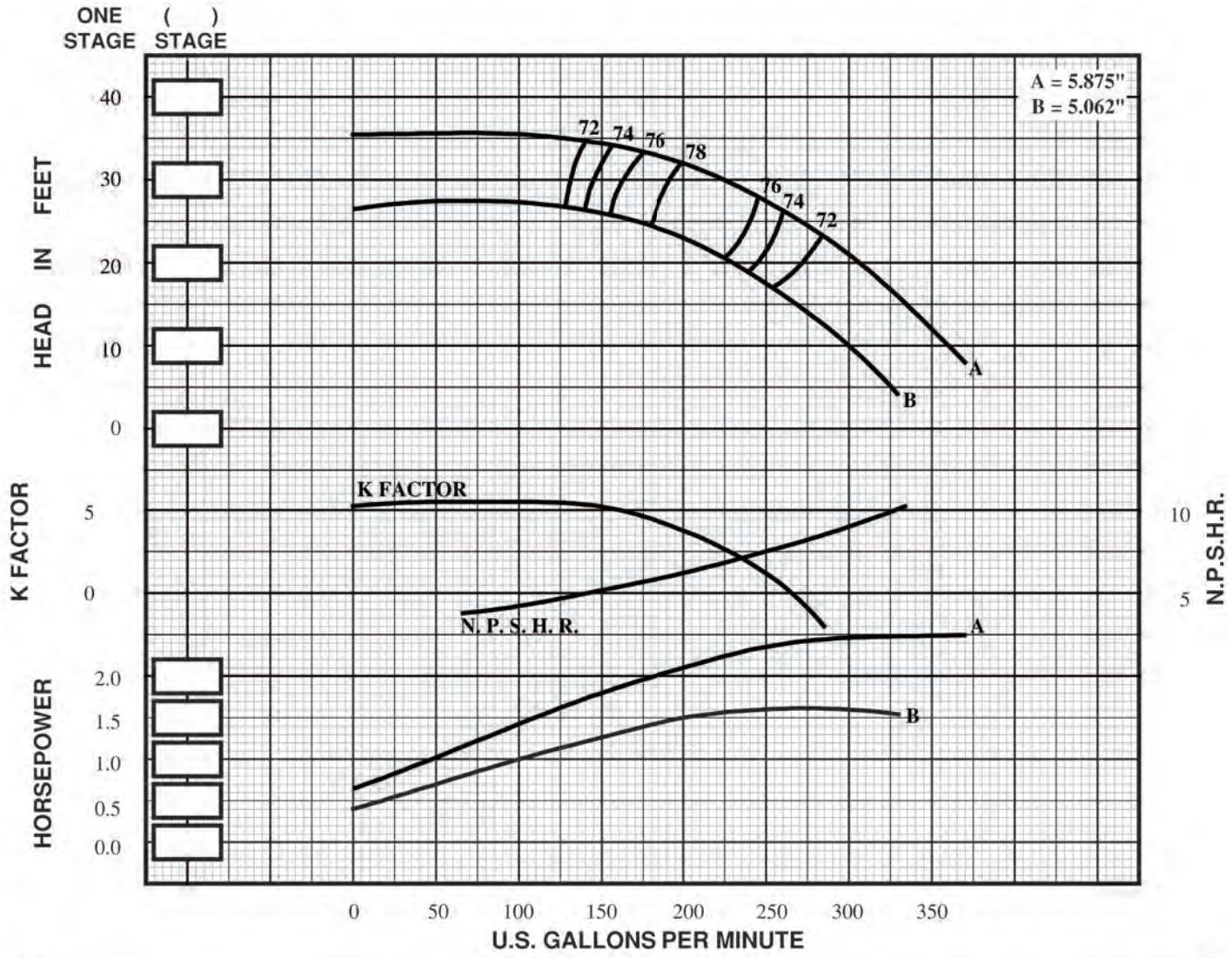


LINESHAFT TURBINE

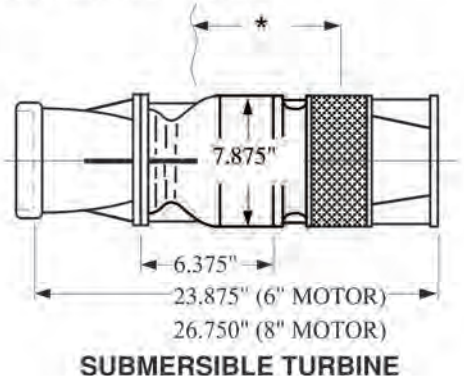
SIMFLO®

Section 202
Date 9/1/06

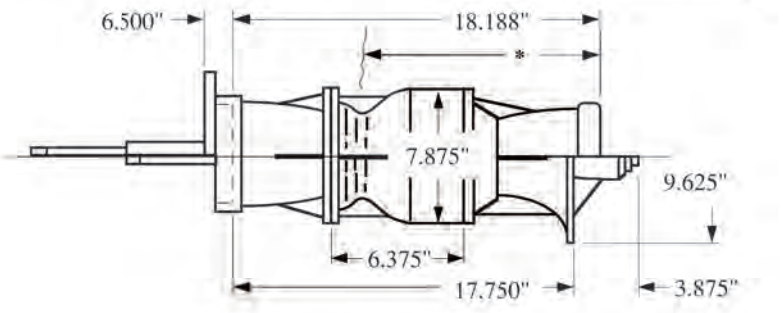
SP8H
1770 RPM



				NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER TYPE	= ENCLOSED	STD. SHAFT DIA.	= 1.250"				
IMPELLER NO.	= SP8H	MAX. SHAFT DIA.	= 1.250"				
IMPELLER WT. - LBS.	= 5.20	STD. LATERAL	= .56"	1	-4	IMP. - C.I.	-2
ONE STAGE WT. - LBS.	= 100.0	DISCHARGE SIZES	= 4"/ 5"/ 6"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS.	= 40.0	SUCTION SIZES	= 5"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE	= .75"	ONE STAGE WR^2	= .105	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE*	= 11"		=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY			v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

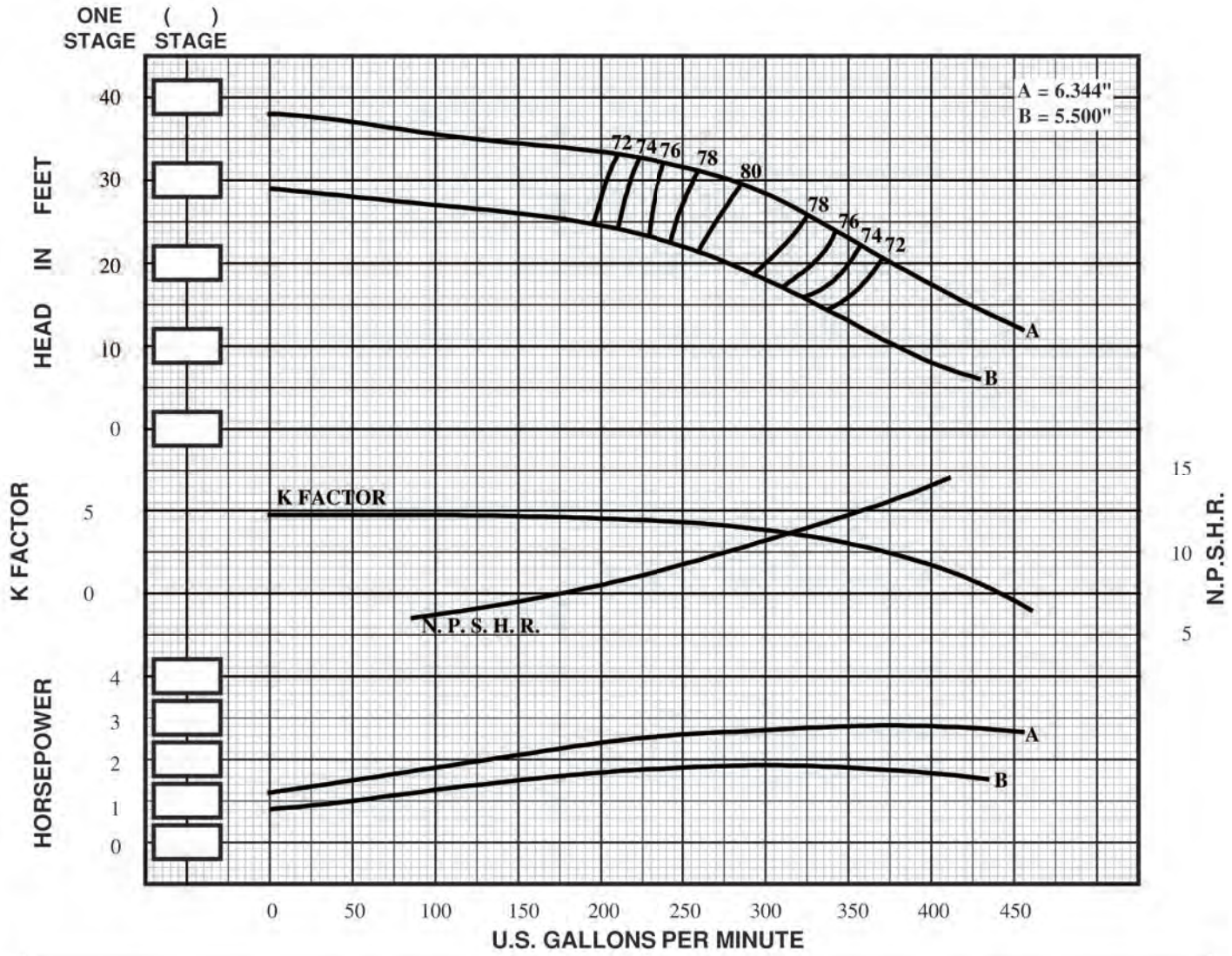


LINESHAFT TURBINE

SIMFLO®

Section 202
Date 9/1/06

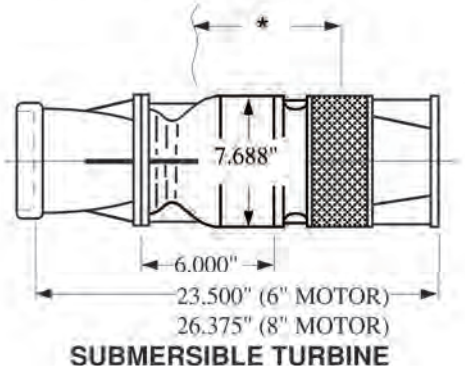
SM8H
1770 RPM



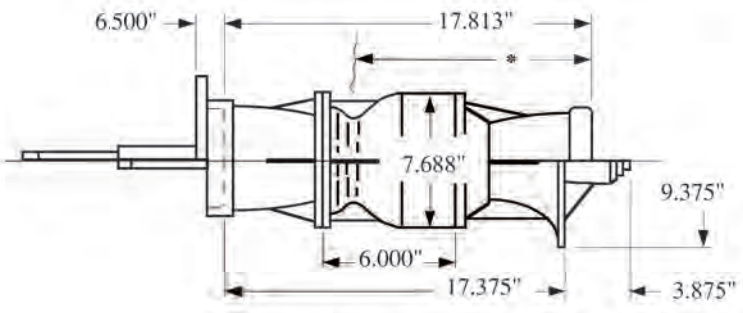
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM8H	MAX. SHAFT DIA. = 1.250"	1	-4	IMP. - C.I.	-2
IMPELLER WT. - LBS. = 7.3	STD. LATERAL = .58"	2	-3	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	3	-2	IMP. - S.S.	-4
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5"/ BELL	4	-1	BOWL - BRZ.	-2
MAX. SPHERE SIZE = .66"	ONE STAGE WR^2 = .158	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 11"	=			BOWL - S.S.	-3

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE



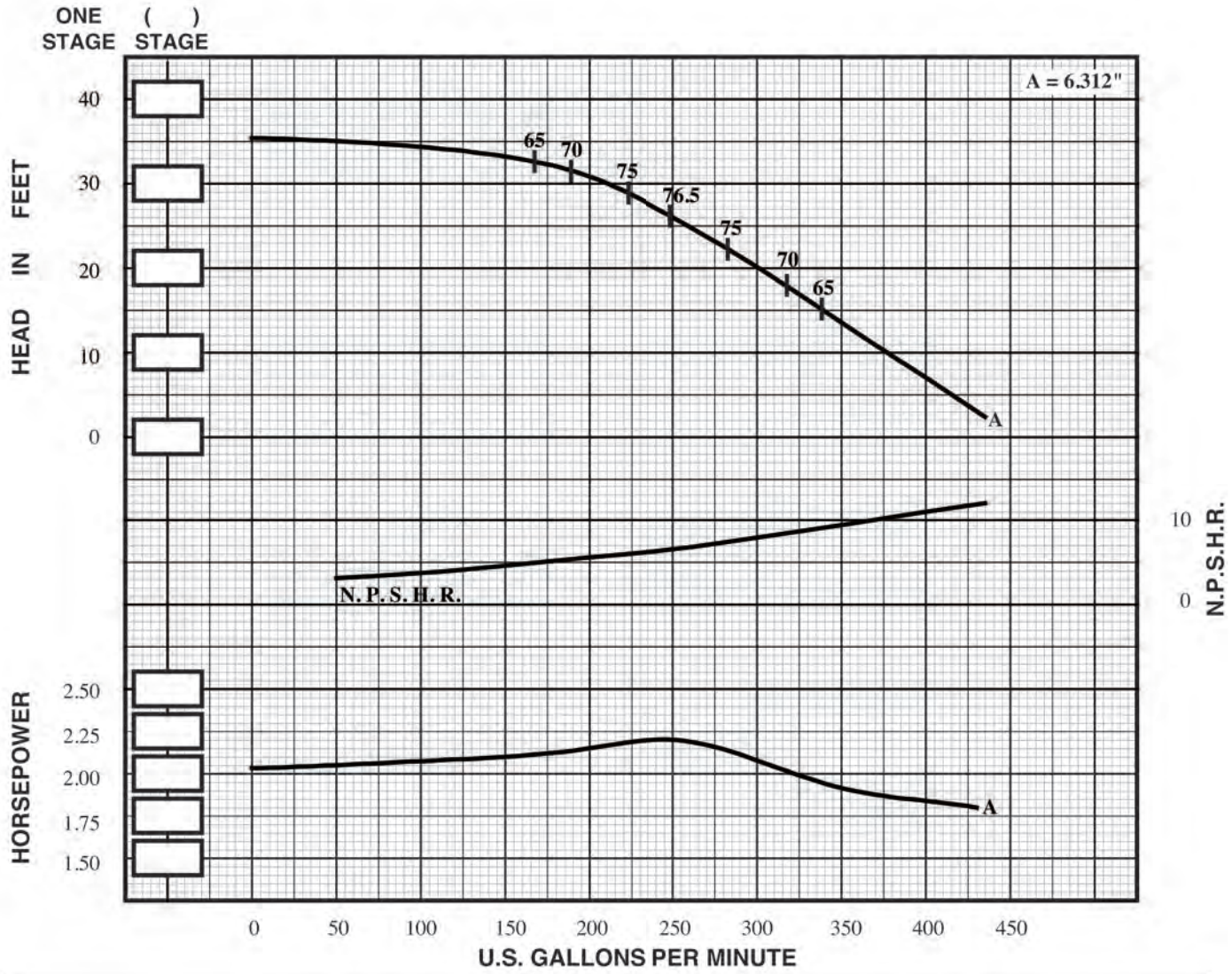
LINESHAFT TURBINE

SIMFLO®

Section 202
Date 3/30/18

SR8MO

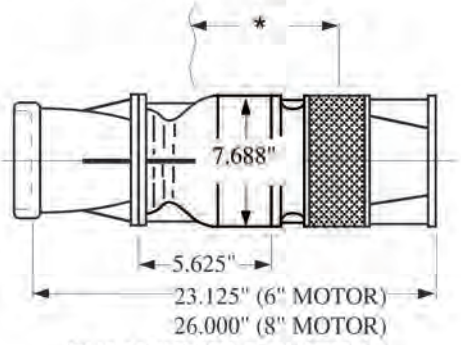
1770 RPM



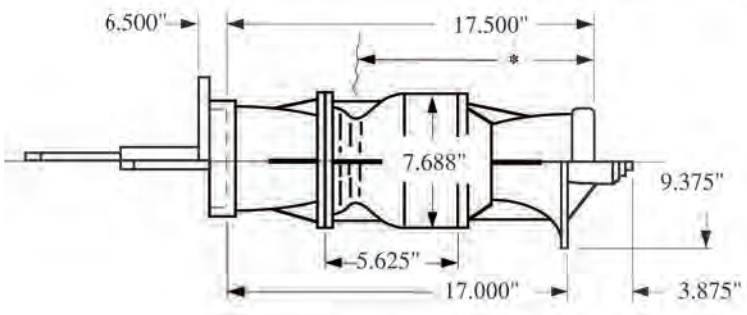
IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.250"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SR8MO	MAX. SHAFT DIA. = 1.250"				
IMPELLER WT. - LBS. = 4.80	STD. LATERAL = .83"	1	-4	IMP. - C.I.	-4
ONE STAGE WT. - LBS. = 100.0	DISCHARGE SIZES = 4"/ 5"/ 6"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 40.0	SUCTION SIZES = 5" / BELL	3	-2	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .44"	ONE STAGE WR^2 = .107	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"	K-FACTOR, MAX. = 6.1	5	0	BOWL - NI-RI	-1
				BOWL - S.S.	-3

Δ CONSULT FACTORY

v18.1



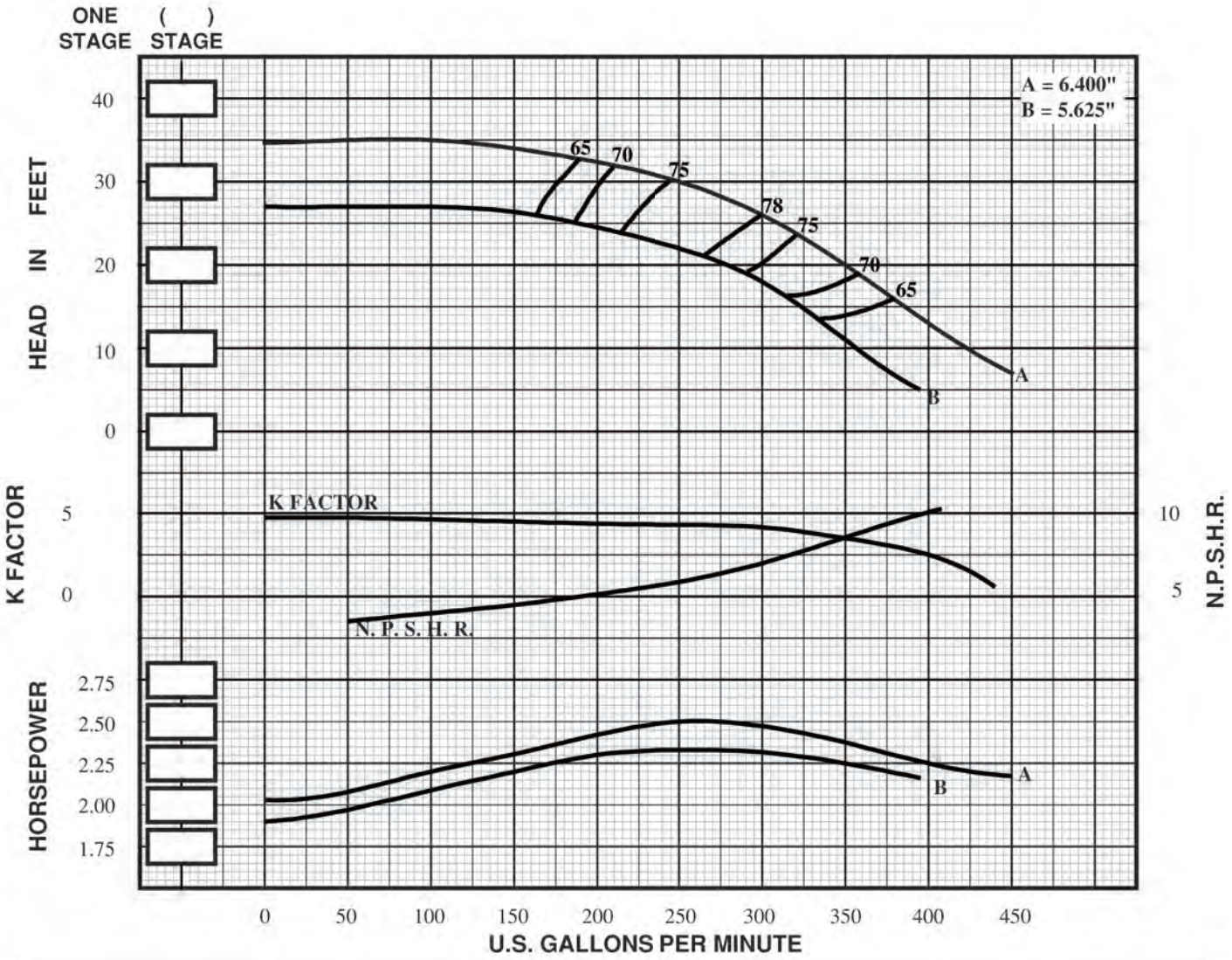
SUBMERSIBLE TURBINE



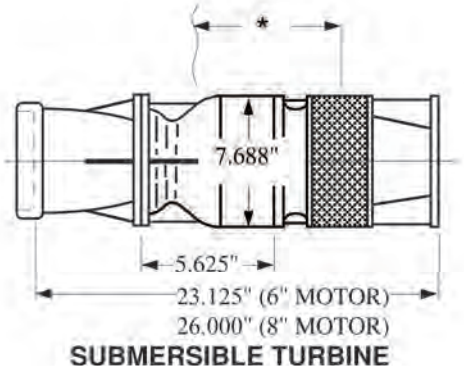
LINESHAFT TURBINE

SR8HO

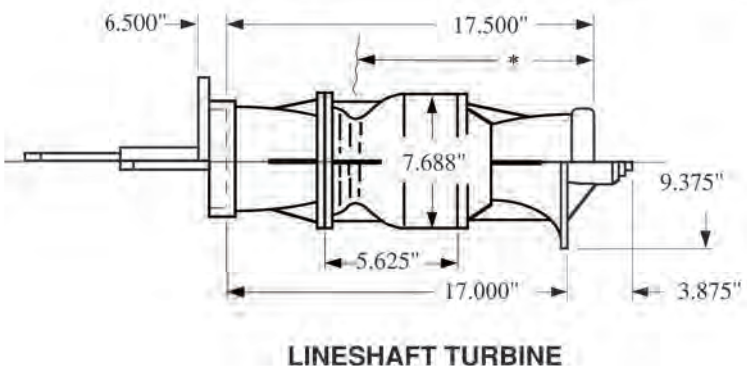
1770 RPM



IMPELLER TYPE = SEMI-OPEN		STD. SHAFT DIA. = 1.250"		NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SR8HO		MAX. SHAFT DIA. = 1.250"					
IMPELLER WT. - LBS. = 5.00		STD. LATERAL = .61"		1	-4	IMP. - C.I.	-4
ONE STAGE WT. - LBS. = 100.0		DISCHARGE SIZES = 4"/ 5"/ 6"		2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 40.0		SUCTION SIZES = 5"/ BELL		3	-2	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .59"		ONE STAGE WR^2 = .112		4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 11"		=		5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY		v18.1				BOWL - S.S.	-3



SUBMERSIBLE TURBINE

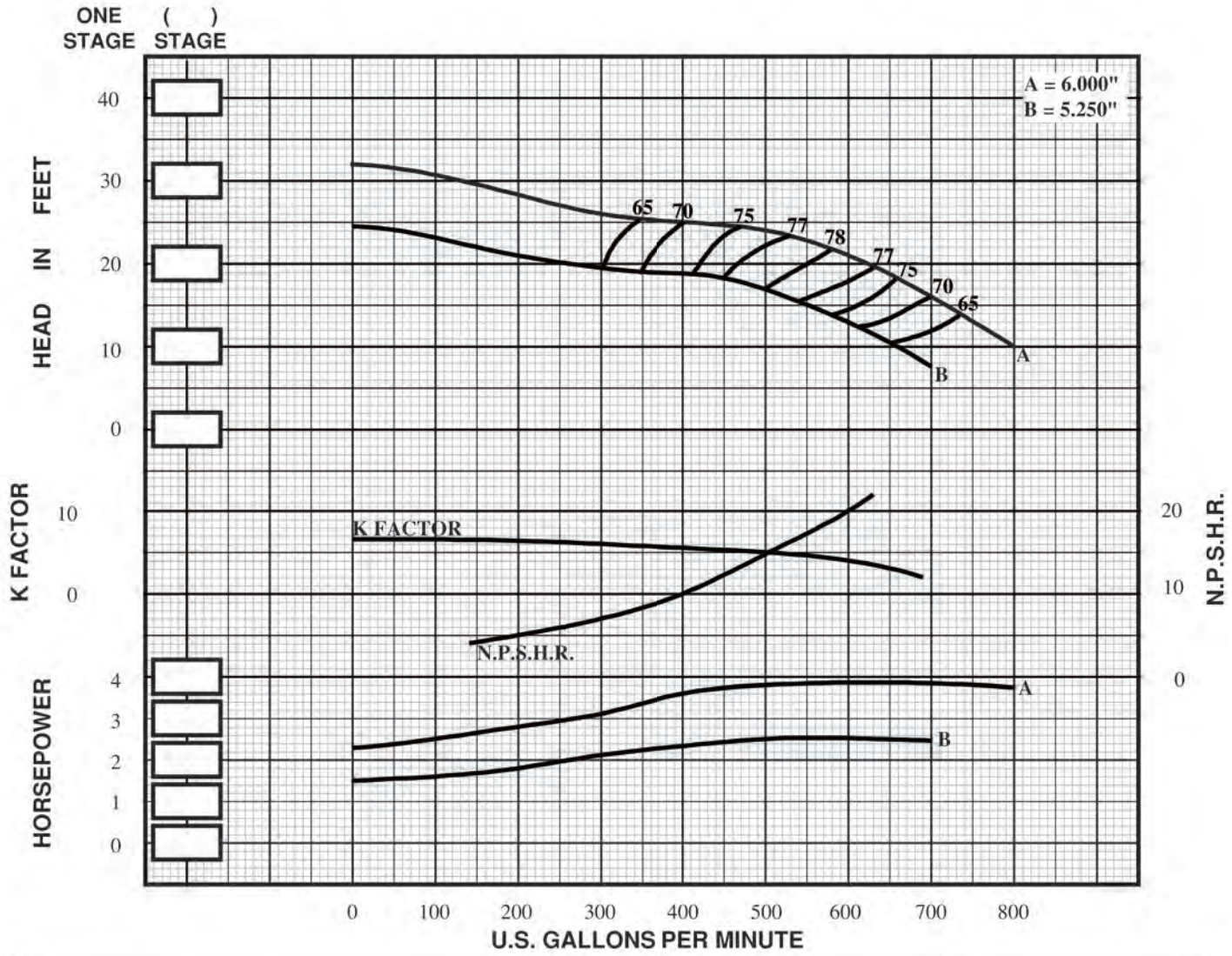


LINESHAFT TURBINE

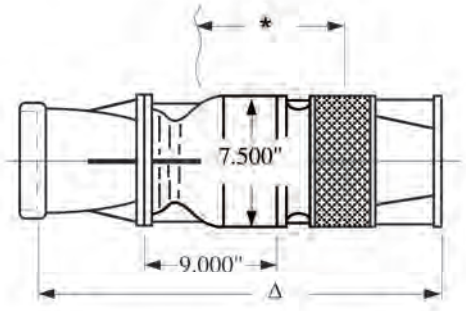
SIMFLO®

Section 202
Date 9/1/06

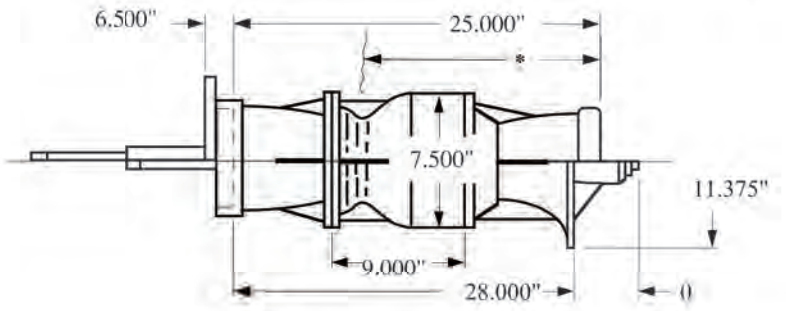
SK8H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK8H	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 6.6	STD. LATERAL = 1.00"	1	-4	IMP. - C.I.	-5
ONE STAGE WT. - LBS. = 180.0	DISCHARGE SIZES = 6"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 60.0	SUCTION SIZES = 6"	3	-2	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .75"	ONE STAGE WR^2 = .133	4	-1	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

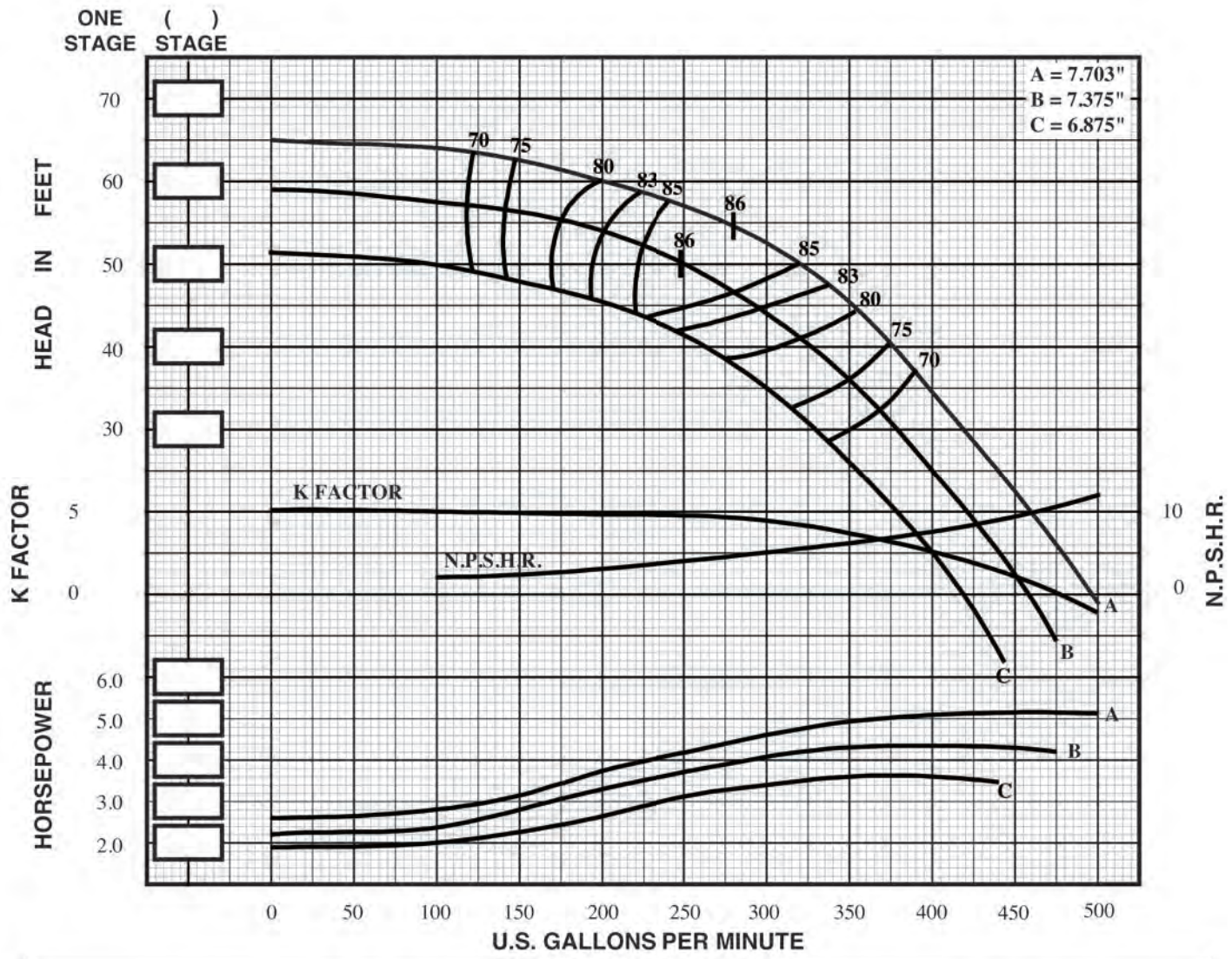


LINESHAFT TURBINE

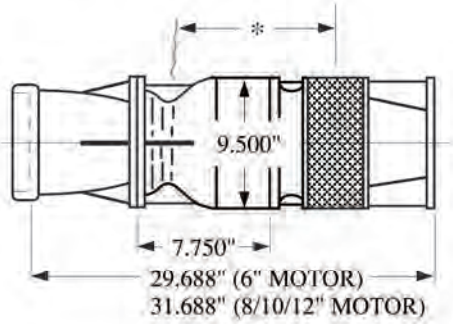
SIMFLO®

Section 202
Date 7/1/11

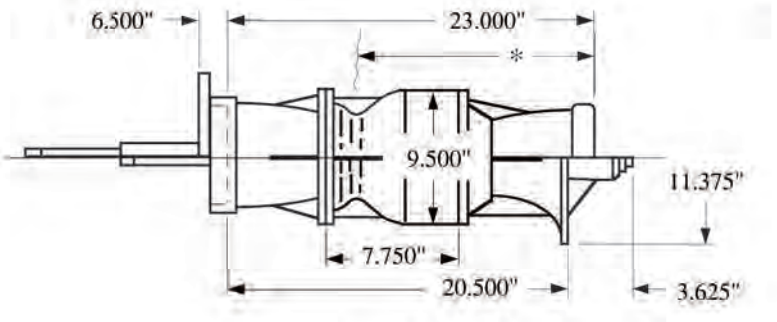
SP9L
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP9L	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 9.0	STD. LATERAL = 1.19"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 150.0	DISCHARGE SIZES = 6" / 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 60.0	SUCTION SIZES = 6" / BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .53"	ONE STAGE WR^2 = .286	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.2			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

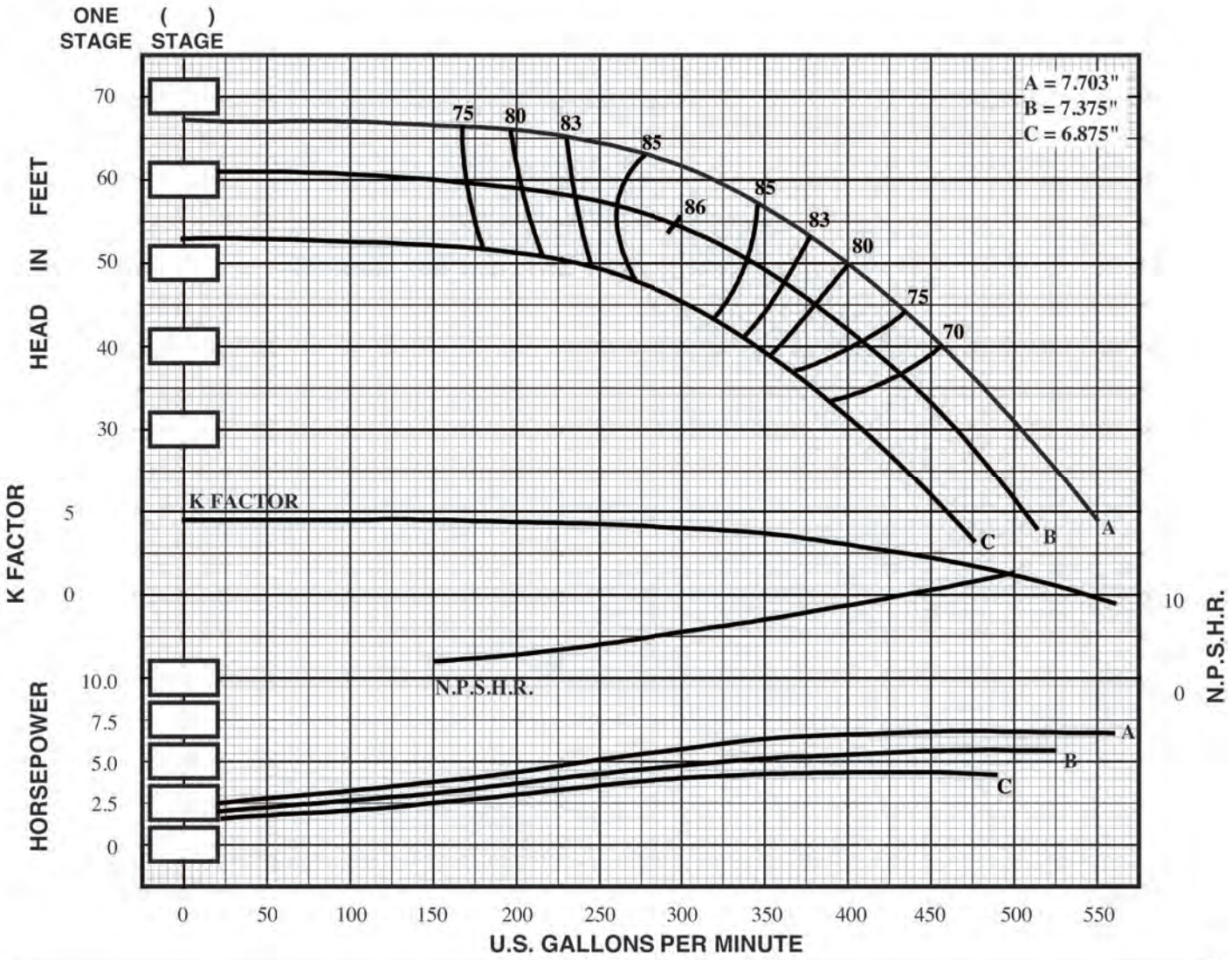


LINESHAFT TURBINE

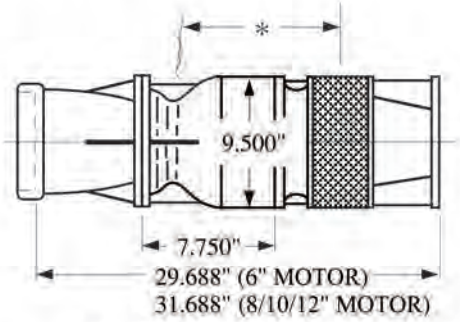
SIMFLO®

Section 202
Date 7/1/11

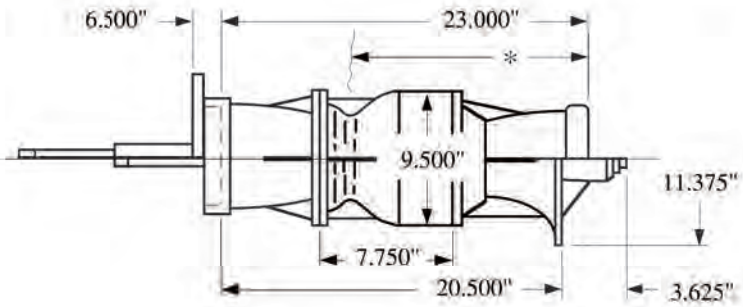
SP9M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP9M	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 9.5	STD. LATERAL = 1.19"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 150.0	DISCHARGE SIZES = 6" / 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 60.0	SUCTION SIZES = 6" / BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .53"	ONE STAGE WR^2 = .303	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.2			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

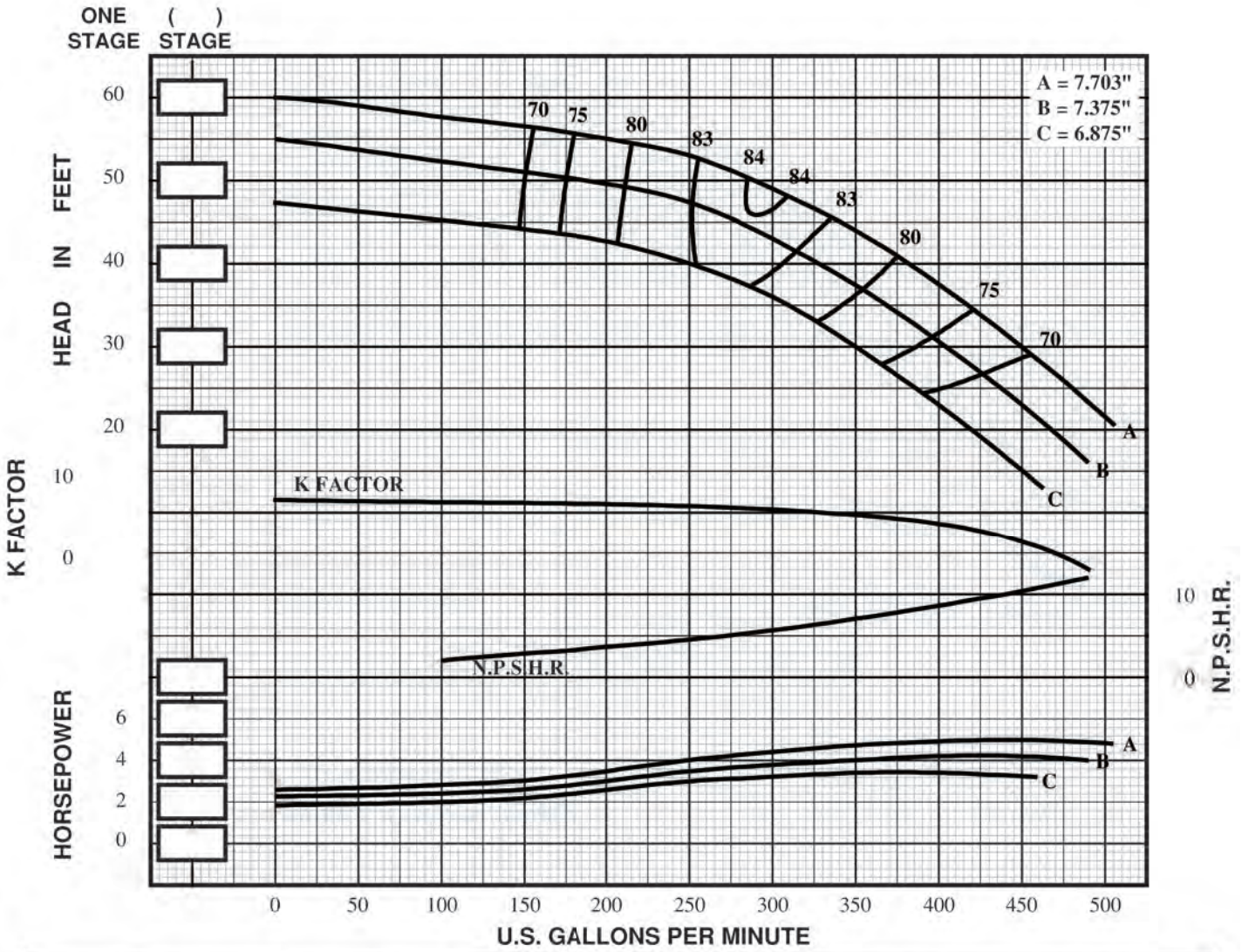


LINESHAFT TURBINE

SIMFLO®

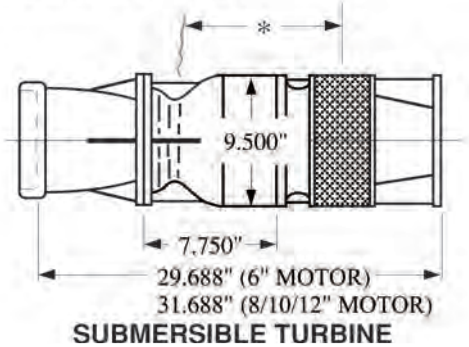
Section 202
Date 9/1/06

SM9L
1770 RPM

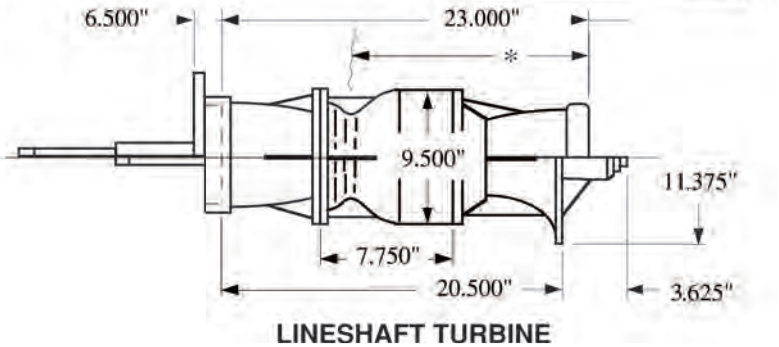


IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP9L	MAX. SHAFT DIA. = 1.500"	1	-3	IMP. - C.I.	-2
IMPELLER WT. - LBS. = 9.0	STD. LATERAL = 1.13"	2	-2	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 150.0	DISCHARGE SIZES = 6"/ 8"	3	-1	IMP. - S.S.	-3
ADD'L STAGE WT. - LBS. = 60.0	SUCTION SIZES = 6" / BELL	4	0	BOWL - BRZ.	-2
MAX. SPHERE SIZE = .53"	ONE STAGE WR^2 = .286	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE * = 15"	=		v18.2	BOWL - S.S.	-3

Δ CONSULT FACTORY



SUBMERSIBLE TURBINE

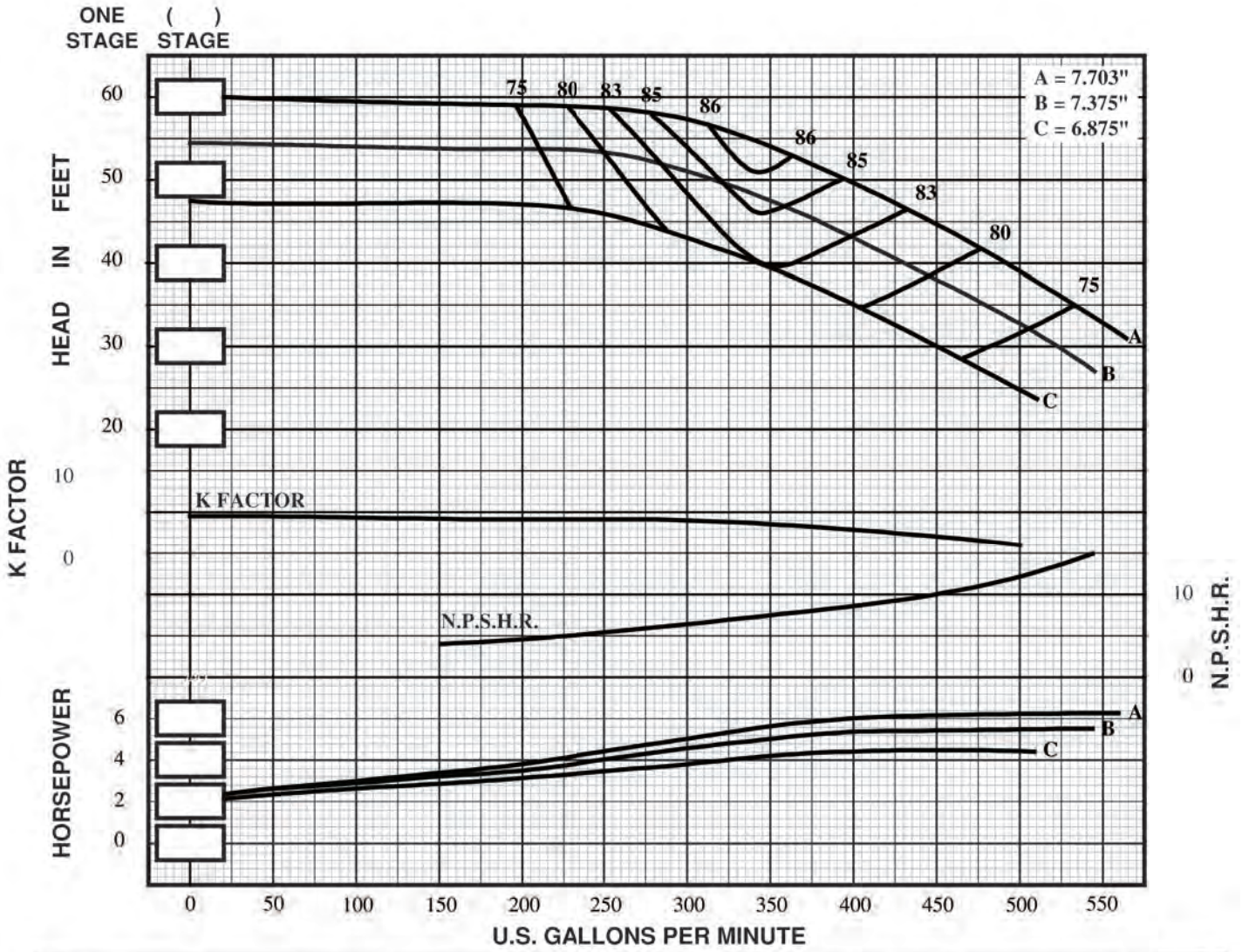


LINESHAFT TURBINE

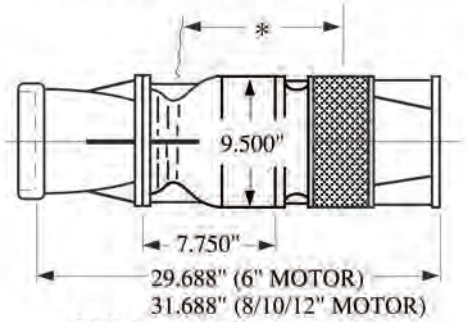
SIMFLO®

Section 202
Date 9/1/06

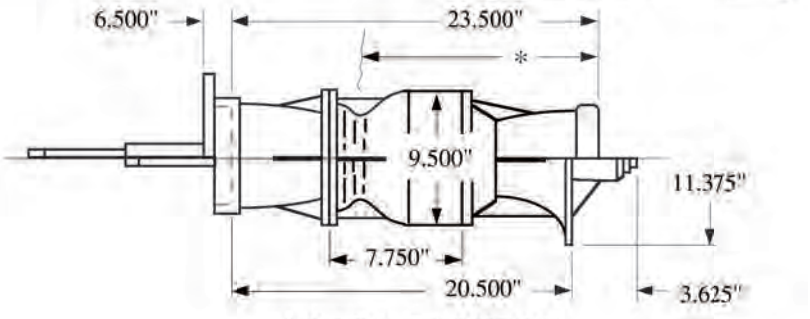
SM9M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP9M	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 9.5	STD. LATERAL = 1.13"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 150.0	DISCHARGE SIZES = 6"/ 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 60.0	SUCTION SIZES = 6" / BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .53"	ONE STAGE WR^2 = .303	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY			v18.2	BOWL - S.S.	-3



SUBMERSIBLE TURBINE

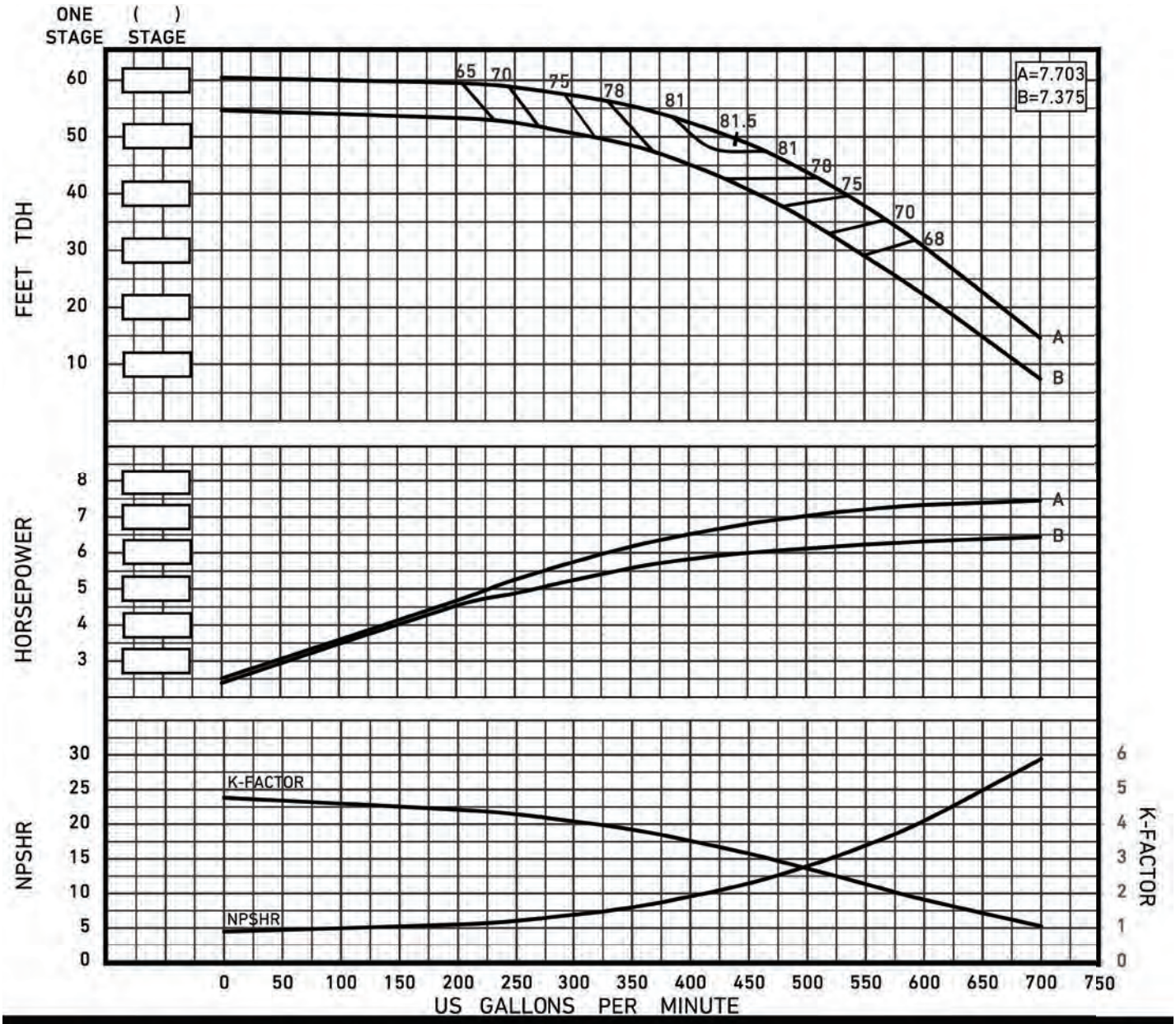


LINESHAFT TURBINE

SIMFLO®

Section 202
Date 6/6/21

SM9H
1770 RPM



Impeller Type	Enclosed	Bowl OD (in.)	9.50	PEI cl	N/A	Qty. Stages	Eff. Change
Impeller Model	SM9H	Thd'd Discharge Size	6" / 8"	Ns	1984		
One Stage Weight (lb)	150.0	Thd'd Suction Size	6"	Nss	6116	1	-3
Add'l Stage Wt. (lb)	60.0	Bell Suction Size	11.38"/ 9.38"	Shaft Size (in.)	1.50	2	-2
Impeller Wt. (lb)	9.5	Sub. Mtr. Size	6" / 8"	Lateral (in)	1.00	3	-1
Std. Impeller Mtrl.	C95500	C.I. Bowl Rating (psi)	408	Setting (in)	.31		
One Stage Length (in)	~24.25	D.I. Bowl Rating (psi)	Δ884	K-Factor (lb/ft tdh)	CURVE		
Add'l Stage Length (in)	7.75	S.S. Bowl Rating (psi)	Δ952	Imp. WR² (lb-ft²)	.303		

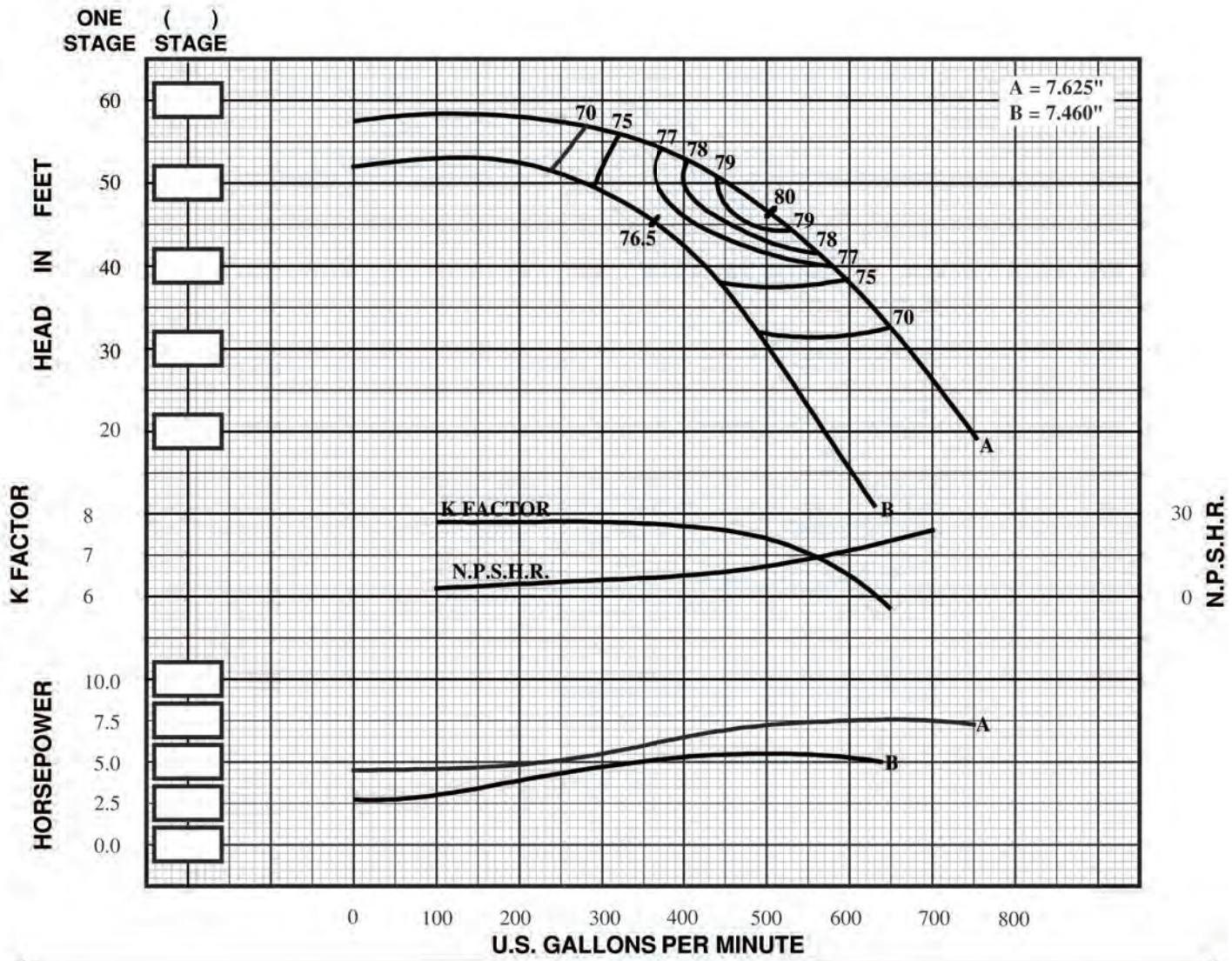
Δ Consult foctory for availabiity

*Curve reflects achievable efficiency. Changes to materials and construction may affect performance.

SIMFLO®

Section 202
Date 9/1/06

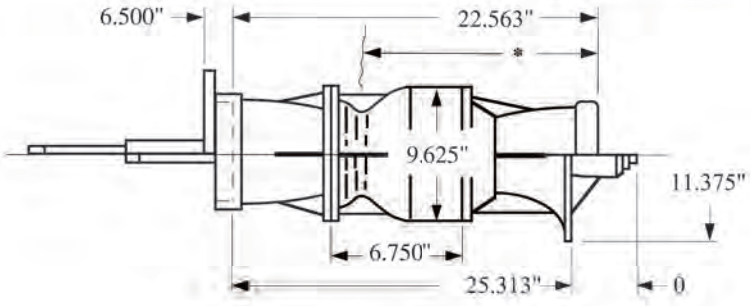
SR9H0
1770 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SR9HO	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 6.2	STD. LATERAL = .70"	1	-3	IMP. - C.I.	-4
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6" /8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 60.0	SUCTION SIZES = 6"	3	-1	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .75"	ONE STAGE WR^2 = .193	4	0	BOWL - BRZ.	-3
MIN. SUBMERGENCE* = 14.5"	=	5	0	BOWL - NI-RI	-1
				BOWL - S.S.	-4

Δ CONSULT FACTORY

v18.1

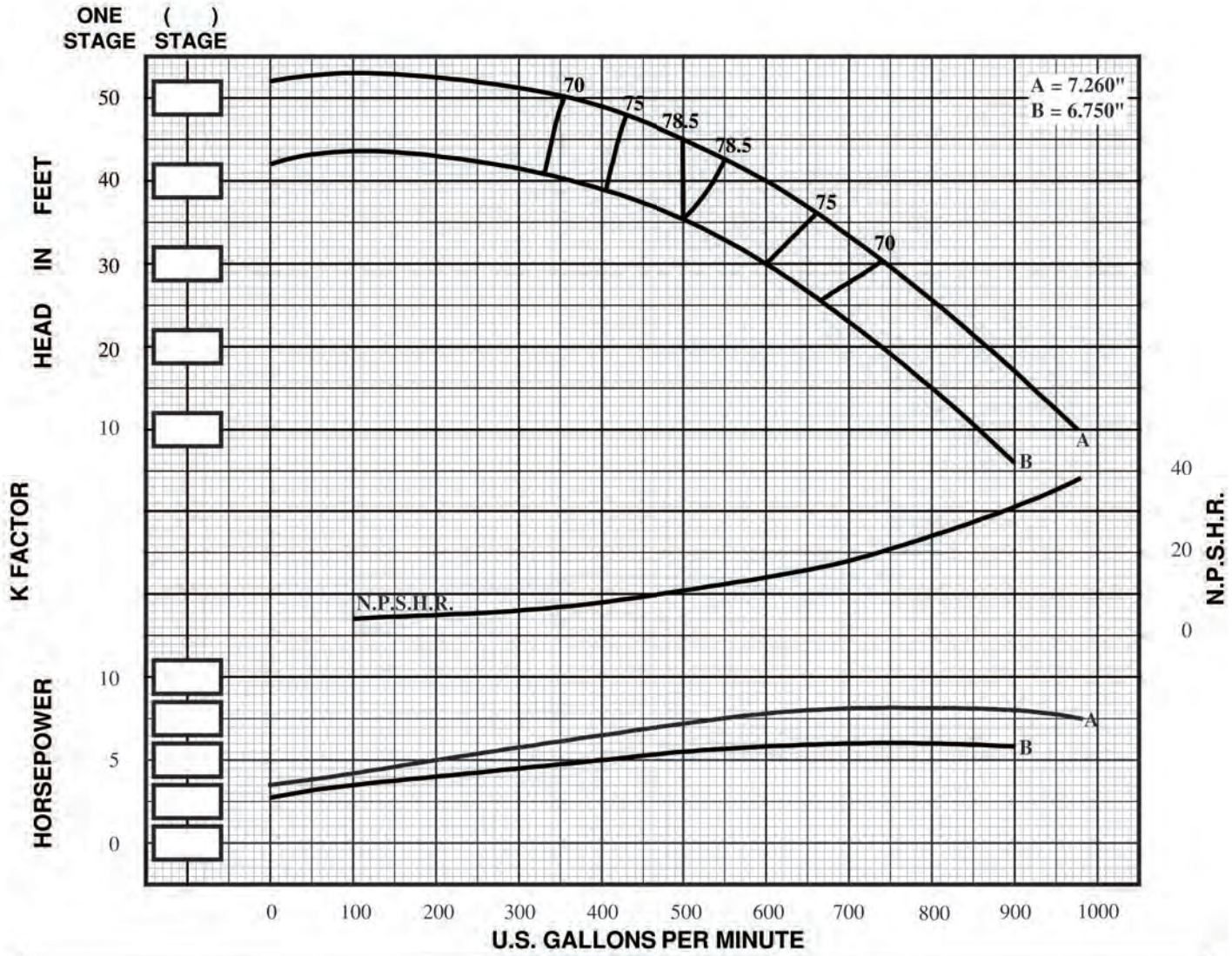


LINESHAFT TURBINE

SIMFLO®

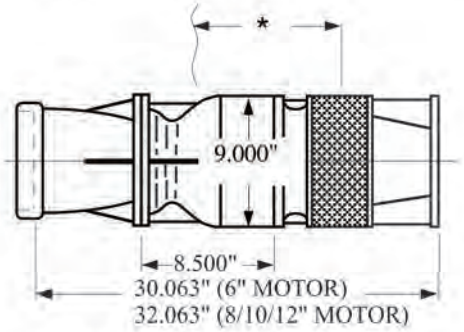
Section 202
Date 9/1/06

SL9H
1770 RPM

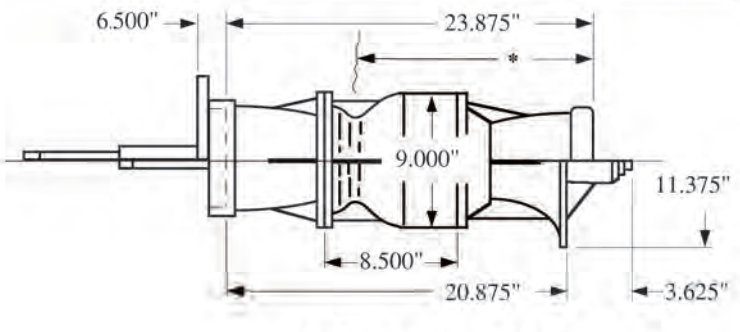


IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SL9H	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 8.7	STD. LATERAL = .94"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 135.0	DISCHARGE SIZES = 6"/ 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 53.0	SUCTION SIZES = 6"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .248	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 15"	K-FACTOR, MAX. = 5.70	5	0	BOWL - NI-RI	-2
				BOWL - S.S.	-3

Δ CONSULT FACTORY



SUBMERSIBLE TURBINE

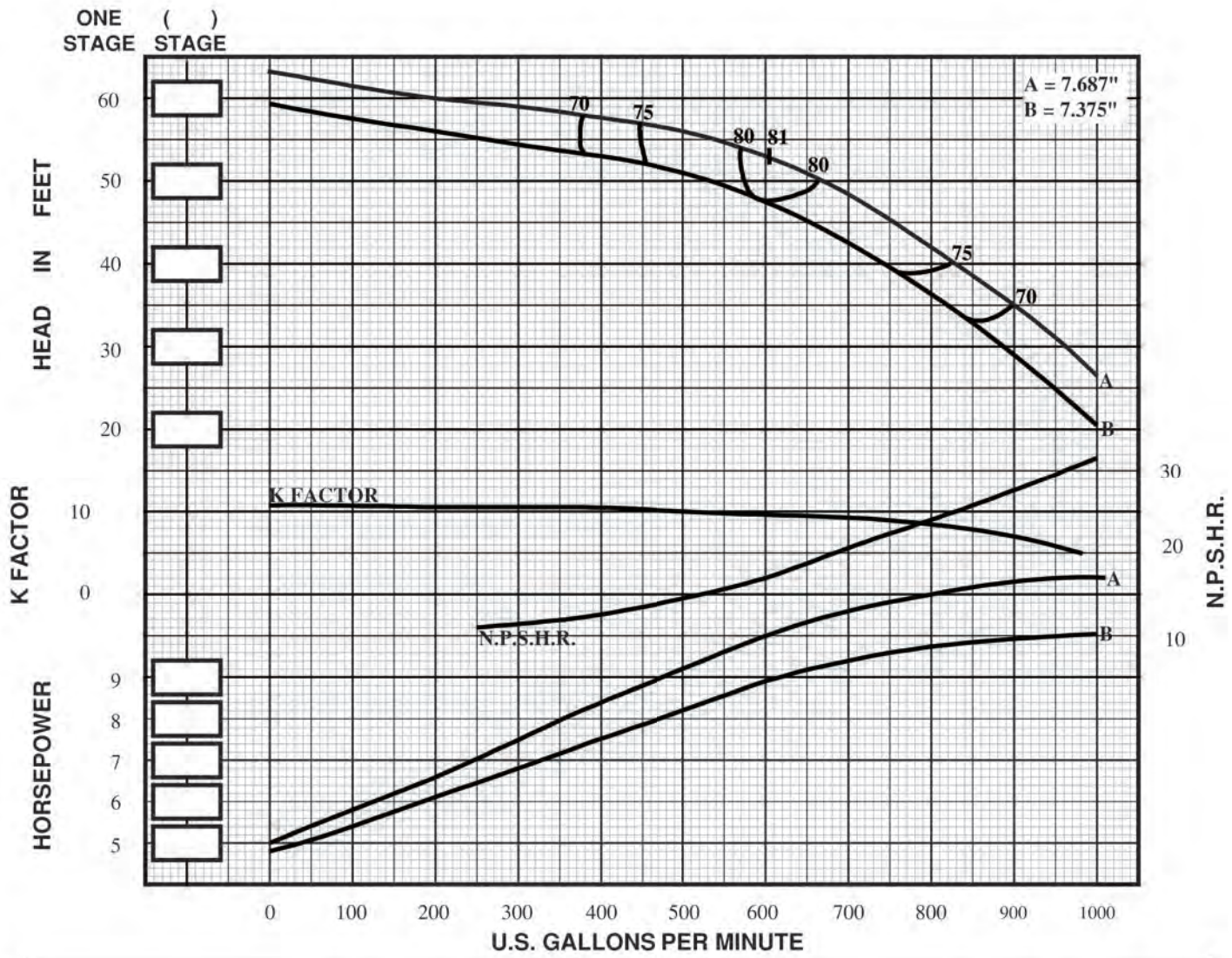


LINESHAFT TURBINE

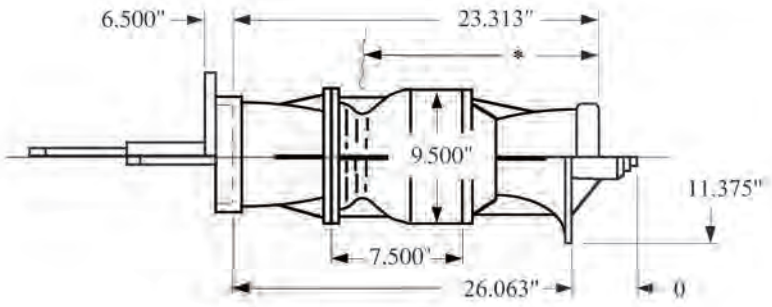
SIMFLO®

Section 202
Date 9/1/06

SF9H
1770 RPM



IMPELLER TYPE = ENCLOSED		STD. SHAFT DIA. = 1.500"		NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SF9H		MAX. SHAFT DIA. = 1.500"					
IMPELLER WT. - LBS. = 9.0		STD. LATERAL = .94"		1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 185.0		DISCHARGE SIZES = 6"/ 8"		2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 67.0		SUCTION SIZES = 6"		3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .88"		ONE STAGE WR^2 = .291		4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 15"		=		5	0	BOWL - NI-RI	-2
Δ CONSULT FACTORY	v18.1					BOWL - S.S.	-3

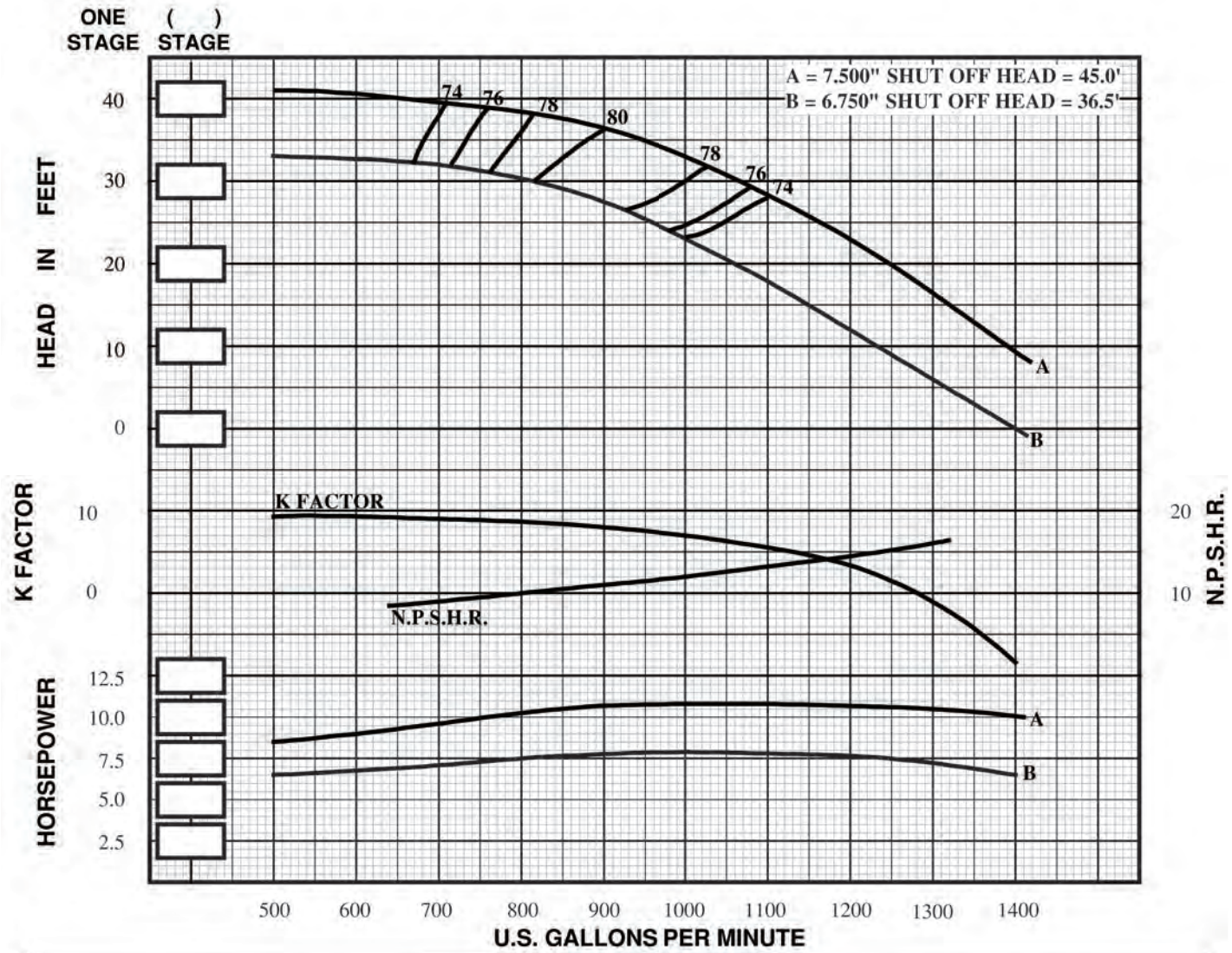


LINESHAFT TURBINE

SIMFLO®

Section 202
Date 9/1/06

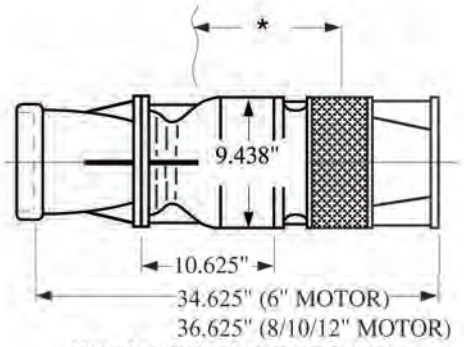
SK9M
1770 RPM



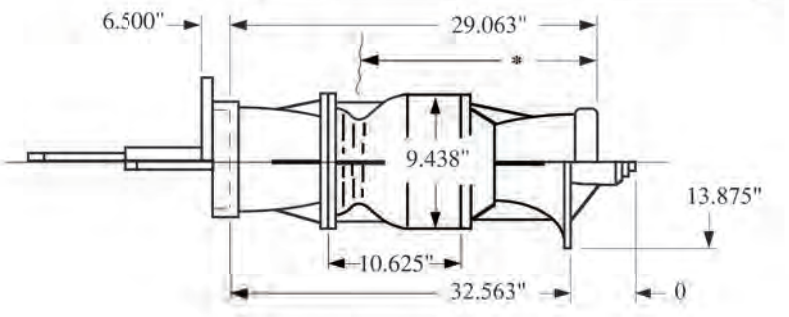
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.688"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK9M	MAX. SHAFT DIA. = 1.688"	1	-4	IMP. - C.I.	-3
IMPELLER WT. - LBS. = 14.9	STD. LATERAL = 1.44"	2	-3	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 250.0	DISCHARGE SIZES = 8"	3	-2	IMP. - S.S.	NOT RECOM.
ADD'L STAGE WT. - LBS. = 85.0	SUCTION SIZES = 8"	4	-1	BOWL - BRZ.	-2
MAX. SPHERE SIZE = 1.13"	ONE STAGE WR^2 = .462	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 18"	=			BOWL - S.S.	-3

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

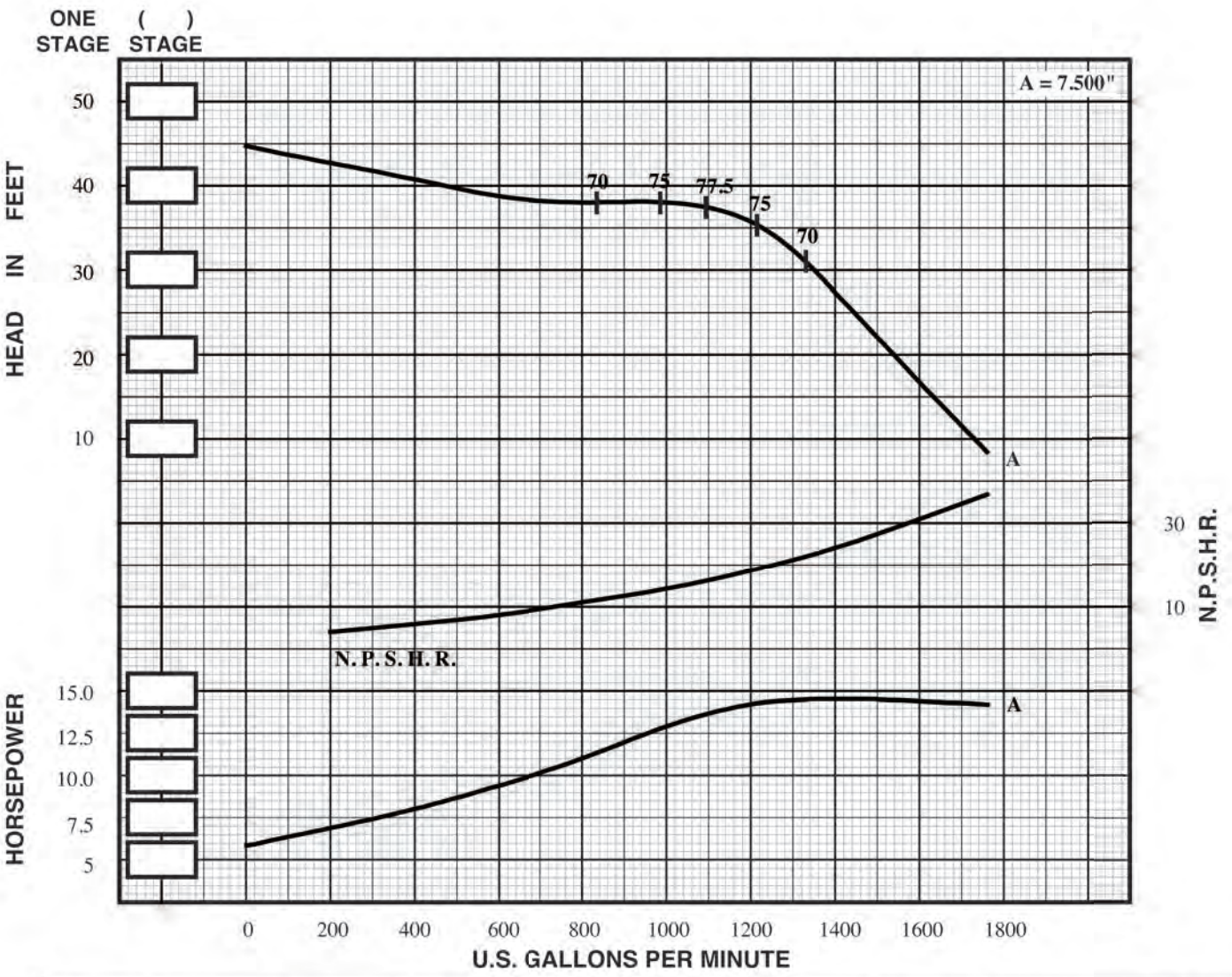


LINESHAFT TURBINE

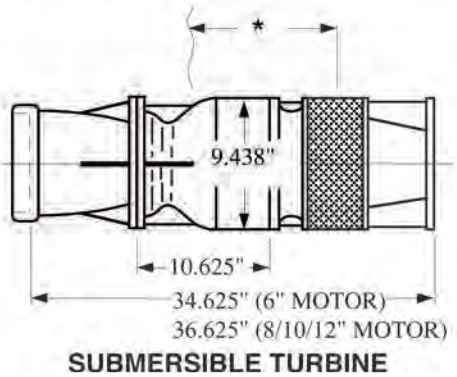
SIMFLO®

Section 202
Date 3/30/18

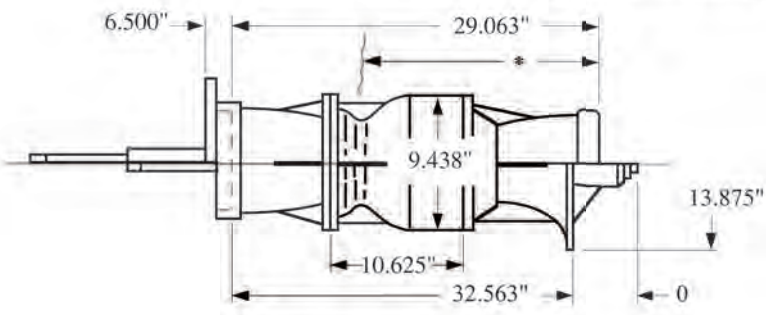
SK9H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.688"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SK9H	MAX. SHAFT DIA. = 1.688"				
IMPELLER WT. - LBS. = 13.1	STD. LATERAL = 1.00"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 250.0	DISCHARGE SIZES = 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 85.0	SUCTION SIZES = 8"	3	-1	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = 1.13"	ONE STAGE WR^2 = .421	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 18"	K-FACTOR, MAX. = 9.9	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

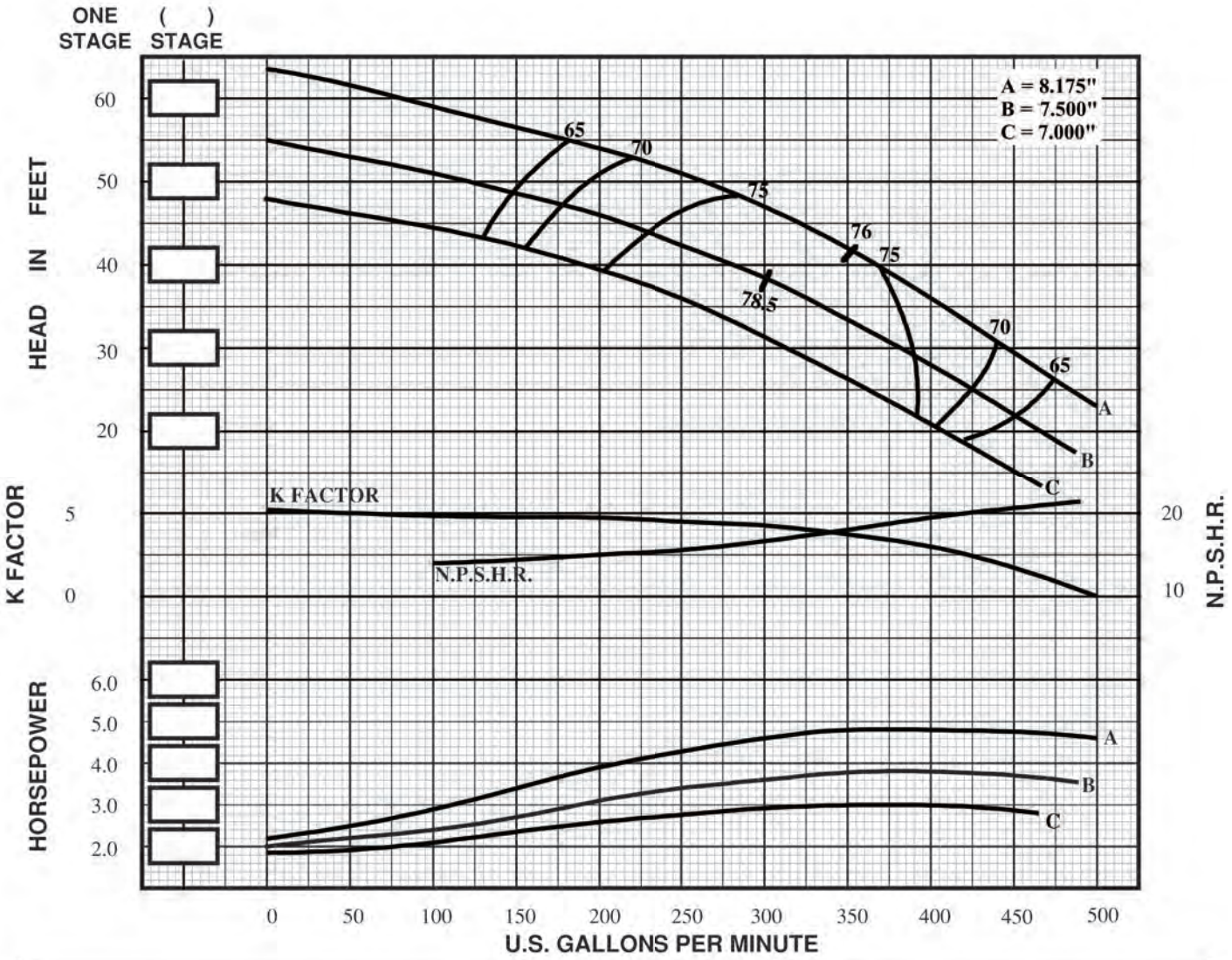


LINESHAFT TURBINE

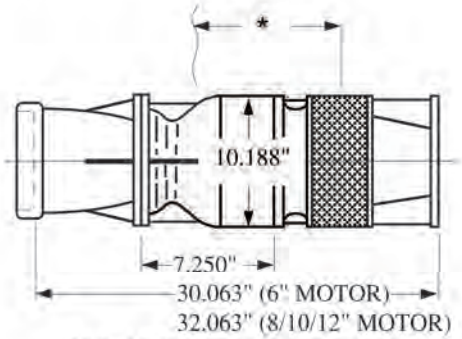
SIMFLO®

Section 202
Date 9/1/06

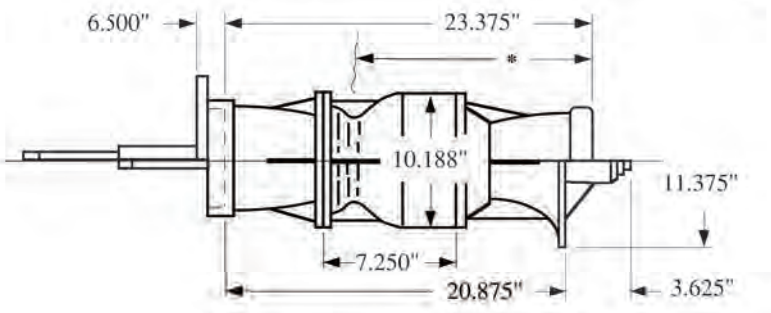
SP10L
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP10L	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 8.1	STD. LATERAL = .94"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6"/ 8"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6"/ BELL	3	-2	IMP. - S.S.	-3
MAX. SPHERE SIZE = .50"	ONE STAGE WR^2 = .295	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 14"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

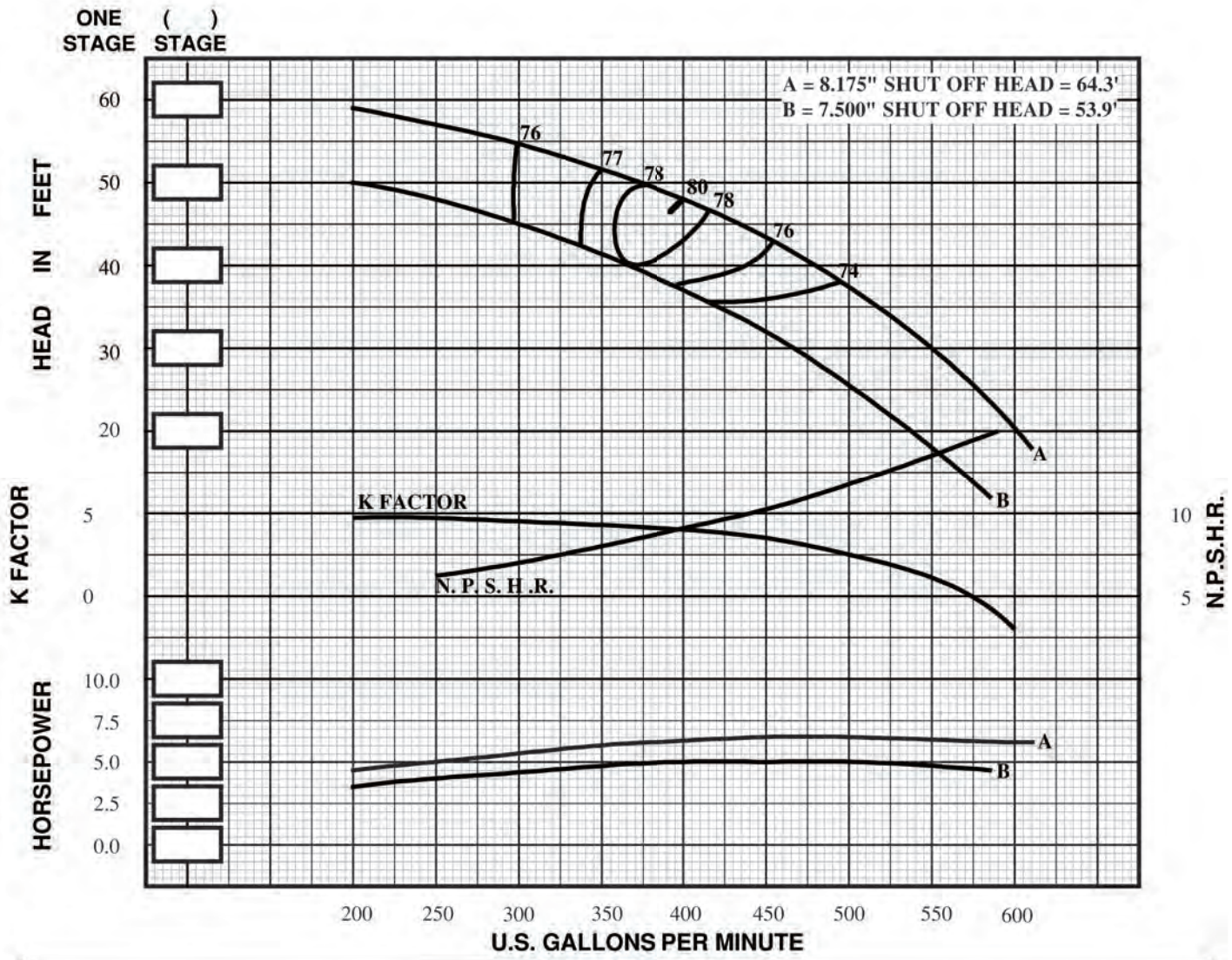


LINESHAFT TURBINE

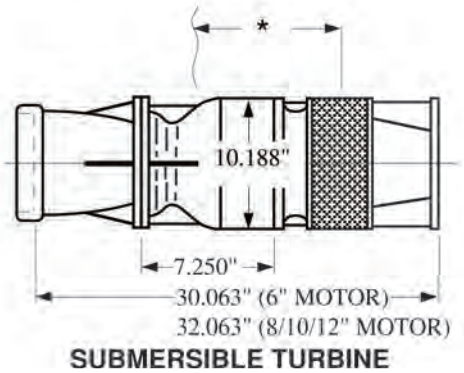
SIMFLO®

Section 202
Date 9/1/06

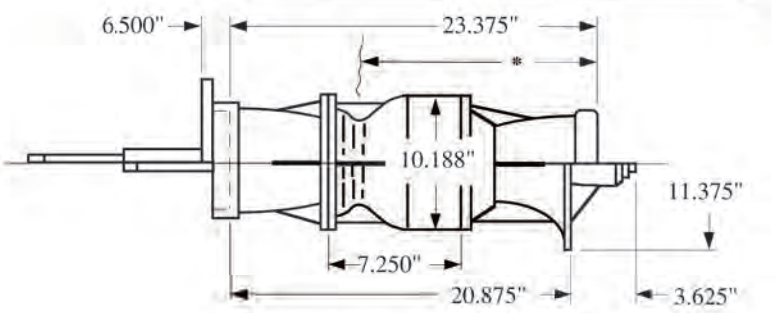
SP10M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP10M	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 8.9	STD. LATERAL = .94"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6"/ 8"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .50"	ONE STAGE WR^2 = .324	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 14"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

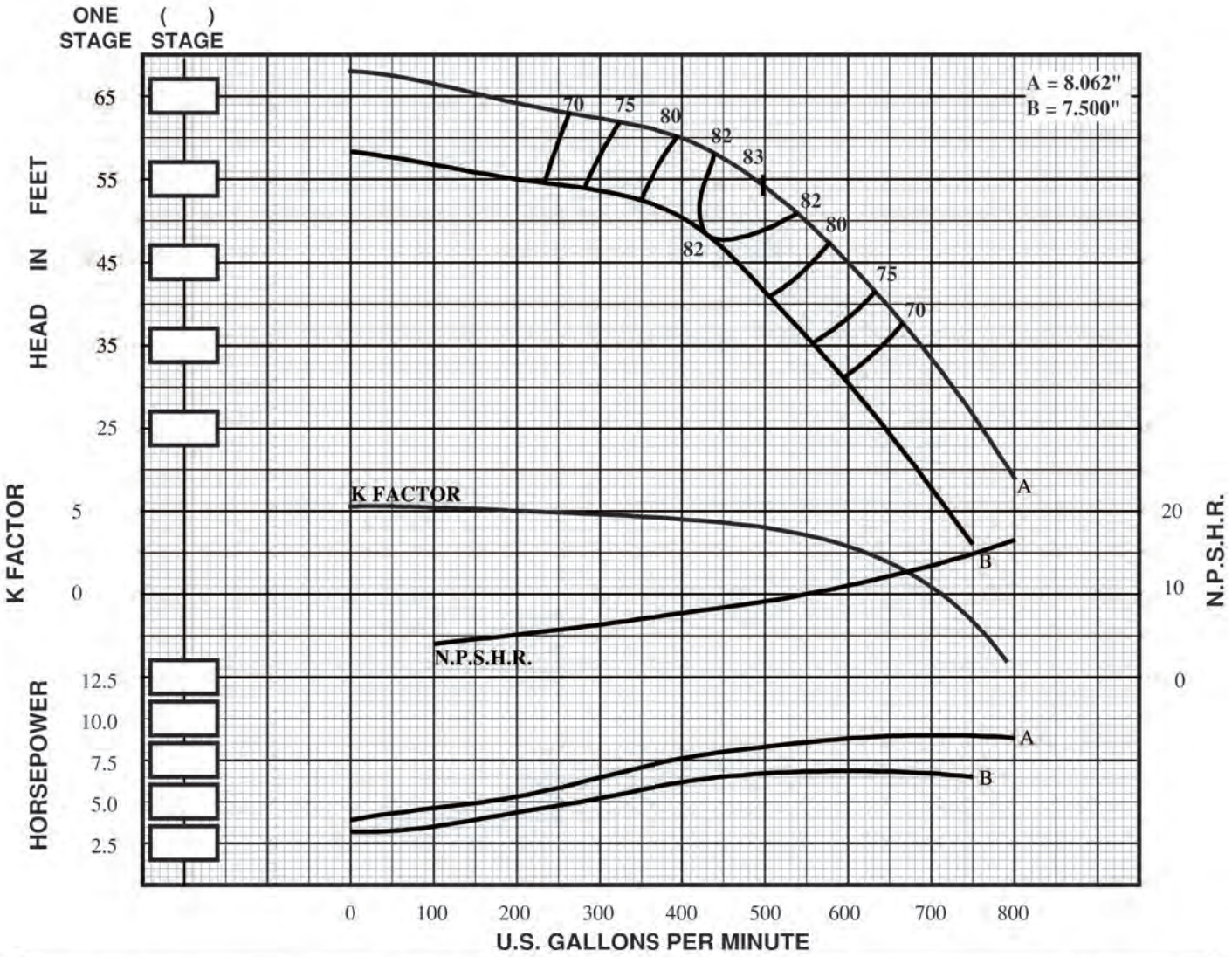


LINESHAFT TURBINE

SIMFLO®

Section 202
Date 12/10/08

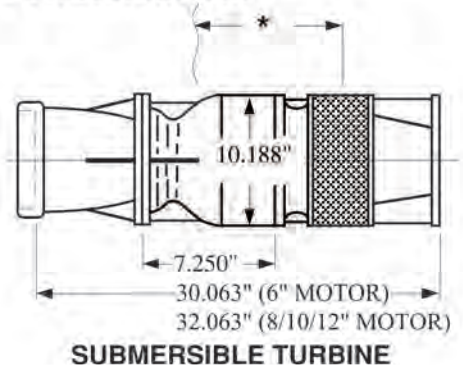
SP10H
1770 RPM



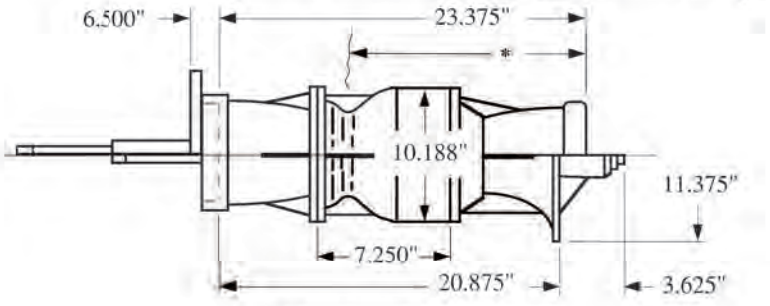
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP10H	MAX. SHAFT DIA. = 1.500"	1	-4	IMP. - C.I.	-3
IMPELLER WT. - LBS. = 9.0	STD. LATERAL = .63"	2	-3	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6"/ 8"	3	-2	IMP. - S.S.	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6"/ BELL	4	-1	BOWL - BRZ.	-3
MAX. SPHERE SIZE = .63"	ONE STAGE WR^2 = .315	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 14"	=			BOWL - S.S.	-3

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

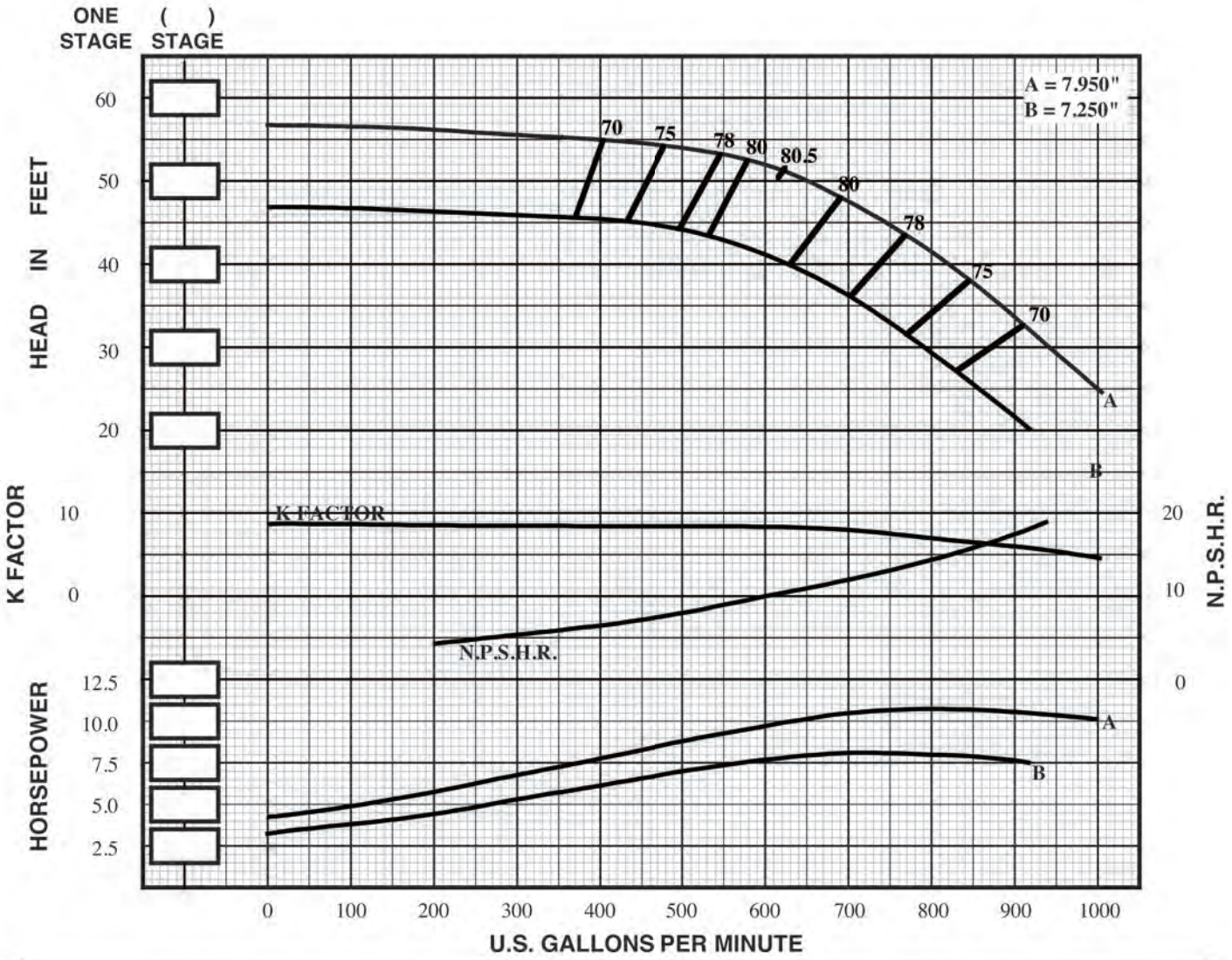


LINESHAFT TURBINE

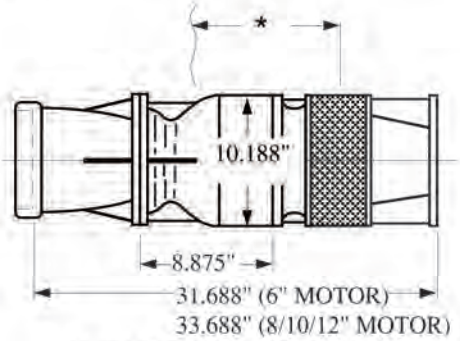
SIMFLO®

Section 202
Date 3/30/18

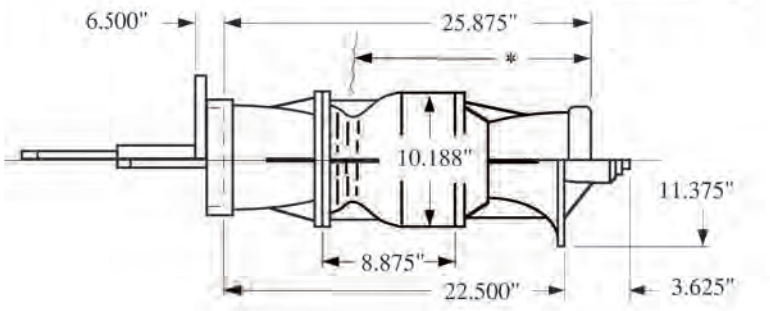
SM10MO
1770 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM10MO	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 6.1	STD. LATERAL = 1.56"	1	-4	IMP. - C.I.	-4
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6" / 8"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6" / BELL	3	-2	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .81"	ONE STAGE WR^2 = .217	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v21.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

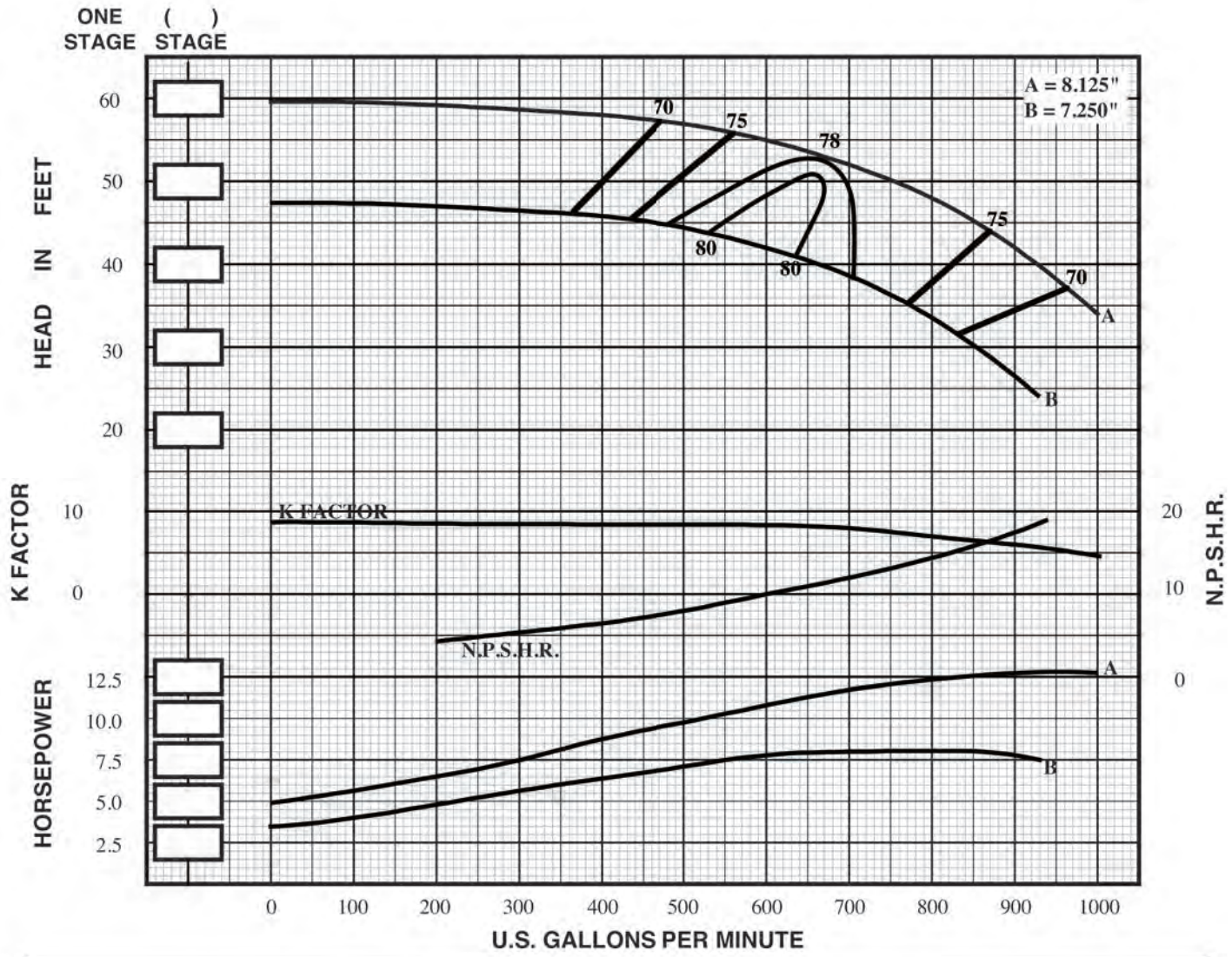


LINESHAFT TURBINE

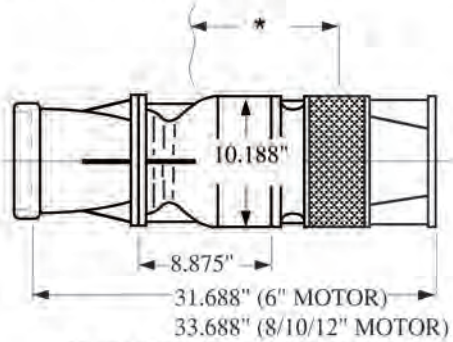
SIMFLO®

Section 202
Date 3/30/18

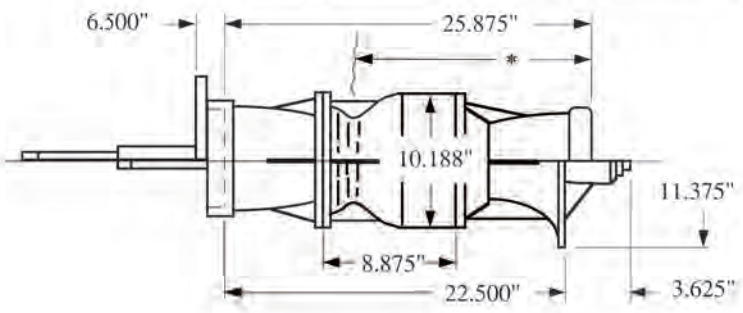
SM10HO
1770 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM10HO	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 6.1	STD. LATERAL = 1.25"	1	-4	IMP. - C.I.	-4
ONE STAGE WT. - LBS. = 190.0	DISCHARGE SIZES = 6" / 8"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6" / BELL	3	-2	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .81"	ONE STAGE WR^2 = .217	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v21.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

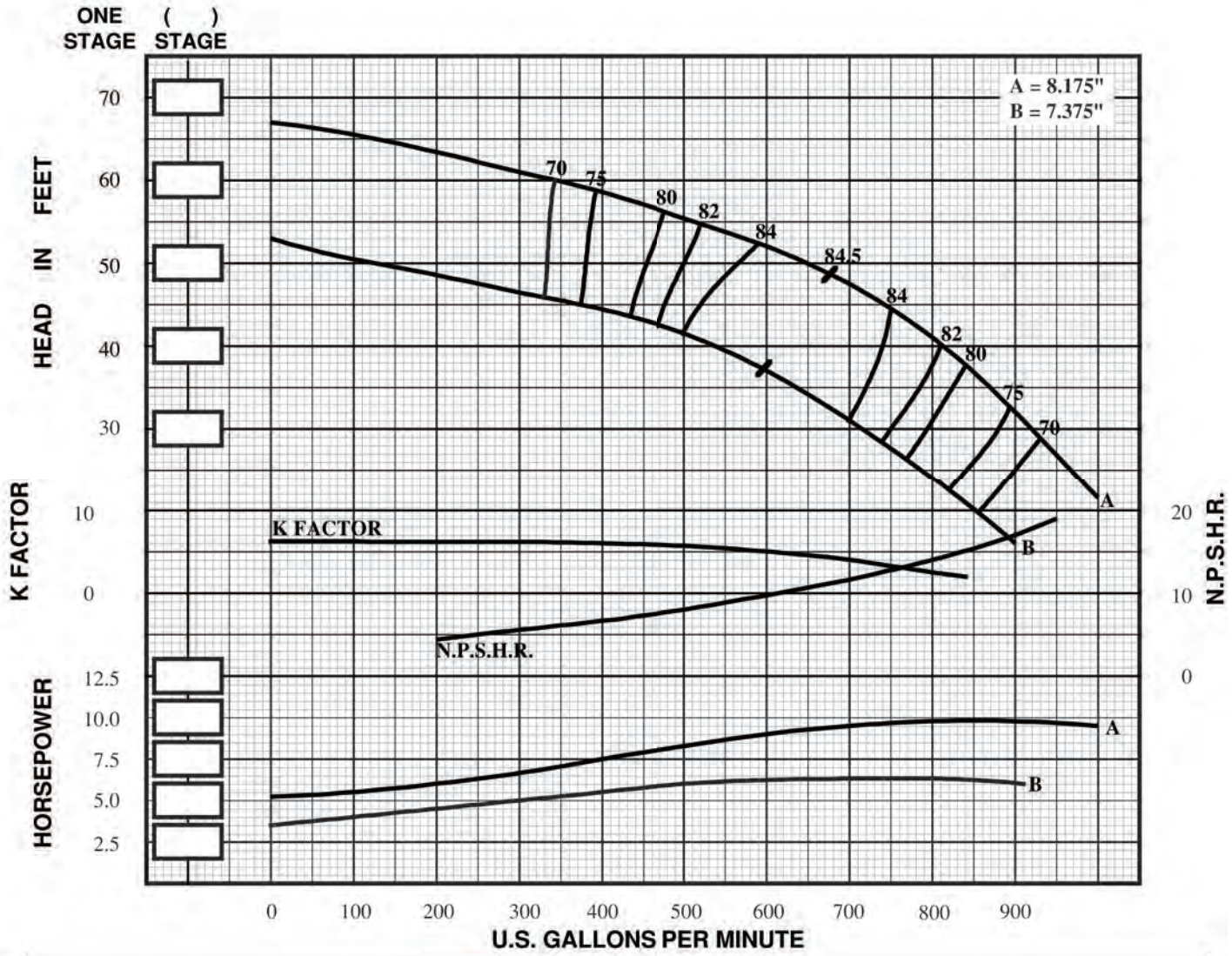


LINESHAFT TURBINE

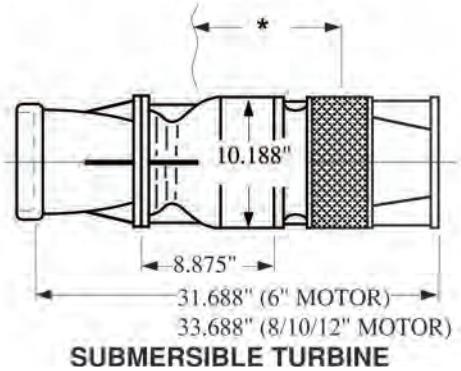
SIMFLO®

Section 202
Date 9/1/06

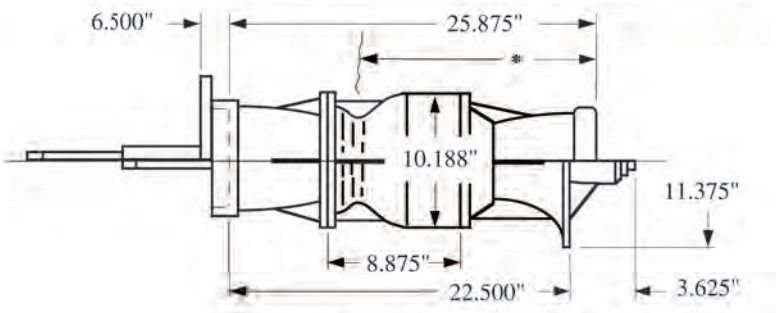
SM10M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM10M	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 9.7	STD. LATERAL = 1.06"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 195.0	DISCHARGE SIZES = 6"/ 8"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .347	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v21.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

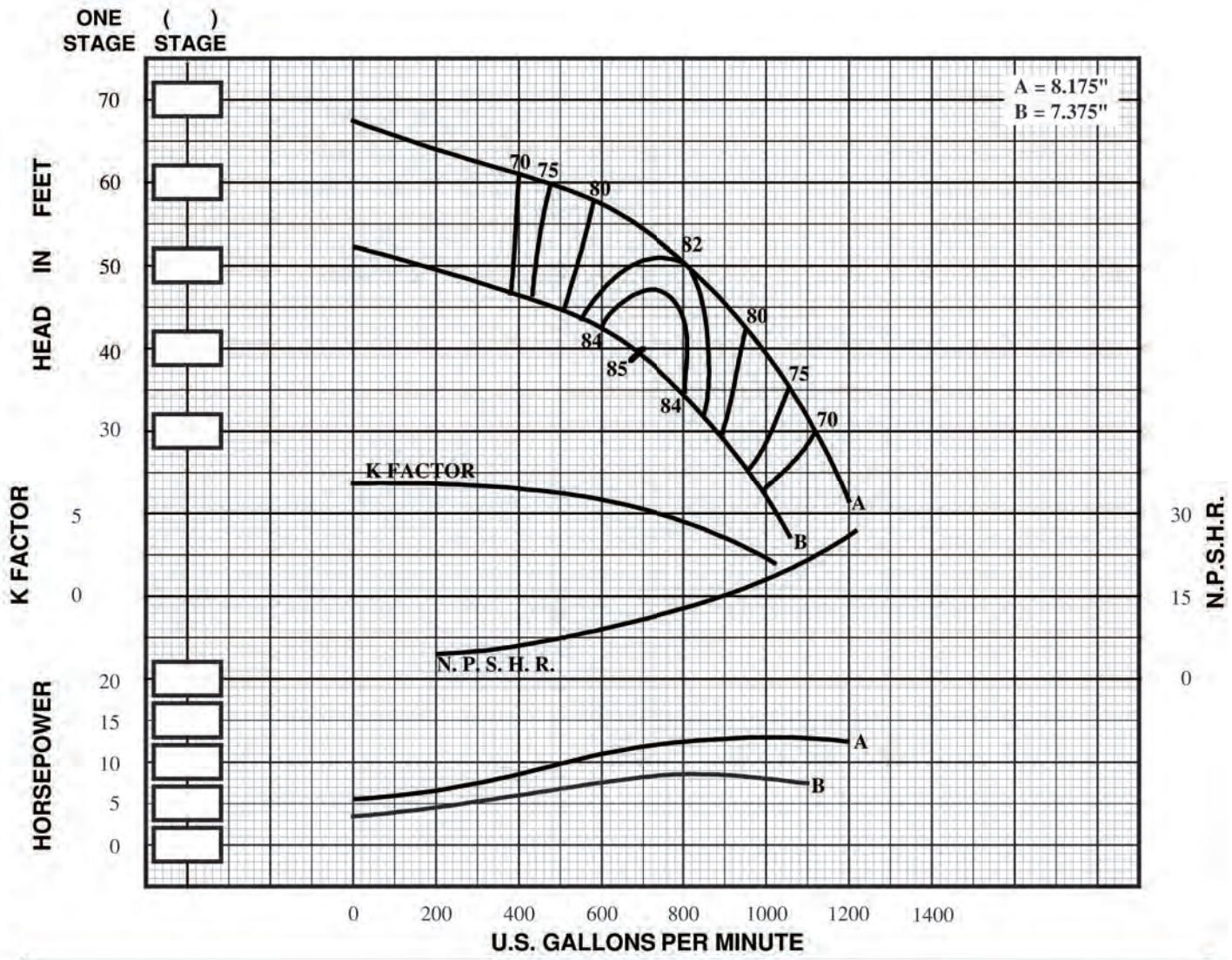


LINESHAFT TURBINE

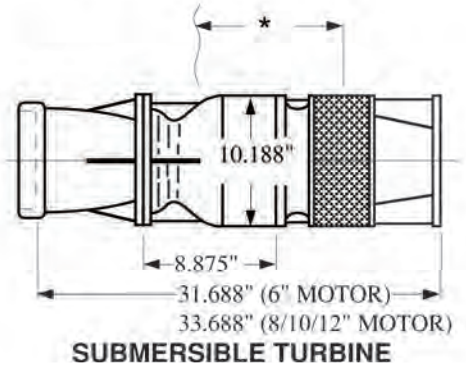
SIMFLO®

Section 202
Date 9/1/06

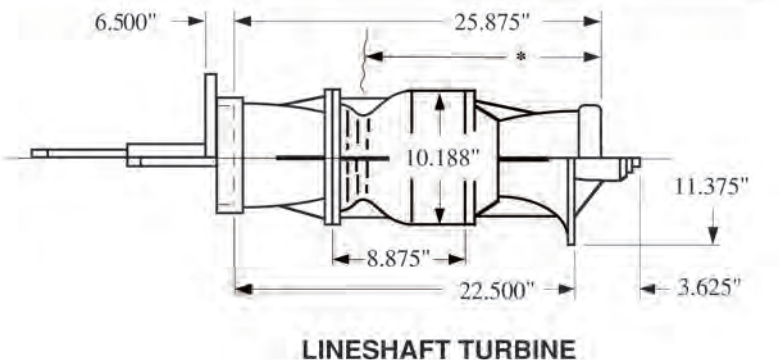
SM10H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM10H	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 10.8	STD. LATERAL = 1.06"	1	-4	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 195.0	DISCHARGE SIZES = 6"/ 8"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6"/ BELL	3	-2	IMP. - S.S.	-4
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .386	4	-1	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v21.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

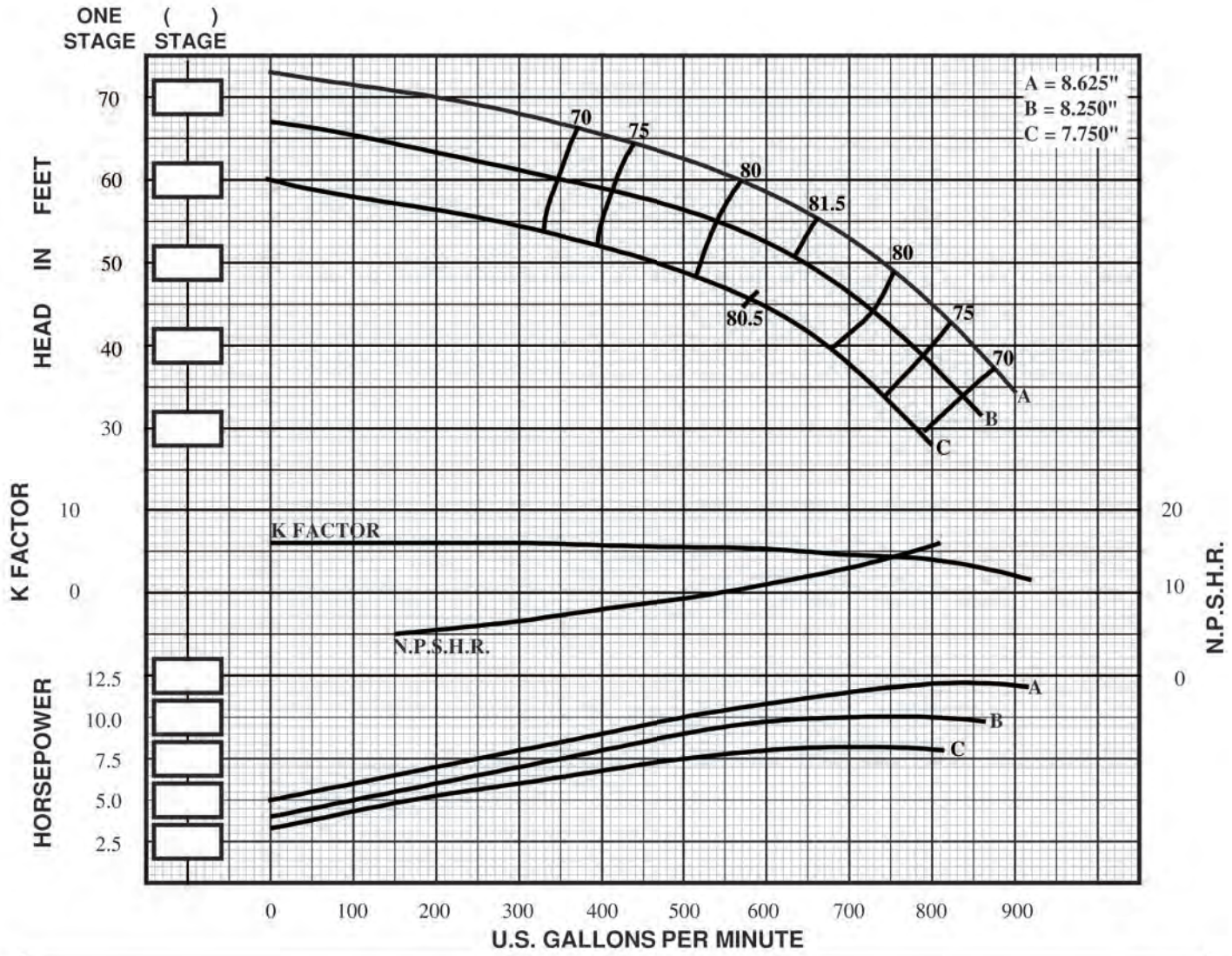


LINESHAFT TURBINE

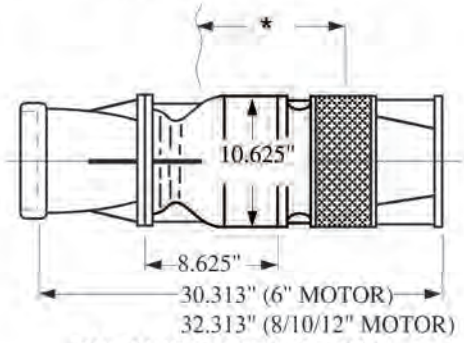
SIMFLO®

Section 202
Date 9/1/06

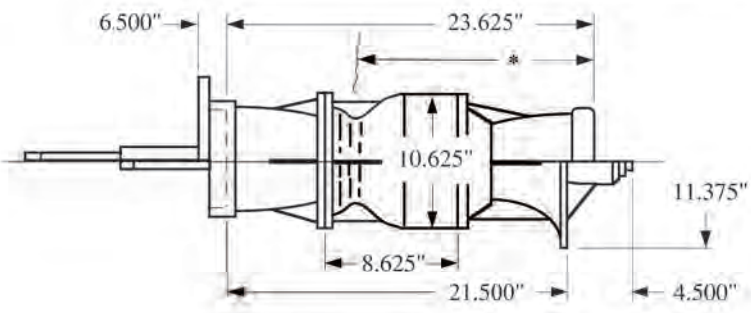
SM11M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM11M	MAX. SHAFT DIA. = 1.500"				
IMPELLER WT. - LBS. = 9.5	STD. LATERAL = .88"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 195.0	DISCHARGE SIZES = 6"/ 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6"/ BELL	3	-1	IMP. - S.S.	-4
MAX. SPHERE SIZE = .81"	ONE STAGE WR^2 = .382	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 14"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

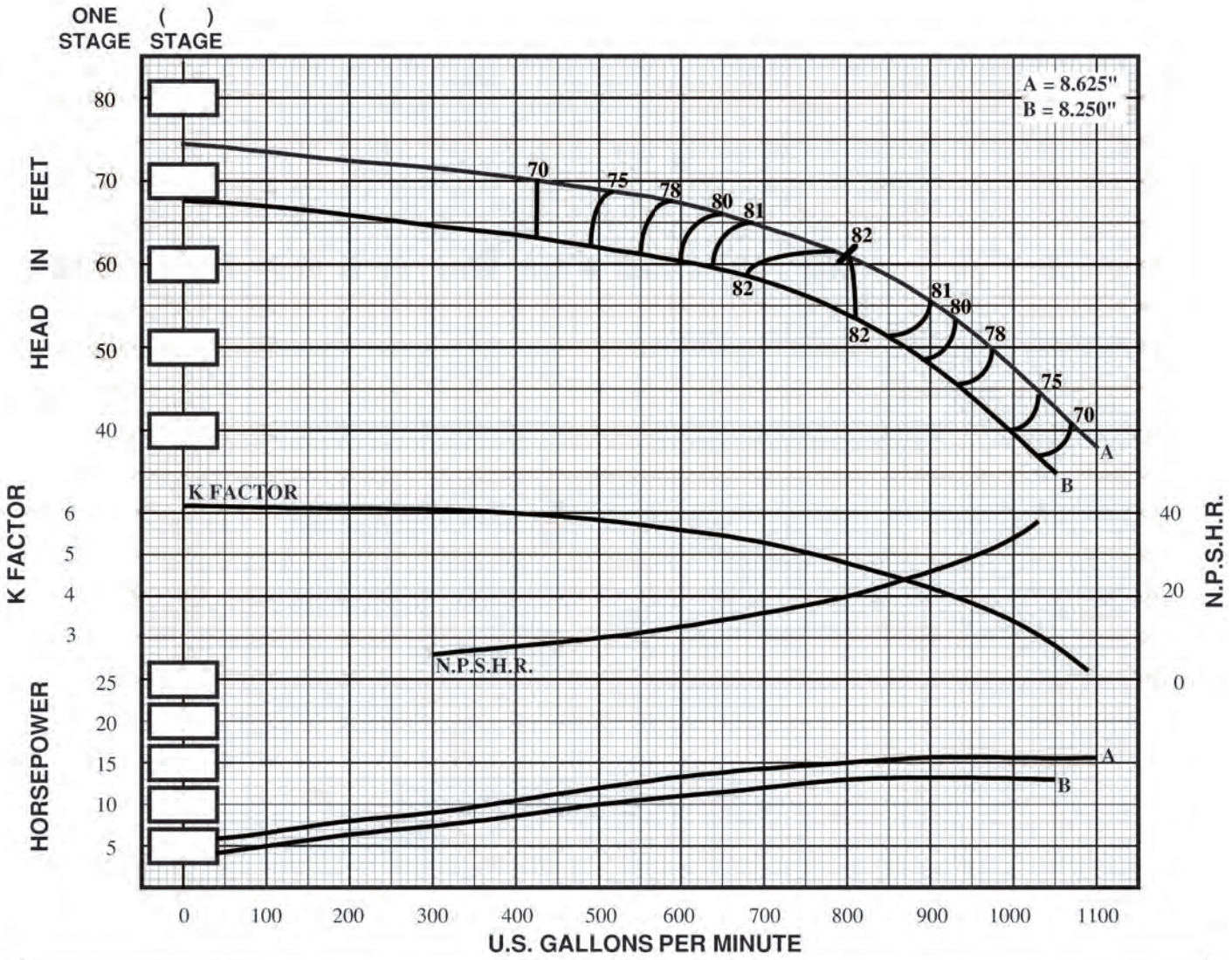


LINESHAFT TURBINE

SIMFLO®

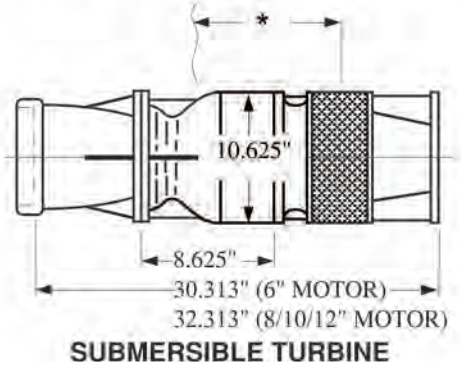
Section 202
Date 9/1/06

SM11H
1770 RPM

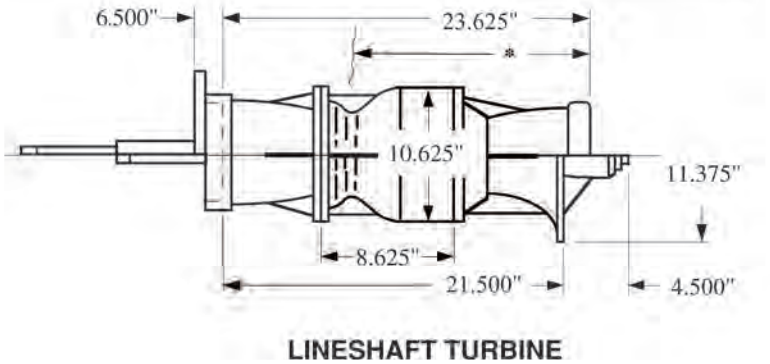


IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.500"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM11H	MAX. SHAFT DIA. = 1.500"	1	-3	IMP. - C.I.	-3
IMPELLER WT. - LBS. = 11.0	STD. LATERAL = .94"	2	-2	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 195.0	DISCHARGE SIZES = 6"/ 8"/ 10"	3	-1	IMP. - S.S.	-4
ADD'L STAGE WT. - LBS. = 75.0	SUCTION SIZES = 6" / BELL	4	0	BOWL - BRZ.	-2
MAX. SPHERE SIZE = .81"	ONE STAGE WR^2 = .450	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 14"	=			BOWL - S.S.	-3

Δ CONSULT FACTORY v18.1



SUBMERSIBLE TURBINE

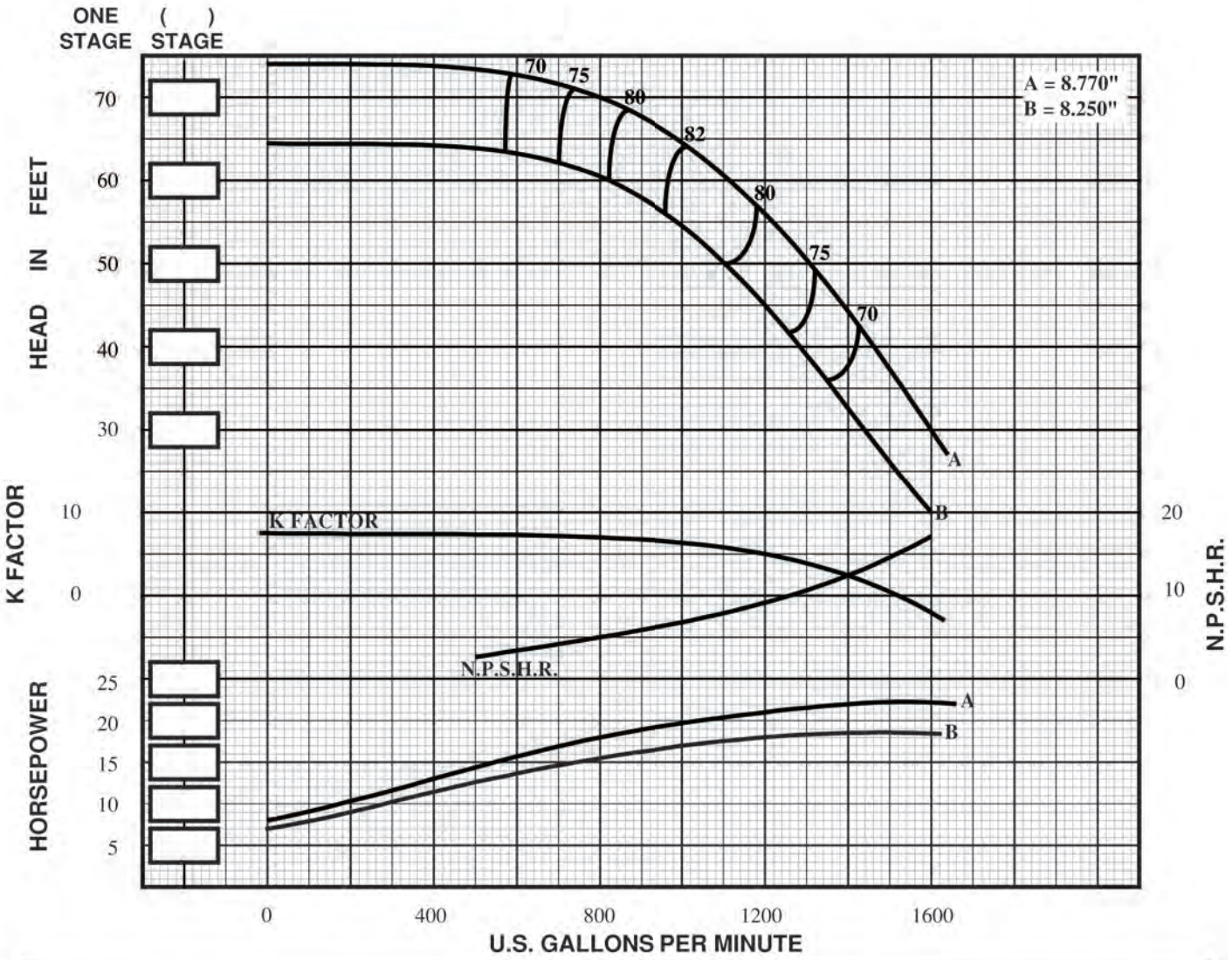


LINESHAFT TURBINE

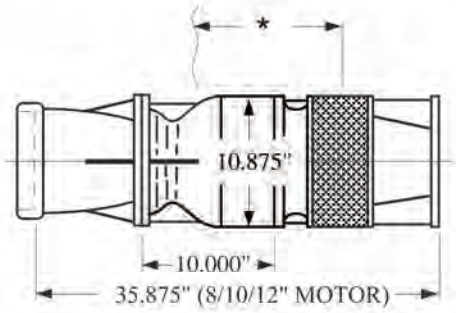
SIMFLO®

Section 202
Date 9/1/06

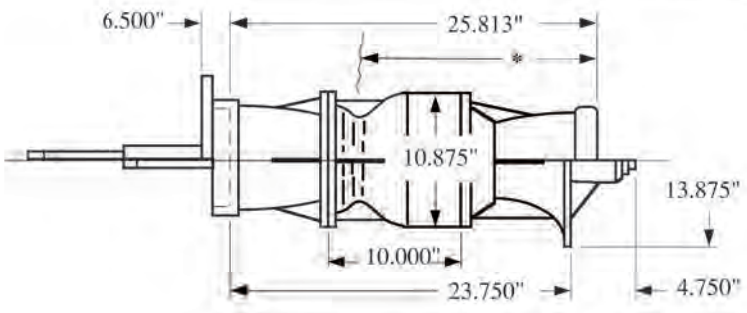
SL11H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.688"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SL11H	MAX. SHAFT DIA. = 1.688"				
IMPELLER WT. - LBS. = 13.0	STD. LATERAL = 1.44"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 200.0	DISCHARGE SIZES = 6"/ 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 81.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .532	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

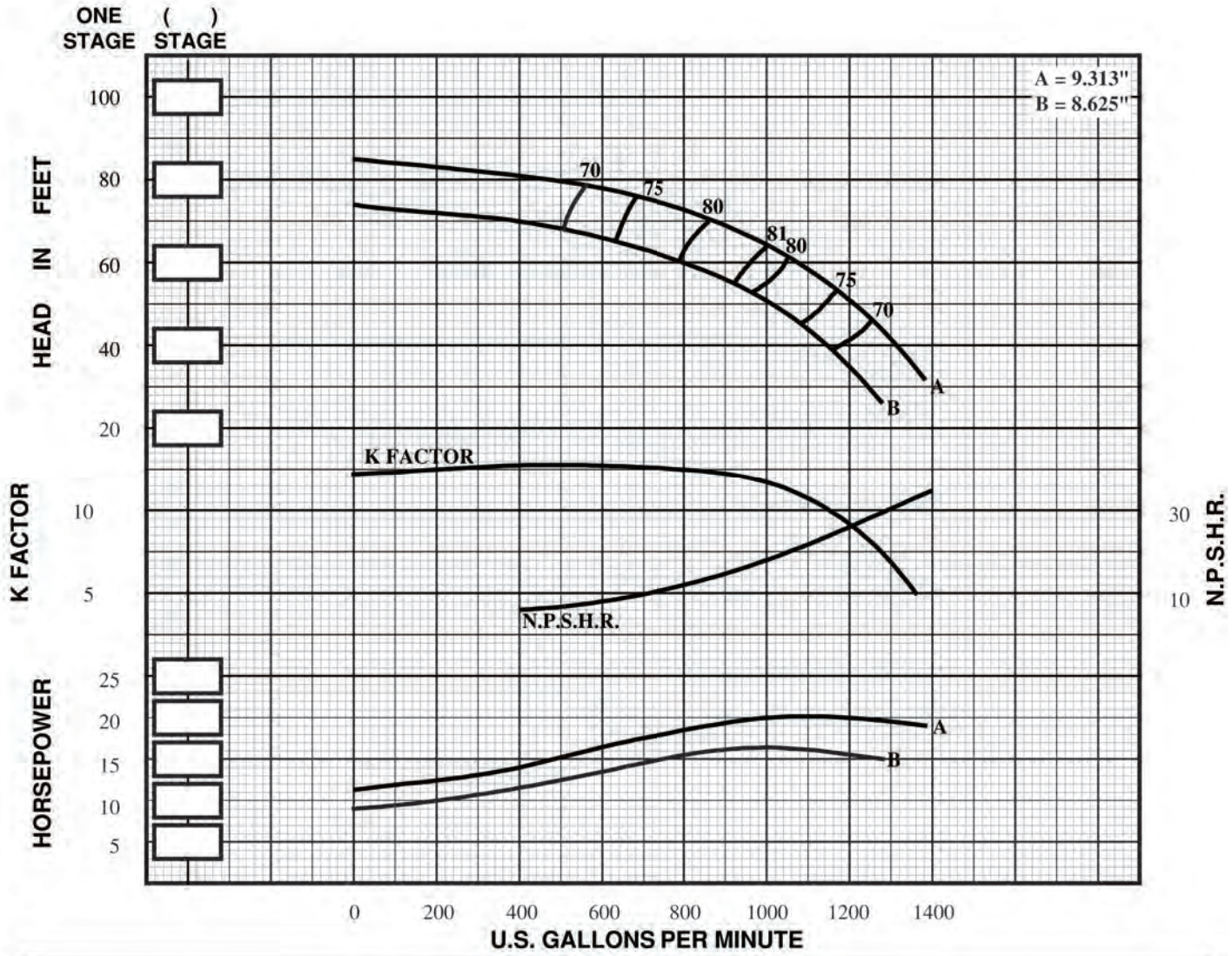


LINESHAFT TURBINE

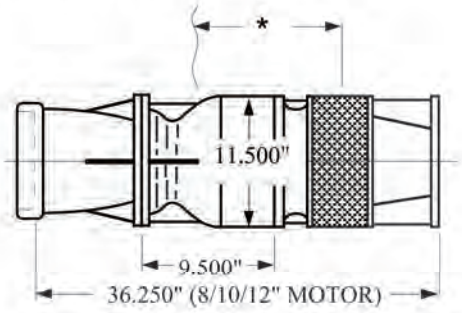
SIMFLO®

Section 202
Date 9/1/06

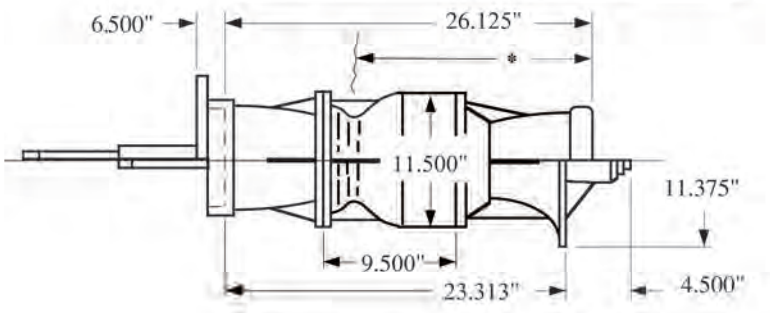
SR11MO
1770 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SR11MO	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 8.0	STD. LATERAL = 1.13"	1	-3	IMP. - C.I.	-1
ONE STAGE WT. - LBS. = 270.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 100.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .75"	ONE STAGE WR^2 = .375	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



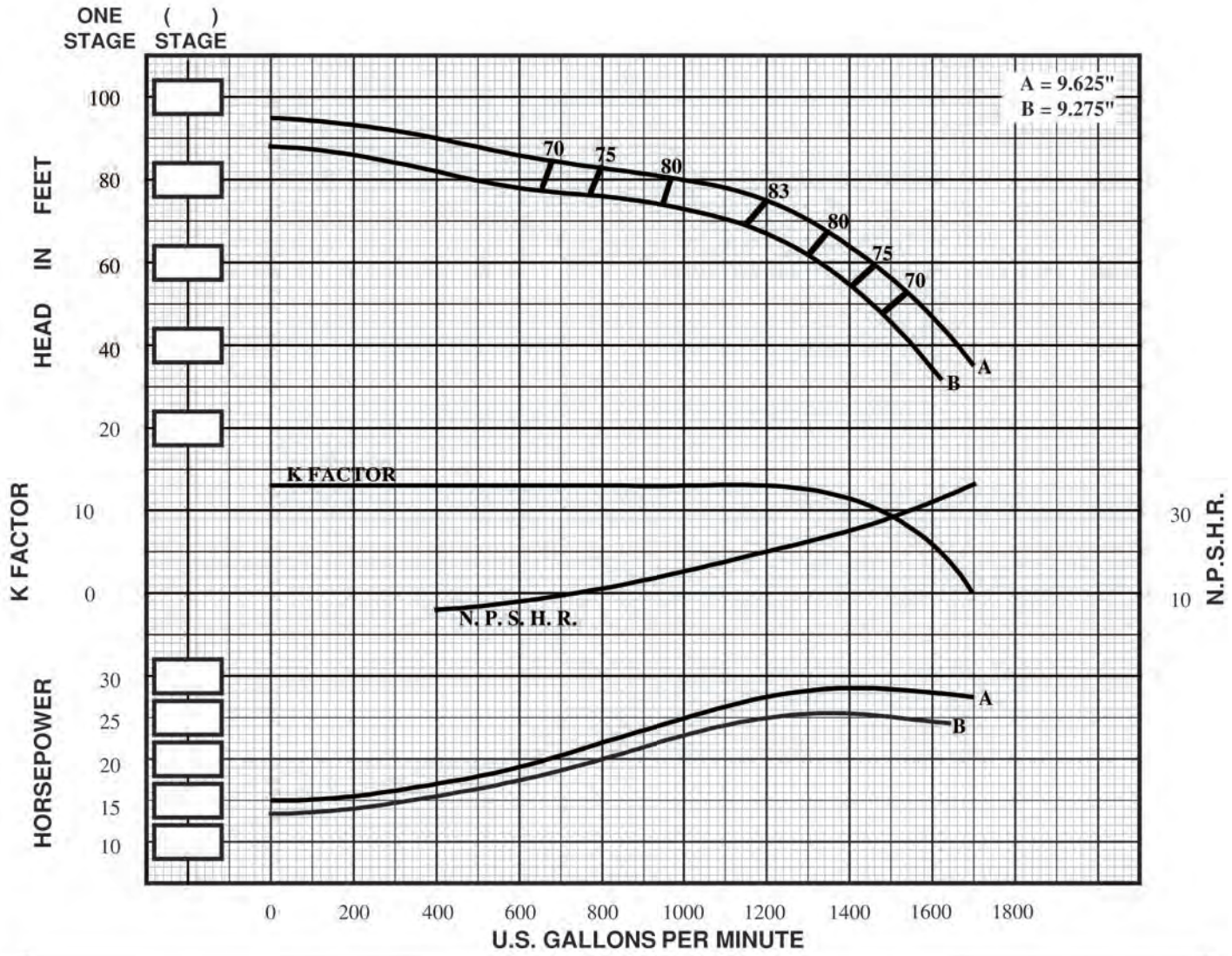
LINESHAFT TURBINE

SIMFLO®

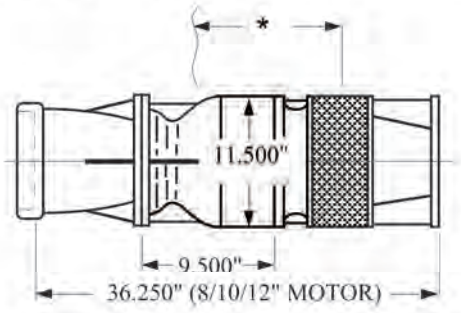
Section 202
Date 9/1/06

SR11HO

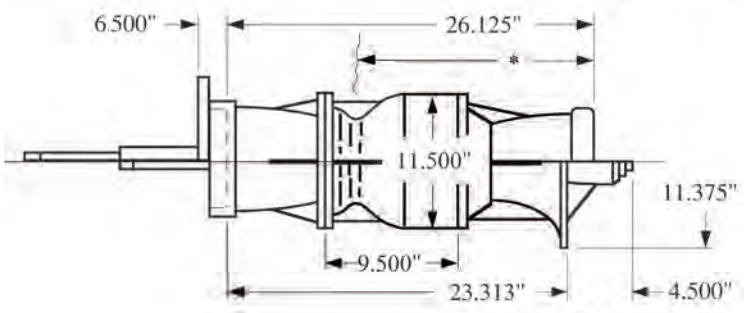
1770 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SR11HO	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 8.35	STD. LATERAL = .72"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 270.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 100.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .75"	ONE STAGE WR^2 = .411	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

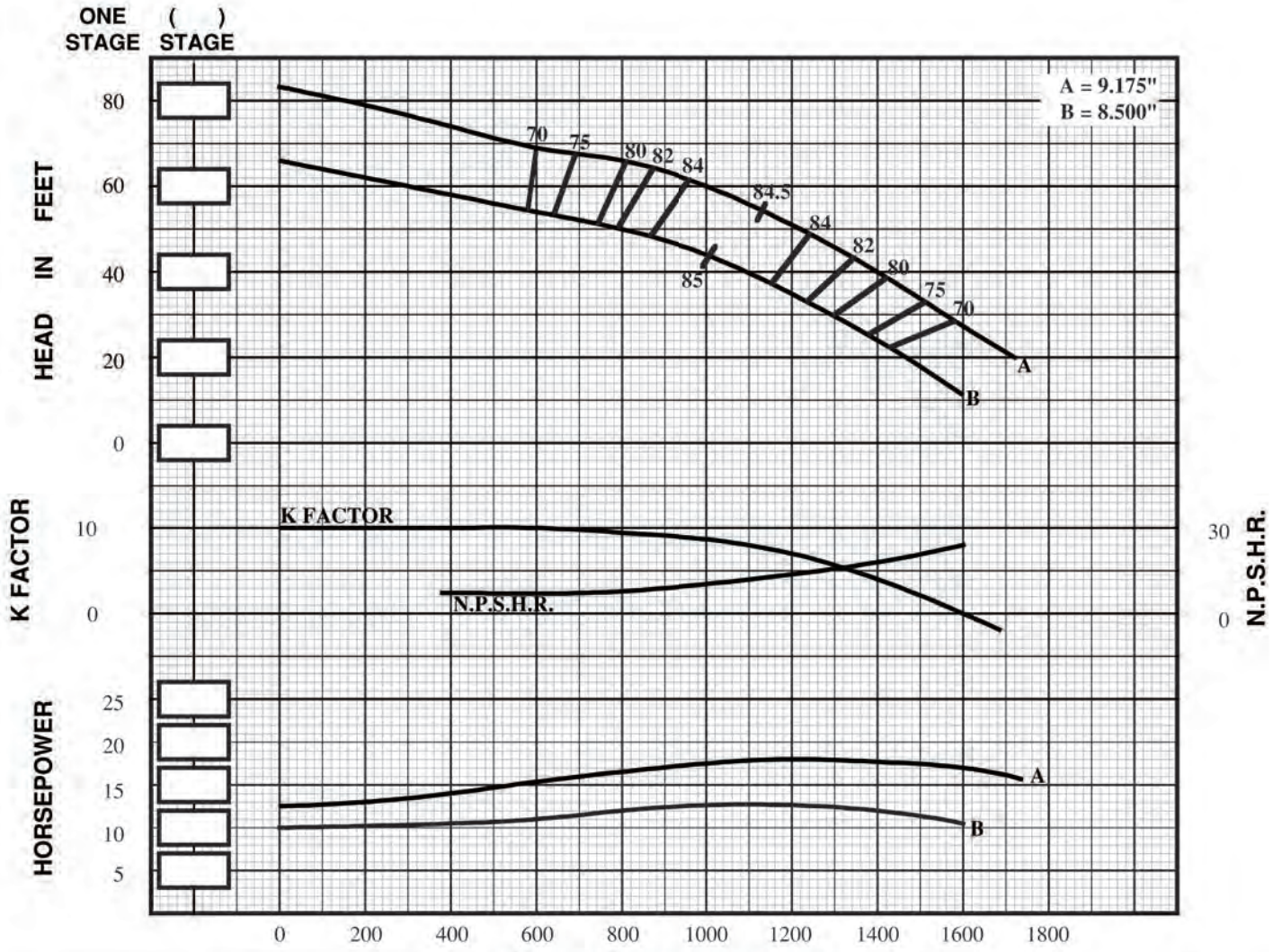


LINESHAFT TURBINE

SIMFLO®

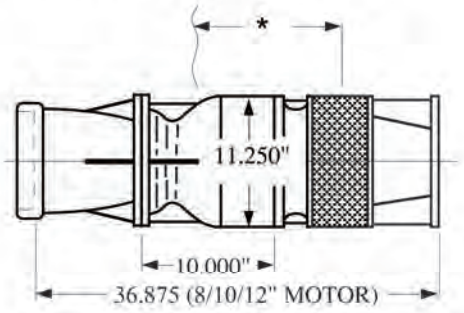
Section 202
Date 9/1/06

SP11L
1770 RPM

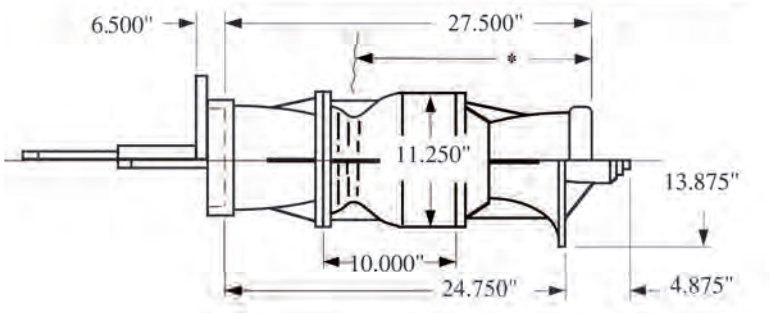


IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP11L	MAX. SHAFT DIA. = 1.937"	1	-4	IMP. - C.I.	0
IMPELLER WT. - LBS. = 16.4	STD. LATERAL = 1.13"	2	-3	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 290.0	DISCHARGE SIZES = 8"/ 10"	3	-2	IMP. - S.S.	-1
ADD'L STAGE WT. - LBS. = 105.0	SUCTION SIZES = 8"/ BELL	4	-1	BOWL - BRZ.	-1
MAX. SPHERE SIZE = 1.19"	ONE STAGE WR^2 = .754	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 18"	=			BOWL - S.S.	-2

Δ CONSULT FACTORY v18.1



SUBMERSIBLE TURBINE

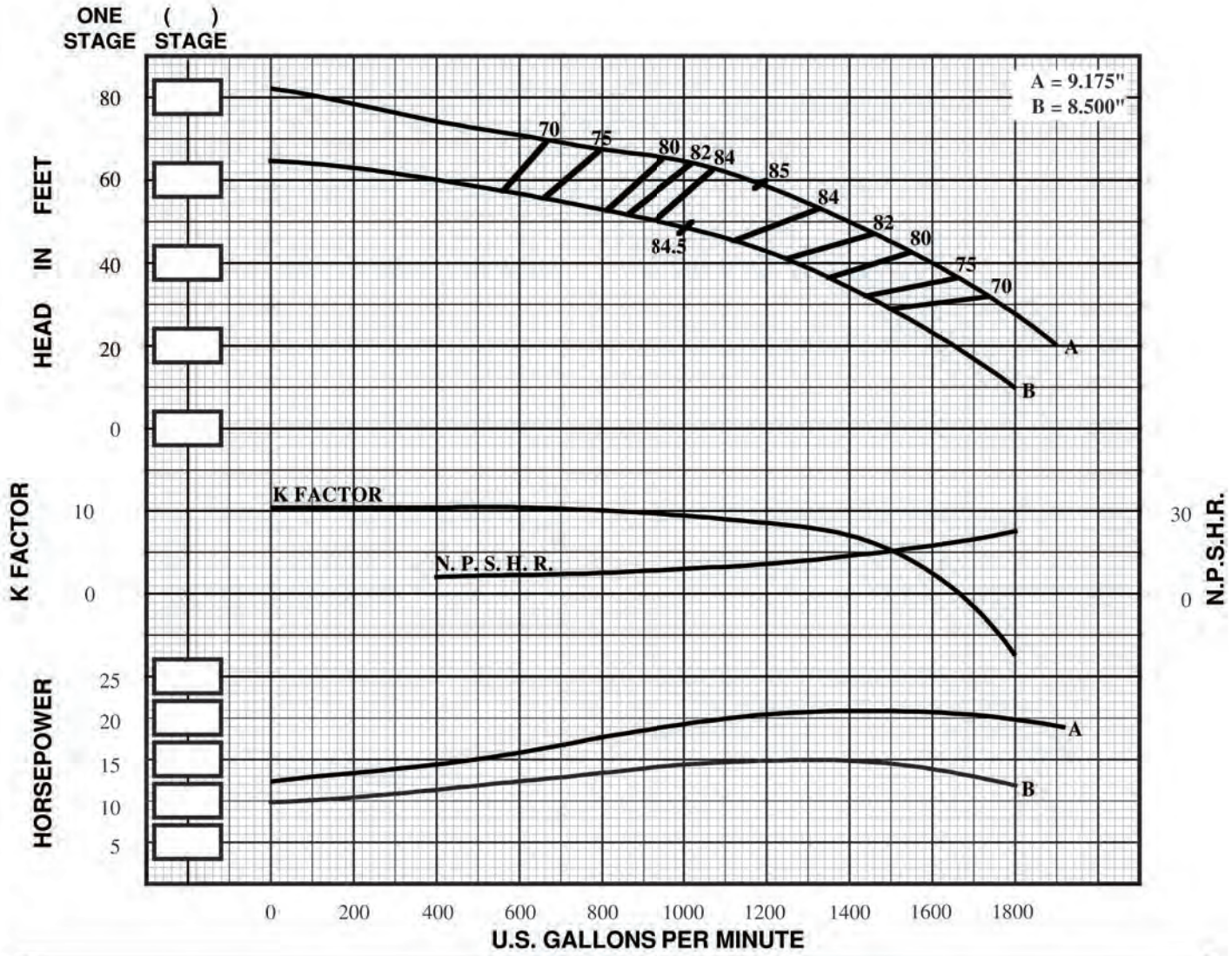


LINESHAFT TURBINE

SIMFLO®

Section 202
Date 9/1/06

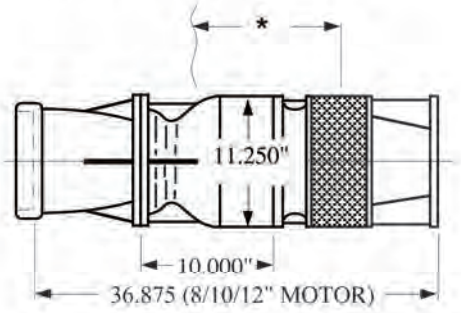
SP11M
1770 RPM



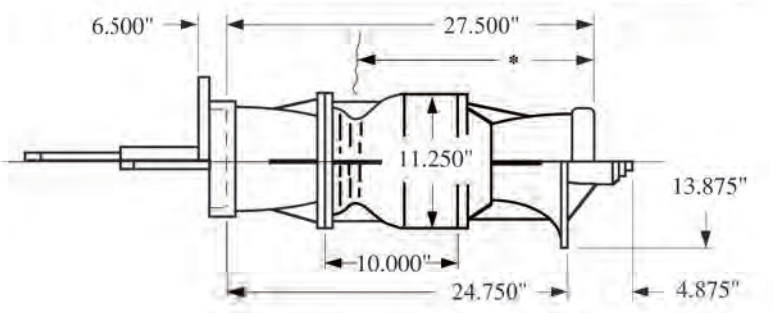
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP11M	MAX. SHAFT DIA. = 1.937"	1	-3	IMP. - C.I.	0
IMPELLER WT. - LBS. = 14.3	STD. LATERAL = 1.13"	2	-2	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 290.0	DISCHARGE SIZES = 8"/ 10"	3	-1	IMP. - S.S.	-2
ADD'L STAGE WT. - LBS. = 105.0	SUCTION SIZES = 8"/ BELL	4	0	BOWL - BRZ.	-1
MAX. SPHERE SIZE = 1.19"	ONE STAGE WR^2 = .670	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 18"	=			BOWL - S.S.	-2

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

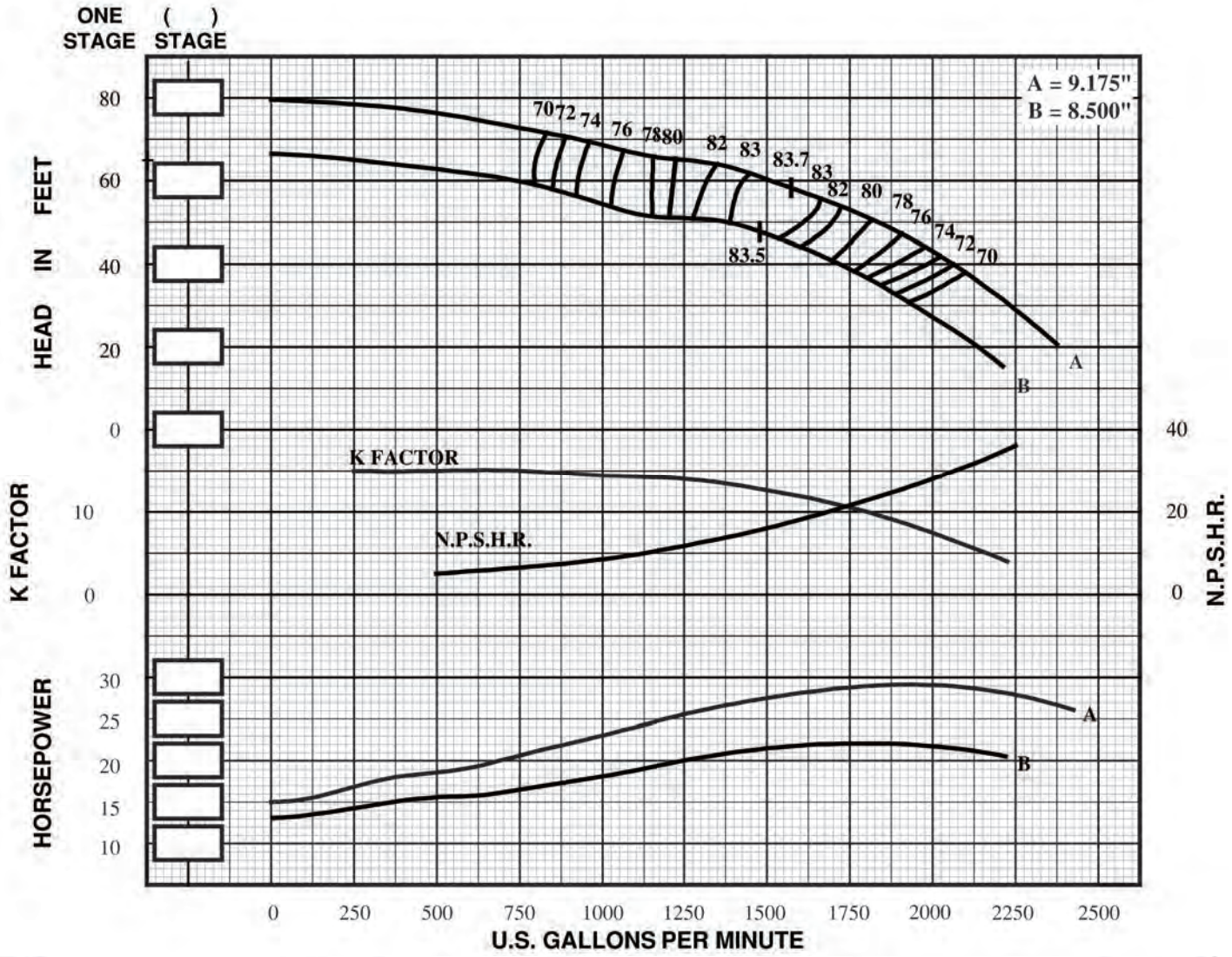


LINESHAFT TURBINE

SIMFLO®

Section 202
Date 9/1/06

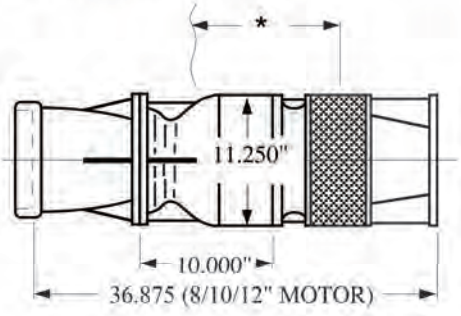
SP11H
1770 RPM



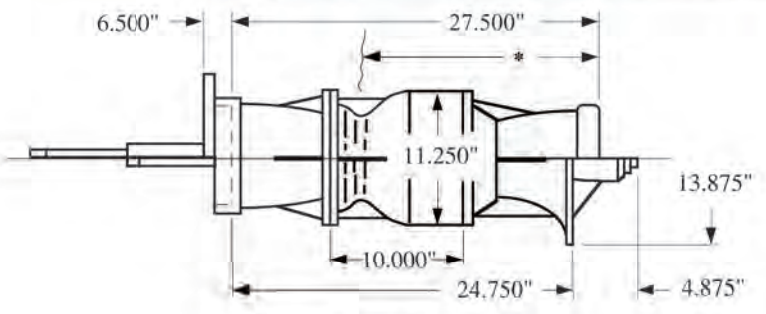
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP11H	MAX. SHAFT DIA. = 1.937"				
IMPELLER WT. - LBS. = 14.9	STD. LATERAL = 1.13"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 290.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 105.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.19"	ONE STAGE WR^2 = .718	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 18"	=	5	0	BOWL - NI-RI	-1
				BOWL - S.S.	-2

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

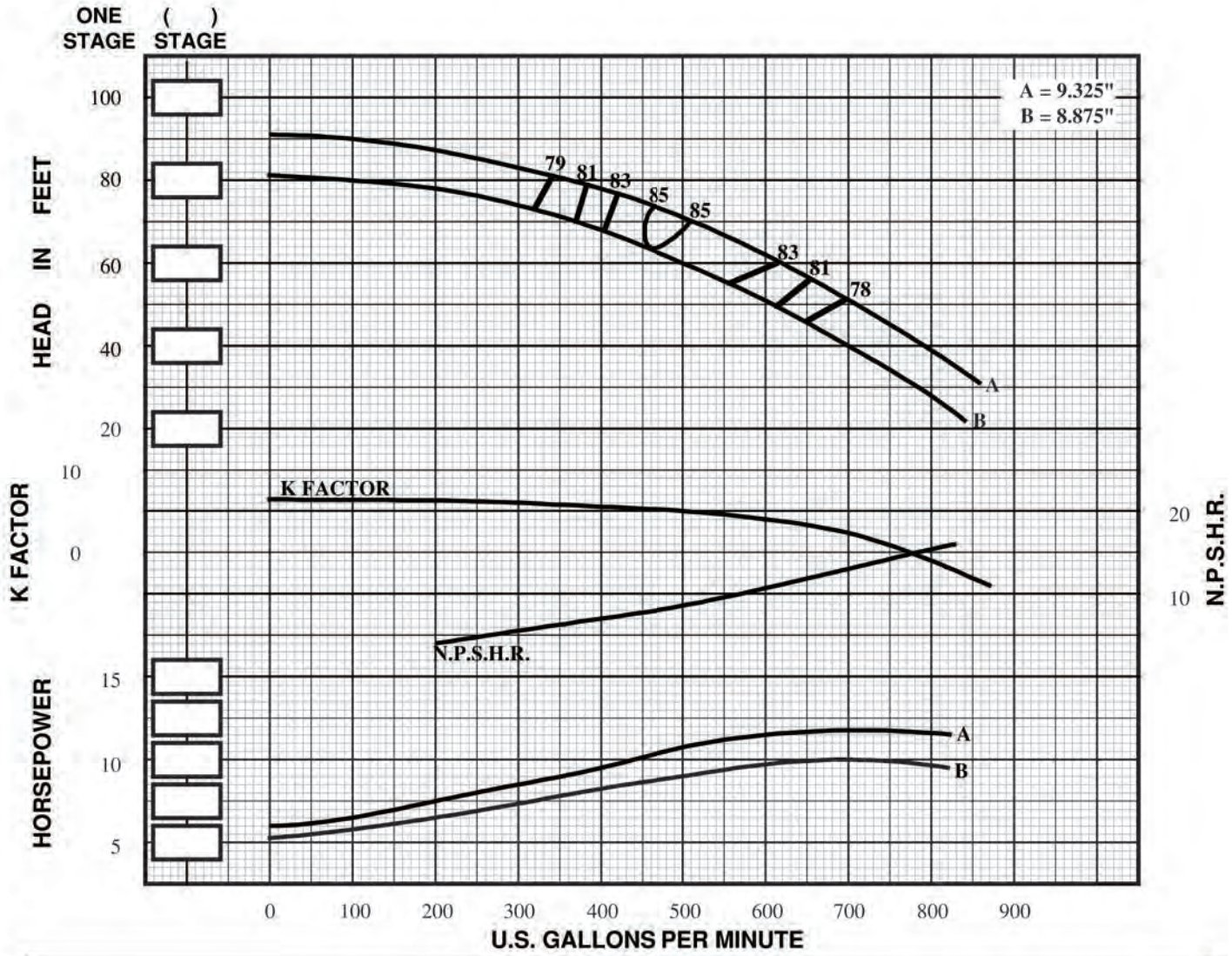


LINESHAFT TURBINE

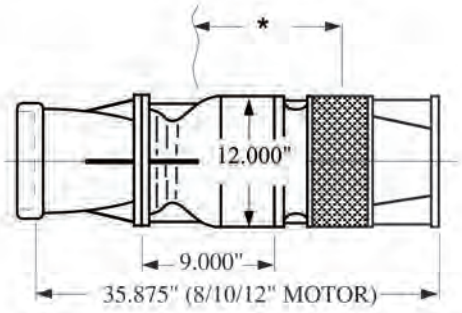
SIMFLO®

Section 202
Date 9/1/06

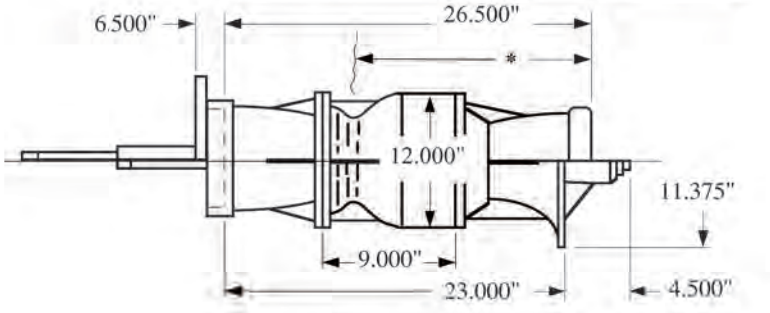
SW12L
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SW12L	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 13.8	STD. LATERAL = 1.13"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 235.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 105.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .66"	ONE STAGE WR^2 = .642	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
□ CONSULT FACTORY	v21.1			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

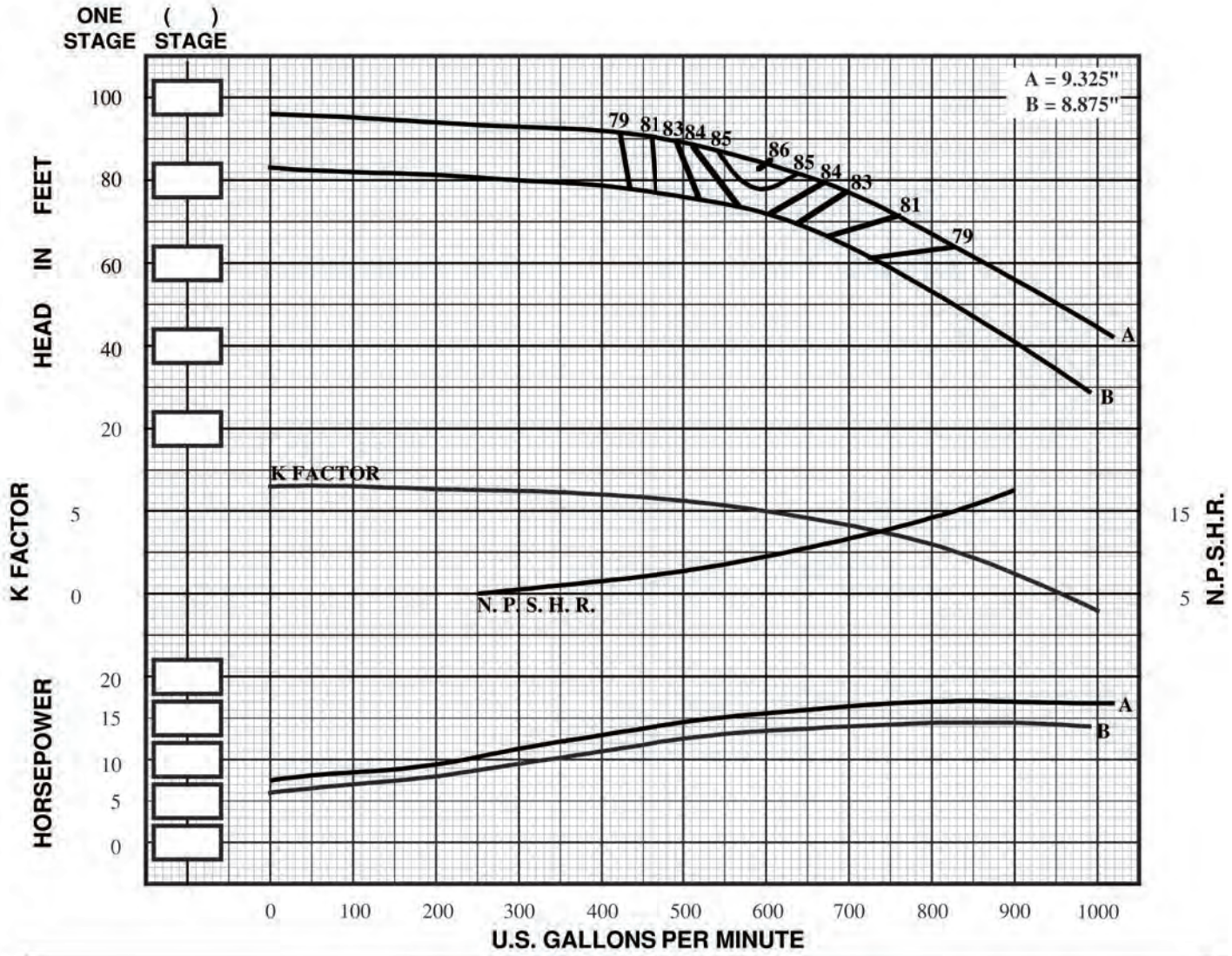


LINESHAFT TURBINE

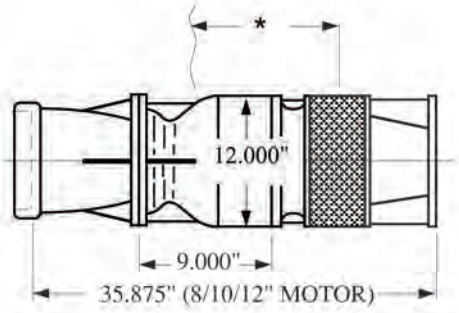
SIMFLO®

Section 202
Date 9/1/06

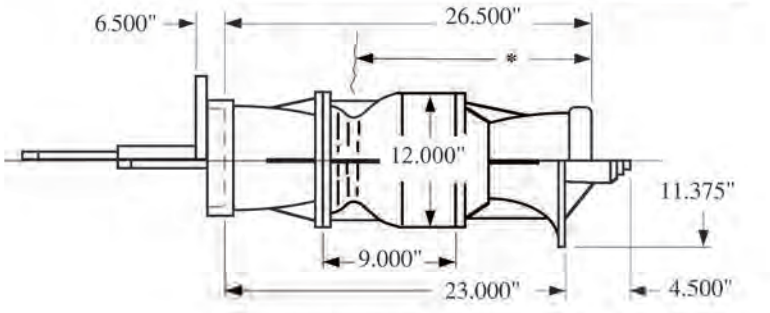
SW12M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SW12M	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 14.5	STD. LATERAL = 1.13"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 235.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 105.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .66"	ONE STAGE WR^2 = .673	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
☐ CONSULT FACTORY	v21.1			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

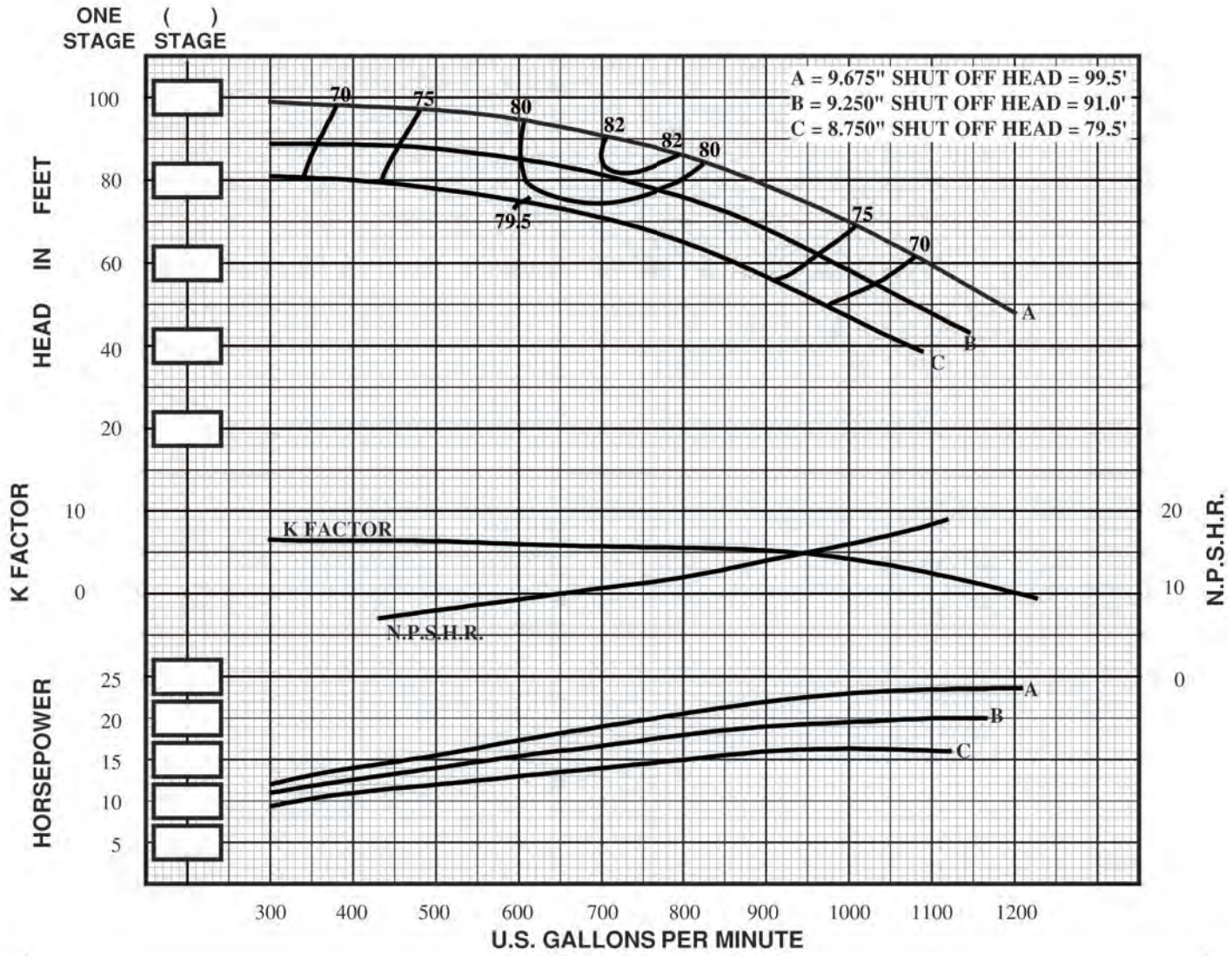


LINESHAFT TURBINE

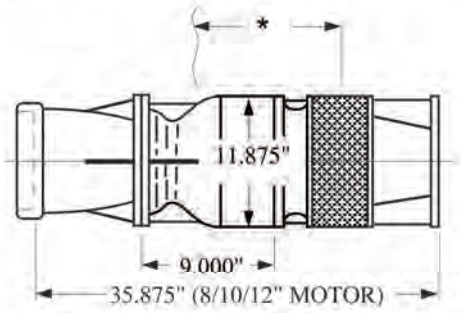
SIMFLO®

Section 202
Date 9/1/06

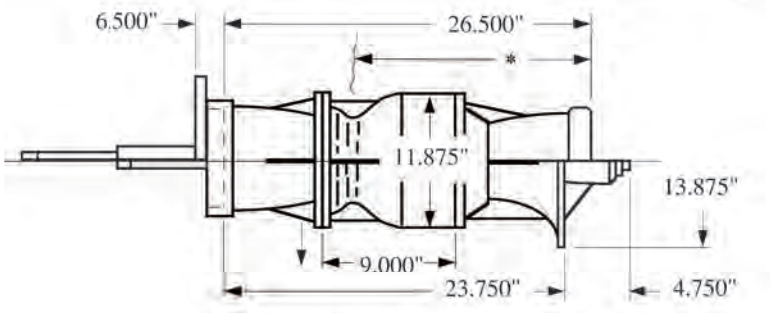
SP12M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP12M	MAX. SHAFT DIA. = 1.687"	1	-3	IMP. - C.I.	-1
IMPELLER WT. - LBS. = 15.0	STD. LATERAL = 1.19"	2	-2	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 260.0	DISCHARGE SIZES = 8"/ 10"	3	-1	IMP. - S.S.	-2
ADD'L STAGE WT. - LBS. = 120.0	SUCTION SIZES = 8"/ BELL	4	0	BOWL - BRZ.	-1
MAX. SPHERE SIZE = .81"	ONE STAGE WR^2 = .746	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 16"	=			BOWL - S.S.	-2
Δ CONSULT FACTORY	v18.1				



SUBMERSIBLE TURBINE

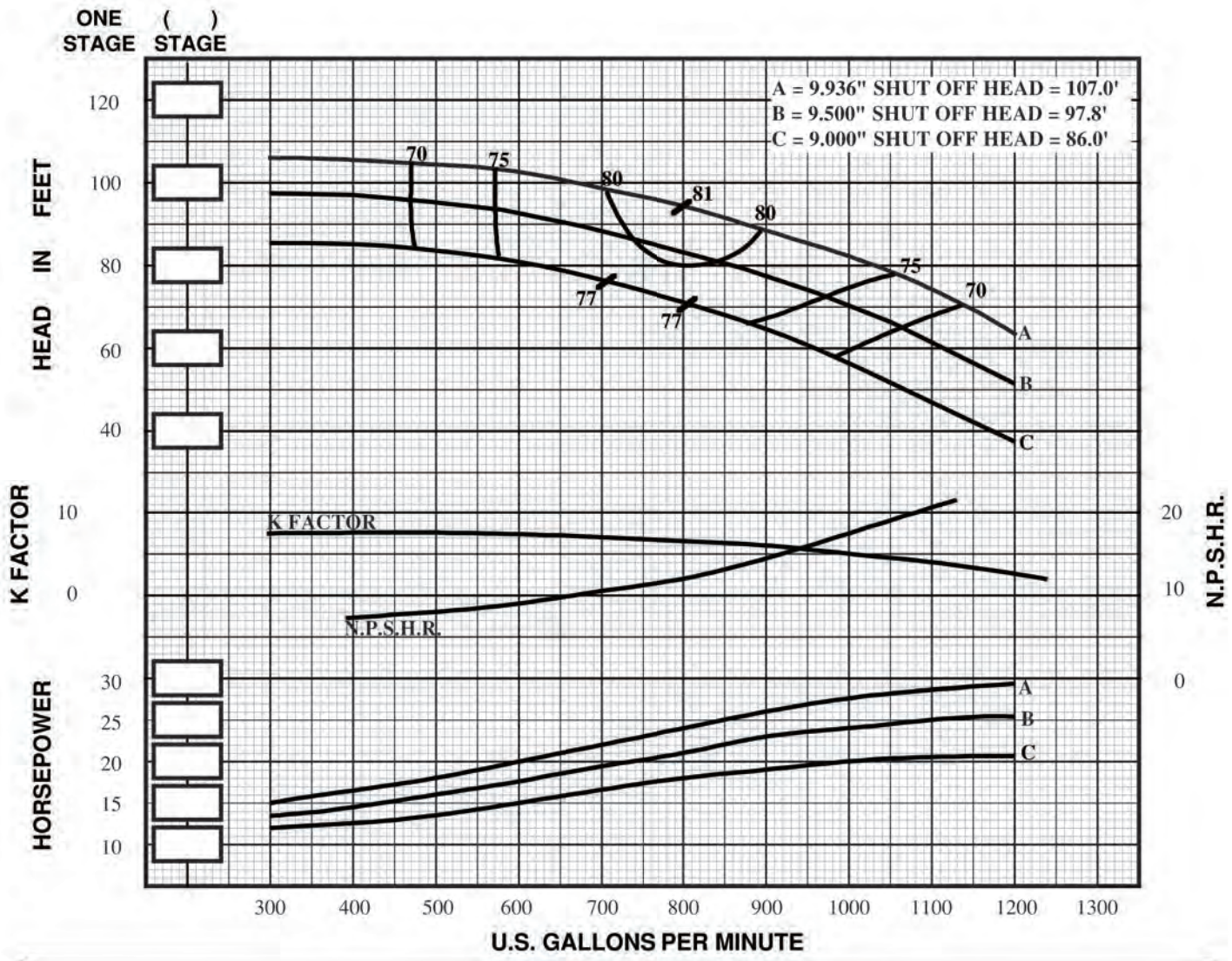


LINESHAFT TURBINE

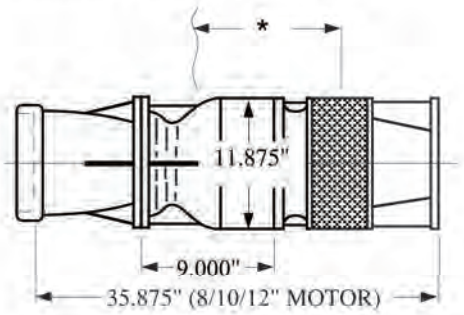
SIMFLO®

Section 202
Date 9/1/06

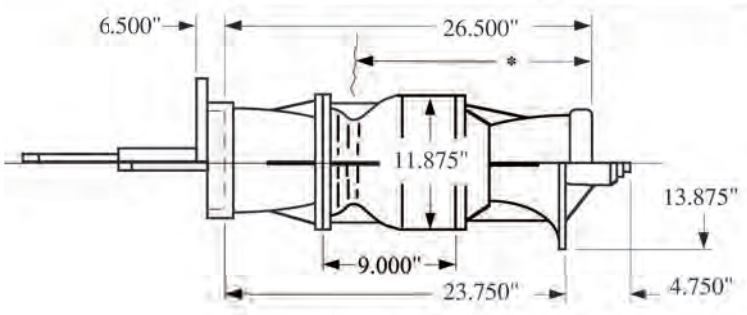
SP12H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP12H	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 15.9	STD. LATERAL = 1.06"	1	-3	IMP. - C.I.	-1
ONE STAGE WT. - LBS. = 260.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 120.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-2
MAX. SPHERE SIZE = .75"	ONE STAGE WR^2 = .790	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

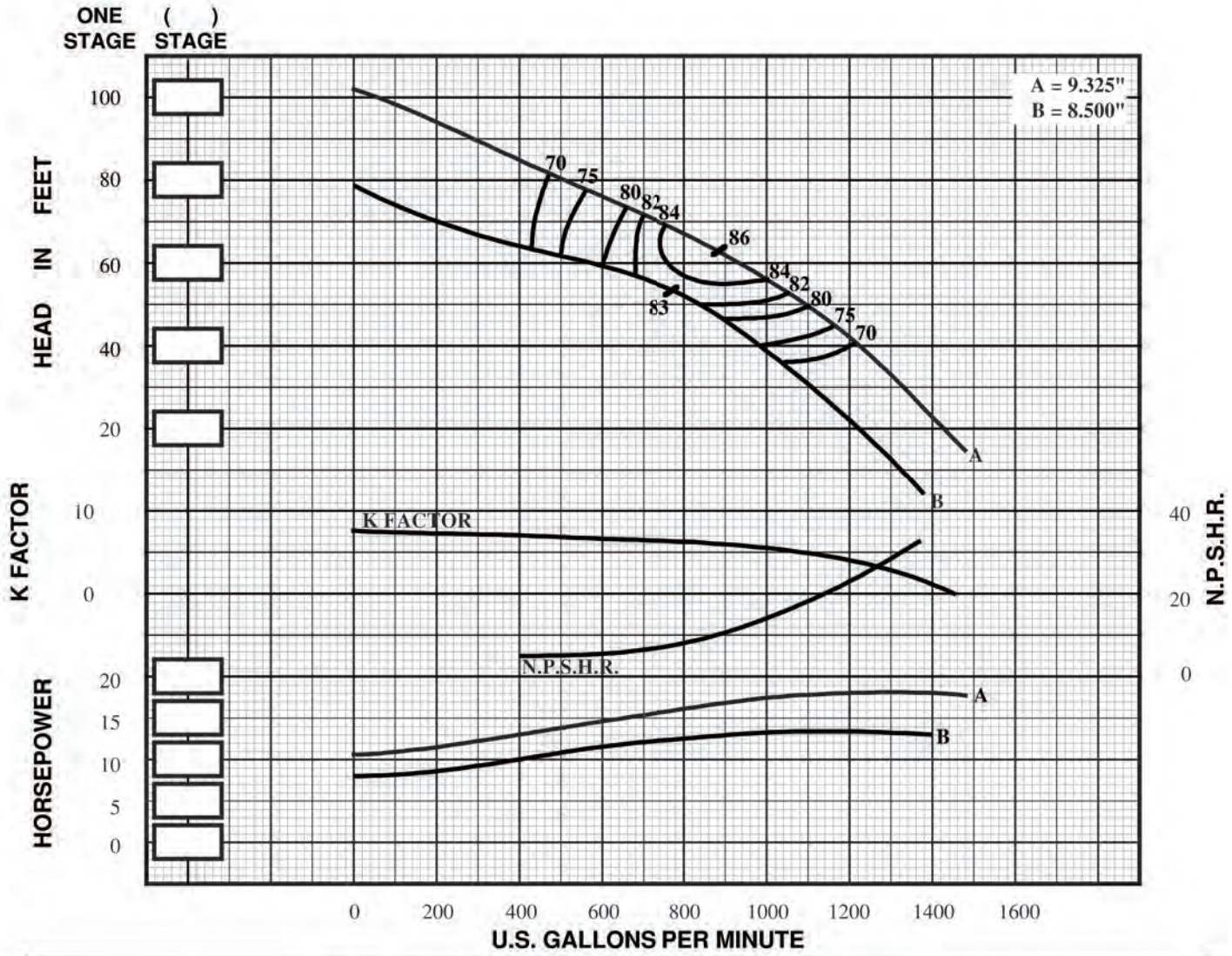


LINESHAFT TURBINE

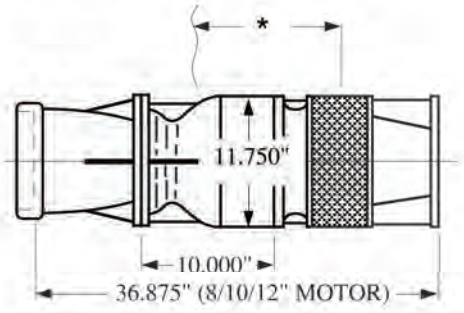
SIMFLO®

Section 202
Date 9/1/06

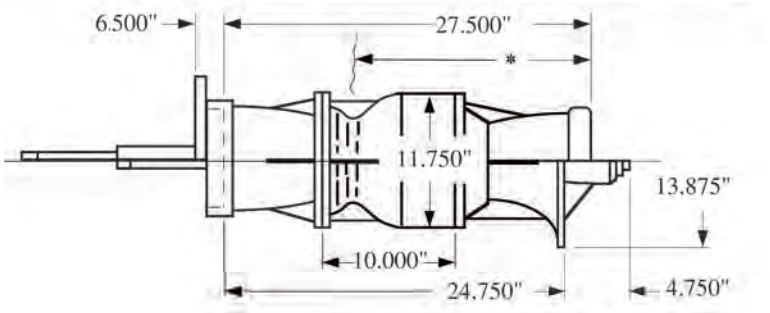
SL12M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SL12M	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 13.2	STD. LATERAL = 1.13"	1	-3.5	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 250.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-3
ADD'L STAGE WT. - LBS. = 107.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-4
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .670	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 17"	=	5	0	BOWL - NI-RI	-2
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

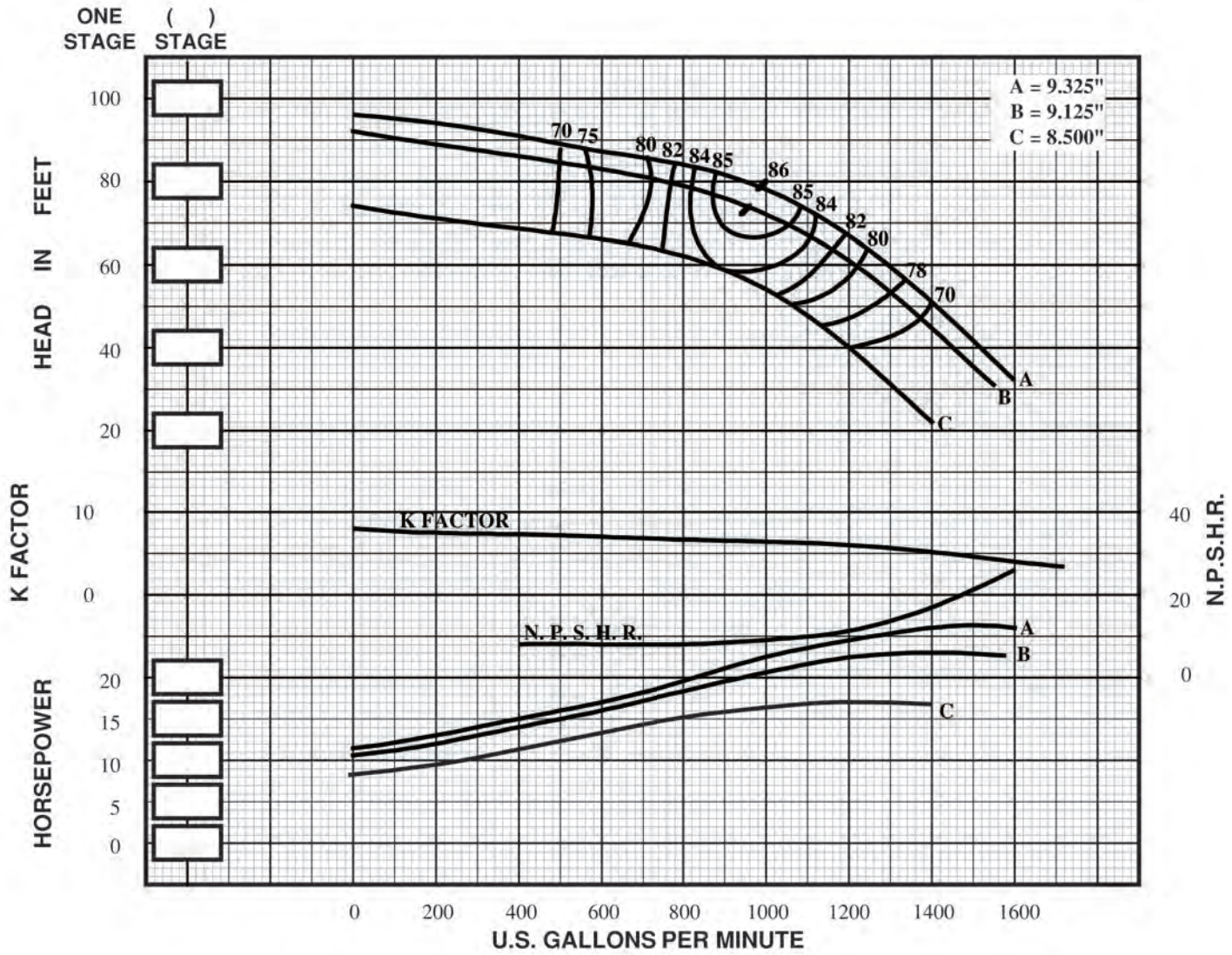


LINESHAFT TURBINE

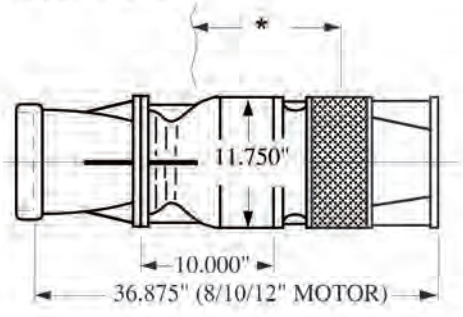
SIMFLO®

Section 202
Date 9/1/06

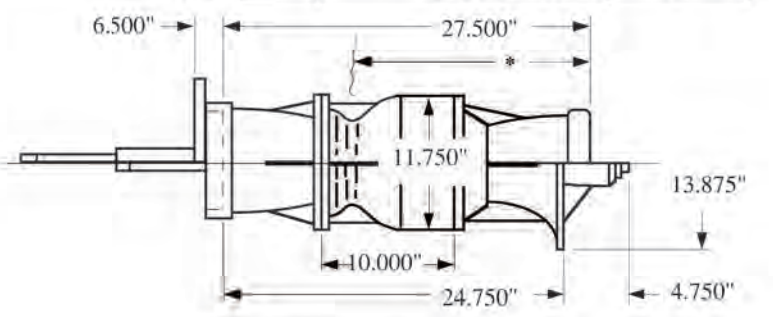
SL12H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SL12H	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 13.5	STD. LATERAL = 1.13"	1	-3.5	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 250.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-3
ADD'L STAGE WT. - LBS. = 107.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	Not Recom.
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .673	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 17"	=	5	0	BOWL - NI-RI	-2
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

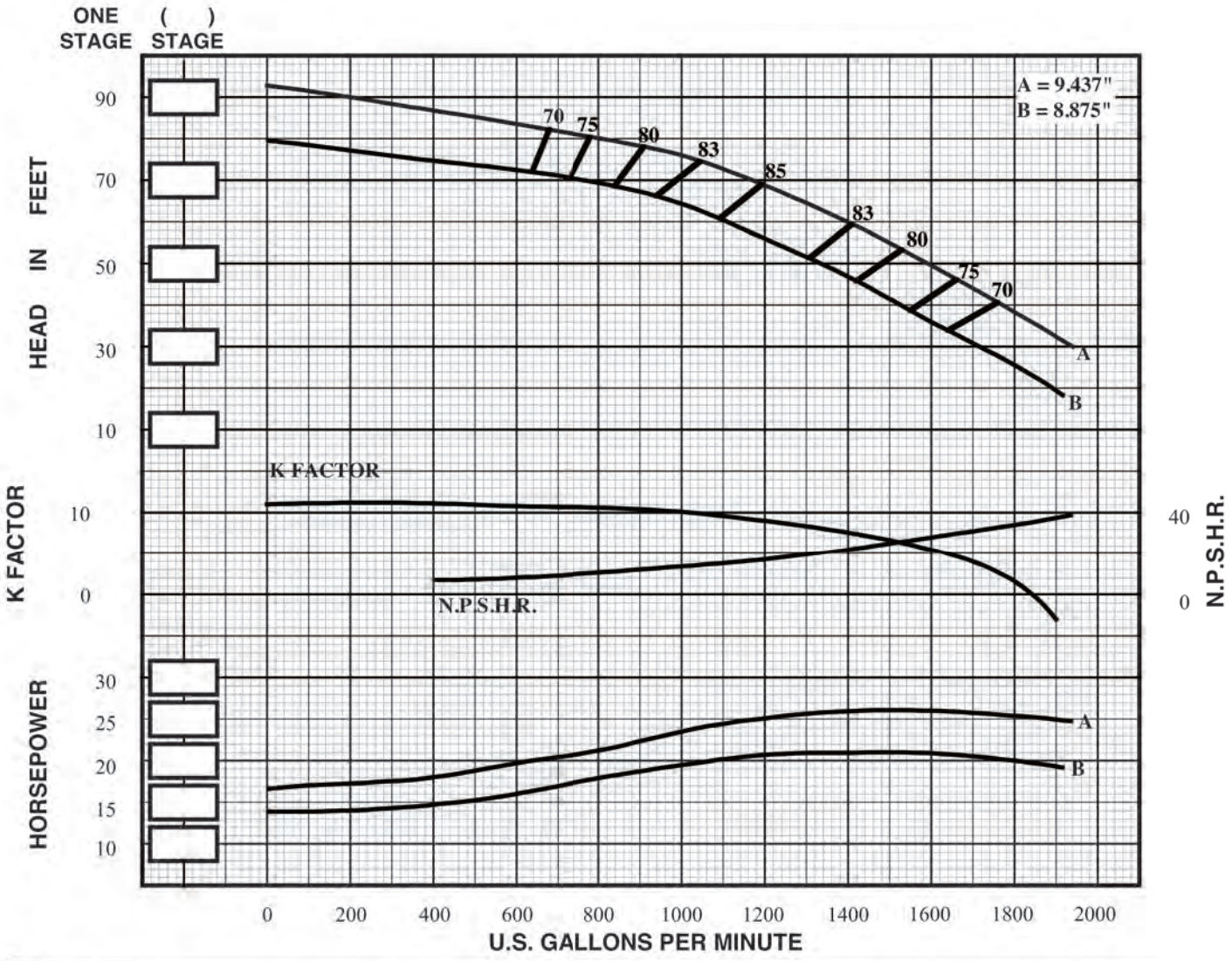


LINESHAFT TURBINE

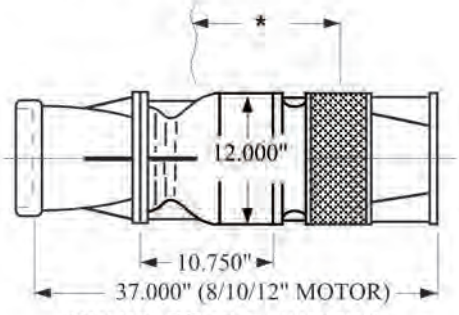
SIMFLO®

Section 202
Date 1/1/12

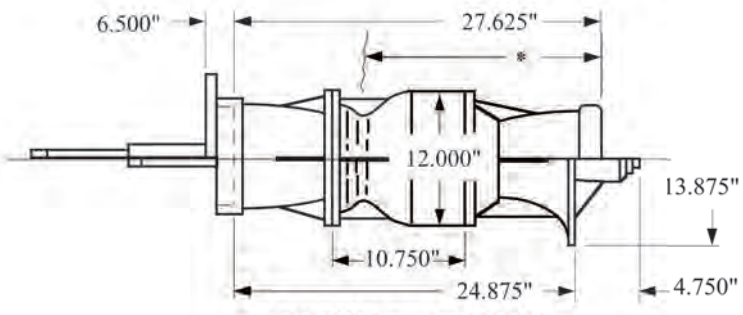
SJ12M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SJ12M	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 17.0	STD. LATERAL = 1.19"	1	-2	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 270.0	DISCHARGE SIZES = 8"/ 10"	2	-1	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 110.0	SUCTION SIZES = 8"/ BELL	3	0	IMP. - S.S.	-1
MAX. SPHERE SIZE = .88"	ONE STAGE WR² = .804	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

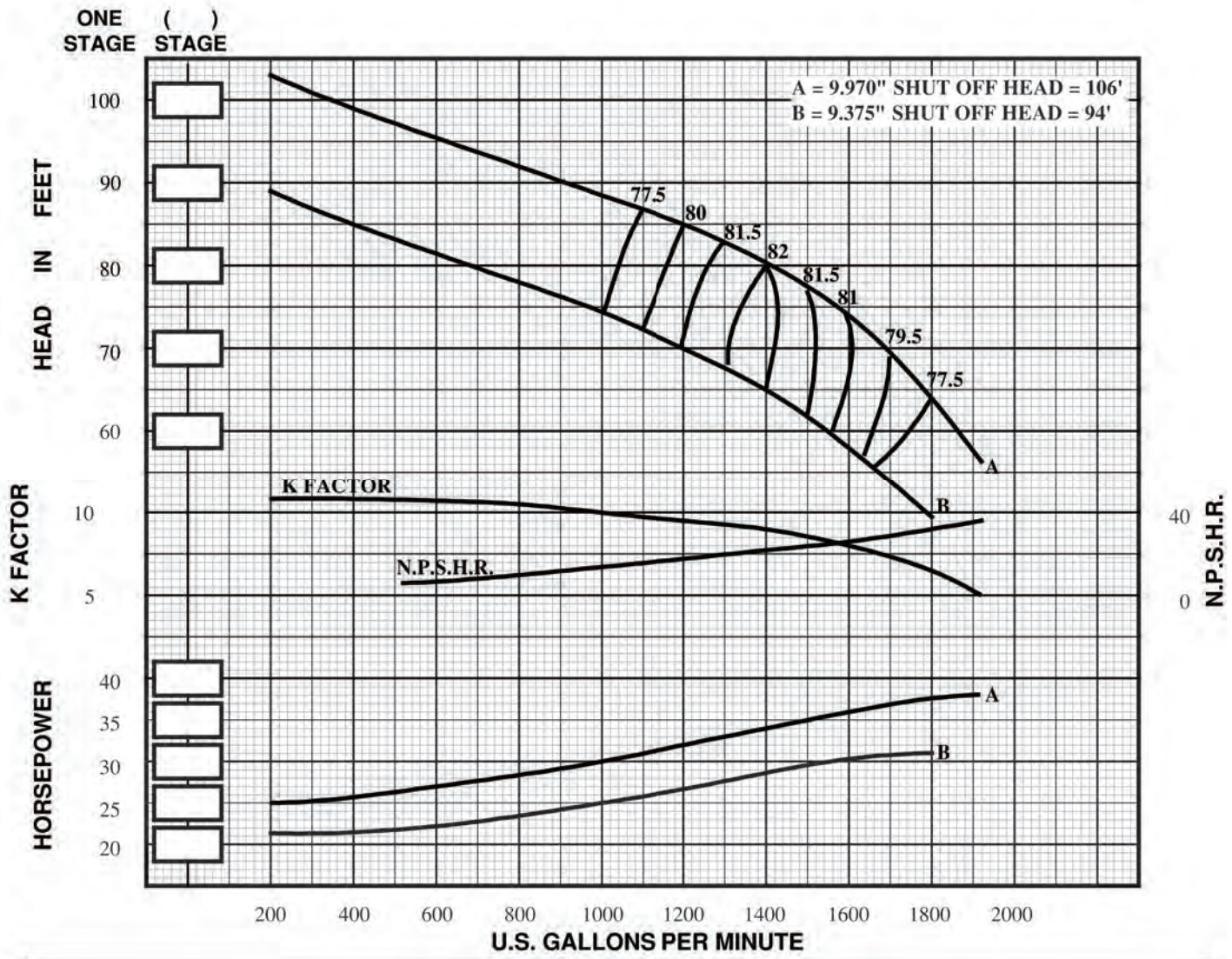


LINESHAFT TURBINE

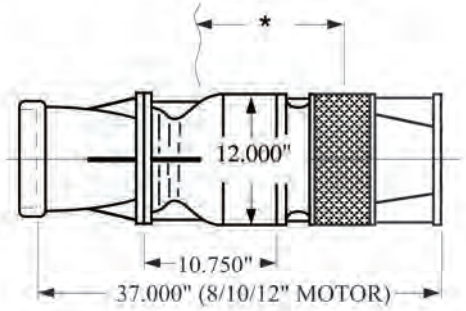
SIMFLO®

Section 202
Date 9/1/06

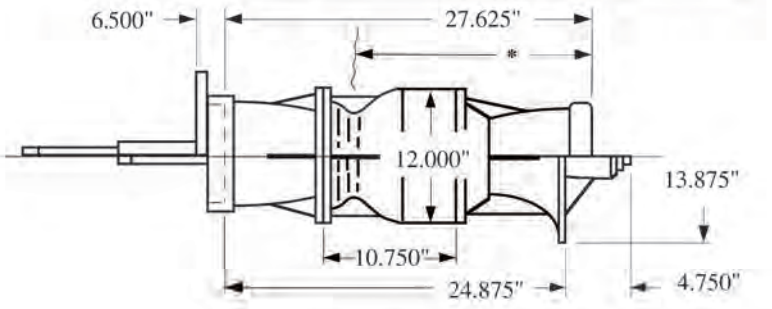
SJ12H
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SJ12H	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 15.2	STD. LATERAL = 1.19"	1	-1	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 270.0	DISCHARGE SIZES = 8"/ 10"	2	0	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 110.0	SUCTION SIZES = 8"/ BELL	3	0	IMP. - S.S.	-1
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .744	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



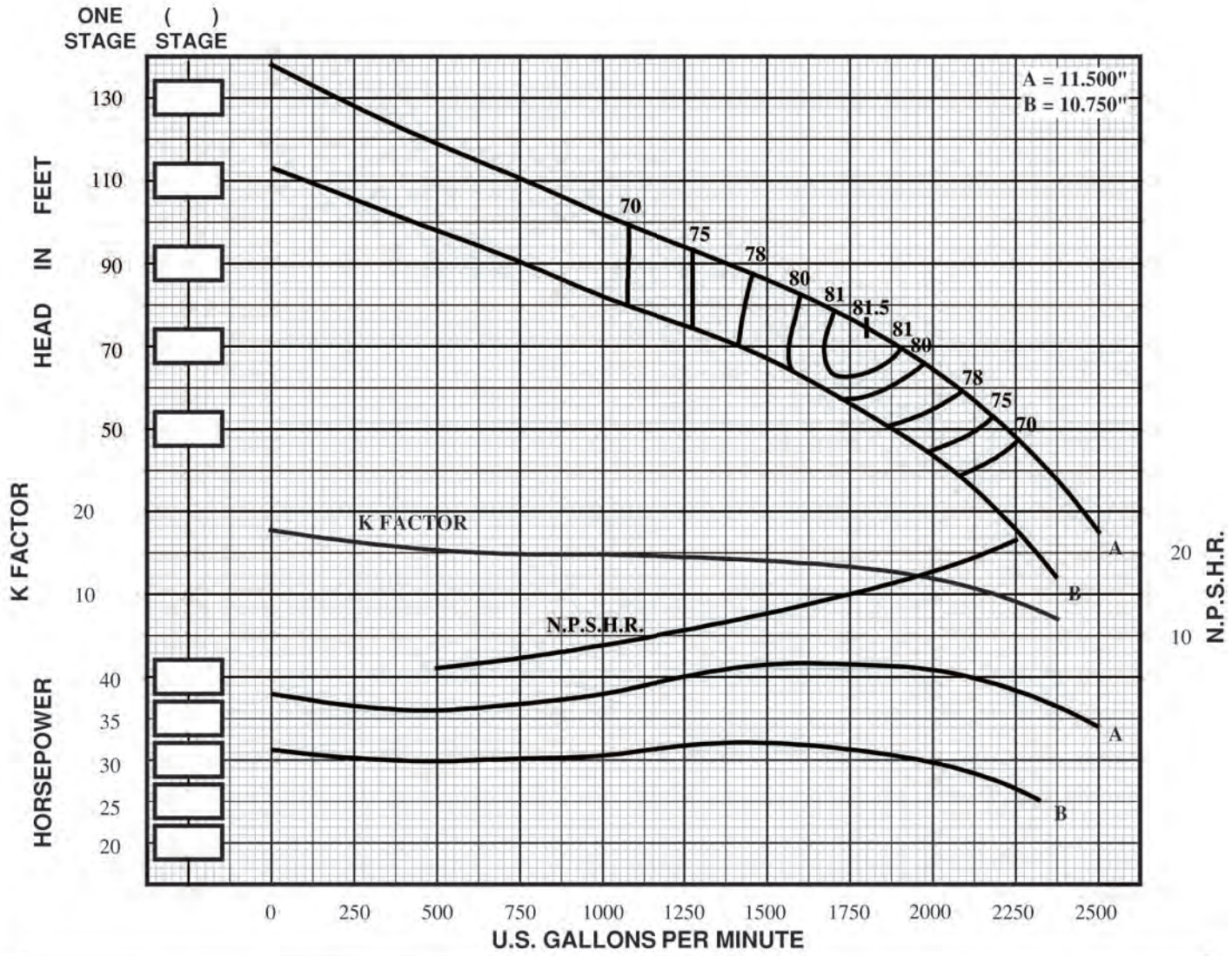
LINESHAFT TURBINE

SIMFLO®

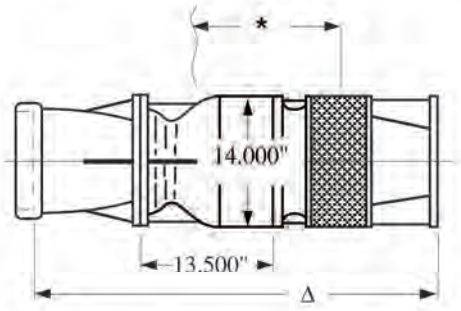
Section 202
Date 9/1/06

SM14LL

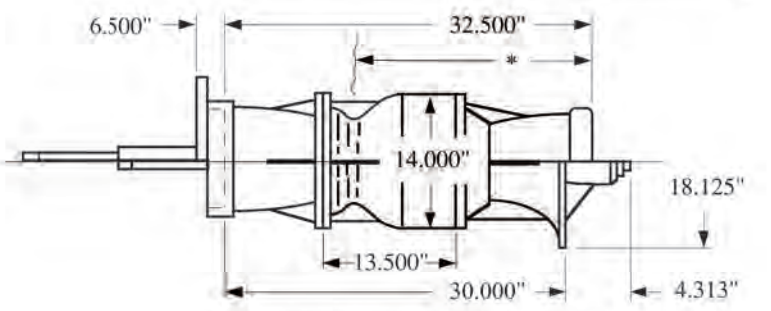
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14LL	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 31.0	STD. LATERAL = 1.25"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 550.0	DISCHARGE SIZES = 10"/ 12"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 235.0	SUCTION SIZES = 10"/ BELL	3	-1	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.44"	ONE STAGE WR^2 = 2.211	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



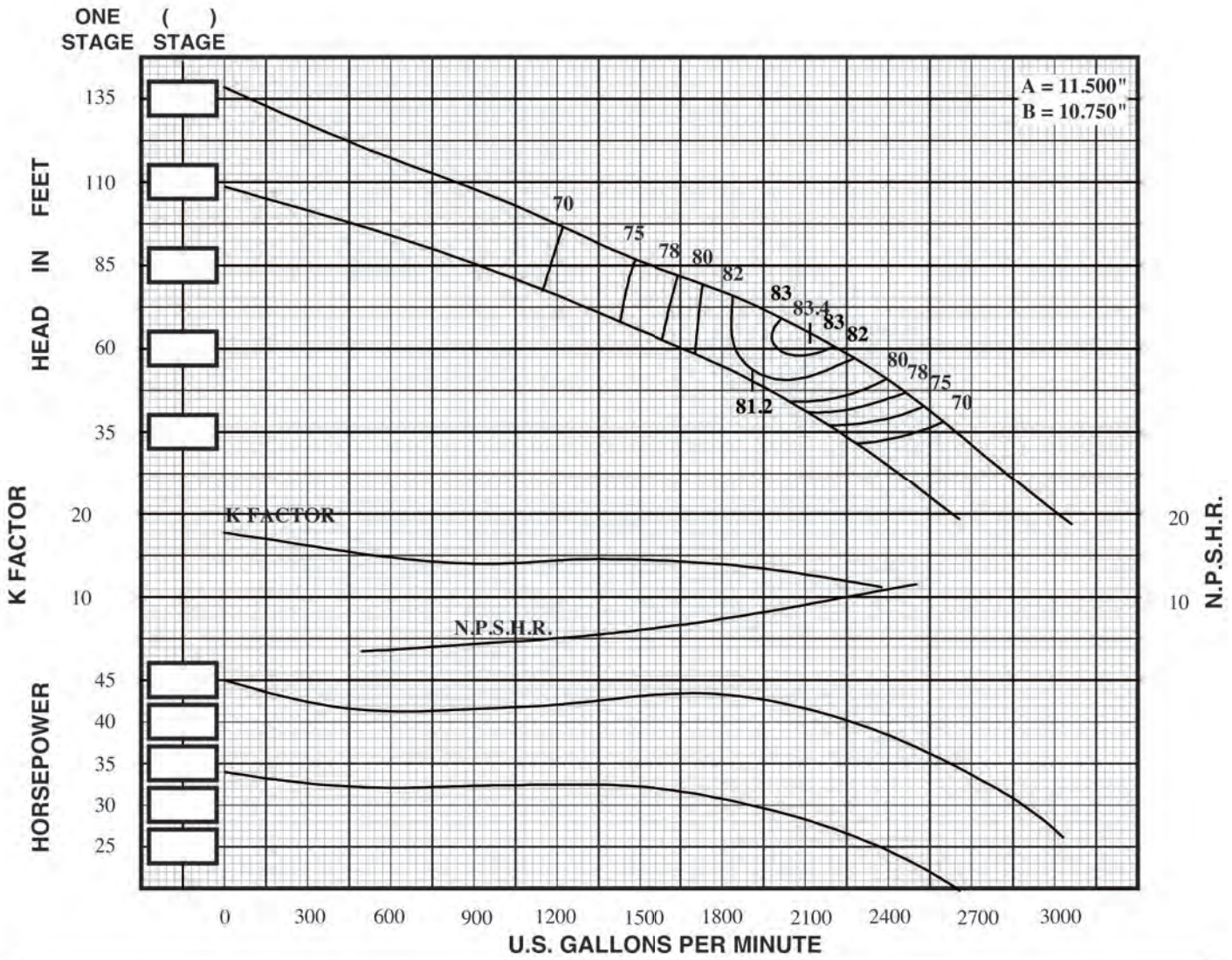
LINESHAFT TURBINE

SIMFLO®

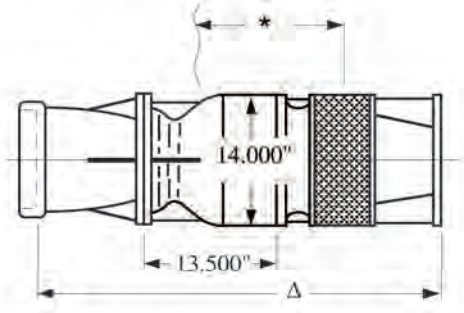
Section 202
Date 2/10/10

SM14L

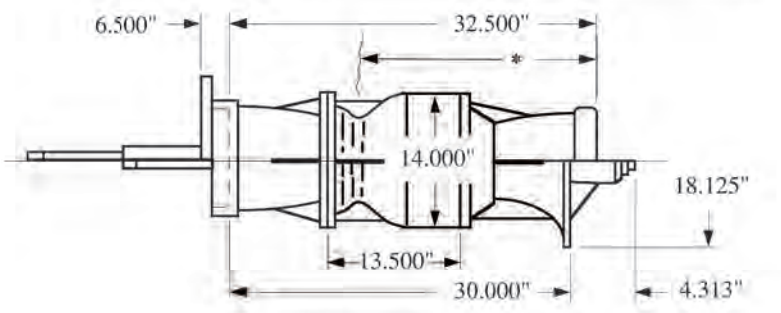
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14L	MAX. SHAFT DIA. = 2.187"	1	-3	IMP. - C.I.	0
IMPELLER WT. - LBS. = 27.4	STD. LATERAL = 1.25"	2	-2	IMP. - NI-RI	-2
ONE STAGE WT. - LBS. = 540.0	DISCHARGE SIZES = 10"/ 12"	3	-1	IMP. - S.S.	-2
ADD'L STAGE WT. - LBS. = 225.0	SUCTION SIZES = 10"/ BELL	4	0	BOWL - BRZ.	-1
MAX. SPHERE SIZE =1.31"	ONE STAGE WR^2 = 1.933	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE* = 19"	=			BOWL - S.S.	-2
Δ CONSULT FACTORY	v18.1				



SUBMERSIBLE TURBINE

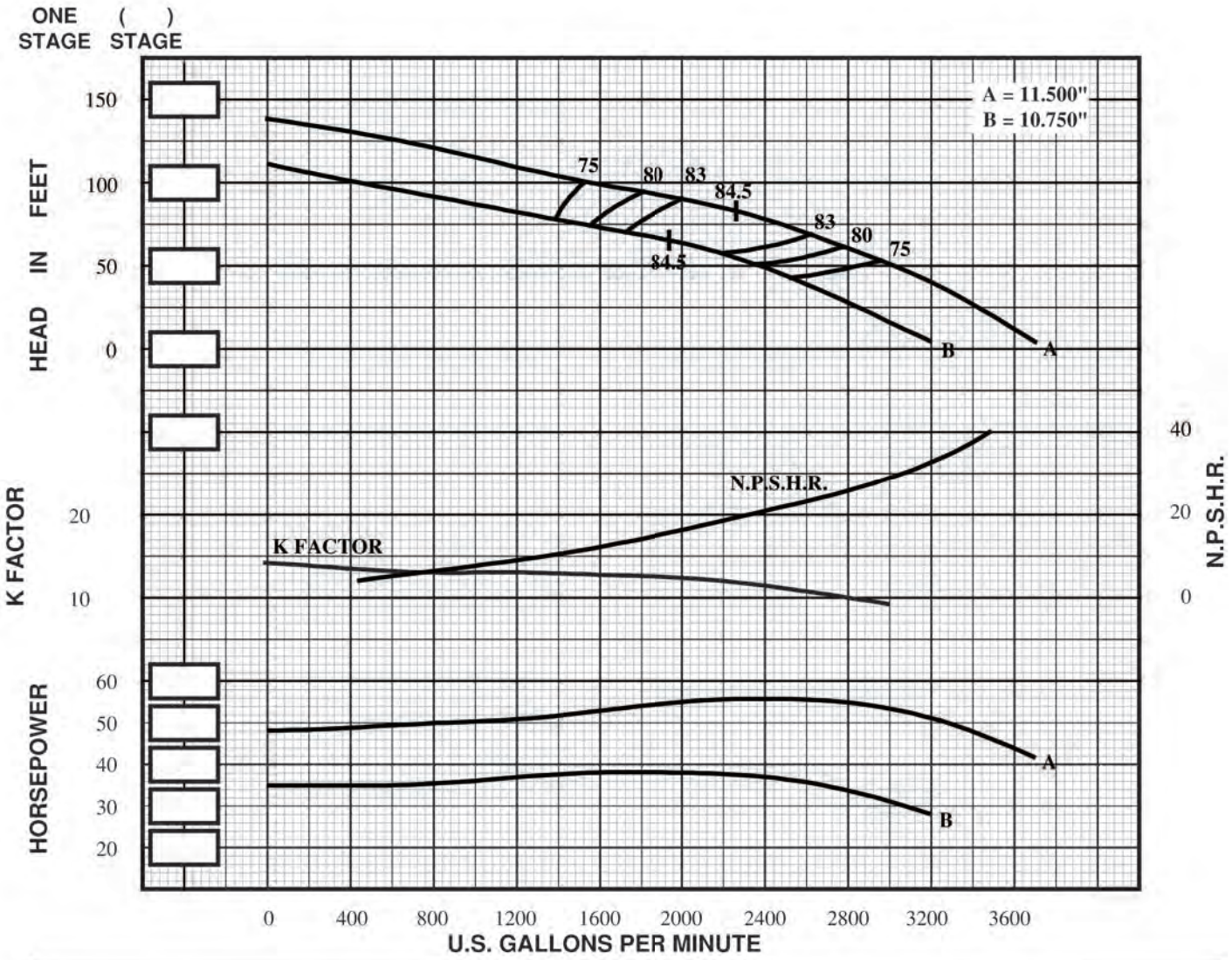


LINESHAFT TURBINE

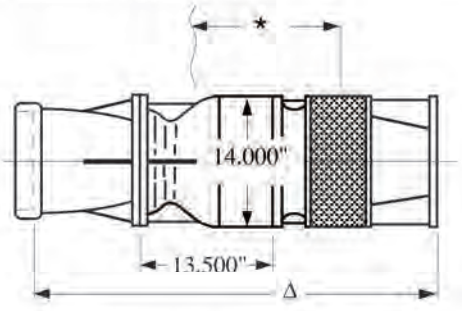
SIMFLO®

Section 202
Date 9/1/06

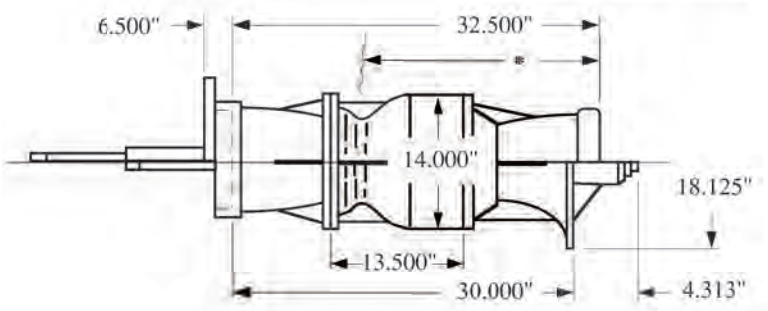
SM14M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14M	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 31.7	STD. LATERAL = 1.25"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 550.0	DISCHARGE SIZES = 10"/ 12"	2	-1	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 235.0	SUCTION SIZES = 10" / BELL	3	0	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.31"	ONE STAGE WR^2 = 2.182	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



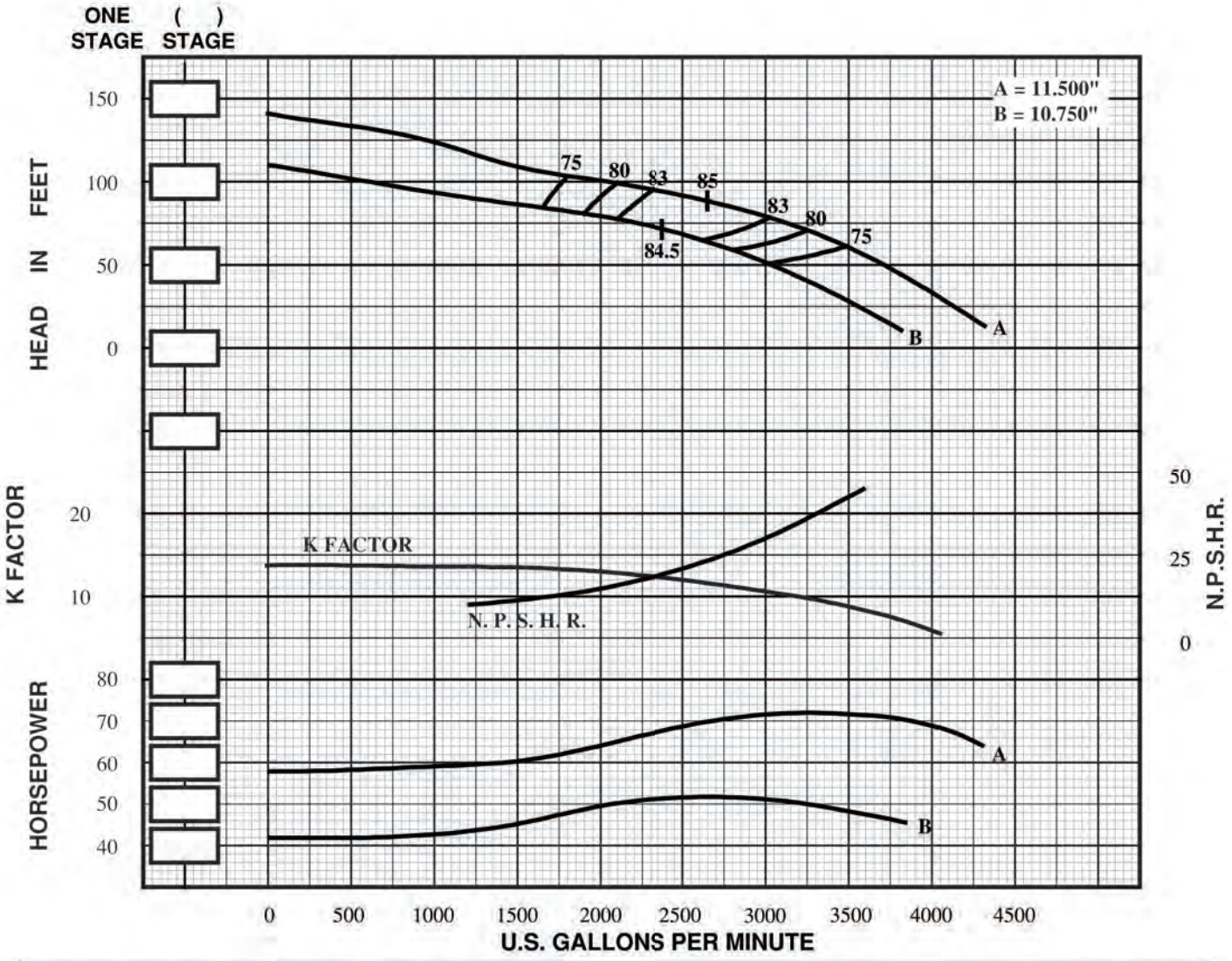
LINESHAFT TURBINE

SIMFLO®

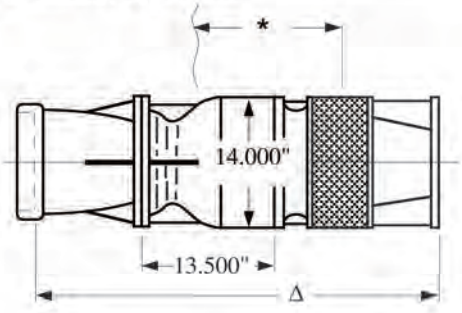
Section 202
Date 9/1/06

SM14H

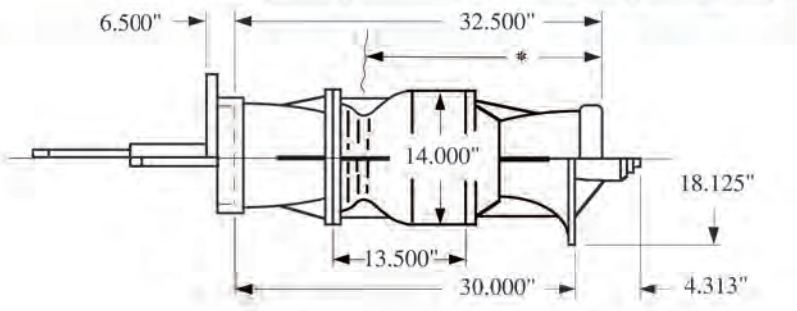
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14H	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 29.0	STD. LATERAL = 1.25"	1	-2	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 550.0	DISCHARGE SIZES = 10"/ 12"	2	-1	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 235.0	SUCTION SIZES = 10"/ BELL	3	0	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.56"	ONE STAGE WR^2 = 2.023	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



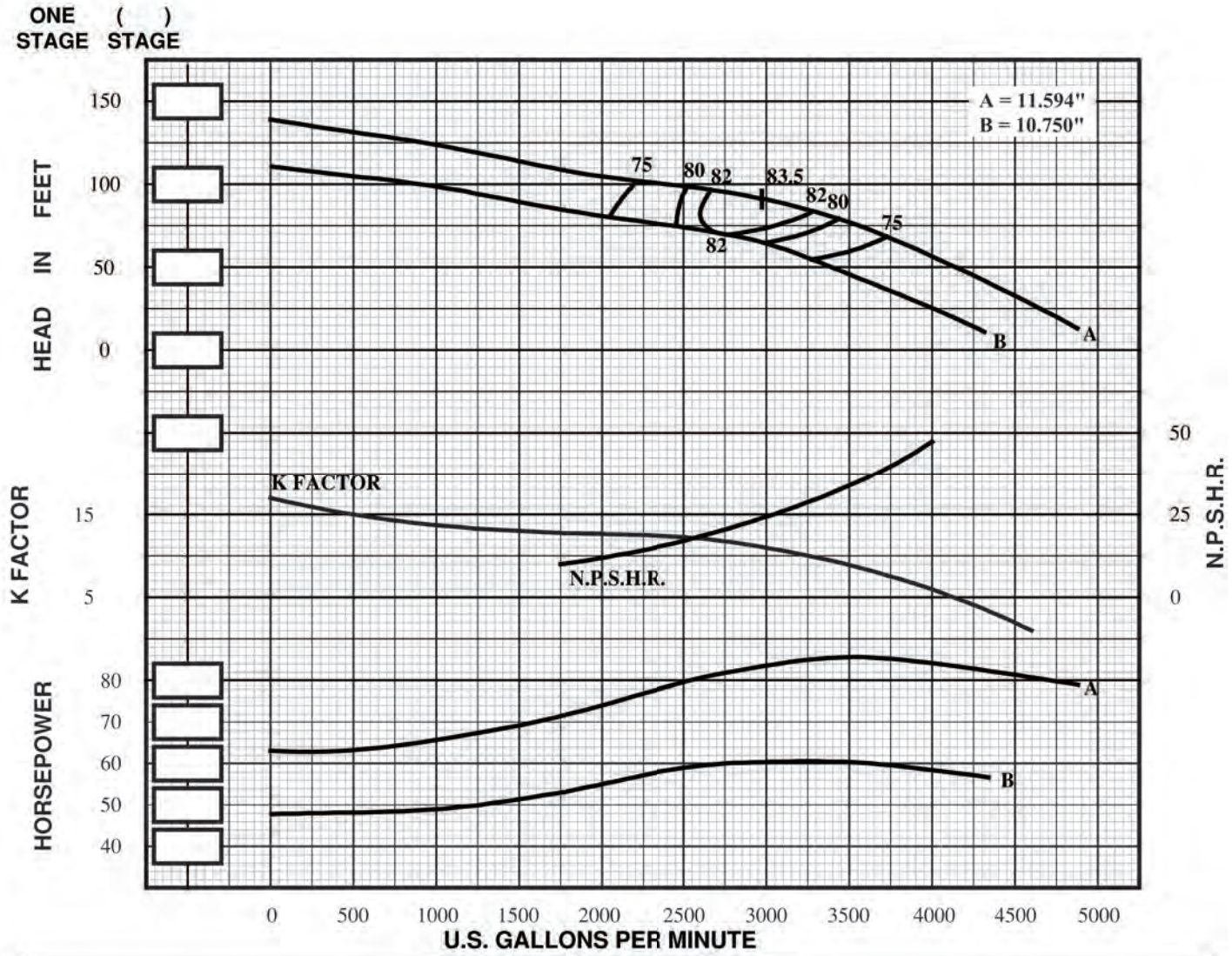
LINESHAFT TURBINE

SIMFLO®

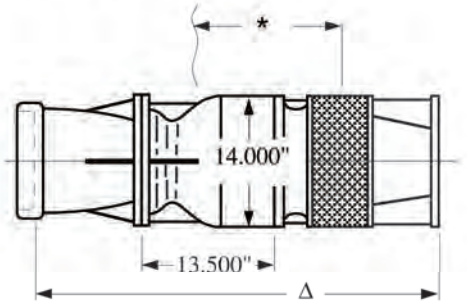
Section 202
Date 9/1/06

SM14HH

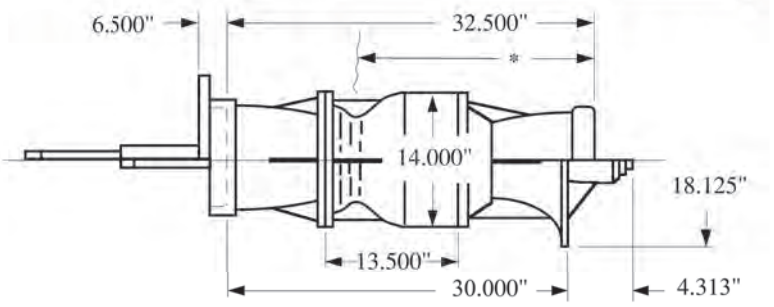
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14HH	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 28.4	STD. LATERAL = 1.25"	1	-2.5	IMP. - C.I.	-.5
ONE STAGE WT. - LBS. = 540	DISCHARGE SIZES = 10"/ 12"	2	-1.5	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 225	SUCTION SIZES = 10"/ BELL	3	-.5	IMP. - S.S.	-3
MAX. SPHERE SIZE = 1.25"	ONE STAGE WR^2 = 2.300	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

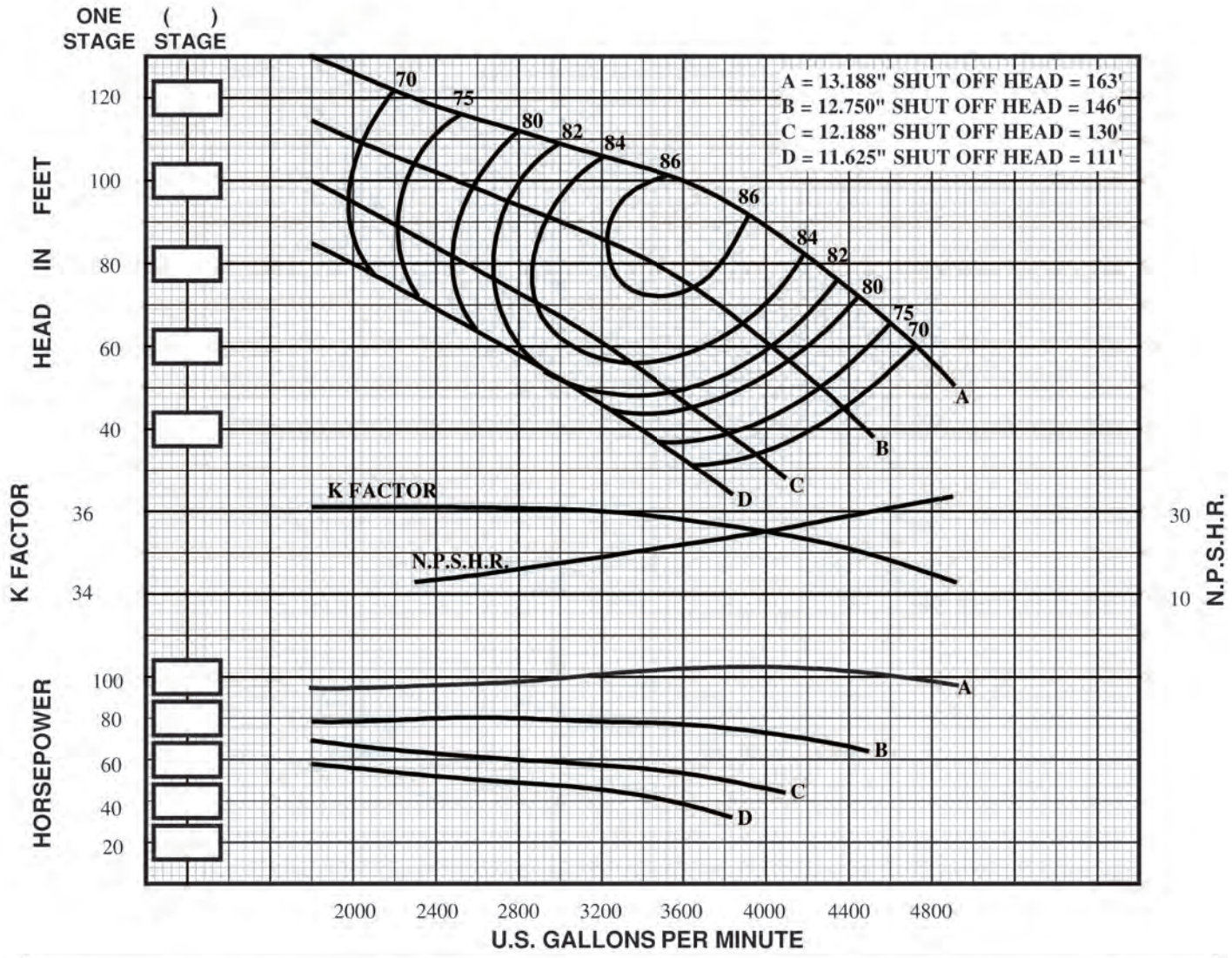


LINESHAFT TURBINE

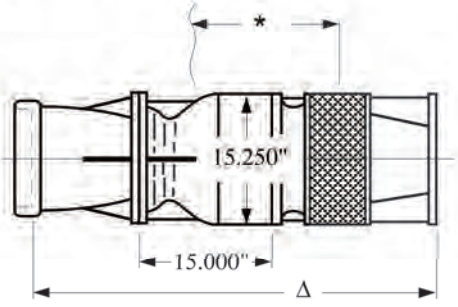
SIMFLO®

Section 202
Date 9/1/06

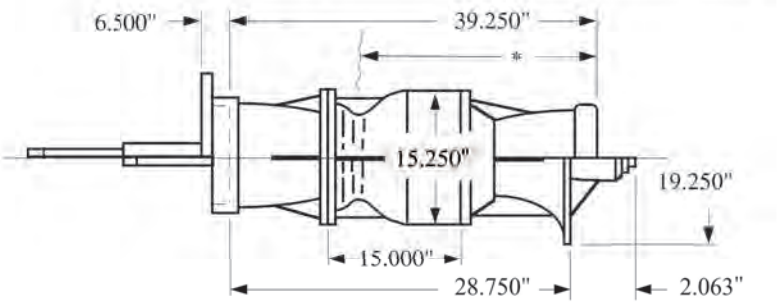
SM16M0
1770 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. =SM16MO	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 24.0	STD. LATERAL = 1.34"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/ 14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.19"	ONE STAGE WR^2 = 2.260	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 35"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



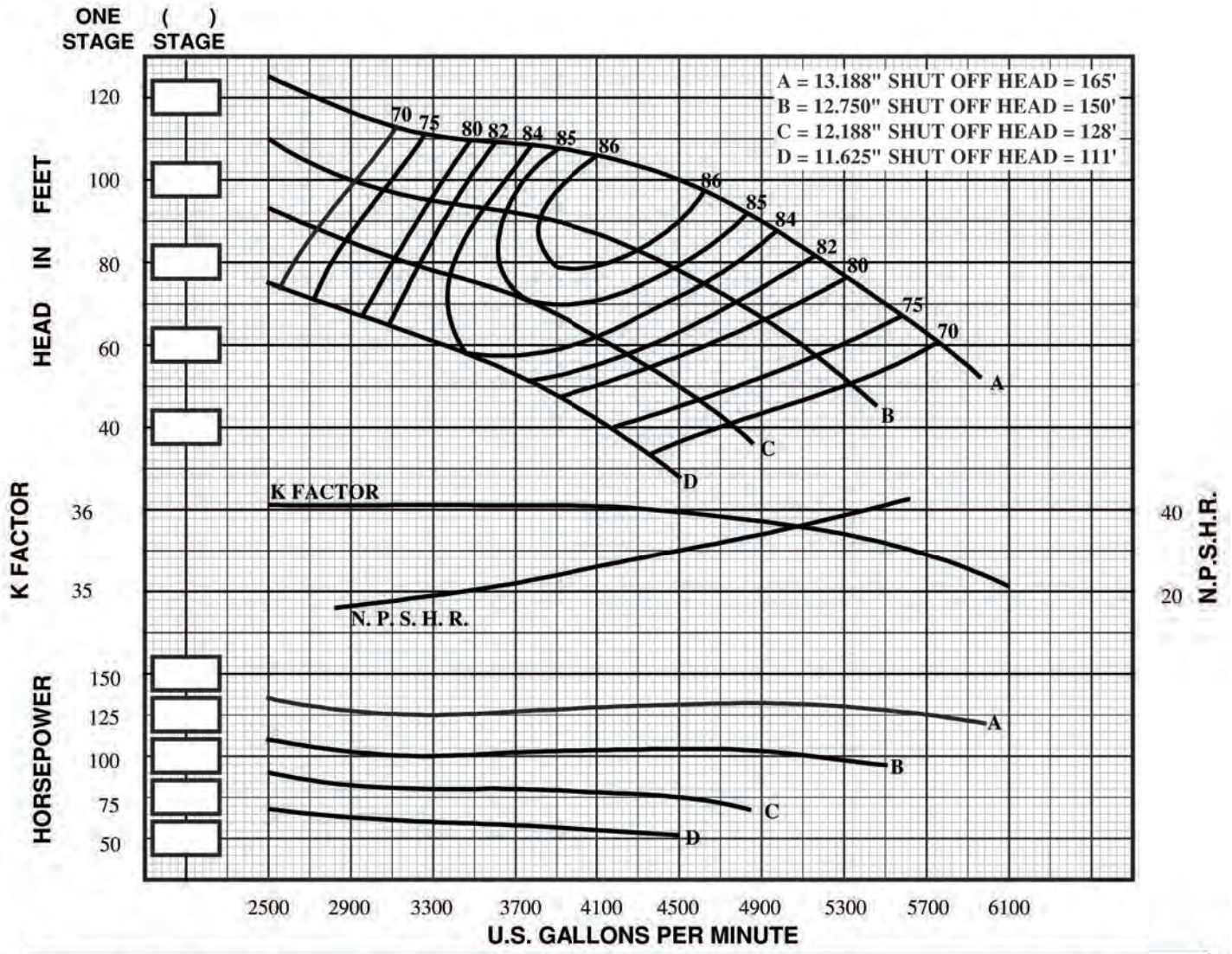
LINESHAFT TURBINE

SIMFLO®

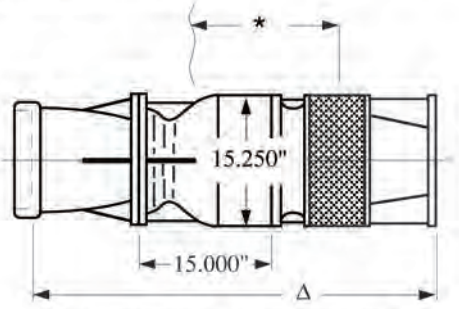
Section 202
Date 9/1/06

SM16H0

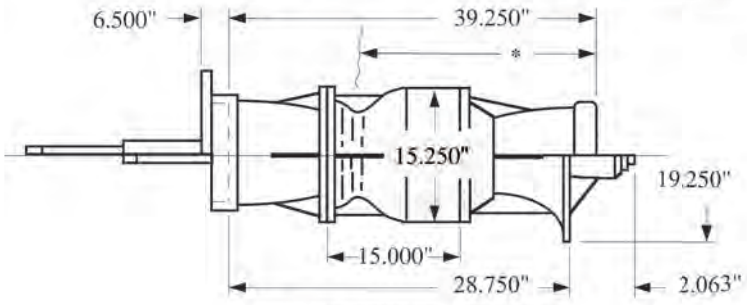
1770 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM16HO	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 25.0	STD. LATERAL = 1.06"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/ 14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.22"	ONE STAGE WR² = 2.240	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 39"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

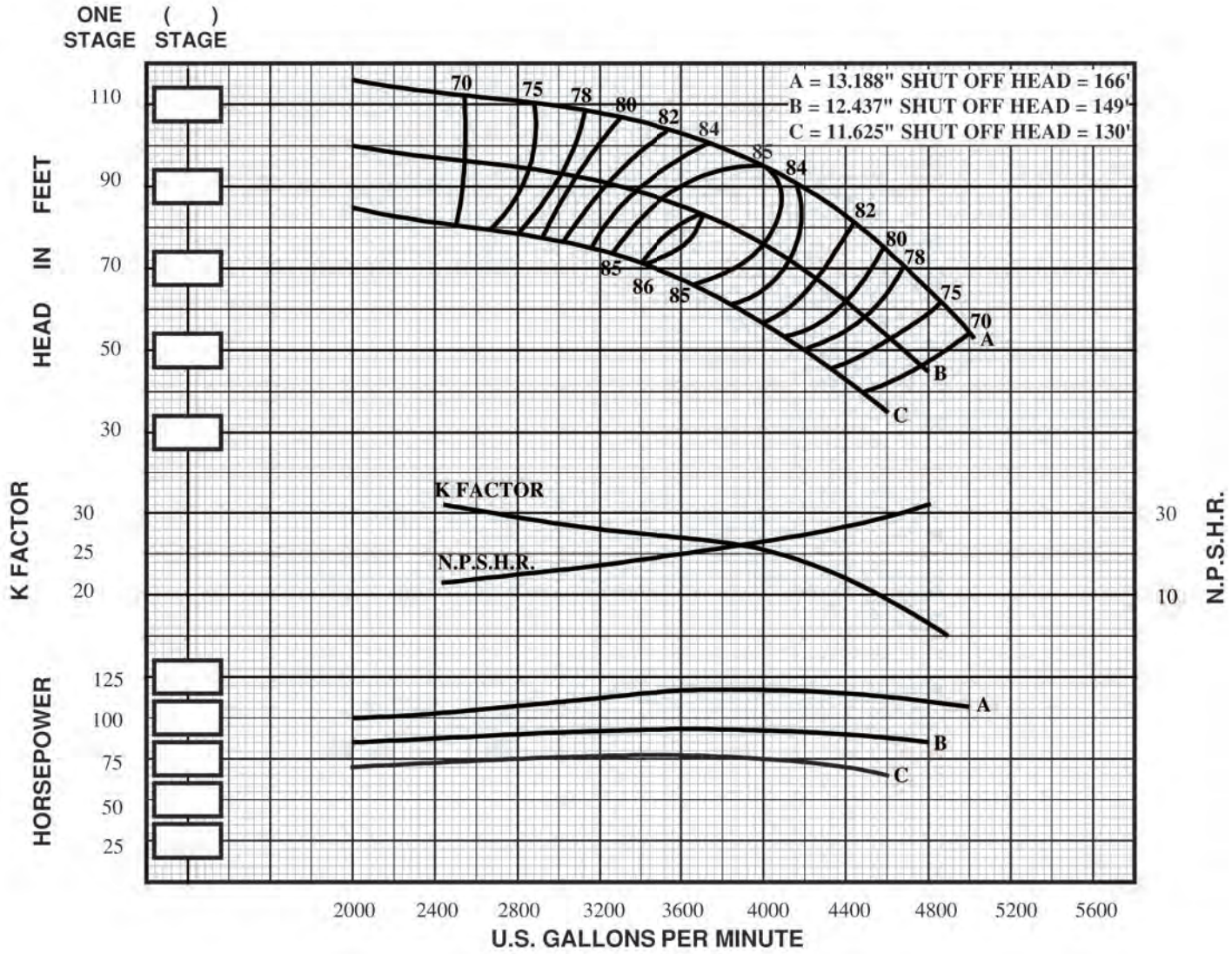


LINESHAFT TURBINE

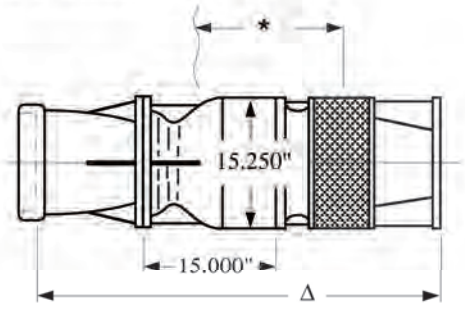
SIMFLO®

Section 202
Date 9/1/06

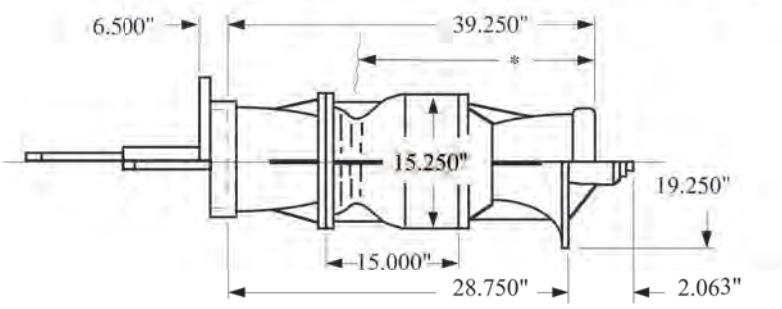
SM16M
1770 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM16M	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 39.0	STD. LATERAL = .94"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/ 14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.00"	ONE STAGE WR^2 = 4.966	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 36"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

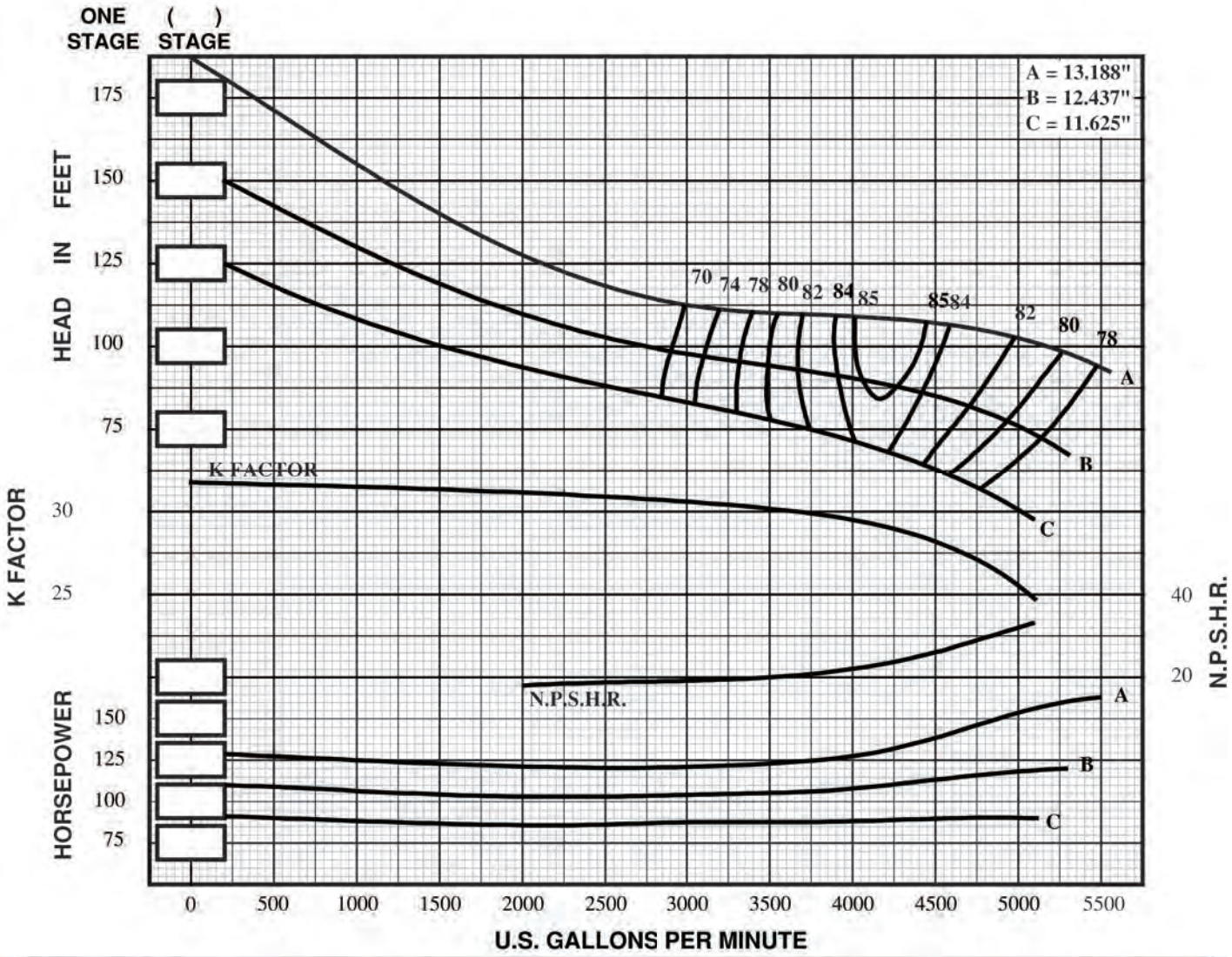


LINESHAFT TURBINE

SIMFLO®

Section 202
Date 9/1/06

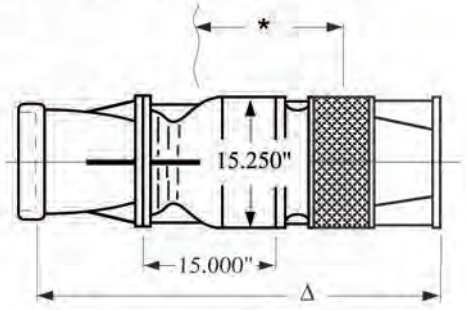
SM16H
1770 RPM



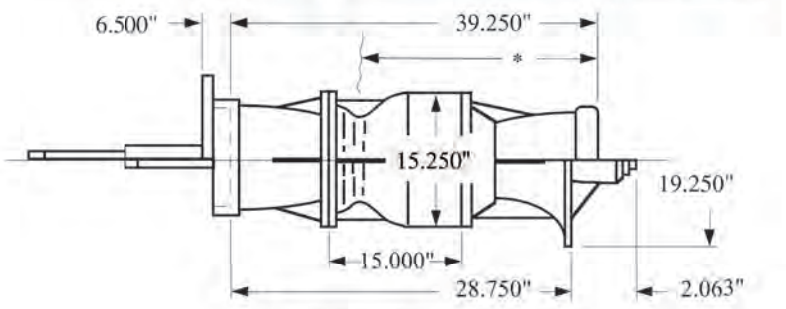
				NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER TYPE	= ENCLOSED	STD. SHAFT DIA.	= 2.187"				
IMPELLER NO.	= SM16H	MAX. SHAFT DIA.	= 2.187"				
IMPELLER WT. - LBS.	= 35.5	STD. LATERAL	= .94"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS.	= 600.0	DISCHARGE SIZES	= 12"/ 14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS.	= 250.0	SUCTION SIZES	= 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE	= 1.38"	ONE STAGE WR^2	= 4.677	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE*	= 39"		=	5	0	BOWL - NI-RI	-1
						BOWL - S.S.	-2

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

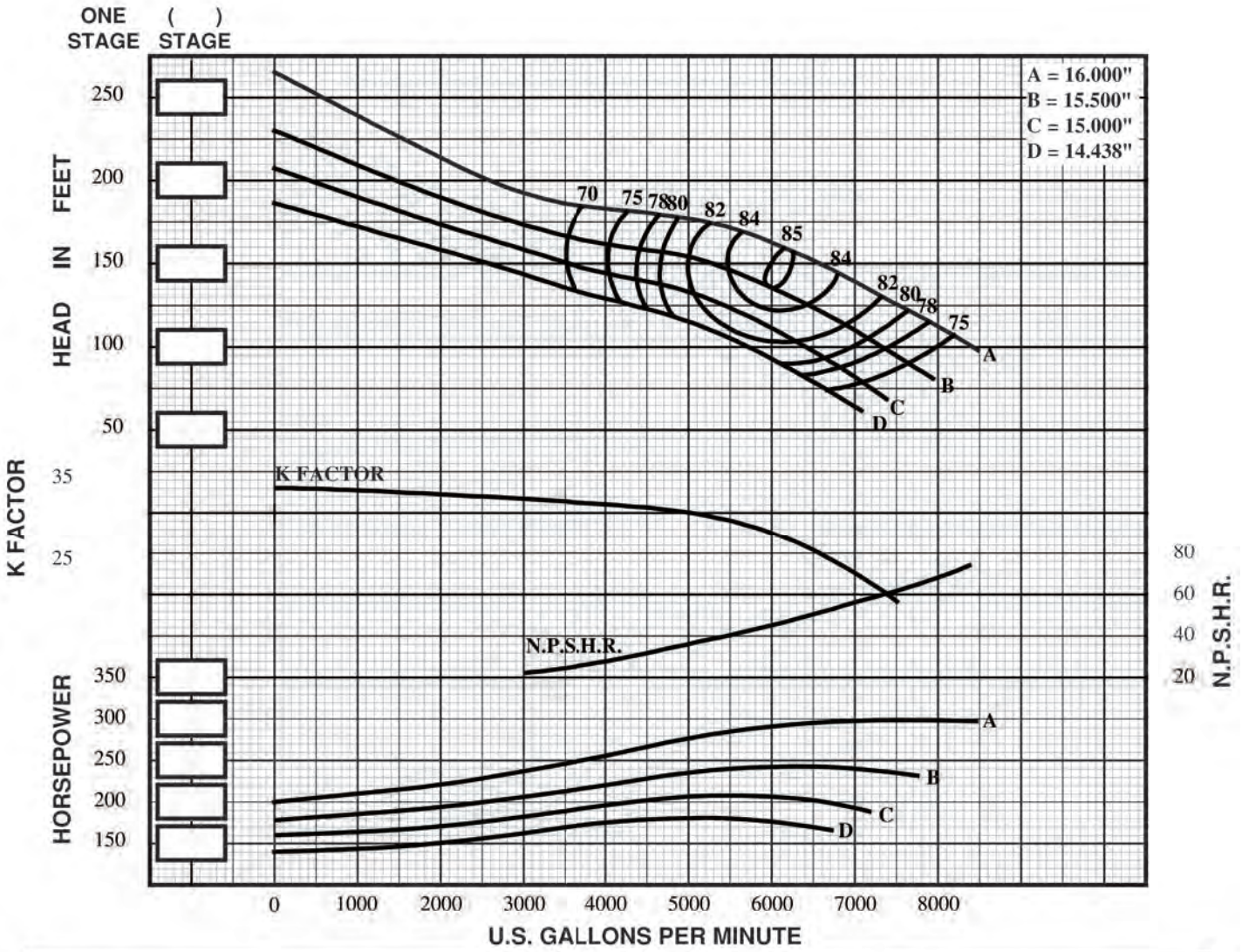


LINESHAFT TURBINE

SIMFLO®

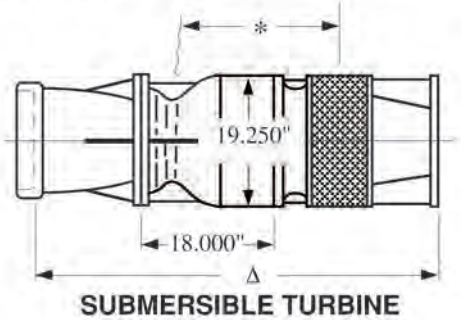
Section 202
Date 9/1/06

SM20M
1770 RPM

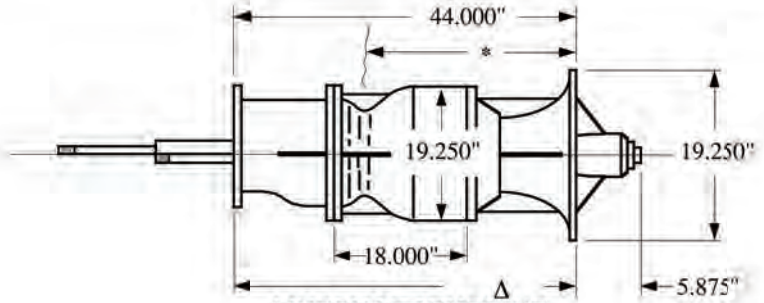


IMPELLER TYPE	= ENCLOSED	STD. SHAFT DIA.	= 2.437"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO.	= SM20M	MAX. SHAFT DIA.	= 2.437"	1	-3	IMP. - C.I.	-1
IMPELLER WT. - LBS.	= 76.0	STD. LATERAL	= 1.50"	2	-2	IMP. - NI-RI	-1
ONE STAGE WT. - LBS.	= 1000.0	DISCHARGE SIZES	= 16"/ Δ	3	-1	IMP. - S.S.	-1
ADD'L STAGE WT. - LBS.	= 450.0	SUCTION SIZES	= BELL	4	0	BOWL - BRZ.	-1
MAX. SPHERE SIZE	= 1.22"	ONE STAGE WR^2	= 8.220	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE*	= 42"		=		v21.1	BOWL - S.S.	-1

Δ CONSULT FACTORY



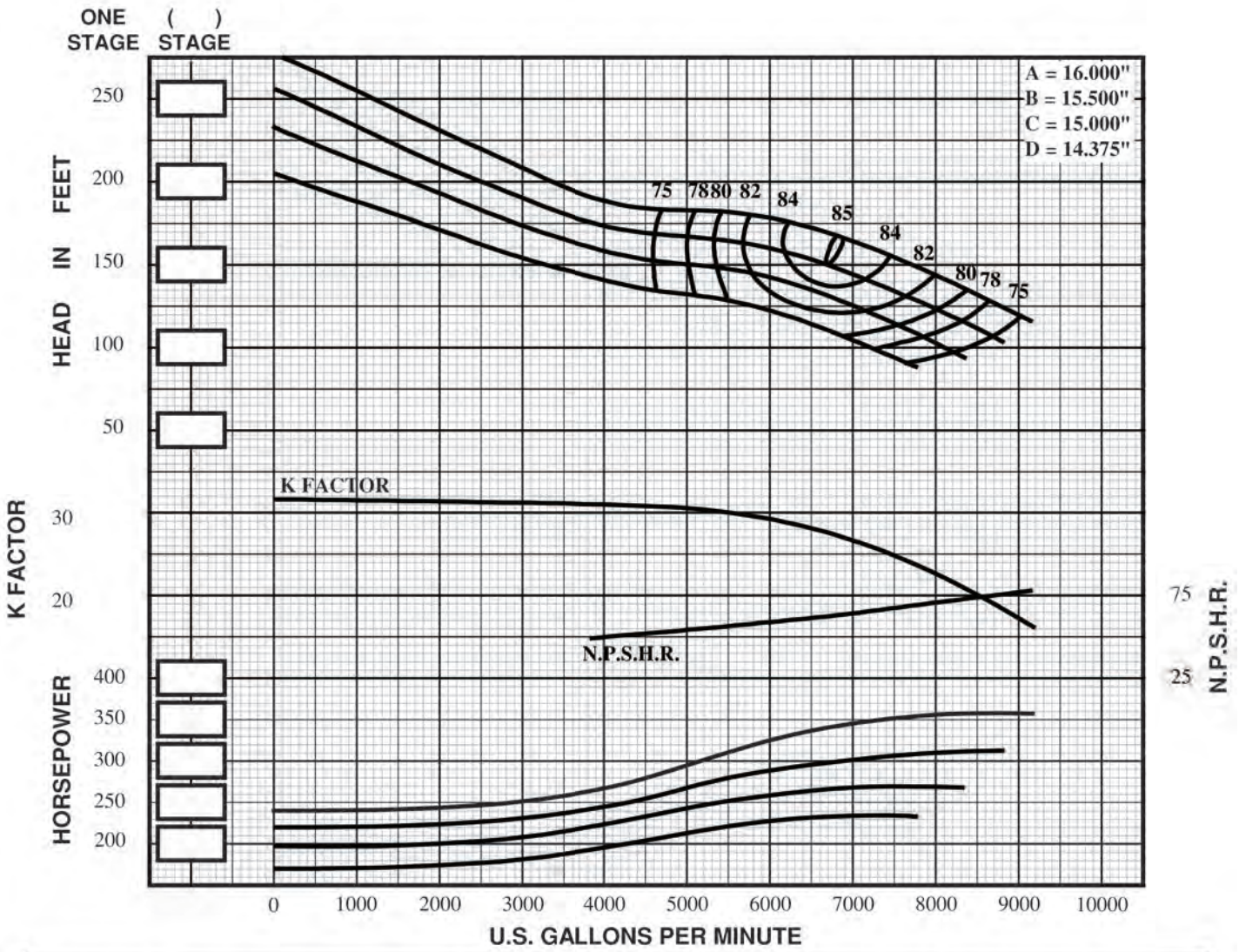
SUBMERSIBLE TURBINE



LINESHAFT TURBINE

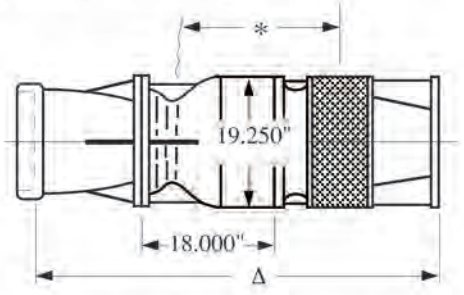
SM20H

1770 RPM

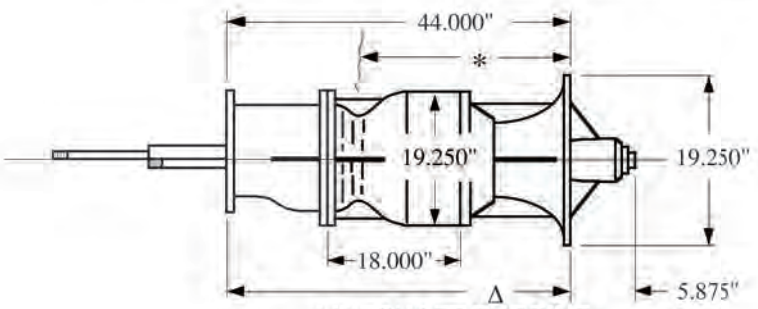


IMPELLER TYPE	=ENCLOSED	STD. SHAFT DIA.	= 2.437"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO.	= SM20H	MAX. SHAFT DIA.	= 2.437"	1	-3	IMP. - C.I.	-1
IMPELLER WT. - LBS.	= 69.0	STD. LATERAL	= 1.31"	2	-2	IMP. - NI-RI	-1
ONE STAGE WT. - LBS.	= 1000.0	DISCHARGE SIZES	= 16"/ Δ	3	-1	IMP. - S.S.	-1
ADD'L STAGE WT. - LBS.	= 450.0	SUCTION SIZES	= BELL	4	0	BOWL - BRZ.	-1
MAX. SPHERE SIZE	= 1.28"	ONE STAGE WR^2	= 8.210	5	0	BOWL - NI-RI	-1
MIN. SUBMERGENCE*	= 46"		=		v18.1	BOWL - S.S.	-1

Δ CONSULT FACTORY



SUBMERSIBLE TURBINE



LINESHAFT TURBINE

1160 RPM
Selection Chart

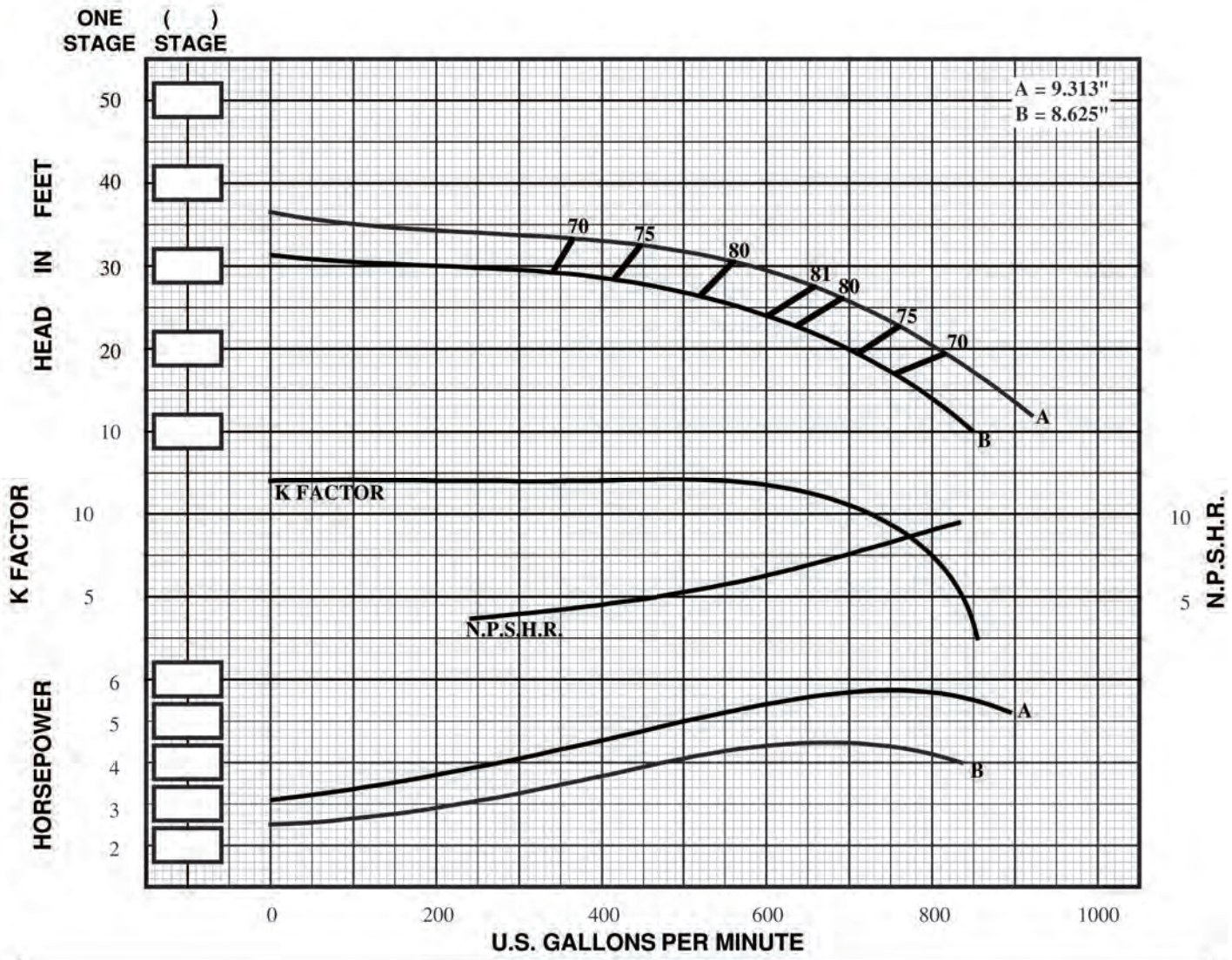
Model Number	Bowl Dia. (in.)	Peak Eff. (full dia.)	BEP Flow (gpm)	BEP Head (ft./ stage)	BEP NPSHr (full dia.)	POR (gpm)	Ns	Nss
SR11MO	11.50	81.0	649	27.7	7.02	454-779	2447	6852
SR11HO	11.50	83.0	785	31.3	8.73	550-934	2456	6399
SP11L	11.25	84.5	738	23.5	7.89	517-886	2952	6694
SP11M	11.25	85.0	768	25.7	7.05	538-922	2816	7430
SP11H	11.25	83.7	1033	25.0	7.64	723-1240	3335	8113
SW12L	11.63	85.0	325	30.9	3.02	228-390	1596	9128
SW12M	11.63	86.0	393	36.2	2.91	275-472	1558	10321
SP12M	11.88	82.0	488	36.6	4.89	342-586	1722	7793
SP12H	11.88	81.0	528	40.0	5.26	370-634	1676	7674
SL12M	11.75	86.0	577	26.7	5.92	404-692	2372	7342
SL12H	11.75	86.0	634	32.9	6.43	444-761	2126	7233
SJ12M	12.00	85.0	782	30.0	7.48	547-938	2531	7172
SJ12H	12.00	82.0	914	35.3	8.49	640-1097	2422	7051
SM14L	14.00	83.4	1388	27.7	5.57	972-1666	3579	11920
SM14M	14.00	84.5	1478	35.4	8.13	1035-1774	3073	9262
SM14H	14.00	85.0	1734	37.7	10.1	1214-2081	3175	8526
SM14HH	14.00	83.5	1950	39.5	9.80	1365-2340	3251	9248
SM16MO	15.25	86.0	2427	42.7	11.7	1699-2912	3421	9033
SM16HO	15.25	86.0	2892	45.5	13.4	2024-3470	3561	8907
SM16M	15.25	85.0	2590	40.0	14.4	1813-3108	3712	7986
SM16H	15.25	86.0	2942	46.7	12.2	2059-3530	3522	9638
SM20M	19.25	85.0	4135	67.7	20.9	2895-4962	3160	7631
SM20H	19.25	85.0	4515	71.4	21.3	3161-5418	3173	7861
SM24M	23.50	81.5	6920	76.8	27.0	4844-8304	3720	8147
SM24H	23.50	85.5	8973	90.4	35.2	6281-10768	3748	7604
SM28H	27.00	87.0	14923	115	39.5	10446-17908	4035	8994

v18.1

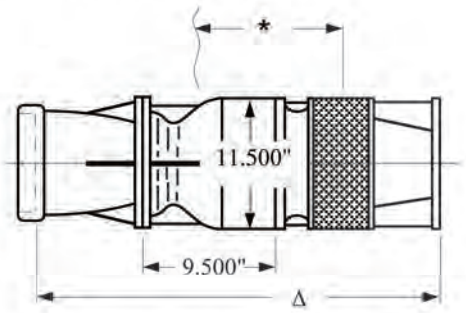
SIMFLO®

Section 203
Date 9/1/06

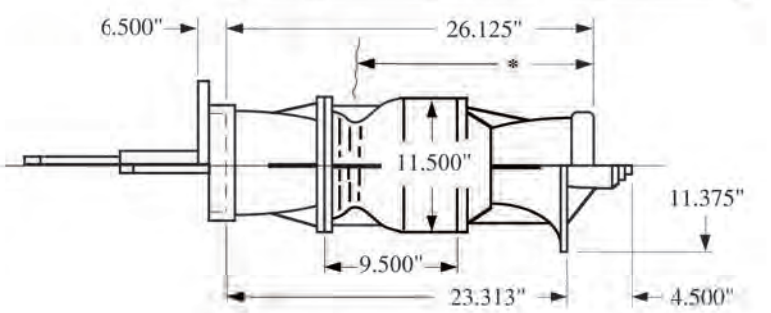
SR11MO
1160 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SR11MO	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 8.0	STD. LATERAL = 1.13"	1	-3	IMP. - C.I.	-1
ONE STAGE WT. - LBS. = 270.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 100.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .75"	ONE STAGE WR^2 = .375	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



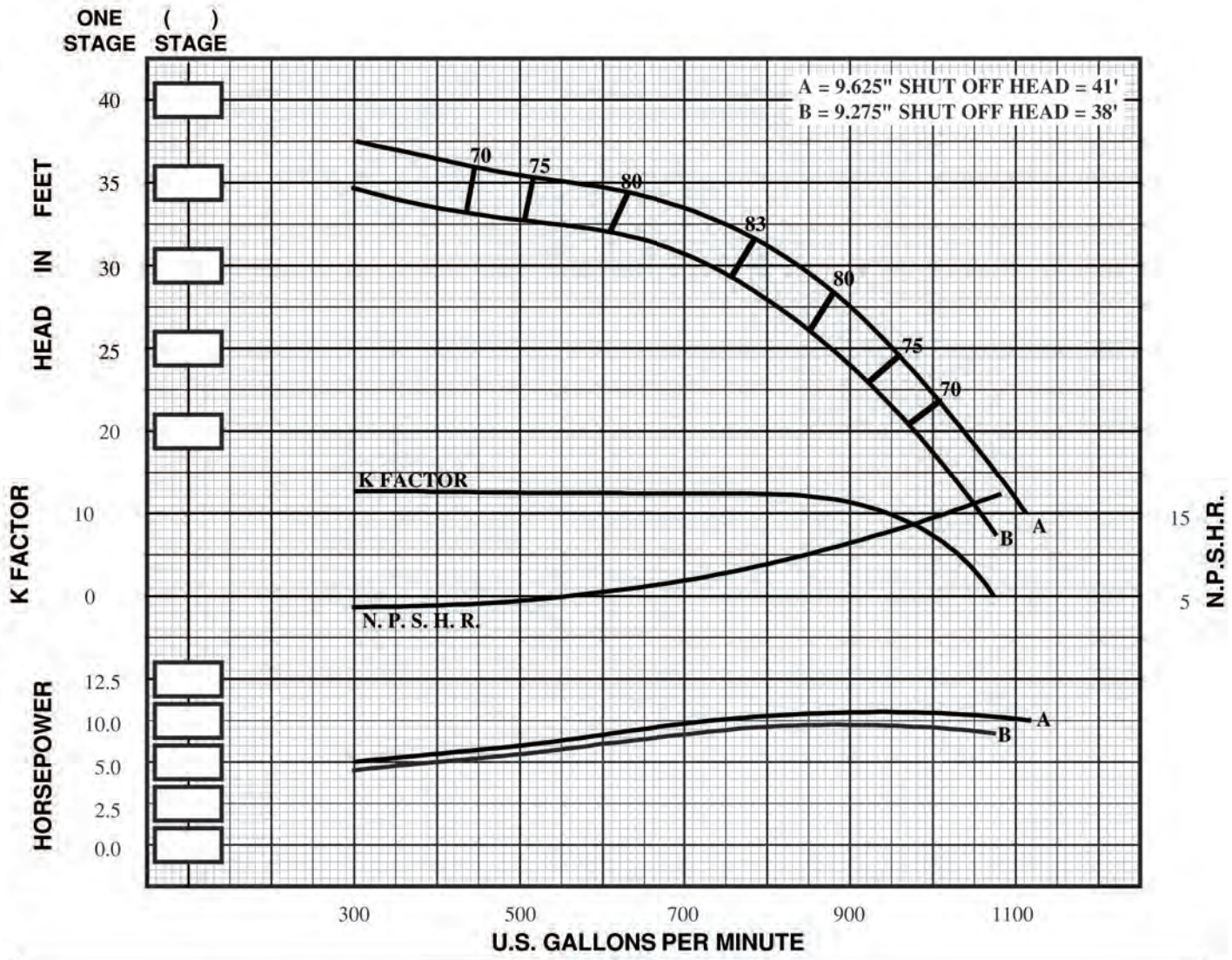
LINESHAFT TURBINE

SIMFLO®

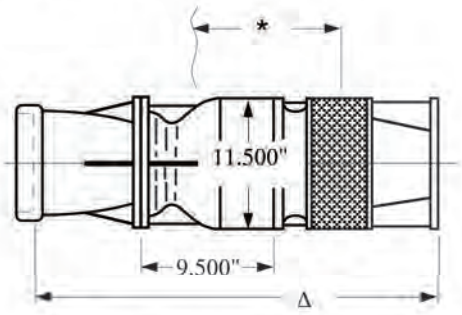
Section 203
Date 9/1/06

SR11HO

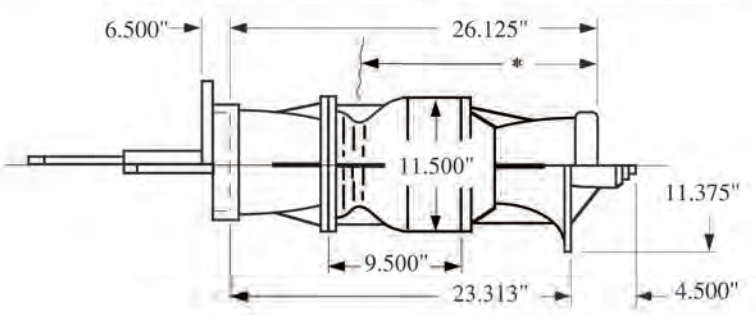
1160 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SR11HO	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 8.35	STD. LATERAL = .72"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 270.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 100.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	NOT RECOM.
MAX. SPHERE SIZE = .75"	ONE STAGE WR^2 = .411	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 15"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

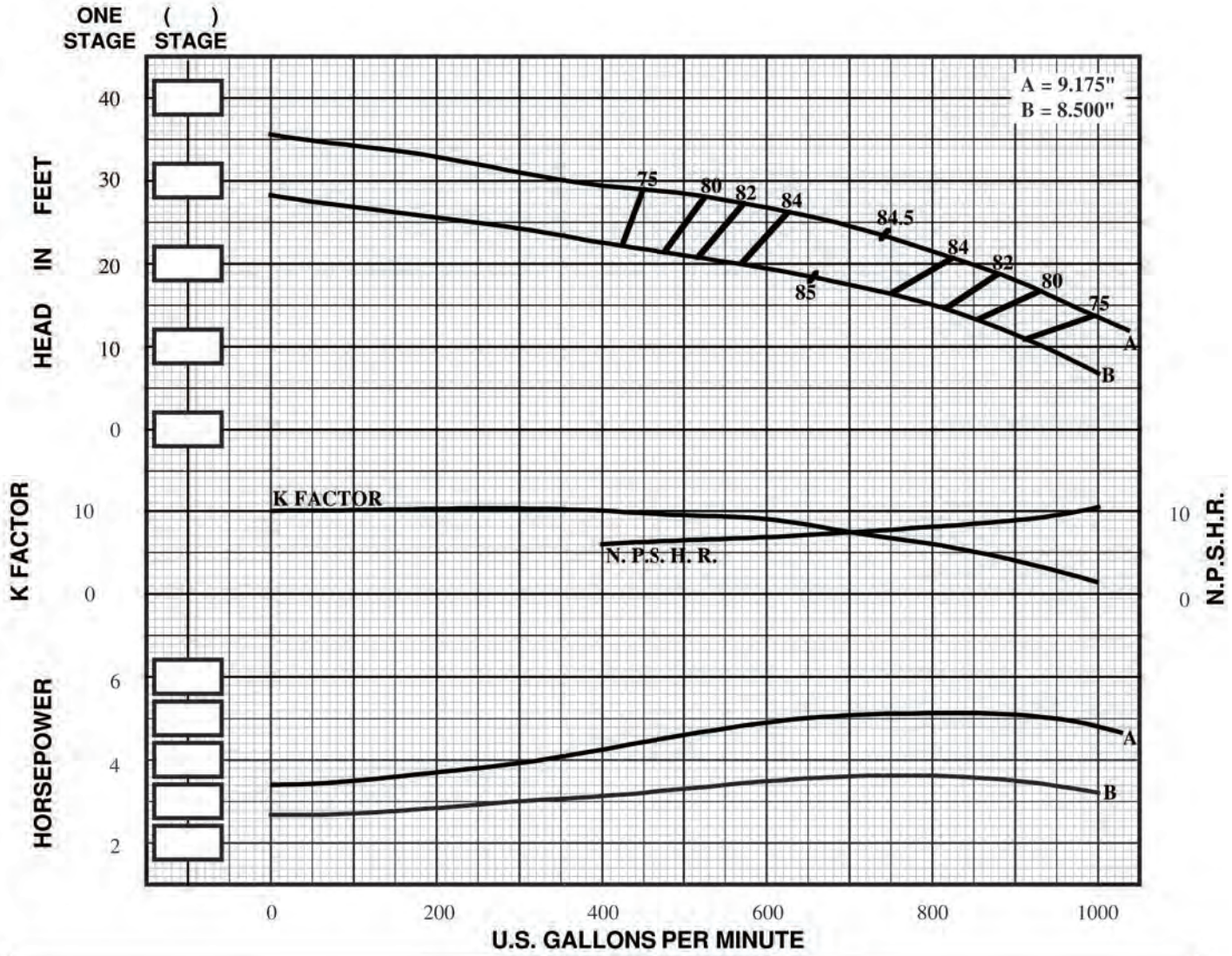


LINESHAFT TURBINE

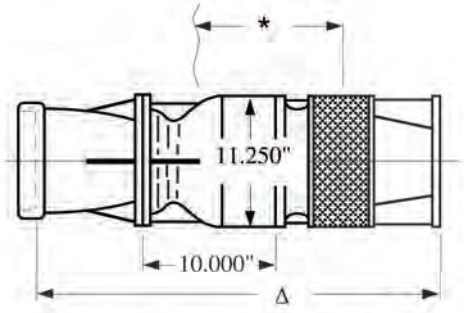
SIMFLO®

Section 203
Date 9/1/06

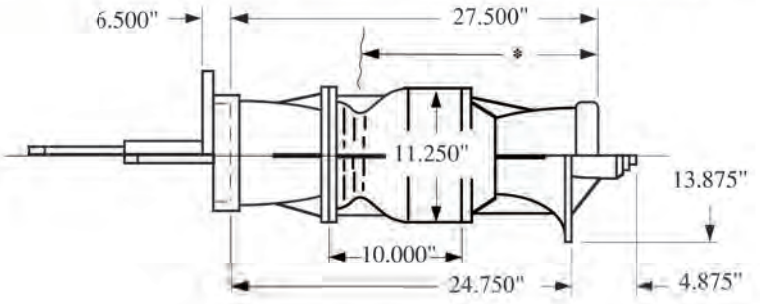
SP11L
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP11L	MAX. SHAFT DIA. = 1.937"				
IMPELLER WT. - LBS. = 16.4	STD. LATERAL = 1.13"	1	-4	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 290.0	DISCHARGE SIZES = 8"/ 10"	2	-3	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 105.0	SUCTION SIZES = 8"/ BELL	3	-2	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.19"	ONE STAGE WR² = .754	4	-1	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 18"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

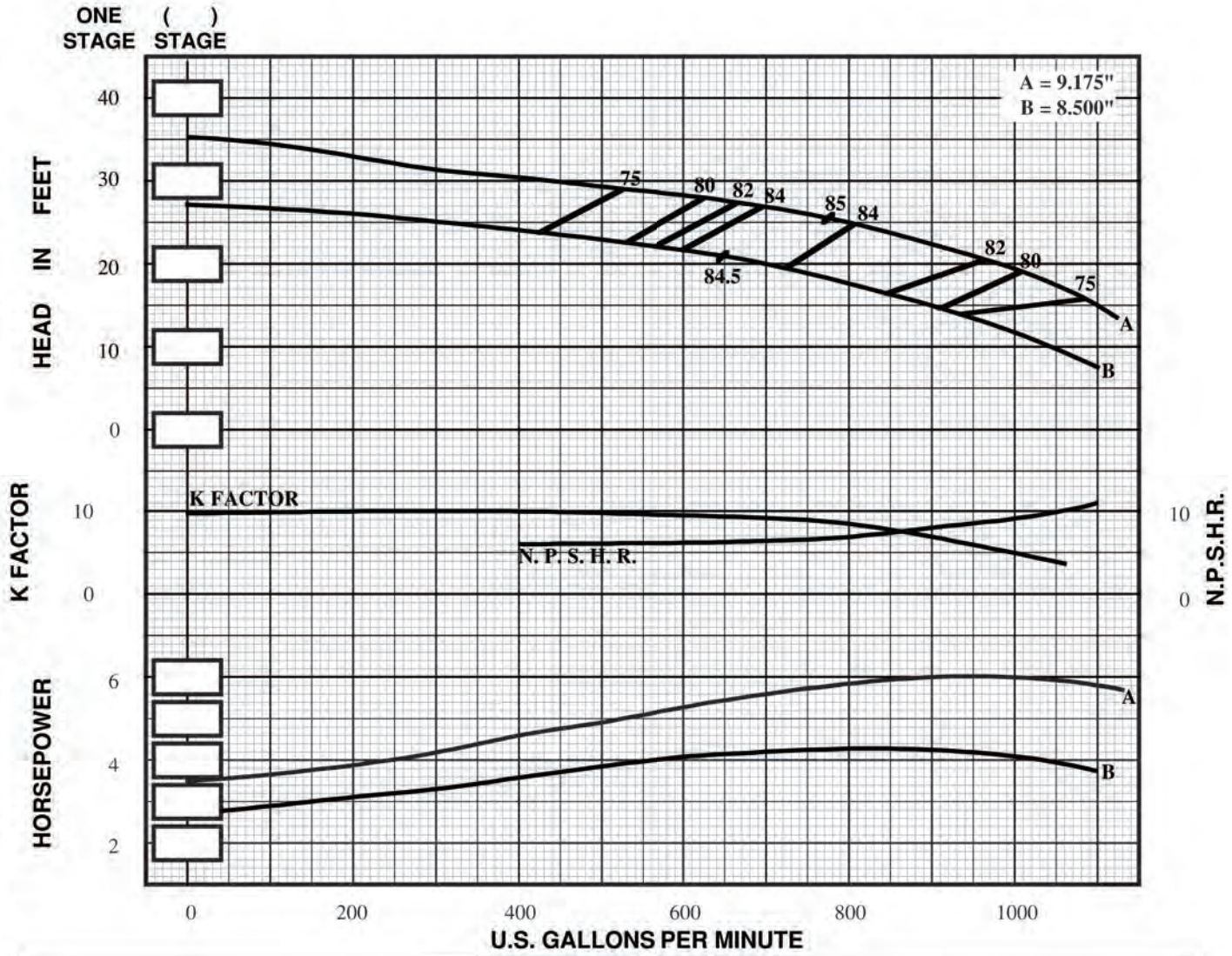


LINESHAFT TURBINE

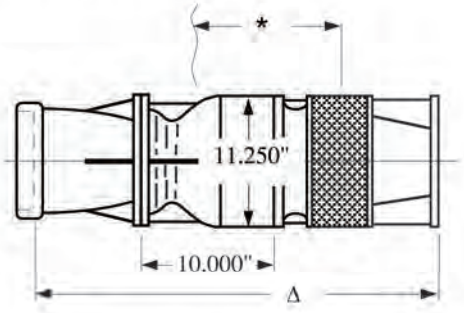
SIMFLO®

Section 203
Date 9/1/06

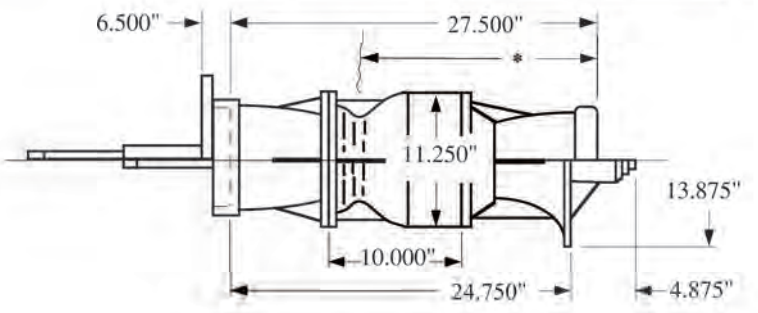
SP11M
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP11M	MAX. SHAFT DIA. = 1.937"				
IMPELLER WT. - LBS. = 14.3	STD. LATERAL = 1.13"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 290.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 105.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.19"	ONE STAGE WR^2 = .670	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 18"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

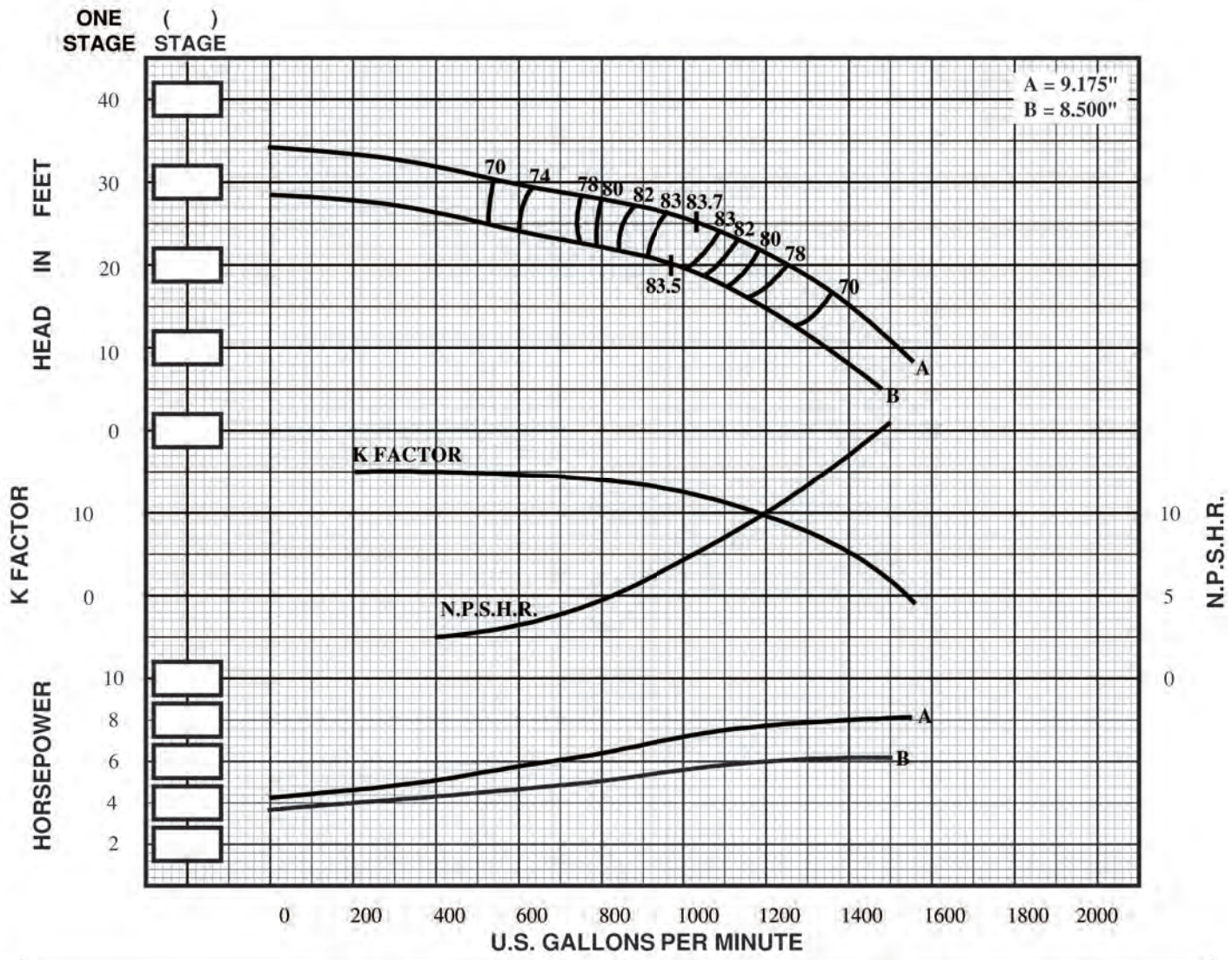


LINESHAFT TURBINE

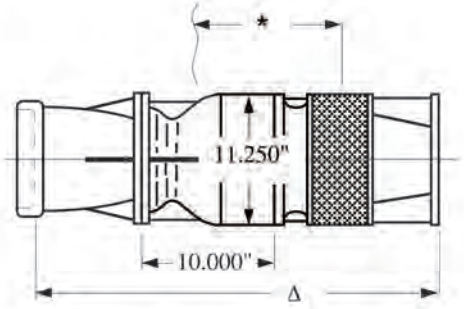
SIMFLO®

Section 203
Date 9/1/06

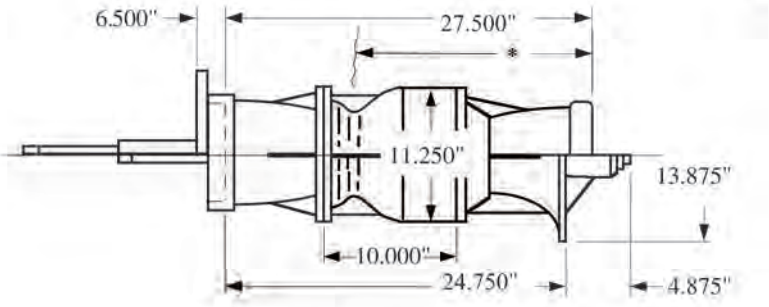
SP11H
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP11H	MAX. SHAFT DIA. = 1.937"				
IMPELLER WT. - LBS. = 14.9	STD. LATERAL = 1.13"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 290.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 105.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.19"	ONE STAGE WR^2 = .718	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 18"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



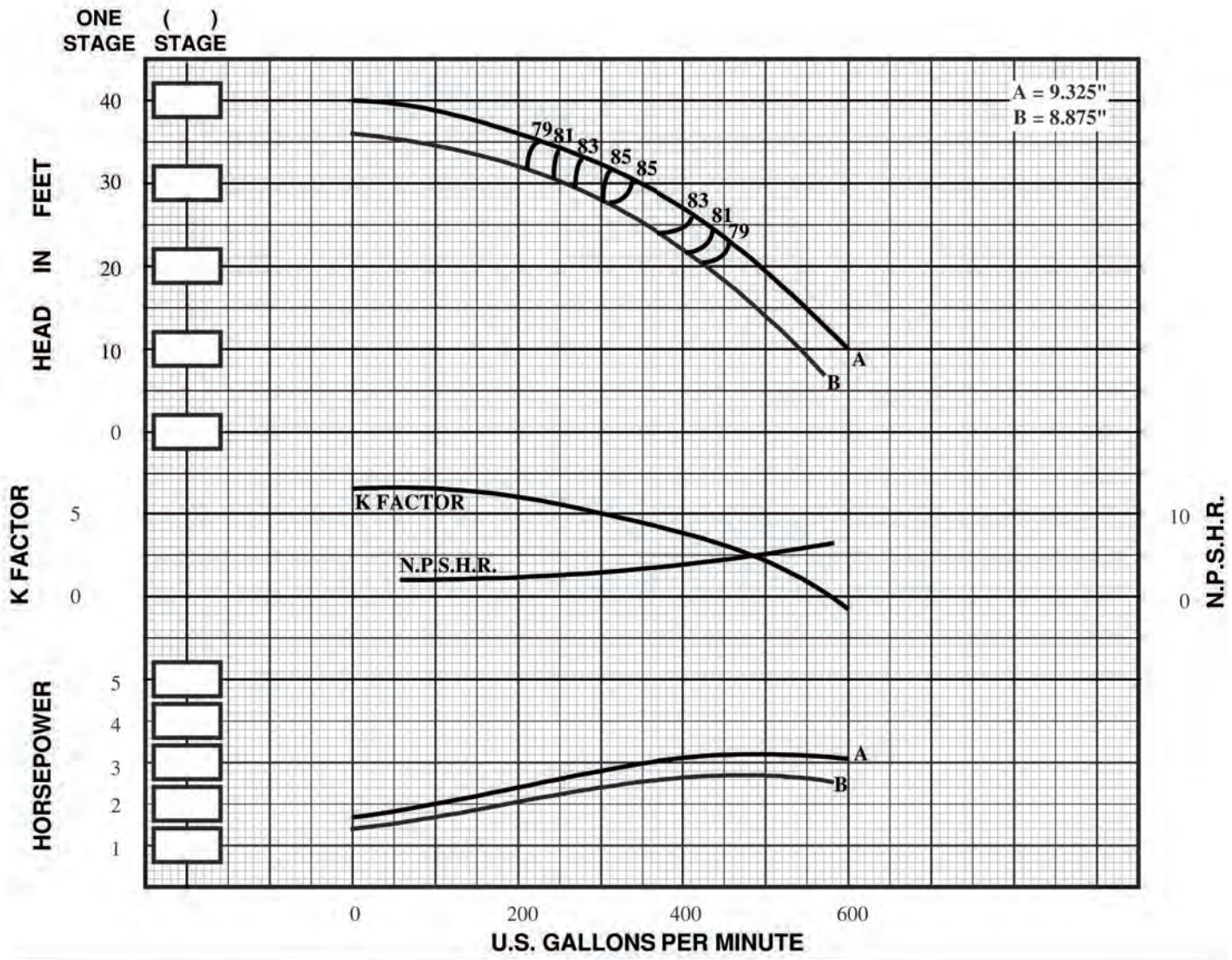
LINESHAFT TURBINE

SIMFLO®

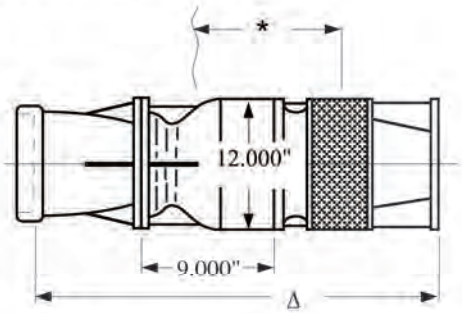
Section 203
Date 12/1/97

SW12L

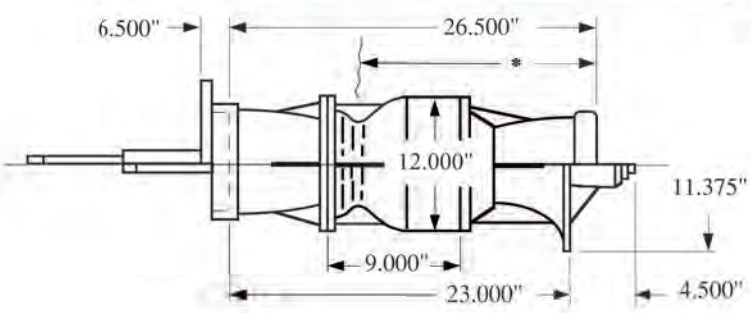
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SW12L	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 13.8	STD. LATERAL = 1.13"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 235.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 105.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .66"	ONE STAGE WR^2 = .642	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v21.1			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

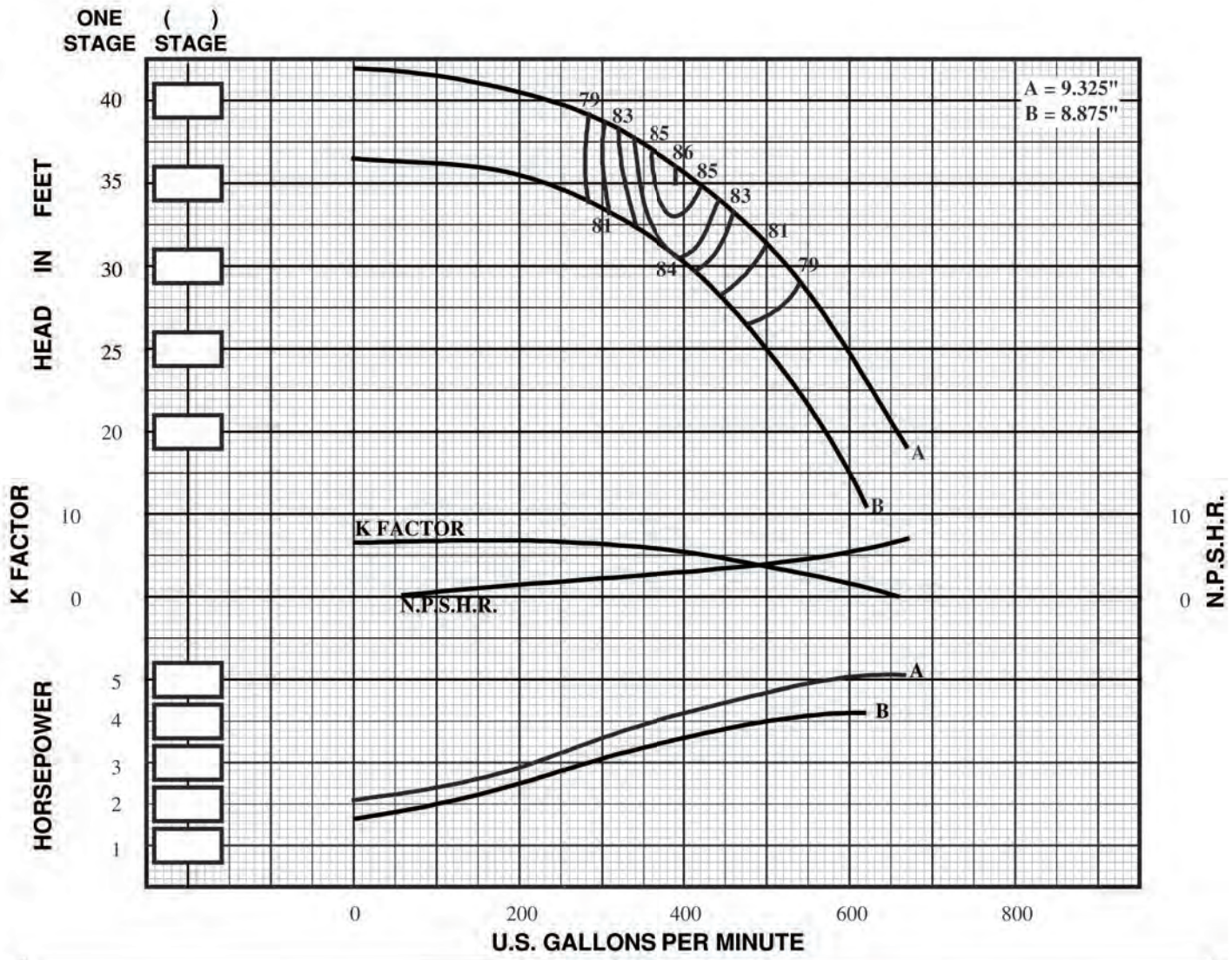


LINESHAFT TURBINE

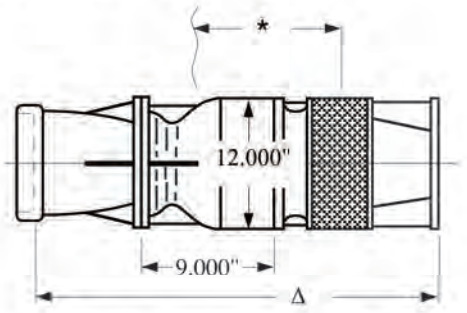
SIMFLO®

Section 203
Date 12/1/97

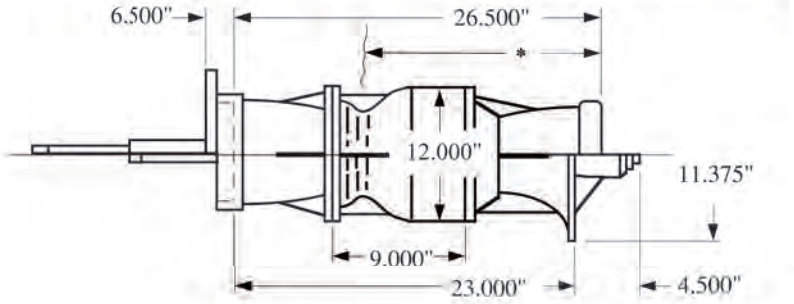
SW12M
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SW12M	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 14.5	STD. LATERAL = 1.13"	1	-3	IMP. - C.I.	-2
ONE STAGE WT. - LBS. = 235.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 105.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-3
MAX. SPHERE SIZE = .66"	ONE STAGE WR^2 = .673	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v21.1			BOWL - S.S.	-4



SUBMERSIBLE TURBINE

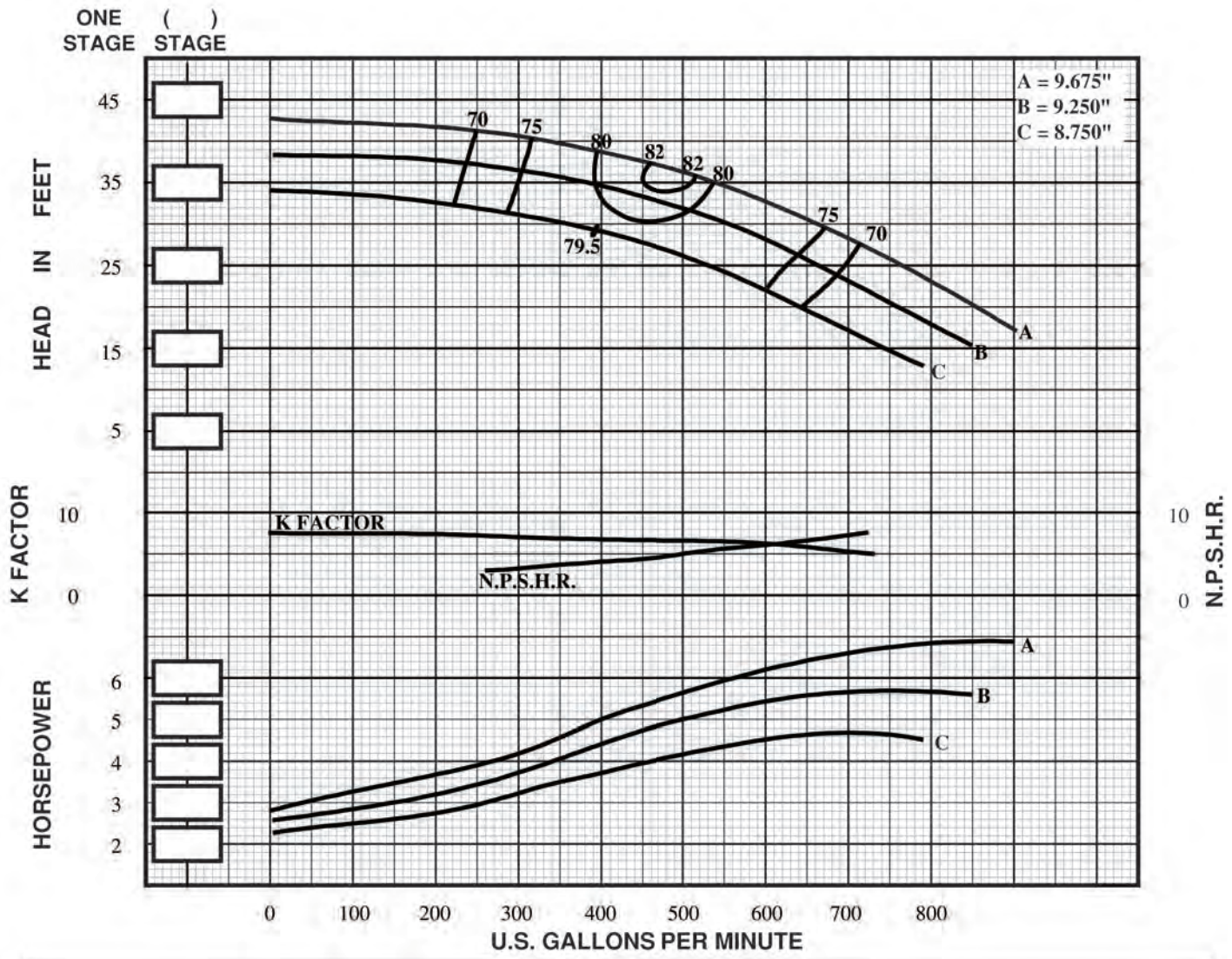


LINESHAFT TURBINE

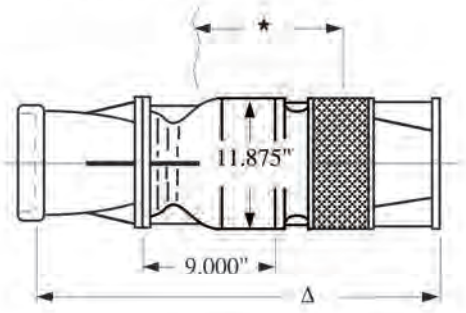
SIMFLO®

Section 203
Date 12/1/97

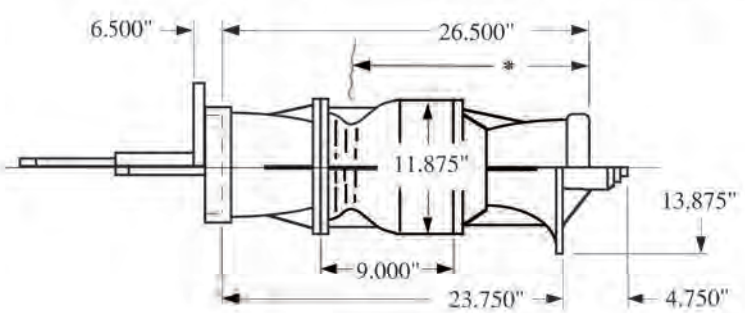
SP12M
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SP12M	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 15.0	STD. LATERAL = 1.19"	1	-3	IMP. - C.I.	-1
ONE STAGE WT. - LBS. = 260.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 120.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-2
MAX. SPHERE SIZE = .81"	ONE STAGE WR^2 = .746	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



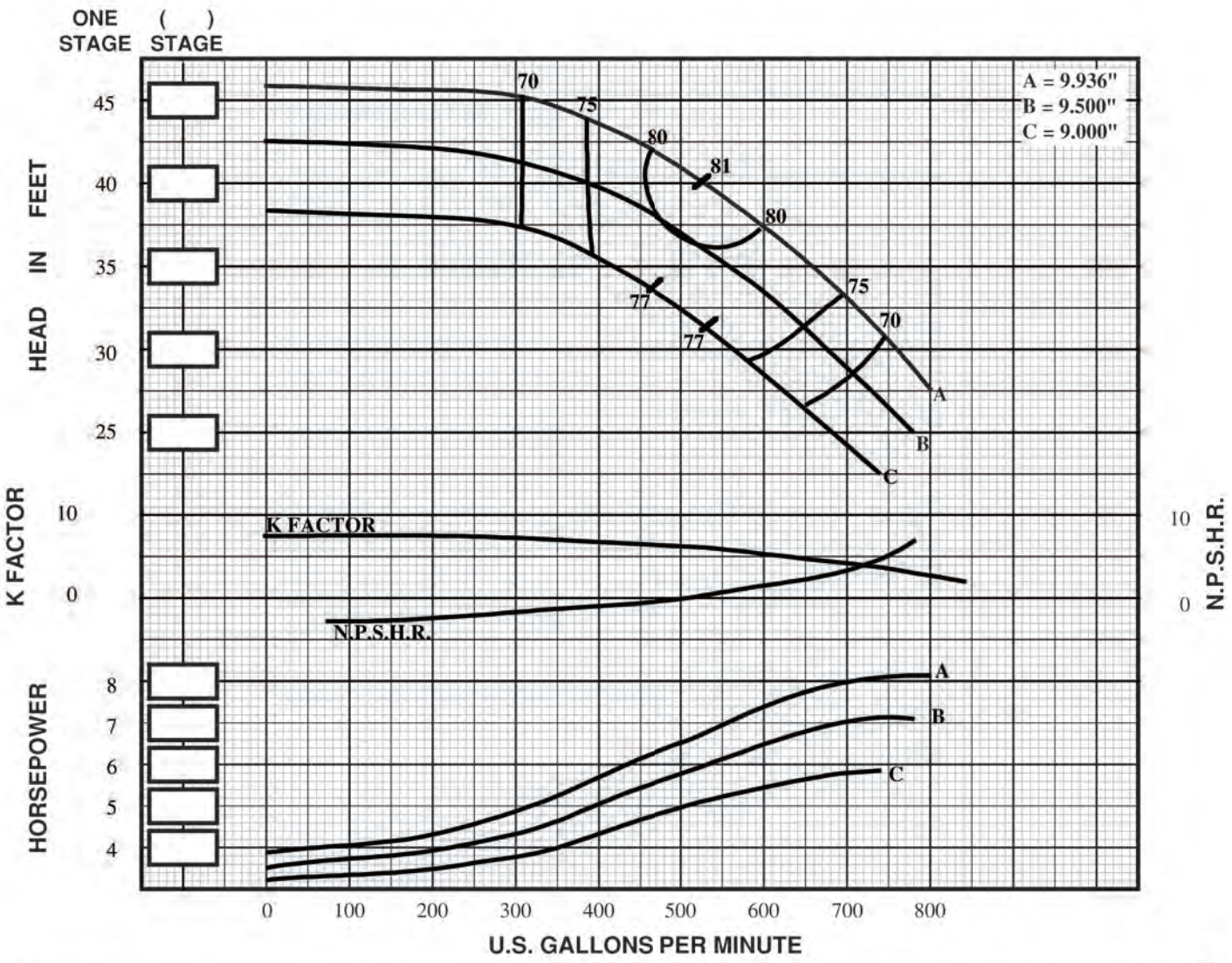
LINESHAFT TURBINE

SIMFLO®

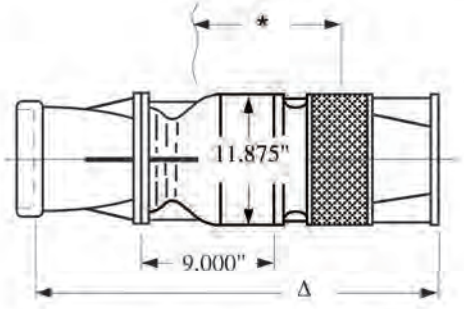
Section 203
Date 12/1/97

SP12H

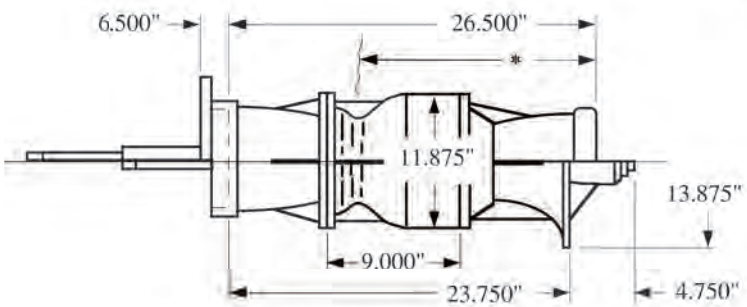
1160 RPM



				NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER TYPE	= ENCLOSED	STD. SHAFT DIA.	= 1.687"				
IMPELLER NO.	= SP12H	MAX. SHAFT DIA.	= 1.687"				
IMPELLER WT. - LBS.	= 15.9	STD. LATERAL	= 1.06"	1	-3	IMP. - C.I.	-1
ONE STAGE WT. - LBS.	= 260.0	DISCHARGE SIZES	= 8"/ 10"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS.	= 120.0	SUCTION SIZES	= 8"/ BELL	3	-1	IMP. - S.S.	-2
MAX. SPHERE SIZE	= .75"	ONE STAGE WR^2	= .790	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE*	= 16"		=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY			v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

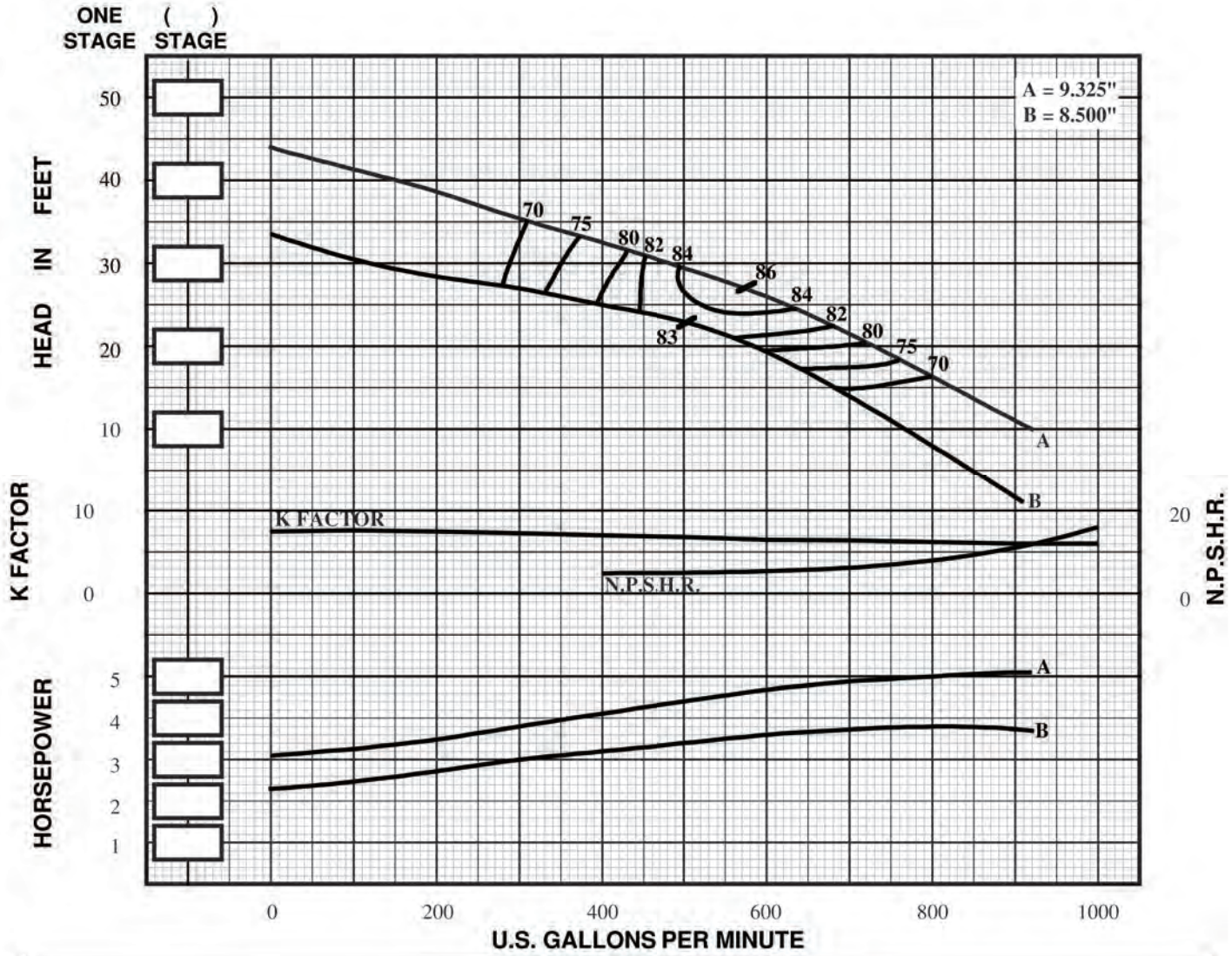


LINESHAFT TURBINE

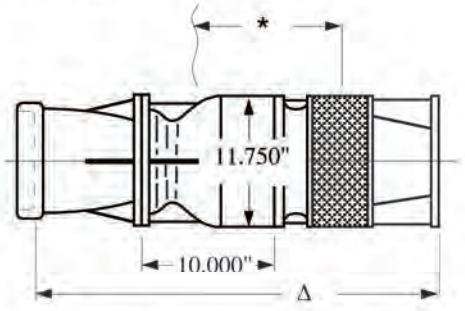
SIMFLO®

Section 203
Date 7/14/05

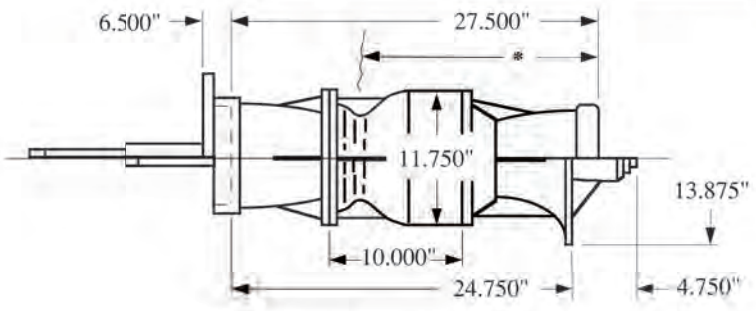
SL12M
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SL12M	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 13.2	STD. LATERAL = 1.13"	1	-3.5	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 250.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-3
ADD'L STAGE WT. - LBS. = 107.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	-4
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .670	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 17"	=	5	0	BOWL - NI-RI	-2
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE

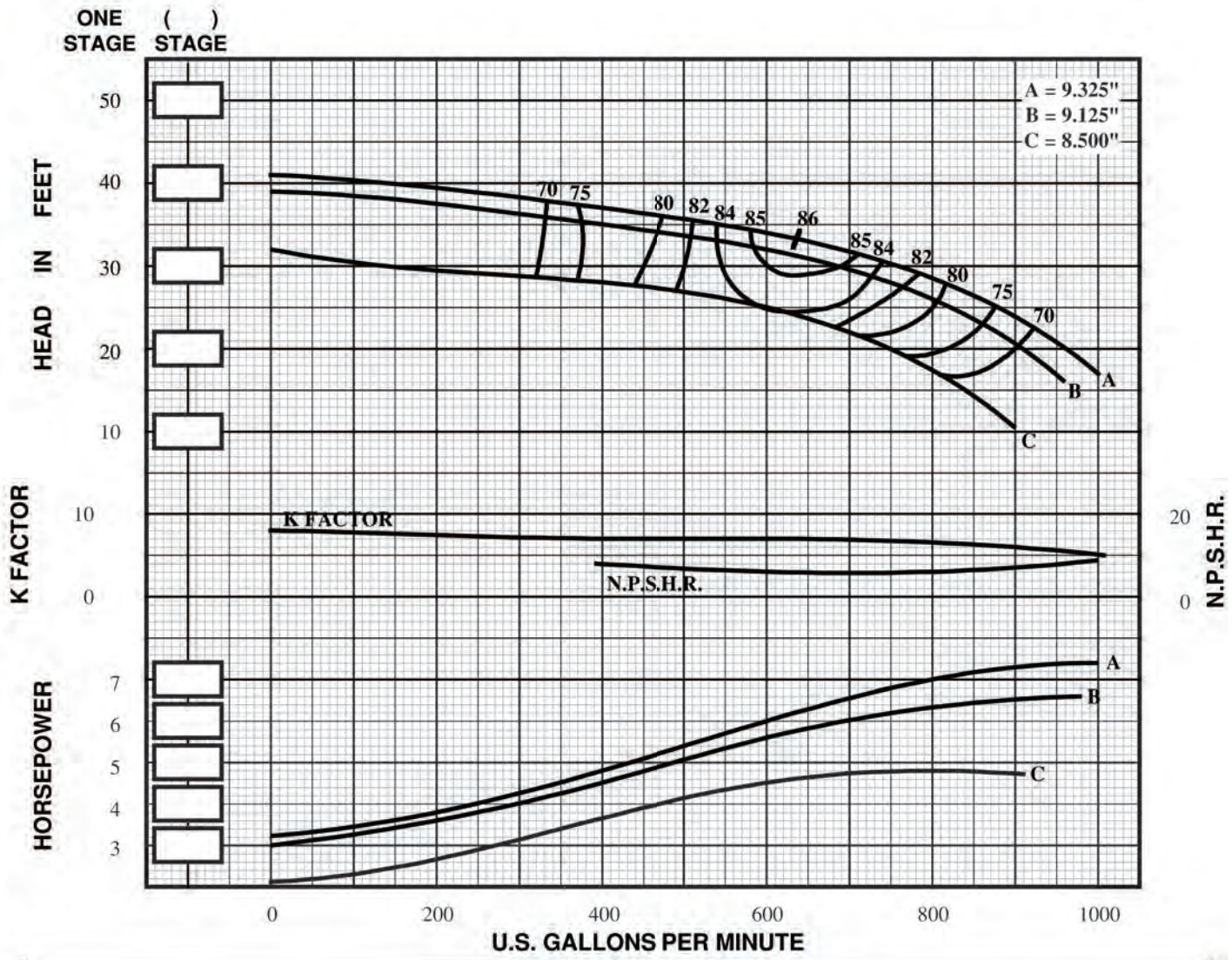


LINESHAFT TURBINE

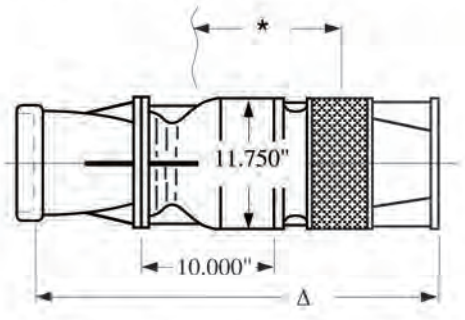
SIMFLO®

Section 203
Date 7/1/99

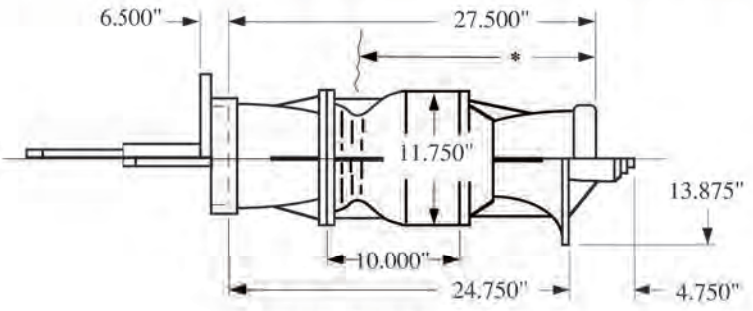
SL12H
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SL12H	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 14.25	STD. LATERAL = 1.13"	1	-3.5	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 250.0	DISCHARGE SIZES = 8"/ 10"	2	-2	IMP. - NI-RI	-3
ADD'L STAGE WT. - LBS. = 107.0	SUCTION SIZES = 8"/ BELL	3	-1	IMP. - S.S.	Not Recom.
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .673	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 17"	=	5	0	BOWL - NI-RI	-2
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-3



SUBMERSIBLE TURBINE



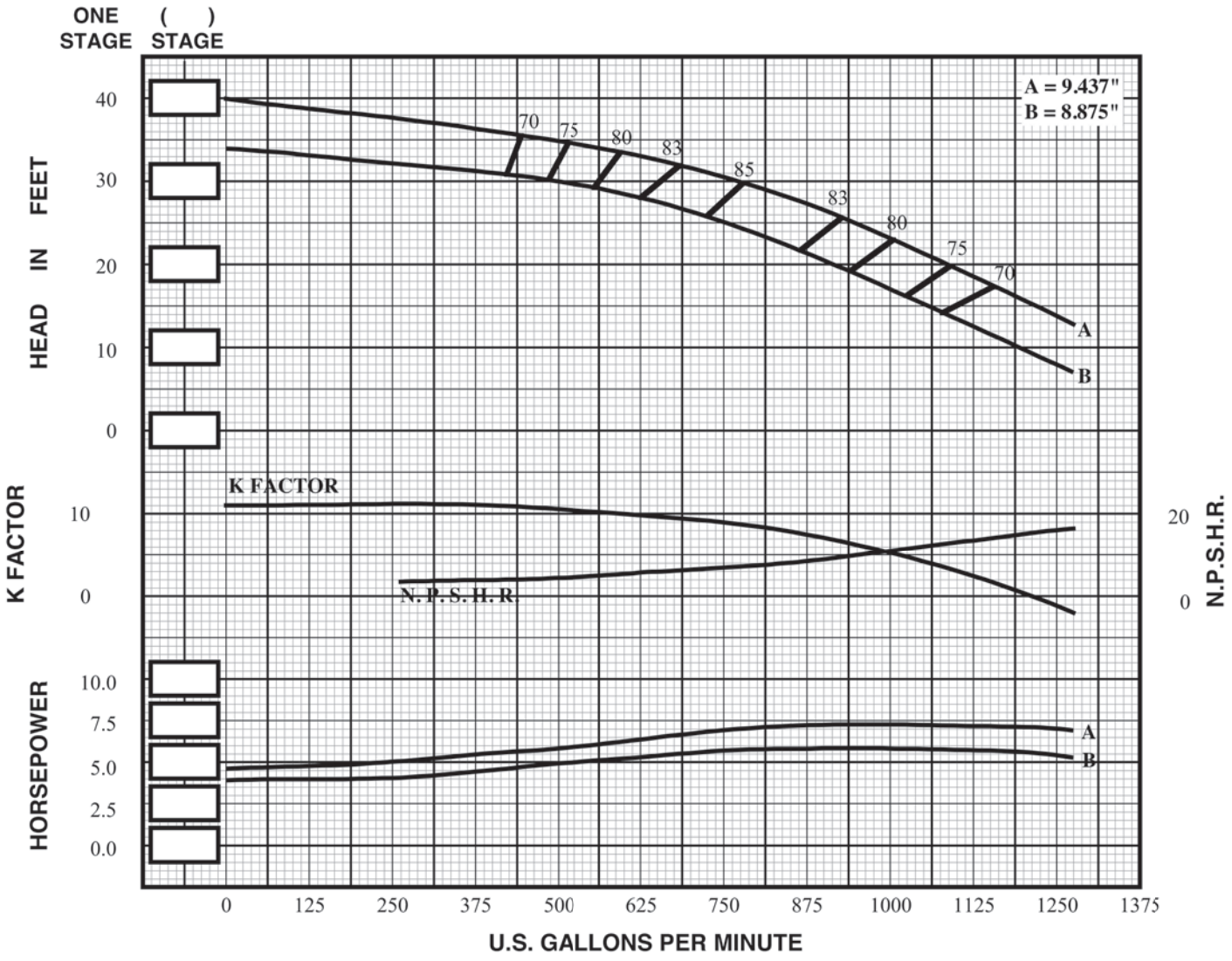
LINESHAFT TURBINE

SIMFLO®

Section 203
Date 1/1/12

SJ12M

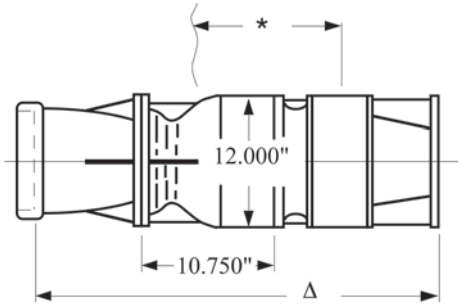
1160 RPM



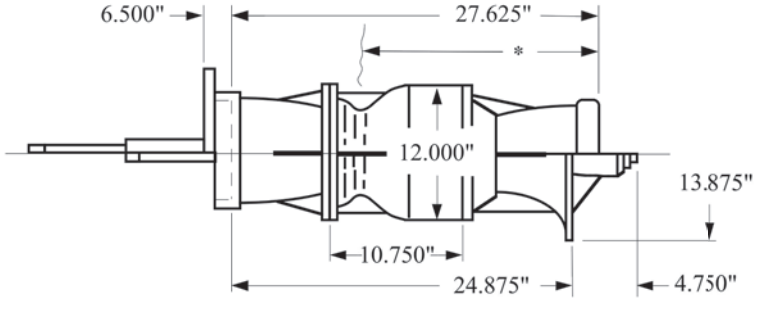
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SJ12M	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 17.0	STD. LATERAL = 1.19"	1	-2	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 270.0	DISCHARGE SIZES = 8"/ 10"	2	-1	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 110.0	SUCTION SIZES = 8"/ BELL	3	0	IMP. - S.S.	-1
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .804	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
				BOWL - S.S.	-2

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE

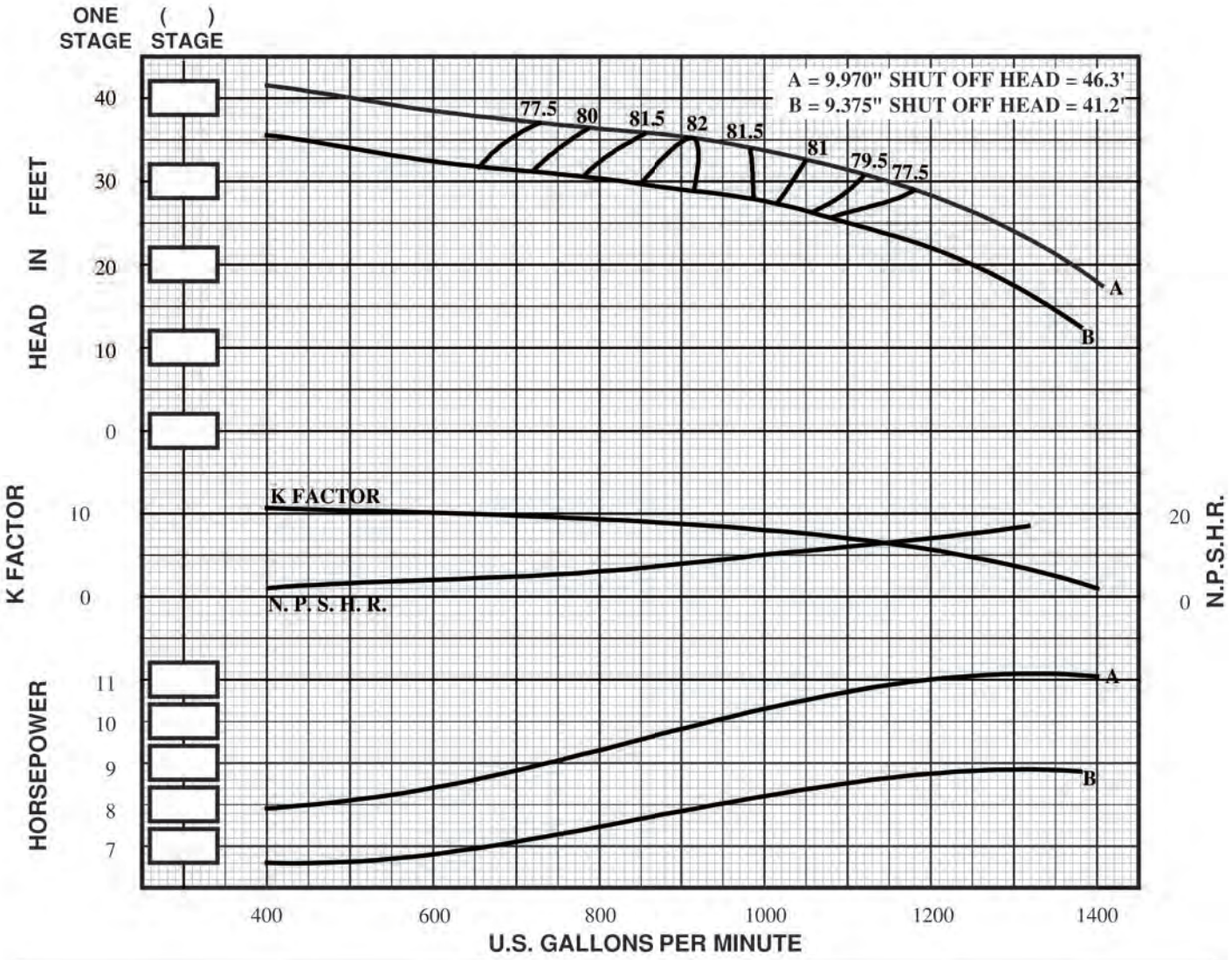


LINESHAFT TURBINE

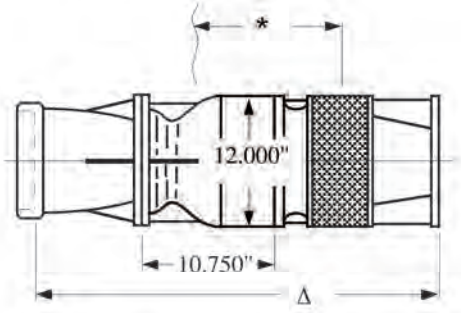
SIMFLO®

Section 203
Date 9/1/06

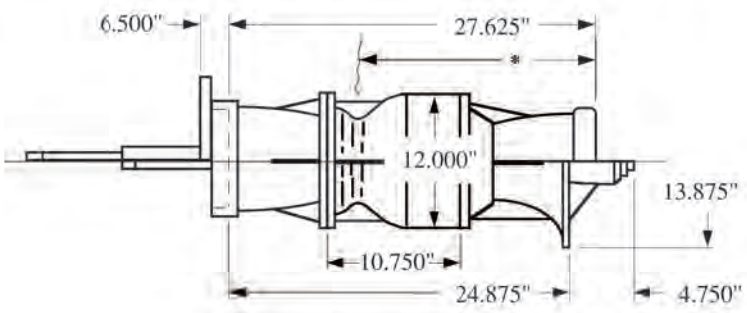
SJ12H
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 1.687"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SJ12H	MAX. SHAFT DIA. = 1.687"				
IMPELLER WT. - LBS. = 15.2	STD. LATERAL = 1.19"	1	-1	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 270.0	DISCHARGE SIZES = 8"/ 10"	2	0	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 110.0	SUCTION SIZES = 8"/ BELL	3	0	IMP. - S.S.	-1
MAX. SPHERE SIZE = .88"	ONE STAGE WR^2 = .744	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 16"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



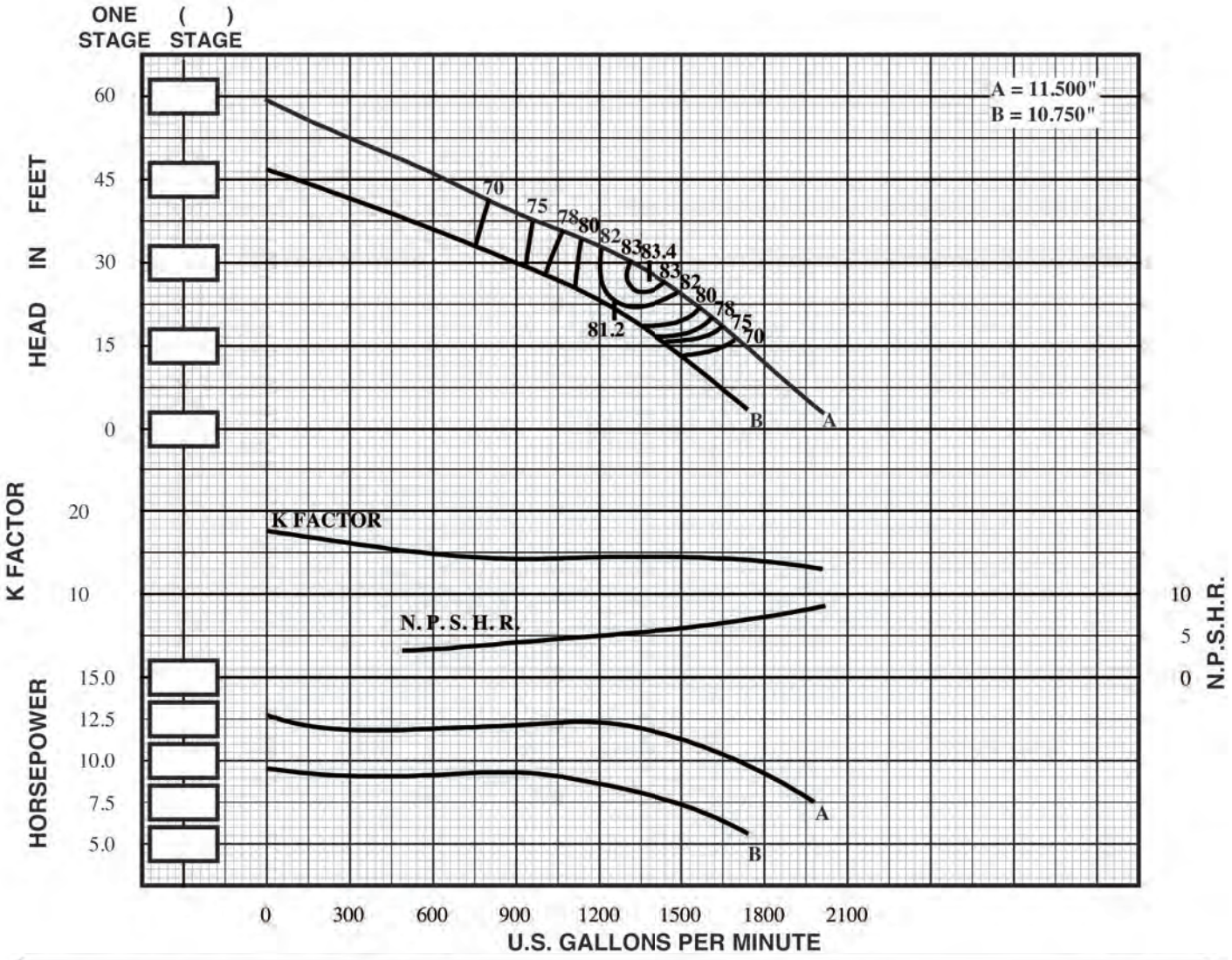
LINESHAFT TURBINE

SIMFLO®

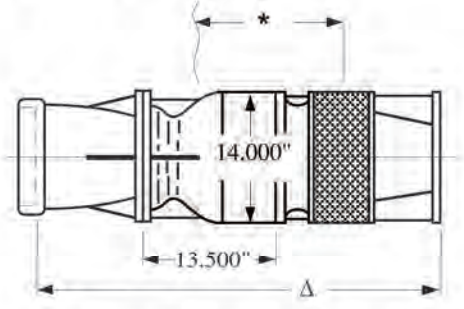
Section 203
Date 7/5/11

SM14L

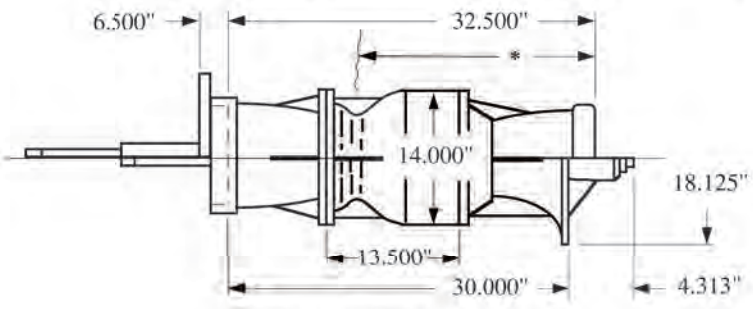
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14L	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 27.4	STD. LATERAL = 1.25"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 540.0	DISCHARGE SIZES = 10" / 12"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 225.0	SUCTION SIZES = 10" / BELL	3	-1	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.31"	ONE STAGE WR^2 = 1.933	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

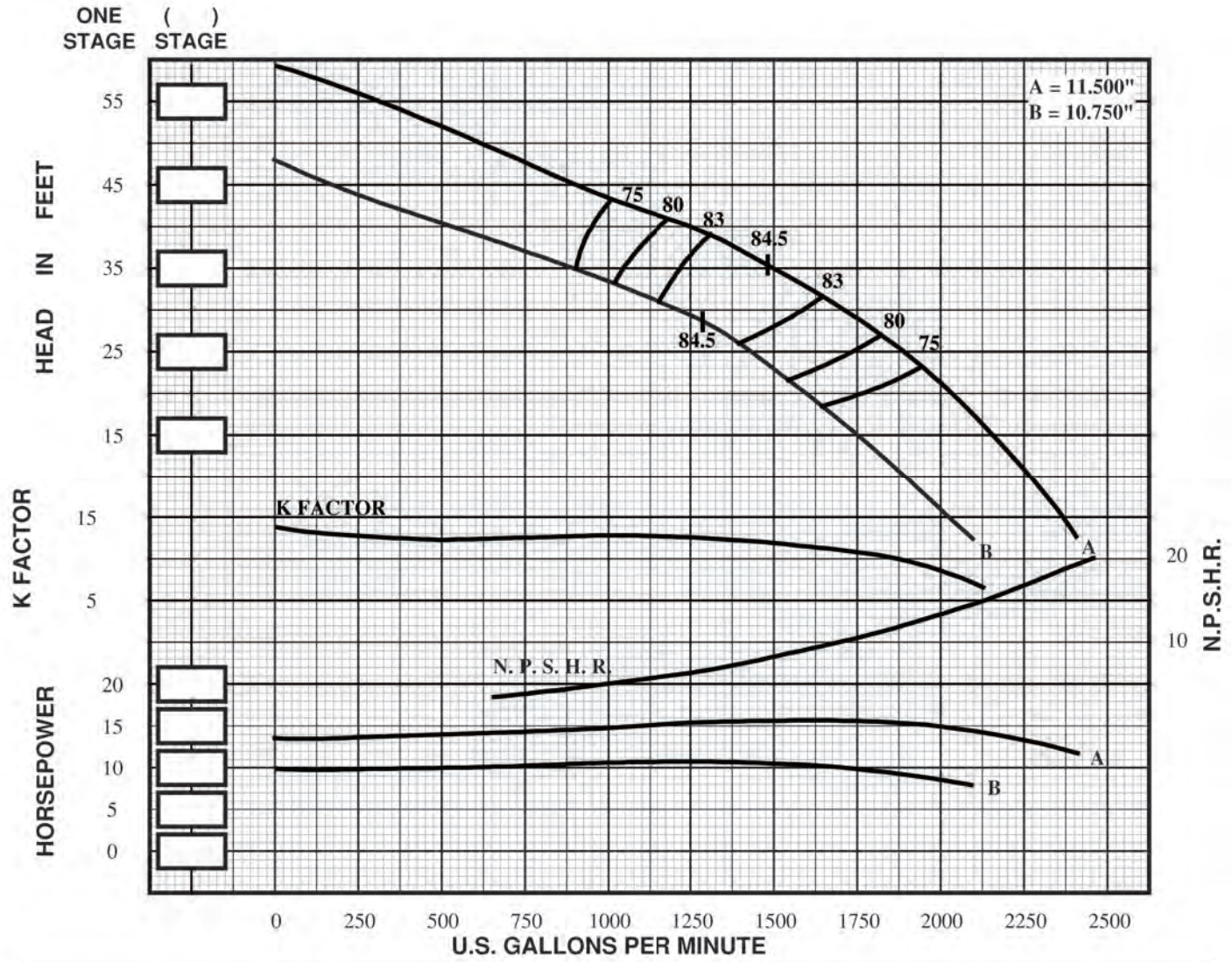


LINESHAFT TURBINE

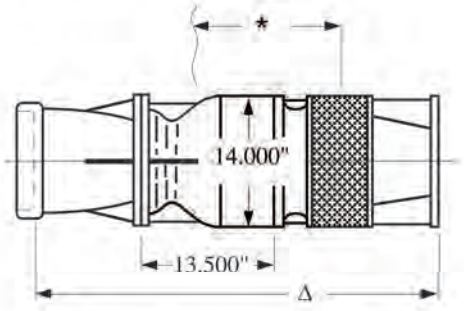
SIMFLO®

Section 203
Date 9/1/06

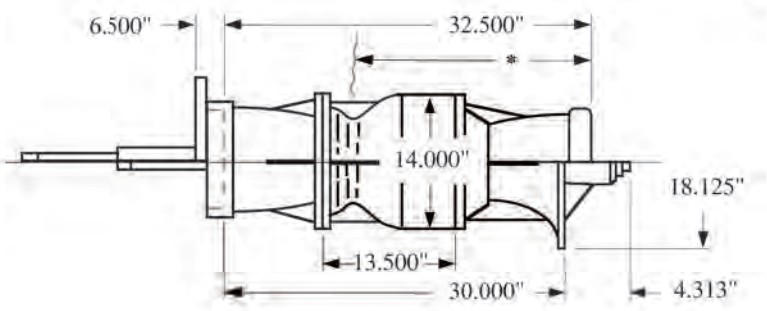
SM14M
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14M	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 31.7	STD. LATERAL = 1.25"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 550.0	DISCHARGE SIZES = 10"/ 12"	2	-1	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 235.0	SUCTION SIZES = 10" / BELL	3	0	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.31"	ONE STAGE WR^2 = 2.182	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

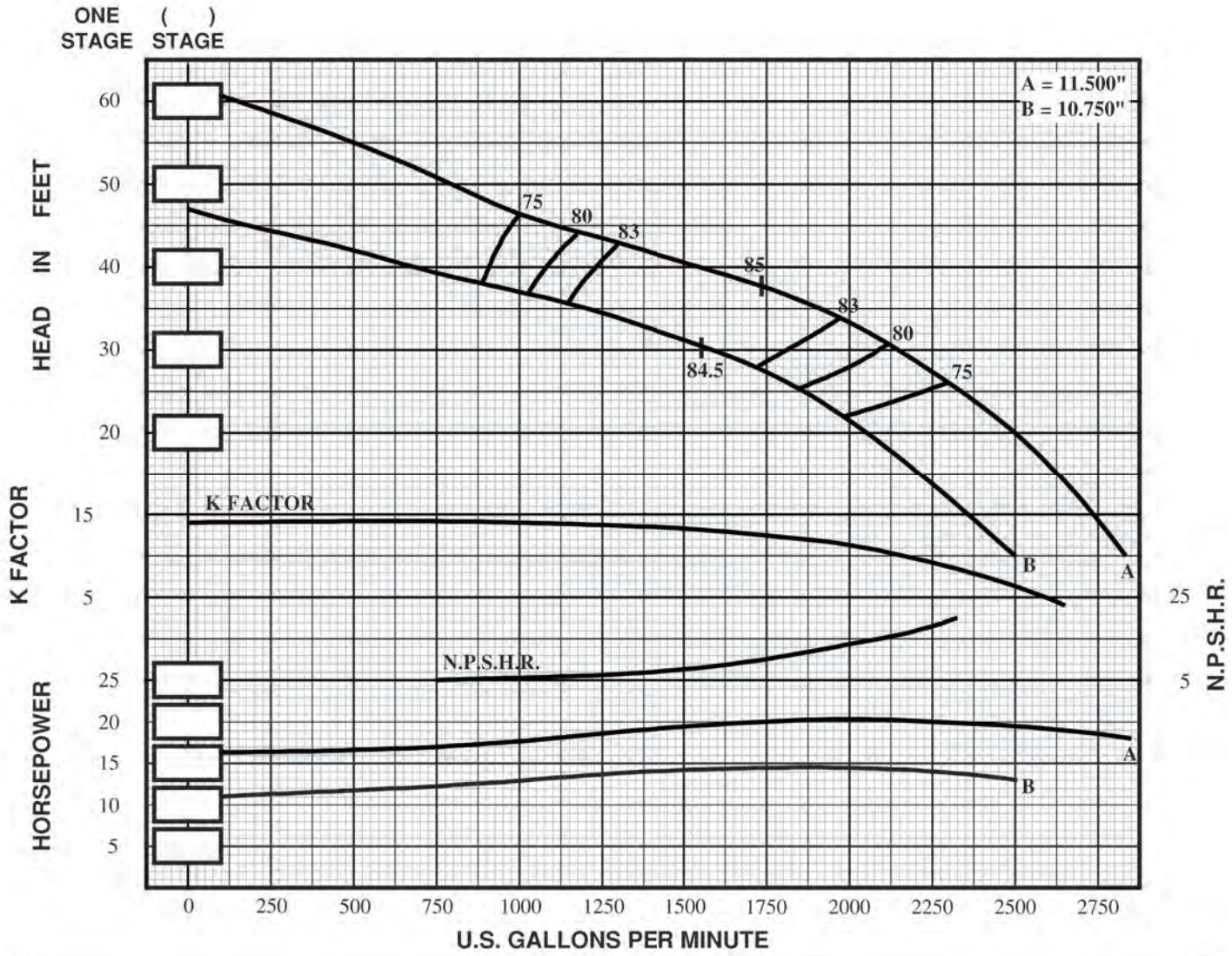


LINESHAFT TURBINE

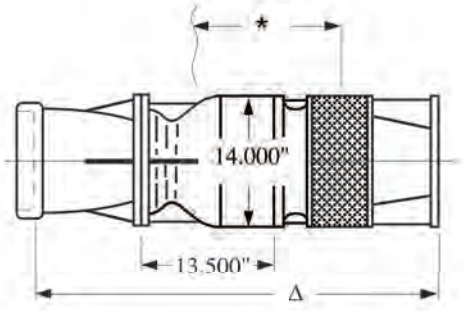
SIMFLO®

Section 203
Date 9/1/06

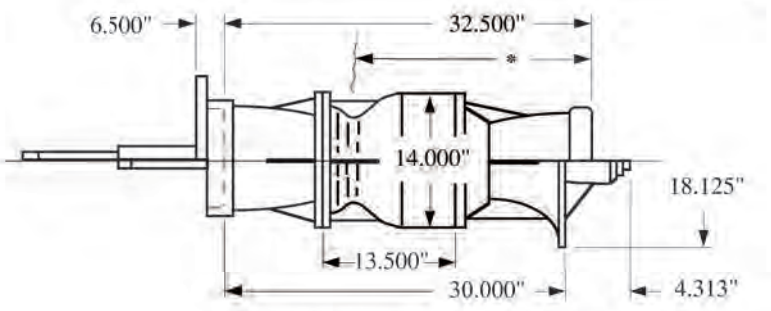
SM14H
1160 RPM



				NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER TYPE	= ENCLOSED	STD. SHAFT DIA.	= 2.187"				
IMPELLER NO.	= SM14H	MAX. SHAFT DIA.	= 2.187"				
IMPELLER WT. - LBS.	= 29.0	STD. LATERAL	= 1.25"	1	-2	IMP. - C.I.	0
ONE STAGE WT. - LBS.	= 550.0	DISCHARGE SIZES	= 10"/ 12"	2	-1	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS.	= 235.0	SUCTION SIZES	= 10"/ BELL	3	0	IMP. - S.S.	-2
MAX. SPHERE SIZE	= 1.56"	ONE STAGE WR^2	= 2.023	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE*	= 19"		=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY			v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



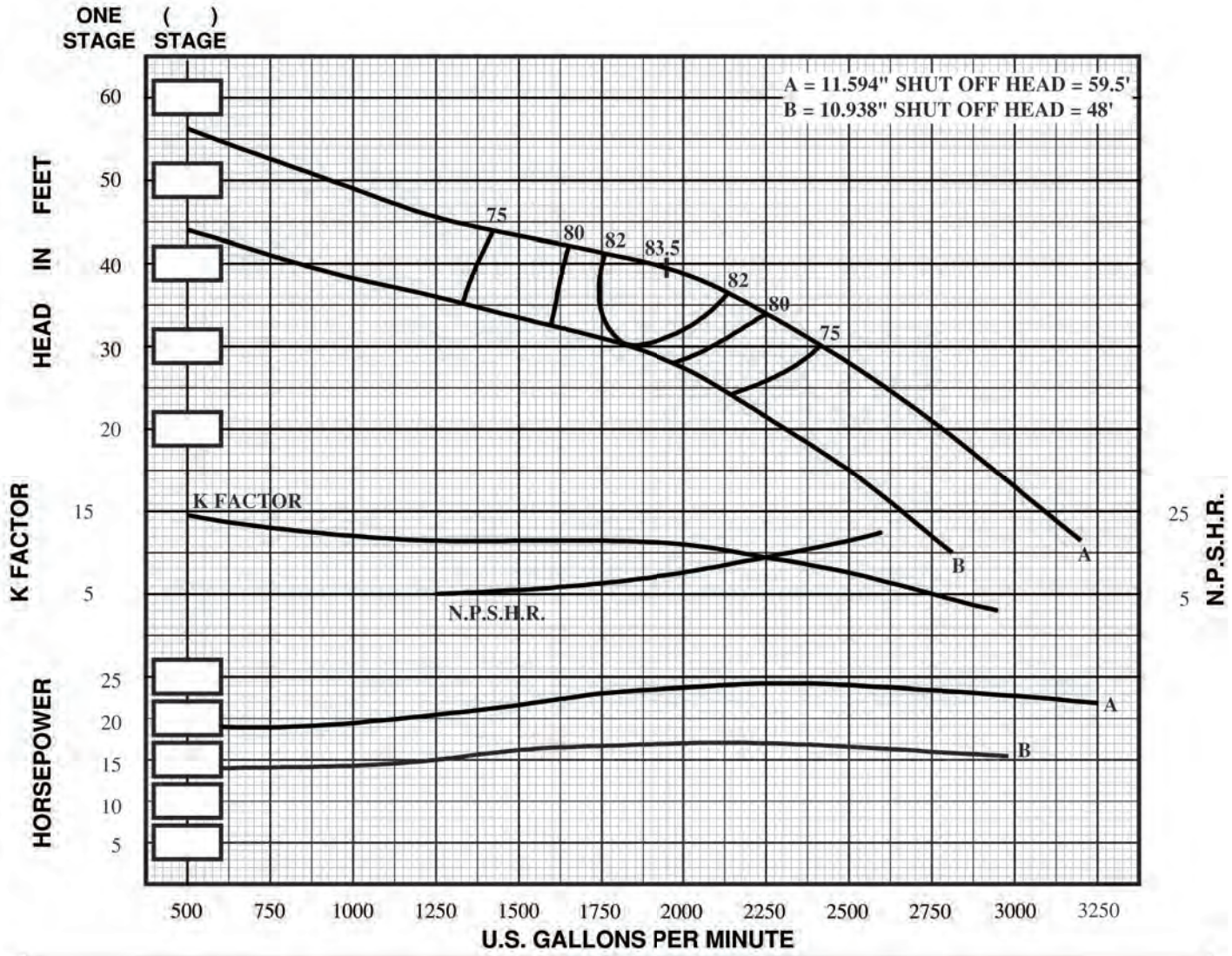
LINESHAFT TURBINE

SIMFLO®

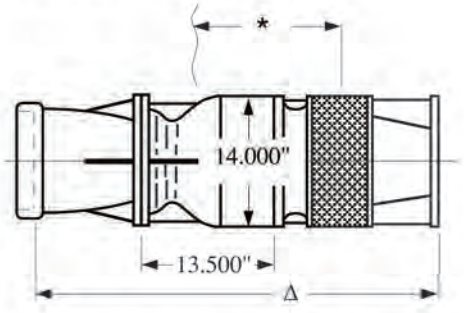
Section 203
Date 9/1/06

SM14HH

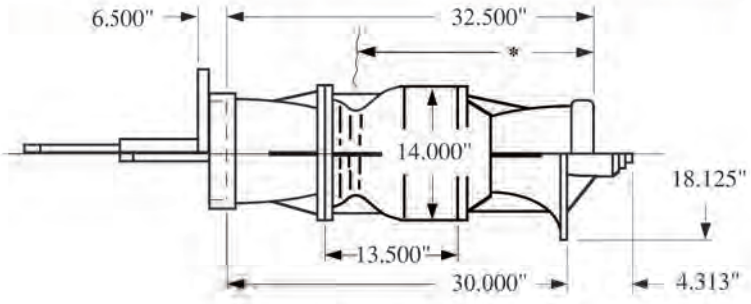
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14HH	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 28.4	STD. LATERAL = 1.25"	1	-2.5	IMP. - C.I.	-.5
ONE STAGE WT. - LBS. = 540	DISCHARGE SIZES = 10"/ 12"	2	-1.5	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 225	SUCTION SIZES = 10"/ BELL	3	-.5	IMP. - S.S.	-3
MAX. SPHERE SIZE = 1.250	ONE STAGE WR^2 = 2.300	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



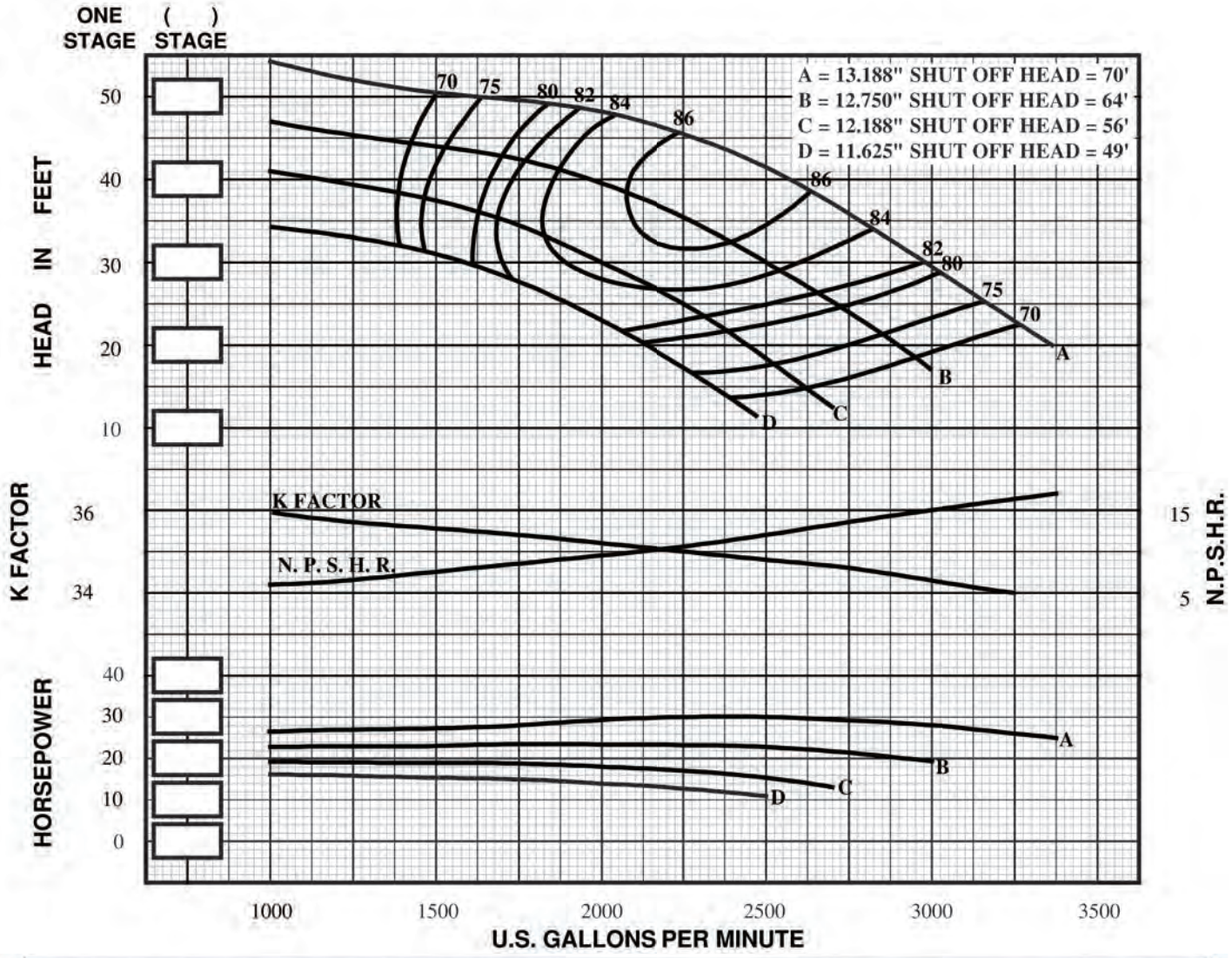
LINESHAFT TURBINE

SIMFLO®

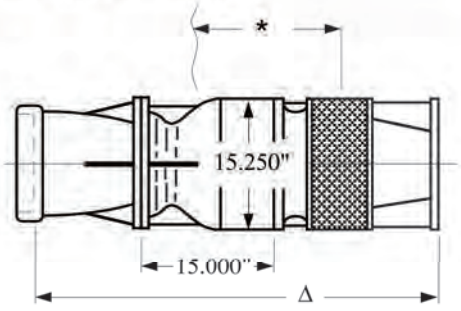
Section 203
Date 7/1/99

SM16MO

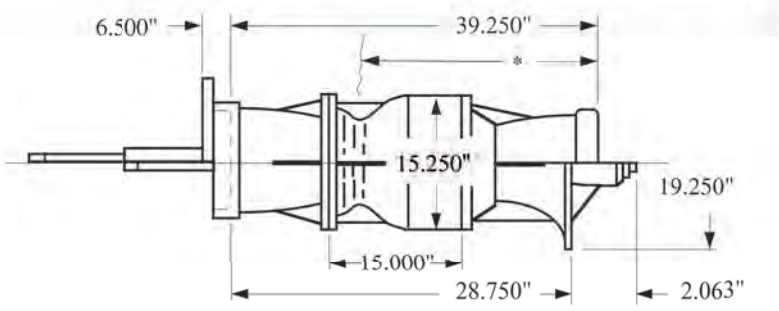
1160 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM16MO	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 24.0	STD. LATERAL = 1.34"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/ 14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.19"	ONE STAGE WR^2 = 2.260	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 35"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



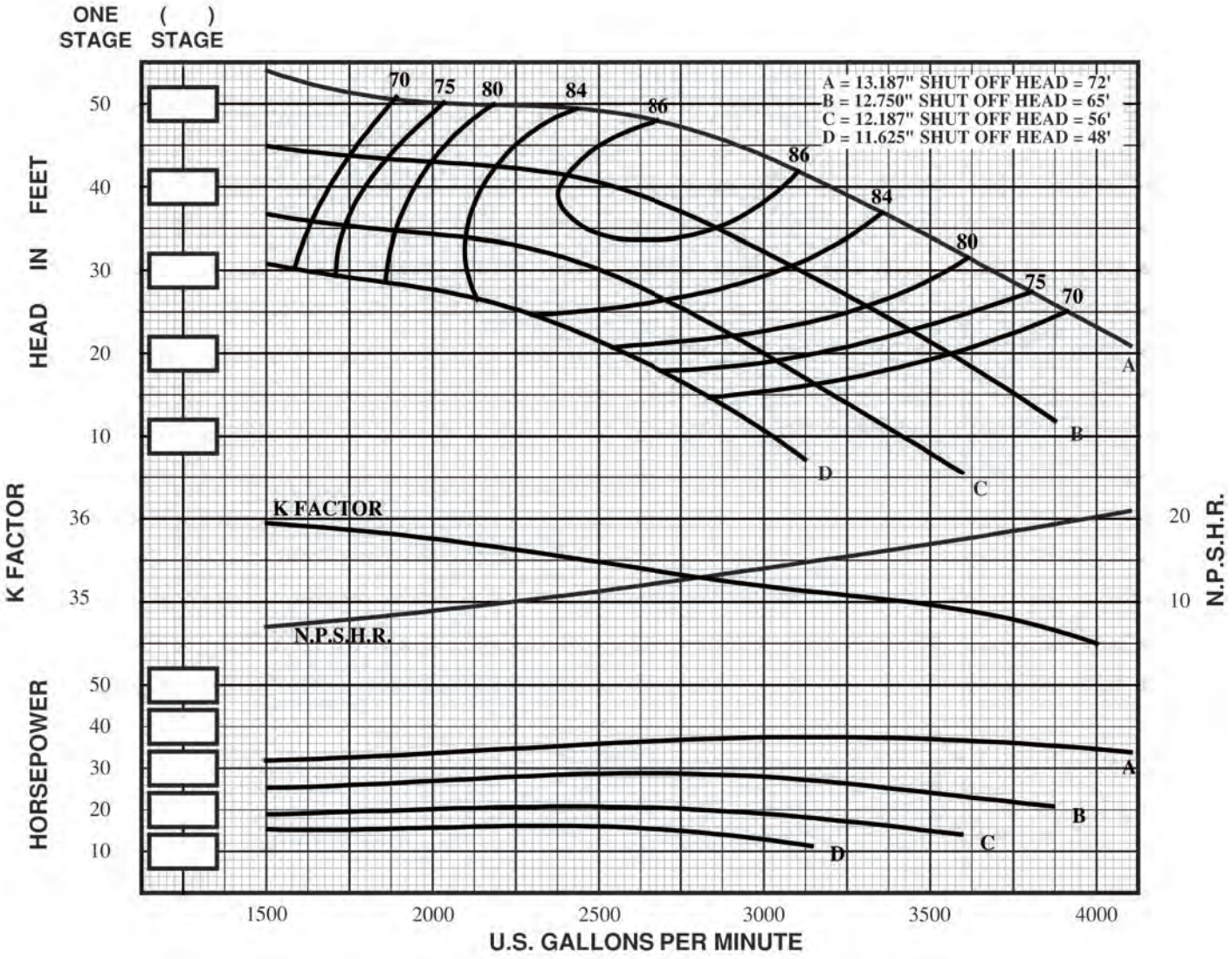
LINESHAFT TURBINE

SIMFLO®

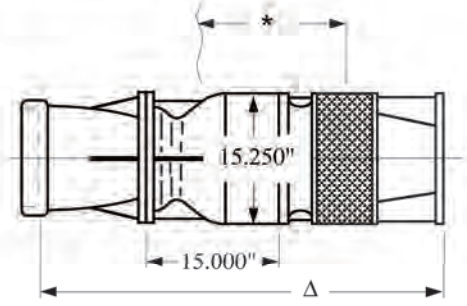
Section 203
Date 9/1/06

SM16HO

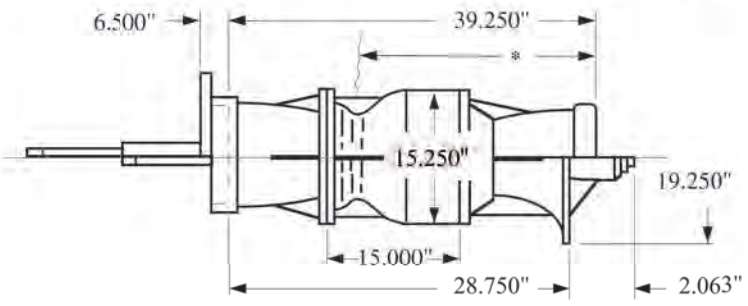
1160 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM16HO	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 25.0	STD. LATERAL = 1.06"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.22"	ONE STAGE WR^2 = 2.240	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 39"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

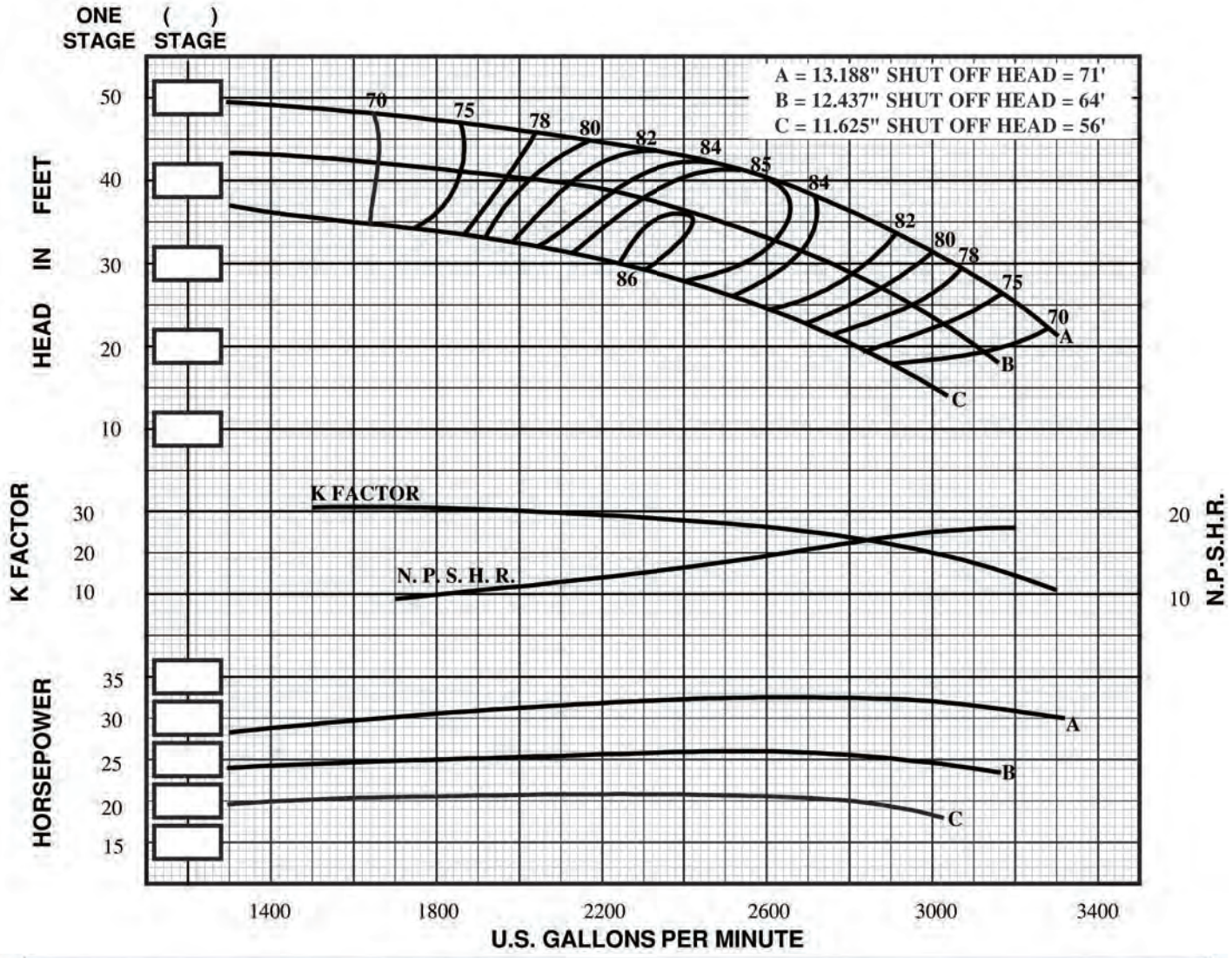


LINESHAFT TURBINE

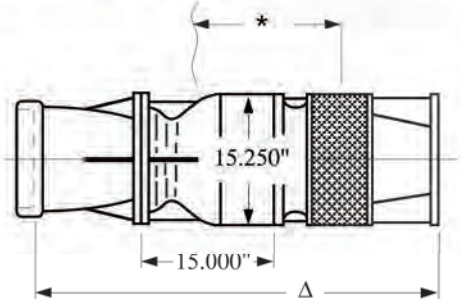
SIMFLO®

Section 203
Date 7/1/99

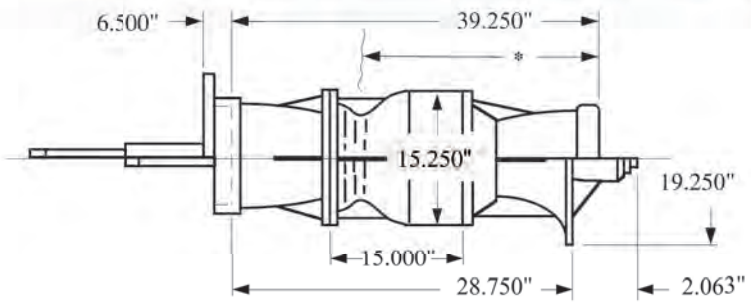
SM16M
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM16M	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 39.0	STD. LATERAL = .94"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.00"	ONE STAGE WR^2 = 4.966	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 36"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



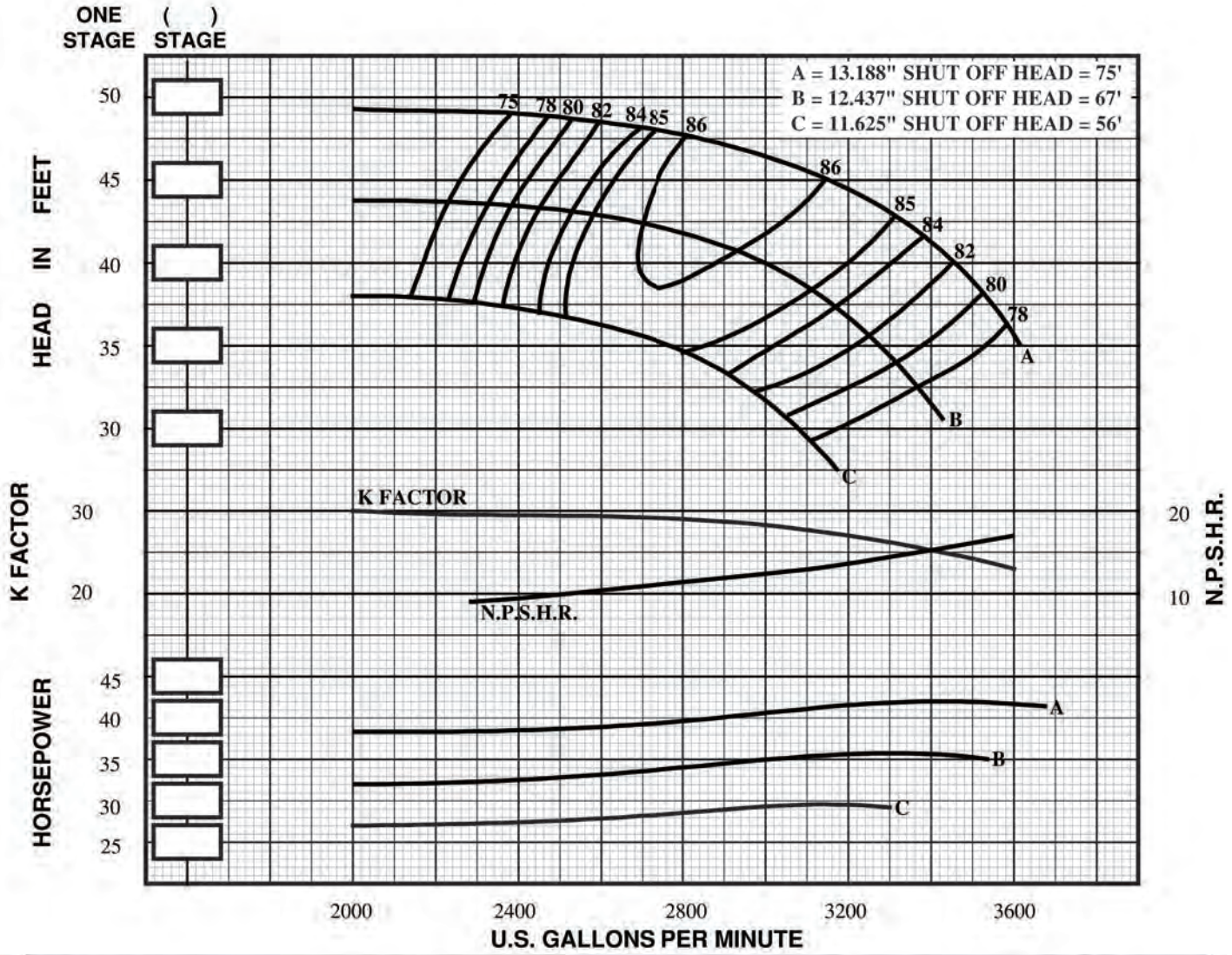
LINESHAFT TURBINE

SIMFLO®

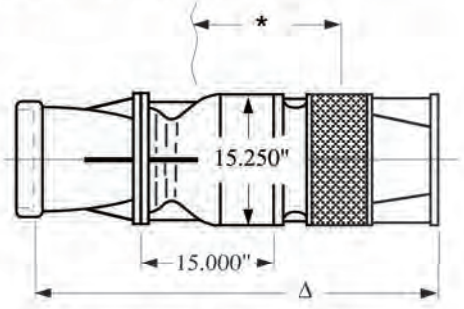
Section 203
Date 7/1/99

SM16H

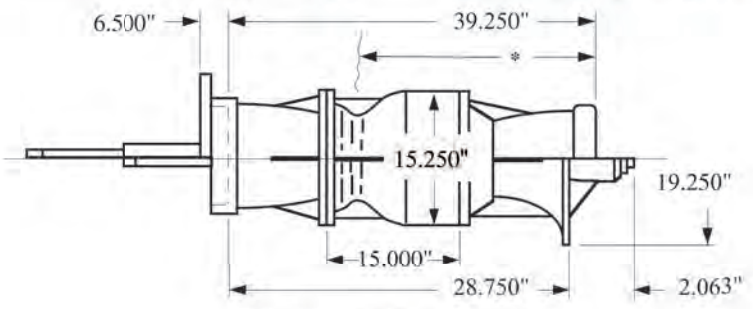
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM16H	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 35.5	STD. LATERAL = .94"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/ 14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.38"	ONE STAGE WR^2 = 4.677	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 39"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

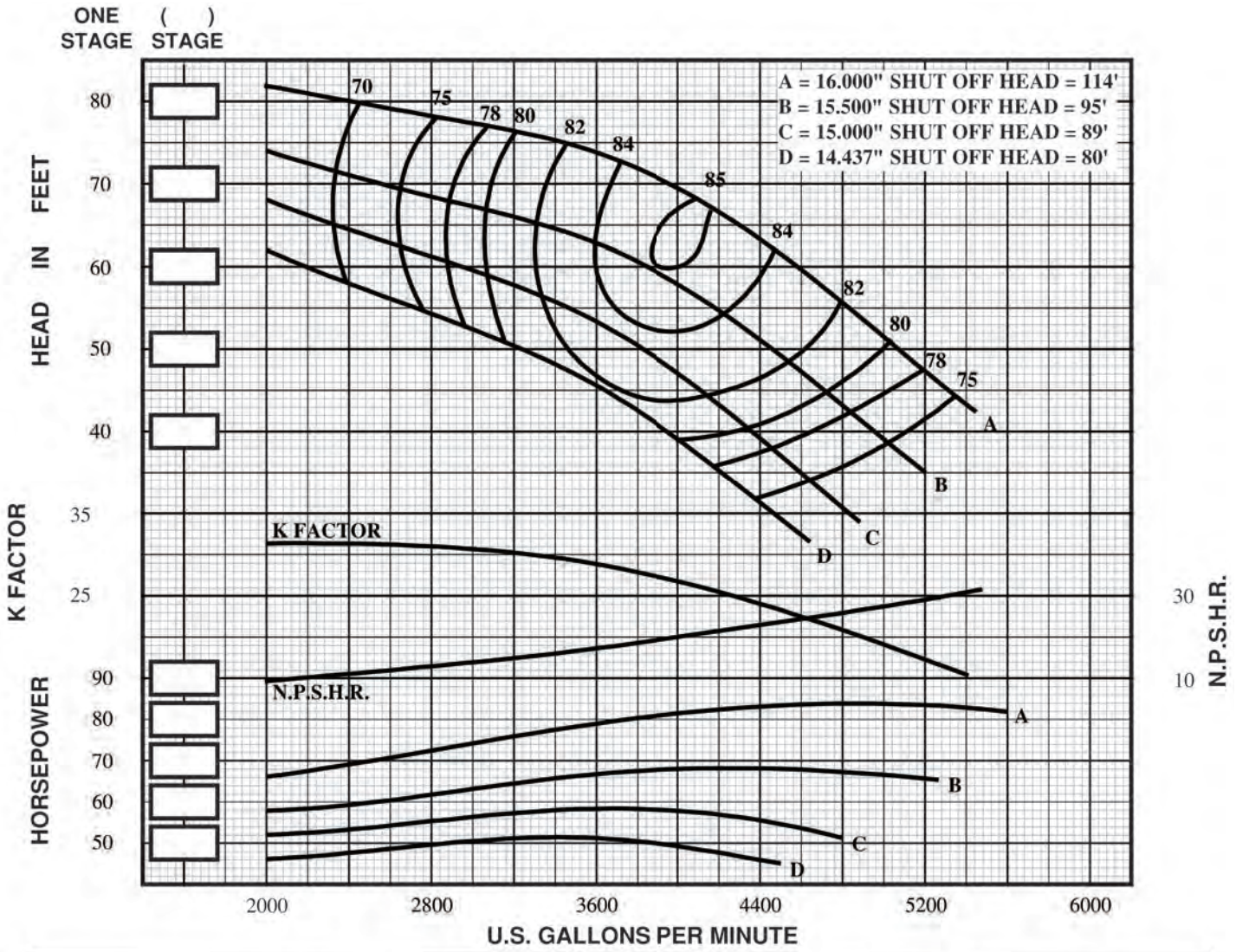


LINESHAFT TURBINE

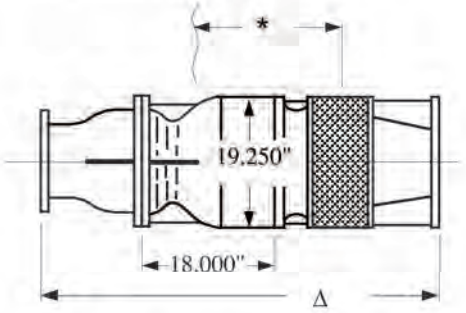
SIMFLO®

Section 203
Date 7/1/99

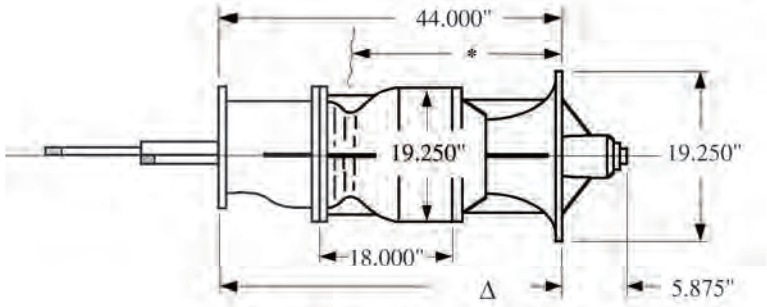
SM20M
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.437"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM20M	MAX. SHAFT DIA. = 2.437"				
IMPELLER WT. - LBS. = 76.0	STD. LATERAL = 1.50"	1	0	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 1000.0	DISCHARGE SIZES = 16"/ Δ	2	0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 450.0	SUCTION SIZES = BELL	3	0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = 1.22"	ONE STAGE WR^2 = 8.220	4	0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 42"	=	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v21.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

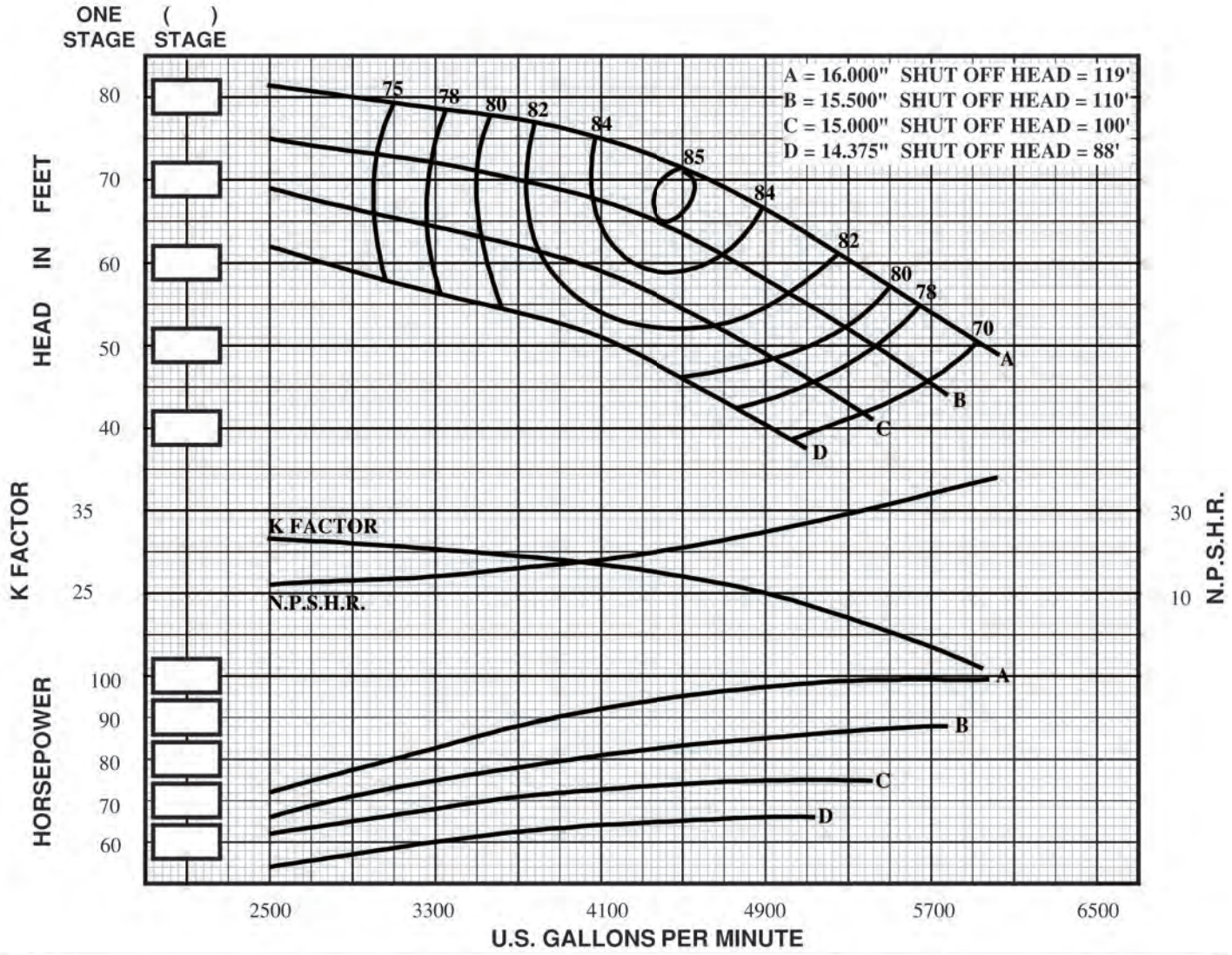


LINESHAFT TURBINE

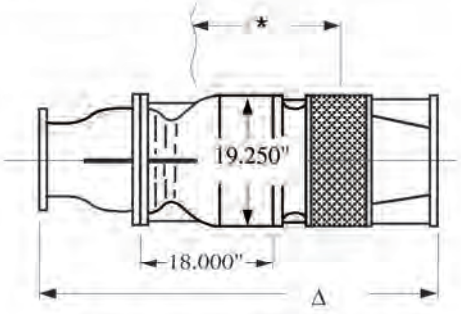
SIMFLO®

Section 203
Date 9/1/06

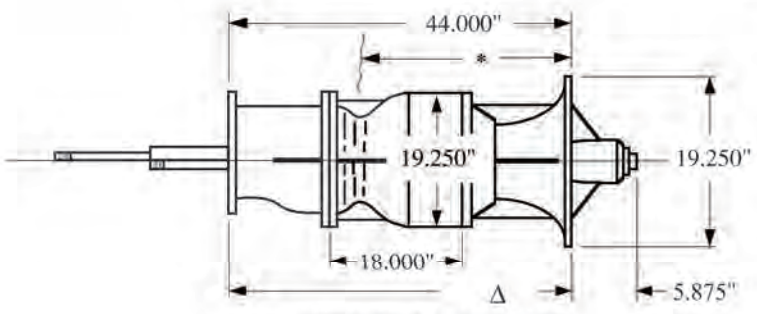
SM20H
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.437"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM20H	MAX. SHAFT DIA. = 2.437"				
IMPELLER WT. - LBS. = 69.0	STD. LATERAL = 1.31"	1	0	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 1000.0	DISCHARGE SIZES = 16"/ Δ	2	0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 450.0	SUCTION SIZES = BELL	3	0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = 1.28"	ONE STAGE WR^2 = 8.210	4	0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 46"	=	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

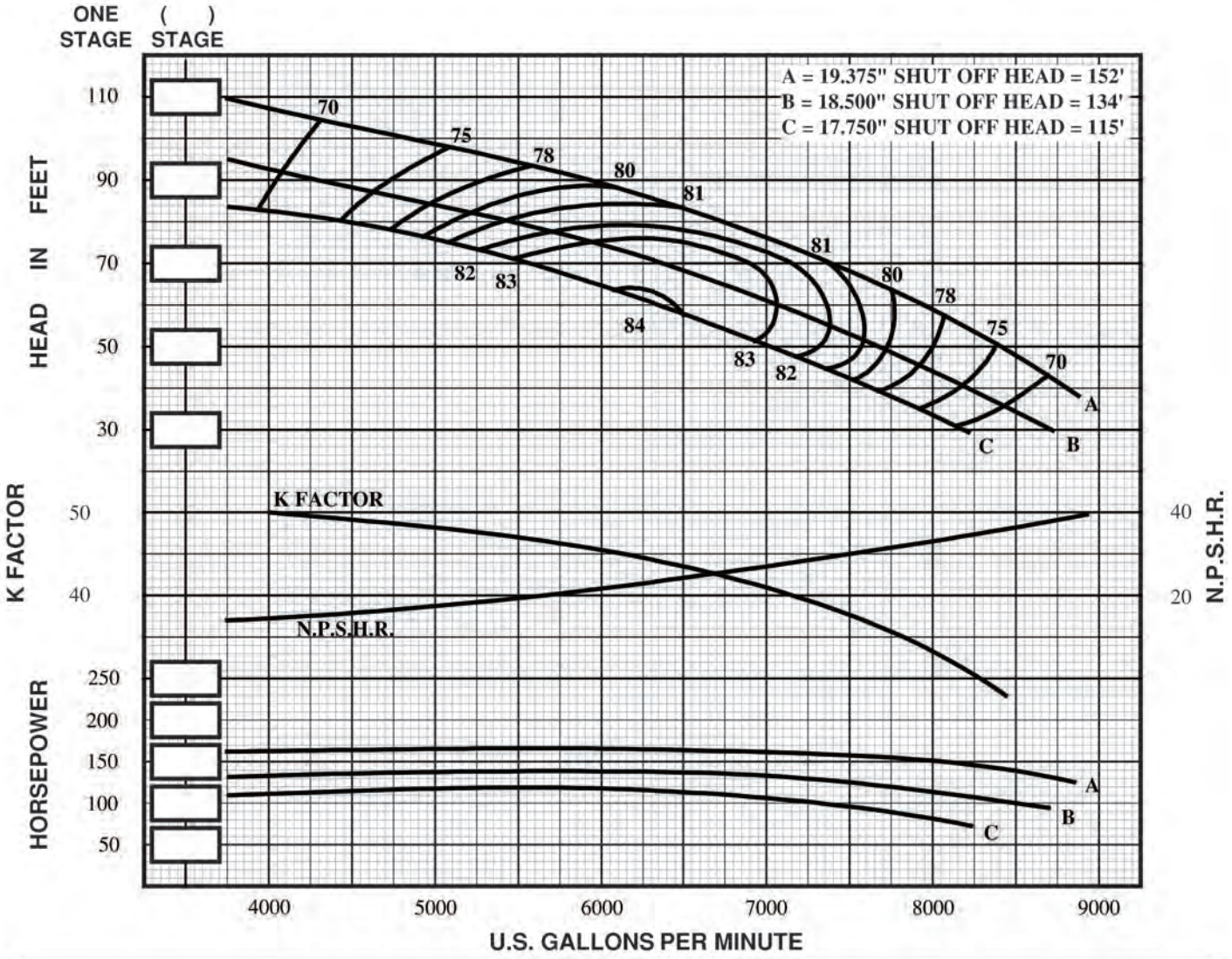


LINESHAFT TURBINE

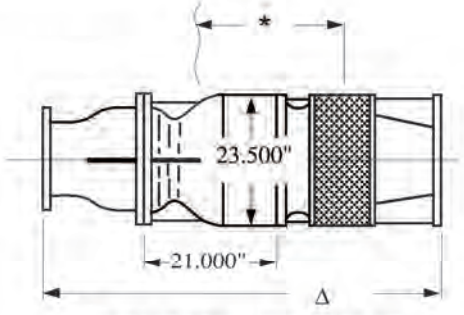
SIMFLO®

Section 203
Date 9/1/06

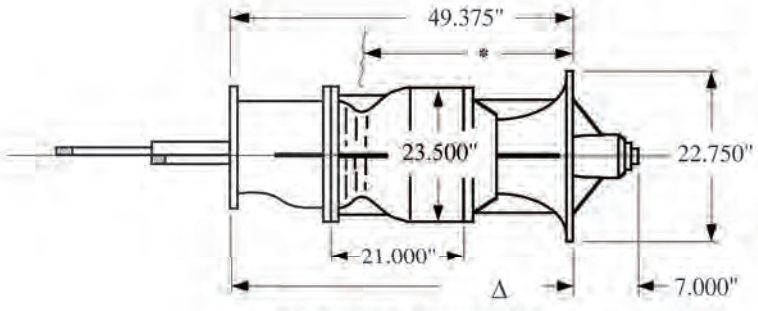
SM24M
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM24M	MAX. SHAFT DIA. = 2.937"				
IMPELLER WT. - LBS. = 112.0	STD. LATERAL = 1.50"	1	0	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 1200.0	DISCHARGE SIZES = 18"/ Δ	2	0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 625.0	SUCTION SIZES = BELL	3	0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = 1.81"	ONE STAGE WR^2 = 19.69	4	0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 56"	=	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

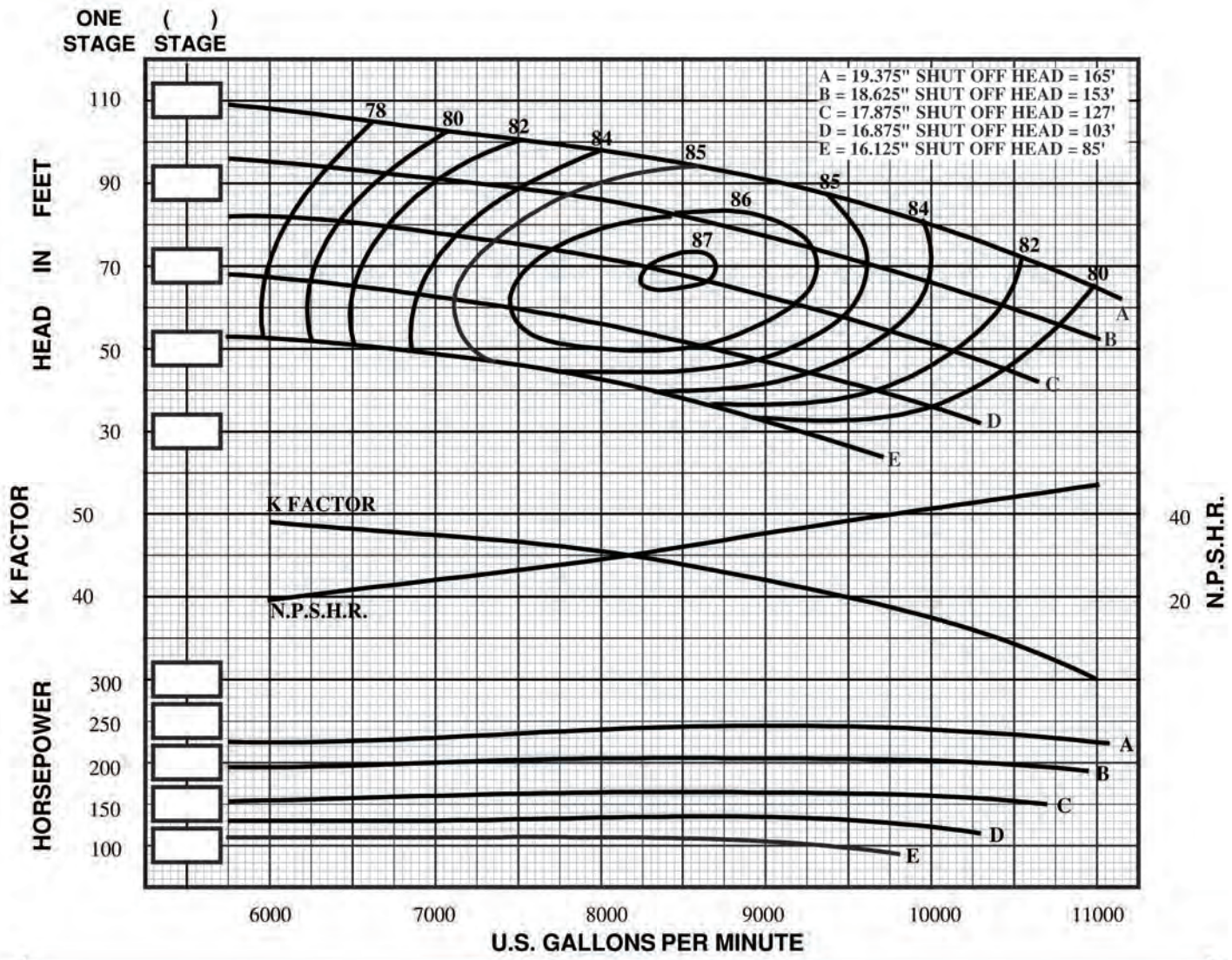


LINESHAFT TURBINE

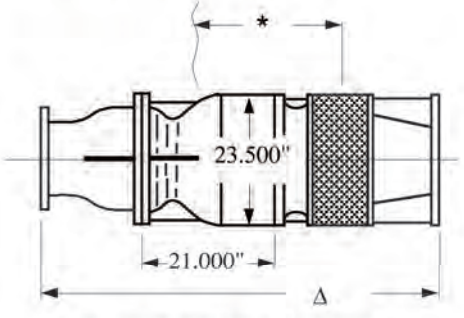
SIMFLO®

Section 203
Date 7/1/99

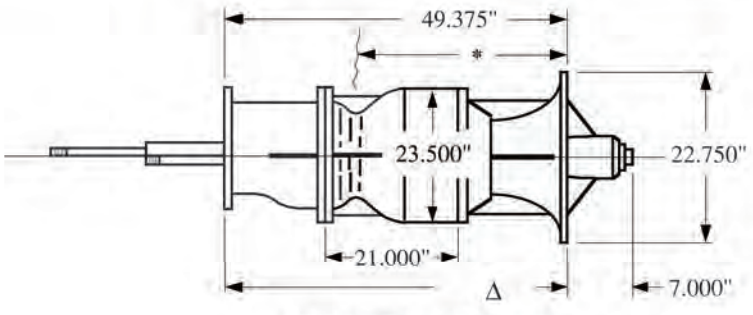
SM24H
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM24H	MAX. SHAFT DIA. = 2.937"				
IMPELLER WT. - LBS. = 112.0	STD. LATERAL = 1.50"	1	0	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 1200.0	DISCHARGE SIZES = 18"/ Δ	2	0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 625.0	SUCTION SIZES = BELL	3	0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = 1.88"	ONE STAGE WR^2 = 19.03	4	0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 56"	=	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

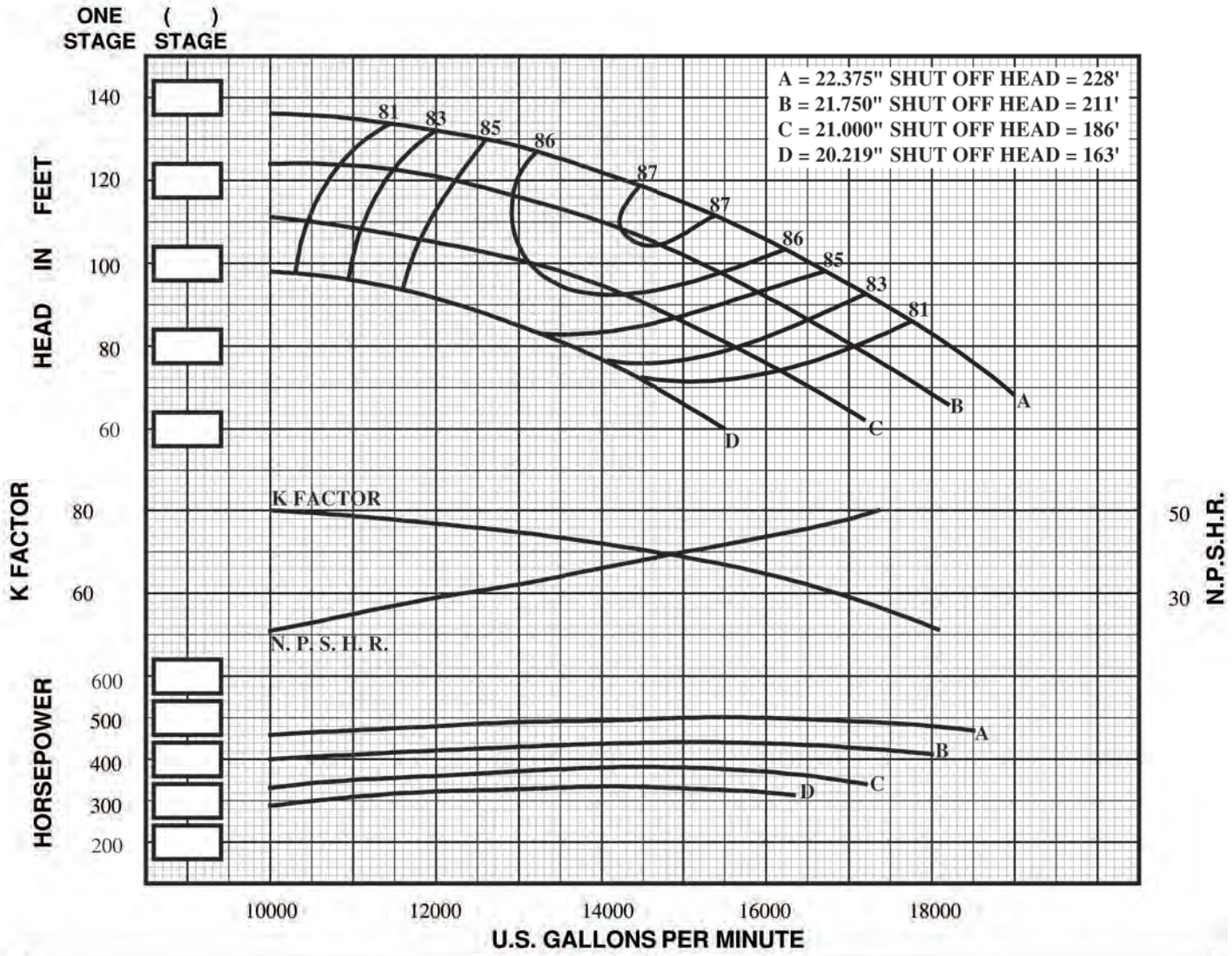


LINESHAFT TURBINE

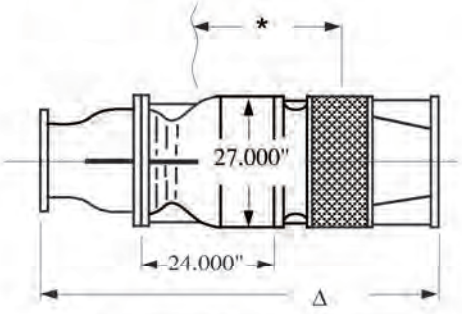
SIMFLO®

Section 203
Date 7/1/99

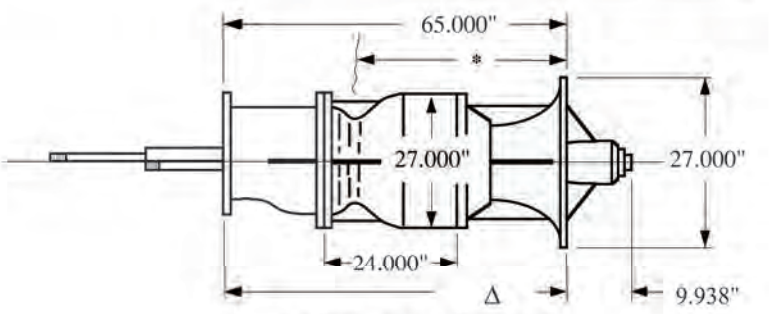
SM28H
1160 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM28H	MAX. SHAFT DIA. = 2.937"				
IMPELLER WT. - LBS. = 218.0	STD. LATERAL = .50"	1	0	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 2100.0	DISCHARGE SIZES = 20"/ Δ	2	0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 1000.0	SUCTION SIZES = BELL	3	0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = 1.88"	ONE STAGE WR² = 39.62	4	0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 64"	=	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE



LINESHAFT TURBINE

880 RPM
Selection Chart

Model Number	Bowl Dia, (in.)	Peak Eff. (full dia.)	BEP Flow (gpm)	BEP Head (ft./ stage)	BEP NPSHr (full dia.)	POR (gpm)	Ns	Nss
SM14L	14.00	83.4	1052	16.0	4.75	736-1262	3568	8871
SM14M	14.00	84.5	1122	20.4	4.60	785-1346	3071	9384
SM14H	14.00	84.5	1128	23.6	4.37	790-1354	2760	9779
SM14HH	14.00	83.5	1469	22.6	6.04	1028-1763	3254	8754
SM16MO	15.25	86.0	1874	23.8	7.63	1312-2249	3535	8298
SM16HO	15.25	86.0	2242	25.9	8.64	1569-2690	3629	8268
SM16M	15.25	85.0	1979	23.4	7.81	1385-2375	3680	8379
SM16H	15.25	86.0	2242	27.0	6.89	1569-2960	3518	9798
SM20M	19.25	85.0	3135	38.5	13.1	2195-3762	3188	7156
SM20H	19.25	85.0	3404	40.7	12.9	2383-4085	3186	7543
SM24M	23.50	81.9	5288	43.5	15.5	3702-6346	3778	8192
SM24H	23.50	85.6	6719	50.8	24.9	4703-8063	3791	6471
SM28H	27.00	88.0	11234	64.2	25.6	7864-13481	4112	8195

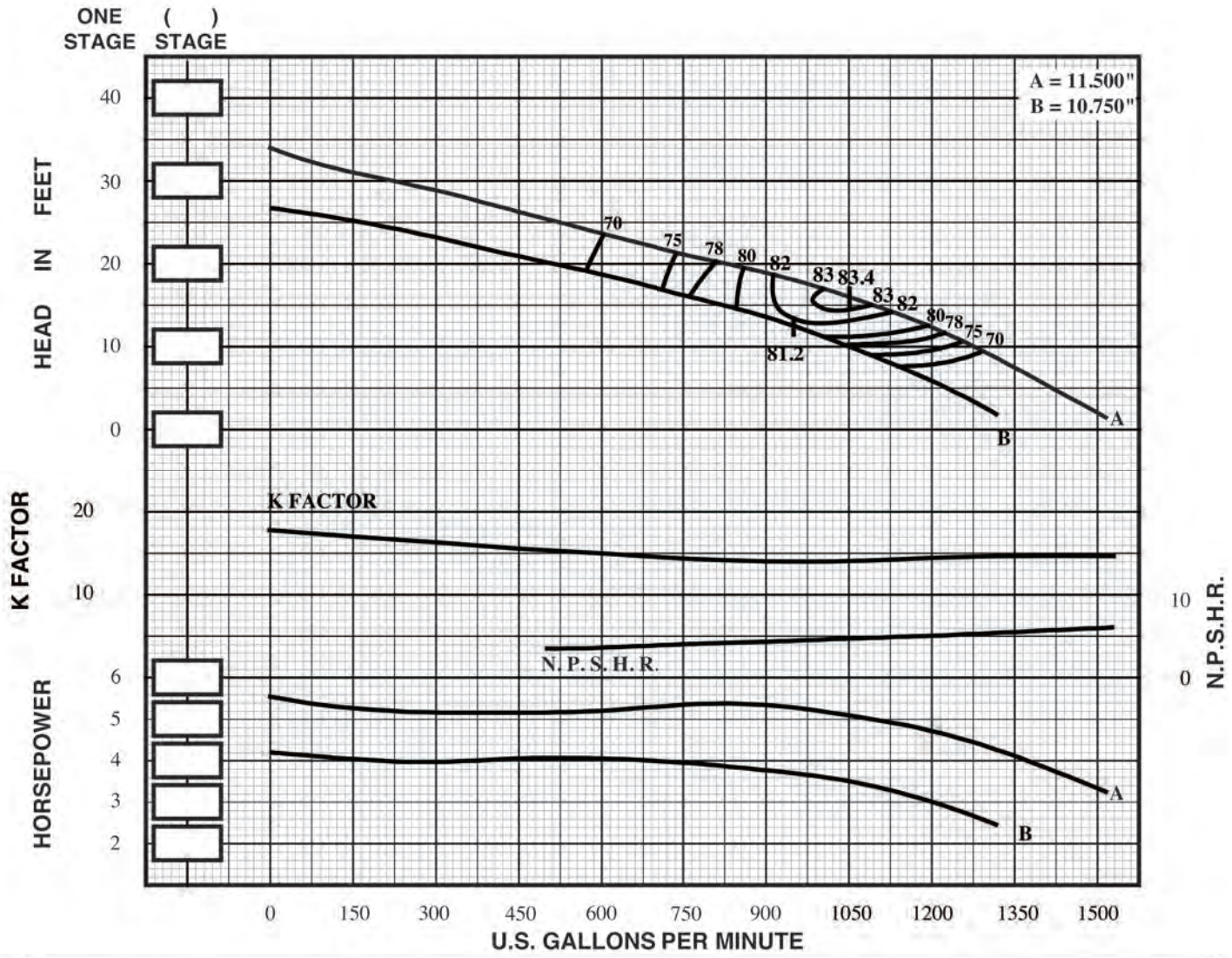
v18.1

SIMFLO®

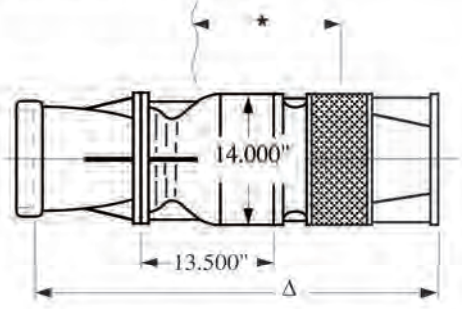
Section 204
Date 7/5/11

SM14L

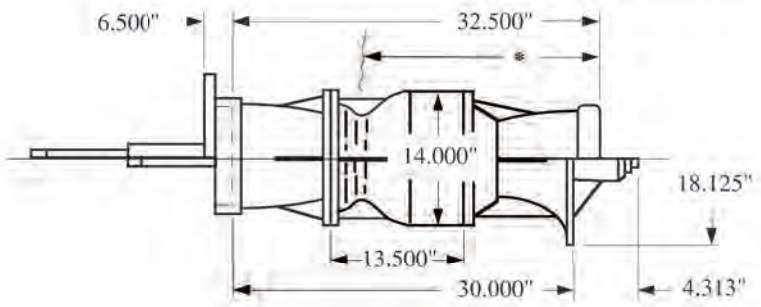
880 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14L	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 27.4	STD. LATERAL = 1.25"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 540.0	DISCHARGE SIZES = 10" / 12"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 225.0	SUCTION SIZES = 10" / BELL	3	-1	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.31"	ONE STAGE WR^2 = 1.933	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

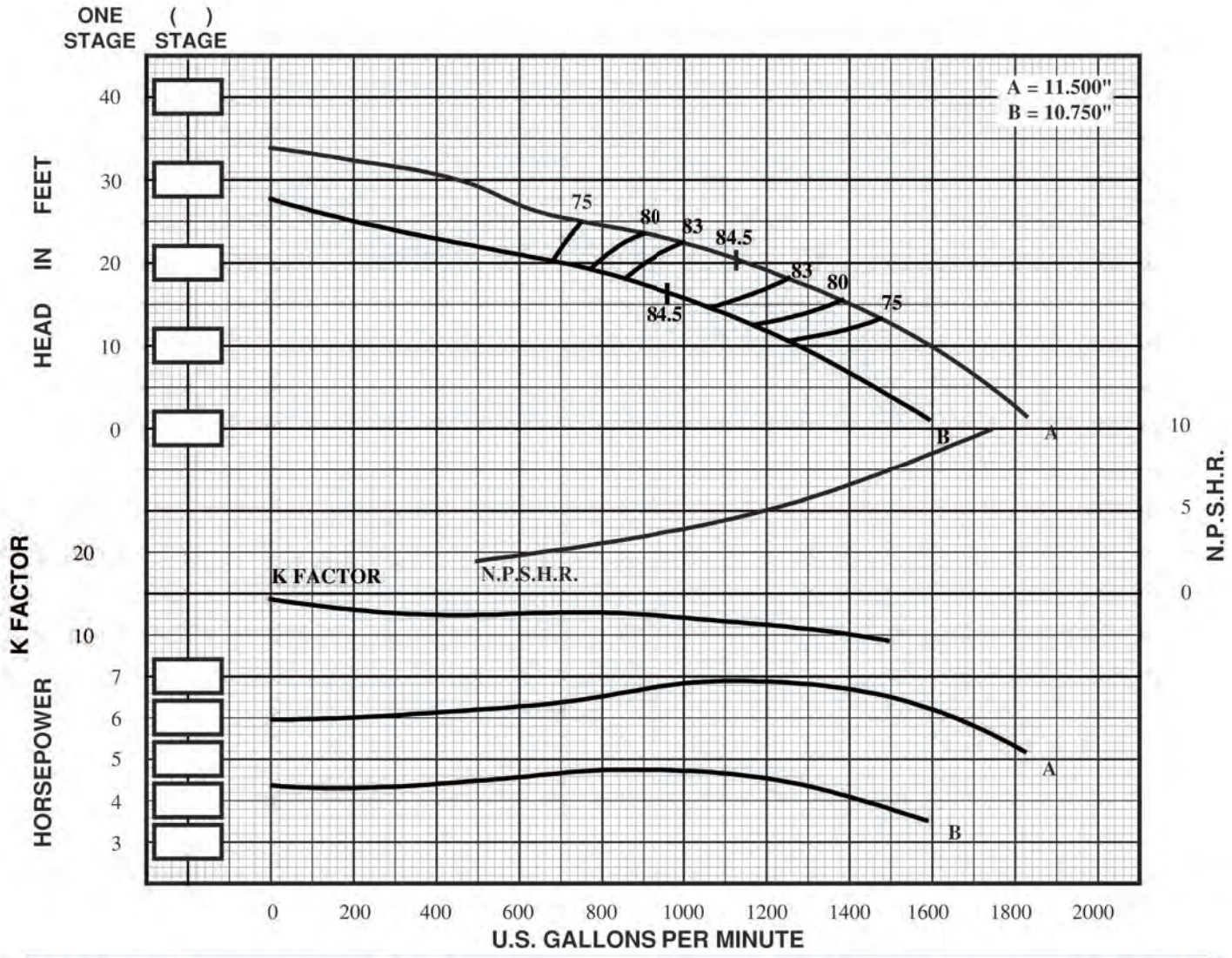


LINESHAFT TURBINE

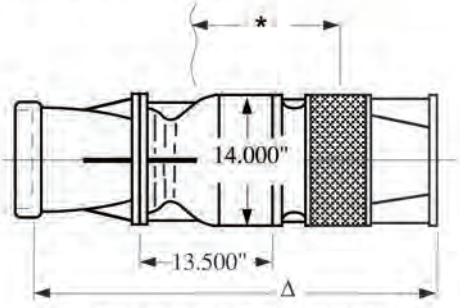
SIMFLO®

Section 204
Date 9/1/16

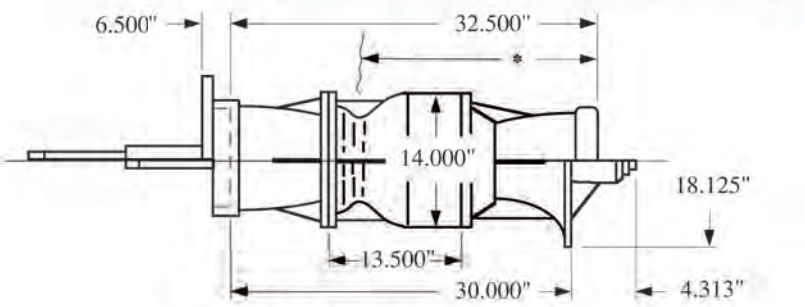
SM14M
880 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14M	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 31.7	STD. LATERAL = 1.25"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 550.0	DISCHARGE SIZES = 10"/ 12"	2	-1	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 235.0	SUCTION SIZES = 10"/ BELL	3	0	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.31"	ONE STAGE WR^2 = 2.182	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



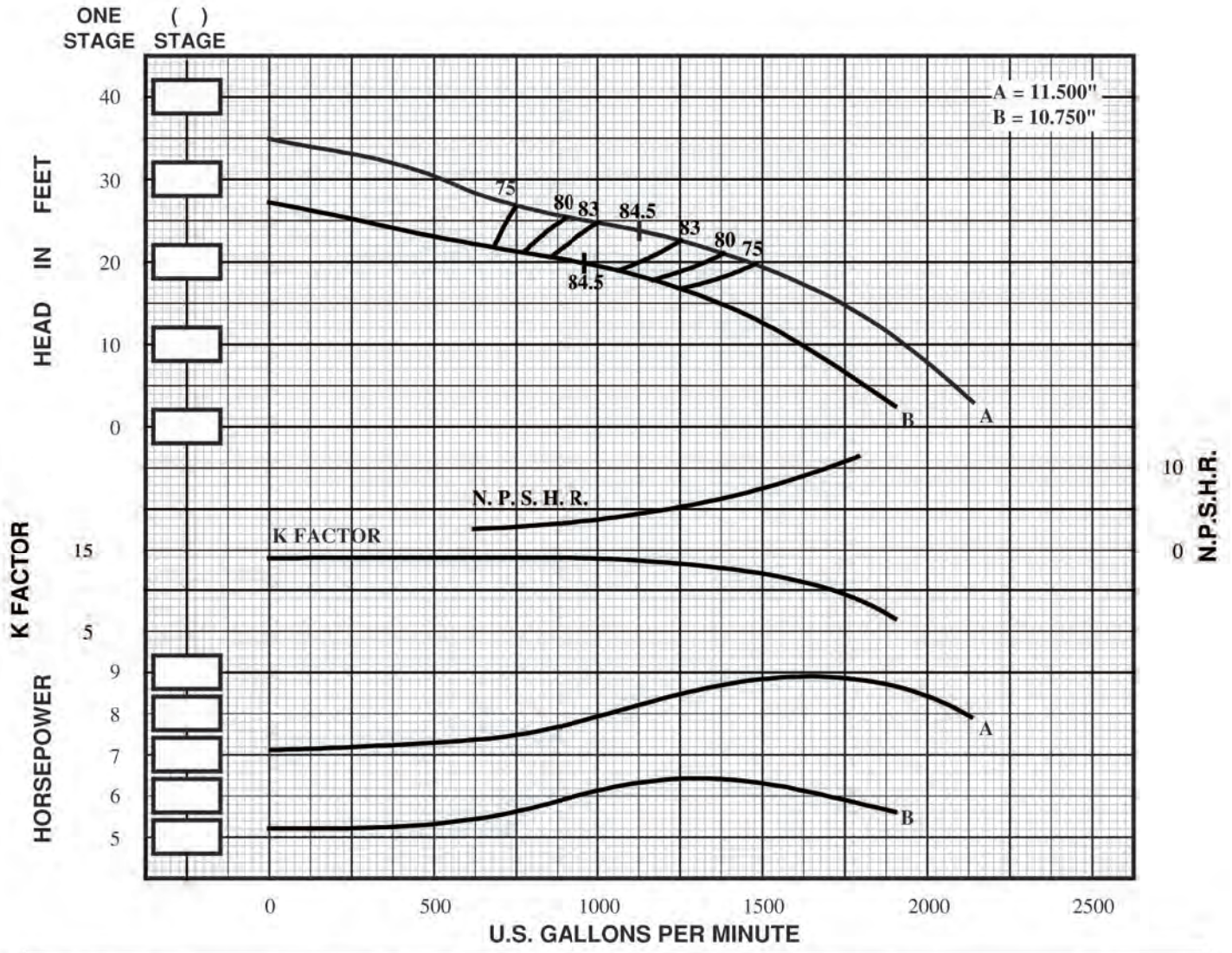
LINESHAFT TURBINE

SIMFLO®

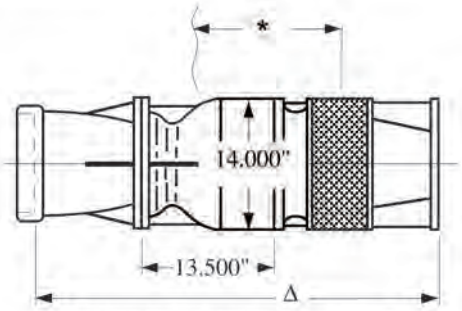
Section 204
Date 9/1/06

SM14H

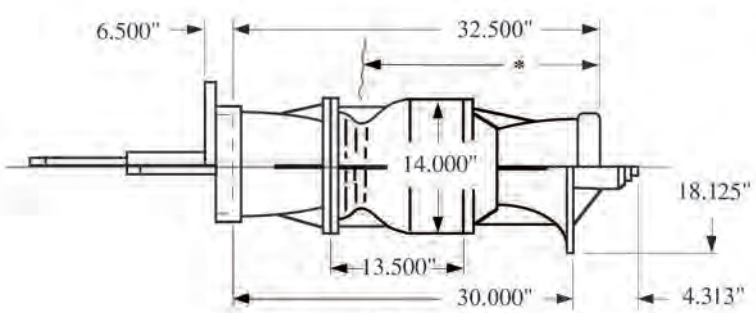
880 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14H	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 29.0	STD. LATERAL = 1.25"	1	-2	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 550.0	DISCHARGE SIZES = 10"/ 12"	2	-1	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 235.0	SUCTION SIZES = 10"/ BELL	3	0	IMP. - S.S.	-2
MAX. SPHERE SIZE = 1.56"	ONE STAGE WR^2 = 2.023	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



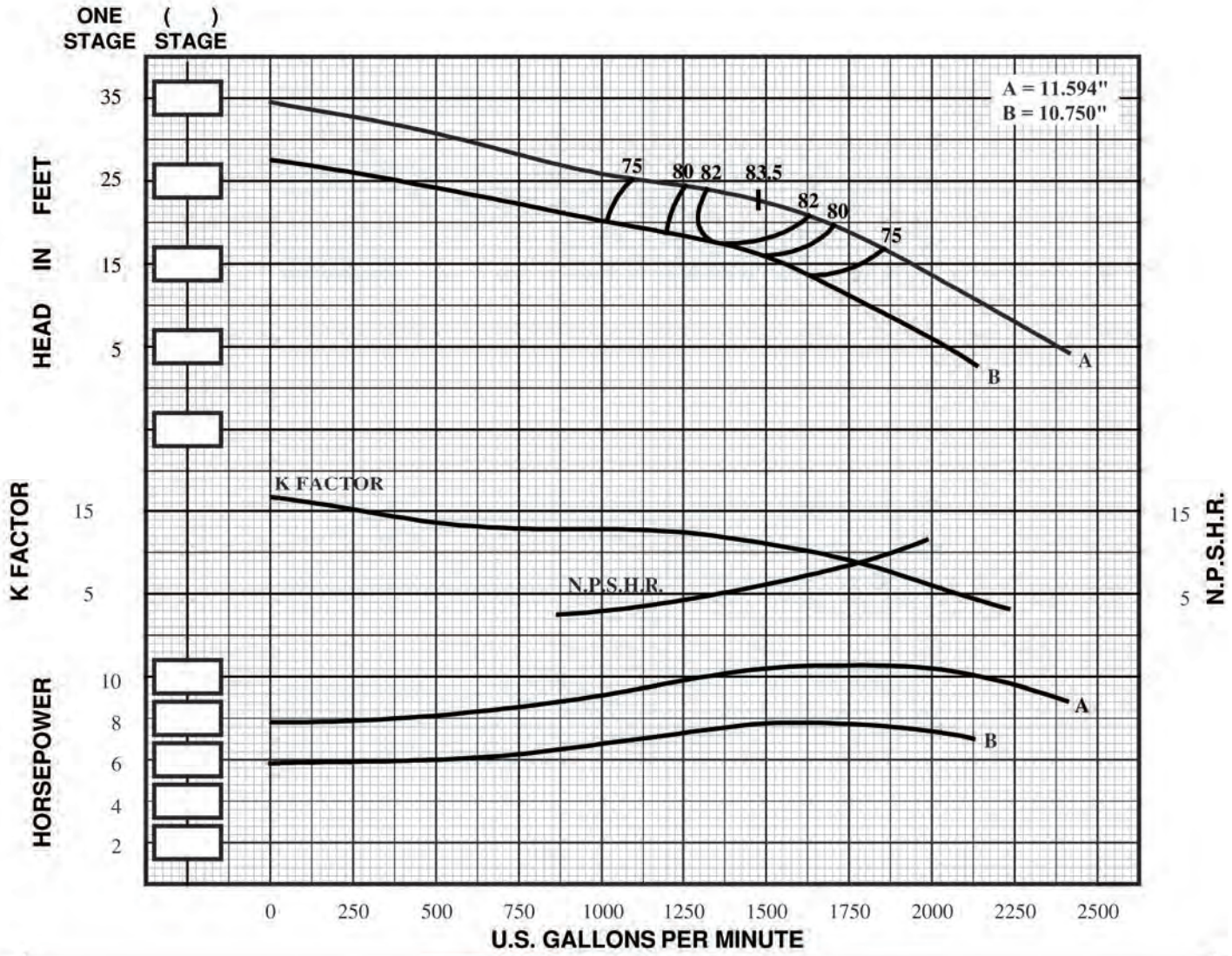
LINESHAFT TURBINE

SIMFLO®

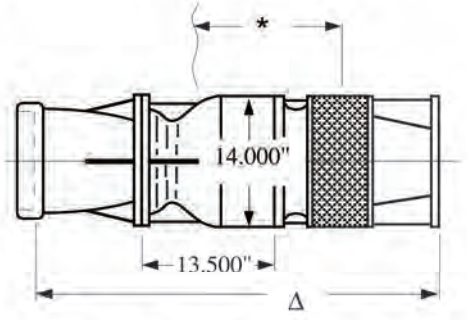
Section 204
Date 9/1/06

SM14HH

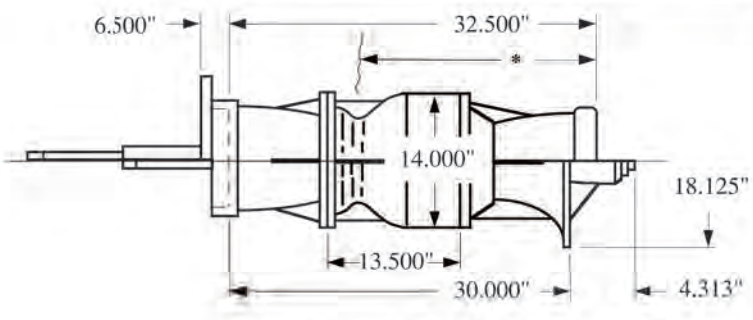
880 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM14HH	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 28.4	STD. LATERAL = 1.25"	1	-2.5	IMP. - C.I.	-5
ONE STAGE WT. - LBS. = 540	DISCHARGE SIZES = 10"/ 12"	2	-1.5	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 225	SUCTION SIZES = 10"/ BELL	3	-.5	IMP. - S.S.	-3
MAX. SPHERE SIZE = 1.25"	ONE STAGE WR^2 = 2.300	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 19"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE



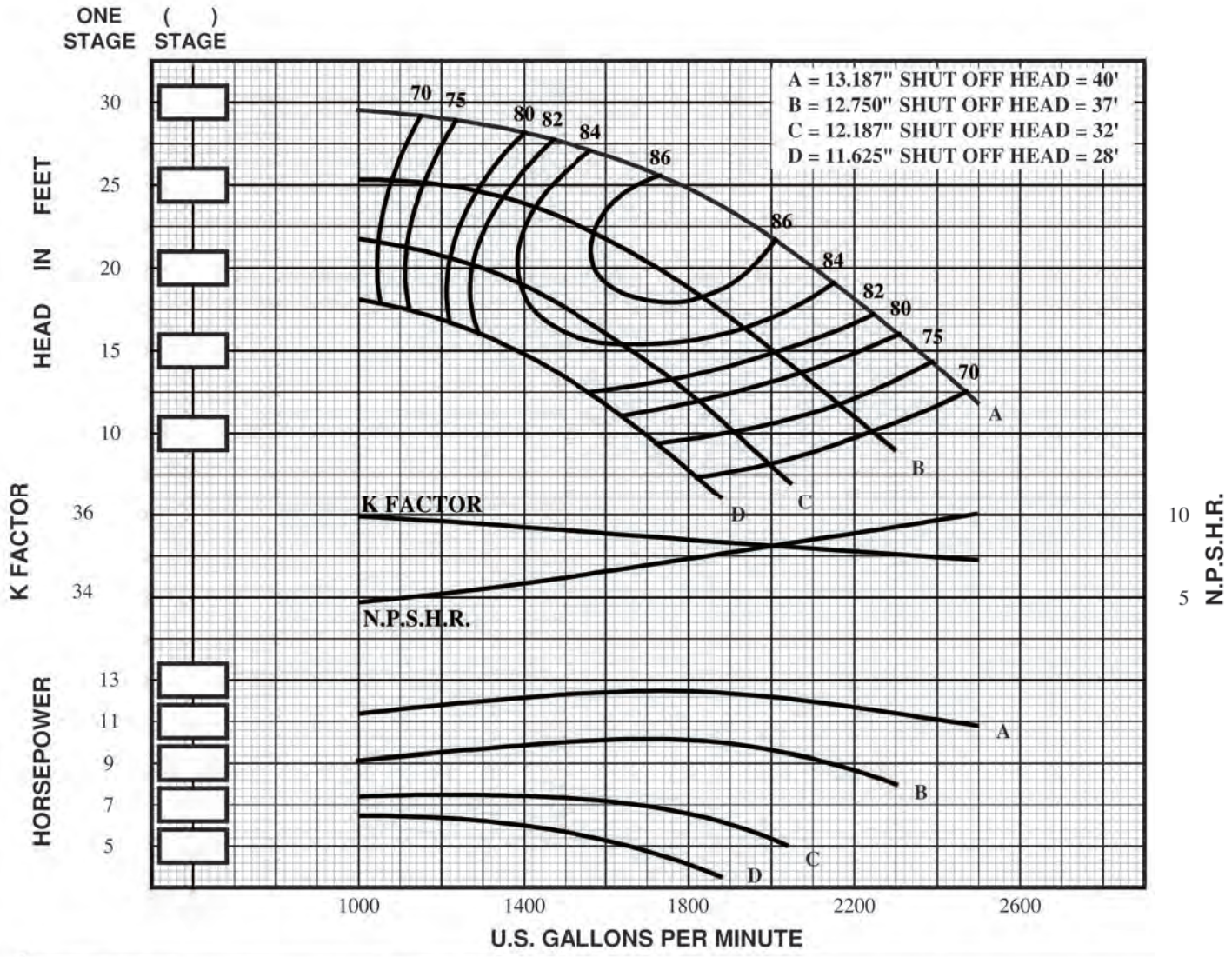
LINESHAFT TURBINE

SIMFLO®

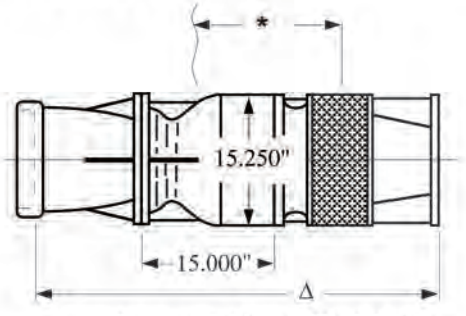
Section 204
Date 9/1/06

SM16MO

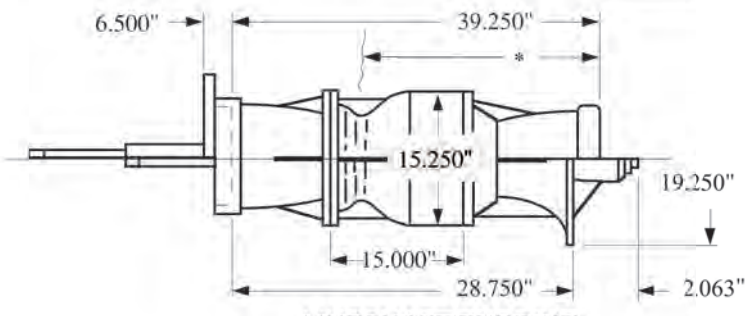
880 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM16MO	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 24.0	STD. LATERAL = 1.34"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/ 14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.19"	ONE STAGE WR^2 = 2.26	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 35"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

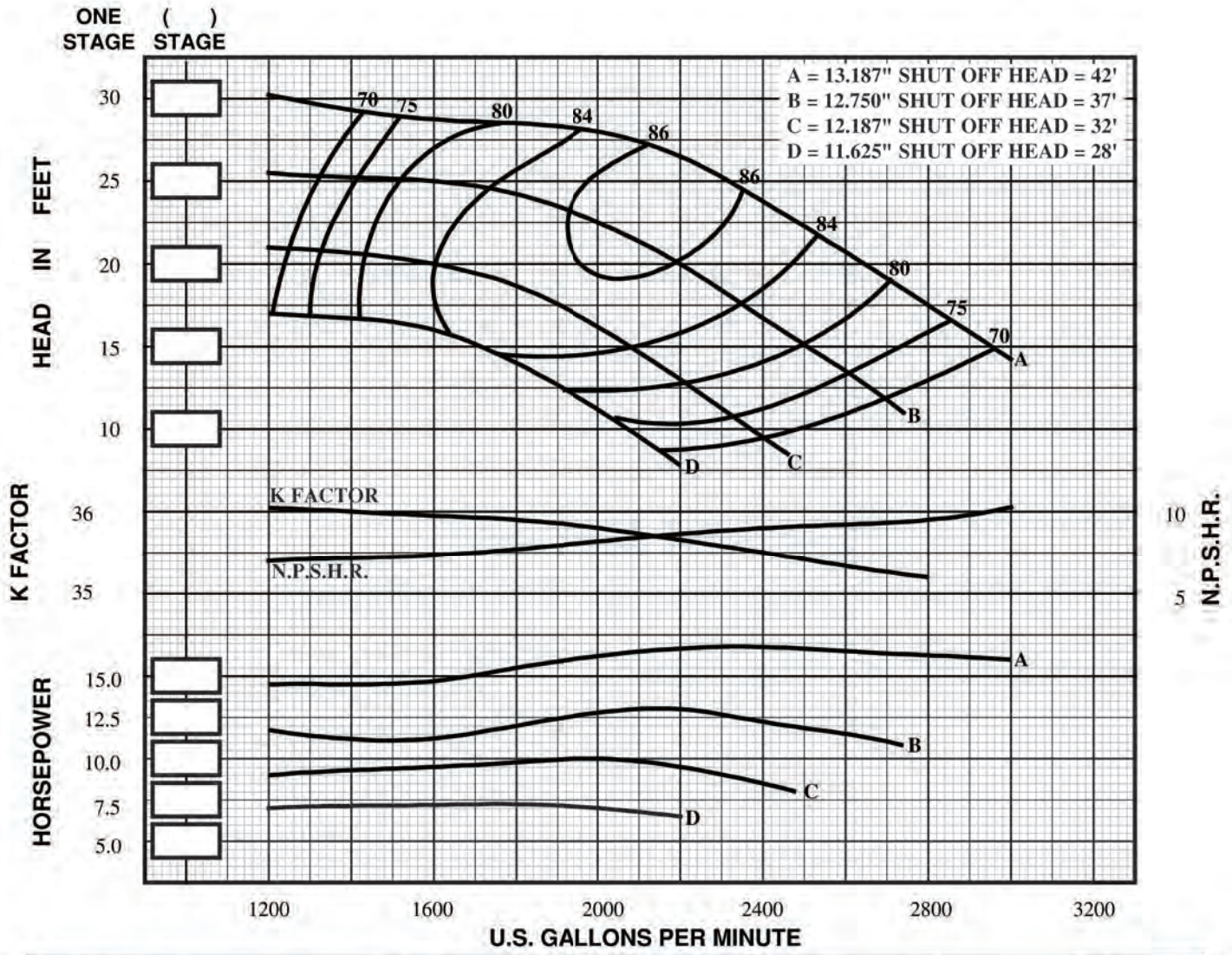


LINESHAFT TURBINE

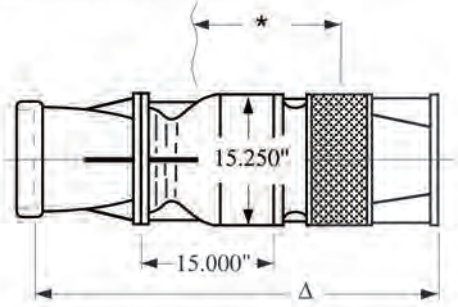
SIMFLO®

Section 204
Date 9/1/06

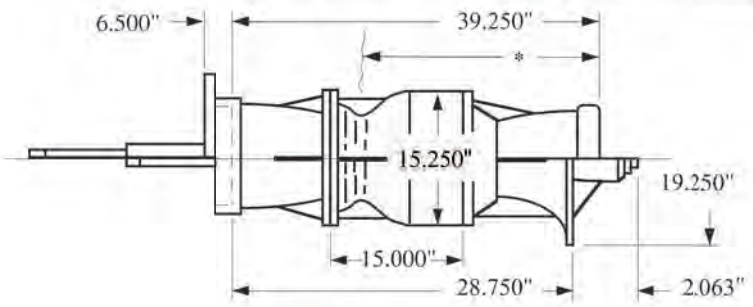
SM16H0
880 RPM



IMPELLER TYPE = SEMI-OPEN	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM16HO	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 25.0	STD. LATERAL = 1.06"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.22"	ONE STAGE WR² = 2.240	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 39"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

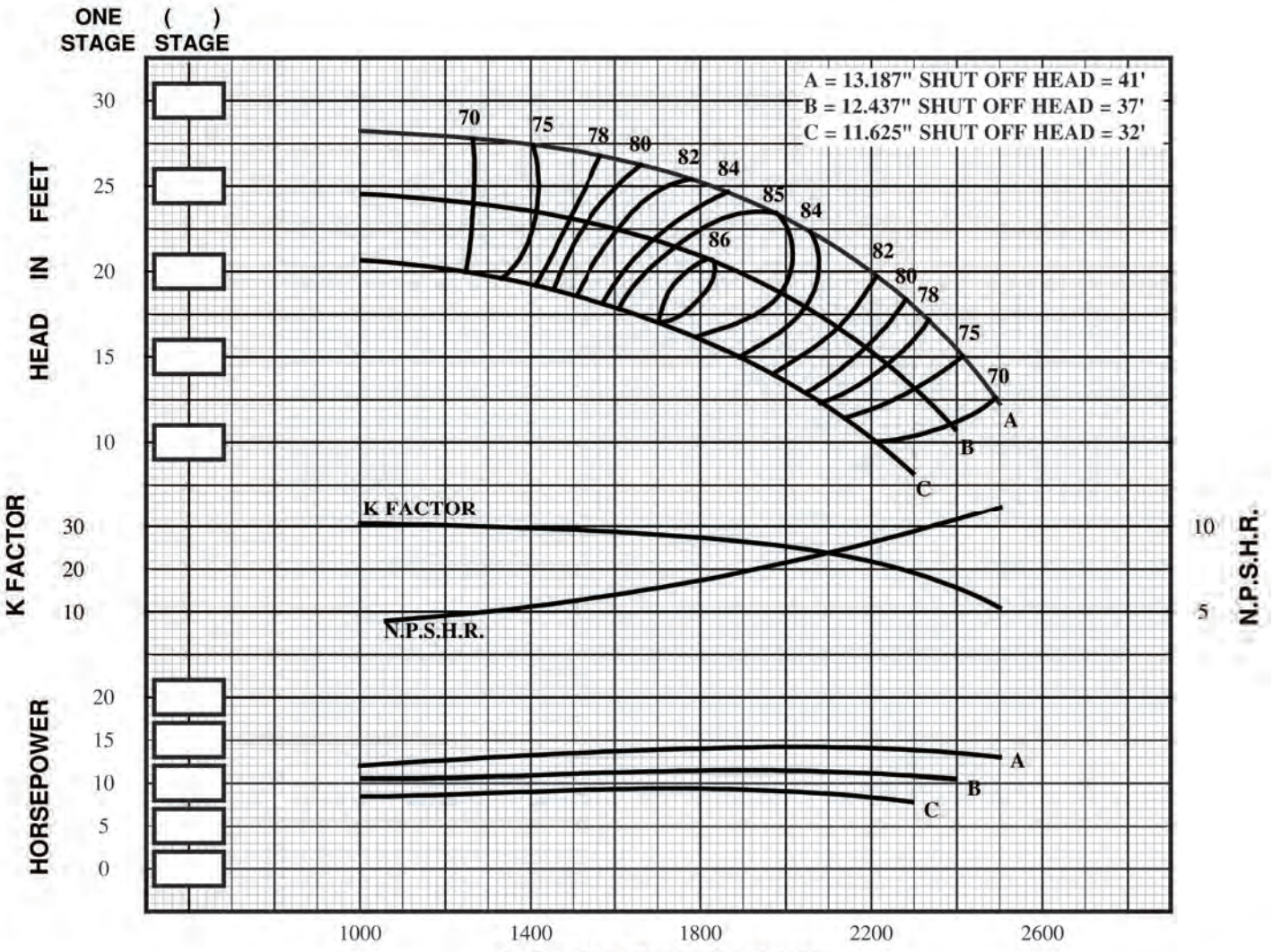


LINESHAFT TURBINE

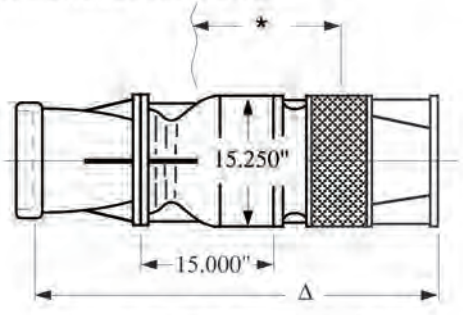
SIMFLO®

Section 204
Date 9/1/06

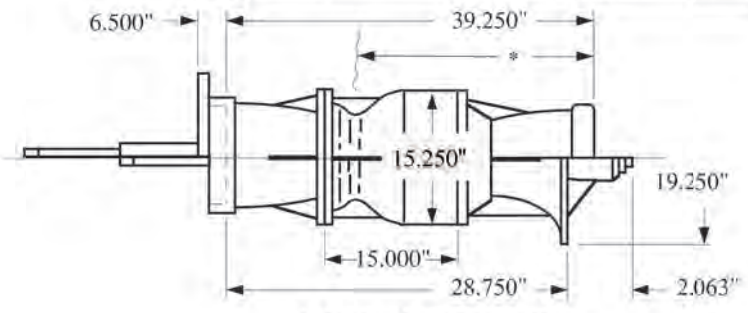
SM16M
880 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM16M	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 39.0	STD. LATERAL = .94"	1	-3	IMP. - C.I.	0
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.00"	ONE STAGE WR^2 = 4.966	4	0	BOWL - BRZ.	-1
MIN. SUBMERGENCE* = 36"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

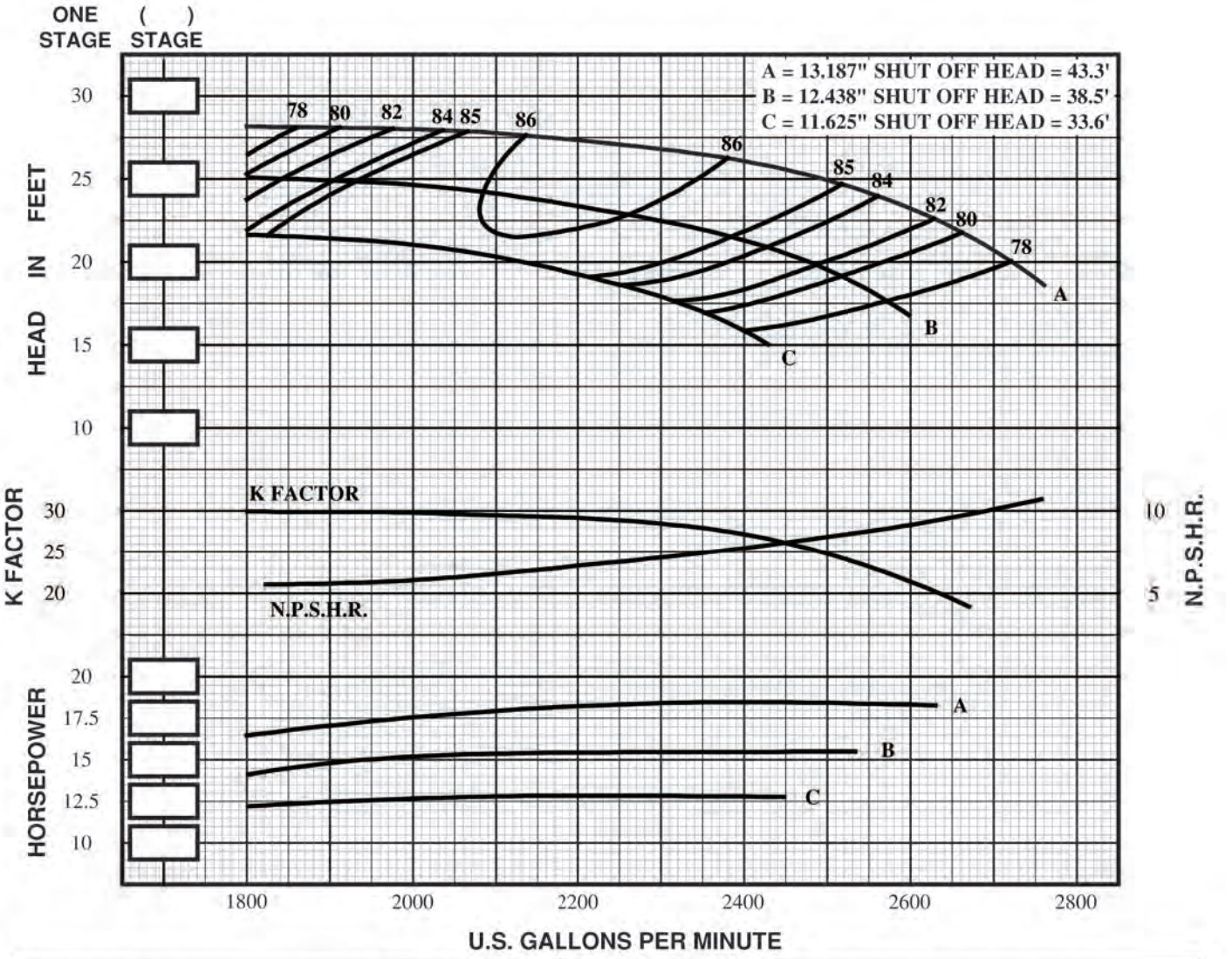


LINESHAFT TURBINE

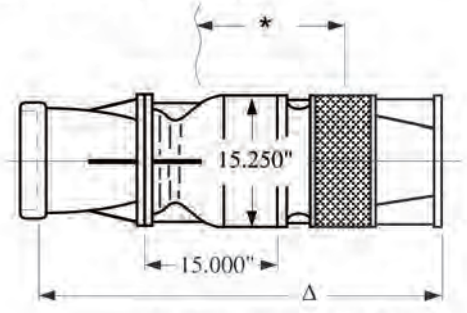
SIMFLO®

Section 204
Date 9/1/06

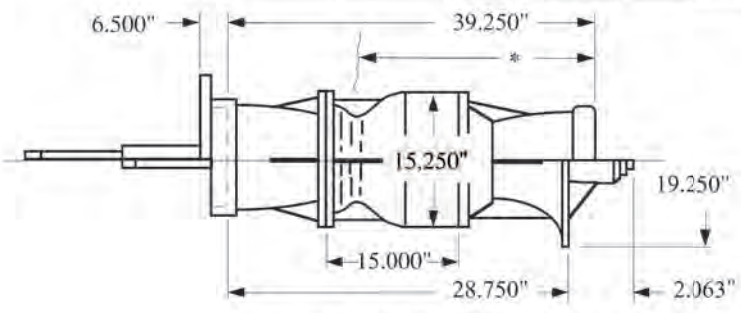
SM16H
880 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.187"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM16H	MAX. SHAFT DIA. = 2.187"				
IMPELLER WT. - LBS. = 35.5	STD. LATERAL = .94"	1	-3	IMP. - C.I.	-3
ONE STAGE WT. - LBS. = 600.0	DISCHARGE SIZES = 12"/ 14"	2	-2	IMP. - NI-RI	-2
ADD'L STAGE WT. - LBS. = 250.0	SUCTION SIZES = 12"/ BELL	3	-1	IMP. - S.S.	-1
MAX. SPHERE SIZE = 1.38"	ONE STAGE WR^2 = 4.677	4	0	BOWL - BRZ.	-2
MIN. SUBMERGENCE* = 39"	=	5	0	BOWL - NI-RI	-1
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	-2



SUBMERSIBLE TURBINE

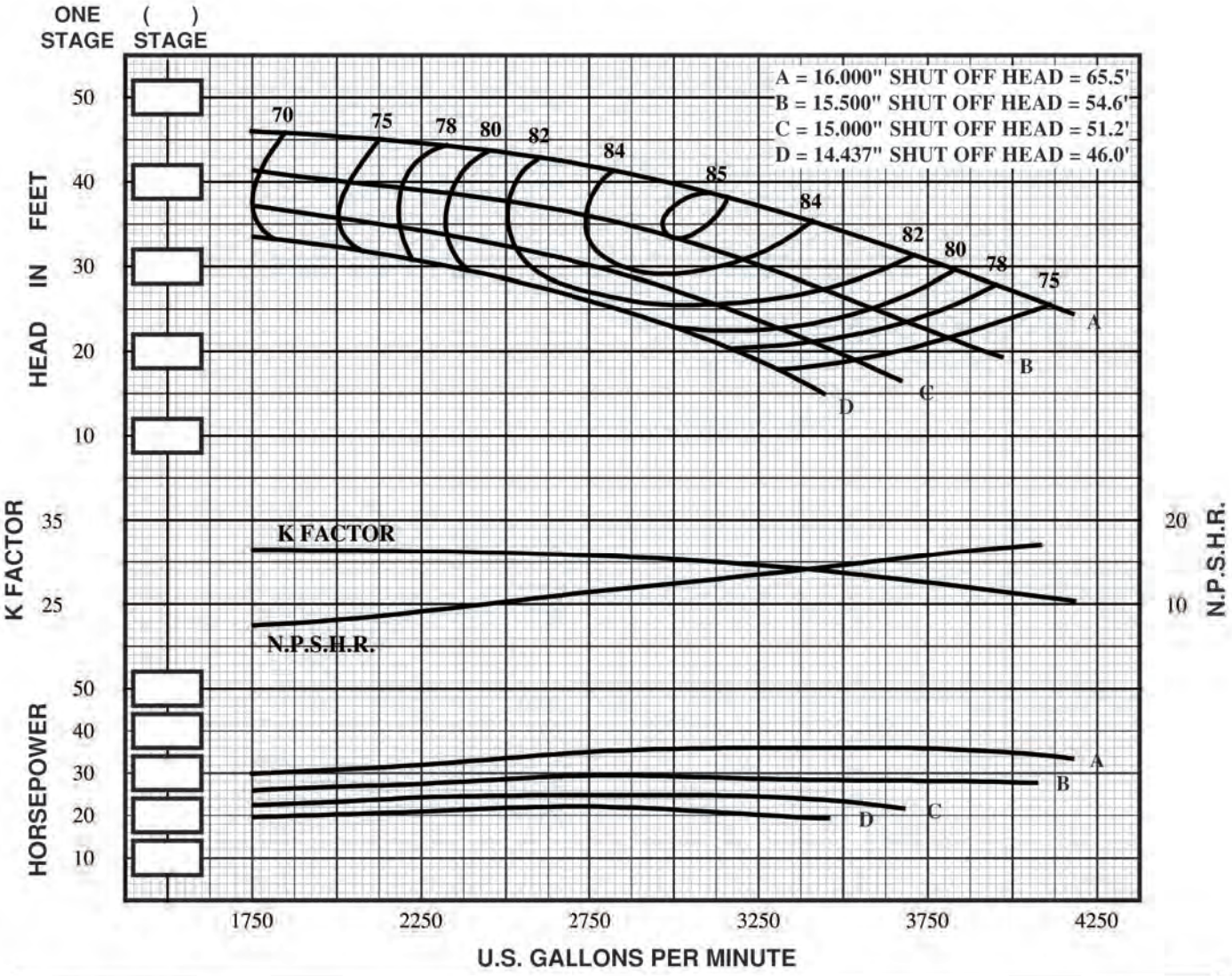


LINESHAFT TURBINE

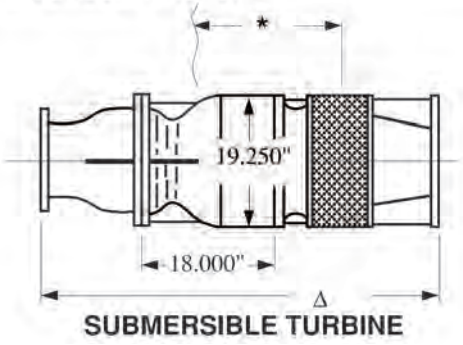
SIMFLO®

Section 204
Date 9/1/06

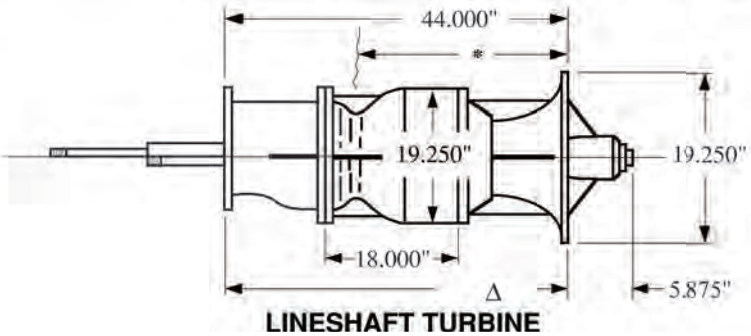
SM20M
880 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.437"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM20M	MAX. SHAFT DIA. = 2.437"				
IMPELLER WT. - LBS. = 76.0	STD. LATERAL = 1.50"	1	0	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 1000.0	DISCHARGE SIZES = 16"/ Δ	2	0	IMP. - NI-RI	Δ
ADD'L STAGE WT. LBS. = 450.0	SUCTION SIZES = BELL	3	0	IMP. S.S.	Δ
MAX. SPHERE SIZE = 1.22"	ONE STAGE WR² = 8.220	4	0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 42"	=	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v21.1			BOWL - S.S.	Δ



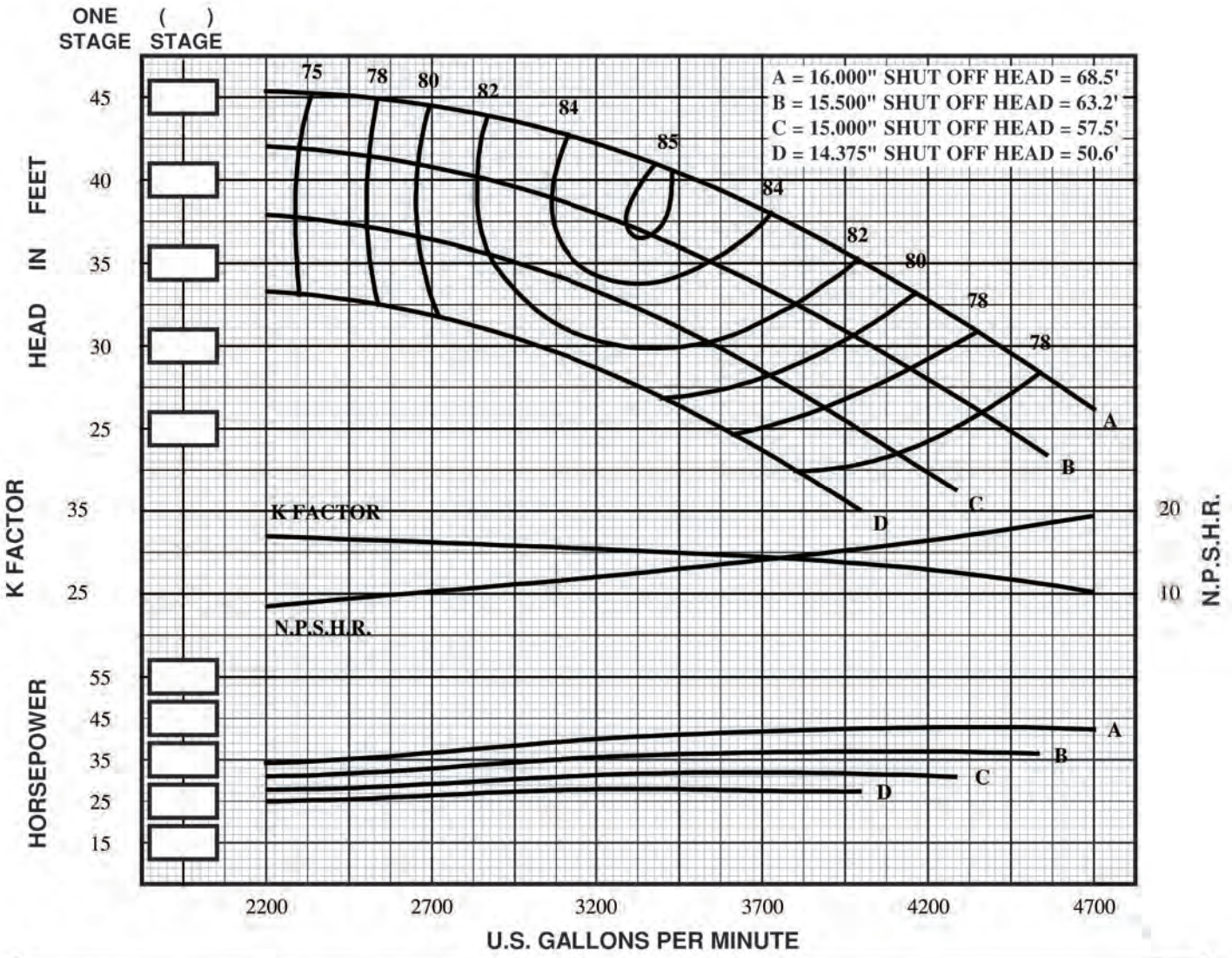
SUBMERSIBLE TURBINE



LINESHAFT TURBINE

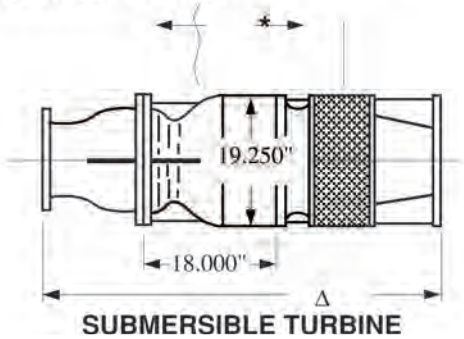
SM20H

880 RPM

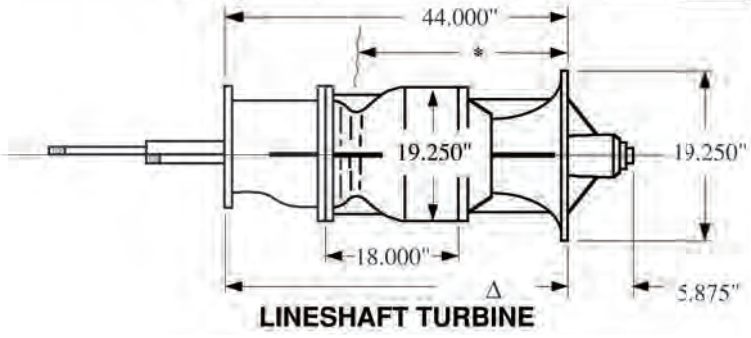


IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.437"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM20H	MAX. SHAFT DIA. = 2.437"	1	0	IMP. - C.I.	Δ
IMPELLER WT. - LBS. = 69.0	STD. LATERAL = 1.31"	2	0	IMP. - NI-RI	Δ
ONE STAGE WT. - LBS. = 1000.0	DISCHARGE SIZES = 16"/ Δ	3	0	IMP. - S.S.	Δ
ADD'L STAGE WT. - LBS. = 450.0	SUCTION SIZES = BELL	4	0	BOWL - BRZ.	Δ
MAX. SPHERE SIZE = 1.28"	ONE STAGE WR^2 = 8.210	5	0	BOWL - NI-RI	Δ
MIN. SUBMERGENCE* = 46"	=			BOWL - S.S.	Δ

Δ CONSULT FACTORY v18.1



SUBMERSIBLE TURBINE

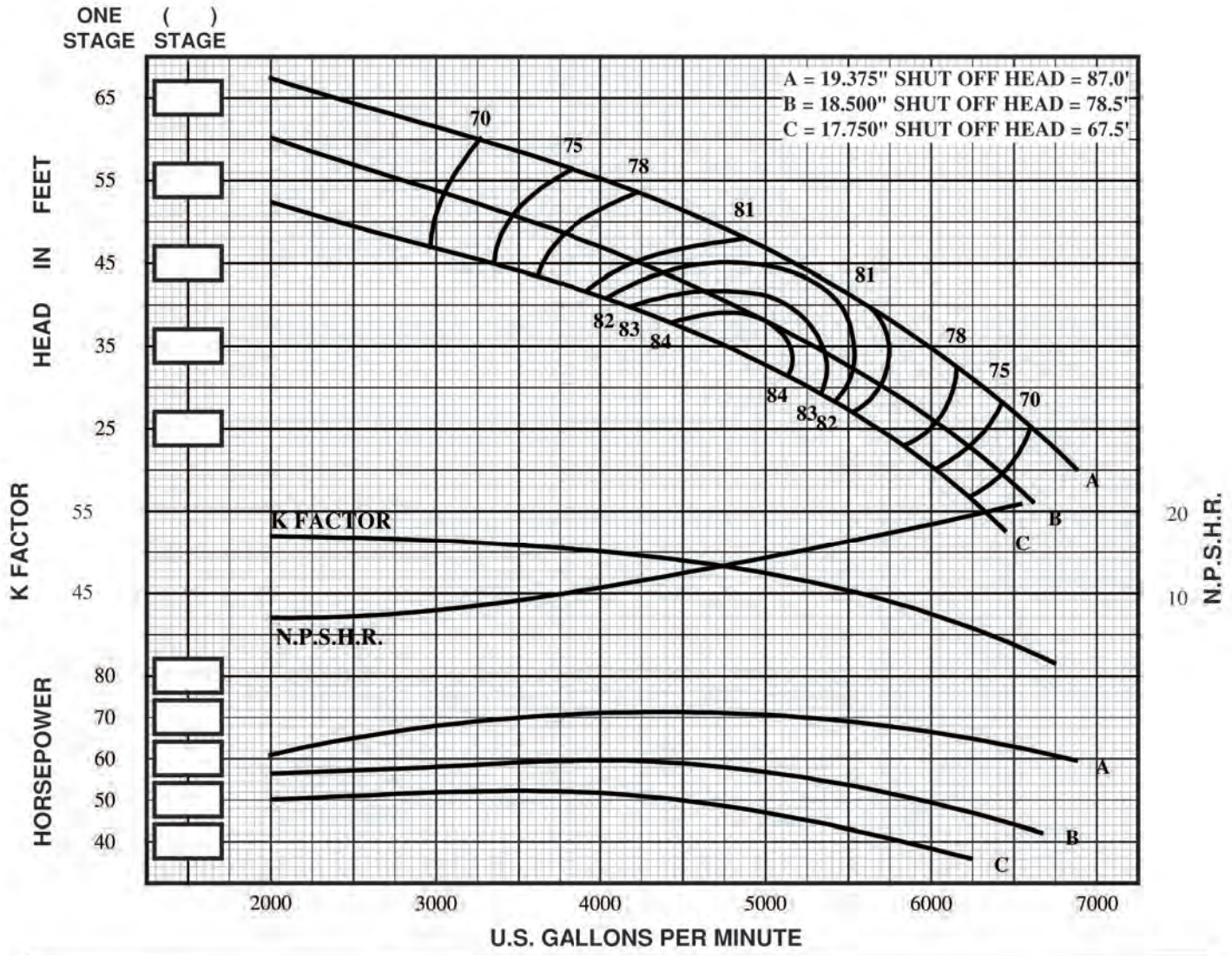


LINESHAFT TURBINE

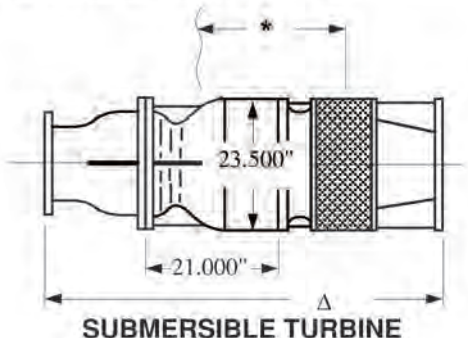
SIMFLO®

Section 204
Date 9/1/06

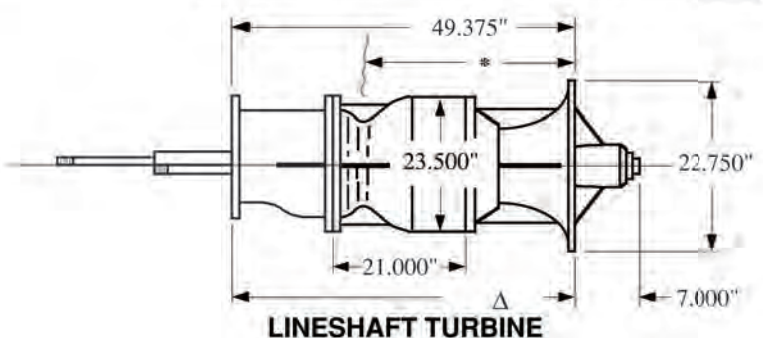
SM24M
880 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM24M	MAX. SHAFT DIA. = 2.937"				
IMPELLER WT. - LBS. = 112.0	STD. LATERAL = 1.50"	1	0	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 1200.0	DISCHARGE SIZES = 18"/ Δ	2	0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 625.0	SUCTION SIZES = BELL	3	0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = 1.81"	ONE STAGE WR^2 = 19.69	4	0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 56"	=	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

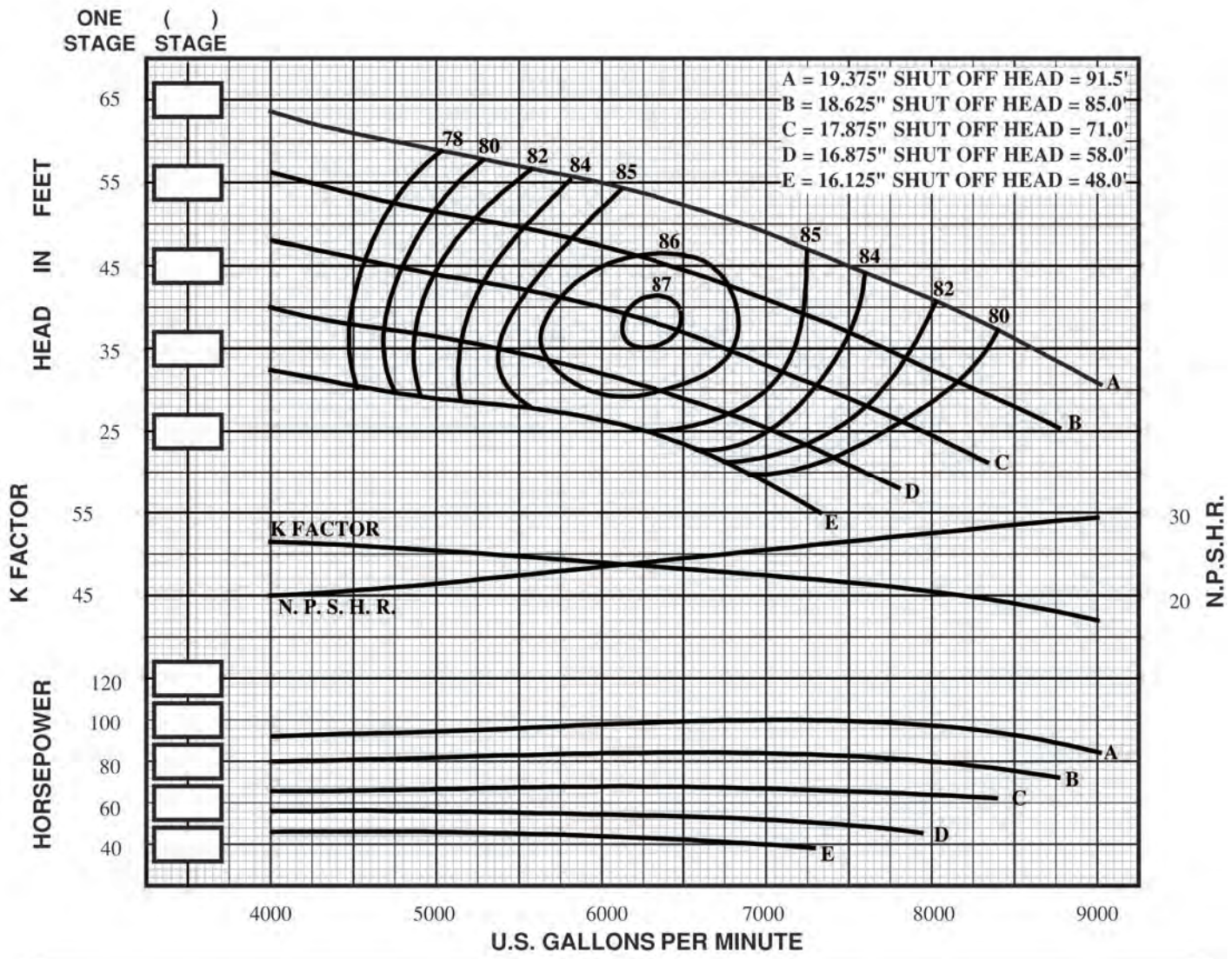


LINESHAFT TURBINE

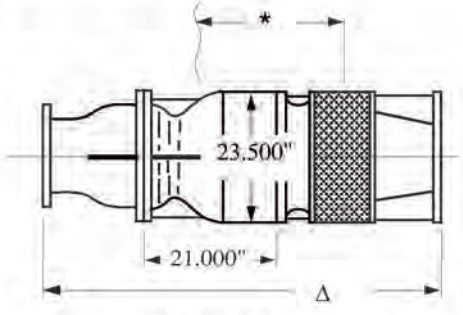
SIMFLO®

Section 204
Date 9/1/06

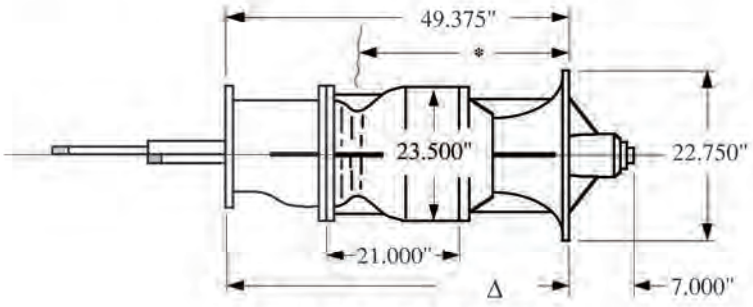
SM24H
880 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM24H	MAX. SHAFT DIA. = 2.937"				
IMPELLER WT. - LBS. = 112.0	STD. LATERAL = 1.50"	1	0	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 1200.0	DISCHARGE SIZES = 18"/ Δ	2	0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 625.0	SUCTION SIZES = BELL	3	0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = 1.88"	ONE STAGE WR^2 = 19.03	4	0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 56"	=	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

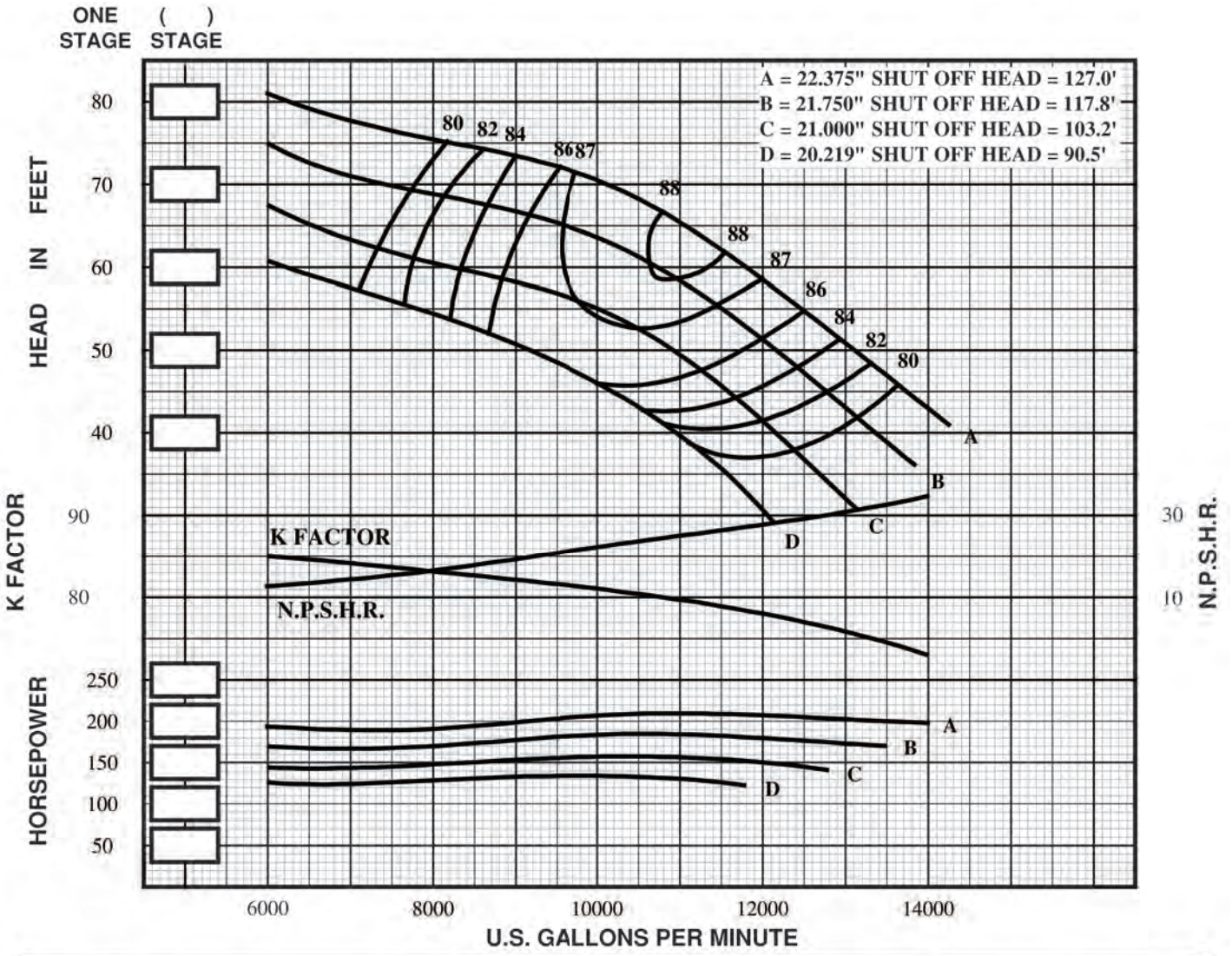


LINESHAFT TURBINE

SIMFLO®

Section 204
Date 9/1/06

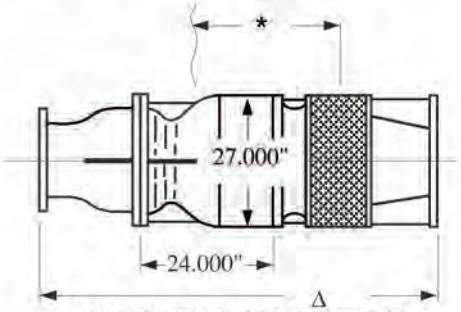
SM28H
880 RPM



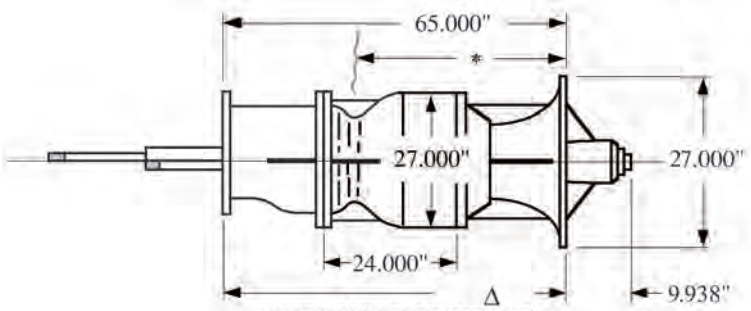
IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM28H	MAX. SHAFT DIA. = 2.937"	1	0	IMP. - C.I.	Δ
IMPELLER WT. - LBS. = 218.0	STD. LATERAL = .50"	2	0	IMP. - NI-RI	Δ
ONE STAGE WT. - LBS. = 2100.0	DISCHARGE SIZES = 20"/ Δ	3	0	IMP. - S.S.	Δ
ADD'L STAGE WT. - LBS. = 1000.0	SUCTION SIZES = BELL	4	0	BOWL - BRZ.	Δ
MAX. SPHERE SIZE = 1.88"	ONE STAGE WR^2 = 39.62	5	0	BOWL - NI-RI	Δ
MIN. SUBMERGENCE* = 64"	=			BOWL - S.S.	Δ

Δ CONSULT FACTORY

v18.1



SUBMERSIBLE TURBINE



LINESHAFT TURBINE

700 RPM
Selection Chart

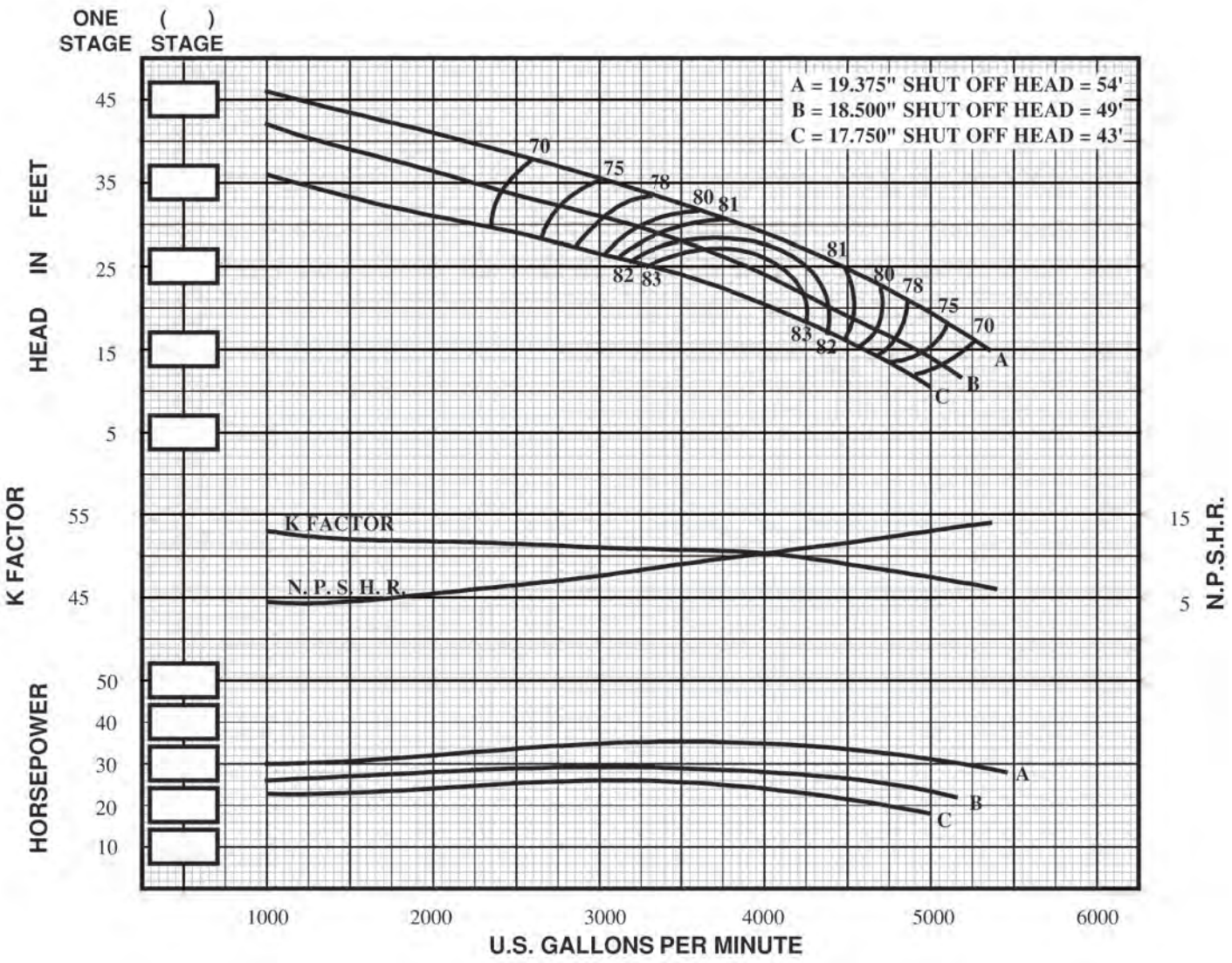
Model Number	Bowl Dia. (in.)	Peak Eff. (full dia.)	BEP Flow (gpm)	BEP Head (ft./ stage)	BEP NPSHr (full dia.)	POR (gpm)	Ns	Nss
SM24M	23.50	81.5	4095	28.5	10.6	2867-4914	3632	7625
SM24H	23.50	85.4	5311	31.6	12.3	3718-6373	3828	7767
SM28H	27.00	88.0	8918	40.1	15.8	6243-10700	4148	8341

v18.1

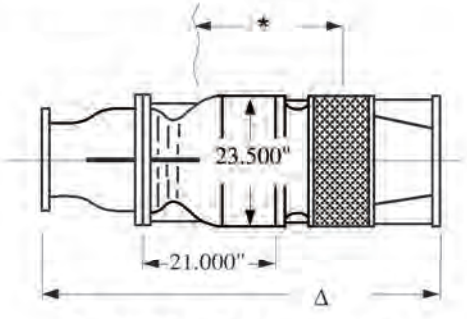
SIMFLO®

Section 205
Date 7/1/99

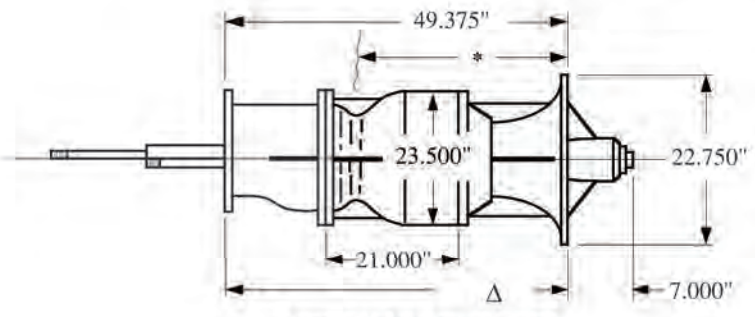
SM24M
700 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM24M	MAX. SHAFT DIA. = 2.937"				
IMPELLER WT. - LBS. = 112.0	STD. LATERAL = 1.50"	1	0	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 1200.0	DISCHARGE SIZES = 18"/ Δ	2	0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 625.0	SUCTION SIZES = BELL	3	0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = 1.81"	ONE STAGE WR^2 = 19.69	4	0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 56"	=	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

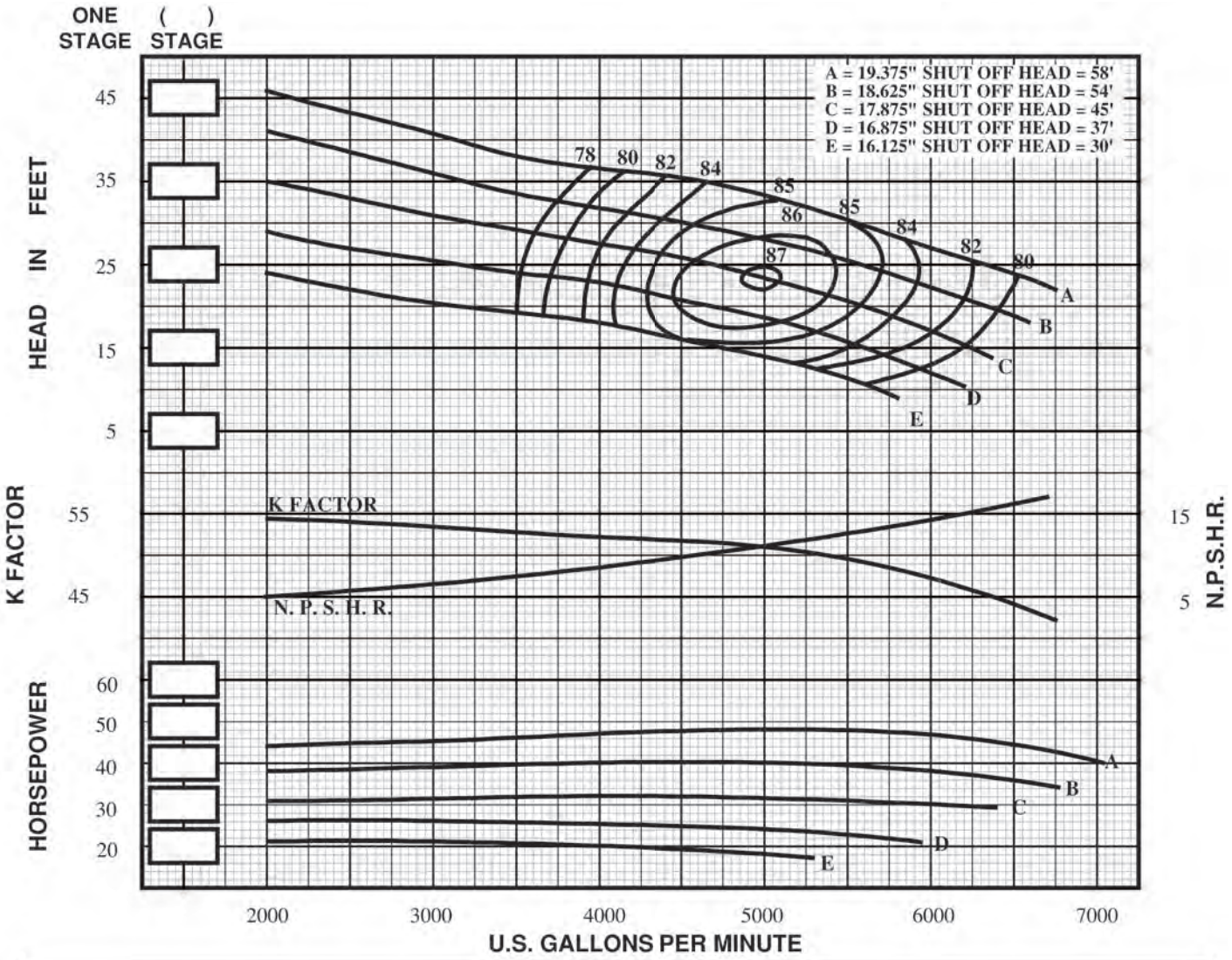


LINESHAFT TURBINE

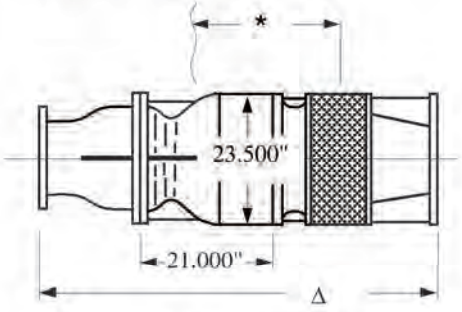
SIMFLO®

Section 205
Date 7/1/99

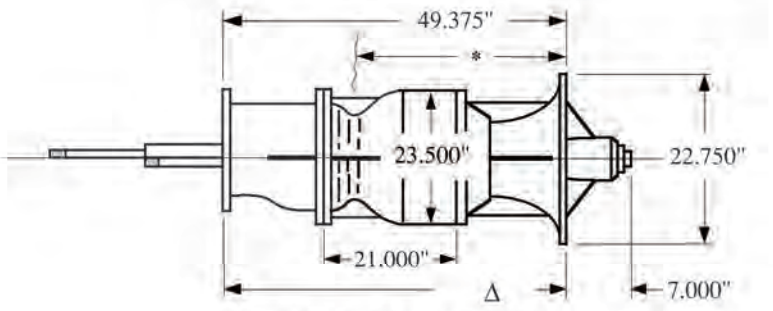
SM24H
700 RPM



IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM24H	MAX. SHAFT DIA. = 2.937"				
IMPELLER WT. - LBS. = 112.0	STD. LATERAL = 1.50"	1	0	IMP. - C.I.	Δ
ONE STAGE WT. - LBS. = 1200.0	DISCHARGE SIZES = 18"/ Δ	2	0	IMP. - NI-RI	Δ
ADD'L STAGE WT. - LBS. = 625.0	SUCTION SIZES = BELL	3	0	IMP. - S.S.	Δ
MAX. SPHERE SIZE = 1.88"	ONE STAGE WR^2 = 19.03	4	0	BOWL - BRZ.	Δ
MIN. SUBMERGENCE* = 56"	=	5	0	BOWL - NI-RI	Δ
Δ CONSULT FACTORY	v18.1			BOWL - S.S.	Δ



SUBMERSIBLE TURBINE

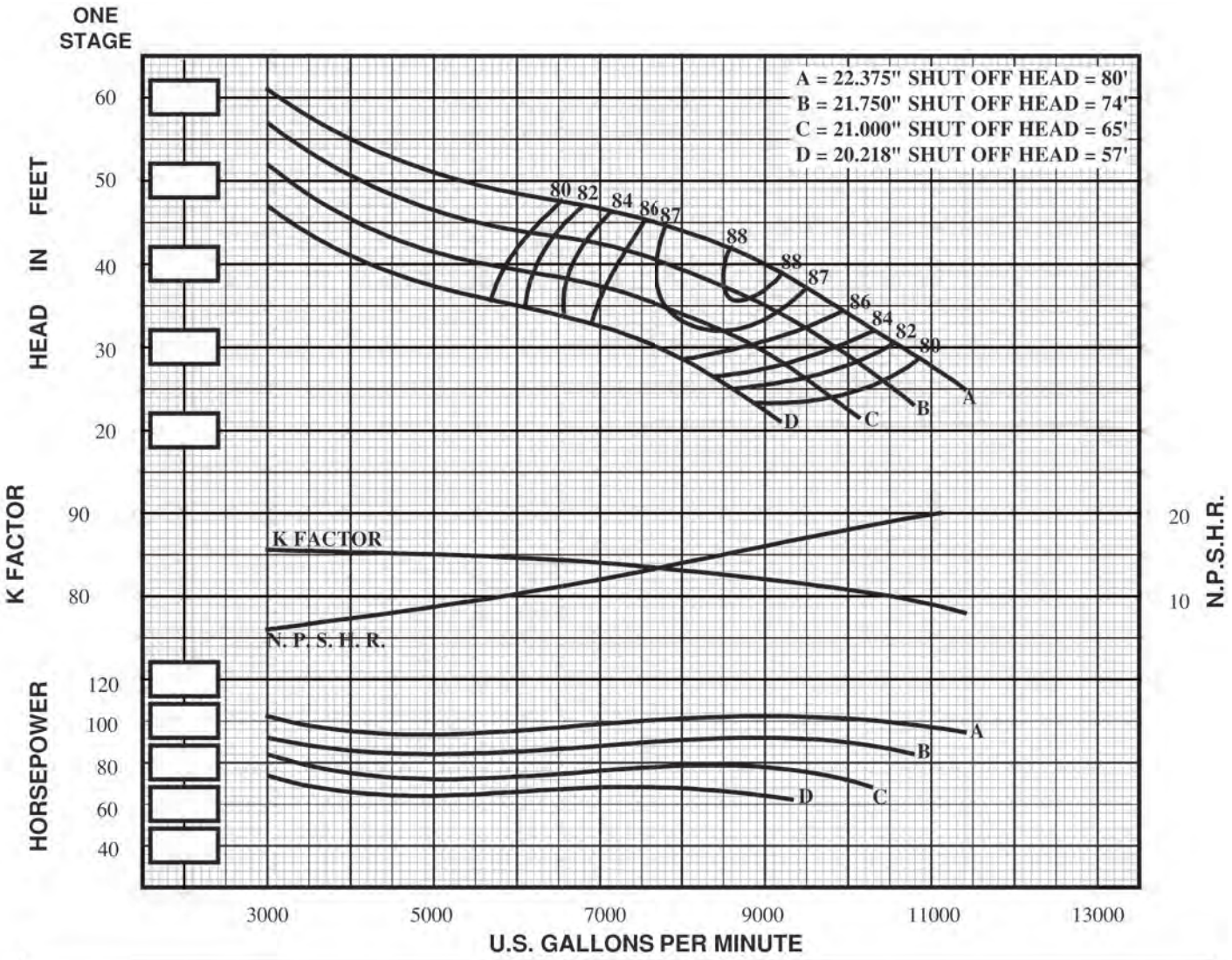


LINESHAFT TURBINE

SIMFLO®

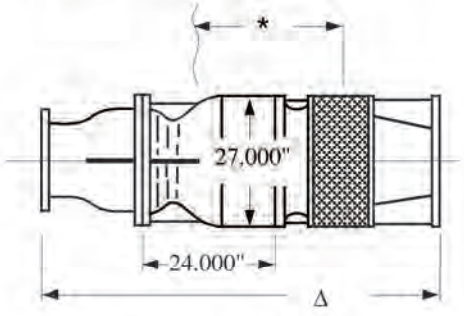
Section 205
Date 7/1/99

SM28H
700 RPM

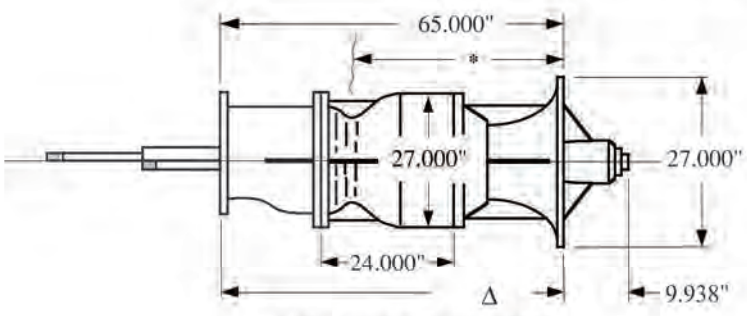


IMPELLER TYPE = ENCLOSED	STD. SHAFT DIA. = 2.937"	NO. STAGES	EFF. CHANGE	MATERIAL	B.E.P. EFF. CHANGE
IMPELLER NO. = SM28H	MAX. SHAFT DIA. = 2.937"	1	0	IMP. - C.I.	Δ
IMPELLER WT. - LBS. = 218.0	STD. LATERAL = .50"	2	0	IMP. - NI-RI	Δ
ONE STAGE WT. - LBS. = 2100.0	DISCHARGE SIZES = 20"/ Δ	3	0	IMP. - S.S.	Δ
ADD'L STAGE WT. - LBS. = 1000.0	SUCTION SIZES = BELL	4	0	BOWL - BRZ.	Δ
MAX. SPHERE SIZE = 1.88"	ONE STAGE WR^2 = 39.62	5	0	BOWL - NI-RI	Δ
MIN. SUBMERGENCE* = 64"	=			BOWL - S.S.	Δ

Δ CONSULT FACTORY v18.1



SUBMERSIBLE TURBINE



LINESHAFT TURBINE

Pump Performance
Speed Change Affinity

$$\frac{\text{Corrected Speed}}{\text{Original Speed}} = \text{Ratio}$$

Ratio X GPM = Corrected GPM
Ratio^2 X Head = Corrected Head
Ratio^3 X HP = Corrected HP

This formula is also used for increasing or decreasing speed. Efficiency at this point is assumed to be the same efficiency as the original point.

EXAMPLE: Speed decreasing from 1770 to 1750 RPM.

GIVEN: 1000 GPM, 1770 RPM. 54' of head and 16.5 HP

SOLUTION: $\frac{\text{Corrected Speed}}{\text{Original Speed}} = \frac{1750}{1770}$ = Ratio = .9887
Ratio^2 = .9775
Ratio^3 = .9665

GPM X Ratio = 1000 X .9887 = 988.7 GPM
Head X Ratio^2 = 54' X .9775 = 52.8' Head
HP X Ratio ^{3} = 16.5 X.9665 = 15.9 HP

The formula can also be used for change of cycles in electricity.

$\frac{50 \text{ cycles}}{60 \text{ cycles}} = .8333$

.8333 X 1700 RPM = 1475 RPM

Now you have the correct RPM from cycle change and therefore can find the correct performance according to speed.

Note: The mathematical results of this formula are approximate. Variances will occur due to design and application differences.

Trouble Shooting
Operating Symptoms

INSUFFICIENT PRESSURE

1. Speed too slow (check voltage).
2. Impeller trimmed incorrectly.
3. Impeller loose.
4. Impeller plugged.
5. Wear rings worn.
6. Entrained air in pump.
7. Leaking joints or bowl casing.
8. Wrong rotation.
9. Incorrect impeller adjustment.

NO LIQUID DELIVERED

1. Pump section broken (water level below inlet).
2. Suction valve closed.
3. Impeller plugged.
4. Strainer clogged.
5. Wrong rotation.
6. Shaft broken or unscrewed.
7. Impeller loose.
8. Barrel or discharge not vented.
9. Driver inoperative.

VIBRATION

1. Motor imbalance-electrical.
2. Motor bearing not properly seated or worn.
3. Motor drive coupling out of balance or alignment.
4. Misalignment of pump, casings, discharge head column or bowls.
5. Discharge head misaligned by improper mounting or pipe strain.
6. Bent shafting.
7. Worn pump bearings.
8. Clogged impeller or foreign material in pump.
9. Improper impeller adjustment.
10. Vortex problems in sump.
11. Resonance-system frequency at or near pump speed.
12. Cavitation.
13. Impeller out of balance.

INSUFFICIENT CAPACITY

1. Speed too slow.
2. Impeller trimmed incorrectly.
3. Impeller loose.
4. Impeller or bowl partially plugged.
5. Leaking joints.
6. Strainer or suction pipe clogged.
7. Suction valve throttled.
8. Low water level.
9. Reverse rotation.
10. Insufficient submergence.
11. Insufficient N.P.S.H.A.
12. Incorrect impeller adjustment.
13. Worn pump.
14. System pressure higher than design.

USING TOO MUCH POWER

1. Speed too high.
2. Improper impeller adjustment.
3. Improper impeller trim.
4. Pump out of alignment.
5. Coupling out of alignment.
6. Pumping sand, silt or other foreign material
7. Lubricating oil too heavy.
8. Bent shaft.
9. Tight bearing or packing.
10. Specific gravity or viscosity of fluid higher than design.
11. Worn pump.
12. Damaged pump.
13. Partial freezing of pump liquid.

ABNORMAL NOISE

1. Motor noise.
2. Dry pump bearing.
3. Broken column bearing retainers.
4. Broken shaft or shaft enclosing tube.
5. Impellers dragging on bowl case.
6. Cavitation due to insufficient N.P.S.H.A. and/or submergence.
7. Foreign material in pump.
8. Excessive fluid velocity in pipe system.

IMPELLERS

TROUBLE SOURCE	PROBABLE CAUSE	REMEDY
Wear on exit vanes and shrouds. Consider	Abrasive action.	Replace impeller if excessive. coating or upgrading material.
Pitting on entrance vanes of impellers.	Cavitation.	Correct condition or upgrade material to extend life.
Pitting on impellers and bowl castings.	Corrosion/Erosion	Investigate cost of different materials. vs. frequency of replacements.
Wear on impeller skirts and/or bowl seal ring area.	1. Abrasive action or excess wear impeller skirts due to worn bowl bearings. 2. Impellers set too high.	1. Install new bearings and wear rings. Upgrade material if abrasive action. 2. Install wear rings and adjust correctly.
Impeller loose on shaft (extremely rare occurrence.)	1. Repeated shock load by surge in suction or discharge line. (Can loosen first or last stage impellers.) 2. Foreign material jamming impeller. (May break shaft or trip motor over load before impeller comes to loose. 3. Differential expansion due to temperature. 4. Parts improperly machined and/or assembled. 5. Torsion loading on submersible pumps.	1. Re-fit impellers. If collet mounted, consider changing to key mounting. 2. Remove cause of jamming. 3. If collet mounted, consider change to key mounted. Avoid sudden thermal shock. 4. Correct parts and refit. 5. Add keyway to collet mounting.

BEARINGS

TROUBLE SOURCE	PROBABLE CAUSE	REMEDY
Bearing seized or galling on shaft.	Running without lubrication.	Check lubrication, look for plugged suction or evidence of flashing.
Bearing failure or bearing seized.	High temperature failure.	Check pump manufacturer for bearing temperature limits.
Excessive shaft wear under rubber bearings	Rubber bearings will swell in hydro-carbon, H_2S & high temperature.	Change bearing material.
Premature bearing wear.	Abrasive action.	Consider conversion to water flushing pressure grease or oil lubrication on all bearings.
Uneven wear on bearings, uniform wear on shaft.	Pump's non-rotating parts misaligned.	Check mounting and discharge pipe connection for dirt between column joints. Correct misalignment, replace bearings and repair or replace shaft.
Uniform wear on bearings and shaft.	Abrasive action.	Replace parts, consider changing materials or means of lubrication.
Uniform wear on bearings, uneven wear on shaft.	1. Shaft run-out caused by bent shafts, shafts not butted in couplings, dirt or grease 2. Shafts ends not properly faced.	1. Straighten shaft or replace, clean and assemble correctly. 2. Reface shaft ends, parallel and concentric.

SHAFT AND COUPLINGS

TROUBLE SOURCE	PROBABLE CAUSE	REMEDY
Bent shaft.	Mishandling in transit or assembly.	Check straightness. Correct to .005"/10 ft. total run-out or replace.
Shaft coupling elongated (neck down).	1. Motor is started while pump running in reverse. 2. Corrosion. 3. Pipe wrench fatigue on reused couplings. 4. Power being applied to shafts that are not butted in coupling.	1. Look for faulty check valve. Could also be momentary power failure or improper starting timers. 2. Replace couplings. 3. Replace couplings. 4. Check for galling on shaft ends.
Shaft coupling unscrewed	Pump started in reverse rotation.	Shafts may be bent, check shafts and couplings. Correct rotation.
Broken shaft or coupling.	1. Can be caused by same reasons listed for coupling elongation. 2. Can also be caused by bearings seized due to lack of lubrication. 3. Foreign locking impellers or galling wear rings. 4. Metal fatigue due to vibrations. 5. Improper impeller adjustment or continuous upthrust conditions, causing impeller drag.	1. Same as for coupling elongation. 2. Same as above for bearing seizure. 3. Add strainers or screens. 4. Check alignment of the pump components to eliminate vibration. 5. See Engineering Section for correction.

BOWLS

TROUBLE SOURCE	PROBABLE CAUSE	REMEDY
Wear on bowl vanes.	Abrasive action.	Coat bowls, upgrade material or rubber line.

PACKING BOX

TROUBLE SOURCE	PROBABLE CAUSE	REMEDY
Excessive leakage.	1. Improper packing. 2. Incorrect type or defective packing. 3. Worn shaft or sleeve.	1. Repack correctly. 2. Repack with the correct grade for service. 3. Remachine or replace scored parts.
Packing box overheated.	1. Improper packing procedure. 2. Packing too tight. 3. Insufficient lubrication. 4. Incorrect type of packing.	1. Repack correctly. 2. Repack with the correct grade for service. 3. Remachine or replace scored parts.
Packing wears prematurely.	1. Improper packing. 2. Insufficient lubrication. 3. Shaft or sleeve scored. 4. Incorrect type of packing. 5. Abrasive action.	1. Repack correctly. 2. Repack correctly. 3. Remachine or replace scored parts. 4. Repack with the correct grade for service. 5. Remove source of abrasives.

INNER COLUMN

TROUBLE SOURCE	PROBABLE CAUSE	REMEDY
Water in inner column.	1. Bypass ports plugged. 2. Badly worn bypass seal or bearings. 3. Tubing joint leaking. 4. Crack or hole in tubing.	1. Remove cause. 2. Replace worn parts. 3. Ensure tubing joint face is clean and is butted squarely. 4. Replace section affected.

Temperature Limitations And Recommendations

MATERIAL	TEMP. RANGE °F	MINIMUM S.G.	REMARKS
Neoprene	32 to 100	1.0	Good for abrasive service. Not recommended where sulfides are present.
Nitrile	-40 to 250	1.0	Good for abrasive service. Resistant to petroleum products. Not recommended where sulfides are present.
Bronze	-60 to 200	0.5	General purpose bearing successfully applied on non-abrasive fresh or salt water and hydrocarbons.
Engineered Plastic (Elastomeric Polymer/ Thermoplastics/ PTFE)	-80 to 250	0.3	Good for abrasive service. Low friction; suitable for dry start-up. Generally inert to harsh chemical solutions.
Carbon Graphite Babbitt	-100 to 400	0.5	Good for extreme temperatures and non-abrasive fluids. Also excellent where fluid has poor lubricating properties.

Notes: Temperature and S.G. are approximate for material classes, consult manufacturer for specific material alloy properties and service limits.

Construction	TEMP. RANGE °F	REMARKS
Bearings	100-140	Increase standard clearances .005"
Bearings	>140	Increase standard clearances .010"
Impellers	>200	Keyed impellers required
Wear Rings	>200	Mechanically affixed wear rings required
General	>140	Special consideration must be made for thermal properties of dissimilar materials. Consult Factory.

Definitions

A **lineshaft vertical turbine pump** is a vertical-shaft centrifugal or mixed-flow pump assembly with rotating impeller or impellers, and with the discharge from the pump element coaxial with the shaft. The pumping element is suspended by the vertical shafting used to transmit power to the impellers, the prime mover being external to the flow stream.

The **pump bowl assembly** is either a single or multistage, centrifugal or mixed-flow vertical pump with discharge coaxial with the shaft. It has an open, semi-open, or enclosed impeller. Assemblies are constructed for use with either open or enclosed lineshafts.

The **column and shaft assembly** consists of the column pipe that suspends the pump bowl assembly from the head assembly and serves as a conductor for the fluid from the pump bowl assembly to the discharge head. Contained within the column pipe is the line-shaft which transmits the power from the driver to the pump shaft. The line-shaft is maintained in alignment throughout its length by means of bearings and is generally lubricated by the fluid being pumped, or it may be enclosed in tube and lubricated with oil.

The **head assembly** consists of the driver, the base from which the column and shaft assembly and the bowl assembly are suspended, and may include the discharge head, which directs the fluid into the desired piping system.

The **driver** is the mechanism mounted on the head assembly which transmits or furnishes the power to the top shaft. It may contain the means for impeller adjustment and provides a bearing to carry the thrust load. It may or may not be a prime mover.

The **impeller elevation datum** shall be taken as the elevation of the entrance eye to the bottom stage impeller.

The **foundation elevation datum** shall be taken as the elevation of that surface from which the weight of the pump is supported. This is normally the elevation of the underside of the discharge head or foundation plate.

The **setting** is the nominal vertical distance in feet (meters) from the foundation elevation datum to the column pipe connection at the bowl assembly.

The **static water level** is the vertical distance in feet (meters) from the foundation elevation datum to the level of the atmospheric surface of the supply pool while no water is being drawn.

The **pumping water level** is the vertical distance in feet (meters) from the foundation elevation datum to the level of the atmospheric surface while the specified fluid flow is being drawn from the supply pool.

Drawdown is the difference in feet (meters) between the pumping water level and the static water level.

Specific yield, expressed in U.S. gallons per minute per foot of drawdown (liter per second per meter of drawdown), is the rate of flow being pumped from the well divided by the total drawdown measured during the metered flow rate.

Head is the quantity used to express the energy content of the liquid per unit weight of the liquid, referred to any arbitrary datum. In terms of foot pounds (meter-kilograms) of energy per pound (kilogram) being pumped, all head quantities have the dimension of feet (meters) of liquid.

Head above datum is the head measured above the foundation elevation datum, expressed in feet (meters) of liquid, plus the velocity head at the point of measurement.

Velocity head is the kinetic energy of a fluid expressed in feet (meters). Velocity head loss corresponds to the energy used to accelerate a fluid to a given velocity.

Suction head (closed system) is the algebraic sum of the pressure in feet (meters) of liquid (measured at the pump suction connection) and the velocity head at the point. Pump suction connection is that point at which the suction piping is attached to the pump bowl assembly or its enclosing vessel. Note that a negative suction head will add to the vertical distance from the datum due to the algebraic subtraction of a negative quantity.

Pump total head is the bowl assembly head minus the column loss and discharge head loss. This is the head generally called for in pump specifications.

Column loss is the value of the head loss, expressed in feet (meters), caused by the flow friction in the column pipe.

Discharge head loss is the value of the head loss, expressed in feet (meters), caused by the flow friction in the discharge head assembly.

The **line-shaft loss** is the power, expressed in horsepower, required due to the rotation friction of the line-shaft. The value is added to the bowl assembly input to predict the pump input.

Pump efficiency is the ratio of pump power output to pump input, expressed as a percentage.

Driver efficiency is the ratio of the driver power input, expressed as a percentage.

Bowl assembly efficiency is the ratio of the bowl output to the bowl assembly input, expressed as a percentage. This is the efficiency that is usually shown on catalog rating charts.

SYMBOLS AND ABBREVIATIONS

AC	Alternating current
AMP	Amperes
BHP	Brake horsepower
CMF	Cubic feet per minute
GAL	Gallons
GPM	Gallons per minute
H	Total head in feet
HP	Horsepower
KW	Kilowatts
PSI	Pounds per square inch
RPM	Revolutions per minute
S.G.	Specific gravity

Definitions (Con't)

DOWNTHRUST

Downthrust is the total thrust load expressed in pounds carried by the thrust bearing in the motor, gear drive or pump head. It is the sum of the weight of the rotating elements and the hydraulic downthrust of the bowl unit.

The shaft length is the sum of the setting (column length), the length of discharge head and driver (from dimension sheet), and length of the bowl unit (from pump curve).

EXAMPLE:

6 stage SM10H bowl unit, 75 HP, 1770 motor, SPC-8 discharge head, 200' setting, 1 1/2 shaft, 312 feet total head

200' + 6' + 5' =	211' (shaft length)
(1) 211' X 6.02 lbs/ft. =	1270 lbs. of shaft
(2) 300' TDH X 4.5(k factor) =	1350 lbs. hyd. thrust
Add (1) and (2) =	2620 lbs.
Add impeller weight =	65 lbs.
	* 2685 lbs. of total thrust load

Motor data sheet shows 75 HP, 1770 RPM motor to have a normal thrust of 4800 lbs., so no additional thrust load capacity is required.
* Note: Coupling weight may be added for deep set pumps.

UPTHRUST

Upthrust is usually not a problem with deep well turbine pumps when used as such. If pump setting is 30 feet or less and designed for a relatively high head, or if the pump operates at a point far to the right of the curve, at high capacity against low head, then an upthrust problem might result. All such applications should be viewed with suspicion and full information furnished to the factory so upthrust protection my be provided, if required.

SHAFT STRETCH

The hydraulic thrust when pump is operating imposes an axial tensile load on the shaft and column pipe which causes the shaft and column pipe to stretch. It is necessary, therefore, to determine the magnitude of the net elongation and whether or not the elongation exceeds the clearance provided in the pump bowls. If there is insufficient clearance, the impeller skirts will rub on the bowl seal rings, resulting in excessive wear and power consumption.

For example, we have 1350 lbs. of hydraulic thrust. From the shaft elongation chart, it is found by interpolation that the elongation for a 1 1/2" shaft at 1350 lbs. of hydraulic thrust = .031" per 100' of shaft.

Elongation for 200' of shaft = $\frac{200' \times .031"}{100'} = .062"$

Column elongation is found by the same method using the column elongation chart. $\frac{200' \times .006"}{100'} = .012"$

Shaft elongation minus column elongation equals net elongation. .062" - .012" = .050"

Extra lateral may be machined if required.

Conversion Factors And Formulas

UNITS OF LENGTH					
UNIT	**INCH**	**FOOT**	**YARD**	**CENTIMETER**	**METER**
INCH	1	.0833	.0278	2.54	.0254
FOOT	12	1	.333	30.48	.3048
YARD	36	3	1	91.44	.9144
CENTIMETER	.3937	.0328	.0109	1	.01
METER	39.37	3.281	1.094	100	1

UNITS OF AREA					
UNIT	**SQ. INCH**	**SQ. FOOT**	**SQ. YARD**	**SQ. CM**	**SQ. METER**
SQ. INCH	1.00	0.00694	0.000772	6.452	0.000645
SQ. FOOT	144.00	1.00	0.1111	929.00	0.0929
SQ. YARD	1296.00	9.00	1.00	8360.00	0.836
SQ. CM	0.1550	0.001076	.00012	1.00	0.0001
SQ. METER	1550.00	10.76	1.196	10,000.00	1.00

UNITS OF VOLUME							
UNIT	**U.S. GAL.**	**IMP. GAL.**	**CU. FT.**	**LB. WATER AT 60°F**	**CU. METER**	**QUART**	**LITER**
U.S. GAL.	1.0	.833	.1337	8.33	.003785	4.0	3.785
IMP. GAL.	1.2	1.0	.1605	10.0	.004546	4.8	4.546
CUBIC FT.	7.481	6.232	1.0	62.37	.0283	29.92	28.32
LB. WATER	.120	.10	0160	1.0	----	.48	.454
CU. METER	264.2	220.0	35.31	2204.0	1.0	1057.0	1000.0
QUART	.25	.208	.0334	2.086	----	1.0	.9464
LITER	.2642	.220	.0353	2.204	.001	1.057	1.0

Useful Formulas:

Liquid HP or useful work done by pump—

$$WHP = \frac{(GPM) \times (TDH) \times (S.G.)}{3960}$$

Brake HP required to drive the pump—

$$BHP = \frac{(GPM) \times (TDH) \times (S.G.)}{3960 \times \text{Pump Eff.}}$$

$$\text{Pump efficiency} = \frac{\text{OUTPUT}}{\text{INPUT}} = \frac{\text{WHP}}{\text{BHP}}$$

$$\text{Electrical HP input to motor} = \frac{\text{BHP}}{\text{Motor Eff.}}$$

$$\text{kw input to motor} = \frac{\text{BHP} \times 0.746}{\text{Motor Eff.}}$$

Overall efficiency = Pump Eff. X Motor Eff.

Velocity formula:

$$V = \frac{.409 \times GPM}{(d_1^2 - d_2^2)}$$

Where: GPM = flow rate in gallons per minute
TDH = total dynamic head in feet
S.G. = fluid specific gravity (water S.G. = 1)
V = velocity in feet per second
d_1 = fluid passage major diameter in inch
d_2 = flow passage minor diameter in inch (if applicable)

Conversion Factors And Formulas

Capacity	
1 Cubic Foot Per Second	449.0 GPM
1 Acre Foot Per Da	227.0 GPM
1 Acre Inch Per Hour	454.0 GPM
1 Cubic Meter Per Minute	264.2 GPM
1,000,000 Gal. Per Day	595.0 GPM

To Find Capacity of a Tank or a Cistern:
D x D x h x 5.875 = Capacity in U.S. Gallons
Where: D = Diameter of Tank in Feet h = Height of Tank in Feet

Head	
1 Pound Per Square Inch (PSI)	2.31 ft. of water 2.04 in. mercury 0.07 kg. per sq. cm
1 Foot of Water	0.433 PSI 0.885 in. mercury
1 Inch of Mercury (or vacuum)	1.132 ft. of water
1 Kilogram Per Square cm.	14.22 lb. PSI
1 Atmosphere (at sea level)	14.7 PSI 34.0 ft. of water 10.35 meters of water
1 Meter of Water	3.28 ft. of water

Volume	
1 Acre Foot	43,560 cu. ft. 325,829 U.S. gal.
1 Acre Inch	3,630 cu. ft. 27,100 U.S. gal.

Horsepower
1 HP is equivalent to: 0.746
kilowatts
746 watts
33,000 ft.-lbs. per minute
550 ft.-lbs. per second

Electric Power
AC = Alternating current power
DC = Direct current
E = Volts = Electrical pressure (similar to head)
I = Amperes = Electrical current (similar to rate of flow)
W = Watts = Electrical power (similar to head capacity)
KW = Kilowatts = 1000 watts
Apparent Power = Volts x amperes = Voltamperes
Apparent Power = EI
Useful Power = W = EI x P.F.
Power factor = ratio of useful power to apparent power
Power factor = PF = W/EI
KW Hr. = Kilowatt hour
Single phase power W = E x I x PF
3 Phase Power W = 1.73 x I x PF Where E = Average voltage between phases I = Average current in each phase

Model Data
(4"-9")

Model Number	Bowl Dia. (in.)	P. Rating CL30 C.I. (psi)	Std. Lateral (in.)	Setting (in.)	Eye Area (in.²)	WR² (lb.-ft.²)	Sphere Size (in.)
SP5XXL	5.25	529	0.30	0.075	3.34	0.014	0.34
SP5XL	5.25	529	0.30	0.075	3.52	0.015	0.38
SP5L	5.25	529	0.30	0.075	2.81	0.015	0.38
SM5M	5.25	697	0.55	0.075	7.31	0.014	0.63
SM5H	5.25	697	0.55	0.075	7.16	0.014	0.50
SP5LO	5.25	529	0.16	0.010	5.03	0.014	0.31
SP6LL	6.00	858	0.66	0.125	4.75	0.037	0.38
SP6L	6.00	858	0.54	0.125	4.75	0.037	0.38
SP6M	6.00	858	0.41	0.125	4.97	0.037	0.31
SP6H	6.00	858	0.28	0.125	5.69	0.034	0.38
SP6LO	6.00	858	0.70	0.020	5.76	0.019	0.44
SP6MO	6.00	858	0.56	0.020	5.03	0.019	0.34
SM6M	6.00	615	0.56	0.125	4.12	0.039	0.50
SM6H	6.00	615	0.56	0.125	4.12	0.039	0.50
SK6HH	5.50	521	0.50	0.075	7.73	0.031	0.50
SP7L	7.19	378	0.63	0.075	7.79	0.073	0.53
SP7H	7.19	378	0.63	0.075	7.79	0.072	0.53
SK7L	6.56	515	0.94	0.125	8.82	0.051	0.44
SK7M	6.56	515	0.75	0.125	12.07	0.046	0.56
SK7H	6.56	515	0.75	0.125	11.73	0.050	0.56
SM7M	7.38	557	0.94	0.125	12.06	0.101	0.50
SP8L	7.88	674	0.88	0.125	7.08	0.108	0.31
SP8M	7.88	674	0.75	0.125	8.18	0.105	0.56
SP8H	7.88	674	0.56	0.125	8.63	0.105	0.75
SM8H	7.69	376	0.58	0.125	9.04	0.158	0.66
SR8MO	7.69	554	0.83	0.020	7.22	0.107	0.44
SR8HO	7.69	554	0.61	0.020	8.28	0.112	0.59
SK8H	7.50	662	1.00	0.125	15.62	0.133	0.75
SP9L	9.50	409	1.19	0.313	10.41	0.286	0.53
SP9M	9.50	409	1.19	0.313	9.74	0.303	0.53
SM9L	9.50	408	1.13	0.313	10.41	0.286	0.53
SM9M	9.50	408	1.13	0.313	9.74	0.303	0.53
SM9H	9.50	408	1.00	0.313	9.74	0.320	0.53
SL9H	9.00	428	0.94	0.125	12.68	0.248	0.88
SF9H	9.50	377	0.94	0.125	16.87	0.291	0.88
SK9M	9.44	620	1.44	0.125	19.73	0.462	1.13
SK9H	9.44	620	1.00	0.125	23.47	0.421	1.13

Notes: Consult O&M manual for proper impeller setting procedure

Model Data
(10"-28")

Model Number	Bowl Dia. (in.)	P. Rating CL30 C.I. (psi)	Std. Lateral (in.)	Setting (in.)	Eye Area (in.²)	WR² (lb.-ft.²)	Sphere Size (in.)
SP10L	10.19	731	0.94	0.125	8.63	0.295	0.50
SP10M	10.19	731	0.94	0.125	9.21	0.324	0.50
SP10H	10.19	731	0.63	0.125	13.22	0.315	0.63
SM10MO	10.19	489	1.56	0.020	17.87	0.217	0.81
SM10HO	10.19	489	1.25	0.020	17.87	0.217	0.81
SM10M	10.19	489	1.06	0.125	13.42	0.347	0.88
SM10H	10.19	489	1.06	0.125	13.52	0.386	0.88
SM11M	10.63	420	0.88	0.125	12.61	0.382	0.81
SM11H	10.63	420	0.94	0.125	12.19	0.450	0.81
SL11H	10.88	398	1.44	0.125	20.34	0.532	0.88
SR11MO	11.50	596	1.13	0.020	15.69	0.375	0.75
SR11HO	11.50	596	0.72	0.020	21.39	0.411	0.75
SP11L	11.25	427	1.13	0.125	29.93	0.754	1.19
SP11M	11.25	427	1.13	0.125	29.25	0.670	1.19
SP11H	11.25	427	1.13	0.125	28.56	0.718	1.19
SW12L	11.63	526	1.13	0.250	16.31	0.642	0.66
SW12M	11.63	526	1.13	0.250	15.89	0.673	0.66
SP12M	11.88	445	1.19	0.125	18.29	0.746	0.81
SP12H	11.88	445	1.06	0.125	20.58	0.790	0.75
SL12M	11.75	549	1.13	0.250	20.90	0.670	0.88
SL12H	11.75	549	1.13	0.250	20.40	0.673	0.88
SJ12M	12.00	487	1.19	0.188	28.24	0.804	0.88
SJ12H	12.00	487	1.19	0.188	29.07	0.744	0.88
SM14LL	14.00	471	1.25	0.250	44.88	2.211	1.44
SM14L	14.00	471	1.25	0.250	49.08	1.933	1.31
SM14M	14.00	471	1.25	0.250	48.23	2.182	1.31
SM14H	14.00	471	1.25	0.250	48.39	2.023	1.56
SM14HH	14.00	471	1.25	0.250	46.89	2.300	1.25
SM16MO	15.25	506	1.34	0.020	78.41	2.260	1.19
SM16HO	15.25	506	1.06	0.020	81.41	2.240	1.22
SM16M	15.25	506	0.94	0.125	78.55	4.966	1.00
SM16H	15.25	506	0.94	0.125	79.15	4.667	1.38
SM20M	19.25	506	1.50	0.125	81.71	8.220	1.22
SM20H	19.25	506	1.31	0.125	89.84	8.210	1.28
SM24M	23.50	418	1.50	0.125	131.3	19.69	1.81
SM24H	23.50	418	1.50	0.125	147.3	19.03	1.88
SM28H	27.00	404	0.50	0.125	225.5	39.62	1.88

Notes: Consult O&M manual for proper impeller setting r d r

v21

Friction Loss per 100 Feet of Steel Drop Pipe (ft. TDH)

GPM	Pipe Size					
	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"
3	2.50	0.77				
5	6.32	1.93				
7	11.80	3.56				
10	23.00	7.86	1.77			
16	56.03	16.50	4.20	1.96		
20	3"	25.10	6.34	2.94	0.87	
26		41.60	10.37	4.81	1.39	
30		54.60	13.60	6.26	1.82	0.75
40			23.50	10.79	3.10	1.28
50	0.60	4"		16.40	4.67	1.94
60	0.90		5"	23.20	6.59	2.72
80	1.57			40.50	11.40	4.66
100	2.39	0.62			17.40	7.11
120	3.37	0.88			24.70	10.00
140	4.51	1.66	0.38	6"		15.40
200	8.90	2.27	0.74		8"	26.70
240	12.06	3.21	1.03	0.41		
300	19.20	4.89	1.58	0.64	0.16	
340	24.08	6.19	2.00	0.81	0.20	
400	33.90	8.47	2.72	1.09	0.28	10"
440		10.02	3.26	1.31	0.33	
500		13.00	4.16	1.66	0.42	0.14
600		18.60	5.88	2.34	0.60	0.19
700			7.93	3.13	0.80	0.26
800	12"		10.22	4.03	1.02	0.33
850				4.53	1.15	0.37
900	0.17			5.05	1.27	0.41
950	0.19			5.60	1.41	0.46
1000	0.21			6.17	1.56	0.50
1100	0.25				1.87	0.60
1200	0.30				2.20	0.70
1300	0.34				2.56	0.82
1500	0.45				3.37	1.07
1700	0.57				4.29	1.36
2000	0.78				5.86	1.86
2200	0.93					2.23
2400	1.09					2.64
2800	1.47					3.56
3000	1.68					4.06

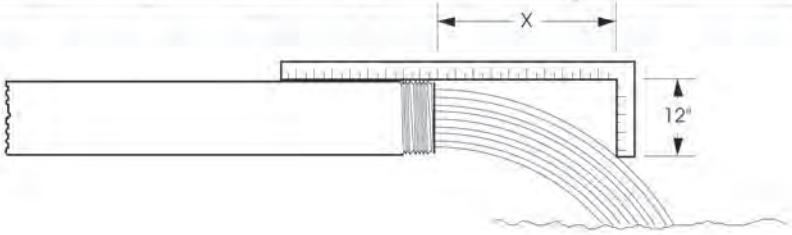
CAUTION: No allowance has been made for age, differences in diameter resulting from manufacturing tolerances or any abnormal conditions of interior pipe surface. It is recommended that a margin of safety to cover these effects be added to the values shown in the tables. Where no careful analysis of these effects is made, a reserve of at least 15% is recommended.

Friction Loss per 100 Feet of Aluminum Drop Pipe (ft. TDH)

GPM	Pipe Size						
	2"	3"	4"	5"	6"	7"	8"
20	1.27	.15	.04				
30	2.58	.38	.08				
40	4.49	.56	.13	.04			
50	6.85	.85	.20	.07	.03		
60	9.67	1.21	.28	.09	.04		
70	12.95	1.67	.38	.12	.05		
80	16.70	2.06	.49	.16	.06	.03	
90	20.80	2.58	.60	.20	.08	.04	
100	25.40	3.18	.74	.24	.10	.05	.03
120		4.51	1.06	.34	.14	.07	.04
140		6.00	1.41	.46	.19	.07	.05
160		7.76	1.82	.59	.24	.11	.06
180		9.67	2.27	.73	.30	.14	.07
200		11.83	2.78	.89	.36	.17	.09
220		14.12	3.31	1.07	.44	.20	.11
240		16.72	3.91	1.27	.52	.24	.13
260		19.42	4.56	1.47	.60	.28	.15
280		22.40	5.26	1.71	.69	.33	.17
300		25.45	5.98	1.95	.79	.37	.19
350			8.03	2.59	1.05	.50	.26
400			10.36	3.33	1.35	.64	.33
450			12.90	4.15	1.69	.80	.41
500			15.73	5.07	2.06	.97	.50
550				6.16	2.50	1.18	.62
600				7.24	2.94	1.38	.72
650				8.42	3.41	1.62	.84
700				9.98	3.92	1.86	.97
750				11.05	4.46	2.11	1.10
800				12.48	5.03	2.38	1.24

Gallons per Minute (Approximate)

Horizontal Distance X	Pipe Size				
	2"	2-1/2"	3"	4"	5"
12"	42	60	93	159	250
14"	49	70	108	186	292
16"	56	80	123	212	334
18"	63	90	139	239	376
20"	70	100	154	266	417
22"	77	110	169	292	459
24"	84	120	185	318	501
26"	91	130	200	345	543
28"	98	140	216	372	585
30"	105	150	231	398	627



MAXIMUM ALLOWABLE CABLE LENGHTS IN FEET

NOTE: Values below are based on 15% continuous motor overload

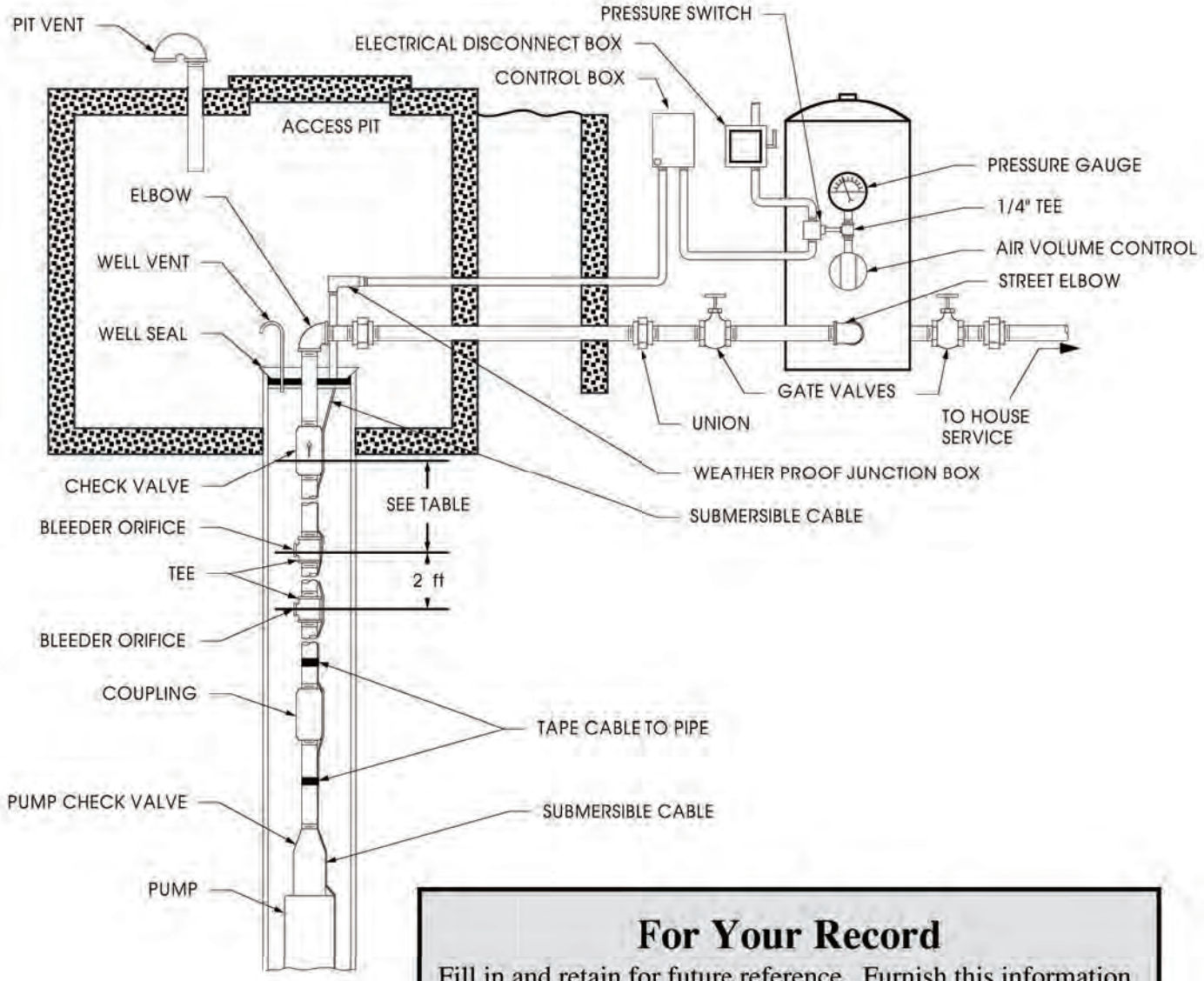
HORSE POWER	VOLTS	PHASE	CABLE SIZE										
			14	12	10	8	6	4	2	0	00	000	0000
1/2	115	1	100	159	249	390	608						
1/2	230	1	404	641	1003								
3/4	230	1	293	473	740	1161							
1	230	1	248	392	617	968	1507						
1-1/2	230	1	205	326	510	801	1248						
1-1/2	230	3	430	680	1070	1680							
1-1/2	460	3	1720										
2	230	1	180	286	449	703	1096	4675					
2	230	3	320	510	790	1250	1940						
2	460	3	1280	2030									
3	230	1		229	359	563	877	1339	2041				
3	230	3	240	380	600	940	1470	2240					
3	460	3	960	1530	2400								
5	230	1			216	315	490	750	1142	1540			
5	230	3		250	390	620	960	1470	2230				
5	460	3	630	1000	1570	2470							
7-1/2	230	1				270	362	553	842	1136	1420		
7-1/2	230	3			290	450	700	1070	1630	2200			
7-1/2	460	3	460	730	1150	1800	2810						
10	230	1					250	425	650	875	1100		
10	230	3				340	520	800	1220	1640	2050		
10	460	3		530	850	1340	2090	3190					
15	230	3			112	168	268	416	665	1020	1250	1500	1500
20	230	3					268	416	665	1020	1250	1500	1500
25	230	3					143	223	353	545	670	800	1000
30	230	3						223	353	545	670	800	1000

MAXIMUM ALLOWABLE CABLE LENGHTS IN FEET

Feet (FT.) column gives maximum allowable cable lengths in feet.
Horsepower (HP) column gives cable loss in HP per 100' of cable at full load.

HORSE POWER	CABLE SIZE for THREE PHASE = 460 Volts													
	10		8		6		4		2		0		00	
	FT.	HP	FT.	HP	FT.	HP	FT.	HP	FT.	HP	FT.	HP	FT.	HP
15	428	.222	687	.139	1080	.088	1700	.056						
20	428	.360	687	.225	1080	.142	1700	.090						
25	252	.562	402	.350	642	.221	1000	.140	1580	.088	2430	.005		
30			402	.482	642	.304	1000	.193	1580	.121	2430	.010		
40					313	.489	487	.310	770	.195	1190	.122	1460	.098
50					313	.838	487	.532	770	.333	1190	.208	1460	.167
60									480	.484	745	.303	910	.243
75									480	.705	745	.422	910	.355
100											596	.855	730	.710
125													600	.928
HORSE POWER	000		0000		250		300		350		400		500	
	FT.	HP	FT.	HP	FT.	HP	FT.	HP	FT.	HP	FT.	HP	FT.	HP
40	1740	.078												
50	1740	.133												
60	1090	.193	1370	.155	1550	.128	1780	.110						
75	1090	.282	1370	.225	1550	.187	1780	.160						
100	873	.563	1095	.451	1240	.373	1430	.322	1630	.269	1680	.236	1930	.190
125	720	.735	900	.589	1020	.486	1170	.420	1340	.351	1390	.310	1590	.246
150	585	1.069	735	.856	830	.708	950	.610	1040	.510	1120	.444	1290	.359
200					613	1.270	700	1.08	770	.900	835	.782	955	.637
250											665	1.220	760	.990

Submersible Pressure System Installation



For Your Record

Fill in and retain for future reference. Furnish this information when it is necessary to contact your distributor or the factory.

Pump Model No._____

Pump Serial No. _____

Motor Horsepower_____ Phase_____ Volts_____

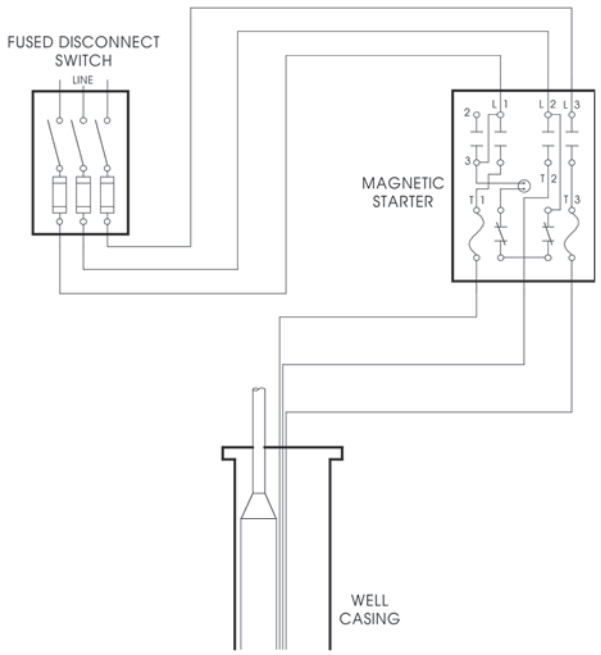
Date of Installation: Month _____ Day _____ Year_____

Well Depth:_____(in feet) Casing Size_____

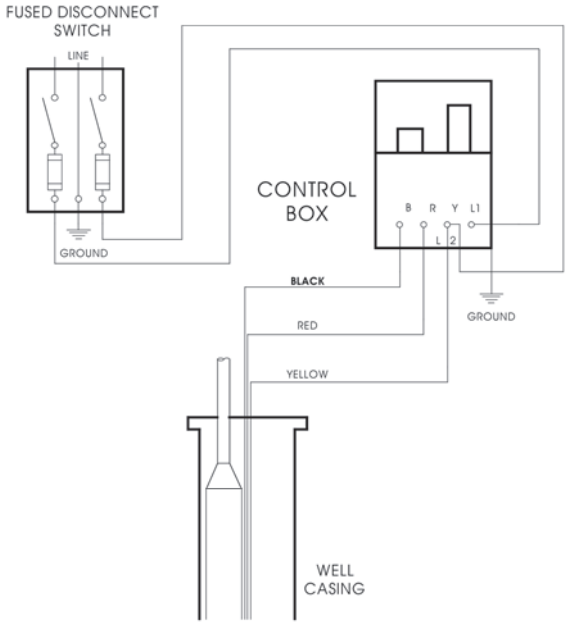
Drop Pipe Size:_____(in inches) Pipe Set At: ___ (in feet)

Note: Refer to your State Water Well Code for installation regulations within your State

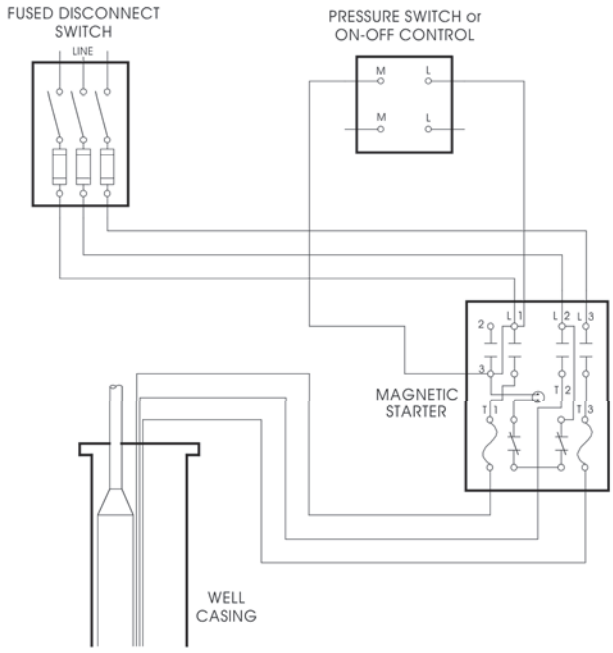
Open System - 3 Phase



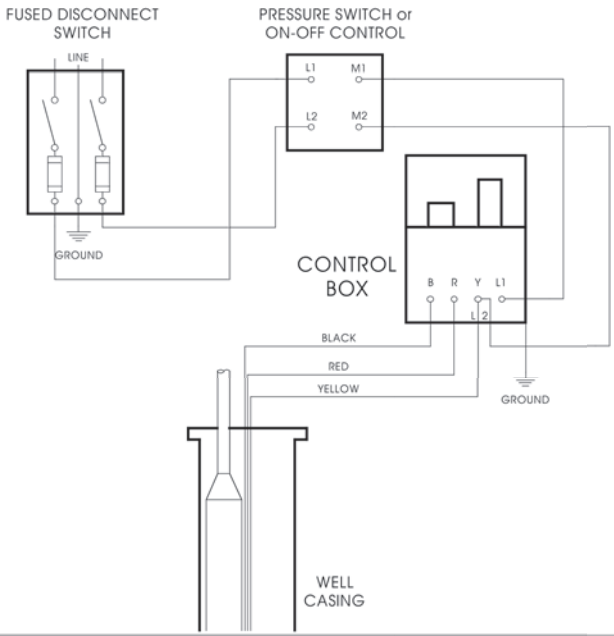
Open System - Single Phase 1/4 HP thru 5 HP



3 Phase - With Pressure Switch

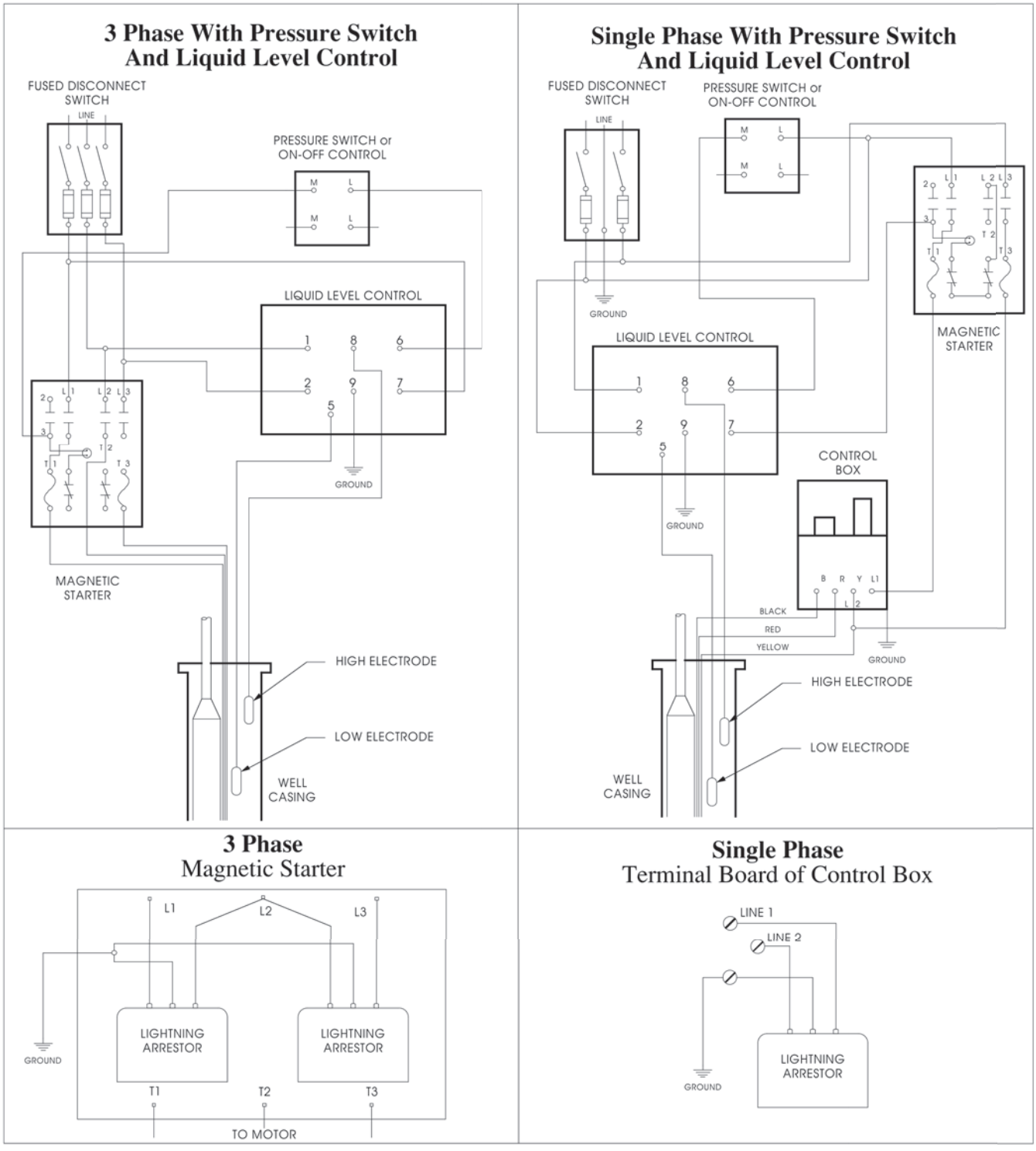


Single Phase - With Pressure Switch. Magnetic Starter Recommended Above 3 HP



Ground all systems to metal well casing, metal drop pipe, metal ground rod or grounded water pipe.

Consult your local electrical code for wire size.



Ground all systems to metal well casing, metal drop pipe, metal ground rod or grounded water pipe.

Consult your local electrical code for wire size.

Column Friction Loss
Open and Enclosed
Line-Shaft 4"-12"

COL. SIZE	4"		5"			6"				8"			
TUBE SIZE	1 1/2	2	1 1/2	2	2 1/12	1 1/2	2	2 1/2	3	1 1/2	2	2 1/2	3
SHAFT SIZE	1	1 1/4	1	1 1/4	1 1/2 1 11/16	1	1 1/4	1 1/2 1 11/16	1 15/16	1	1 1/4	1 1/2 1 11/16	1 15/16 2 3/16
GPM	COLUMN FRICTION LOSS (IN FEET) PER 100 FEET OF COLUMN												
100	2.90	5.30		.90	1.20								
200	9.50	17.00	2.20	3.10	4.00	.73	.95	1.40	2.20				
300	19.00		4.50	6.40	8.30	1.60	2.00	2.90	4.50				
400			7.50	10.50		2.70	3.40	4.70	7.60		.61	.74	1.05
500			11.20			3.80	4.90	6.90	11.80		.91	1.10	1.55
600						5.20	7.00	9.50	17.10		1.30	1.55	2.20
700						7.00	9.00	12.50		.98	1.80	2.10	2.90
800						8.90	12.00	16.20		1.30	2.20	2.70	3.70
900						11.50	14.50			1.60	2.80	3.20	4.70
1000										1.90	3.30	3.90	5.40
1200										2.60	4.50	5.50	7.50
1400										3.50	5.95	7.20	9.98
1600										4.50	7.55	9.20	13.00
1800										5.50	9.40	14.00	16.40
2000										6.70	12.50		
2200										7.90	15.10		
2400										9.40			
2600										11.00			
2800										12.80			
3000										14.70			
3200										16.70			

COL.SIZE	10"				12"			
TUBE SIZE	1 1/2	2	2 1/2	3	2	2 1/2	3	3 1/2
SHAFT SIZE	1	1 1/4	1 1/2 1 11/16	1 15/16 2 3/16	1 1/4	1 1/2 1 11/16	1 15/16 2 3/16	2 7/16
GPM	COLUMN FRICTION LOSS (IN FEET) PER 100 FEET OF COLUMN							
700			.50	.62				
800		.58	.67	.80				
900		.72	.83	1.00				
1000		.89	1.00	1.17				
1200	1.08	1.20	1.38	1.65				
1400	1.40	1.59	1.81	2.18		.90		1.02
1600	1.79	2.20	2.30	2.78		1.11	1.04	1.30
1800	2.20	2.50	2.88	3.50	.99	1.36	1.29	1.65
2000	2.69	3.02	3.50	4.25	1.20	1.60	1.57	1.95
2200	3.20	3.60	4.10	5.05	1.42	1.89	1.85	2.35
2400	3.75	4.20	4.80	5.95	1.68	2.18	2.18	2.76
2600	4.33	4.90	5.60	6.90	1.92	2.50	2.50	3.23
2800	5.00	5.60	6.40	7.90	2.20	2.87	2.90	3.69
3000	5.65	6.40	7.25	8.95	2.50	3.20	3.30	4.20
3200	6.35	7.15	8.20	9.99	2.80	3.60	3.72	4.73
3400	7.05	8.00	9.10	12.00	3.15	4.00	4.15	5.28
3600	7.85	8.90	10.50	13.50	3.50	4.40	4.60	5.90
3800	8.70	9.80	12.50	14.50	3.85	4.80	5.15	5.55
4000	9.60	12.00	13.50		4.20	5.25	5.65	7.25
4200	10.60	14.50	14.90		4.60	5.80	6.15	7.85
4400	11.60				5.10	6.30	6.70	8.60
4600	12.70	14.40			5.50	6.80	7.25	9.30
4800	13.80	15.60			5.90	7.30	7.90	10.10
5000	15.00				6.40	8.70	8.55	11.10
5500					7.60	10.40	10.30	13.30
6000					9.00	12.20	12.30	15.80
6500					10.60	14.10	14.40	
7000					12.30	16.20	16.80	
7500					14.10			
8000					16.00			

Note: For open line-shaft use shaft size, for enclosed line-shaftuse tube size.

Column Friction Loss
Open and Enclosed
Line-Shaft 14"-24"

COL.SIZE	14"					16"				
TUBE SIZE	2 1/2	3	3 1/2	4	5	2 1/2	3	3 1/2	4	5
SHAFT SIZE	1 1/2 1 11/16	1 15/16 2 3/16	2 7/16	2 11/16	2 15/16 3 11/16	1 1/2 1 11/16	1 15/16 2 3/16	2 7/16 2 15/16	2 11/16 3 11/16	2 15/16
GPM	COLUMN FRICTION LOSS (IN FEET) PER 100 FEET OF COLUMN									
2000			1.05							
2200	.95	1.07	1.24							
2400	1.13	1.26	1.46							
2600	1.30	1.46	1.68							
2800	1.50	1.67	1.93	2.01	2.52					1.00
3000	1.68	1.90	2.20	2.30	2.87			.99	1.03	1.10
3200	1.90	2.13	2.45	2.55	3.20		1.00	1.12	1.17	1.30
3400	2.14	2.38	2.72	2.85	3.60	1.03	1.12	1.25	1.30	1.40
3600	2.38	2.65	3.04	3.17	4.00	1.14	1.24	1.38	1.44	1.60
3800	2.62	2.90	3.35	3.50	4.40	1.25	1.37	1.53	1.60	1.80
4000	2.90	3.20	3.67	3.85	4.85	1.37	1.50	1.66	1.75	1.90
4200	3.15	3.50	4.00	4.20	5.25	1.49	1.64	1.83	1.90	2.10
4400	3.45	3.80	4.35	4.55	5.70	1.63	1.79	2.00	2.08	2.30
4600	3.70	4.10	4.72	4.95	6.20	1.77	1.93	2.16	2.25	2.50
4800	4.00	4.45	5.15	5.40	6.75	1.90	2.10	2.32	2.42	2.70
5000	4.35	4.80	5.53	5.80	7.20	2.06	2.25	2.52	2.63	2.90
5500	5.15	5.70	6.50	6.80	8.60	2.45	2.70	2.98	3.10	3.50
6000	6.10	6.70	7.65	8.00	9.99	2.87	3.13	3.48	3.60	4.10
6500	7.10	7.70	8.85	9.30	11.70	3.30	3.60	4.03	4.20	4.70
7000	8.10	8.90	10.30	10.80	13.60	3.80	4.15	4.62	4.80	5.40
7500	9.20	10.20	11.18	12.40	15.60	4.30	4.70	5.27	5.50	6.10
8000	10.50	11.60	13.40	14.10		4.80	5.25	5.87	6.10	6.85
8500	11.80	13.10	13.10	15.90		5.40	5.90	6.55	6.80	7.60
9000	13.20	14.70				6.00	6.50	7.30	7.60	8.30
9500	14.80	16.40				6.60	7.20	8.05	8.40	9.00
10000	16.40					7.25	7.90	8.85	9.20	9.80
10500						7.99	8.71	9.76	10.10	10.80
11000						8.77	9.56	10.70	11.10	11.90
11500						9.59	10.40	11.70	12.20	13.00
12000						10.40	11.40	12.70	13.20	14.10
12500						11.30	12.30	13.80	14.30	15.30
13000						12.30	13.40	15.00	15.50	
13500						13.20	14.40			
14000						14.20	15.20			
14500						15.20				

COL. SIZE	18"				20"				24"			
TUBE SIZE	3	3 1/2	4	5	3	3 1/2	4	5	3	3 1/2	4	5
SHAFT SIZE	1 15/16 2 3/16	2 7/16	2 11/16	2 15/16 3 11/16	1 15/16 2 3/16	2 7/16	2 11/16	2 15/16 3 11/16	1 15/16 2 3/16	2 7/16	2 11/16	2 15/16 3 11/16
GPM	COLUMN FRICTION LOSS (IN FEET) PER 100 FEET OF COLUMN											
8500	3.70	4.20	4.55	6.20	1.90	2.20	2.55	3.40				1.04
9000	4.20	4.60	5.10	6.90	2.10	2.50	2.85	3.75				1.15
9500	4.60	5.15	5.60	7.60	2.35	2.75	3.07	4.15				1.32
10000	5.00	5.60	6.20	8.35	2.55	3.00	3.45	4.55			1.08	1.40
10500	5.50	6.10	6.70	9.20	2.80	3.30	3.80	5.00		1.05	1.20	1.54
11000	6.00	6.60	7.30	10.00	3.05	3.55	4.10	5.40		1.12	1.30	1.65
11500	6.40	7.20	8.00	13.20	3.30	3.85	4.50	5.85		1.20	1.40	1.80
12000	7.00	7.80	8.60	14.00	3.55	4.20	4.85	6.30		1.32	1.50	1.94
12500	7.50	8.20	9.20	15.60	3.85	4.50	5.20	6.80	1.25	1.42	1.60	2.07
13000	8.10	9.00	10.00		4.10	4.85	5.60	7.30	1.35	1.52	1.75	2.25
13500	8.70	9.80	10.80		4.40	5.25	6.00	7.80	1.45	1.65	1.87	2.40
14000	9.30	10.50	11.50		4.75	5.60	6.40	8.40	1.55	1.75	2.00	2.57
14500	10.00	11.30	12.40		5.05	6.00	6.90	9.00	1.65	1.85	2.15	2.75
15000	10.70	12.10	13.30		5.40	6.30	7.30	9.60	1.77	2.00	2.25	2.90
15500	11.40	12.90	14.20		5.70	6.80	7.80	10.30	1.87	2.10	2.42	3.10

Notes: For open line-shaft use shaft size, for enclosed line-shaft use tube size.

'SPC' Style Cast Discharge Head Friction Loss

Loss Coeff.	Cast Iron Discharge Head Model				
	SPC-3	**SPC-4**	**SPC-6**	**SPC-8**	**SPC-10**
	0.799	**0.783**	**0.765**	**0.751**	**0.723**
L_{equiv} (ft)	**9.7**	**12.8**	**21.7**	**30.3**	**38.2**
GPM	**Head Loss (ft)**				
100	0.26				
125	0.40	0.12			
150	0.58	0.18			
175	0.78	0.24			
200	1.02	0.32			
225	1.30	0.40			
250	1.60	0.50	0.10		
275	1.93	0.60	0.12		
300	2.30	0.71	0.14		
400	4.09	1.27	0.24		
500		1.98	0.38	0.12	
600		2.86	0.55	0.17	
700		3.89	0.75	0.23	
800		5.08	0.98	0.30	0.12
900			1.24	0.39	0.15
1000			1.53	0.48	0.19
1250			2.39	0.74	0.29
1500			3.44	1.07	0.42
1750			4.69	1.46	0.57
2000				1.90	0.75
2250				2.41	0.95
2500				2.97	1.17
2750				3.60	1.42
3000				4.28	1.69
3250				5.02	1.98
3500					2.30
3750					2.64
4000					3.00
4250					3.39
4500					3.80
4750					4.23
5000					4.69

Standard-Elbow Fabricated 'SLS' Discharge Head Friction Loss 3"-24"

	Fabricated Standard Discharge Head											
Loss Coeff.	SLS-3	SLS-4	SLS-5	SLS-6	SLS-8	SLS-10	SLS-12	SLS-14	SLS-16	SLS-18	SLS-20	SLS-24
	1.371	1.238	1.209	1.088	0.939	0.859	0.799	0.761	0.797	0.691	0.801	0.642
L_{equiv} (ft)	16.6	21.4	27.5	30.9	37.8	45.4	52.6	60.3	74.1	74.0	97.3	97.0
GPM	Head Loss (ft)											
100	0.44											
125	0.69											
150	0.99	0.28										
175	1.34	0.38										
200	1.76	0.50										
225	2.22	0.64	0.25									
250	2.74	0.78	0.31									
275	3.32	0.95	0.38									
300	3.95	1.13	0.45									
400		2.01	0.80	0.35								
500		3.14	1.25	0.54								
600			1.81	0.78	0.21							
700			2.46	1.07	0.29							
800			3.21	1.39	0.38							
900			4.06	1.76	0.48	0.18						
1000				2.18	0.59	0.22						
1250				3.40	0.93	0.35	0.16					
1500					1.34	0.50	0.22					
1750					1.82	0.68	0.31	0.16				
2000					2.38	0.89	0.40	0.21				
2250					3.01	1.13	0.51	0.26	0.16			
2500						1.39	0.62	0.32	0.20			
2750						1.69	0.76	0.39	0.24			
3000						2.01	0.90	0.46	0.28	0.15		
3250						2.35	1.06	0.54	0.33	0.18		
3500						2.73	1.22	0.63	0.39	0.21	0.16	
3750							1.41	0.72	0.44	0.24	0.18	
4000							1.60	0.82	0.50	0.27	0.21	
4250							1.81	0.93	0.57	0.31	0.23	
4500							2.02	1.04	0.64	0.35	0.26	
4750							2.25	1.16	0.71	0.39	0.29	
5000							2.50	1.28	0.79	0.43	0.32	0.13
6000								1.85	1.13	0.61	0.47	0.18
7000								2.52	1.54	0.84	0.64	0.25
8000									2.02	1.09	0.83	0.32
9000									2.55	1.38	1.05	0.41
10000										1.71	1.30	0.50
12500											2.03	0.78
15000												1.13
17500												1.54
20000												2.01

Radius-Elbow Fabricated 'SLR' Discharge Head Friction Loss 3"-24"

Loss Coeff.	Fabricated Radius-Elbow Discharge Head											
	SLR-3	SLR-4	SLR-5	SLR-6	SLR-8	SLR-10	SLR-12	SLR-14	SLR-16	SLR-18	SLR-20	SLR-24
	0.688	0.574	0.543	0.521	0.468	0.416	0.396	0.383	0.357	0.352	0.335	0.324
L_{equiv}	8.3	9.9	12.3	14.8	18.8	22.0	26.1	30.3	33.3	37.7	40.7	48.9
GPM	Head Loss (ft)											
100	0.22											
125	0.34											
150	0.50	0.13										
175	0.67	0.18										
200	0.88	0.23										
225	1.12	0.29	0.11									
250	1.38	0.36	0.14									
275	1.67	0.44	0.17									
300	1.98	0.52	0.20									
400		0.93	0.36	0.17								
500		1.45	0.56	0.26								
600			0.81	0.37	0.11							
700			1.10	0.51	0.15							
800			1.44	0.67	0.19							
900			1.82	0.84	0.24	0.09						
1000				1.04	0.30	0.11						
1250				1.63	0.46	0.17	0.08					
1500					0.67	0.24	0.11					
1750					0.91	0.33	0.15	0.08				
2000					1.18	0.43	0.20	0.10				
2250					1.50	0.55	0.25	0.13	0.07			
2500						0.67	0.31	0.16	0.09			
2750						0.82	0.37	0.20	0.11			
3000						0.97	0.45	0.23	0.13	0.08		
3250						1.14	0.52	0.27	0.15	0.09		
3500						1.32	0.61	0.32	0.17	0.11	0.07	
3750							0.70	0.36	0.20	0.12	0.08	
4000							0.79	0.41	0.23	0.14	0.09	
4250							0.89	0.47	0.26	0.16	0.10	
4500							1.00	0.52	0.29	0.18	0.11	
4750							1.12	0.58	0.32	0.20	0.12	
5000							1.24	0.65	0.35	0.22	0.14	0.06
6000								0.93	0.51	0.31	0.20	0.09
7000								1.27	0.69	0.43	0.27	0.12
8000									0.91	0.56	0.35	0.16
9000									1.15	0.70	0.44	0.20
10000										0.87	0.54	0.25
12500											0.85	0.40
15000												0.57
17500												0.77
20000												1.01

Mitered-Elbow Fabricated 'SLM' Discharge Head Friction Loss 3"-24"

	Fabricated Mitered Discharge Head											
Loss Coeff.	SLM-3 0.604	SLM-4 0.495	SLM-5 0.467	SLM-6 0.448	SLM-8 0.399	SLM-10 0.351	SLM-12 0.332	SLM-14 0.321	SLM-16 0.297	SLM-18 0.293	SLM-20 0.277	SLM-24 0.268
L_{equiv}	7.3	8.5	10.6	12.7	16.1	18.5	21.9	25.4	27.7	31.4	33.7	40.5
GPM	Head Loss (ft)											
100	0.19											
125	0.30											
150	0.44	0.11										
175	0.59	0.15										
200	0.77	0.20										
225	0.98	0.25	0.10									
250	1.21	0.31	0.12									
275	1.46	0.38	0.15									
300	1.74	0.45	0.17									
400		0.80	0.31	0.14								
500		1.25	0.48	0.22								
600			0.70	0.32	0.09							
700			0.95	0.44	0.12							
800			1.24	0.57	0.16							
900			1.57	0.73	0.20	0.07						
1000				0.90	0.25	0.09						
1250				1.40	0.39	0.14	0.06					
1500					0.57	0.20	0.09					
1750					0.77	0.28	0.13	0.07				
2000					1.01	0.36	0.17	0.09				
2250					1.28	0.46	0.21	0.11	0.06			
2500						0.57	0.26	0.14	0.07			
2750						0.69	0.31	0.16	0.09			
3000						0.82	0.37	0.20	0.11	0.07		
3250						0.96	0.44	0.23	0.12	0.08		
3500						1.11	0.51	0.27	0.14	0.09	0.06	
3750							0.58	0.30	0.17	0.10	0.06	
4000							0.67	0.35	0.19	0.12	0.07	
4250							0.75	0.39	0.21	0.13	0.08	
4500							0.84	0.44	0.24	0.15	0.09	
4750							0.94	0.49	0.27	0.16	0.10	
5000							1.04	0.54	0.29	0.18	0.11	0.05
6000								0.78	0.42	0.26	0.16	0.08
7000								1.06	0.58	0.36	0.22	0.10
8000									0.75	0.46	0.29	0.13
9000									0.95	0.59	0.36	0.17
10000										0.72	0.45	0.21
12500											0.70	0.33
15000												0.47
17500												0.64
20000												0.84

Standard-Tee Fabricated 'STS' Discharge Head Friction Loss 3"-24"

	Fabricated "T" Discharge Head For Booster Can											
Loss	STS-3	STS-4	STS-5	STS-6	STS-8	STS-10	STS-12	STS-14	STS-16	STS-18	STS-20	STS-24
Coeff.	1.696	1.510	1.429	1.370	1.263	1.174	1.125	1.089	1.046	1.024	0.994	0.960
L_{equiv}	20.5	26.1	32.4	38.9	50.9	62.0	74.1	86.4	97.3	109.8	120.8	145.1
GPM	Head Loss (ft)											
100	0.54											
125	0.85											
150	1.22	0.34										
175	1.66	0.47										
200	2.17	0.61										
225	2.75	0.77	0.30									
250	3.39	0.96	0.37									
275	4.11	1.16	0.45									
300	4.89	1.38	0.53									
400		2.45	0.95	0.44								
500		3.82	1.48	0.69								
600			2.13	0.99	0.29							
700			2.91	1.34	0.39							
800			3.79	1.75	0.51							
900			4.80	2.22	0.65	0.25						
1000				2.74	0.80	0.30						
1250				4.28	1.25	0.48	0.22					
1500					1.80	0.69	0.32					
1750					2.45	0.93	0.43	0.23				
2000					3.20	1.22	0.56	0.29				
2250					4.05	1.54	0.71	0.37	0.21			
2500						1.90	0.88	0.46	0.26			
2750						2.30	1.06	0.56	0.31			
3000						2.74	1.27	0.66	0.37	0.23		
3250						3.22	1.49	0.78	0.44	0.27		
3500						3.73	1.72	0.90	0.51	0.31	0.20	
3750							1.98	1.03	0.58	0.36	0.23	
4000							2.25	1.18	0.66	0.40	0.26	
4250							2.54	1.33	0.75	0.46	0.29	
4500							2.85	1.49	0.84	0.51	0.33	
4750							3.18	1.66	0.93	0.57	0.36	
5000							3.52	1.84	1.03	0.63	0.40	0.19
6000								2.65	1.49	0.91	0.58	0.27
7000								3.60	2.03	1.24	0.79	0.37
8000									2.65	1.62	1.03	0.48
9000									3.35	2.05	1.30	0.61
10000										2.53	1.61	0.75
12500											2.52	1.17
15000												1.69
17500												2.30
20000												3.00

Velocity Head
3"-24" Pipe

GPM	Nominal Pipe Size											
	3	4	5	6	8	10	12	14	16	18	20	24
	Head Loss (ft.)											
100	0.293	0.099										
125	0.458	0.154										
150	0.659	0.222	0.090									
175	0.897	0.302	0.122									
200	1.171	0.395	0.160									
225	1.482	0.500	0.202	0.097								
250	1.830	0.617	0.250	0.120								
275	2.214	0.747	0.302	0.145								
300	2.635	0.889	0.360	0.173								
400	4.685	1.580	0.640	0.307	0.098							
500	7.321	2.469	1.000	0.479	0.153							
600	10.542	3.555	1.439	0.690	0.220							
700		4.839	1.959	0.940	0.300	0.118						
800		6.320	2.559	1.227	0.391	0.154						
900		7.999	3.239	1.553	0.495	0.195	0.098					
1000		9.875	3.998	1.917	0.611	0.240	0.121					
1250			6.248	2.996	0.955	0.376	0.190	0.132				
1500			8.997	4.314	1.376	0.541	0.273	0.189	0.108			
1750				5.872	1.872	0.736	0.372	0.258	0.147	0.090		
2000				7.669	2.446	0.962	0.486	0.337	0.192	0.117		
2250				9.707	3.095	1.217	0.615	0.426	0.243	0.148	0.096	
2500					3.821	1.503	0.759	0.526	0.300	0.183	0.118	
2750					4.624	1.818	0.918	0.637	0.363	0.222	0.143	
3000					5.502	2.164	1.093	0.758	0.432	0.264	0.170	
3250					6.458	2.540	1.283	0.889	0.507	0.309	0.200	0.094
3500					7.489	2.945	1.487	1.031	0.588	0.359	0.231	0.109
3750					8.598	3.381	1.708	1.184	0.675	0.412	0.266	0.125
4000					9.782	3.847	1.943	1.347	0.767	0.469	0.302	0.142
4250						4.343	2.193	1.520	0.866	0.529	0.341	0.160
4500						4.869	2.459	1.704	0.971	0.593	0.383	0.180
4750						5.425	2.740	1.899	1.082	0.661	0.426	0.200
5000						6.011	3.036	2.104	1.199	0.733	0.472	0.222
6000						8.655	4.371	3.030	1.727	1.055	0.680	0.320
7000							5.950	4.124	2.350	1.436	0.926	0.435
8000							7.771	5.387	3.070	1.875	1.209	0.568
9000							9.836	6.818	3.885	2.373	1.530	0.719
10000								8.417	4.797	2.930	1.889	0.888
12500									7.495	4.578	2.952	1.387
15000									10.793	6.593	4.251	1.998
17500										8.973	5.786	2.719
20000											7.557	3.551
22500											9.565	4.495
25000												5.549
27500												6.714
30000												7.991

Threaded Line-shaft Limits (Carbon Steel)

Shaft Size (in.)	RPM	Pump Thrust (lb.)								
		0 – 4000	6000	8000	10000	15000	20000	25000	30000	40000
		Maximum Allowable Horsepower								
7/8	1160	26								
	1770	40								
	3450	78								
1	1160	42	41							
	1770	64	63							
	3450	125	122							
1 3/16	700	40	39	38						
	880	50	49	48						
	1160	66	65	64						
	1770	100	99	97						
	3450	196	193	190						
1 1/4	700	48	47	46						
	880	60	59	58						
	1160	79	78	77						
	1770	120	119	117						
	3450	234	232	229						
1 1/2	700	89	89	88	88					
	880	112	112	111	110					
	1160	148	148	147	145					
	1770	226	225	224	222					
	3450	441	439	436	433					
1 11/16	700	133	133	132	132	130				
	880	167	167	166	166	163				
	1160	221	220	219	218	215				
	1770	337	336	334	333	328				
	3450	656	654	652	649	639				
1 15/16	700	211	210	210	209	208	205			
	880	265	264	264	263	261	258			
	1160	349	349	348	347	344	340			
	1770	533	532	531	530	525	519			
2 3/16	700	314	313	313	313	311	309	306		
	880	394	394	394	393	391	388	385		
	1160	520	519	519	518	515	512	507		
	1770	793	792	792	790	786	781	774	765	
2 7/16	700	446	445	445	445	443	441	439	436	
	880	560	560	560	559	557	555	552	548	
	1160	738	738	738	737	735	731	727	722	
	1770	1127	1126	1125	1124	1121	1116	1110	1102	
2 11/16	700	610	610	610	609	608	606	604	601	594
	880	767	767	767	766	765	762	759	756	747
	1160	1011	1011	1010	1010	1008	1005	1001	996	985
	1770	1543	1542	1542	1541	1538	1533	1528	1521	1502
2 15/16	700	773	773	773	773	772	770	768	765	759
	880	972	972	972	971	970	968	965	962	954
	1160	1282	1281	1281	1281	1279	1276	1272	1268	1257
	1770	1956	1955	1955	1954	1951	1947	1942	1935	1919

Note: ratings per AWWA E103 specifications

v21.1

Material	Shaft Correction Factor
C1045	1.00
416 HT	1.12
304	0.53
316	0.59
17-4 PH	1.64
Alloy 20	0.82
Nitronic 50	0.97

v21.1

Threaded Coupling Limits (Carbon Steel)

Coupling Size (in.)	RPM	Pump Thrust (lb.)								
		0 – 4000	6000	8000	10000	15000	20000	25000	30000	40000
		Maximum Allowable Horsepower								
7/8	1160	20								
	1770	30								
	3450	58								
1	1160	50	46							
	1770	76	70							
	3450	148	137							
1 3/16	700	50	48	45						
	880	63	60	57						
	1160	83	80	75						
	1770	126	121	115						
	3450	246	237	224						
1 1/4	700	44	41	38						
	880	55	52	48						
	1160	72	69	63						
	1770	110	105	97						
	3450	215	204	188						
1 1/2	700	90	88	86	83					
	880	113	111	108	105					
	1160	149	146	143	138					
	1770	227	223	218	210					
	3450	443	435	424	410					
1 11/16	700	110	109	106	103	93				
	880	138	136	134	130	117				
	1160	182	180	176	171	154				
	1770	278	274	269	262	235				
	3450	542	535	524	510	458				
1 15/16	700	164	162	161	158	149	136			
	880	206	204	202	199	188	171			
	1160	271	269	266	262	247	225			
	1770	414	411	406	400	377	343			
2 3/16	700	330	329	328	326	320	312	301		
	880	415	414	412	410	403	392	379		
	1160	547	545	543	541	531	517	499		
	1770	835	832	829	825	810	789	762		
2 7/16	700	571	571	570	568	564	558	550	540	
	880	718	717	716	715	709	701	691	679	
	1160	947	946	944	942	935	925	911	895	
	1770	1445	1443	1440	1437	1426	1411	1391	1365	
2 11/16	700	779	778	777	776	772	767	760	751	728
	880	979	978	977	976	971	964	955	944	916
	1160	1291	1290	1288	1286	1280	1271	1259	1245	1207
	1770	1970	1968	1966	1963	1953	1939	1921	1899	1842
2 15/16	700	1035	1035	1034	1033	1029	1024	1018	1010	990
	880	1301	1301	1300	1298	1294	1288	1280	1270	1245
	1160	1715	1714	1713	1711	1706	1698	1687	1674	1641
	1770	2617	2616	2614	2611	2603	2590	2574	2554	2503

Note: Ratings per AWWA E103 specifications

v21.1

Material	Coupling Correction Factor
C1215	1.00
1018 CR	0.81
416 HT	1.40
304	0.66
316	0.74
17-4 PH	2.04
Alloy 20	1.02
Nitronic 50	1.21

v21.1

Mechanical Friction

Shaft Size (in.)	RPM									
	3450	2875	1770	1475	1160	965	880	730	700	580
	Line-Shaft Mechanical Friction Loss (HP per 100 feet)									
7/8	1.14	0.66	0.15	0.09						
1	1.70	0.98	0.23	0.13						
1 3/16	2.84	1.64	0.38	0.22	0.11					
1 1/4	3.31	1.92	0.45	0.26	0.13					
1 1/2	5.73	3.32	0.78	0.45	0.22	0.13	0.10			
1 11/16	8.16	4.73	1.11	0.64	0.31	0.18	0.14			
1 15/16	12.36	7.16	1.68	0.97	0.48	0.27	0.21	0.12	0.11	
2 3/16	17.79	10.31	2.42	1.40	0.68	0.40	0.30	0.17	0.15	0.09
2 7/16	24.63	14.27	3.35	1.94	0.95	0.55	0.42	0.24	0.21	0.12
2 11/16	33.01	19.13	4.49	2.60	1.27	0.73	0.56	0.32	0.28	0.16
2 15/16	43.11	24.98	5.86	3.40	1.66	0.96	0.73	0.42	0.37	0.21

Material	HP Correction Factor
Bronze	1.00
Aluminum Bronze	1.12
Carbon Graphite	0.34
Nitrile / Neoprene	1.56
Engineered Plastics	0.20

$$\textbf{Motor Thrust Bearing HP Loss} = \frac{\text{TOTAL THRUST X RPM X .0075}}{\text{100,000}}$$

Shaft Elongation
(C1045)

HYD. Thrust	Shaft Diameter (in.)										
	7/8	1	1 3/16	1 1/4	1 1/2	1 11/16	1 15/16	2 3/16	2 7/16	2 11/16	2 15/16
	Shaft Elongation (inches per 100 ft.)										
200	0.013	0.010	0.007	0.007							
400	0.027	0.021	0.015	0.013	0.009	0.007					
600	0.040	0.031	0.022	0.020	0.014	0.011	0.008	0.006			
800	0.054	0.041	0.029	0.026	0.018	0.014	0.011	0.009	0.007	0.006	
1000	0.067	0.051	0.036	0.033	0.023	0.018	0.014	0.011	0.009	0.007	0.006
1200	0.081	0.062	0.044	0.040	0.027	0.022	0.016	0.013	0.010	0.009	0.007
1400	0.094	0.072	0.051	0.046	0.032	0.025	0.019	0.015	0.012	0.010	0.008
1600	0.108	0.082	0.058	0.053	0.037	0.029	0.022	0.017	0.014	0.011	0.010
1800	0.121	0.093	0.066	0.059	0.041	0.033	0.025	0.019	0.016	0.013	0.011
2000	0.134	0.103	0.073	0.066	0.046	0.036	0.027	0.022	0.017	0.014	0.012
2400	0.161	0.123	0.088	0.079	0.055	0.043	0.033	0.026	0.021	0.017	0.014
2800	0.188	0.144	0.102	0.092	0.064	0.051	0.038	0.030	0.024	0.020	0.017
3200	0.215	0.165	0.117	0.105	0.073	0.058	0.044	0.034	0.028	0.023	0.019
3600	0.242	0.185	0.131	0.119	0.082	0.065	0.049	0.039	0.031	0.026	0.021
4000	0.269	0.206	0.146	0.132	0.091	0.072	0.055	0.043	0.035	0.028	0.024
4400	0.296	0.226	0.161	0.145	0.101	0.079	0.060	0.047	0.038	0.031	0.026
4800	0.323	0.247	0.175	0.158	0.110	0.087	0.066	0.052	0.042	0.034	0.029
5200	0.349	0.268	0.190	0.171	0.119	0.094	0.071	0.056	0.045	0.037	0.031
5600	0.376	0.288	0.204	0.184	0.128	0.101	0.077	0.060	0.048	0.040	0.033
6000	0.403	0.309	0.219	0.198	0.137	0.108	0.082	0.065	0.052	0.043	0.036
6500	0.437	0.334	0.237	0.214	0.149	0.117	0.089	0.070	0.056	0.046	0.039
7000	0.470	0.360	0.255	0.230	0.160	0.126	0.096	0.075	0.061	0.050	0.042
7500	0.504	0.386	0.274	0.247	0.171	0.135	0.103	0.081	0.065	0.053	0.045
8000	0.538	0.412	0.292	0.263	0.183	0.145	0.110	0.086	0.069	0.057	0.048
9000					0.206	0.163	0.123	0.097	0.078	0.064	0.054
10000					0.229	0.181	0.137	0.108	0.087	0.071	0.060
12500					0.286	0.226	0.171	0.134	0.108	0.089	0.075
15000					0.343	0.271	0.206	0.161	0.130	0.107	0.089
17500					0.400	0.316	0.240	0.188	0.152	0.125	0.104
20000					0.457	0.361	0.274	0.215	0.173	0.142	0.119
22500								0.242	0.195	0.160	0.134
25000								0.269	0.216	0.178	0.149
27500										0.196	0.164
30000										0.214	0.179
32500										0.231	0.194
35000										0.249	0.209
37500										0.267	0.224
40000										0.285	0.238

Note: Multiply elongation by appropriate correction factor for alternate material

v18.1

Material	Shaft Correction Factor
416 HT	1.02
316	1.06
17-4 PH	1.00
Alloy 20	1.06
Nitronic 50	1.06

v18.1

Column Elongation
(With Enclosing Tube)

Column Size (wall thickness)	3 (.216)	4 (.237)	5 (.258)	6 (.280)	6 (.280)	8 (.277)	8 (.277)	10 (.279)	10 (.279)	12 (.330)	12 (.330)	14 (.375)	16 (.375)
Encl. Tube (sch. 80)	1-1/4	1-1/2	1-1/2	2	2-1/2	2	2-1/2	2-1/2	3	2-1/2	3	3-1/2	3-1/2
HYD. Thrust	Column Assy. Elongation (inches per 100 ft.)												
500	0.007	0.005	0.004	0.003									
600	0.008	0.006	0.005	0.004									
800	0.011	0.008	0.006	0.005	0.004	0.004							
1000	0.013	0.010	0.008	0.006	0.005	0.005	0.004						
1200	0.016	0.012	0.009	0.007	0.006	0.006	0.005	0.004					
1400	0.019	0.014	0.011	0.008	0.007	0.007	0.006	0.005	0.005				
1600	0.021	0.016	0.012	0.009	0.008	0.008	0.007	0.006	0.005				
1800	0.024	0.018	0.014	0.011	0.010	0.009	0.008	0.007	0.006	0.005			
2000	0.027	0.020	0.015	0.012	0.011	0.009	0.009	0.007	0.007	0.005	0.005		
2400	0.032	0.023	0.019	0.014	0.013	0.011	0.010	0.009	0.008	0.007	0.006		
2800	0.037	0.027	0.022	0.016	0.015	0.013	0.012	0.010	0.010	0.008	0.007	0.006	
3200	0.043	0.031	0.025	0.019	0.017	0.015	0.014	0.012	0.011	0.009	0.008	0.007	0.006
3600	0.048	0.035	0.028	0.021	0.019	0.017	0.016	0.013	0.012	0.010	0.009	0.008	0.007
4000		0.039	0.031	0.023	0.021	0.019	0.017	0.014	0.014	0.011	0.010	0.008	0.007
4400		0.043	0.034	0.026	0.023	0.021	0.019	0.016	0.015	0.012	0.011	0.009	0.008
4800		0.047	0.037	0.028	0.025	0.023	0.021	0.017	0.016	0.013	0.012	0.010	0.009
5200		0.051	0.040	0.030	0.027	0.025	0.023	0.019	0.018	0.014	0.014	0.011	0.010
5600		0.055	0.043	0.033	0.030	0.027	0.024	0.020	0.019	0.015	0.015	0.012	0.010
6000			0.046	0.035	0.032	0.028	0.026	0.022	0.020	0.016	0.016	0.013	0.011
6500			0.050	0.038	0.034	0.031	0.028	0.024	0.022	0.018	0.017	0.014	0.012
7000			0.054	0.041	0.037	0.033	0.030	0.025	0.024	0.019	0.018	0.015	0.013
7500			0.058	0.044	0.040	0.036	0.033	0.027	0.025	0.021	0.020	0.016	0.014
8000			0.062	0.047	0.042	0.038	0.035	0.029	0.027	0.022	0.021	0.017	0.015
9000				0.053	0.048	0.043	0.039	0.033	0.031	0.025	0.023	0.019	0.017
10000				0.059	0.053	0.047	0.043	0.036	0.034	0.027	0.026	0.021	0.019
12000				0.070	0.063	0.057	0.052	0.043	0.041	0.033	0.031	0.025	0.022
14000				0.082	0.074	0.066	0.061	0.051	0.048	0.038	0.036	0.029	0.026
16000				0.094	0.085	0.076	0.070	0.058	0.054	0.044	0.042	0.034	0.030
18000					0.095	0.085	0.078	0.065	0.061	0.049	0.047	0.038	0.034
20000					0.106	0.095	0.087	0.072	0.068	0.055	0.052	0.042	0.037
22000					0.116	0.104	0.096	0.080	0.075	0.060	0.057	0.046	0.041
24000						0.114	0.104	0.087	0.081	0.066	0.062	0.050	0.045
26000							0.113	0.094	0.088	0.071	0.068	0.055	0.049
28000								0.101	0.095	0.077	0.073	0.059	0.052
30000								0.109	0.102	0.082	0.078	0.063	0.056

Column Elongation
(Without Enclosing Tube)

Column Size (wall thickness)	3 (.216)	4 (.237)	5 (.258)	6 (.280)	8 (.277)	10 (.279)	12 (.330)	14 (.375)	16 (.375)
HYD. Thrust	**Column Elongation (inches per 100 ft.)**								
500	0.009	0.007	0.005	0.004					
600	0.011	0.008	0.006	0.004					
800	0.015	0.010	0.008	0.006	0.005	0.004			
1000	0.019	0.013	0.010	0.007	0.006	0.005			
1200	0.022	0.016	0.012	0.009	0.007	0.005	0.004		
1400	0.026	0.018	0.013	0.010	0.008	0.006	0.004	0.004	
1600	0.030	0.021	0.015	0.012	0.009	0.007	0.005	0.004	0.004
1800	0.033	0.023	0.017	0.013	0.010	0.008	0.006	0.005	0.004
2000	0.037	0.026	0.019	0.015	0.011	0.009	0.006	0.005	0.004
2400	0.045	0.031	0.023	0.018	0.014	0.011	0.008	0.006	0.005
2800	0.052	0.037	0.027	0.021	0.016	0.013	0.009	0.007	0.006
3200	0.059	0.042	0.031	0.024	0.018	0.014	0.010	0.008	0.007
3600	0.067	0.047	0.035	0.027	0.021	0.016	0.012	0.009	0.008
4000	0.074	0.052	0.038	0.030	0.023	0.018	0.013	0.010	0.009
4400	0.082	0.057	0.042	0.033	0.025	0.020	0.014	0.011	0.010
4800	0.089	0.063	0.046	0.036	0.027	0.022	0.015	0.012	0.011
5200	0.097	0.068	0.050	0.039	0.030	0.023	0.017	0.013	0.012
5600	0.104	0.073	0.054	0.042	0.032	0.025	0.018	0.014	0.013
6000		0.078	0.058	0.044	0.034	0.027	0.019	0.015	0.013
6500		0.085	0.063	0.048	0.037	0.029	0.021	0.017	0.015
7000		0.091	0.067	0.052	0.040	0.032	0.022	0.018	0.016
7500		0.098	0.072	0.056	0.043	0.034	0.024	0.019	0.017
8000		0.104	0.077	0.059	0.046	0.036	0.026	0.021	0.018
9000			0.087	0.067	0.051	0.041	0.029	0.023	0.020
10000			0.096	0.074	0.057	0.045	0.032	0.026	0.022
12000				0.089	0.068	0.054	0.039	0.031	0.027
14000				0.104	0.080	0.063	0.045	0.036	0.031
16000					0.091	0.072	0.051	0.041	0.036
18000					0.103	0.081	0.058	0.046	0.040
20000						0.090	0.064	0.052	0.045
22000						0.099	0.071	0.057	0.049
24000						0.108	0.077	0.062	0.054
26000							0.084	0.067	0.058
28000							0.090	0.072	0.063
30000							0.096	0.077	0.067

Selection/Calculation Guide

Customer _____ Job _____ Date _____

CONDITIONS

☐ Well _____ dia.
☐ Sump or Tank
☐ Can _____ dia.
☐ Open Water Body
} Depth _____

Pump type
☐ line-shaft
☐ submersible

Lubrication
☐ oil
☐ product
☐ water flushed

Seal type
☐ packing
☐ mechnical

_____ **GPM(A)**
_____ **RPM**
_____ TPL
_____ Water Temp
_____ Elevation

_____' **Setting** of _____" Column _____" Tube _____" Shaft _____" Sleeve OD
_____ Bowl Model **# of stages** _____ _____ OD _____ Impeller Diameter
_____ Motor HP ____ PH _____ Volts _____ Hertz _____ Cable Size (submersible)

$$\frac{\text{\_\_\_\_ PSI x 2.31}}{\text{\_\_\_\_specific gravity}} =$$

_____ Static Water Level
_____ Drawdown
_____ Head above Discharge
_____ Pressure in Feet

(B) _____ **Field Head**
_____ Column Friction Loss
_____ Elbow Friction Loss
_____ Velocity Head Loss

_____ specific gravity x **(C)** _____ **TDH** x _____ K Factor =

Coupling Weight _____ #
Shaft Weight _____ #
Impeller Weight _____ #
Total Hydraulic Thrust _____ #
Total Thrust Load _____ #

A	B	C	D	E	F	*G	H	I	J	K	L
GPM	Field Head	TDH	Head per Stage	Bowl Eff.	Lab. HP	Shaft or Cable Loss in HP	Thrust Loss in HP	Total HP	Field Eff.	Motor Eff.	Wire to Water Eff.

A = Customer Specifications
B = Customer Specifications - Calculated as above
C = Field Head plus losses - Calculated as above
D = C / number of stages
E = Determined from performance curve
F = (A x C x specific gravity) / (3960xE)

***G** = Refer to Engineering Data
Lineshaft Pump (502-11)
Submersible Pump (501-3)
(use the larger of shaft or sleeve ø)
H = (total thrust load x RPM x .0075) / 100,000 (this is an average for most motors)

I = F + G + H
J = (A x B x specific gravity) / (3960 x I)
K = Per Motor Manufacturer
L = J x K
NOTE: Convert all percentages to decimals.

DETERMINING PROPER IMPELLER SETTING

From the above data use the **Total Hydraulic Thrust** rating to determine the elongation in inches per 100' of shaft and column.

Shaft Stretch (502-12) = (_____' setting x _____" shaft elongation per 100') / 100 = _____"

Column Stretch (502-13 & 14) = (_____' setting x _____" column elongation per 100') / 100 = _____"

Impeller Setting (500-10 & 11) = _____"

Total Shaft Adjustment = Shaft Stretch - Column Stretch + Impeller Setting = _____"

NOTE: Turn adjusting nut until impellers turn freely - then make the calculated **Total Shaft Adjustment** per SIMFLO IOM.

Cost of Pumping Water

1. If the cost of operation per hour is desired, power consumption may be used:

Cost per hour = Kilowatts consumed x Cost per KW hour

2. The cost of operation may be estimated by determining the input horsepower and converting it to kilowatts:

Cost per hour of operation = Input Horsepower x .746 x Cost per KW hour

3. A less accurate estimate may be made by using the following formula:

$$\text{Cost per hour of operation} = \frac{\text{GPM x Total head x .746 x Cost per KW Hour}}{\text{3960 x Overall Pump efficiency x Motor efficiency}}$$

4. It is often desirable to express the cost of operating a pump in terms of "Cost per 1000 gallons". To do this the above figures of Cost per hour of operation may be used with the capacity of the pump as follows:

$$\text{Cost per 1000 gallons} = \frac{\text{Cost per Hour x 1000}}{\text{Gallons pumped per hour}}$$

5. For convenience the following table may be used to estimate the power consumption and cost of operation when the overall efficiencies are known. The table gives power consumed pumping 1000 GPM at one foot total head at various overall pump efficiencies.

Overall Efficiency of Pump Unit	Kilowatts per 1000 Gallons at 1 ft Total Head	Overall Efficiency of Pump Unit	Kilowatts per 1000 Gallons at 1 ft Total Head	Overall Efficiency of Pump Unit	Kilowatts per 1000 Gallons at 1 ft Total Head
36	.00871	53	.00592	70	.00448
37	.00858	54	.00581	71	.00442
38	.00826	55	.00570	72	.00435
39	.00804	56	.00560	73	.00430
40	.00784	57	.00550	74	.00424
41	.00765	58	.00541	75	.00418
42	.00747	59	.00532	76	.00413
43	.00730	60	.00523	77	.00407
44	.00713	61	.00514	78	.00402
45	.00697	62	.00506	79	.00397
46	.00682	63	.00498	80	.00392
47	.00667	64	.00490	81	.00387
48	.00653	65	.00482	82	.00382
49	.00640	66	.00475	83	.00378
50	.00627	67	.00468	84	.00373
51	.00615	68	.00461	85	.00369
52	.00603	69	.00454		

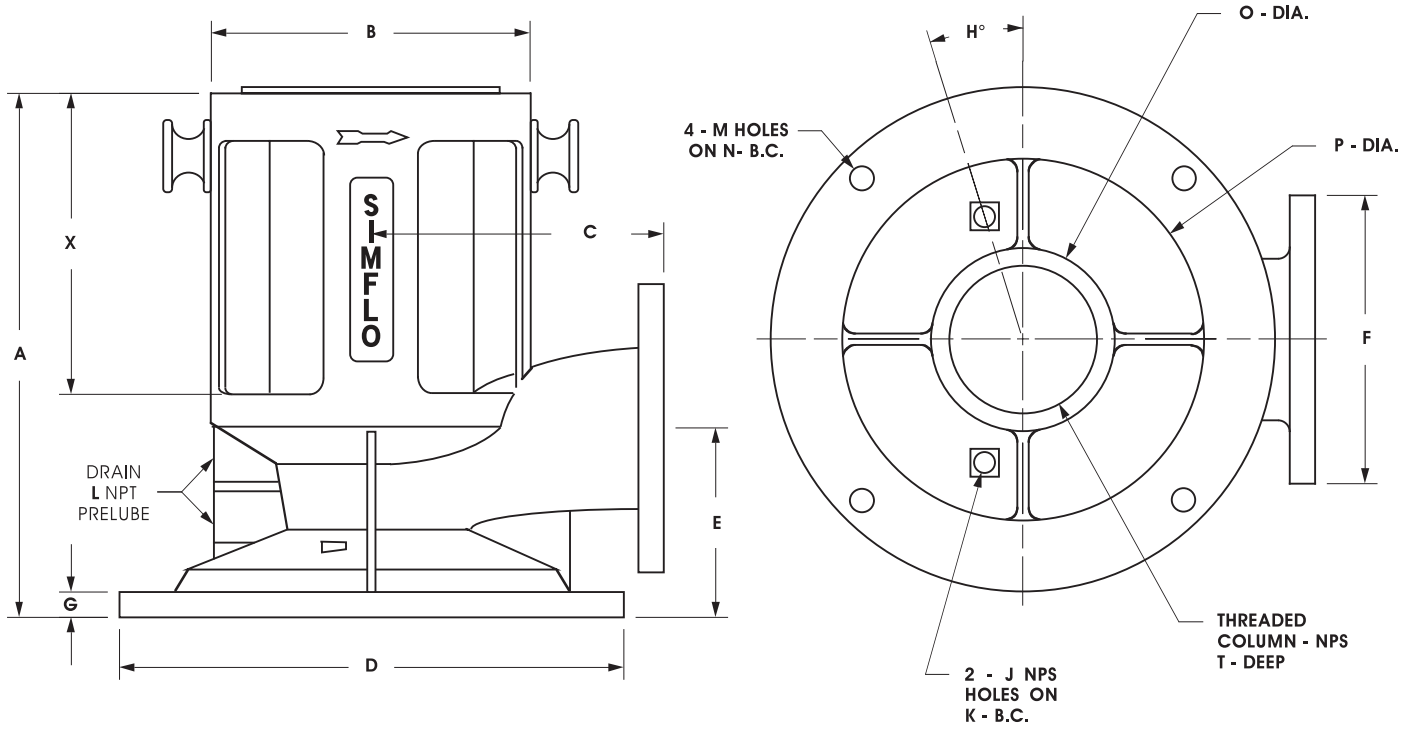
Overall Efficiency as indicated is the input-output efficiency including all losses in the pump unit, pumping 1000 gallons of clear water one foot total head. Therefore, in determining the kilowatts per 1000 gallons pumped, it is only necessary to multiply the factor corresponding to the overall efficiency by the number of feet head at which the total dynamic head has been calculated.

Booster Can Selection Chart

Bowl Size	Booster Can Size														
	5	6	8	10	12	14	16	18	20	24	30	36	42	48	54
	Maximum Recommended GPM														
4	135	266													
5		112	460												
6			356	831											
7			164	638	1156										
8				511	1029	1389	2087								
9					684	1044	1742								
10					518	878	1576	2372							
11						530	1228	2024	2918						
12						356	1084	1880	2774						
14								1243	2137	4219					
16									1689	3771	7450				
20										2081	5760	10462			
24											5355	8237	13821		
28													11656	18121	25468

- Data based on maximum velocity of 5'/second past the bowl assembly.

'SPC' Style Cast Discharge Head



Model Number	Size	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	T	X	Wt. (#)
SPC-3	3	16.75	10.0	7.50	13.50	5.25	7.5	0.75	19.5	1/2	7.50	1/2	.75	11.75	6.00	9.00	1.38	9.38	87
SPC-4	4	16.50	10.0	9.13	16.00	6.00	9.0	0.81	18.5	1/2	7.50	3/4	.75	14.25	5.75	11.25	1.38	9.50	145
SPC-6	6	20.13	16.5	11.50	20.88	7.00	11.0	1.00	20.0	3/4	11.25	3/4	.75	18.75	8.50	14.50	1.75	11.56	300
SPC-8	8	22.31	16.5	13.13	23.88	8.50	13.5	1.00	20.0	1	13.00	3/4	.88	21.25	10.50	16.50	1.75	12.13	395
SPC-10	10	26.00	20.0	15.00	27.25	11.00	16.0	1.13	24.0	1	16.75	3/4	.88	25.00	12.50	20.50	2.50	13.25	595

v21.1

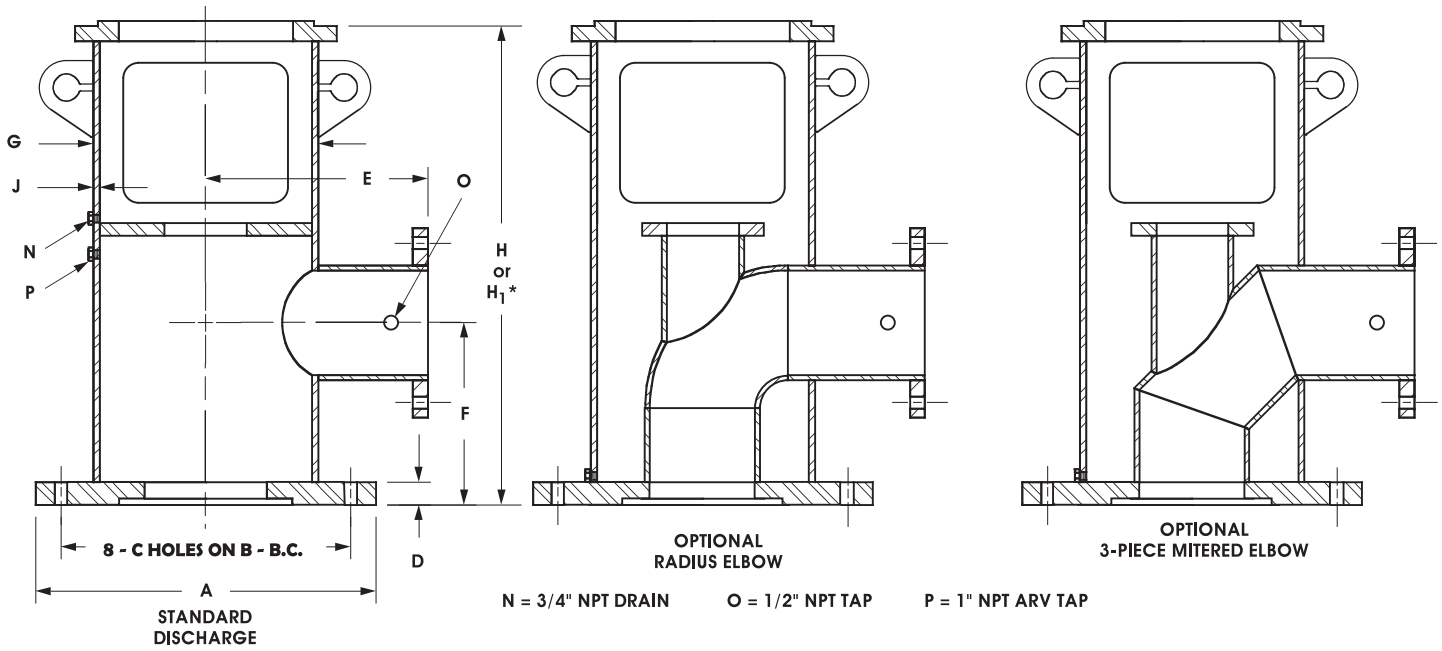
NOTE: "F" outlet flange is drilled to match 150# ANSI flange, except for SPC-3, which is drilled to match 300# ANSI flange
Optional 300# ANSI outlet flange is available on SPC-4, SPC-6, and SPC-8.
SPC-10 is only available with 150# ANSI outlet flange.

All heads listed are of 65-45-12 Ductile Iron construction

SPC-3 is available with optional 8" ANSI 150# base plate drilling for booster can use.
SPC-4 is available with optional 10" ANSI 150# base plate drilling for booster can use.
SPC-6 is available with optional 14" ANSI 150# base plate drilling for booster can use.
SPC-8 is available with optional 16" ANSI 150# base plate drilling for booster can use.
SPC-10 is available with optional 20" ANSI 150# base plate drilling for booster can use.

NOTE: DIMENSIONS ARE IN INCHES AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Fabricated Elbow
'SL' Style
Discharge Head



N = 3/4" NPT DRAIN O = 1/2" NPT TAP P = 1" NPT ARV TAP

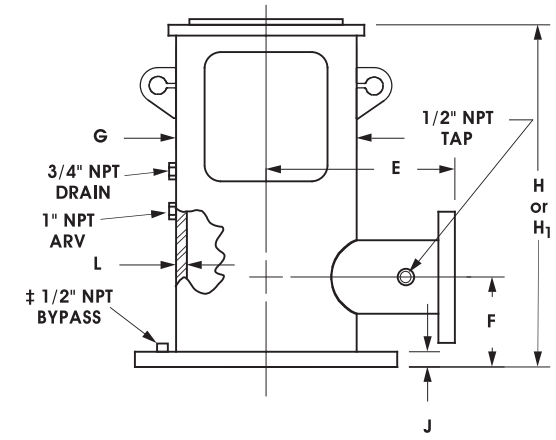
Model	Driver B.D.	Disch. & Col. Size	A	B	C	D	E	F	G	H	H_1	J
SL-3	10 to 12	3	16.00	14.25	0.75	1.13	11.00	6.00	10.75	19.00	H1 dimension must be specified when using a spacer type flanged motor coupling and will vary according to coupling size and sealing arrangement. Consult factory.	0.37
SL-4	10 to 12	4	16.00	14.25	0.75	1.13	11.00	6.50	10.75	21.00		0.37
SL-5	10 to 12	5	19.00	17.00	0.88	1.38	12.00	7.00	12.75	24.00		0.38
SL-5	16	5	19.00	17.00	0.88	1.38	12.00	7.00	14.00	24.00		0.38
SL-6	10 to 12	6	21.00	18.75	0.88	1.38	12.00	8.00	12.75	25.00		0.38
SL-6	16	6	21.00	18.75	0.88	1.38	12.00	8.00	14.00	25.00		0.38
SL-8	10 to 12	8	27.50	25.00	0.88	1.38	16.00	9.00	14.00	28.00		0.38
SL-8	16 to 20	8	27.50	25.00	0.88	1.38	16.00	9.00	14.00	28.00		0.38
SL-8	24	8	27.50	25.00	0.88	1.38	16.00	9.00	14.00	28.00		0.38
SL-10	10 to 12	10	32.00	29.50	1.00	1.38	18.00	10.00	14.00	30.00		0.38
SL-10	16 to 20	10	32.00	29.50	1.00	1.38	18.00	10.00	16.00	30.00		0.38
SL-10	24	10	32.00	29.50	1.00	1.38	18.00	10.00	18.00	30.00		0.38
SL-10	30	10	32.00	29.50	1.00	1.38	18.00	10.00	24.00	30.00		0.50
SL-12	16 to 20	12	32.00	29.50	1.00	1.38	18.00	12.00	18.00	33.00		0.38
SL-12	24	12	32.00	29.50	1.00	1.38	18.00	12.00	18.00	33.00		0.38
SL-12	30	12	32.00	29.50	1.00	1.38	18.00	12.00	24.00	33.00		0.50
SL-14	16 to 20	14	34.25	31.75	1.13	1.88	21.00	13.00	18.00	35.00		0.38
SL-14	24	14	34.25	31.75	1.13	1.88	21.00	13.00	20.00	35.00		0.38
SL-14	30	14	34.25	31.75	1.13	1.88	21.00	13.00	24.00	35.00		0.50
SL-16	16 to 24	16	36.50	34.00	1.13	1.88	21.00	14.00	24.00	37.00		0.50
SL-16	30	16	36.50	34.00	1.13	1.88	21.00	14.00	24.00	37.00		0.50
SL-18	16 to 24	18	36.50	34.00	1.12	1.88	23.00	16.00	24.00	41.00		0.50
SL-18	30	18	36.50	34.00	1.12	1.88	23.00	16.00	24.00	41.00		0.50
SL-20	16 to 24	20	43.75	40.50	1.62	1.88	25.00	18.00	24.00	44.00		0.50
SL-20	30	20	43.75	40.50	1.62	1.88	25.00	18.00	24.00	44.00		0.50
SL-20	36	20	43.75	40.50	1.62	1.88	25.00	18.00	30.00	44.00		0.50
SL-24	16 to 24	24	43.75	40.50	1.62	2.38	25.00	20.00	30.00	48.00		0.50
SL-24	30	24	43.75	40.50	1.62	2.38	25.00	20.00	30.00	48.00		0.50
SL-24	36	24	43.75	40.50	1.62	2.38	25.00	20.00	30.00	48.00		0.50

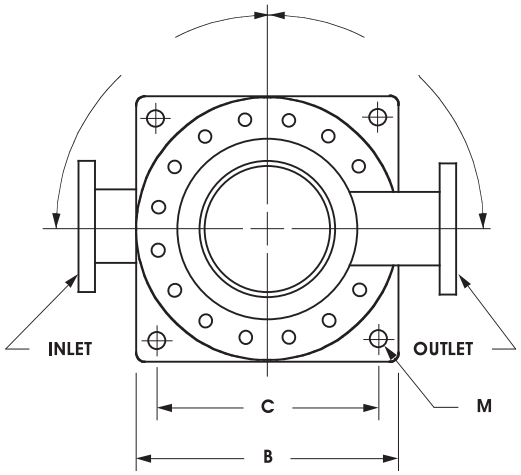
v21.1

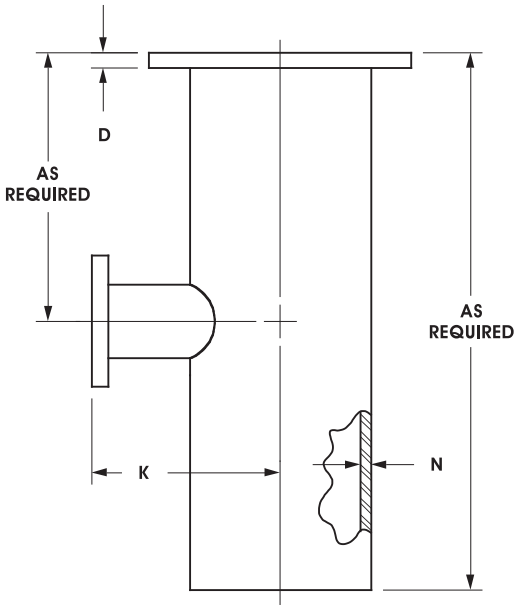
NOTE: DIMENSIONS ARE IN INCHES AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

SIMFLO®

Fabricated Elbow
'SL' Style
Discharge Head
For Booster Can







Model	Driver B.D.	Disch. & Col. Size	E	F	G*	H	H_1	J	L
SL-3	10 to 12	3	Consult Factory	6.00	10.75	19.00	Consult Factory	1.13	0.37
SL-4	10 to 12	4		6.50	10.75	21.00		1.13	0.37
SL-5	10 to 12	5		7.00	12.75	24.00		1.38	0.38
SL-5	16	5		7.00	14.00	24.00		1.38	0.38
SL-6	10 to 12	6		8.00	12.75	25.00		1.38	0.38
SL-6	16	6		8.00	14.00	25.00		1.38	0.38
SL-8	10 to 12	8		9.00	14.00	28.00		1.38	0.38
SL-8	16 to 20	8		9.00	14.00	28.00		1.38	0.38
SL-8	24	8		9.00	14.00	28.00		1.38	0.38
SL-10	10 to 12	10		10.00	14.00	30.00		1.38	0.38
SL-10	16 to 20	10		10.00	16.00	30.00		1.38	0.38
SL-10	24	10		10.00	18.00	30.00		1.38	0.38
SL-10	30	10		10.00	24.00	30.00		1.38	0.50
SL-12	16 to 20	12		12.00	18.00	33.00		1.38	0.38
SL-12	24	12		12.00	18.00	33.00		1.38	0.38
SL-12	30	12		12.00	24.00	33.00		1.38	0.50
SL-14	16 to 20	14		13.00	18.00	35.00		1.88	0.38
SL-14	24	14		13.00	20.00	35.00		1.88	0.38
SL-14	30	14		13.00	24.00	35.00		1.88	0.50
SL-16	16 to 24	16		14.00	24.00	37.00		1.88	0.50
SL-16	30	16		14.00	24.00	37.00		1.88	0.50
SL-18	16 to 24	18		16.00	24.00	41.00		1.88	0.50
SL-18	30	18		16.00	24.00	41.00		1.88	0.50
SL-20	16 to 24	20		18.00	24.00	44.00		1.88	0.50
SL-20	30	20		18.00	24.00	44.00		1.88	0.50
SL-20	36	20		18.00	30.00	44.00		1.88	0.50
SL-24	16 to 24	24		20.00	30.00	48.00		2.38	0.50
SL-24	30	24		20.00	30.00	48.00		2.38	0.50
SL-24	36	24		20.00	30.00	48.00		2.38	0.50

v21.1

Can Dia.	B	C	D	K	M	N
8.75	13.50	11.50	1.00	9.00	0.63	0.32
10.75	16.00	13.00	1.13	11.00	0.88	0.37
12.75	19.00	16.00	1.13	12.00	0.88	0.33
14.00	21.00	18.00	1.13	12.00	0.88	0.38
16.00	23.50	20.00	1.38	14.00	1.13	0.38
18.00	25.00	22.00	1.38	15.00	1.13	0.38
20.00	27.50	24.00	1.38	16.00	1.13	0.38
24.00	32.00	28.00	1.38	18.00	1.13	0.38
30.00	38.75	34.00	1.88	21.00	1.25	0.38
36.00	46.00	40.00	1.88	24.00	1.25	0.38
48.00	59.50	53.50	1.88	30.00	1.25	0.38

v21.1

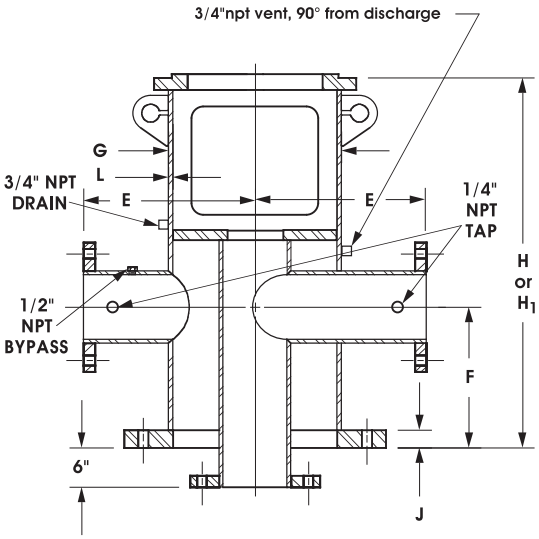
‡ Bypass may be located outside of discharge housing, if permissible by can size.

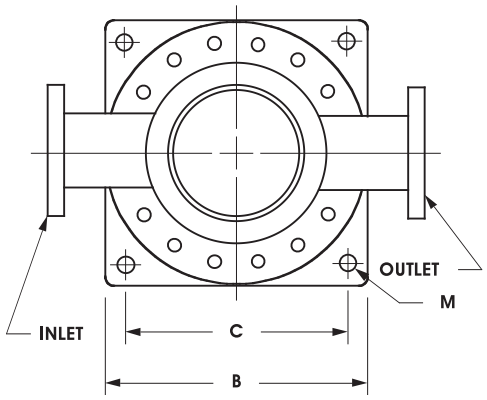
* Dimensions in all cases should be changed to be less than or equal to can size.

H^1 Dimension must be specified when using a spacer type flanged motor coupling, and will vary according to coupling size and sealing arrangement. Consult factory.

NOTE: DIMENSIONS ARE IN INCHES AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

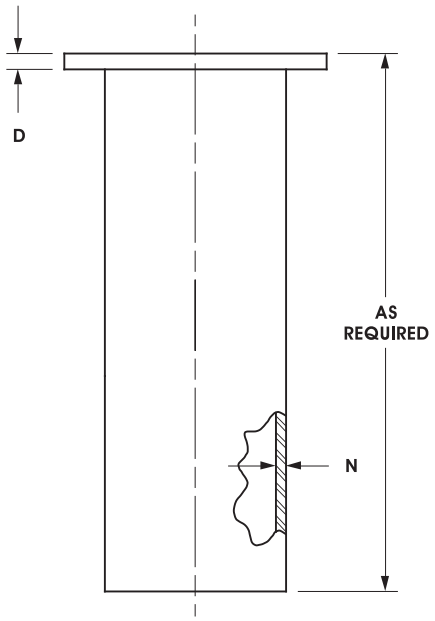
Fabricated Tee
'ST' Style
Discharge Head
For Booster Can





Model	Driver B.D.	Suct / Disch. & Col. Size		E	F	G*	H	H_1	J	L
ST-3	10 to 12	3	3	Consult Factory	6.00	10.75	19.00	Consult Factory	1.13	0.37
ST-4	10 to 12	4	4		6.50	10.75	21.00		1.13	0.37
ST-5	10 to 12	5	5		7.00	12.75	24.00		1.38	0.38
ST-5	16	5	5		7.00	14.00	24.00		1.38	0.38
ST-6	10 to 12	6	6		8.00	12.75	25.00		1.38	0.38
ST-6	16	6	6		8.00	14.00	25.00		1.38	0.38
ST-8	10 to 12	8	8		9.00	14.00	28.00		1.38	0.38
ST-8	16 to 20	8	8		9.00	14.00	28.00		1.38	0.38
ST-8	24	8	8		9.00	14.00	28.00		1.38	0.38
ST-10	10 to 12	10	10		10.00	14.00	30.00		1.38	0.38
ST-10	16 to 20	10	10		10.00	16.00	30.00		1.38	0.38
ST-10	24	10	10		10.00	18.00	30.00		1.38	0.38
ST-10	30	10	10		10.00	24.00	30.00		1.38	0.50
ST-12	16 to 20	12	12		12.00	18.00	33.00		1.38	0.38
ST-12	24	12	12		12.00	18.00	33.00		1.38	0.38
ST-12	30	12	12		12.00	24.00	33.00		1.38	0.50
ST-14	16 to 20	14	14		13.00	18.00	35.00		1.88	0.38
ST-14	24	14	14		13.00	20.00	35.00		1.88	0.38
ST-14	30	14	14		13.00	24.00	35.00		1.88	0.50
ST-16	16 to 24	16	16		14.00	24.00	37.00		1.88	0.50
ST-16	30	16	16		14.00	24.00	37.00		1.88	0.50
ST-18	16 to 24	18	18		16.00	24.00	41.00		1.88	0.50
ST-18	30	18	18		16.00	24.00	41.00		1.88	0.50
ST-20	16 to 24	20	20		18.00	24.00	44.00		1.88	0.50
ST-20	30	20	20		18.00	24.00	44.00		1.88	0.50
ST-20	36	20	20		18.00	30.00	44.00		1.88	0.50
ST-24	16 to 24	24	24		20.00	30.00	48.00		2.38	0.50
ST-24	30	24	24		20.00	30.00	48.00		2.38	0.50
ST-24	36	24	24		20.00	30.00	48.00		2.38	0.50

v21.1



Can Dia.	B	C	D	K	M	N
8.75	13.50	11.50	1.00	9.00	0.63	0.32
10.75	16.00	13.00	1.13	11.00	0.88	0.37
12.75	19.00	16.00	1.13	12.00	0.88	0.33
14.00	21.00	18.00	1.13	12.00	0.88	0.38
16.00	23.50	20.00	1.38	14.00	1.13	0.38
18.00	25.00	22.00	1.38	15.00	1.13	0.38
20.00	27.50	24.00	1.38	16.00	1.13	0.38
24.00	32.00	28.00	1.38	18.00	1.13	0.38
30.00	38.75	34.00	1.88	21.00	1.25	0.38
36.00	46.00	40.00	1.88	24.00	1.25	0.38
48.00	59.50	53.50	1.88	30.00	1.25	0.38

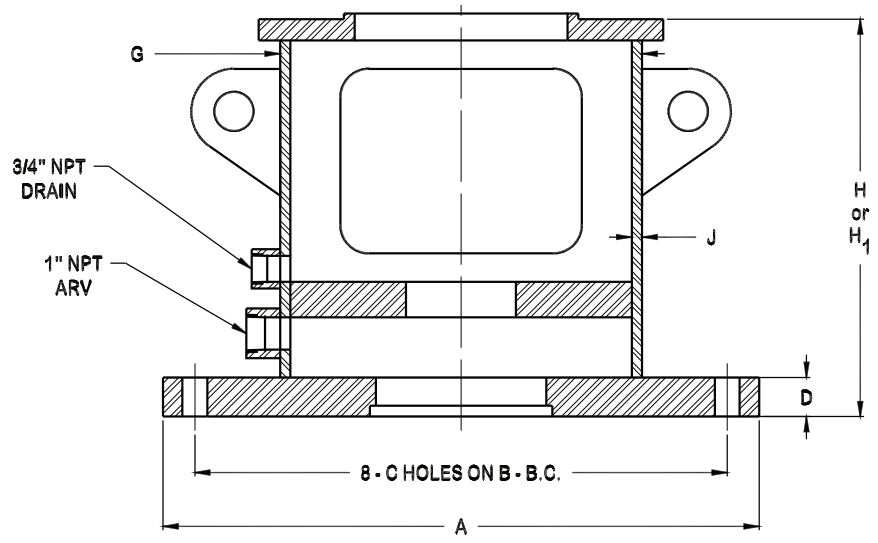
v21.1

* Dimensions in all cases should be changed to be less than or equal to can size.

H^1 Dimension must be specified when using a spacer type flanged motor coupling, and will vary according to coupling size and sealing arrangement. Consult factory.

NOTE: DIMENSIONS ARE IN INCHES AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Fabricated 'SM' Style Motor Stand For Underground Discharge

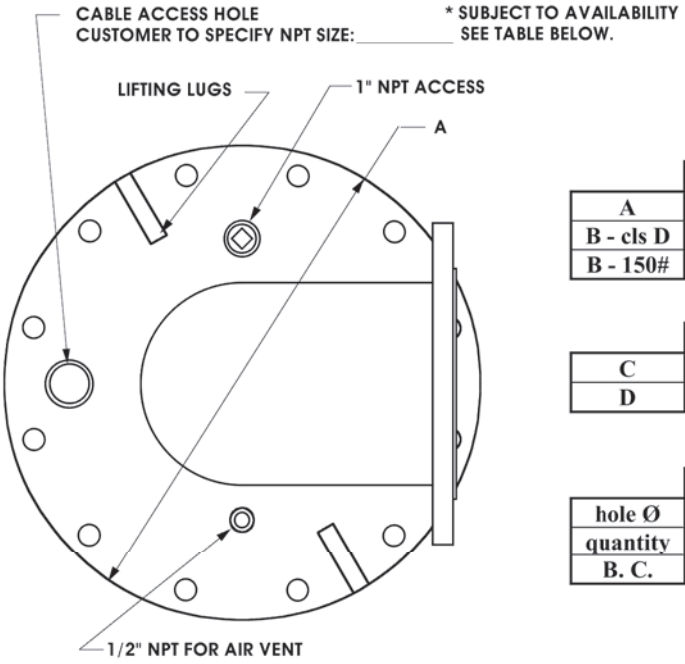


Model	Driver B.D.	Col. Size	A	B	C	D	G	H	H_1	J
SM-3	10 to 12	3	16.00	14.25	0.75	1.13	10.75	15.50	Consult Factory	0.37
SM-4	10 to 12	4	16.00	14.25	0.75	1.13	10.75	16.50		0.37
SM-5	10 to 12	5	19.00	17.00	0.88	1.38	12.75	18.50		0.38
SM-5	16	5	19.00	17.00	0.88	1.38	14.00	18.50		0.38
SM-6	10 to 12	6	21.00	18.75	0.88	1.38	12.75	18.00		0.38
SM-6	16	6	21.00	18.75	0.88	1.38	14.00	18.00		0.38
SM-8	10 to 12	8	27.50	25.00	0.88	1.38	14.00	19.00		0.38
SM-8	16 to 20	8	27.50	25.00	0.88	1.38	14.00	19.00		0.38
SM-8	24	8	27.50	25.00	0.88	1.38	14.00	19.00		0.38
SM-10	10 to 12	10	32.00	29.50	1.00	1.38	14.00	18.75		0.38
SM-10	16 to 20	10	32.00	29.50	1.00	1.38	16.00	18.75		0.38
SM-10	24	10	32.00	29.50	1.00	1.38	18.00	18.75		0.38
SM-10	30	10	32.00	29.50	1.00	1.38	24.00	18.75		0.50
SM-12	16 to 20	12	32.00	29.50	1.00	1.38	18.00	18.75		0.38
SM-12	24	12	32.00	29.50	1.00	1.38	18.00	18.75		0.38
SM-12	30	12	32.00	29.50	1.00	1.38	24.00	18.75		0.50
SM-14	16 to 20	14	34.25	31.75	1.13	1.88	18.00	19.00		0.38
SM-14	24	14	34.25	31.75	1.13	1.88	20.00	19.00		0.38
SM-14	30	14	34.25	31.75	1.13	1.88	24.00	19.00		0.50
SM-16	16 to 24	16	36.50	34.00	1.13	1.88	24.00	19.00		0.50
SM-16	30	16	36.50	34.00	1.13	1.88	24.00	19.00		0.50
SM-18	16 to 24	18	36.50	34.00	1.12	1.88	24.00	20.00		0.50
SM-18	30	18	36.50	34.00	1.12	1.88	24.00	20.00		0.50
SM-20	16 to 24	20	43.75	40.50	1.62	1.88	24.00	20.00		0.50
SM-20	30	20	43.75	40.50	1.62	1.88	24.00	20.00		0.50
SM-20	36	20	43.75	40.50	1.62	1.88	30.00	20.00		0.50
SM-24	16 to 24	24	43.75	40.50	1.62	2.38	30.00	20.00		0.50
SM-24	30	24	43.75	40.50	1.62	2.38	30.00	20.00		0.50
SM-24	36	24	43.75	40.50	1.62	2.38	30.00	20.00		0.50

v21.1

NOTE: DIMENSIONS ARE IN INCHES AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Fabricated Submersible Discharge



WELL CASING DIAMETER

	6	8	10	12	14	16	18	20
A	11.00	13.50	16.00	19.00	21.00	23.50	25.00	27.50
B - cls D	0.69	0.69	0.69	0.81	0.94	1.00	1.06	1.13
B - 150#	1.00	1.13	1.19	1.25	1.38	1.44	1.56	1.69

v18.1

ELBOW & NIPPLE DIAMETER

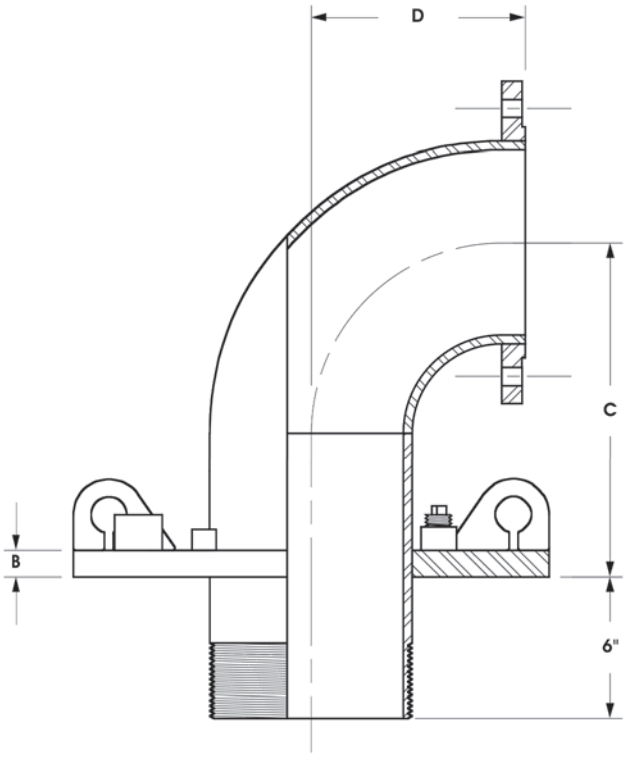
	2	3	4	5	6	8	10	12
C	5.00	6.50	8.00	10.00	11.50	14.75	17.75	20.75
D	3.75	5.13	7.13	8.63	10.13	12.88	17.63	19.50

v18.1

BASE PLATE MOUNTING HOLE PATTERN

	6	8	10	12	14	16	18	20
hole Ø	.88	.88	1.00	1.00	1.13	1.13	1.25	1.25
quantity	8	8	12	12	12	16	16	20
B. C.	9.50"	11.75	14.25	17.00	18.75	21.25	22.75	25.00

v18.1



MAXIMUM CABLE AND ACCESS TAP SIZES

RISER \ CASING	6	8	10	12	14	16	18	20
2	3/4	1-1/2	2-1/2	3	4	4	4	4
3	-	1	2	2-1/2	3	4	4	4
4	-	1/2	1-1/2	2-1/2	2-1/2	3	4	4
5	-	-	3/4	1-1/2	2	3	4	4
6	-	-	-	1-1/4	1-1/2	2-1/2	3	4
8	-	-	-	-	3/4	1-1/2	2-1/2	3
10	-	-	-	-	-	1/2	1-1/2	2-1/2
12	-	-	-	-	-	-	-	1-1/4

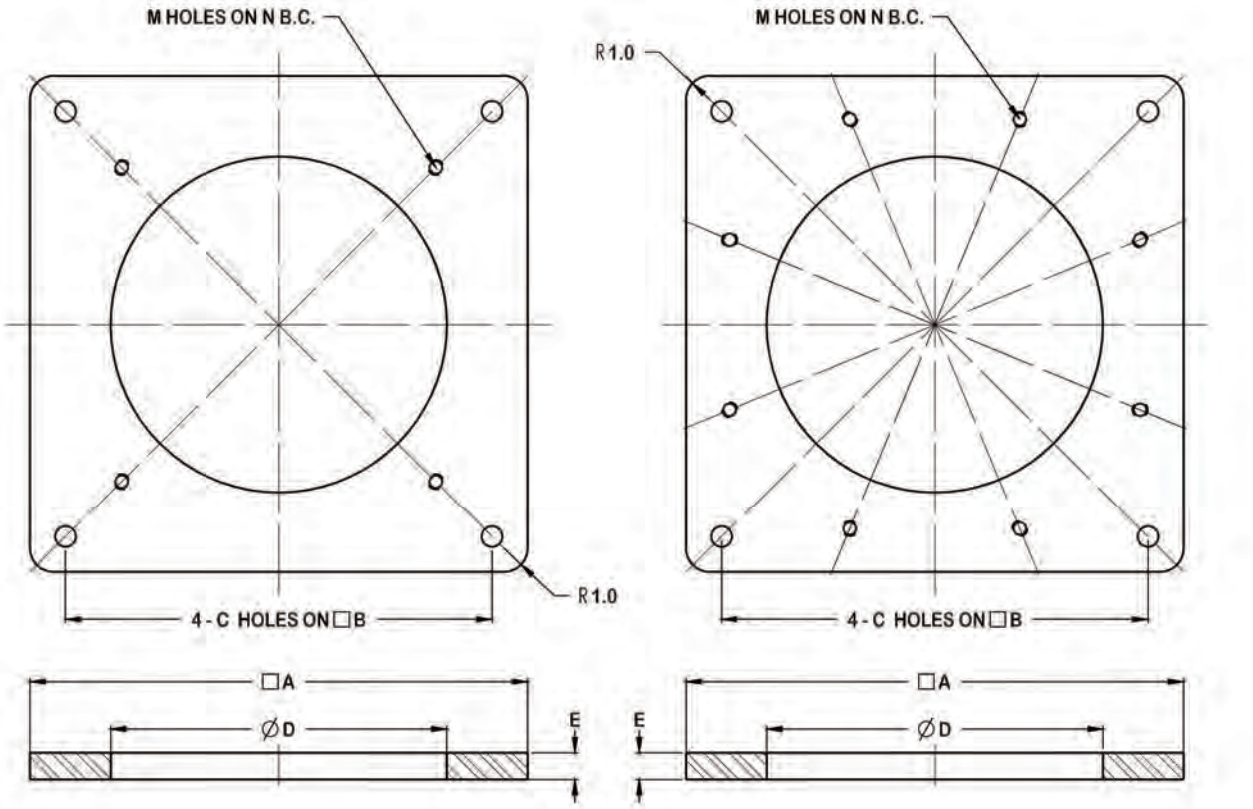
TAP SIZE

v18.1

Standard features include:
Lifting lugs
1" npt access hole
1/2" npt for air vent
ANSI 150# raised face discharge flange.
ANSI 150# hole pattern base plate.

NOTE: DIMENSIONS ARE IN INCHES AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Discharge Head
Foundation Plate

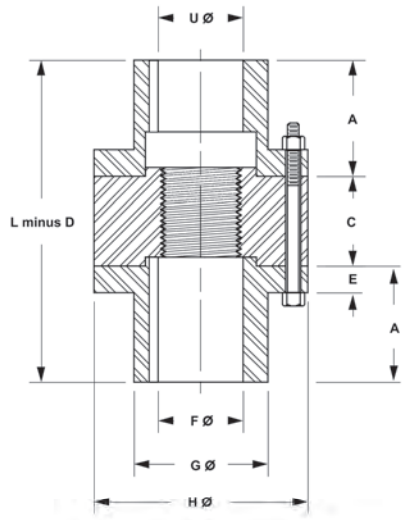


Model	Head	A	B	C	D	E	M	N
03C	SPC-3	13.50	11.25	0.88	8.75	1.00	4 - 5/8 NC	11.75
04C	SPC-4	16.00	13.50	0.88	10.88	1.00	4 - 5/8 NC	14.25
06C	SPC-6	19.00	18.00	0.88	14.19	1.13	4 - 5/8 NC	18.75
08C	SPC-8	21.00	20.00	1.13	16.19	1.13	4 - 3/4 NC	21.25
10C	SPC-10	24.00	24.00	1.13	20.25	1.38	4 - 3/4 NC	25.00
03F	SL/SM-3	13.50	11.25	0.88	8.75	1.00	8 - 5/8 NC	11.75
04F	SL/SM-4	16.00	13.50	0.88	10.88	1.00	8 - 5/8 NC	14.25
05F	SL/SM-5	19.00	16.00	0.88	12.88	1.13	8 - 5/8 NC	17.00
06F	SL/SM-6	21.00	18.00	0.88	14.19	1.13	8 - 5/8 NC	18.75
08F	SL/SM-8	27.50	24.00	1.13	20.25	1.13	8 - 3/4 NC	25.00
12F	SL/SM-10/12	32.00	28.00	1.13	24.25	1.38	8 - 7/8 NC	29.50
14F	SL/SM-14	34.25	30.25	1.13	26.25	1.38	8 - 1 NC	31.75
18F	SL/SM-16/18	36.50	32.25	1.13	28.25	1.38	8 - 1 NC	34.00
24F	SL/SM-20/24	43.75	37.75	1.63	34.25	1.88	8 - 1-1/2 NC	40.50

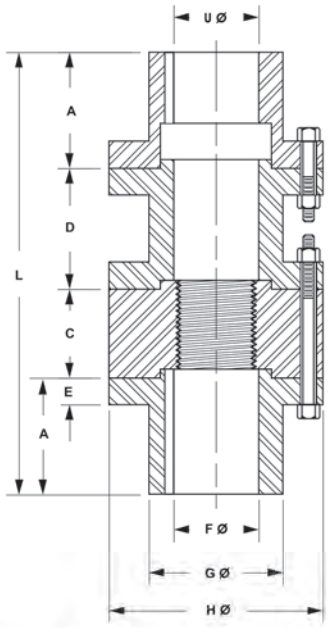
v21.1

NOTE: The "D" dimension must be greater than the largest diameter of the pump to allow installation. Consult factory for undergroud discharge applications.

Vertical Solid Shaft
Motor Coupling



ADJUSTABLE FLANGED MOTOR COUPLING



ADJUSTABLE FLANGED SPACER MOTOR COUPLING

Cplg. Size	L*	A	C	D*	E	F		G	H	Bolt Size	Bolts/ Flange
						Min	Max				
1 1/8	10.00	2.00	1.50	4.50	0.50	1	1 1/4	2.50	4.25	3/8	4
1 5/8	11.38	2.69	1.50	4.50	0.63	1	1 11/16	2.88	5.00	3/8	6
2 1/8	12.13	2.69	2.25	4.50	0.75	1 1/2	2 3/16	3.63	6.00	1/2	6
2 3/8	14.00	3.00	2.50	5.50	0.75	1 11/16	2 7/16	4.25	6.88	5/8	6
2 5/8	14.00	3.00	2.50	5.50	0.75	1 15/16	2 11/16	4.25	6.88	5/8	6
2 7/8	15.38	3.44	3.00	5.50	0.88	1 15/16	2 15/16	4.88	8.00	5/8	8

* MAY VARY ACCORDING TO SEALING ARRANGEMENT. CONSULT FACTORY FOR INFORMATION.

v18.1

Cplg. Size	Max Thrust	HP Rating @ RPM					Motor Shaft Dimensions					
		3450	1770	1160	880	700	U	AH	EU	EW	EY/EX	Sq. Key
1 1/8	23,000	160	80	50	40	30	1 1/8	2.75	0.875	0.375	0.75	1/4
1 5/8	34,000	570	290	190	140	110	1 5/8	4.50	1.250	0.375	0.75	3/8
2 1/8	47,000	970	500	330	250	200	2 1/8	4.50	1.750	0.375	0.75	1/2
2 3/8	54,000	1620	830	540	410	330	2 3/8	5.00	2.000	0.375	0.75	5/8
2 5/8	61,000	1790	920	600	460	360	2 5/8	5.00	2.250	0.375	0.75	5/8
2 7/8	86,000	2550	1310	860	650	520	2 7/8	7.00	2.375	0.500	1.00	3/4

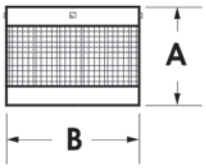
v18.1

NOTE: DIMENSIONS ARE IN INCHES AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Strainer Dimensions

Bell Dia.	Bolt on Basket Strainer			
	A	B	Eff. Length	Clear Dia.
4.00	6	4.56	5.00	5.06
6.00	7	6.56	6.00	7.06
8.00	7	8.56	6.00	9.06
9.38	7	9.94	6.00	10.44
10.00	8	10.56	7.00	11.06
11.38	8	11.94	7.00	12.44
13.88	8	14.44	7.00	14.94
15.25	10	15.81	9.00	16.31
18.13	8	18.69	6.50	19.69
19.25	10	19.81	8.50	20.81
22.75	14	23.31	12.25	24.31
27.00	17	27.56	15.00	28.56

v18.1

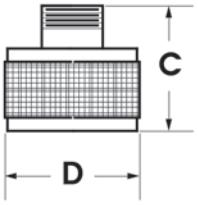


BOLT-ON TYPE BASKET

NOTES:
1. Bell suction is required when using bolt on basket strainer.
2. Refer to Section 200 curve data sheets for pump bell diameter.
3. Eff, Length is the length added to pump measured from bell lip.
4. Clear Dia. is the installed clearance diameter to accommodate installation hardware.

Inlet Size	Threaded Basket Strainer		
	C	D	Eff. Length
4	11.00	8.00	9.88
5	12.00	10.00	10.81
6	14.00	10.00	12.81
8	16.75	12.00	15.44
10	20.00	18.00	18.50
12	22.50	18.00	20.88

v18.1

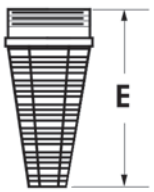


THREADED TYPE BASKET

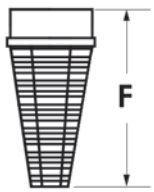
NOTES:
1. Threaded suction is required when using threaded basket strainer.
2. Refer to Section 200 curve data sheets for pump suction inlet size.
3. Eff. Length is the length added to pump measured from threaded suction end.

Inlet Size	Cone Strainer		
	E	Eff. Length	F
4	17.38	16.28	14.38
5	17.38	16.19	14.38
6	17.38	16.19	14.38
8	22.88	21.56	19.88
10	33.75	32.25	30.25
12	33.75	32.13	30.75

v18.1



THREADED CONE STRAINER



WELD-ON CONE STRAINER

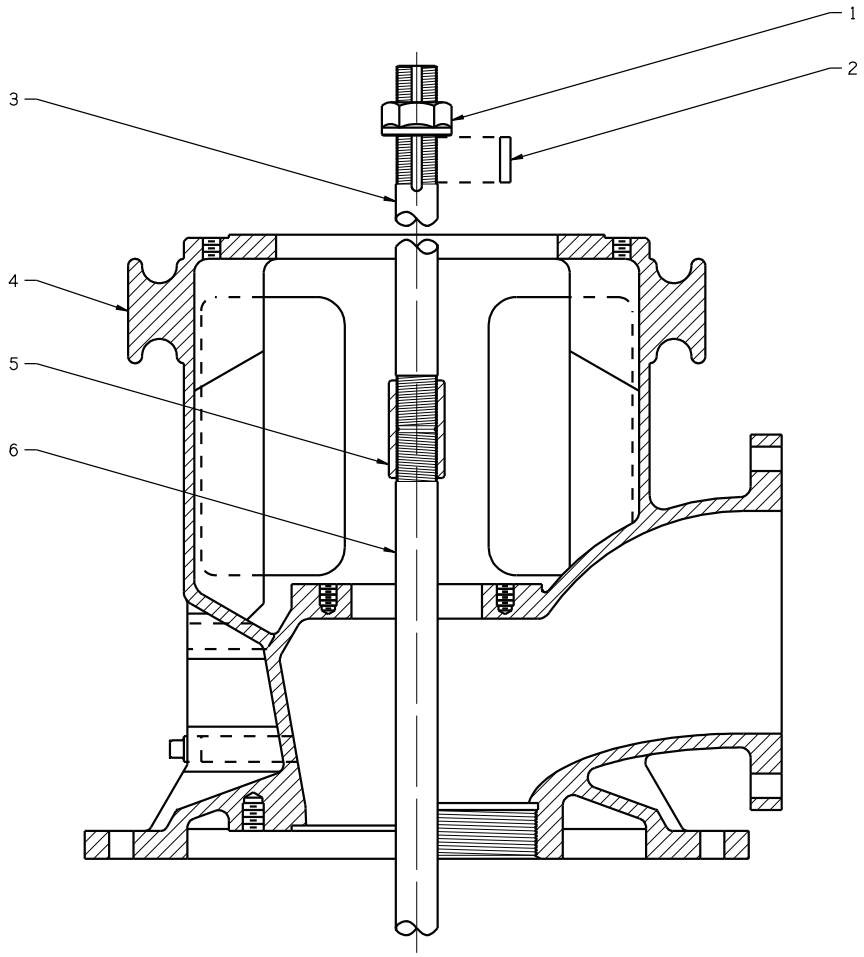
NOTES:
1. Threaded suction is required when using threaded cone strainer.
2. Refer to Section 200 curve data sheets for pump suction inlet size.
3. Eff. Length is the length added to pump measured from threaded suction end when using threaded cone strainer.

Cast
Discharge Head

DATE _____
DISTRIBUTOR _____

JOB _____

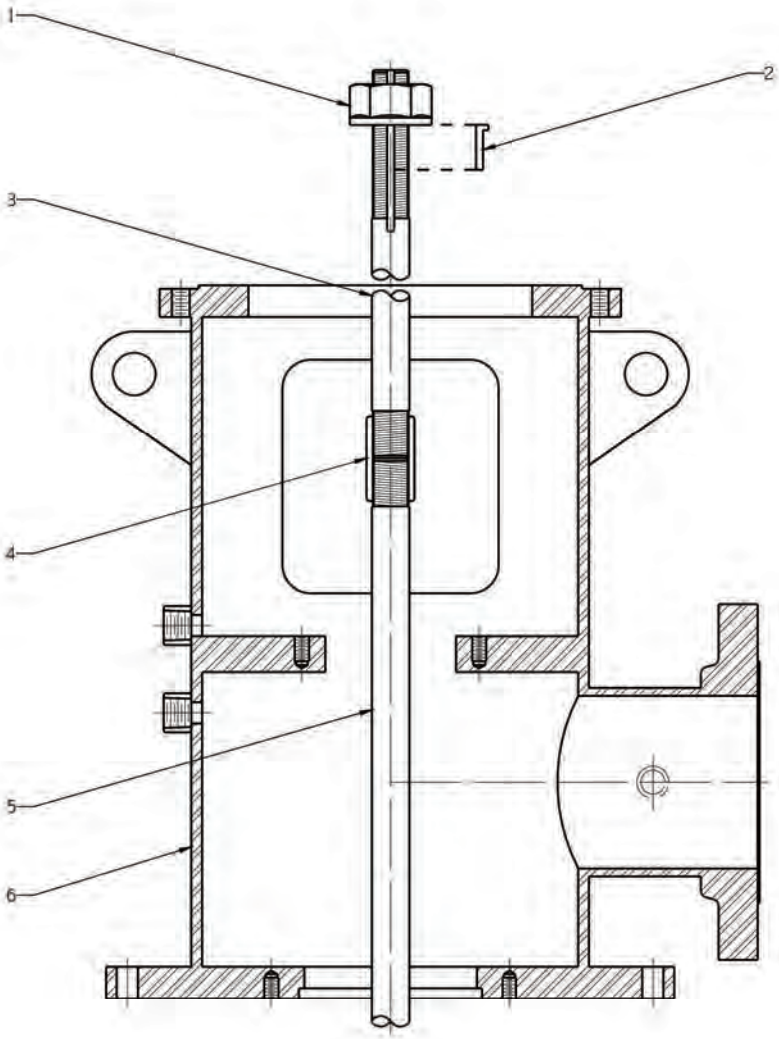
JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	HEAD NUT	ASTM B584 C89833 BRONZE
2	GIB KEY	COMMERCIAL
3	MOTOR SHAFT	ASTM A108 GRADE 1045 CARBON STEEL
4	DISCHARGE HEAD	ASTM A536 GRADE 65-45-12 DUCTILE IRON
5	HEAD SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
5a	FLANGED MOTOR COUPLING (NOT SHOWN)	STEEL
6	HEAD SHAFT	ASTM A582 GRADE 416 HT STAINLESS STEEL

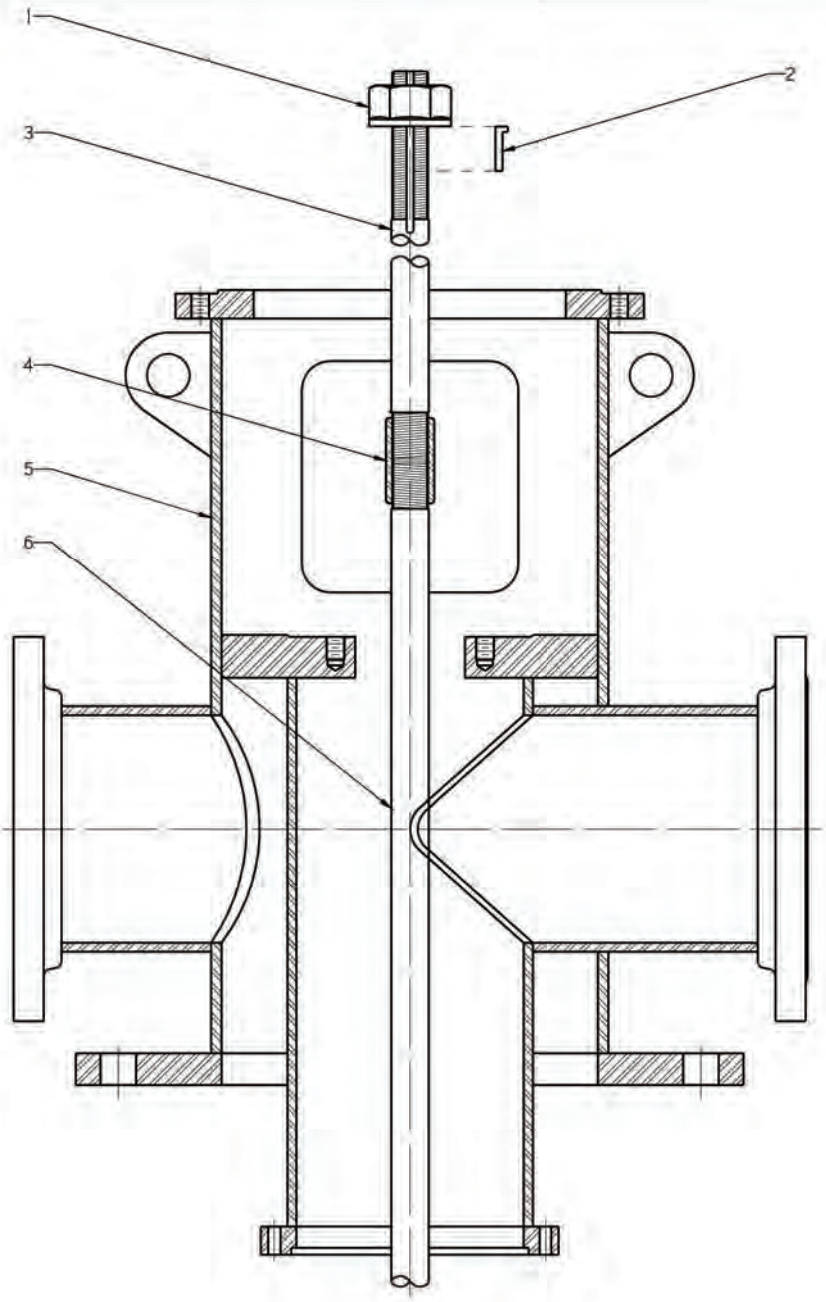
'SL' Style
Discharge Head

DATE _____
DISTRIBUTOR _____
_____
_____
JOB _____
_____
_____
JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	HEAD NUT	ASTM B584 C89833 BRONZE
2	GIB KEY	COMMERCIAL
3	MOTOR SHAFT	ASTM A108 GRADE 1045 CARBON STEEL
4	HEAD SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
4a	FLANGED MOTOR COUPLING (NOT SHOWN)	STEEL
5	HEAD SHAFT	ASTM A582 GRADE 416 HT STAINLESS STEEL
6	DISCHARGE HEAD	ASTM A36 HR & 53 GRADE B CARBON STEEL

'ST' Style Discharge Head



DATE _____

DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

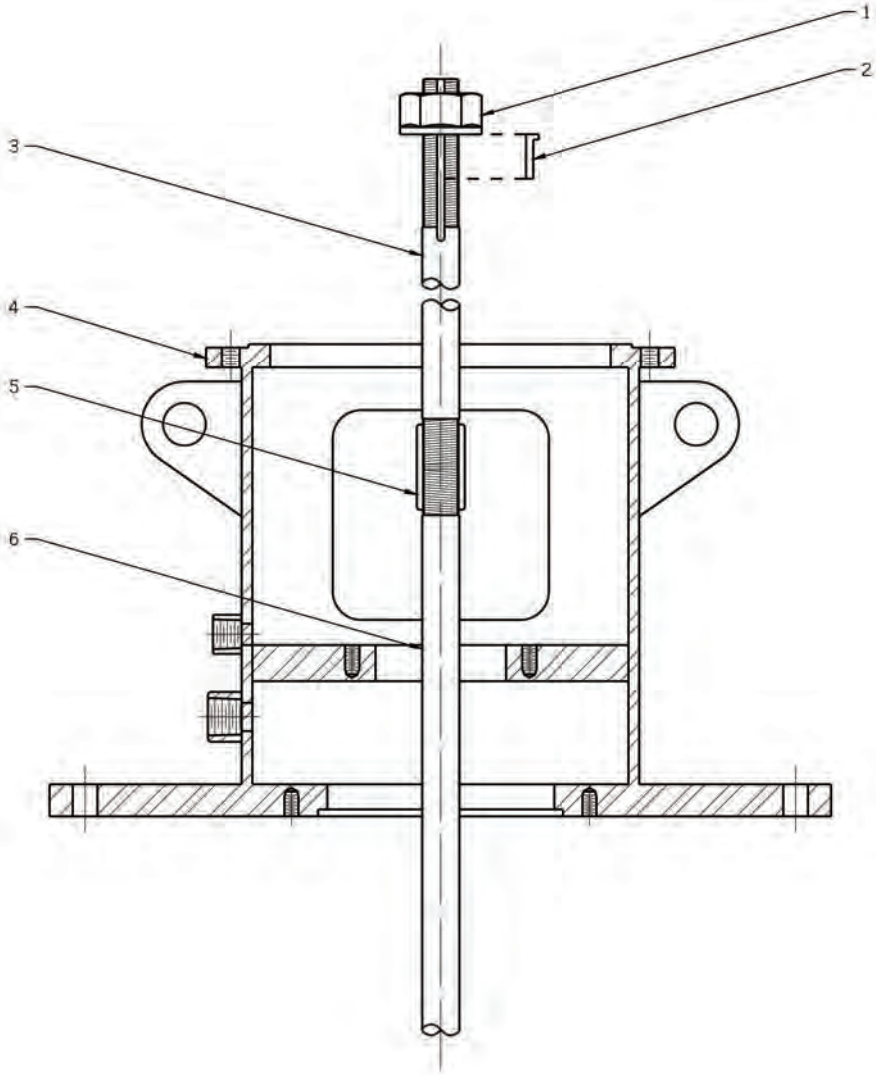
JOB/QUOTE # _____

UNIT QUANTITY _____

Label	Part Name	Material
1	HEAD NUT	ASTM B584 C89833 BRONZE
2	GIB KEY	COMMERCIAL
3	MOTOR SHAFT	ASTM A108 GRADE 1045 CARBON STEEL
4	HEAD SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
4a	FLANGED MOTOR COUPLING (NOT SHOWN)	STEEL
5	DISCHARGE HEAD	ASTM A36 HR & A53 GRADE B CARBON STEEL
6	HEAD SHAFT	ASTM A582 GRADE 416 HT STAINLESS STEEL

'SM' Style
Motor Stand

DATE _____
DISTRIBUTOR _____
_____
_____
JOB _____
_____
_____
JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	HEADNUT	ASTM B584 C89833 BRONZE
2	GIB KEY	COMMERCIAL
3	MOTOR SHAFT	ASTM A108 GRADE 1045 CARBON STEEL
4	MOTOR STAND	ASTM A36 HR & A53 GRADE B CARBON STEEL
5	HEAD SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
5a	FLANGED MOTOR COUPLING (NOT SHOWN)	STEEL
6	HEAD SHAFT	ASTM A582 GRADE 416 HT STAINLESS STEEL

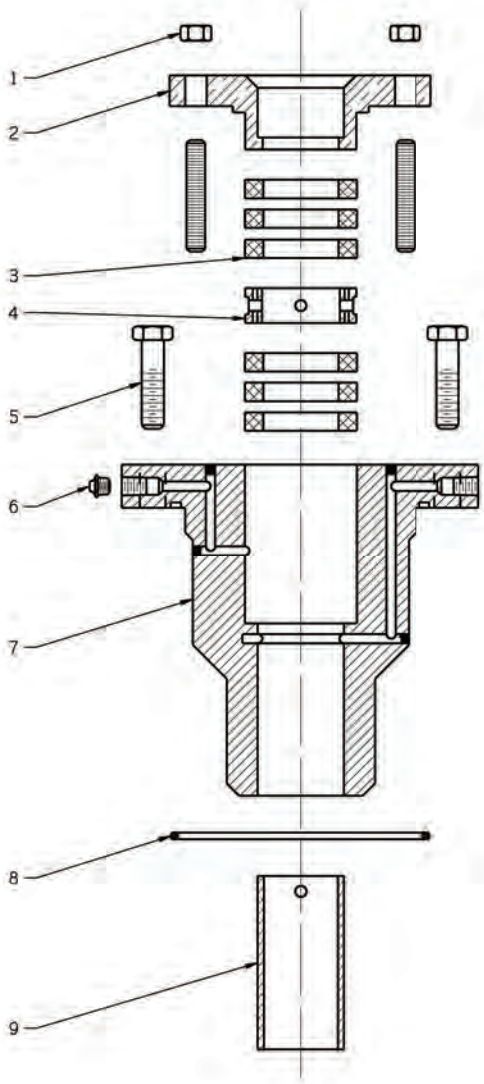
SIMFLO®

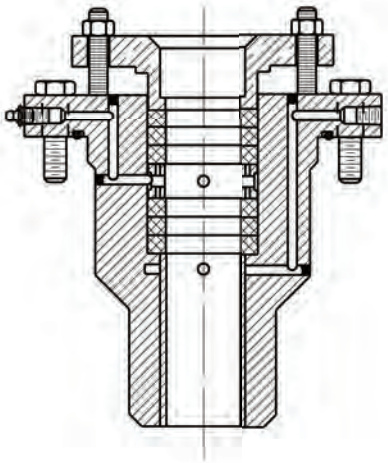
Packing Gland
Seal Assembly

DATE _____
DISTRIBUTOR _____

JOB _____

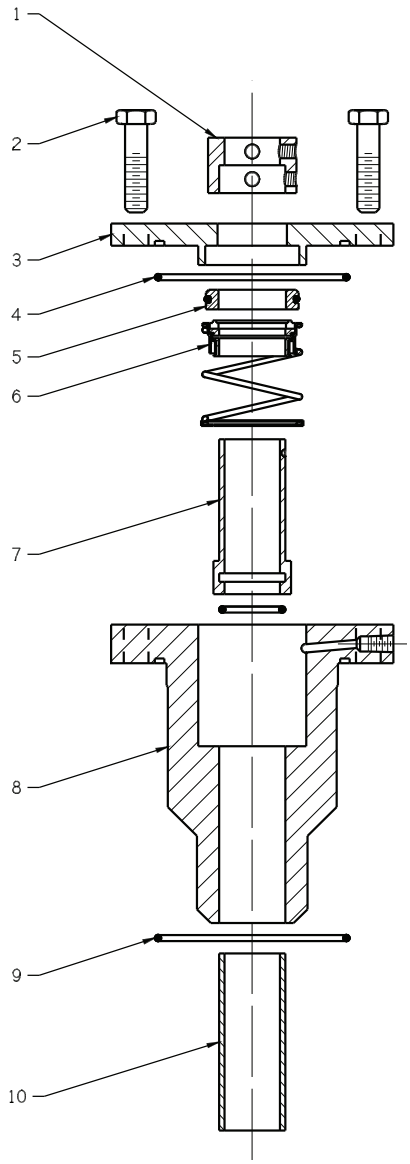
JOB/QUOTE # _____
UNIT QUANTITY _____





Label	Part Name	Material
1	STUD AND NUT	COMMERCIAL 18-8 STAINLESS STEEL
2	PACKING GLAND	ASTM B584 C89833 BRONZE
3	PACKING RING	GRAPHITE
4	LANTERN RING	ASTM B505 C89835 BRONZE
5	CAP SCREW	COMMERCIAL CARBON STEEL
6	PIPE PLUG	COMMERCIAL CARBON STEEL
7	PACKING HOUSING	ASTM A48 CLASS 30 CAST IRON
8	PACKING HOUSING O-RING	NITRILE
9	PACKING HOUSING BEARING	ASTM B505 C89835 BRONZE

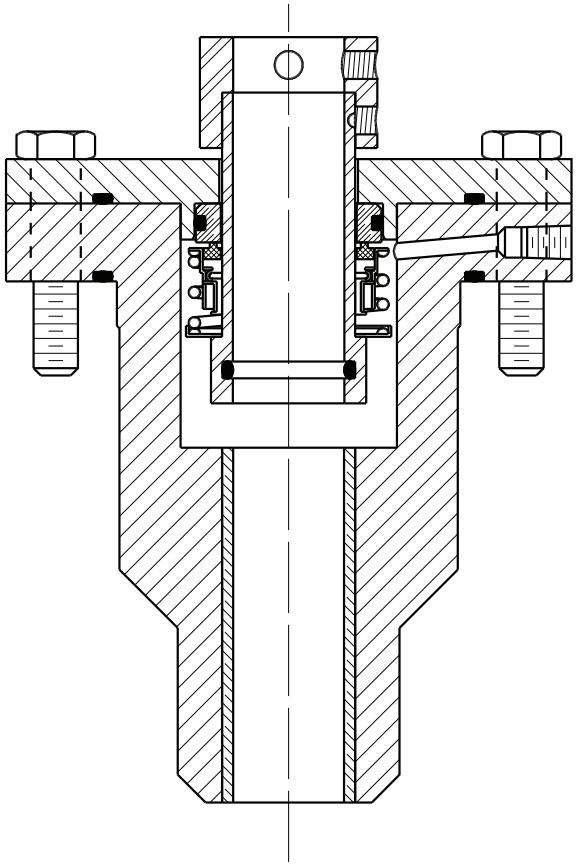
Component
Mechanical Seal
Assembly



DATE _____
DISTRIBUTOR _____

JOB _____

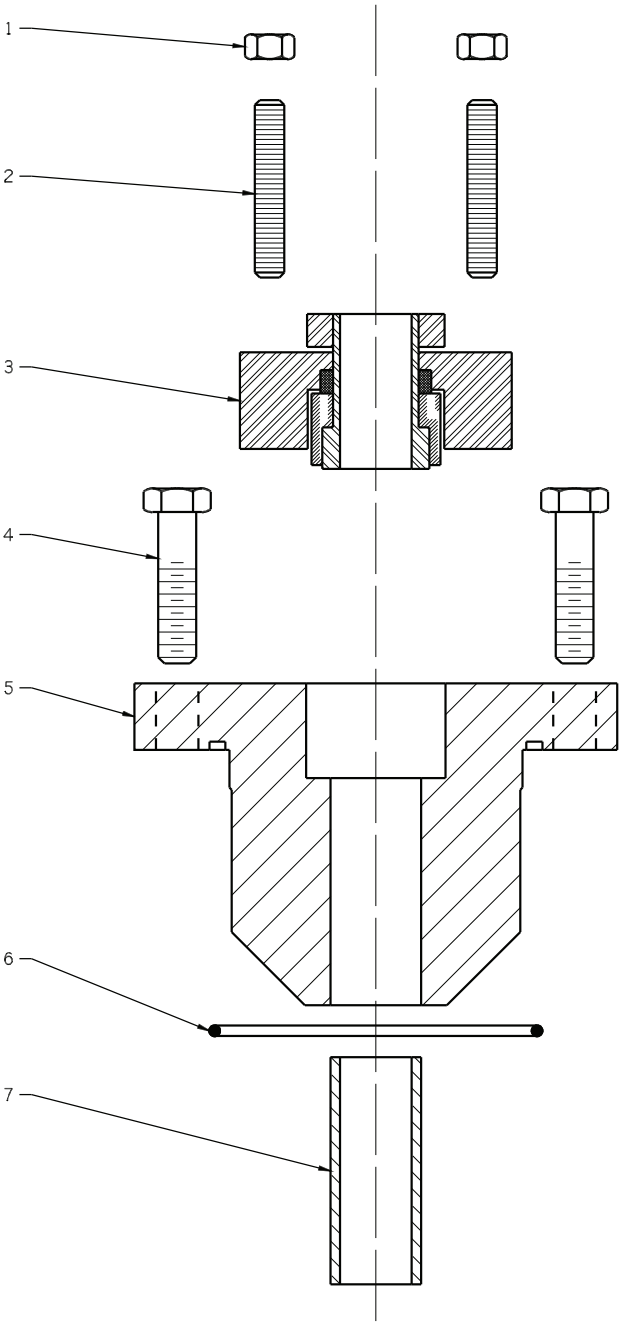
JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	LOCK RING	ASTM A511 GRADE 304 STAINLESS STEEL
2	CAP SCREWS	COMMERCIAL 18-8 STAINLESS STEEL
3	MECHANICAL SEAL PLATE	ASTM A48 CLASS 30 CAST IRON
4	MECHANICAL SEAL PLATE O-RING	NITRILE
5	MECHANICAL SEAL STATIONARY FACE	CERAMIC
6	MECHANICAL SEAL ROTATING FACE	CARBON GRAPHITE
7	MECHANICAL SEAL SLEEVE	ASTM A511 GRADE 304 STAINLESS STEEL
8	SEAL HOUSING	ASTM A48 CLASS 30 CAST IRON
9	SEAL HOUSING O-RING	NITRILE
10	SEAL HOUSING BEARING	ASTM B505 C89835 BRONZE

SIMFLO®

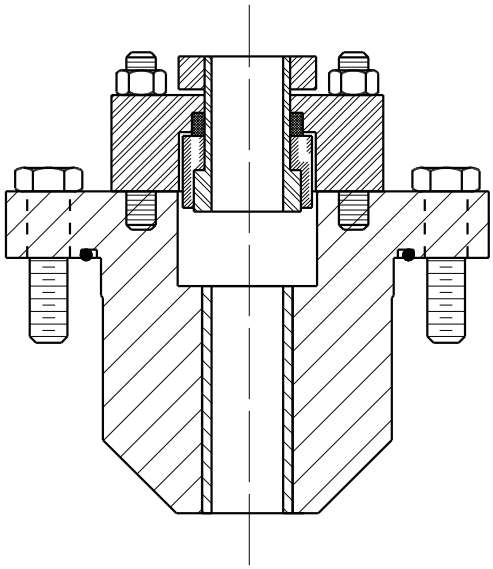
Cartridge Mechanical Seal Assembly



DATE _____
DISTRIBUTOR _____

JOB _____

JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	HEX NUT	COMMERCIAL 18-8 STAINLESS STEEL
2	THREADED STUD	COMMERCIAL 18-8 STAINLESS STEEL
3	CARTRIDGE MECHANICAL SEAL	VARIOUS
4	CAP SCREWS	COMMERCIAL 18-8 STAINLESS STEEL
5	SEAL HOUSING	ASTM A48 CLASS 30 CAST IRON
6	SEAL HOUSING O-RING	NITRILE
7	SEAL HOUSING BEARING	ASTM B505 C89835 BRONZE

Oil Lube
Stretch Housing
Stretch Assembly

DATE _____

DISTRIBUTOR _____

_____

_____

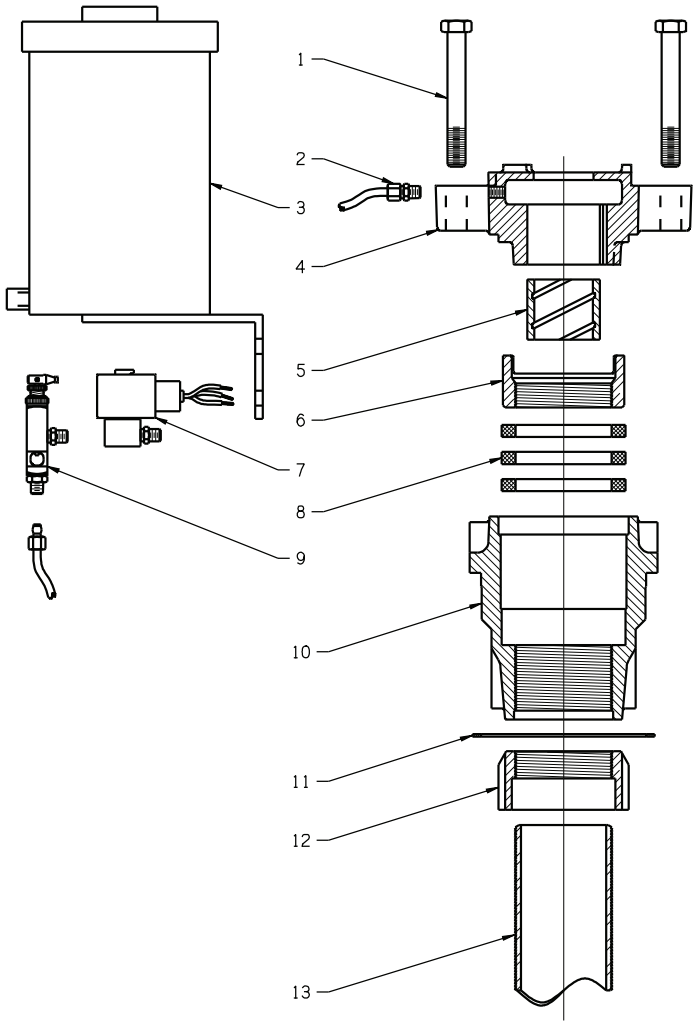
JOB _____

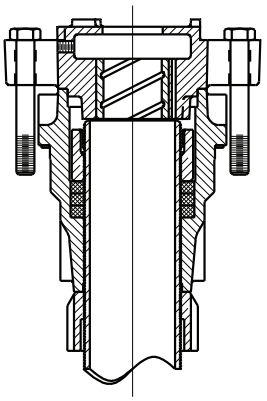
_____

_____

JOB/QUOTE # _____

UNIT QUANTITY _____





Label	Part Name	Material
1	CAP SCREWS	COMMERCIAL CARBON STEEL
2	OIL LINE ADAPTER	COMMERCIAL BRASS
3	OIL POT	CARBON STEEL
4	DUST COVER	ASTM A48 CLASS 30 CAST IRON
5	DUST COVER BEARING	ASTM B505 C89835 BRONZE
6	PACKING FOLLOWER	ASTM B584 C89833 BRONZE
7	SOLENOID OILER	COMMERCIAL
8	PACKING RING	GRAPHITE
9	OIL DRIPPER	COMMERCIAL BRASS
10	STRETCH HOUSING	ASTM A536 GRADE 65-45-12 DUCTILE IRON
11	STRETCH HOUSING GASKET	COPPER
12	STRETCH TUBE LOCK NUT	ASTM B584 C89833 BRONZE
13	STRETCH TUBE	ASTM A53 GRADE B CARBON STEEL (SCH 80)

Oil Lube
Tension Nut
Stretch Assembly

DATE _____

DISTRIBUTOR _____

_____

_____

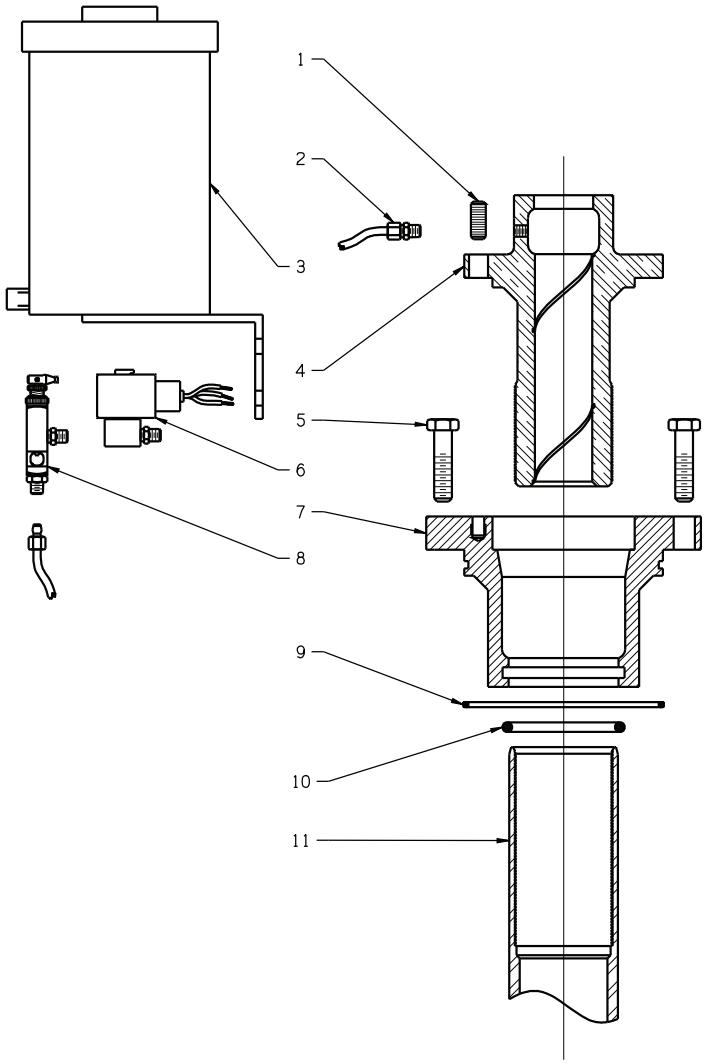
JOB _____

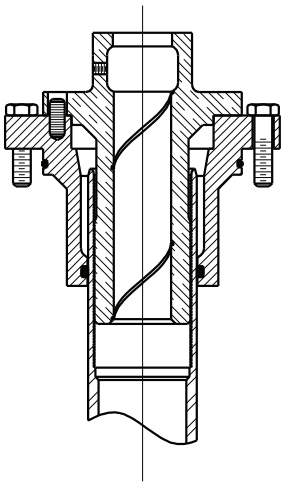
_____

_____

JOB/QUOTE # _____

UNIT QUANTITY _____



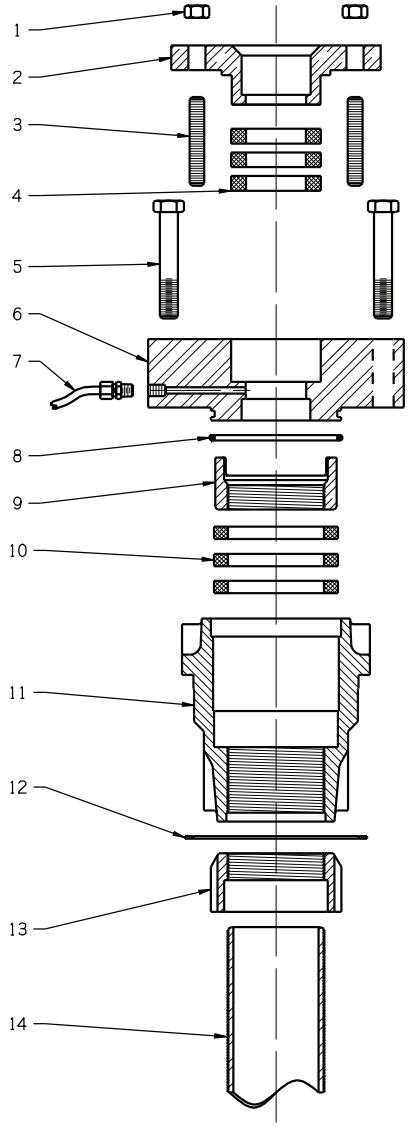


Label	Part Name	Material
1	SET SCREW	COMMERCIAL 18-8 STAINLESS STEEL
2	OIL LINE ADAPTER	COMMERCIAL BRASS
3	OIL POT	CARBON STEEL
4	TENSION NUT	ASTM B584 C89833 BRONZE
5	CAP SCREWS	COMMERCIAL CARBON STEEL
6	SOLENOID OILER	COMMERCIAL
7	TENSION HOUSING	ASTM A48 CLASS 30 CAST IRON
8	OIL DRIPPER	COMMERCIAL BRASS
9	TENSION HOUSING O-RING	NITRILE
10	TENSION TUBE O-RING	NITRILE
11	TENSION TUBE	ASTM A53 GRADE B CARBON STEEL (SCH 80)

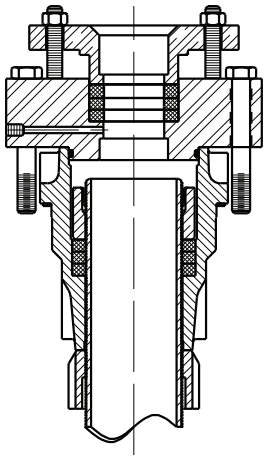
SIMFLO®

Section 902-10

Water Flush Packing Gland
Stretch Housing
Stretch Assembly



DATE _____
DISTRIBUTOR _____
_____
_____
JOB _____
_____
_____
JOB/QUOTE # _____
UNIT QUANTITY _____

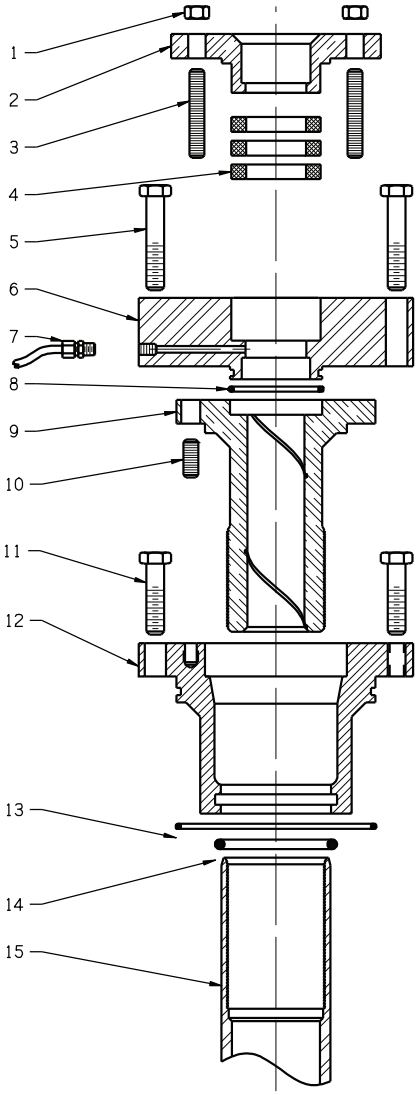


Label	Part Name	Material
1	HEX NUT	COMMERCIAL 18-8 STAINLESS STEEL
2	PACKING GLAND	ASTM B584 C89833 BRONZE
3	THREADED STUDS	COMMERCIAL 18-8 STAINLESS STEEL
4	PACKING RING	GRAPHITE
5	CAP SCREWS	COMMERCIAL CARBON STEEL
6	WATER FLUSH PACKING PLATE	ASTM A240 GRADE 304L STAINLESS STEEL
7	FLUSH LINE ADAPTER	COMMERCIAL STAINLESS STEEL
8	WATER FLUSH PACKING PLATE O-RING	NITRILE
9	PACKING FOLLOWER	ASTM B584 C89833 BRONZE
10	PACKING RING	GRAPHITE
11	STRETCH HOUSING	ASTM A536 GRADE 65-45-12 DUCTILE IRON
12	STRETCH HOUSING GASKET	COPPER
13	STRETCH TUBE LOCK NUT	ASTM B584 C89833 BRONZE
14	STRETCH TUBE	ASTM A312 GRADE 304L STAINLESS STEEL (SCH 80)

SIMFLO®

Section 902-11

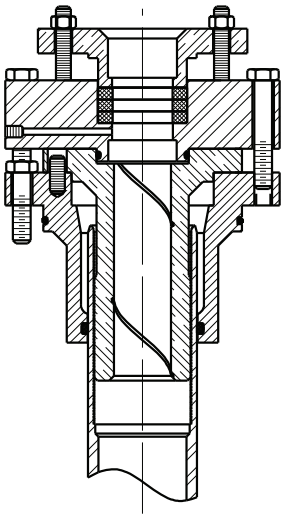
Water Flush Packing Gland
Tension Nut
Stretch Assembly



DATE _____
DISTRIBUTOR _____

JOB _____

JOB/QUOTE # _____
UNIT QUANTITY _____

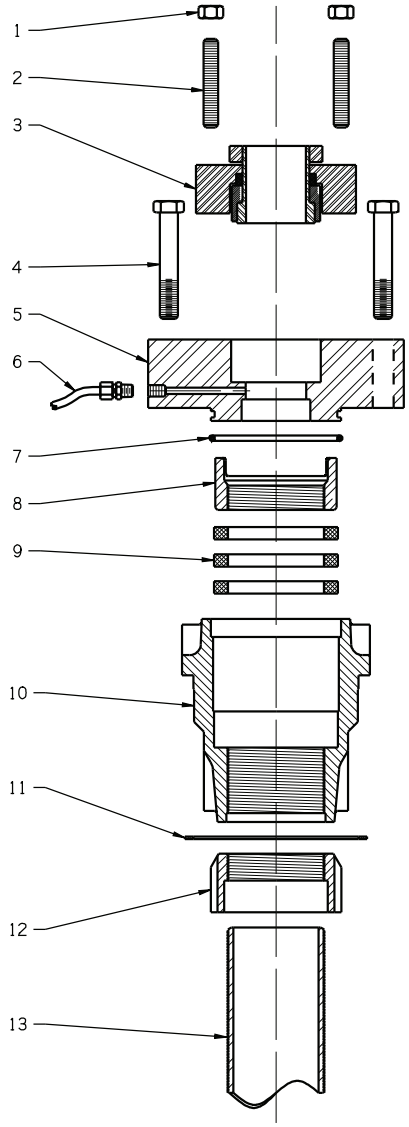


Label	Part Name	Material
1	HEX NUT	COMMERCIAL 18-8 STAINLESS STEEL
2	PACKING GLAND	ASTM B584 C89833 BRONZE
3	THREADED STUDS	COMMERCIAL 18-8 STAINLESS STEEL
4	PACKING RING	GRAPHITE
5	CAP SCREWS	COMMERCIAL CARBON STEEL
6	WATER FLUSH PACKING HOUSING	ASTM A240 GRADE 304L STAINLESS STEEL
7	FLUSH LINE ADAPTER	COMMERCIAL STAINLESS STEEL
8	WATER FLUSH PACKING HOUSING O-RING	NITRILE
9	TENSION NUT	ASTM B584 C89833 BRONZE
10	SET SCREW	COMMERCIAL 18-8 STAINLESS STEEL
11	CAP SCREWS	COMMERCIAL CARBON STEEL
12	TENSION HOUSING	ASTM A48 CLASS 30 CAST IRON
13	TENSION HOUSING O-RING	NITRILE
14	TENSION TUBE O-RING	NITRILE
15	TENSION TUBE	ASTM A312 GRADE 304L STAINLESS STEEL (SCH 80)

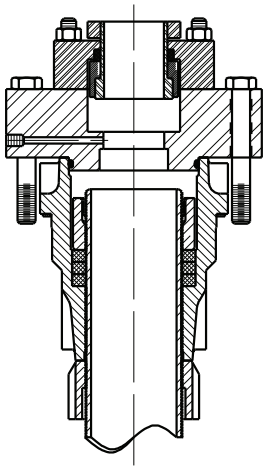
SIMFLO®

Section 902-12

Water Flush Mechanical Seal
Stretch Housing
Stretch Assembly

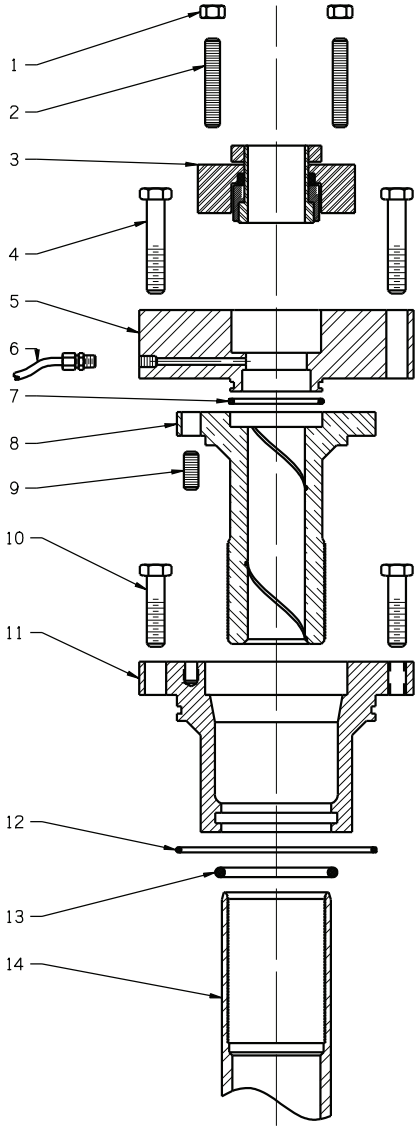


DATE _____
DISTRIBUTOR _____
_____
_____
JOB _____
_____
_____
JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	HEX NUT	COMMERCIAL 18-8 STAINLESS STEEL
2	THREADED STUDS	COMMERCIAL 18-8 STAINLESS STEEL
3	CARTRIDGE MECHANICAL SEAL	VARIOUS
4	CAP SCREWS	COMMERCIAL CARBON STEEL
5	WATER FLUSH PACKING PLATE	ASTM A240 GRADE 304L STAINLESS STEEL
6	FLUSH LINE ADAPTER	COMMERCIAL STAINLESS STEEL
7	WATER FLUSH PACKING PLATE O-RING	NITRILE
8	PACKING FOLLOWER	ASTM B584 C89833 BRONZE
9	PACKING RING	GRAPHITE
10	STRETCH HOUSING	ASTM A536 GRADE 65-45-12 DUCTILE IRON
11	STRETCH HOUSING GASKET	COPPER
12	STRETCH TUBE LOCK NUT	ASTM B584 C89833 BRONZE
13	STRETCH TUBE	ASTM A312 GRADE 304L STAINLESS STEEL (SCH 80)

Water Flush Mechanical Seal
Tension Nut
Stretch Assembly



DATE _____

DISTRIBUTOR _____

_____

_____

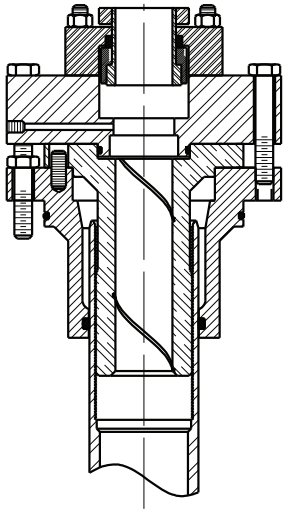
JOB _____

_____

_____

JOB/QUOTE # _____

UNIT QUANTITY _____



Label	Part Name	Material
1	HEX NUT	COMMERCIAL 18-8 STAINLESS STEEL
2	THREADED STUDS	COMMERCIAL 18-8 STAINLESS STEEL
3	CARTRIDGE MECHANICAL SEAL	VARIOUS
4	CAP SCREWS	COMMERCIAL CARBON STEEL
5	WATER FLUSH MECHANICAL SEAL HOUSING	ASTM A240 GRADE 304L STAINLESS STEEL
6	FLUSH LINE ADAPTER	COMMERCIAL STAINLESS STEEL
7	WATER FLUSH MECAHNICAL SEAL HOUSING O-RING	NITRILE
8	TENSION NUT	ASTM B584 C89833 BRONZE
9	SET SCREW	COMMERCIAL 18-8 STAINLESS STEEL
10	CAP SCREWS	COMMERCIAL CARBON STEEL
11	TENSION HOUSING	ASTM A48 CLASS 30 CAST IRON
12	TENSION HOUSING O-RING	NITRILE
13	TENSION TUBE O-RING	NITRILE
14	TENSION TUBE	ASTM A312 GRADE 304L STAINLESS STEEL (SCH 80)

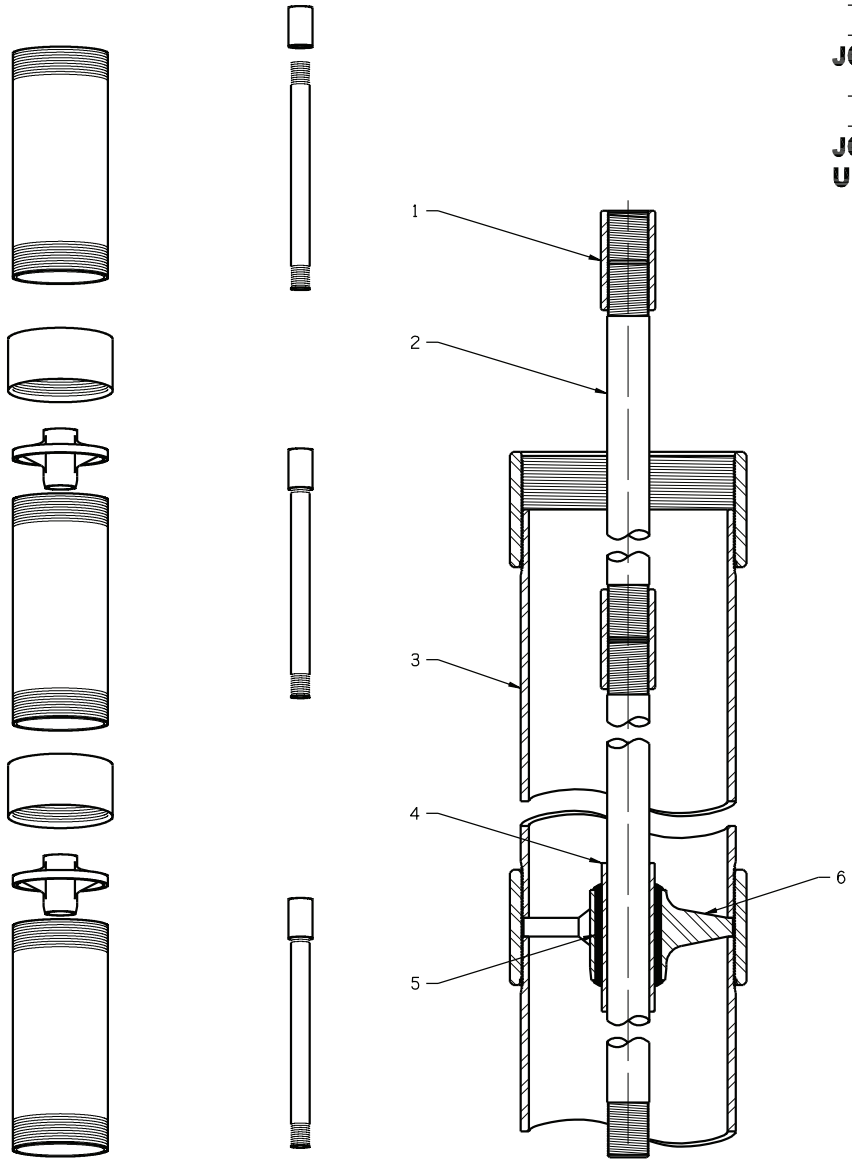
SIMFLO®

Threaded Open Lineshaft Column Assembly

DATE _____
DISTRIBUTOR _____

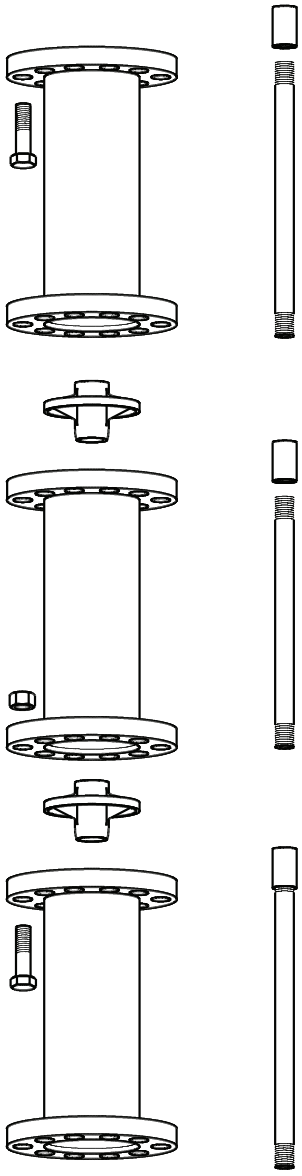
JOB _____

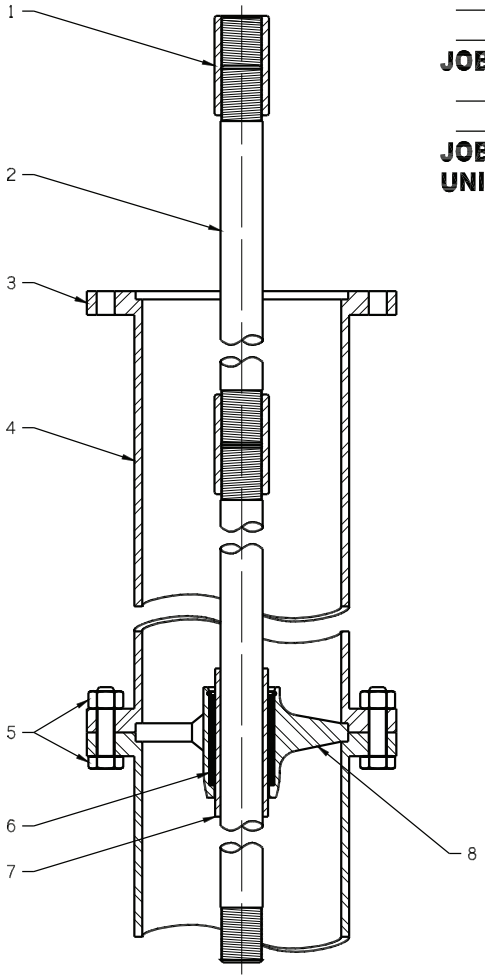
JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	LINE SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
2	LINE SHAFT	ASTM A108 GRADE 1045 CARBON STEEL
3	COLUMN PIPE (THREADED & COUPLED)	ASTM A53 GRADE B CARBON STEEL
4	SHAFT SLEEVE (OPTIONAL, NOT RECCOMENDED)	ASTM A511 GRADE 304 STAINLESS STEEL
5	LINE SHAFT BEARING	NEOPRENE
6	BEARING RETAINER (DROP IN)	ASTM A743 CF8 STAINLESS STEEL

Flanged
Open Lineshaft
Column Assembly





DATE _____

DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____

UNIT QUANTITY _____

Label	Part Name	Material
1	SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
2	LINE-SHAFT	ASTM A108 GRADE 1045 CARBON STEEL
3	COLUMN PIPE (FLANGED)	ASTM A36 HR & A53 GRADE B CARBON STEEL
4	FASTENING ASSEMBLY	COMMERCIAL 18-8 STAINLESS STEEL
5	LINE SHAFT BEARING	NEOPRENE
6	SHAFT SLEEVE (OPTIONAL, NOT RECCOMENDED)	ASTM A511 GRADE 304 STAINLESS STEEL
7	BEARING RETAINER (DROP-IN)	ASTM A743 CF8 STAINLESS STEEL

SIMFLO®

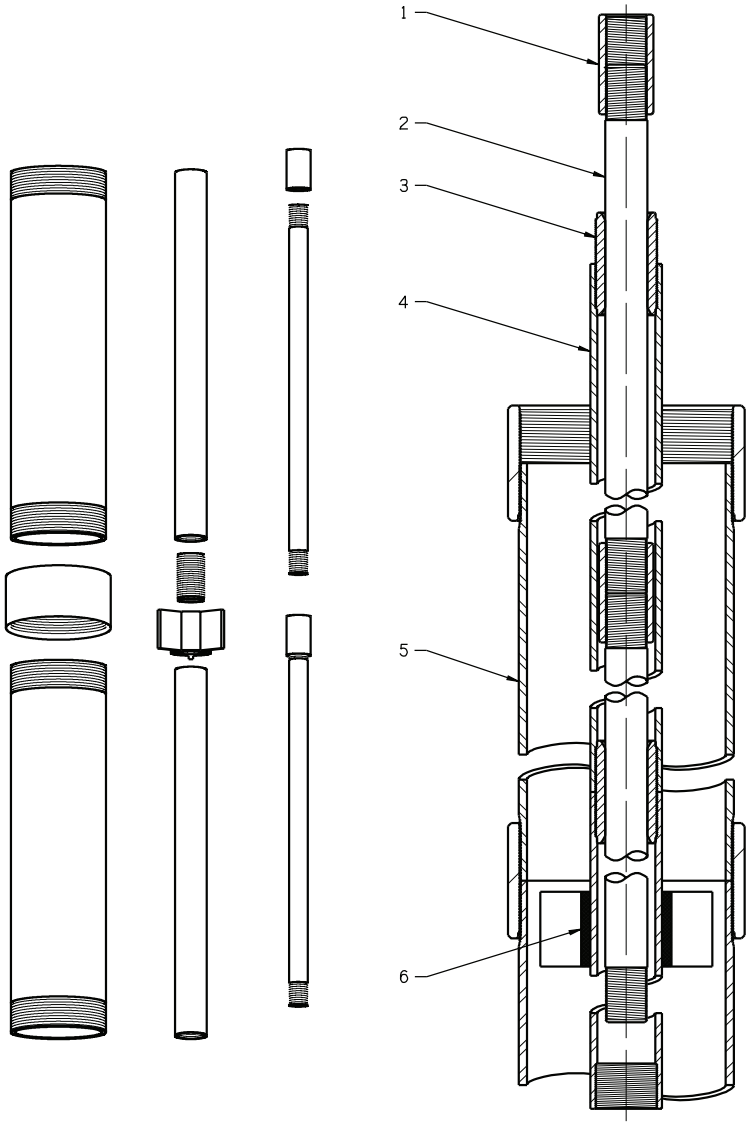
Section 902-16

Threaded Enclosed Lineshaft Column Assembly

DATE _____
DISTRIBUTOR _____

JOB _____

JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	LINE SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
2	LINE-SHAFT	ASTM A108 GRADE 1045 CARBON STEEL
3	LINE SHAFT BEARING	ASTM B505 C84400 BRONZE
4	OIL TUBE	ASTM A53 GRADE B CARBON STEEL (SCH 80)
5	COLUMN PIPE (THREADED & COUPLED)	ASTM A53 GRADE B CARBON STEEL
6	CENTERING SPIDER	NEOPRENE

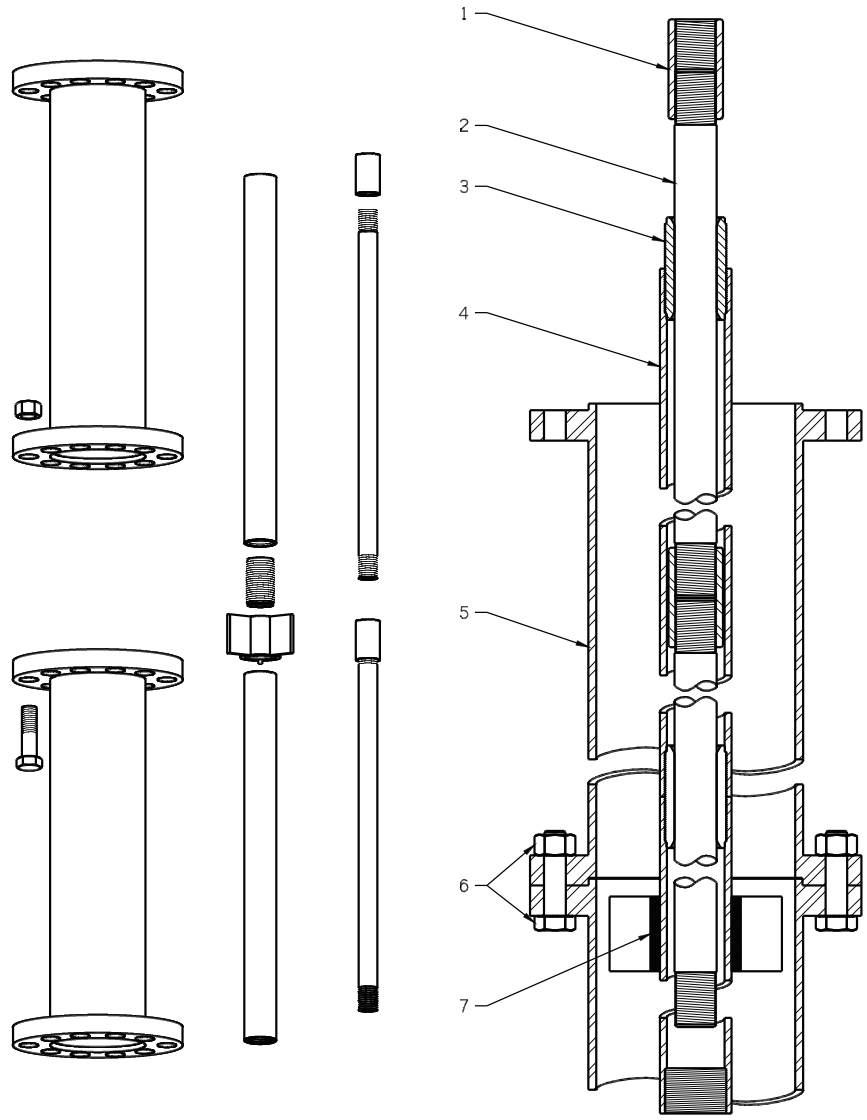
SIMFLO®

Flanged Enclosed Lineshaft Column Assembly

DATE _____
DISTRIBUTOR _____

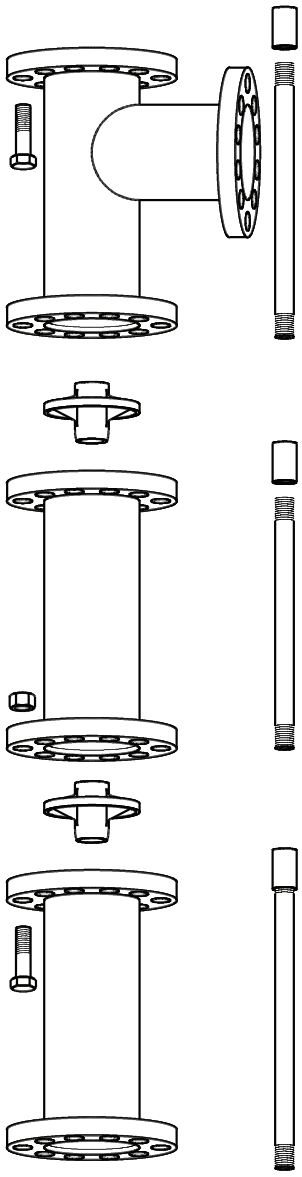
JOB _____

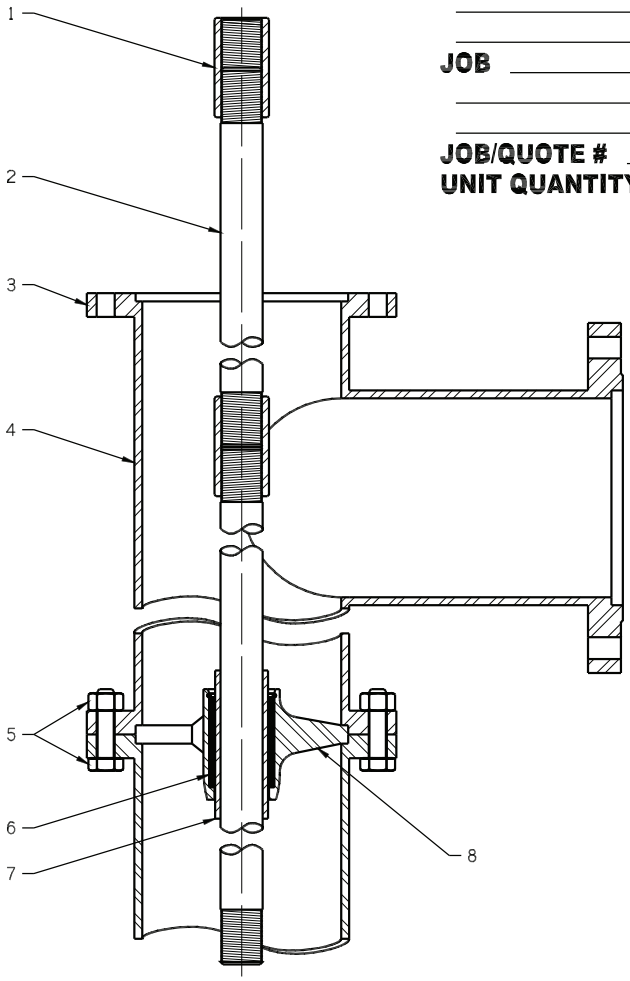
JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
2	LINE-SHAFT	ASTM A108 GRADE 1045 CARBON STEEL
3	TUBE BEARING	ASTM B505 C84400 BRONZE
4	ENCLOSING TUBE	ASTM A53 GRADE B CARBON STEEL (SCH 80)
5	COLUMN PIPE (FLANGED)	ASTM A36 HR & A53 GRADE B CARBON STEEL
6	FASTENING ASSEMBLY	COMMERCIAL 18-8 STAINLESS STEEL
7	CENTERING SPIDER	NEOPRENE

Flanged Underground Discharge
Open Lineshaft
Column Assembly





DATE _____

DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____

UNIT QUANTITY _____

Label	Part Name	Material
1	SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
2	LINE-SHAFT	ASTM A108 GRADE 1045 CARBON STEEL
3	COLUMN PIPE (FLANGED)	ASTM A36 HR & A53 GRADE B CARBON STEEL
4	FASTENING ASSEMBLY	COMMERCIAL 18-8 STAINLESS STEEL
5	LINE SHAFT BEARING	NEOPRENE
6	SHAFT SLEEVE (OPTIONAL, NOT RECCOMENDED)	ASTM A511 GRADE 304 STAINLESS STEEL
7	BEARING RETAINER (DROP-IN)	ASTM A743 CF8 STAINLESS STEEL

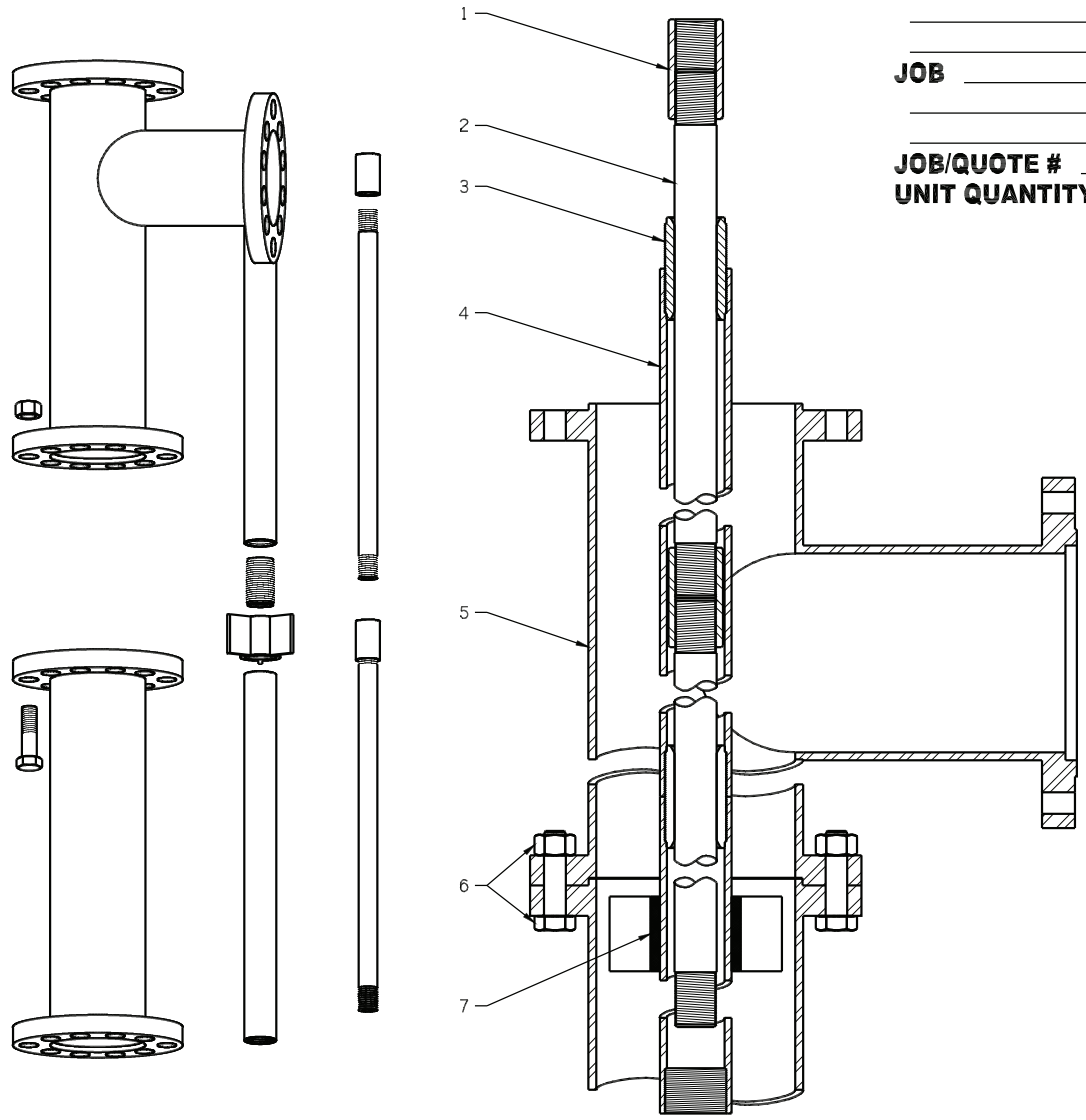
SIMFLO®

Flanged Underground Discharge
Enclosed Lineshaft
Column Assembly

DATE _____
DISTRIBUTOR _____

JOB _____

JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
2	LINE-SHAFT	ASTM A108 GRADE 1045 CARBON STEEL
3	TUBE BEARING	ASTM B505 C84400 BRONZE
4	ENCLOSING TUBE	ASTM A53 GRADE B CARBON STEEL (SCH 80)
5	COLUMN PIPE (UNDERGROUND DISCHARGE, FLANGED)	ASTM A36 HR & A53 GRADE B CARBON STEEL
6	FASTENING ASSEMBLY	COMMERCIAL 18-8 STAINLESS STEEL
7	CENTERING SPIDER	NEOPRENE

SIMFLO®

Section 902-20

Open Lineshaft Bowl Assembly

DATE _____

DISTRIBUTOR _____

_____

_____

JOB _____

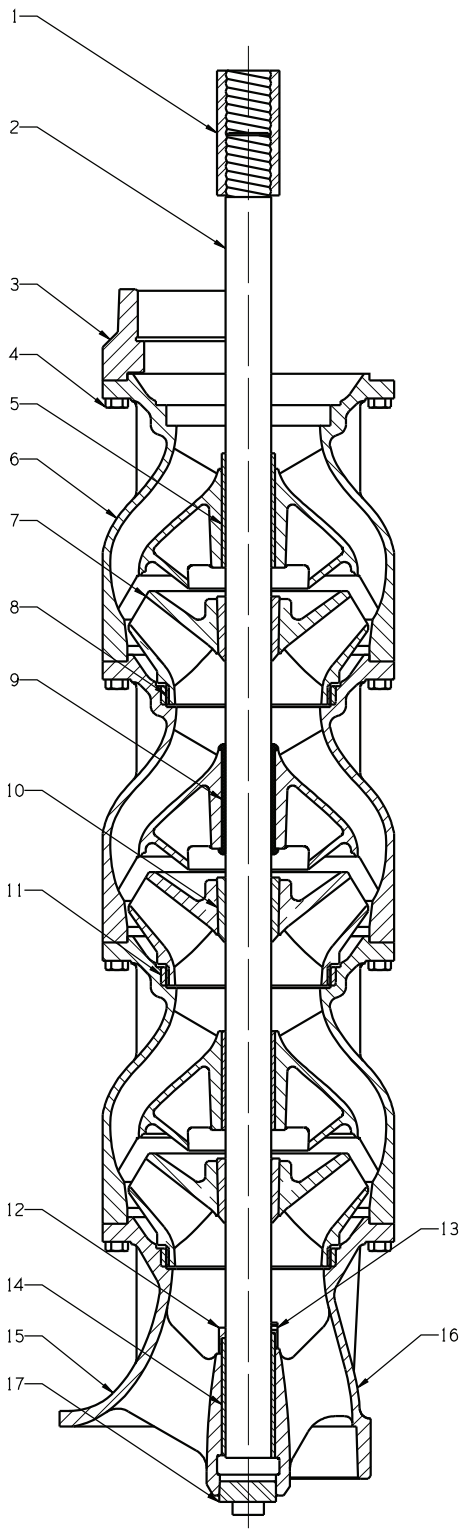
_____

_____

JOB/QUOTE # _____

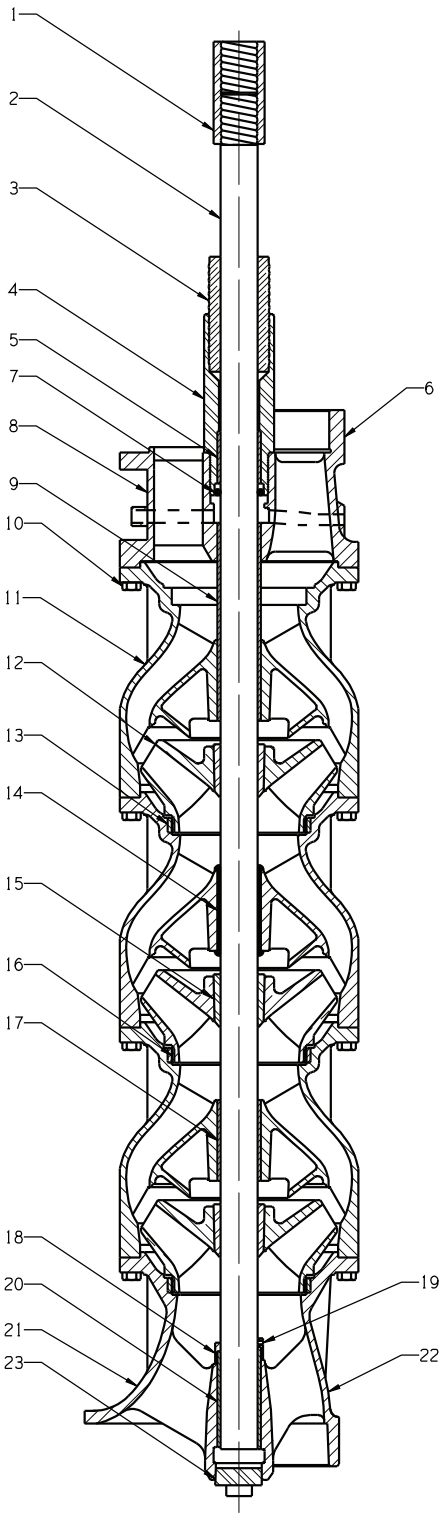
UNIT QUANTITY _____

Note: Bowls are vitreous porcelain enamel or fusion bonded epoxy lined



Label	Part Name	Material
1	BOWL SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
2	BOWL SHAFT	ASTM A582 GRADE 416 HT STAINLESS STEEL
3	DISCHARGE CASE	ASTM A48 CLASS 30 CAST IRON
4	CAP SCREW	COMMERCIAL 18-8 STAINLESS STEEL
5	INTERMEDIATE BOWL BEARING	ASTM B505 C89835 BRONZE
6	INTERMEDIATE BOWL	ASTM A48 CLASS 30 CAST IRON
7	IMPELLER (ENCLOSED) (SEMI-OPEN)	ASTM B148 C95500 NI-AL BRONZE
8	IMPELLER WEAR RING (OPTIONAL)	ASTM A743 CA15 STAINLESS STEEL (OR EQUAL)
9	INTERMEDIATE BOWL BEARING	NITRILE
10	IMPELLER COLLET	ASTM A108 GRADE 1018 CARBON STEEL
11	BOWL WEAR RING (OPTIONAL)	ASTM A743 CA15 STAINLESS STEEL (OR EQUAL)
12	SAND COLLAR	ASTM B505 C89835 BRONZE
13	SAND COLLAR SET SCREW	COMMERCIAL 18-8 STAINLESS STEEL
14	SUCTION CASE BEARING	ASTM B505 C89835 BRONZE
15	SUCTION CASE (BELL)	ASTM A48 CLASS 30 CAST IRON
16	SUCTION CASE (THREADED)	ASTM A48 CLASS 30 CAST IRON
17	GREASE PLUG	COMMERCIAL CARBON STEEL
NOT SHOWN	BASKET STRAINER (THREADED)	CARBON STEEL / STAINLESS STEEL
NOT SHOWN	BASKET STRAINER (BOLT ON)	STAINLESS STEEL
NOT SHOWN	CONE STRAINER (THREADED)	CARBON STEEL W/ STAINLESS STEEL WIRE

Enclosed Lineshaft Bowl Assembly



DATE _____

DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____

UNIT QUANTITY _____

Note: Bowls are vitreous porcelain enamel or fusion bonded epoxy lined

Label	Part Name	Material
1	BOWL SHAFT COUPLING	ASTM A108 GRADE 1215 CR CARBON STEEL
2	BOWL SHAFT	ASTM A582 GRADE 416 HT STAINLESS STEEL
3	TUBE BEARING	ASTM B505 C84400 BRONZE
4	TUBE ADAPTER	ASTM A536 GRADE 65-45-12 DUCTILE IRON
5	ADAPTER TUBE BEARING	ASTM B505 C89835 BRONZE
6	DISCHARGE CASE (THREADED)	ASTM A48 CLASS 30 CAST IRON
7	O-RING	NITRILE
8	DISCHARGE CASE (FLANGED)	ASTM A48 CLASS 30 CAST IRON
9	DISCHARGE CASE THROTTLE BEARING	ASTM B505 C89835 BRONZE
10	CAP SCREW	COMMERCIAL 18-8 STAINLESS STEEL
11	INTERMEDIATE BOWL	ASTM A48 CLASS 30 CAST IRON
12	IMPELLER (ENCLOSED) (SEMI-OPEN)	ASTM B148 C95500 NI-AL BRONZE
13	BOWL WEAR RING (OPTIONAL)	ASTM A743 CA15 STAINLESS STEEL (OR EQUAL)
14	INTERMEDIATE BOWL BEARING	NITRILE
15	IMPELLER COLLET	ASTM A108 GRADE 1018 CARBON STEEL
16	IMPELLER WEAR RING (OPTIONAL)	ASTM A743 CA15 STAINLESS STEEL (OR EQUAL)
17	INTERMEDIATE BOWL BEARING	ASTM B505 C89835 BRONZE
18	SAND COLLAR	ASTM B505 C89835 BRONZE
19	SAND COLLAR SET SCREW	COMMERCIAL 18-8 STAINLESS STEEL
20	SUCTION CASE BEARING	ASTM B505 C89835 BRONZE
21	SUCTION CASE (BELL)	ASTM A48 CLASS 30 CAST IRON
22	SUCTION CASE (THREADED)	ASTM A48 CLASS 30 CAST IRON
23	GREASE PLUG	COMMERCIAL CARBON STEEL
NOT SHOWN	BASKET STRAINER (THREADED)	CARBON STEEL / STAINLESS STEEL
NOT SHOWN	BASKET STRAINER (BOLT ON)	STAINLESS STEEL
NOT SHOWN	CONE STRAINER (THREADED)	CARBON STEEL W/ STAINLESS STEEL WIRE

SIMFLO®

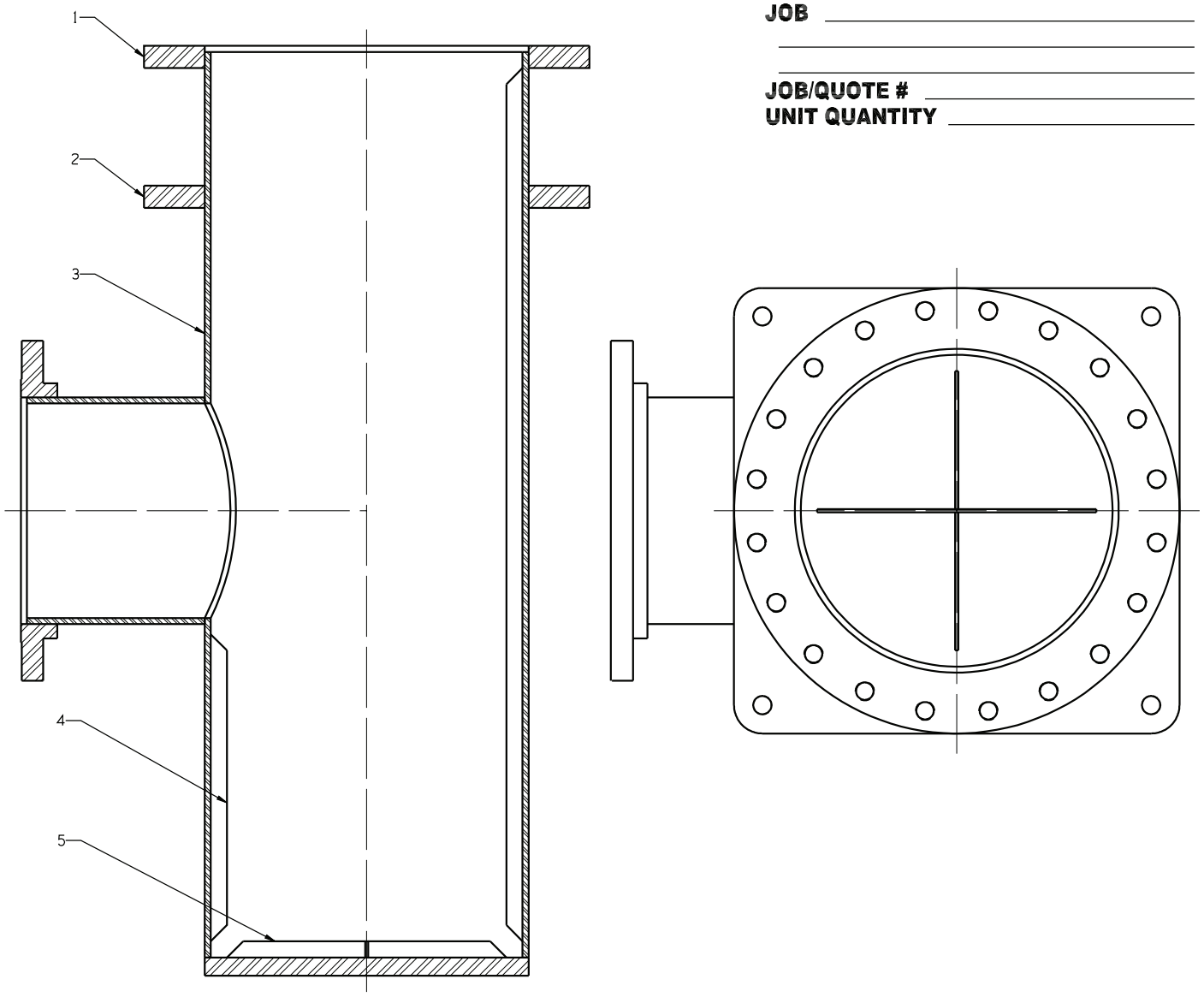
Section 902-22

Booster Can With Inlet

DATE _____
DISTRIBUTOR _____

JOB _____

JOB/QUOTE # _____
UNIT QUANTITY _____



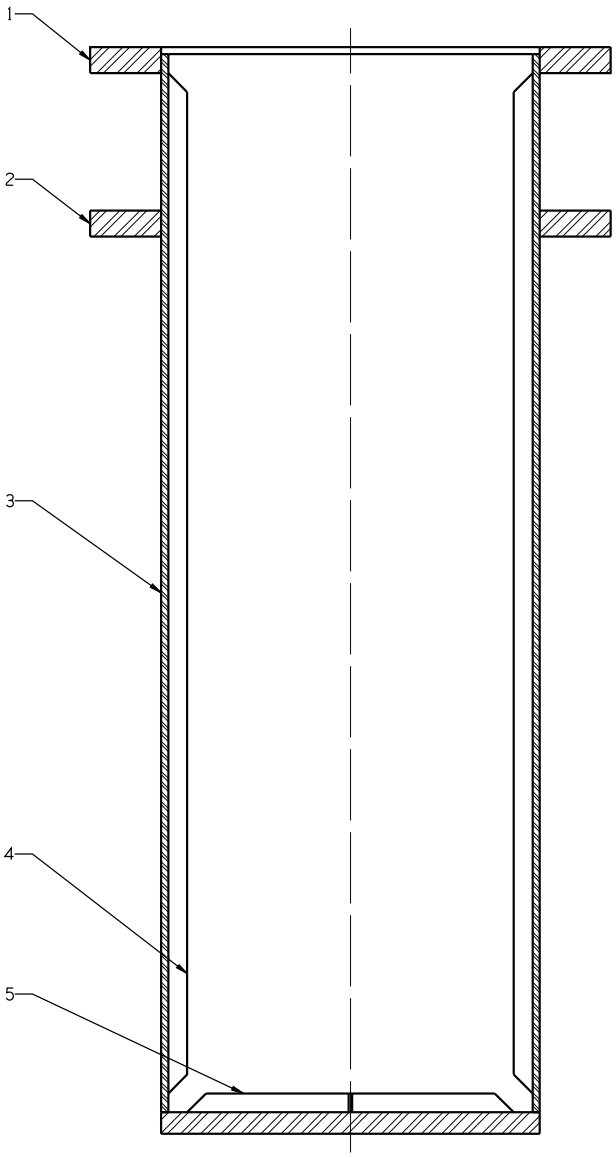
Label	Part Name	Material
1	DISCHARGE HEAD MOUNTING FLANGE	ASTM A36 HR CARBON STEEL
2	BOOSTER CAN MOUNTING FLANGE (OPTIONAL)	ASTM A36 HR CARBON STEEL
3	BOOSTER CAN	ASTM A36 HR & A53 GRADE B CARBON STEEL
4	VERTICAL STRAIGHTENING VANES (AS REQUIRED)	ASTM A36 HR CARBON STEEL
5	BASE VORTEX SUPPRESSION VANES	ASTM A36 HR CARBON STEEL

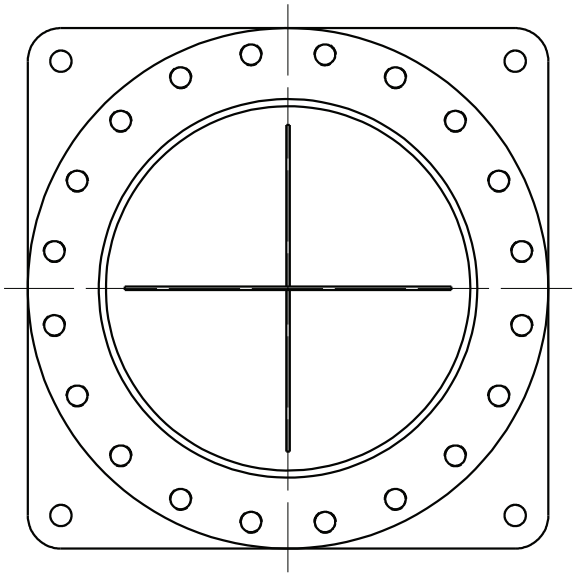
Booster Can
Without Inlet

DATE _____
DISTRIBUTOR _____

JOB _____

JOB/QUOTE # _____
UNIT QUANTITY _____





Label	Part Name	Material
1	DISCHARGE HEAD MOUNTING FLANGE	ASTM A36 HR CARBON STEEL
2	BOOSTER CAN MOUNTING FLANGE (OPTIONAL)	ASTM A36 HR CARBON STEEL
3	BOOSTER CAN	ASTM A36 HR & A53 GRADE B CARBON STEEL
4	VERTICAL STRAIGHTENING VANES (AS REQUIRED)	ASTM A36 HR CARBON STEEL
5	BASE VORTEX SUPPRESSION VANES	ASTM A36 HR CARBON STEEL

SIMFLO®

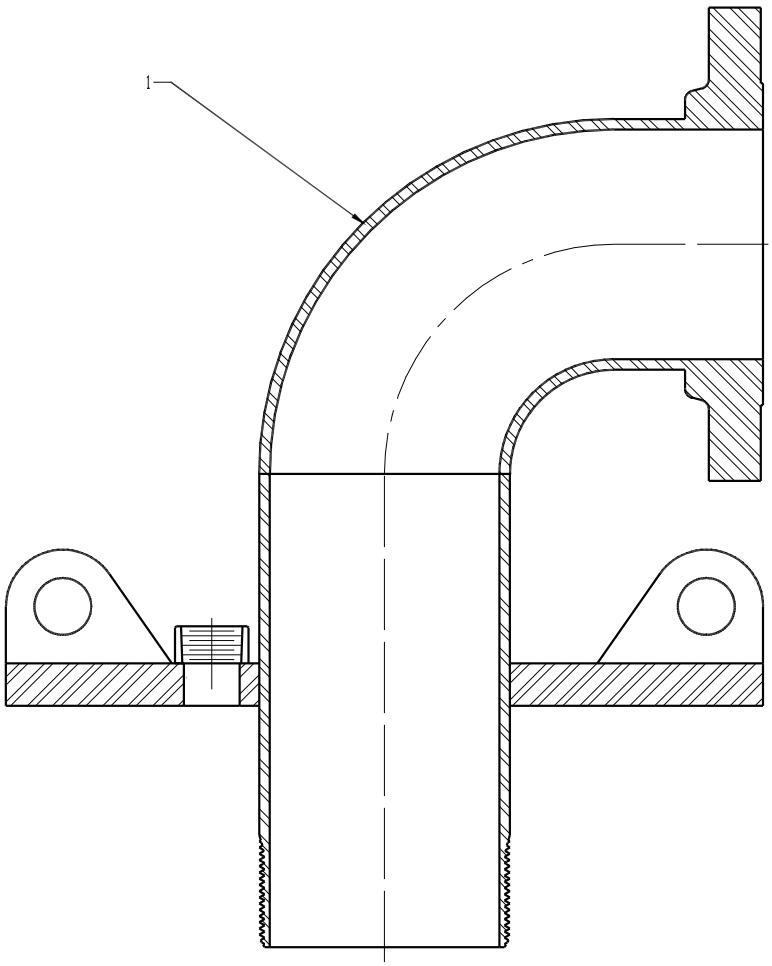
Section 902-24

Submersible Discharge Head

DATE _____
DISTRIBUTOR _____

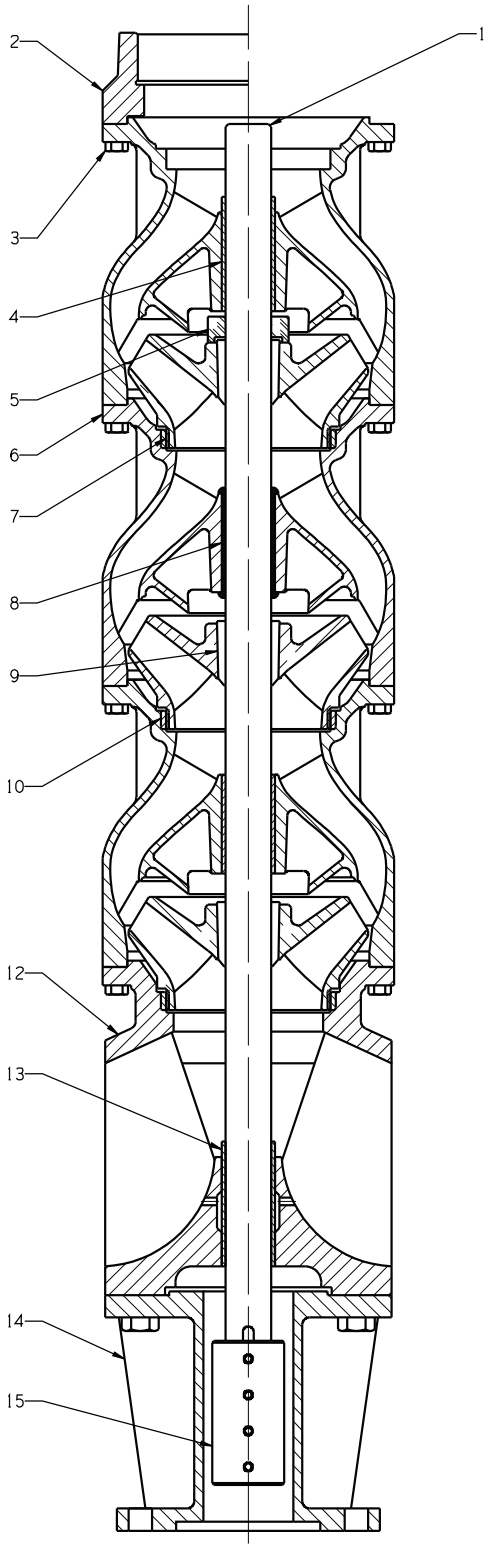
JOB _____

JOB/QUOTE # _____
UNIT QUANTITY _____



Label	Part Name	Material
1	DISCHARGE HEAD	ASTM A36 HR & 53 GRADE B CARBON STEEL

Submersible Flanged Construction Bowl Assembly



DATE _____

DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

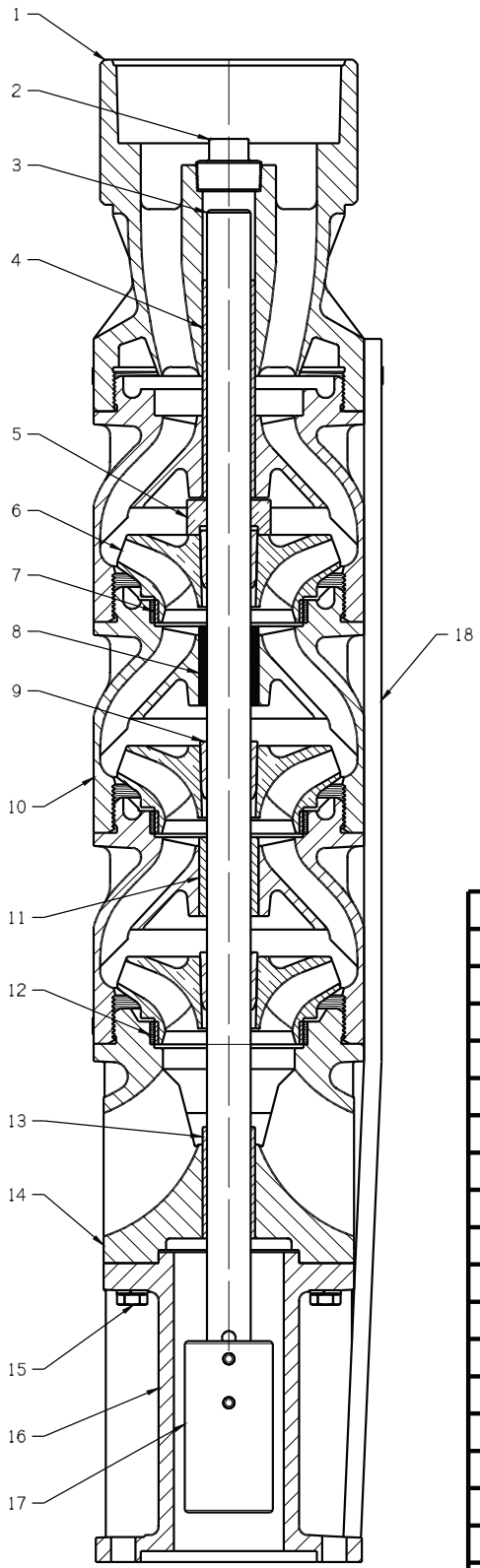
JOB/QUOTE # _____

UNIT QUANTITY _____

Note: Bowls are vitreous porcelain enamel or fusion bonded epoxy lined

Label	Part Name	Material
1	BOWL SHAFT	ASTM A582 GRADE 416 HT STAINLESS STEEL
2	DISCHARGE CASE	ASTM A48 CLASS 30 CAST IRON
3	CAP SCREW	COMMERCIAL 18-8 STAINLESS STEEL
4	INTERMEDIATE BOWL BEARING	ASTM B505 C89835 BRONZE
5	UPTHRUST COLLAR	POLYETHYLENE TEREPHTHALATE
6	INTERMEDIATE BOWL	ASTM A48 CLASS 30 CAST IRON
7	IMPELLER (ENCLOSED) (SEMI-OPEN)	ASTM B148 C95500 NI-AL BRONZE
8	IMPELLER WEAR RING (OPTIONAL)	ASTM A743 CA15 STAINLESS STEEL (OR EQUAL)
9	INTERMEDIATE BOWL BEARING	NITRILE
10	IMPELLER COLLET	ASTM A108 GRADE 1018 CARBON STEEL
11	BOWL WEAR RING (OPTIONAL)	ASTM A743 CA15 STAINLESS STEEL (OR EQUAL)
12	SUCTION CASE (SUB)	ASTM A536 GRADE 65-45-12 DUCTILE IRON
13	SUCTION CASE BEARING	ASTM B505 C89835 BRONZE
14	MOTOR BRACKET (SUB)	ASTM A536 GRADE 65-45-12 DUCTILE IRON
15	MOTOR COUPLING (SUB)	ASTM A276 GRADE 304 STAINLESS STEEL
NOT SHOWN	SCREEN STRAINER	STAINLESS STEEL
NOT SHOWN	CABLE GUARD	STAINLESS STEEL

Submersible Threaded Construction Bowl Assembly



DATE _____

DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____

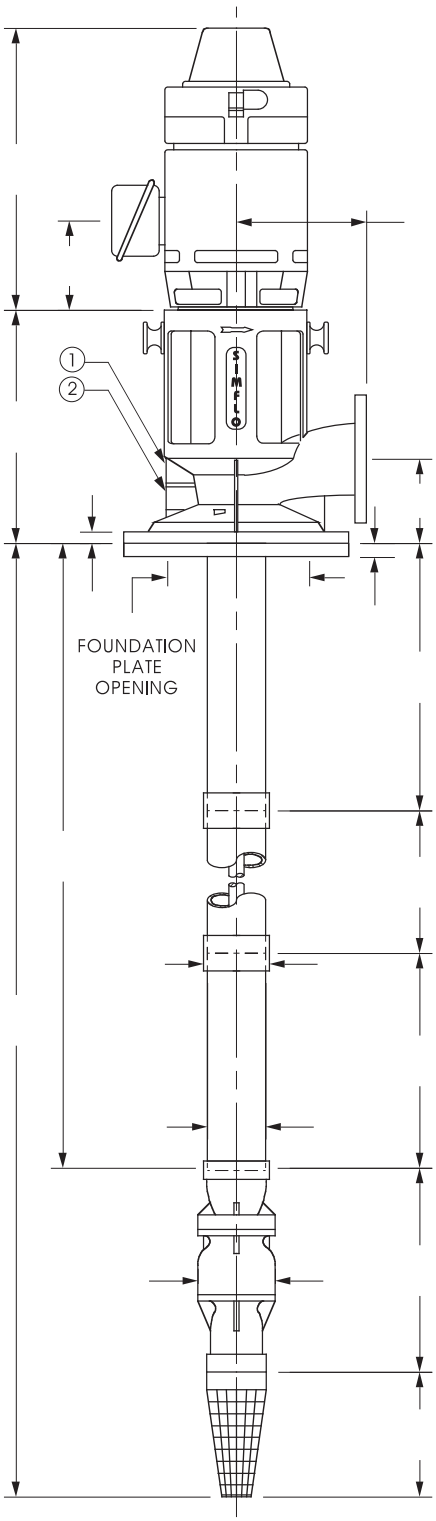
UNIT QUANTITY _____

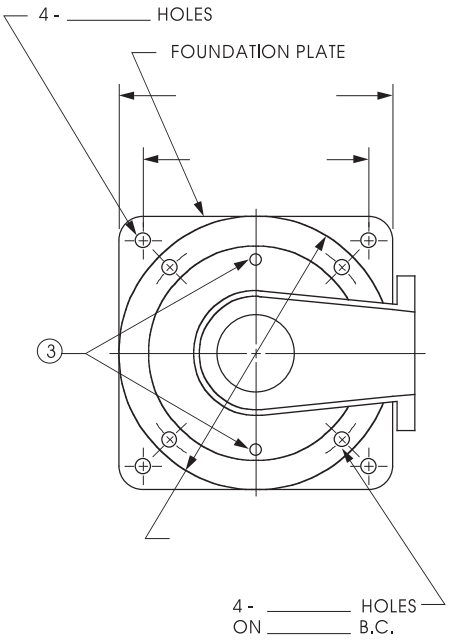
Note: Bowls are vitreous porcelain enamel or fusion bonded epoxy lined

Label	Part Name	Material
1	DISCHARGE CASE	ASTM A48 CLASS 30 CAST IRON
2	GREASE PLUG	COMMERCIAL CARBON STEEL
3	BOWL SHAFT	ASTM A582 GRADE 416 HT STAINLESS STEEL
4	TOP BEARING	ASTM B505 C89835 BRONZE
5	UPTHRUST COLLAR	POLYETHYLENE TEREPHTHALATE
6	IMPELLER (ENCLOSED) (SEMI-OPEN)	ASTM A743 CF8M STAINLESS STEEL
7	IMPELLER WEAR RING (OPTIONAL)	ASTM A743 CA15 STAINLESS STEEL (OR EQUAL)
8	INTERMEDIATE BOWL BEARING	NITRILE
9	IMPELLER COLLET	ASTM A108 GRADE 1018 CARBON STEEL
10	INTERMEDIATE BOWL	ASTM A48 CLASS 30 CAST IRON
11	INTERMEDIATE BOWL BEARING	ASTM B505 C89835 BRONZE
12	BOWL WEAR RING (OPTIONAL)	ASTM A743 CA15 STAINLESS STEEL (OR EQUAL)
13	SUCTION CASE BEARING	ASTM B505 C89835 BRONZE
14	SUCTION CASE (SUB)	ASTM A536 GRADE 65-45-12 DUCTILE IRON
15	CAP SCREW	COMMERCIAL 18-8 STAINLESS STEEL
16	MOTOR BRACKET (SUB)	ASTM A536 GRADE 65-45-12 DUCTILE IRON
17	MOTOR COUPLING (SUB)	ASTM A276 GRADE 304 STAINLESS STEEL
18	CABLE GUARD	STAINLESS STEEL
NOT SHOWN	SCREEN STRAINER	STAINLESS STEEL

SIMFLO®

Deep Well Pump
With Cast Discharge Head
And Electric Motor





DISCHARGE FLANGE

_____

_____

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

_____

_____

_____

_____

_____

1 - 3/4" NPT DRAIN (1/2" NPT FOR S-050)
2 - 3/4" NPT ARV/PRELUBE (1/2" NPT FOR S-050)
3 - X" NPT HOLES ON Y" B.C.

	X	Y
S-050	1/2	7.50
S-150	1/2	7.50
S-350	3/4	11.25
S-550	1	13.00
S-750	1	16.75

DATE _____
DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

_____

_____

_____

_____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

_____

COLUMN ASSY. _____

_____

_____

_____

_____

FOUNDATION PLATE _____

_____

DISCHARGE HEAD _____

_____

_____

_____

SEAL TYPE _____

_____

SPECIAL _____

_____

_____

OTHER _____

_____

_____

_____

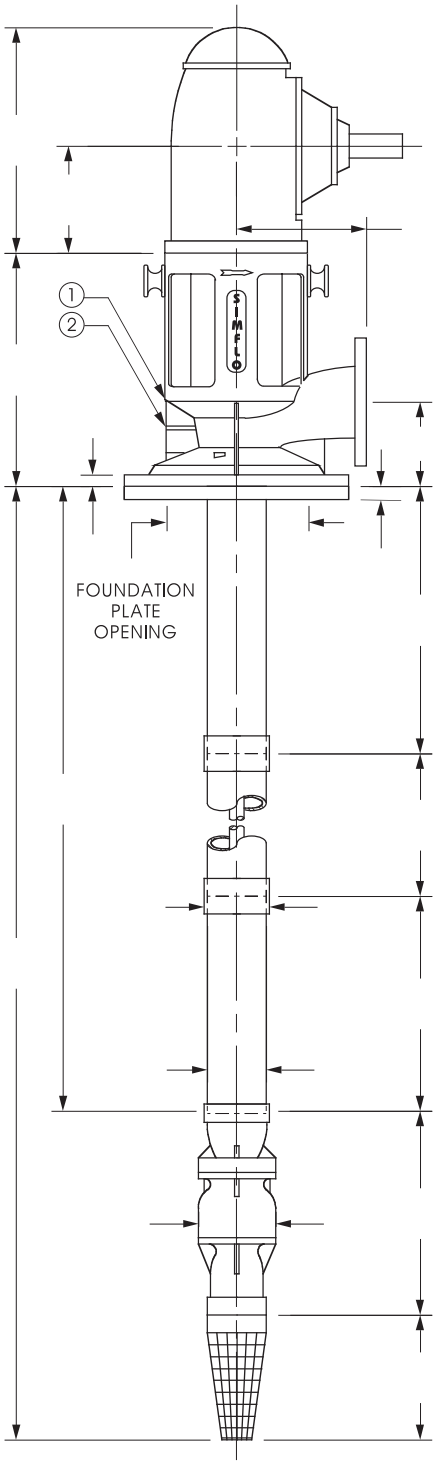
_____

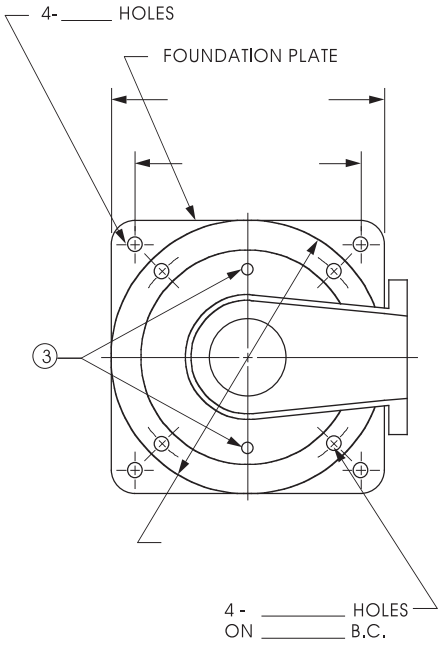
_____

SIMFLO®

Section 902-28

Deep Well Pump
With Cast Discharge Head
And Gear Drive





DISCHARGE FLANGE

_____

_____

GEAR DRIVE

MAKE _____

RATIO _____

N.R.R. _____ **NO** _____

H.P. _____ **S.F.** _____

R.P.M. _____

(1) 3/4" NPT DRAIN (1/2" NPT FOR S-050)
(2) 3/4" NPT ARV/PRELUBE (1/2" NPT FOR S-050)
(3) X" NPT HOLES ON Y" B.C.

	X	Y
S-050	1/2	7.50
S-150	1/2	7.50
S-350	3/4	11.25
S-550	1	13.00
S-750	1	16.75

DATE _____

DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____

QUANTITY _____

G.P.M. _____

T.D.H. _____

SPEED _____

BOWL MODEL # _____

_____

_____

_____

_____

IMP. DIA. _____

IMP. TYPE _____

STRAINER TYPE _____

_____

COLUMN ASSY. _____

_____

_____

_____

_____

FOUNDATION PLATE _____

_____

DISCHARGE HEAD _____

_____

_____

_____

SEAL TYPE _____

_____

SPECIAL _____

_____

_____

_____

OTHER _____

_____

_____

_____

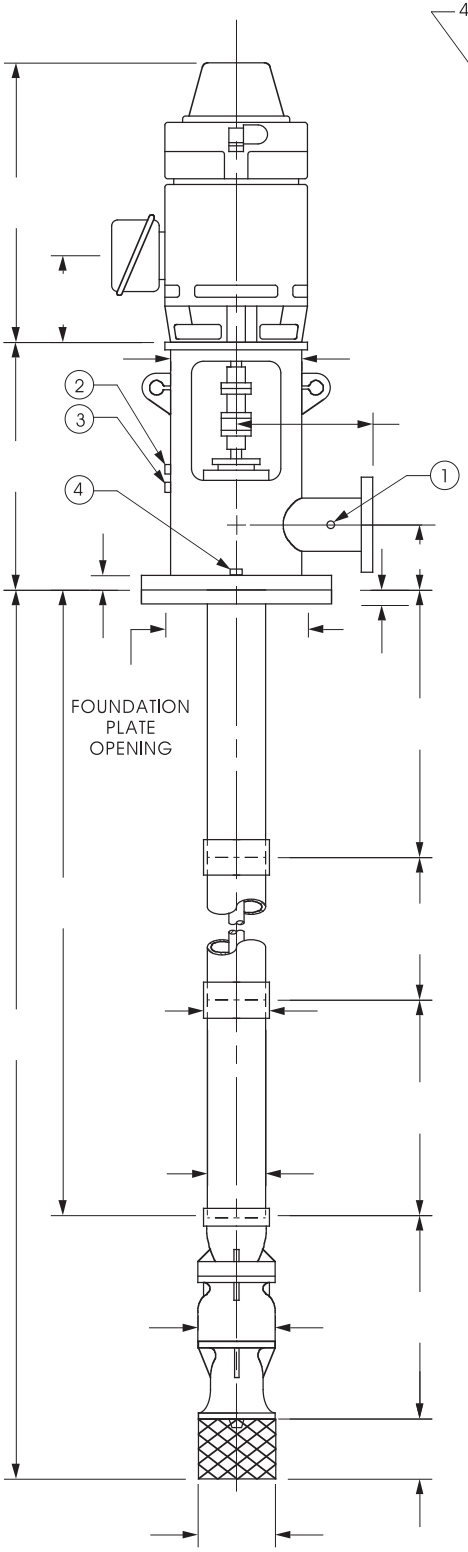
_____

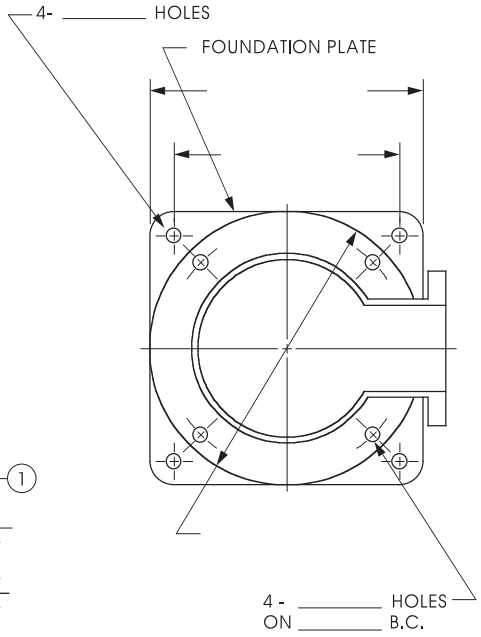
_____

SIMFLO®

Section 902-29

Short Coupled Pump
With 'SL' Style
Discharge Head,
Threaded Column





DISCHARGE FLANGE

_____

_____

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

1 - 1/2" NPT GAUGE TAP
2 - 3/4" NPT DRAIN TAP
3 - 1" NPT PRELUBE/ARV TAP
4 - 1/2" NPT BYPASS TAP

DATE _____
DISTRIBUTOR _____

JOB _____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

COLUMN ASSY. _____

FOUNDATION PLATE _____

DISCHARGE HEAD _____

SEAL TYPE _____

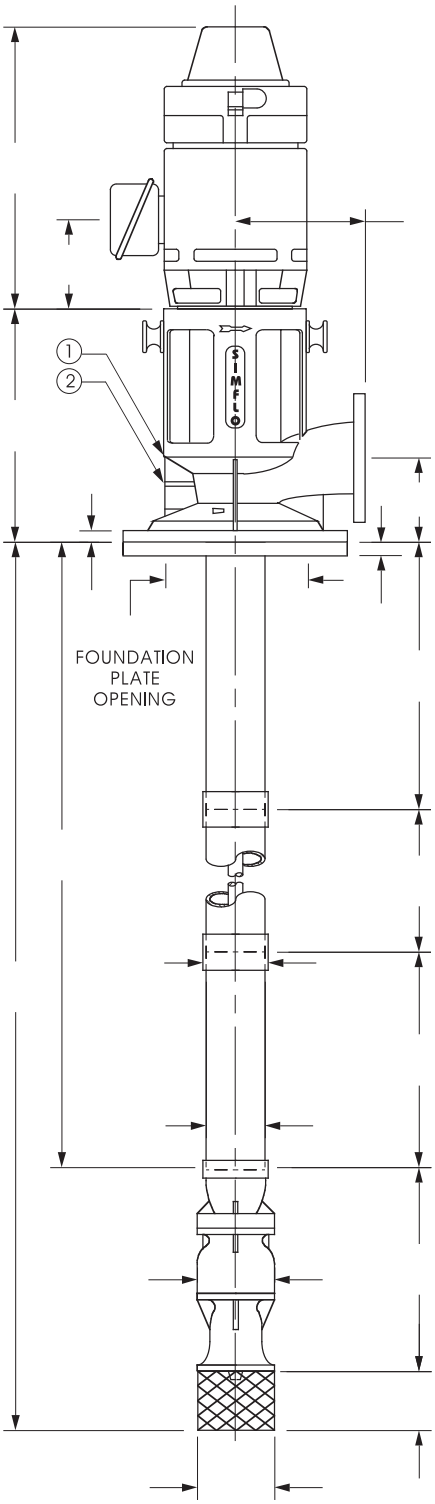
SPECIAL _____

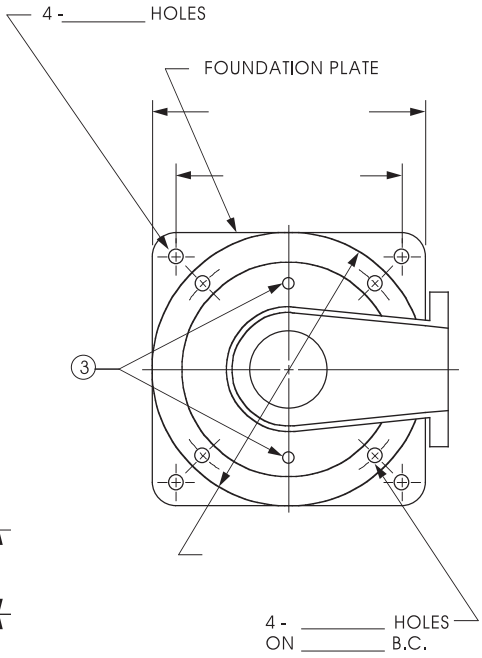
OTHER _____

SIMFLO®

Section 902-30

Short Coupled Pump With Cast Discharge Head, Threaded Column





DISCHARGE FLANGE

_____

_____

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

_____

_____

_____

_____

_____

1 - 3/4" NPT DRAIN (1/2" NPT FOR S-050)
2 - 3/4" NPT ARV/PRELUBE (1/2" NPT FOR S-050)
3 - X" NPT HOLES ON Y" B.C.

	X	Y
S-050	1/2	7.50
S-150	1/2	7.50
S-350	3/4	11.25
S-550	1	13.00
S-750	1	16.75

DATE _____
DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

_____

_____

_____

_____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

_____

COLUMN ASSY. _____

_____

_____

_____

_____

FOUNDATION PLATE _____

_____

DISCHARGE HEAD _____

_____

_____

_____

SEAL TYPE _____

_____

SPECIAL _____

_____

_____

_____

OTHER _____

_____

_____

_____

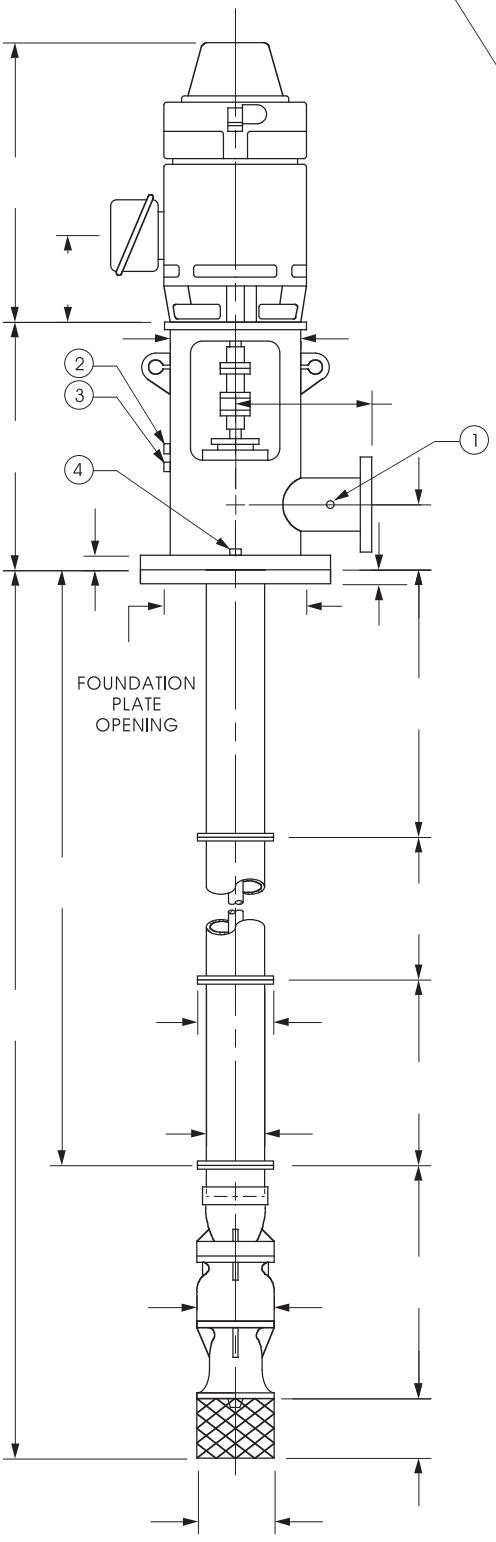
_____

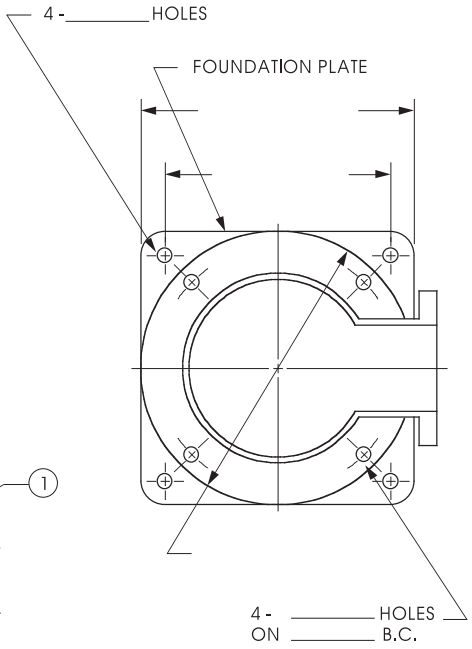
_____

SIMFLO®

Section 902-31

Short Coupled Pump
With 'SL' Style
Discharge Head,
Flanged Column





DISCHARGE FLANGE

_____

_____

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

_____

_____

_____

_____

_____

(1) - 1/2" NPT GAUGE TAP
(2) - 3/4" NPT DRAIN TAP
(3) - 1" NPT PRELUBE/ARV TAP
(4) - 1/2" NPT BYPASS TAP

DATE _____
DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

_____

_____

_____

_____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

_____

COLUMN ASSY. _____

_____

_____

_____

_____

FOUNDATION PLATE _____

_____

DISCHARGE HEAD _____

_____

_____

_____

SEAL TYPE _____

_____

SPECIAL _____

_____

_____

_____

OTHER _____

_____

_____

_____

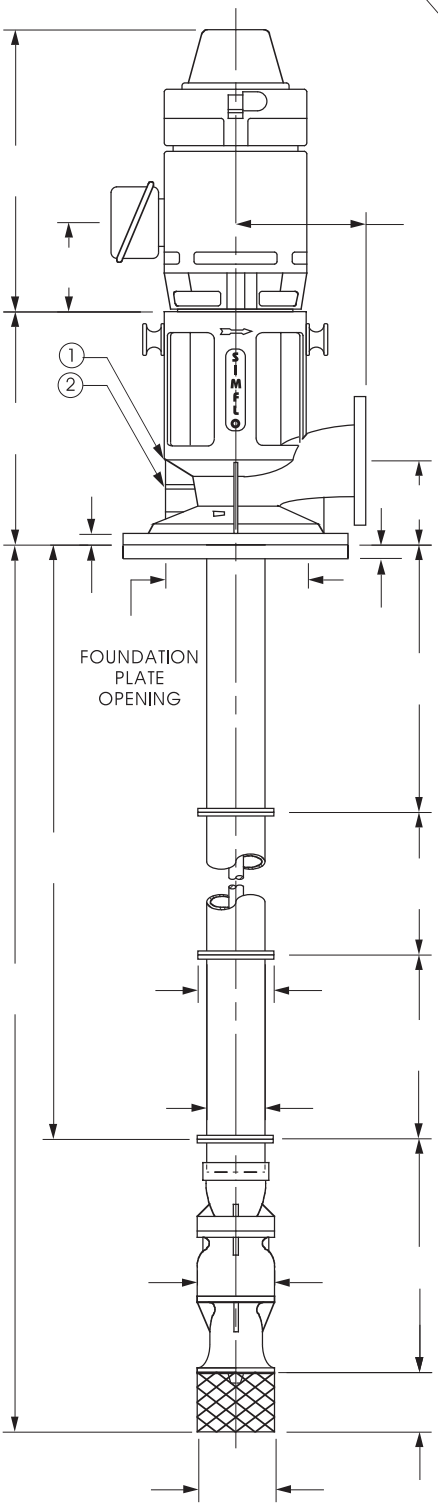
_____

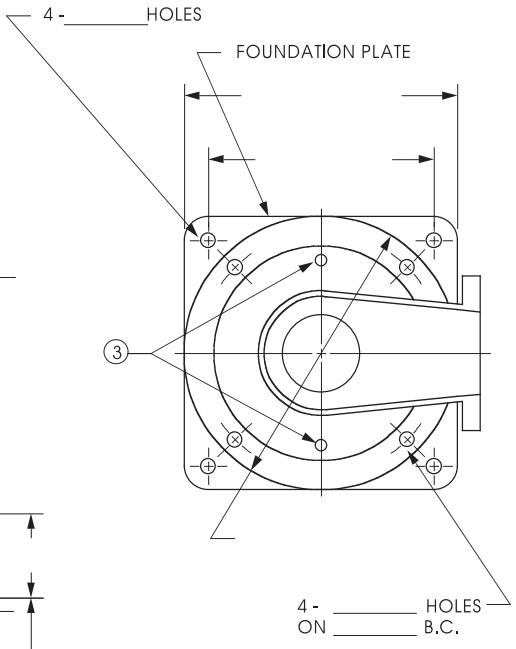
_____

SIMFLO®

Section 902-32

Short Coupled Pump With Cast Discharge Head, Flanged Column





DISCHARGE FLANGE

_____

_____

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

_____

_____

_____

_____

_____

1 - 3/4" NPT DRAIN (1/2" NPT FOR S-050)
2 - 3/4" NPT ARV/PRELUBE (1/2" NPT FOR S-050)
3 - X" NPT HOLES ON Y" B.C.

	X	Y
S-050	1/2	7.50
S-150	1/2	7.50
S-350	3/4	11.25
S-550	1	13.00
S-750	1	16.75

DATE _____
DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

_____

_____

_____

_____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

_____

COLUMN ASSY. _____

_____

_____

_____

_____

FOUNDATION PLATE _____

_____

DISCHARGE HEAD _____

_____

_____

_____

SEAL TYPE _____

_____

SPECIAL _____

_____

_____

_____

OTHER _____

_____

_____

_____

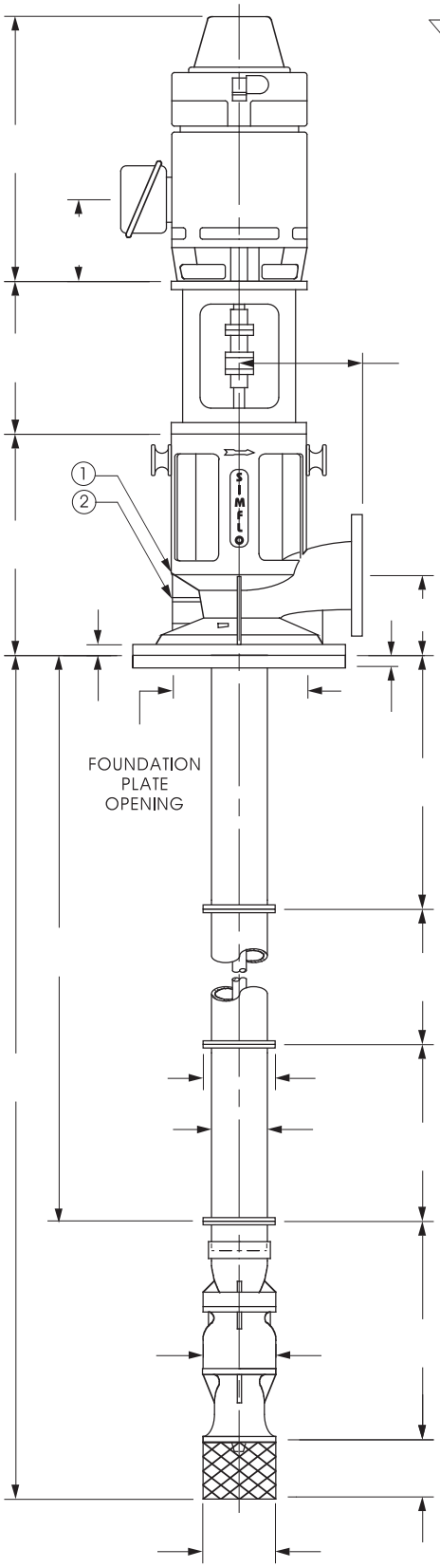
_____

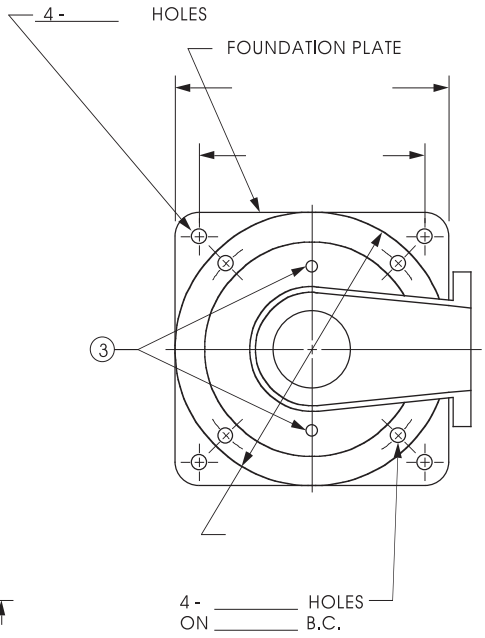
_____

SIMFLO®

Section 902-33

Short Coupled Pump
With Cast Discharge Head
With Motor Riser
Flanged Column





DISCHARGE FLANGE

MOTOR

MAKE
ENCLOSURE
N.R.R. or S.R.C.
H.P. **S.F.**
R.P.M.
PHASE **CYCLE**
VOLTAGE
V.H.S. or V.S.S.

OTHER MOTOR INFO:

1 - 3/4" NPT DRAIN (1/2" NPT FOR S-050)
2 - 3/4" NPT ARV/PRELUBE (1/2" NPT FOR S-050)
3 - X" NPT HOLES ON Y" B.C.

	X	Y
S-050	1/2	7.50
S-150	1/2	7.50
S-350	3/4	11.25
S-550	1	13.00
S-750	1	16.75

DATE
DISTRIBUTOR

JOB

JOB/QUOTE #
QUANTITY

G.P.M.
T.D.H.
SPEED
BOWL MODEL #

IMP. DIA.
IMP. TYPE
STRAINER TYPE

COLUMN ASSY.

FOUNDATION PLATE

DISCHARGE HEAD

SEAL TYPE

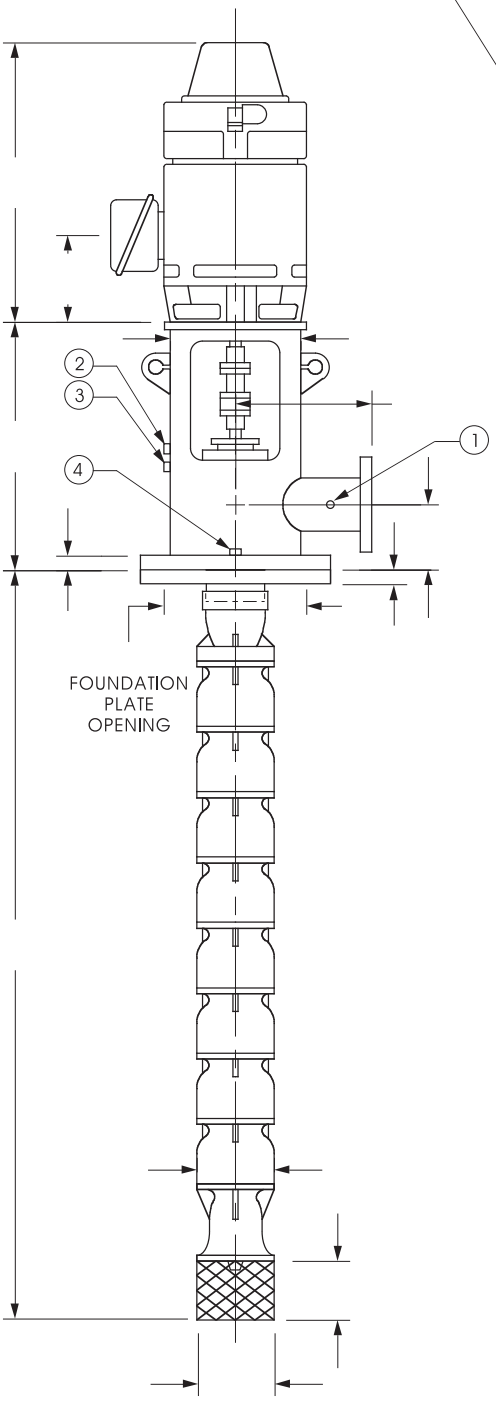
SPECIAL

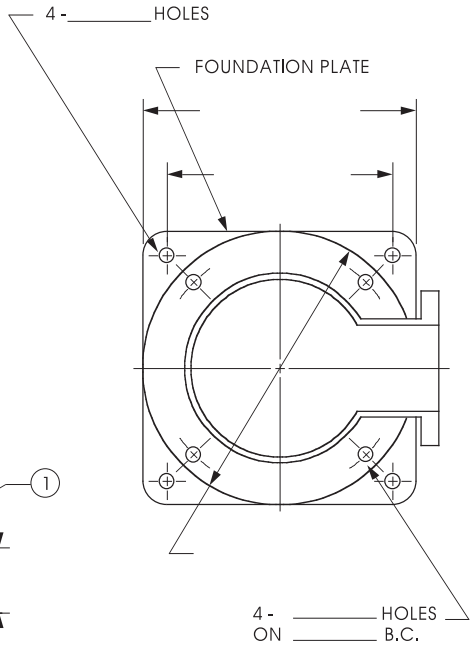
OTHER

SIMFLO®

Section 902-34

Close Coupled Pump With 'SL' Style Discharge Head





DISCHARGE FLANGE

_____

_____

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

_____

_____

_____

_____

_____

1 - 1/2" NPT GAUGE TAP
2 - 3/4" NPT DRAIN TAP
3 - 1" NPT PRELUBE/ARV TAP
4 - 1/2" NPT BYPASS TAP

DATE _____
DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

_____

_____

_____

_____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

_____

FOUNDATION PLATE _____

_____

DISCHARGE HEAD _____

_____

_____

_____

SEAL TYPE _____

_____

SPECIAL _____

_____

_____

_____

OTHER _____

_____

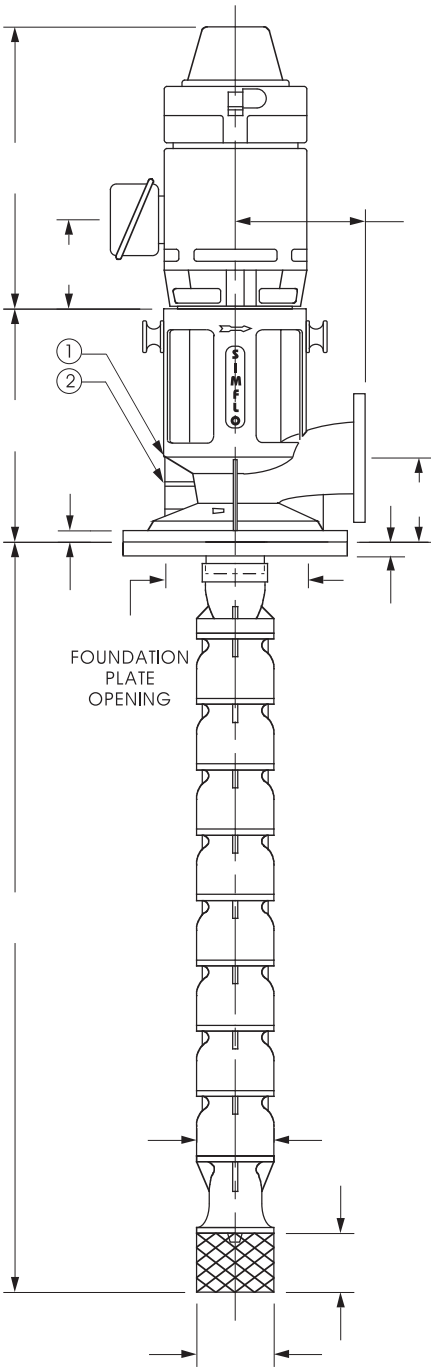
_____

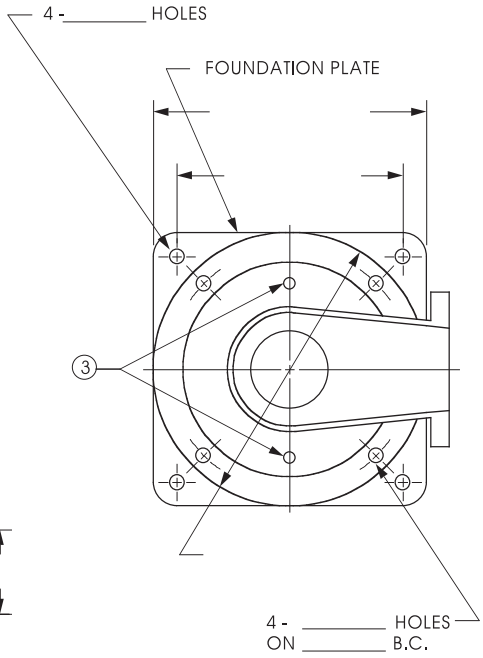
_____

_____

_____

Close Coupled Pump
With Cast Discharge Head





DISCHARGE FLANGE

_____

_____

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

_____

_____

_____

_____

_____

1 - 3/4" NPT DRAIN (1/2" NPT FOR S-050)
2 - 3/4" NPT ARV/PRELUBE (1/2" NPT FOR S-050)
3 - X" NPT HOLES ON Y" B.C.

	X	Y
S-050	1/2	7.50
S-150	1/2	7.50
S-350	3/4	11.25
S-550	1	13.00
S-750	1	16.75

DATE _____
DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

_____

_____

_____

_____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

_____

FOUNDATION PLATE _____

_____

DISCHARGE HEAD _____

_____

_____

_____

SEAL TYPE _____

_____

SPECIAL _____

_____

_____

_____

OTHER _____

_____

_____

_____

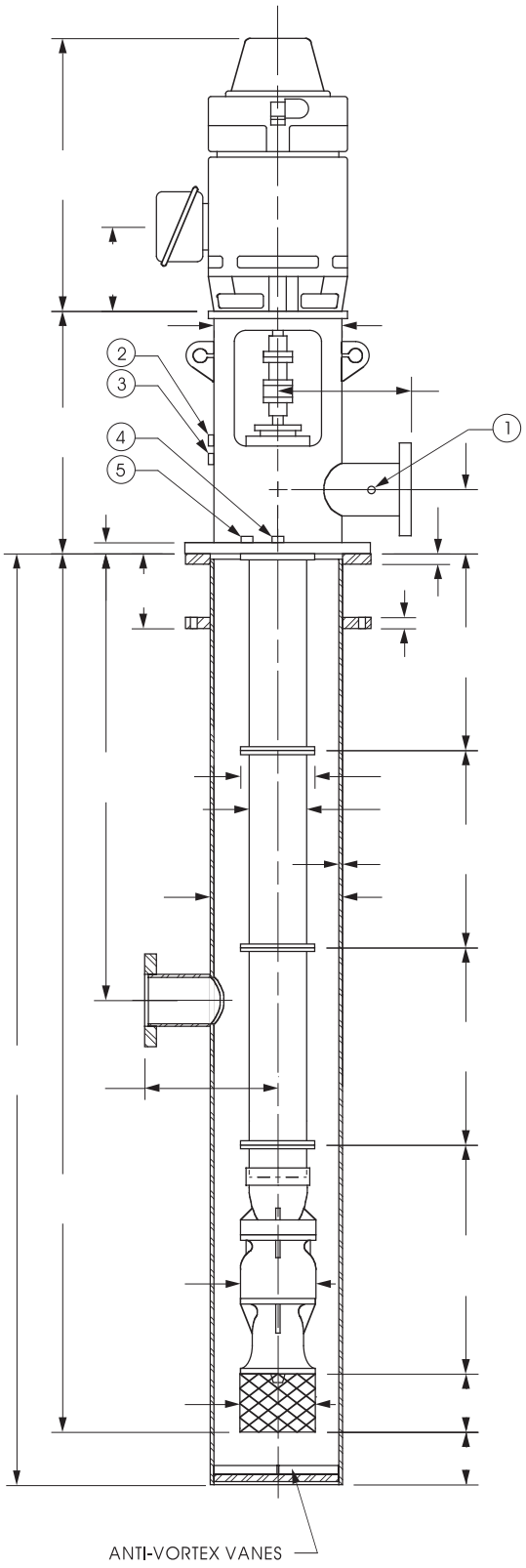
_____

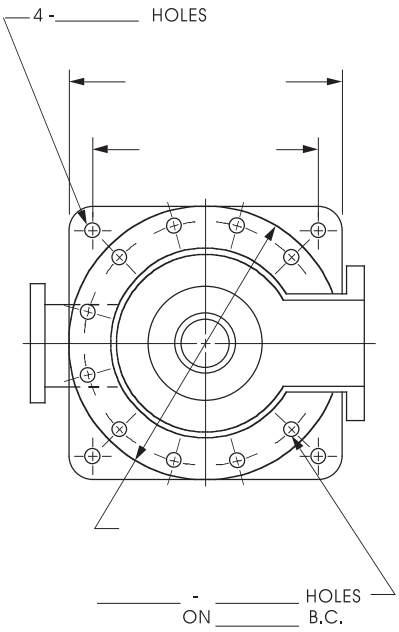
_____

SIMFLO®

Booster Can Pump
With 'SL' Style
Discharge Head,
Flanged Column
Underground Suction

Section 902-36





SUCTION FLANGE

DISCHARGE FLANGE

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

1 - 1/2" NPT GAUGE TAP
2 - 3/4" NPT DRAIN TAP
3 - 1" NPT PRELUBE/ARV TAP
4 - 1" NPT CAN ARV
5 - 1/2" NPT BYPASS TAP

DATE _____
DISTRIBUTOR _____

JOB _____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

COLUMN ASSY. _____

CAN MOUNTING PLATE _____

DISCHARGE HEAD _____

SEAL TYPE _____

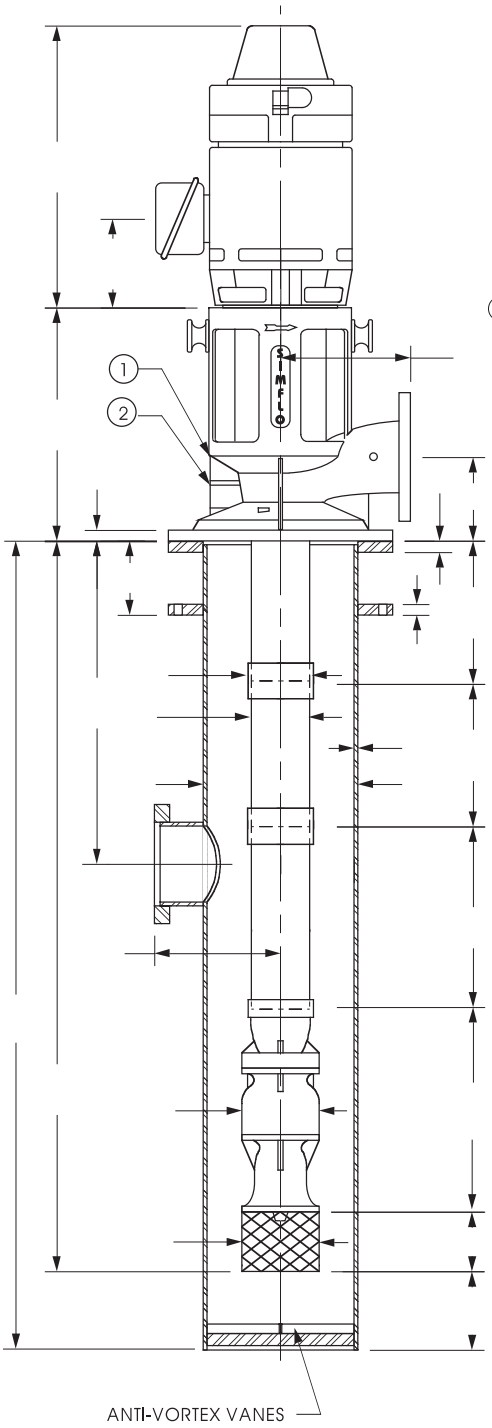
SPECIAL _____

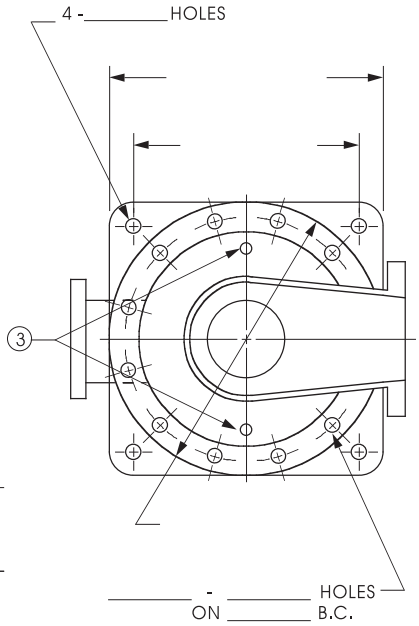
OTHER _____

SIMFLO®

Section 902-37

Booster Can Pump
With Cast Discharge Head,
Threaded Column
Underground Suction





SUCTION FLANGE _____

DISCHARGE FLANGE _____

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

1 - 3/4" NPT DRAIN (1/2" NPT FOR S-050)
2 - 3/4" NPT ARV/PRELUBE (1/2" NPT FOR S-050)
3 - X" NPT HOLES ON Y" B.C. (ALSO AS CAN ARV)

	X	Y
S-050	1/2	7.50
S-150	1/2	7.50
S-350	3/4	11.25
S-550	1	13.00
S-750	1	16.75

DATE _____
DISTRIBUTOR _____

JOB _____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

COLUMN ASSY. _____

CAN MOUNTING PLATE _____

DISCHARGE HEAD _____

SEAL TYPE _____

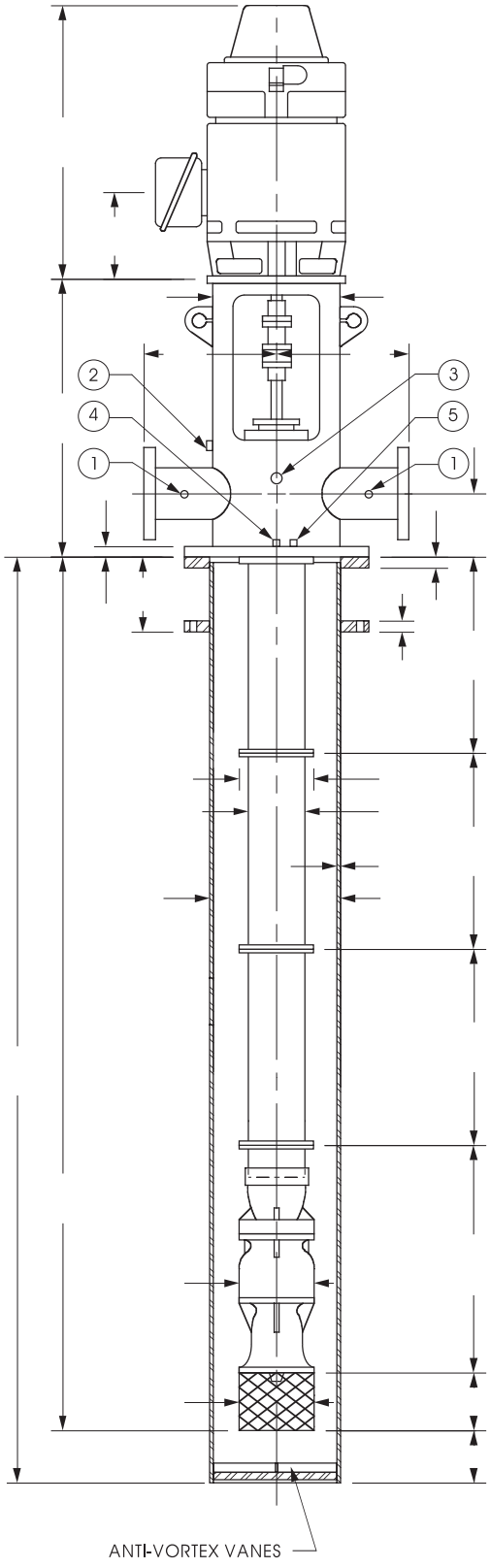
SPECIAL _____

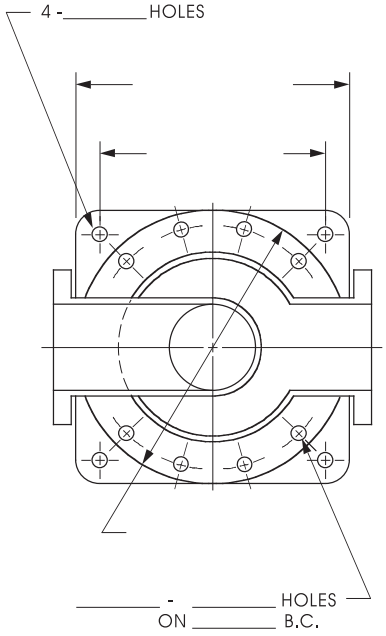
OTHER _____

SIMFLO®

Booster Can Pump
With 'ST' Style
Discharge Head,
Flanged Column,
Above Ground Suction

Section 902-38





SUCTION FLANGE

DISCHARGE FLANGE

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

1 - 1/2" NPT GAUGE TAP
2 - 3/4" NPT DRAIN TAP
3 - 1" NPT PRELUBE/ARV TAP
4 - 1" NPT CAN ARV TAP
5 - 1/2" NPT BYPASS TAP

DATE _____
DISTRIBUTOR _____

JOB _____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

COLUMN ASSY. _____

CAN MOUNTING PLATE _____

DISCHARGE HEAD _____

SEAL TYPE _____

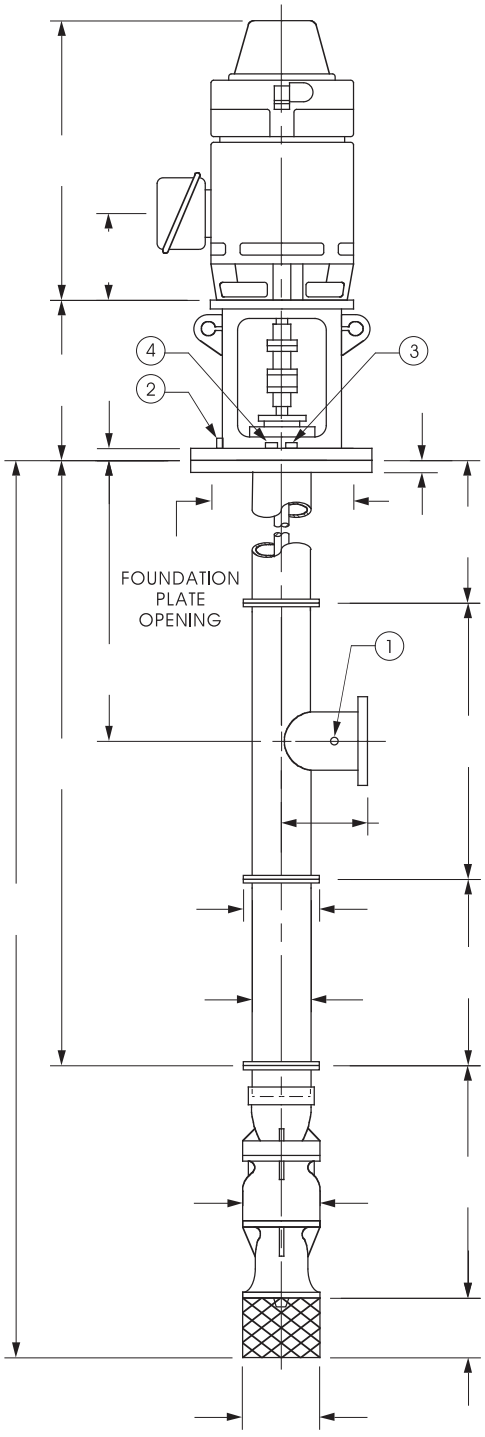
SPECIAL _____

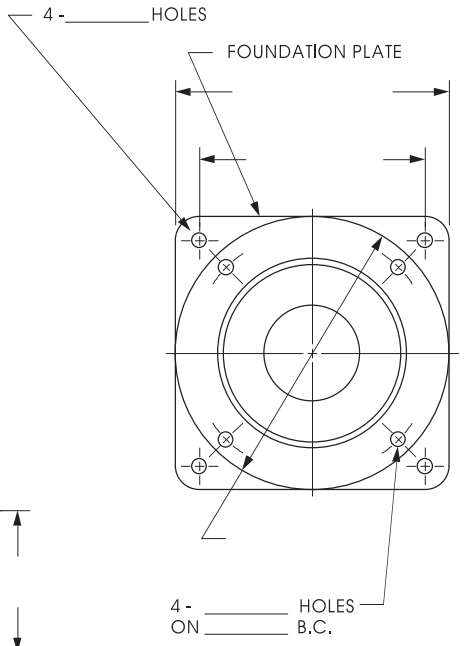
OTHER _____

SIMFLO®

Section 902-39

Underground Discharge Pump With 'SM' Style Motor Stand, Flanged Column





DISCHARGE FLANGE

_____

_____

MOTOR

MAKE _____
ENCLOSURE _____
N.R.R. or S.R.C.
H.P. _____ **S.F.** _____
R.P.M. _____
PHASE _____ **CYCLE** _____
VOLTAGE _____
V.H.S. or V.S.S.
OTHER MOTOR INFO: _____

_____

_____

_____

_____

_____

1 - 1/2" NPT GAUGE TAP
2 - 3/4" NPT DRAIN TAP
3 - 1" NPT PRELUBE/ARV TAP
4 - 1/2" NPT BYPASS TAP

DATE _____
DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____
QUANTITY _____

G.P.M. _____
T.D.H. _____
SPEED _____
BOWL MODEL # _____

_____

_____

_____

_____

IMP. DIA. _____
IMP. TYPE _____
STRAINER TYPE _____

_____

COLUMN ASSY. _____

_____

_____

_____

_____

FOUNDATION PLATE _____

_____

MOTOR STAND _____

_____

_____

_____

SEAL TYPE _____

_____

SPECIAL _____

_____

_____

_____

OTHER _____

_____

_____

_____

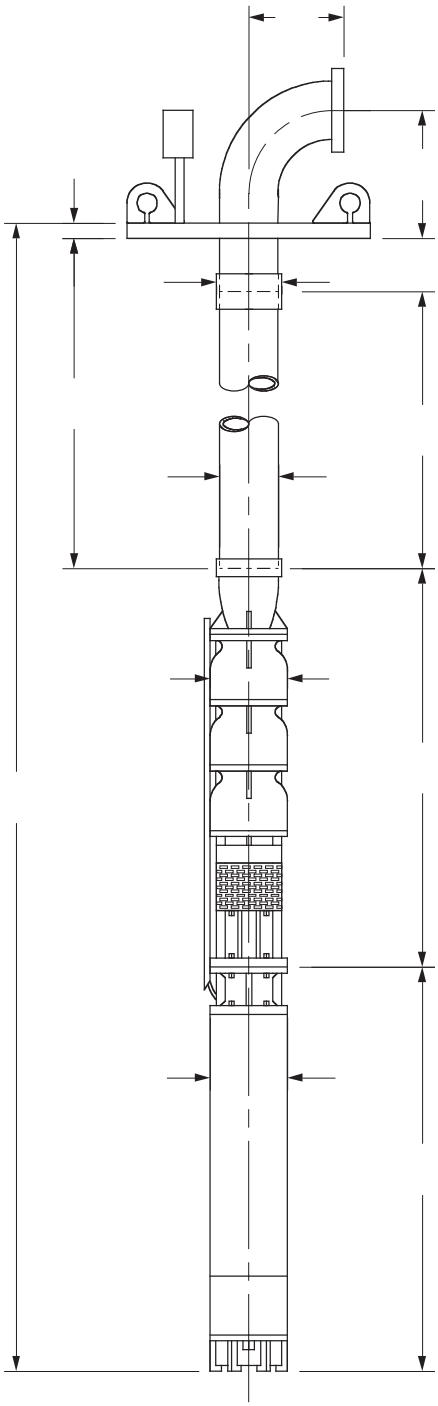
_____

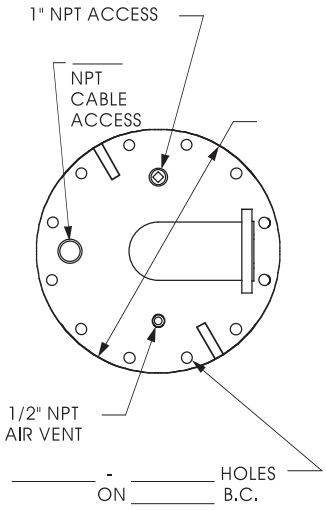
_____

SIMFLO®

Section 902-40

Submersible Pump
With Threaded Pipe





DISCHARGE FLANGE

_____

_____

SUBMERSIBLE MOTOR

MAKE _____

H.P. _____ **S.F.** _____

R.P.M. _____

PHASE _____ **CYCLE** _____

VOLTAGE _____

DATE _____

DISTRIBUTOR _____

_____

_____

JOB _____

_____

_____

JOB/QUOTE # _____

QUANTITY _____

G.P.M. _____

T.D.H. _____

SPEED _____

BOWL MODEL # _____

_____

_____

_____

_____

IMP. DIA. _____

IMP. TYPE _____

COLUMN ASSY. _____

_____

_____

_____

_____

CHECK VALVE _____

_____

FOUNDATION PLATE _____

_____

DISCHARGE HEAD _____

_____

_____

_____

SPECIAL _____

_____

_____

_____

OTHER _____

_____

_____

_____

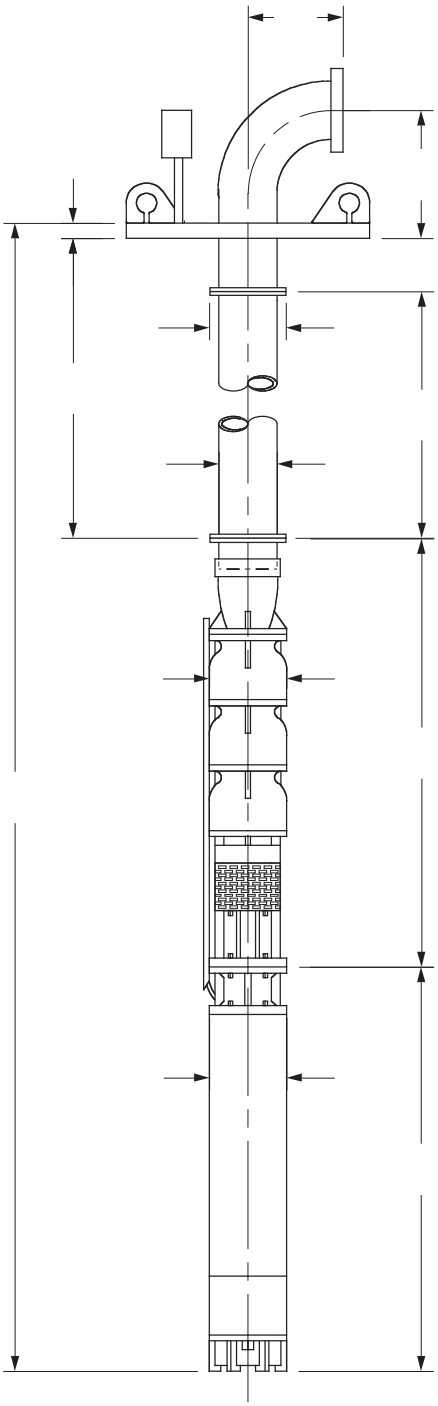
_____

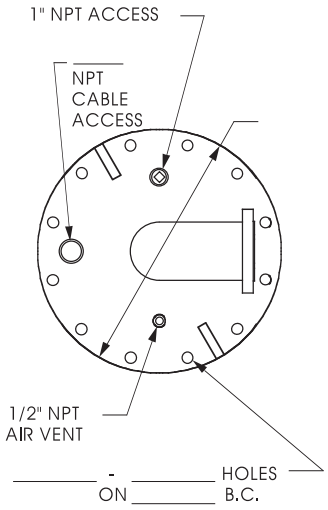
_____

SIMFLO®

Section 902-41

Submersible Pump
With Flanged Pipe





DISCHARGE FLANGE

SUBMERSIBLE MOTOR

MAKE
H.P. **S.F.**
R.P.M.
PHASE **CYCLE**
VOLTAGE

DATE
DISTRIBUTOR

JOB

JOB/QUOTE #
QUANTITY

G.P.M.
T.D.H.
SPEED
BOWL MODEL #

IMP. DIA.
IMP. TYPE
COLUMN ASSY.

CHECK VALVE

FOUNDATION PLATE

DISCHARGE HEAD

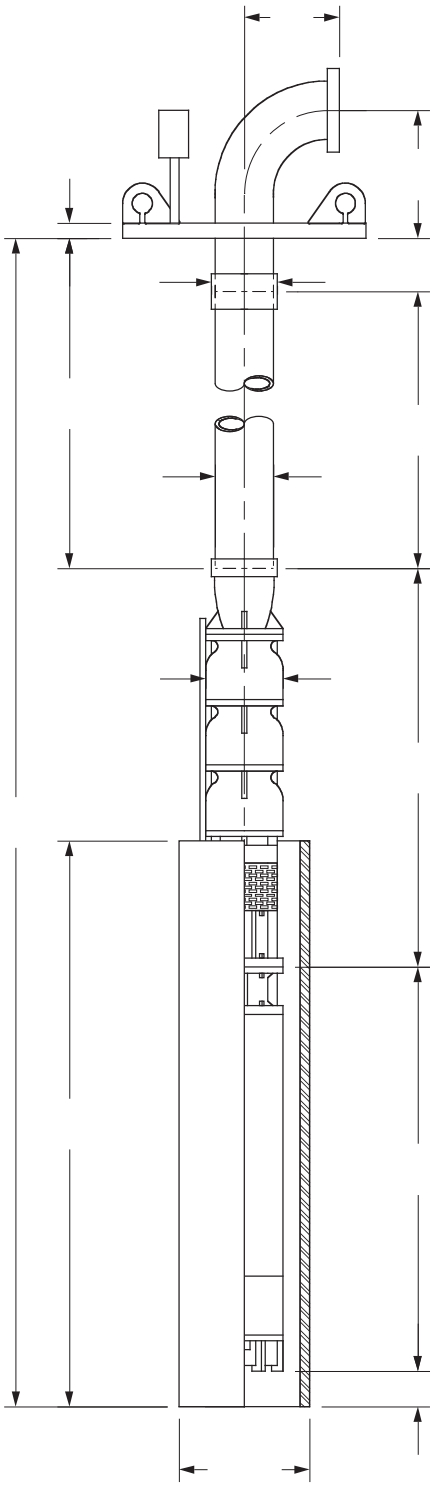
SPECIAL

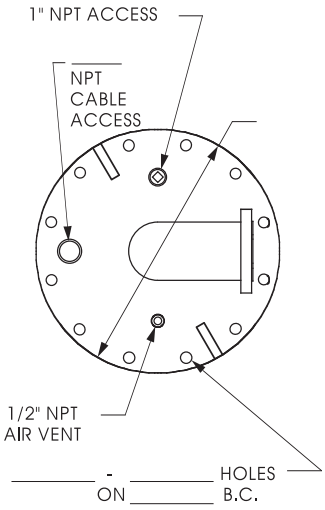
OTHER

SIMFLO®

Section 902-42

Submersible Pump
With Threaded Pipe
With Motor Shroud





DISCHARGE FLANGE

SUBMERSIBLE MOTOR

MAKE
H.P. **S.F.**
R.P.M.
PHASE **CYCLE**
VOLTAGE

DATE
DISTRIBUTOR

JOB

JOB/QUOTE #
QUANTITY

G.P.M.
T.D.H.
SPEED
BOWL MODEL #

IMP. DIA.
IMP. TYPE
COLUMN ASSY.

CHECK VALVE
FOUNDATION PLATE
DISCHARGE HEAD

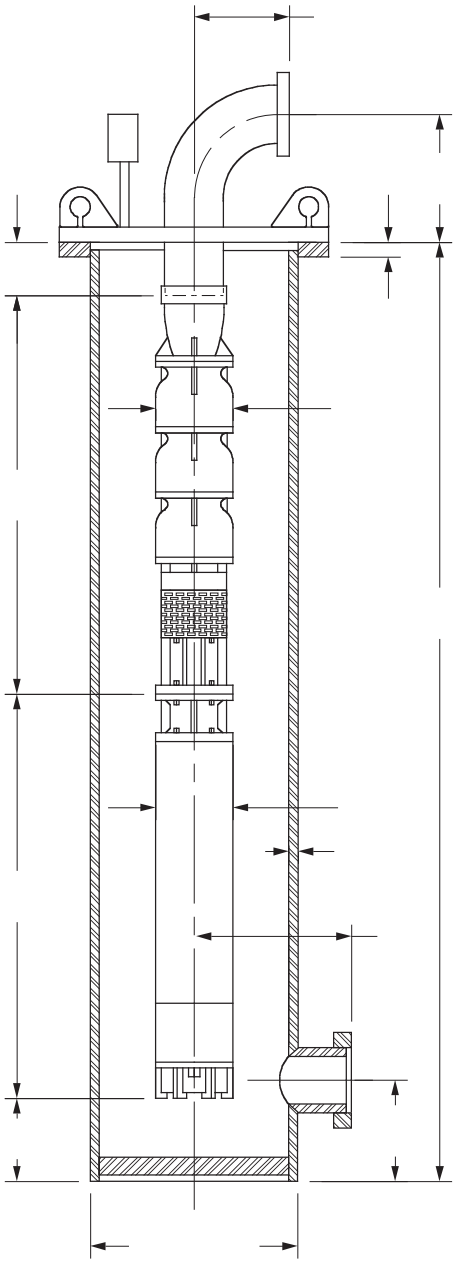
SPECIAL

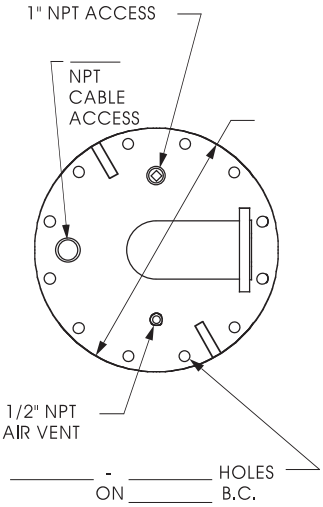
OTHER

SIMFLO®

Section 902-43

Submersible Booster Can Pump With Threaded Pipe, Underground Suction





SUCTION FLANGE

DISCHARGE FLANGE

SUBMERSIBLE MOTOR

MAKE
H.P. **S.F.**
R.P.M.
PHASE **CYCLE**
VOLTAGE

DATE
DISTRIBUTOR

JOB

JOB/QUOTE #
QUANTITY

G.P.M.
T.D.H.
SPEED
BOWL MODEL #

IMP. DIA.
IMP. TYPE
COLUMN ASSY.

CHECK VALVE

FOUNDATION PLATE

DISCHARGE HEAD

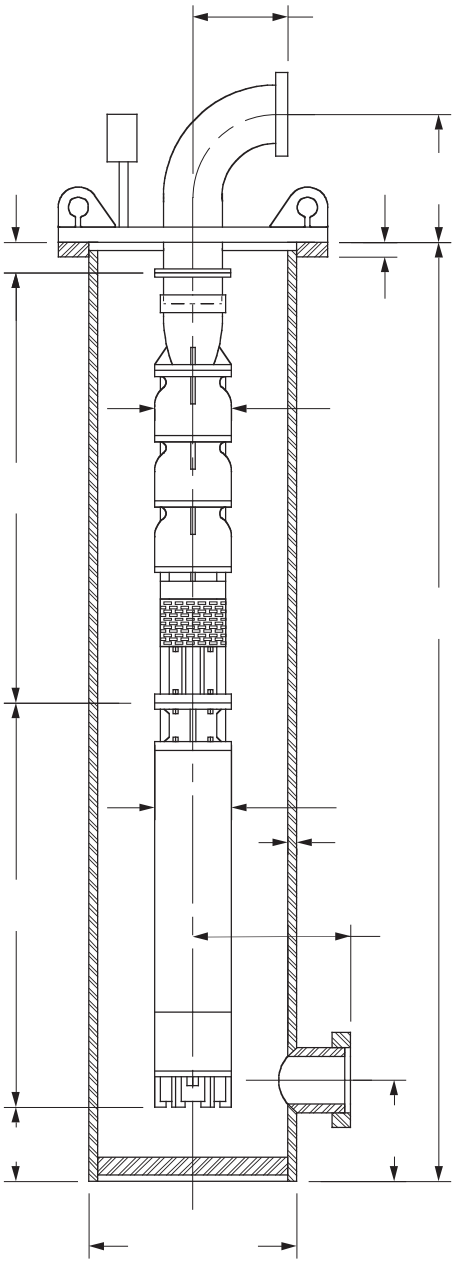
SPECIAL

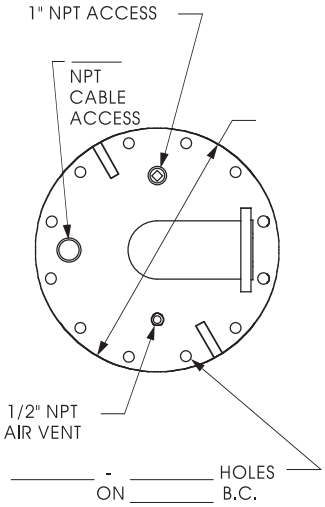
OTHER

SIMFLO®

Section 902-44

Submersible Booster Can Pump With Flanged Pipe, Underground Suction





SUCTION FLANGE

DISCHARGE FLANGE

SUBMERSIBLE MOTOR

MAKE
H.P. **S.F.**
R.P.M.
PHASE **CYCLE**
VOLTAGE

DATE
DISTRIBUTOR

JOB

JOB/QUOTE #
QUANTITY

G.P.M.
T.D.H.
SPEED
BOWL MODEL #

IMP. DIA.
IMP. TYPE
COLUMN ASSY.

CHECK VALVE

FOUNDATION PLATE

DISCHARGE HEAD

SPECIAL

OTHER

Suggested Specifications Short Coupled, Open Lineshaft Pump With Above Ground Discharge

Pump shall be designed for pumping product at:	Rated capacity of	_____ (GPM)
	Total dynamic head of	_____ (TDH)
	Minimum bowl efficiency of	_____ %
	Product temperature of	_____ °F
	Specific gravity of	_____
	Running Speed of	_____ (RPM)

BOWL ASSEMBLY: The intermediate bowls, suction case, and discharge case shall be of ASTM A48 Class 30 cast iron or ASTM A536 Grade 65-45-12 ductile iron as required for pressure handling capability. The intermediate bowls shall be fitted with fluted nitrile and/ or ASTM B505 C89835 bronze bearings as required to support the bowl-shaft. The suction case shall be fitted with an ASTM B505 C89835 bronze bearing and sand collar to protect the suction case bearing from abrasives and be permanently grease lubricated. The impellers shall be made of ASTM B148 C95500 Ni. Al. bronze, statically balanced [***(optional)**, and shall be fitted with replaceable ASTM B148 C95500 Ni. Al. bronze wear rings*]. The impellers shall be securely fastened to the bowl-shaft with tapered collets of ASTM A519 Grade 1018 carbon steel for bowl-shafts 2-3/16" nominal diameter and smaller or with keyed connections for bowl-shafts larger than 2-3/16" nominal diameter. The water passages of pump bowls size 6" through 14" shall have vitreous porcelain enamel lining and 16" and larger shall have ScotchKote™ Fusion-Bonded Epoxy 134. The bowl-shaft shall be ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened to within .0005" total indicator reading per foot of length. The bowl-shaft shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards.

COLUMN ASSEMBLY: The column pipe shall be of ASTM A53 Grade B carbon steel. The column pipe shall be flanged having interchangeable sections not exceeding 10 feet and/or sized to avoid critical speeds by a safe operational margin. The column flanges shall be of ASTM A36 HR steel. The flanged pipe ends shall have a female register machined for drop-in bearing retainers of ASTM A743 CF8 stainless steel. The line-shaft bearings shall be replaceable fluted neoprene to allow for product lubrication of the line-shaft.

The line-shafts shall be of ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], and shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened within .005" total indicator reading per 10 foot section. The line-shafts shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards and/or sized to avoid critical speeds by a safe operational margin. The shaft threads shall be lathe cut and shall be left hand to prevent loosening during pump operation. The shaft couplings shall be threaded from ASTM A108 Grade 1215 CR carbon steel or ASTM A276 Grade 304 stainless steel. The intermediate line-shaft sections shall be interchangeable and shall not exceed 10 feet in length. The butting ends of the line-shafts shall be machined square to axis of the shaft with a recessed center to ensure proper alignment.

DISCHARGE HEAD: The discharge head shall be of ASTM A536 Grade 65-45-12 ductile iron or fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The discharge head shall be for above ground discharge with sufficient strength and rigidity to support the attached vertical motor or driver and carry the suspended weight of the attached column and bowl assembly. As required to reduce internal friction losses, a radius or three-piece mitered type elbow shall be used for a smooth transition. The discharge flange shall match a 150# Class ANSI flange size, bolt pattern, and rating. The discharge size shall be the same as the column pipe. The discharge head shall permit a two-piece head-shaft to be coupled above the seal assembly. The base of the discharge head shall be circular and fully finished on bottom. If the discharge head is to be mounted on a booster can, the base diameter and bolt pattern shall match a 150# Class ANSI flange.

PACKING GLAND SEAL ASSEMBLY: The packing housing shall be of ASTM A48 Class 30 cast iron. The packing housing shall have a deep bore with a minimum of five rings of packing and a lantern ring rated for 450 PSI and 210° F. Connections for lubrication and bypass shall be provided. The packing gland shall be of ASTM B584 C89833 bronze or ASTM A743 CF8 stainless steel and secured in place with stainless steel hardware. A packing housing bearing of ASTM B505 C89835 bronze shall be installed directly below the packing for stability. A nitrile o-ring shall be used to seal the packing housing to the discharge head.

COMPONENT STYLE MECHANICAL SEAL, SEAL ASSEMBLY: The seal housing shall be of ASTM A48 Class 30 cast iron. The mechanical seal sleeve and cap shall be of ASTM A511 Grade 304 stainless steel. The mechanical seal plate shall be of ASTM A48 Class 30 cast iron. The mechanical seal shall have a ceramic stationary face, a carbon graphite rotating face, and nitrile o-rings. The mechanical seal assembly shall be rated for 350 PSI and 250° F. A seal housing bearing of ASTM B505 C89835 bronze shall be installed directly below the mechanical seal for stability. Nitrile o-rings shall be used to seal the mechanical seal plate to the seal housing, and the seal housing to the discharge head.

CARTRIDGE STYLE MECHANICAL SEAL, SEAL ASSEMBLY: The seal housing shall be of ASTM A48 Class 30 cast iron. The mechanical seal shall be of 316 stainless steel construction. The mechanical seal shall have a carbon stationary face, a tungsten carbide rotating face, and fluorocarbon o-rings. The mechanical seal shall be rated for 600 PSI and 400° F. A seal housing bearing of ASTM B505 C89835 bronze shall be installed directly below the mechanical seal for stability. A nitrile o-ring shall be used to seal the seal housing to the discharge head.

FOUNDATION PLATE: The foundation plate shall be of ASTM A36 HR carbon steel. The foundation plate shall be square with radius corners, equal to or greater than the size of the base of the discharge head. The foundation plate shall be uniformly faced on one side, with four drilled holes provided, one at each corner to accommodate anchor bolts.

BOOSTER CAN: The booster can shall be fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The booster can shall have a 150# Class ANSI flange raised face inlet. The head-mounting flange shall match the discharge head base 150# Class ANSI diameter and bolt pattern. The booster can shall be sized per Hydraulic Institute Pump Intake Design standards.

MOTOR COUPLING: The Motor Coupling, when driven with a solid shaft motor, shall be a flanged adjustable three-piece or spacer type four-piece rigid coupling. The coupling shall be of steel, designed to transmit the required torque and horsepower of the attached pump and other rotating elements. The pump side of the coupling shall be keyed to the head-shaft. The motor side shall have a radial key to support down thrust and an axial key to transmit torque. A threaded adjusting nut shall be located above the pump side coupling component. The coupling shall be designed to prevent movement due to up thrust and held concentric by means of machined registers.

Suggested Specifications Deep-Set, Open Lineshaft Pump With Above Ground Discharge

Pump shall be designed for pumping product at:

Rated capacity of	_____ (GPM)
Total dynamic head of	_____ (TDH)
Minimum bowl efficiency of	_____ %
Product temperature of	_____ °F
Specific gravity of	_____
Running Speed of	_____ (RPM)

BOWL ASSEMBLY: The intermediate bowls, suction case, and discharge case shall be of ASTM A48 Class 30 cast iron or ASTM A536 Grade 65-45-12 ductile iron as required for pressure handling capability. The intermediate bowls shall be fitted with fluted nitrile and/ or ASTM B505 C89835 bronze bearings as required to support the bowl-shaft. The suction case shall be fitted with an ASTM B505 C89835 bronze bearing and sand collar to protect the suction case bearing from abrasives and be permanently grease lubricated. The impellers shall be made of ASTM B148 C95500 Ni. Al. bronze, statically balanced [***(optional)**, and shall be fitted with replaceable ASTM B148 C95500 Ni. Al. bronze wear rings*]. The impellers shall be securely fastened to the bowl-shaft with tapered collets of ASTM A519 Grade 1018 carbon steel for bowl-shafts 2-3/16" nominal diameter and smaller or with keyed connections for bowl-shafts larger than 2-3/16" nominal diameter. The water passages of pump bowls size 6" through 14" shall have vitreous porcelain enamel lining and 16" and larger shall have ScotchKote™ Fusion-Bonded Epoxy 134. The bowl-shaft shall be ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened to within .0005" total indicator reading per foot of length. The bowl-shaft shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards.

COLUMN ASSEMBLY: The column pipe shall be of ASTM A53 Grade B carbon steel. The pipe weight shall be consistent with industry standard pump column pipe and appropriately sized for the intended service. The column pipe shall be connected by "J" Type straight butt style threaded couplings. The ends of each column pipe shall be machined parallel and threaded so that the ends butt. Intermediate sections of column shall not exceed 10 feet. Top and bottom column pipe sections shall not exceed 5 feet. Drop-in bearing retainers of ASTM A743 CF8 stainless steel shall be used at the end of each column section. The line-shaft bearings shall be replaceable fluted neoprene to allow for product lubrication of the line-shaft.

The line-shafts shall be of ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], and shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened within .005" total indicator reading per 10 foot section. The line-shafts shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards and/or sized to avoid critical speeds by a safe operational margin. The shaft threads shall be lathe cut and shall be left hand to prevent loosening during pump operation. The shaft couplings shall be threaded from ASTM A108 Grade 1215 CR carbon steel or ASTM A276 Grade 304 stainless steel. The intermediate line-shaft sections shall be interchangeable and shall not exceed 10 feet in length. The butting ends of the line-shafts shall be machined square to axis of the shaft with a recessed center to ensure proper alignment.

DISCHARGE HEAD: The discharge head shall be of ASTM A536 Grade 65-45-12 ductile iron or fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The discharge head shall be for above ground discharge with sufficient strength and rigidity to support the attached vertical motor or driver and carry the suspended weight of the attached column and bowl assembly. As required to reduce internal friction losses, a radius or three-piece mitered type elbow shall be used for a smooth transition. The discharge flange shall match a 150# Class ANSI flange size, bolt pattern, and rating. The discharge size shall be the same as the column pipe. The discharge head shall permit a two-piece head-shaft to be coupled above the seal assembly. The base of the discharge head shall be circular and fully finished on bottom.

PACKING GLAND SEAL ASSEMBLY: The packing housing shall be of ASTM A48 Class 30 cast iron. The packing housing shall have a deep bore with a minimum of five rings of packing and a lantern ring rated for 450 PSI and 210° F. Connections for lubrication and bypass shall be provided. The packing gland shall be of ASTM B584 C89833 bronze or ASTM A743 CF8 stainless steel and secured in place with stainless steel hardware. A packing housing bearing of ASTM B505 C89835 bronze shall be installed directly below the packing for stability. A nitrile o-ring shall be used to seal the packing housing to the discharge head.

COMPONENT STYLE MECHANICAL SEAL, SEAL ASSEMBLY: The seal housing shall be of ASTM A48 Class 30 cast iron. The mechanical seal sleeve and cap shall be of ASTM A511 Grade 304 stainless steel. The mechanical seal plate shall be of ASTM A48 Class 30 cast iron. The mechanical seal shall have a ceramic stationary face, a carbon graphite rotating face, and nitrile o-rings. The mechanical seal assembly shall be rated for 350 PSI and 250° F. A seal housing bearing of ASTM B505 C89835 bronze shall be installed directly below the mechanical seal for stability. Nitrile o-rings shall be used to seal the mechanical seal plate to the seal housing, and the seal housing to the discharge head.

CARTRIDGE STYLE MECHANICAL SEAL, SEAL ASSEMBLY: The seal housing shall be of ASTM A48 Class 30 cast iron. The mechanical seal shall be of 316 stainless steel construction. The mechanical seal shall have a carbon stationary face, a tungsten carbide rotating face, and fluorocarbon o-rings. The mechanical seal shall be rated for 600 PSI and 400° F. A seal housing bearing of ASTM B505 C89835 bronze shall be installed directly below the mechanical seal for stability. A nitrile o-ring shall be used to seal the seal housing to the discharge head.

FOUNDATION PLATE: The foundation plate shall be of ASTM A36 HR carbon steel. The foundation plate shall be square with radius corners, equal to or greater than the size of the base of the discharge head. The foundation plate shall be uniformly faced on one side, with four drilled holes provided, one at each corner to accommodate anchor bolts.

Suggested Specifications Booster Can Mounted Open Lineshaft Pump With Above Ground Suction

Pump shall be designed for pumping product at:	Rated capacity of	_____ (GPM)
	Total dynamic head of	_____ (TDH)
	Minimum bowl efficiency of	_____ %
	Product temperature of	_____ °F
	Specific gravity of	_____
	Running Speed of	_____ (RPM)

BOWL ASSEMBLY: The intermediate bowls, suction case, and discharge case shall be of ASTM A48 Class 30 cast iron or ASTM A536 Grade 65-45-12 ductile iron as required for pressure handling capability. The intermediate bowls shall be fitted with fluted nitrile and/ or ASTM B505 C89835 bronze bearings as required to support the bowl-shaft. The suction case shall be fitted with an ASTM B505 C89835 bronze bearing and sand collar to protect the suction case bearing from abrasives and be permanently grease lubricated. The impellers shall be made of ASTM B148 C95500 Ni. Al. bronze, statically balanced [***(optional)**, and shall be fitted with replaceable ASTM B148 C95500 Ni. Al. bronze wear rings*]. The impellers shall be securely fastened to the bowl-shaft with tapered collets of ASTM A519 Grade 1018 carbon steel for bowl-shafts 2-3/16" nominal diameter and smaller or with keyed connections for bowl-shafts larger than 2-3/16" nominal diameter. The water passages of pump bowls size 6" through 14" shall have vitreous porcelain enamel lining and 16" and larger shall have ScotchKote™ Fusion-Bonded Epoxy 134. The bowl-shaft shall be ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened to within .0005" total indicator reading per foot of length. The bowl-shaft shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards.

COLUMN ASSEMBLY: The column pipe shall be of ASTM A53 Grade B carbon steel. The column pipe shall be flanged having interchangeable sections not exceeding 10 feet and/or sized to avoid critical speeds by a safe operational margin. The column flanges shall be of ASTM A36 HR steel. The flanged pipe ends shall have a female register machined for drop-in bearing retainers of ASTM A743 CF8 stainless steel. The line-shaft bearings shall be replaceable fluted neoprene to allow for product lubrication of the line-shaft.

The line-shafts shall be of ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], and shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened within .005" total indicator reading per 10 foot section. The line-shafts shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards and/or sized to avoid critical speeds by a safe operational margin. The shaft threads shall be lathe cut and shall be left hand to prevent loosening during pump operation. The shaft couplings shall be threaded from ASTM A108 Grade 1215 CR carbon steel or ASTM A276 Grade 304 stainless steel. The intermediate line-shaft sections shall be interchangeable and shall not exceed 10 feet in length. The butting ends of the line-shafts shall be machined square to axis of the shaft with a recessed center to ensure proper alignment.

DISCHARGE HEAD: The discharge head shall be fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The discharge head shall be for above ground suction and discharge with sufficient strength and rigidity to support the attached vertical motor or driver and carry the suspended weight of the attached column and bowl assembly. The suction flange shall be a 150# Class ANSI raised face flange. The suction size shall be sized per Hydraulic Institute Pump Intake Design standards. The discharge flange shall be a 150# Class ANSI raised face flange. The discharge size shall be the same as the column pipe. The discharge head shall permit a two-piece head-shaft to be coupled above the seal assembly. The base of the discharge head shall be circular and fully finished on bottom. The base diameter and bolt pattern shall match a 150# Class ANSI flange.

PACKING GLAND SEAL ASSEMBLY: The packing housing shall be of ASTM A48 Class 30 cast iron. The packing housing shall have a deep bore with a minimum of five rings of packing and a lantern ring rated for 450 PSI and 210° F. Connections for lubrication and bypass shall be provided. The packing gland shall be of ASTM B584 C89833 bronze or ASTM A743 CF8 stainless steel and secured in place with stainless steel hardware. A packing housing bearing of ASTM B505 C89835 bronze shall be installed directly below the packing for stability. A nitrile o-ring shall be used to seal the packing housing to the discharge head.

COMPONENT STYLE MECHANICAL SEAL, SEAL ASSEMBLY: The seal housing shall be of ASTM A48 Class 30 cast iron. The mechanical seal sleeve and cap shall be of ASTM A511 Grade 304 stainless steel. The mechanical seal plate shall be of ASTM A48 Class 30 cast iron. The mechanical seal shall have a ceramic stationary face, a carbon graphite rotating face, and nitrile o-rings. The mechanical seal assembly shall be rated for 350 PSI and 250° F. A seal housing bearing of ASTM B505 C89835 bronze shall be installed directly below the mechanical seal for stability. Nitrile o-rings shall be used to seal the mechanical seal plate to the seal housing, and the seal housing to the discharge head.

CARTRIDGE STYLE MECHANICAL SEAL, SEAL ASSEMBLY: The seal housing shall be of ASTM A48 Class 30 cast iron. The mechanical seal shall be of 316 stainless steel construction. The mechanical seal shall have a carbon stationary face, a tungsten carbide rotating face, and fluorocarbon o-rings. The mechanical seal shall be rated for 600 PSI and 400° F. A seal housing bearing of ASTM B505 C89835 bronze shall be installed directly below the mechanical seal for stability. A nitrile o-ring shall be used to seal the seal housing to the discharge head.

BOOSTER CAN: The booster can shall be fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The head-mounting flange shall match the discharge head base 150# Class ANSI diameter and bolt pattern. The booster can shall be sized per Hydraulic Institute Pump Intake Design standards.

MOTOR COUPLING: The Motor Coupling, when driven with a solid shaft motor, shall be a flanged adjustable three-piece or spacer type four-piece rigid coupling. The coupling shall be of steel, designed to transmit the required torque and horsepower of the attached pump and other rotating elements. The pump side of the coupling shall be keyed to the head-shaft. The motor side shall have a radial key to support down thrust and an axial key to transmit torque. A threaded adjusting nut shall be located above the pump side coupling component. The coupling shall be designed to prevent movement due to up thrust and held concentric by means of machined registers.

Suggested Specifications Short Couple, Open Lineshaft Pump With Underground Discharge

Pump shall be designed for pumping water at:	Rated capacity of	_____ (GPM)
	Total dynamic head of	_____ (TDH)
	Minimum bowl efficiency of	_____ %
	Water temperature of	_____ °F
	Specific gravity of	_____
	Running Speed of	_____ (RPM)

BOWL ASSEMBLY: The intermediate bowls, suction case, and discharge case shall be of ASTM A48 Class 30 cast iron or ASTM A536 Grade 65-45-12 ductile iron as required for pressure handling capability. The intermediate bowls shall be fitted with fluted nitrile and/ or ASTM B505 C89835 bronze bearings as required to support the bowl-shaft. The suction case shall be fitted with an ASTM B505 C89835 bronze bearing and sand collar to protect the suction case bearing from abrasives and be permanently grease lubricated. The impellers shall be made of ASTM B148 C95500 Ni. Al. bronze, statically balanced [***(optional)**, and shall be fitted with replaceable ASTM B148 C95500 Ni. Al. bronze wear rings*]. The impellers shall be securely fastened to the bowl-shaft with tapered collets of ASTM A519 Grade 1018 carbon steel for bowl-shafts 2-3/16" nominal diameter and smaller or with keyed connections for bowl-shafts larger than 2-3/16" nominal diameter. The water passages of pump bowls size 6" through 14" shall have vitreous porcelain enamel lining and 16" and larger shall have ScotchKote™ Fusion-Bonded Epoxy 134. The bowl-shaft shall be ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened to within .0005" total indicator reading per foot of length. The bowl-shaft shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards.

COLUMN ASSEMBLY: The column pipe shall be of ASTM A53 Grade B carbon steel. The column pipe shall be flanged having interchangeable sections not exceeding 10 feet and/or sized to avoid critical speeds by a safe operational margin. The column flanges shall be of ASTM A36 HR steel. The flanged pipe ends shall have a female register machined for drop-in bearing retainers of ASTM A743 CF8 stainless steel. The line-shaft bearings shall be replaceable fluted neoprene to allow for product lubrication of the line-shaft. The underground discharge flange shall be a 150# Class ANSI raised face flange of similar size as the column pipe.

The line-shafts shall be of ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened within .005" total indicator reading per 10 foot section. The line-shafts shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards and/or sized to avoid critical speeds by a safe operational margin. The shaft threads shall be lathe cut and shall be left hand to prevent loosening during pump operation. The shaft couplings shall be threaded from ASTM A108 Grade 1215 CR carbon steel or ASTM A276 Grade 304 stainless steel. The intermediate line-shaft sections shall be interchangeable and shall not exceed 10 feet in length. The butting ends of the line-shafts shall be machined square to axis of the shaft with a recessed center to ensure proper alignment.

MOTOR STAND: The motor stand shall be fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The motor stand shall be for underground discharge with sufficient strength and rigidity to support the attached vertical motor or driver and carry the suspended weight of the attached column and bowl assembly. The motor stand shall permit a two-piece head shaft to be coupled above the seal assembly. The base of the motor stand shall be circular and fully finished on bottom.

PACKING GLAND SEAL ASSEMBLY: The packing housing shall be of ASTM A48 Class 30 cast iron. The packing housing shall have a deep bore with a minimum of five rings of packing and a lantern ring rated for 450 PSI and 210° F. Connections for lubrication and bypass shall be provided. The packing gland shall be of ASTM B584 C89833 bronze or ASTM A743 CF8 stainless steel and secured in place with stainless steel hardware. A packing housing bearing of ASTM B505 C89835 bronze shall be installed directly below the packing for stability. A nitrile o-ring shall be used to seal the packing housing to the discharge head.

COMPONENT STYLE MECHANICAL SEAL, SEAL ASSEMBLY: The seal housing shall be of ASTM A48 Class 30 cast iron. The mechanical seal sleeve and cap shall be of ASTM A511 Grade 304 stainless steel. The mechanical seal plate shall be of ASTM A48 Class 30 cast iron. The mechanical seal shall have a ceramic stationary face, a carbon graphite rotating face, and nitrile o-rings. The mechanical seal assembly shall be rated for 350 PSI and 250° F. A seal housing bearing of ASTM B505 C89835 bronze shall be installed directly below the mechanical seal for stability. Nitrile o-rings shall be used to seal the mechanical seal plate to the seal housing, and the seal housing to the discharge head.

CARTRIDGE STYLE MECHANICAL SEAL, SEAL ASSEMBLY: The seal housing shall be of ASTM A48 Class 30 cast iron. The mechanical seal shall be of 316 stainless steel construction. The mechanical seal shall have a carbon stationary face, a tungsten carbide rotating face, and fluorocarbon o-rings. The mechanical seal shall be rated for 600 PSI and 400° F. A seal housing bearing of ASTM B505 C89835 bronze shall be installed directly below the mechanical seal for stability. A nitrile o-ring shall be used to seal the seal housing to the discharge head.

FOUNDATION PLATE: The foundation plate shall be of ASTM A36 HR carbon steel. The foundation plate shall be square with radius corners, equal to or greater than the size of the base of the discharge head. The foundation plate shall be uniformly faced on one side, with four drilled holes provided, one at each corner to accommodate anchor bolts.

MOTOR COUPLING: The Motor Coupling, when driven with a solid shaft motor, shall be a flanged adjustable three-piece or spacer type four-piece rigid coupling. The coupling shall be of steel, designed to transmit the required torque and horsepower of the attached pump and other rotating elements. The pump side of the coupling shall be keyed to the head-shaft. The motor side shall have a radial key to support down thrust and an axial key to transmit torque. A threaded adjusting nut shall be located above the pump side coupling component. The coupling shall be designed to prevent movement due to up thrust and held concentric by means of machined registers.

Suggested Specifications Short Coupled, Enclosed Lineshaft Pump With Above Ground Discharge

Pump shall be designed for pumping water at:	Rated capacity of	_____ (GPM)
	Total dynamic head of	_____ (TDH)
	Minimum bowl efficiency of	_____ %
	Water temperature of	_____ °F
	Specific gravity of	_____
	Running Speed of	_____ (RPM)

BOWL ASSEMBLY: The intermediate bowls, suction case, and discharge case shall be of ASTM A48 Class 30 cast iron or ASTM A536 Grade 65-45-12 ductile iron as required for pressure handling capability. A tube adapter of ASTM A536 Grade 65-45-12 ductile iron shall attach to the discharge case and be fitted with an ASTM B505 C84400 bronze tube bearing to provide a means of connection for the shaft enclosing tube assembly. The discharge case shall be fitted with an ASTM B505 C89835 bronze throttle bearing to restrict pumped fluid from entering the shaft enclosing tube assembly and drain ports located between the throttle bearing and tube adapter connection. The intermediate bowls shall be fitted with fluted nitrile and/ or ASTM B505 C89835 bronze bearings as required to support the bowl-shaft. The suction case shall be fitted with an ASTM B505 C89835 bronze bearing and sand collar to protect the suction case bearing from abrasives and be permanently grease lubricated. The impellers shall be made of ASTM B148 C95500 Ni. Al. bronze, statically balanced [***(optional)**, and shall be fitted with replaceable ASTM B148 C95500 Ni. Al. bronze wear rings*]. The impellers shall be securely fastened to the bowl-shaft with tapered collets of ASTM A519 Grade 1018 carbon steel for bowl-shafts 2-3/16" nominal diameter and smaller or with keyed connections for bowl-shafts larger than 2-3/16" nominal diameter. The water passages of pump bowls size 6" through 14" shall have vitreous porcelain enamel lining and 16" and larger shall have ScotchKote™ Fusion-Bonded Epoxy 134. The bowl-shaft shall be ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened to within .0005" total indicator reading per foot of length. The bowl-shaft shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards.

COLUMN ASSEMBLY: The column pipe shall be of ASTM A53 Grade B carbon steel. The column pipe shall be flanged having interchangeable sections, not exceeding 10 feet. The column flanges shall be of ASTM A36 HR steel and conform to ANSI specifications.

The shaft enclosing tubes shall be of schedule 80 ASTM A53 Grade B carbon steel for oil lubricated application and shall be of ASTM A312 Grade 304 stainless steel for water flush application. The tube ends shall be internally threaded and machined parallel to accurately butt and align. The tube lengths shall be interchangeable and not exceed 60". The top section of tube shall be designed for applying tension to the enclosing tube assembly. The enclosing tube assembly shall be of such overall assembled length to properly match the length of the column pipe and allow for proper tensioning.

The bearings within the shaft enclosing tubes shall be of ASTM B505 C84400 bronze. The bearings shall be externally threaded, installed between each enclosing tube section to securely affix the enclosing tubes, and maintain alignment of the line-shaft and prevent excessive vibration. The bearing bore shall be machined and grooved to provide proper lubrication.

The line-shafts shall be of ASTM A108 Grade 1045 carbon steel for oil lubricated applications and shall be of ASTM A582 Grade 416 HT stainless steel for water flush applications. The line-shaft shall have pump shaft quality dimensional tolerances of +.000"/ -.002" and shall be straightened within .005" total indicator reading per 10 foot section. The line-shafts shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards and/or sized to avoid critical speeds by a safe operational margin. The shaft threads shall be lathe cut and shall be left hand to prevent loosening during pump operation. The shaft couplings shall be threaded from ASTM A108 Grade 1215 CR carbon steel or ASTM A276 Grade 304 stainless steel. The intermediate line-shaft sections shall be interchangeable and shall not exceed 10 feet in length. The butting ends of the line-shafts shall be machined square to axis of the shaft with a recessed center to ensure proper alignment.

DISCHARGE HEAD: The discharge head shall be of ASTM A536 Grade 65-45-12 ductile iron or fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The discharge head shall be for above ground discharge with sufficient strength and rigidity to support the attached vertical motor or driver and carry the suspended weight of the attached column and bowl assembly. As required to reduce internal friction losses, a radius or three-piece mitered type elbow shall be used for a smooth transition. The discharge flange shall match a 150# Class ANSI flange size, bolt pattern, and rating. The discharge size shall be the same as the column pipe. The discharge head shall permit a two-piece head-shaft to be coupled above the stretch assembly. The base of the discharge head shall be circular and fully finished on bottom. If the discharge head is to be mounted on a booster can, the base diameter and bolt pattern shall match a 150# Class ANSI flange.

STRETCH HOUSING, STRETCH ASSEMBLY: The stretch assembly shall consist of a stretch housing of ASTM A536 Grade 65-45-12 ductile iron, designed to maintain proper tension of the shaft enclosing tubes. For oil lubricated applications, a dust cover of ASTM A48 Class 30 cast iron will be used above the stretch housing that will provide a threaded port for attaching means of supplying drip oil to the enclosing tubes. For water flush applications, a seal housing of ASTM A240 Grade 304L stainless steel will seal the stretch assembly and provide a threaded port for flush water injection.

TENSION NUT, STRETCH ASSEMBLY: The stretch assembly shall consist of a tension nut of ASTM B584 C89833 bronze, designed to maintain proper tension of the shaft enclosing tubes. For oil lubricated applications, the tension nut will provide a threaded port for attaching means of supplying drip oil to the enclosing tubes. For water flush applications, a seal housing of ASTM A240 Grade 304L stainless steel will seal the stretch assembly and provide a threaded port for flush water injection.

FOUNDATION PLATE: The foundation plate shall be of ASTM A36 HR carbon steel. The foundation plate shall be square with radius corners, equal to or greater than the size of the base of the discharge head. The foundation plate shall be uniformly faced on one side, with four drilled holes provided, one at each corner to accommodate anchor bolts.

BOOSTER CAN: The booster can shall be fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The booster can shall have a 150# Class ANSI flange raised face inlet. The head-mounting flange shall match the discharge head base 150# Class ANSI diameter and bolt pattern. The booster can shall be sized per Hydraulic Institute Pump Intake Design standards.

MOTOR COUPLING: The Motor Coupling, when driven with a solid shaft motor, shall be a flanged adjustable three-piece or spacer type four-piece rigid coupling. The coupling shall be of steel, designed to transmit the required torque and horsepower of the attached pump and other rotating elements. The pump side of the coupling shall be keyed to the head-shaft. The motor side shall have a radial key to support down thrust and an axial key to transmit torque. A threaded adjusting nut shall be located above the pump side coupling component. The coupling shall be designed to prevent movement due to up thrust and held concentric by means of machined registers.

Suggested Specifications Deep-Set, Enclosed Lineshaft Pump With Above Ground Discharge

Pump shall be designed for pumping water at:	Rated capacity of	_____ (GPM)
	Total dynamic head of	_____ (TDH)
	Minimum bowl efficiency of	_____ %
	Water temperature of	_____ °F
	Specific gravity of	_____
	Running Speed of	_____ (RPM)

BOWL ASSEMBLY: The intermediate bowls, suction case, and discharge case shall be of ASTM A48 Class 30 cast iron or ASTM A536 Grade 65-45-12 ductile iron as required for pressure handling capability. A tube adapter of ASTM A536 Grade 65-45-12 ductile iron shall attach to the discharge case and be fitted with an ASTM B505 C84400 bronze tube bearing to provide a means of connection for the shaft enclosing tube assembly. The discharge case shall be fitted with an ASTM B505 C89835 bronze throttle bearing to restrict pumped fluid from entering the shaft enclosing tube assembly and drain ports located between the throttle bearing and tube adapter connection. The intermediate bowls shall be fitted with fluted nitrile and/ or ASTM B505 C89835 bronze bearings as required to support the bowl-shaft. The suction case shall be fitted with an ASTM B505 C89835 bronze bearing and sand collar to protect the suction case bearing from abrasives and be permanently grease lubricated. The impellers shall be made of ASTM B148 C95500 Ni. Al. bronze, statically balanced [***(optional)**, and shall be fitted with replaceable ASTM B148 C95500 Ni. Al. bronze wear rings*]. The impellers shall be securely fastened to the bowl-shaft with tapered collets of ASTM A519 Grade 1018 carbon steel for bowl-shafts 2-3/16" nominal diameter and smaller or with keyed connections for bowl-shafts larger than 2-3/16" nominal diameter. The water passages of pump bowls size 6" through 14" shall have vitreous porcelain enamel lining and 16" and larger shall have ScotchKote™ Fusion-Bonded Epoxy 134. The bowl-shaft shall be ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened to within .0005" total indicator reading per foot of length. The bowl-shaft shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards.

COLUMN ASSEMBLY: The column pipe shall be of ASTM A53 Grade B carbon steel. The pipe weight shall be consistent with industry standard pump column pipe and appropriately sized for the intended service. The column pipe shall be connected by "J" Type straight butt style threaded couplings. The ends of each column pipe shall be machined parallel and threaded so that the ends butt. Intermediate sections of column shall not exceed 20 feet. Top and bottom column pipe sections shall not exceed 5 feet.

The shaft enclosing tubes shall be of schedule 80 ASTM A53 Grade B carbon steel for oil lubricated application and shall be of ASTM A312 Grade 304 stainless steel for water flush application. The tube ends shall be internally threaded and machined parallel to accurately butt and align. The tube lengths shall be interchangeable and not exceed 60". The top section of tube shall be designed for applying tension to the enclosing tube assembly. The enclosing tube assembly shall be of such overall assembled length to properly match the length of the column pipe and allow for proper tensioning.

The bearings within the shaft enclosing tubes shall be of ASTM B505 C84400 bronze. The bearings shall be externally threaded, installed between each enclosing tube section to securely affix the enclosing tubes, and maintain alignment of the line-shaft and prevent excessive vibration. The bearing bore shall be machined and grooved to provide proper lubrication.

The line-shafts shall be of ASTM A108 Grade 1045 carbon steel for oil lubricated applications and shall be of ASTM A582 Grade 416 HT stainless steel for water flush applications. The line-shaft shall have pump shaft quality dimensional tolerances of +.000"/ -.002" and shall be straightened within .005" total indicator reading per 10 foot section. The line-shafts shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards and/or sized to avoid critical speeds by a safe operational margin. The shaft threads shall be lathe cut and shall be left hand to prevent loosening during pump operation. The shaft couplings shall be threaded from ASTM A108 Grade 1215 CR carbon steel or ASTM A276 Grade 304 stainless steel. The intermediate line-shaft sections shall be interchangeable and shall not exceed 20 feet in length. The butting ends of the line-shafts shall be machined square to axis of the shaft with a recessed center to ensure proper alignment.

DISCHARGE HEAD: The discharge head shall be of ASTM A536 Grade 65-45-12 ductile iron or fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The discharge head shall be for above ground discharge with sufficient strength and rigidity to support the attached vertical motor or driver and carry the suspended weight of the attached column and bowl assembly. As required to reduce internal friction losses, a radius or three-piece mitered type elbow shall be used for a smooth transition. The discharge flange shall match a 150# Class ANSI flange size, bolt pattern, and rating. The discharge size shall be the same as the column pipe. The discharge head shall permit a two-piece head-shaft to be coupled above the stretch assembly. The base of the discharge head shall be circular and fully finished on bottom. If the discharge head is to be mounted on a booster can, the base diameter and bolt pattern shall match a 150# Class ANSI flange.

STRETCH HOUSING, STRETCH ASSEMBLY: The stretch assembly shall consist of a stretch housing of ASTM A536 Grade 65-45-12 ductile iron, designed to maintain proper tension of the shaft enclosing tubes. For oil lubricated applications, a dust cover of ASTM A48 Class 30 cast iron will be used above the stretch housing that will provide a threaded port for attaching means of supplying drip oil to the enclosing tubes. For water flush applications, a seal housing of ASTM A240 Grade 304L stainless steel will seal the stretch assembly and provide a threaded port for flush water injection.

TENSION NUT, STRETCH ASSEMBLY: The stretch assembly shall consist of a tension nut of ASTM B584 C89833 bronze, designed to maintain proper tension of the shaft enclosing tubes. For oil lubricated applications, the tension nut will provide a threaded port for attaching means of supplying drip oil to the enclosing tubes. For water flush applications, a seal housing of ASTM A240 Grade 304L stainless steel will seal the stretch assembly and provide a threaded port for flush water injection.

FOUNDATION PLATE: The foundation plate shall be of ASTM A36 HR carbon steel. The foundation plate shall be square with radius corners, equal to or greater than the size of the base of the discharge head. The foundation plate shall be uniformly faced on one side, with four drilled holes provided, one at each corner to accommodate anchor bolts.

Suggested Specifications
Booster Can Mounted
Enclosed Lineshaft Pump With
Above Ground Suction

Pump shall be designed for pumping water at:	Rated capacity of	_____ (GPM)
	Total dynamic head of	_____ (TDH)
	Minimum bowl efficiency of	_____ %
	Water temperature of	_____ °F
	Specific gravity of	_____
	Running Speed of	_____ (RPM)

BOWL ASSEMBLY: The intermediate bowls, suction case, and discharge case shall be of ASTM A48 Class 30 cast iron or ASTM A536 Grade 65-45-12 ductile iron as required for pressure handling capability. A tube adapter of ASTM A536 Grade 65-45-12 ductile iron shall attach to the discharge case and be fitted with an ASTM B505 C84400 bronze tube bearing to provide a means of connection for the shaft enclosing tube assembly. The discharge case shall be fitted with an ASTM B505 C89835 bronze throttle bearing to restrict pumped fluid from entering the shaft enclosing tube assembly and drain ports located between the throttle bearing and tube adapter connection. The intermediate bowls shall be fitted with fluted nitrile and/ or ASTM B505 C89835 bronze bearings as required to support the bowl-shaft. The suction case shall be fitted with an ASTM B505 C89835 bronze bearing and sand collar to protect the suction case bearing from abrasives and be permanently grease lubricated. The impellers shall be made of ASTM B148 C95500 Ni. Al. bronze, statically balanced [***(optional)**, and shall be fitted with replaceable ASTM B148 C95500 Ni. Al. bronze wear rings*]. The impellers shall be securely fastened to the bowl-shaft with tapered collets of ASTM A519 Grade 1018 carbon steel for bowl-shafts 2-3/16" nominal diameter and smaller or with keyed connections for bowl-shafts larger than 2-3/16" nominal diameter. The water passages of pump bowls size 6" through 14" shall have vitreous porcelain enamel lining and 16" and larger shall have ScotchKote™ Fusion-Bonded Epoxy 134. The bowl-shaft shall be ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened to within .0005" total indicator reading per foot of length. The bowl-shaft shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards.

COLUMN ASSEMBLY: The column pipe shall be of ASTM A53 Grade B carbon steel. The column pipe shall be flanged having interchangeable sections, not exceeding 10 feet. The column flanges shall be of ASTM A36 HR steel and conform to ANSI specifications.

The shaft enclosing tubes shall be of schedule 80 ASTM A53 Grade B carbon steel for oil lubricated application and shall be of ASTM A312 Grade 304 stainless steel for water flush application. The tube ends shall be internally threaded and machined parallel to accurately butt and align. The tube lengths shall be interchangeable and not exceed 60". The top section of tube shall be designed for applying tension to the enclosing tube assembly. The enclosing tube assembly shall be of such overall assembled length to properly match the length of the column pipe and allow for proper tensioning.

The bearings within the shaft enclosing tubes shall be of ASTM B505 C84400 bronze. The bearings shall be externally threaded, installed between each enclosing tube section to securely affix the enclosing tubes, and maintain alignment of the line-shaft and prevent excessive vibration. The bearing bore shall be machined and grooved to provide proper lubrication.

The line-shafts shall be of ASTM A108 Grade 1045 carbon steel for oil lubricated applications and shall be of ASTM A582 Grade 416 HT stainless steel for water flush applications. The line-shaft shall have pump shaft quality dimensional tolerances of +.000"/ -.002" and shall be straightened within .005" total indicator reading per 10 foot section. The line-shafts shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards and/or sized to avoid critical speeds by a safe operational margin. The shaft threads shall be lathe cut and shall be left hand to prevent loosening during pump operation. The shaft couplings shall be threaded from ASTM A108 Grade 1215 CR carbon steel or ASTM A276 Grade 304 stainless steel. The intermediate line-shaft sections shall be interchangeable and shall not exceed 10 feet in length. The butting ends of the line-shafts shall be machined square to axis of the shaft with a recessed center to ensure proper alignment.

DISCHARGE HEAD: The discharge head shall be of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The discharge head shall be for above ground suction and discharge with sufficient strength and rigidity to support the attached vertical motor or driver and carry the suspended weight of the attached column and bowl assembly. The suction flange shall be a 150# Class ANSI raised face flange. The suction size shall be sized per Hydraulic Institute Pump Intake Design standards. The discharge flange shall be a 150# Class ANSI raised face flange. The discharge size shall be the same as the column pipe. The discharge head shall permit a two-piece head-shaft to be coupled above the stretch assembly. The base of the discharge head shall be circular and fully finished on bottom. The base diameter and bolt pattern shall match a 150# Class ANSI flange.

STRETCH HOUSING, STRETCH ASSEMBLY: The stretch assembly shall consist of a stretch housing of ASTM A536 Grade 65-45-12 ductile iron, designed to maintain proper tension of the shaft enclosing tubes. For oil lubricated applications, a dust cover of ASTM A48 Class 30 cast iron will be used above the stretch housing that will provide a threaded port for attaching means of supplying drip oil to the enclosing tubes. For water flush applications, a seal housing of ASTM A240 Grade 304L stainless steel will seal the stretch assembly and provide a threaded port for flush water injection.

TENSION NUT, STRETCH ASSEMBLY: The stretch assembly shall consist of a tension nut of ASTM B584 C89833 bronze, designed to maintain proper tension of the shaft enclosing tubes. For oil lubricated applications, the tension nut will provide a threaded port for attaching means of supplying drip oil to the enclosing tubes. For water flush applications, a seal housing of ASTM A240 Grade 304L stainless steel will seal the stretch assembly and provide a threaded port for flush water injection.

BOOSTER CAN: The booster can shall be fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The booster can shall have a 150# Class ANSI flange raised face inlet. The head-mounting flange shall match the discharge head base 150# Class ANSI diameter and bolt pattern. The booster can shall be sized per Hydraulic Institute Pump Intake Design standards.

MOTOR COUPLING: The Motor Coupling, when driven with a solid shaft motor, shall be a flanged adjustable three-piece or spacer type four-piece rigid coupling. The coupling shall be of steel, designed to transmit the required torque and horsepower of the attached pump and other rotating elements. The pump side of the coupling shall be keyed to the head-shaft. The motor side shall have a radial key to support down thrust and an axial key to transmit torque. A threaded adjusting nut shall be located above the pump side coupling component. The coupling shall be designed to prevent movement due to up thrust and held concentric by means of machined registers.

Suggested Specifications Short Coupled, Enclosed Lineshaft Pump With Underground Discharge

Pump shall be designed for pumping product at:	Rated capacity of	_____ (GPM)
	Total dynamic head of	_____ (TDH)
	Minimum bowl efficiency of	_____ %
	Product temperature of	_____ °F
	Specific gravity of	_____
	Running Speed of	_____ (RPM)

BOWL ASSEMBLY: The intermediate bowls, suction case, and discharge case shall be of ASTM A48 Class 30 cast iron or ASTM A536 Grade 65-45-12 ductile iron as required for pressure handling capability. A tube adapter of ASTM A536 Grade 65-45-12 ductile iron shall attach to the discharge case and be fitted with an ASTM B505 C84400 bronze tube bearing to provide a means of connection for the shaft enclosing tube assembly. The discharge case shall be fitted with an ASTM B505 C89835 bronze throttle bearing to restrict pumped fluid from entering the shaft enclosing tube assembly and drain ports located between the throttle bearing and tube adapter connection. The intermediate bowls shall be fitted with fluted nitrile and/ or ASTM B505 C89835 bronze bearings as required to support the bowl-shaft. The suction case shall be fitted with an ASTM B505 C89835 bronze bearing and sand collar to protect the suction case bearing from abrasives and be permanently grease lubricated. The impellers shall be made of ASTM B148 C95500 Ni. Al. bronze, statically balanced [***(optional)**, and shall be fitted with replaceable ASTM B148 C95500 Ni. Al. bronze wear rings*]. The impellers shall be securely fastened to the bowl-shaft with tapered collets of ASTM A519 Grade 1018 carbon steel for bowl-shafts 2-3/16" nominal diameter and smaller or with keyed connections for bowl-shafts larger than 2-3/16" nominal diameter. The water passages of pump bowls size 6" through 14" shall have vitreous porcelain enamel lining and 16" and larger shall have ScotchKote™ Fusion-Bonded Epoxy 134. The bowl-shaft shall be ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened to within .0005" total indicator reading per foot of length. The bowl-shaft shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards.

COLUMN ASSEMBLY: The column pipe shall be of ASTM A53 Grade B carbon steel. The column pipe shall be flanged having interchangeable sections not exceeding 10 feet and/or sized to avoid critical speeds by a safe operational margin. The column flanges shall be of ASTM A36 HR steel. The flanged pipe ends shall have a female register machined for drop-in bearing retainers of ASTM A743 CF8 stainless steel. The underground discharge flange shall be a 150# Class ANSI raised face flange of similar size as the column pipe.

The shaft enclosing tubes shall be of schedule 80 ASTM A53 Grade B carbon steel for oil lubricated application and shall be of ASTM A312 Grade 304 stainless steel for water flush application. The tube ends shall be internally threaded and machined parallel to accurately butt and align. The tube lengths shall be interchangeable and not exceed 60". The top section of tube shall be designed for applying tension to the enclosing tube assembly. The enclosing tube assembly shall be of such overall assembled length to properly match the length of the column pipe and allow for proper tensioning.

The bearings within the shaft enclosing tubes shall be of ASTM B505 C84400 bronze. The bearings shall be externally threaded, installed between each enclosing tube section to securely affix the enclosing tubes, and maintain alignment of the line-shaft and prevent excessive vibration. The bearing bore shall be machined and grooved to provide proper lubrication.

The line-shafts shall be of ASTM A108 Grade 1045 carbon steel for oil lubricated applications and shall be of ASTM A582 Grade 416 HT stainless steel for water flush applications. The line-shaft shall have pump shaft quality dimensional tolerances of +.000"/ -.002" and shall be straightened within .005" total indicator reading per 10 foot section. The line-shafts shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards and/or sized to avoid critical speeds by a safe operational margin. The shaft threads shall be lathe cut and shall be left hand to prevent loosening during pump operation. The shaft couplings shall be threaded from ASTM A108 Grade 1215 CR carbon steel or ASTM A276 Grade 304 stainless steel. The intermediate line-shaft sections shall be interchangeable and shall not exceed 10 feet in length. The butting ends of the line-shafts shall be machined square to axis of the shaft with a recessed center to ensure proper alignment.

MOTOR STAND: The motor stand shall be fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The motor stand shall be for underground discharge with sufficient strength and rigidity to support the attached vertical motor or driver and carry the suspended weight of the attached column and bowl assembly. The motor stand shall permit a two-piece head shaft to be coupled above the stretch assembly. The base of the motor stand shall be circular and fully finished on bottom.

STRETCH HOUSING, STRETCH ASSEMBLY: The stretch assembly shall consist of a stretch housing of ASTM A536 Grade 65-45-12 ductile iron, designed to maintain proper tension of the shaft enclosing tubes. For oil lubricated applications, a dust cover of ASTM A48 Class 30 cast iron will be used above the stretch housing that will provide a threaded port for attaching means of supplying drip oil to the enclosing tubes. For water flush applications, a seal housing of ASTM A240 Grade 304L stainless steel will seal the stretch assembly and provide a threaded port for flush water injection.

TENSION NUT, STRETCH ASSEMBLY: The stretch assembly shall consist of a tension nut of ASTM B584 C89833 bronze, designed to maintain proper tension of the shaft enclosing tubes. For oil lubricated applications, the tension nut will provide a threaded port for attaching means of supplying drip oil to the enclosing tubes. For water flush applications, a seal housing of ASTM A240 Grade 304L stainless steel will seal the stretch assembly and provide a threaded port for flush water injection.

FOUNDATION PLATE: The foundation plate shall be of ASTM A36 HR carbon steel. The foundation plate shall be square with radius corners, equal to or greater than the size of the base of the discharge head. The foundation plate shall be uniformly faced on one side, with four drilled holes provided, one at each corner to accommodate anchor bolts.

MOTOR COUPLING: The Motor Coupling, when driven with a solid shaft motor, shall be a flanged adjustable three-piece or spacer type four-piece rigid coupling. The coupling shall be of steel, designed to transmit the required torque and horsepower of the attached pump and other rotating elements. The pump side of the coupling shall be keyed to the head-shaft. The motor side shall have a radial key to support down thrust and an axial key to transmit torque. A threaded adjusting nut shall be located above the pump side coupling component. The coupling shall be designed to prevent movement due to up thrust and held concentric by means of machined registers.

Suggested Specifications
Submersible Pump With
Above Ground Discharge

Pump shall be designed for pumping product at:	Rated capacity of	_____ (GPM)
	Total dynamic head of	_____ (TDH)
	Minimum bowl efficiency of	_____ %
	Product temperature of	_____ °F
	Specific gravity of	_____
	Running Speed of	_____ (RPM)

BOWL ASSEMBLY: The intermediate bowls, and discharge case shall be of ASTM A48 Class 30 cast iron or ASTM A536 Grade 65-45-12 ductile iron as required for pressure handling capability. The submersible suction case and motor bracket shall be of ASTM A536 Grade 65-45-12 ductile iron. The intermediate bowls shall be fitted with fluted nitrile and/ or ASTM B505 C89835 bronze bearings as required to support the bowl-shaft. The suction case shall be fitted with an ASTM B505 C89835 bronze bearing. The impellers shall be made of ASTM B148 C95500 Ni. Al. bronze, statically balanced [***(optional)**, and shall be fitted with replaceable ASTM B148 C95500 Ni. Al. bronze wear rings*]. The impellers shall be securely fastened to the bowl-shaft with tapered collets of ASTM A519 Grade 1018 carbon steel for bowl-shafts 2-3/16" nominal diameter and smaller or with keyed connections for bowl-shafts larger than 2-3/16" nominal diameter. The water passages of pump bowls size 6" through 14" shall have vitreous porcelain enamel lining and 16" and larger shall have ScotchKote™ Fusion-Bonded Epoxy 134. The bowl-shaft shall be ASTM A582 Grade 416 HT stainless steel [***(optional)** with hard chrome plating no less than .007" hard chrome per side, and Brinell hardness no less than 500*], shall have pump shaft quality dimensional tolerances of +.000"/ -.002", and shall be straightened to within .0005" total indicator reading per foot of length. The bowl-shaft shall be of sufficient diameter to transmit the pump horsepower with a safety factor consistent with AWWA pump shaft standards. The coupling connecting the motor to the pump bowl shall be of ASTM A276 Grade 304 stainless steel, keyed or splined to the pump shaft of sufficient size and strength to withstand the maximum torque generated by the motor.

SUBMERSIBLE MOTOR: The motor shall be of the vertical, submersible, alternating current induction type, designed for continuous duty, underwater operation. The motor shall be oil or water-filled and shall incorporate a suitable seal to restrict foreign matter from entering the motor. The thrust bearing shall be of ample capacity to carry the weight of all rotating parts plus the hydraulic thrust and shall be an integral part of the driver.

SUBMERSIBLE CABLE: The cable shall be comprised of separate conductors within a single neoprene exterior jacket. Each conductor shall be insulated by synthetic rubber or plastic specifically designed for continuous immersion in water. Minimum size of cable shall be per NEC ampacity requirements.

DISCHARGE PIPING: The discharge pipe shall be of ASTM A53 Grade B carbon steel. The discharge pipe shall be furnished in 20 foot sections threaded with ANSI B1.20.1 standard taper threads and connected with matching threaded couplings. The pipe weight shall be consistent with industry standard pump discharge pipe.

DISCHARGE HEAD: The discharge head shall be fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The discharge head shall consist of a radius elbow and be for above ground discharge with sufficient strength and rigidity to carry the suspended weight of the attached column and pump/ motor assembly. The discharge flange shall be a 150# Class ANSI flange. The discharge size shall be the same as the column pipe. The discharge head shall have an integral base and lifting lugs of sufficient strength to lift the entire head, discharge pipe, and pump/ motor assembly safely for installation and servicing operations. The base of the discharge head shall be circular and finished on bottom for proper mounting. A threaded connection shall be provided in the head base for a terminal box. The base shall also be provided with threaded openings for a well vent and a water level indicator. If the discharge head is to be mounted on a booster can, the base diameter and bolt pattern shall match a 150# Class ANSI flange.

BOOSTER CAN: The booster can shall be fabricated of ASTM A53 Grade B carbon steel pipe and ASTM A36 HR carbon steel plate. The booster can shall have a 150# Class ANSI flange raised face inlet. The head-mounting flange shall match the discharge head base 150# Class ANSI diameter and bolt pattern. The booster can shall be sized per Hydraulic Institute Pump Intake Design standards.

CONTACT US

FOR THE TOOLS AND

SERVICE YOU NEED

TO MAKE THE MOST

OF YOUR WATER.

SIMFLO®

ISO 9001:2015

AWWA MEMBER

HYDRAULIC INSTITUTE PROUD MEMBER

NGWA The Groundwater Association MEMBER 2021

Water Environment Federation® the water quality people®

LUBBOCK | 2605 INTERSTATE 27 | LUBBOCK, TX | 79404 | 806.747.3411

WILLCOX | 754 E MALEY ST | WILLCOX, AZ | 85644 | 520.384.2273

GARDEN CITY | 2726 W JONES AVE | GARDEN CITY, KS | 67846 | 620.275.4107

SIMFLO.COM