



VERTICAL TURBINE PUMPS

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Phone 817-632-0266

Selection software

www.flowise.pump-flo.com

PREFERRED PUMP & EQUIPMENT, LP'S TERMS AND CONDITIONS OF SALE

1. **TERMS AND CONDITIONS.** These terms and conditions of sale apply to all orders by Buyer and all goods and services to be provided by Seller to Buyer, except as provided below. The invoice on the reverse hereof and these terms and conditions constitute Buyer's order. Seller retains the right to alter or change these terms and conditions at any time upon written notice to Buyer as provided by law. By placing an order(s) after receipt of such notice, Buyer agrees that all subsequent charges will be subject to Seller's alterations or changes. Buyer acknowledges and agrees that any terms and conditions set forth on any purchase order or other document subsequently submitted by Buyer which are different than or conflict with these terms and conditions are rejected by Seller. These terms and conditions may not be waived or modified except as specifically set forth in writing by Seller. The order and any applicable Commercial Credit Agreement and Personal Guaranty contain the final and complete agreement between the parties for provision of the goods and services and supersede all prior or contemporaneous conduct, agreements, statements, representations, negotiations, course of conduct, course of dealing, or communications pertaining to those goods and services, whether written or oral. Seller's failure to object to provisions contained in any of Buyer's forms shall not be deemed to be a waiver of these terms and conditions.
2. **CHANGES.** All orders must be approved and accepted by Seller. All requests for changes to any order must be made to Seller in writing. Seller may accept such changes in writing in its sole and absolute discretion, for such additional charges as may be determined by Seller.
3. **CREDIT AND PAYMENT TERMS.** Buyer agrees to pay the full amount shown on the order, plus applicable sales tax, shipping and other charges. Tax-exempt Buyers must furnish a certificate of exemption or pay sales tax. Unless otherwise indicated on the order or as provided below, payment is due and payable in full as set forth on the invoice. In the event Buyer fails to make payment when due, Seller may suspend or cancel any further shipments, and Buyer shall reimburse Seller for any fees, costs or expenses it incurs in attempting to collect such amounts due from Buyer, whether by lawsuit or otherwise, including without limitation attorneys' fees and collection fees based on a percentage of recovery against Buyer. Seller may assess a 1.5% monthly interest charge on the entire unpaid balance of the account for any monthly period during which any payment is more than 30 days late. If, in the sole judgment of Seller, the financial condition of Buyer at any time does not justify continuance of shipment, Seller may require full or partial payment in advance at any time.
4. **CANCELLATION.** Once an order is accepted by Seller, the order is a binding contract subject to the terms and conditions set forth herein and may not be cancelled without Seller's written consent, which may be withheld in Seller's sole and absolute discretion. Canceled orders are subject to a 25% restocking fee based on the sales price of the items canceled.
5. **SHIPPING.** All sales are F.O.B., Seller's warehouse at Buyer's sole expense unless otherwise agreed in writing by Seller. Unless otherwise noted on the order, delivery shall be via ground transportation as Seller deems appropriate in its sole discretion. Seller is not responsible for delays caused by carriers. Buyer assumes risk of loss when goods are delivered to common carrier.
6. **DELIVERY, INSPECTION AND ACCEPTANCE.** Buyer or Buyer's representative must be present at time of delivery to sign for goods and acknowledge quantity and condition of goods. Buyer shall inspect all goods upon delivery. Unless Buyer notifies Seller in writing of Buyer's rejection and the reason therefore at the time of delivery, the goods shall be conclusively presumed to be accepted by Buyer.
7. **SCHEDULING AND DELAYS.** If goods cannot be delivered on the scheduled delivery date for reasons beyond Seller's control, Seller shall have a reasonable period of time to deliver the goods once delays have been eliminated. Delays for reasons beyond Seller's control do not constitute grounds for non-acceptance of goods or non-payment by the Buyer.
8. **NO WARRANTIES; LIMITATION OF DAMAGES; REMEDY.** **NO EXPRESS OR IMPLIED WARRANTIES ARE GIVEN BY SELLER. THE GOODS PURCHASED HEREUNDER ARE SOLD BY SELLER "AS IS." BUYER MUST PROCEED DIRECTLY AGAINST THE MANUFACTURER WITH RESPECT TO BREACHES OF THE MANUFACTURER'S WARRANTIES (IF ANY). SELLER EXPRESSLY DISCLAIMS ALL WARRANTIES OF ANY KIND, INCLUDING BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND OF ALL OTHER OBLIGATIONS OR LIABILITY ON SELLER'S PART. THE BUYER AND GUARANTOR (IF ANY) ARE NOT ENTERING THIS AGREEMENT IN RELIANCE ON ANY STATEMENT OF SELLER NOT FOUND IN THIS AGREEMENT. IN NO EVENT SHALL SELLER BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, GENERAL, EXEMPLARY OR SPECIAL DAMAGES, INCLUDING LOST PROFITS, REGARDLESS OF THE FORESEEABILITY OF SUCH DAMAGES, WHETHER BASED ON CONTRACT, REPRESENTATION, WARRANTY OR TORT, ARISING OUT OF OR RELATED TO PURCHASE, INSTALLATION, USE OR PERFORMANCE OF GOODS. WITHOUT LIMITING THE FOREGOING, BUYER'S SOLE AND EXCLUSIVE REMEDY, AND SELLER'S SOLE AND EXCLUSIVE LIABILITY, WITH RESPECT TO GOODS PURCHASED HEREUNDER, SHALL BE, AT SELLER'S OPTION, TO REPAIR OR REPLACE SUCH GOODS, REFUND THE PURCHASE PRICE, OR CREDIT BUYER'S ACCOUNT, PROVIDED BUYER COMPLIES WITH SELLER'S RETURN PROCEDURES AND SELLER'S EXAMINATION OF SUCH GOODS DISCLOSES TO SELLER'S SATISFACTION THAT SOME PROBLEM ACTUALLY EXISTS THAT WAS NOT CAUSED BY ACCIDENT, MISUSE, ALTERATION, DAMAGE IN TRANSIT, OR MISHANDLING.**
9. **FORCE MAJEURE.** Seller shall not be held responsible for any losses of any kind resulting if the fulfillment of any term or provision of any order is delayed or prevented by any excusing cause, including revolutions or other disorders, wars, acts of enemies, strikes, fires, floods, or acts of God. Without limiting the foregoing, the term "excusing causes" includes any cause not within the control of Seller that Seller is unable to prevent by the exercise of reasonable diligence.
10. **MISCELLANEOUS.** These terms and conditions shall be governed in all respects, including validity, interpretation and effect, by, and shall be enforceable in accordance with the laws of the State of Texas, without regard to or application of conflict of law rules or principals. Should any dispute arise concerning this agreement, or arising out of or related thereto, such claims will be litigated exclusively in the state courts of Tarrant County, Texas, which such courts shall have the exclusive jurisdiction and venue of these matters. Buyer agrees that such jurisdiction is not unreasonable and presents no overly burdensome difficulty or inconvenience to the Buyer. For any such litigation, the Parties submit to the jurisdiction of the Tarrant County State District Courts and waive any such rights each may have to transfer or change this jurisdiction or venue of any such litigation brought against them by any other Party to this agreement. No waiver of any breach shall be held to be a waiver of any other or subsequent breach. If any action, suit or proceeding (including without limitation proceedings in arbitration or mediation or in collection) arising out of or relating to this order is brought by either party, the prevailing party will be entitled to receive from the other party, in addition to any other relief that may be granted, the reasonable attorneys' fees, experts' fees, costs, and expenses incurred in the action or proceeding by the prevailing party.



FloWise®
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LIMITED WARRANTY

New equipment manufactured by FloWise ("Seller"; such equipment, "Equipment") is hereby warranted to be free from material defects in material and workmanship under normal use and service for a period of one (1) year from the date of shipment (the "Warranty Period"). If, prior to the end of the Warranty period, the purchaser ("Purchaser") timely notifies Seller of a potential defect in the Equipment and provides reasonable detail about such suspected defect, then Seller shall, upon Seller's confirmation that the Equipment is defective, either (a) repair, (b) replace, or (c) accept the return of, such defective Equipment, in each case (a) through (c) at Seller's sole election. If Seller elects to accept the return of any defective Equipment in accordance with (c) above, then Purchaser shall ship such Equipment to Seller (F.O.B. Seller's branch of origin from which it was originally shipped), and Seller shall (i) refund any amount paid thereon by Purchaser (less depreciation at the rate of fifteen percent (15%) per year if Purchaser has used such Equipment for more than thirty (30) days) and (ii) cancel any balance still owed by Purchaser on such Equipment. Upon Seller's request, Purchaser shall ship any defective Equipment replaced in accordance with (b) above to Seller (F.O.B. Seller's branch of origin).

EXCEPT FOR THE WARRANTIES SET FORTH IN THE IMMEDIATELY PRECEDING PARAGRAPH, SELLER MAKES NO WARRANTY WHATSOEVER WITH RESPECT TO SELLER'S EQUIPMENT, INCLUDING ANY (a) WARRANTY OF MERCHANTABILITY; OR (b) WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE, OR OTHERWISE. THE REMEDIES DESCRIBED IN THE IMMEDIATELY PRECEDING PARAGRAPH ARE PURCHASER'S SOLE AND EXCLUSIVE REMEDIES AND SELLER'S ENTIRE LIABILITY FOR ANY BREACH OF THIS LIMITED WARRANTY. SELLER'S LIABILITY SHALL UNDER NO CIRCUMSTANCES EXCEED THE ACTUAL AMOUNT PAID BY PURCHASER FOR THE DEFECTIVE EQUIPMENT, NOR SHALL SELLER UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL OR PUNITIVE DAMAGES OR LOSSES, WHETHER DIRECT OR INDIRECT.

For the avoidance of doubt, this limited warranty does not cover any Equipment defect or damage due to: (a) transportation; (b) storage; (c) improper use, installation, or adjustment; (d) failure to follow the product instructions or to perform any preventive maintenance; (e) modifications; (f) unauthorized repair; (g) normal wear and tear; (h) external causes such as accidents, abuse, neglect, or other actions or events beyond Seller's reasonable control; or (i) decomposition from chemical action or wear caused by abrasive materials.

For the avoidance of doubt, this limited warranty does not cover any Equipment or parts thereof repaired outside of Seller's branch of origin without prior written approval of Seller, and Seller makes no warranty as to any product manufactured by a third party ("Third Party Product"), including, without limitation, any starting equipment, electrical apparatus or other material used alone or in combination with Seller's Equipment. For the avoidance of doubt, SELLER MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO ANY THIRD PARTY PRODUCT, INCLUDING ANY (a) WARRANTY OF MERCHANTABILITY; (b) WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; (c) WARRANTY OF TITLE; OR (d) WARRANTY AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY; WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE.



Curve Index 3450 RPM - 60 Cycle

Effective May, 2021

Model	Curve Number	RPM	Date	Notes
FW5IC	FT6205IC0	3450	Dec.2018	
FW5KC	FT6205KC0	3450	Dec.2018	
FW5LC	FT6205LC1	3450	Apr. 2020	Supersedes Jan. 2018
FW5HC	FT6205HC1	3450	Apr. 2020	Supersedes Jan. 2018
FW5WC	FW5WC RES.	3450		
FW5YC	FW5YC RES.	3450		
FW6DC	FW6DC RES.	3450		
FW6EC	FW6EC RES.	3450		
FW6IC	FW6IC RES.	3450		
FW6KC	FW6KC RES.	3450		
FW6LC	FT6206LC2	3450	Oct. 2020	Supersedes Jan. 2018
FW6LS	FW6LS RES.	3450		
FW6HC	FT6206HC2	3450	Oct. 2020	Supersedes Jan. 2018
FW6HS	FW6HS RES.	3450		
FW6QC	FW6QC RES.	3450		
FW6RC	FW6RC RES.	3450		
FW6WC	FT6206WC0	3450	Apr. 2020	
FW6YC	FT6206YC0	3450	Apr. 2020	
FW7LC	FT6207LC0	3450	Dec.2018	
FW7LS	FW7LS RES.	3450		
FW7HC	FT6207HC0	3450	Dec.2018	
FW7HS	FW7HS RES.	3450		
FW7WC	FT6207WC0	3450	Jun. 2017	
FW7YC	FT6207YC0	3450	Jun. 2017	
FW8IC	FT6208IC0	3450	Jan. 2020	
FW8IS	FW8IS RES.	3450	Apr. 2020	
FW8KC	FT6208KC0	3450	Jan. 2020	
FW8KS	FT6208KS0	3450	Apr. 2020	
FW8LC	FT6208LC1	3450	Nov. 2019	Supersedes Dec. 2018
FW8LS	FW8LS RES.	3450		
FW8HC	FT6208HC1	3450	Nov. 2019	Supersedes Dec. 2018
FW8HS	FW8HS RES.	3450		
FW8QC	FT6208QC0	3450		
FW8QS	FW8QS RES.	3450	Jan. 2020	
FW8RC	FT6208RC0	3450	Dec. 2020	
FW8RS	FW8RS RES.	3450		
FW8WC	FT6208WC1	3450	Mar. 2019	Supersedes May 2017
FW8WS	FT6208WS0	3450	Mar. 2020	
FW9LC	FT6209LC1	3450	Jun. 2017	Supersedes Feb. 2017
FW9LS	FT6209LS0	3450	May 2017	
FW9HC	FT6209HC1	3450	Jun. 2017	Supersedes Feb. 2017
FW9HS	FT6209HS0	3450	May 2017	
FW9WC	FT6209WC0	3450	Jul. 2020	
FW9WS	FT6209WS0	3450	Dec. 2020	
FW9YC	FT6209YC0	3450	Dec. 2020	
FW9YS	FT6209YS0	3450	Dec. 2020	
FW10IC	FT6210IC0	3450	Aug. 2018	
FW10IS	FT6210IS1	3450	Dec. 2020	Supersedes Aug. 2018
FW10KC	FT6210KC0	3450	Aug. 2018	
FW10KS	FT6210KS1	3450	Dec. 2020	Supersedes Aug. 2018
FW10LC	FT6210LC0	3450	Jun. 2020	
FW10LS	FT6210LS0	3450	Dec. 2020	
FW10MC	FT6210MC0	3450	Jun. 2020	
FW10MS	FT6210MS0	3450	Dec. 2020	
FW10HC	FT6210HC0	3450	Jun. 2020	
FW10HS	FT6210HS0	3450	Dec. 2020	
FW10WC	FT6210WC1	3450	Mar. 2019	Supersedes May 2017
FW10WS	FT6210WS1	3450	Mar. 2019	Supersedes Jun. 2017
FW10YC	FT6210YC1	3450	Mar. 2019	Supersedes May 2017
FW10YS	FT6210YS1	3450	Mar. 2019	Supersedes May 2017
FW10WCXL	FW10WCXL RES.	3450		
FW10YCXL	FW10YCXL RES.	3450		
FW11LC	FT6211LC2	3450	Mar. 2020	Supersedes May 2017
FW11LS	FT6211LS2	3450	Mar. 2020	
FW11MC	FT6211MC2	3450	Mar. 2020	Supersedes Jun. 2017
FW11MS	FT6211MS2	3450	Mar. 2020	
FW11HC	FT6211HC2	3450	Mar. 2020	Supersedes Jun. 2017
FW11HS	FT6211HS2	3450	Mar. 2020	



Curve Index 3450 RPM - 60 Cycle

Effective May, 2021

FW11LCXL	FT6211LCXLO	3450	Jul. 2020	
FW11MCXL	FT6211MCXLO	3450	Jul. 2020	
FW11HCXL	FT6211HCXLO	3450	Jul. 2020	



Curve Index 1770 RPM - 60 Cycle

Effective May, 2021

Model	Curve Number	RPM	Date	Notes
FW5IC	FT6405IC0	1770	Dec. 2018	
FW5KC	FT6405KC0	1770	Dec. 2018	
FW5LC	FT6405LC1	1770	Apr. 2020	Supersedes Jan. 2018
FW5HC	FT6405HC1	1770	Apr. 2020	Supersedes Jan. 2018
FW5WC	FW5WC RES.	1770		
FW5YC	FW5YC RES.	1770		
FW6DC	FW6DC RES.	1770		
FW6EC	FW6EC RES.	1770		
FW6IC	FW6IC RES.	1770		
FW6KC	FW6KC RES.	1770		
FW6LC	FT6406LC2	1770	Oct. 2020	Supersedes Jan. 2018
FW6LS	FW6LS RES.	1770		
FW6HC	FT6406HC2	1770	Oct. 2020	Supersedes Jan. 2018
FW6HS	FW6HS RES.	1770		
FW6QC	FW6QC RES.	1770		
FW6RC	FW6RC RES.	1770		
FW6WC	FT6406WC0	1770	Apr. 2020	
FW6YC	FT6406YC0	1770	Apr. 2020	
FW7LC	FT6407LC0	1770	Dec. 2018	
FW7LS	FW7LS RES.	1770		
FW7HC	FT6407HC0	1770	Dec. 2018	
FW7HS	FW7HS RES.	1770		
FW7WC	FT6407WC0	1770	Jun. 2017	
FW7YC	FT6407YC0	1770	Jun. 2017	
FW8IC	FT6408IC0	1770	Jan. 2020	
FW8IS	FW8IS RES.	1770		
FW8KC	FT6408KC0	1770	Jan. 2020	
FW8KS	FT6408KS0	1770	Apr. 2020	
FW8LC	FT6408LC1	1770	Nov. 2019	Supersedes Dec. 2018
FW8LS	FW8LS RES.	1770		
FW8HC	FT6408HC1	1770	Nov. 2019	Supersedes Dec. 2018
FW8HS	FW8HS RES.	1770		
FW8QC	FT6408QC0	1770		
FW8QS	FW8QS RES.	1770	Jan. 2020	
FW8RC	FT6408RC0	1770	Dec. 2020	
FW8RS	FW8RS RES.	1770		
FW8WC	FT6408WC1	1770	Mar. 2019	Supersedes May. 2017
FW8WS	FT6408WS0	1770	Mar. 2019	
FW8Z	FW8Z RES.	1770		
FW9LC	FT6409LC1	1770	Jun. 2017	Supersedes Feb. 2017
FW9LS	FT6409LS0	1770	May 2017	
FW9HC	FT6409HC1	1770	Jun. 2017	Supersedes Feb. 2017
FW9HS	FT6409HS0	1770	May 2017	
FW9WC	FT6409WC0	1770		
FW9WS	FT6409WS0	1770	Dec. 2020	
FW9YC	FT6409YC0	1770	Dec. 2020	
FW9YS	FT6409YS0	1770	Dec. 2020	
FW10IC	FT6410IC0	1770	Aug. 2018	
FW10IS	FT6410IS1	1770	Dec. 2020	Supersedes Aug. 2018
FW10KC	FT6410KC0	1770	Aug. 2018	
FW10KS	FT6410KS1	1770	Dec. 2020	Supersedes Aug. 2018
FW10LC	FT6410LC0	1770	Jun. 2020	
FW10LS	FT6410LS0	1770	Dec. 2020	
FW10MC	FT6410MC0	1770	Jun. 2020	
FW10MS	FT6410MS0	1770	Dec. 2020	
FW10HC	FT6410HC0	1770	Jun. 2020	
FW10HS	FT6410HS0	1770	Dec. 2020	
FW10WC	FT6410WC1	1770	Mar. 2019	Supersedes May 2017
FW10WS	FT6410WS1	1770	Mar. 2019	Supersedes Jun. 2017
FW10YC	FT6410YC1	1770	Mar. 2019	Supersedes May 2017
FW10YS	FT6410YS1	1770	Mar. 2019	Supersedes May 2017
FW10WCXL	FW10WCXL RES.	1770		
FW10YCXL	FW10YCXL RES.	1770		
FW10ZC	FT6410ZC1	1770	Mar. 2019	Supersedes Nov. 2017
FW10ZS	FT6410ZS1	1770	Mar. 2019	Supersedes May 2017
FW11LC	FT6411LC2	1770	Mar. 2020	Supersedes Jun. 2017
FW11LS	FT6411LS2	1770	Mar. 2020	Supersedes Jun. 2017
FW11MC	FT6411MC2	1770	Mar. 2020	Supersedes Jun. 2017



Curve Index 1770 RPM - 60 Cycle

Effective May, 2021

Model	Curve Number	RPM	Date	Notes
FW11MS	FT6411MS2	1770	Mar. 2020	Supersedes Jun. 2017
FW11HC	FT6411HC2	1770	Mar. 2020	Supersedes Jun. 2017
FW11HS	FT6411HS2	1770	Mar. 2020	Supersedes Jun. 2017
FW11LCXL	FT6411LCXL0	1770	Jul. 2020	
FW11MCXL	FT6411MCXL0	1770	Jul. 2020	
FW11HCXL	FT6411HCXL0	1770	Jul. 2020	
FW11RC	FT6411RC0	1770	Jan. 2020	
FW11RS	FW11RS RES.	1770		
FW12DC	FT6412DC1	1770	Mar. 2019	Supersedes Dec. 2018
FW12DS	FT6412DS2	1770	Dec. 2020	Supersedes Mar. 2019
FW12EC	FT6412EC2	1770	Mar. 2020	Supersedes Mar. 2019
FW12ES	FT6412ES2	1770	Mar. 2020	Supersedes Mar. 2019
FW12IC	FT6412IC1	1770	Feb. 2017	Supersedes Feb. 2017
FW12IS	FT6412IS1	1770	Feb. 2017	Supersedes Feb. 2017
FW12KC	FT6412KC1	1770	Feb. 2017	Supersedes Dec. 2018
FW12KS	FT6412KS1	1770	Feb. 2017	
FW12LC	FT6412LC0	1770	Oct. 2017	
FW12LS	FT6412LS0	1770	Oct. 2017	
FW12MC	FT6412MC0	1770	Oct. 2017	
FW12MS	FT6412MS0	1770	Oct. 2017	
FW12HC	FT6412HC0	1770	Oct. 2017	
FW12HS	FT6412HS0	1770	Oct. 2017	
FW12LCXL	FW12LCXL RES.	1770		
FW12MCXL	FW12MCXL RES.	1770		
FW12HCXL	FW12HCXL RES.	1770		
FW12RC	FT6412RC1	1770	Mar. 2019	Supersedes Nov. 2018
FW12RS	FT6412RS1	1770	Mar. 2019	Supersedes Nov. 2018
FW12WC	FT6412WC0	1770	Jul. 2019	
FW12WS	FT6412WS0	1770	Mar. 2019	
FW12XC	FT6412XC0	1770	Jan. 2020	
FW12XS	FT6412XS0	1770	Jul. 2019	
FW12ZC	FT6412ZC1	1770	Mar. 2019	Supersedes Aug. 2018
FW12ZS	FT6412ZS2	1770	Dec. 2020	Supersedes Mar. 2019
FW13MC	FT6413MC0	1770	Sep. 2016	
FW13MCXL	FW13MCXL RES.			
FW13YCXL	FT6413YCXL0	1770	Jan. 2020	
FW14LC	FT6414LC1	1770	Apr. 2018	Supersedes Mar. 2016
FW14LS	FT6414LS0	1770	May 2017	
FW14MC	FT6414MC1	1770	Apr. 2018	Supersedes Mar. 2016
FW14MS	FT6414MS0	1770	May 2017	
FW14HC	FT6414HC1	1770	Apr. 2018	Supersedes Mar. 2016
FW14HS	FT6414HS0	1770	May 2017	
FW14LCXL	FT6414LCXL0	1770	Nov. 2019	
FW14MCXL	FT6414MCXL0	1770	Nov. 2019	
FW14HCXL	FT6414HCXL0	1770	Nov. 2019	
FW14WC	FT6414WC0	1770	Nov. 2018	
FW14WS	FT6414WS0	1770	Sep. 2019	
FW14YC	FT6414YC2	1770	Apr. 2021	
FW14YS	FT6414YS1	1770	Apr. 2021	
FW14YCXL	FT6414YCXL1	1770	Apr. 2021	Superseded Oct. 2019
FW15WC	FT6415WC0	1770	Mar. 2020	
FW15WS	FT6415WS0	1770	Mar. 2020	
FW16MC	FW16MC RES.	1770		
FW18MC	FW18MC RES.	1770		
FW20LC	FW20LC RES.	1770		
FW20HC	FW20HC RES.	1770		
FW20HCLN	FW20HCLN RES.	1770		



Curve Index 1180 RPM - 60 Cycle

Effective April, 2021

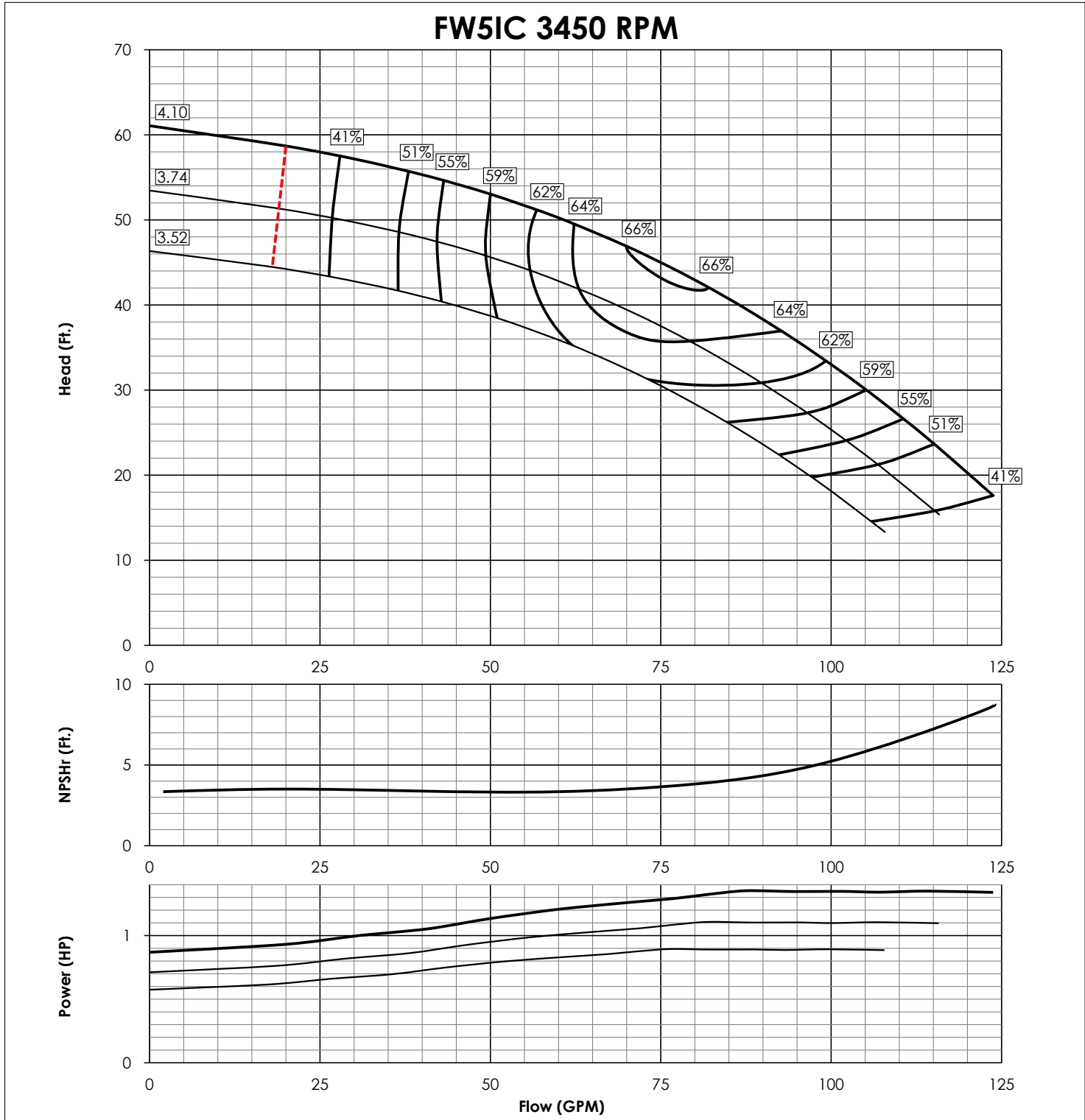
Model	Curve Number	RPM	Date	Notes
FW11RC	FT6411RC0	1180	Jan. 2020	
FW11RS	FW11RS RES.	1180		
FW12IC	FT6612IC1	1180	Feb. 2017	Supersedes Sept. 2016
FW12IS	FT6612IS1	1180	Feb. 2017	Supersedes Sept. 2016
FW12KC	FT6612KC1	1180	Feb. 2017	Supersedes Sept. 2016
FW12KS	FT6612KS1	1180	Feb. 2017	Supersedes Sept. 2016
FW12LC	FT6612LC0	1180	Oct. 2017	
FW12LS	FT6612LS0	1180	Oct. 2017	
FW12MC	FT6612MC0	1180	Oct. 2017	
FW12MS	FT6612MS0	1180	Oct. 2017	
FW12HC	FT6612HC0	1180	Oct. 2017	
FW12HS	FT6612HS0	1180	Oct. 2017	
FW12LCXL	FW12LCXL RES.	1180		
FW12MCXL	FW12MCXL RES.	1180		
FW12HCXL	FW12HCXL RES.	1180		
FW12RC	FT6612RC1	1180	Mar. 2019	Supersedes Nov. 2018
FW12RS	FT6612RS1	1180	Mar. 2019	Supersedes Nov. 2018
FW12WC	FT6612WC0	1180	Jul. 2019	
FW12WS	FT6612WS0	1180	Mar. 2019	
FW12XC	FT6612XC0	1180	Jan. 2020	
FW12XS	FT6612XS0	1180	Jul. 2019	
FW12ZC	FT6612ZC1	1180	Mar. 2019	Supersedes Aug. 2018
FW12ZS	FT6612ZS2	1180	Dec. 2020	Supersedes Mar. 2019
FW13MC	FT6613MC0	1180	Sep. 2016	
FW13MCXL	FW13MCXL RES.	1180		
FW13YCXL	FT6613YCXL0	1180	Jan. 2020	
FW14LC	FT6614LC1	1180	Apr. 2018	Supersedes May 2016
FW14LS	FT6614LS0	1180	May 2017	
FW14MC	FT6614MC1	1180	Apr. 2018	Supersedes Jun. 2016
FW14MS	FT6614MS0	1180	May 2017	
FW14HC	FT6614HC1	1180	Apr. 2018	Supersedes Sept. 2016
FW14HS	FT6614HS0	1180	May 2017	
FW14LCXL	FT6614LCXL0	1180	Nov. 2019	
FW14MCXL	FT6614MCXL0	1180	Nov. 2019	
FW14HCXL	FT6614HCXL0	1180	Nov. 2019	
FW14WC	FT6614WC0	1180	Nov. 2018	
FW14WS	FT6614WS0	1180	Sep. 2019	
FW14YC	FT6614YC2	1180	Apr. 2021	
FW14YS	FT6614YS1	1180	Apr. 2021	
FW14YCXL	FT6614YCXL1	1180	Apr. 2021	Supersedes Oct. 2019
FW15WC	FT6615WC0	1180	Mar. 2020	
FW15WS	FT6615WS0	1180	Mar. 2020	
FW16MC	FW16MC RES.	1180		
FW18MC	FW18MC RES.	1180		
FW20LC	FW20LC RES.	1180		
FW20HC	FW20HC RES.	1180		
FW20HCLN	FW20HCLN RES.	1180		



Curve Index 880 RPM - 60 Cycle

Effective April, 2021

Model	Curve Number	RPM	Date	Notes
FW12ZC	FT6812ZC1	880	Mar. 2019	Supersedes Aug. 2018
FW14LC	FT6814LC1	880	Apr. 2018	Supersedes Sept. 2016
FW14MC	FT6814MC1	880	Apr. 2018	Supersedes Sept. 2016
FW14HC	FT6814HC1	880	Apr. 2018	Supersedes Sept. 2016
FW14LCXL	FT6814LCXL0	880	Nov. 2019	
FW14MCXL	FT6814MCXL0	880	Nov. 2019	
FW14HCXL	FT6814HCXL0	880	Nov. 2019	
FW14WC	FT6814WC0	880	Nov. 2018	
FW14YC	FT9814YC2	880	Apr. 2021	
FW14YS	FT6814YS1	880	Apr. 2021	
FW14YCXL	FT6814YCXL1	880	Apr. 2021	Supersedes Oct. 2019
FW15WC	FT6815WC0	880	Mar. 2020	
FW16MC	FW16MC RES.	880		
FW18MC	FW18MC RES.	880		
FW20LC	FW20LC RES.	880		
FW20HC	FW20HC RES.	880		
FW20HCLN	FW20HCLN RES.	880		



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	1771
K _T	1.30 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.20"	SINGLE STG. WT.	50 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	10"
SHAFT DIA.	1"	MAX WORKING PRES.	480 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



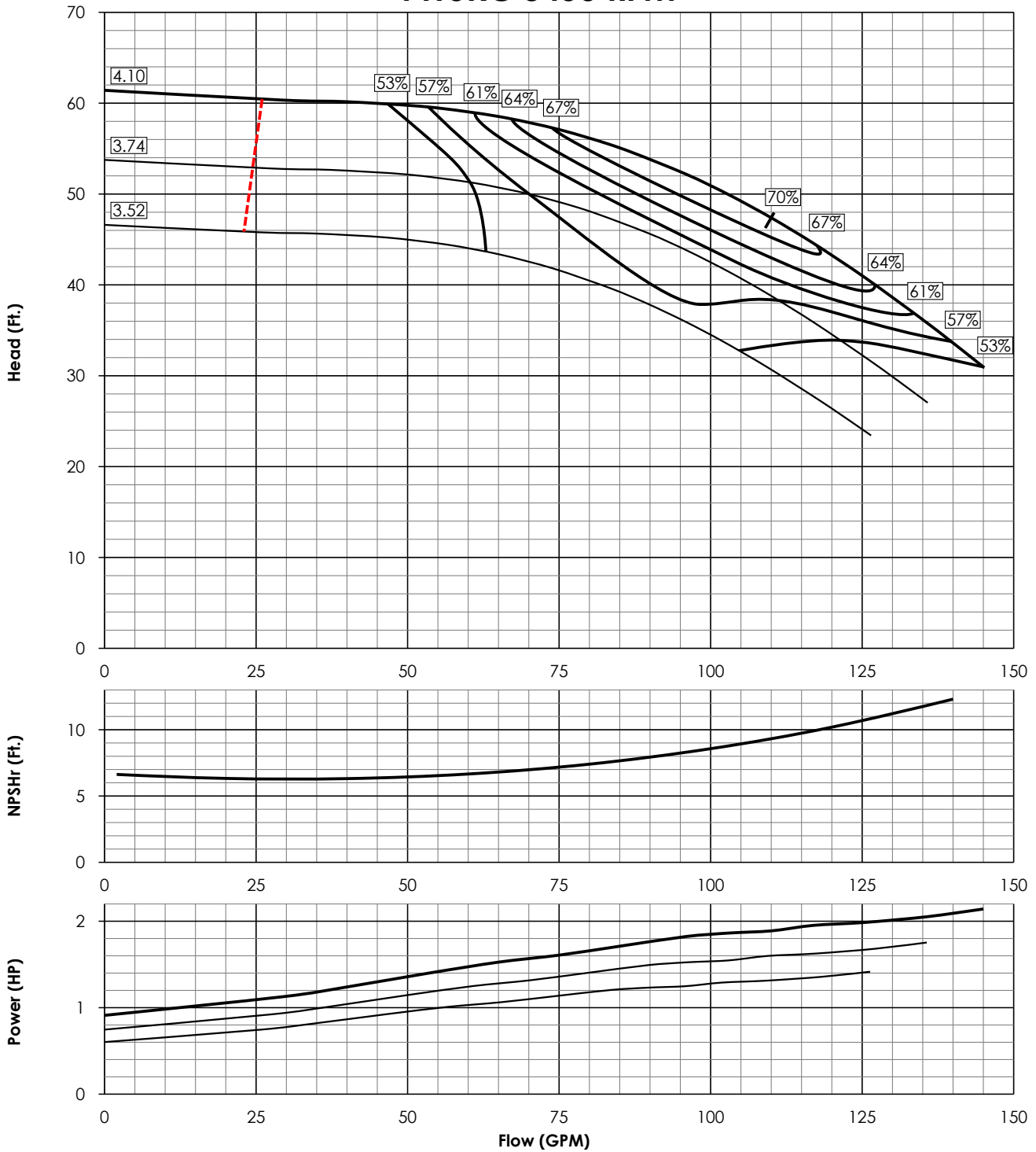
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6205KC0

Updated: Dec. 2018

FW5KC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2000
K _T	1.30 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.20"	SINGLE STG. WT.	50 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	10"
SHAFT DIA.	1"	MAX WORKING PRES.	480 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



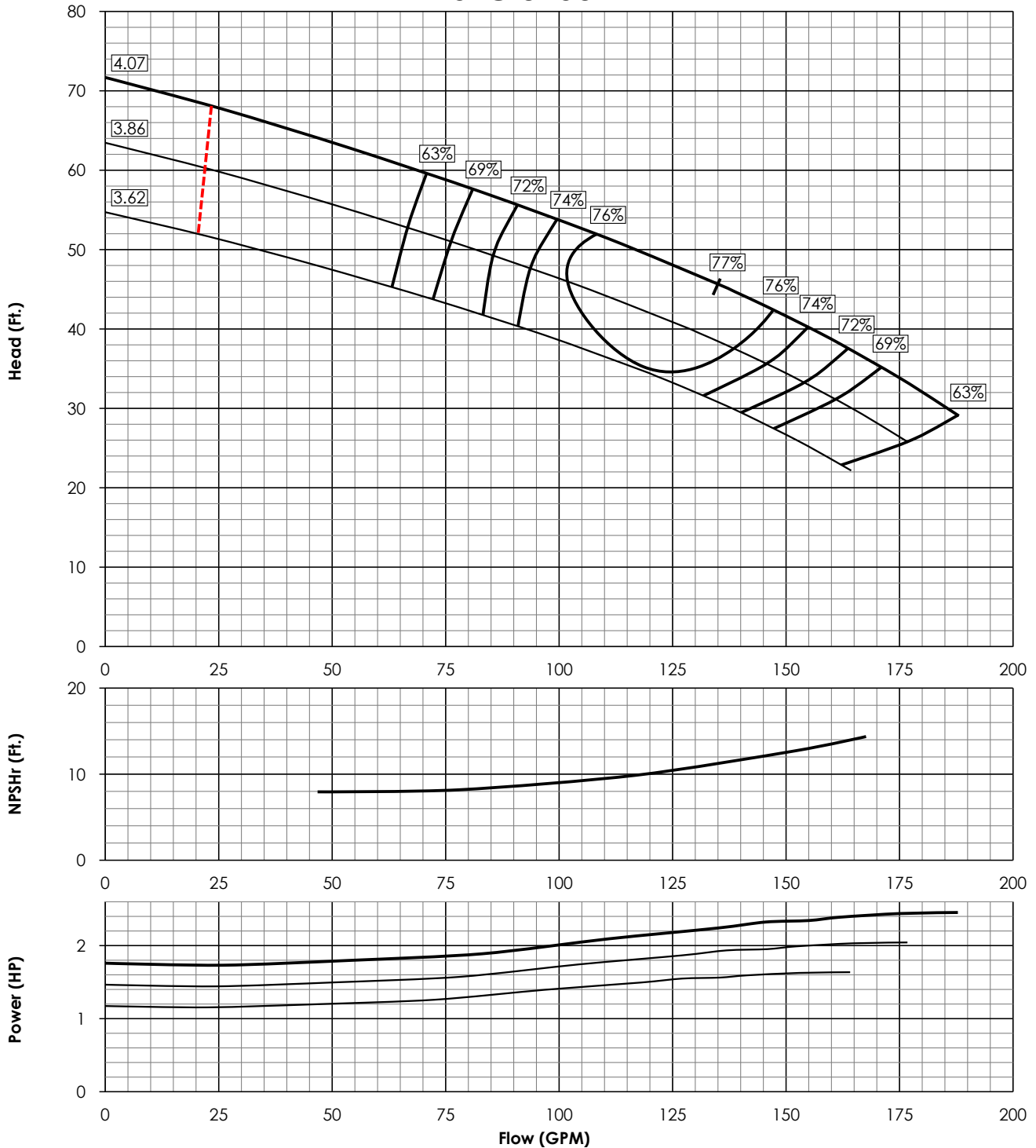
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6205LC1

Updated: Apr. 2020

FW5LC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-1.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2288
K _t	1.40 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.20"	SINGLE STG. WT.	55 LBS
STD. LATERAL	0.31"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	12"
SHAFT DIA.	1"	MAX WORKING PRES.	480 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



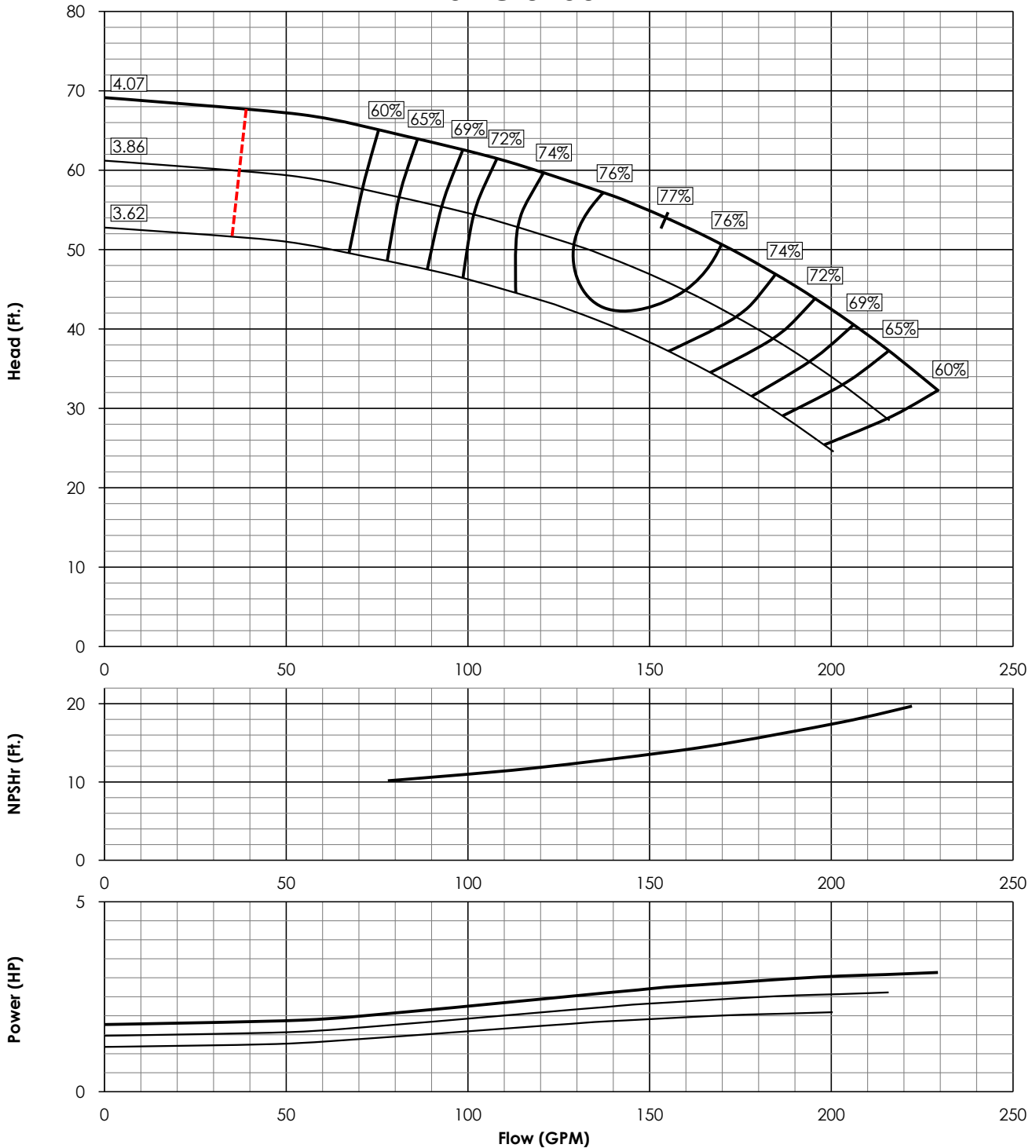
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6205HC1

Updated: Apr. 2020

FW5HC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-1.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2146
K _T	1.30 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.20"	SINGLE STG. WT.	55 LBS
STD. LATERAL	0.31"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERSION	12"
SHAFT DIA.	1"	MAX WORKING PRES.	480 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW5WC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW5YC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6DC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6EC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

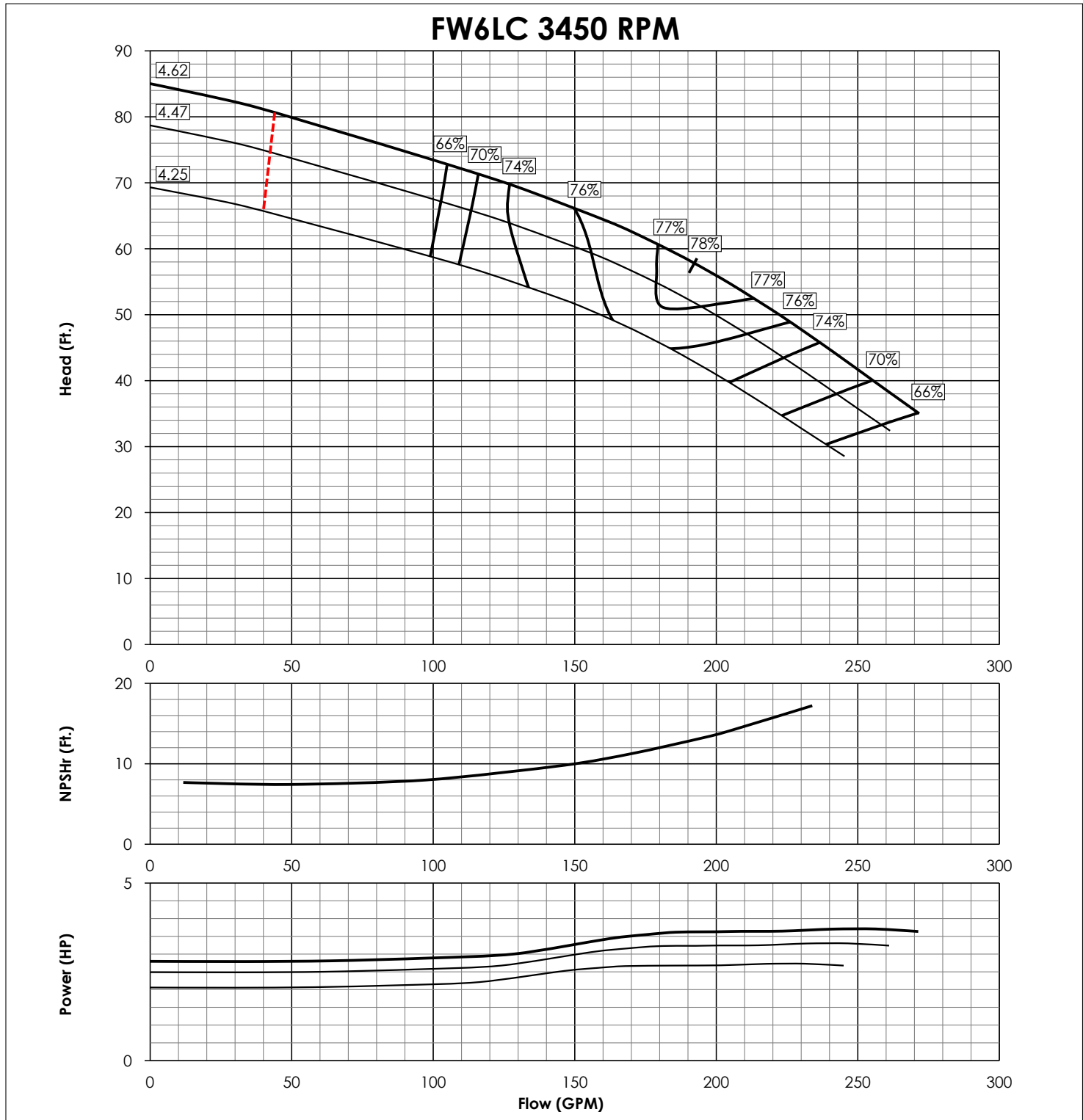
**RESERVED
FOR
FW61C**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6KC**



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2285
K _T	2.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.90"	SINGLE STG. WT.	60 LBS
STD. LATERAL	0.38"	ADD. STG. WT.	20 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERSION	20"
SHAFT DIA.	1"	MAX WORKING PRES.	420 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6LS**



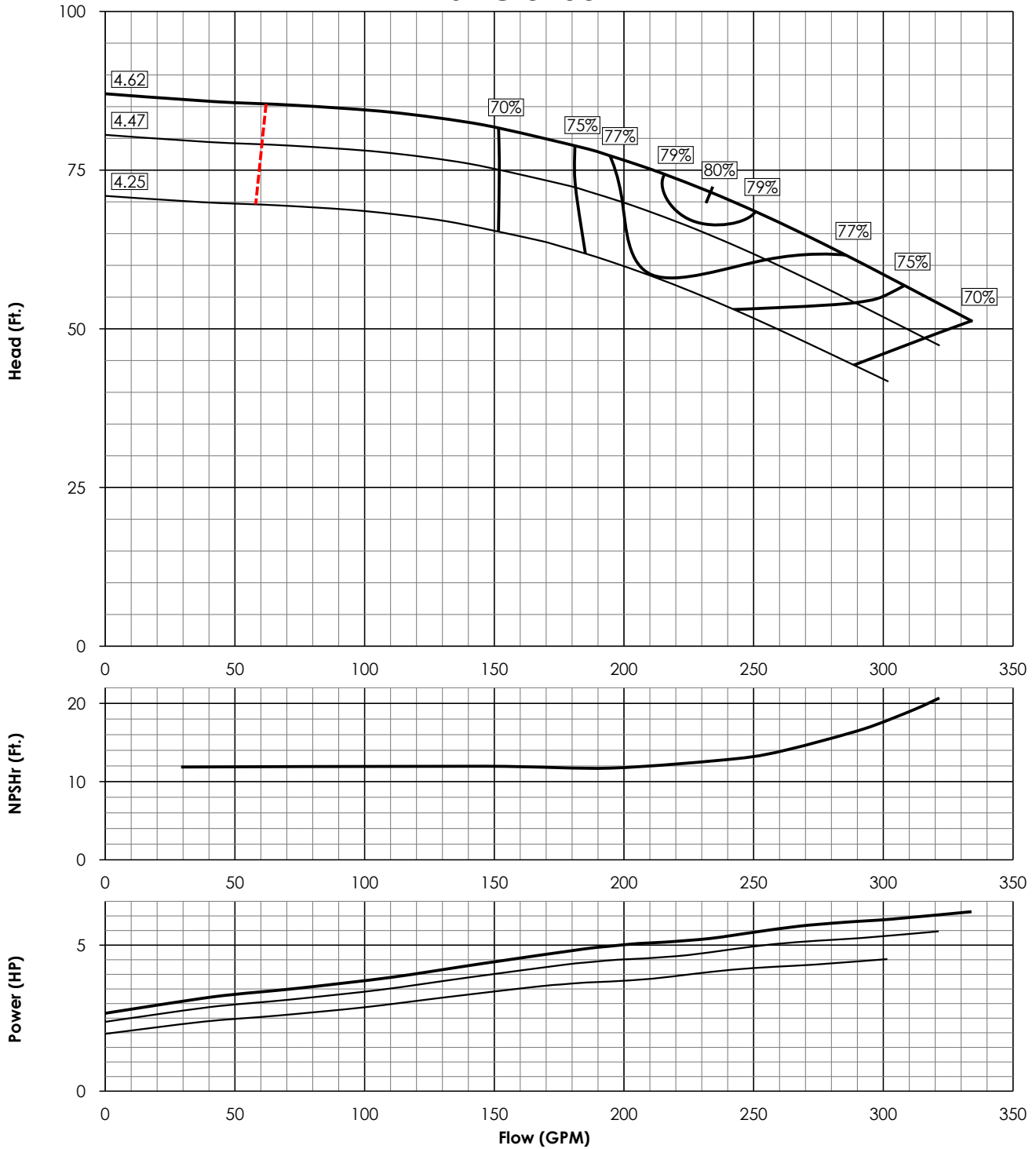
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6206HC2

Updated: Oct. 2020

FW6HC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2155
K _T	2.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.90"	SINGLE STG. WT.	60 LBS
STD. LATERAL	0.38"	ADD. STG. WT.	20 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	20"
SHAFT DIA.	1"	MAX WORKING PRES.	420 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6HS**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6QC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6RC**



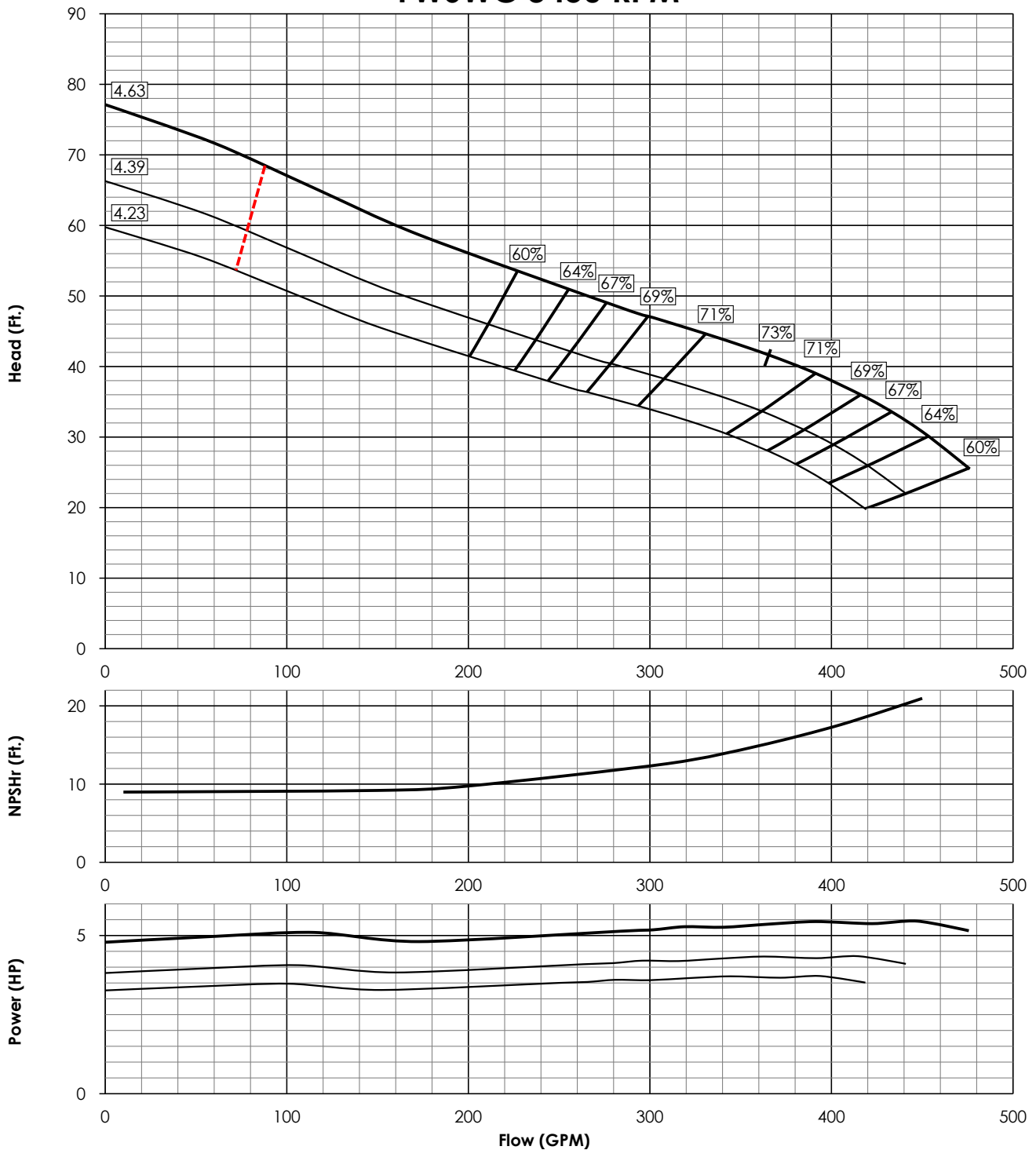
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6206WC0

Updated: Apr. 2020

FW6WC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	3997
K _T	5.60 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.44"	SINGLE STG. WT.	55 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	20"
SHAFT DIA.	1"	MAX WORKING PRES.	200 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



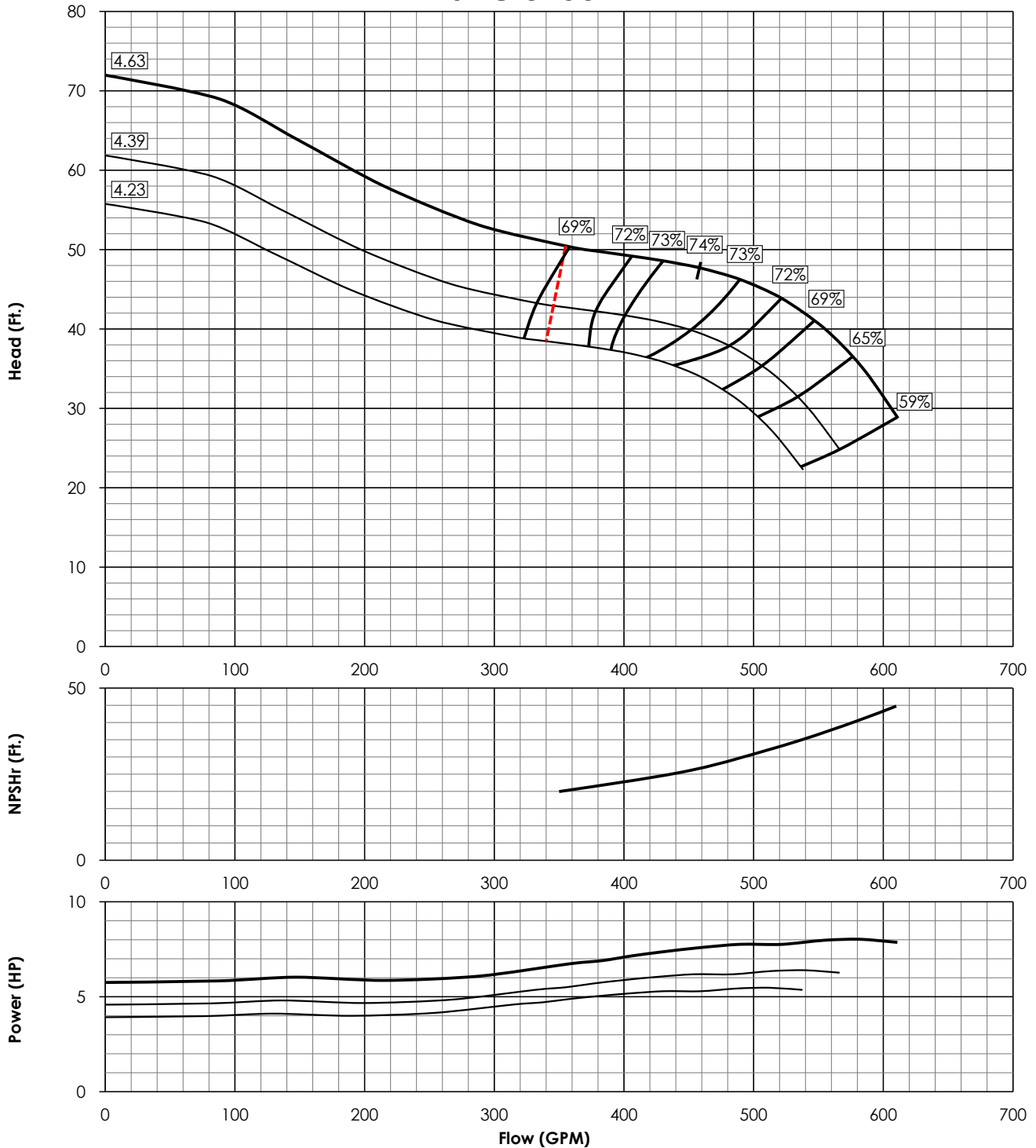
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6206YC0

Updated: Apr. 2020

FW6YC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	4018
K _T	5.60 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.44"	SINGLE STG. WT.	55 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	20"
SHAFT DIA.	1"	MAX WORKING PRES.	200 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



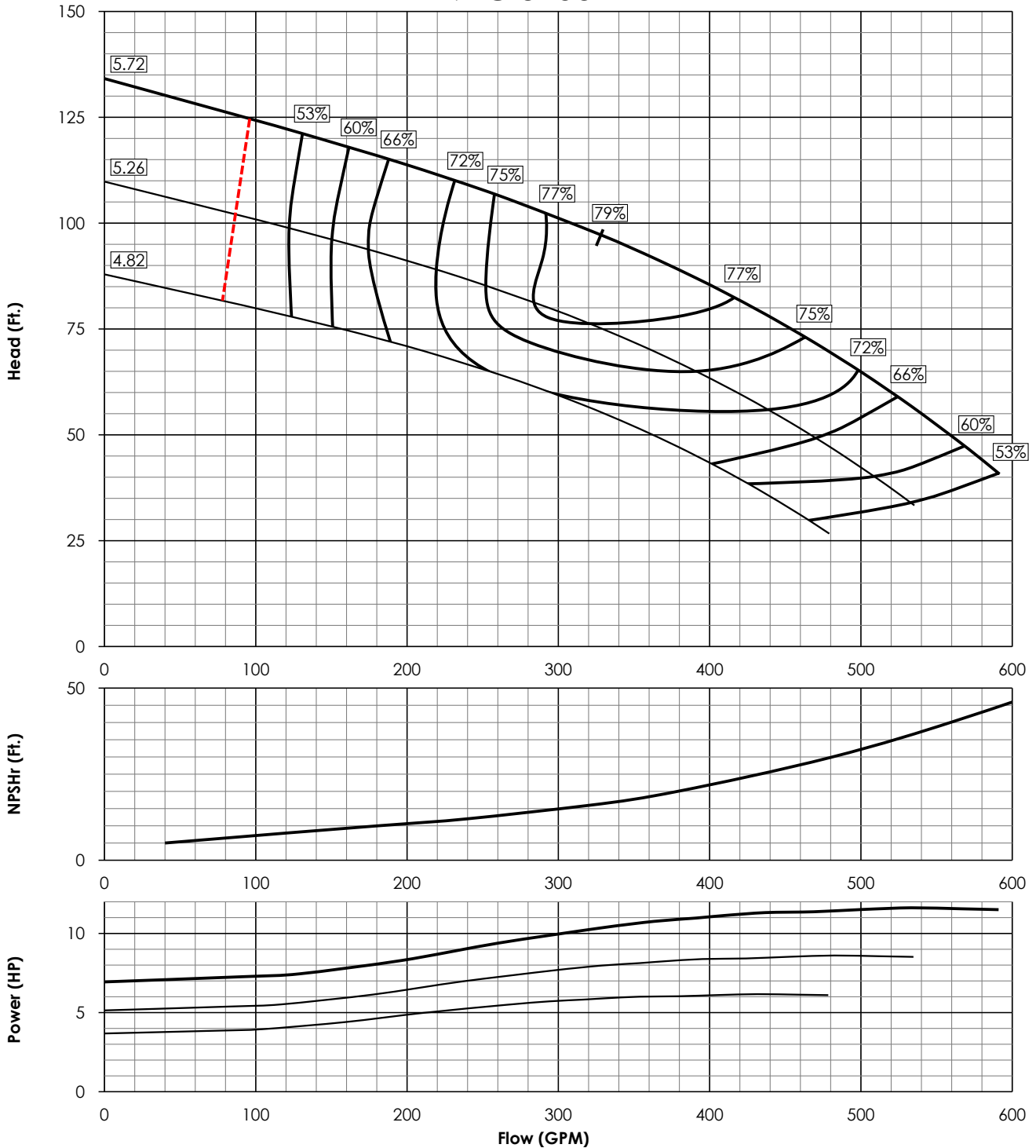
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6207LC0

Updated: Dec. 2018

FW7LC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	1996
K _T	3.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.13"	SINGLE STG. WT.	90 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	415 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

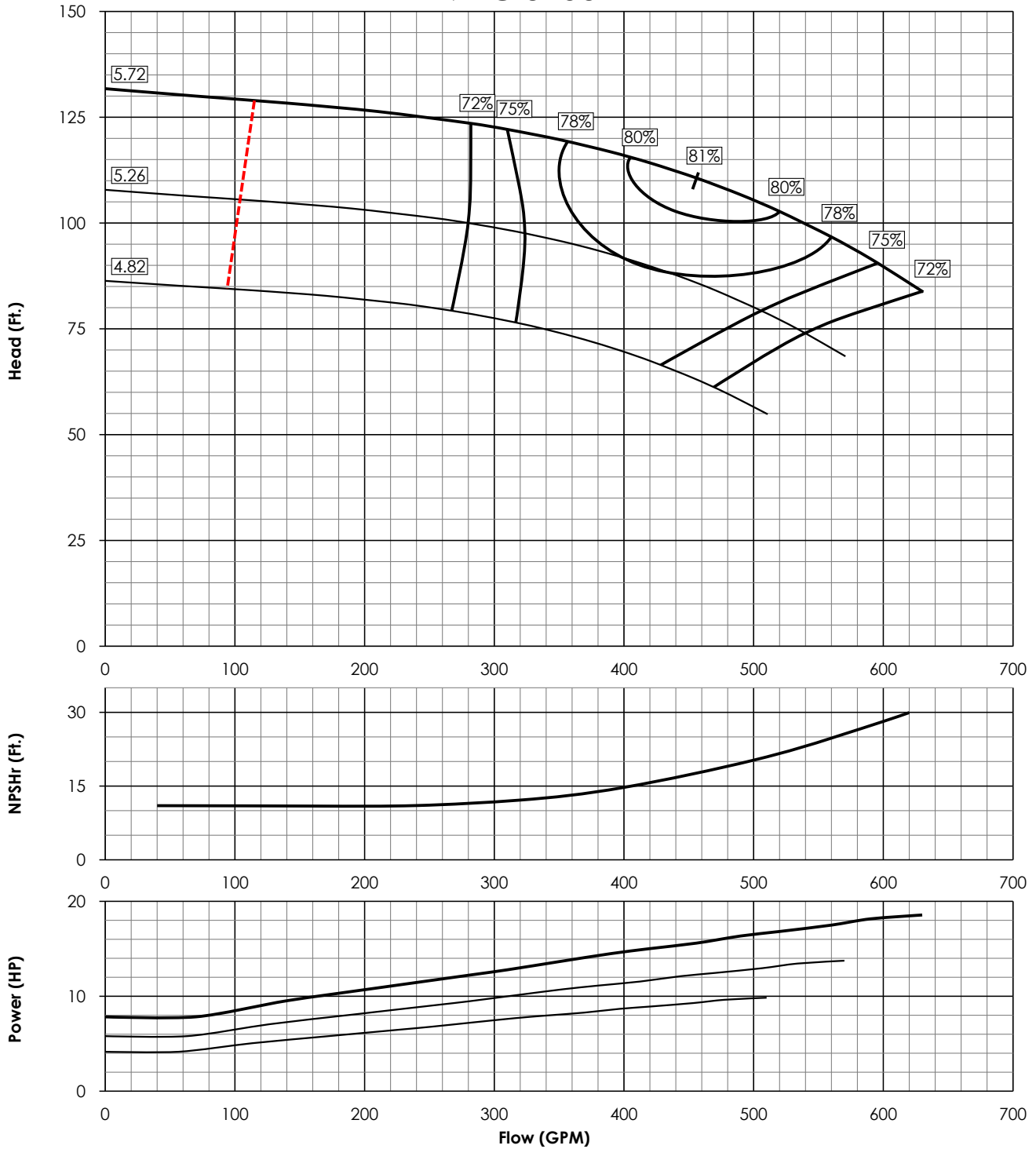


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW7LS**

FW7HC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2169
K _T	3.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.13"	SINGLE STG. WT.	90 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	415 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW7HS**



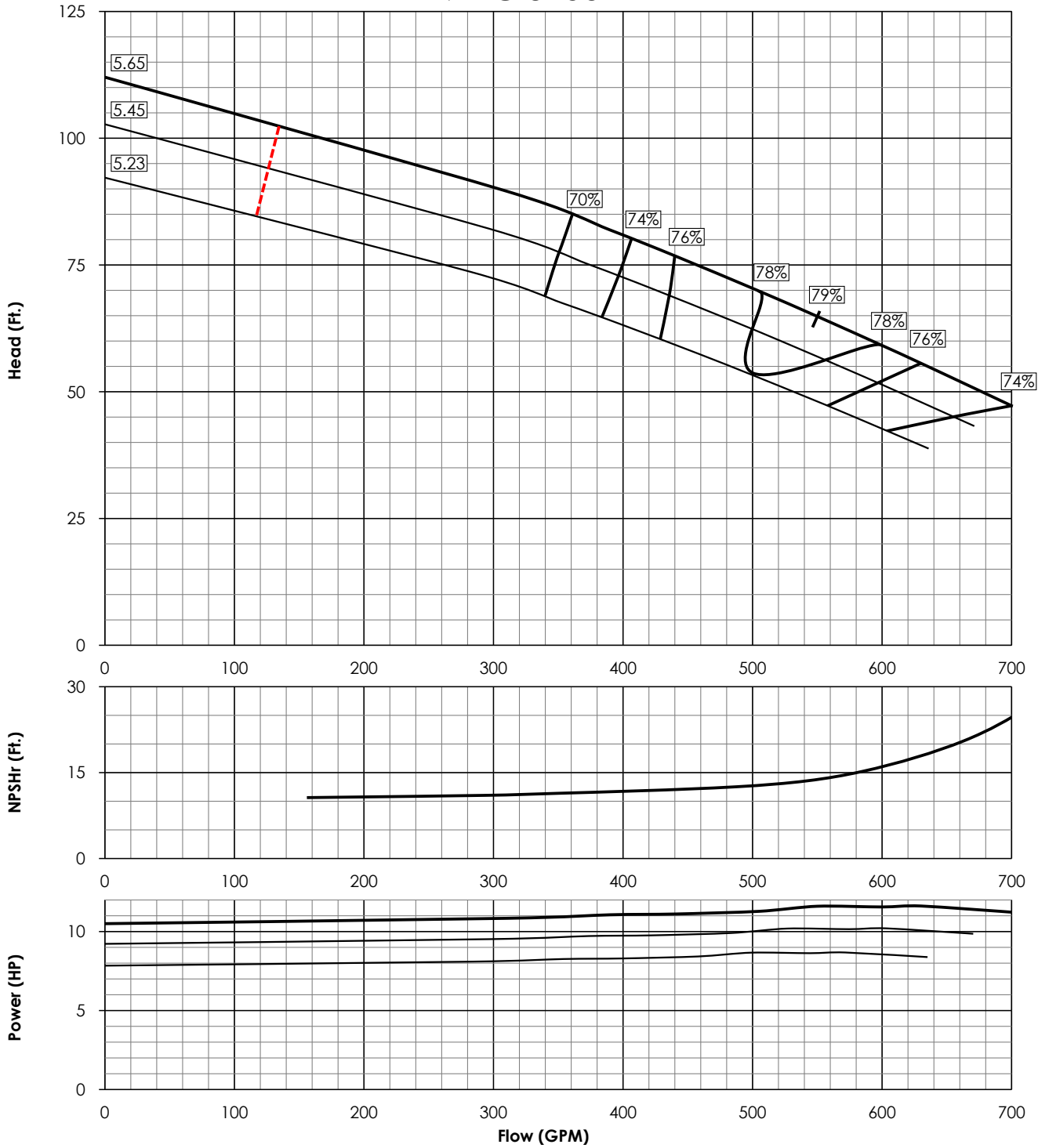
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6207WC0

Updated: Jun. 2017

FW7WC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	3494
K _T	4.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.13"	SINGLE STG. WT.	105 LBS
STD. LATERAL	0.38"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERSION	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	310 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



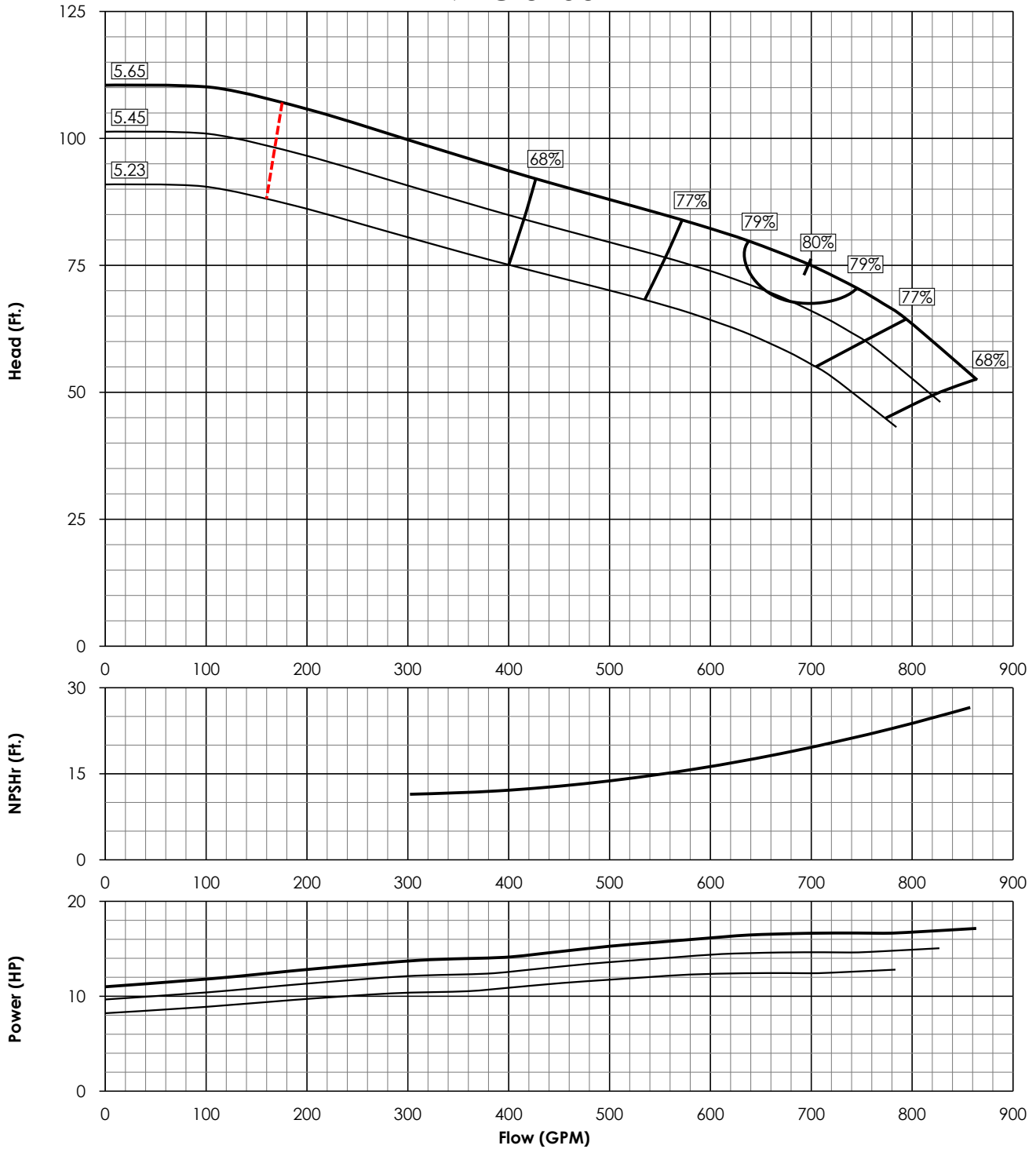
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6207YC0

Updated: Jun. 2017

FW7YC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	3572
K _T	4.56 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.13"	SINGLE STG. WT.	105 LBS
STD. LATERAL	0.38"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERSION	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	310 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



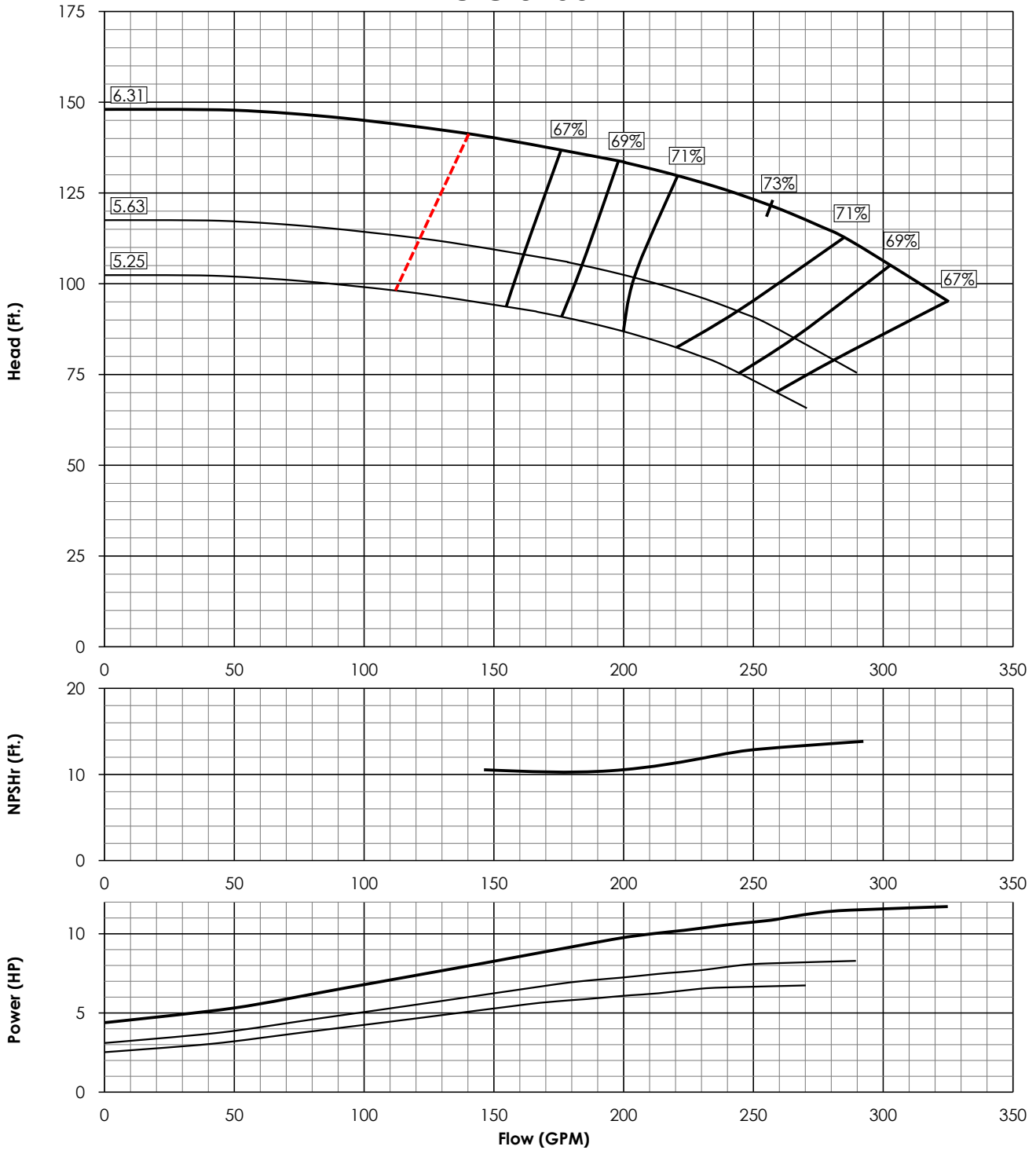
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6208IC0

Updated: Jan. 2020

FW8IC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	1506
K _T	2.98 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	85 LBS
STD. LATERAL	0.44"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERSION	18"
SHAFT DIA.	1"	MAX WORKING PRES.	310 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8IS**



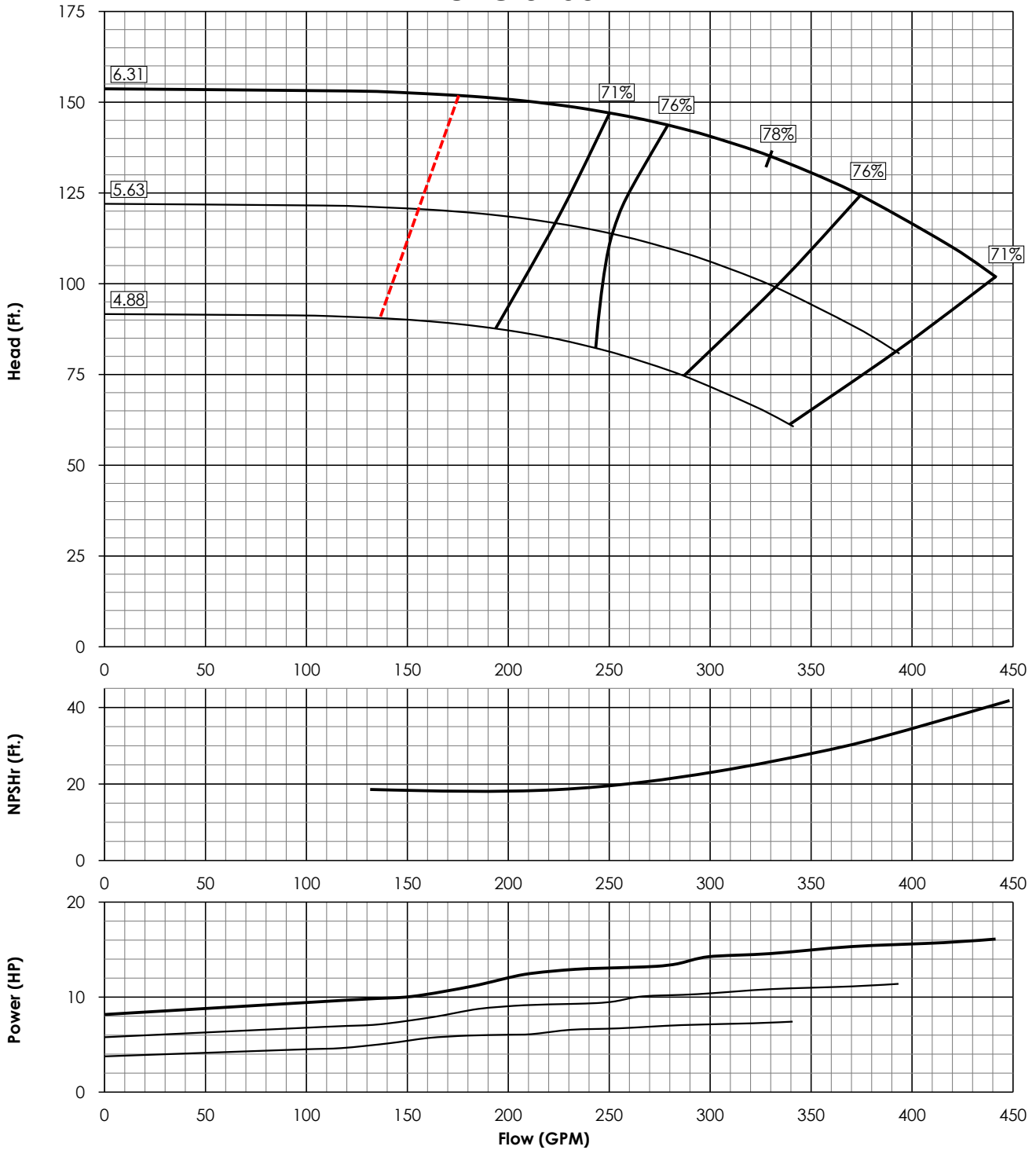
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6208KC0

Updated: Jan. 2020

FW8KC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	1569
K _t	2.98 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	85 LBS
STD. LATERAL	0.44"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	18"
SHAFT DIA.	1"	MAX WORKING PRES.	310 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



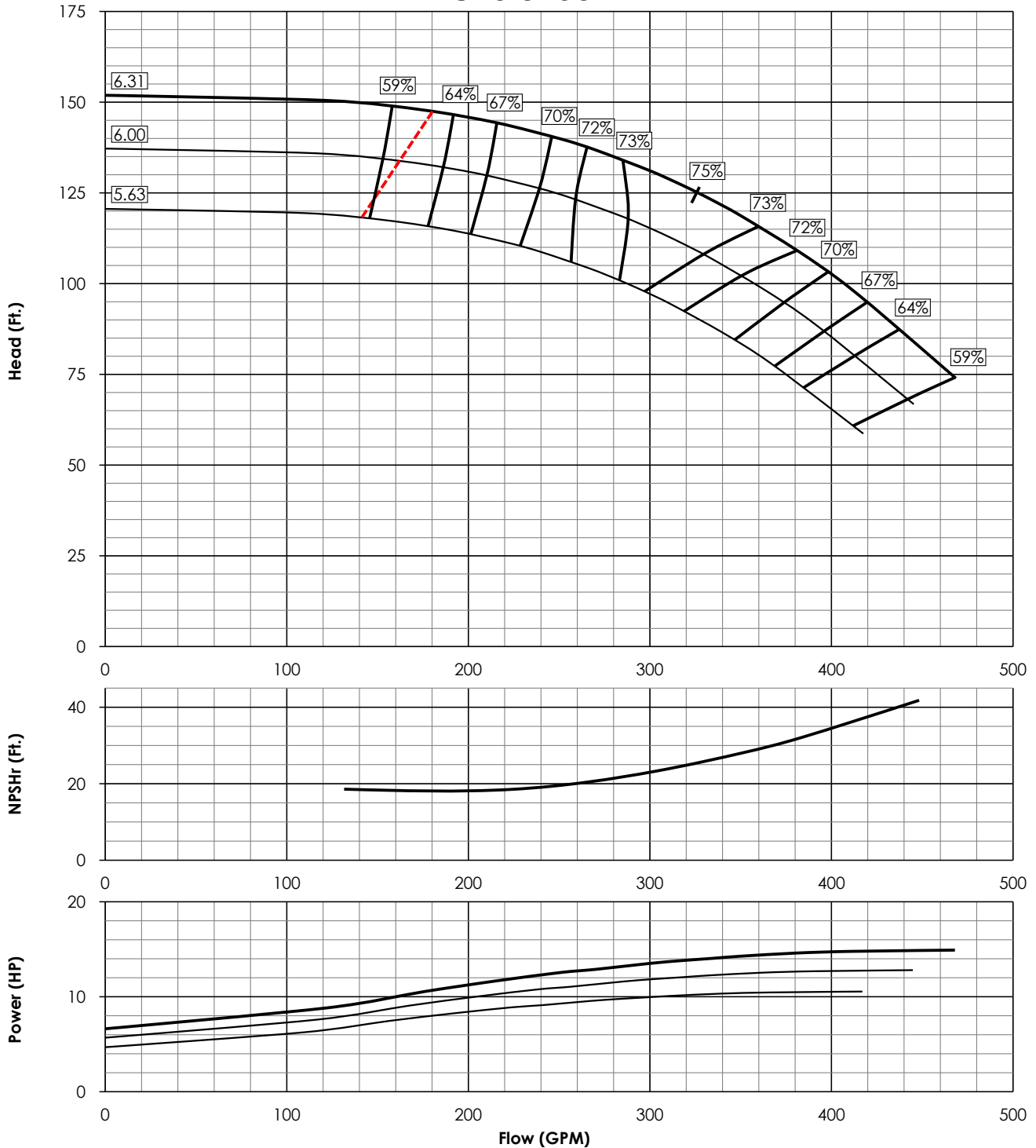
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6208KS0

Updated: Apr. 2020

FW8KS 3450 RPM



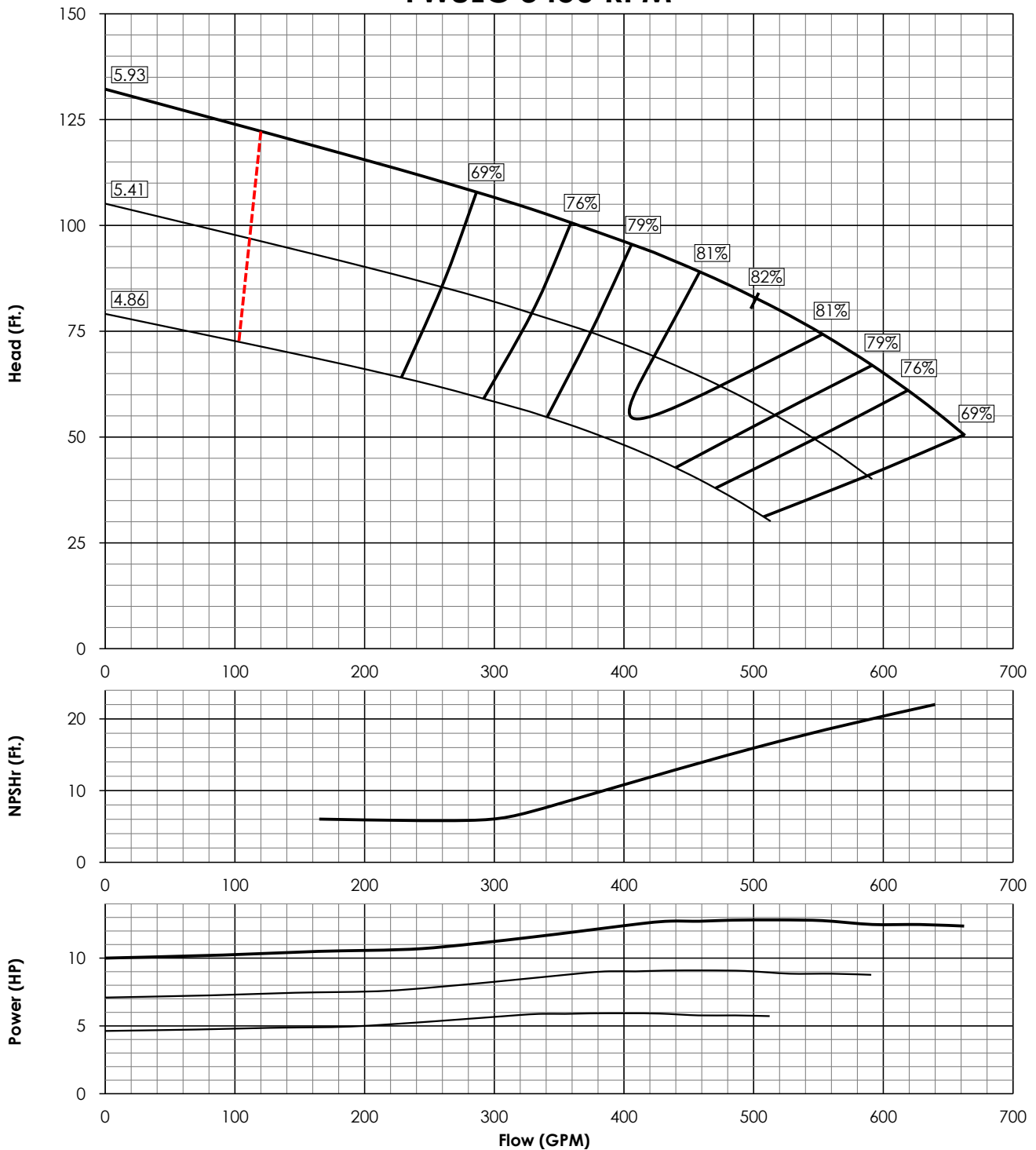
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	1656
K _T	3.34 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	85 LBS
STD. LATERAL	0.44"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	18"
SHAFT DIA.	1"	MAX WORKING PRES.	310 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW8LC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	0
2 STG.	0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2805
K _t	4.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	100 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMURGENCE	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	425 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8LS**



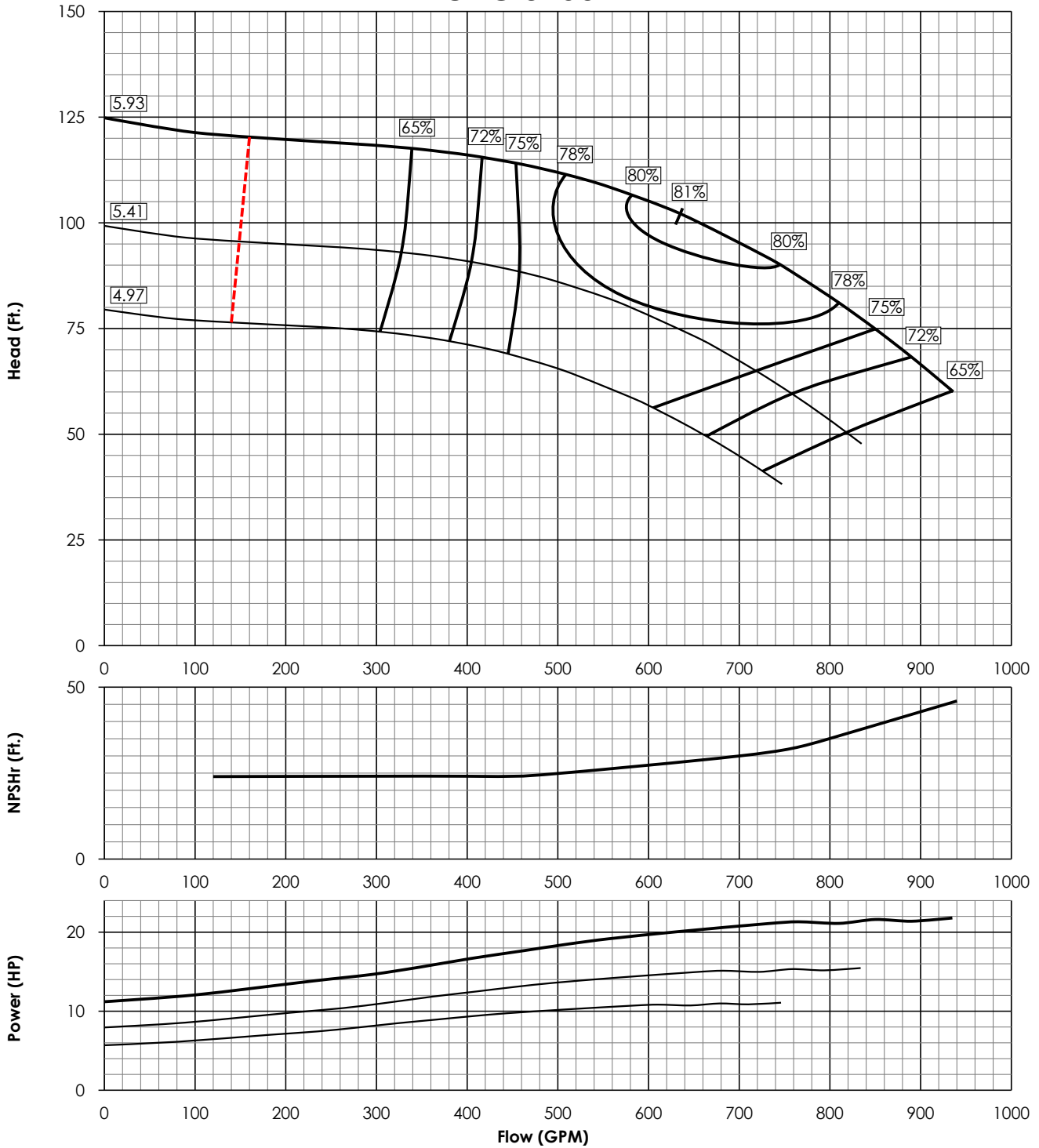
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6208HC1

Updated: Nov. 2019

FW8HC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	0
2 STG.	0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2782
K _T	4.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	100 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	425 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

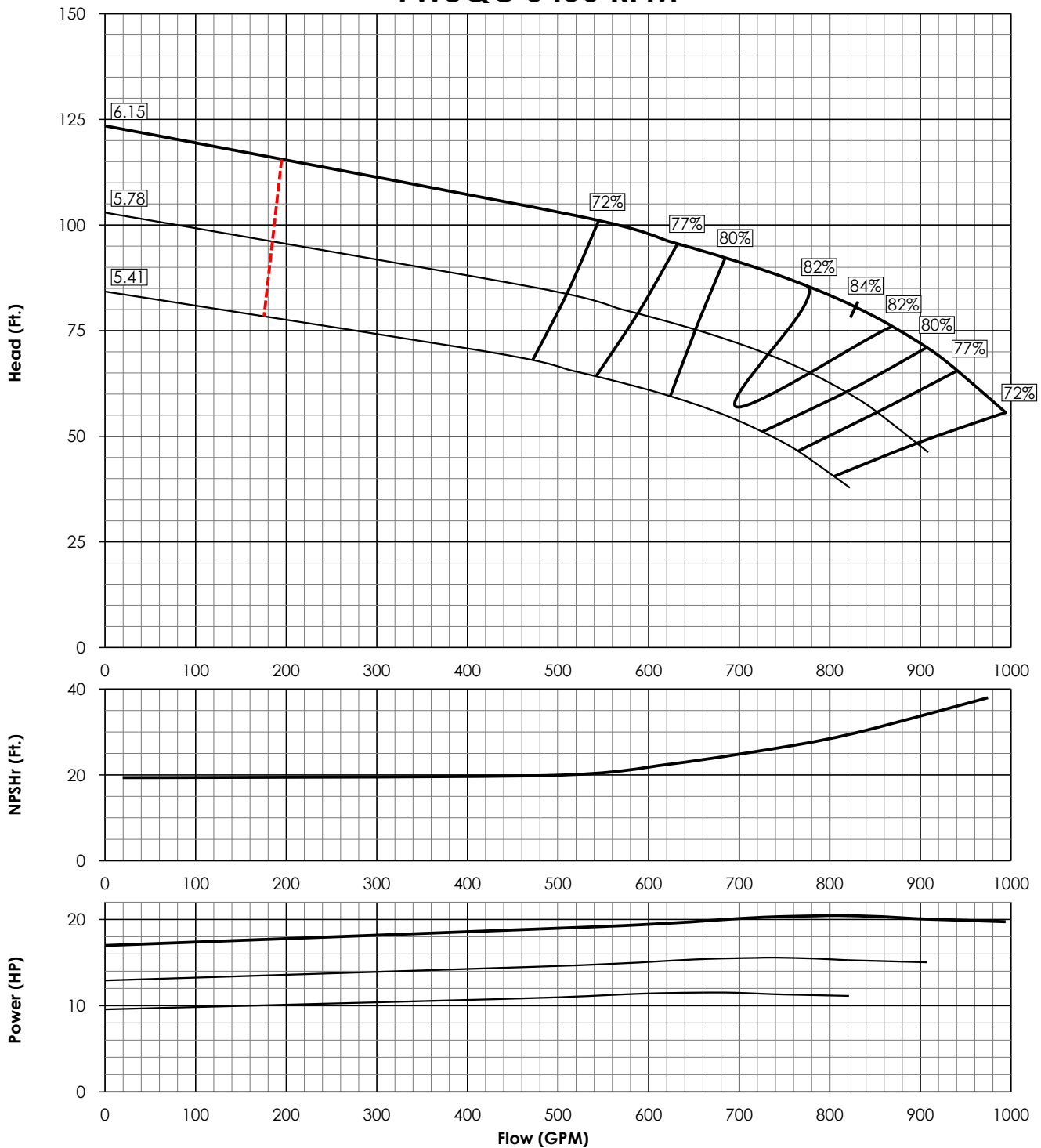


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8HS**

FW8QC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.5
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	3657
K _T	7.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	105 LBS
STD. LATERAL	0.56"	ADD. STG. WT.	35 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

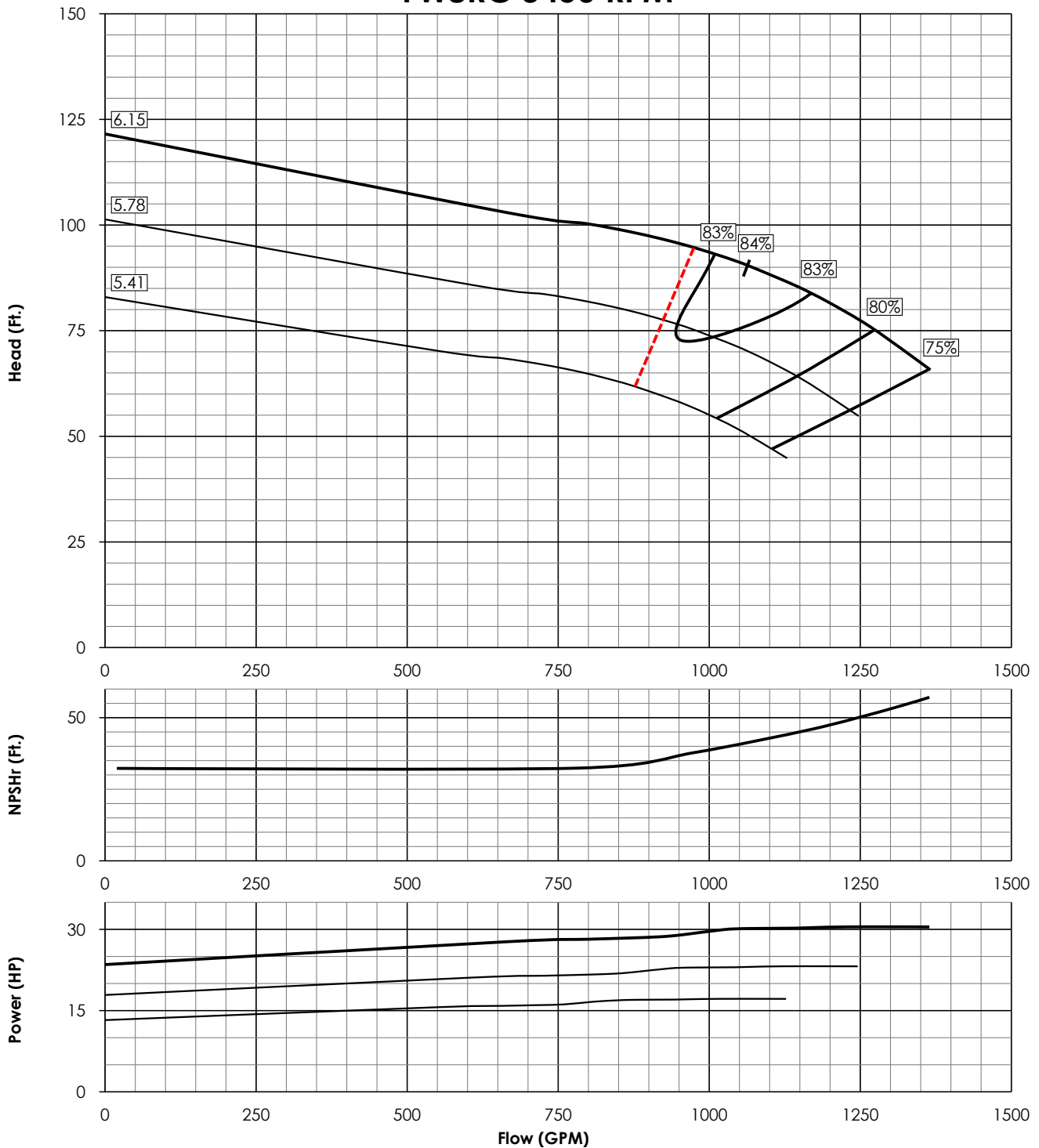


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8QS**

FW8RC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	3812
K _T	7.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	105 LBS
STD. LATERAL	0.56"	ADD. STG. WT.	35 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

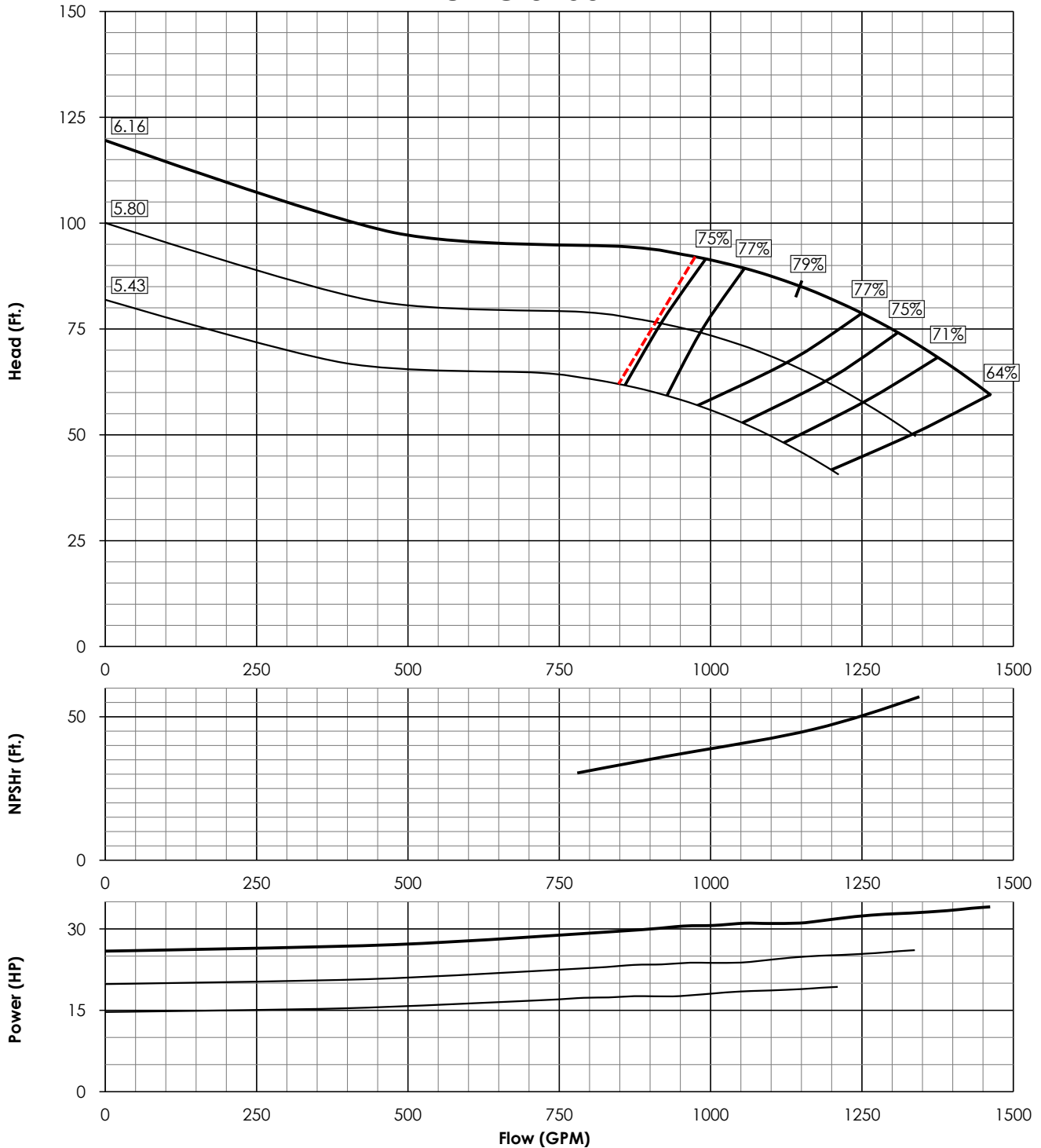


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8RS**

FW8WC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.5
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	4185
K _T	7.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	105 LBS
STD. LATERAL	0.56"	ADD. STG. WT.	35 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	364 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



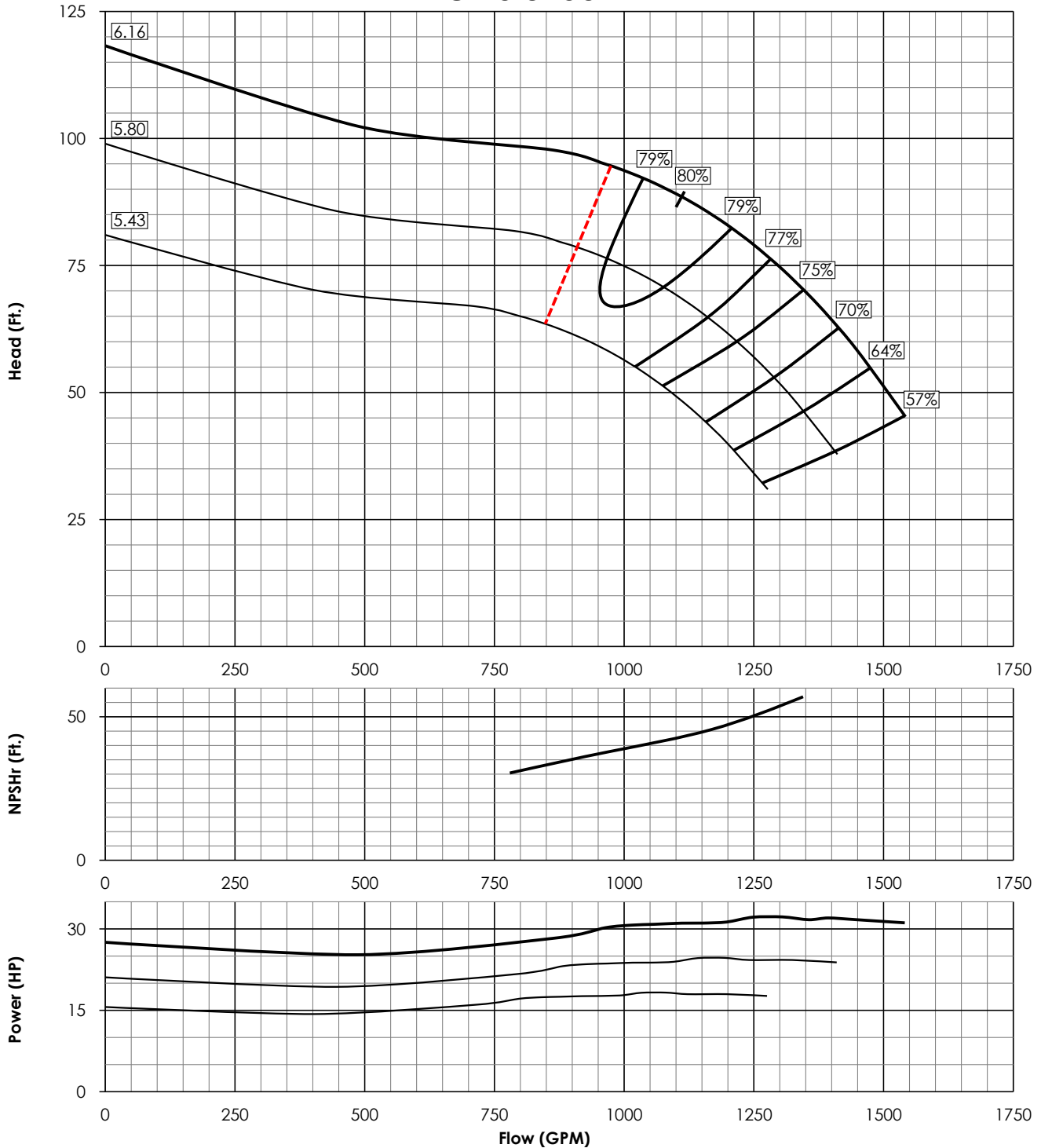
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6208WS0

Updated: Mar. 2020

FW8WS 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.5
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	3982
K _T	7.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	110 LBS
STD. LATERAL	0.56"	ADD. STG. WT.	35 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	364 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



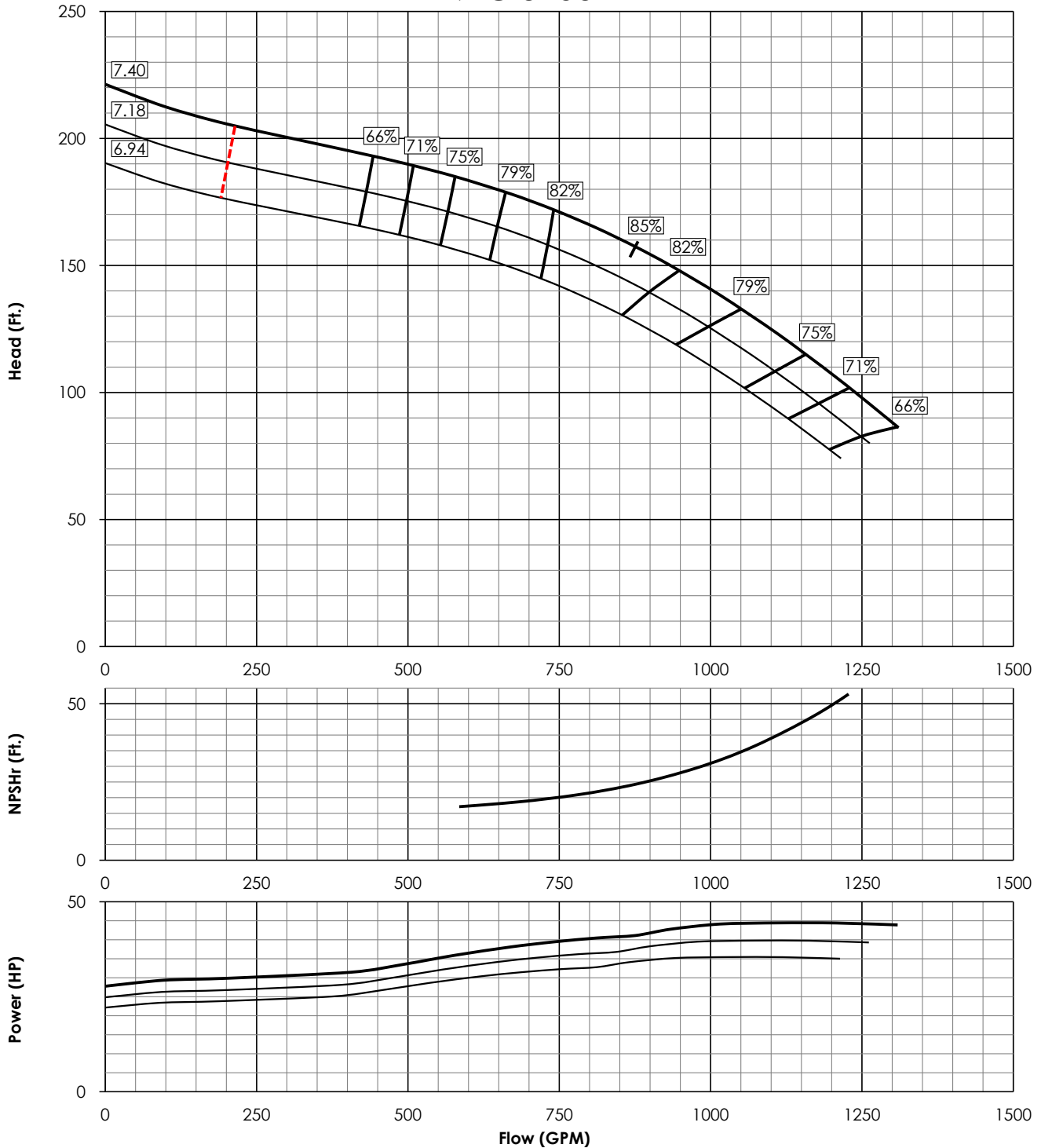
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6209LC1

Updated: Jun. 2017

FW9LC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2322
K _T	4.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	60 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



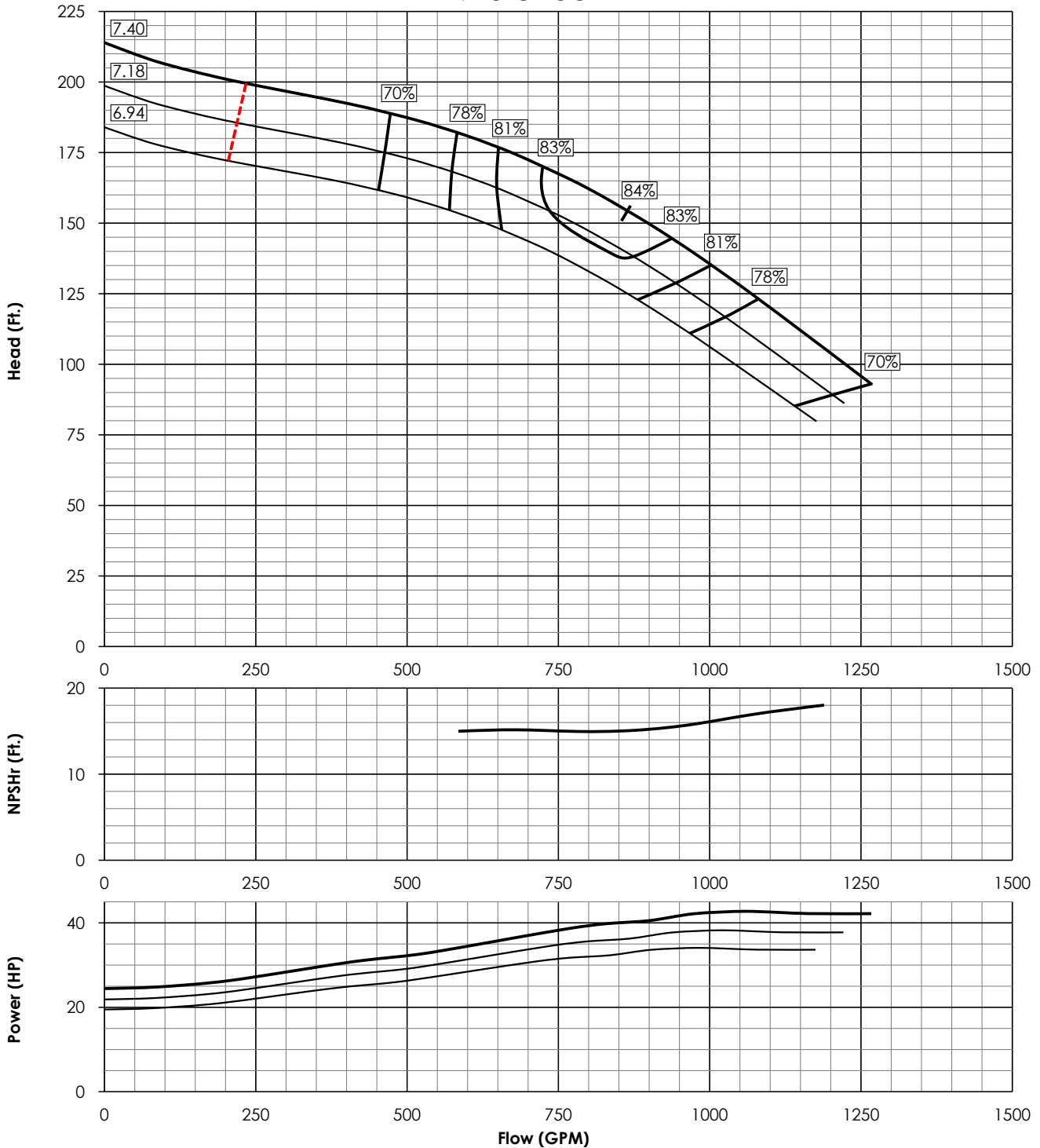
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6209LS0

Updated: May 2017

FW9LS 3450 RPM



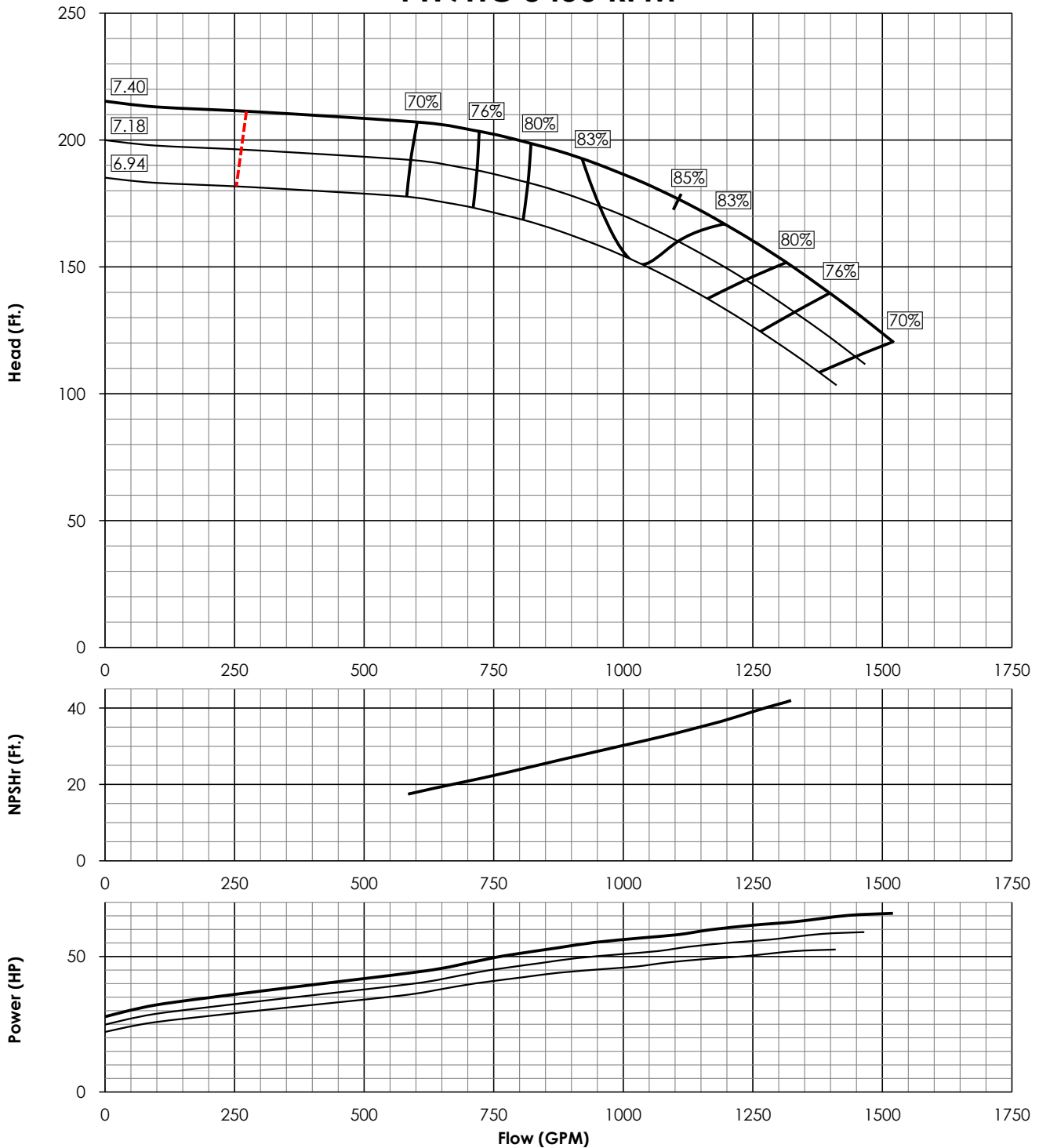
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	2212
K _T	6.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	60 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW9HC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2369
K _T	4.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	60 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMURGENCE	30"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



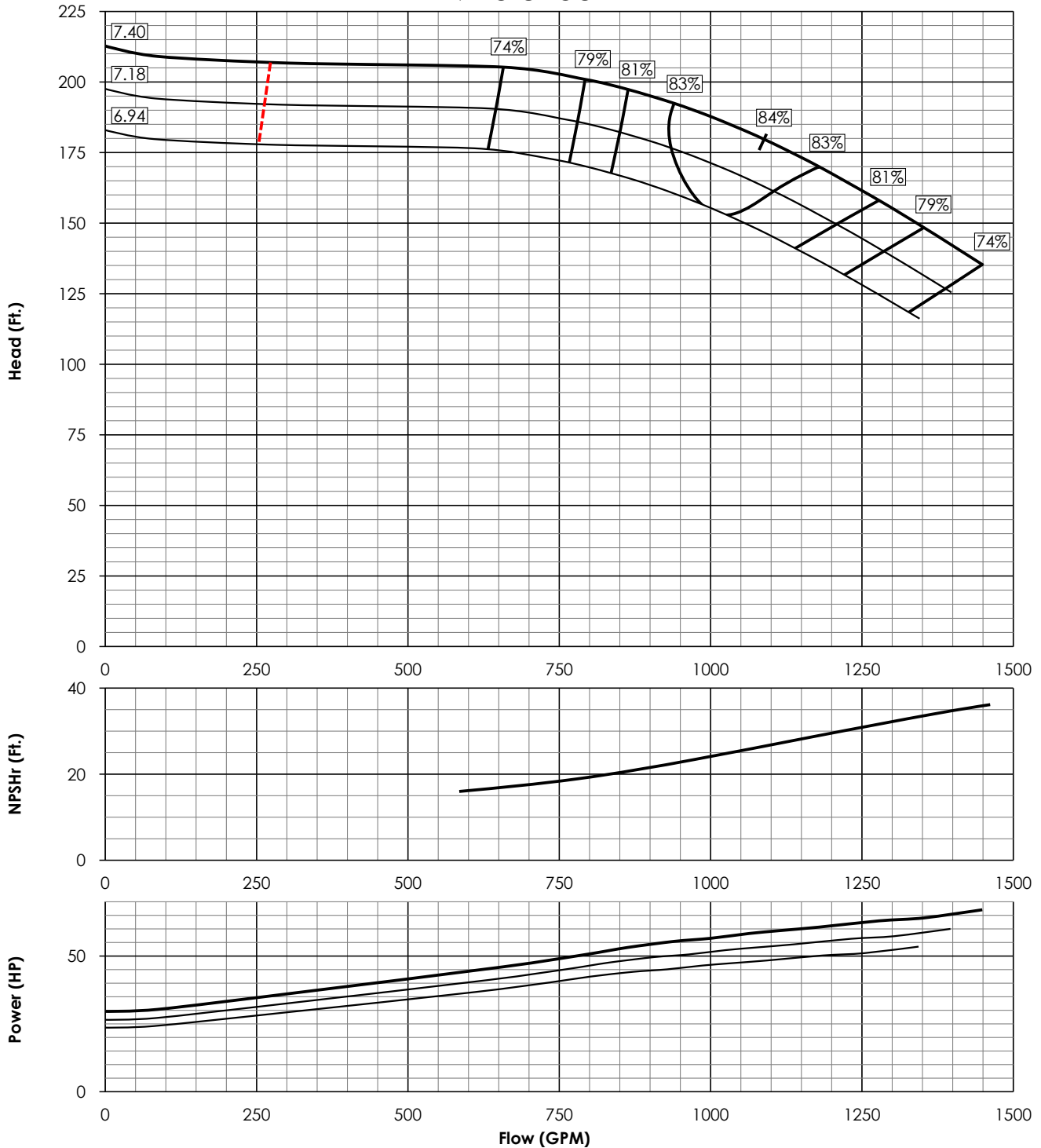
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6209HS0

Updated: May 2017

FW9HS 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	2259
K _T	6.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	60 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



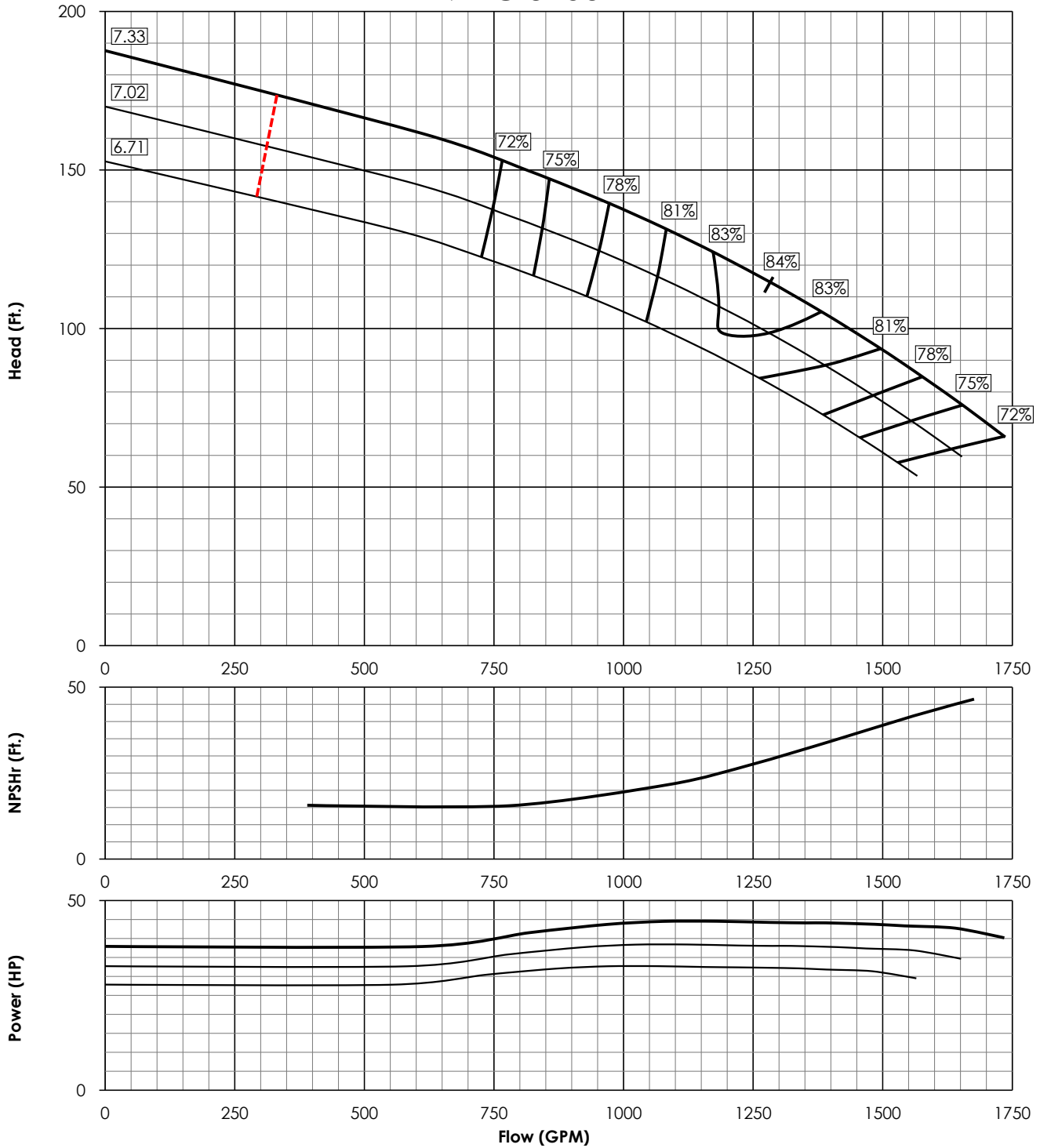
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6209WC0

Updated: Jul. 2020

FW9WC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	3518
K _T	9.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERSION	36"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	530 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



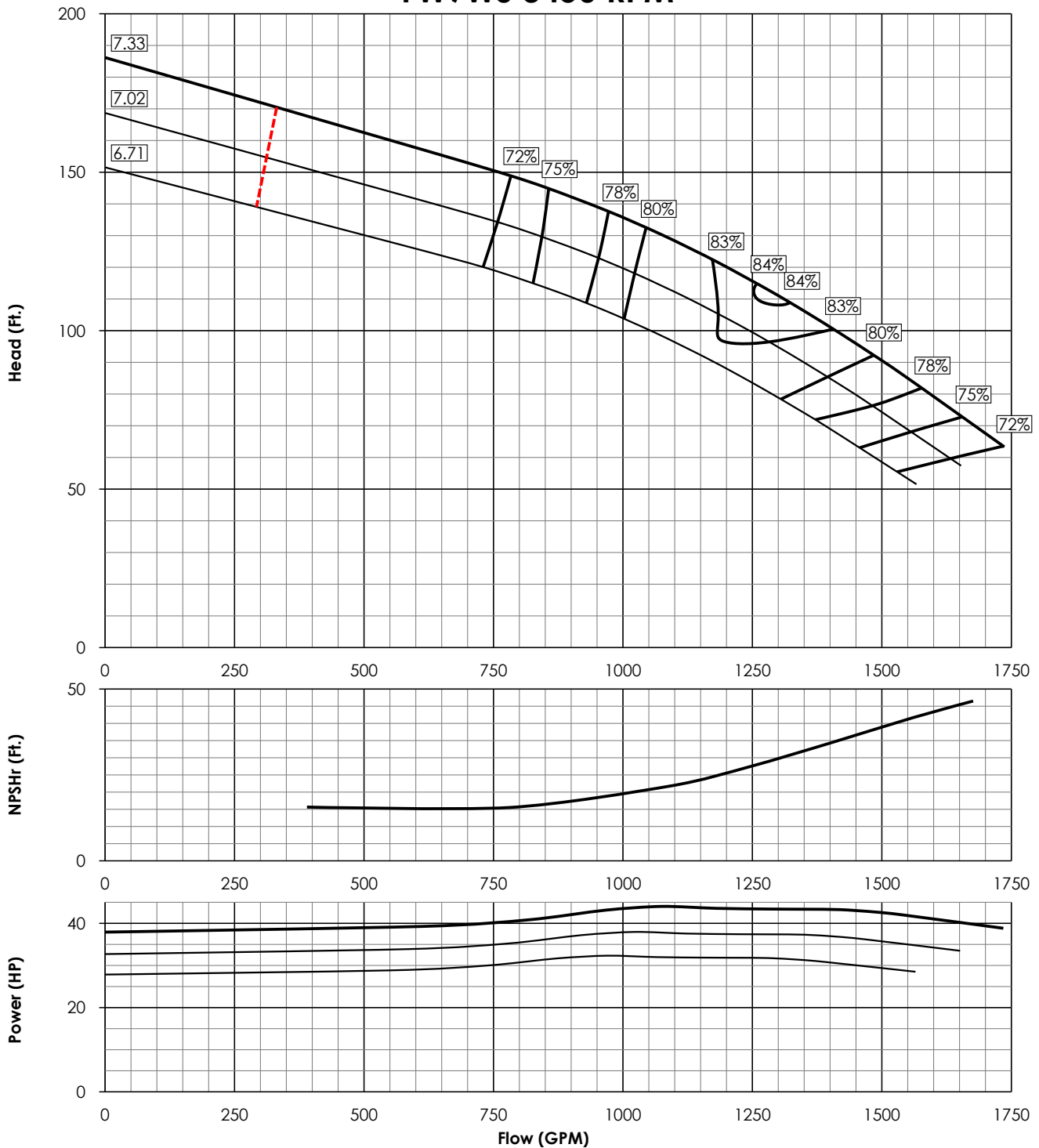
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6209WS0

Updated: Dec. 2020

FW9WS 3450 RPM



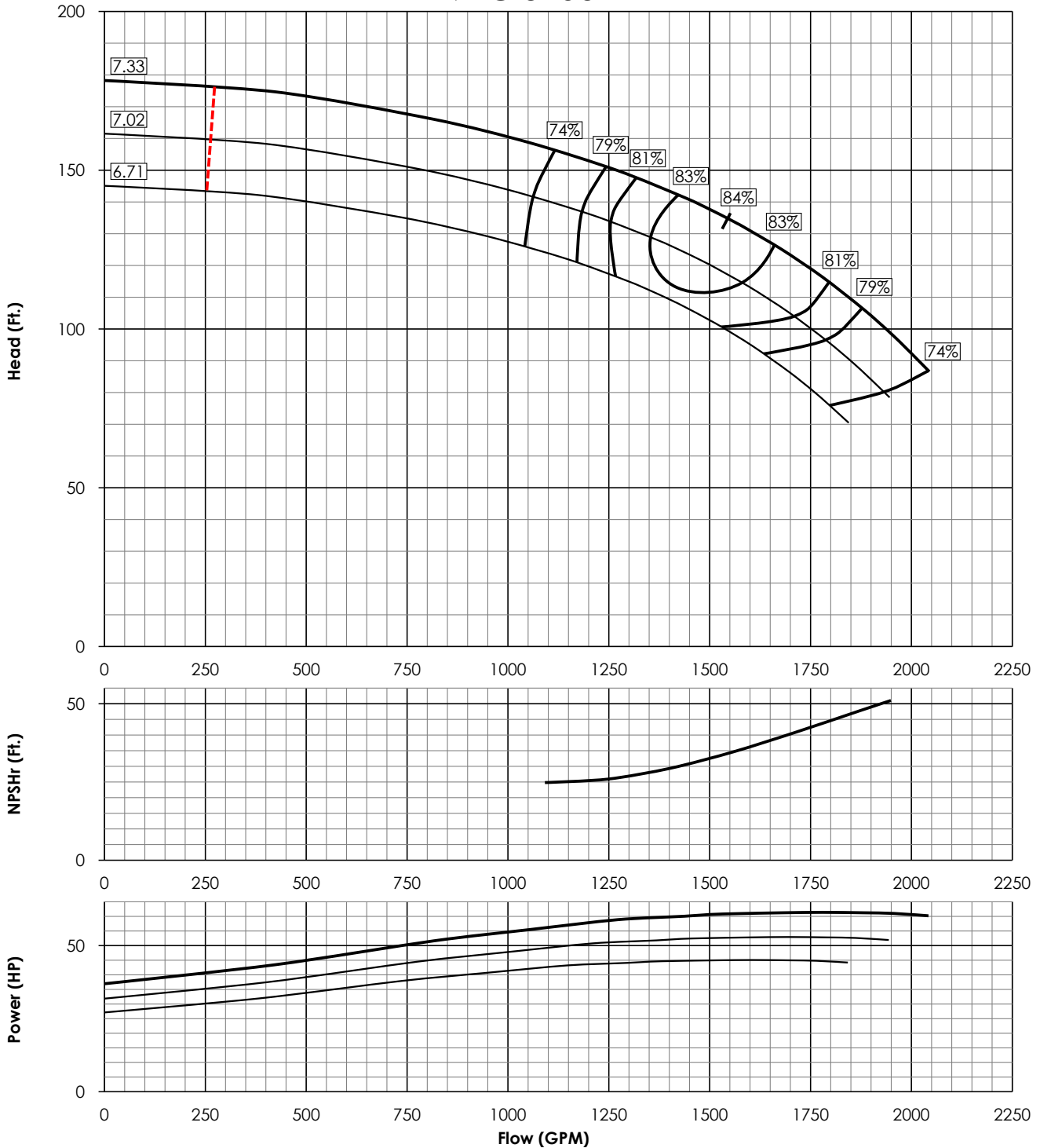
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	3570
K _T	10.5 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	530 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW9YC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	3408
K _T	9.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERSION	42"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	530 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



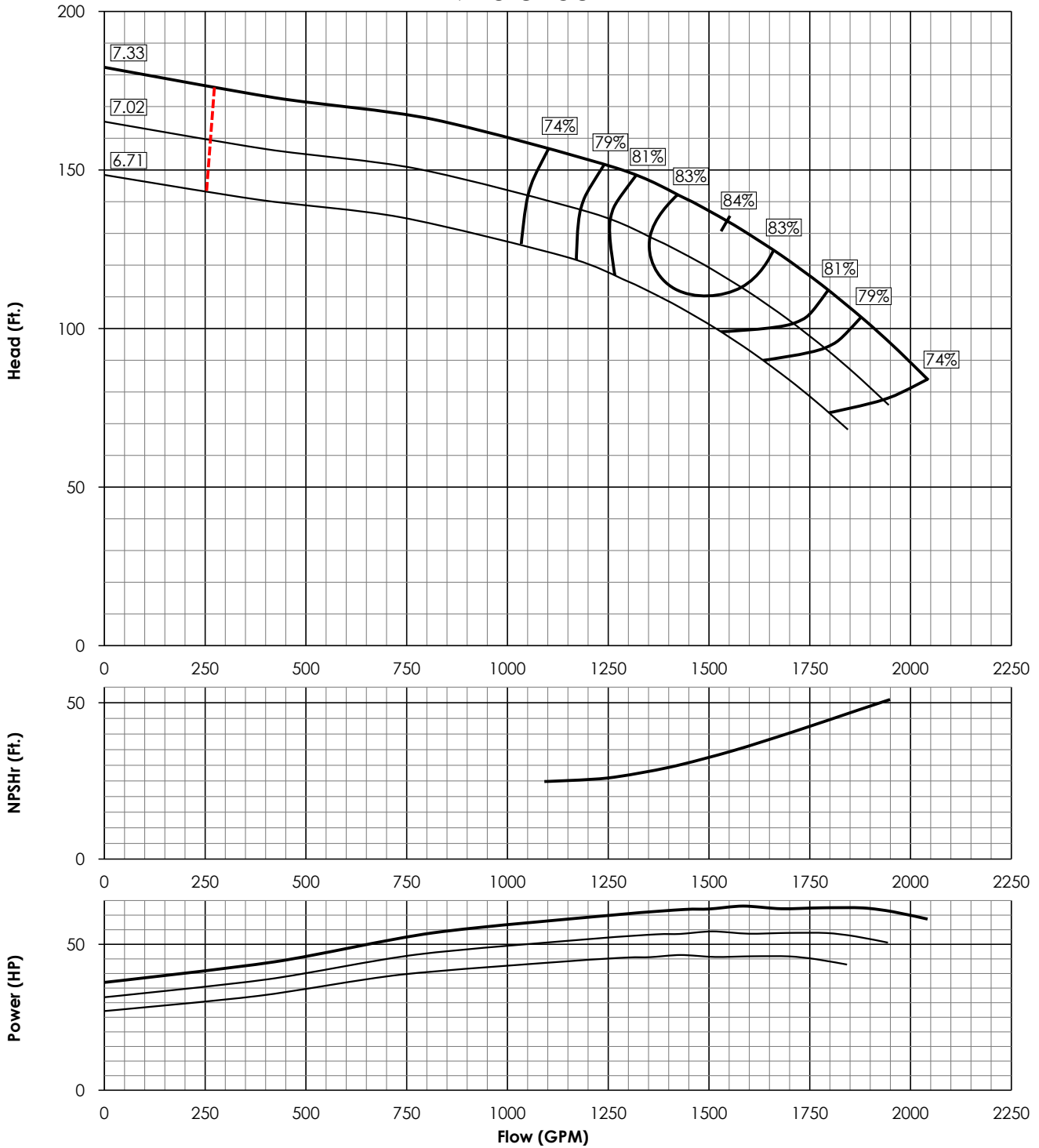
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6209YS0

Updated: Dec. 2020

FW9YS 3450 RPM



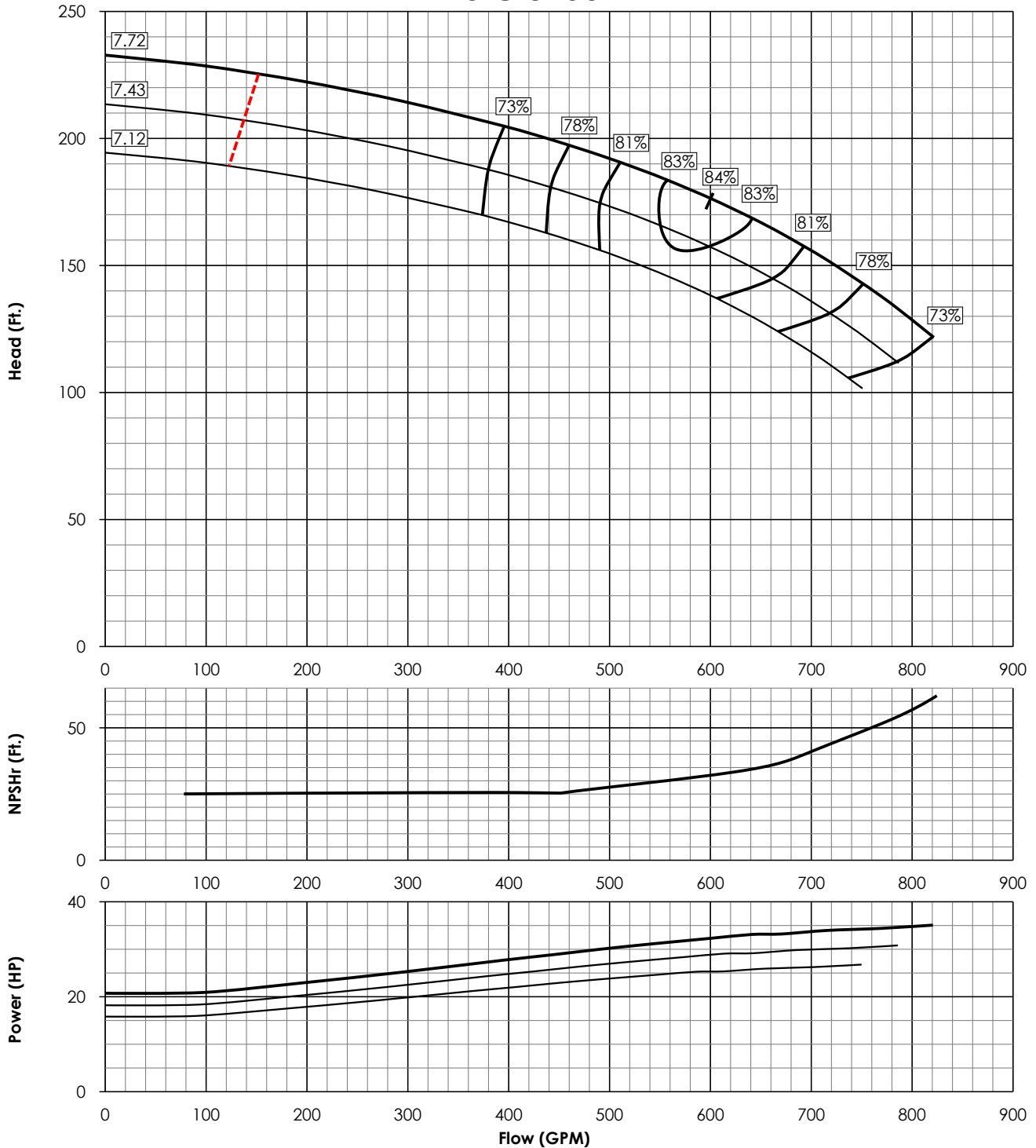
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	3421
K _T	10.5 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	5", 6", 8"	MIN. SUBMERSION	42"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	530 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10IC 3450 RPM



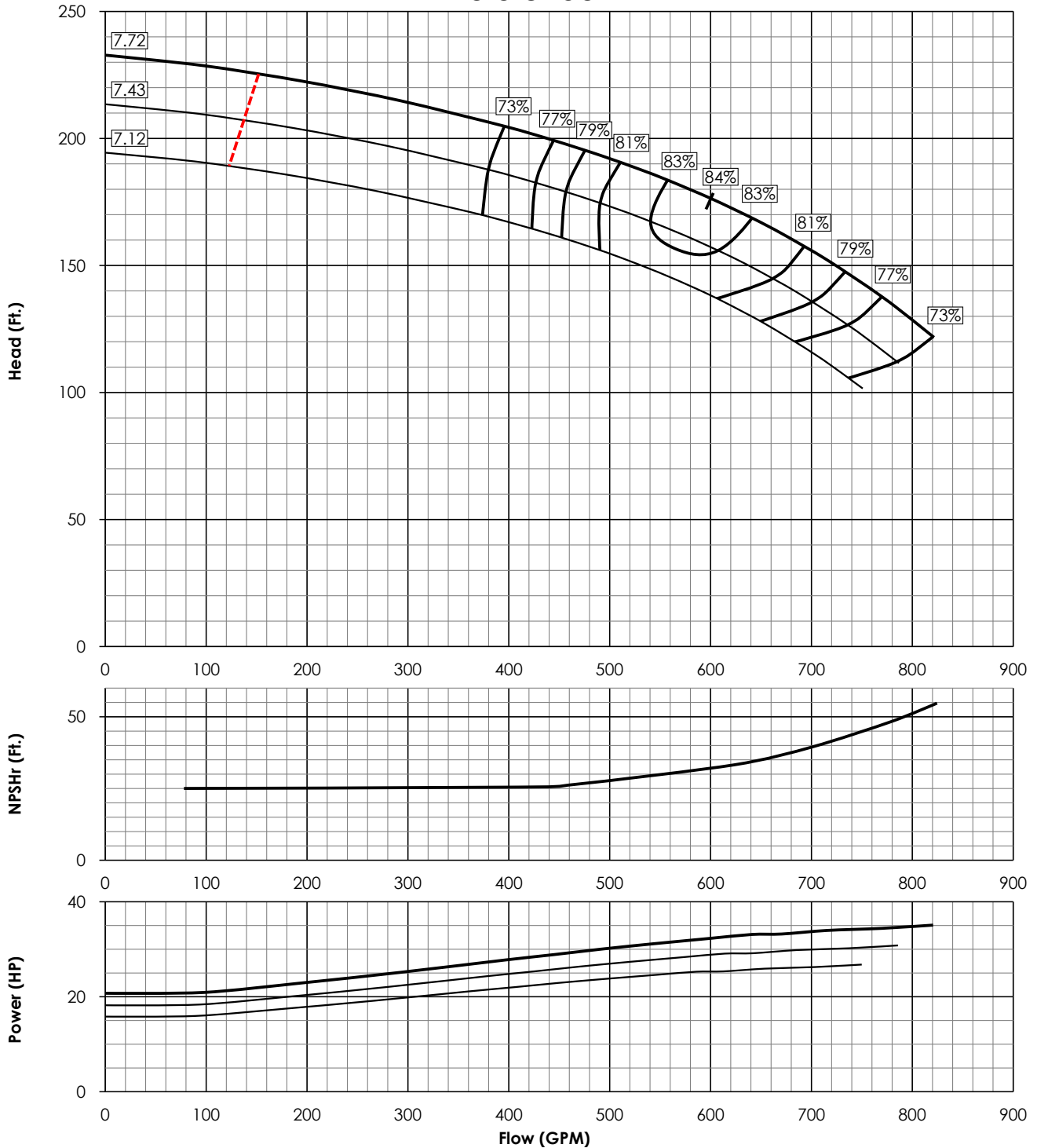
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	1735
K _T	4.60 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	32"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	375 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10IS 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	1735
K _T	6.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	32"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	375 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

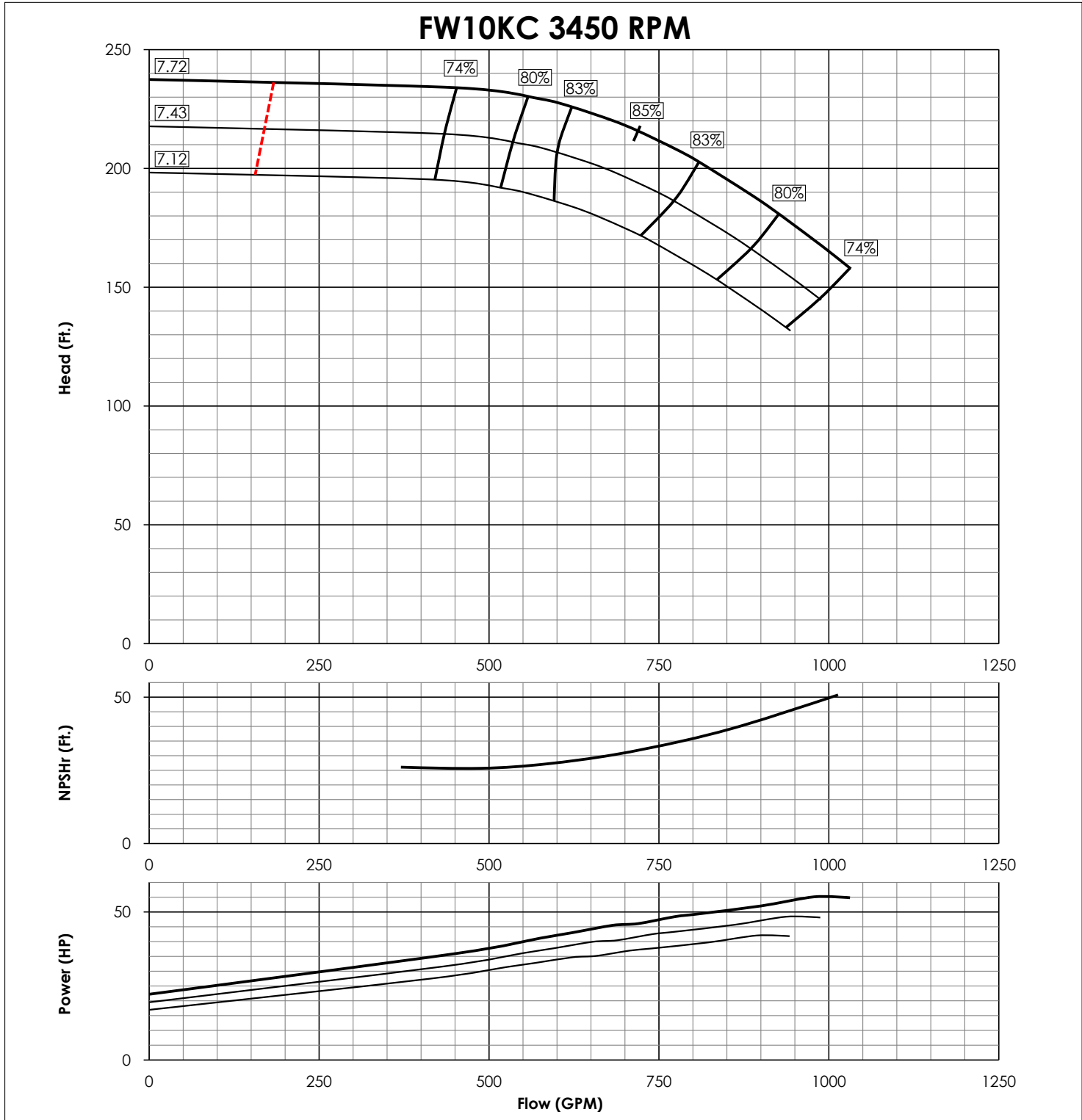


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6210KC0

Updated: Aug. 2018



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	1652
K _T	4.65 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	32"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	375 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



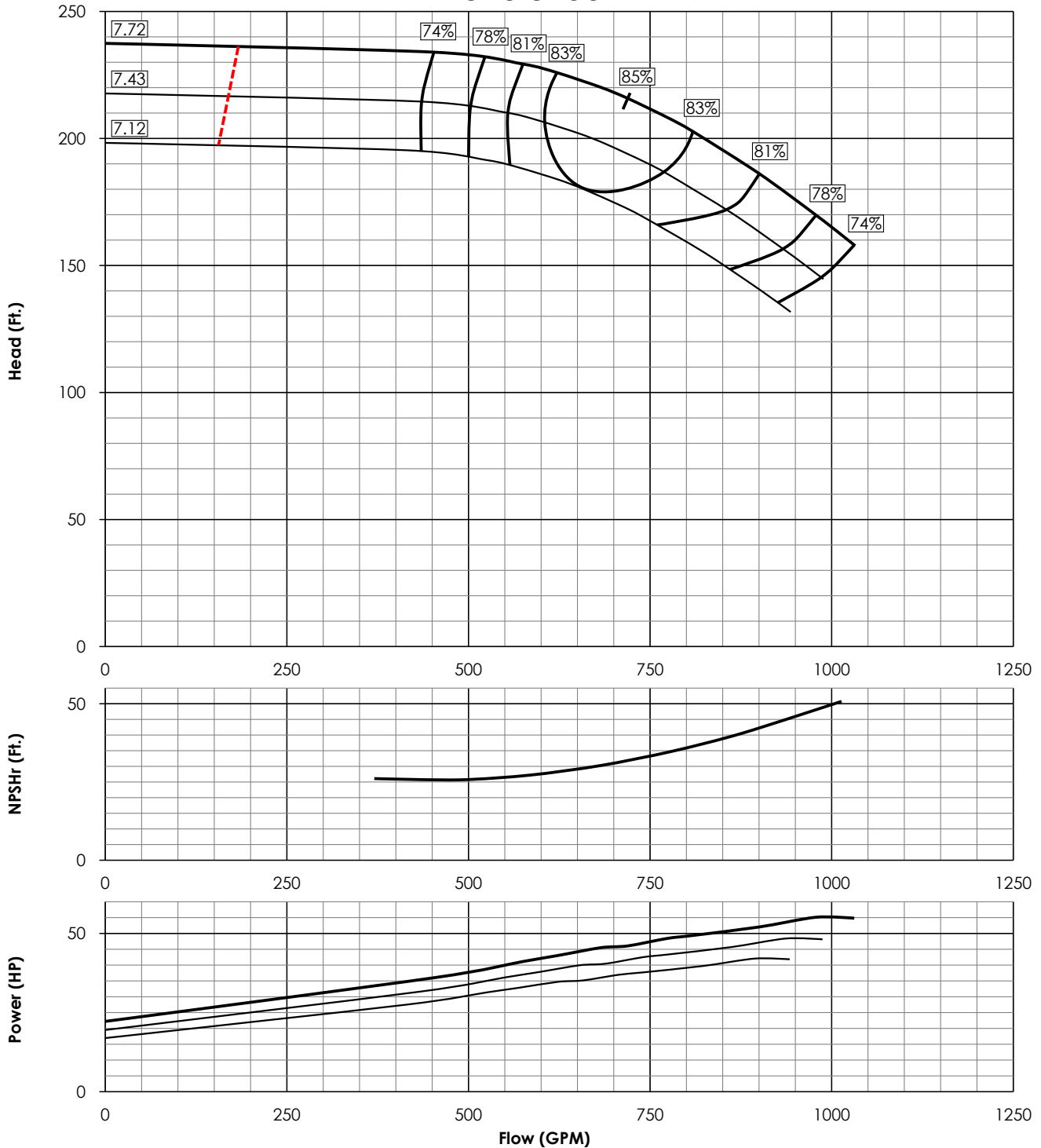
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6210KS1

Updated: Dec. 2020

FW10KS 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	1652
K _T	6.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERSION	32"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	375 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



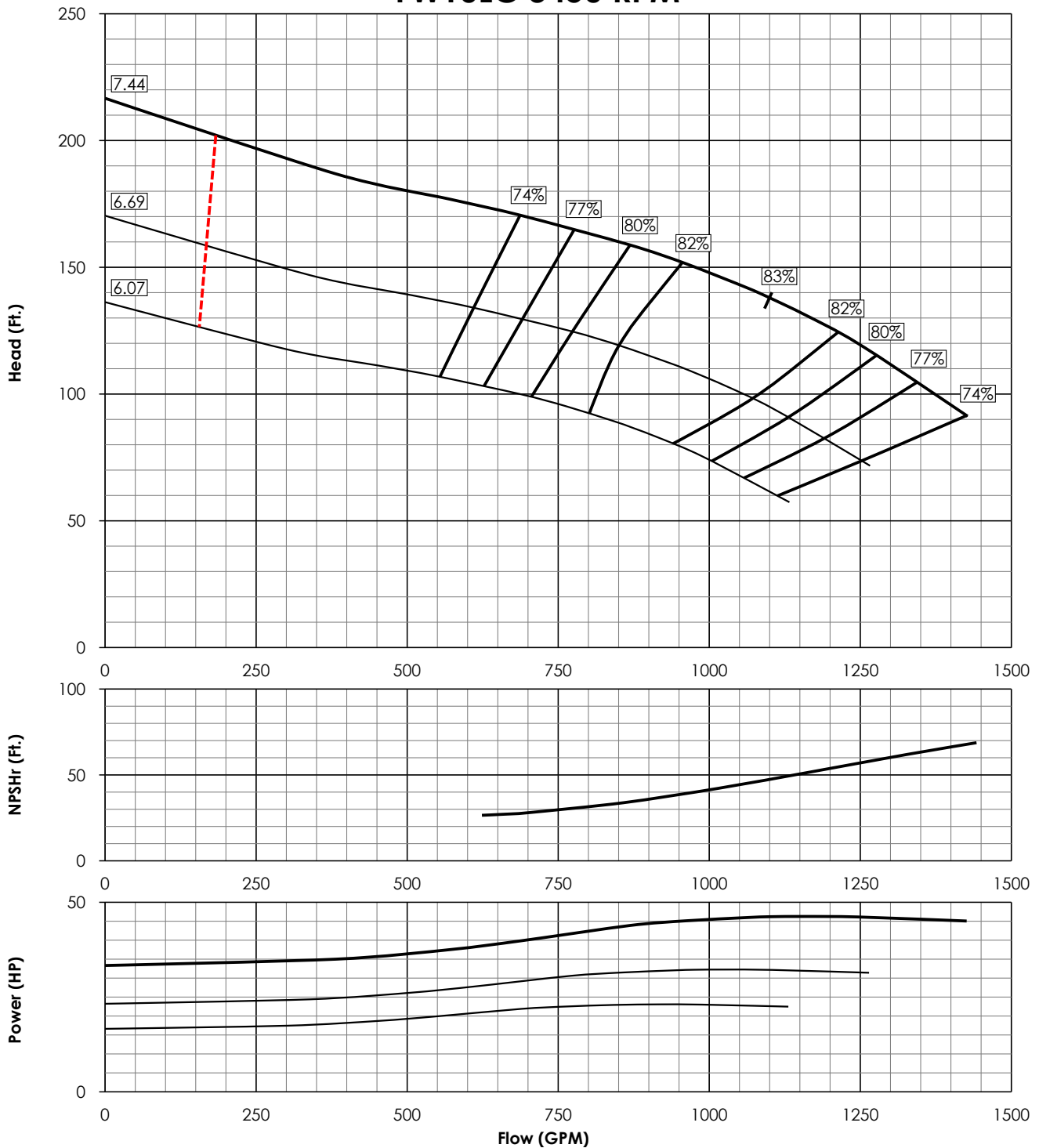
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6210LC0

Updated: Jun. 2020

FW10LC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2842
K _T	7.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	22"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



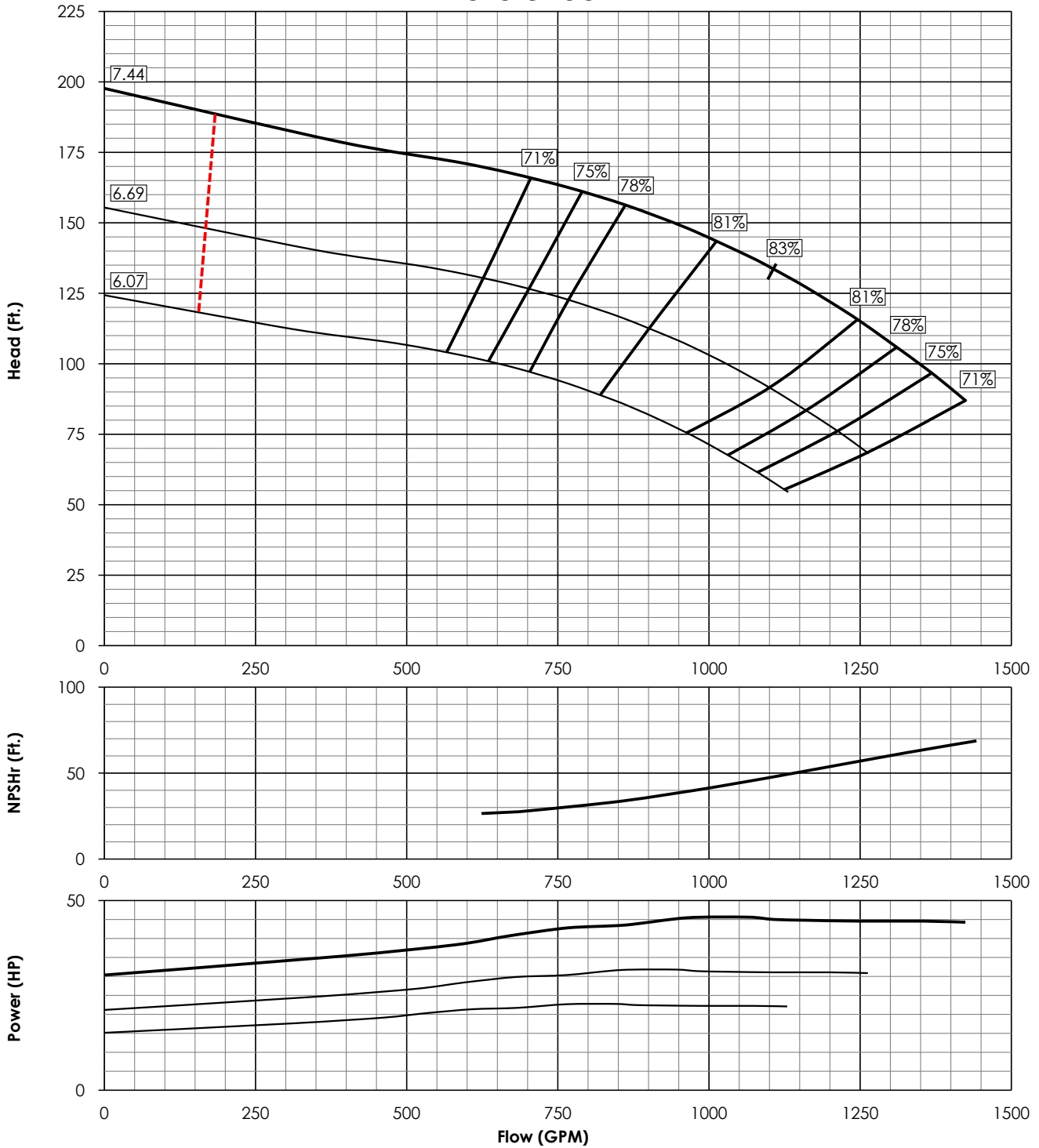
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6210LS0

Updated: Dec. 2020

FW10LS 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	2917
K _T	9.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	22"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



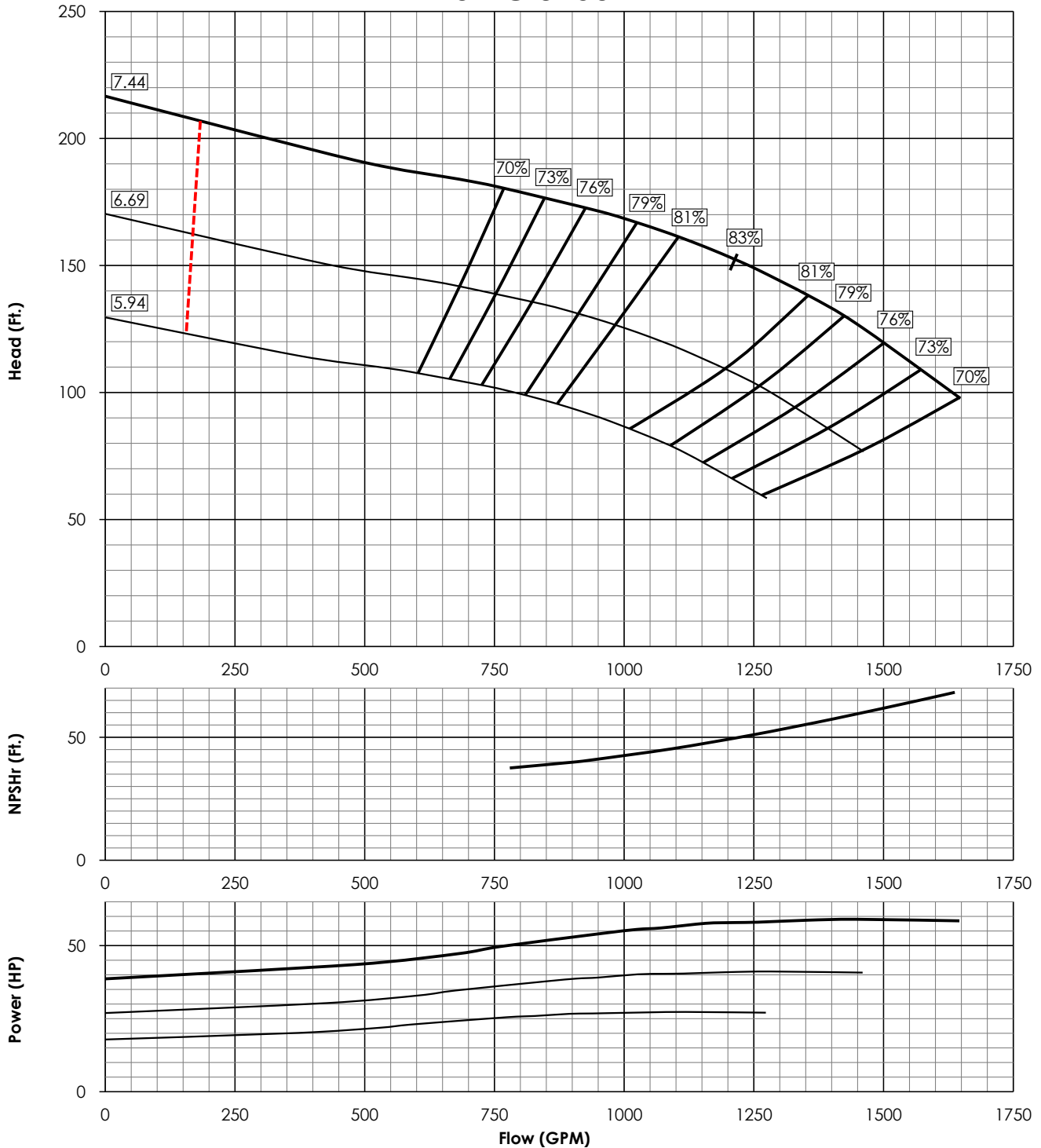
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6210MC0

Updated: Jun. 2020

FW10MC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2763
K _t	7.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERSION	23"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



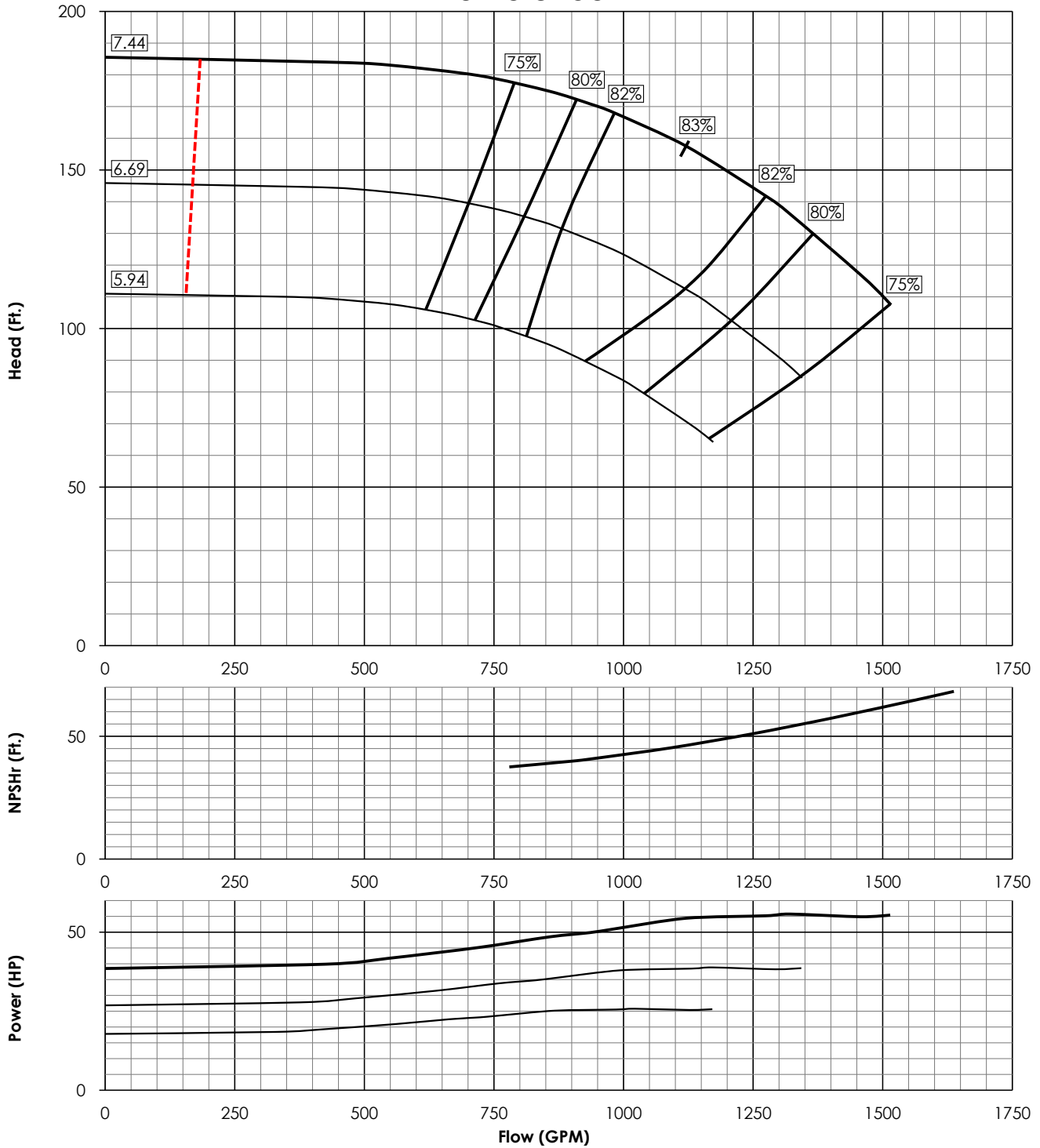
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6210MS0

Updated: Dec. 2020

FW10MS 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	2573
K _T	9.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	23"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



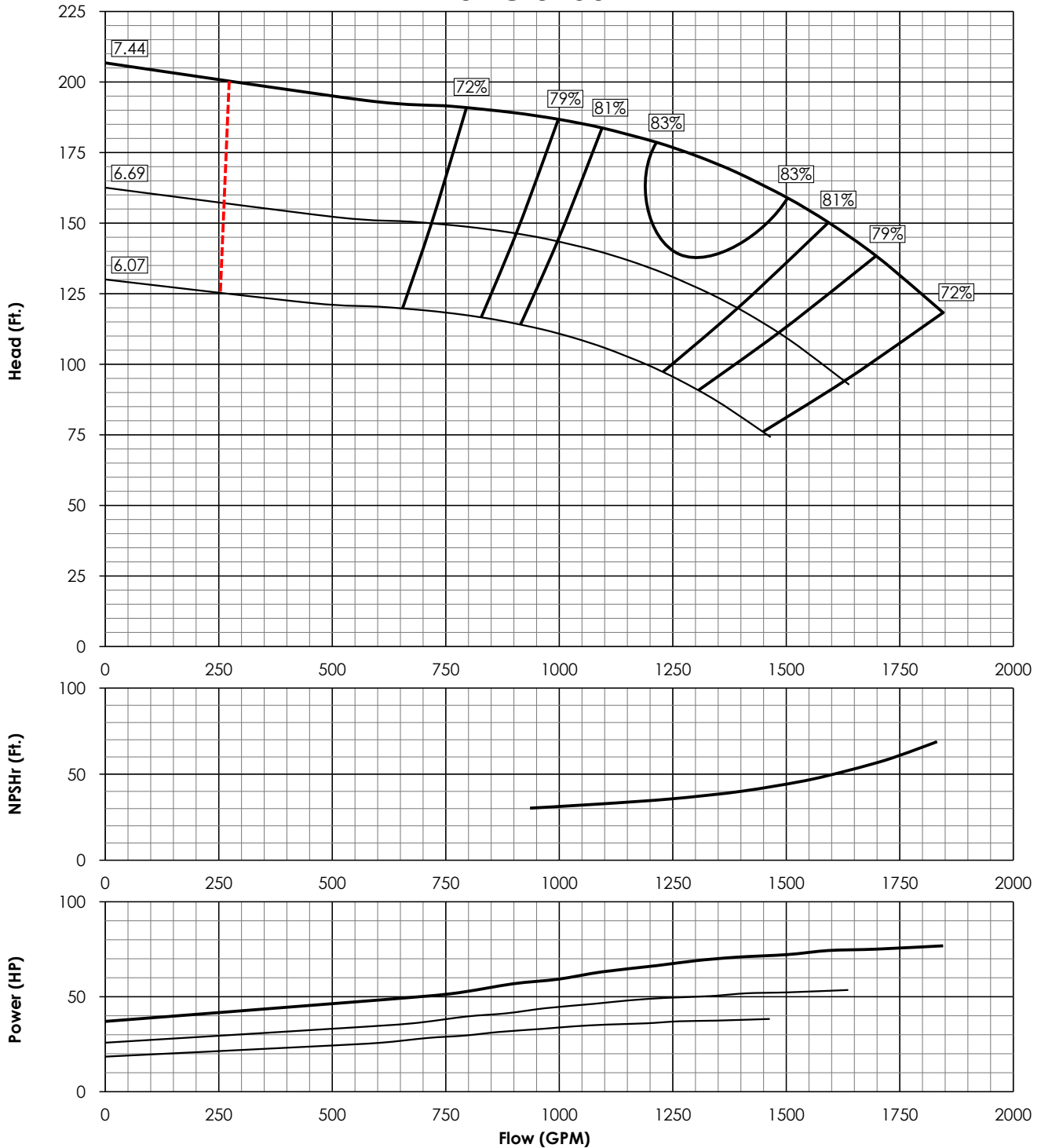
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6210HC0

Updated: Jun. 2020

FW10HC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2754
K _t	7.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	5", 6", 8"	MIN. SUBMERGENCE	26"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



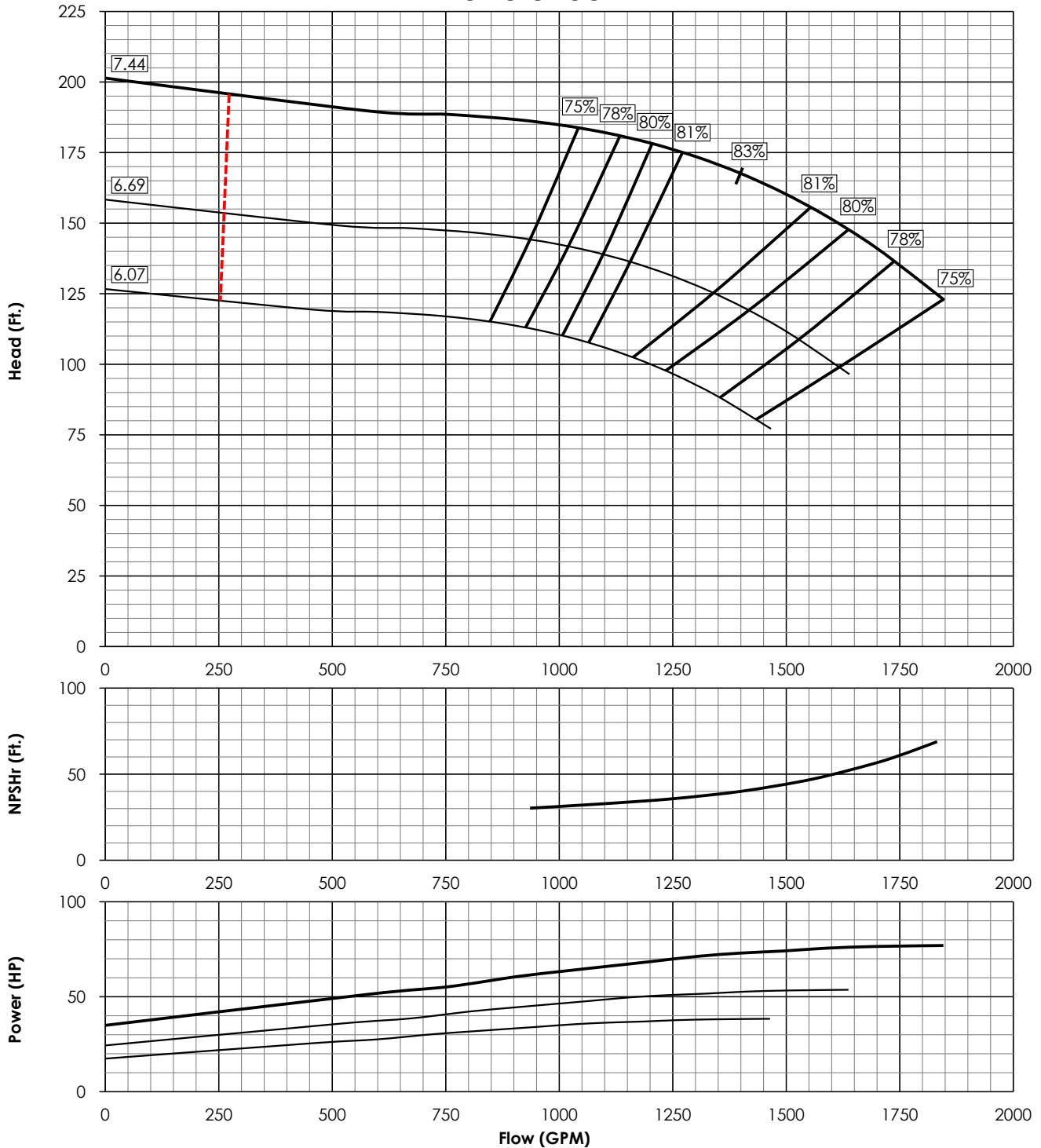
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6210HS0

Updated: Dec. 2020

FW10HS 3450 RPM



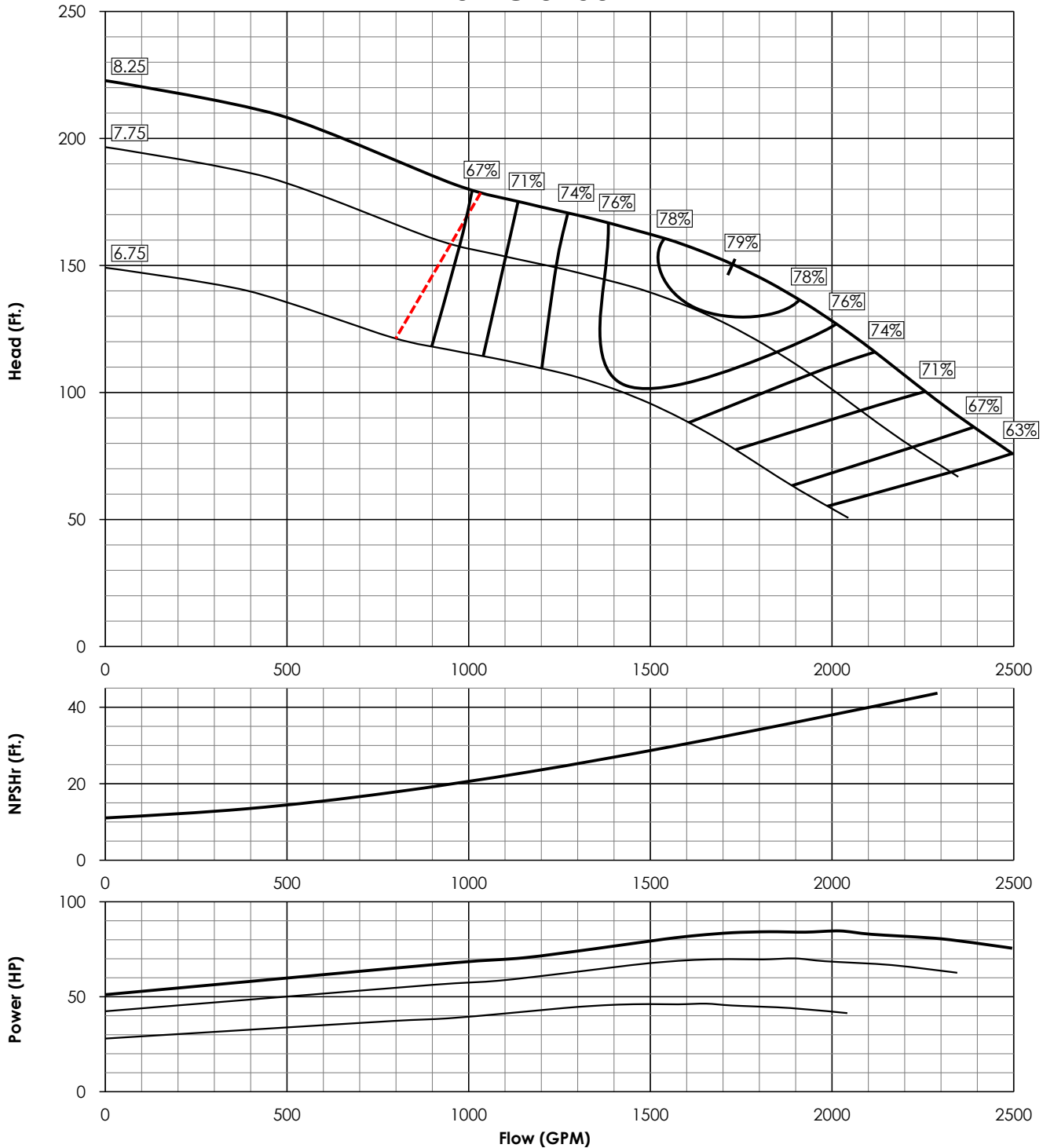
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	2762
K _t	9.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	5", 6", 8"	MIN. SUBMERGENCE	26"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10WC 3450 RPM



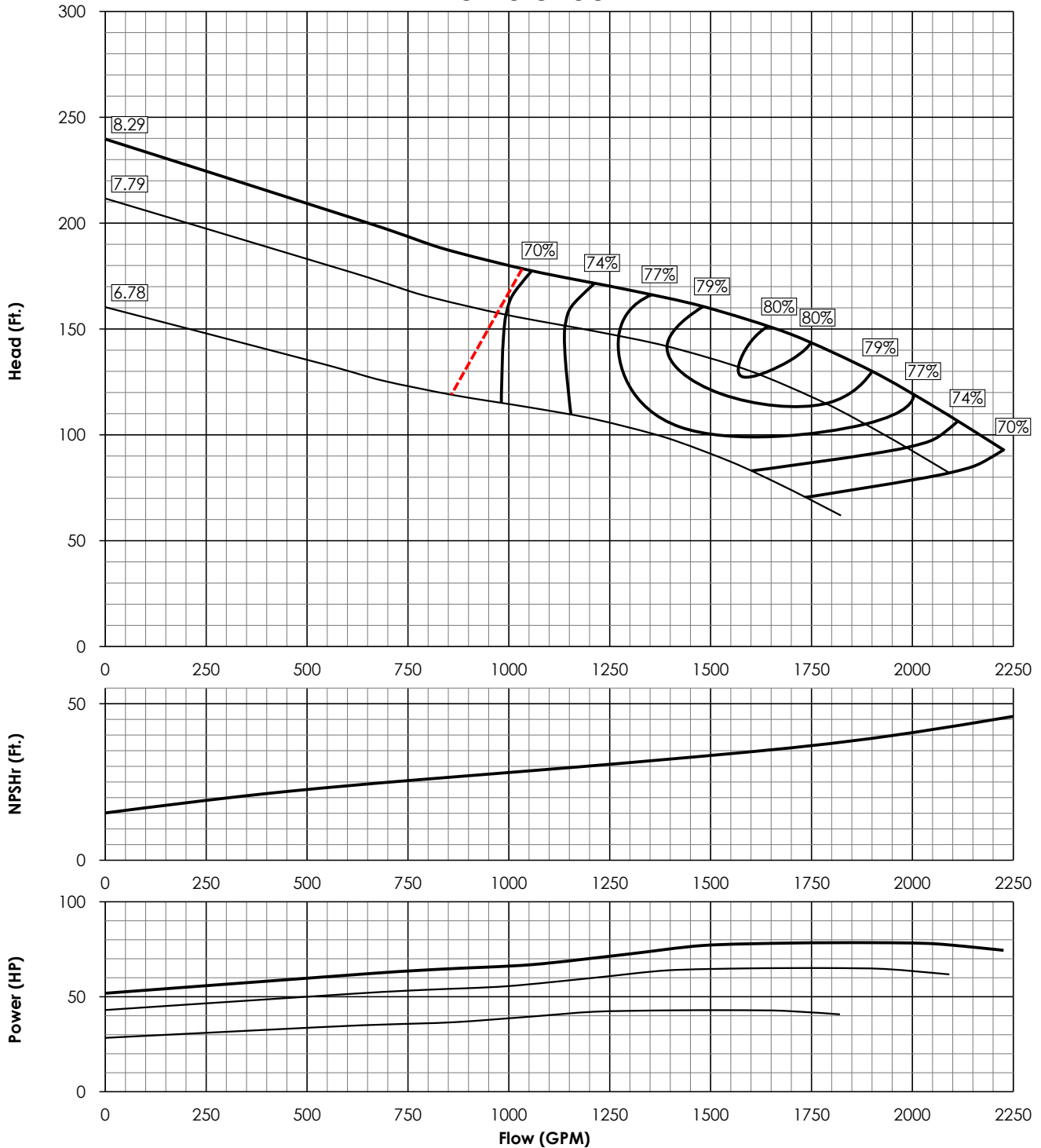
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	3316
K _T	10.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	55 LBS
DISCH. SIZE(S)	8"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	322 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10WS 3450 RPM



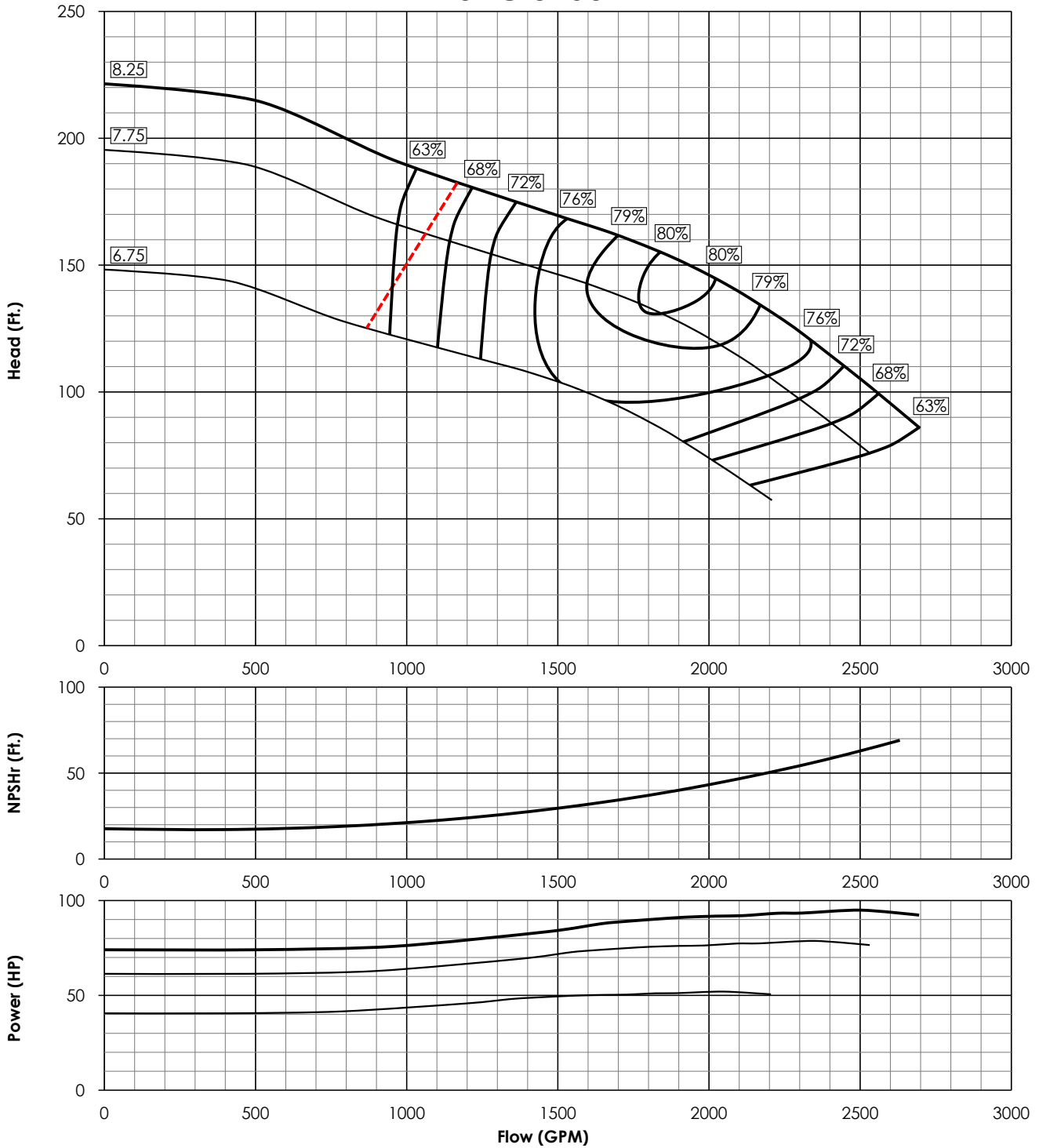
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	3374
K _t	11.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	55 LBS
DISCH. SIZE(S)	8"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	322 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10YC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	3512
K _T	10.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	55 LBS
DISCH. SIZE(S)	8"	MIN. SUBMERGENCE	40"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	322 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



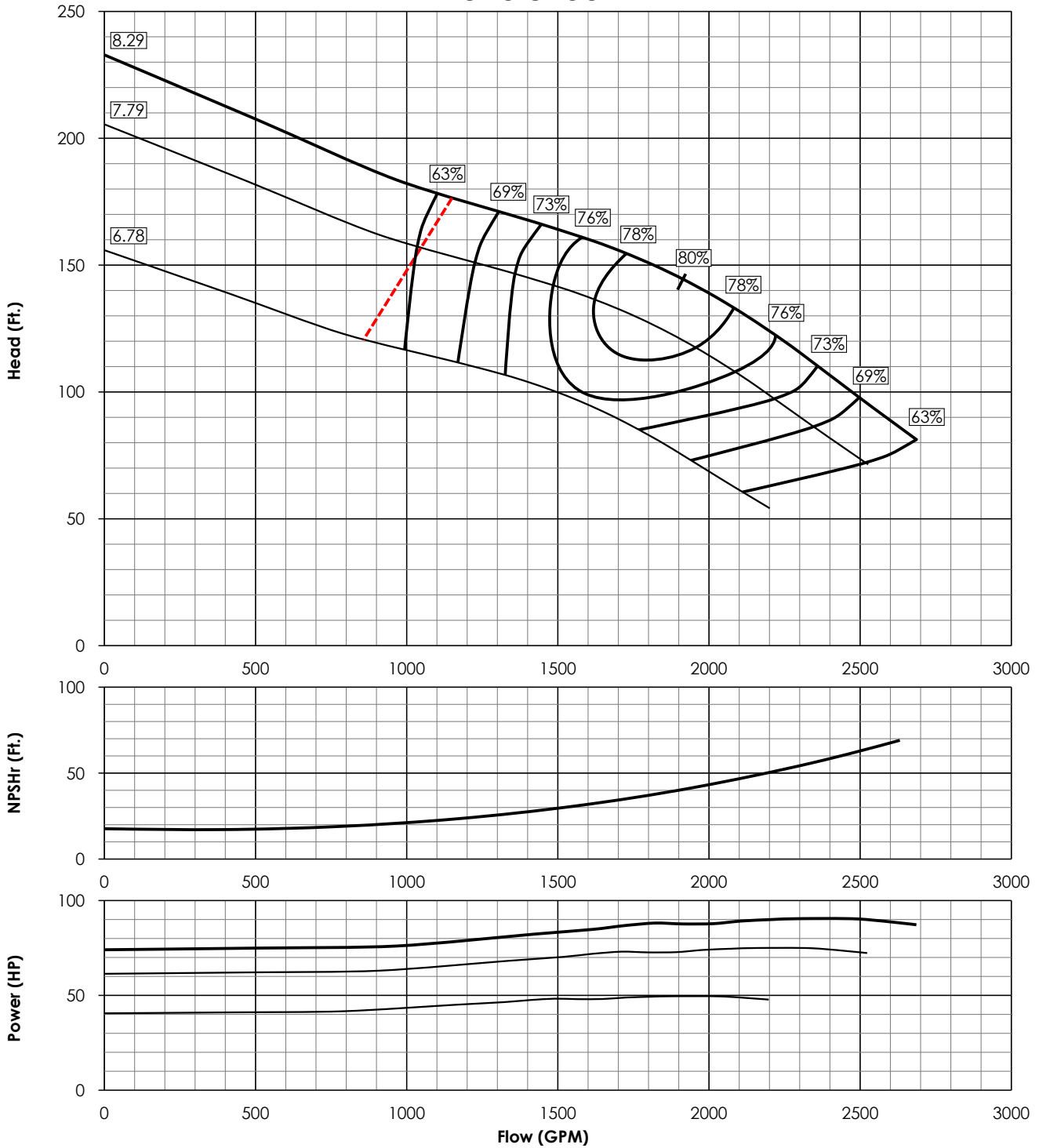
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6210YS1

Updated: Mar. 2019

FW10YS 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	3624
K _t	11.4 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	55 LBS
DISCH. SIZE(S)	8"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	322 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW10WCXL**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW10YCXL**



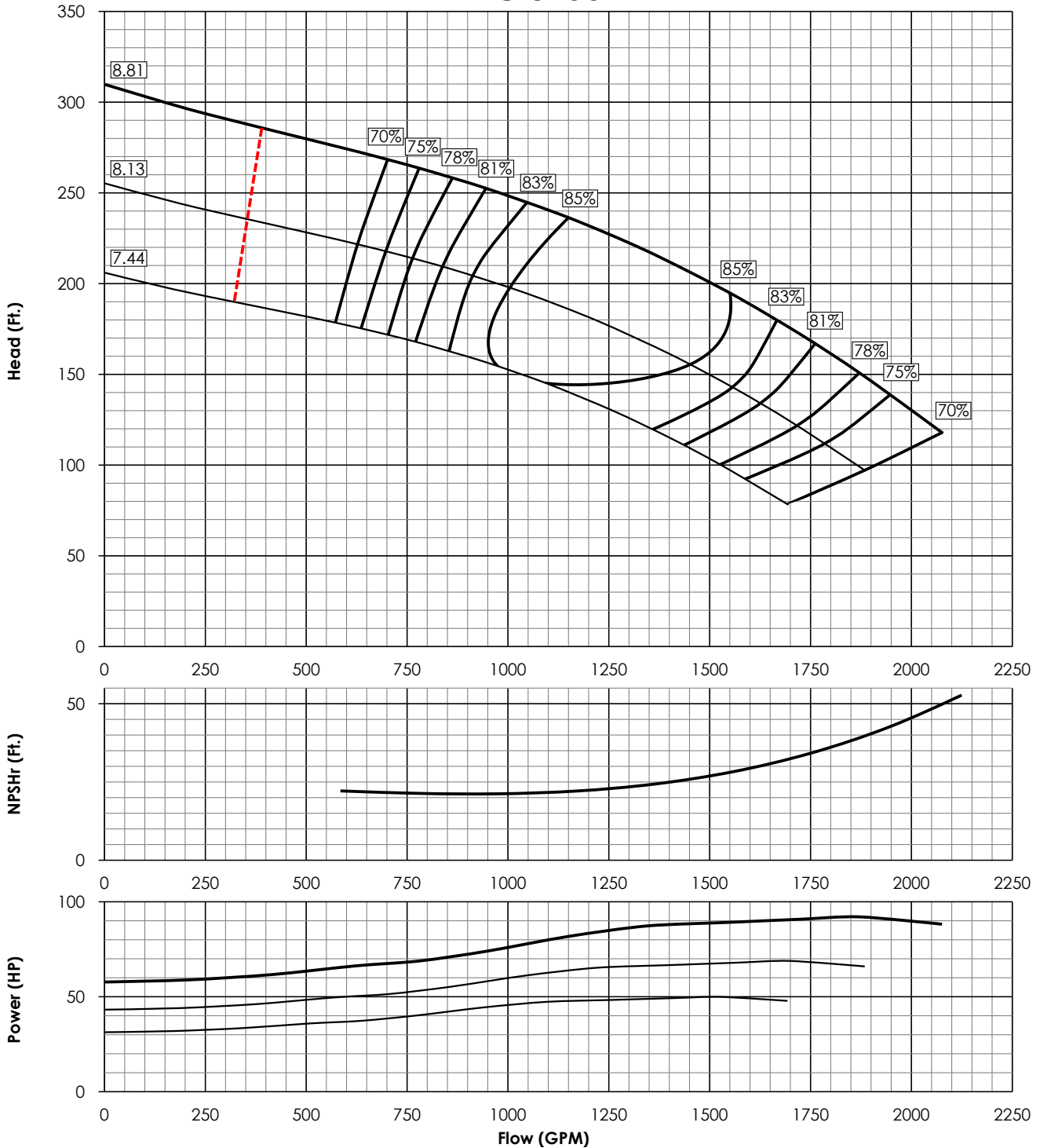
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6211LC2

Updated: Mar. 2020

FW11LC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2257
K _t	7.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



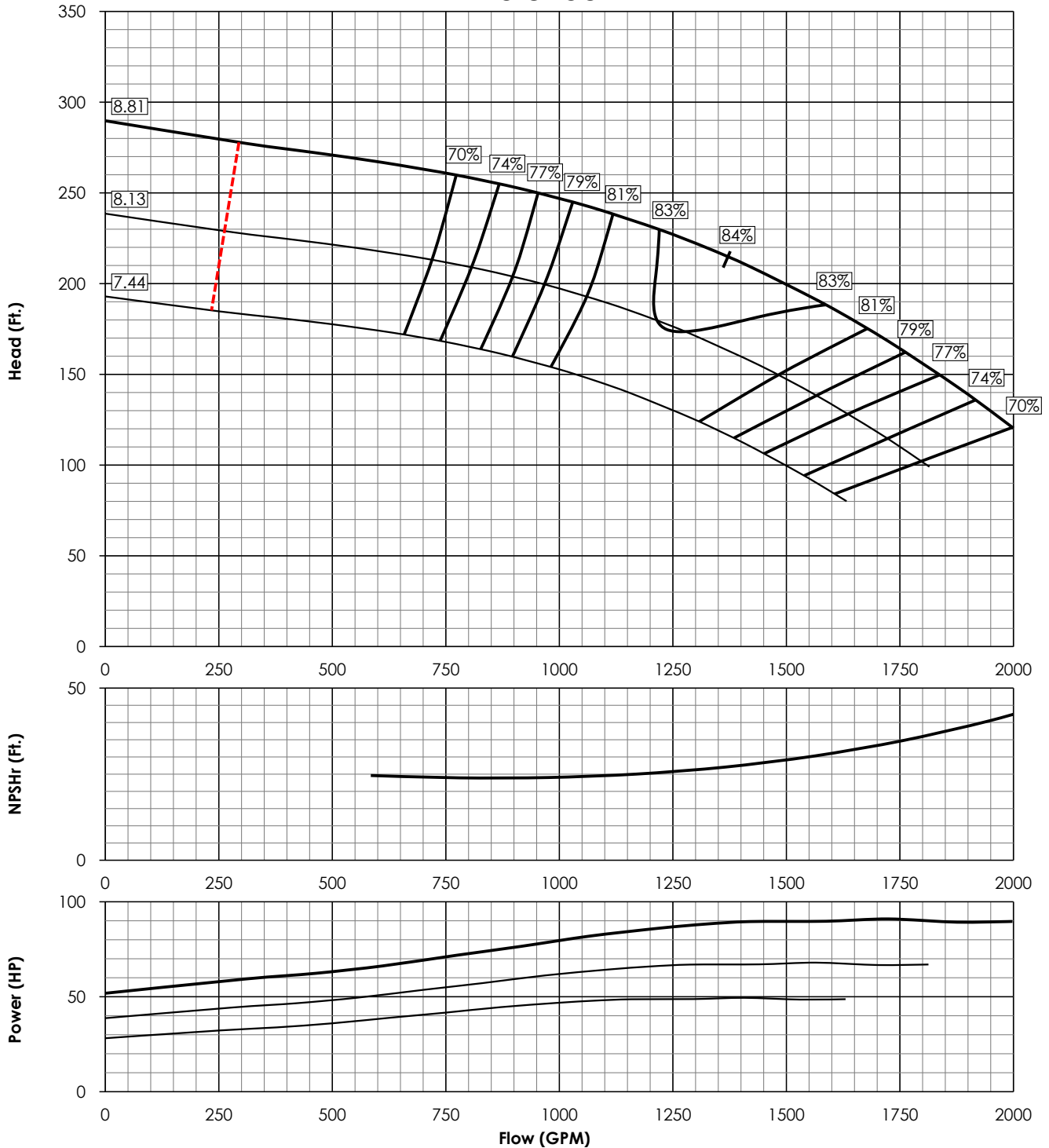
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6211LS2

Updated: Mar. 2020

FW11LS 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	2296
K _t	9.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



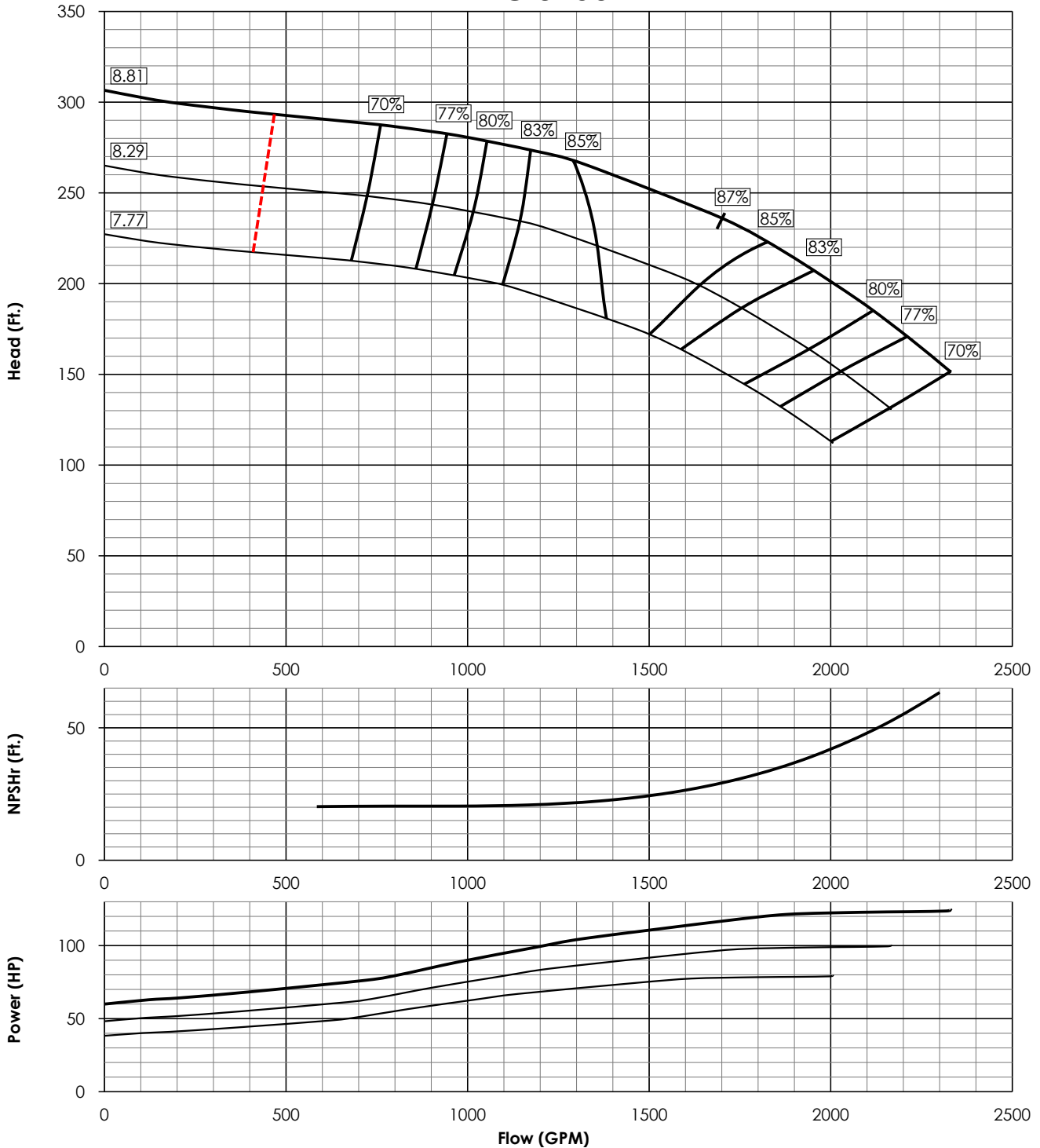
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6211MC2

Updated: Mar. 2020

FW11MC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2360
K _T	7.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



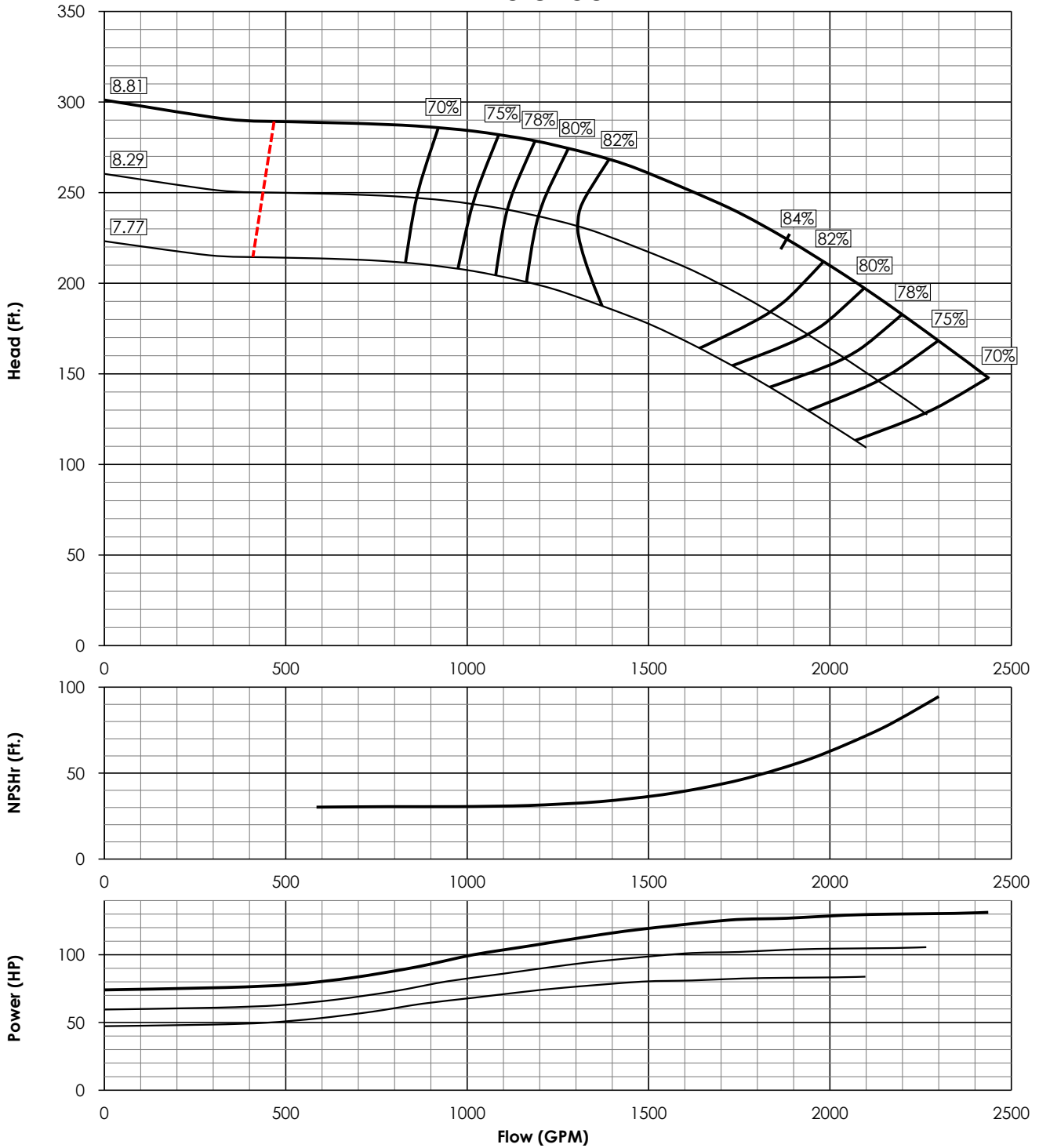
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6211MS2

Updated: Mar. 2020

FW11MS 3450 RPM



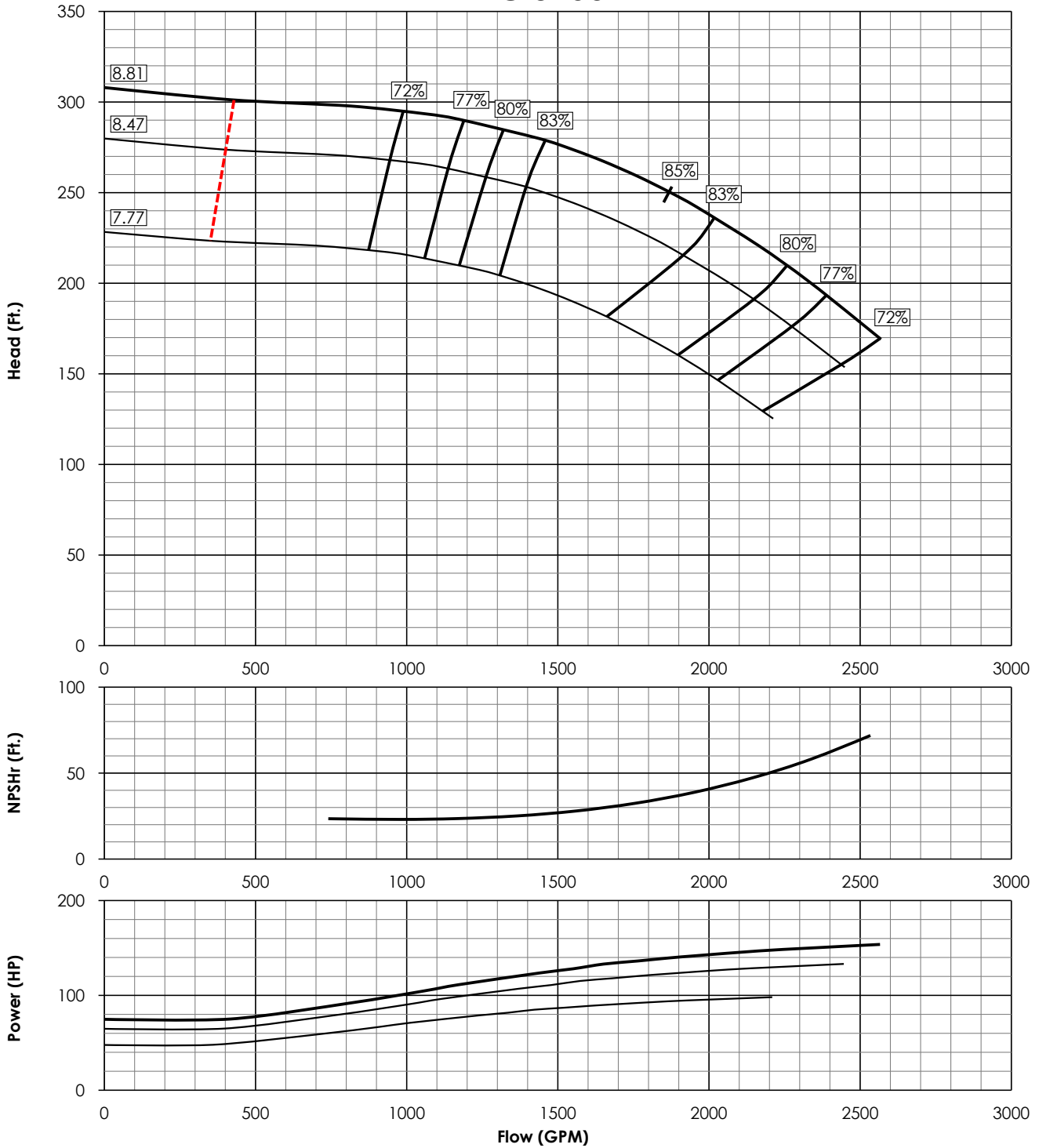
EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	2454
K _t	9.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW11HC 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2107
K _T	6.80 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



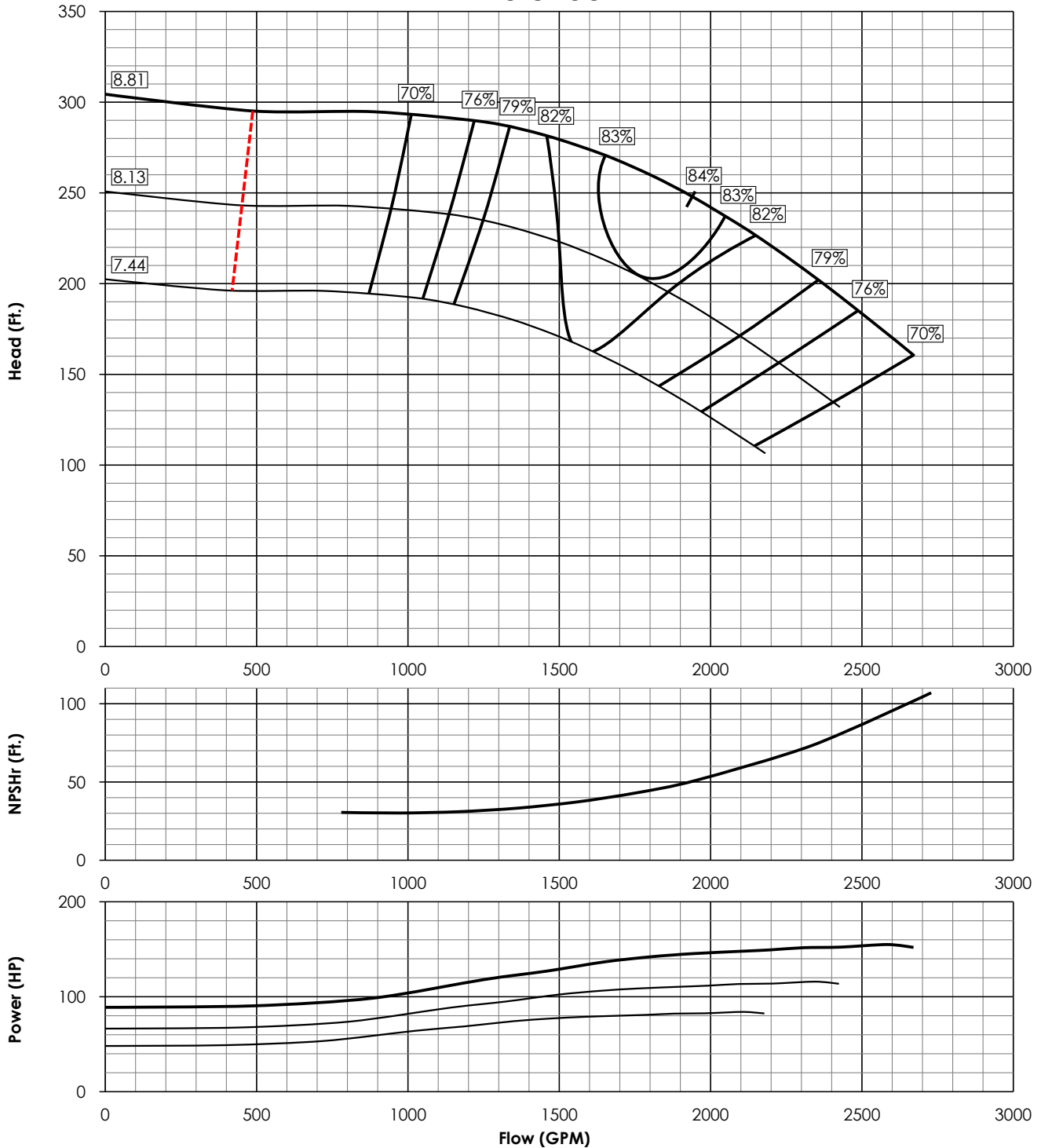
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6211HS2

Updated: Mar. 2020

FW11HS 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	3600 RPM
N _s	2422
K _T	9.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



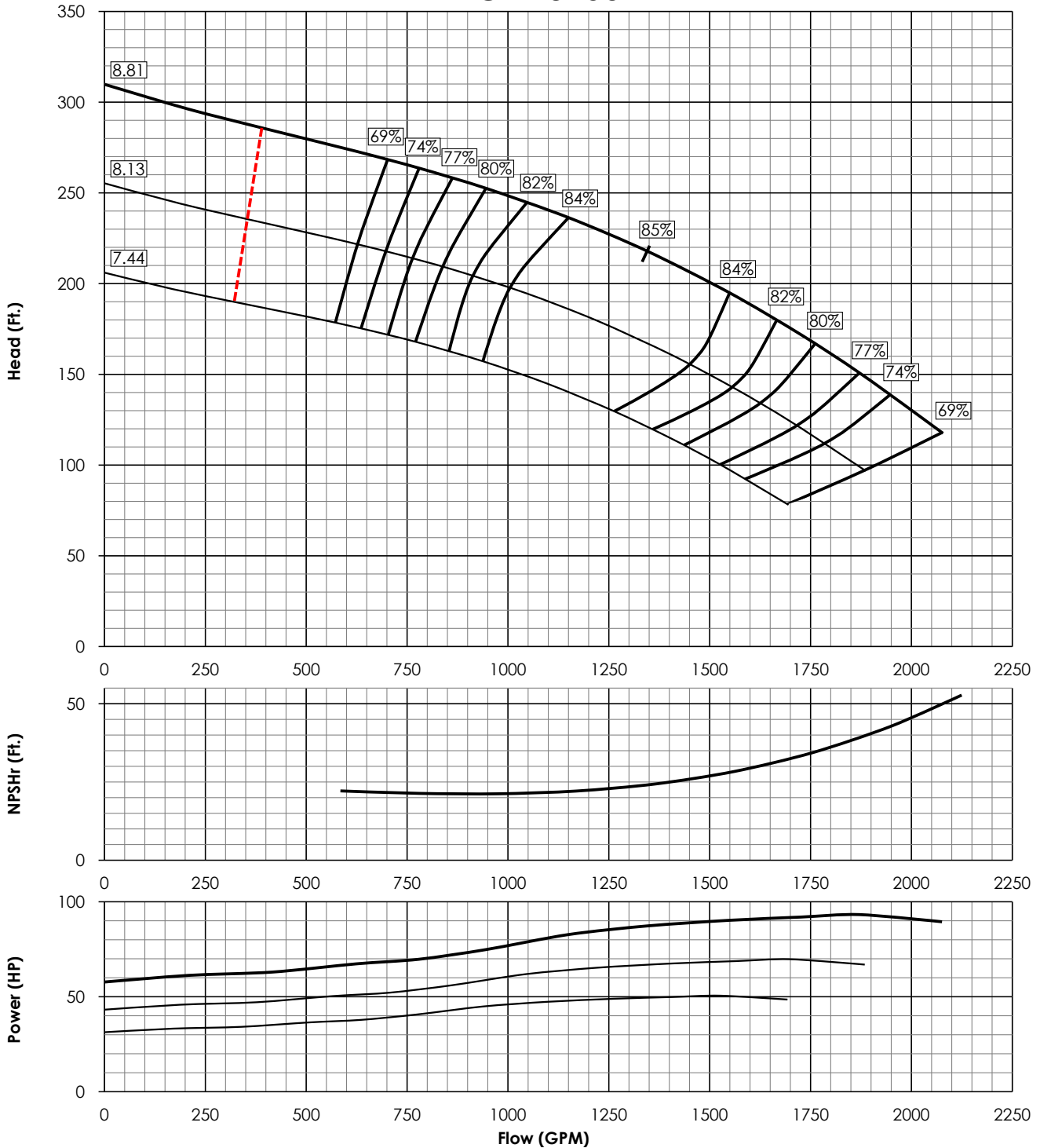
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6211LCXL0

Updated: Jul. 2020

FW11LCXL 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2227
K _t	7.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	285 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



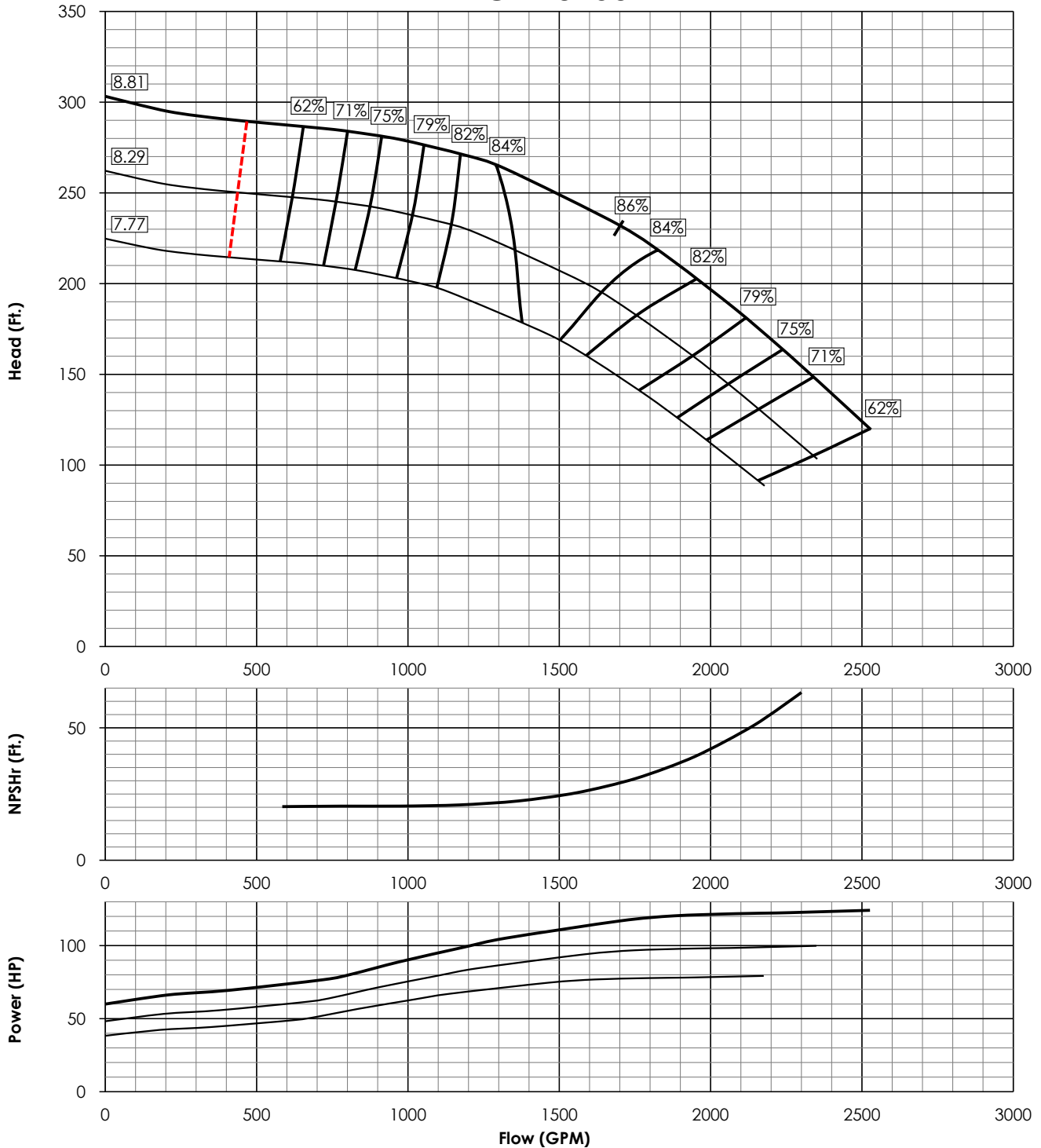
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6211MCXL0

Updated: Jul. 2020

FW11MCXL 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2378
K _T	7.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	285 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERSION	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



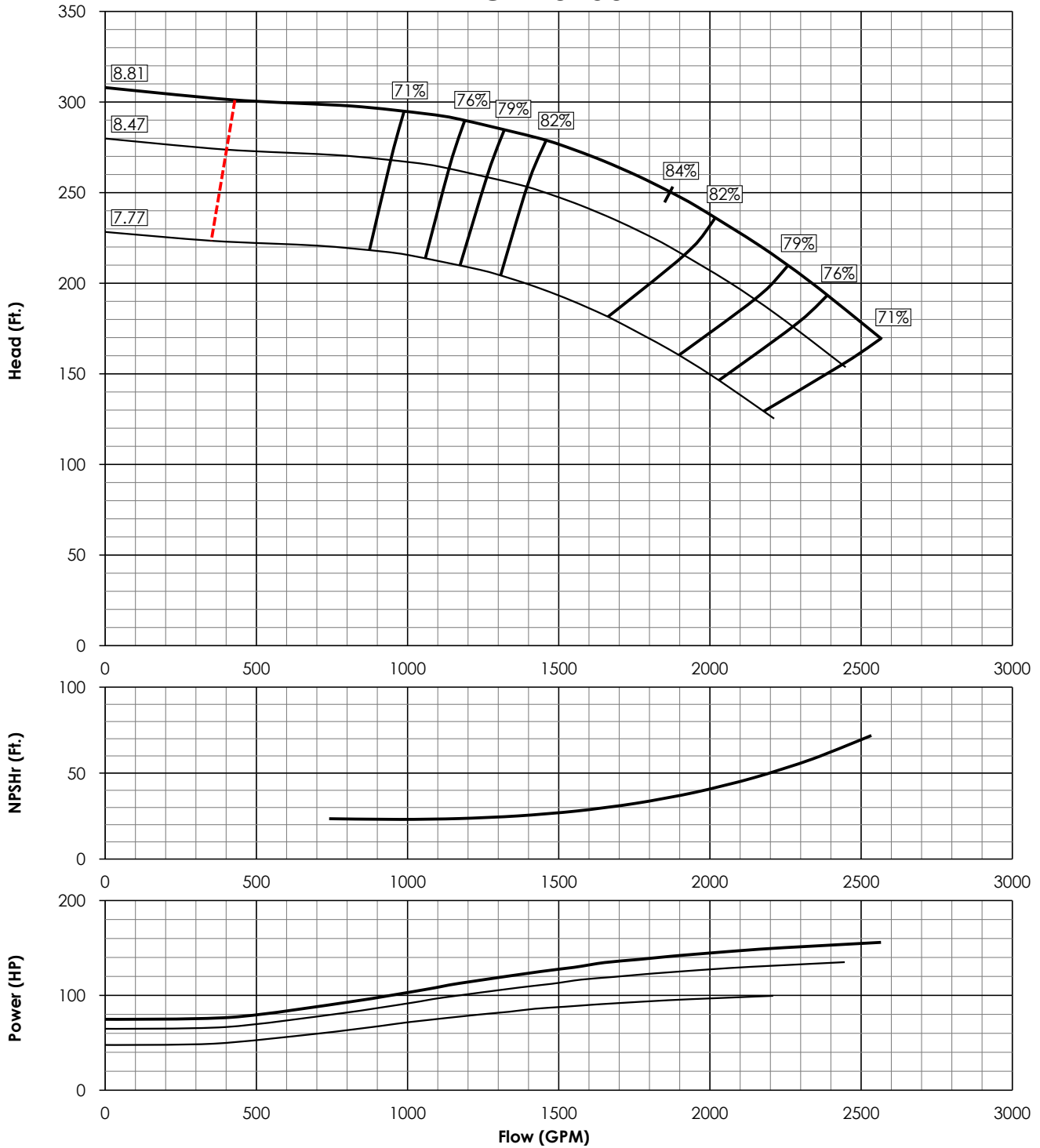
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6211HCXL0

Updated: Jul. 2020

FW11HCXL 3450 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2362
K _T	6.80 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	285 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

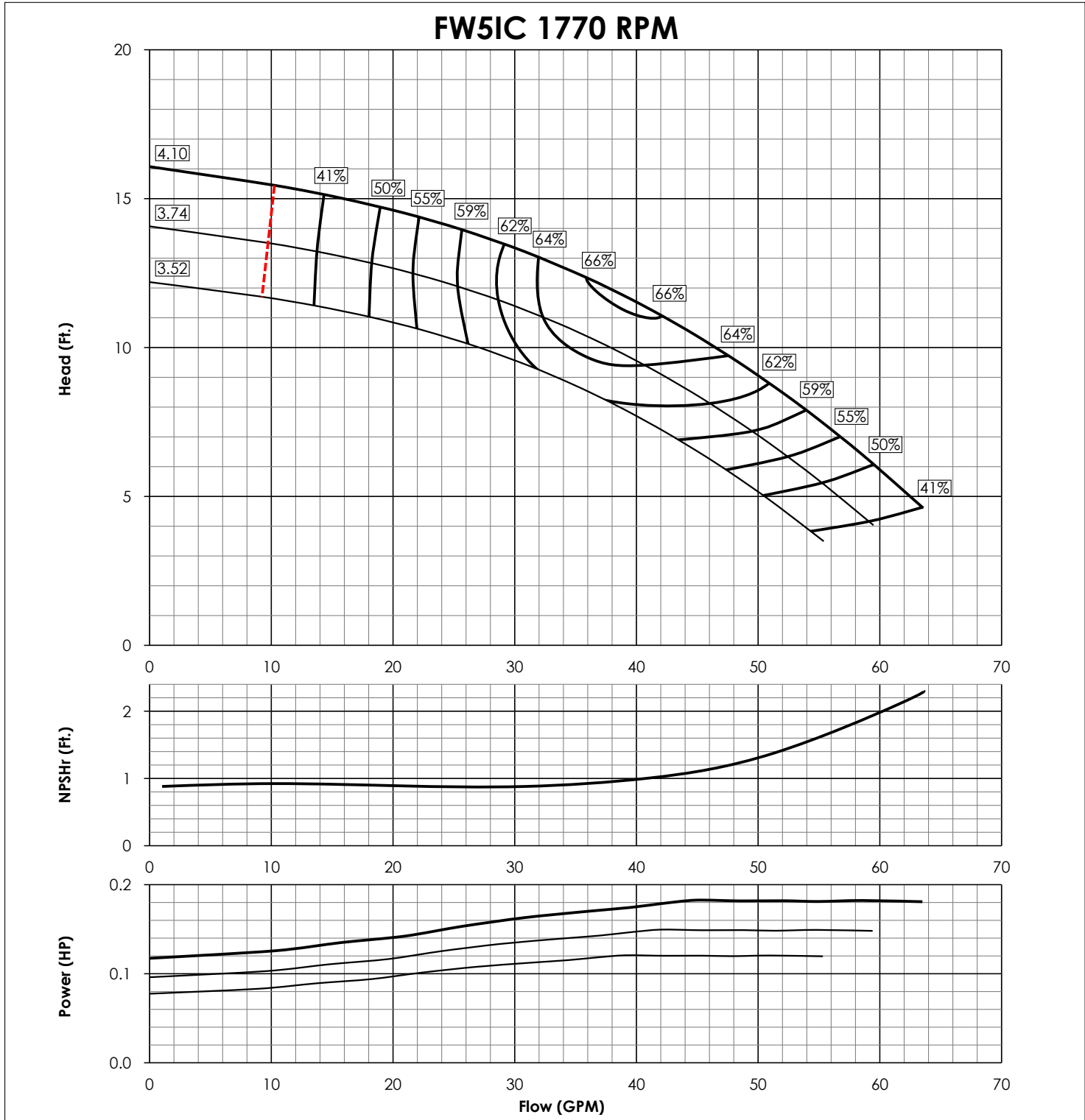


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6405IC0

Updated: Dec. 2018



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	1771
K _T	1.30 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.20"	SINGLE STG. WT.	50 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	10"
SHAFT DIA.	1"	MAX WORKING PRES.	480 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



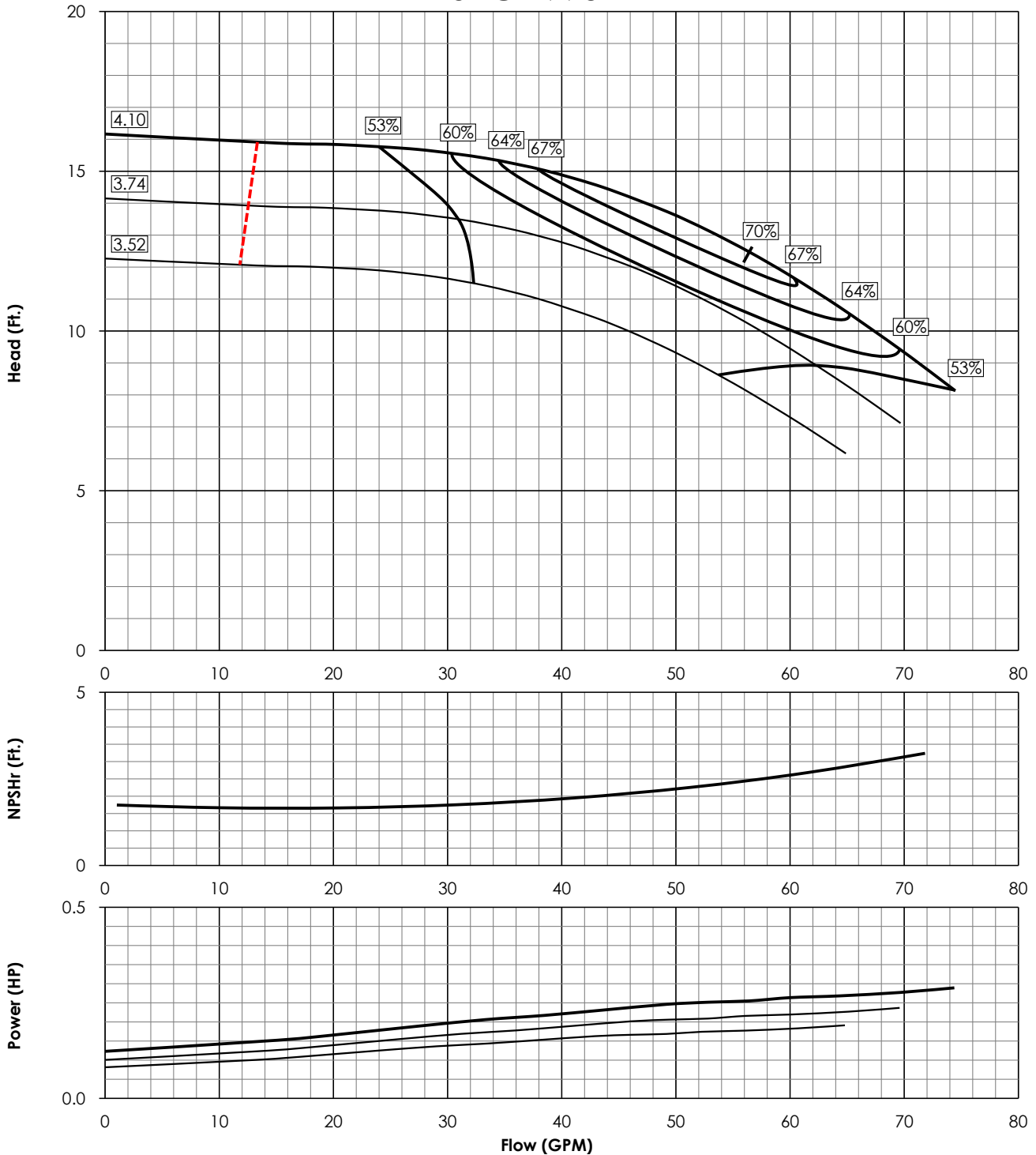
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6405KC0

Updated: Dec. 2018

FW5KC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	2000
K _T	1.30 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.20"	SINGLE STG. WT.	50 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	10"
SHAFT DIA.	1"	MAX WORKING PRES.	480 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



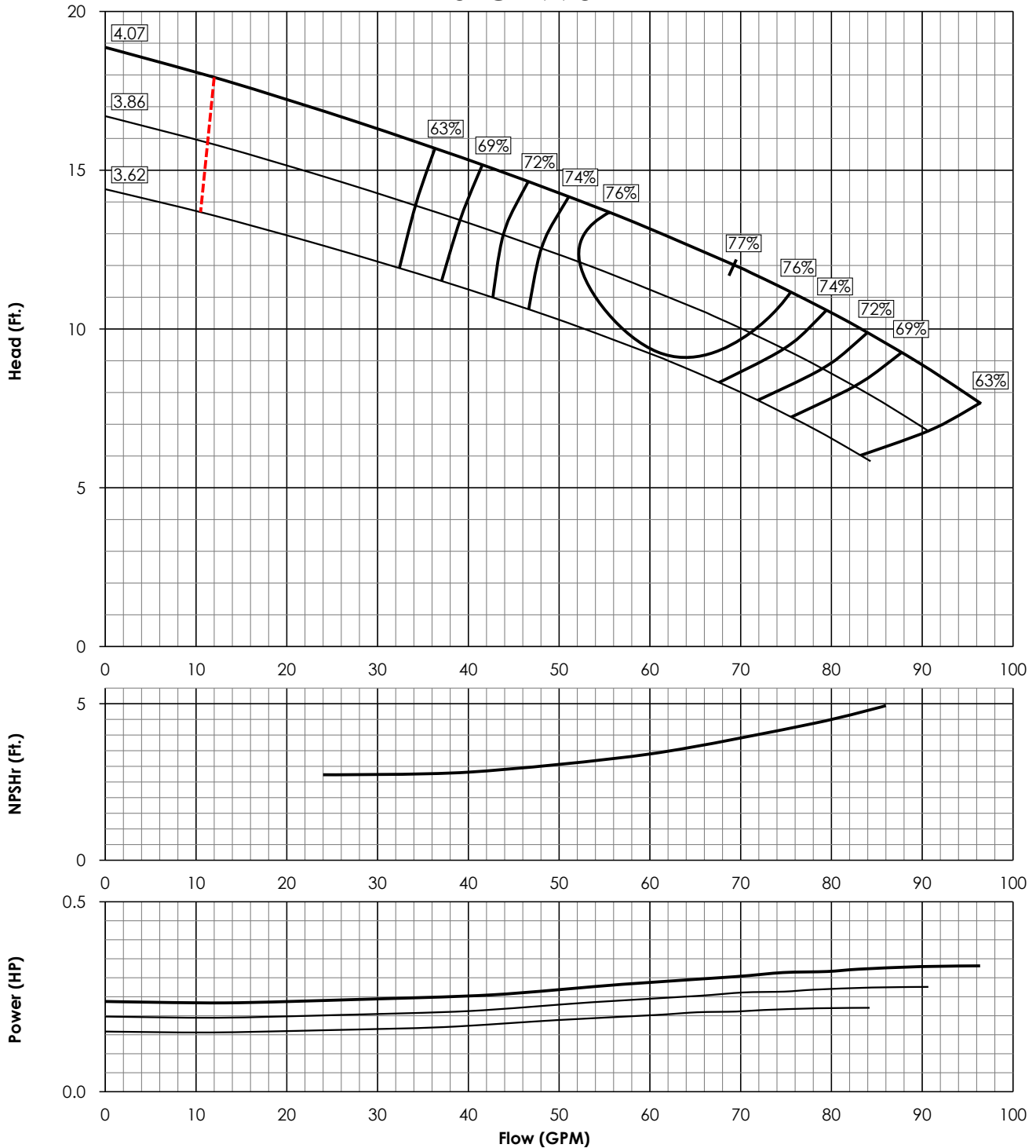
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6405LC1

Updated: Apr. 2020

FW5LC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-1.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2288
K _T	1.40 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.20"	SINGLE STG. WT.	55 LBS
STD. LATERAL	0.31"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	12"
SHAFT DIA.	1"	MAX WORKING PRES.	480 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



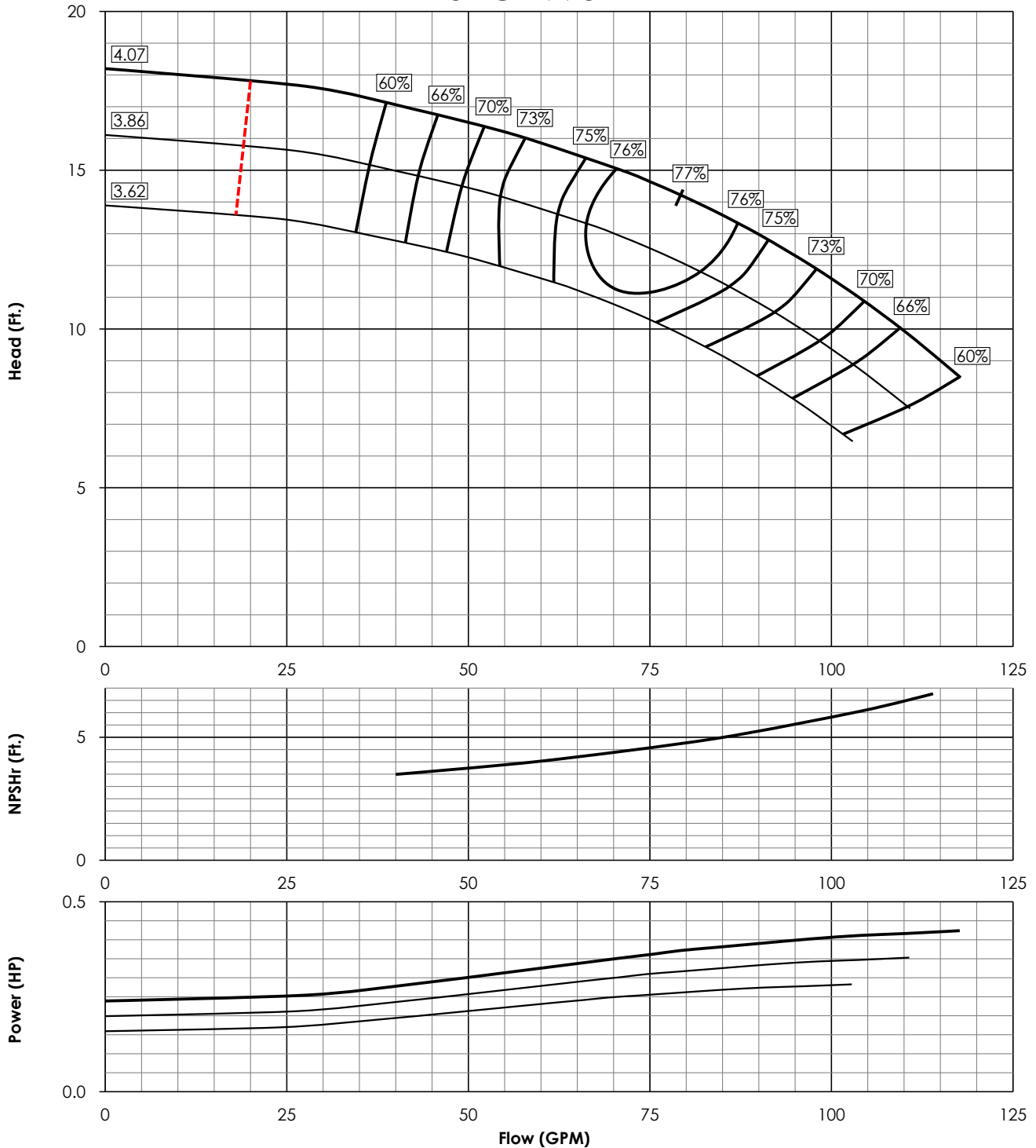
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6405HC1

Updated: Apr. 2020

FW5HC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-1.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2146
K _T	1.30 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.20"	SINGLE STG. WT.	55 LBS
STD. LATERAL	0.31"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	12"
SHAFT DIA.	1"	MAX WORKING PRES.	480 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW5WC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW5YC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6DC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6EC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW61C**

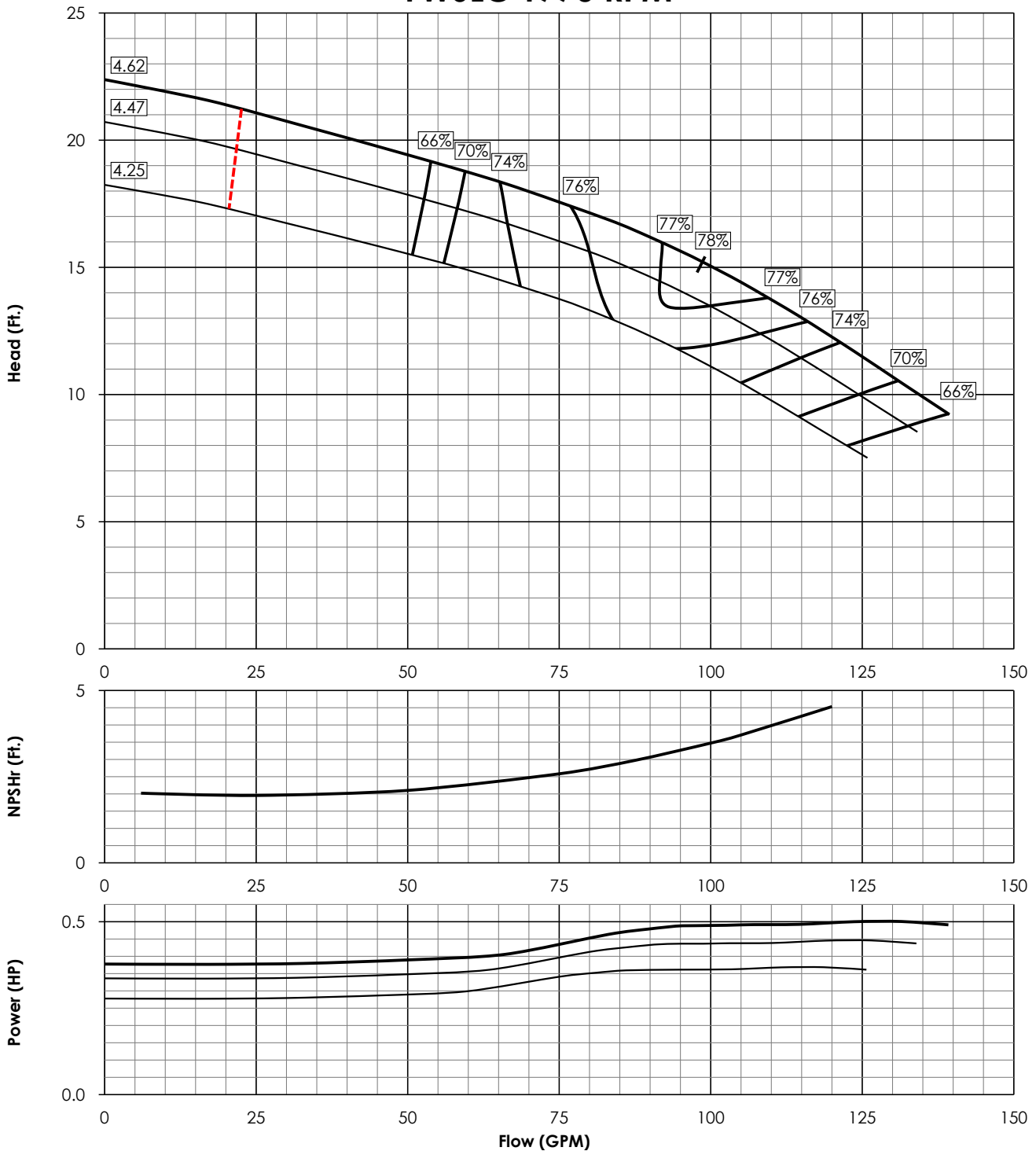


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6KC**

FW6LC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2285
K _T	2.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.90"	SINGLE STG. WT.	60 LBS
STD. LATERAL	0.38"	ADD. STG. WT.	20 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERSION	20"
SHAFT DIA.	1"	MAX WORKING PRES.	420 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6LS**



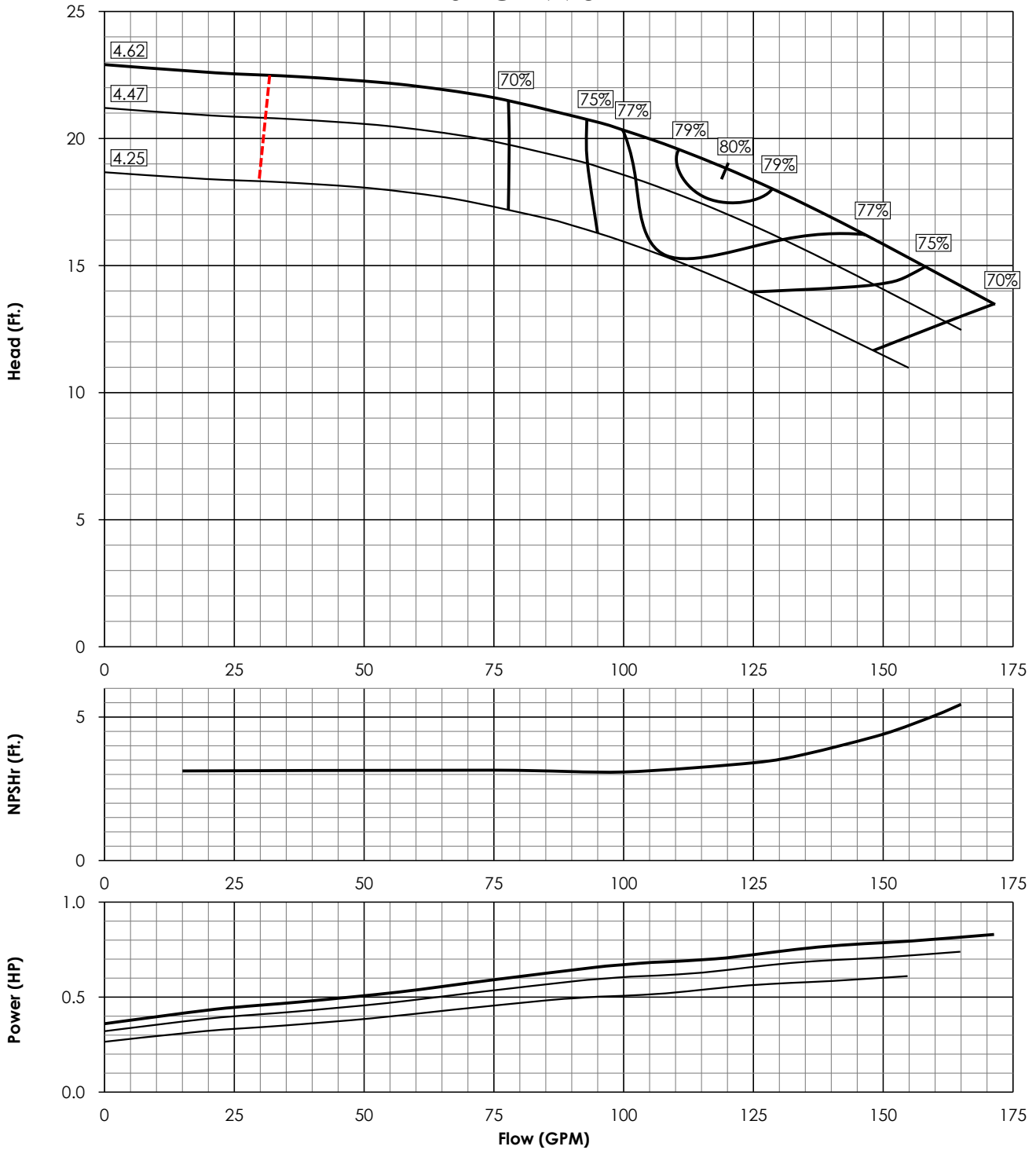
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6406HC2

Updated: Oct. 2020

FW6HC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2155
K _t	2.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.90"	SINGLE STG. WT.	60 LBS
STD. LATERAL	0.38"	ADD. STG. WT.	20 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	20"
SHAFT DIA.	1"	MAX WORKING PRES.	420 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6HS**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6QC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW6RC**



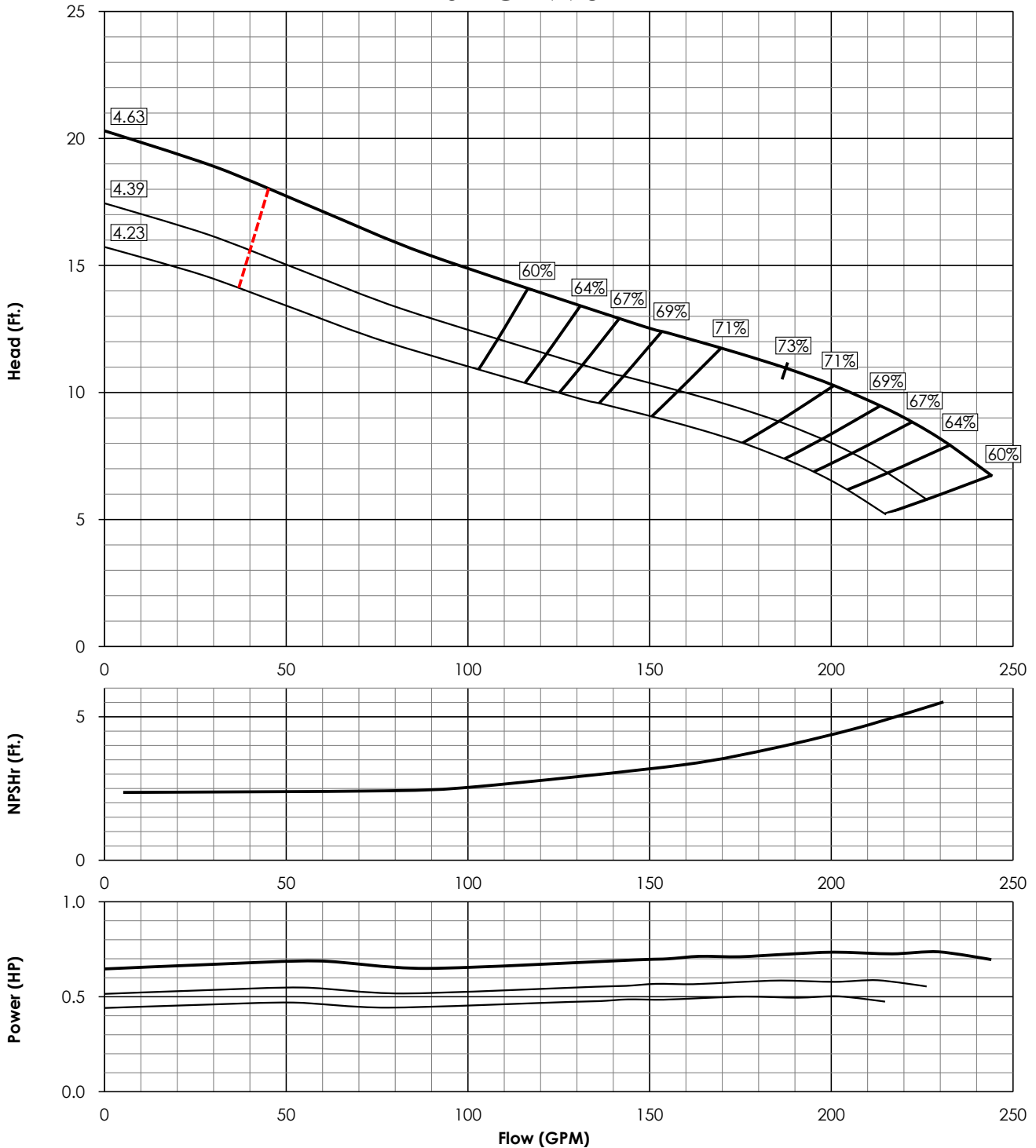
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6406WC0

Updated: Apr. 2020

FW6WC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3997
K _T	5.60 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.44"	SINGLE STG. WT.	55 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	20"
SHAFT DIA.	1"	MAX WORKING PRES.	200 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



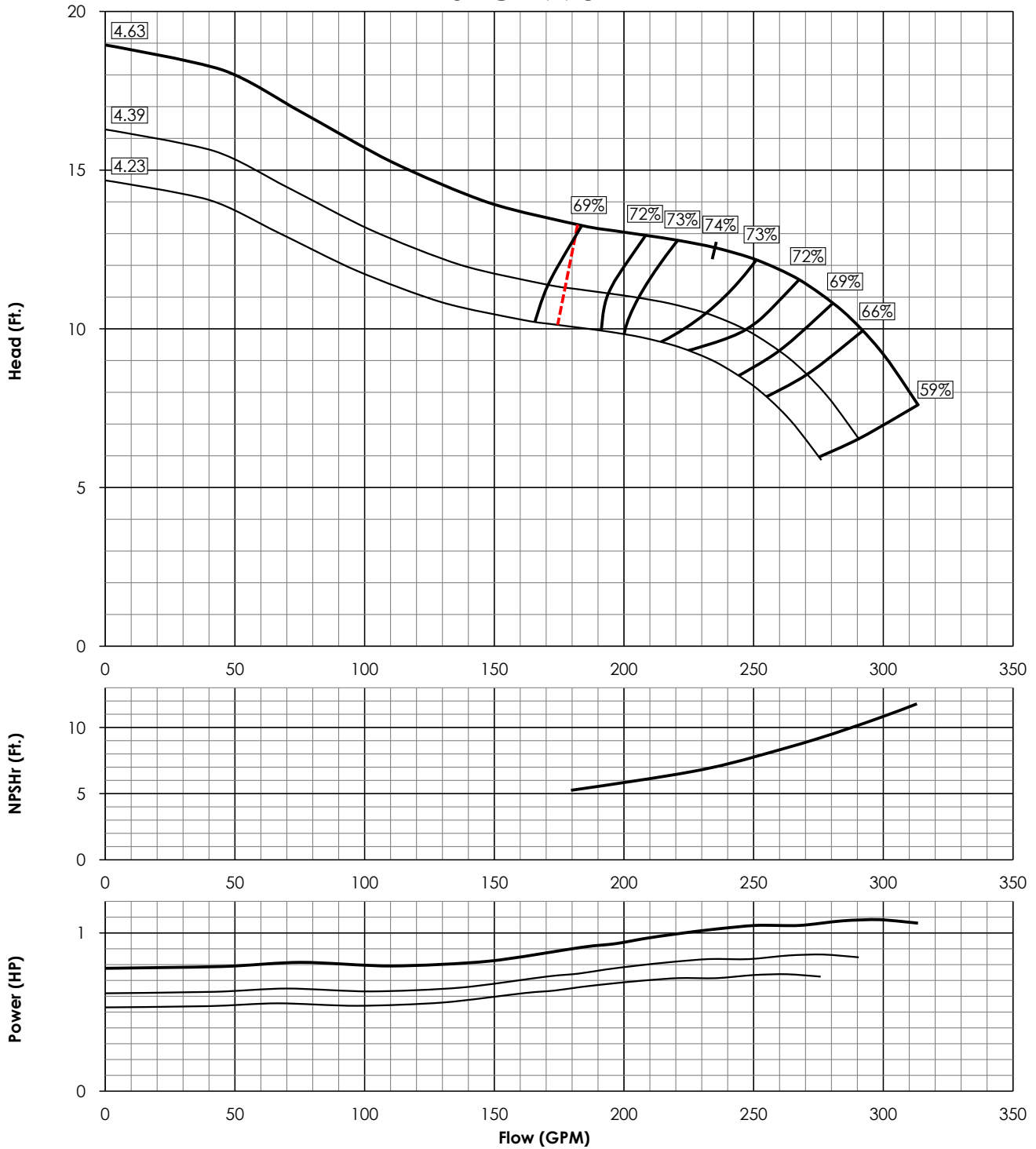
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6406YC0

Updated: Apr. 2020

FW6YC 1770 RPM



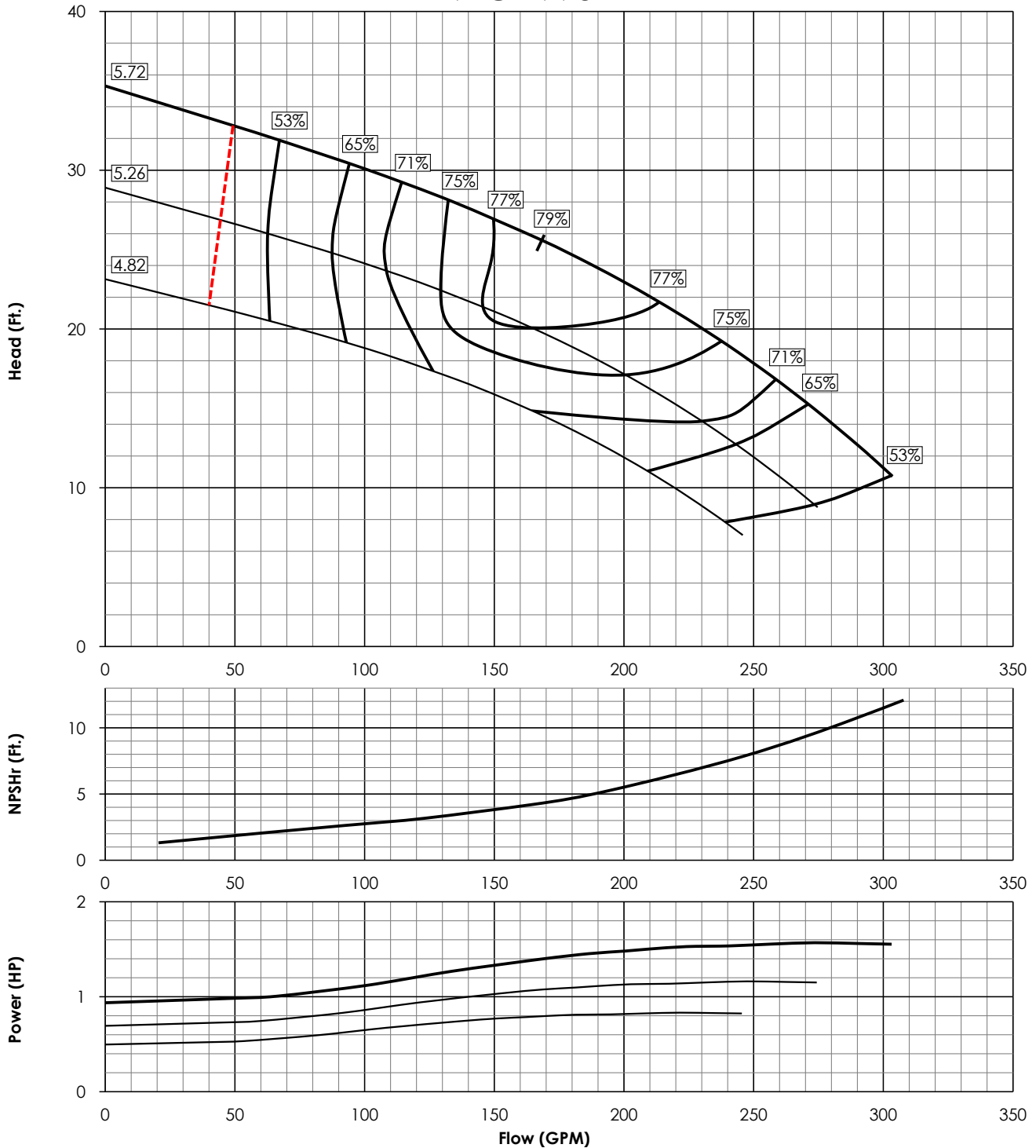
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	4018
K _T	5.60 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	5.44"	SINGLE STG. WT.	55 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	15 LBS
DISCH. SIZE(S)	4"	MIN. SUBMERGENCE	20"
SHAFT DIA.	1"	MAX WORKING PRES.	200 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW7LC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	1996
K _t	3.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.13"	SINGLE STG. WT.	90 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	415 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

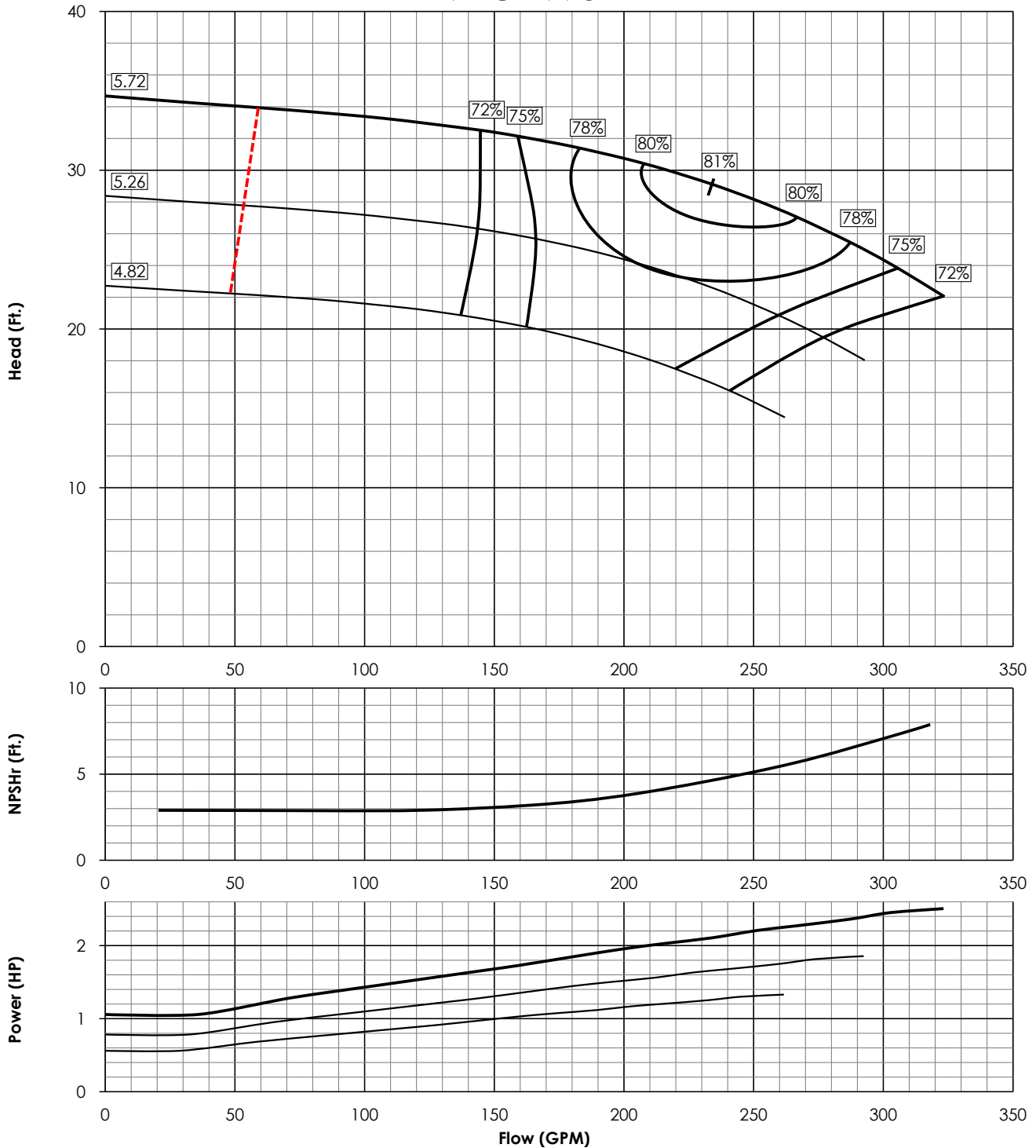


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW7LS**

FW7HC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2169
K _T	3.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.13"	SINGLE STG. WT.	90 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	415 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW7HS**



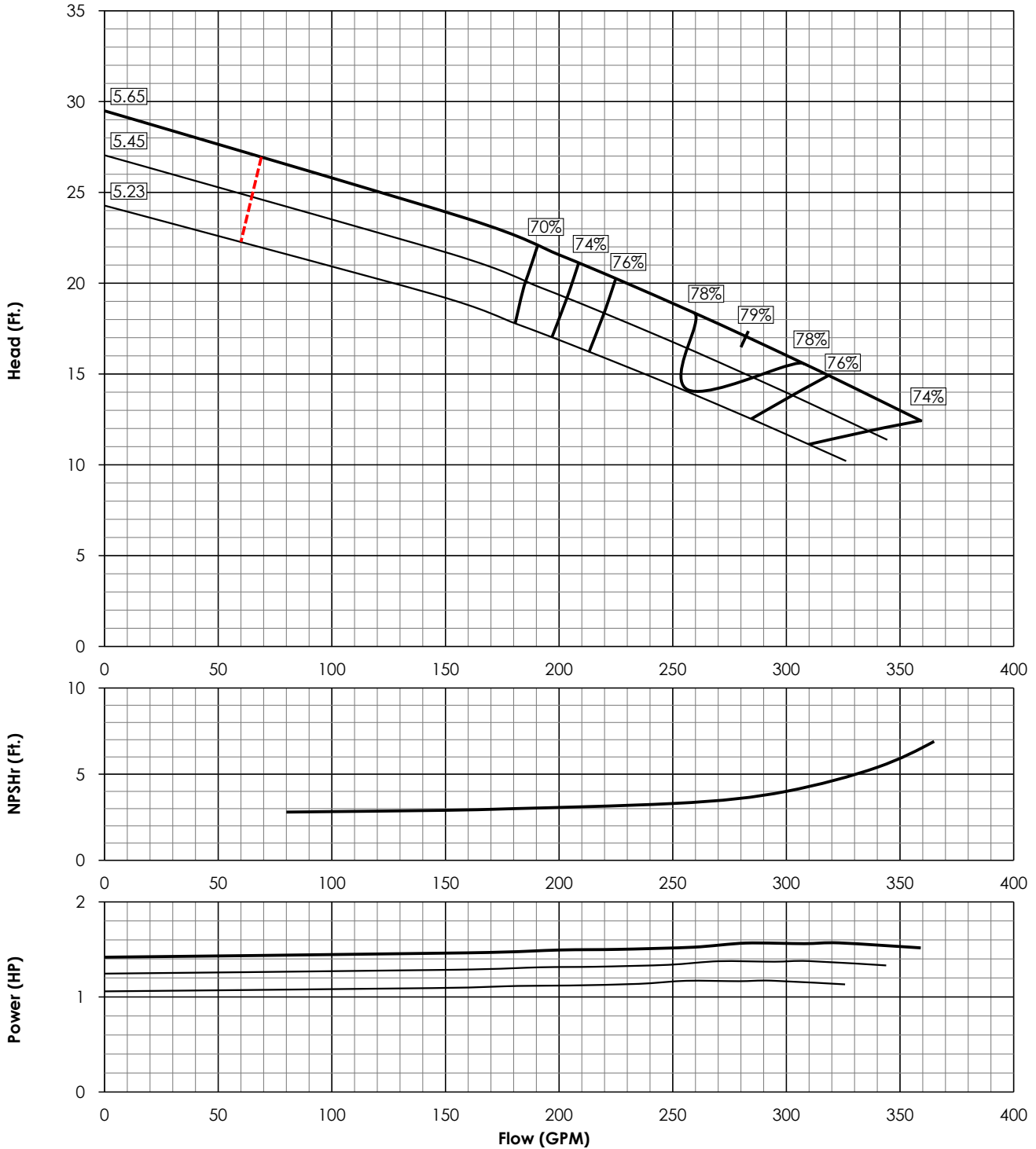
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6407WC0

Updated: Jun. 2017

FW7WC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3494
K _T	4.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.13"	SINGLE STG. WT.	105 LBS
STD. LATERAL	0.38"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERSION	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	310 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



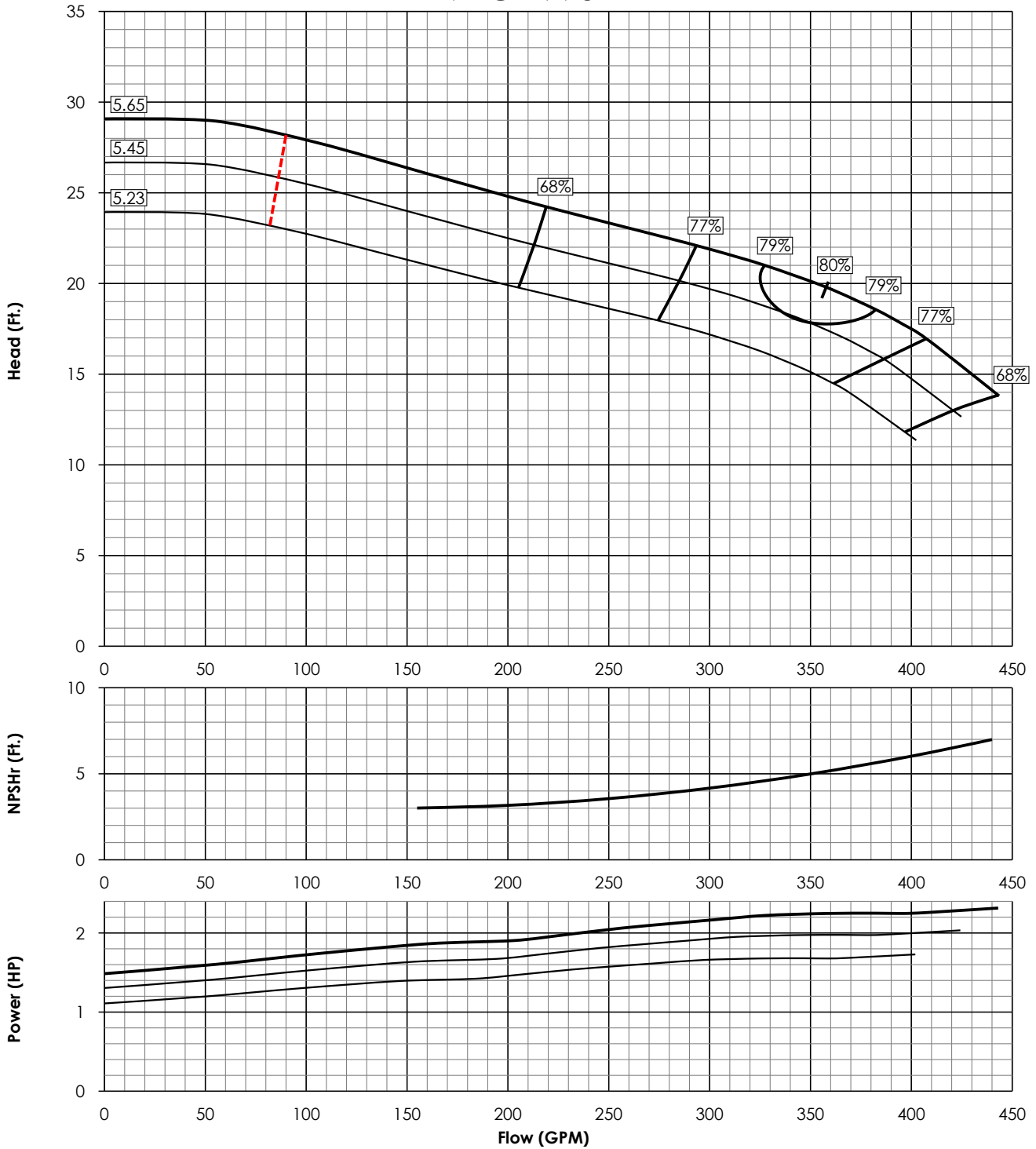
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6407YC0

Updated: Jun. 2017

FW7YC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3572
K _T	4.56 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.13"	SINGLE STG. WT.	105 LBS
STD. LATERAL	0.38"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERSION	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	310 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



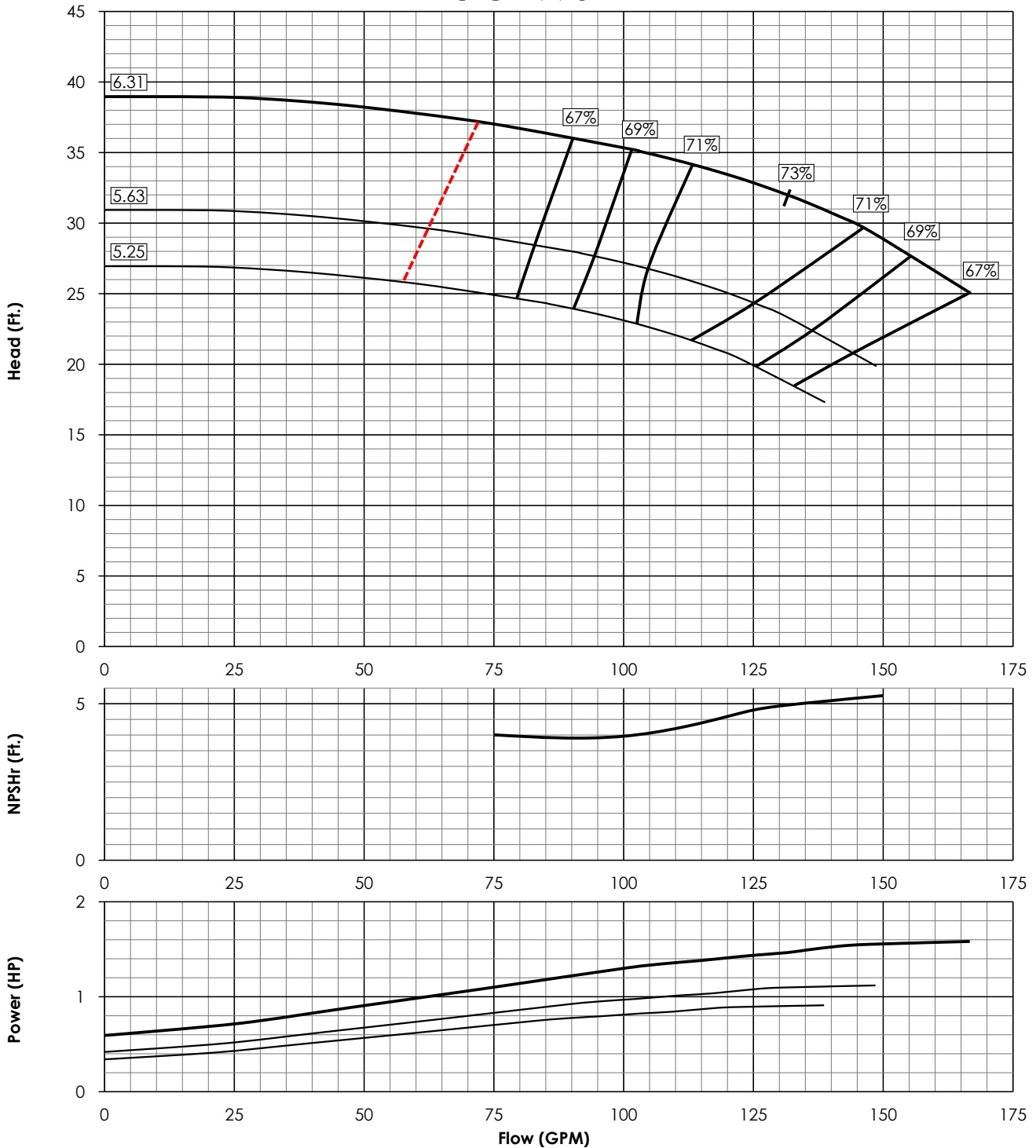
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6408IC0

Updated: Jan. 2020

FW8IC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	1506
K _T	2.98 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	85 LBS
STD. LATERAL	0.44"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERSION	18"
SHAFT DIA.	1"	MAX WORKING PRES.	310 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8IS**



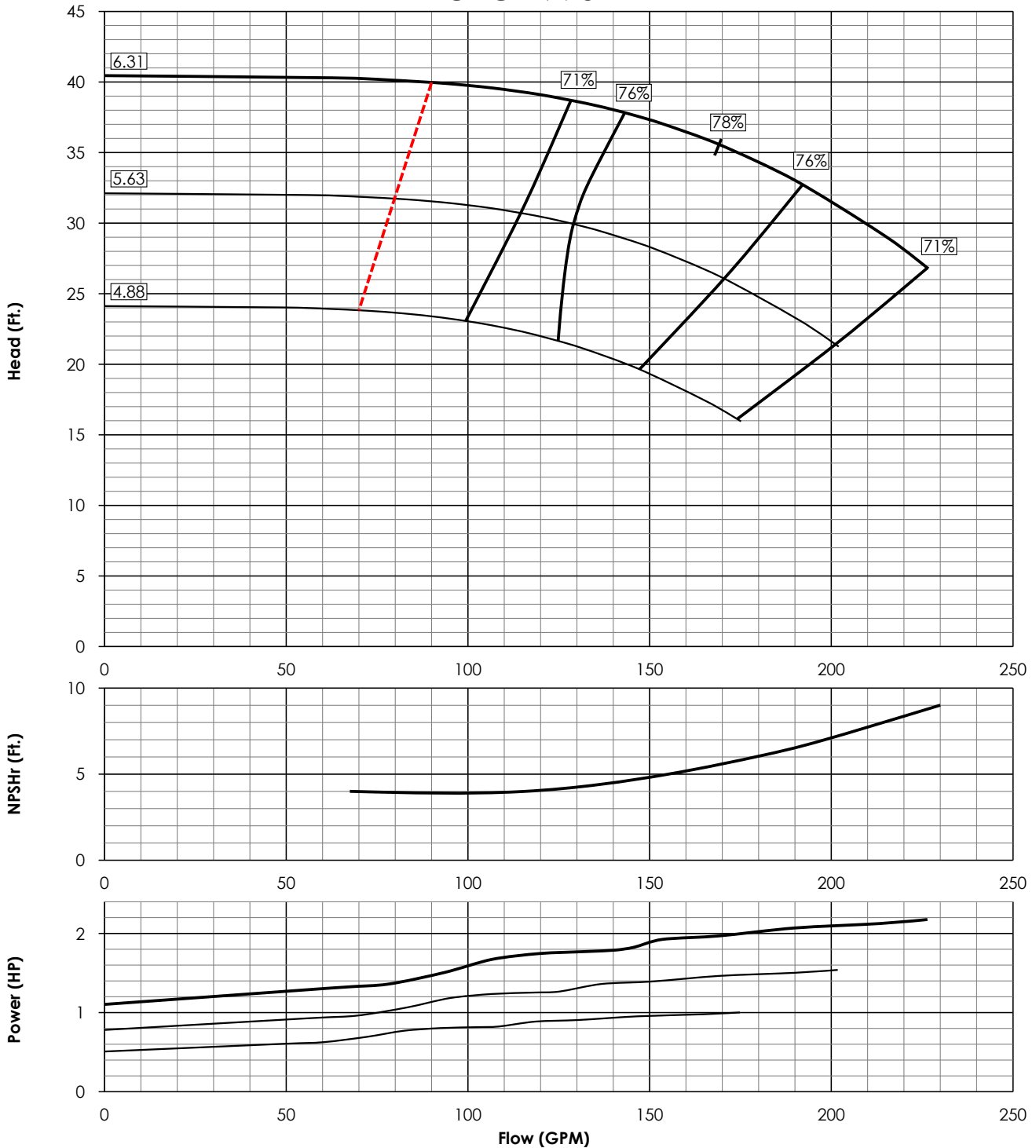
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6408KC0

Updated: Jan. 2020

FW8KC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	1569
K _T	2.98 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	85 LBS
STD. LATERAL	0.44"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	18"
SHAFT DIA.	1"	MAX WORKING PRES.	310 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



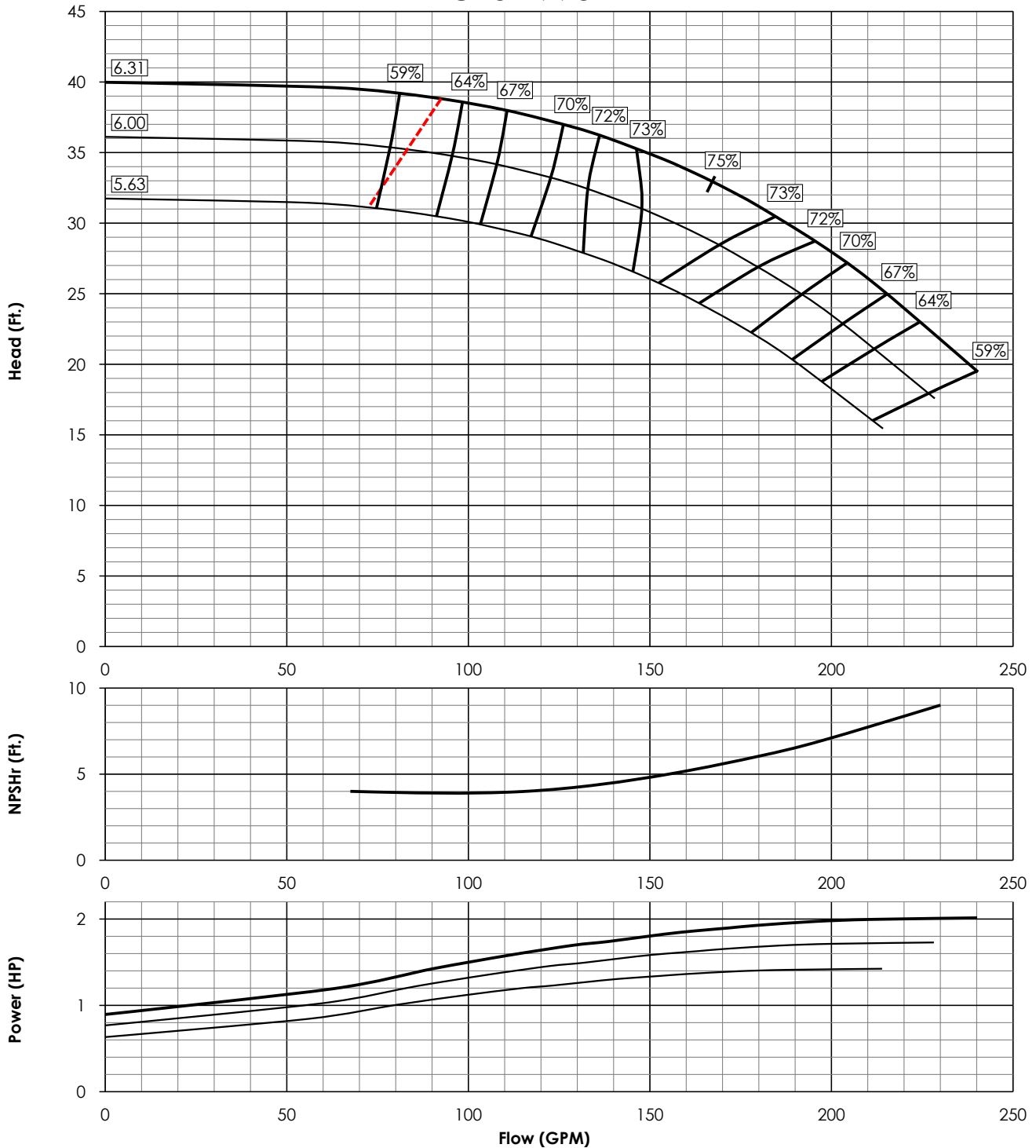
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6408KS0

Updated: Apr. 2020

FW8KS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	1656
K _T	3.34 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	85 LBS
STD. LATERAL	0.44"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	18"
SHAFT DIA.	1"	MAX WORKING PRES.	310 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



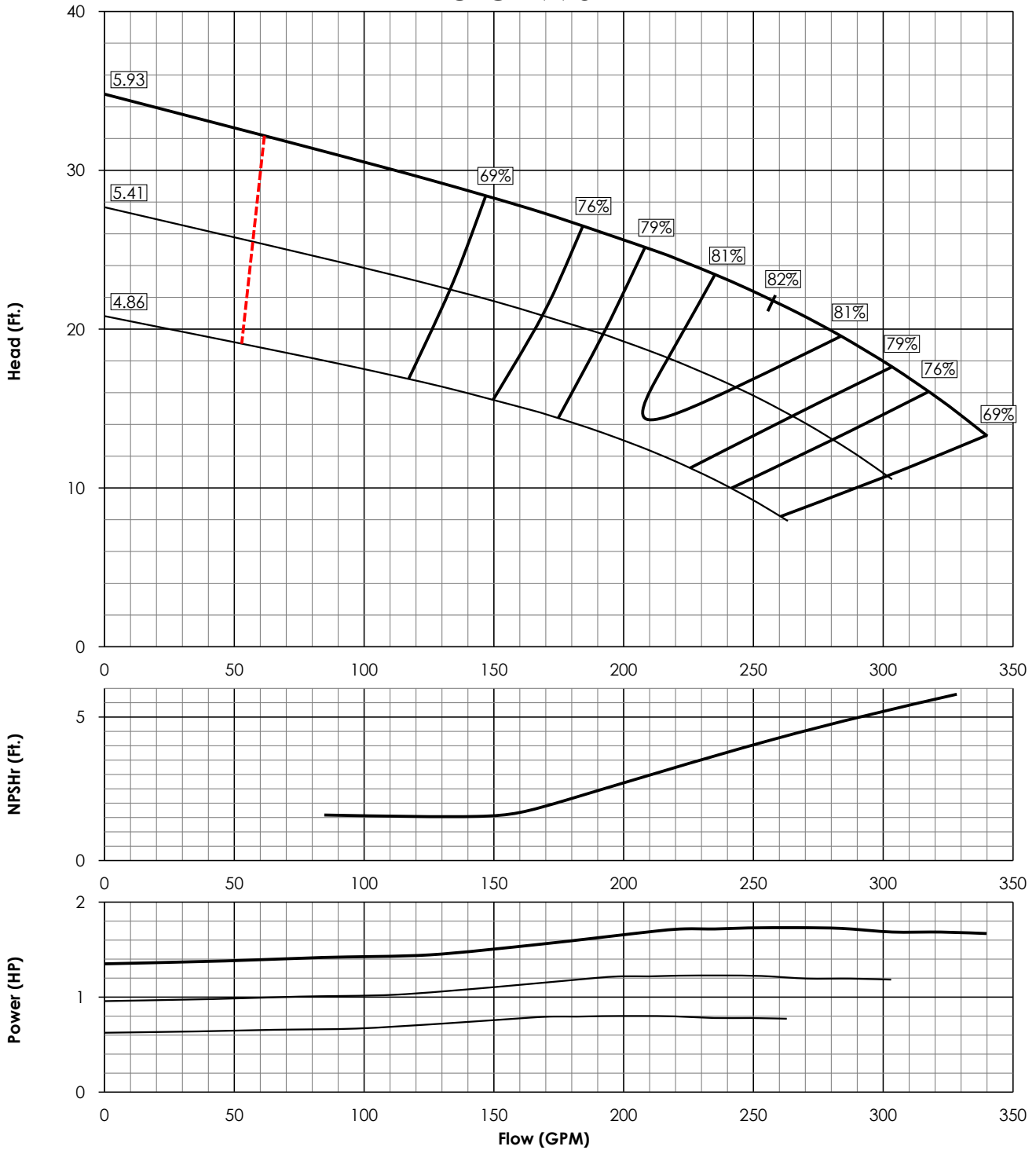
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6408LC1

Updated: Nov. 2019

FW8LC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	0
2 STG.	0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2805
K _T	4.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	100 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	425 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

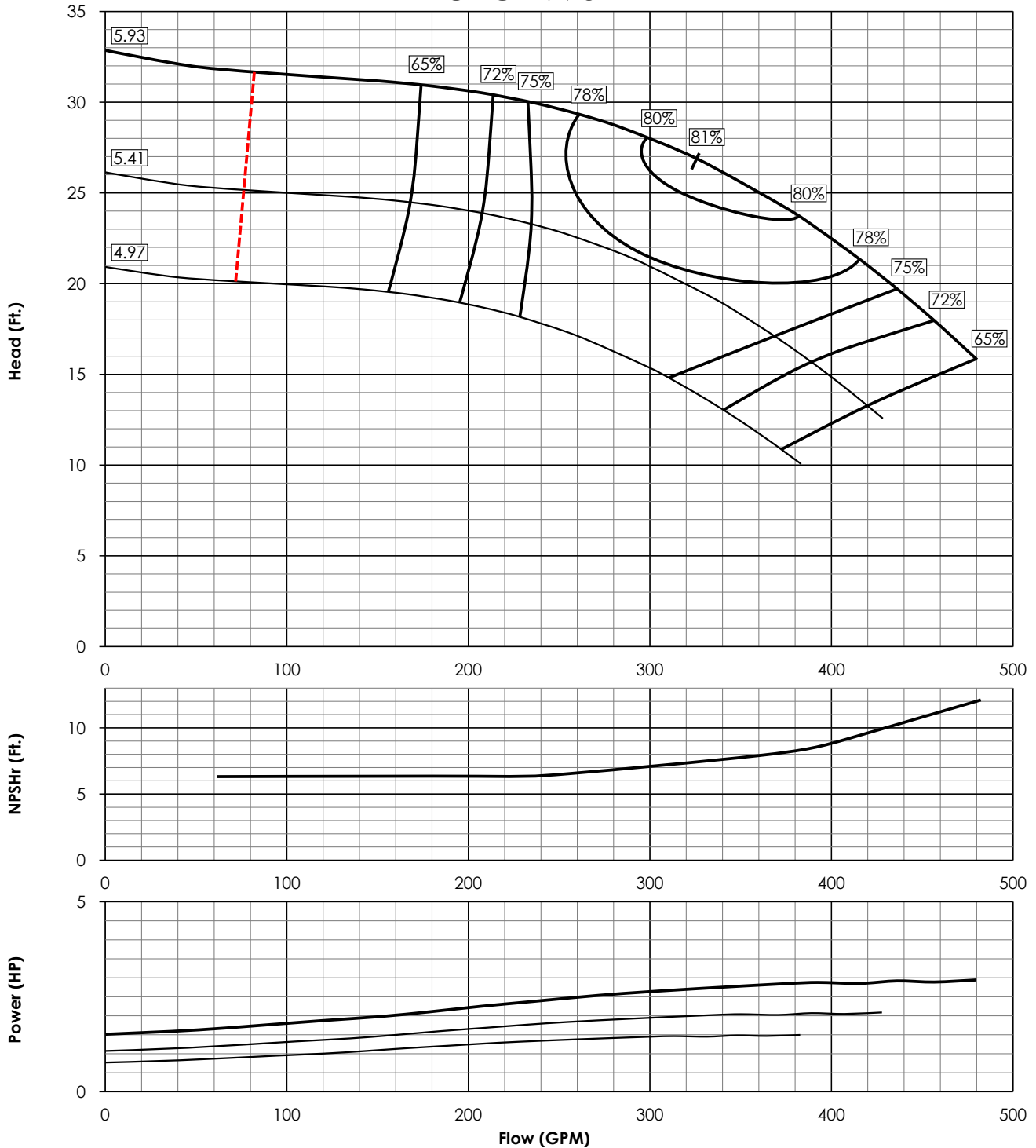


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8LS**

FW8HC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	0
2 STG.	0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2782
K _T	4.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	100 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	30 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERSION	18"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	425 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8HS**



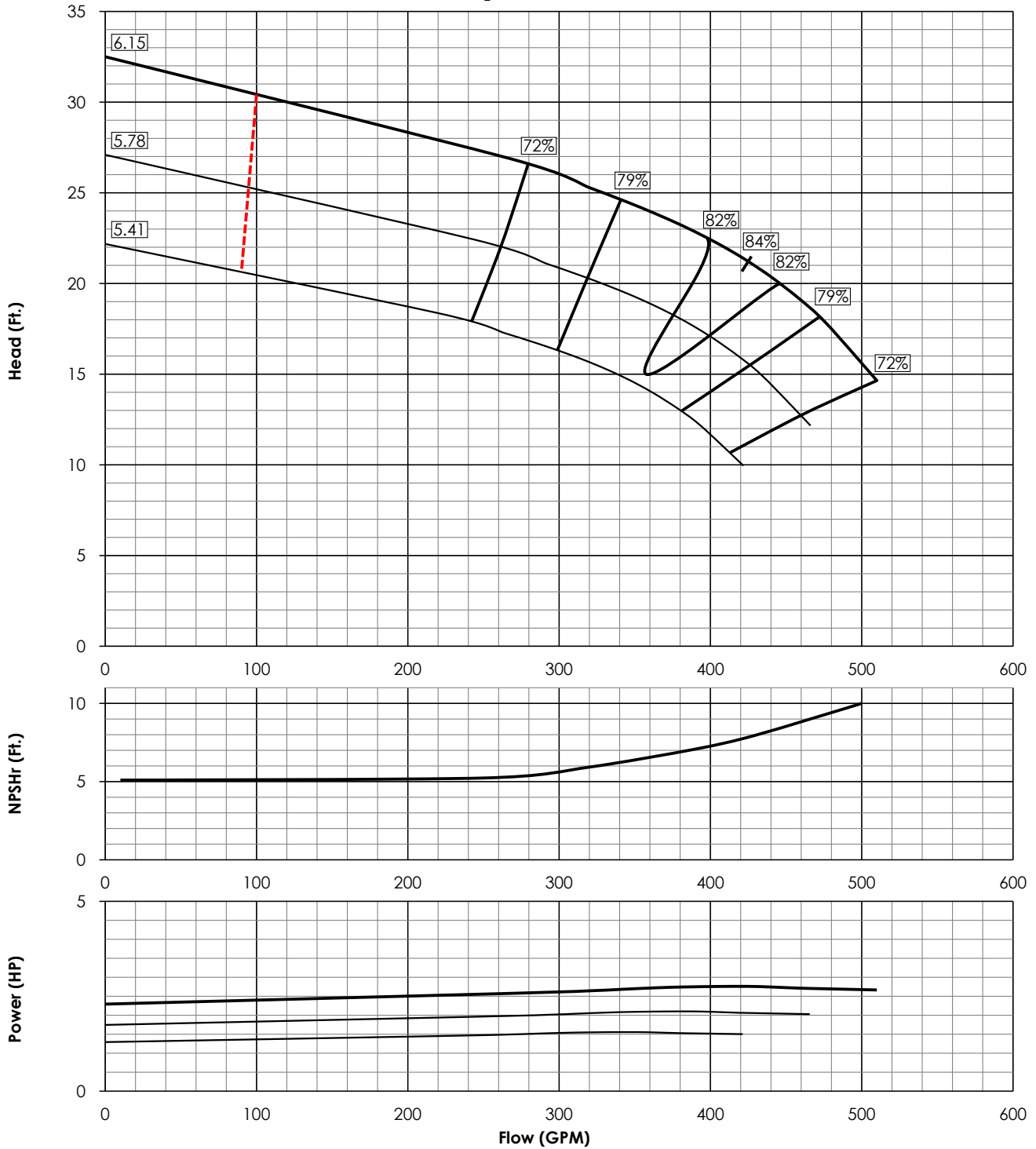
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6408QC0

Updated: Jan. 2021

FW8QC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.5
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3657
K _T	7.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	105 LBS
STD. LATERAL	0.56"	ADD. STG. WT.	35 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8QS**



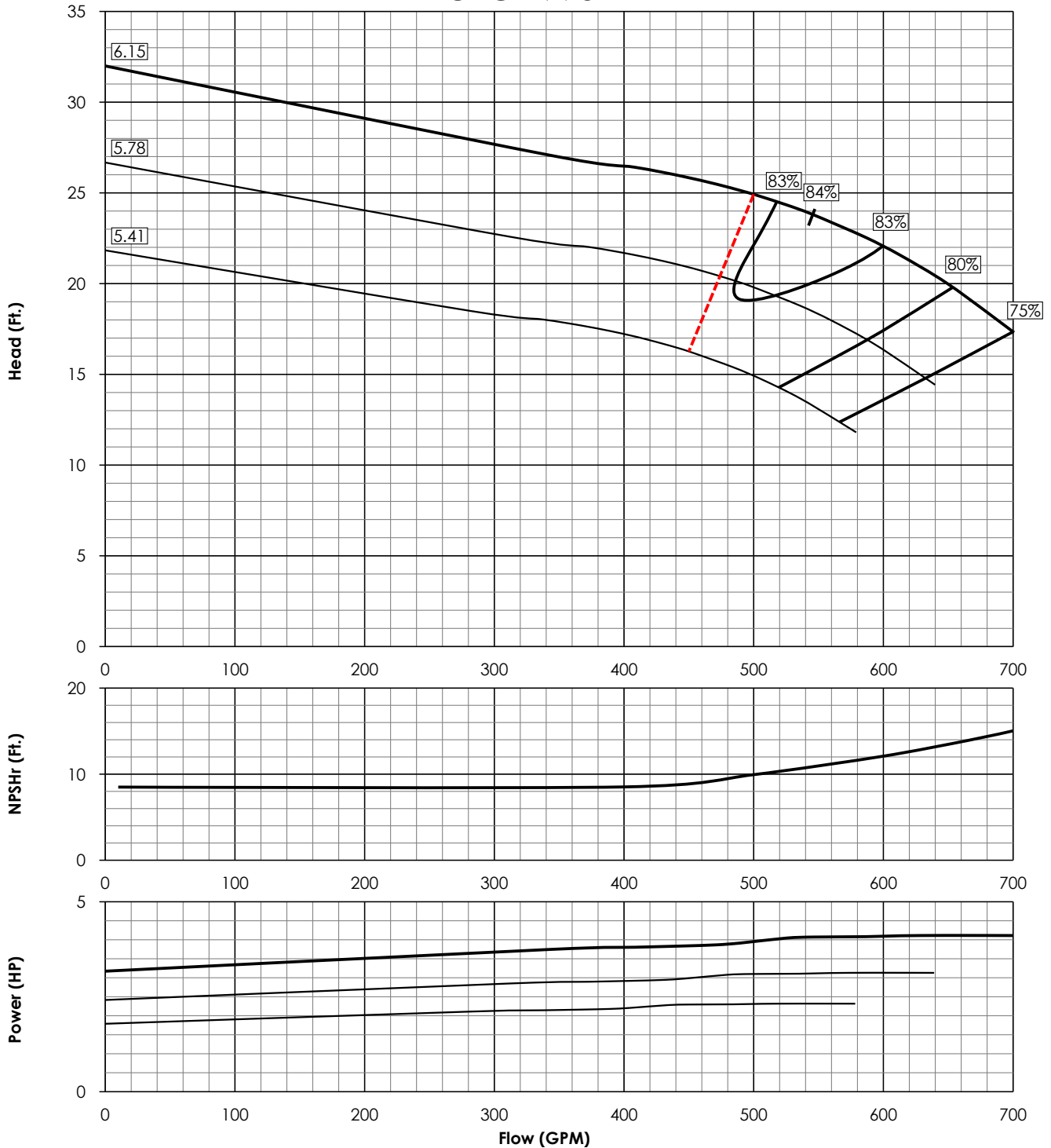
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6408RC0

Updated: Dec. 2020

FW8RC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3812
K _T	7.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	105 LBS
STD. LATERAL	0.56"	ADD. STG. WT.	35 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

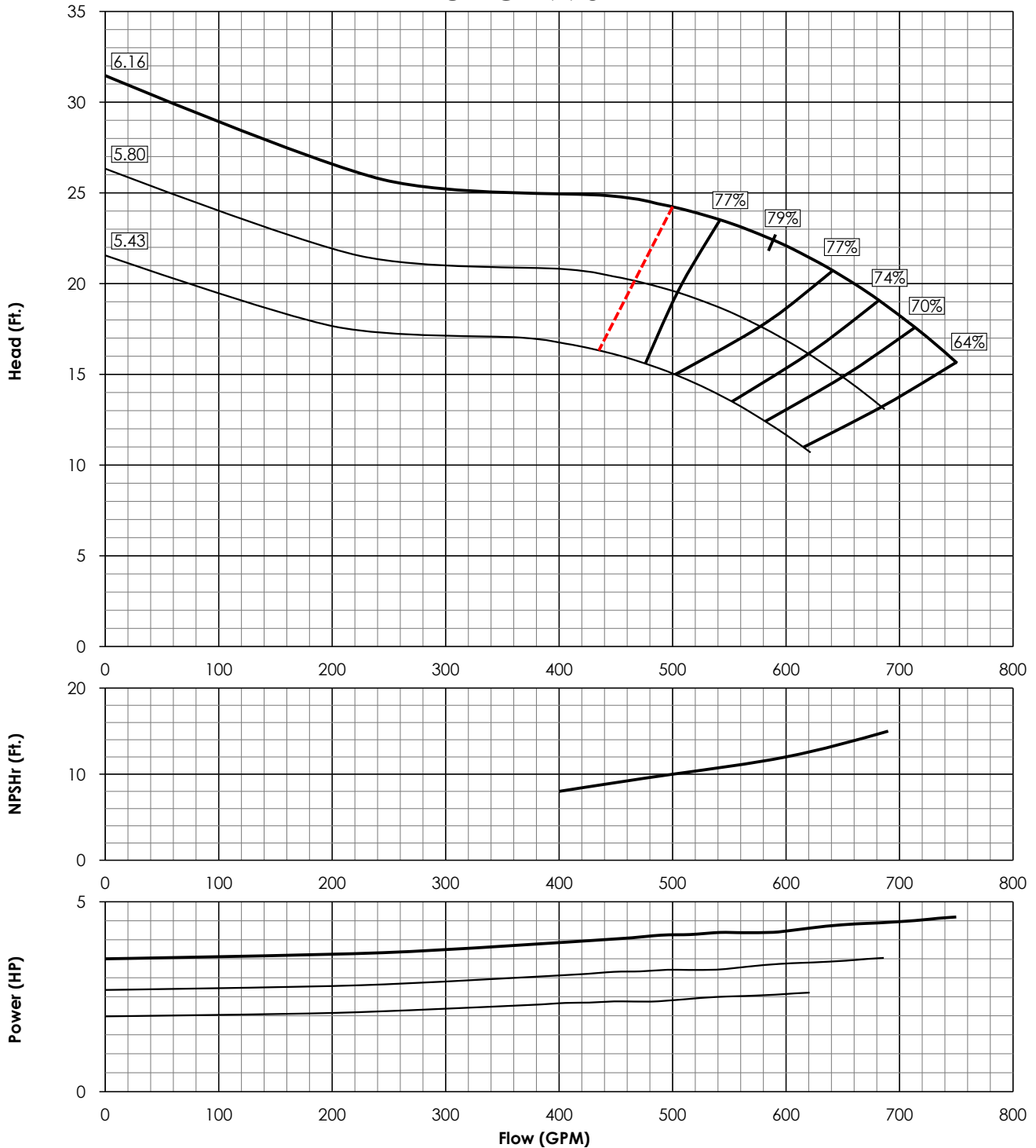


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8RS**

FW8WC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.5
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	4185
K _T	7.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	105 LBS
STD. LATERAL	0.56"	ADD. STG. WT.	35 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERSION	28"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	364 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



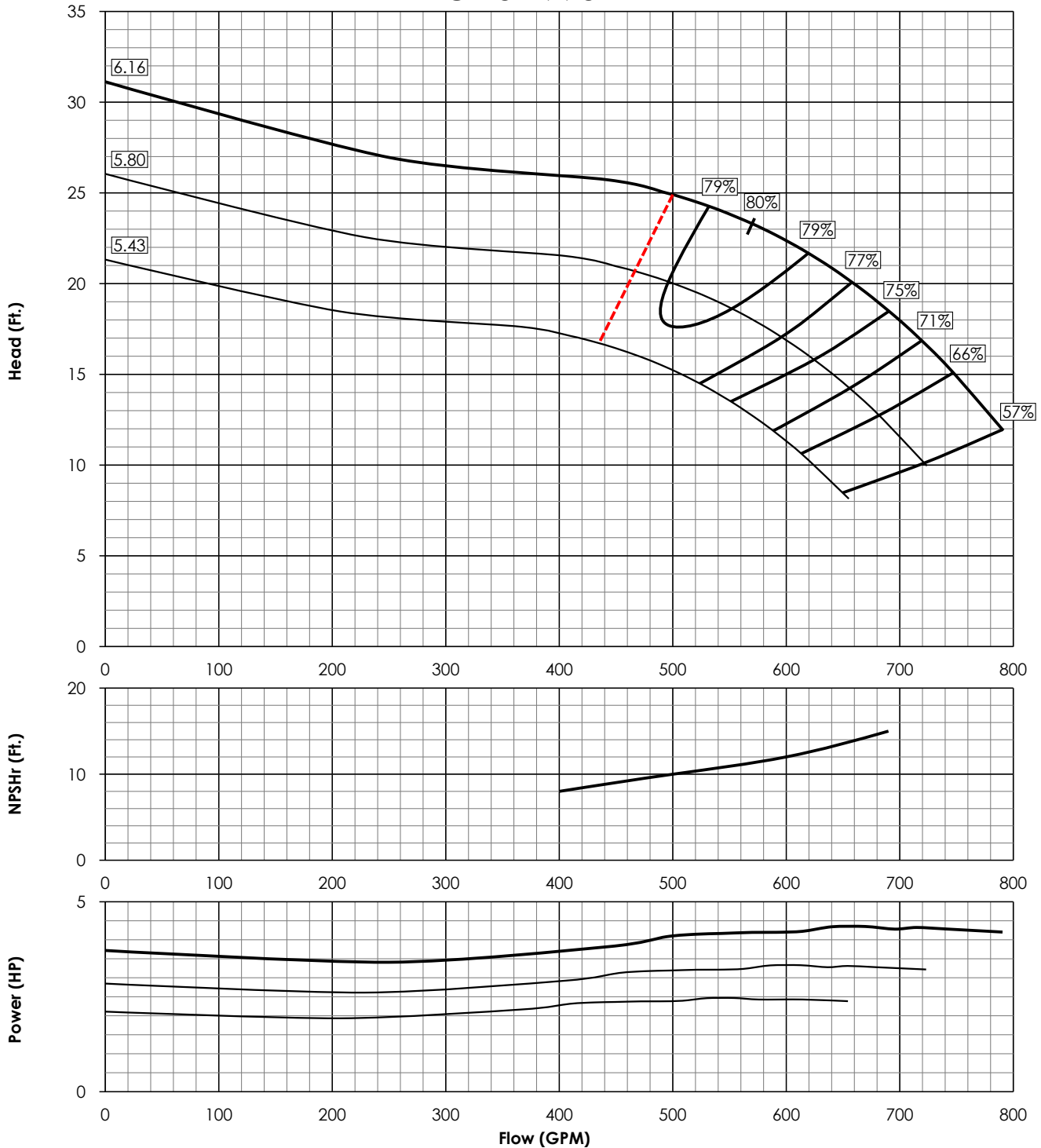
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6408WS0

Updated: Mar. 2020

FW8WS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.5
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3982
K _T	7.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	7.50"	SINGLE STG. WT.	110 LBS
STD. LATERAL	0.56"	ADD. STG. WT.	35 LBS
DISCH. SIZE(S)	6"	MIN. SUBMERSION	28"
SHAFT DIA.	1-3/16"	MAX WORKING PRES.	364 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

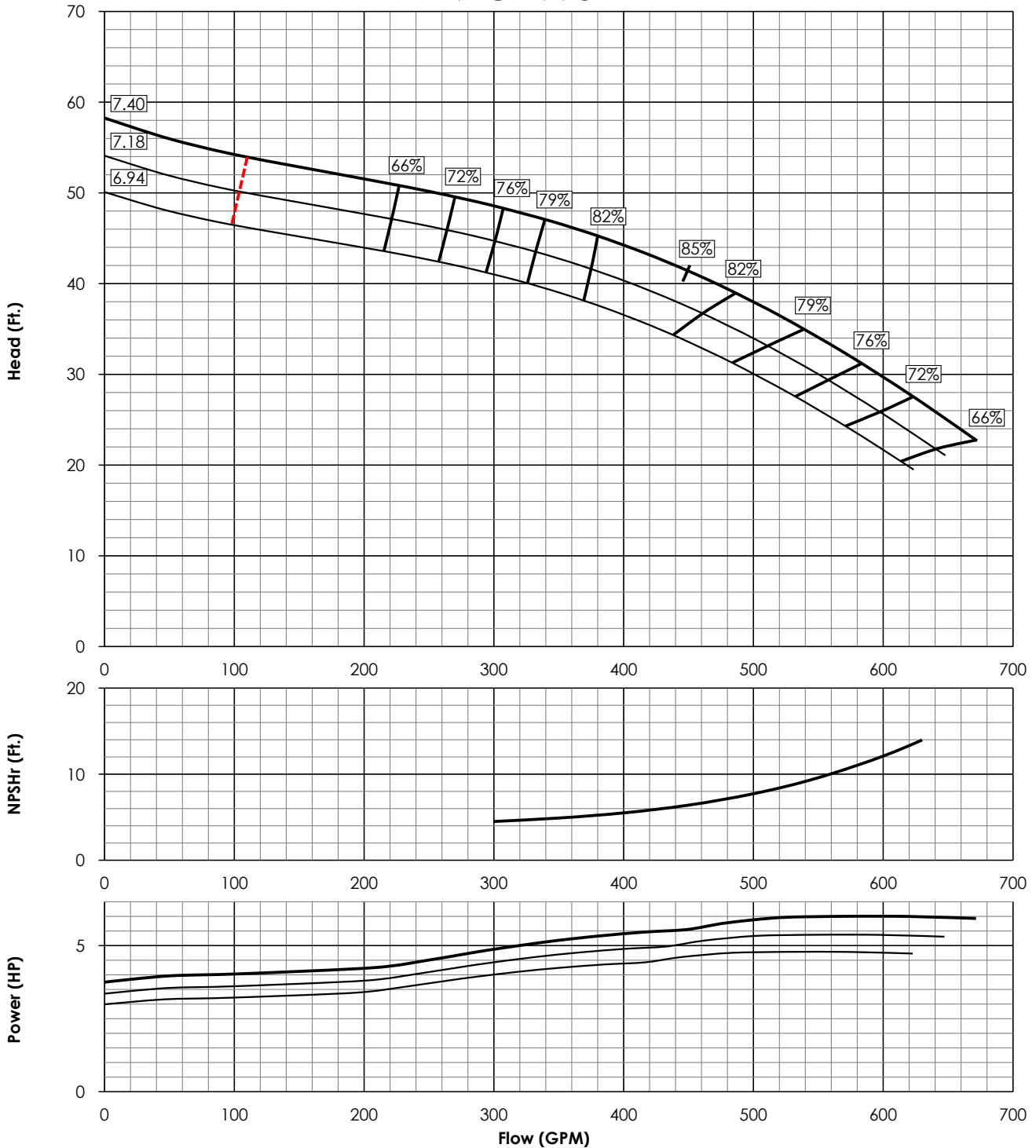


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW8ZC**

FW9LC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2322
K _T	4.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	60 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



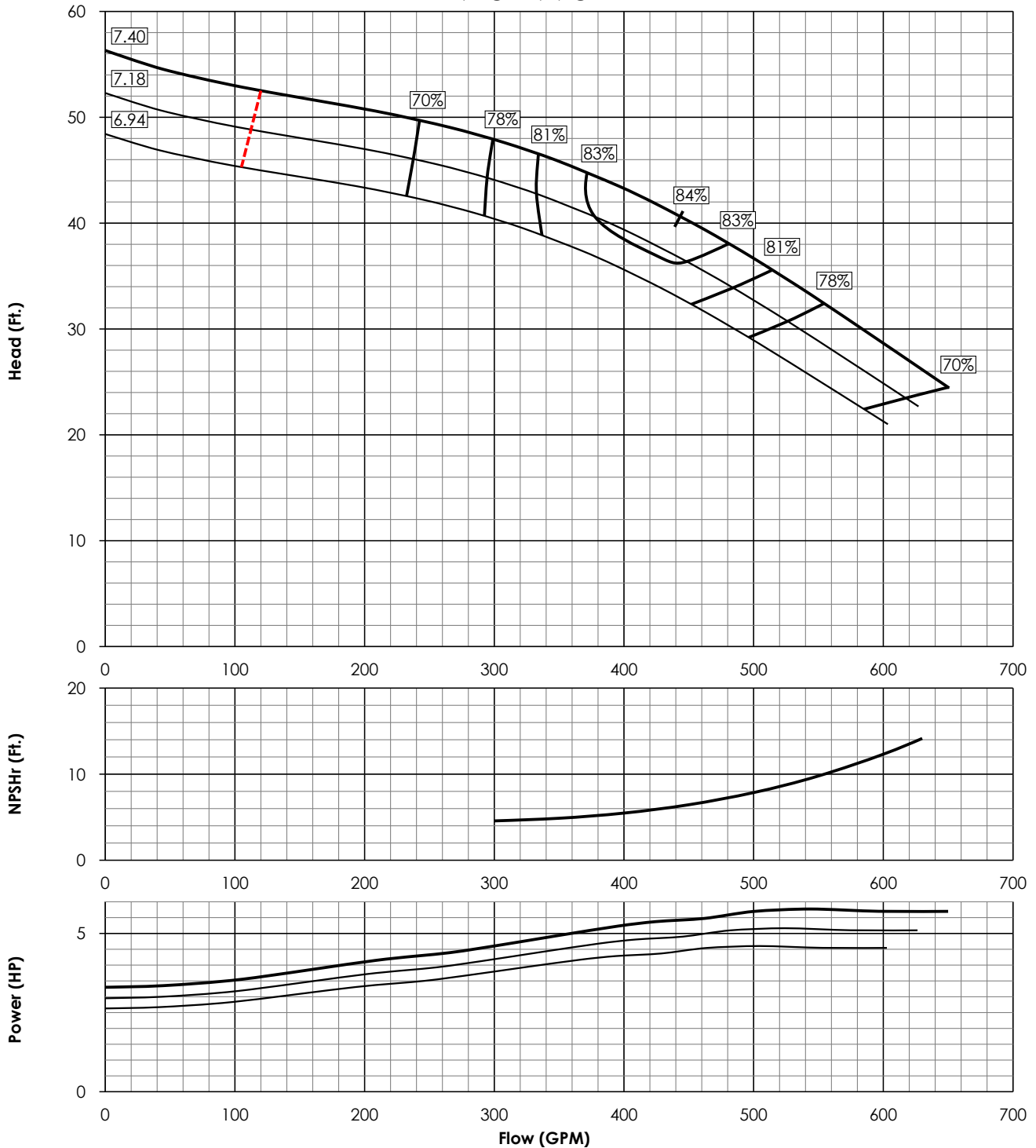
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6409LS0

Updated: May 2017

FW9LS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2212
K _t	6.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	60 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMURGENCE	30"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



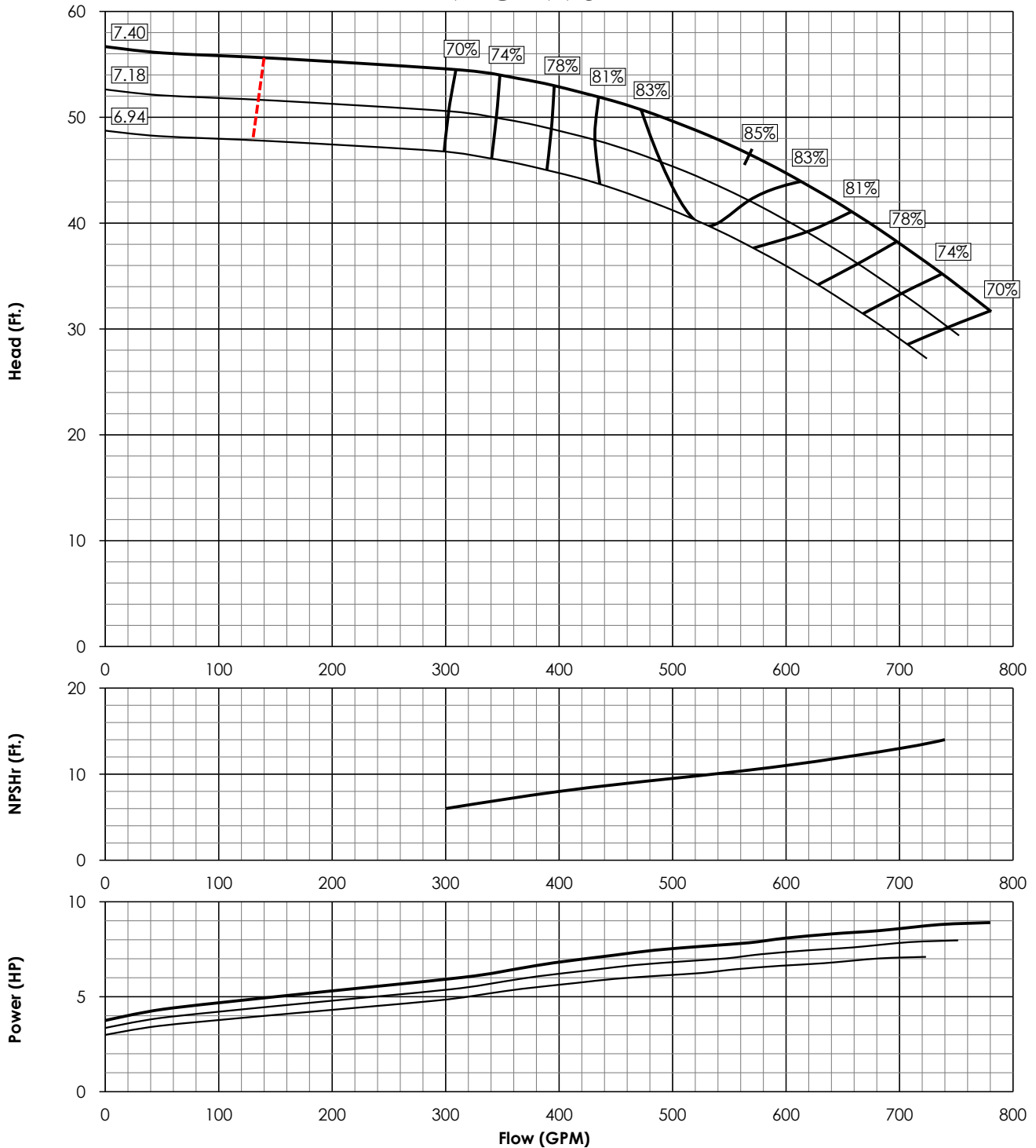
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6409HC1

Updated: Jun. 2017

FW9HC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2369
K _T	4.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	60 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



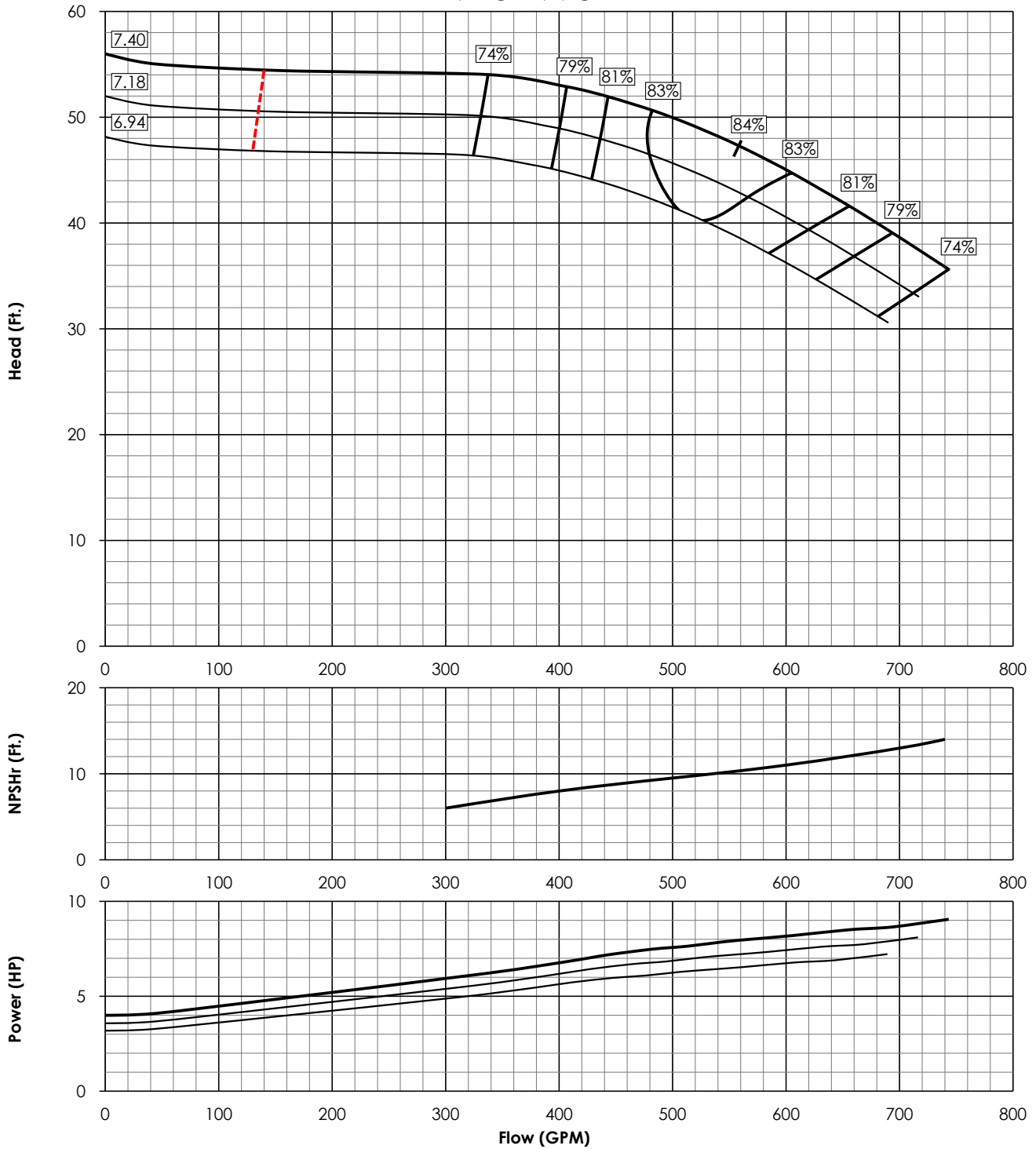
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6409HS0

Updated: May 2017

FW9HS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2259
K _T	6.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	60 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	400 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



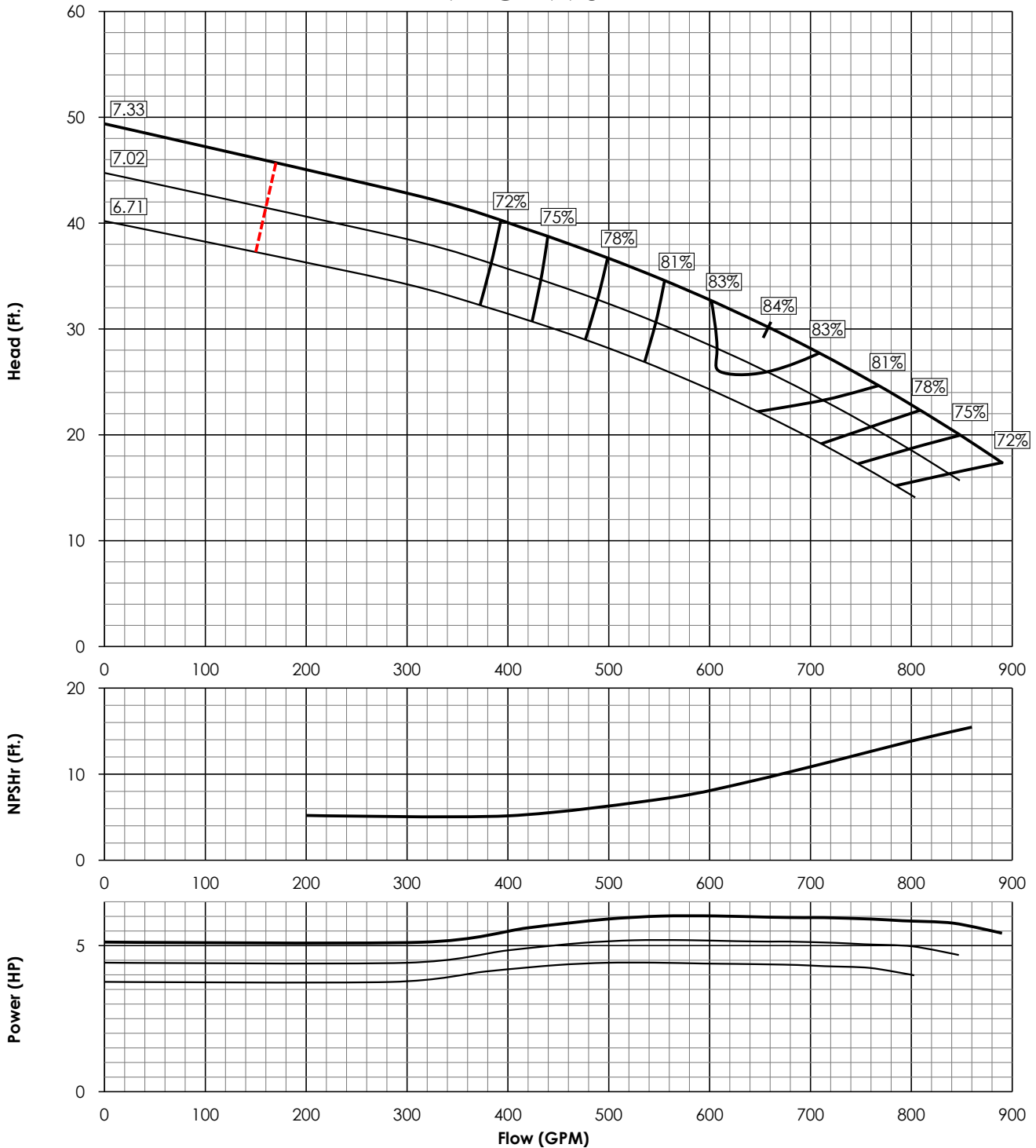
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6409WC0

Updated: Jul. 2020

FW9WC 1770 RPM



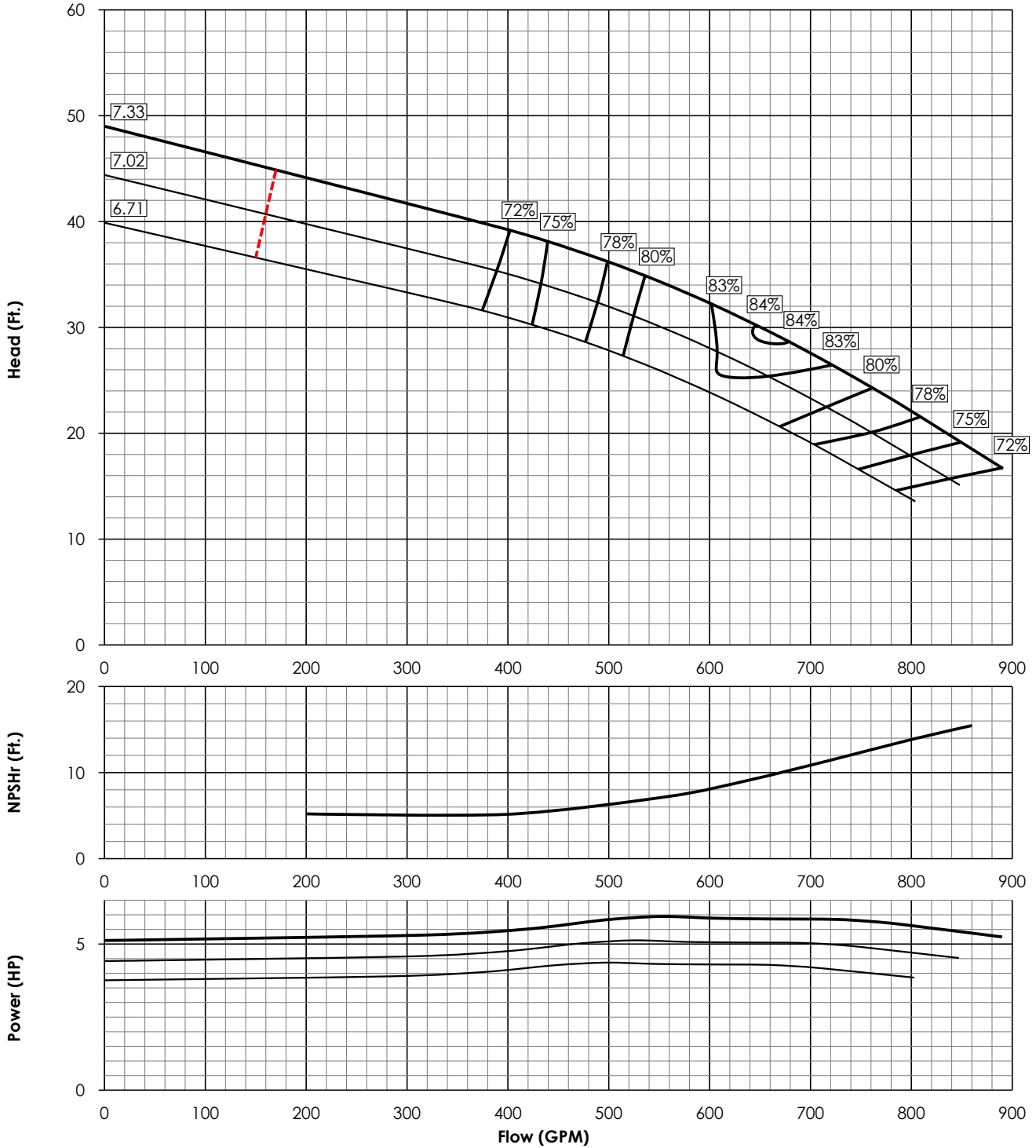
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3518
K _T	9.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERSION	36"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	530 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW9WS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3570
K _t	10.5 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	530 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



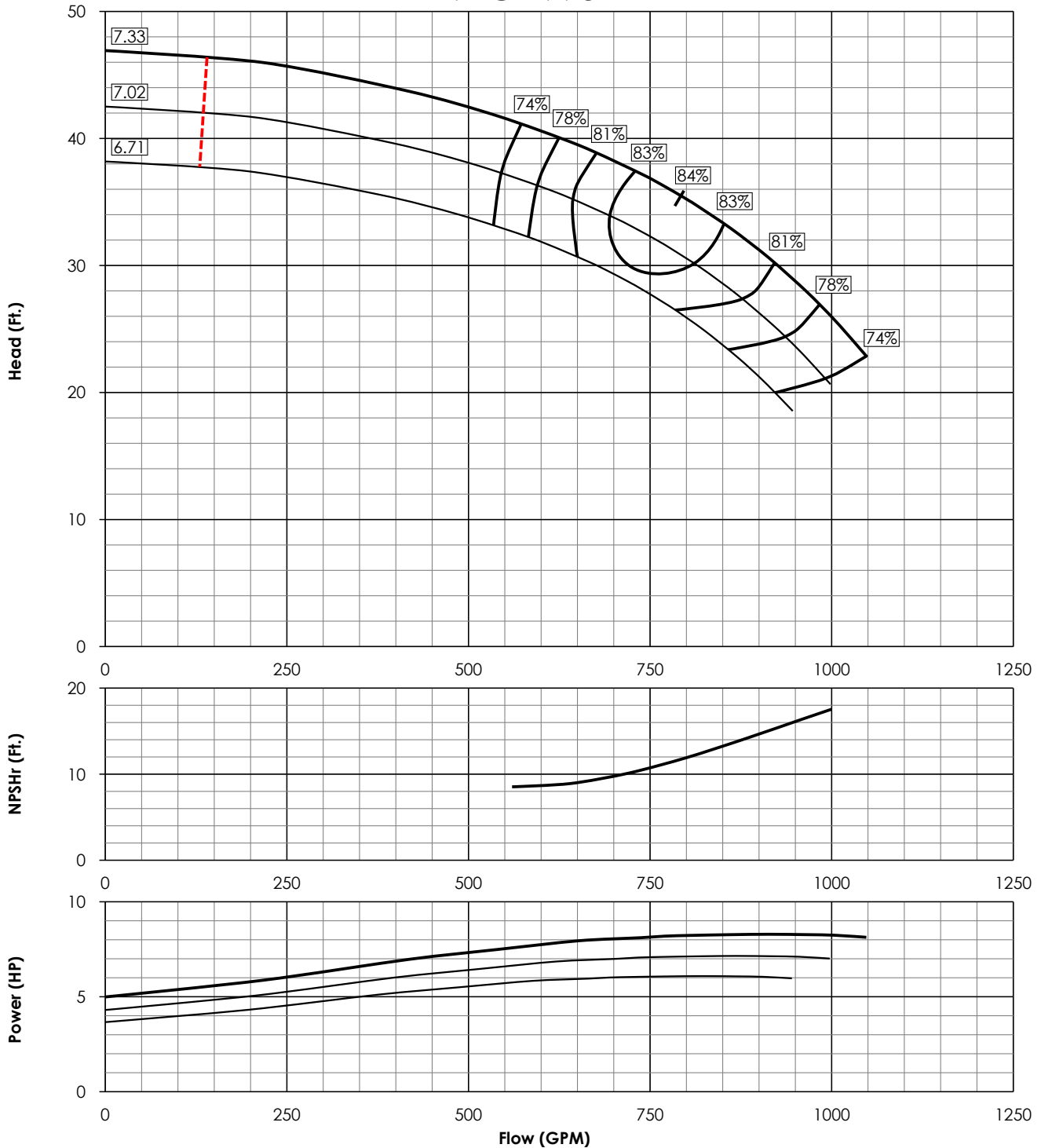
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6409YC0

Updated: Dec. 2020

FW9YC 1770 RPM



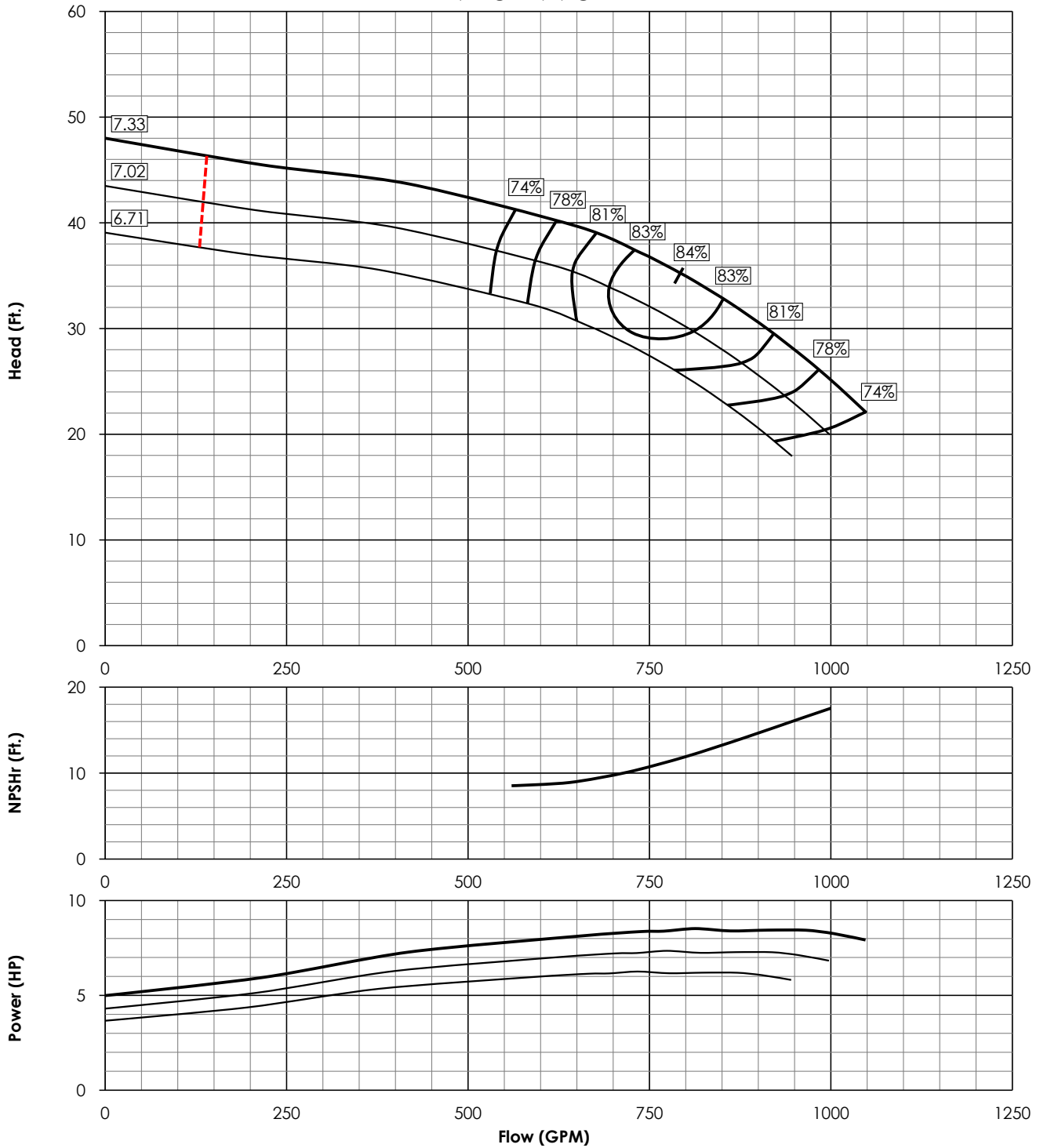
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3408
K _T	9.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	42"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	530 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW9YS 1770 RPM



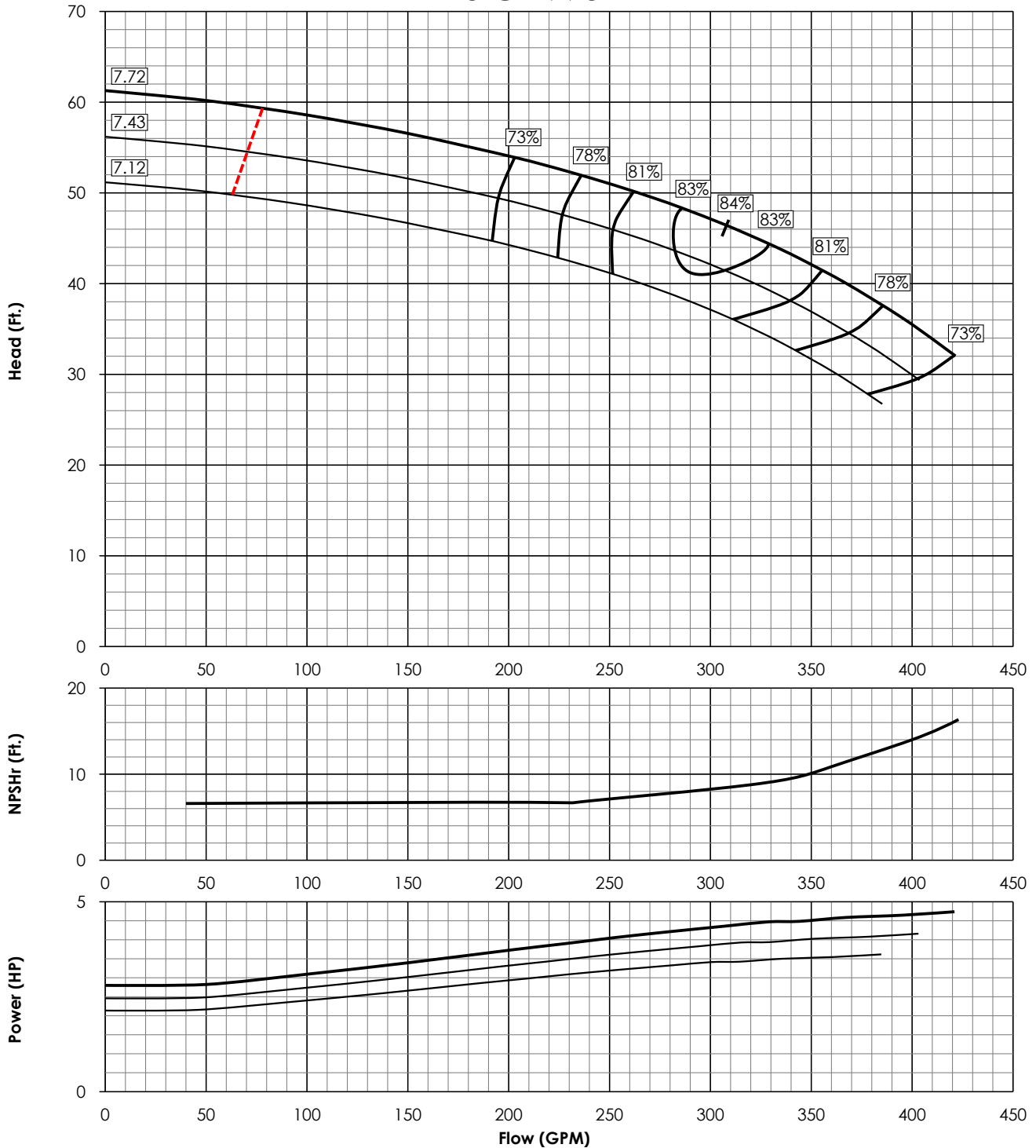
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3421
K _T	10.5 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.25"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	5", 6", 8"	MIN. SUBMERGENCE	42"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	530 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10IC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	1735
K _T	4.60 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	32"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	375 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



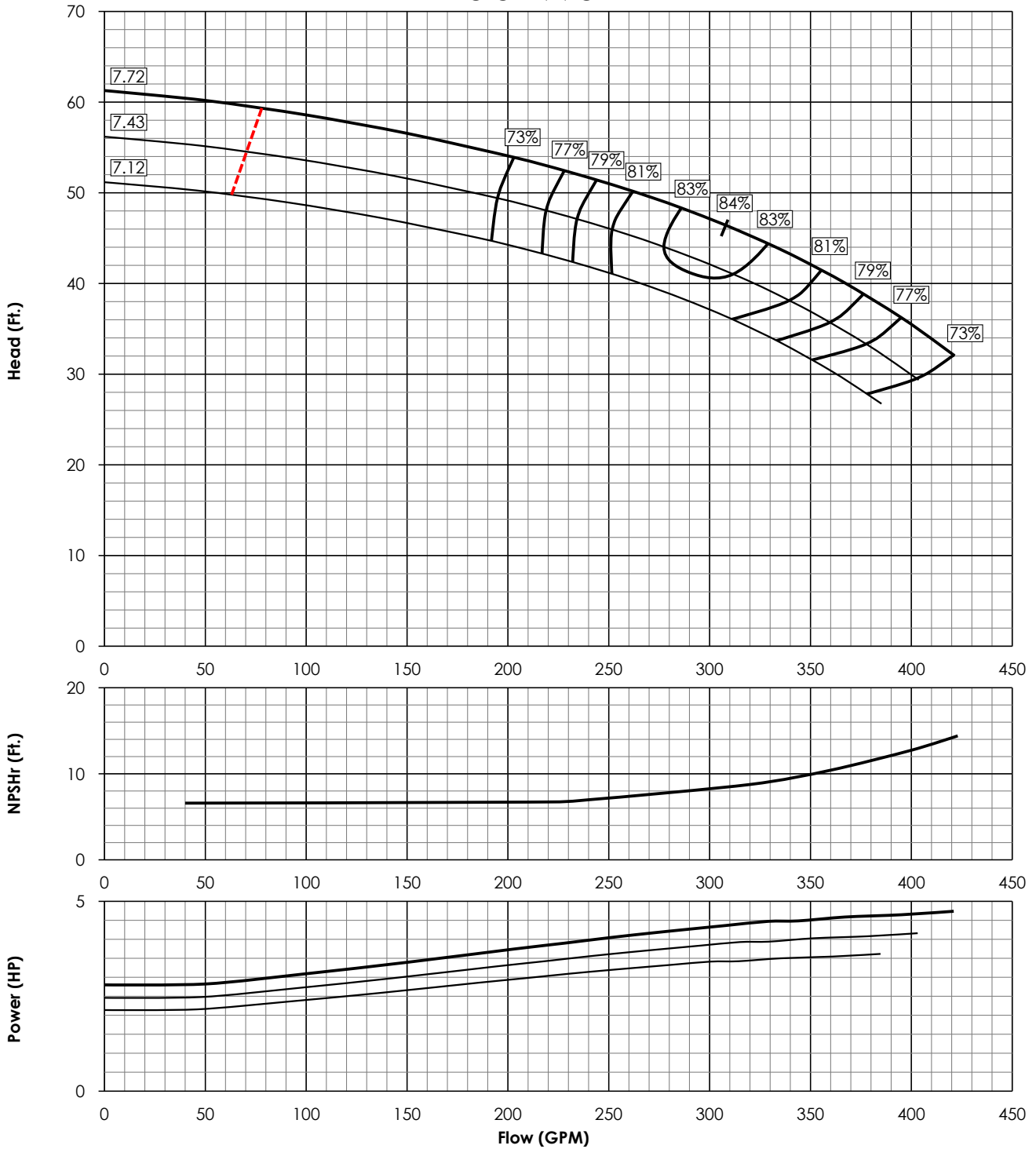
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6410IS1

Updated: Dec. 2020

FW10IS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	1735
K _T	6.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	32"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	375 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



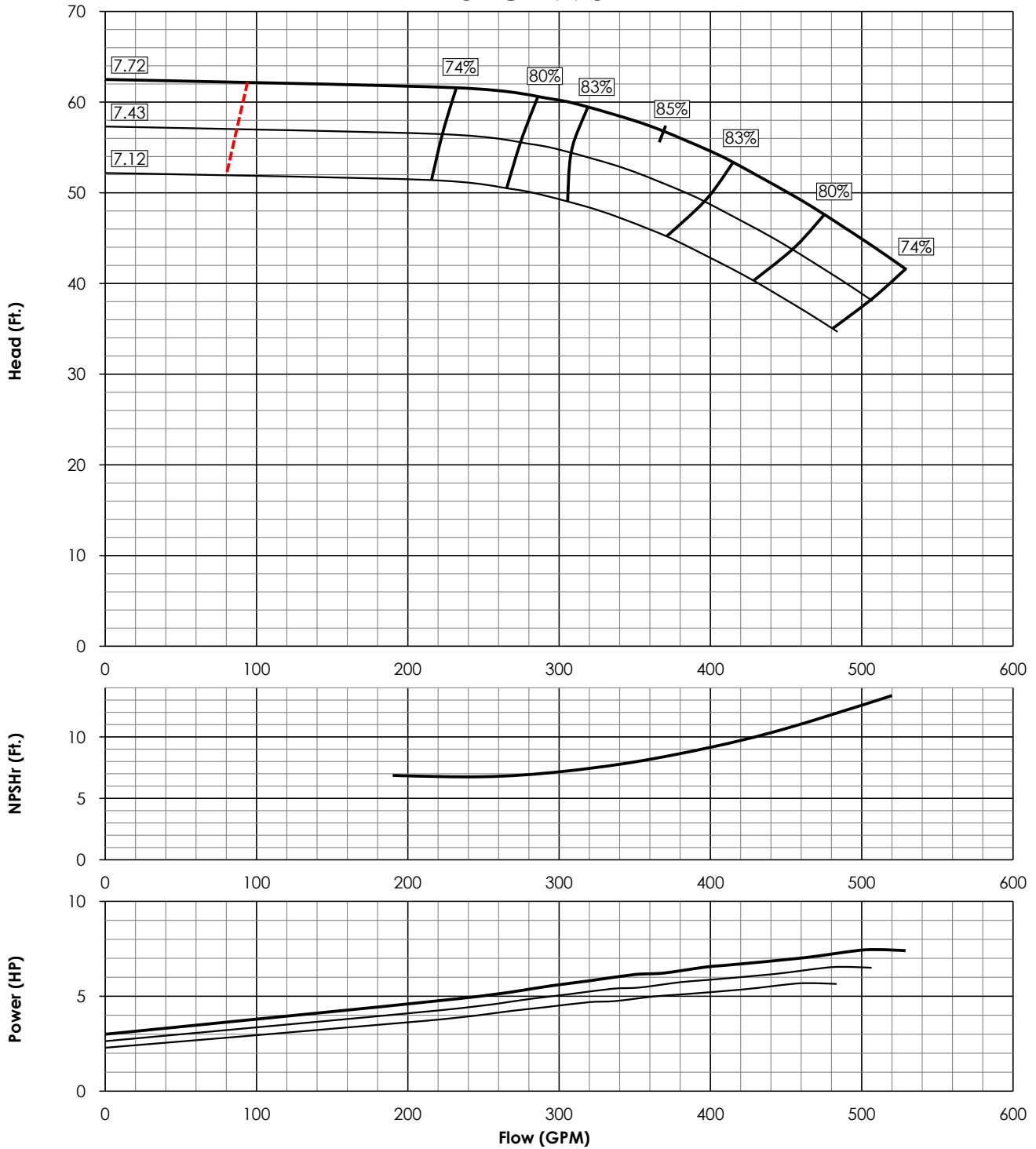
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6410KC0

Updated: Aug. 2018

FW10KC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	1652
K _T	4.65 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	32"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	375 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6410KS1

Updated: Dec. 2020

FW10KS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	1652
K _T	6.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERSION	32"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	375 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



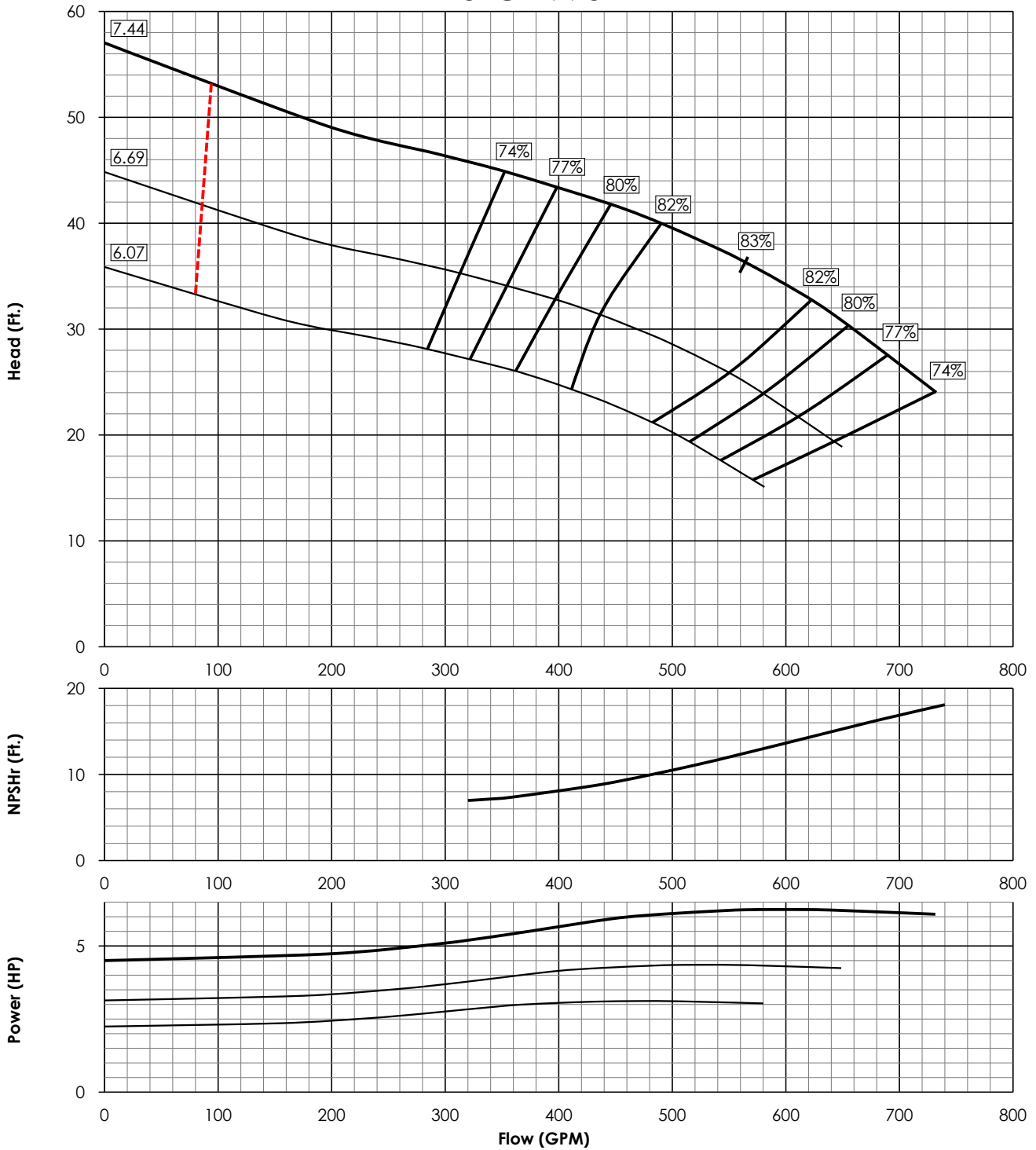
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6410LC0

Updated: Jun. 2020

FW10LC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2842
K _T	7.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERSION	22"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



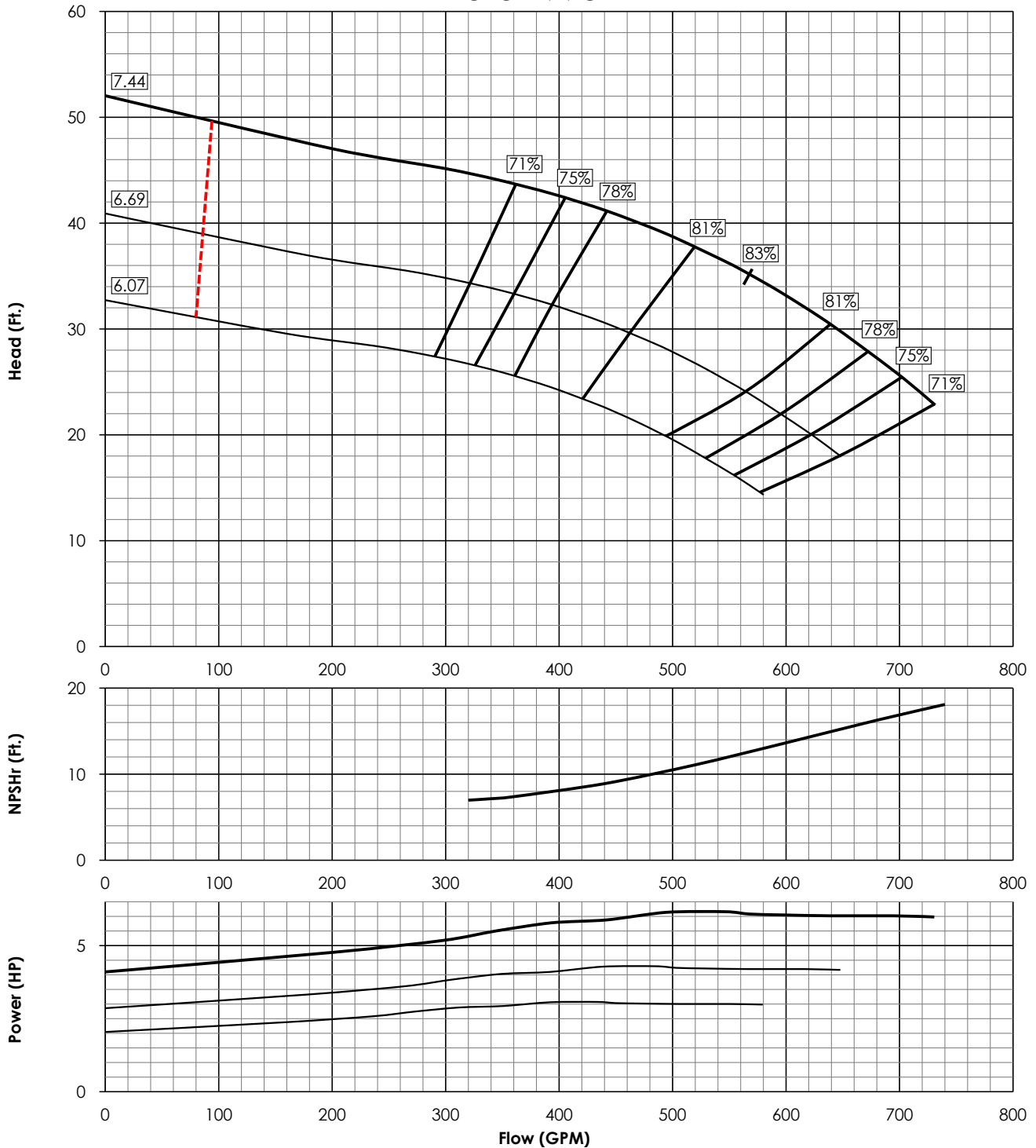
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6410LS0

Updated: Dec. 2020

FW10LS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2917
K _T	9.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	22"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



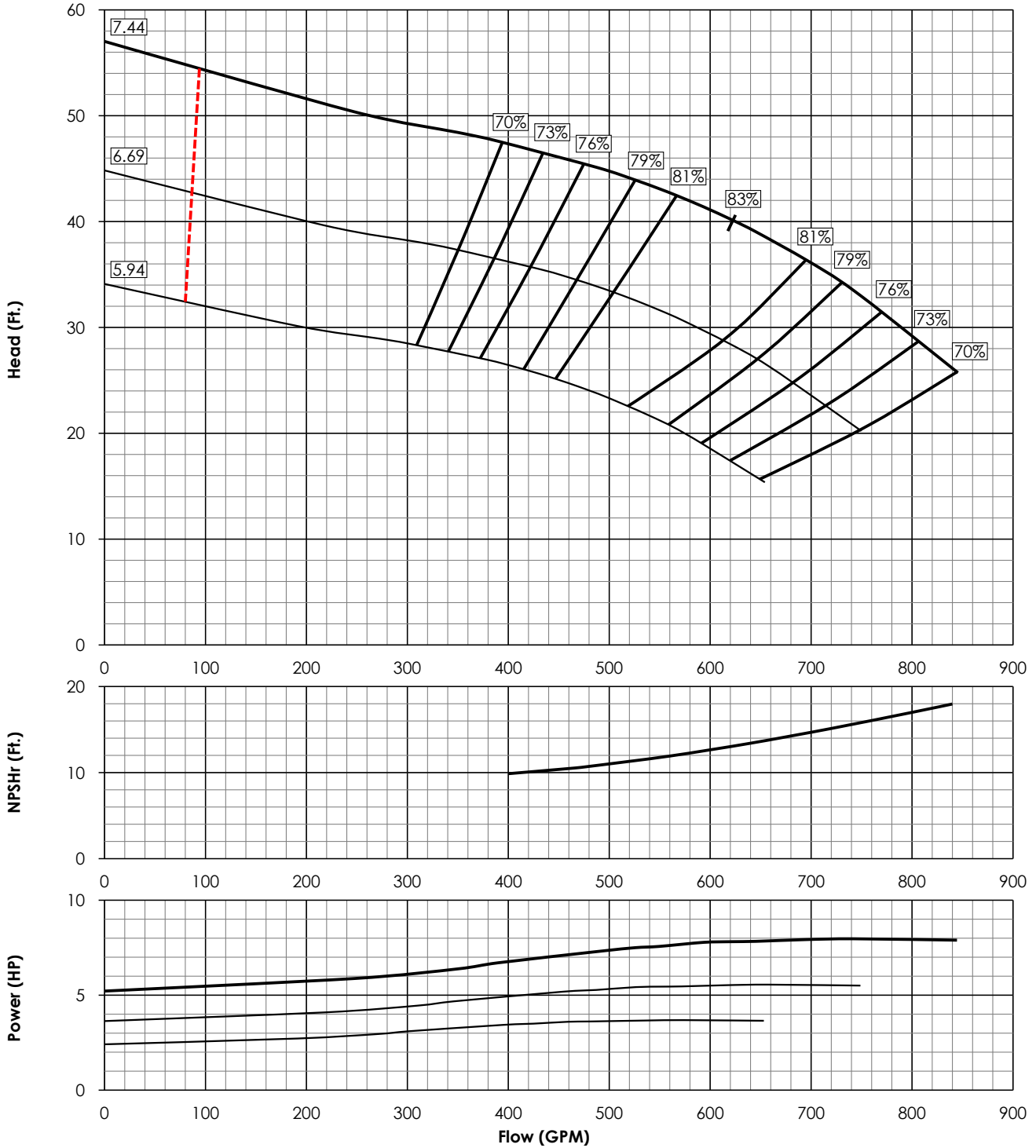
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6410MC0

Updated: Jun. 2020

FW10MC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2763
K _T	7.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMURGENCE	23"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



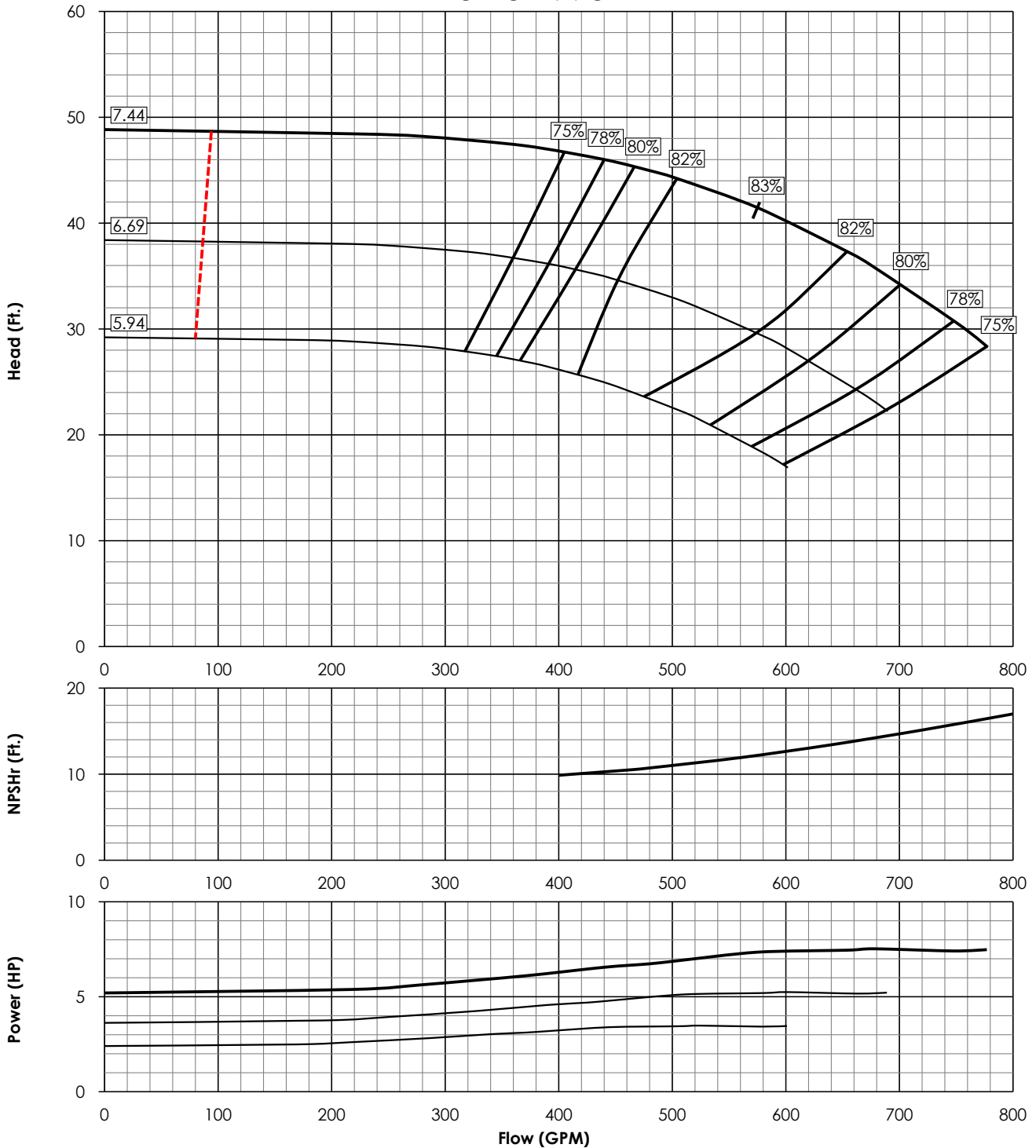
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6410MS0

Updated: Dec. 2020

FW10MS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2573
K _T	9.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	23"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



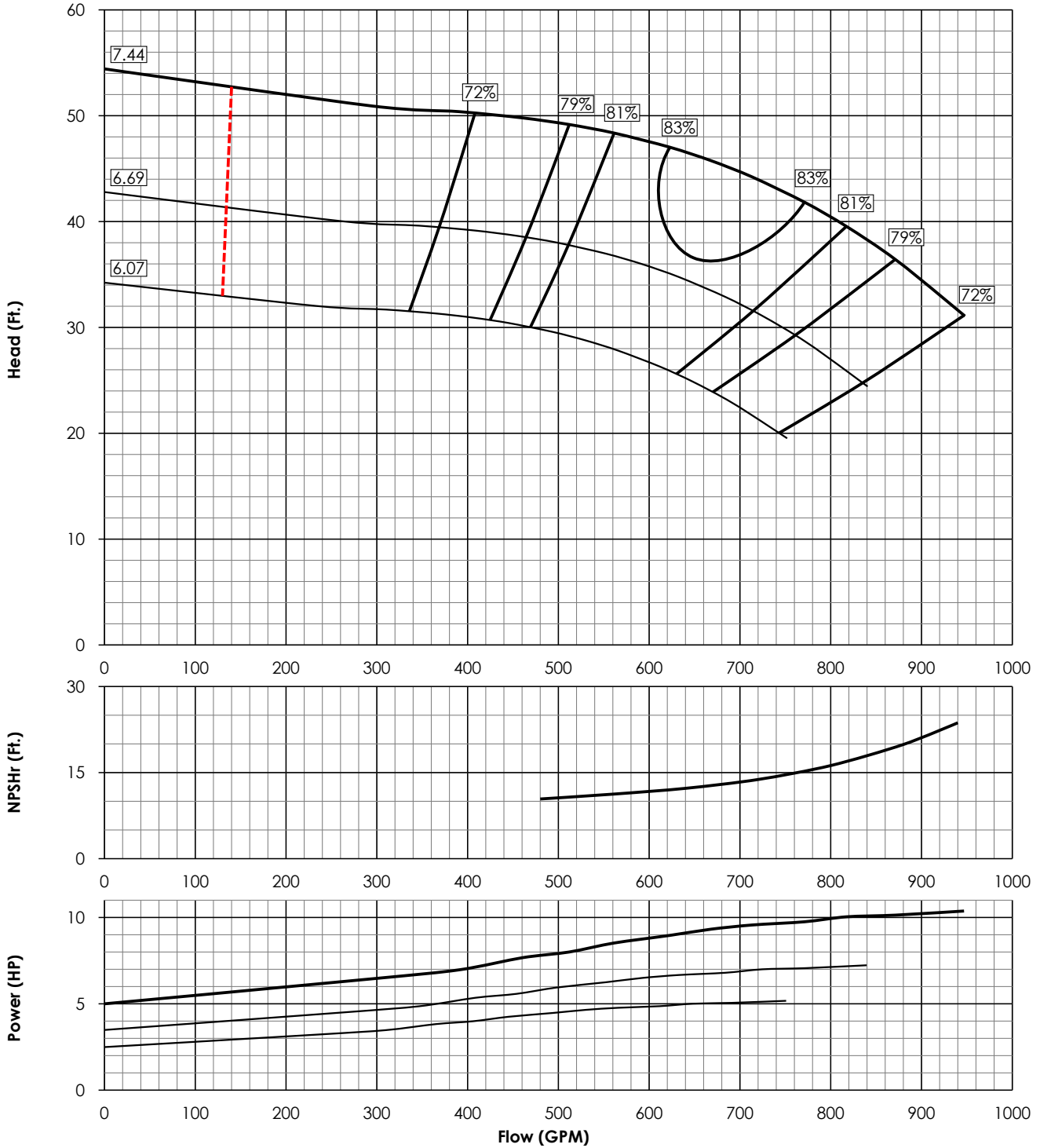
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6410HCO

Updated: Jun. 2020

FW10HC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2754
K _T	7.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	5", 6", 8"	MIN. SUBMERSION	26"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



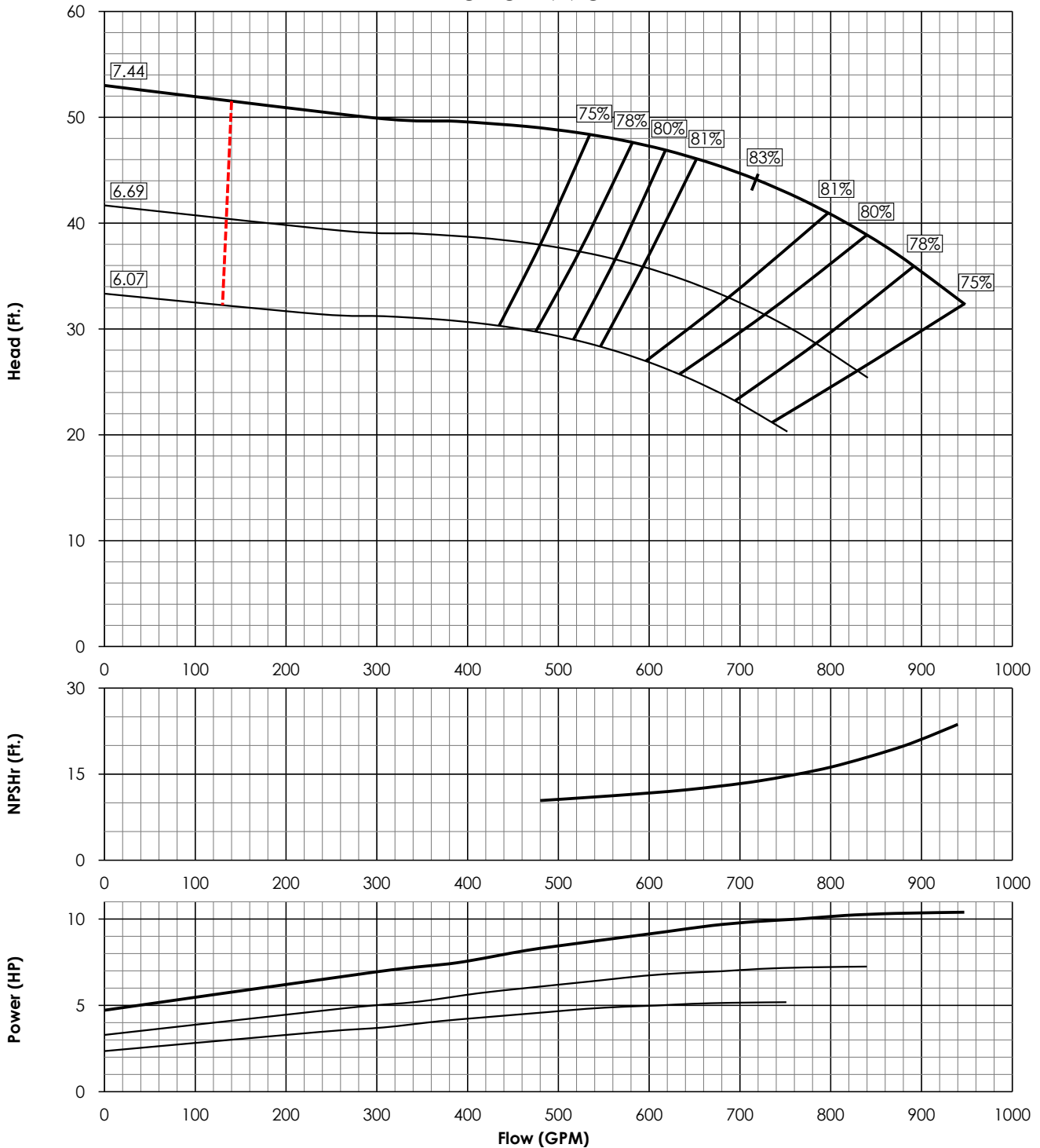
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6410HS0

Updated: Dec. 2020

FW10HS 1770 RPM



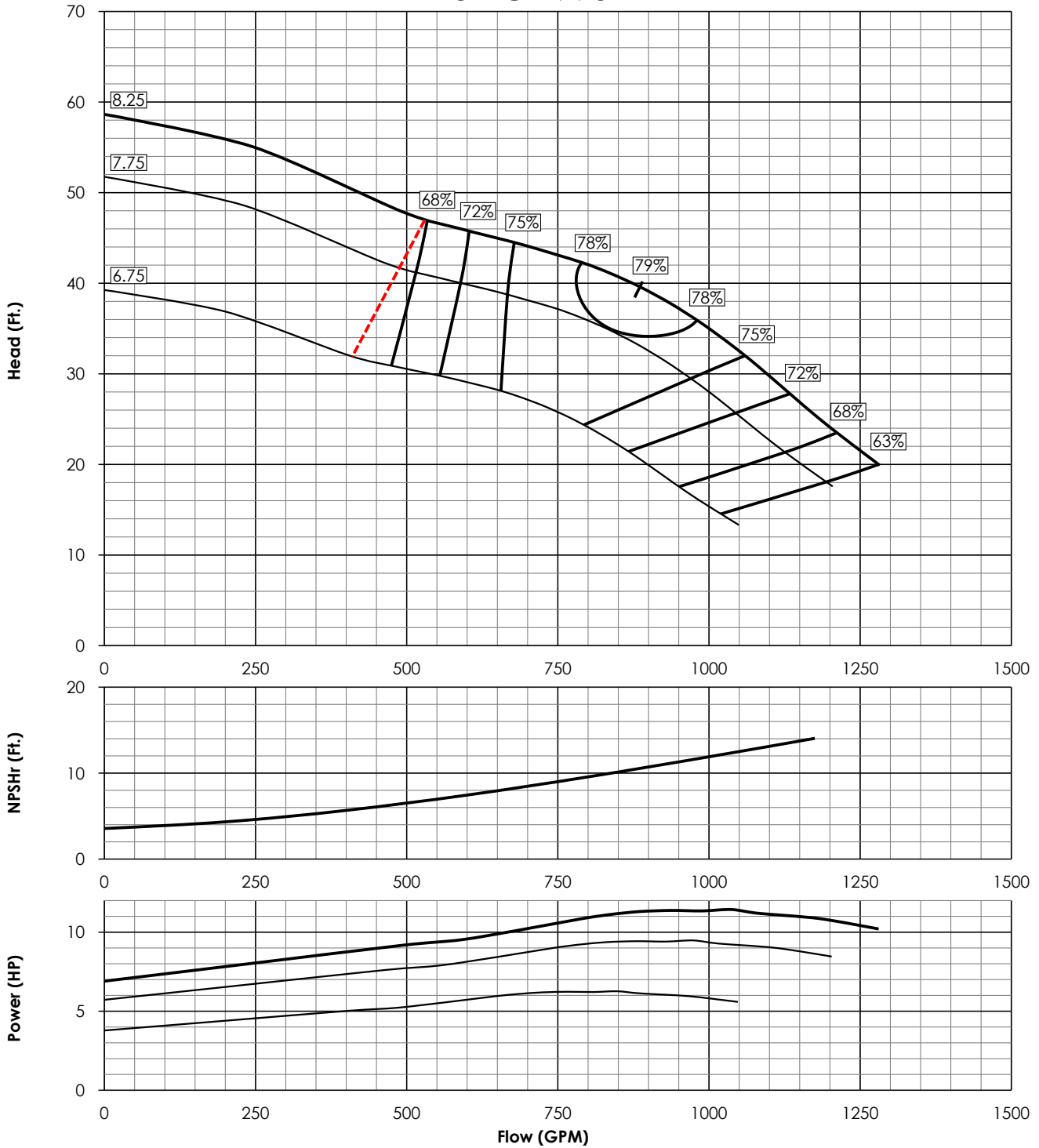
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2762
K _T	9.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	65 LBS
DISCH. SIZE(S)	5", 6", 8"	MIN. SUBMERSION	26"
SHAFT DIA.	1-1/2"	MAX WORKING PRES.	430 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10WC 1770 RPM



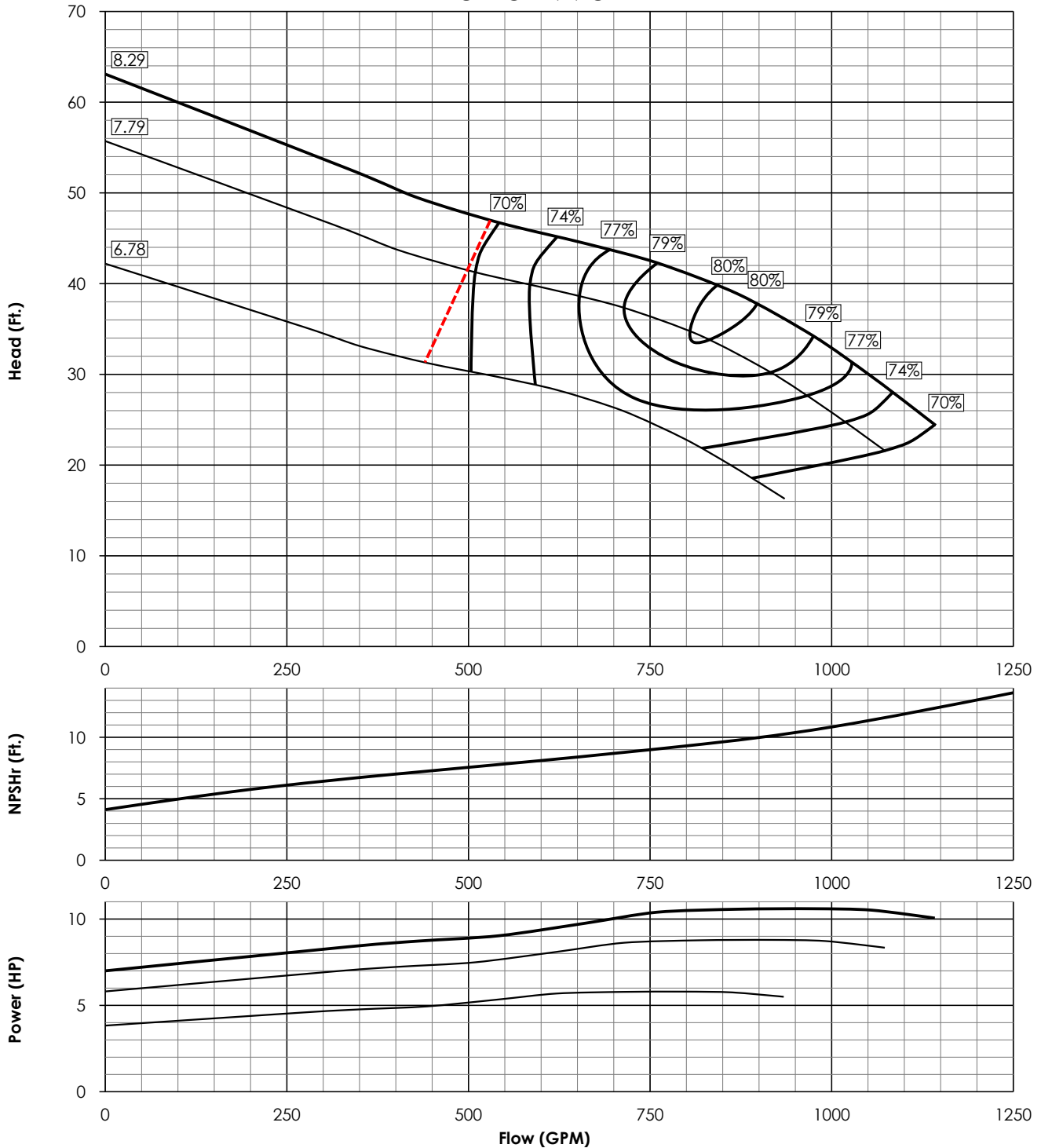
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3316
K _T	10.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	55 LBS
DISCH. SIZE(S)	8"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	322 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10WS 1770 RPM



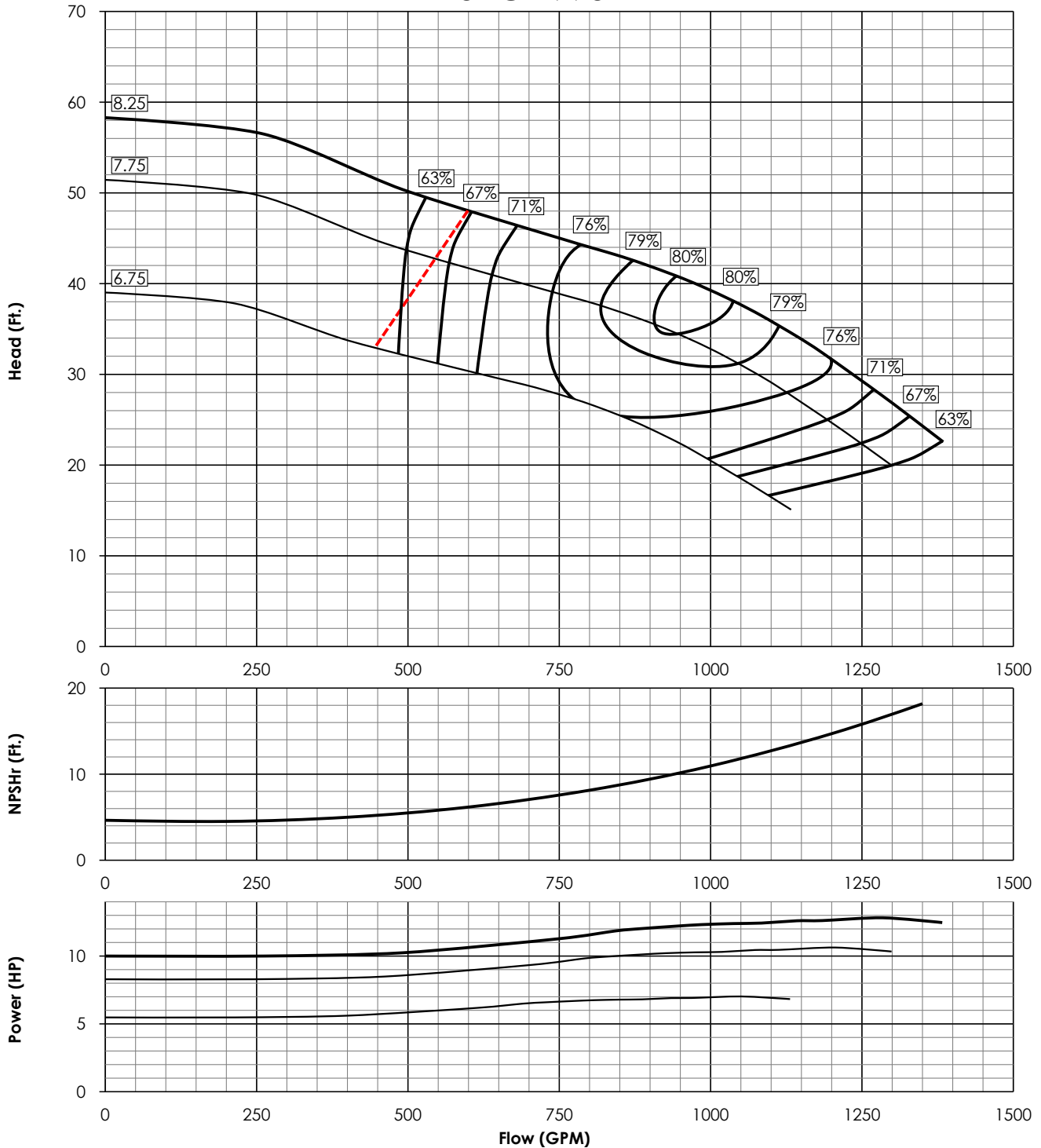
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3374
K _T	11.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	55 LBS
DISCH. SIZE(S)	8"	MIN. SUBMERSION	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	322 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10YC 1770 RPM



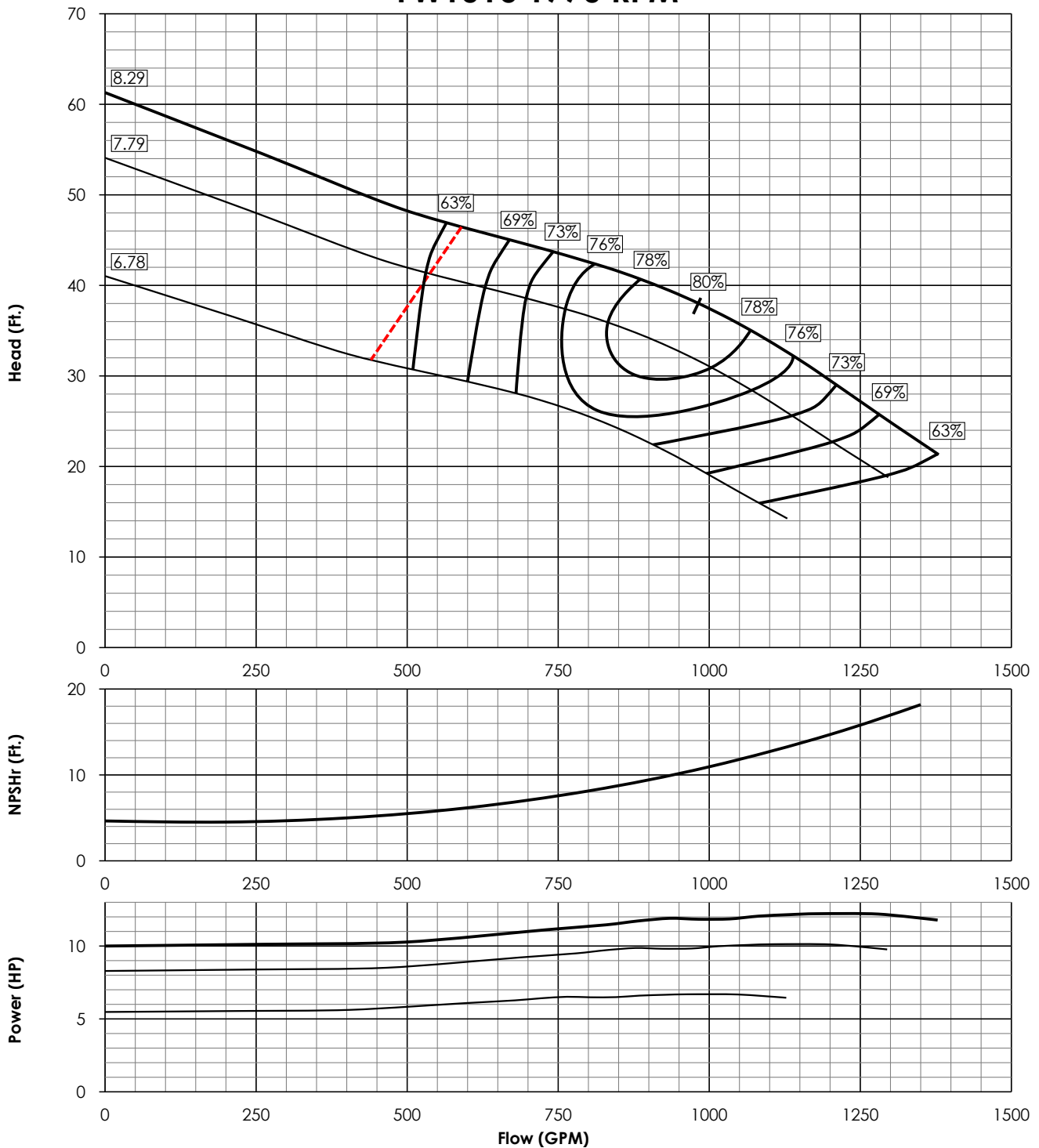
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3512
K _T	10.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	55 LBS
DISCH. SIZE(S)	8"	MIN. SUBMERGENCE	40"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	322 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10YS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3624
K _T	11.4 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	190 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	55 LBS
DISCH. SIZE(S)	8"	MIN. SUBMERSION	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	322 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW10WCXL**

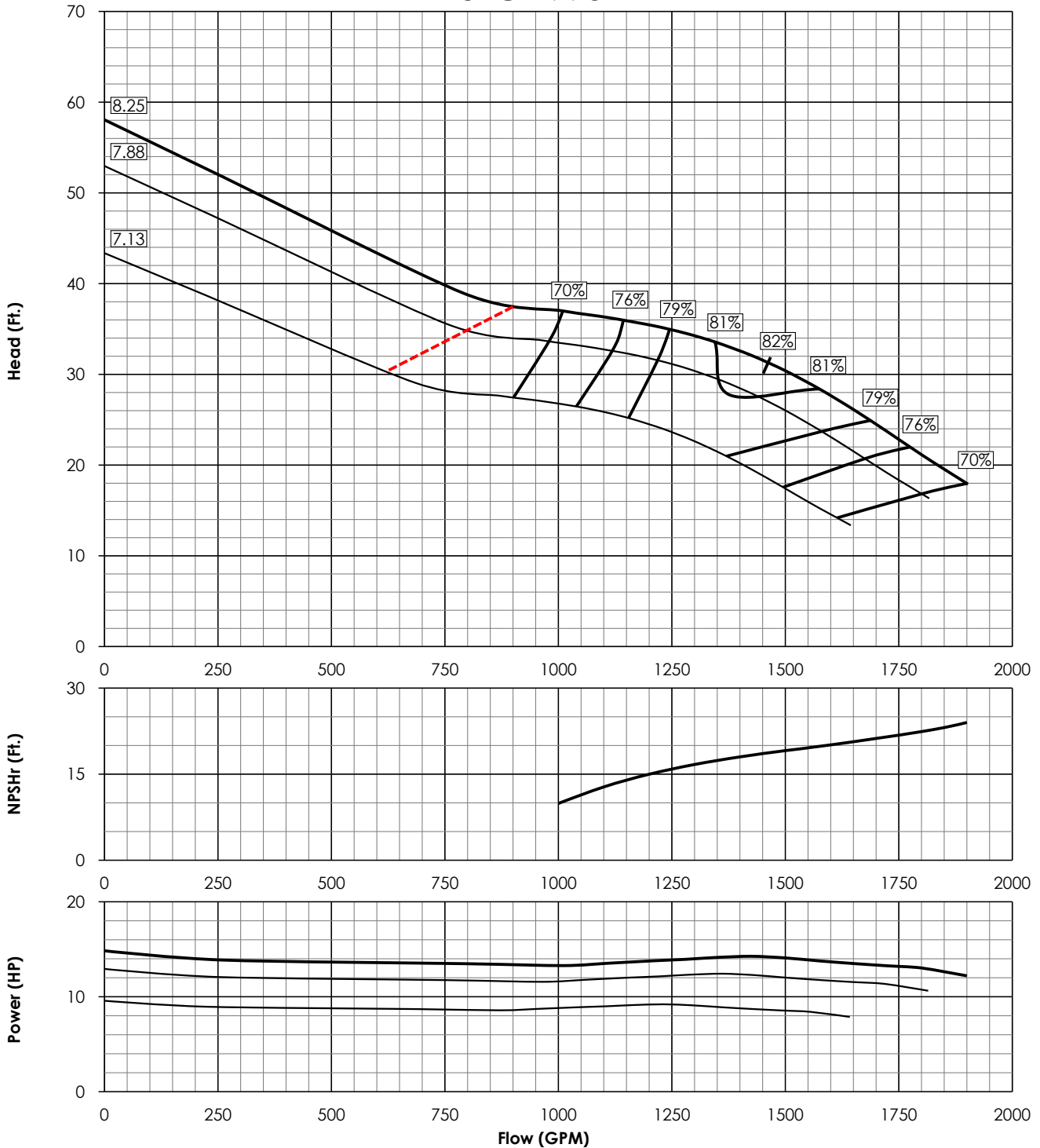


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW10YCXL**

FW10ZC 1770 RPM



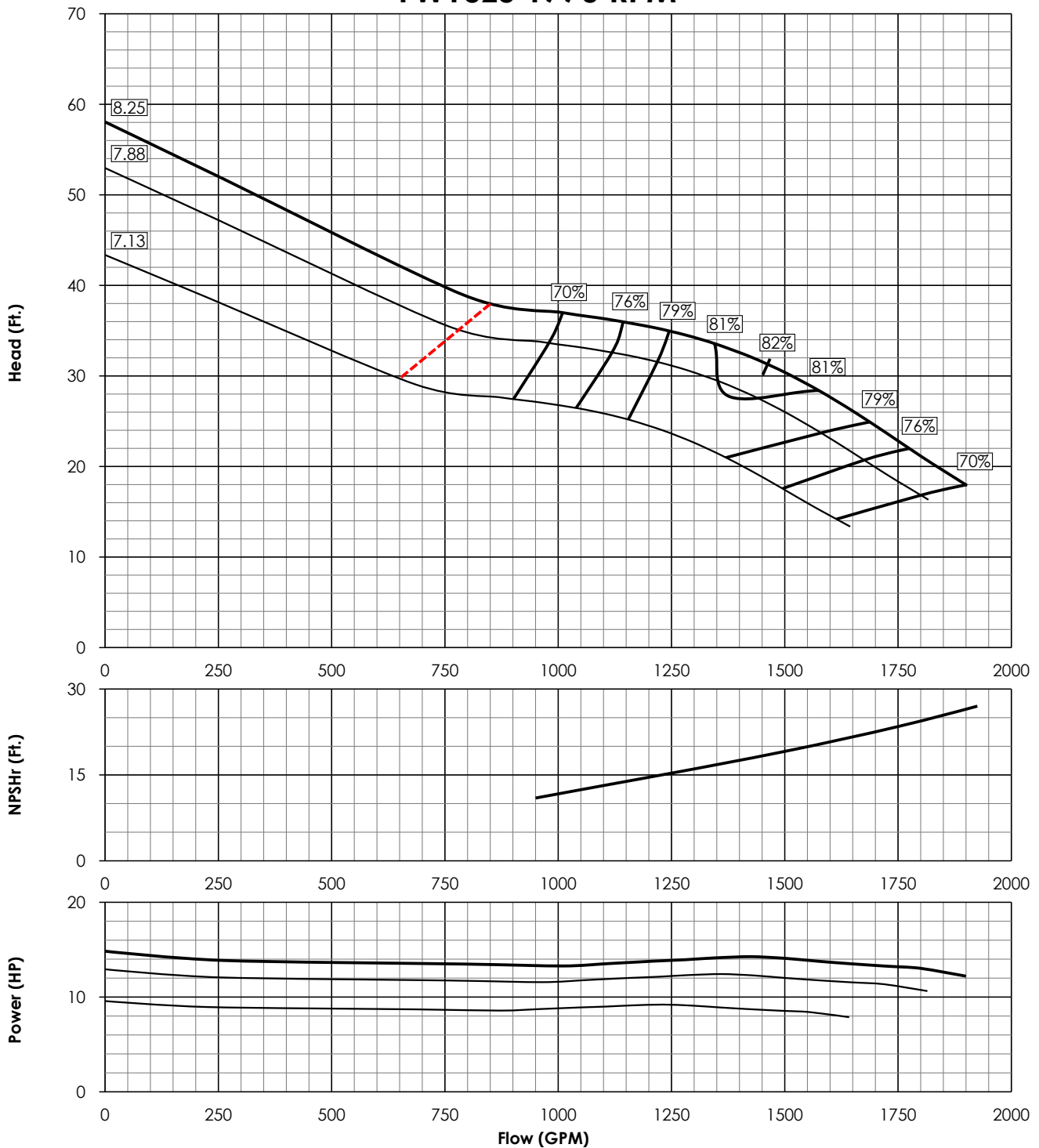
EFFICIENCY CORRECTION	
1 STG.	-6.0
2 STG.	-5.0
3 STG.	-3.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	3600 RPM
N _s	4969
K _T	13.6 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	55 LBS
DISCH. SIZE(S)	8"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	322 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW10ZS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-5.0
2 STG.	-4.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1770 RPM
N _s	4969
K _t	13.5 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	9.50"	SINGLE STG. WT.	185 LBS
STD. LATERAL	0.50"	ADD. STG. WT.	55 LBS
DISCH. SIZE(S)	8"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	322 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



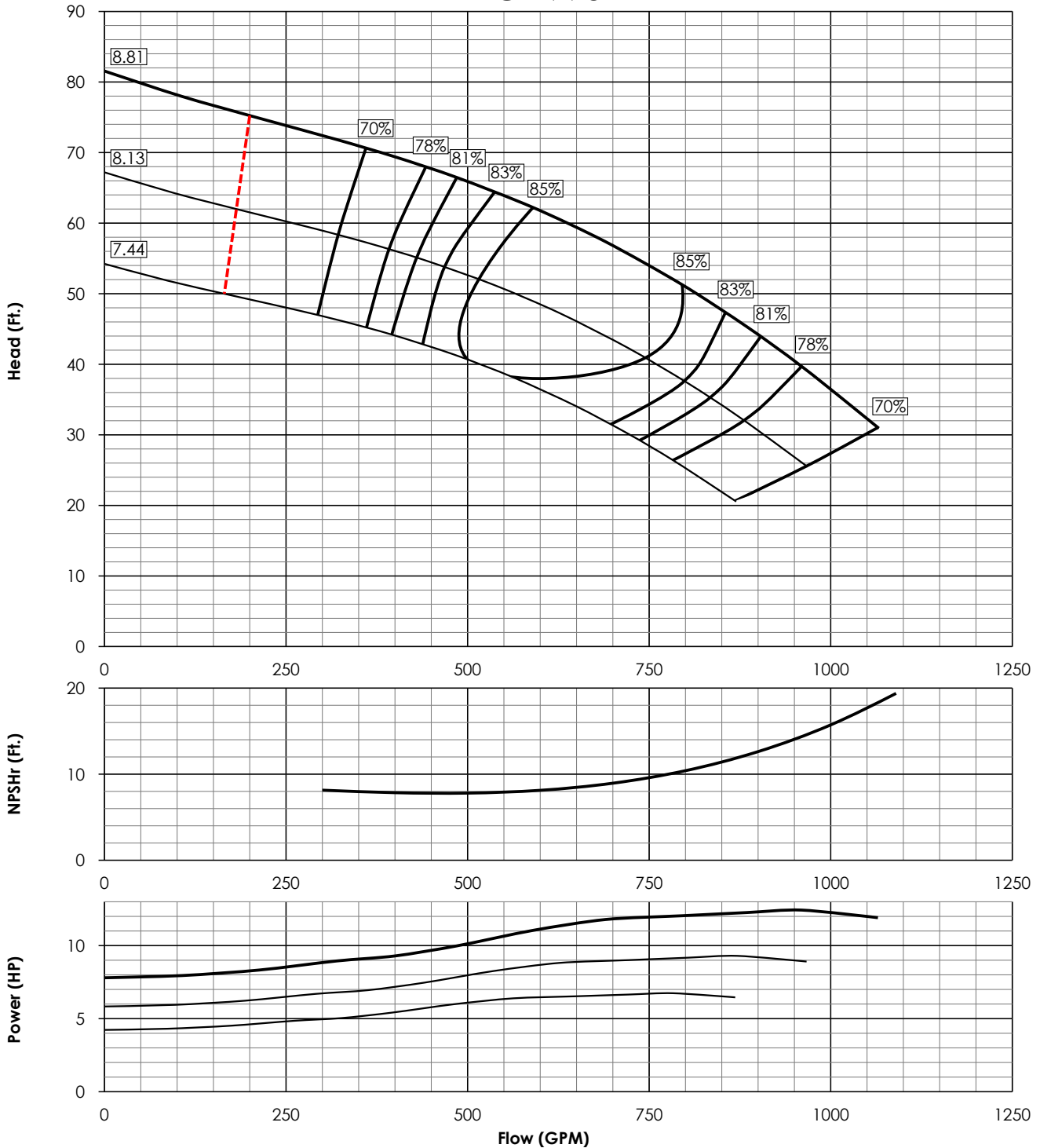
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6411LC2

Updated: Mar. 2020

FW11LC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2257
K _t	7.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



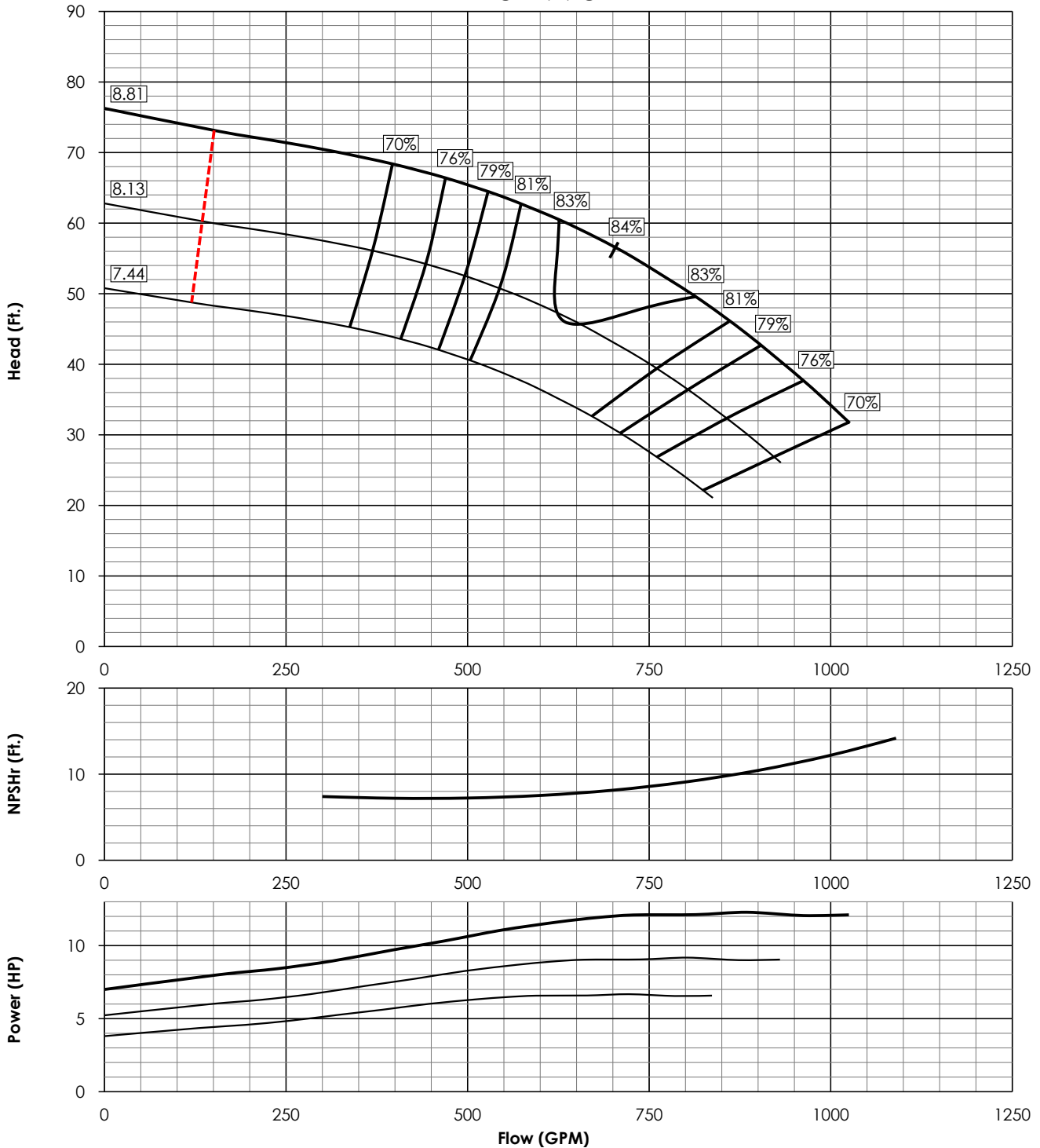
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6411LS2

Updated: Mar. 2020

FW11LS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2296
K _T	9.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



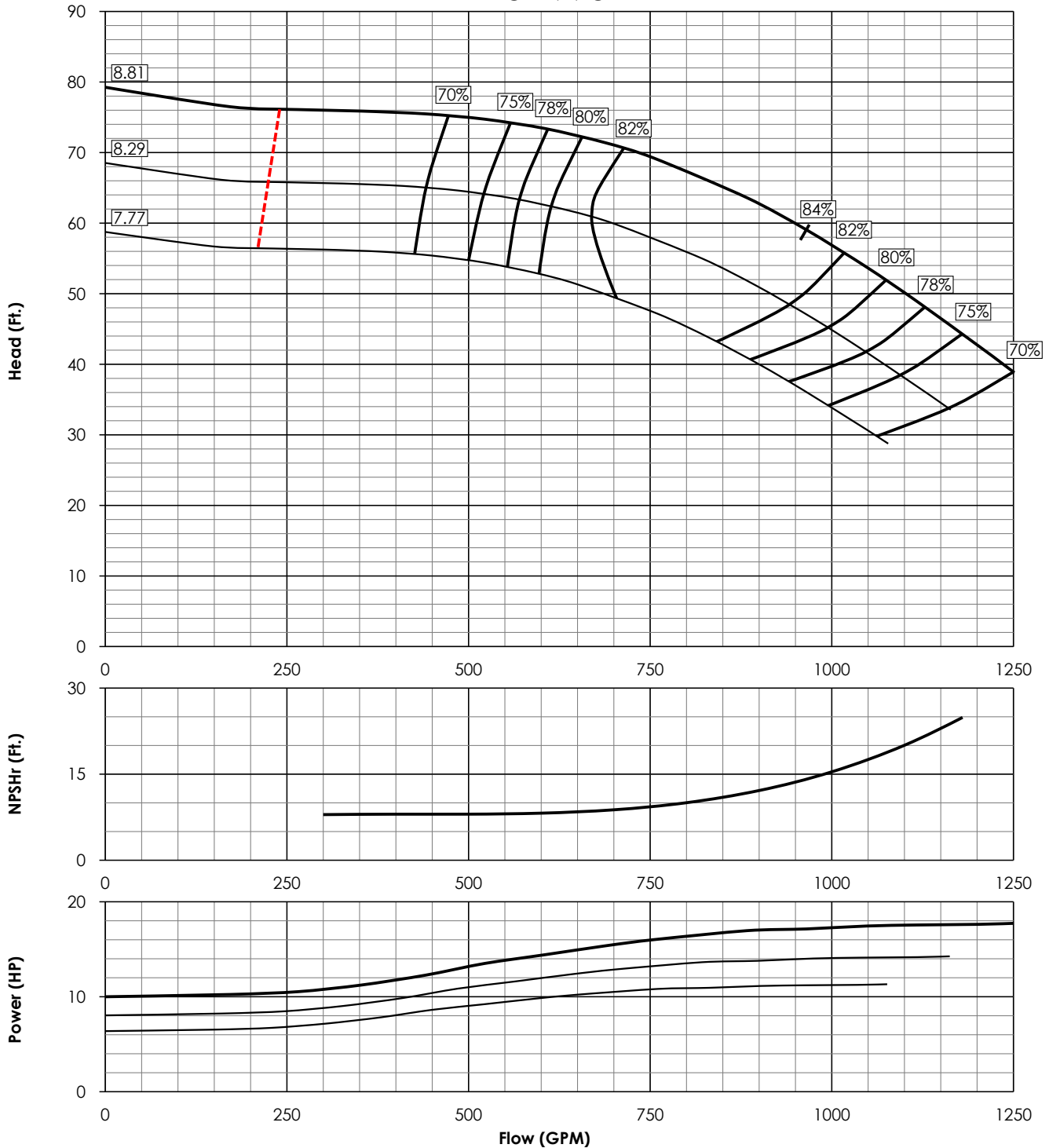
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6411MS2

Updated: Mar. 2020

FW11MS 1770 RPM



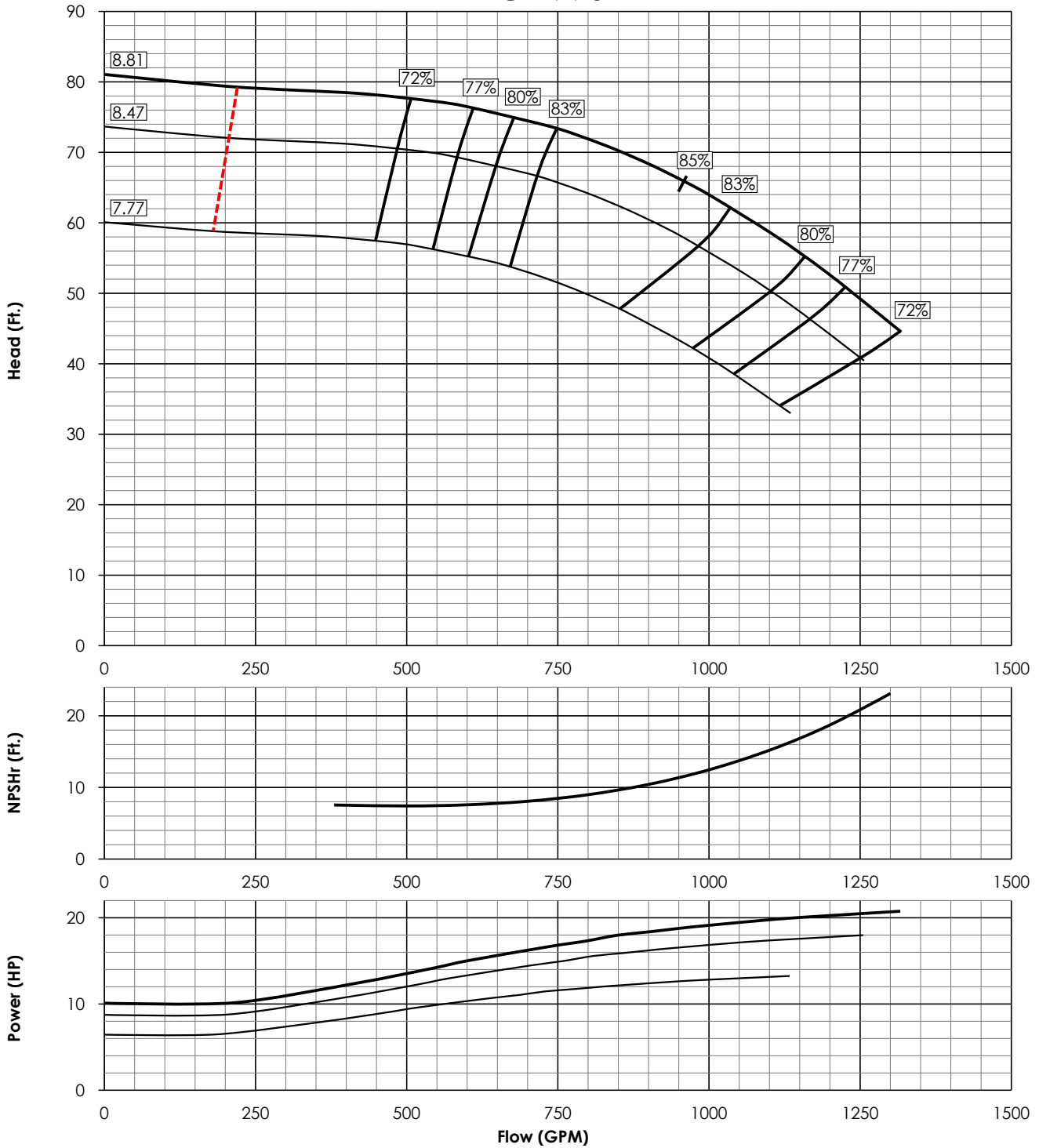
EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2454
K _T	9.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW11HC 1770 RPM



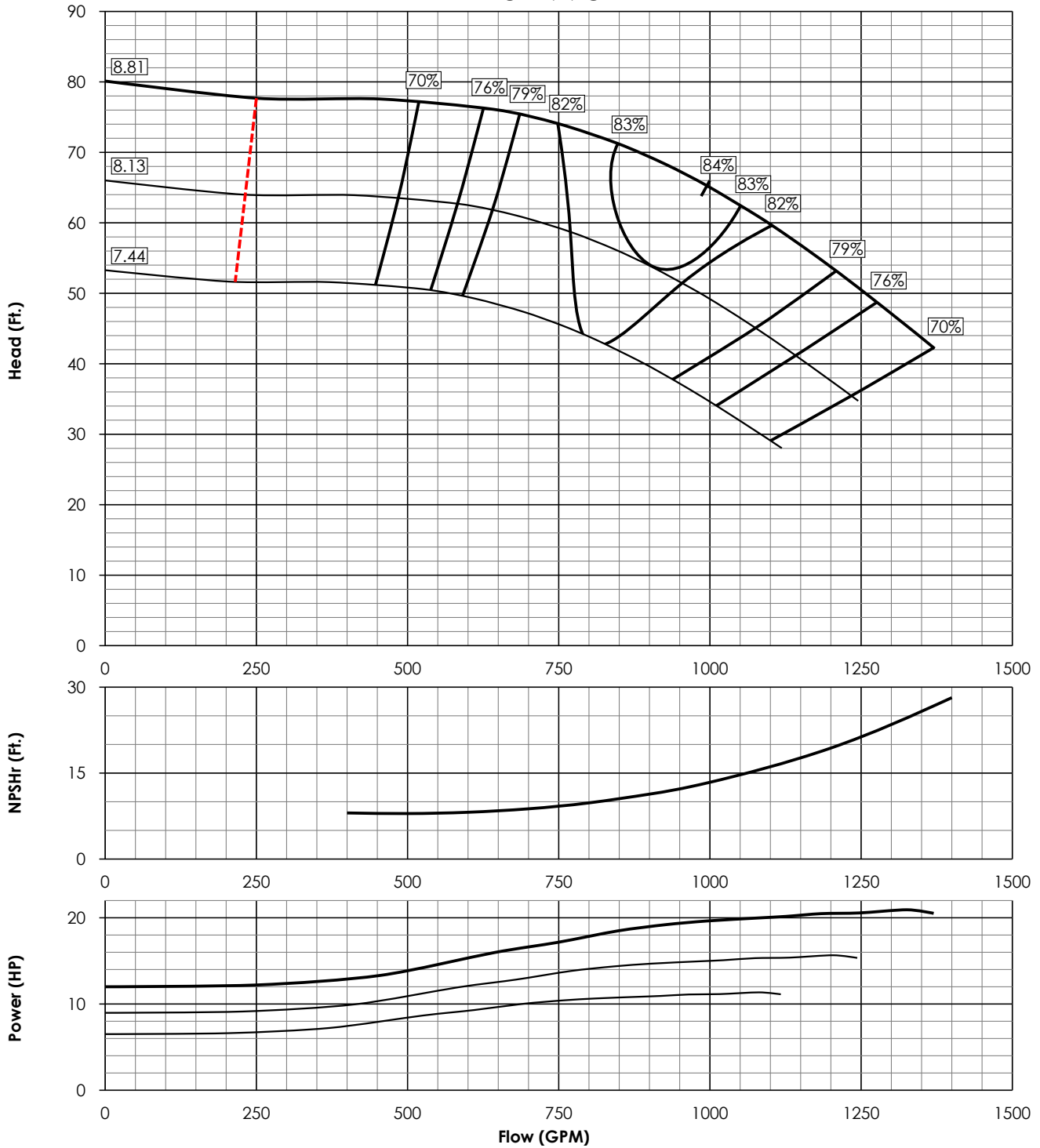
EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2107
K _T	6.80 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW11HS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2422
K _T	9.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	275 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	100 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



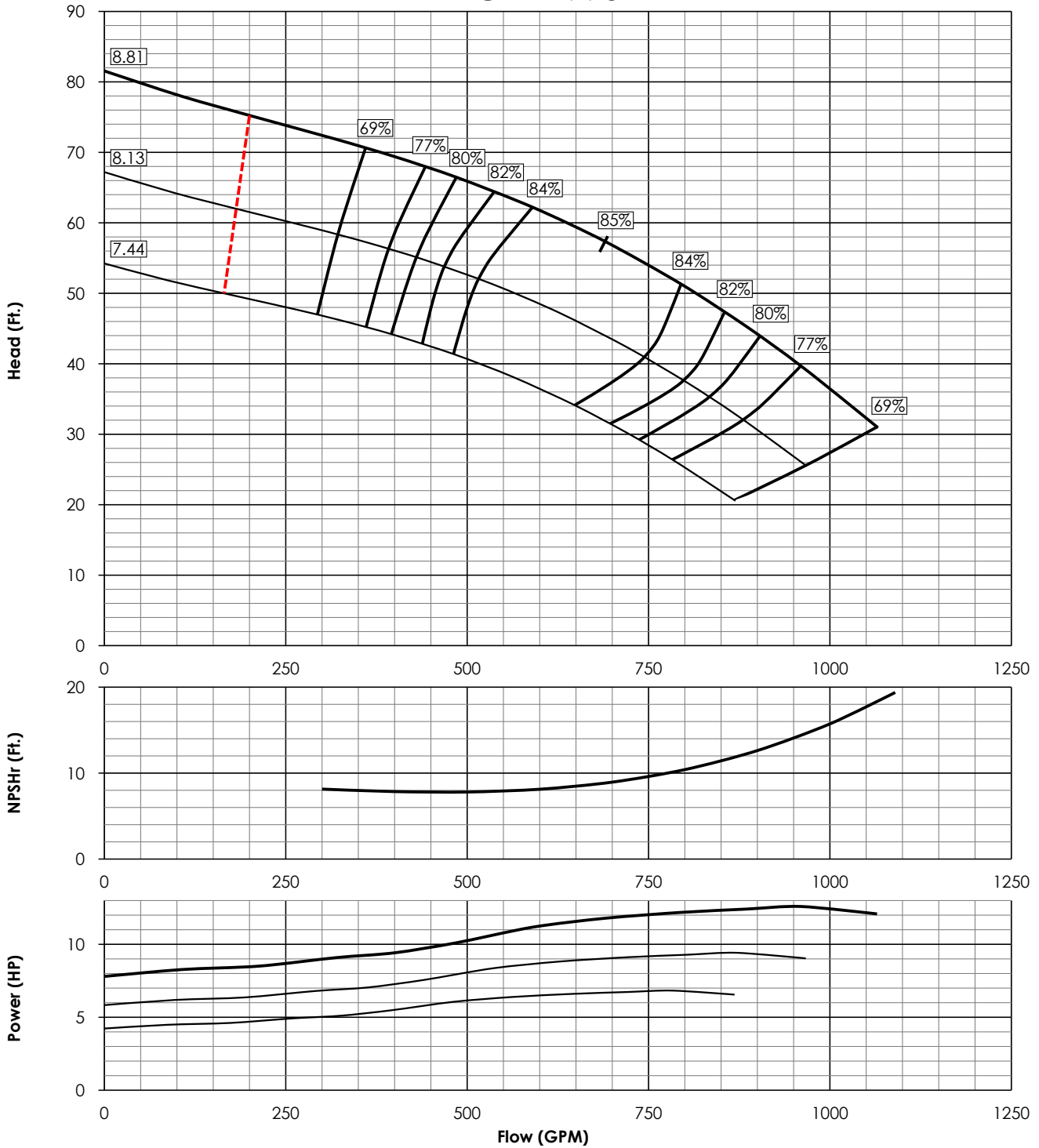
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6411LCXL0

Updated: Jul. 2020

FW11LCXL 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2227
K _t	7.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	285 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



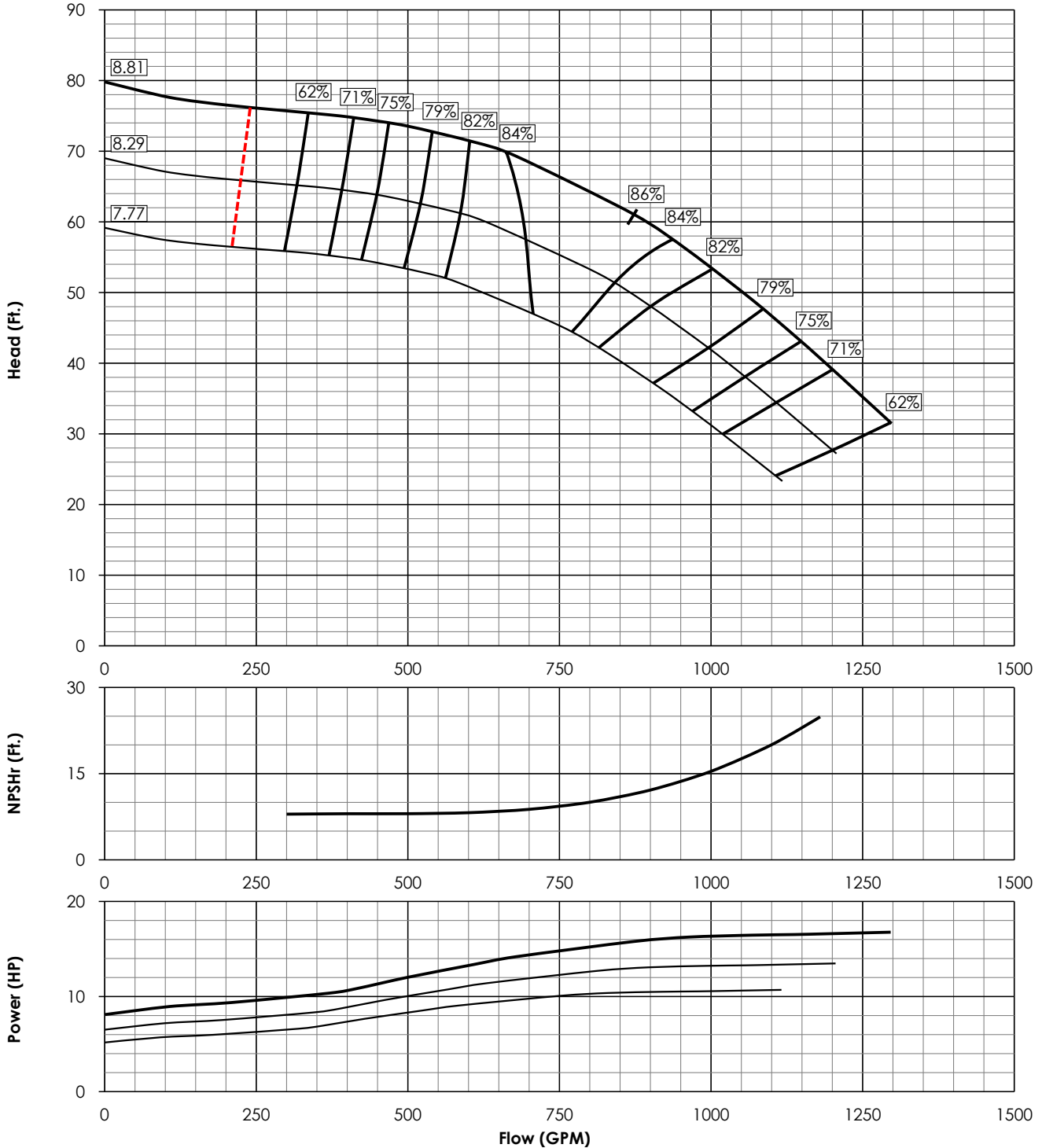
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6411MCXL0

Updated: Jul. 2020

FW11MCXL 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2378
K _t	7.00 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	285 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



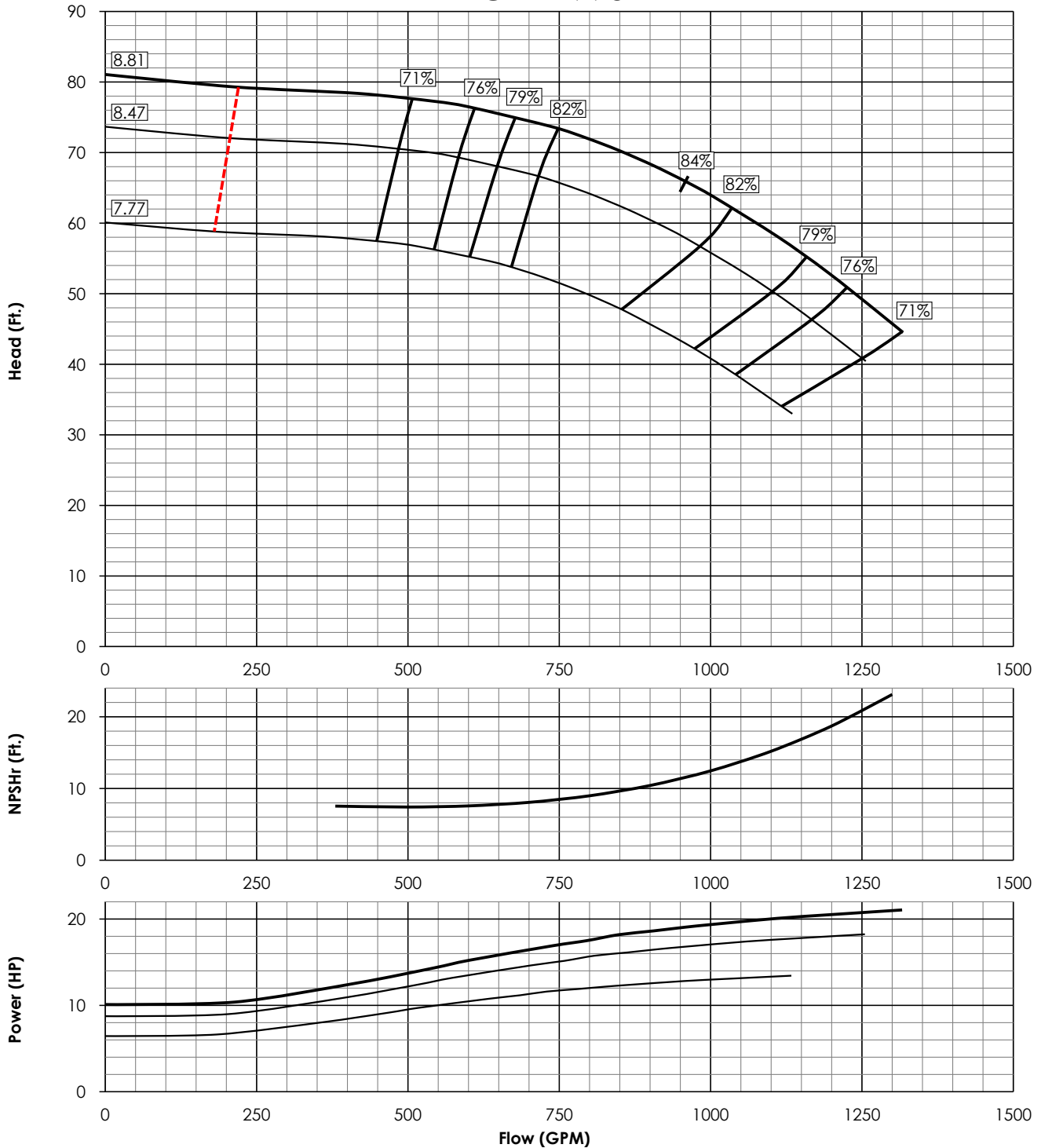
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6411HCXL0

Updated: Jul. 2020

FW11HCXL 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2362
K _T	6.80 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.00"	SINGLE STG. WT.	285 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	380 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



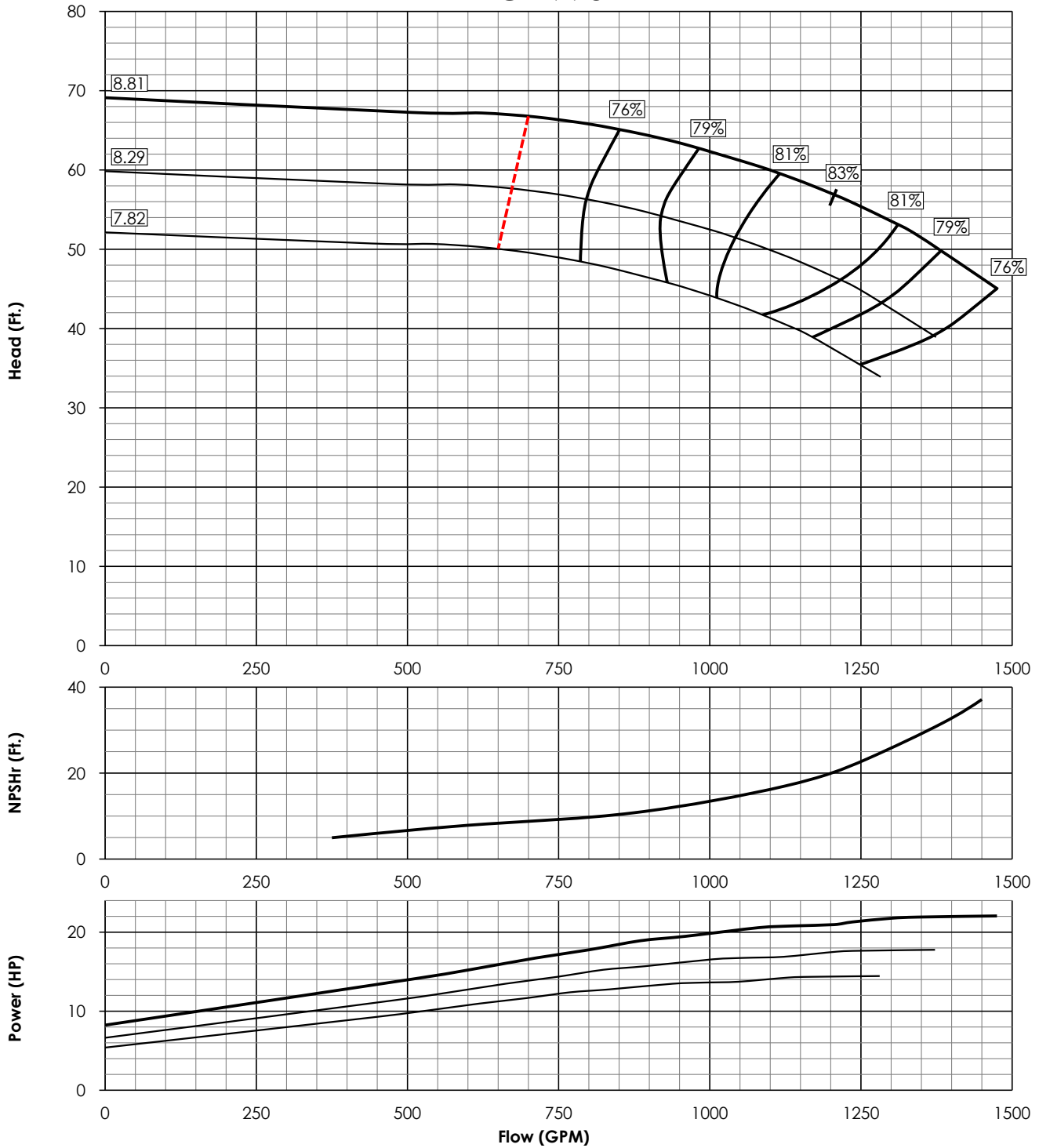
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6411RC0

Updated: Jan. 2020

FW11RC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2971
K _t	5.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.25"	SINGLE STG. WT.	345 LBS
STD. LATERAL	1.50"	ADD. STG. WT.	120 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	497 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

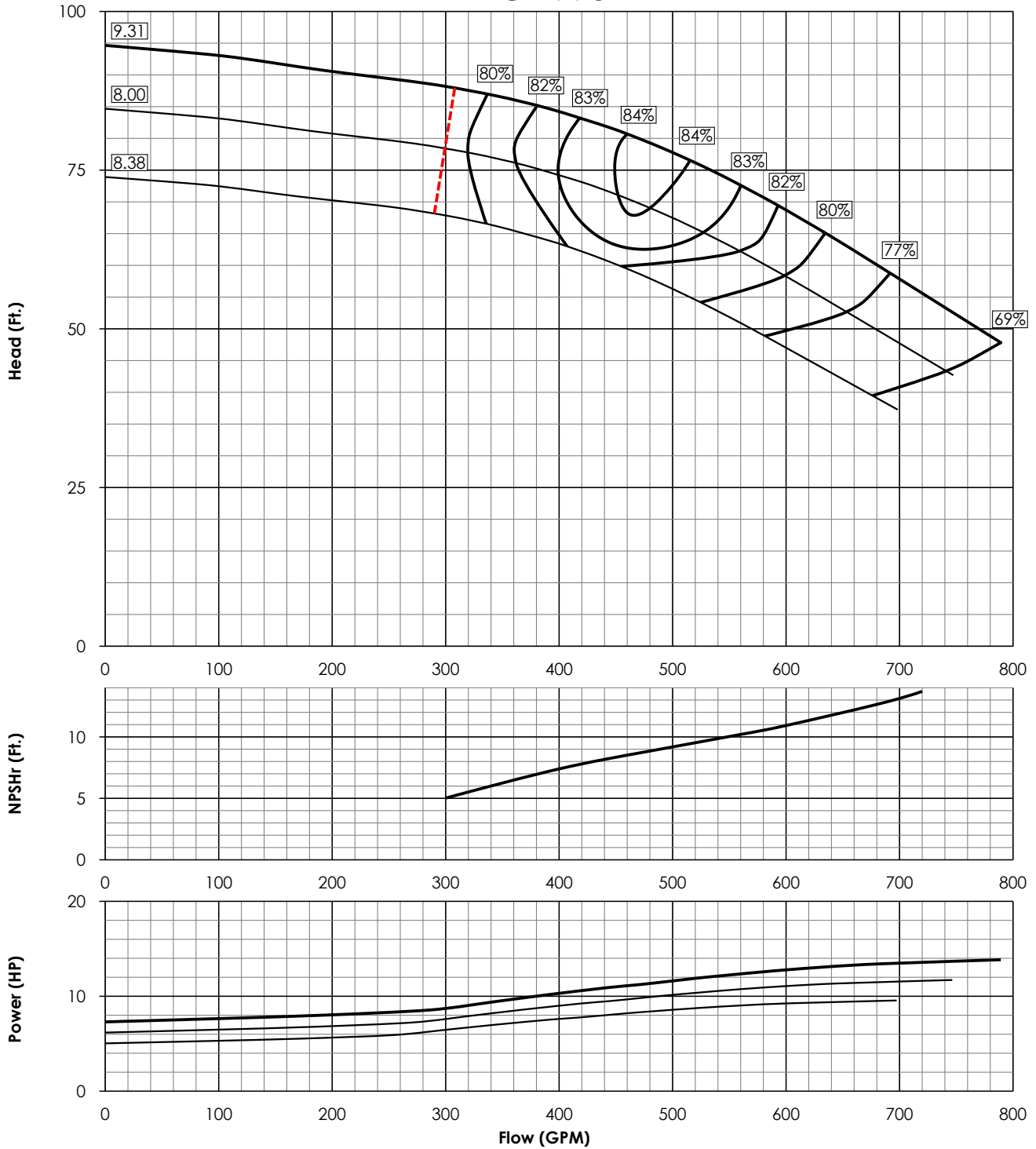


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW11RS**

FW12DC 1770 RPM



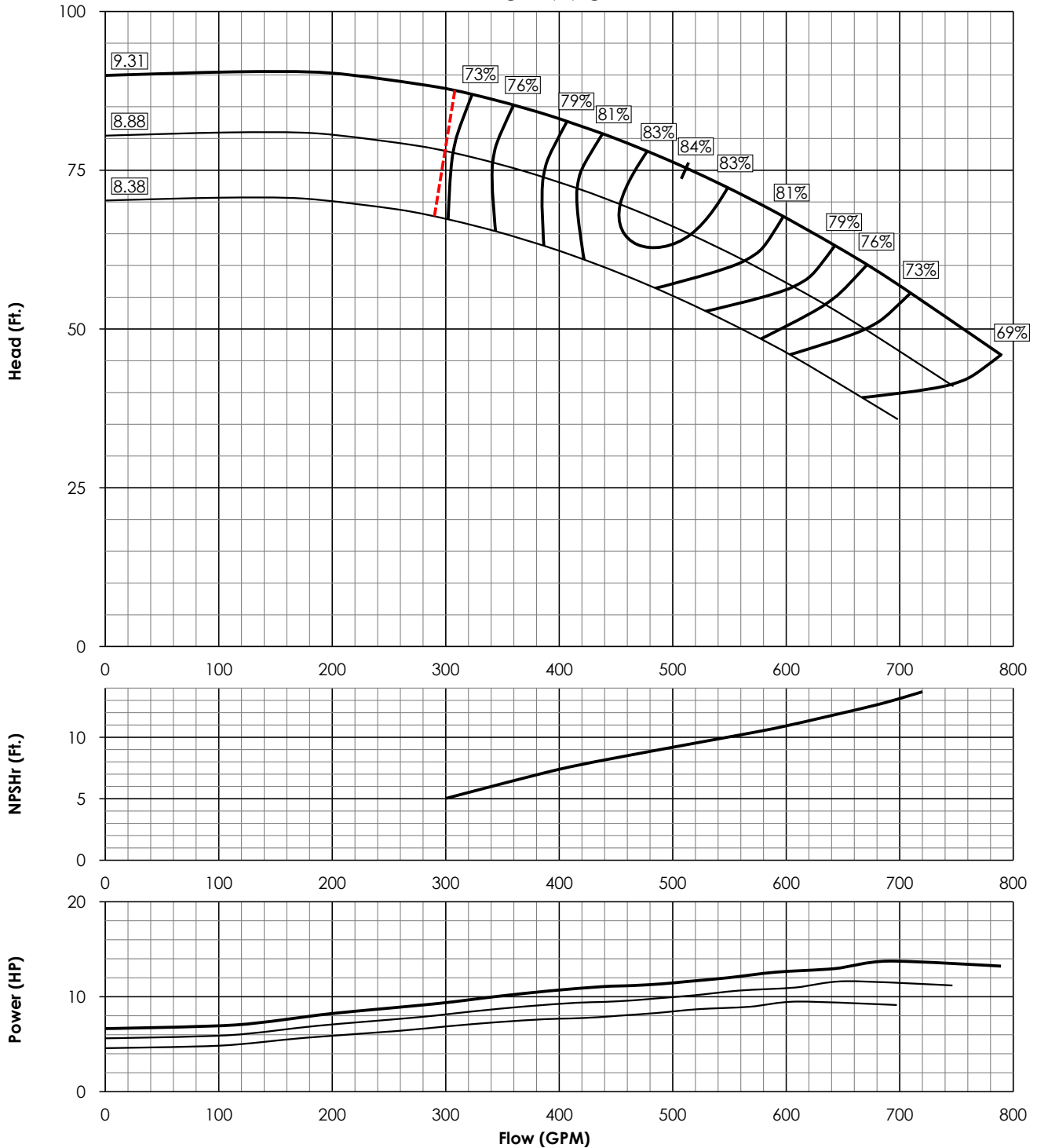
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1800 RPM
N _s	1502
K _t	5.13 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	270 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12DS 1770 RPM



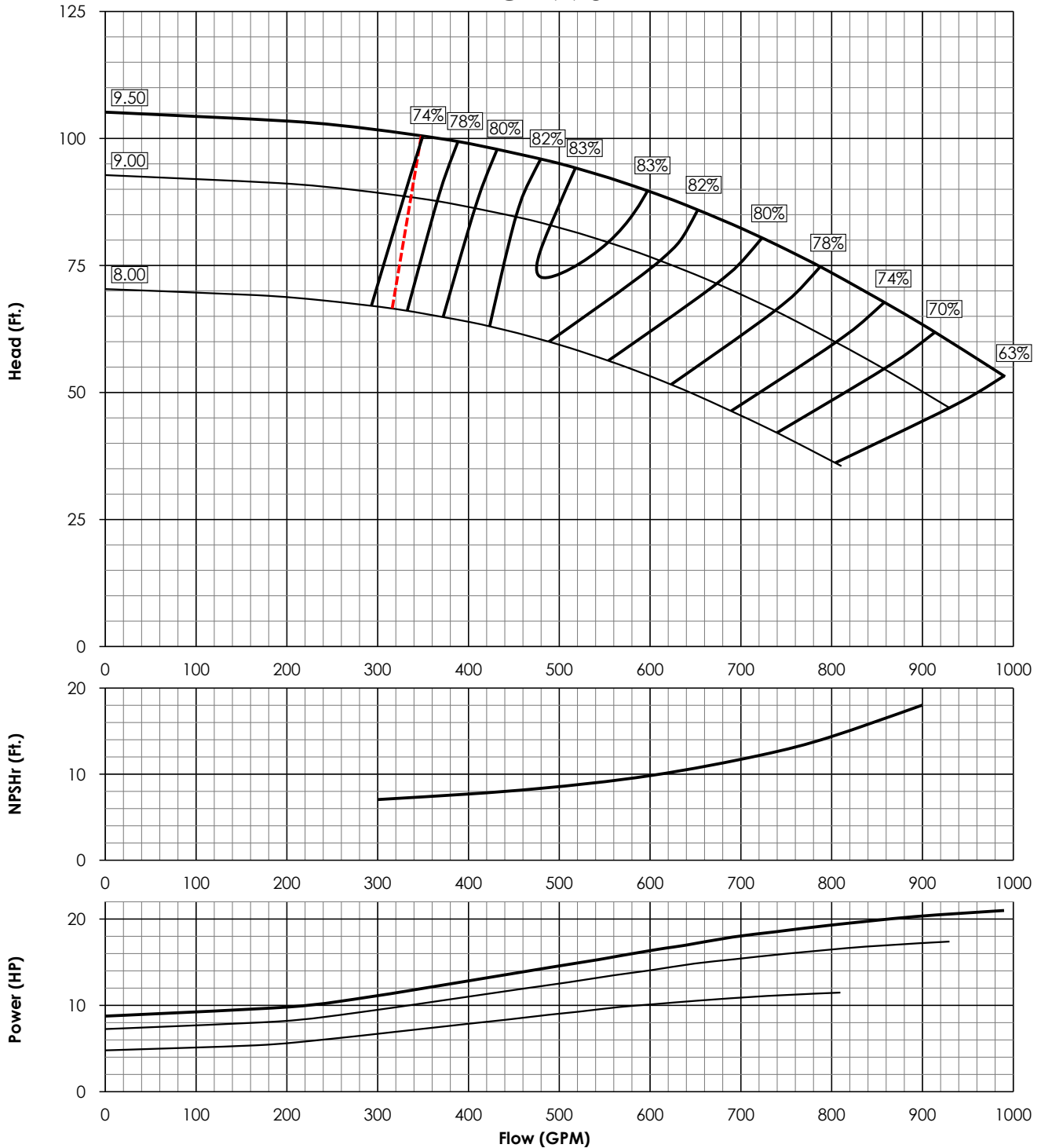
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1800 RPM
N _s	1566
K _t	7.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	270 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12EC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1800 RPM
N _s	1377
K _T	6.60 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	270 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



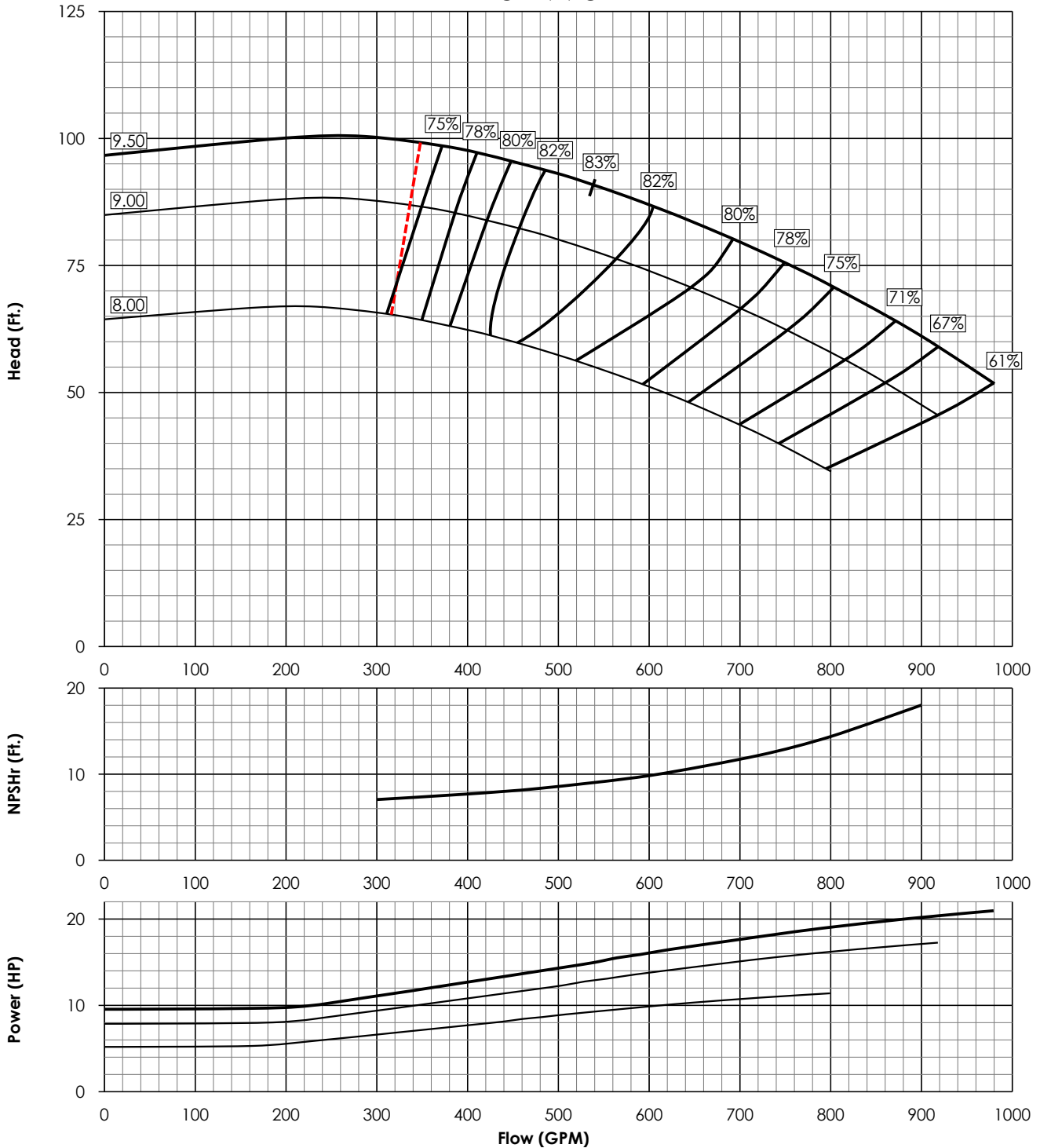
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412ES2

Updated: Dec. 2020

FW12ES 1770 RPM



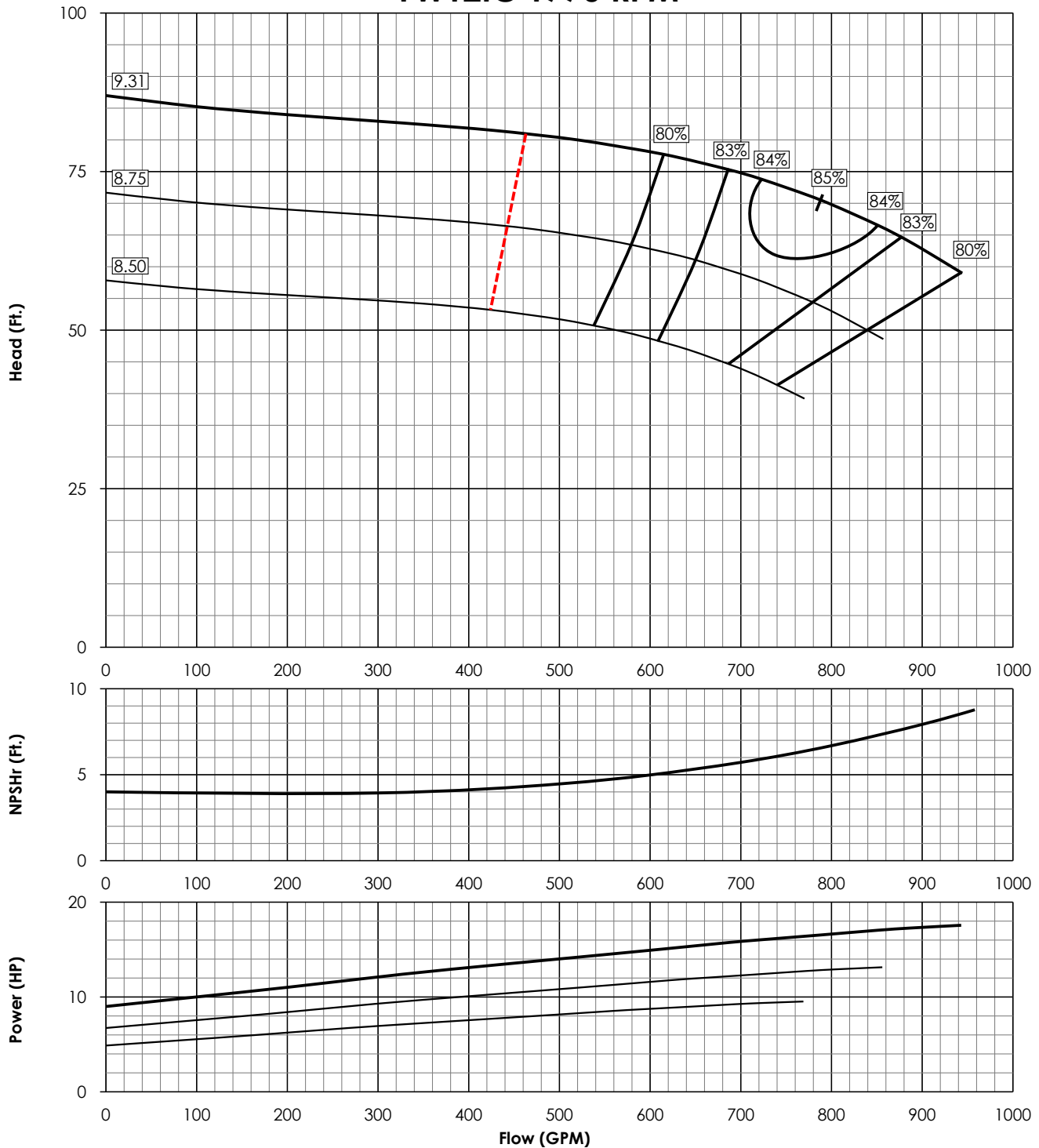
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1800 RPM
N _s	1501
K _T	9.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	270 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12IC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1800 RPM
N _s	2044
K _t	6.75 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



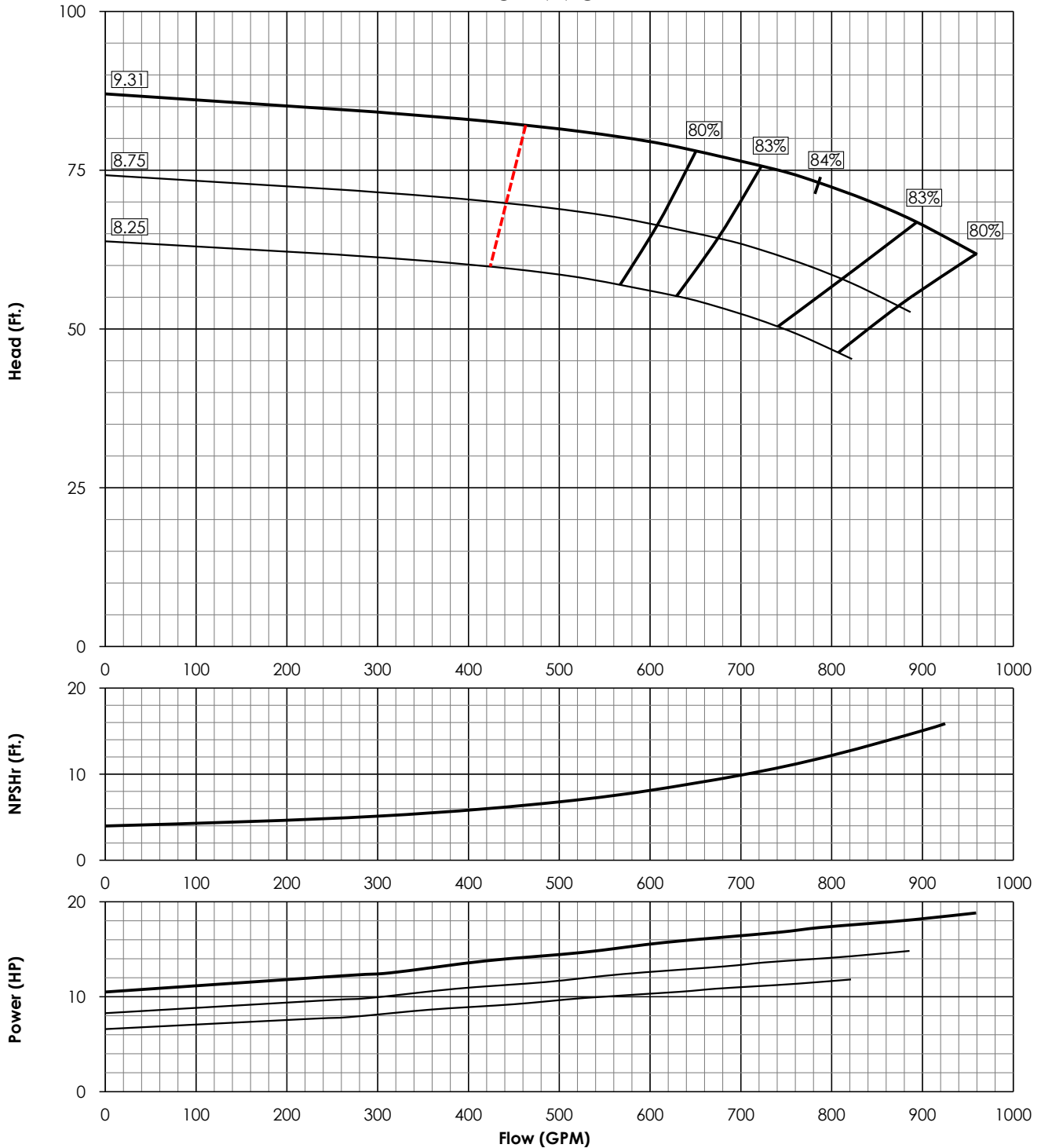
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412IS2

Updated: Apr. 2020

FW12IS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1800 RPM
N _s	1984
K _T	8.20 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



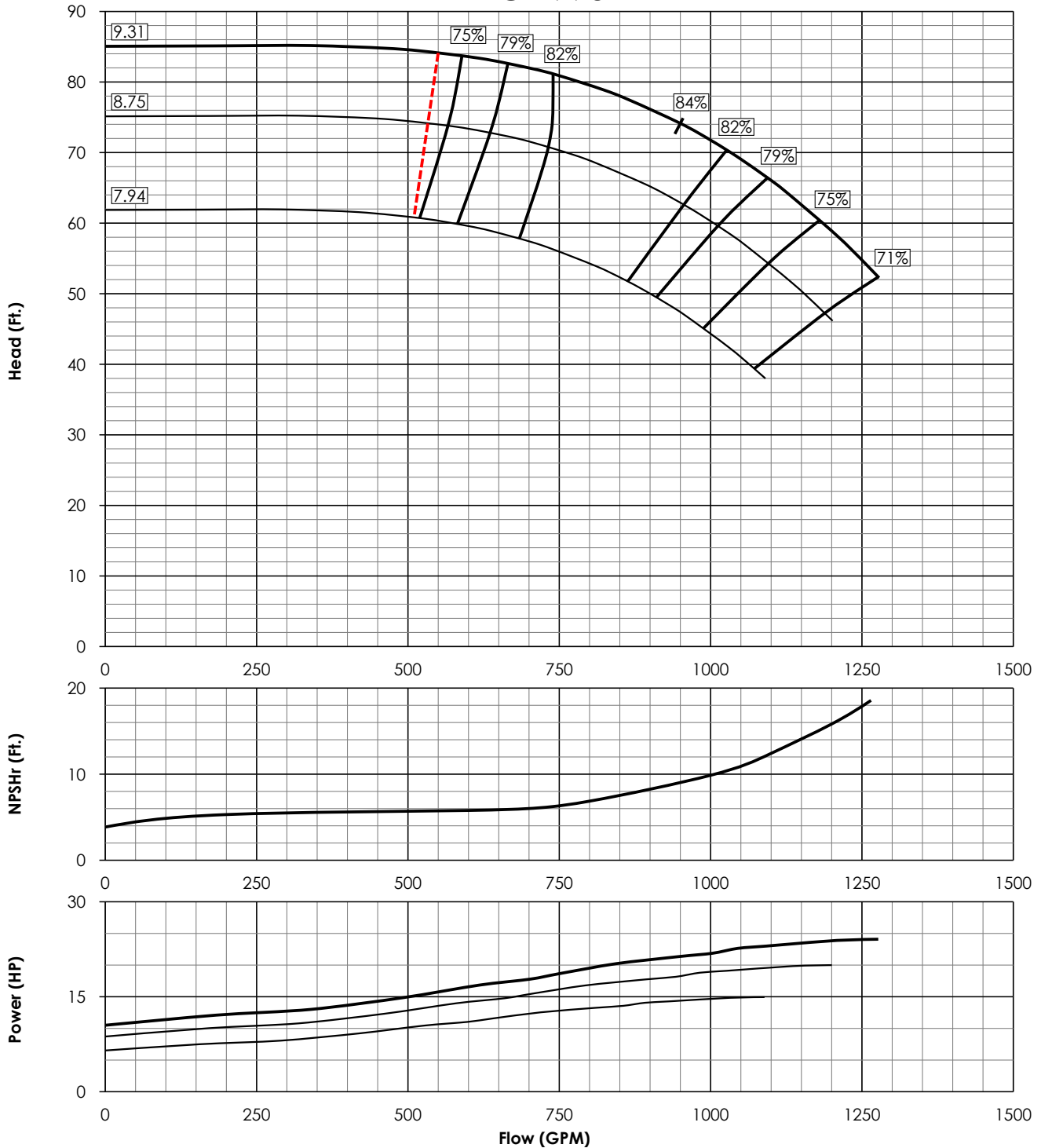
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412KC1

Updated: Feb. 2017

FW12KC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1800 RPM
N _s	2141
K _T	6.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



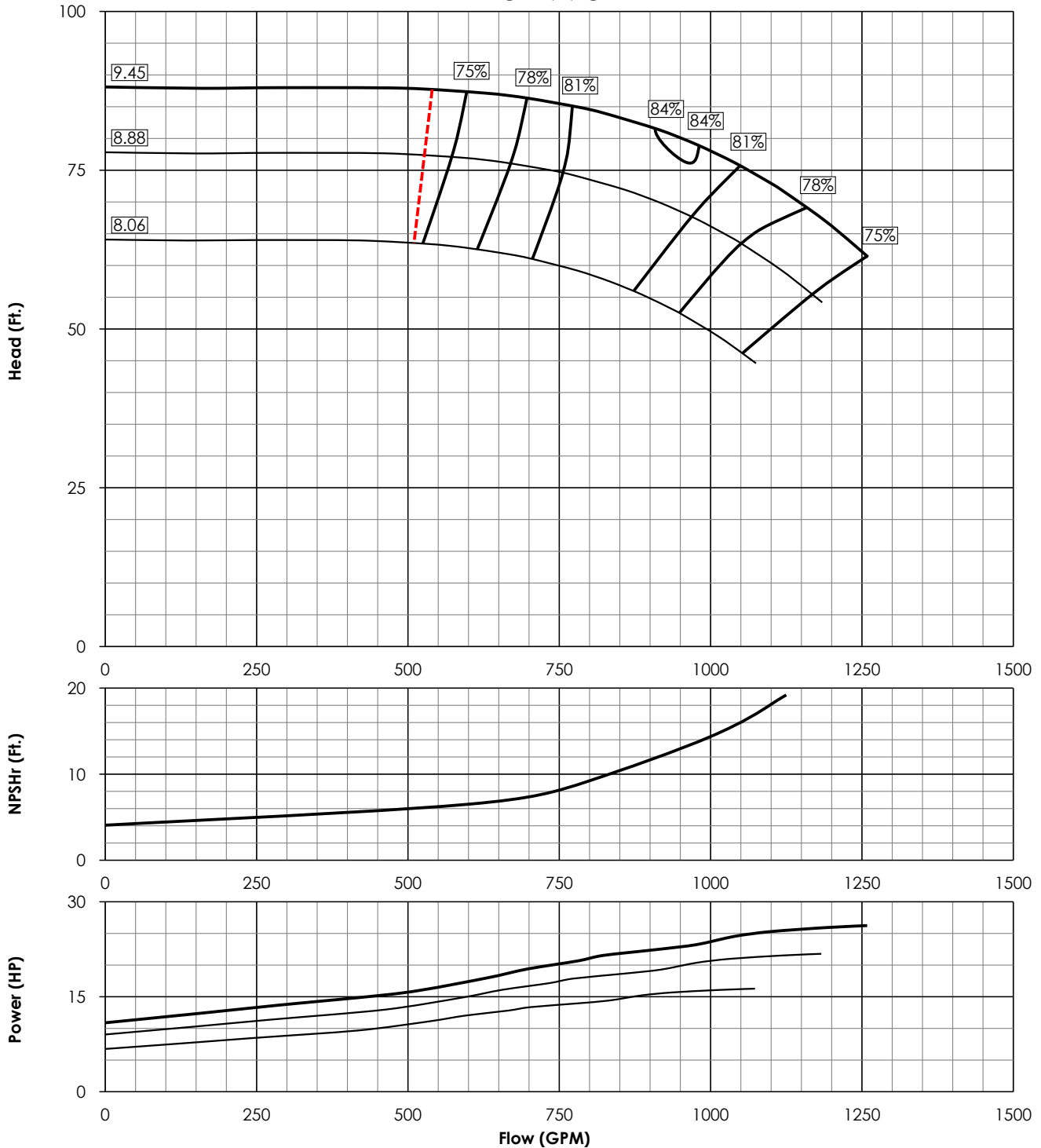
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412KS1

Updated: Feb. 2017

FW12KS 1770 RPM



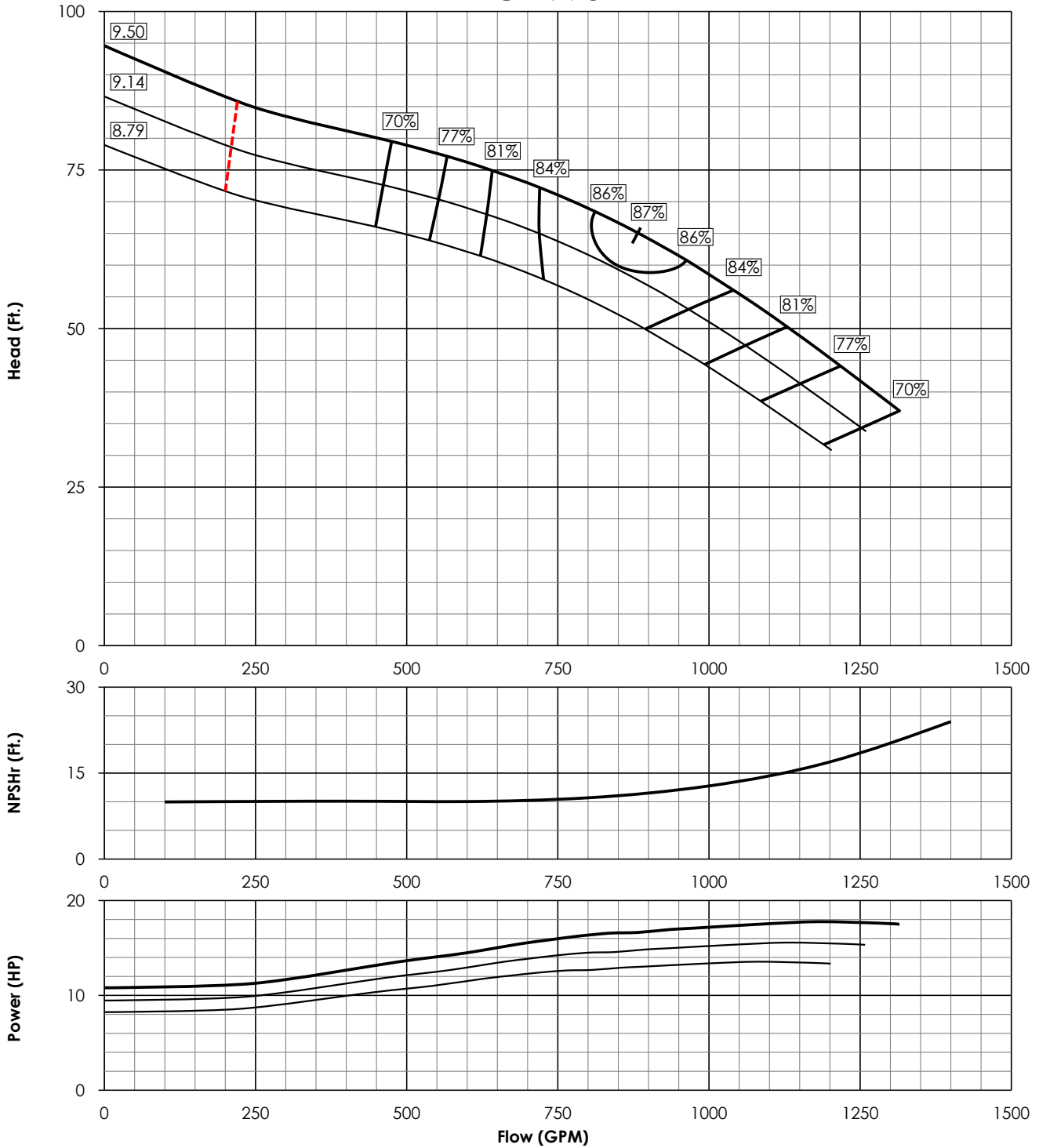
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1800 RPM
N _s	2082
K _T	7.75 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12LC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2302
K _T	7.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



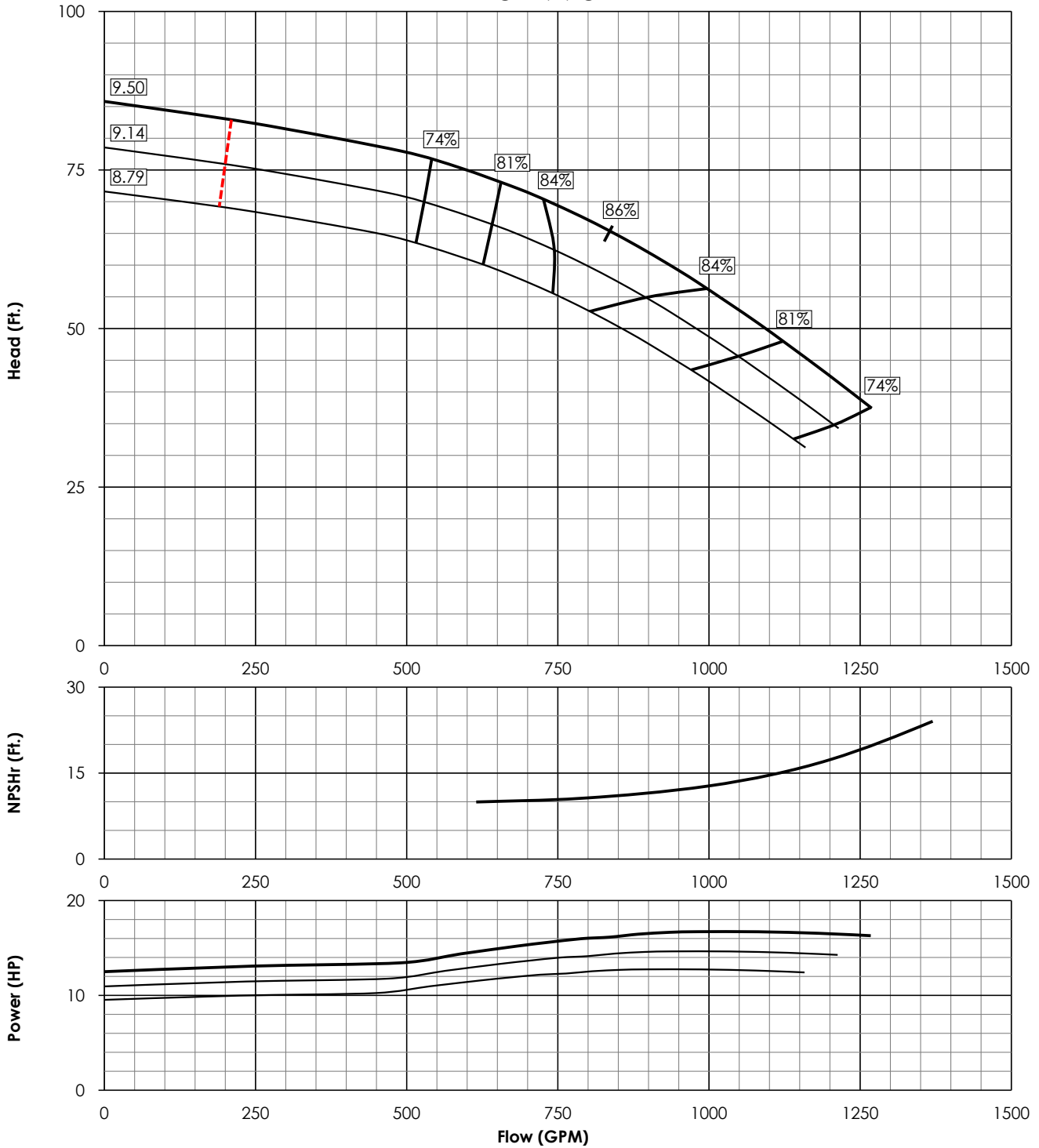
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412LS0

Updated: Oct. 2017

FW12LS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2209
K _T	10.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



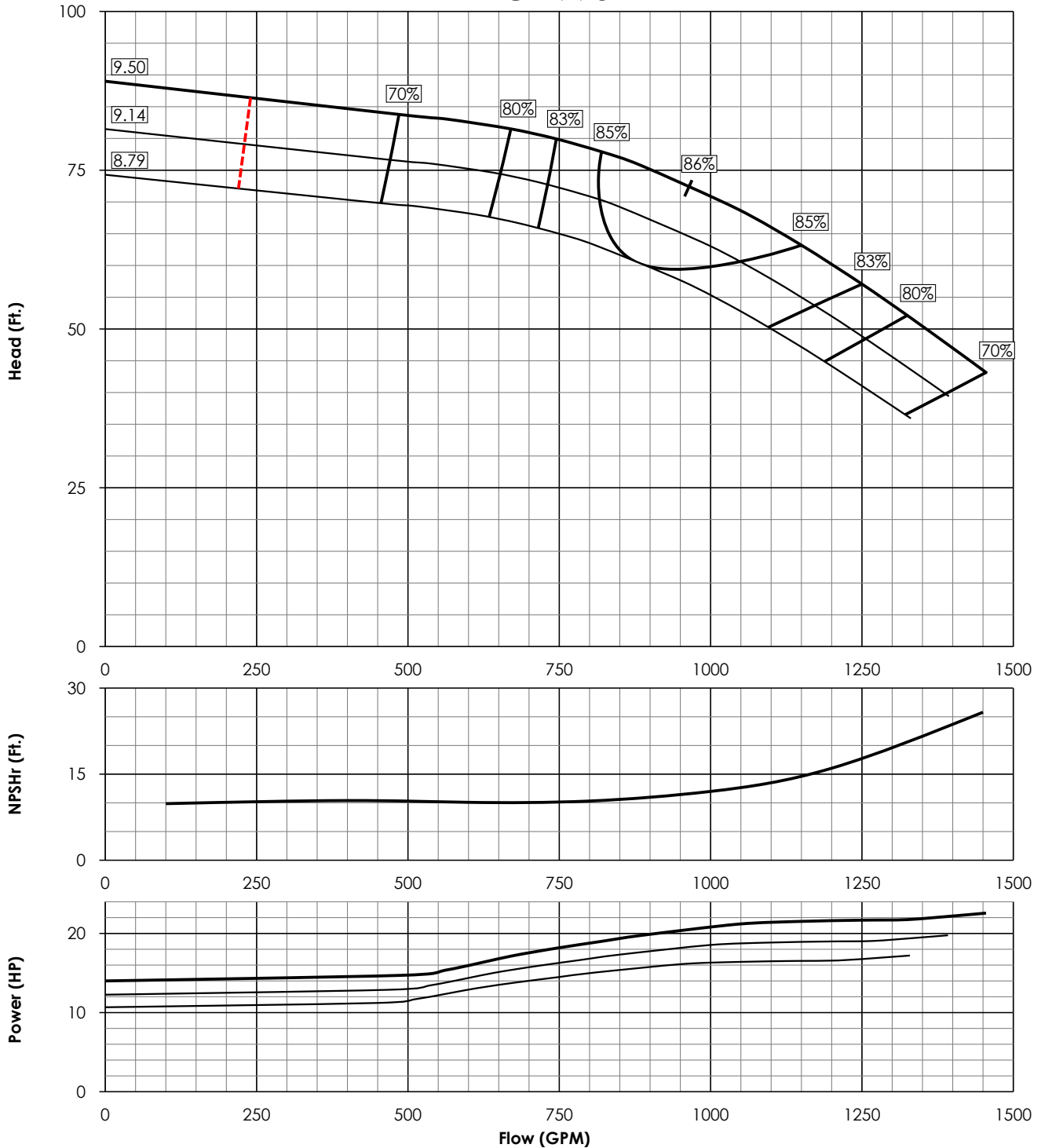
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412MC0

Updated: Oct. 2017

FW12MC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2532
K _T	7.40 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



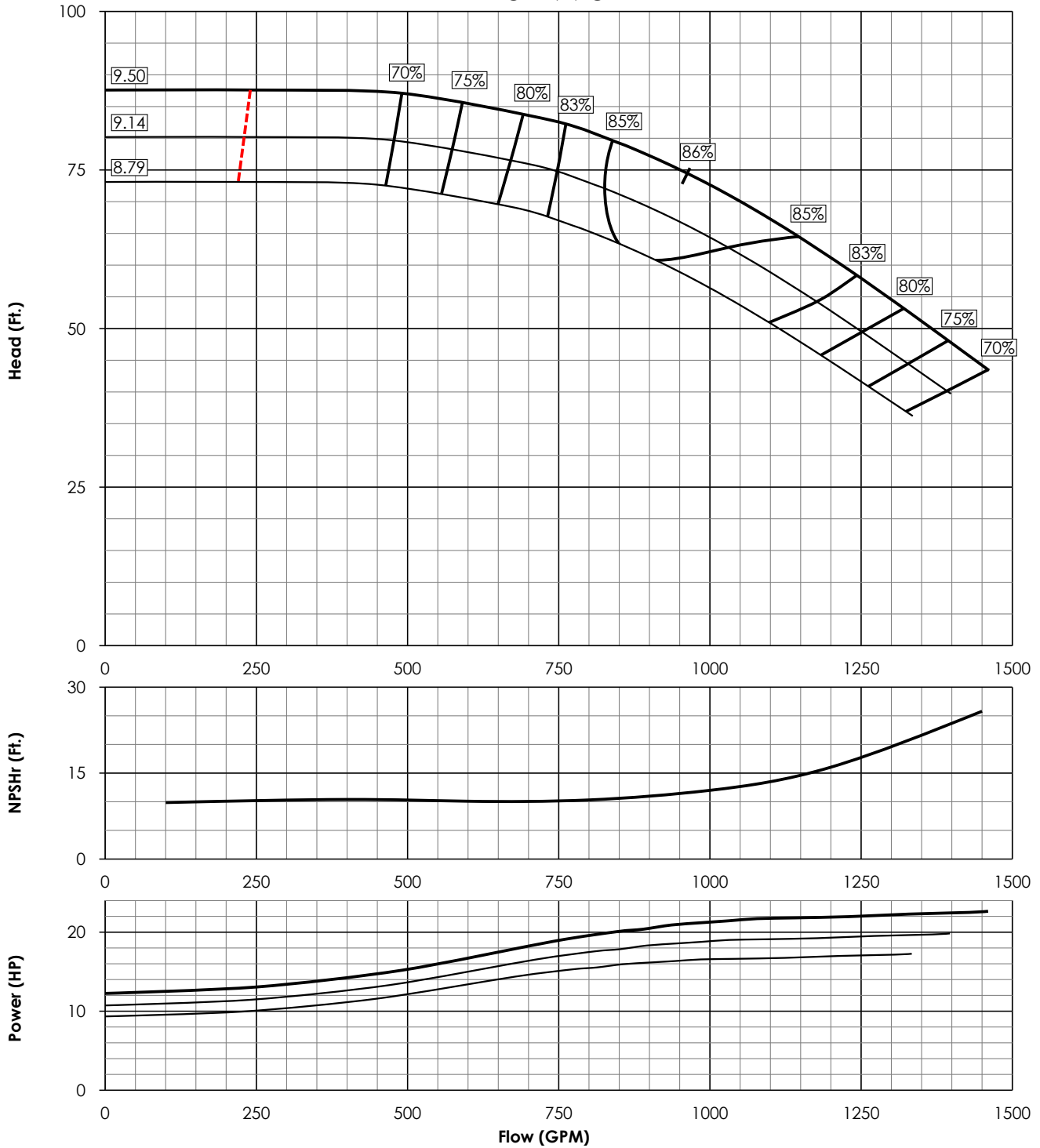
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412MS0

Updated: Oct. 2017

FW12MS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2163
K _T	10.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



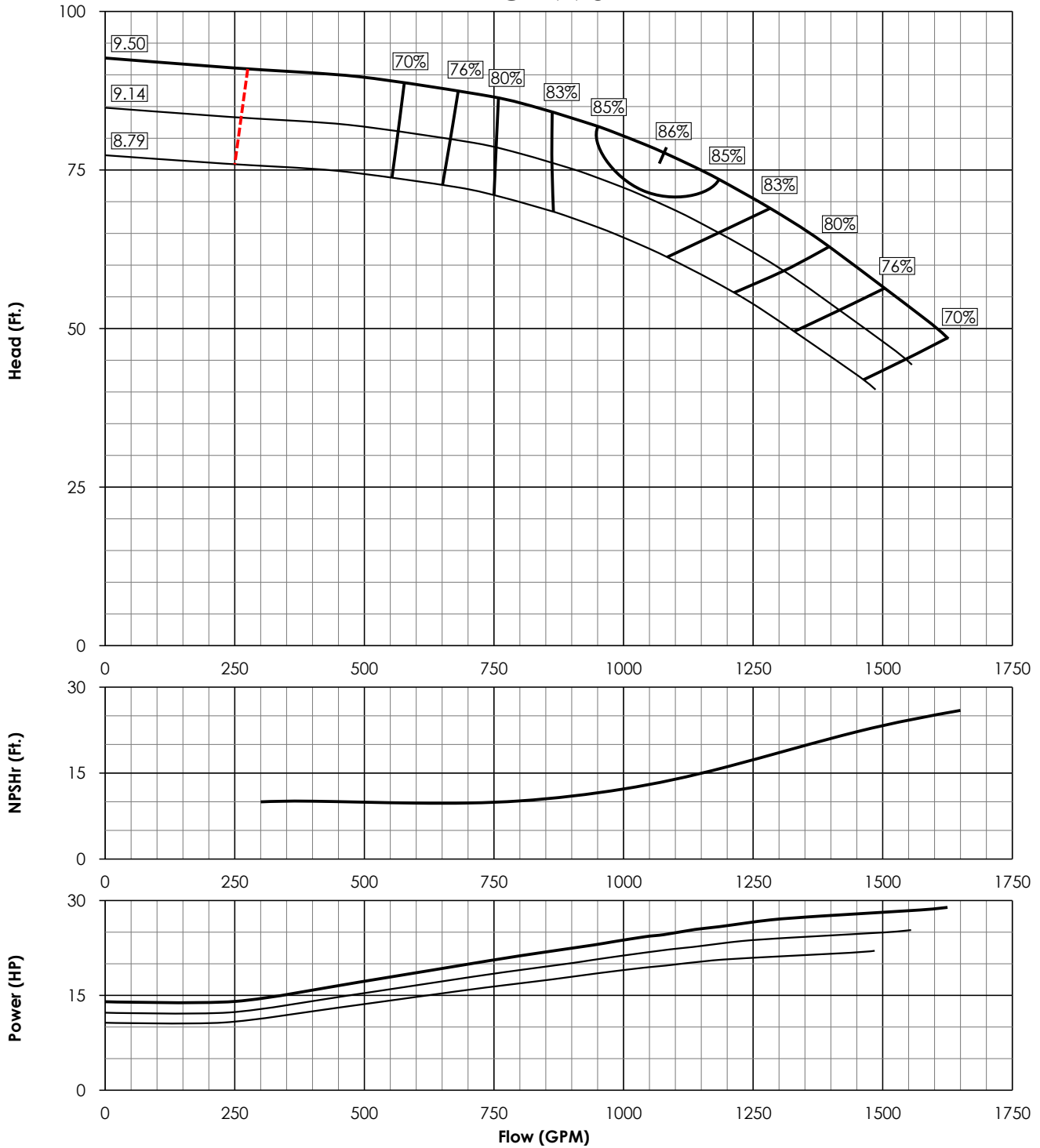
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412HC0

Updated: Oct. 2017

FW12HC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2223
K _t	7.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



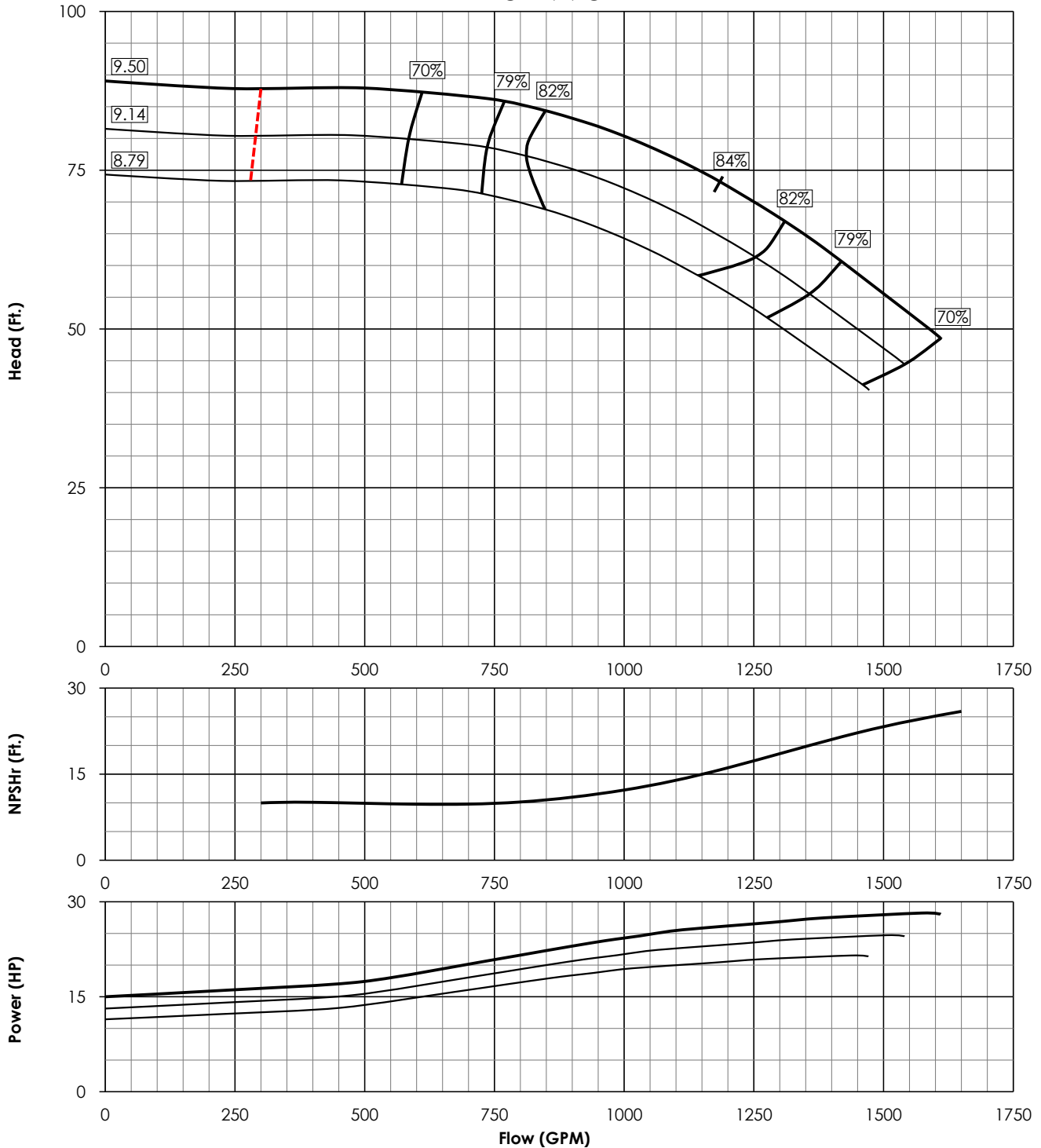
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412HS0

Updated: Oct. 2017

FW12HS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2433
K _T	10.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW12LCXL**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW12MCXL**

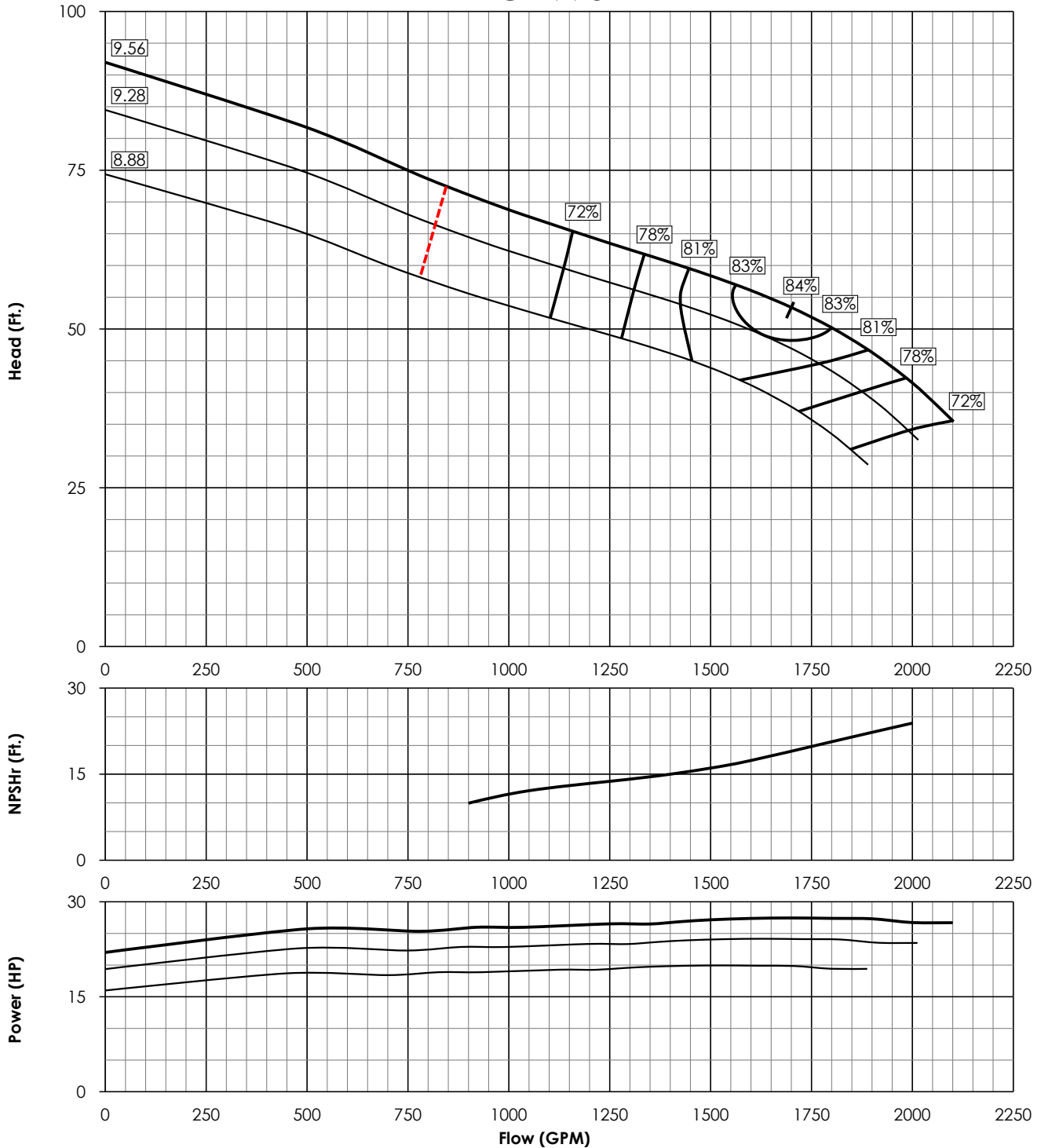


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW12HCXL**

FW12RC 1770 RPM



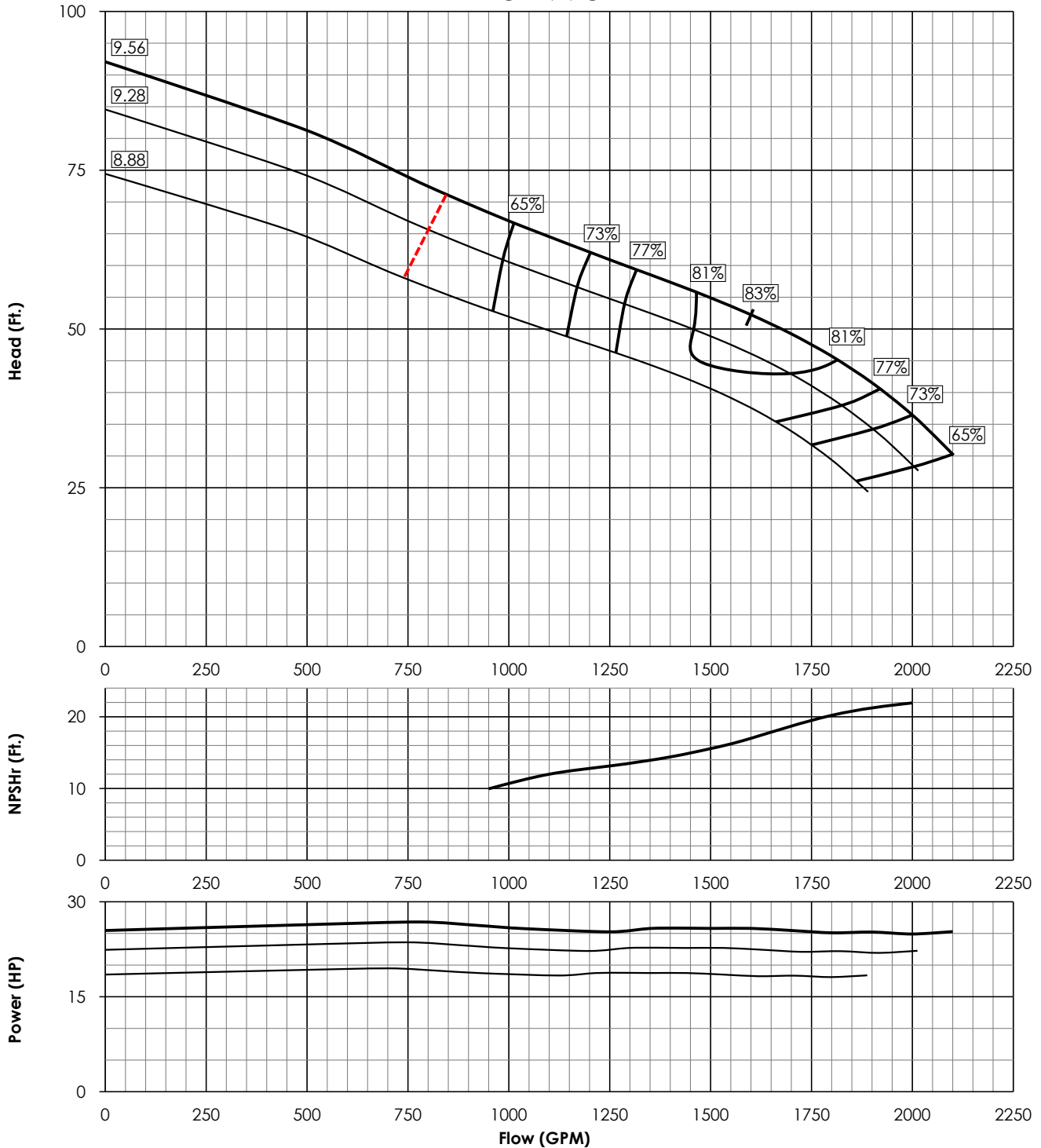
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3679
K _t	16.5 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	245 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	95 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	26"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12RS 1770 RPM



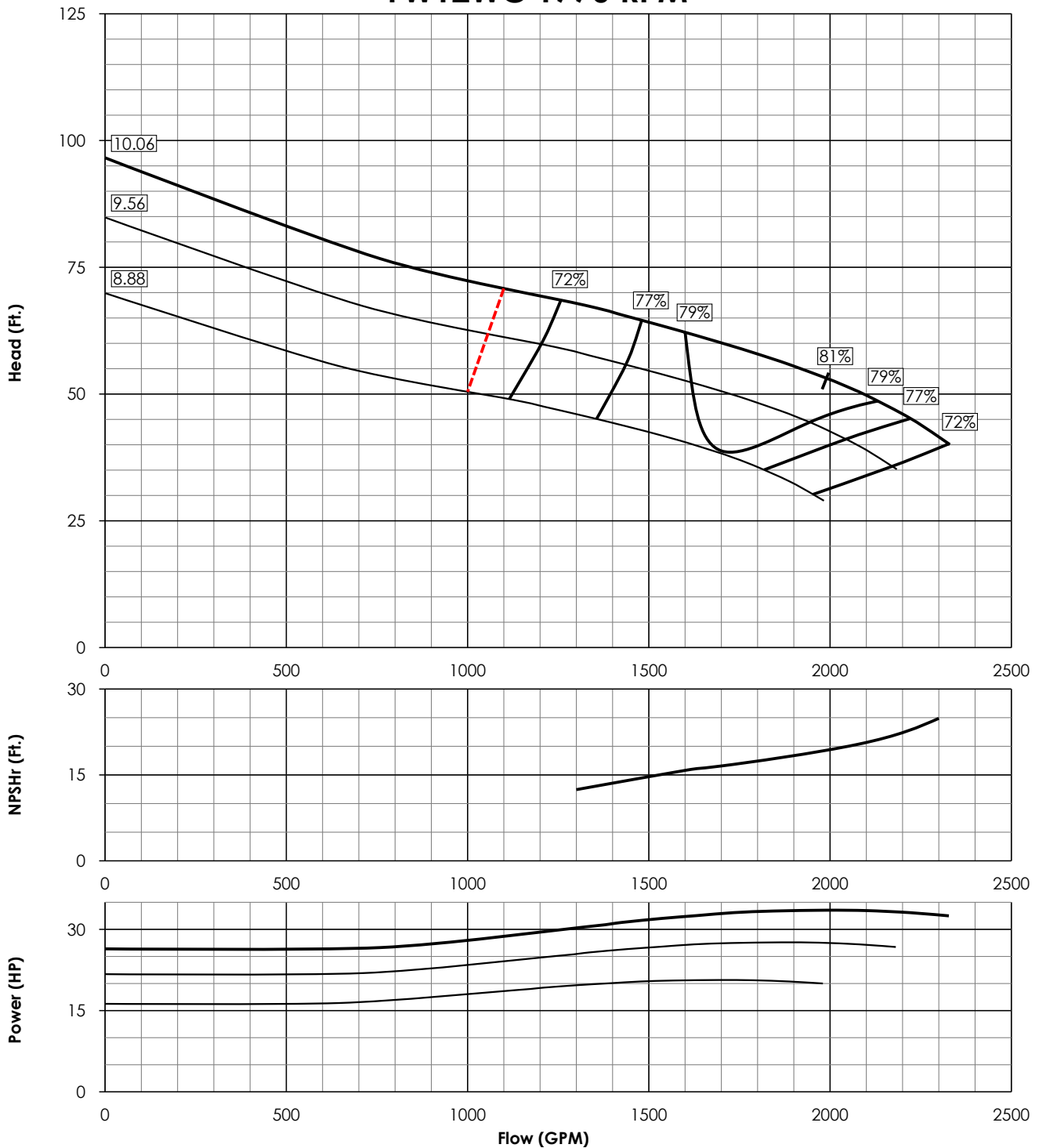
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3560
K _t	19.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	245 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	95 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12WC 1770 RPM



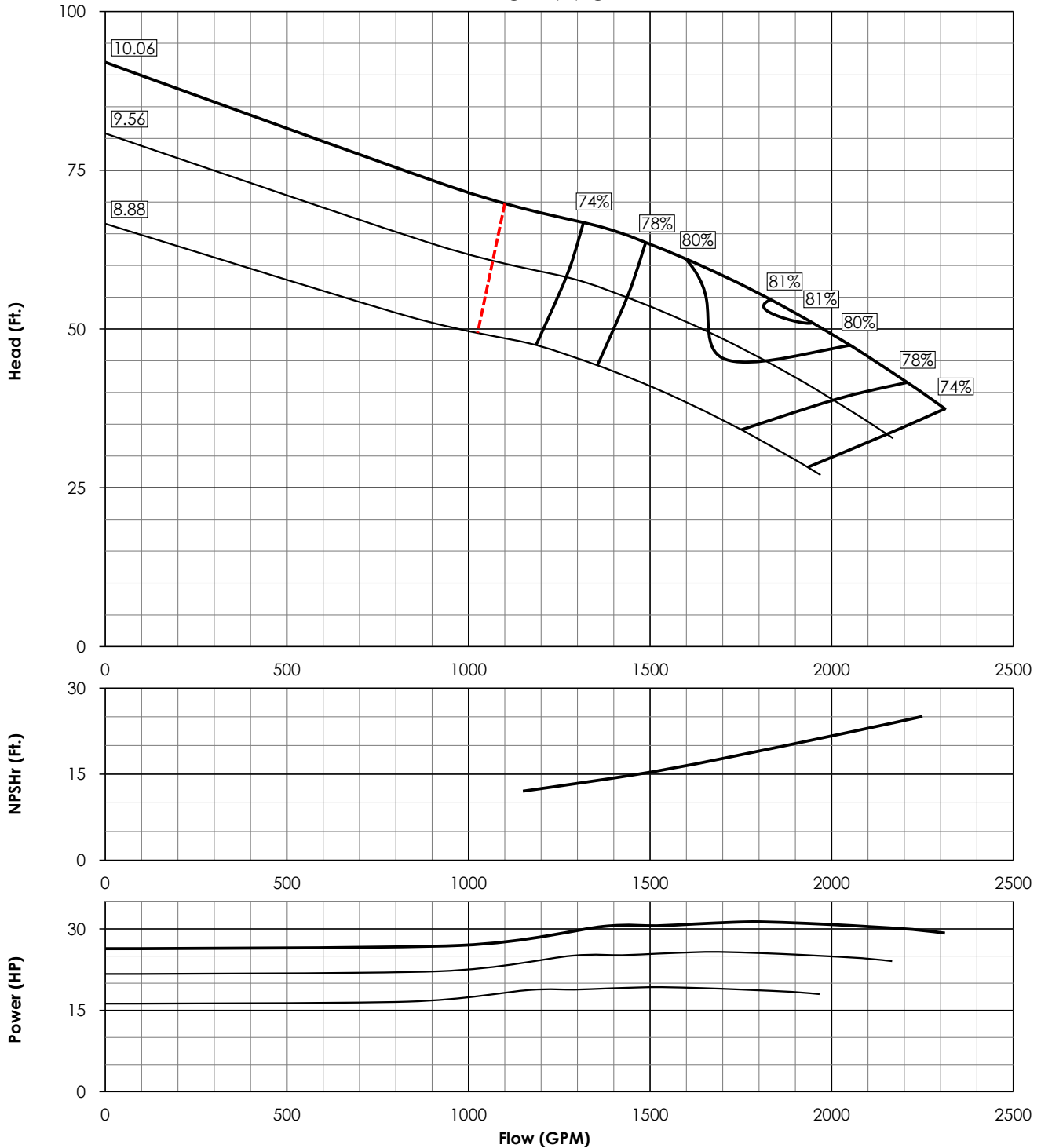
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	4017
K _T	18.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.75"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	105 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12WS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3824
K _T	11.5 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.75"	SINGLE STG. WT.	265 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	105 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



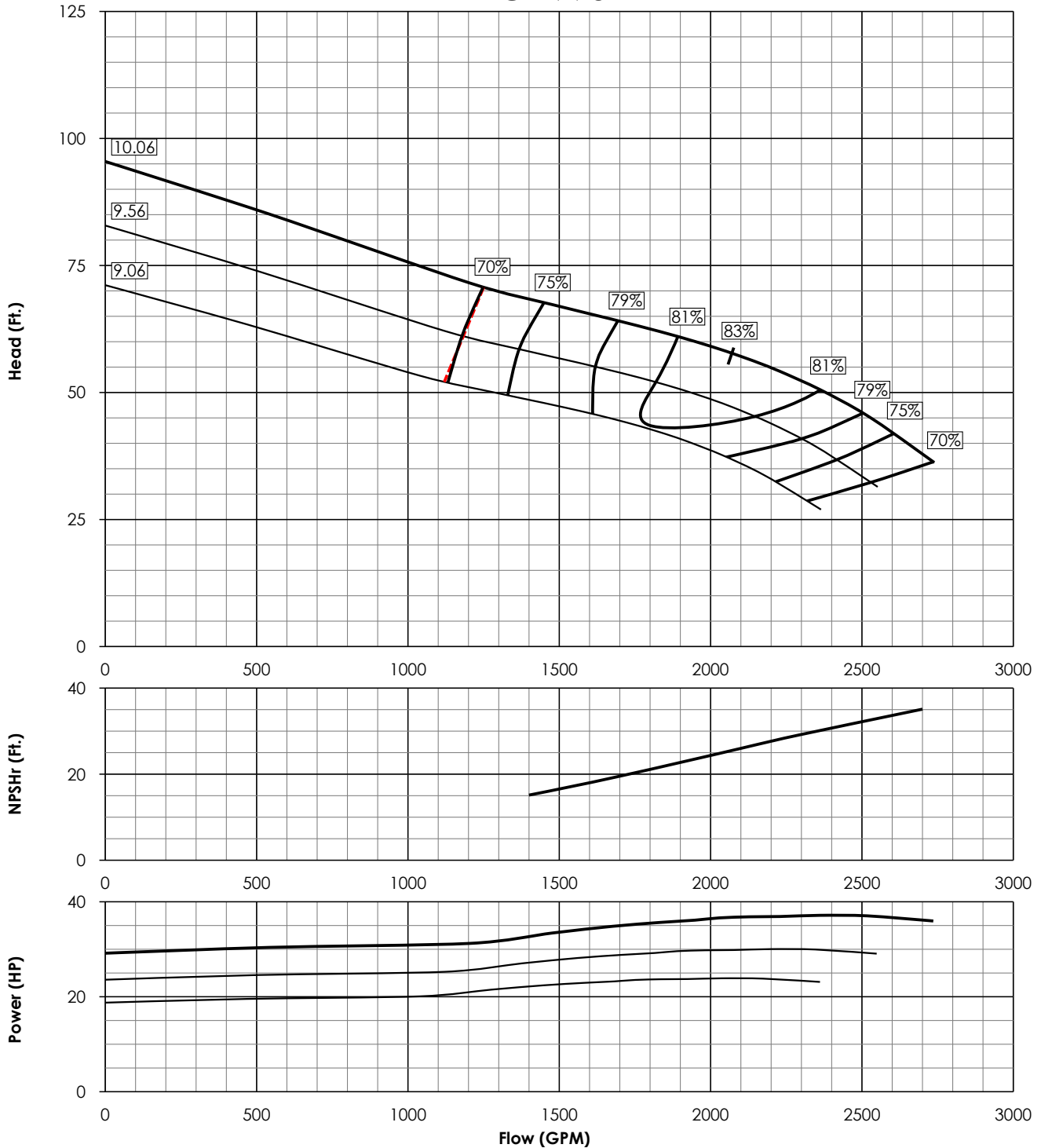
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412XC0

Updated: Jan. 2020

FW12XC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3832
K _T	16.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.75"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	105 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



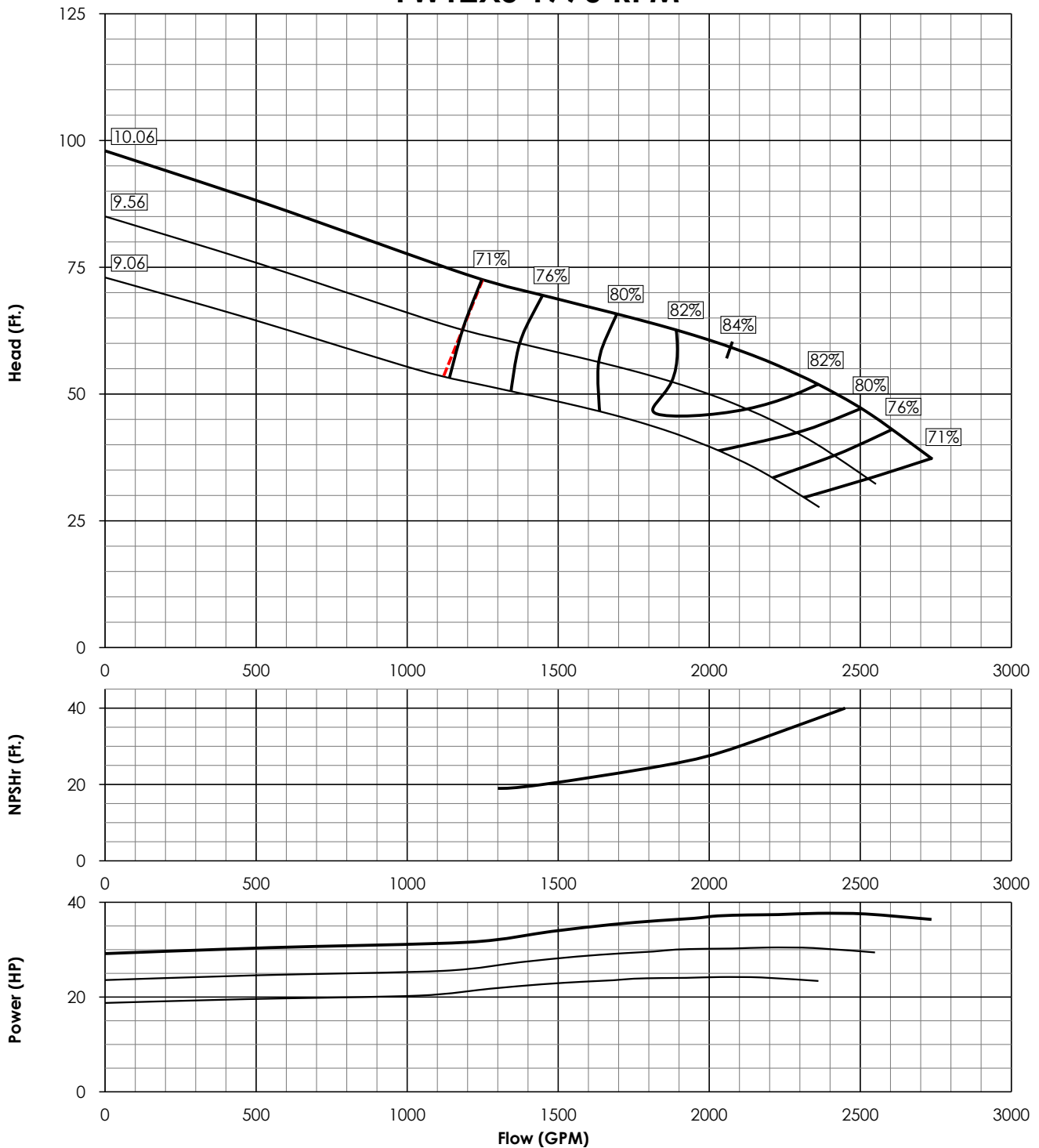
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6412XS0

Updated: Jul. 2019

FW12XS 1770 RPM



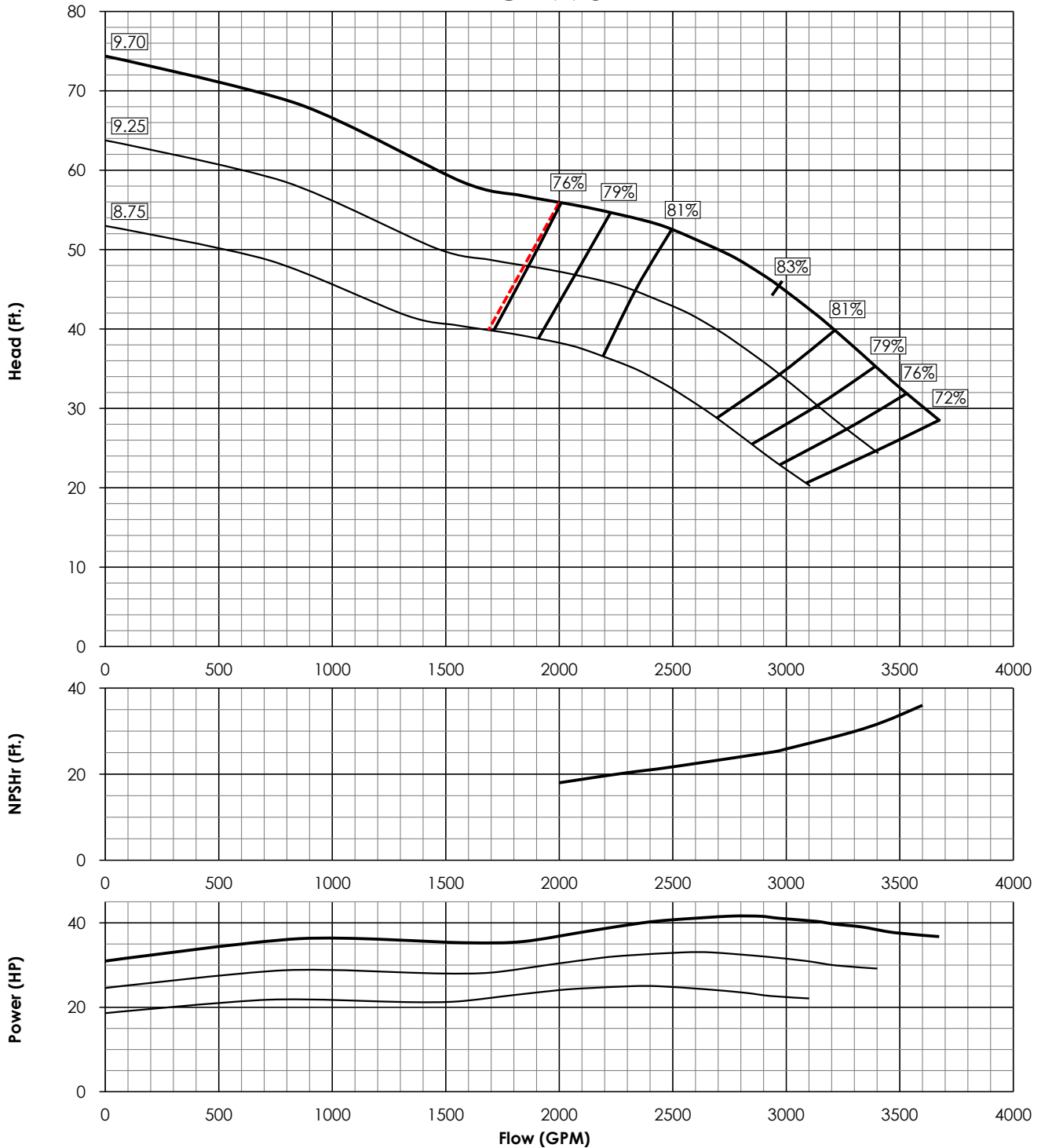
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3783
K _T	17.4 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.75"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	105 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERGENCE	32"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12ZC 1770 RPM



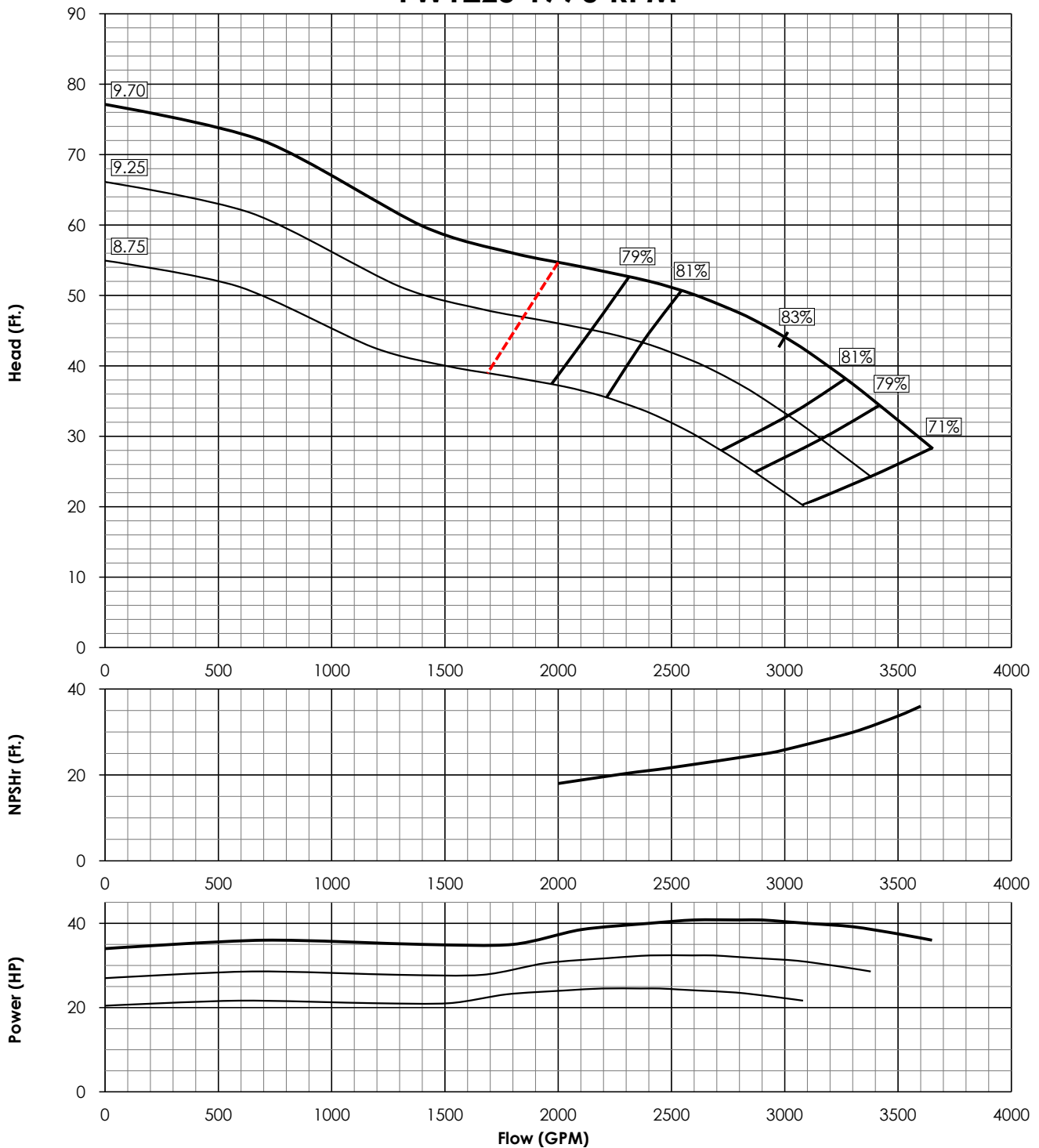
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1800 RPM
N _s	5526
K _T	14.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	355 LBS
STD. LATERAL	0.90"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	24"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12ZS 1770 RPM



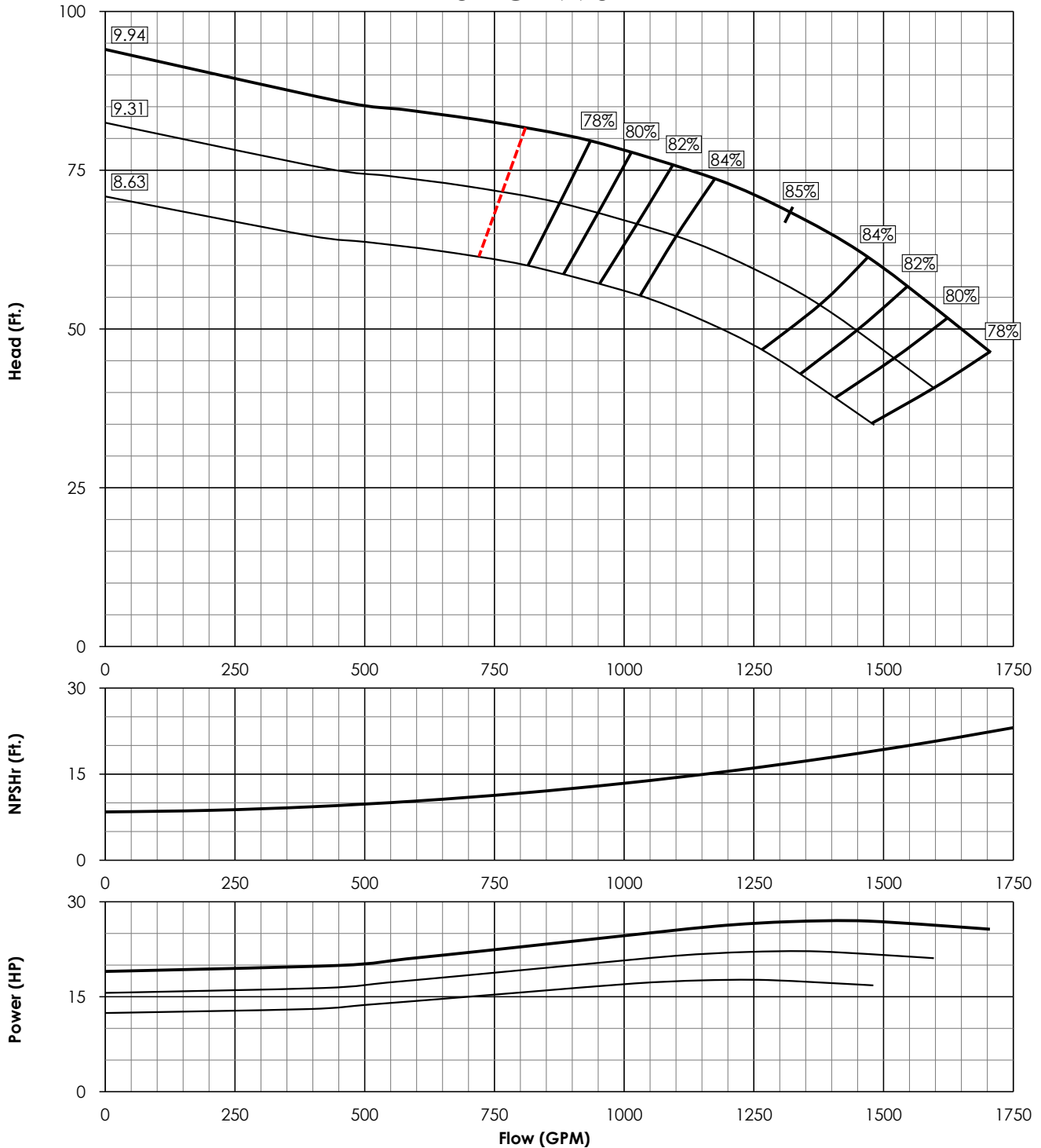
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1800 RPM
N _s	5675
K _t	20.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	355 LBS
STD. LATERAL	1.25"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	24"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW13MC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2667
K _T	7.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	12.13"	SINGLE STG. WT.	265 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	115 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERSION	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW13MCXL**



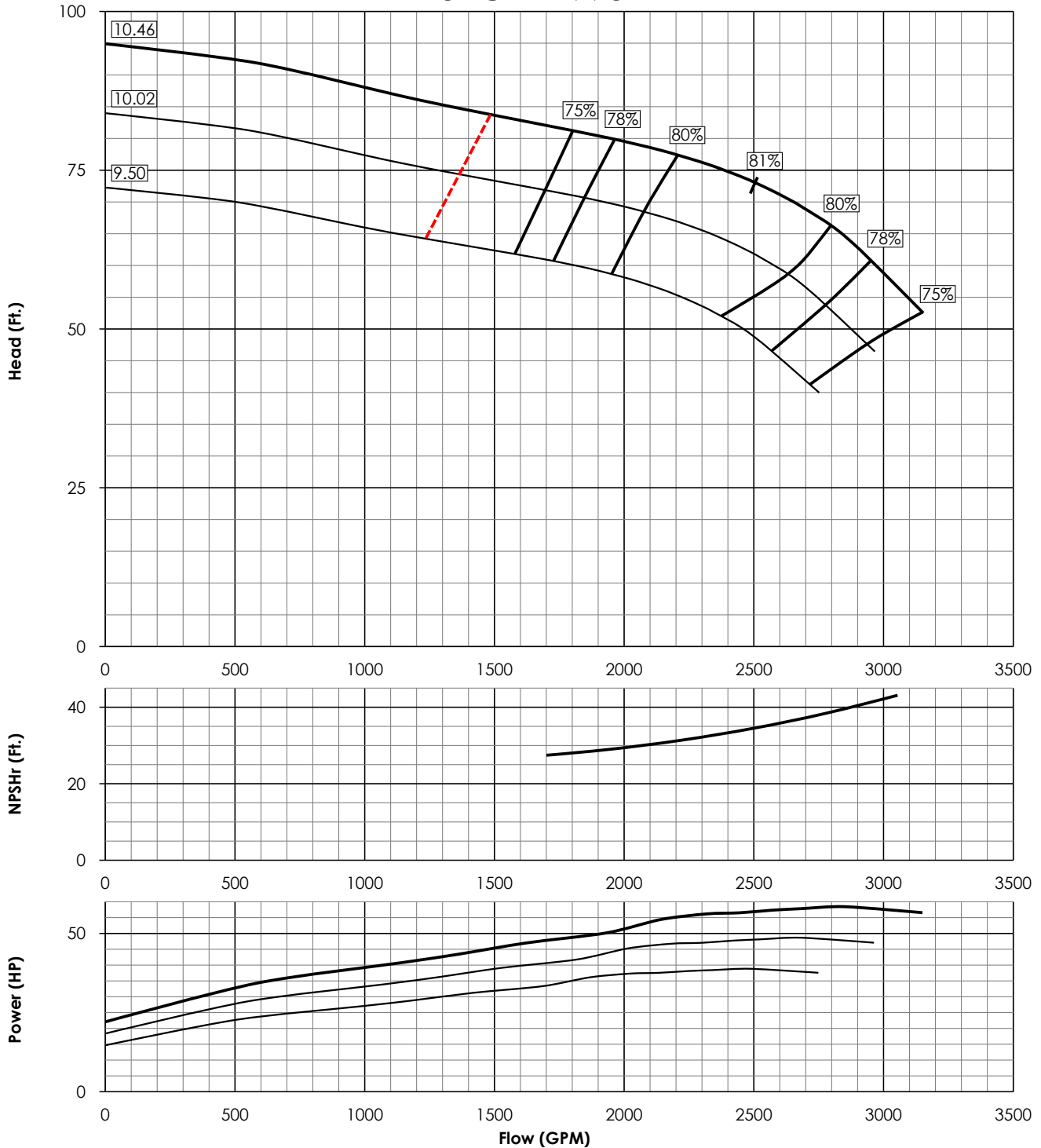
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6413YCXL0

Updated: Jan. 2020

FW13YCXL 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3562
K _T	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	12.50"	SINGLE STG. WT.	385 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10"	MIN. SUBMERSION	28"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



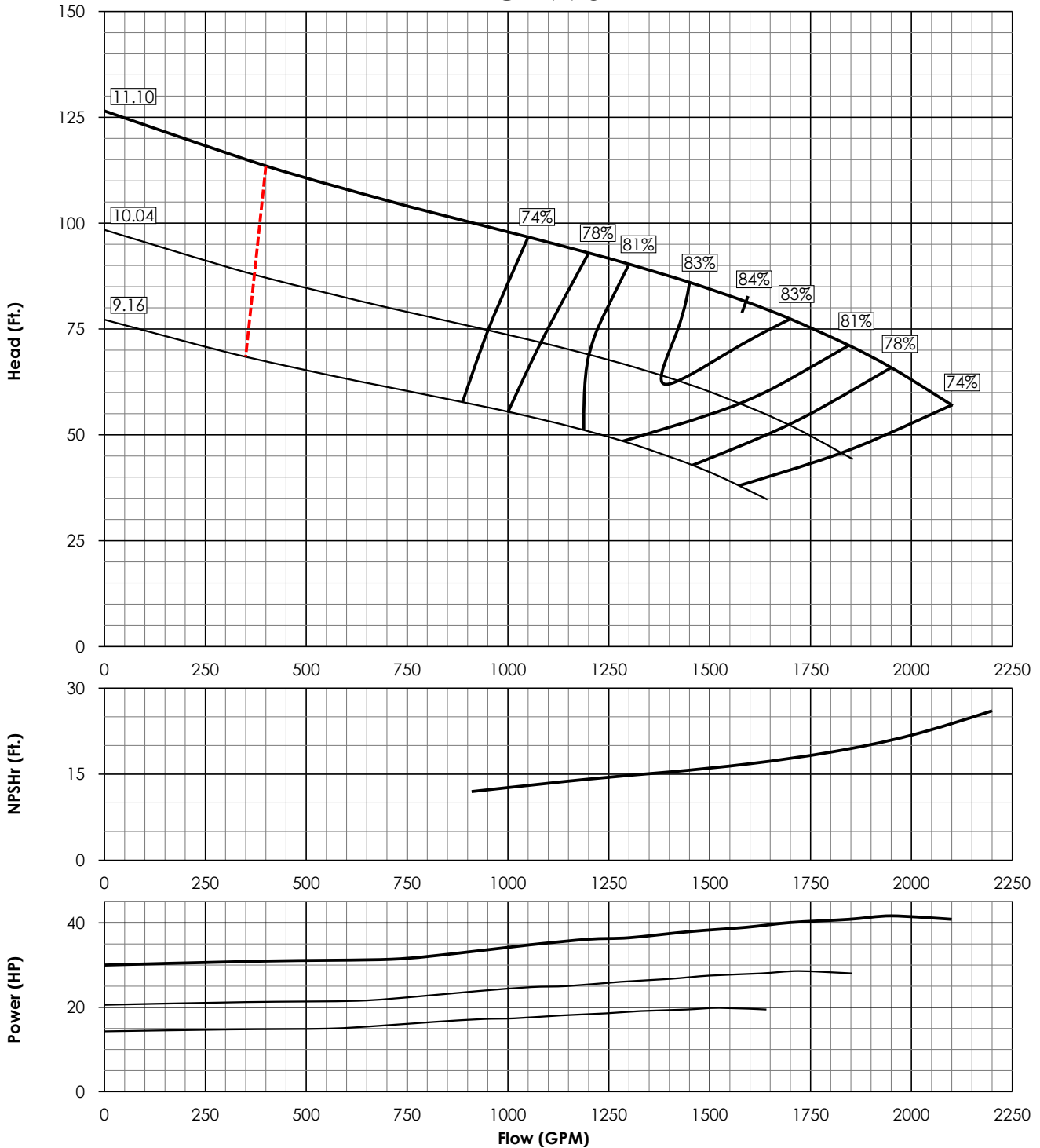
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6414LC1

Updated: Apr. 2018

FW14LC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2602
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



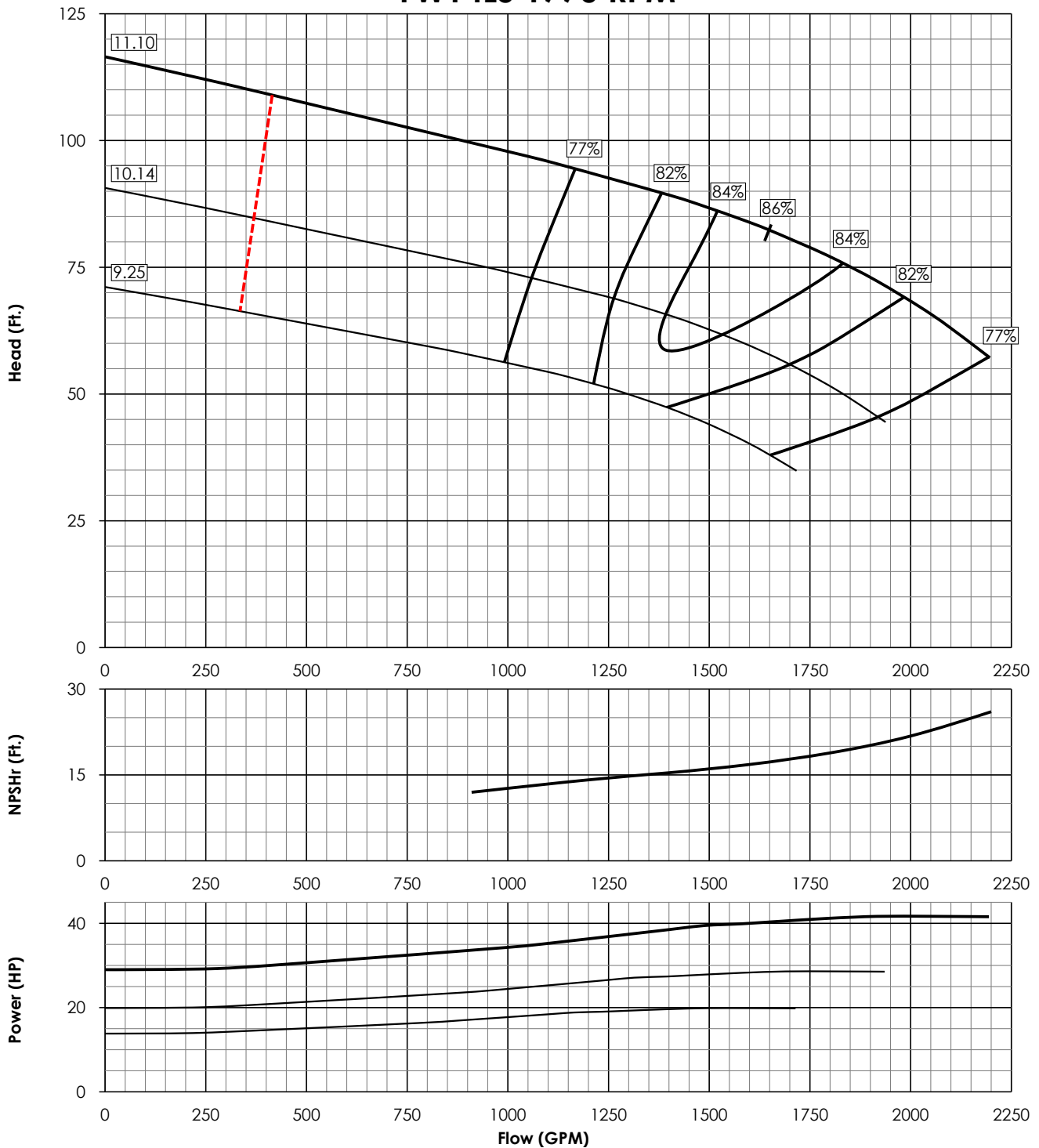
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6414LS0

Updated: May 2017

FW14LS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2618
K _T	16.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



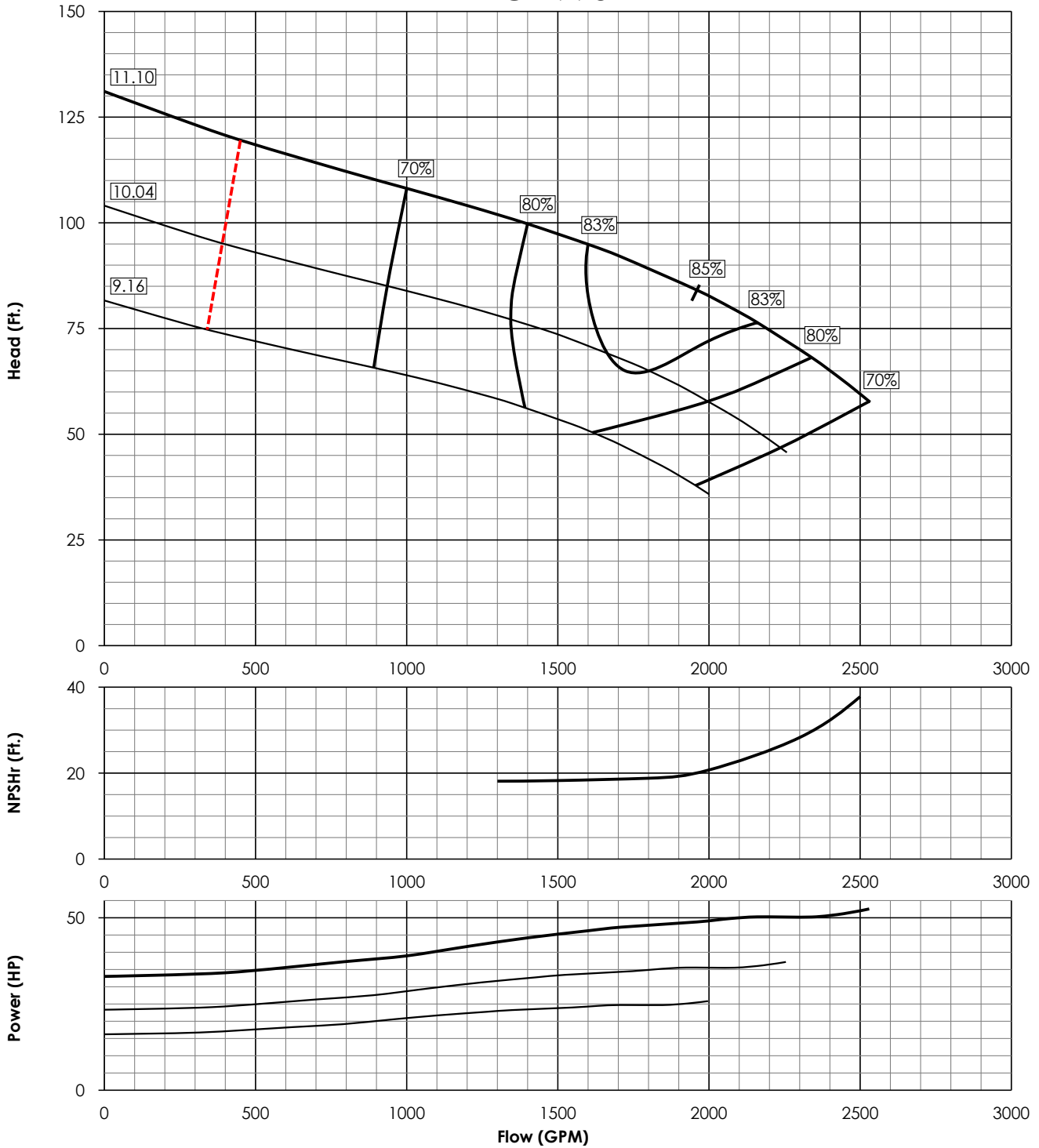
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6414MC1

Updated: Apr. 2018

FW14MC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2829
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



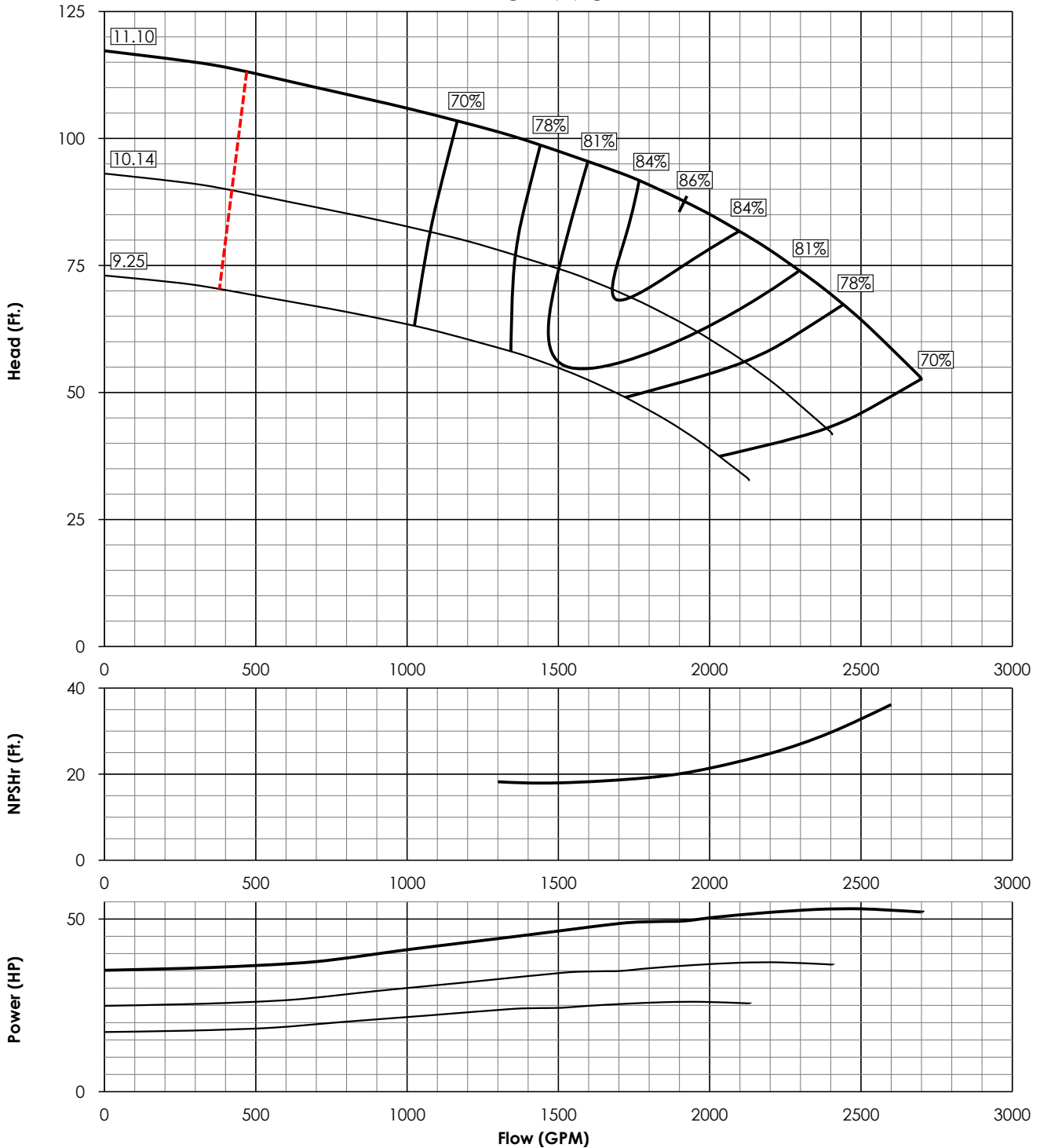
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6414MS0

Updated: May 2017

FW14MS 1770 RPM



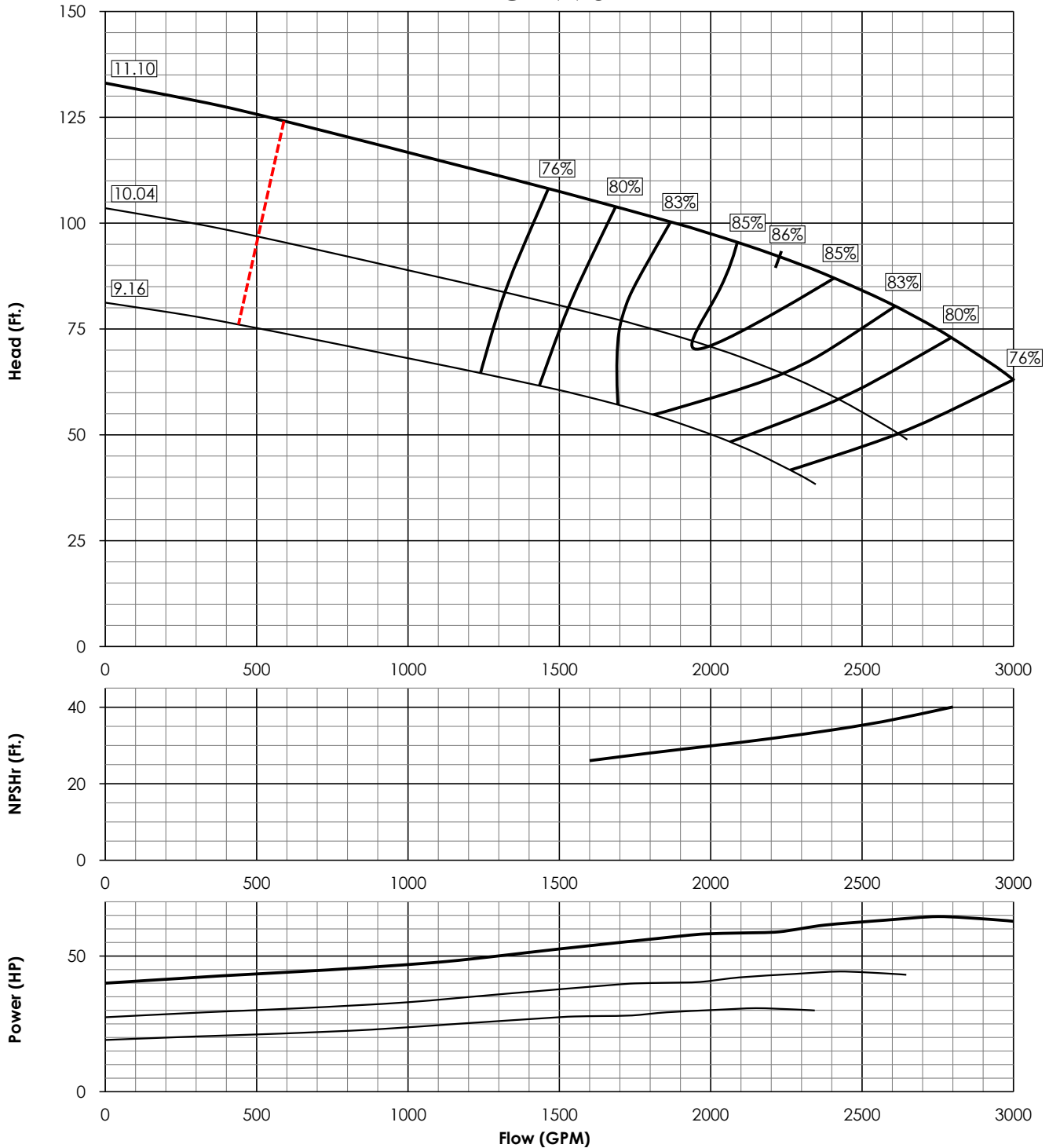
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2697
K _T	16.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14HC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2855
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



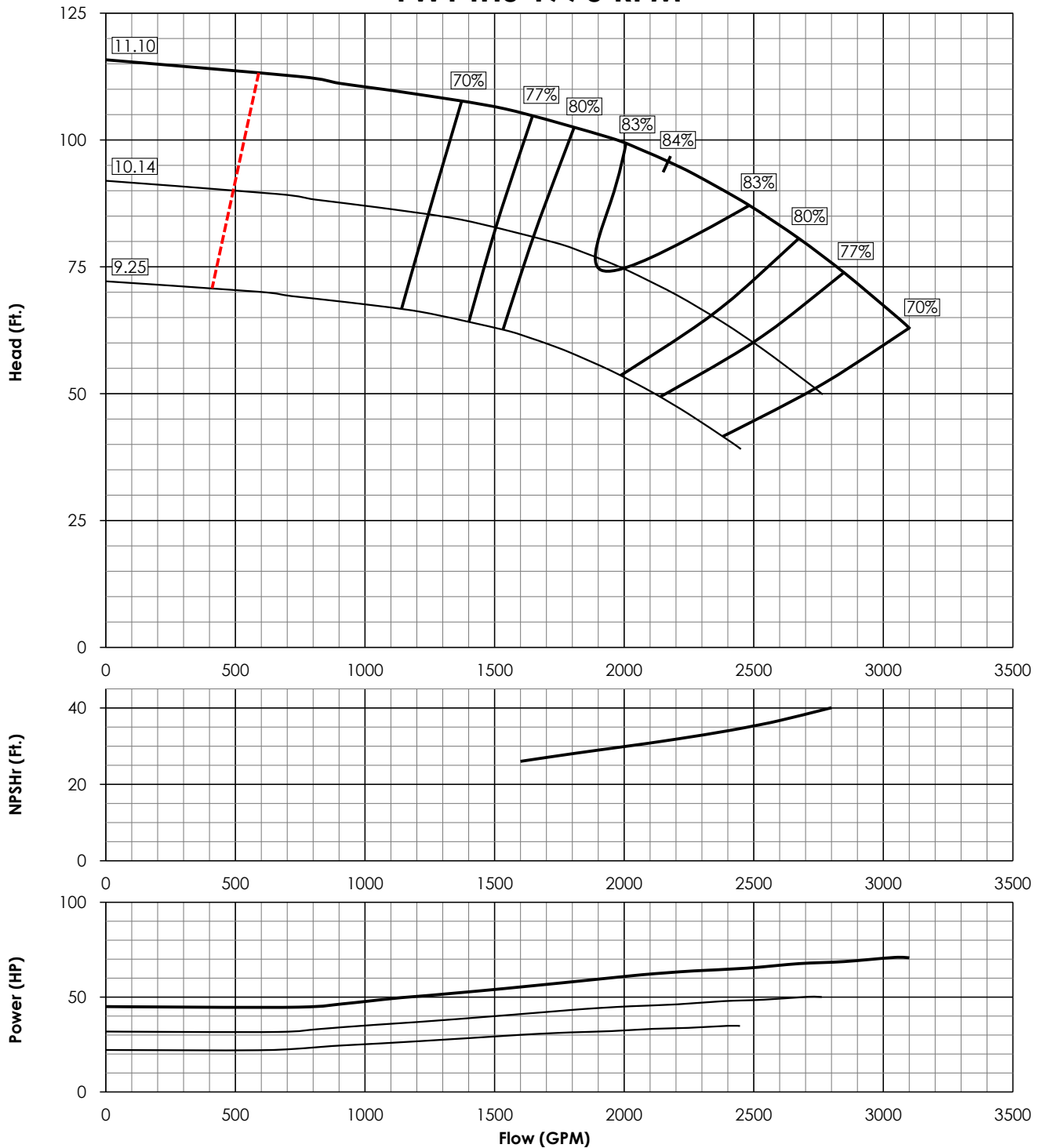
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6414HS0

Updated: May 2017

FW14HS 1770 RPM



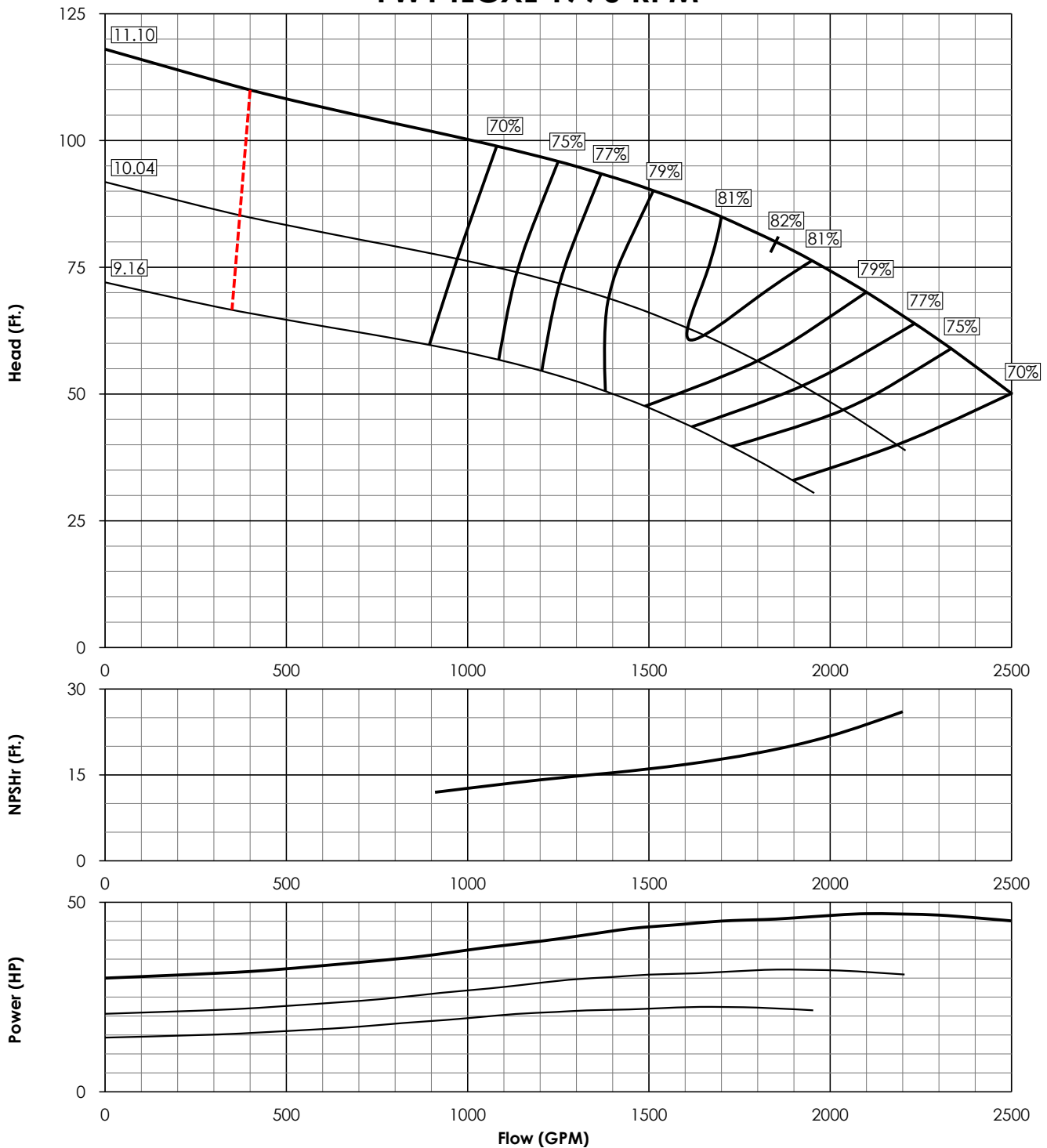
EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2688
K _t	16.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14LCXL 1770 RPM



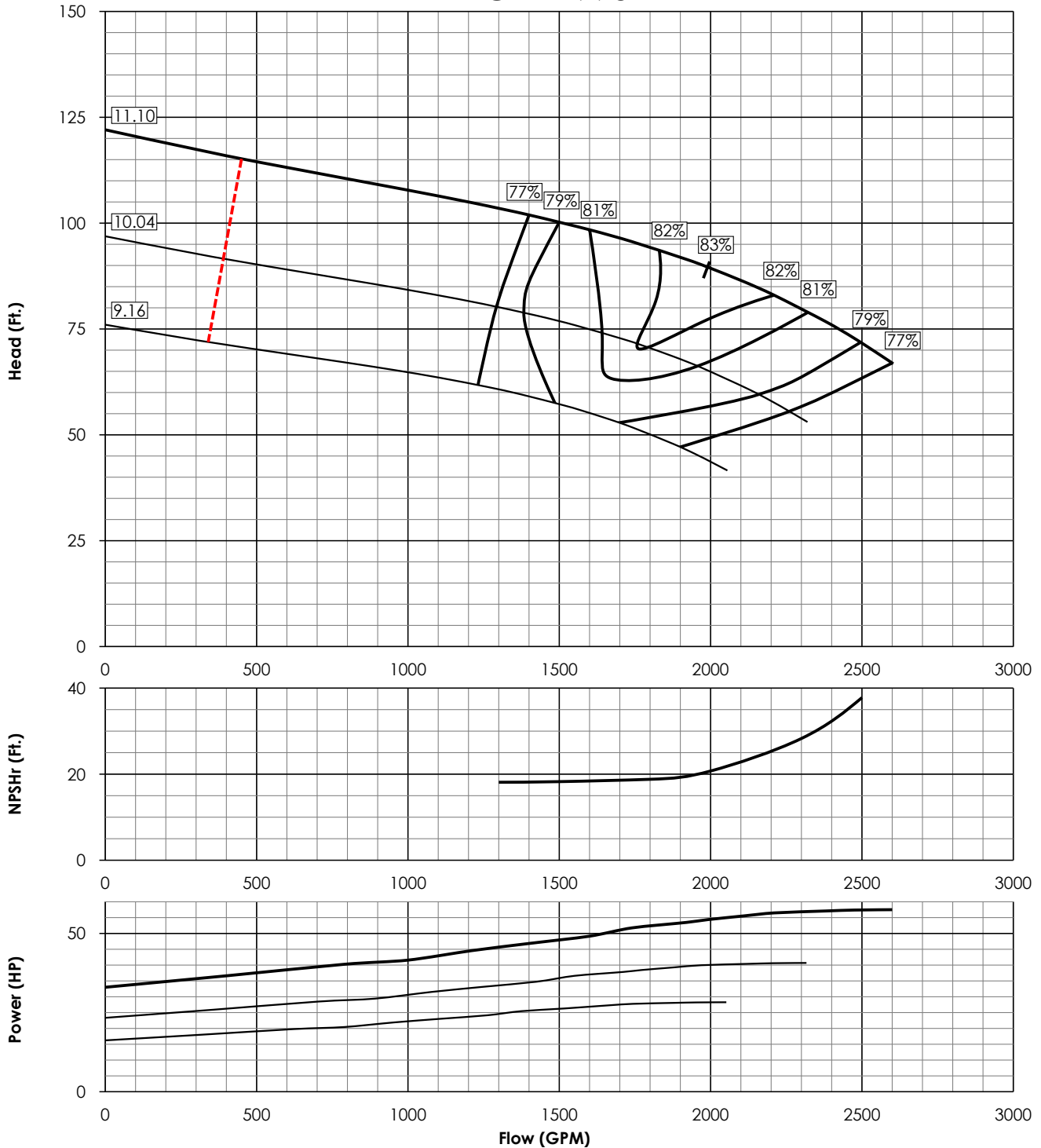
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2846
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	440 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	185 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14MCXL 1770 RPM



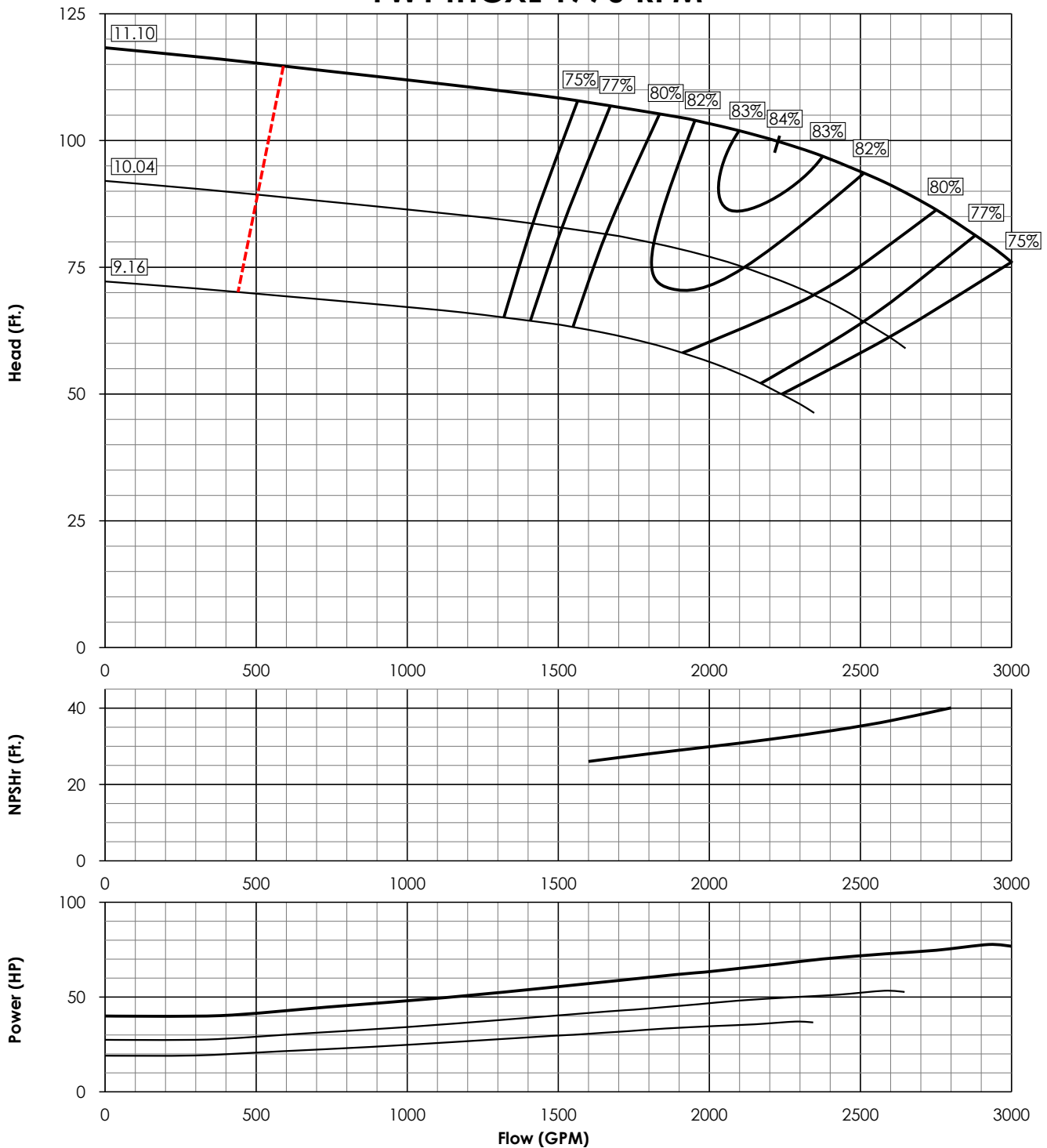
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2702
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	440 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	185 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14HCXL 1770 RPM



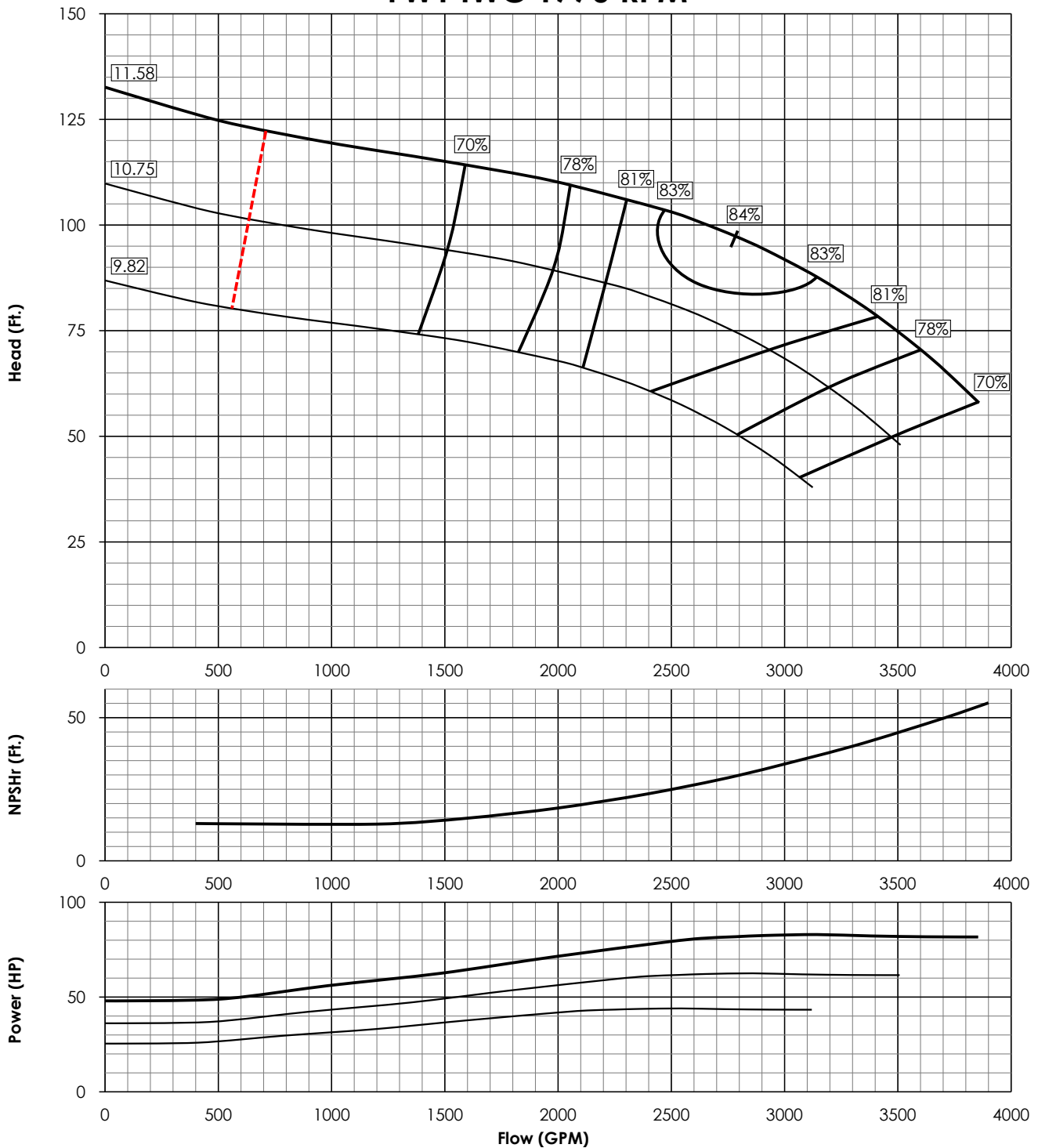
EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2641
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	440 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	185 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14WC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2985
K _T	16.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	550 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	215 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMURGENCE	32"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	330 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



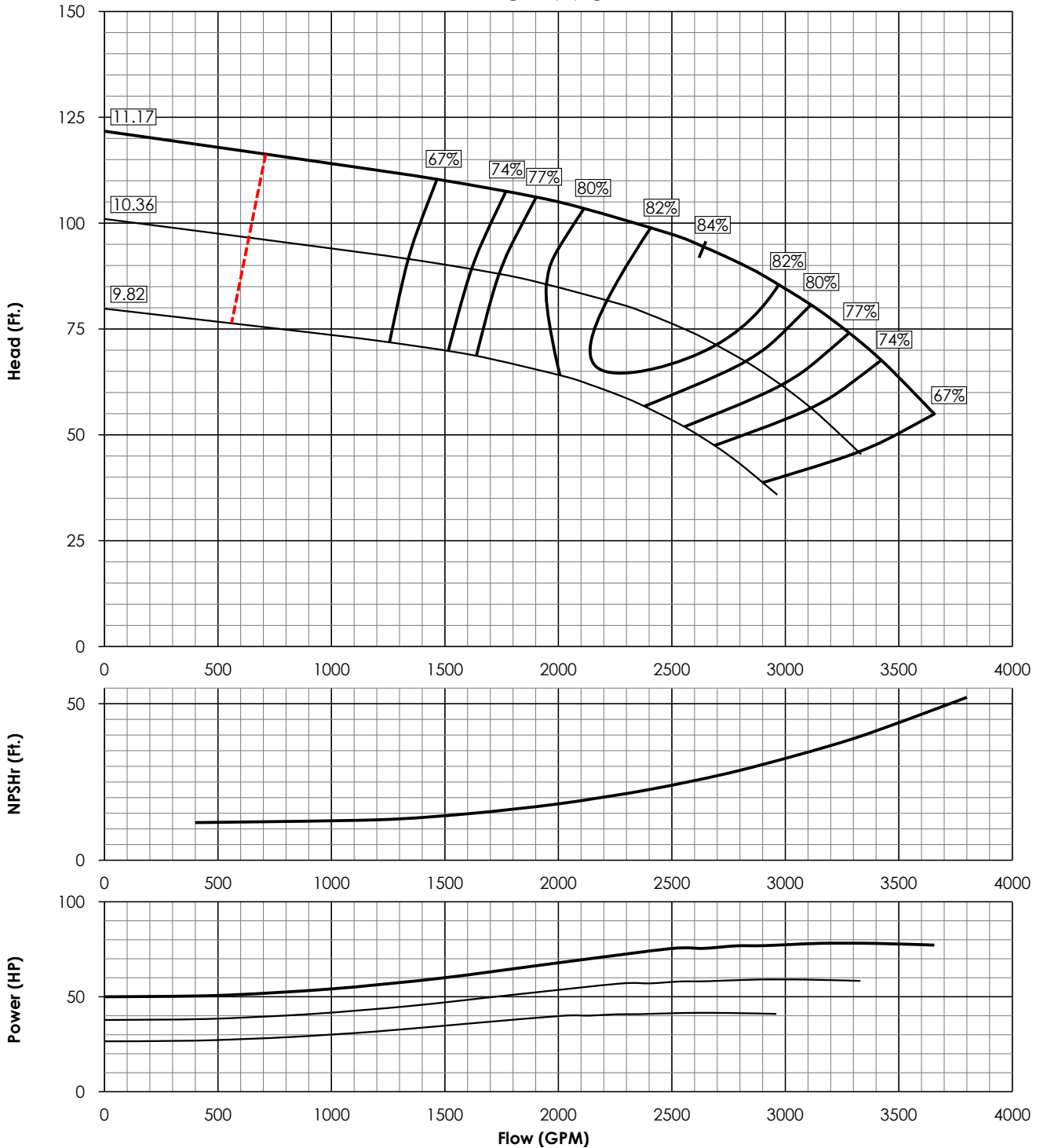
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6414WS0

Updated: Sep. 2019

FW14WS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2969
K _t	24.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	550 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	215 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	32"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	330 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



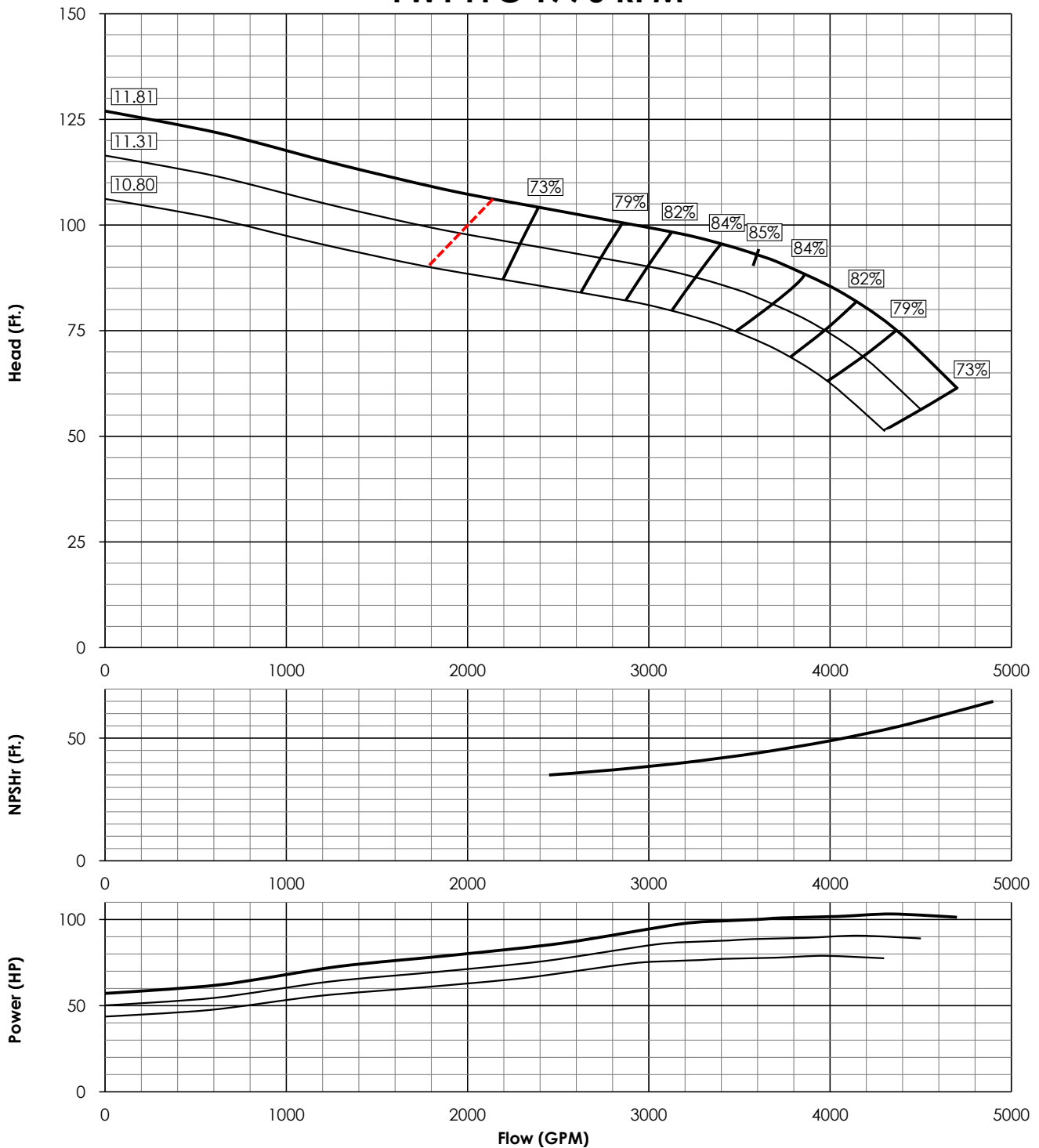
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6414YC2

Updated: Apr. 2021

FW14YC 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	N/A

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1800 RPM
N _s	3544
K _T	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	520 LBS
STD. LATERAL	1.12"	ADD. STG. WT.	210 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



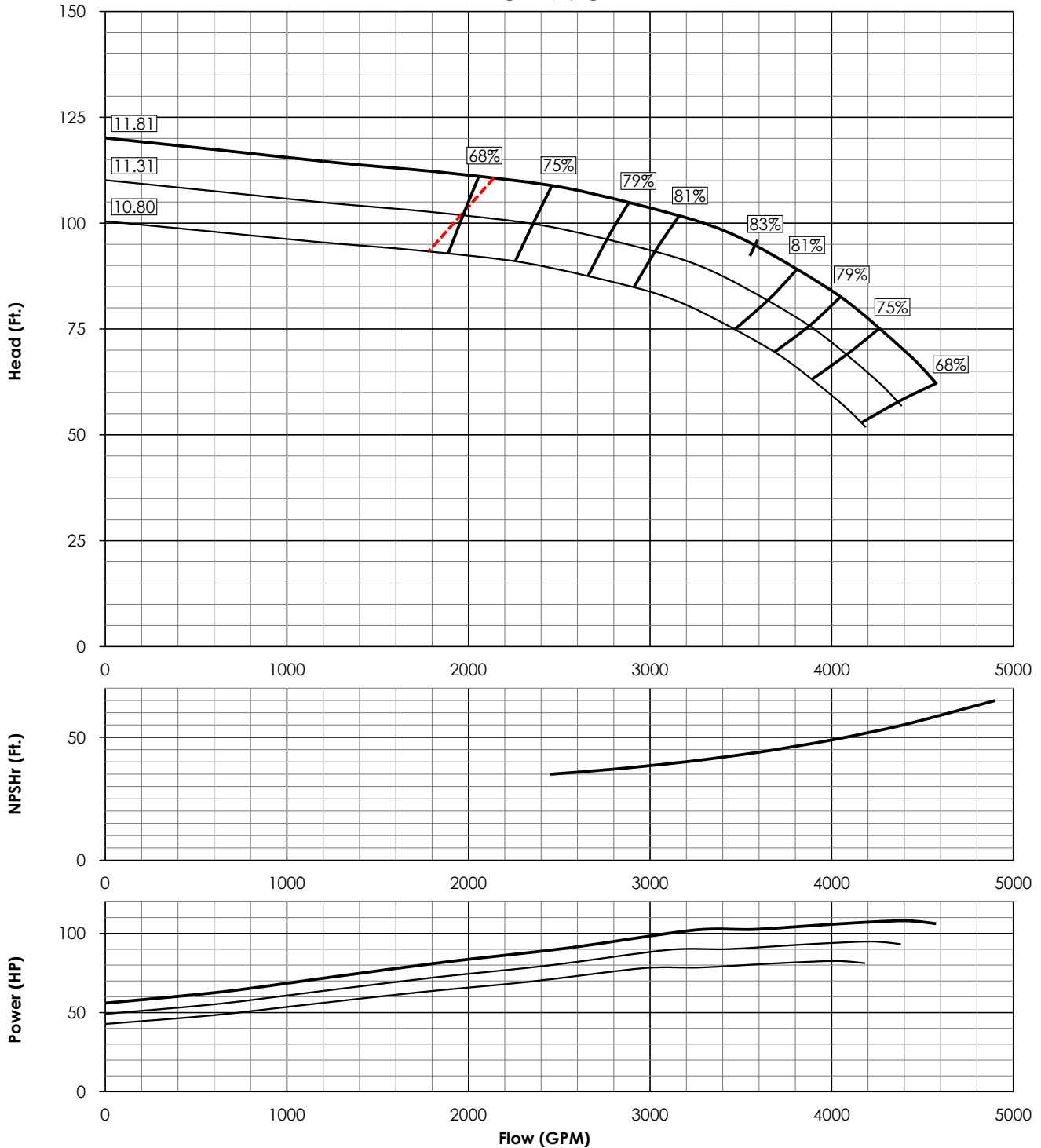
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6414YS1

Updated: Apr. 2021

FW14YS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	N/A

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1800 RPM
N _s	3501
K _T	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	550 LBS
STD. LATERAL	1.12"	ADD. STG. WT.	215 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



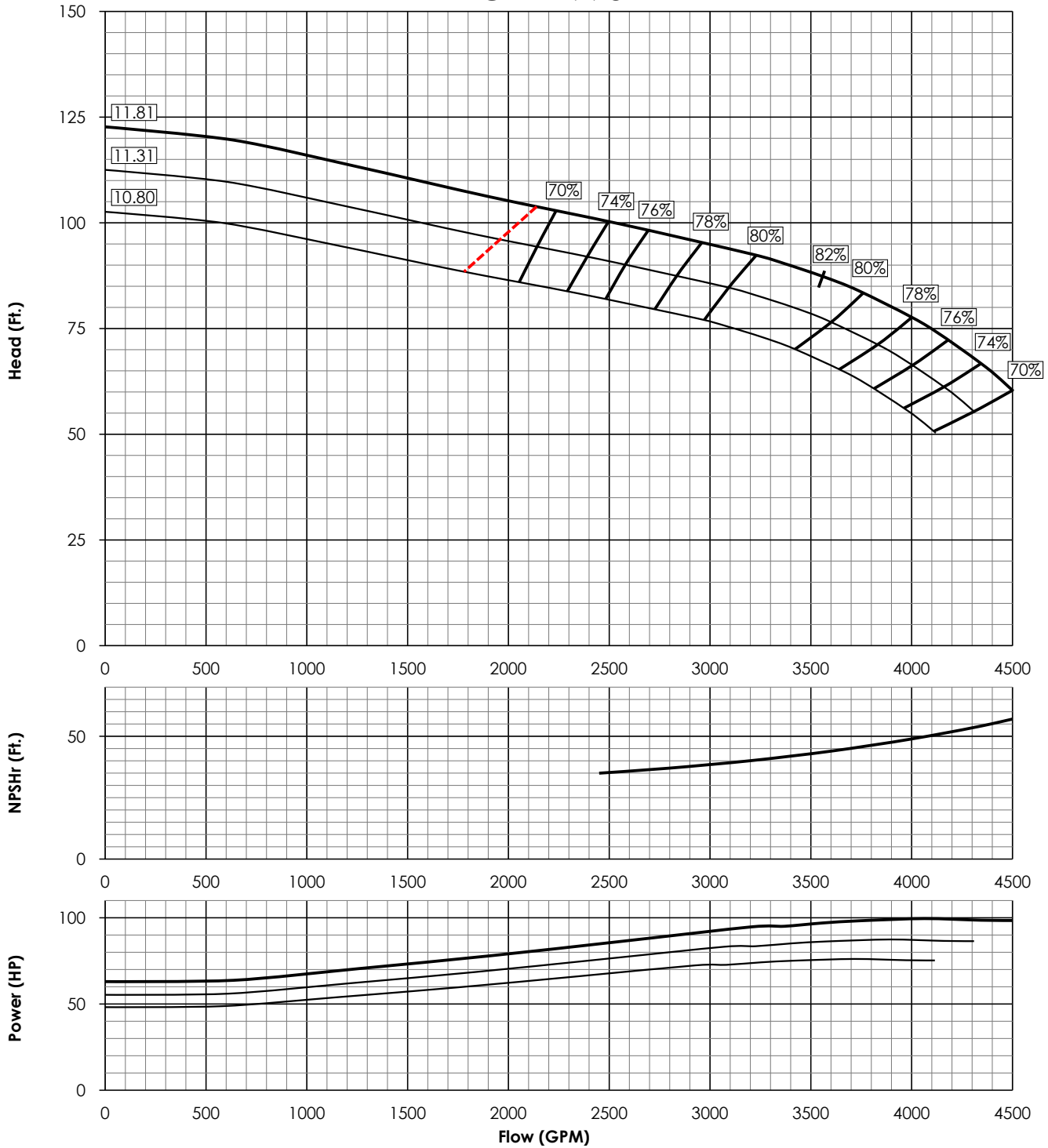
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6414YCXL1

Updated: Apr. 2021

FW14YCXL 1770 RPM



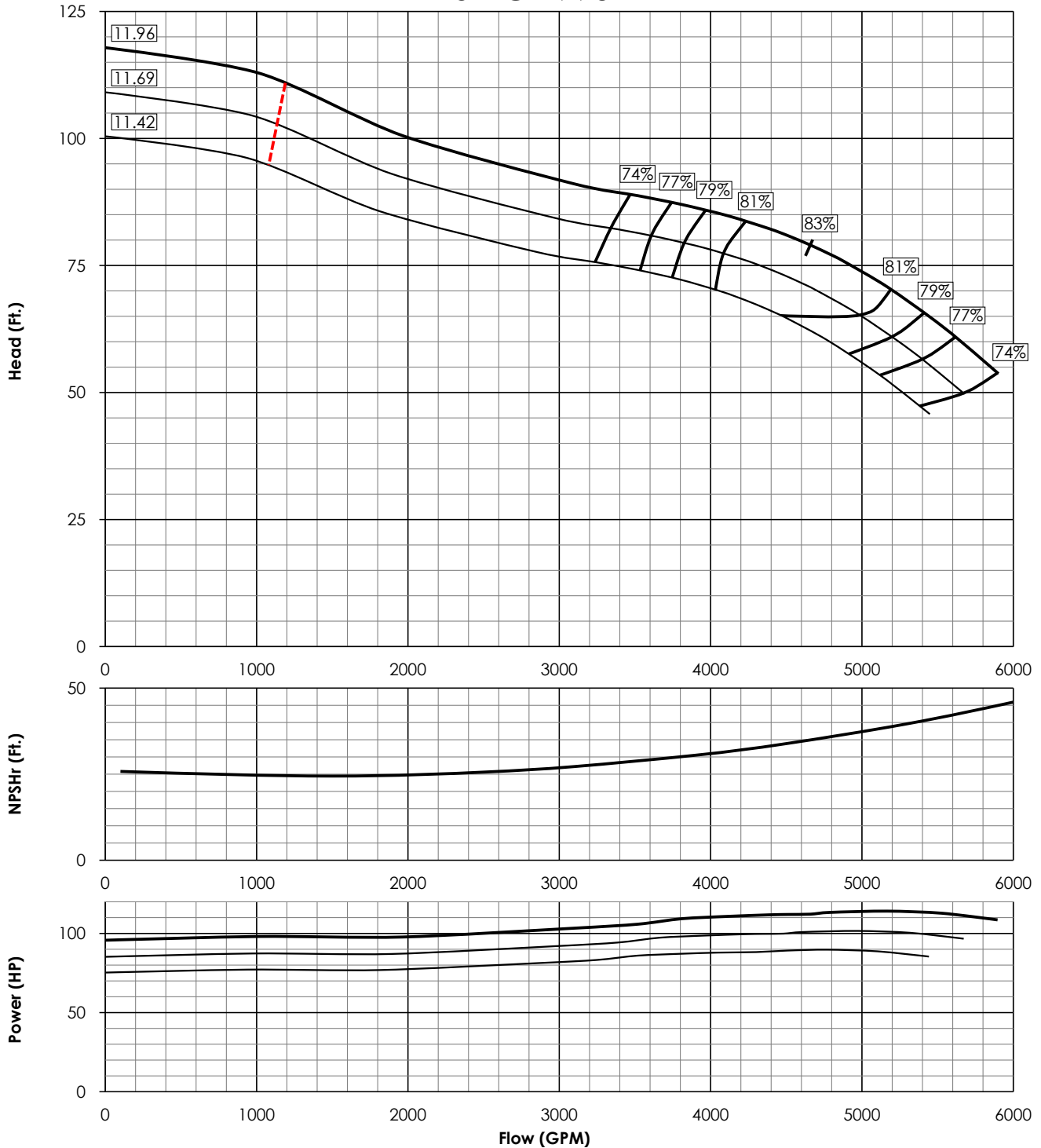
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	N/A

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1800 RPM
N _s	3694
K _t	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	535 LBS
STD. LATERAL	2.25"	ADD. STG. WT.	230 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW15WC 1770 RPM



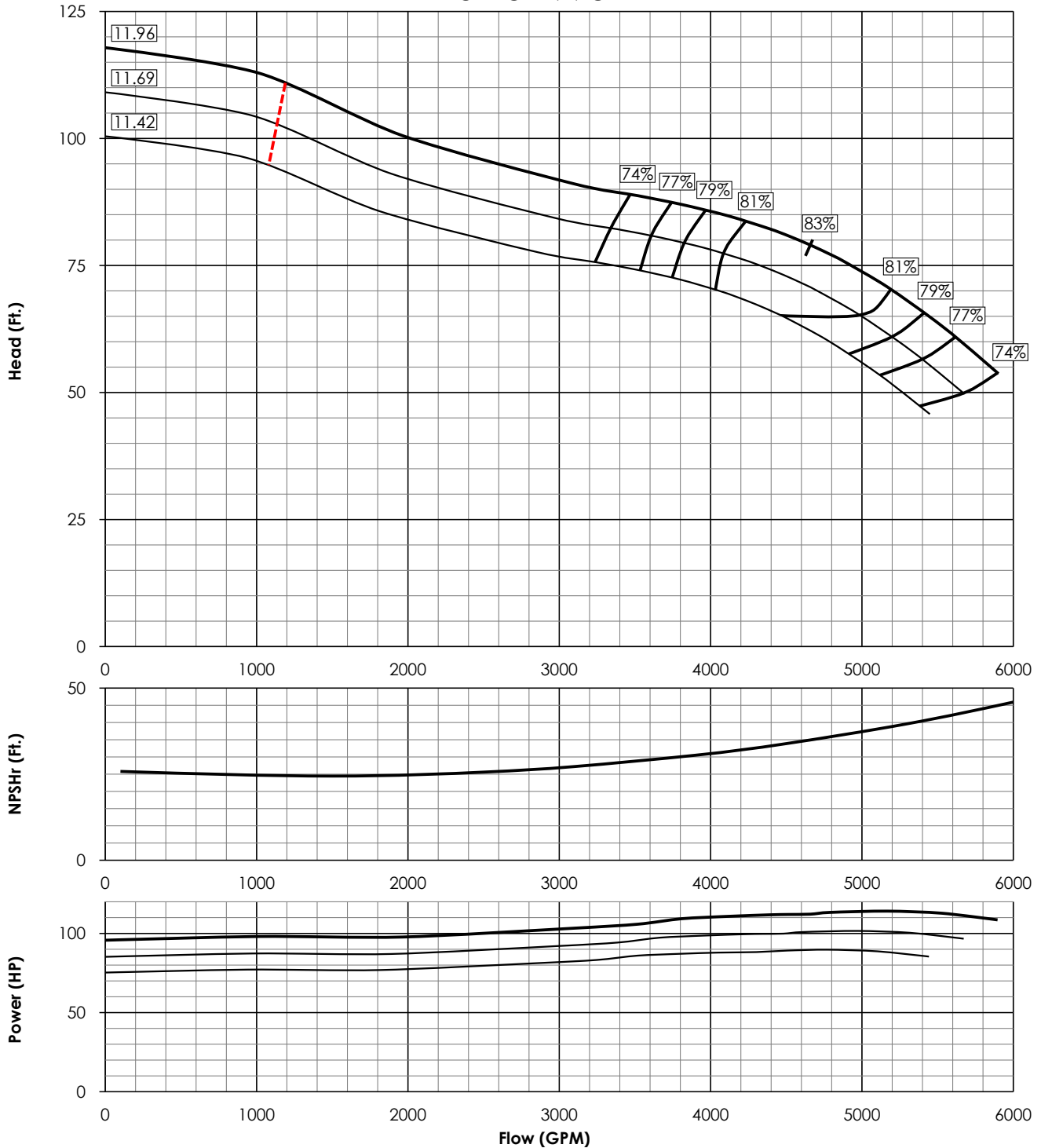
EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	4560
K _T	30.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.75"	SINGLE STG. WT.	565 LBS
STD. LATERAL	2.75"	ADD. STG. WT.	225 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	260 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW15WS 1770 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	4560
K _T	45.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.75"	SINGLE STG. WT.	565 LBS
STD. LATERAL	2.75"	ADD. STG. WT.	225 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	260 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW16MC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW18MC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW20LC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW20HC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW20HCLN**



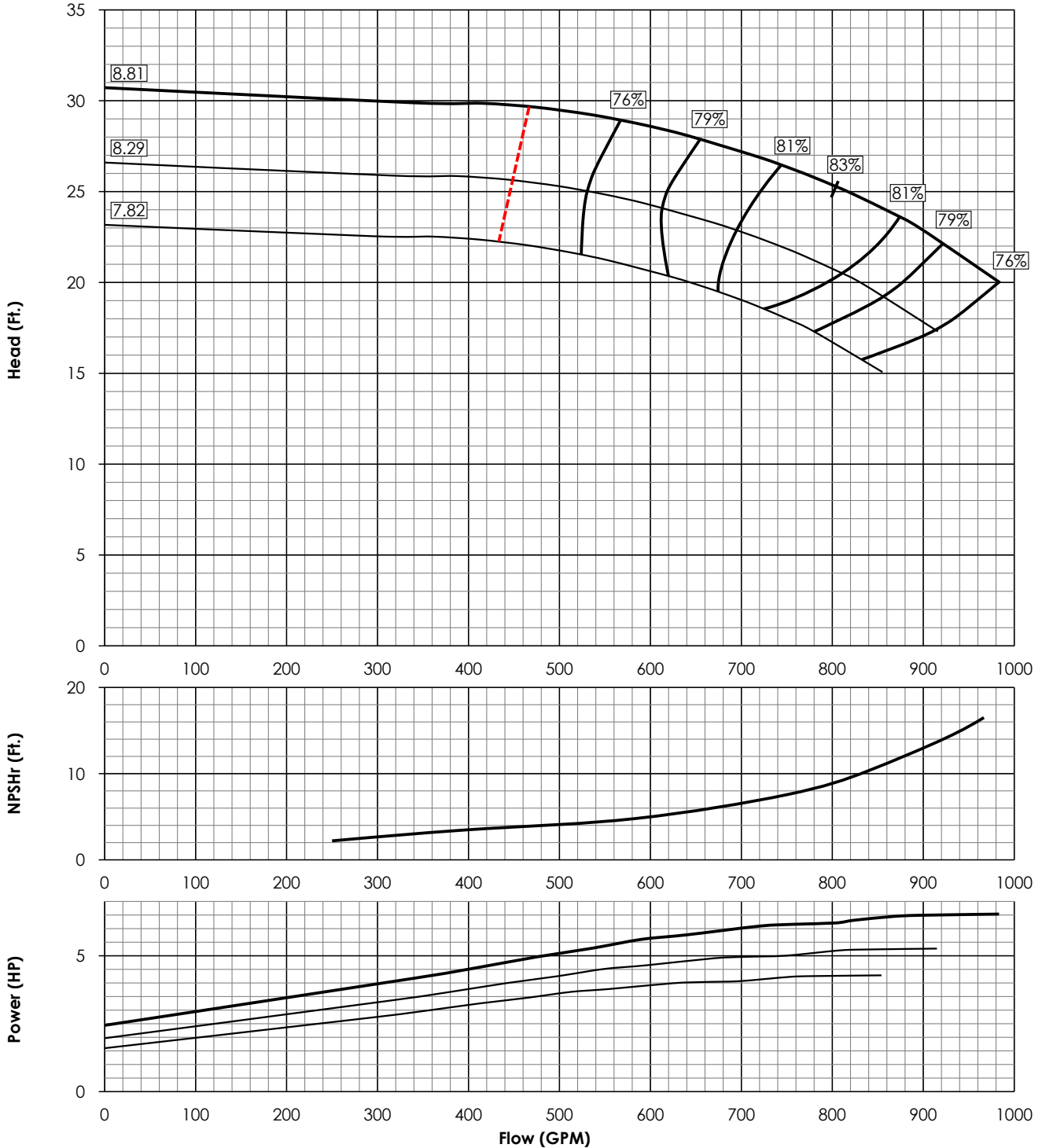
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6611RC0

Updated: Jan. 2020

FW11RC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.5
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	2971
K _t	5.10 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.25"	SINGLE STG. WT.	345 LBS
STD. LATERAL	1.50"	ADD. STG. WT.	120 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	497 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

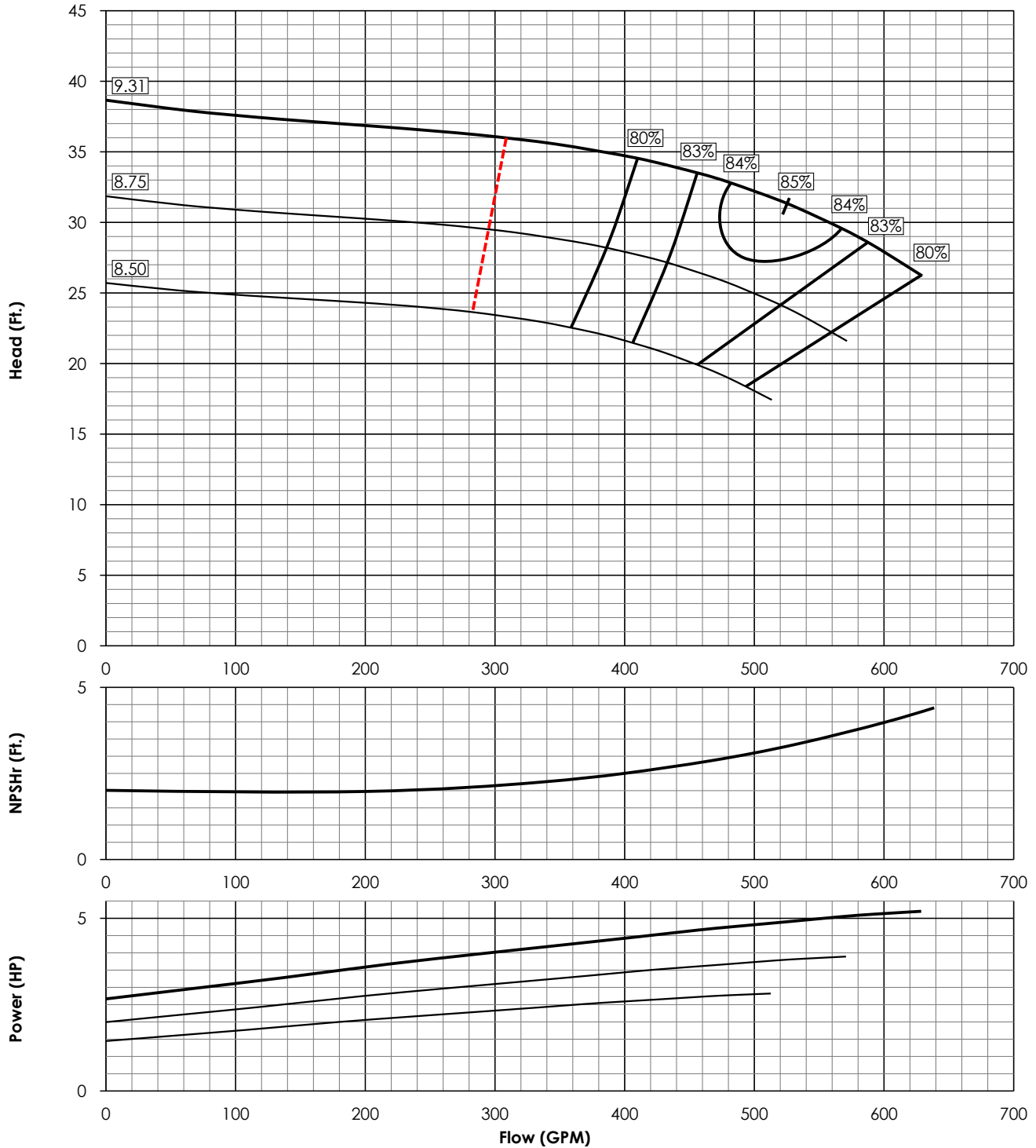


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW11RS**

FW12IC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	2044
K _T	6.75 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMURGENCE	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



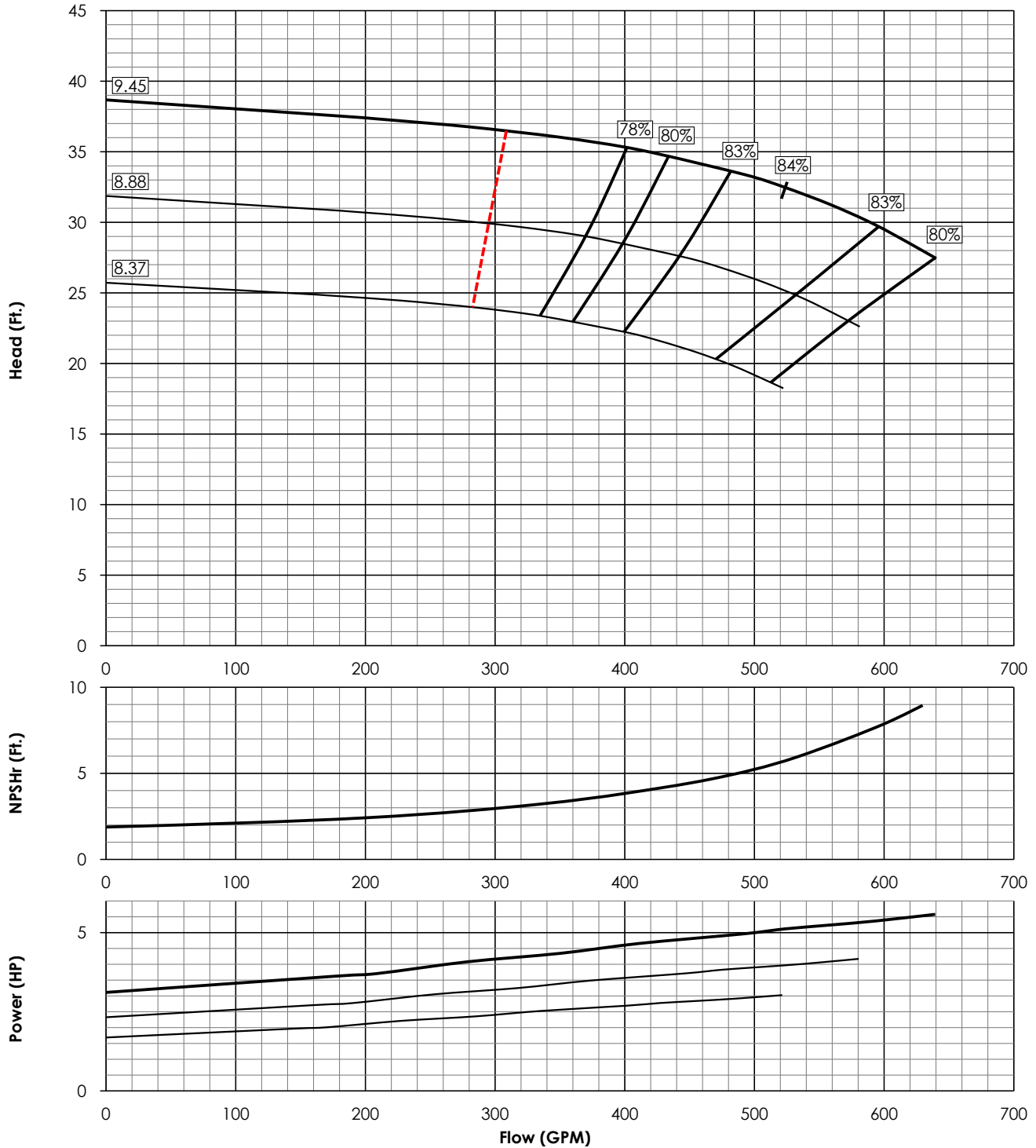
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612IS1

Updated: Feb. 2017

FW12IS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1200 RPM
N _s	1984
K _t	8.20 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



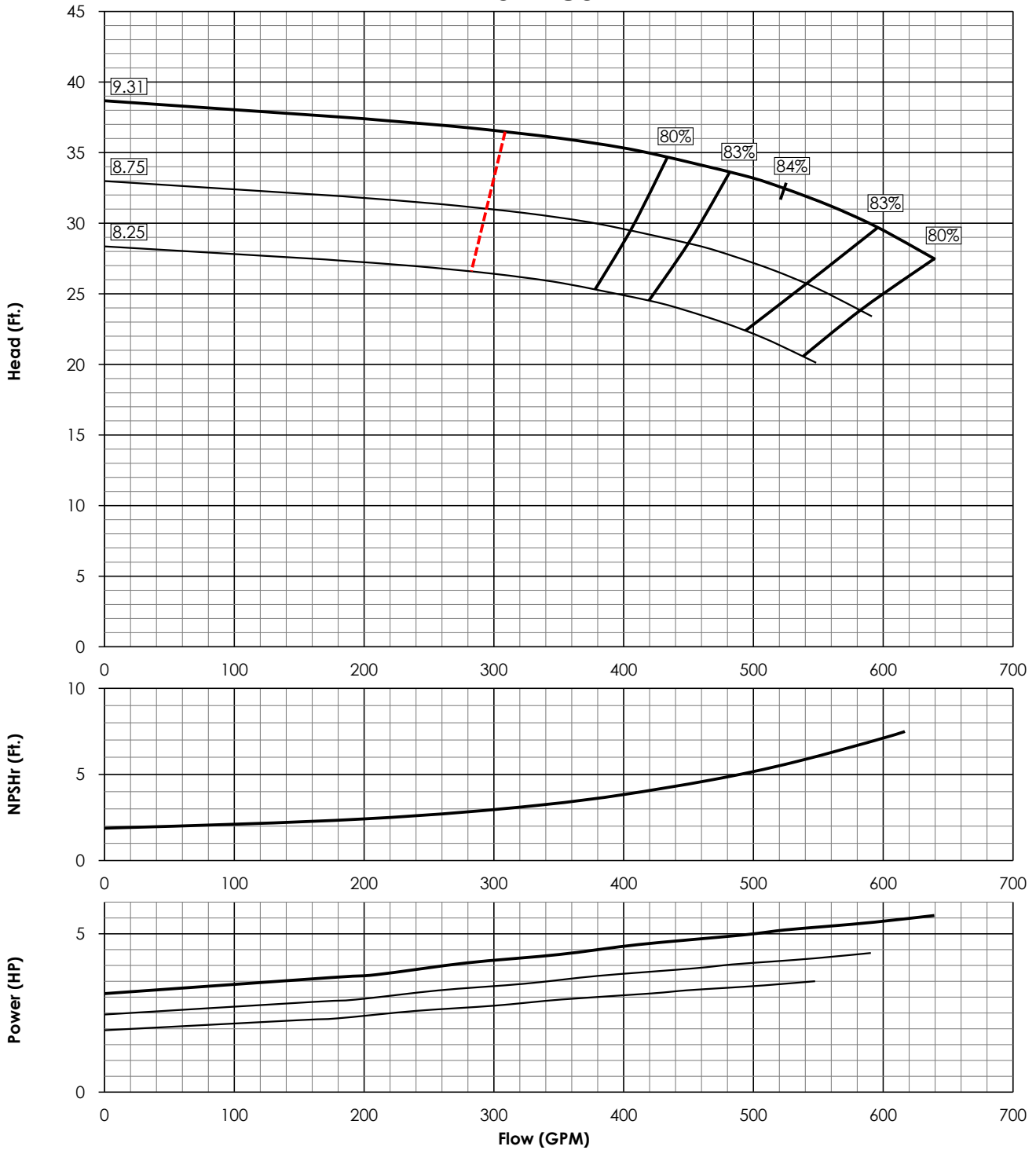
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612IS2

Updated: Apr. 2020

FW12IS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1200 RPM
N _s	1984
K _T	8.20 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

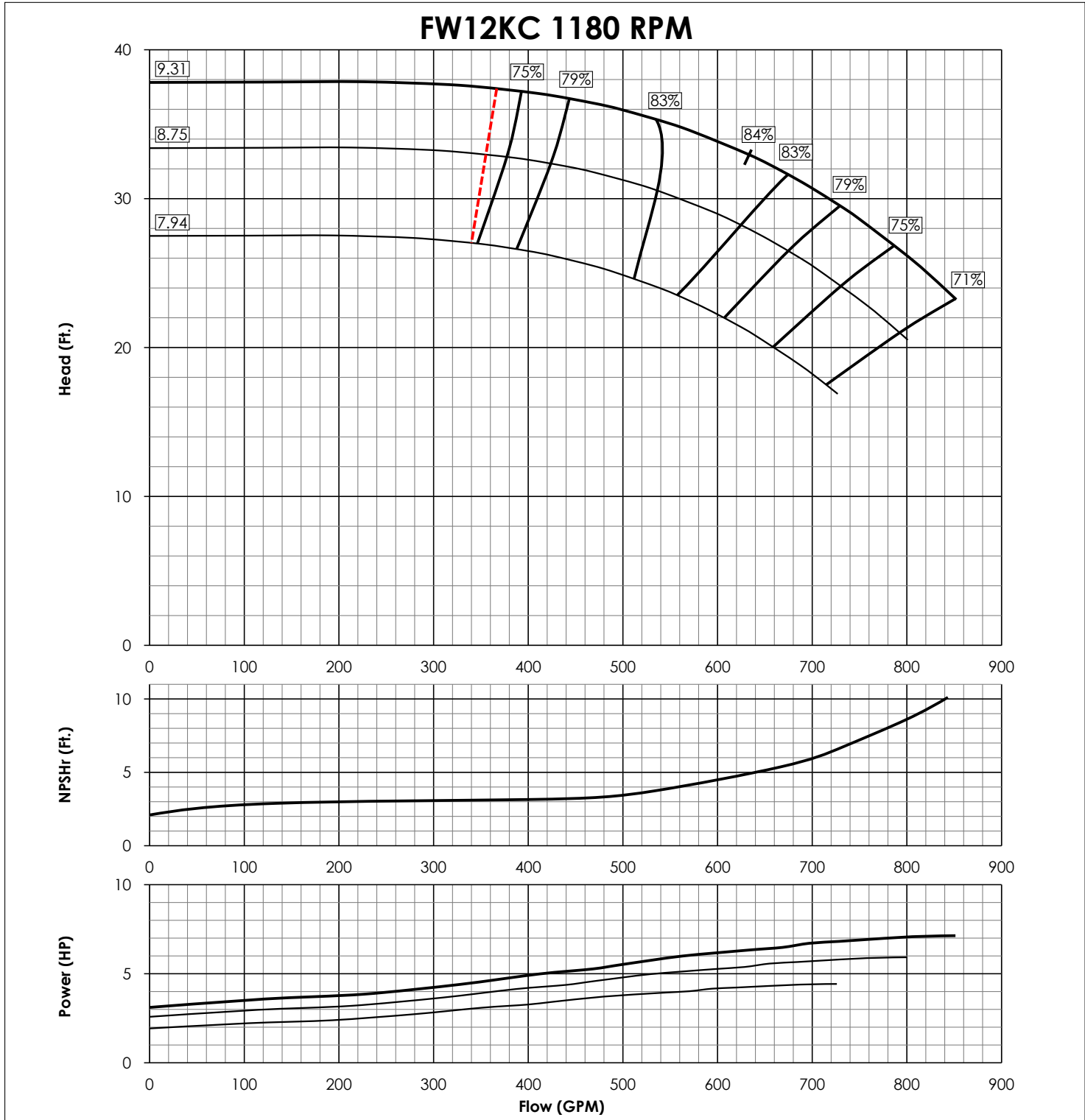


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612KC1

Updated: Feb. 2017



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	2141
K _T	6.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



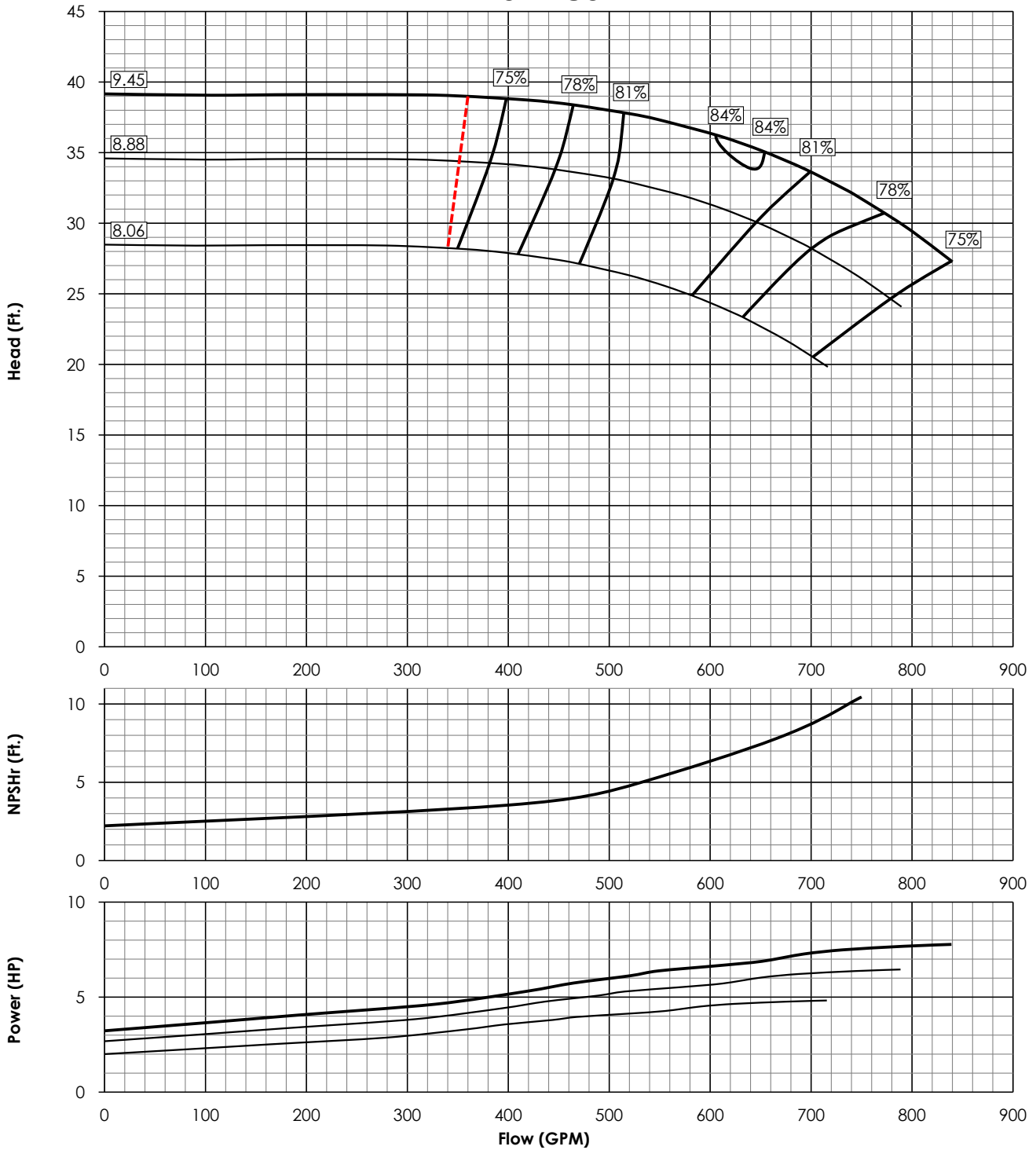
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612KS1

Updated: Feb. 2017

FW12KS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1200 RPM
N _s	2082
K _T	7.75 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.63"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



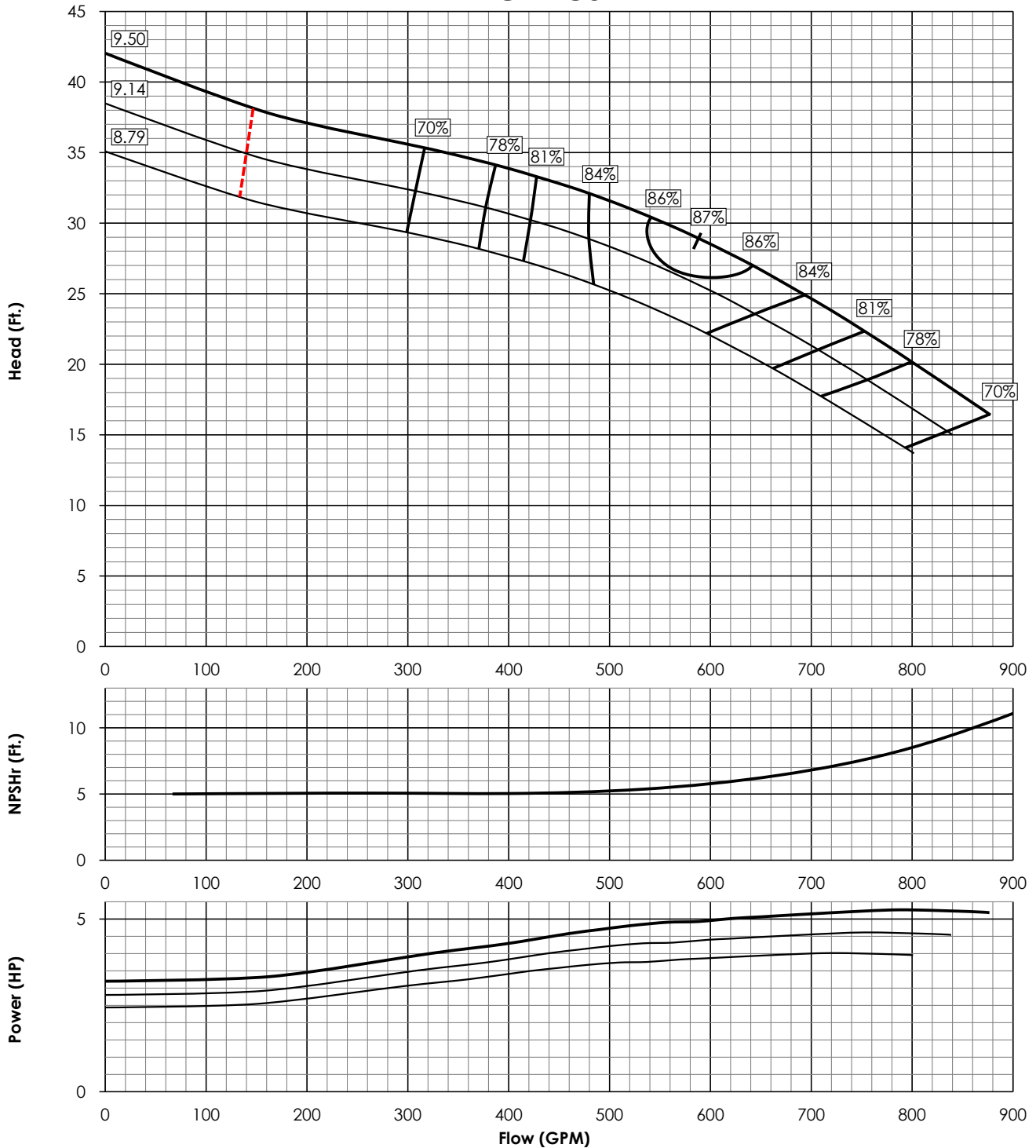
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612LC0

Updated: Oct. 2017

FW12LC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	2302
K _t	7.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



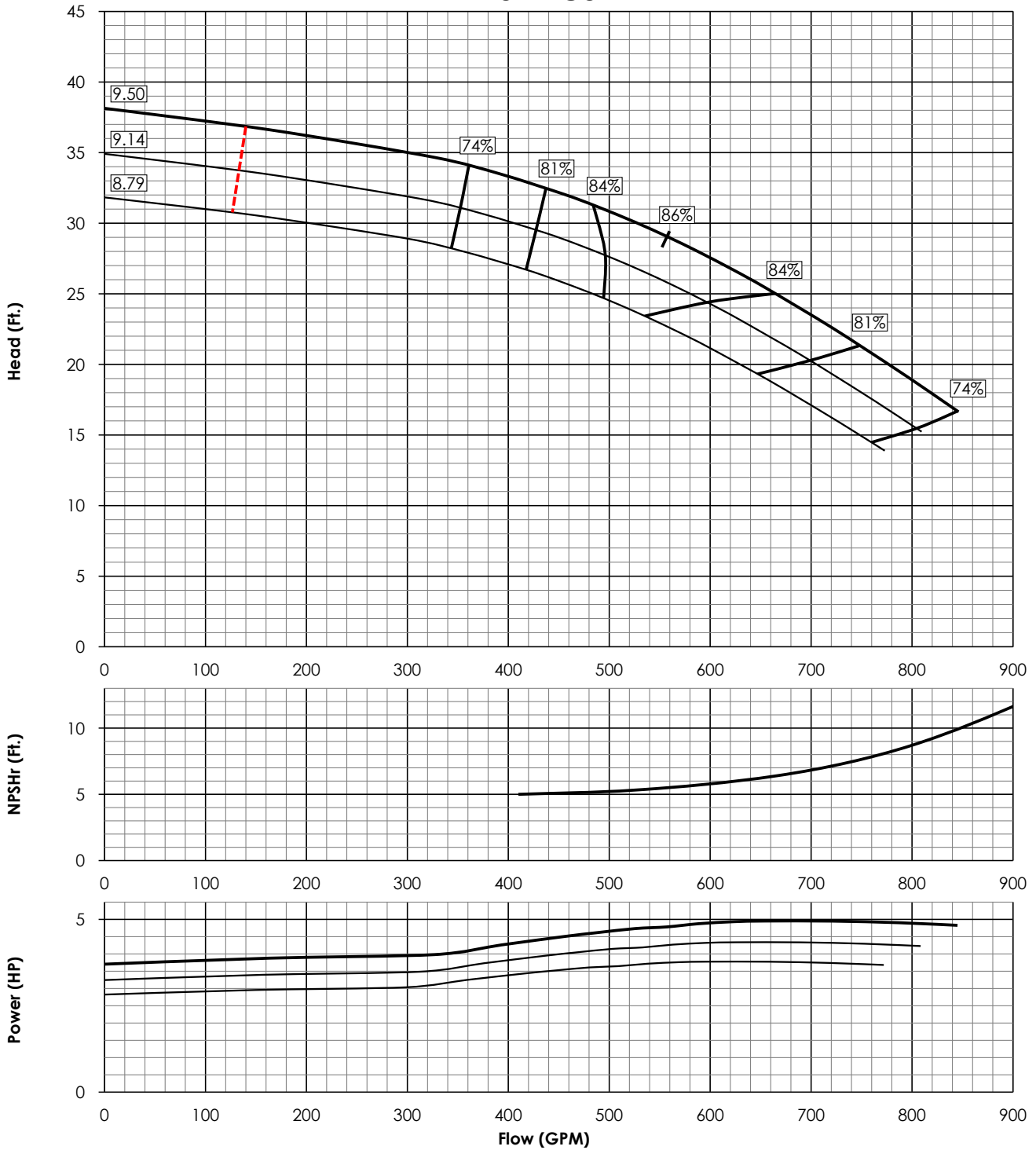
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612LS0

Updated: Oct. 2017

FW12LS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1200 RPM
N _s	2209
K _T	10.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



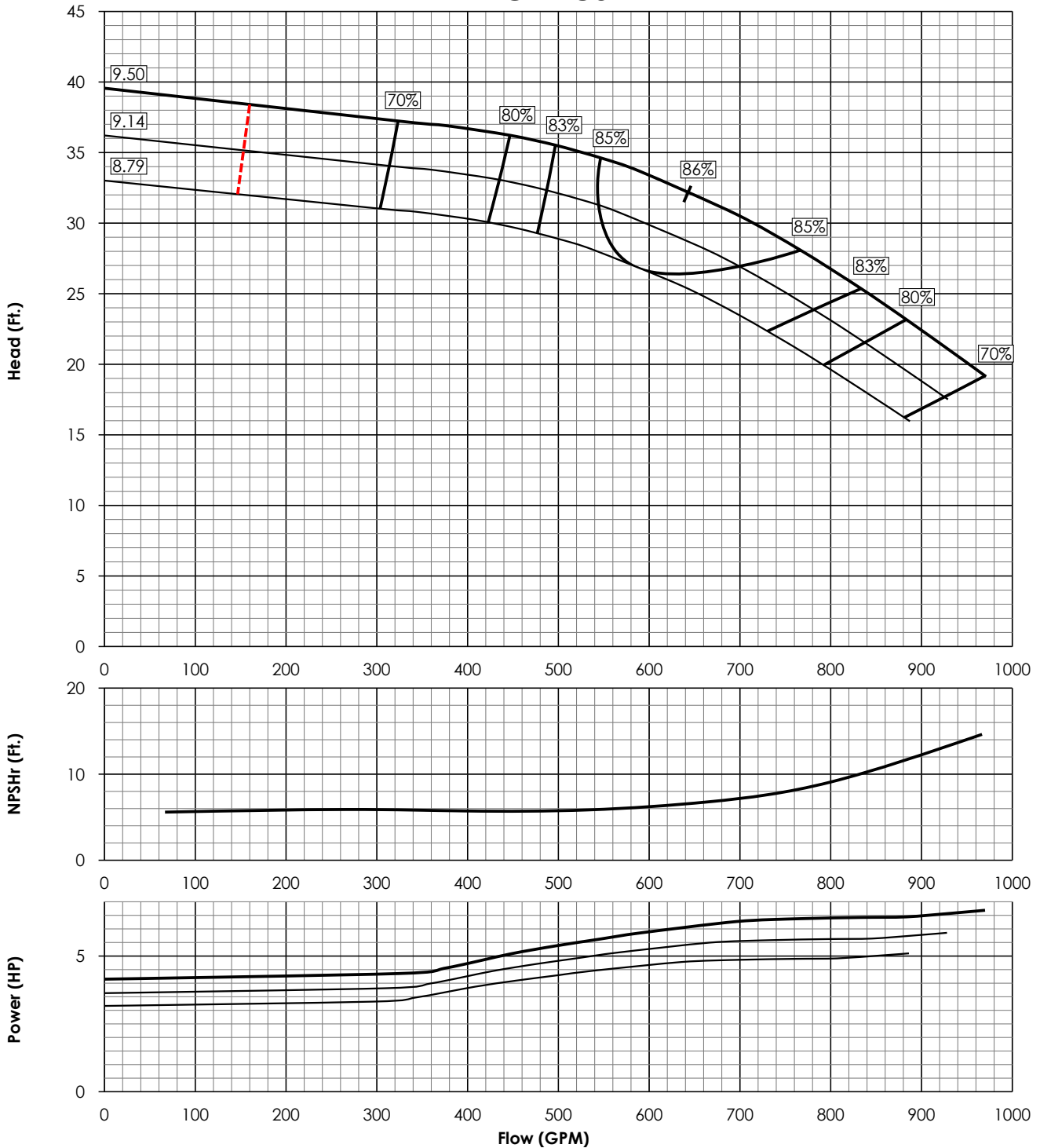
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612MC0

Updated: Oct. 2017

FW12MC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	2532
K _t	7.40 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



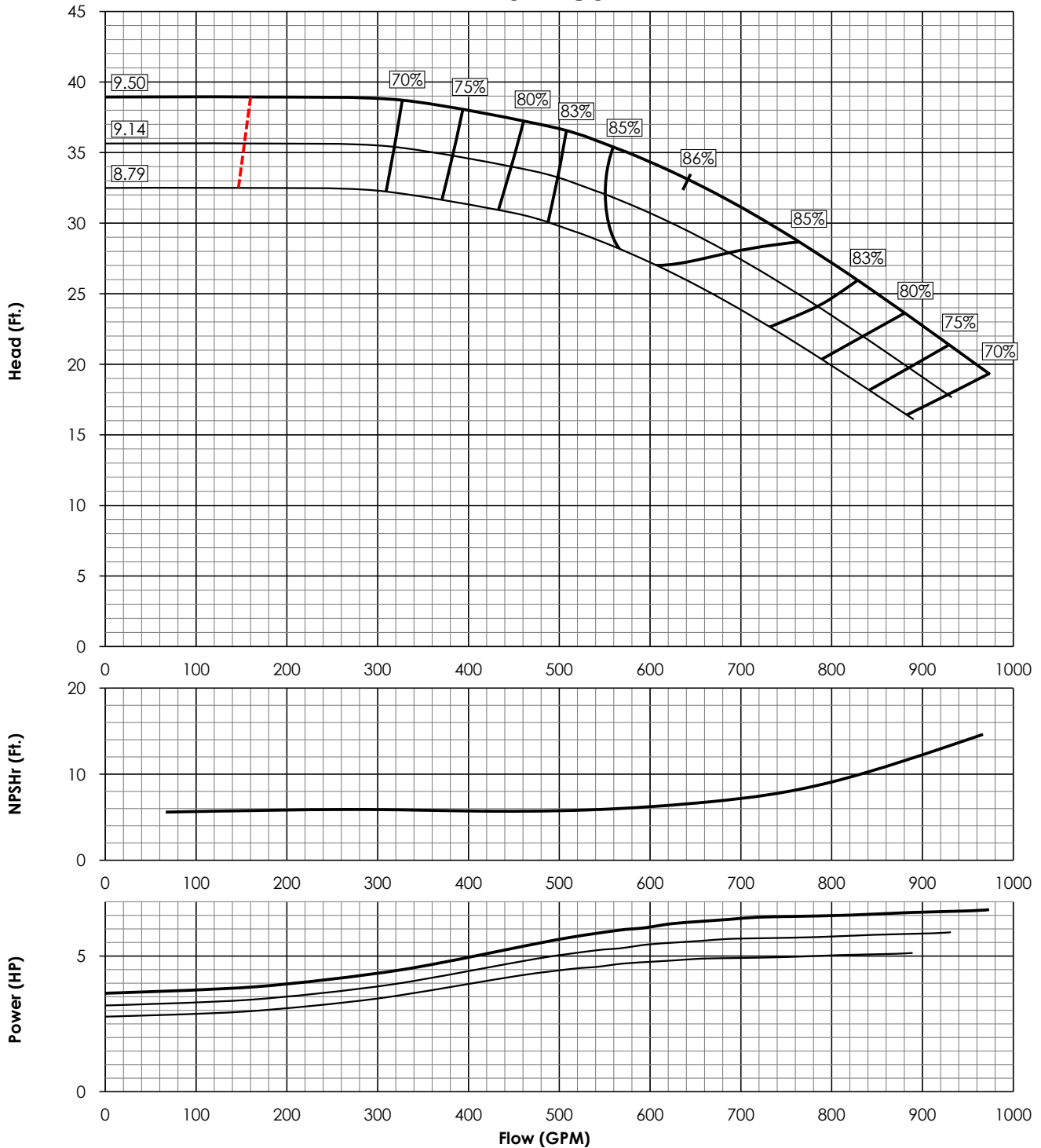
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612MS0

Updated: Oct. 2017

FW12MS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1200 RPM
N _s	2163
K _t	10.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



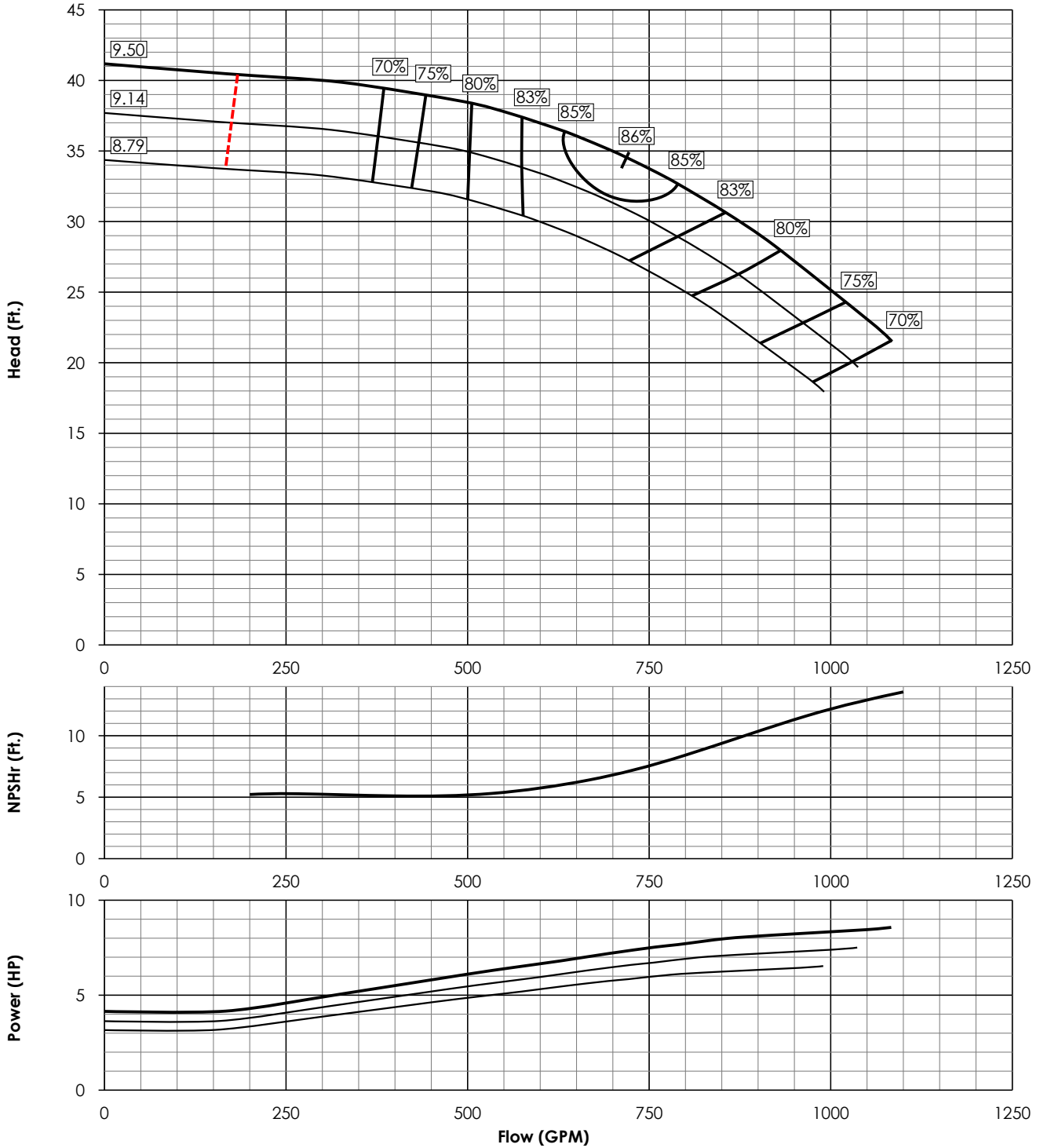
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612HCO

Updated: Oct. 2017

FW12HC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	2223
K _T	7.50 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



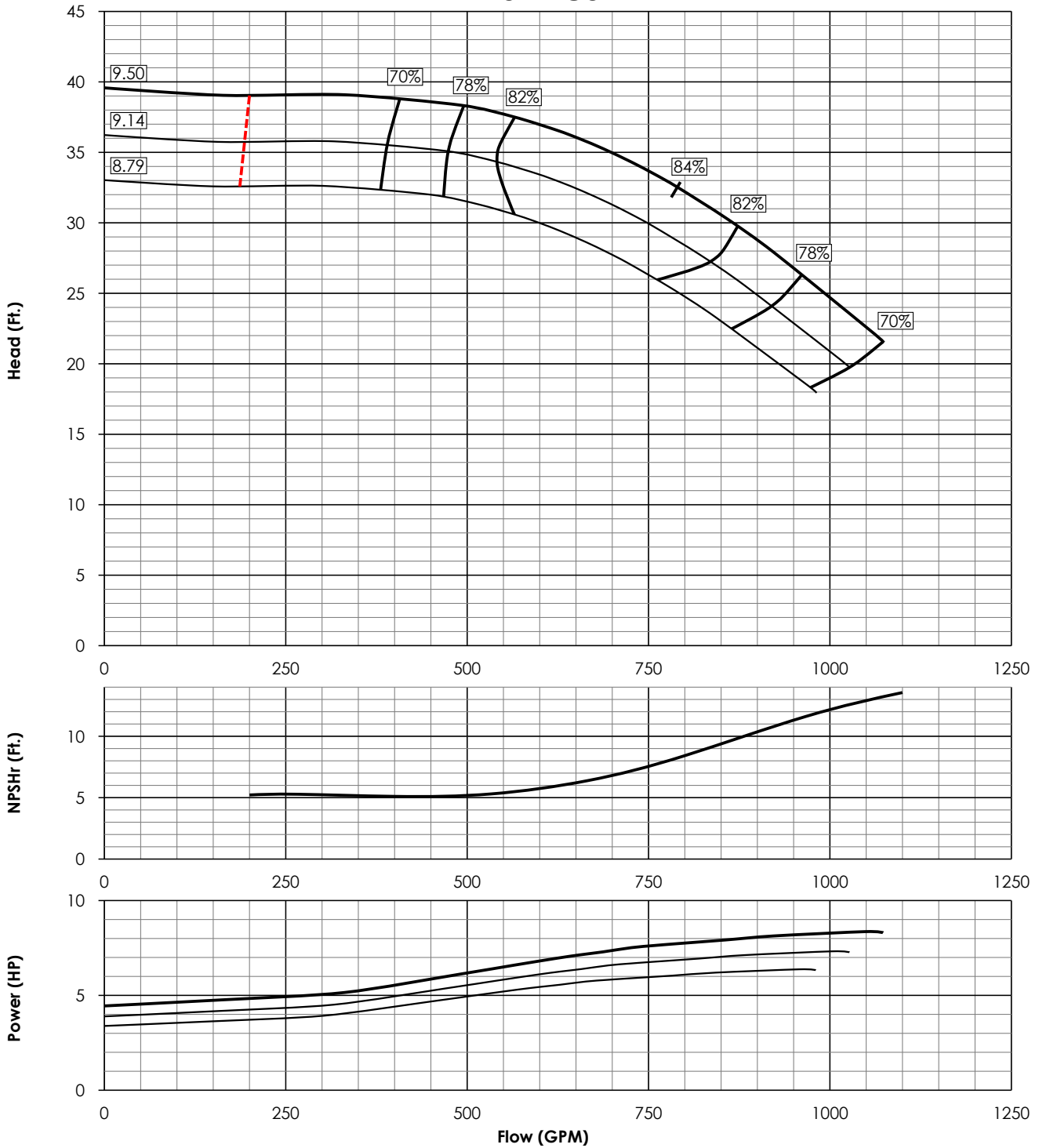
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612HS0

Updated: Oct. 2017

FW12HS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1200 RPM
N _s	2433
K _T	10.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	290 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	130 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	28"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW12LCXL**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW12MCXL**

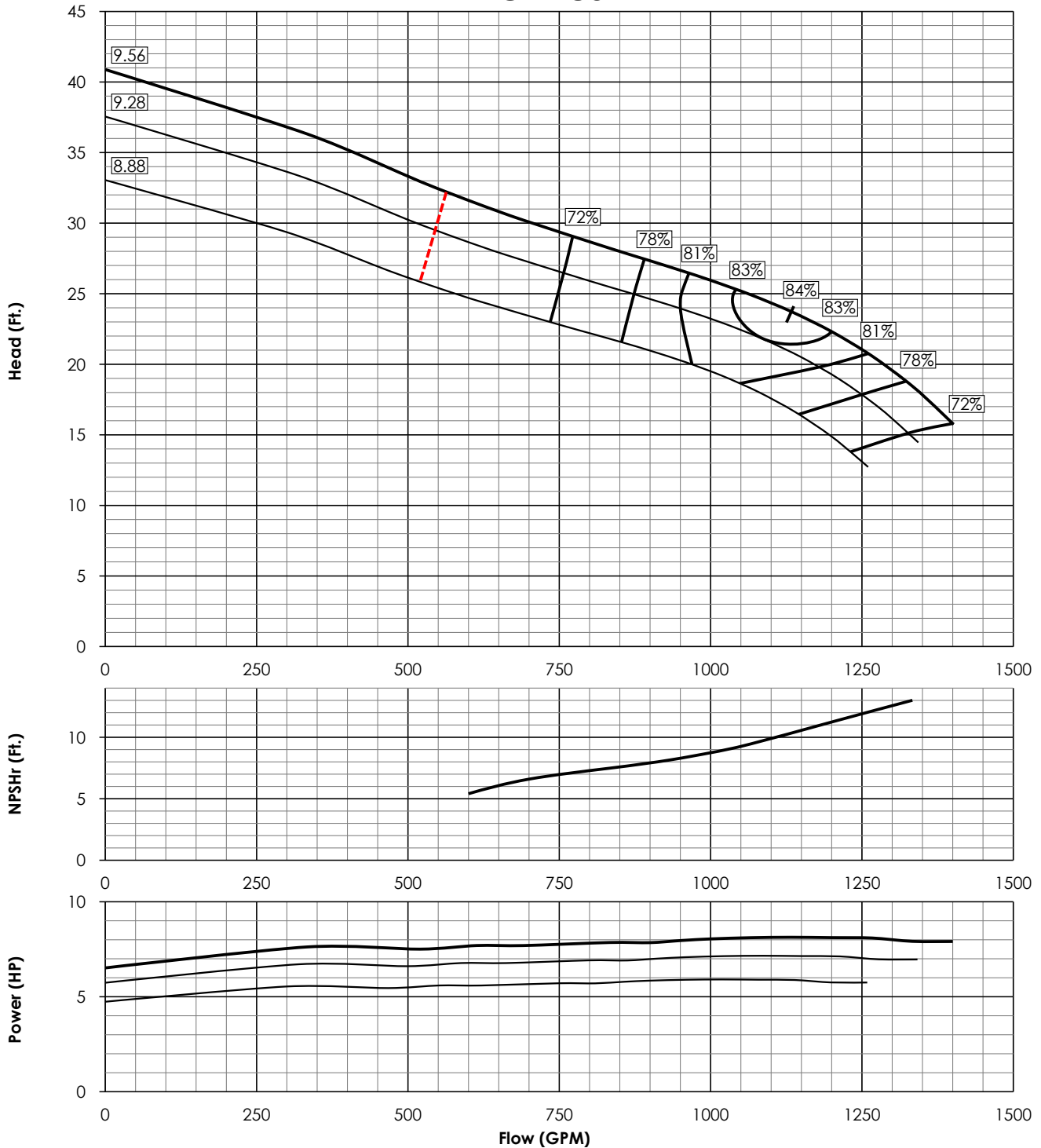


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW12HCXL**

FW12RC 1180 RPM



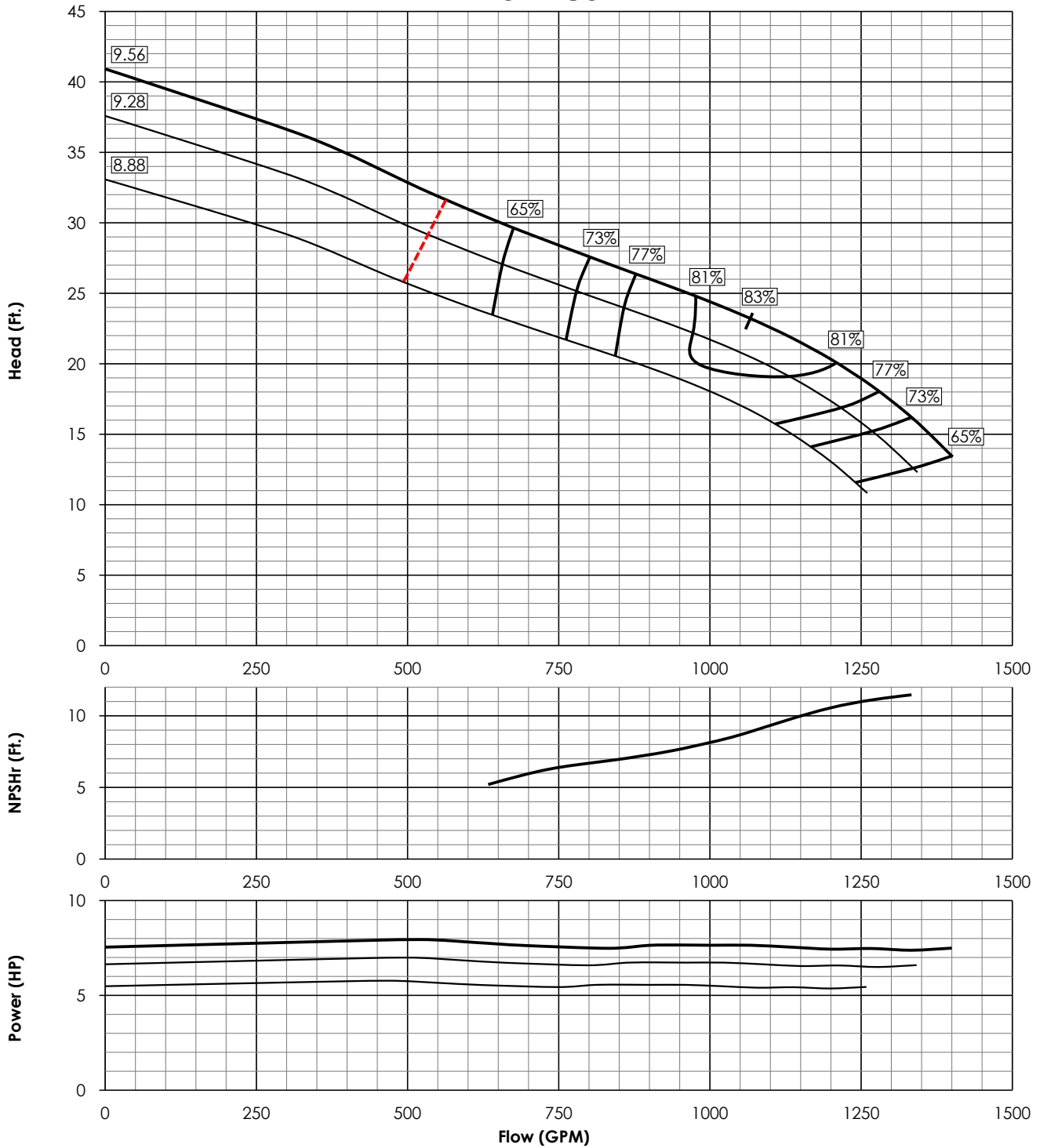
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3679
K _T	16.5 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	245 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	95 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	26"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12RS 1180 RPM



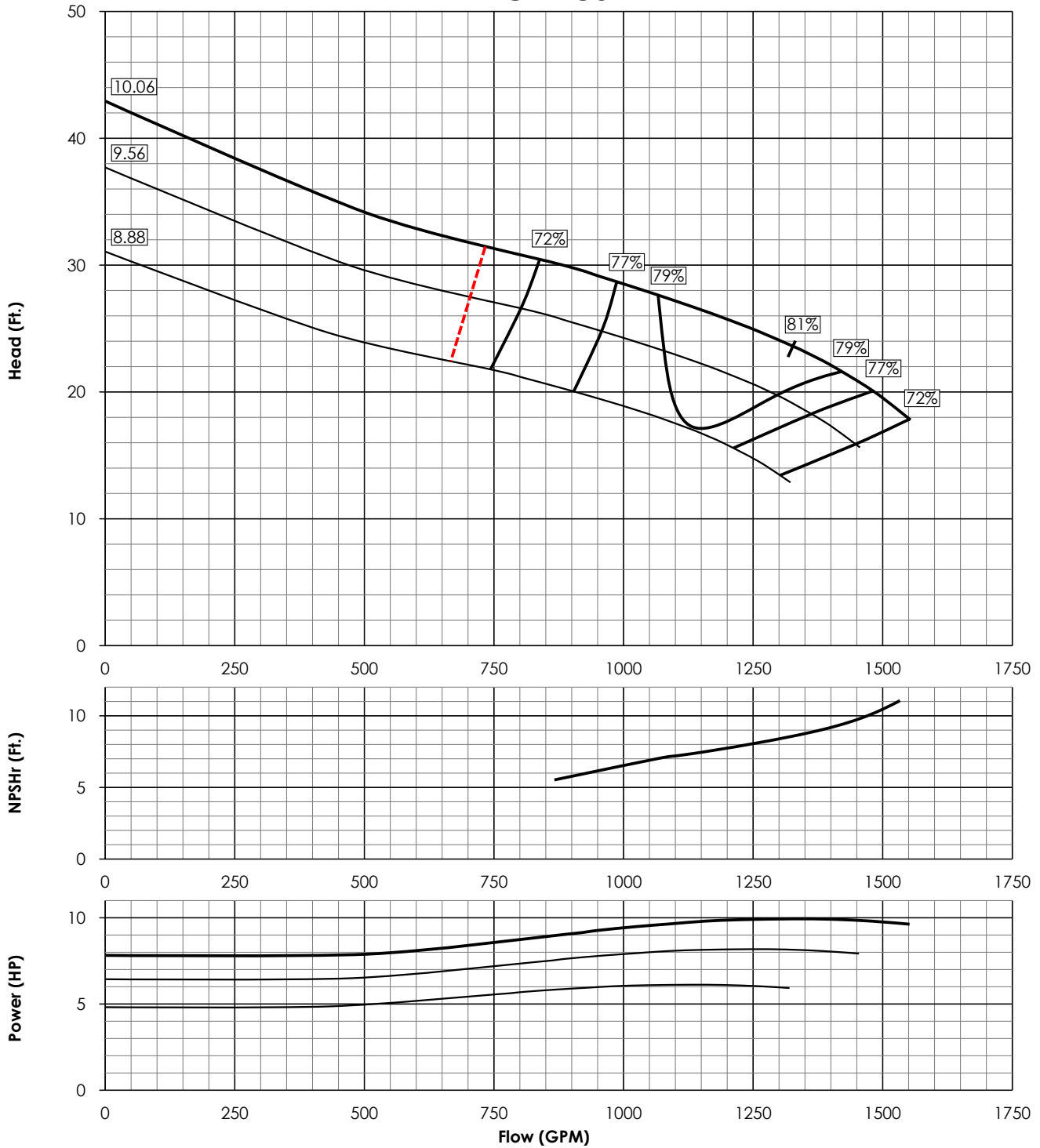
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3560
K _t	19.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	245 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	95 LBS
DISCH. SIZE(S)	6", 8", 10"	MIN. SUBMERSION	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12WC 1180 RPM



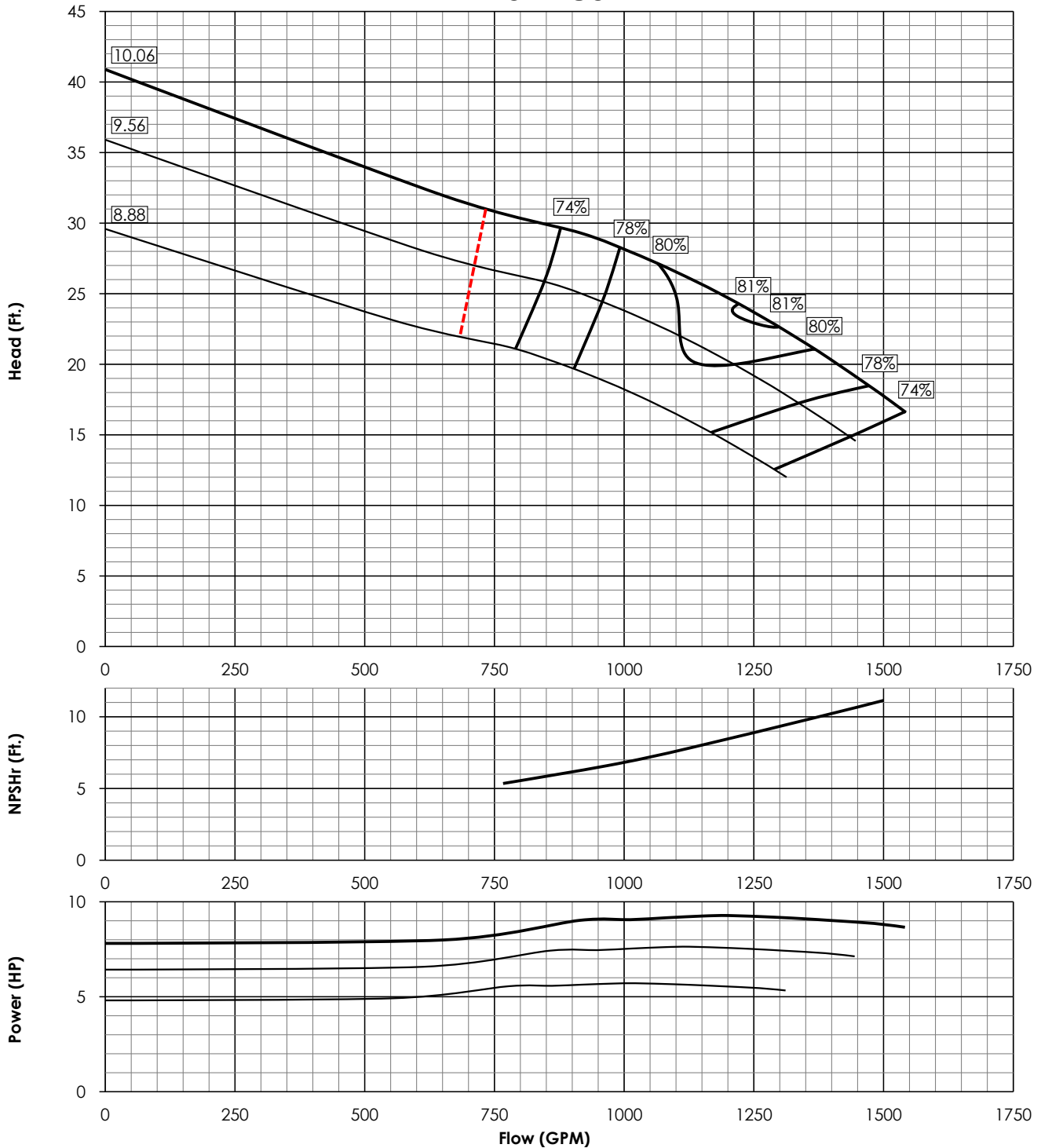
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	4017
K _T	18.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.75"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	105 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERSION	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12WS 1180 RPM



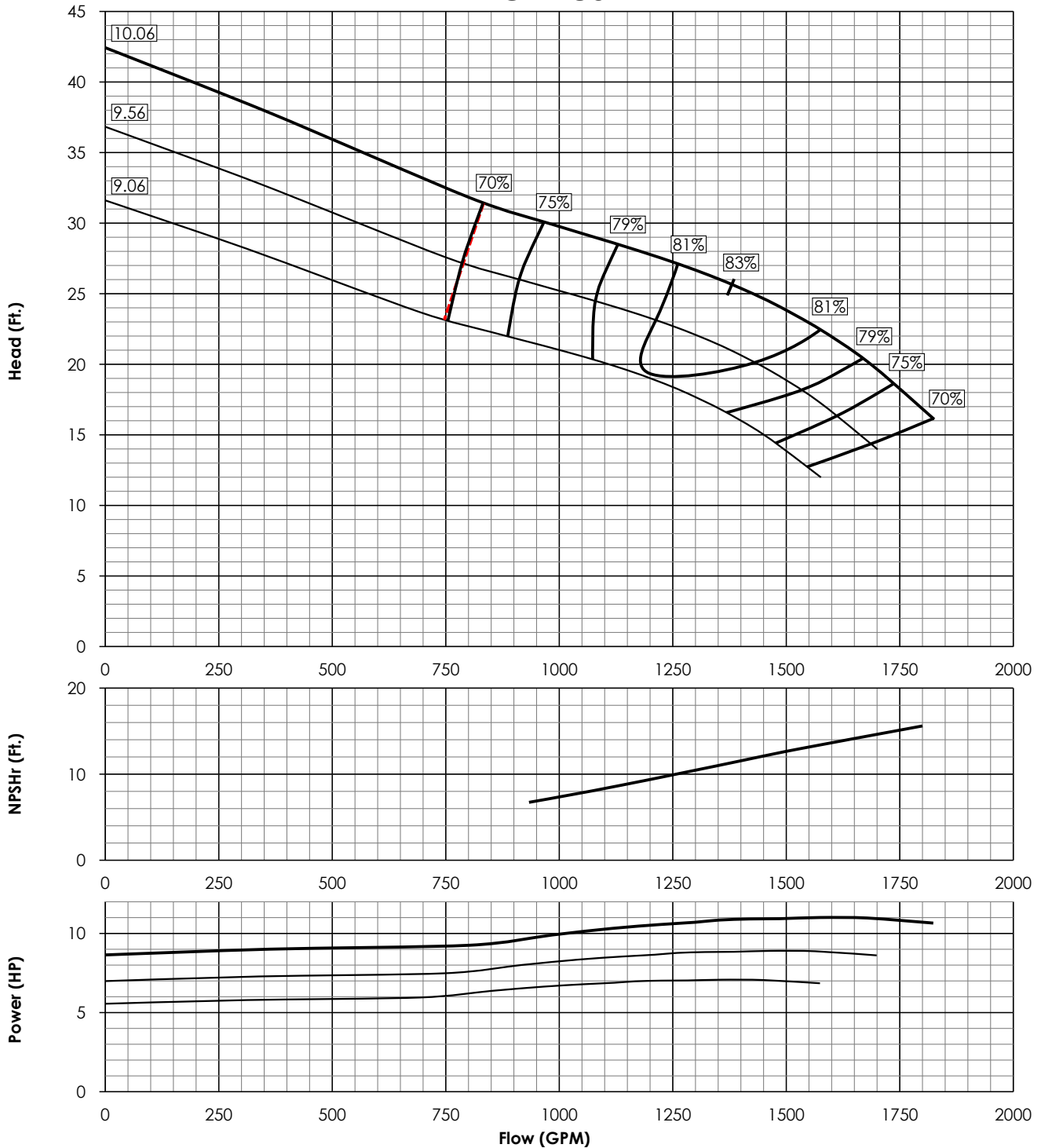
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3824
K _t	11.5 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.75"	SINGLE STG. WT.	265 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	105 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12XC 1180 RPM



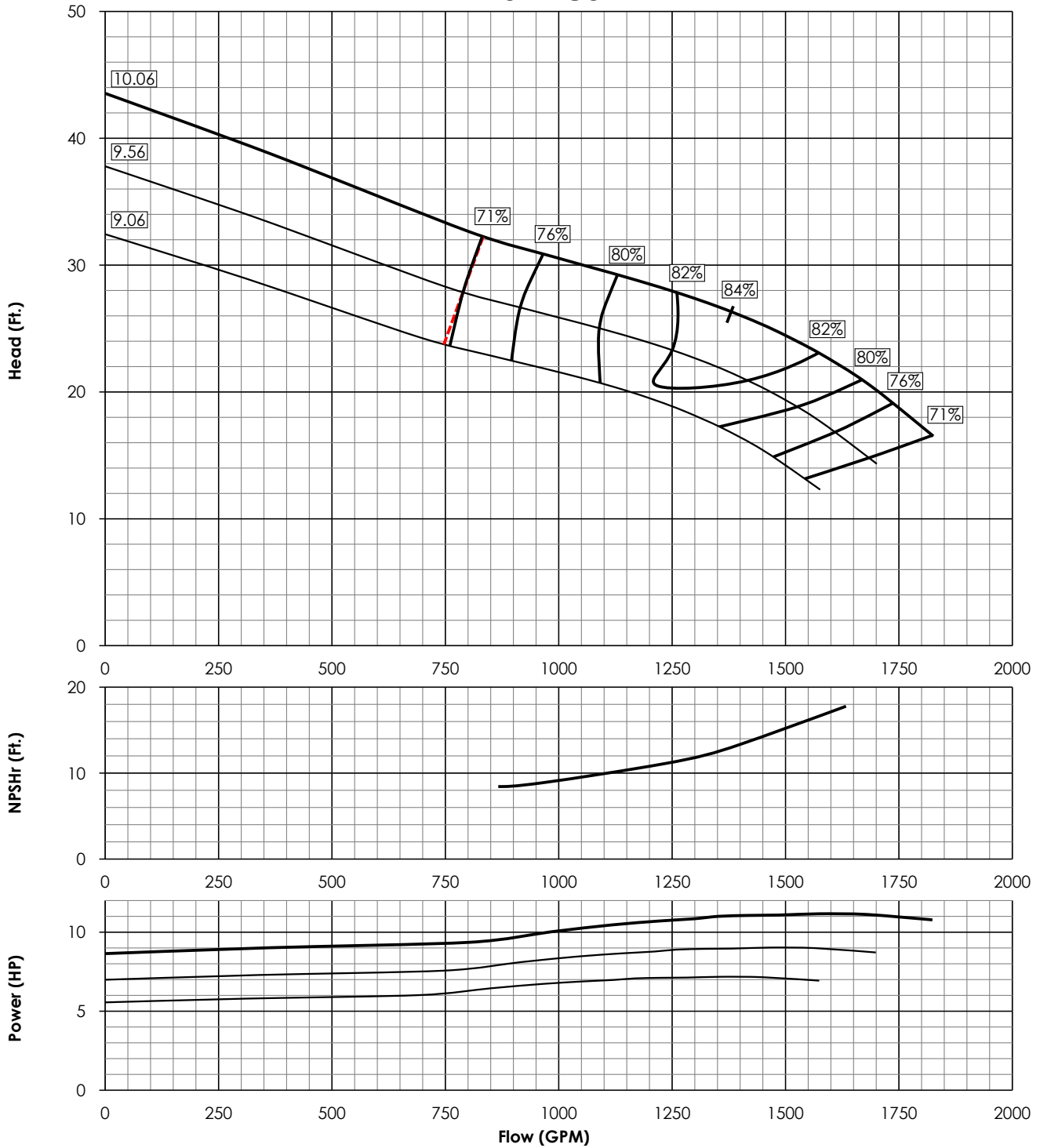
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3832
K _t	16.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.75"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	105 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERGENCE	30"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12XS 1180 RPM



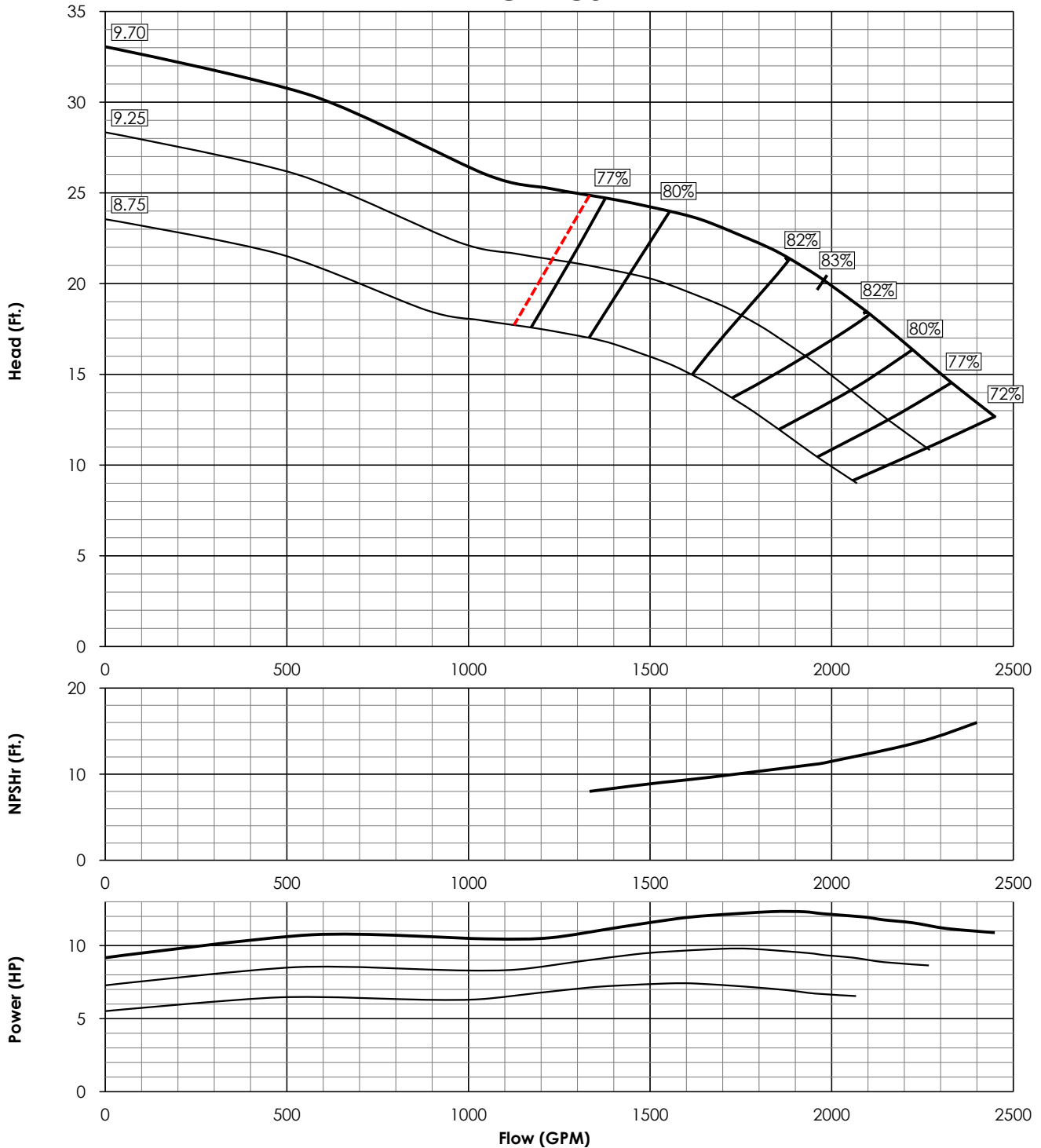
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-2.0
3 STG.	-1.0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3783
K _T	17.4 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.75"	SINGLE STG. WT.	260 LBS
STD. LATERAL	0.75"	ADD. STG. WT.	105 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERSION	32"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW12ZC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	5526
K _T	14.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	355 LBS
STD. LATERAL	0.90"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



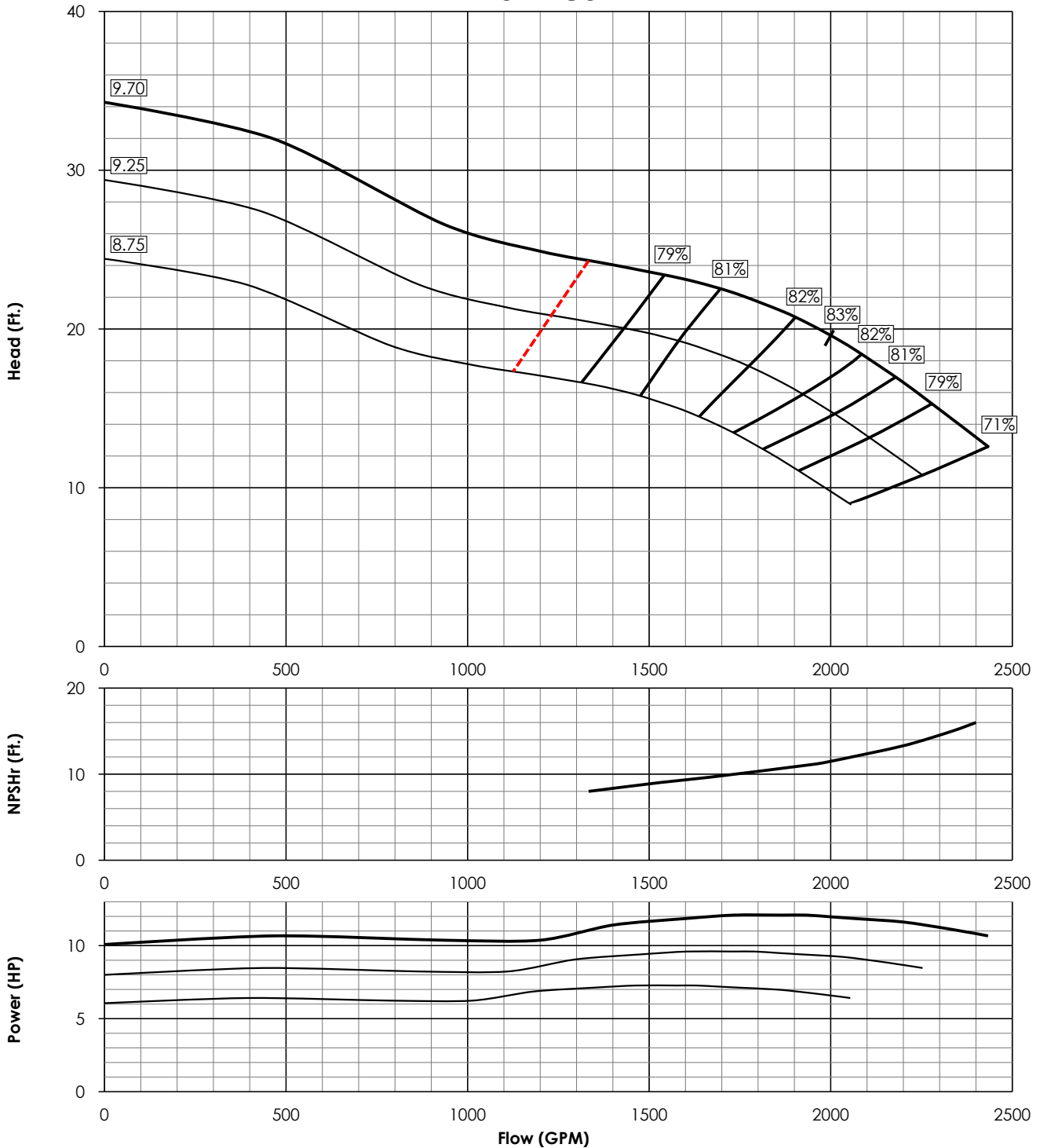
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6612ZS2

Updated: Dec. 2020

FW12ZS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1200 RPM
N _s	5675
K _T	20.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	355 LBS
STD. LATERAL	1.25"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



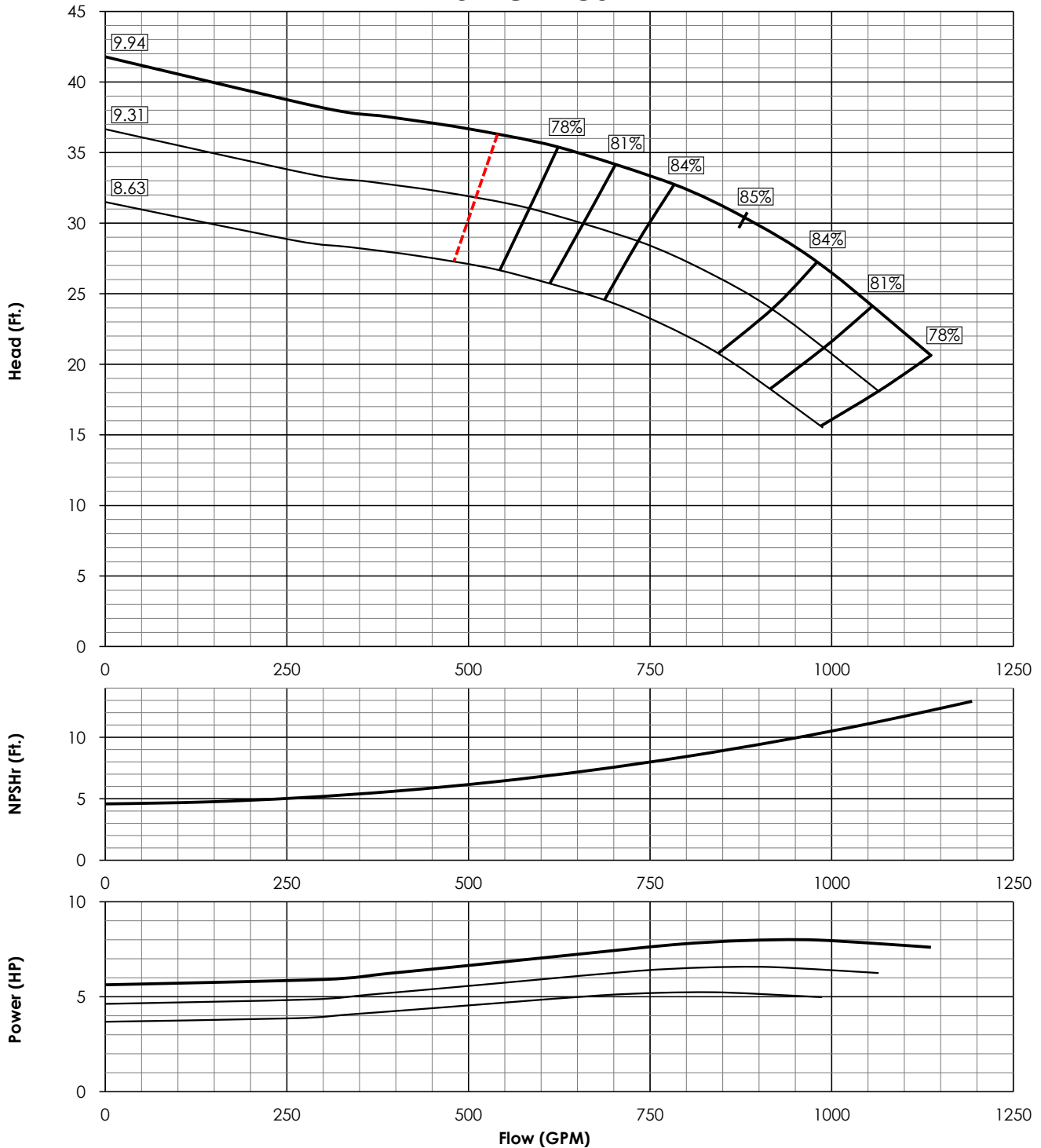
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6613MC0

Updated: Sep. 2016

FW13MC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-3.0
3 STG.	-2.0
4 STG.	-1.0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	2667
K _T	7.90 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	12.13"	SINGLE STG. WT.	265 LBS
STD. LATERAL	0.88"	ADD. STG. WT.	115 LBS
DISCH. SIZE(S)	8", 10"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-11/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW13MCXL**



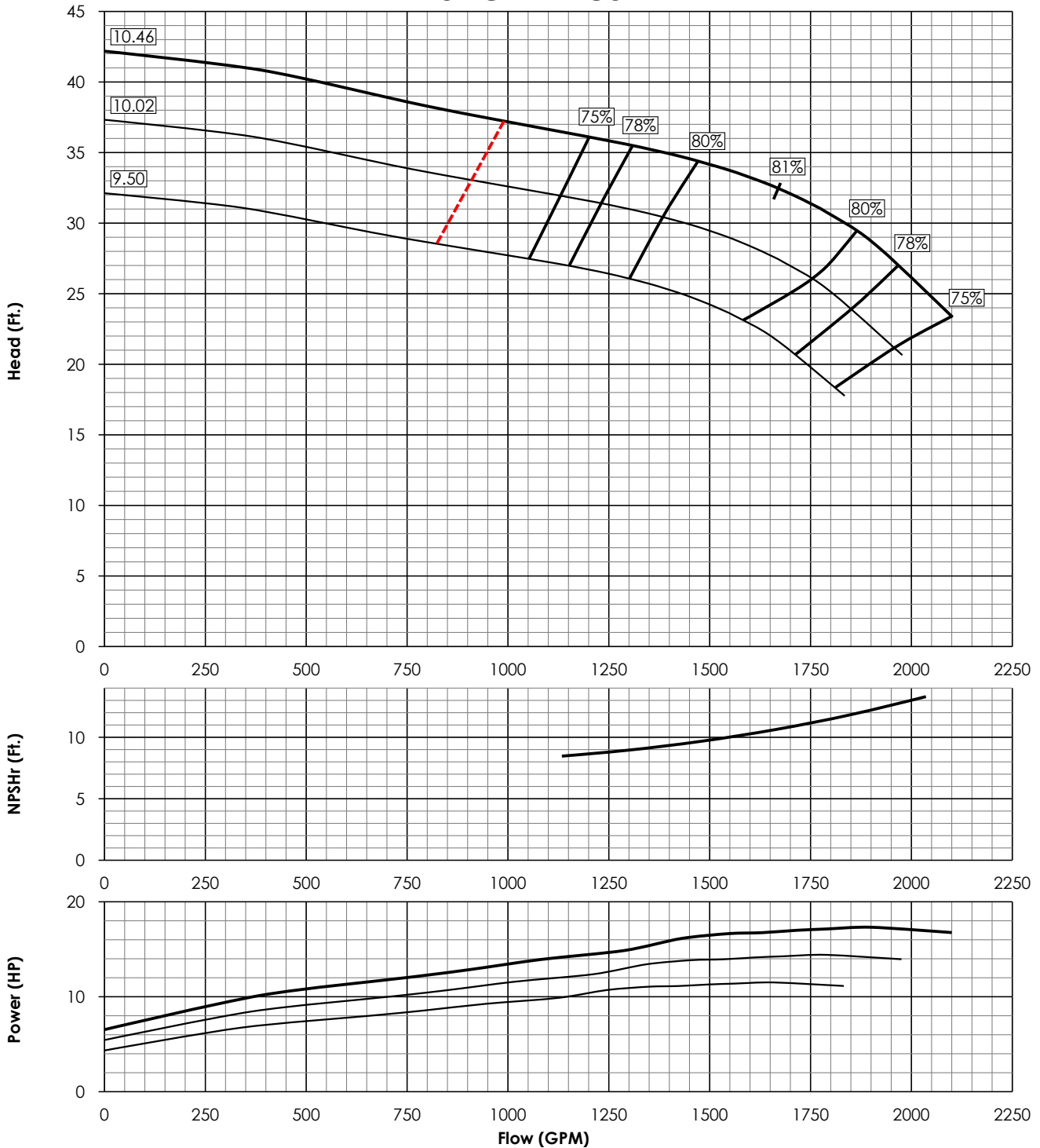
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6613YCXL0

Updated: Jan. 2020

FW13YCXL 1180 RPM



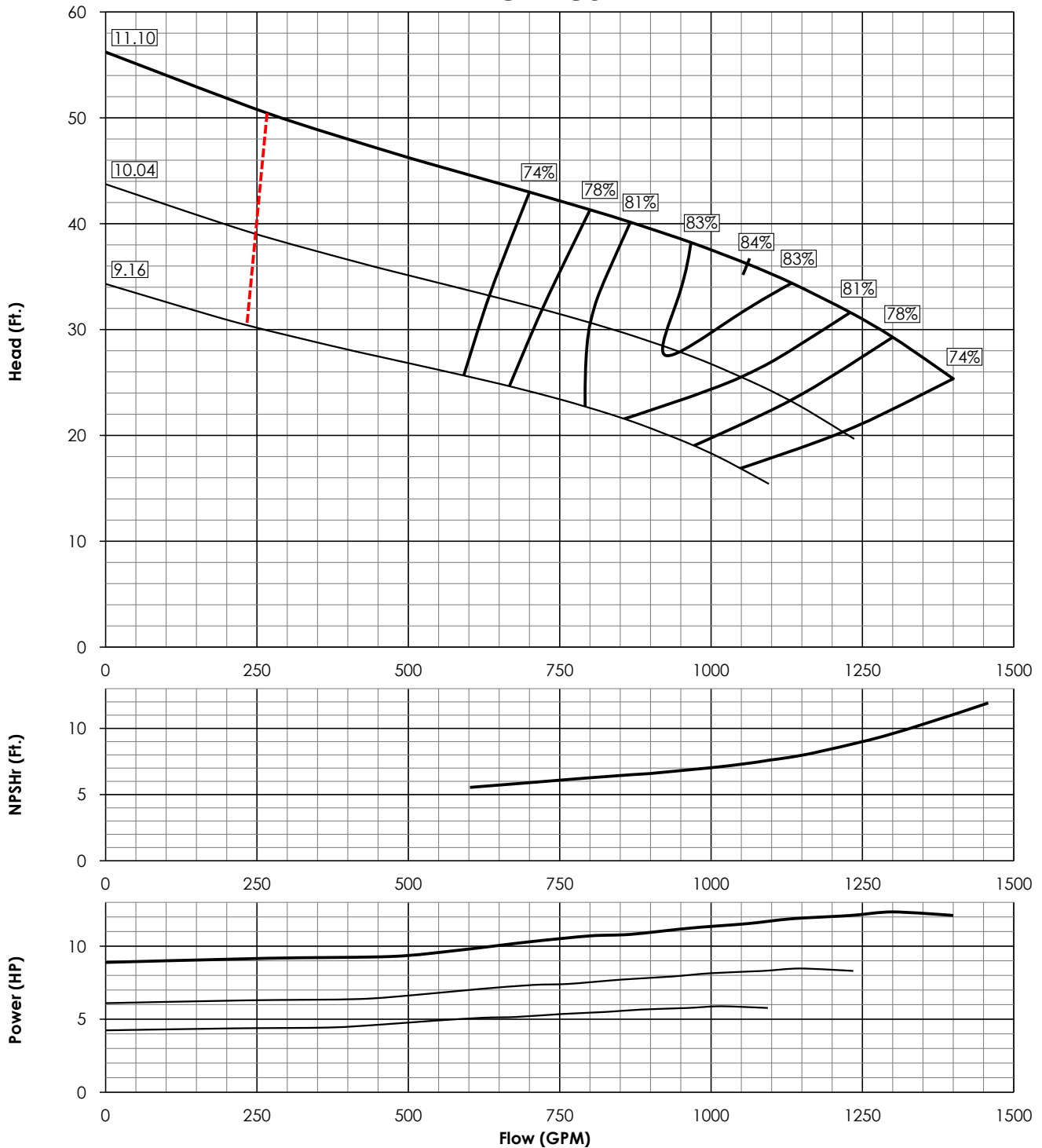
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	3562
K _T	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	12.50"	SINGLE STG. WT.	385 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10"	MIN. SUBMERGENCE	28"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14LC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2602
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



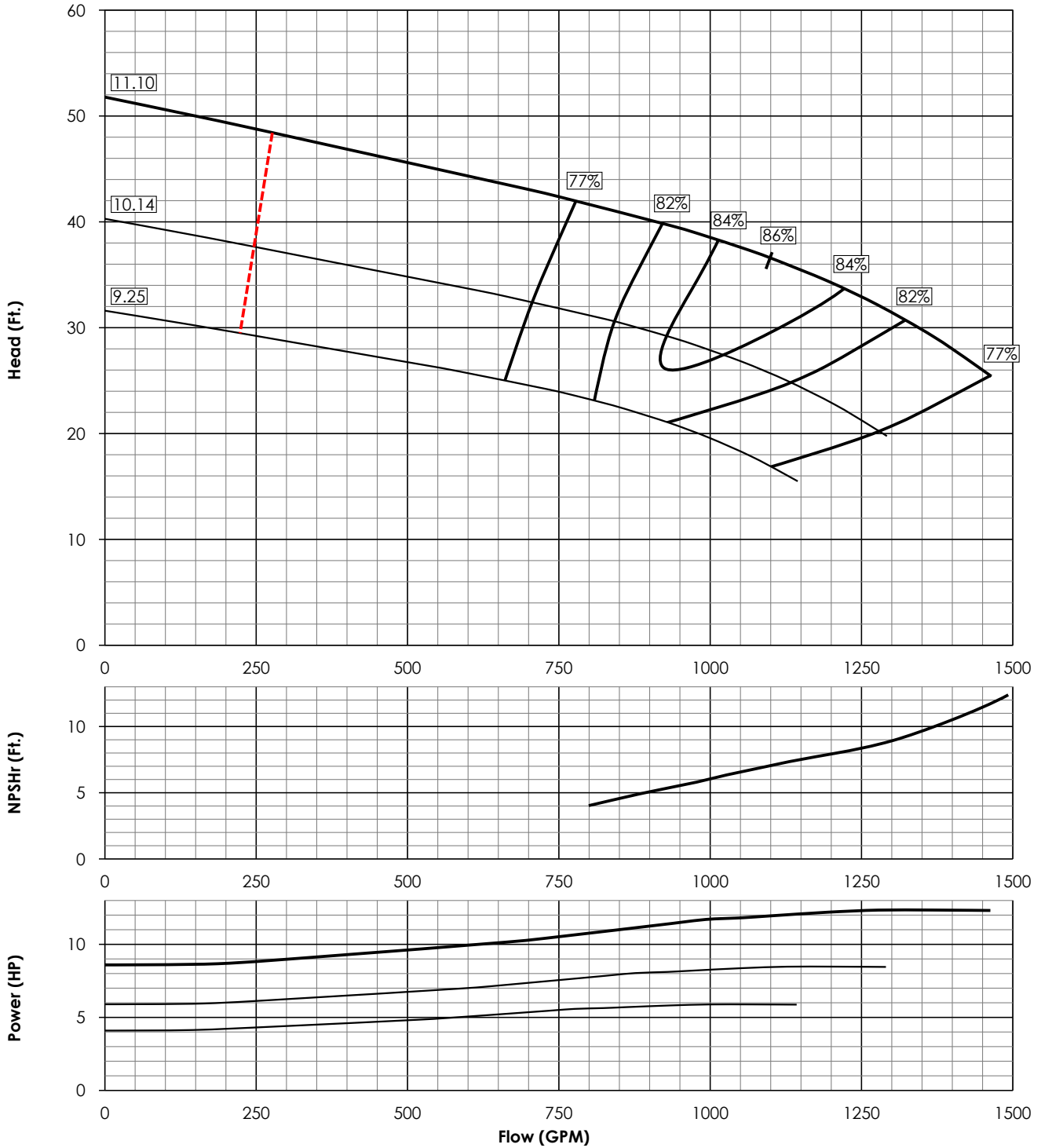
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6614LS0

Updated: May 2017

FW14LS 1180 RPM



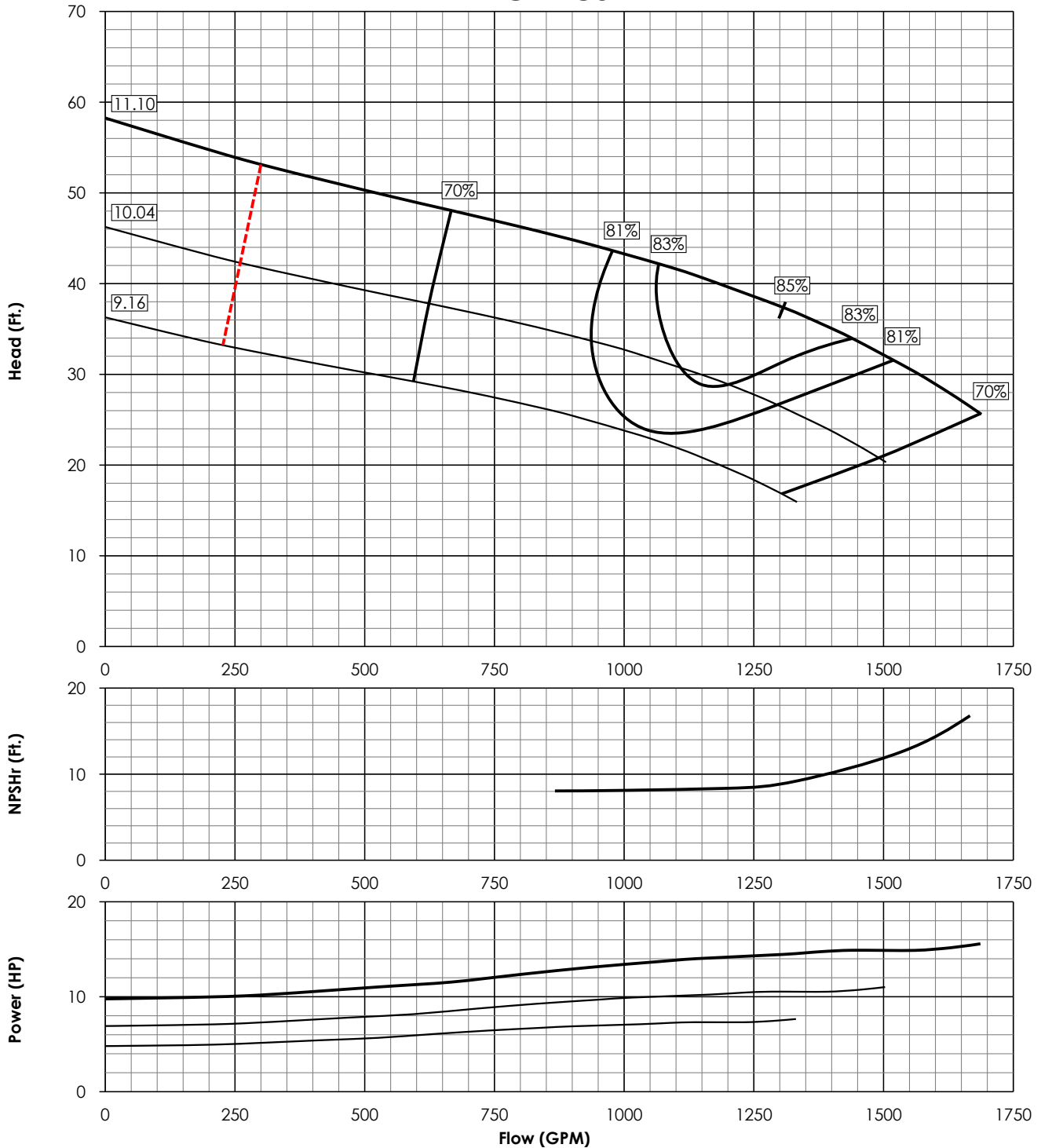
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2618
K _t	16.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14MC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2829
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



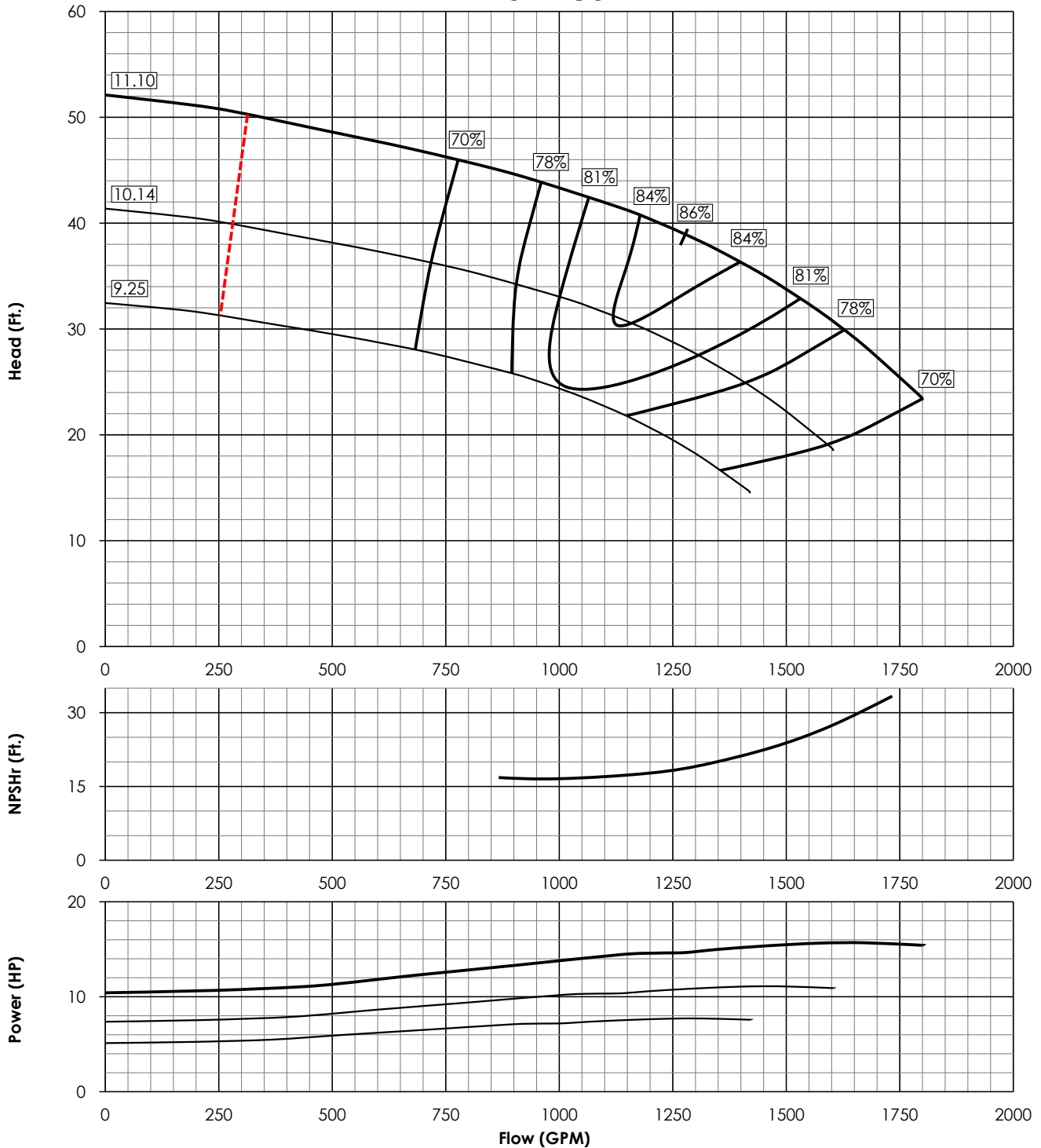
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6614MS0

Updated: May 2017

FW14MS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2697
K _t	16.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



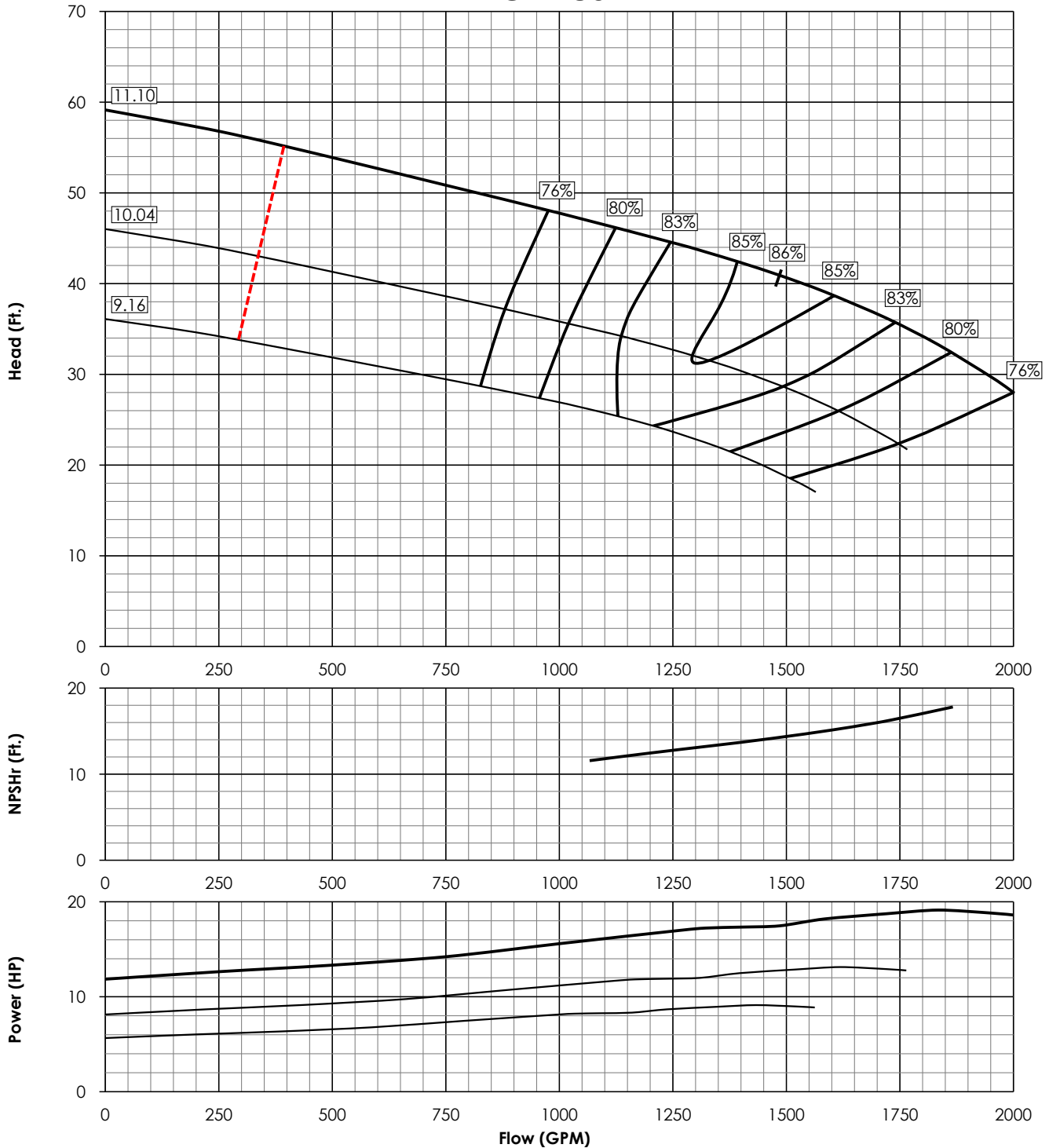
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6614HC1

Updated: Apr. 2018

FW14HC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2855
K _t	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



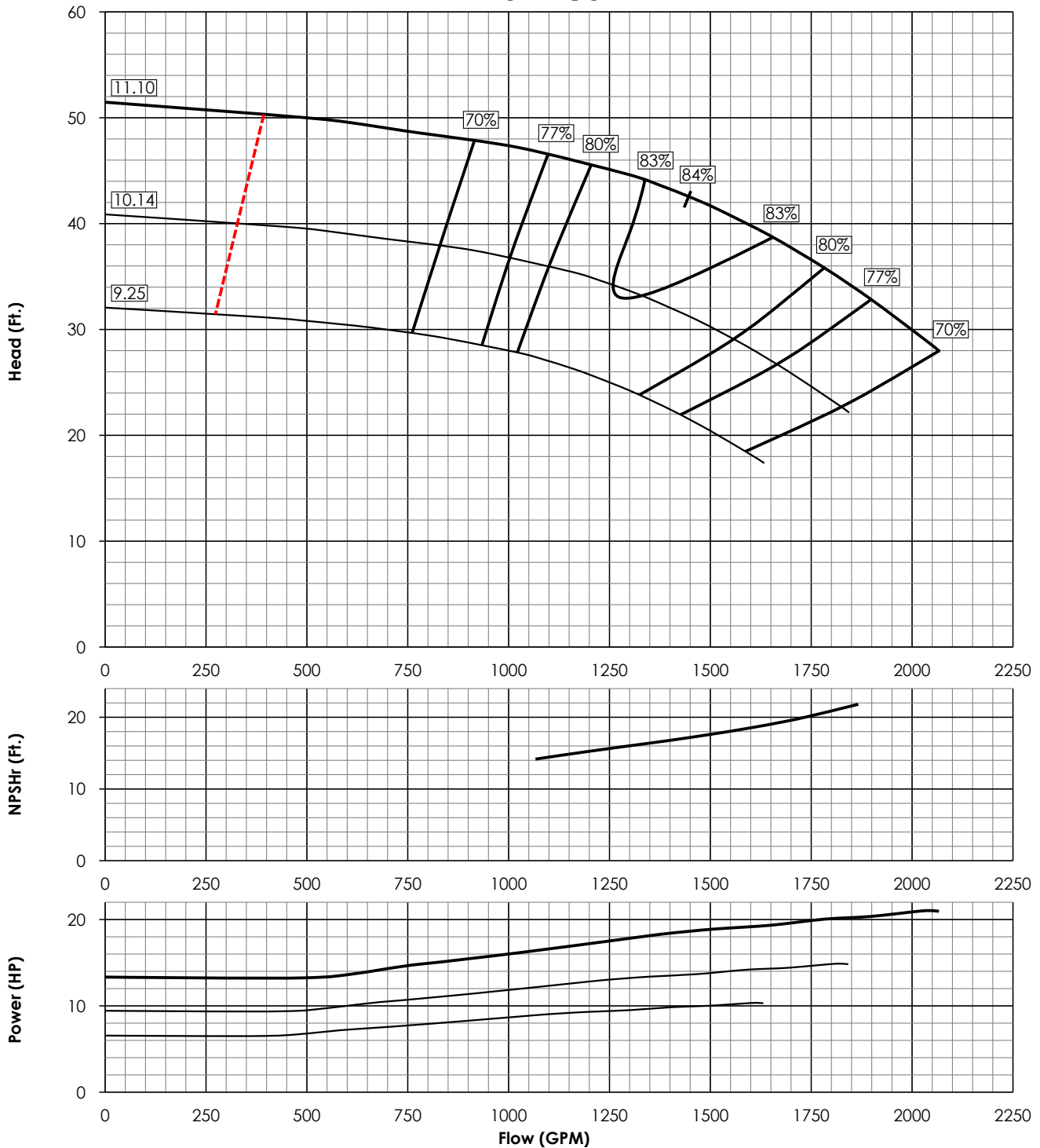
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6614HS0

Updated: May 2017

FW14HS 1180 RPM



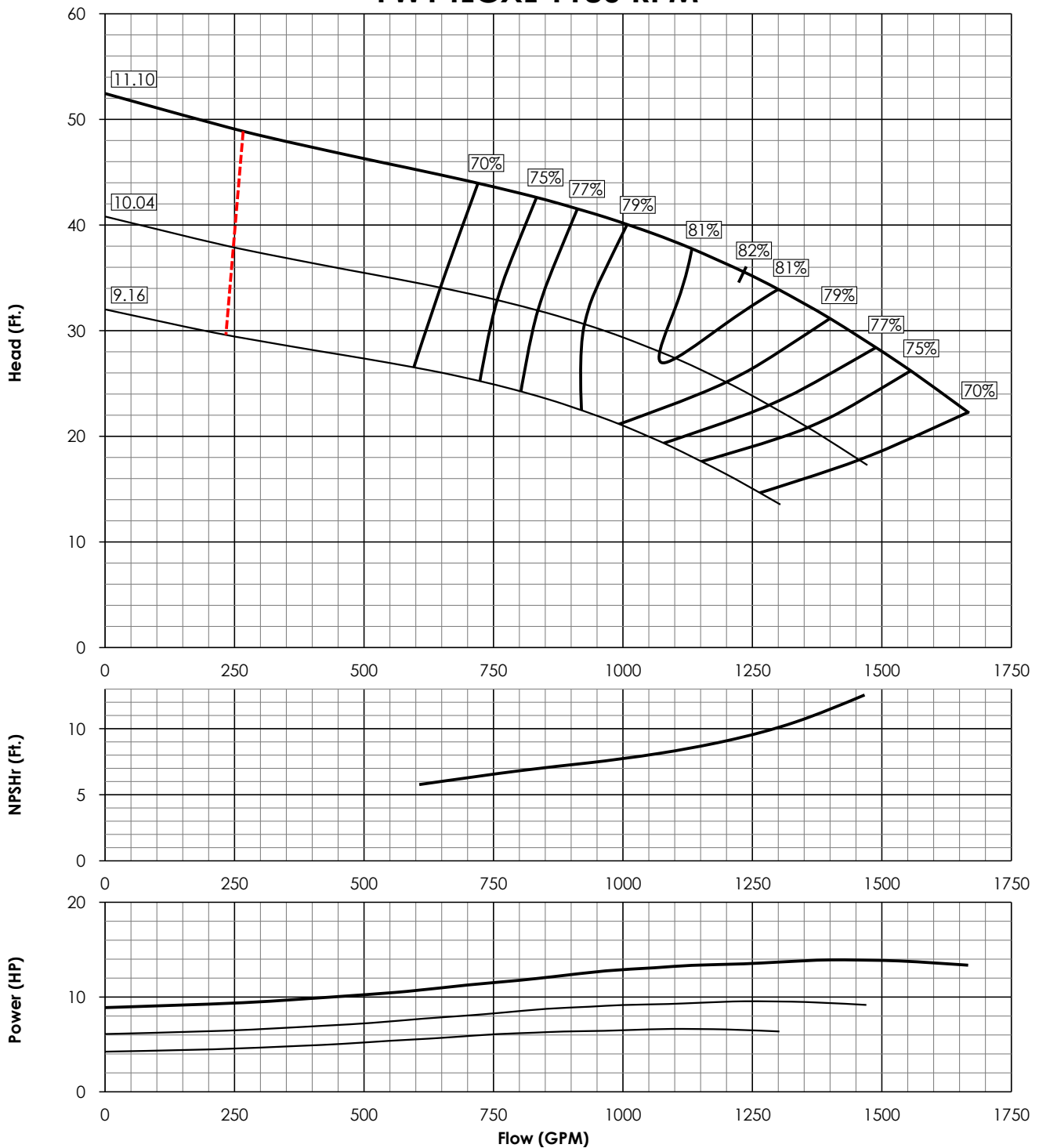
EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	2688
K _T	16.2 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14LCXL 1180 RPM



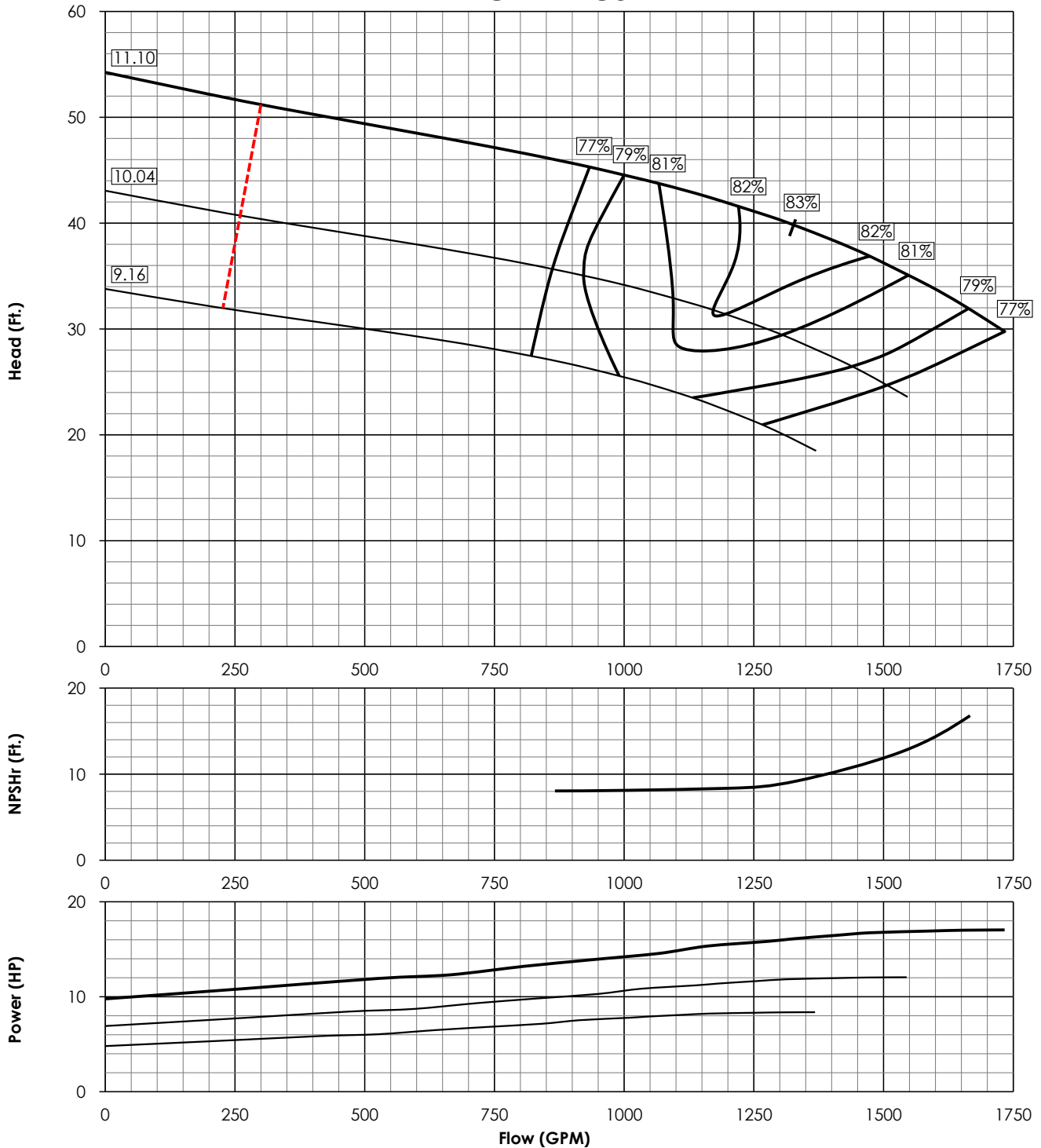
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2846
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	440 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	185 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14MCXL 1180 RPM



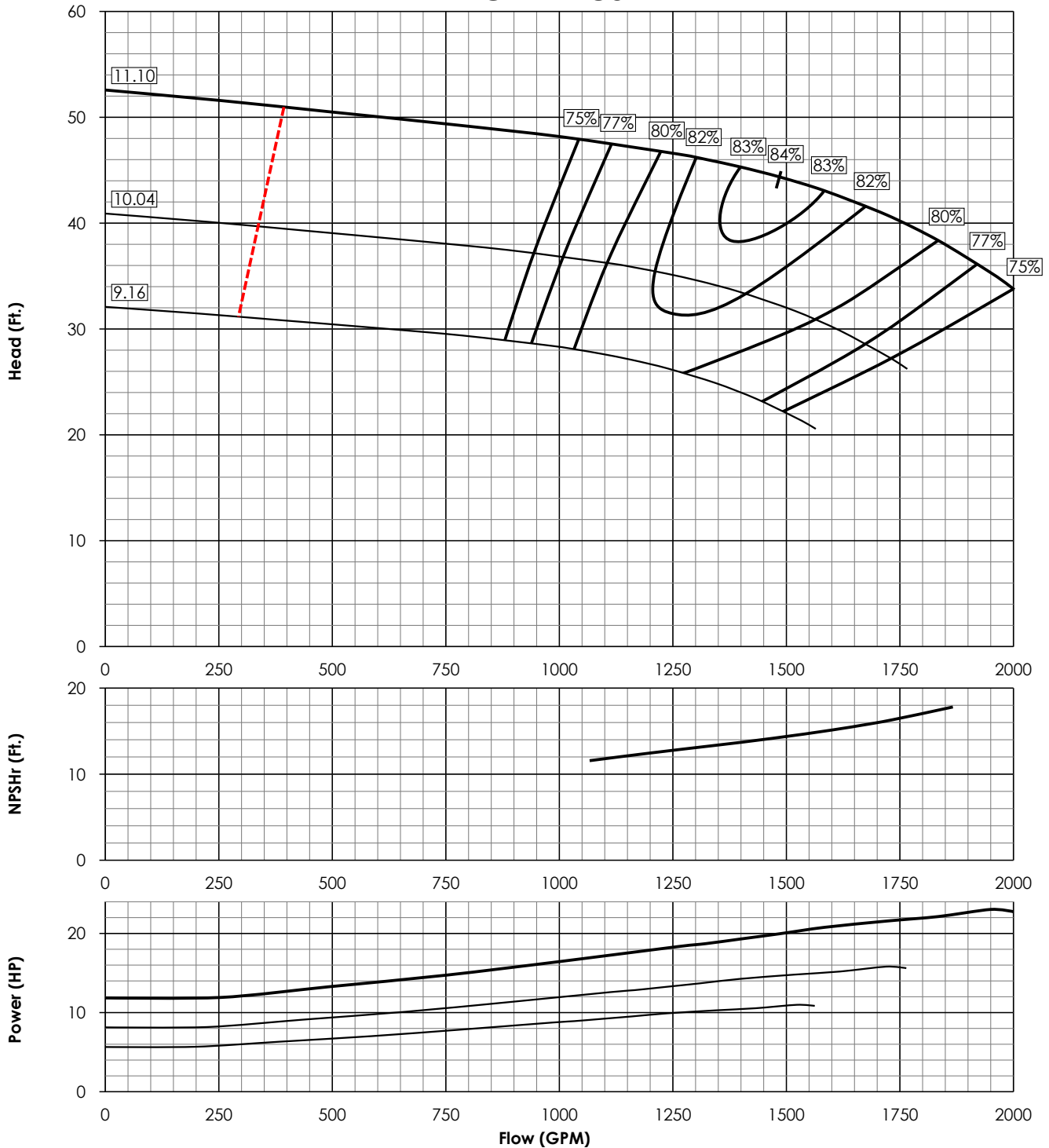
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2702
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	440 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	185 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14HCXL 1180 RPM



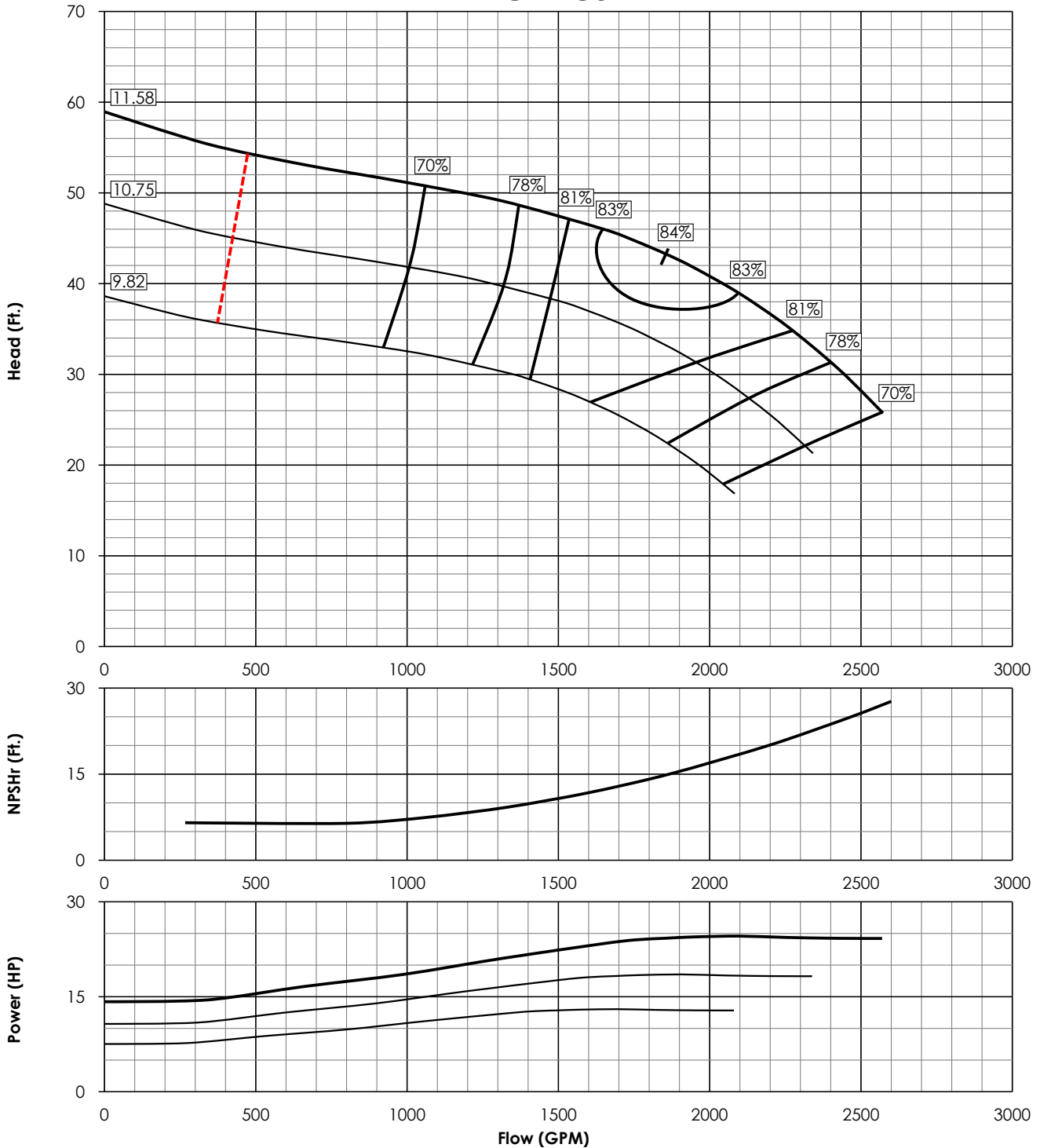
EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2641
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	440 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	185 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14WC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1400 RPM
N _s	2985
K _T	16.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	550 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	215 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	32"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	330 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



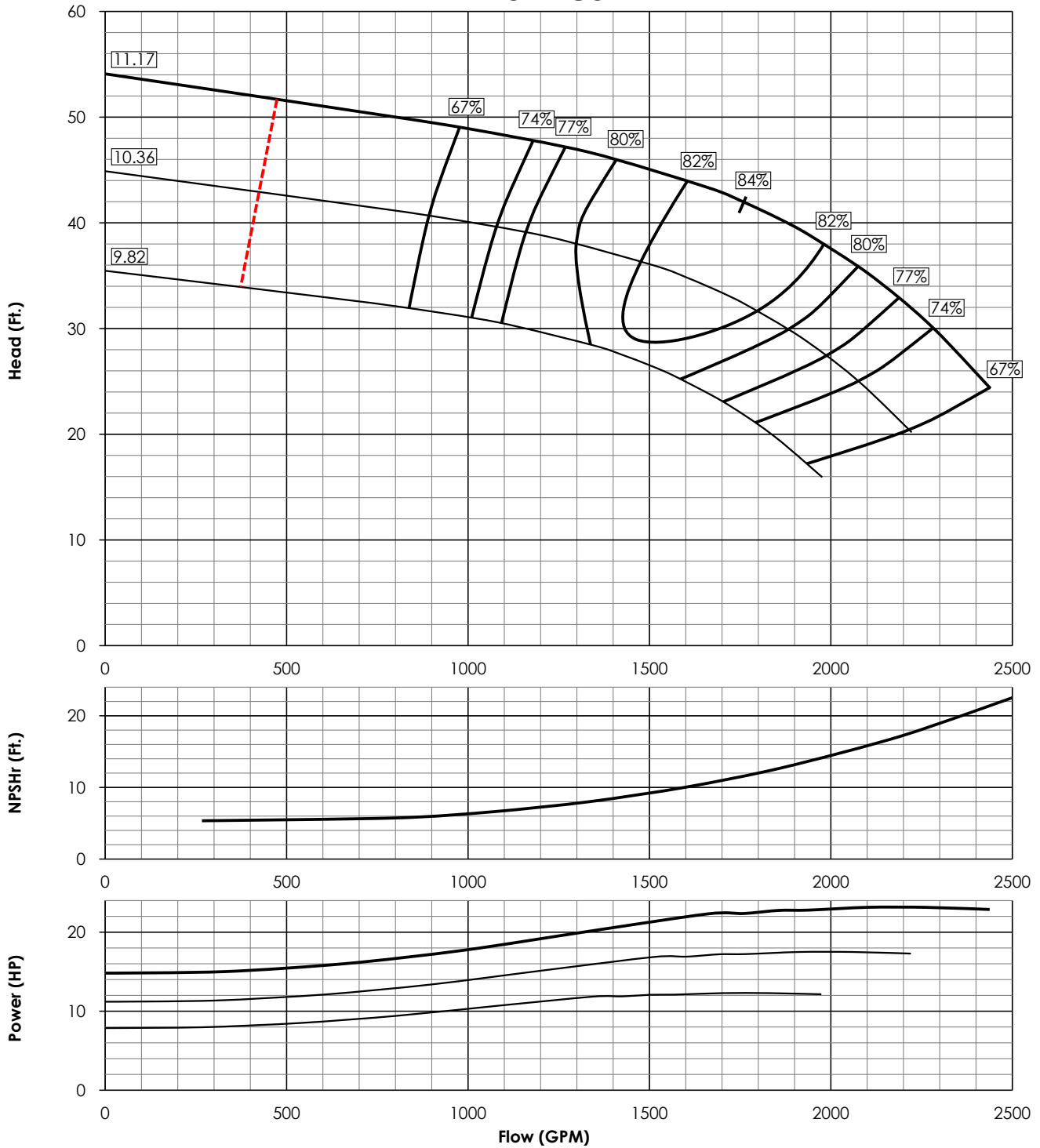
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6614WS0

Updated: Sep. 2019

FW14WS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1400 RPM
N _s	2969
K _T	24.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	550 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	215 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	32"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	330 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



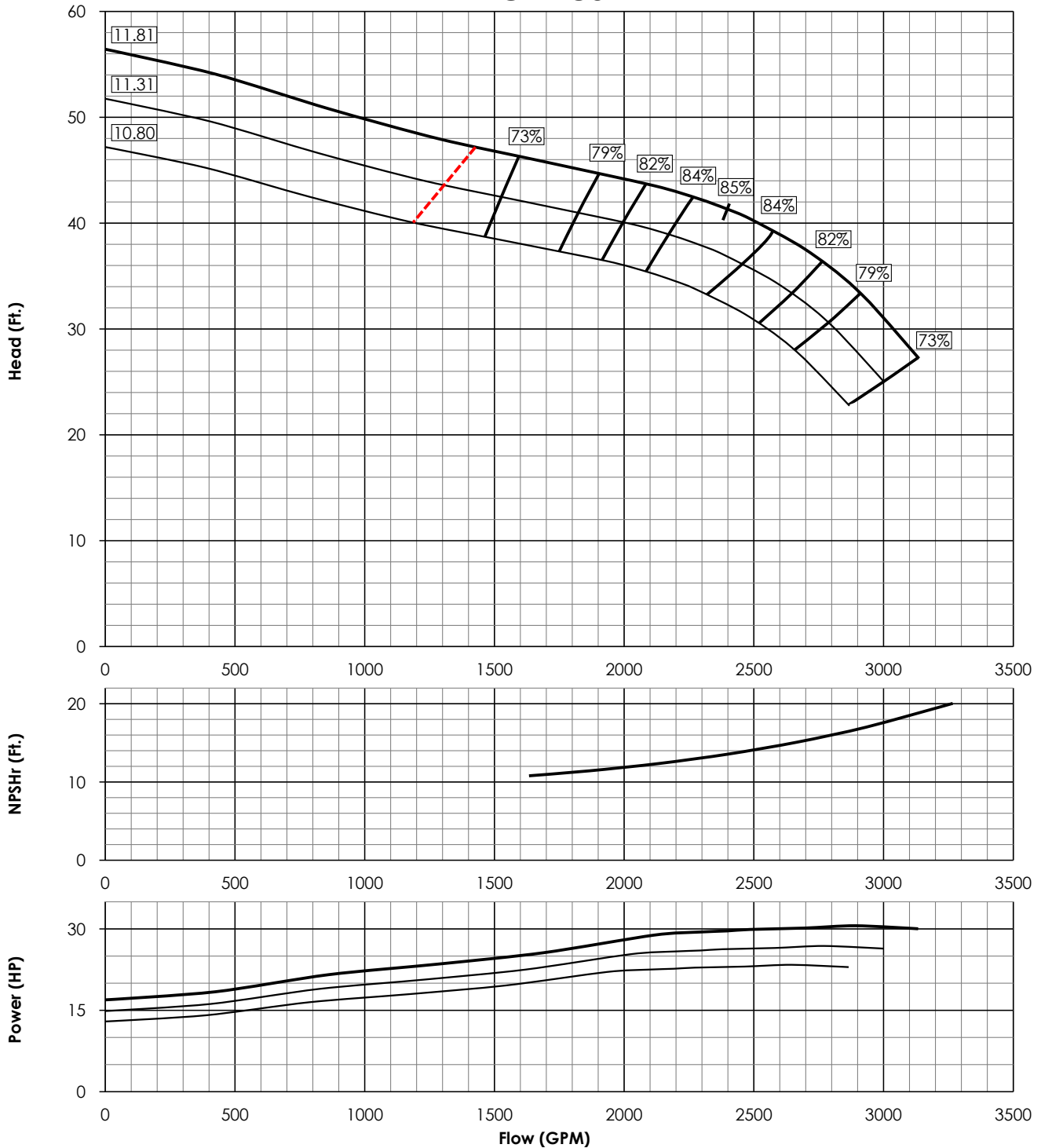
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6614YC2

Updated: Apr. 2021

FW14YC 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	N/A

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	3544
K _T	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	520 LBS
STD. LATERAL	1.12"	ADD. STG. WT.	210 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



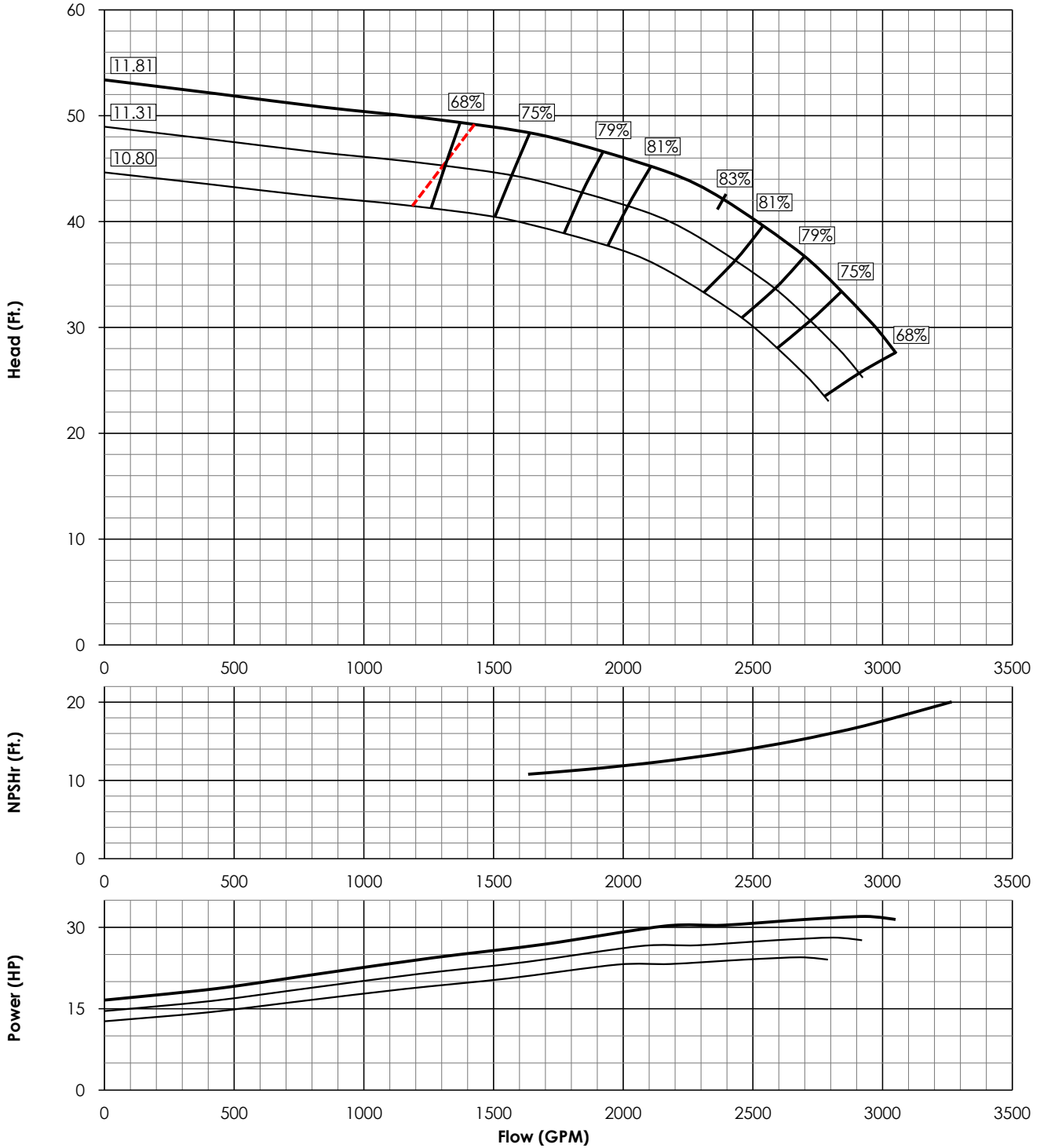
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6614YS1

Updated: Apr. 2021

FW14YS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	N/A

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1200 RPM
N _s	3501
K _T	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	550 LBS
STD. LATERAL	1.12"	ADD. STG. WT.	215 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



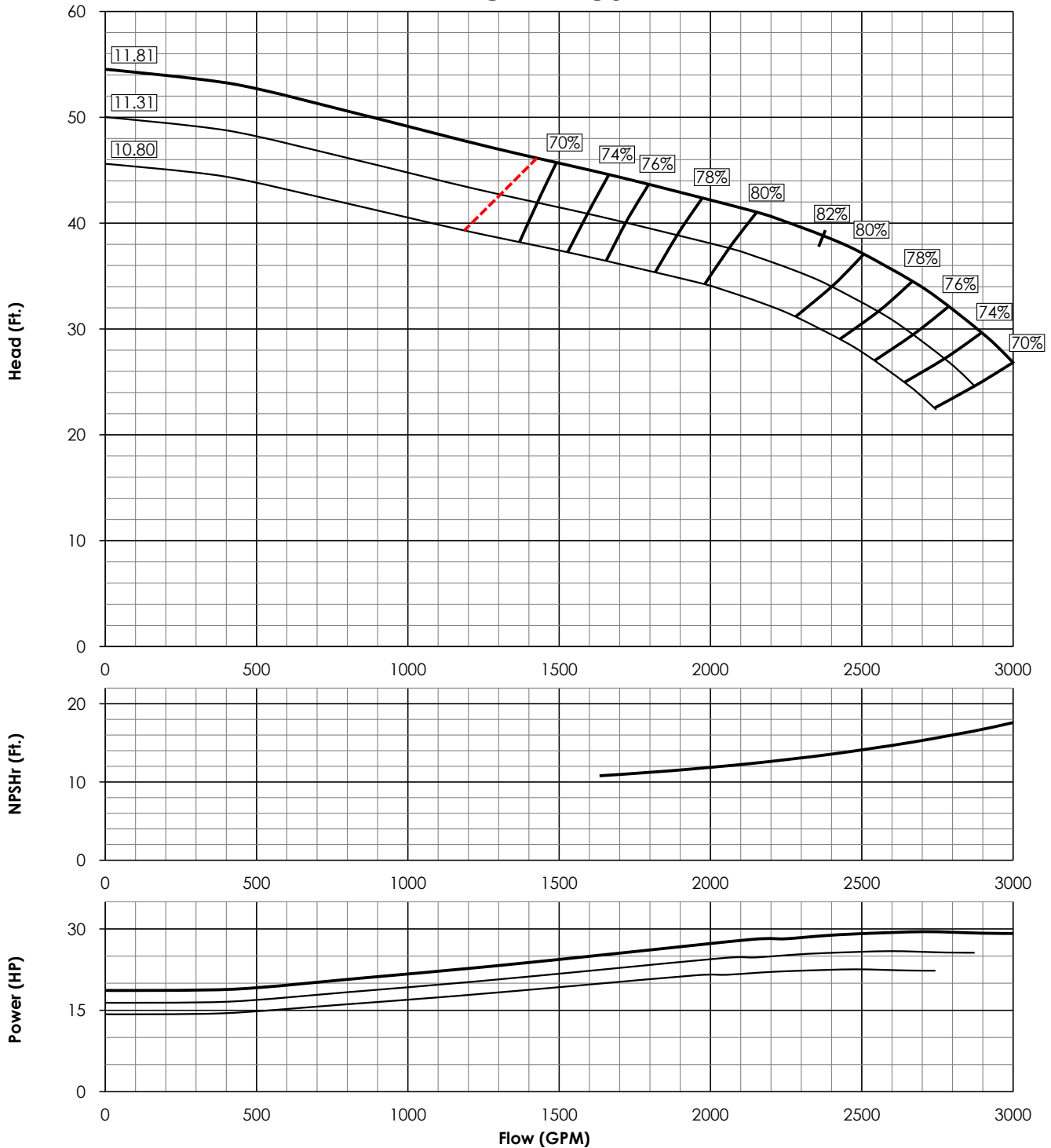
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6614YCXL1

Updated: Apr. 2021

FW14YCXL 1180 RPM



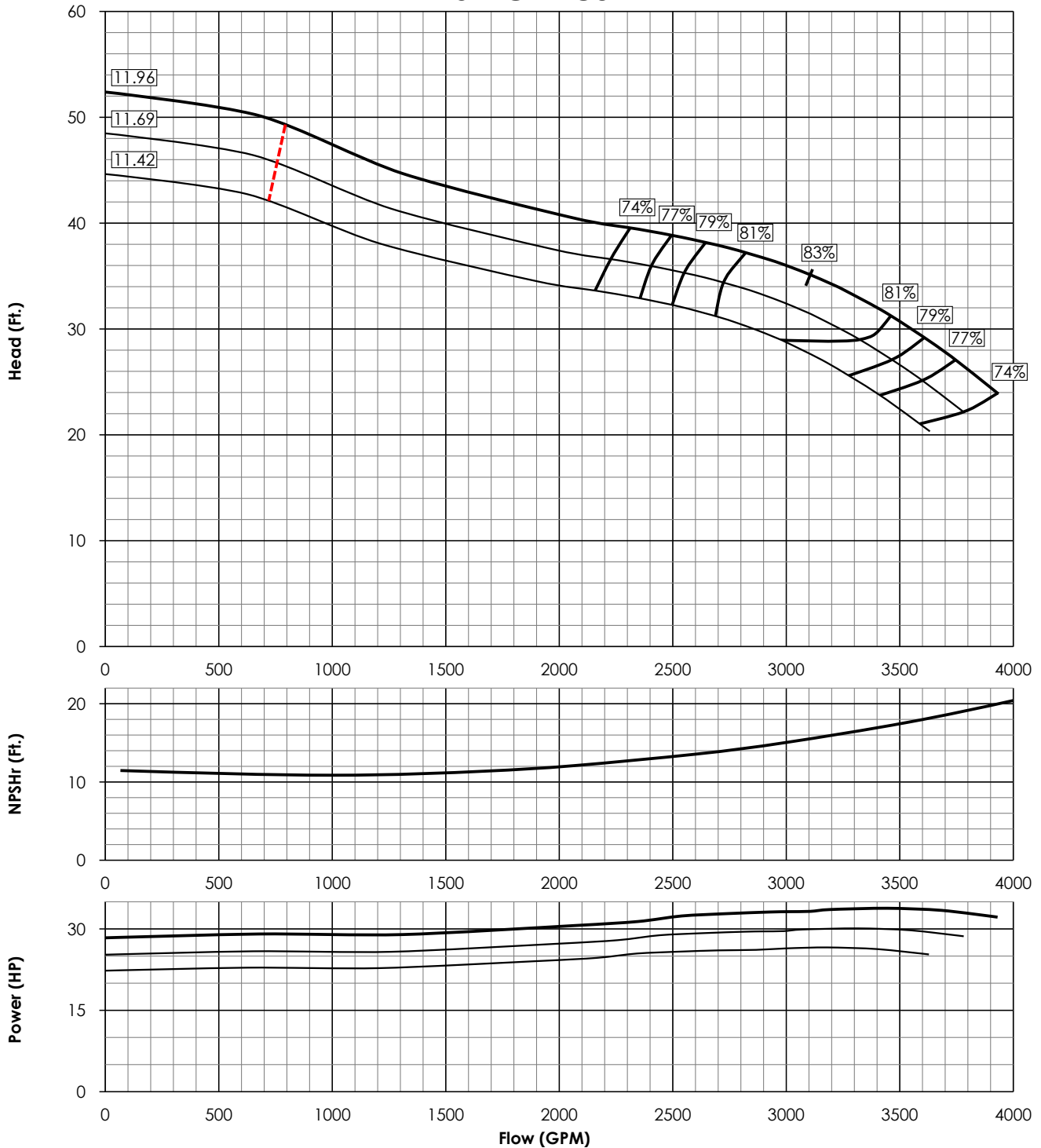
EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	N/A

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1200 RPM
N _s	3694
K _T	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	535 LBS
STD. LATERAL	2.25"	ADD. STG. WT.	230 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW15WC 1180 RPM



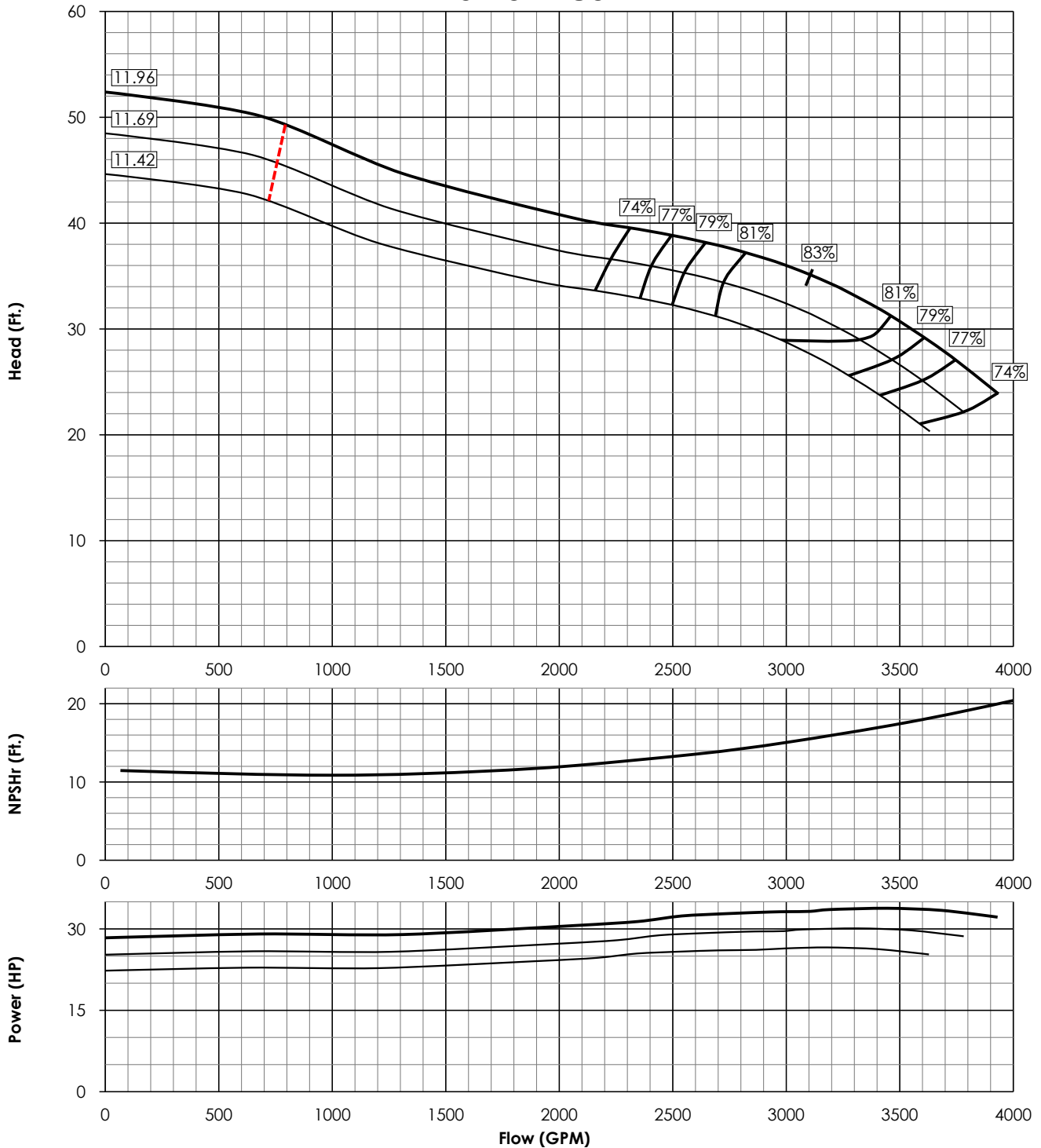
EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1400 RPM
N _s	4560
K _T	30.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.75"	SINGLE STG. WT.	565 LBS
STD. LATERAL	2.75"	ADD. STG. WT.	225 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	260 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW15WS 1180 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	1400 RPM
N _s	4560
K _T	45.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.75"	SINGLE STG. WT.	565 LBS
STD. LATERAL	2.75"	ADD. STG. WT.	225 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	260 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW16MC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW18MC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW20LC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW20HC**

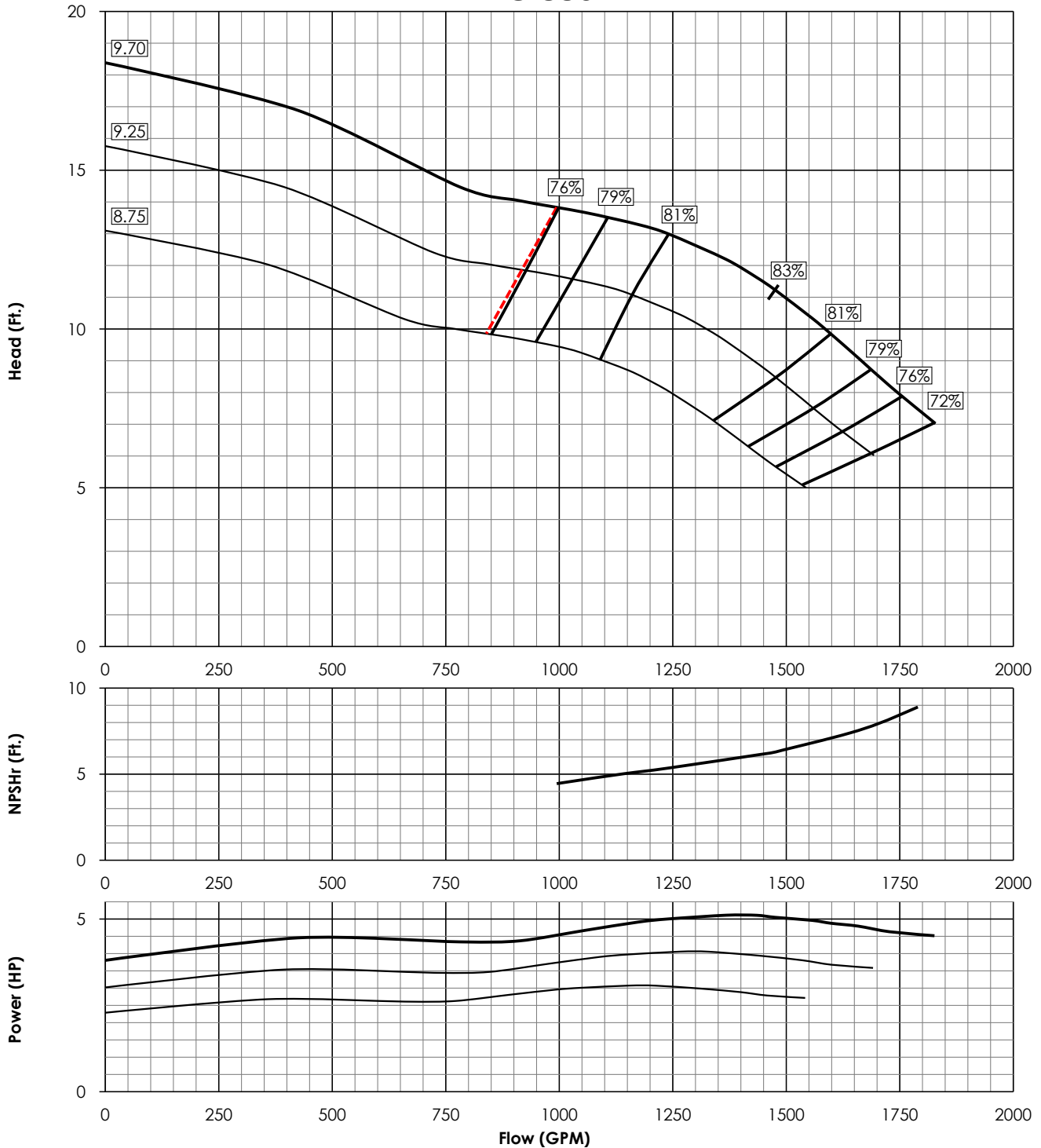


TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW20HCLN**

FW12ZC 880 RPM



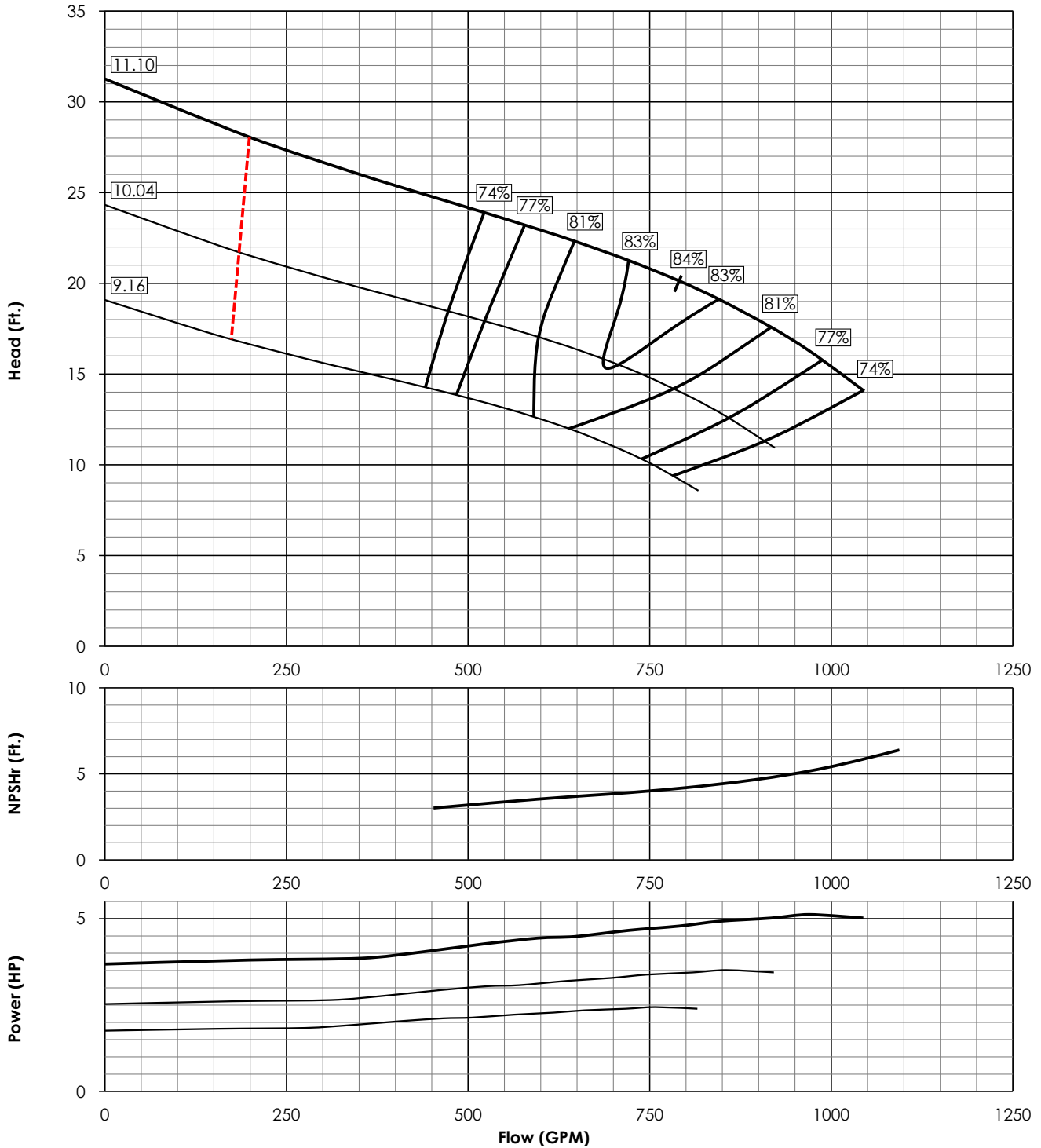
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	1800 RPM
N _s	5526
K _t	14.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	11.50"	SINGLE STG. WT.	355 LBS
STD. LATERAL	0.90"	ADD. STG. WT.	110 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	24"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	300 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14LC 880 RPM



EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2602
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



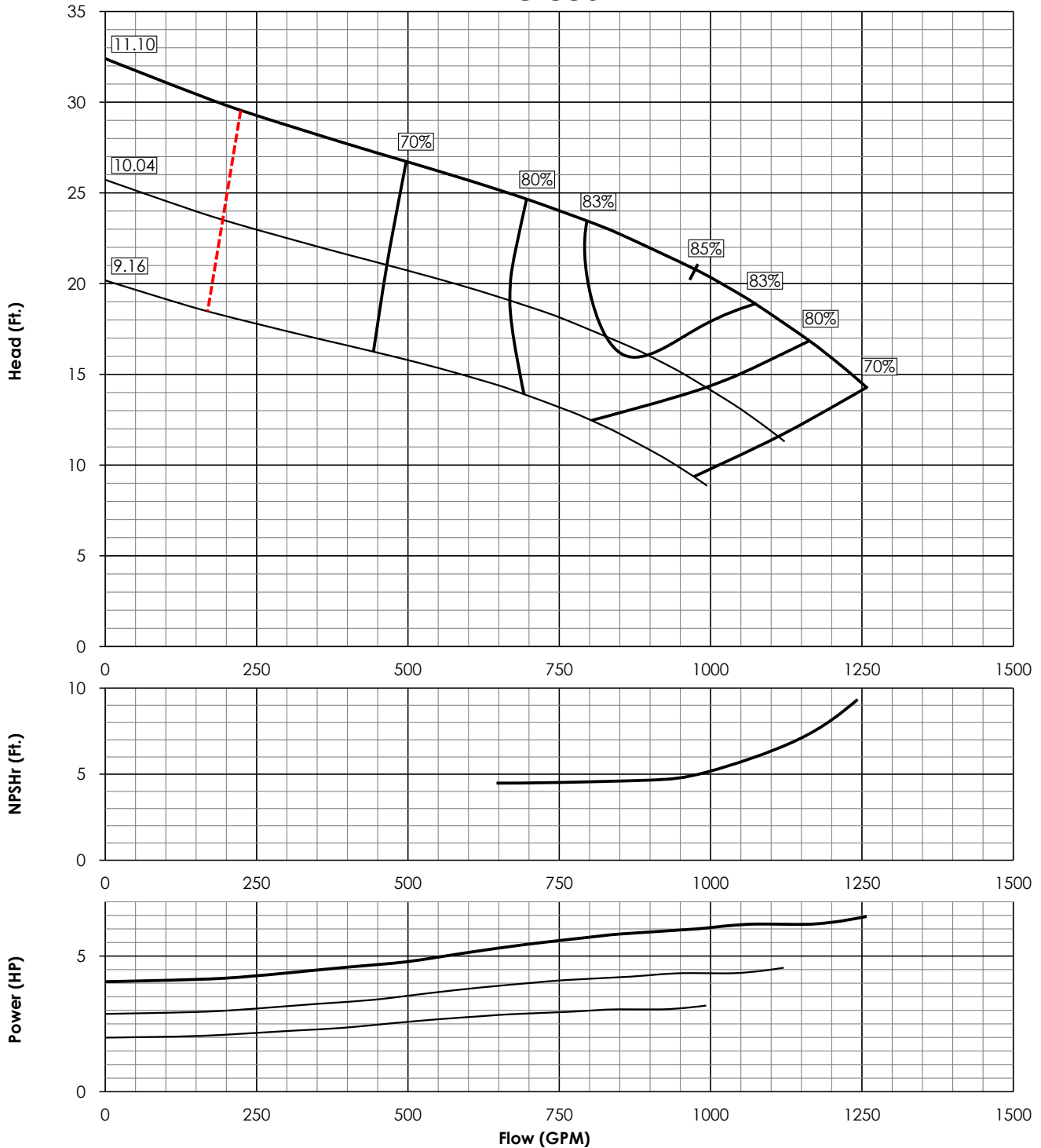
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6814MC1

Updated: Apr. 2018

FW14MC 880 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2829
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



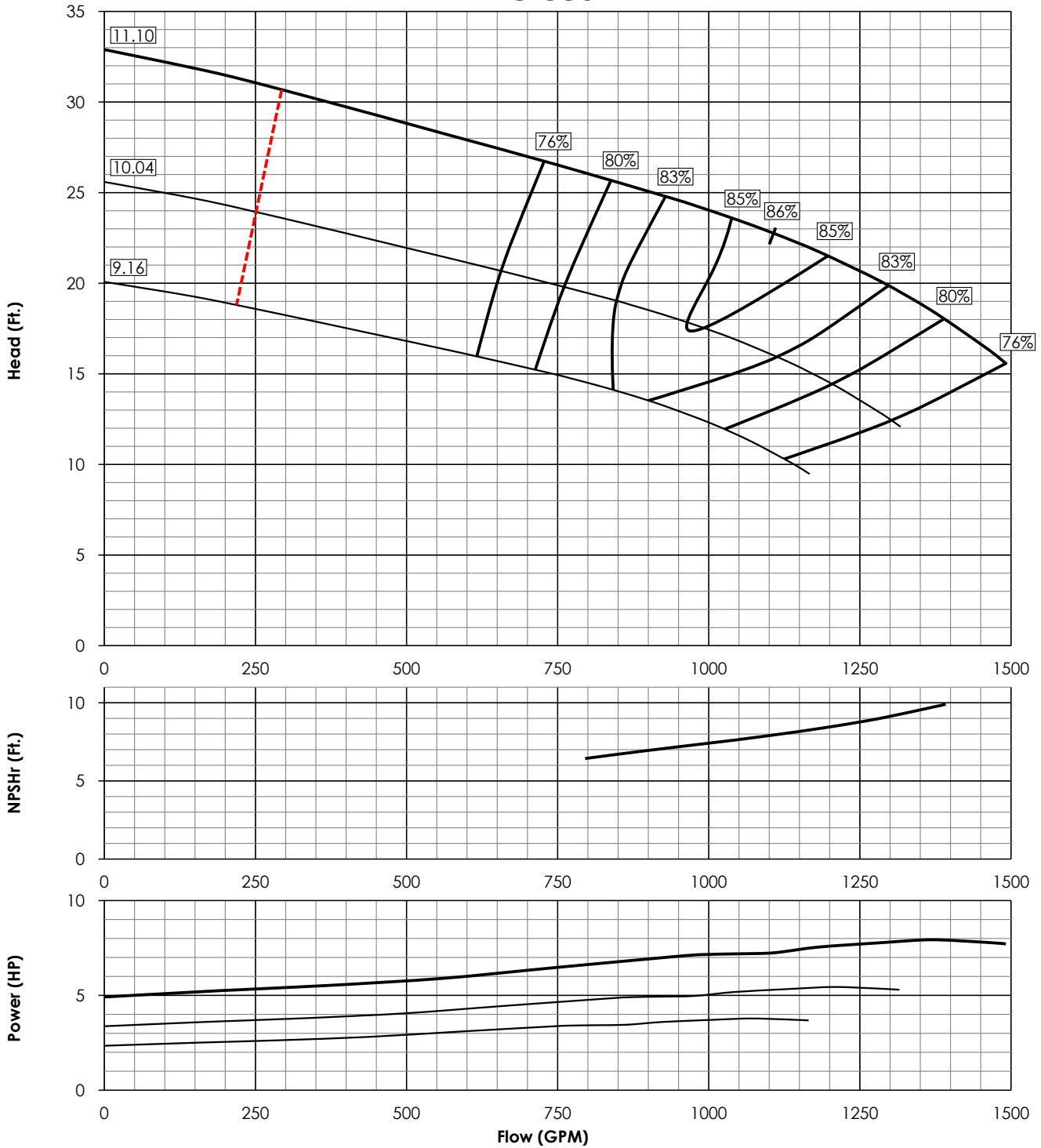
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6814HC1

Updated: Apr. 2018

FW14HC 880 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2855
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	475 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	155 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



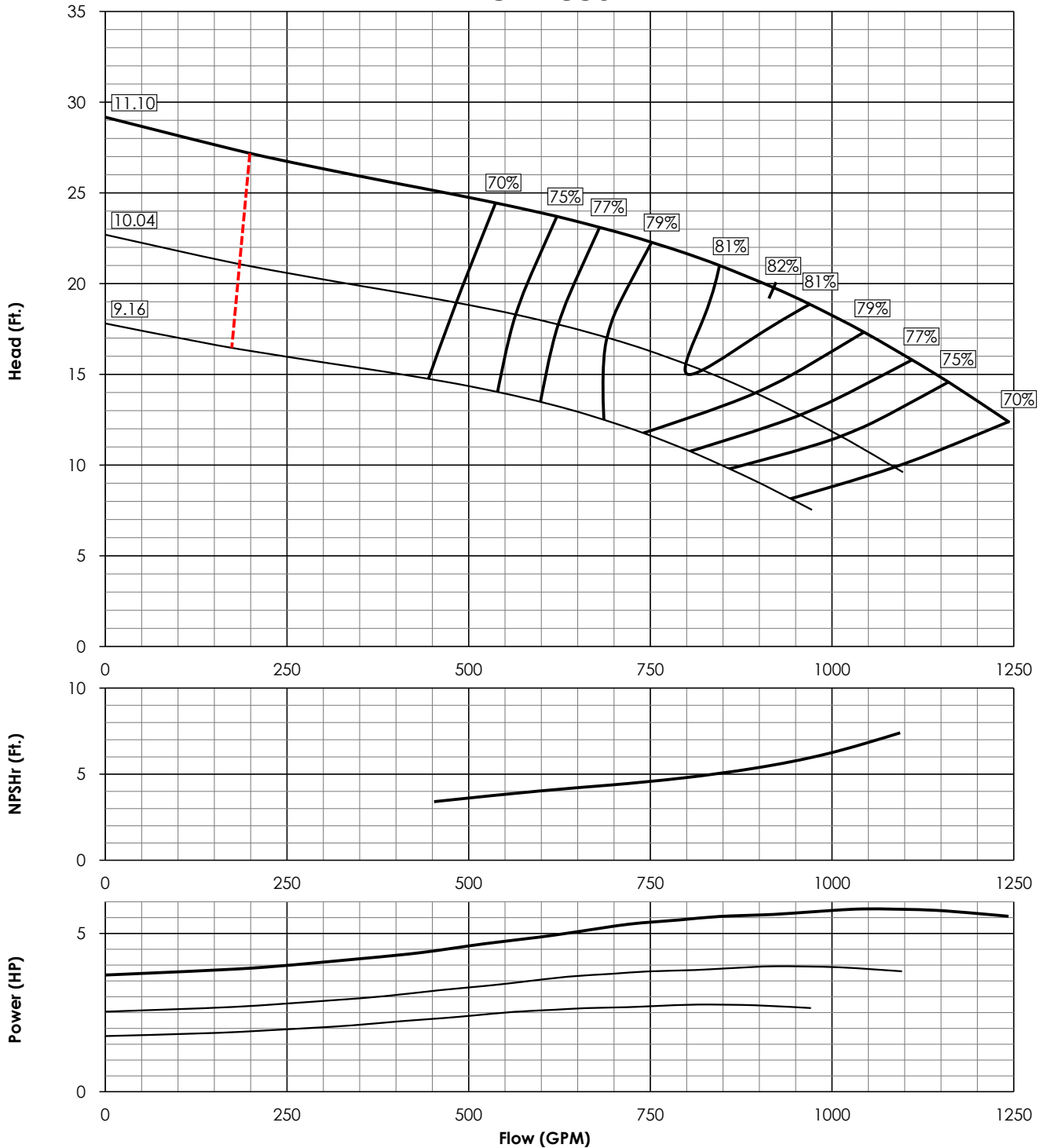
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6814LCXL0

Updated: Nov. 2019

FW14LCXL 880 RPM



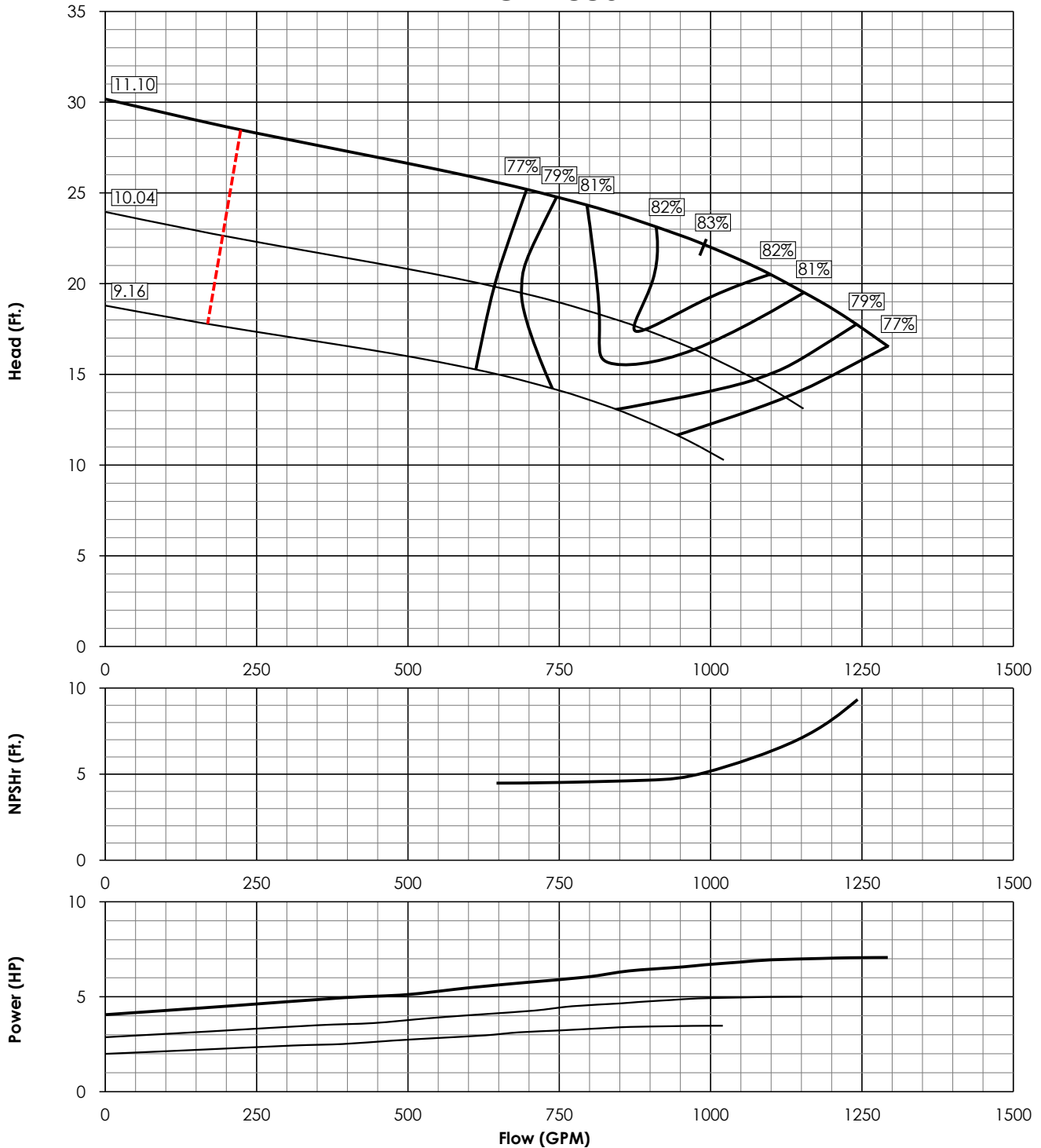
EFFICIENCY CORRECTION	
1 STG.	-3.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2846
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	440 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	185 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14MCXL 880 RPM



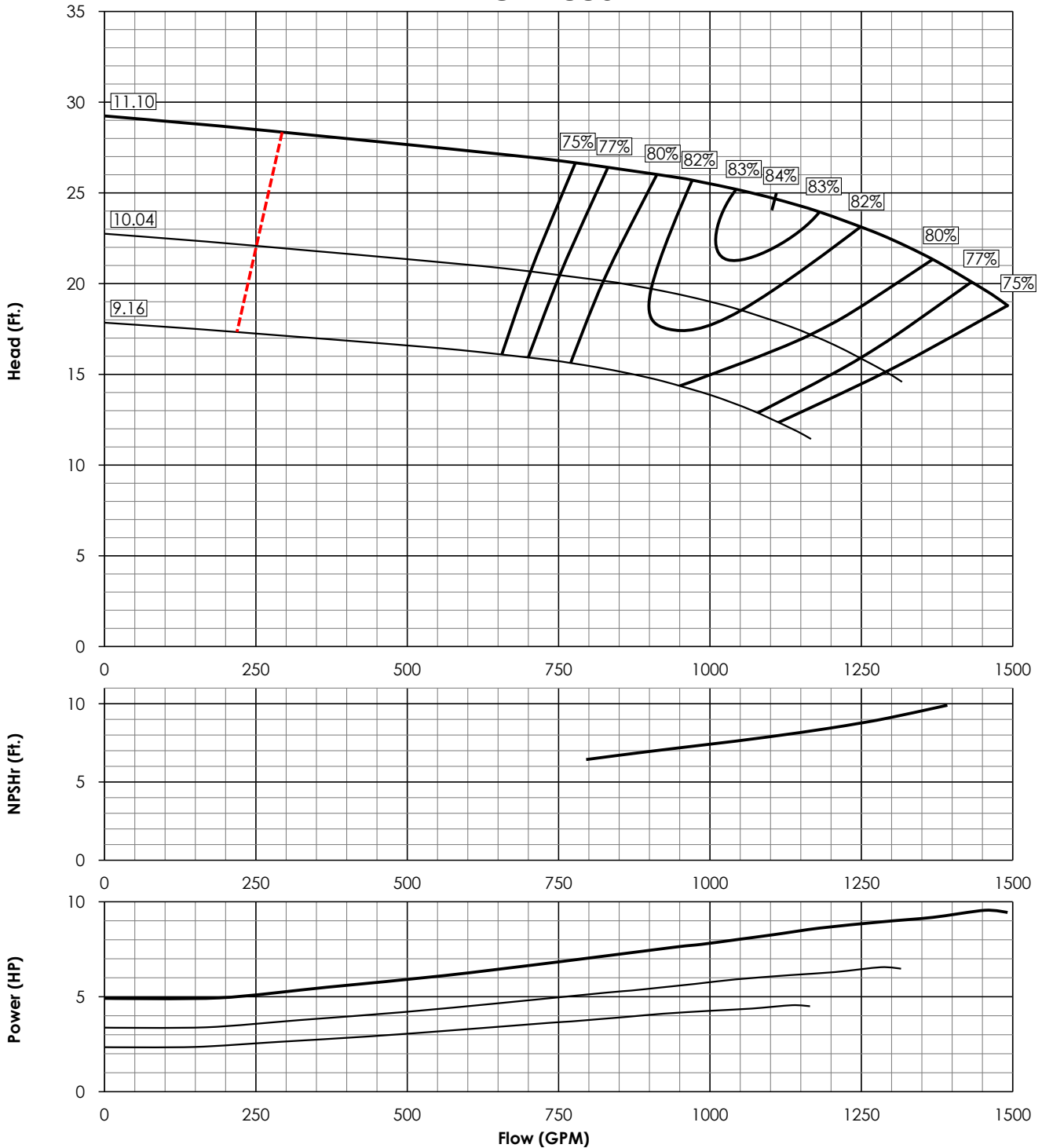
EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2702
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	440 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	185 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14HCXL 880 RPM



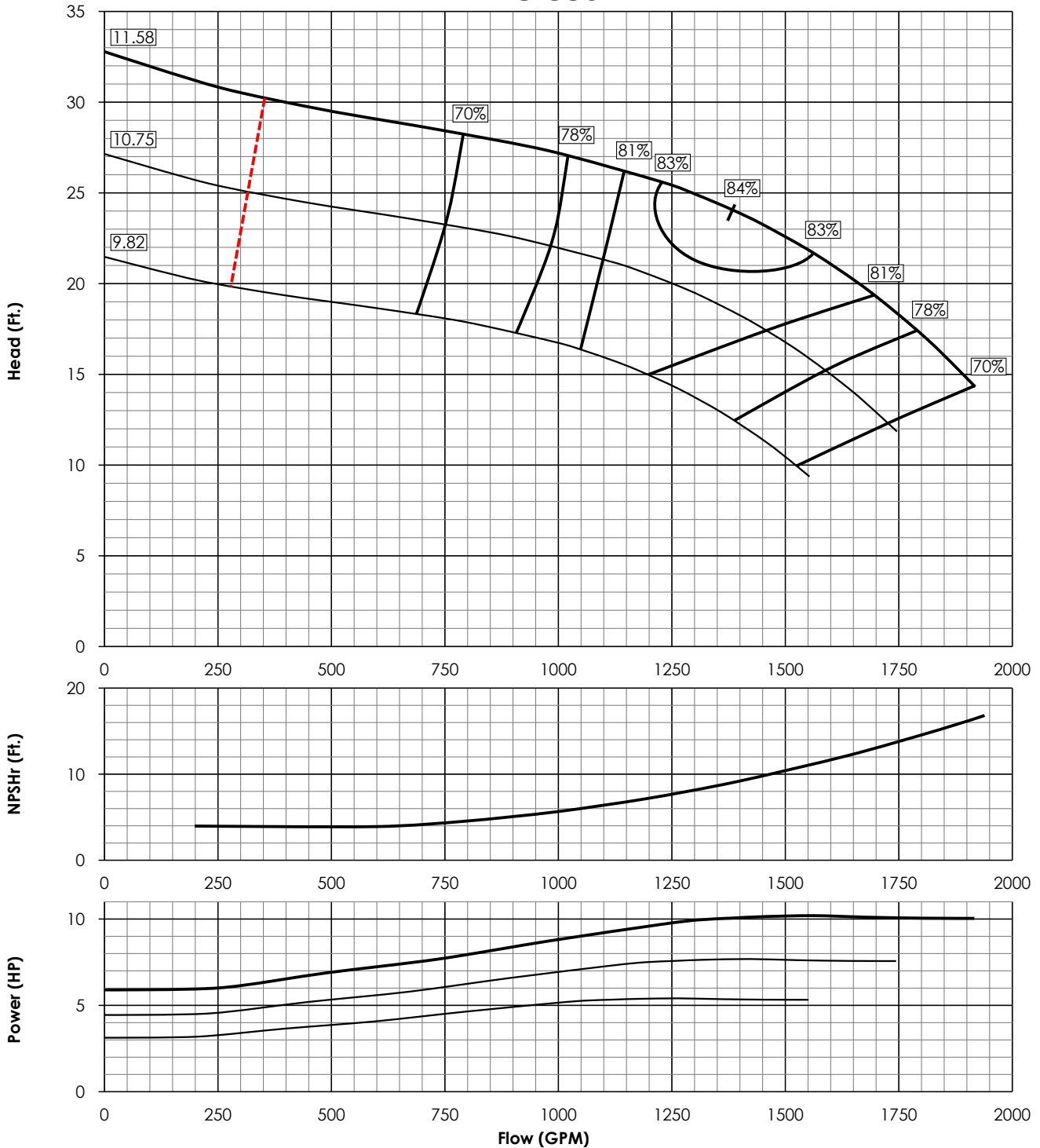
EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2641
K _T	13.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	13.63"	SINGLE STG. WT.	440 LBS
STD. LATERAL	2.00"	ADD. STG. WT.	185 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	1-15/16"	MAX WORKING PRES.	340 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.

FW14WC 880 RPM



EFFICIENCY CORRECTION	
1 STG.	-2.0
2 STG.	-1.0
3 STG.	-0.5
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	2985
K _T	16.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	550 LBS
STD. LATERAL	1.00"	ADD. STG. WT.	215 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	32"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	330 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



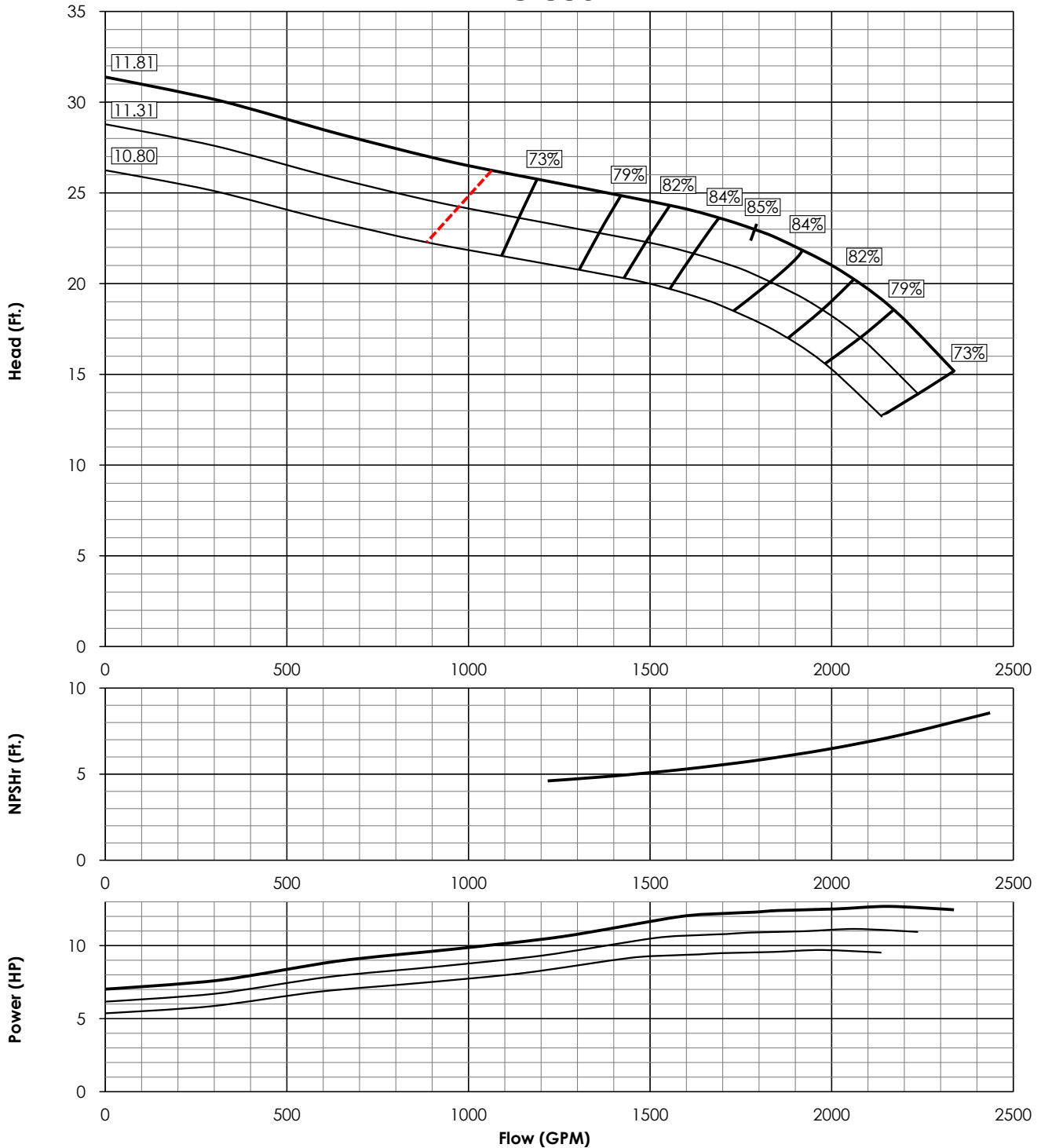
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6814YC2

Updated: Apr. 2021

FW14YC 880 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	N/A

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3544
K _T	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	520 LBS
STD. LATERAL	1.12"	ADD. STG. WT.	210 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



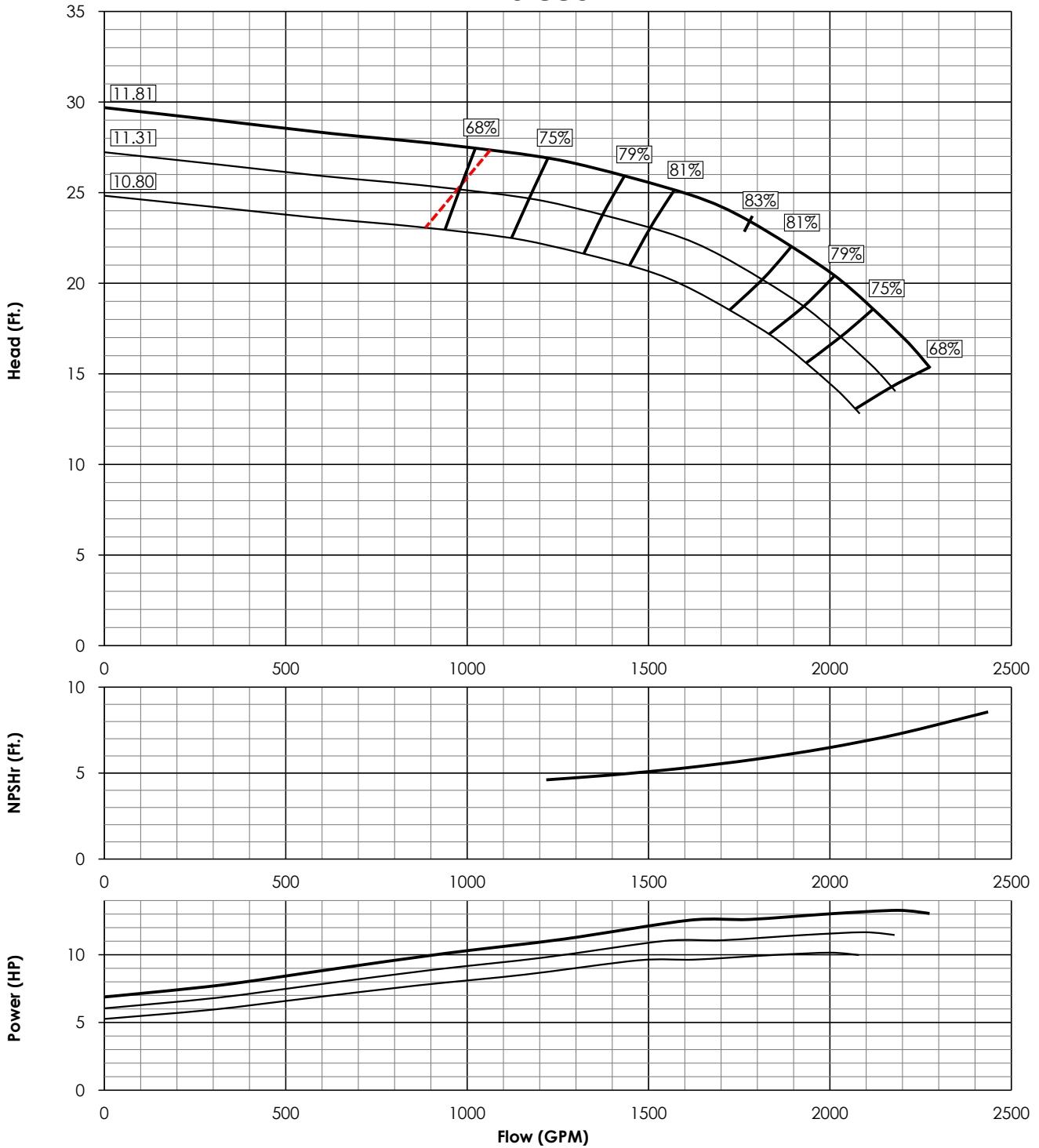
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6814YS1

Updated: Apr. 2021

FW14YS 880 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	N/A

IMPELLER DATA	
TYPE	OPEN
MAX SPEED	2200 RPM
N _s	3501
K _T	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	550 LBS
STD. LATERAL	1.12"	ADD. STG. WT.	215 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



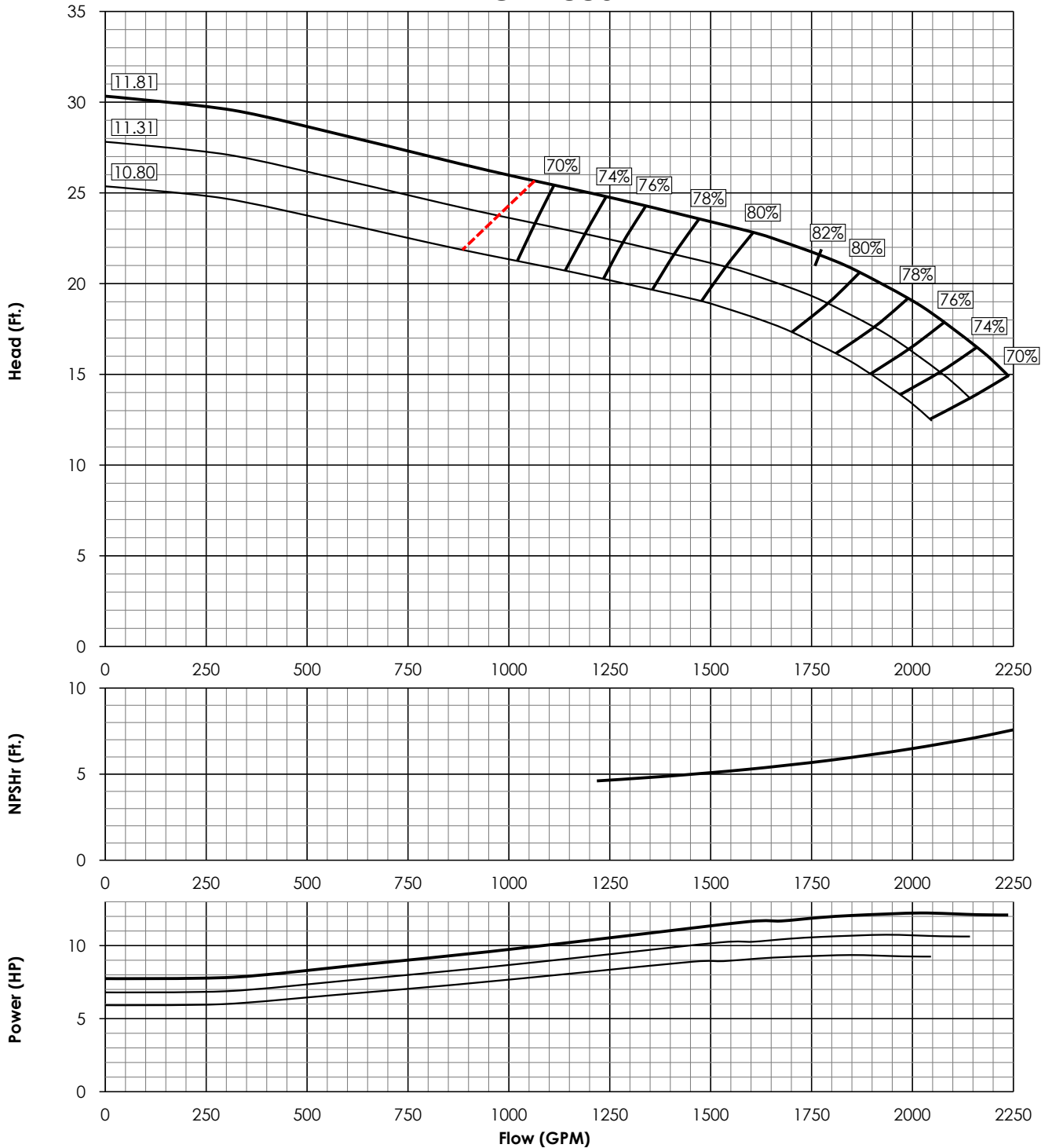
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6814YCXL1

Updated: Apr. 2021

FW14YCXL 880 RPM



EFFICIENCY CORRECTION	
1 STG.	-4.0
2 STG.	-2.0
3 STG.	0
4 STG.	N/A

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	3694
K _t	20.3 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.17"	SINGLE STG. WT.	535 LBS
STD. LATERAL	2.25"	ADD. STG. WT.	230 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERGENCE	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	327 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



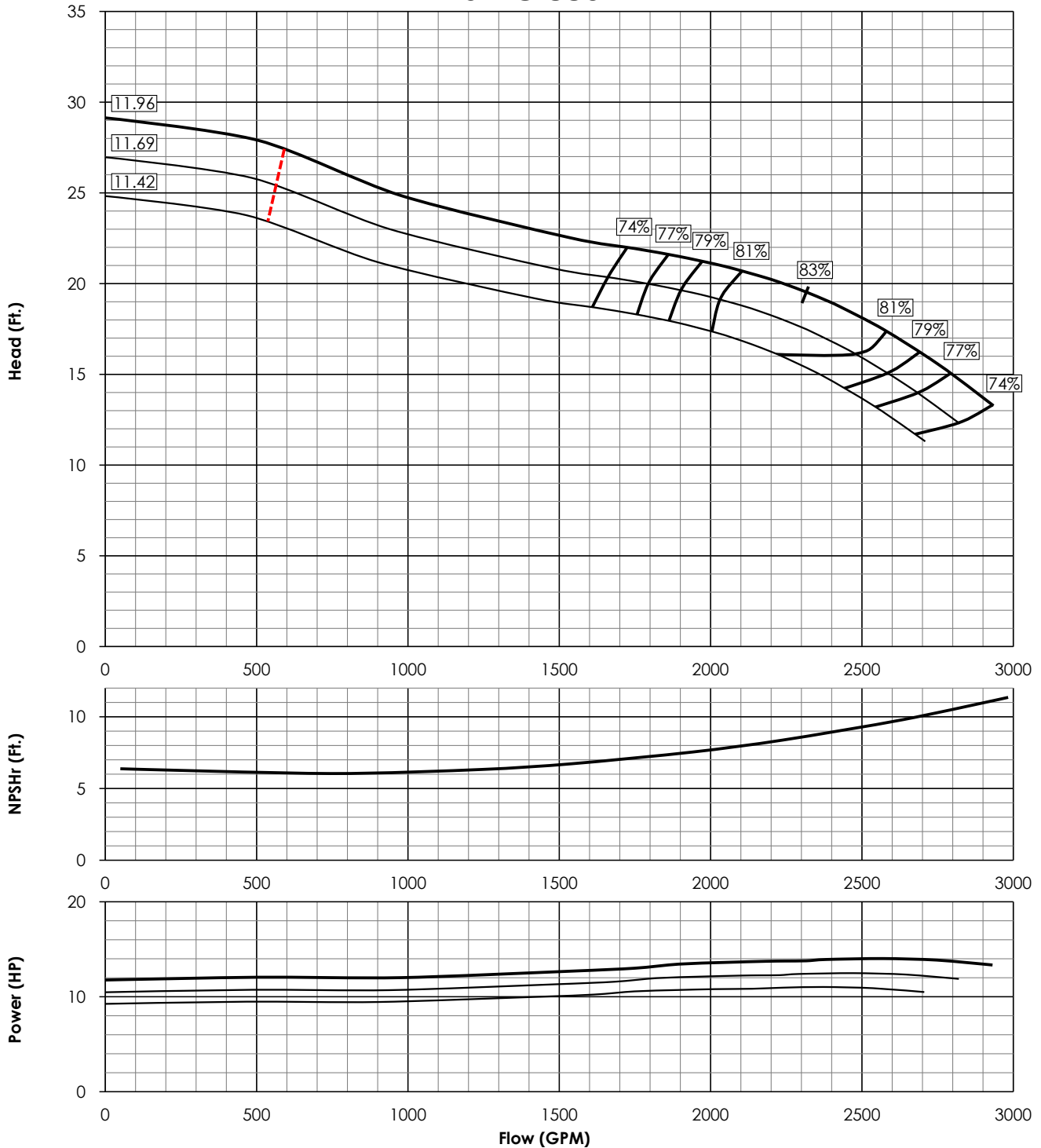
TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

Curve No. FT6815WC0

Updated: Mar. 2020

FW15WC 880 RPM



EFFICIENCY CORRECTION	
1 STG.	-1.0
2 STG.	-0.5
3 STG.	0
4 STG.	0

IMPELLER DATA	
TYPE	ENCLOSED
MAX SPEED	2200 RPM
N _s	4560
K _T	30.0 LBS/FT

BOWL ASSEMBLY DATA			
BOWL O.D.	14.75"	SINGLE STG. WT.	565 LBS
STD. LATERAL	2.75"	ADD. STG. WT.	225 LBS
DISCH. SIZE(S)	10", 12"	MIN. SUBMERSION	36"
SHAFT DIA.	2-3/16"	MAX WORKING PRES.	260 PSI

Curves represent single stage bowl performance when pumping clear, non-aerated water. Performance is based on laboratory testing of multi-stage pump assembly, and reflective of HI and ISO pump testing tolerance and guidelines. Efficiency corrections are required as noted for fewer stages.



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW16MC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW18MC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW20LC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW20HC**



TURBINE PUMP CURVES

SINGLE STAGE PERFORMANCE

**RESERVED
FOR
FW20HCLN**

Terminology

1. **Grade** - The elevation of the surface supporting the pump.
2. **Static Water Level** - The vertical distance between grade and the water level in the well when the pump is OFF.
3. **Drawdown** - The vertical distance the water is lowered in the well during pumping.
4. **Pumping Water Level** - The vertical distance between grade and the water level in the well when the pump is ON.
5. **Pump Setting** - The vertical distance between grade and the top of the pump assembly
6. **Lift** - The vertical distance from the pumping water level to the discharge level (this may be higher than grade).
7. **Minimum Submergence** - The lowest acceptable water level in the well for pump operation.
8. **Column Friction Loss** - Losses incurred by the flow of water through the pump column assembly. See Column Friction Loss Table for approximate values.
9. **TDH (Total Dynamic Head)** - The total of the following: vertical elevation from the pumping water level to the discharge point plus all losses in the column and discharge piping.
10. **Lab Efficiency** - Efficiency of the bowl assembly only. This value can be found on the pump performance curve.
11. **Lab Horsepower** - The horsepower required by the bowl assembly as measured during laboratory testing.

$$Lab\ HP = \frac{Lab\ TDH \times Capacity}{3960 \times Lab\ Efficiency}$$
12. **Shaft Friction Loss** - The horsepower required to overcome the friction in the lineshaft bearings.
13. **Field Horsepower or Brake Horsepower** - The sum of Lab Horsepower plus Shaft Friction Loss plus any losses in the driver thrust bearing.
14. **Pump Field Efficiency** - The efficiency of the entire pump, less the driver.

$$Pump\ Field\ Efficiency = \frac{Field\ TDH \times Capacity}{3960 \times Brake\ Horsepower}$$
15. **Overall Efficiency (Wire to Water)** - The efficiency of the pump and motor. Equal to Pump Field Efficiency x Motor Efficiency.
16. **Total Pump Thrust** - The sum of the shaft weight and the hydraulic thrust created by the impellers moving liquid.

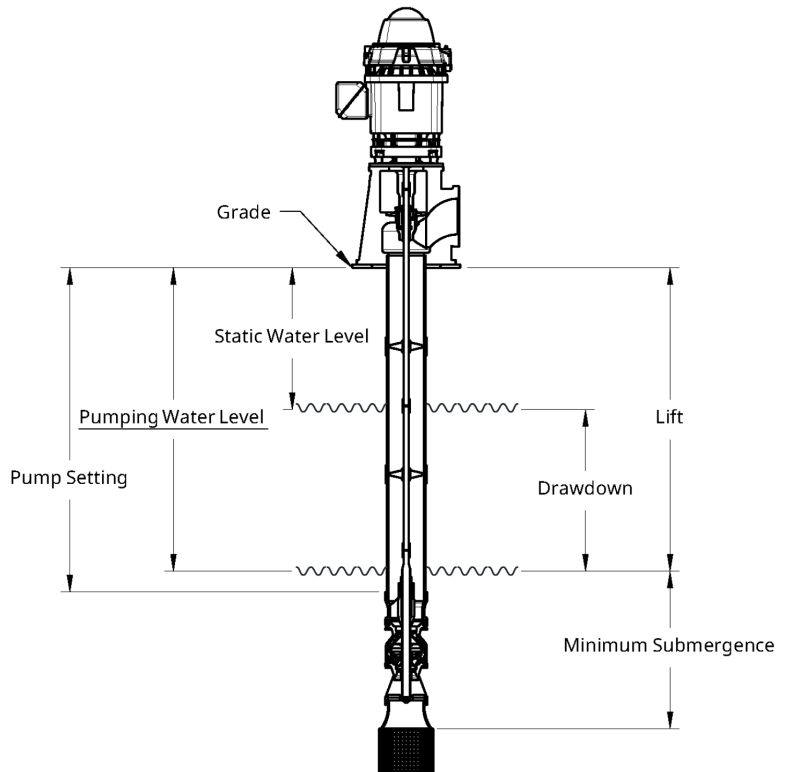


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Sump Design

Note: The following sump design guidelines are recommendations and not to be considered exact. There are many different design aspects and considerations that are not included in this guide.

General Design Considerations

- The goal of proper sump design is to achieve an *evenly distributed flow* to the pump intake.
- Uneven flow can be characterized by the formation of visible and invisible vortices along with uneven velocity in the sump.
 - Vortices can cause premature wear on the pump and motor by constantly increasing or decreasing power consumption. This is a result in fluctuating TDH caused by the uneven velocity of the vortex.
 - Vortices may be invisible to the naked eye, or strong enough to reach the surface. If a vortex reaches the surface, it is possible that it will draw air down into the pump, causing cavitation, reduced performance, and premature wear.
 - Uneven velocity may occur in localized regions of a sump, even if the general sump velocity is low. For this reason, low sump velocity is not necessarily an indication of good sump design. In fact, higher velocities tend to discourage uneven localized velocities.
- The best intake is a direct channel that carries water directly to the pump suction. Any additional geometry or flow obstructions may create eddy currents and form vortices.
 - Water should never flow past one pump's suction to reach another pump's suction

Sump Dimensions

Use Table 1 on the next page to find the dimensions for the following figures.

Note:

- Dimension C is an average value and the manufacturer should be consulted for the final dimension
- Dimension B is a suggested maximum dimension. If the back wall distance cannot be achieved, it may be necessary to install a “false wall” behind the pump
- Dimension S can be increased but should not be reduced without a manufacturer consultation
- Dimension H is the normal low water level. The pump should only momentarily be operated when the sump level falls below this point.
 - Minimum submergence is typically equal to Dimension H minus Dimension C
- Dimension Y and Dimension A are recommended minimum values. These can be as large as desired up to the limit shown in Figure 3. If there is no screen, dimension A should be substantially longer. The width of the screen and rack should not be much less than Dimension S and their heights should not be less than Dimension H.
- If the velocity in the channel is greater than 2ft/s, it is recommended to do one or both of the following: install straightening vanes or increase dimension A. It may be necessary to conduct a test of the sump in order to determine what is required.
- Figure 2 shows the ideal installation with straight line flow directly to each pump. Optional separating walls can be installed to optimize efficiency if multiple pumps will run at the same time. Velocity in the channel should be between 1 and 2 ft/s.

Figure 1: Sump Dimensions

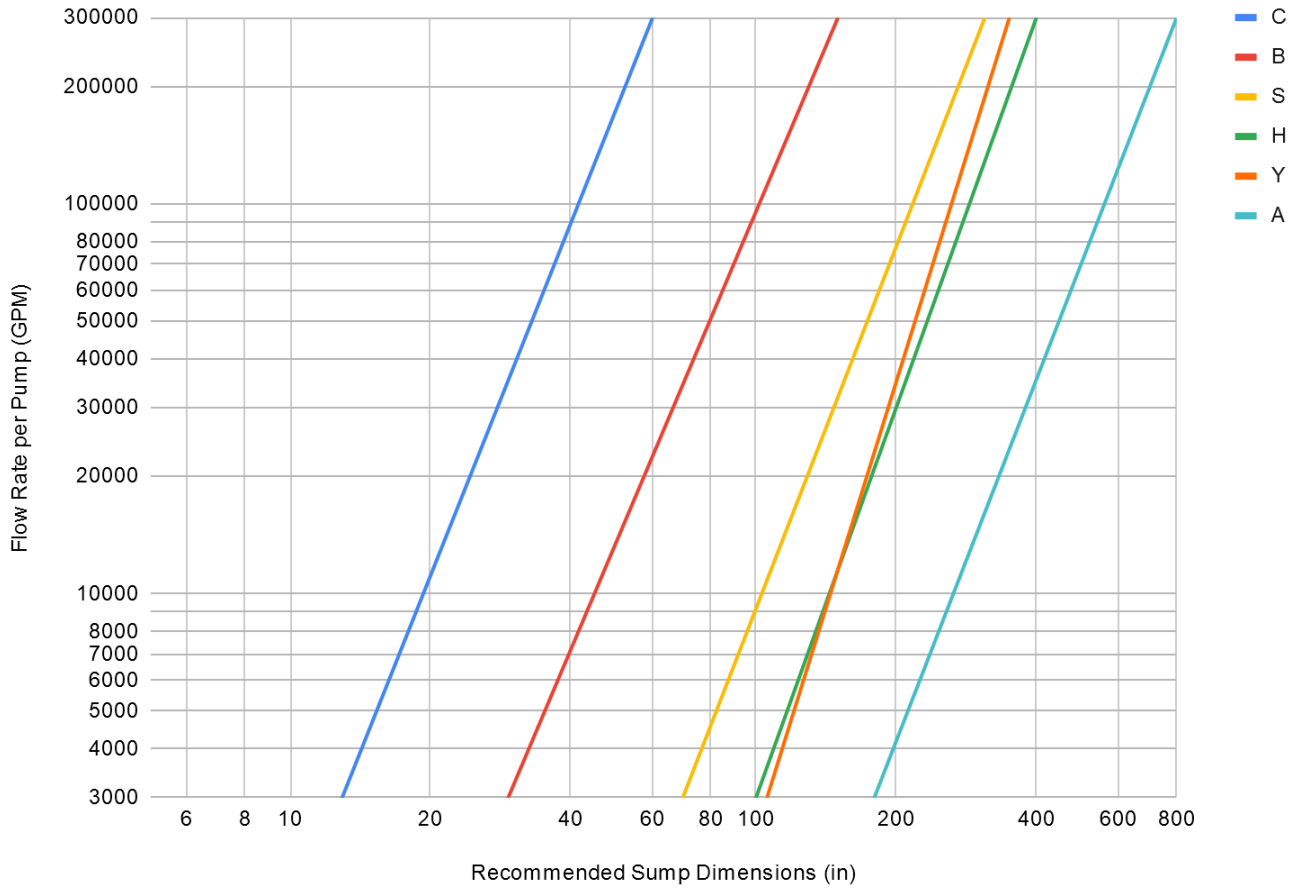


Figure 2: Multiple Sump

(Separating walls should not extend beyond the suction bell.)

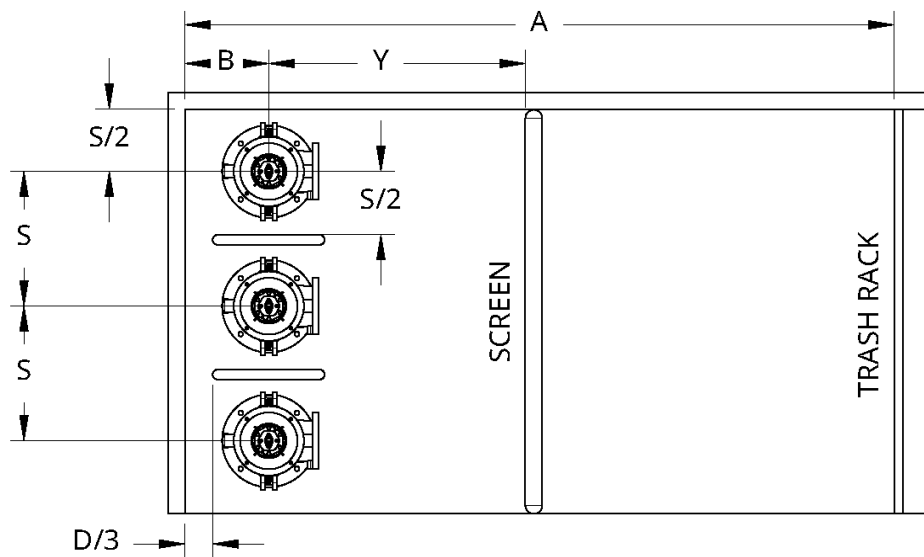


Figure 3: Minimum Submergence and Offset

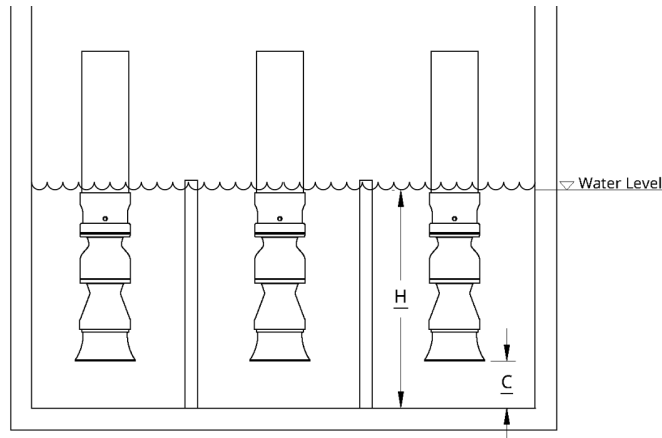


Figure 4: Minimum Submergence for Vortex Suppression

- Values in the chart below are in regards to vortex suppression, not NPSH required. Submergence to meet NPSH requirements may be higher than these values.
- Values shown below are measured from the intake or suction bell of the pump to the water level, or H - C as shown in Figure 3.

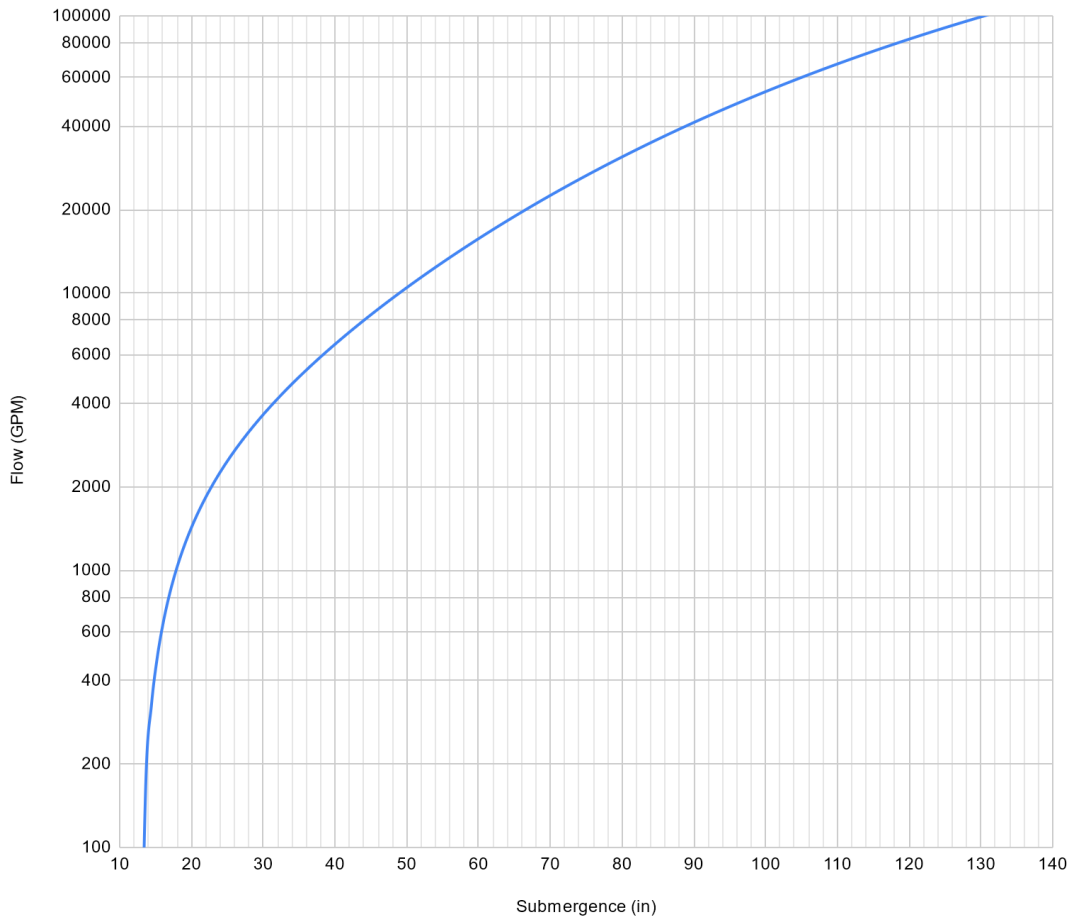
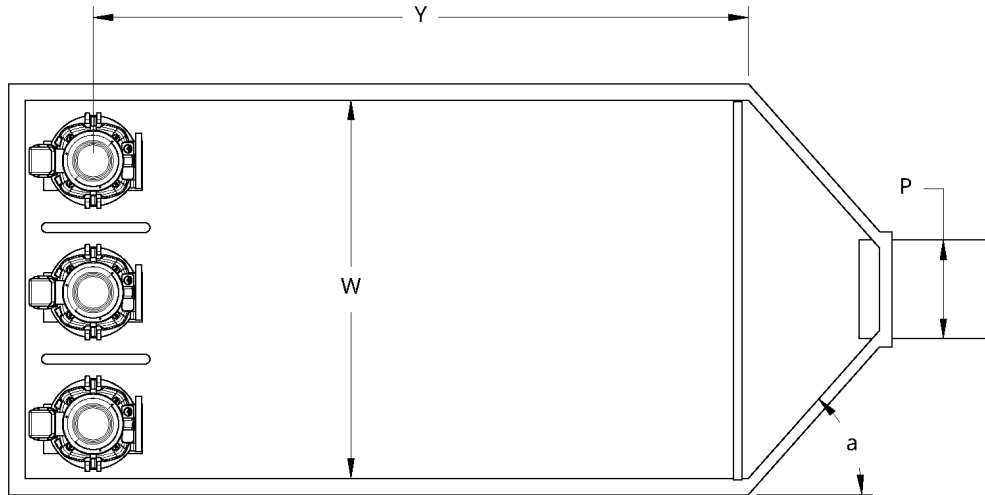


Figure 5: Pipe Fed Sump

- For an abrupt change in diameter from inlet pipe to sump, follow the layout below. Use the table to find the allowable channel velocity and Dimension Y based on the ratio of Dimension W to Dimension P.
- It is recommended that baffles, grating, or some type of strainer be used where the maximum channel width (W) first occurs.

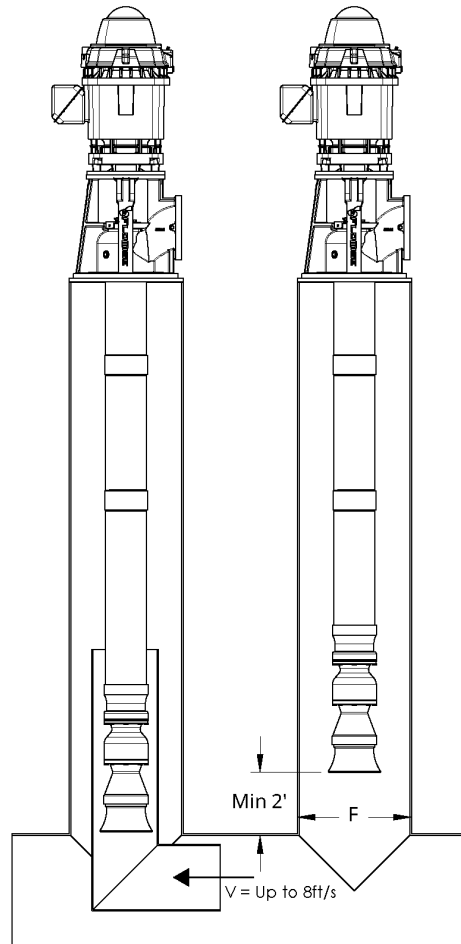


W/P	1.0	1.5	2.5	4.0	10.0
Y	3D	5D	8D	10D	15D
Velocity	1	2	4	6	8

"a" max = 15°
Recommended = 10°

Figure 6: Pipe Installation

- For pipeline installation as shown below in Figure 5, the design must either have an intake elbow as shown on the left, or the suction bell must be a minimum of 2 pipe diameters (or 2ft) above the top of the tunnel.
- The max velocity for the discharge elbow is 8ft/s as shown.



Correction of Existing Sumps

- If water must flow past one pump to get to another pump, rearrange the pump layout to match that shown in Figure 2.
- To aid in the prevention of vortices, add a cone underneath the pump suction as shown in Figure 6.
- Ensure that there is space between the back of the separating walls and the sump wall as shown in Figure 2. This dimension should be equal to $D/3$. Also ensure that the separating walls do not extend past the suction bell on either side.
- Ensure that Dimension B is a maximum of $3/4D$. Install a false wall if necessary to achieve this dimension.
- Use floating rafts or spheres to break up surface vortices.
- Eliminate corners, sharp edges, or objects that are causing turbulence. Install smooth transitions where flow enters the sump as shown in Figure 7.

Figure 7: Suction Cone

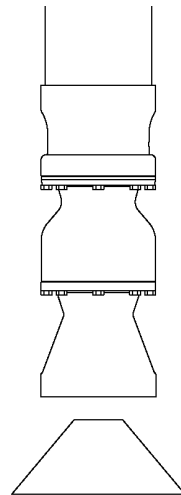
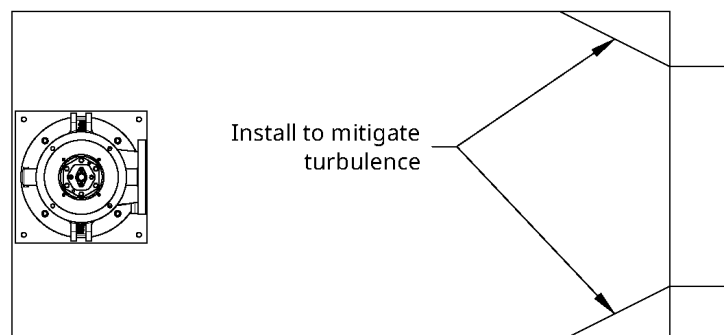


Figure 8: Sump Corner Adjustments



Bearing Spacing

Table 1: Maximum Bearing Spacing for Open Lineshaft Pumps

- Use Table 1 to find the appropriate lineshaft bearing spacing for open lineshaft pump column pipe.

Speed (RPM)	Bearing Material	Shaft Diameter (in.)						
		3/4	1	1-3/16	1-1/2	1-11/16	1-15/16	2-3/16
880	Rubber			120	120	120	120	120
	Solid			60	84	90	96	100
1200	Rubber	120	120	120	120	120	120	120
	Solid	60	60	60	72	78	84	88
1460	Rubber	120	120	120	120	120	120	120
	Solid	42	48	54	66	66	72	76
1760	Rubber	120	120	120	120	120	120	120
	Solid	42	48	48	60	60	66	70
2900	Rubber	60	60	60	60	60	60	60
	Solid	30	36	36	42	48	48	52
3600	Rubber	60	60	60	60	60	60	60
	Solid	30	30	36	36	42	48	48

Note:

- Solid bearing materials are brass, carbon, graphite, teflon, etc.

Suction Barrel Sizing

- Suction barrel capacity is limited by the fluid velocity. Maximum fluid velocity in the suction barrel should not exceed 5ft/sec.
- Use the following equation to determine the velocity in the suction barrel.

$$V = \frac{GPM \times C}{D_1^2 - D_2^2}$$

where:

GPM = maximum design flow (gallons per minute)

C = constant = 0.4085 (cubic ft/s)

D₁ = inner diameter of suction barrel (inches)

D₂ = outside diameter of bowl (inches)

Example

GPM = 1000

D₁ = 16 in. (suction barrel ID)

D₂ = 11.5 in. (bowl OD)

$$V = \frac{1000 \times 0.4085}{16^2 - 11.5^2} = \frac{408.5}{256 - 132.25} = \frac{408.5}{123.75} = 3.3 \text{ ft/s}$$

3.3 ft/s is less than 5ft/s, so a 16in suction barrel is acceptable.

Note:

- NPSHA may be affected by suction barrel installations and should be calculated during design
- Pump suction inlet should be qty (2) barrel diameters below or above the suction barrel inlet. The pump suction should never be in the area near the barrel inlet.
- The suction barrel inlet shall also have a maximum velocity of 5ft/s

Table 2: Suction Barrel Selection Chart

The chart below can be used as a reference guide for suction barrel sizing and is based on a fluid velocity of 5ft/s.

Bowl Diameter (in)	Barrel Diameter (in)									
	8	10	12	14	16	18	20	24	30	36
Flow (GPM)										
5	448	892								
6	337	767								
7		603	1120	1486						
8		450	765	1372						
9			753	1115	1761	2490				
10			315	922	1620	2407				
11				625	1272	2001	2849			
12				382	1080	1867	2767			
13-14					450	1237	2137	4230		
15						877	1777	3870	7717	
16							1395	3487	7335	
18								2655	6502	

Prelubrication of Water Lubricated Pumps

For an open lineshaft pump with neoprene rubber shaft bearings, it may be necessary to have a prelubrication system installed on the pump. This system provides moisture to the bearings while the liquid level rises or falls in the column pipe at pump startup and shutdown.

Lubrication at Startup

- If the static water level is less than 30ft, a prelubrication system is usually not necessary at startup.
- If the static water level is greater than 30ft, refer to Figures and Table to design the prelubrication system.

Lubrication at Shutdown

- If a non-reverse ratchet (NRR) is installed in the driver, prelubrication at shutdown is not required.
- If there is not an NRR, refer to Figures and Table to design the prelubrication system.

Table 3: Prelubrication Solenoid Valve Size

- One method for prelubrication is to use a solenoid valve attached to a pressurized water source. Use Table 2 to determine the proper solenoid valve and fittings based on the pump column size and available pressure at the solenoid valve.

Pressure at Solenoid Valve	Column Size		
	5" or less	6" and 8"	10" and larger
1-10 PSI	1-1/4"	1-1/2"	2-1/2"
11-75 PSI	1"	1-1/4"	2"
76-150 PSI	3/4"	1"	1-1/2"

Table 4: Prelubrication Time Delay Relay

- Prelubrication is only required for a certain amount of time during startup. Use Table 3 to determine the required time delay setting for the solenoid valve.

Static Water Level (ft)	Time Delay (minutes)
0-30	0.5
31-70	1
71-150	1.5
151-250	2.5
251-350	3.5
351-450	

Table 5: Tank sizing

- If using a tank as the water source for prelubrication, use Table 4 to determine the proper tank size based on the pump column size and the static water level.

Column Size	Fittings	Tank Size (gal)	Fittings	Tank Size (gal)	Fittings	Tank Size (gal)
	1"	50	1-1/2"	100	2"	200
Static Water Level						
2-1/2" to 4"	30'-300'		300'-400'			
4-1/2" to 6"	30'-200'		200'-400'			
8" to 10"	30'-125'		125'-300'		300'-400'	
12"	30'-70'		70'-200'		200'-400'	
14"	30'-50'		50'-150'		150'-300'	

Water Level Testing

Using an Airline

- Install an airline that extends from the surface to 2' above the inlet of the pump. Securely attach the airline to the pump assembly but take care not to crimp the airline. Measure and record the exact vertical length of the airline during installation.
- Attach a depth gauge or pressure gauge and snifter valve to the airline at the surface.
- Connect a tire pump to the snifter valve and expel all the water in the airline (if using a gauge with a movable dial - set the dial to 0 first).
- If you used an indirect depth gauge with a fixed dial: The reading on the dial after the water is expelled will be the level of water above the bottom of the airline (Dimension Z).
- If you used a direct depth gauge with a movable dial: Set the dial to 0 prior to expelling the water from the line. Use the tire pump to expel the water from the airline. The reading on the dial will now be the static water level (Dimension X)
- If you used a pressure gauge: The reading on the dial after the water is expelled will need converted from PSI to feet.

Feet of water = 2.31 x PSI

After converting to feet, this measurement is equal to the level of water above the bottom of the airline (Dimension Z).

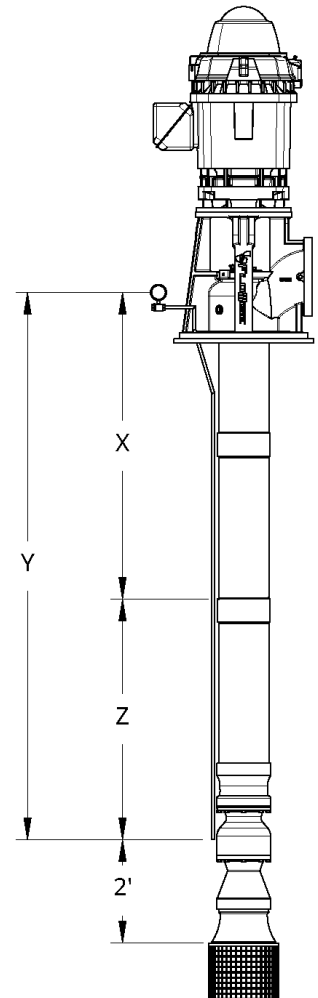


Figure 9: Water Level

An electric sounder can also be used to measure water level in the well. The basic operation of a sounder is such:

- One terminal of a battery is connected directly to the pump discharge head.
- The other terminal of the battery is connected through a potentiometer to a spool of wire.
- The wire is lowered into the well until it reaches water. At this point, the circuit will close, the potentiometer needle deflects, and the length of wire is recorded as the water level depth.
- Care must be taken to ensure that the exposed wire does not contact the pump assembly while being lowered into the well. This would also close the circuit and provide a false reading of water level.

Affinity Laws - Changing Speed

In order to calculate the performance of a pump at speeds not shown on the manufacturer's published curves, one can use Affinity Laws.

Affinity Laws can be stated as such:

The flow is directly proportional to the speed

$$\circ Q_2 = Q_1 \frac{N_2}{N_1}$$

The head is proportional to the square of the speed

$$\circ H_2 = H_1 \left(\frac{N_2}{N_1}\right)^2$$

The horsepower is proportional to the cube of the speed

$$\circ BHP_2 = BHP_1 \left(\frac{N_2}{N_1}\right)^3$$

where:

Q = Flow (GPM)

H = Head (ft)

BHP = Brake Horsepower

N_1 = Original Speed in RPM (from known data)

N_2 = New Speed in RPM

Example:

A pump produces 1000 GPM at 37' TDH when operating at 1760 RPM and requires 12 BHP

What flow and head will it produce at 1400 RPM and what is the new BHP required?

Step 1: Flow

$$\circ Q_2 = Q_1 \frac{N_2}{N_1}$$

$$\circ Q_2 = 1000 \frac{1400}{1760}$$

$$\circ Q_2 = 795 \text{ GPM}$$

Step 2: Head

- $H_2 = H_1 \left(\frac{N_2}{N_1}\right)^2$
- $H_2 = 37 \left(\frac{1400}{1760}\right)^2$
- $H_2 = 23.4' TDH$

Step 3: BHP

- $BHP_2 = BHP_1 \left(\frac{N_2}{N_1}\right)^3$
- $BHP_2 = 12 \left(\frac{1400}{1760}\right)^3$
- $BHP_2 = 6 BHP$

Note: It is not recommended to operate a turbine pump beyond 2200 RPM due to vibration and harmonics.

Similarly,

Trimming an impeller is another way to alter the performance of a pump. Since trimming the impeller changes the peripheral speed in the same way as reducing the impeller rotational speed, we can use a very similar set of formulas for calculating performance from a trimmed impeller.

- $Q_2 = Q_1 \frac{Imp_2}{Imp_1}$
- $H = H_1 \left(\frac{Imp_2}{Imp_1}\right)^2$
- $BHP_2 = BHP_1 \left(\frac{Imp_2}{Imp_1}\right)^3$

where:

Q = Flow (GPM)

Imp₁ = Original impeller trim (in)

Imp₂ = New impeller trim (in)

Table 6: Affinity Law Multipliers

Affinity Law Multipliers for Various Speeds Using 1760 RPM as Reference Speed								
RPM	GPM	Head	BHP		RPM	GPM	Head	BHP
1400	0.7955	0.6327	0.5033		2500	1.4205	2.0177	2.8660
1450	0.8239	0.6788	0.5592		2550	1.4489	2.0992	3.0415
1500	0.8523	0.7264	0.6191		2600	1.4773	2.1823	3.2239
1550	0.8807	0.7756	0.6831		2650	1.5057	2.2671	3.4135
1600	0.9091	0.8264	0.7513		2700	1.5341	2.3534	3.6104
1650	0.9375	0.8789	0.8240		2750	1.5625	2.4414	3.8147
1700	0.9659	0.9330	0.9012		2800	1.5909	2.5310	4.0266
1760					2850	1.6193	2.6222	4.2462
1800	1.0227	1.0460	1.0697		2900	1.6477	2.7150	4.4736
1850	1.0511	1.1049	1.1614		2950	1.6761	2.8094	4.7090
1900	1.0795	1.1654	1.2581		3000	1.7045	2.9055	4.9525
1950	1.1080	1.2276	1.3601		3050	1.7330	3.0031	5.2043
2000	1.1364	1.2913	1.4674		3100	1.7614	3.1024	5.4645
2050	1.1648	1.3567	1.5802		3150	1.7898	3.2033	5.7332
2100	1.1932	1.4237	1.6987		3200	1.8182	3.3058	6.0105
2150	1.2216	1.4923	1.8230		3250	1.8466	3.4099	6.2967
2200	1.2500	1.5625	1.9531		3300	1.8750	3.5156	6.5918
2250	1.2784	1.6343	2.0893		3350	1.9034	3.6230	6.8960
2300	1.3068	1.7078	2.2317		3400	1.9318	3.7319	7.2094
2350	1.3352	1.7828	2.3805		3450	1.9602	3.8425	7.5322
2400	1.3636	1.8595	2.5357		3500	1.9886	3.9547	7.8644
2450	1.3920	1.9378	2.6975		3520	2.0000	4.0000	8.0000

Specific Speed

Specific Speed is a useful measurement to compare impeller designs and understand their output. The specific speed of an impeller is the speed in RPM that the impeller would need to rotate if reduced in size to the point that it produces one GPM at one ft of head.

The calculation for specific speed is given below:

$$N_S = \frac{RPM \times \sqrt{Flow_{GPM}}}{H_{ft}^{0.75}} \quad \text{OR} \quad N_S = \frac{RPM \times \sqrt{Flow_{m^3/hr}}}{H_m^{0.75}}$$

Where:

N_S = Specific speed

RPM = pump rotational speed in revolutions per minute

Flow_{GPM} = pump flow in gallons per minute

Flow_{m³/hr} = pump flow in cubic meters per hour

H_{ft} = head in feet

H_m = head in meters

Note:

1. Flow and head should be chosen at the best efficiency point of the max diameter shown on the pump performance curve.
2. Specific speed is always the value for a single impeller, not multiple stages.
3. The specific speed of a pump will be the same value at all rotational speeds.
4. Low specific speed is an indication that the pump is designed for low GPM and high head.
5. High specific speed is an indication that the pump is designed for high GPM and low head.

Example:

RPM = 1770

Flow_{GPM} = 975

H_{ft} = 38

$$N_S = \frac{RPM \times \sqrt{Flow_{GPM}}}{H_{ft}^{0.75}}$$

$$N_S = \frac{1770 \times \sqrt{975}}{38^{0.75}}$$

$$N_S = 3611.09$$

Required Torque

$$\text{torque (lb. ft)} = \frac{WR^2N}{307 t}$$

where:

W = weight of impeller plus taper lock (lbs)

R = radius of gyration (ft)

N = change in RPM

t = time of acceleration (s)

Convert Linear Inertia to Rotational Inertia

$$\text{Equivalent } WR^2 = \frac{W}{39.48} \left(\frac{V}{N}\right)^2$$

where:

W = weight in lbs

V = linear velocity in ft/min = 0.262 x Dia(in.) x RPM

N = motor speed(RPM) when load is moving at velocity V

Equivalent WR^2 for Belted or Geared Loads

$$\text{Equivalent (at Motor Shaft) } WR^2 = WR^2_{(load)} \left(\frac{N_{load}}{N_{motor}}\right)^2$$

$$WR^2 = \frac{\text{Actual Calculated}}{WR^2_{of load}}$$

$$N_{load} = \text{Full Speed of Load (RPM)}$$

$$N_{motor} = \text{Full Speed of Motor (RPM)}$$

Thrust

There are two types of thrust to understand in a vertical turbine pump.

- Downthrust is the force created from moving the liquid upward in the pump.
- Upthrust is the force created by the velocity of liquid entering the impeller.

For an impeller with a low specific speed (low flow, high head), the upthrust can sometimes be larger than the downthrust. This creates a lift on the impellers, shafting, and ultimately the driver.

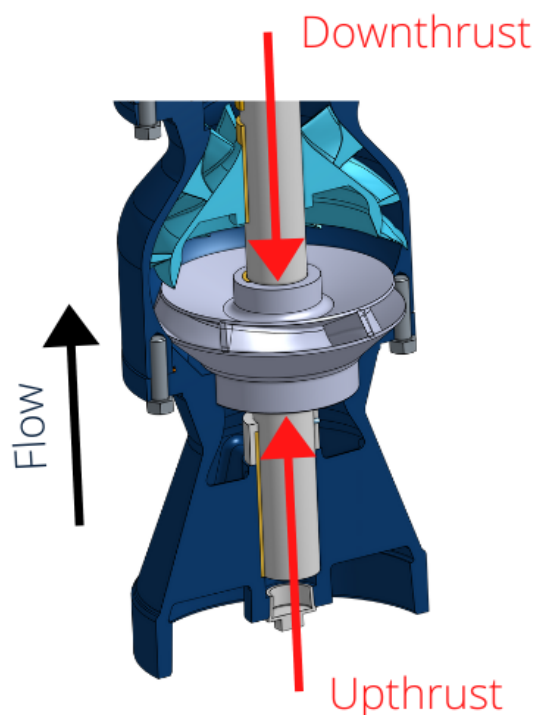
In most instances, the drive is designed to handle 30% momentary upthrust loads. Upthrust will typically occur at 120% of BEP. The force of the upthrust on deep well pumps is typically negated by the weight of the shafting and impellers.

For short pumps that may experience consistent upthrust, it is recommended that the pump be started against a closed valve until the system has developed sufficient pressure.

Note that the following issues can arrive from a pump continuously operating with an upthrust greater than the downthrust.

- Seal failure
- Bent lineshafts
- Impeller rub inside of the bowls
- Driver thrust bearing damage

Figure 10: Thrust



The total downthrust produced is the sum of the hydraulic thrust plus the static thrust, or dead weight, of the shaft and impellers. Use Table 6 to calculate the weight of the shafting.

Table 7: Shaft Weight/Area

Shaft Weight and Area										
Dia (in.)	3/4	1	1-3/16	1-1/4	1-1/2	1-11/16	1-15/16	2-3/16	2-1/4	2-7/16
Lbs/ft	1.5	2.67	3.77	4.17	6.01	7.6	10.02	12.78	13.52	15.87
Area (sq.in)	0.44	0.78	1.11	1.23	1.77	2.24	2.95	3.76	3.97	4.67

Total Thrust

$$Total\ Thrust = (K \times H \times SG) + (W \times S) + (Impeller\ Weight \times \#Stages)$$

where:

K =Thrust factor

H = Bowl head (total head + column friction loss) (ft)

W = Weight of shaft (lbs)

S = Total column length (ft)

SG = Specific gravity of fluid

Example:

K = 6.25 for given 3-stage pump with 1-½ lineshaft, total head of 205ft, and 250ft of column

K = 6.25

H = 207ft

W = 6.01lb/ft

S = 250ft

SG = 1 (water)

$$Total\ Thrust = (6.25 \times 207 \times 1) + (6.01 \times 250) + (16 \times 3) = 2,844.3\ lbs$$

Note:

- Thrust factors (K) and impeller weights are unique to each pump model and should be found with the performance data.
- The driver must have thrust capacity greater than the total thrust calculated.

Table 8: HP Loss Due to Mechanical Friction per 100ft of Column Pipe

Shaft Size (in)	RPM						
	3600	2900	1800	1500	1200	1000	900
3/4	0.60	0.52	0.32	0.26	0.20	0.17	0.15
1	1.10	0.88	0.55	0.44	0.35	0.29	0.26
1-3/16	1.45	1.30	0.75	0.61	0.48	0.40	0.36
1-1/4		1.33	0.79	0.67	0.52	0.44	0.39
1-1/2		1.90	1.20	0.96	0.75	0.60	0.55
1-11/16		2.36	1.40	1.20	0.94	0.78	0.70
1-15/16			1.90	1.60	1.20	1.00	0.90
2-3/16			2.30	2.00	1.50	1.30	1.15
2-1/4			2.50	2.07	1.60	1.41	1.26
2-7/16			2.90	2.40	1.90	1.60	1.40

Net Positive Suction Head

There are two terms for Net Positive Suction Head, NPSHa and NPSHr.

Net Positive Suction Head Available

NPSHa is the Net Positive Suction Head Available to the pump. This value is the total suction head less the absolute vapor pressure of the liquid.

For suction lift applications, NPSHa can be described as such:

$$NPSHa = h_{abs} - h_{vp} - h_{static} - h_{losses}$$

For flooded or pressurized suction applications, NPSHa can be described as such:

$$NPSHa = h_{abs} - h_{vp} + h_{static} - h_{losses}$$

where:

h_{abs} = absolute pressure (ft) on the liquid supply (atmospheric pressure if open tank or sump or absolute pressure in closed tank)

h_{vp} = vapor pressure of liquid (ft)

h_{static} = static height the pumped liquid is above or below the lowest pump impeller (ft)

h_{losses} = all losses on the suction side of the pump such entrance/exit and friction losses through pipe, valves, and fittings (ft)

Note:

The two different equations are to prevent NPSHa from ever being negative.

Net Positive Suction Head Required

Net Positive Suction Head Required (NPSHr) is the amount of suction head, less vapor pressure, that is required to prevent more than 3% of losses in total head of the first pump stage.

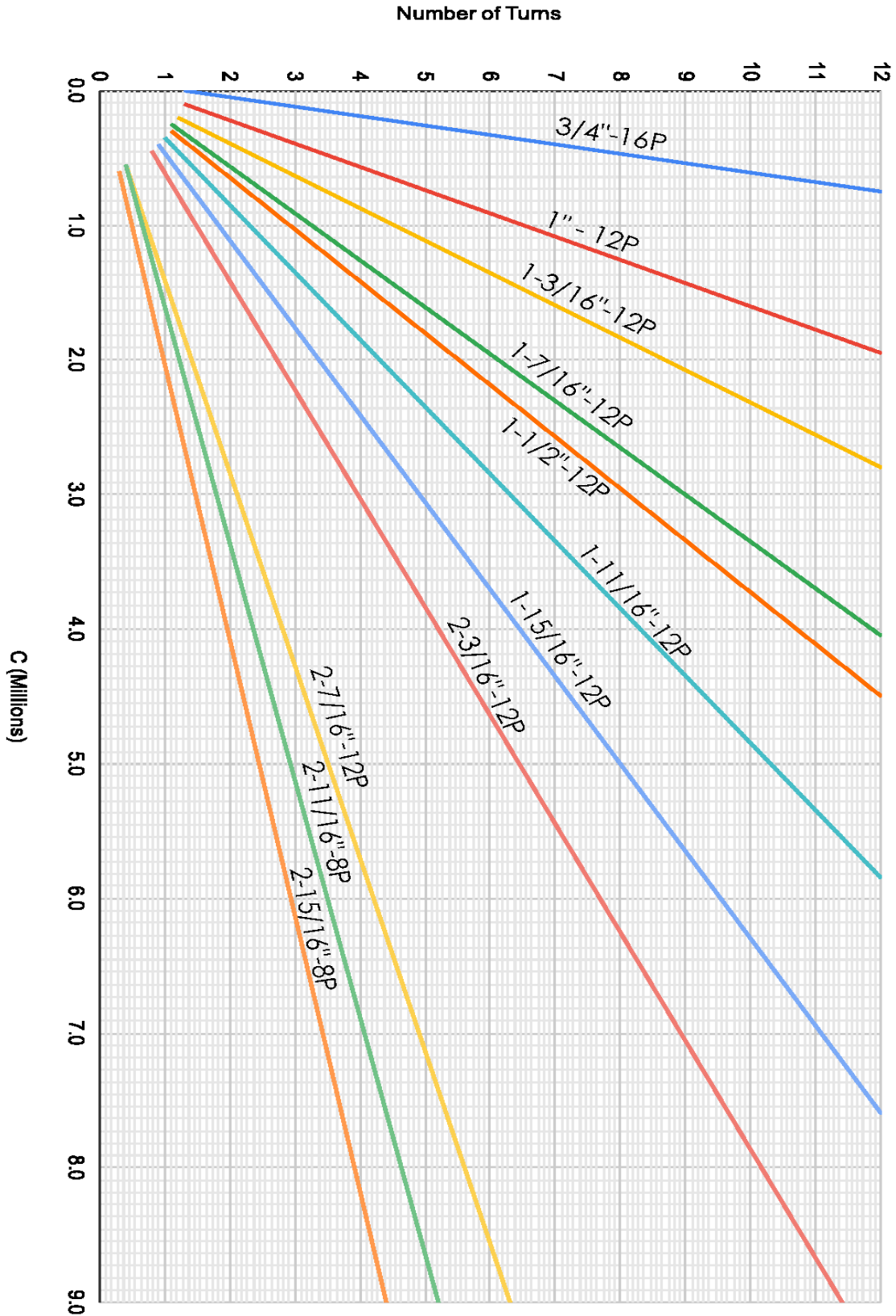
- Ensuring that NPSHr is less than NPSHa is very important in preventing air from coming out of solution. When entrained air is pulled from solution in a pump, it reduces performance, causes wear due to instability and vibration, and can cause cavitation.
- NPSHr is calculated under lab conditions at the manufacturer and should be found in the performance data.
- It is generally recommended that NPSHa exceed NPSHr by 2-3ft.

Table 9: Atmospheric Pressure at Altitude

Altitude	Atmospheric Pressure (PSI)	Atmospheric Pressure (ft of water)
0	14.7	34.0
500	14.4	33.3
1000	14.2	32.8
1500	13.9	32.1
2000	13.7	31.6
2500	13.4	31.0
3000	13.2	30.5
3500	12.9	29.8
4000	12.7	29.3
4500	12.4	28.6
5000	12.2	28.2
5500	12.0	27.7
6000	11.8	27.3
6500	11.5	26.6
7000	11.3	26.1
7500	11.1	25.6
8000	10.9	25.2
8500	10.7	24.7
9000	10.5	24.3
9500	10.3	23.8
10000	10.1	23.3
10500	9.9	22.9
11000	9.7	22.4
11500	9.5	21.9
12000	9.3	21.5
12500	9.1	21.0
15000	8.3	19.2

Shaft Adjustment

Figure 11: Number of Adjustment Nut Turns



Shaft Stretch

As a vertical turbine pump moves water upward in the column pipe, a downward force (downthrust) is exerted on the impeller and shafting. This force can stretch the shafting, especially on pumps with deep settings. The stretching of the shaft moves the impeller downward in the bowl.

To compensate for the shaft stretch, it is necessary to lift the impellers a certain distance off of the bottom of the bowls prior to pump startup.

This is achieved by turning the adjustment nut a certain number of turns.

To find out how many turns the adjustment nut requires, the first step is to determine the Thrust Constant (K) for the particular pump model in question. This can be found in the thrust constant table.

Once K is known, we can calculate a value of C and use that value in Figure X.

$$C = K \times \text{total head} \times \text{setting}$$

Example:

FloWise 14LC

77' Total Dynamic Head

500' Setting

1-11/16" lineshaft

K = 13lbs/ft

$$C = K \times \text{total head} \times \text{setting}$$

$$C = 13 \times 77 \times 500 = 500,500$$

Using a C of 0.5 on the 1-11/16" line in Figure 11, we see that 1.1 turns are required.

Shaft Selection Chart

Table 10: Shaft Selection

Shaft Diameter (in)	Speed (RPM)	Pump Thrust (lbs)								
		1000	2000	5000	7500	10000	15000	20000	25000	30000
		Power Rating (HP)								
1	3550	120	119	116	110					
	1770	60	59	58	55					
	1180	40	40	38	37					
1-3/16	3550	213	212	209	205					
	1770	106	106	104	102					
	1180	71	71	70	68					
1-1/2	3550	435	435	433	429	424	410			
	1770	217	217	216	214	212	205			
	1180	145	145	144	143	141	136			
	880	108	108	107	106	105	102			
1-11/16	3550	639	639	637	631	615	570	500		
	1770	319	319	318	314	307	284	249		
	1180	213	212	212	210	205	190	166		
	880	158	158	158	156	153	141	124		
1-15/16	1770	498	498	497	496	494	489	456	419	369
	1180	332	332	332	331	329	326	304	279	246
	880	248	248	247	247	246	243	226	208	184
2-3/16	1770	634	633	631	626	620	602	576	541	494
	1180	423	422	420	417	413	401	384	361	330
	880	315	315	313	311	308	299	286	269	246
2-7/16	1770	1037	1037	1036	1035	1029	1016	996	970	938
	1180	691	691	691	690	686	677	664	647	625
	880	515	515	515	515	512	505	495	482	466
2-11/16	1770	1358	1358	1358	1357	1356	1352	1347	1340	1332
	1180	906	906	905	905	904	901	898	893	888
	880	675	675	675	675	674	672	670	666	662
2-15/16	1770	1803	1803	1802	1802	1800	1797	1793	1787	1779
	1180	1202	1202	1202	1201	1200	1198	1195	1191	1186
	880	896	896	896	896	895	894	891	888	885
3-3/16	1770	2336	2336	2335	2334	2333	2330	2326	2321	2314
	1180	1557	1557	1557	1556	1555	1553	1551	1547	1543
	880	1161	1161	1161	1161	1160	1159	1156	1154	1150
3-7/16	1770	2740	2740	2738	2736	2732	2722	2708	2690	2667
	1180	1827	1827	1826	1824	1822	1815	1805	1793	1778
	880	1362	1362	1362	1360	1358	1353	1346	1337	1326

<ul style="list-style-type: none"> - Use a 0.75 multiplier for keyed shafts. - For bowl shafts, use only the hydraulic thrust load. - For lineshaft, use the total thrust. - Hydraulic thrust = "K" x TDH - Total thrust = Hydraulic thrust + Lineshaft weight 	Material	Multiplier
	316SS	0.88
	416SS	1.18
	17-4PH	1.59
	K-MONEL	1.65

Shaft Elongation

Shaft elongation occurs from the downthrust of a pump plus the weight of the shafting and impellers.

It is expressed as follows:

$$e = \frac{L \times 12 \times Thrust}{E \times GSA}$$

where:

e = shaft elongation (in)

L - shaft length (ft)

E = modulus of elasticity (29,000,000)

Thrust = hydraulic thrust (lbs)

GSA = gross shaft area (in²)

Table 11: Shaft Elongation per 100ft

Hydraulic Thrust	Shaft Diameter													
	3/4	12/31	1-3/16	1-1/2	1-11/16	1-15/16	2-3/16	2-7/16	2-11/16	2-15/16	3-3/16	3-7/16	3-11/16	3-15/16
500	0.047	0.026	0.018	0.012	0.009	0.007								
600	0.056	0.032	0.022	0.014	0.011	0.008	0.006							
800	0.075	0.042	0.03	0.019	0.015	0.011	0.009							
1000	0.094	0.053	0.037	0.024	0.019	0.014	0.011	0.009						
1200	0.112	0.063	0.045	0.028	0.022	0.017	0.013	0.011						
1400	0.131	0.074	0.052	0.033	0.026	0.02	0.015	0.012	0.01					
1600	0.15	0.084	0.06	0.038	0.03	0.022	0.018	0.014	0.012					
1800	0.169	0.095	0.067	0.042	0.033	0.025	0.02	0.016	0.013	0.011				
2000	0.187	0.105	0.075	0.047	0.037	0.028	0.022	0.018	0.015	0.012				
2400	0.225	0.127	0.09	0.056	0.044	0.034	0.026	0.021	0.018	0.015	0.012			
2800	0.262	0.148	0.105	0.066	0.052	0.039	0.03	0.025	0.02	0.017	0.015			
3200		0.169	0.119	0.075	0.059	0.045	0.035	0.028	0.023	0.02	0.017	0.014		
3600		0.19	0.135	0.085	0.067	0.051	0.04	0.032	0.026	0.022	0.019	0.016		
4000		0.211	0.15	0.094	0.074	0.056	0.044	0.036	0.029	0.025	0.021	0.018	0.016	
4400		0.24	0.164	0.103	0.081	0.062	0.048	0.039	0.032	0.027	0.024	0.02	0.017	
4800		0.253	0.179	0.113	0.089	0.067	0.053	0.043	0.035	0.029	0.025	0.021	0.019	0.016
5200		0.274	0.194	0.122	0.096	0.073	0.057	0.046	0.038	0.032	0.027	0.023	0.02	0.018
5600			0.209	0.131	0.107	0.079	0.062	0.05	0.041	0.034	0.029	0.025	0.022	0.019
6000			0.224	0.141	0.111	0.084	0.066	0.053	0.044	0.037	0.031	0.027	0.023	0.02
6500			0.243	0.153	0.12	0.091	0.071	0.058	0.047	0.04	0.034	0.029	0.025	0.022
7000			0.26	0.164	0.129	0.098	0.077	0.062	0.051	0.043	0.036	0.031	0.027	0.024
7500				0.176	0.139	0.105	0.082	0.067	0.055	0.046	0.039	0.033	0.029	0.026
8000				0.188	0.148	0.112	0.088	0.071	0.058	0.049	0.042	0.036	0.031	0.027
9000				0.211	0.167	0.126	0.098	0.08	0.066	0.055	0.047	0.04	0.035	0.031
10000				0.234	0.185	0.14	0.11	0.089	0.073	0.061	0.052	0.045	0.039	0.034
12000				0.281	0.222	0.168	0.132	0.106	0.088	0.073	0.062	0.054	0.047	0.041
14000					0.259	0.196	0.154	0.124	0.102	0.086	0.073	0.062	0.055	0.048
16000					0.296	0.224	0.176	0.142	0.117	0.098	0.083	0.071	0.062	0.054
18000						0.252	0.198	0.16	0.131	0.11	0.093	0.08	0.07	0.061
20000						0.28	0.22	0.176	0.146	0.122	0.104	0.089	0.078	0.068
22000							0.242	0.195	0.16	0.134	0.114	0.098	0.086	0.074
24000							0.264	0.213	0.175	0.147	0.124	0.107	0.094	0.082
26000							0.286	0.23	0.19	0.159	0.135	0.116	0.102	0.088
28000								0.248	0.204	0.171	0.145	0.125	0.109	0.095
30000								0.266	0.219	0.183	0.156	0.134	0.117	0.104
32000								0.283	0.233	0.196	0.166	0.143	0.125	0.109
34000									0.248	0.208	0.176	0.152	0.133	0.116
36000									0.262	0.22	0.187	0.16	0.14	0.122
38000									0.277	0.232	0.197	0.17	0.148	0.129
40000									0.292	0.245	0.207	0.178	0.156	0.136

Column and Tube Elongation

Table 12: Column and Tube Elongation per 100ft

Hydraulic Thrust	Column Diameter								
	3"	4"	5"	6"	8"	10"	12"	14"	16"
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					
1000	0.013	0.01	0.008	0.006	0.004				
1200	0.016	0.012	0.009	0.007	0.005				
1400	0.019	0.014	0.011	0.008	0.006				
1600	0.021	0.016	0.012	0.009	0.007	0.005			
1800	0.024	0.018	0.014	0.011	0.008	0.006			
2000	0.027	0.02	0.015	0.012	0.009	0.007			
2400	0.032	0.023	0.019	0.014	0.01	0.008	0.006		
2800	0.037	0.027	0.022	0.016	0.012	0.01	0.007		
3200	0.043	0.031	0.025	0.019	0.014	0.011	0.008		
3600	0.048	0.035	0.028	0.021	0.016	0.012	0.009	0.008	
4000		0.039	0.031	0.023	0.017	0.014	0.01	0.008	
4400		0.043	0.034	0.026	0.019	0.015	0.011	0.009	
4800		0.047	0.037	0.028	0.021	0.016	0.013	0.01	0.009
5200		0.051	0.04	0.03	0.023	0.018	0.014	0.011	0.01
5600		0.055	0.043	0.033	0.024	0.019	0.015	0.012	0.011
6000			0.046	0.035	0.026	0.02	0.016	0.013	0.011
6500			0.05	0.038	0.028	0.022	0.017	0.014	0.012
7000			0.054	0.041	0.03	0.024	0.018	0.015	0.013
7500			0.058	0.044	0.033	0.025	0.02	0.016	0.014
8000			0.062	0.047	0.035	0.027	0.021	0.017	0.015
9000				0.053	0.039	0.03	0.023	0.019	0.017
10000				0.059	0.043	0.034	0.026	0.021	0.019
12000				0.07	0.052	0.041	0.031	0.025	0.023
14000				0.082	0.061	0.048	0.036	0.029	0.026
16000				0.094	0.07	0.054	0.042	0.034	0.03
18000					0.078	0.061	0.047	0.038	0.034
20000					0.087	0.068	0.052	0.042	0.037
22000					0.096	0.075	0.057	0.046	0.041
24000					0.104	0.082	0.063	0.05	0.045
26000					0.113	0.088	0.068	0.055	0.049
28000						0.095	0.073	0.059	0.052
30000						0.102	0.078	0.063	0.056
32000						0.109	0.083	0.067	0.06
34000						0.115	0.089	0.071	0.064
36000						0.122	0.094	0.076	0.068
38000						0.129	0.099	0.08	0.071
40000						0.136	0.104	0.084	0.075

Thrust Bearing Horsepower Loss

Losses from external thrust loads on the rotor must be added to mechanical friction in order to get the total pump brake horsepower requirement.

Thrust loss in HP can be calculated as follows:

$$\text{Thrust Bearing HP Loss} = 0.0075 \times \frac{\text{RPM}}{100} \times \frac{\text{Thrust}}{1000}$$

For example:

If total thrust = 3676 lbs at 1770 RPM

$$\text{Thrust Bearing HP Loss} = 0.0075 \times \frac{1770}{100} \times \frac{3676}{1000} = 0.49 \text{ HP Loss}$$

Table 12 shows the approximate Thrust Bearing HP Loss at given thrust values and speeds.

Table 13: Thrust Bearing HP Loss

(Assuming angular contact anti-friction bearings)

Total Thrust (lbs)	RPM			
	3500	1770	1170	880
1000	0.262	0.133	0.088	0.066
2000	0.525	0.268	0.175	0.132
3000	0.79	0.4	0.263	0.198
4000	1.05	0.532	0.35	0.264
5000	1.32	0.665	0.438	0.33
6000	1.58	0.796	0.525	0.396
7000	1.84	0.93	0.615	0.46
8000	2.1	1.06	0.7	0.528
9000	2.36	1.2	0.79	0.593
10000	2.62	1.33	0.88	0.66
15000	3.95	1.98	1.4	0.99
20000	5.25	2.68	1.75	1.32
25000		3.32	2.2	1.65
30000		4	2.63	1.98
35000		4.65	3.07	2.3
40000		5.32	3.5	2.64
45000		5.98	3.95	2.97
50000			4.38	3.3

Power Consumption

There are two primary methods of measuring power consumption.

The first method uses an ammeter and voltmeter. Using the values obtained from these meters, you can solve the equation below to calculate power consumption in kilowatts.

$$\text{Kilowatts} = \frac{I \times E \times P.F. \times C}{1000}$$

where:

I = Amperes

E = Volts

P.F. = Power Factor (see motor manufacturer's published motor operating characteristics)

C = 1 (single phase)

OR

C = 2 (two phase, four wire)

OR

C = 1.73 (three phase)

The second method to calculate power consumption uses the watt-hour meter in the power line.

If you measure the revolutions of the meter disc over a set period of time, you can use the equation below to find power consumption in kilowatts.

$$\text{Kilowatts} = 3.6 \times K \times M \times R/t$$

where:

K = Disc constant (Represents watt-hrs/rev and can be found on the meter nameplate or disc)

M = Product of current transformer ratio and potential transformer ratio (If either of the transformers are not used, the equivalent ratio is 1)

R = Number of revolutions of the watt-hr meter disc

t = Length of measurement in seconds

Energy Cost of Pumping with an Electric Motor

It is often beneficial to understand the energy costs of a pumping system.

If you have already calculated the power consumption of the motor in the previous section, then you can quickly figure the cost per hour as follows:

$$\text{Energy Cost/hr of pumping} = \text{KW consumed} \times \text{Cost per Kilowatt Hour}$$

To estimate energy cost when measured power consumption values are not available you can use the following two methods:

Either

$$\text{Energy Cost/hr of pumping} = 1 \text{ HP} \times 0.746 \times \text{Cost per Kilowatt Hour}$$

OR

$$\text{Energy Cost/hr of pumping} = \frac{\text{GPM} \times \text{Total Head} \times 0.746 \times \text{Cost per Kilowatt Hour}}{3960 \times \text{Pump Efficiency} \times \text{Motor Efficiency}}$$

If you want to convert Energy Cost/hr of pumping to Energy Cost/1000 Gallons:

$$\text{Energy Cost/1000 Gallons} = \frac{\text{Energy Cost/hr of Pumping}}{\text{GPM}} \times 16.667$$

Table 13 shows the approximate Kilowatt-hrs per 1000 Gallons at 1 ft TDH with respect to overall pump efficiency. You can use this table to quickly get approximate values of Energy Cost/1000 Gallons as follows:

Example:

Assume 84% overall pump efficiency (including all losses in the pump unit), 175ft TDH, and \$0.11/KW-hr

Per Table 13 and an 84% overall efficiency, we get 0.00373 Kilowatt-hrs/1000 Gallons at 1 ft TDH

Kilowatt-hrs/1000 Gallons = 0.00373 x TDH = 0.00373 x 175 = 0.6528

Energy Cost/1000 Gallons = 0.6528 * Cost per Kilowatt Hour = 0.6528 * 0.11 = \$0.0718

Table 14: Approximate KW-hr / 1000GPM

Overall Efficiency	Kilowatt-hrs per 1000 Gallons at 1ft TDH	Overall Efficiency	Kilowatt-hrs per 1000 Gallons at 1ft TDH
32	0.00981	62	0.00506
33	0.00951	63	0.00498
34	0.00923	64	0.00491
35	0.00897	65	0.00483
36	0.00872	66	0.00476
37	0.00849	67	0.00469
38	0.00826	68	0.00462
39	0.00805	69	0.00455
40	0.00785	70	0.00449
41	0.00766	71	0.00442
42	0.00748	72	0.00436
43	0.00730	73	0.00430
44	0.00714	74	0.00424
45	0.00698	75	0.00419
46	0.00683	76	0.00413
47	0.00668	77	0.00408
48	0.00654	78	0.00403
49	0.00641	79	0.00397
50	0.00628	80	0.00392
51	0.00616	81	0.00388
52	0.00604	82	0.00383
53	0.00592	83	0.00378
54	0.00581	84	0.00374
55	0.00571	85	0.00369
56	0.00561	86	0.00365
57	0.00551	87	0.00361
58	0.00541	88	0.00357
59	0.00532	89	0.00353
60	0.00523	90	0.00349
61	0.00515	91	0.00345

Column Friction Loss

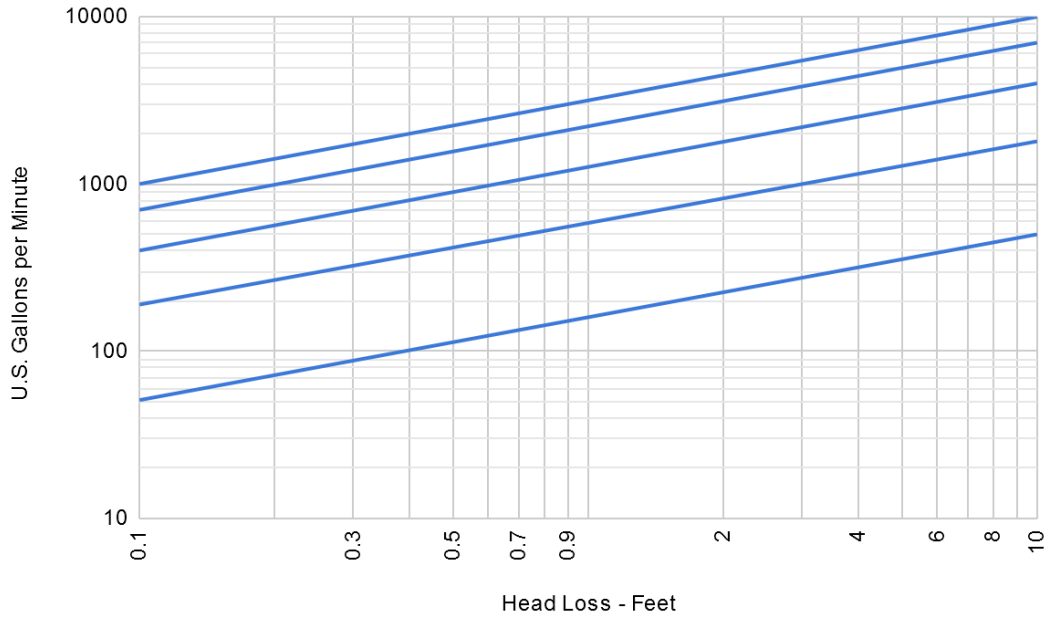
Table 15 - Column Friction Loss

Column Size (in)	3			4			5			6			8			10			12			Column Size (in)
Shaft Size (in)	3/4	3/4	1	1 3/16	3/4	1	1 3/16	1	1 3/16	1 1/2	1 3/16	1 1/2	1 15/16	1 3/16	1 1/2	1 15/16	1 3/16	1 1/2	1 15/16	2 3/16	Shaft Size (in)	
Tube Size (in)	1 1/4	1 1/4	1 1/2	2	1 1/4	1 1/2	2	1 1/2	2	2 1/2	2	2 1/2	3	2	2 1/2	3	2	2 1/2	3	3 1/2	Tube Size (in)	
GPM	Column Friction Loss (ft) Per 100 Feet of Column																				GPM	
25	1.80																				25	
50	4.60	0.65	0.86	1.60																	50	
75	9.00	1.30	1.70	3.30																	75	
100	14.00	2.20	2.80	5.30	0.54	0.65	0.94														100	
125		3.20	4.20	7.80	0.81	0.96	1.40														125	
150		4.40	5.80	10.60	1.10	1.30	1.90														150	
175		5.80	7.50	13.80	1.50	1.70	2.50														175	
200		7.30	9.40	17.10	1.80	2.20	3.10	0.73	0.96	1.40											200	
225		9.00	12.00	21.10	2.30	2.70	3.90	0.90	1.20	1.70											225	
250		10.90	14.00		2.70	3.30	4.70	1.10	1.40	2.00											250	
275		13.00	16.80		3.30	3.90	5.60	1.30	1.70	2.40											275	
300		15.20	19.20		3.80	4.50	6.40	1.50	2.00	2.80											300	
325		19.80			4.40	5.20	7.40	1.70	2.30	3.20											325	
350					5.00	6.00	8.40	2.00	2.60	3.60											350	
375					5.60	6.70	9.50	2.20	2.90	4.10											375	
400					6.30	7.50	10.60	2.50	3.30	4.60	0.61	0.74	1.00								400	
450					7.80	9.30	13.10	3.10	4.10	5.70	0.77	0.91	1.30								450	
500					9.20	11.20	15.70	3.70	5.00	6.90	0.93	1.10	1.50								500	
550					11.0	13.20	18.60	4.40	5.80	8.10	1.10	1.30	1.80								550	
600					12.9	15.50		5.20	6.80	9.50	1.30	1.50	2.10								600	
650					14.8	20.30		6.00	7.90	11.00	1.50	1.80	2.50								650	
700					16.8			6.90	9.10	12.50	1.70	2.00	2.80								700	
750					19.0			7.90	10.30	14.10	1.90	2.30	3.20								750	
800								8.80	11.50	15.70	2.20	2.60	3.60	0.57	0.65	0.77					800	
850								9.90	12.80	17.70	2.40	2.90	4.00	0.63	0.72	0.86					850	
900								11.00	14.30	19.50	2.70	3.20	4.50	0.70	0.80	0.96					900	
950								12.10	15.80	21.50	2.90	3.50	4.90	0.77	0.88	1.10					950	

Column Size (in)	3			4			5			6			8			10			12			Column Size (in)		
Shaft Size (in)	3/4	3/4	1	1 3/16	3/4	1	1 3/16	1	1 3/16	1 1/2	1 3/16	1 1/2	1 3/16	1 1/2	1 15/16	1 3/16	1 1/2	1 15/16	1 3/16	1 1/2	1 15/16	2 3/16	Shaft Size (in)	
Tube Size (in)	1 1/4	1 1/4	1 1/2	2	1 1/4	1 1/2	2	1 1/2	2	2 1/2	2	2 1/2	3	2	2 1/2	3	2	2 1/2	3	2	2 1/2	3	3 1/2	Tube Size (in)
GPM	Column Friction Loss (ft) Per 100 Feet of Column																					GPM		
1600				Multipliers for Pipe Condition									7.60	9.10	13.00	2.00	2.30	2.80	0.80	0.90	1.10	1.20	1600	
1800				Condition Inside	Approx Age	Multiplier				9.40	11.00	15.70	2.50	2.80	3.40	0.99	1.10	1.30	1.50	1800				
2000										11.00	13.00	19.20	3.00	3.50	4.20	1.20	1.40	1.60	1.80	2000				
2200				Very Smooth	New	1.00				13.20	16.50	22.90	3.60	4.10	5.00	1.40	1.60	1.90	2.10	2200				
2400										15.50	19.30	4.20	4.90	5.80	1.70	1.90	2.20	2.50	2400					
2600				Fairly Smooth	1-5 Years	1.51				17.90	22.40	4.90	5.60	6.80	1.90	2.20	2.50	2.90	2600					
2800										20.50	5.60	6.40	7.80	2.20	2.50	2.80	3.30	2800						
3000				Rough	> 6 years	2.35				6.40	7.40	8.80	2.50	2.90	3.30	3.80	3000							
3200										7.10	8.10	9.90	2.80	3.20	3.70	4.30	3200							
3400							7.90	9.00	11.10	3.20	3.60	4.20	4.80	3400										
3600							8.80	10.00	12.40	3.50	4.00	4.70	5.30	3600										
3800							9.80	11.10	13.70	3.90	4.40	5.10	5.90	3800										
4000							10.70	12.20	15.00	4.30	4.90	5.60	6.40	4000										
4200							11.80	13.40	16.40	4.70	5.30	6.20	7.10	4200										
4400							12.90	14.60	17.90	5.10	5.80	6.70	7.70	4400										
4600							13.90	15.80	19.30	5.60	6.30	7.40	8.40	4600										
4800							15.00	17.20	21.00	6.00	6.80	7.90	9.00	4800										

Cast Discharge Head Friction Loss

Figure 12 - Cast Discharge Head Friction Loss



Fabricated Discharge Head Friction Loss

Figure 13 - Fabricated Discharge Head Friction Loss

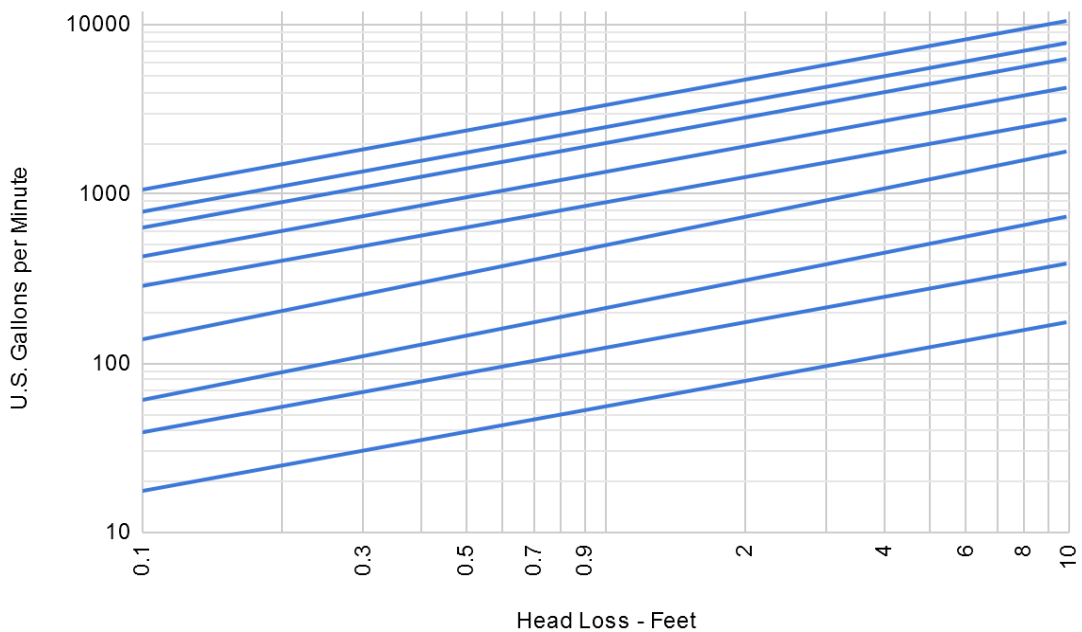


Table 16: Mechanical Friction in Turbine Pump Line Shafts

Mechanical Friction in Turbine Pump Line Shafts (HP/100ft)								
Shaft Dia (in)	RPM							
	3450	2900	2200	1760	1460	1160	880	700
3/4			0.38	0.3	0.25	0.22		
1	1.04	0.87	0.65	0.52	0.45	0.35		
1-3/16	1.44	1.2	0.9	0.72	0.6	0.44		
1-1/2	2.3	1.92	1.44	1.15	0.95	0.74	0.56	
1-11/16				1.4	1.2	0.92	0.7	
1-15/16				1.8	1.5	1.2	0.9	0.72
2-3/16				2.3	1.9	1.5	1.15	0.92
2-7/16				2.85	2.4	1.85	1.4	1.13

Shaft Weights

Table 17: Shaft Weight

Shaft Weights (lb/ft)		
Shaft Diameter	Enclosed	Open
3/4	1.5	1.3
1	2.6	2.3
1-3/16	3.8	3.3
1-11/16	6	5.3
1-15/16	7.6	6.3
2-3/16	10	8.8
2-7/16	12.8	11.2

Turbine Mechanical Data

Table 18 - Turbine Mechanical Data

Model	Standard Lateral	Max. Lateral	Allowable Sphere (in)	Net Eye Area (in ²)	No. of Vanes	Impeller Weight (lbs)		K Factor	
						Closed	Open	Closed	Open
5I	0.50	0.56	0.15	2.11	5	1.2	N/A	1.30	N/A
5K	0.50	0.56	0.15	2.11	9	1.2	N/A	1.30	N/A
5L	0.31	0.31	0.22	2.95	5	1.8	N/A	1.40	N/A
5H	0.31	0.31	0.22	2.95	8	1.8	N/A	1.40	N/A
5W	0.38		0.43	5.03	5		N/A		N/A
5Y	0.38		0.43	5.03	8		N/A		N/A
6I	0.438	0.63	0.19	3.70	6	1.9	N/A	2.24	N/A
6K	0.375	0.63	0.19	3.70	6	1.9	N/A	2.24	N/A
6L	0.38	0.625	0.22	4.12	5	2.1	N/A	2.10	N/A
6H	0.38	0.625	0.22	4.12	8	2.1	N/A	2.10	N/A
6W	0.44	0.625	0.50	7.15	4	1.1	N/A	5.60	N/A
6Y	0.44	0.625	0.50	7.15	7	1.1	N/A	5.60	N/A
7L	0.50	0.50	0.43	6.44	5	3.9	2.18	3.50	3.80
7H	0.50	0.50	0.43	6.44	8	3.9	2.29	3.50	3.80
7W	0.38	0.75	0.83	10.11	4	4.3	N/A	4.50	N/A
7Y	0.38	0.75	0.83	10.11	7	4.5	N/A	4.56	N/A
8I	0.438	0.438	0.25	3.66	6	4.7	2.30	2.98	3.52
8K	0.438	0.438	0.25	4.61	6	4.5	2.69	2.98	3.34
8L	0.50	0.56	0.43	8.51	5	5.0	2.86	4.00	5.30
8H	0.50	0.56	0.43	8.51	8	4.9	2.89	4.00	5.30
8Q	0.56	1.75	0.46	13.81	5	5.0	3.00	7.90	9.90
8R	0.56	1.75	0.46	13.81	7	4.8	2.95	7.90	9.90
8W	0.56	0.88	0.46	14.58	7	5.4	3.92	7.90	9.00
9L	0.88	1.25	0.56	10.93	5	6.6	3.5	4.90	6.00
9H	0.88	1.25	0.56	10.93	8	6.7	3.7	4.90	6.00
9W	0.75	2	1	17.08	4	8.1	5.3	9.00	10.50
9Y	0.75	1.875	0.68	17.08	7	13.7	11.0	9.00	10.50
10I	0.63	0.75	0.45	8.64	5	7.3	4.1	4.60	6.50
10K	0.63	0.75	0.45	8.64	8	7.3	4.2	4.65	6.50
10L	0.75	1	0.68	13.09	5	8.1	4.3	7.00	9.50
10M	0.75	1	0.68	13.09	6	8.2	4.5	7.00	9.50
10H	0.75	1	0.68	13.09	8	8.6	4.9	7.00	9.50
10W	0.88	1.13	0.87	19.41	6	7.9	4.9	10.30	11.20
10Y	0.75	1.13	0.87	19.41	6	8.1	4.9	10.30	11.40
10Z	0.50	0.88	1.43	26.70	6	9.2	5.3	11.40	13.50
11L	0.75	0.88	0.68	15.71	5	10.9	5.8	7.10	9.10
11M	0.75	0.88	0.68	15.71	7	11.0	6.0	7.00	9.10
11H	0.75	0.88	0.68	15.71	8	10.9	6.0	6.80	9.10

Model	Standard Lateral	Max. Lateral	Allowable Sphere (in)	Net Eye Area (in ²)	No. of Vanes	Impeller Weight (lbs)		K Factor	
						Closed	Open	Closed	Open
11R	1.5	1.5	0.81	16.83	7	10.3	6.0	5.10	5.13
11LXL	2	2	0.68	15.70	5	12.3	N/A	10.30	N/A
11MXL	2	2	0.68	15.70	7	13.6	N/A	10.30	N/A
11HXL	2	2	0.68	15.70	8	12.5	N/A	11.40	N/A
12D	0.625	0.875	0.63	12.69	5	14.1	7.9	5.13	7.50
12E	0.625	0.875	0.50	12.69	8	14.6	8.0	6.60	9.50
12I	0.63	1	0.62	18.92	5	12.9	7.1	6.75	8.20
12K	0.63	1	0.62	18.92	8	14.4	7.6	6.50	7.75
12L	1.00	1.75	0.73	18.19	5	15.2	8.8	7.50	10.00
12M	1.00	1.75	0.73	18.19	7	15.2	8.9	7.40	10.00
12H	1.00	1.75	0.73	18.19	8	14.7	8.4	7.50	10.00
12R	0.75	1.50	0.75	32.39	6	10.5	6.4	16.50	19.00
12W	0.88	2.00	1.375	30.22	6	13.3	8.6	18.20	20.80
12X	0.75	2.00	1.375	30.22	6	13.5	9.6	16.20	17.40
12Z	0.90	1.25	0.67	38.33	7	19.8	10.9	14.00	20.00
13M	0.88	2.13	0.75	21.00	8	14.2	N/A	7.90	N/A
13YXL	2	3.25	0.91	30.83	8	25.4	N/A	20.30	N/A
14L	1.00	2.00	0.98	30.23	5	23.3	14.2	13.00	16.20
14M	1.00	2.00	0.98	30.23	7	23.6	13.8	13.00	16.20
14H	1.00	2.00	0.98	30.23	8	23.5	14.0	13.00	16.20
14LXL	2.00	4.00	0.98	30.22	5	26.8	N/A	13.00	N/A
14MXL	2.00	2.25	0.98	30.22	6	26.8	N/A	13.00	N/A
14HXL	2.00	2.25	0.98	30.22	8	27.4	N/A	13.00	N/A
14W	1.00	2.25	1.18	35.06	7	36.4	13.8	16.00	24.00
14Y			0.92	39.34	8	36.6	N/A	45.00	N/A
14YXL	2.25	4.00	0.92	39.34	8	36.6	N/A	45.00	N/A
15W	1.75	2.75	1.44	67.12	6	31.5	20.8	30.00	45.00
16M	0.75	2.25	0.72	40.37	7	62.0	N/A		N/A
18M	0.90	2.51	1.00	48.54	7	53.4	N/A		N/A

Submersible Motor Cooling Flow Rate

$$V = \frac{GPM \times 0.408}{(W_{ID})^2 - (M_{OD})^2}$$

where:

V = Velocity

GPM = Flow rate in Gallons Per Minute

W_{ID} = Well casing Inside Diameter

M_{OD} = Motor Outside Diameter

At the maximum motor operating temperature of 86°F, the minimum Velocity of flow past the motor is:

0.25 ft/s for a 4" motor diameter

0.50ft/s for a 6" and larger motor diameter

- If the Velocity of flow past the motor is less than the values shown above, then the motor must be installed in a flow sleeve.
- If the temperature of the water is greater than 86°F, the flow rate past the motor should not be less than 3.0 ft/s.

The Horsepower required for a submersible motor increases when water temperature is above 86°F. This can be calculated using a Heat Factor multiplier, as shown below.

Table 19 - HP Required for Submersible Motor if Water Temp is above 86°F

Maximum Water Temperature	< 5HP	5-30HP	> 30HP
140°F	1.25	1.62	2.00
131°F	1.11	1.32	1.62
122°F	1.00	1.14	1.32
113°F	1.00	1.00	1.14
104°F	1.00	1.00	1.00
95°F	1.00	1.00	1.00

To calculate horsepower required when the water temperature is above 86°F, use the following equation and insert the Heat Factor multiplier.

$$HP_{Required} = P_{HP} \times HF$$

where:

$HP_{Required}$ = Horsepower Required

P_{HP} = Pump Horsepower

HF = Heat Factor multiplier

Cable Selection for Single and Three Phase Motors

Table 20 - Cable Selection for Single Phase Motor

Single Phase, 60Hz (Service Entrance to Motor) - Values are Maximum Length in Feet														
Two or Three Wire Cable														
230V Single Phase		AWG Copper Wire Size												
	HP	14	12	10	8	6	4	3	2	1	0	00	000	0000
	1/2	130	210	340	540	840	1300	1610	1960	2390	2910	3540	4210	5060
	3/4	100	160	250	390	620	960	1190	1460	1780	2160	2630	3140	3770
	1	250	400	630	990	1540	2380	2960	3610	4410	5360	6520		
	1-1/2	190	310	480	770	1200	1870	2320	2850	3500	4280	5240		
	2	150	250	390	620	970	1530	1910	2360	2930	3620	4480		
	3	120*	190	300	470	750	1190	1490	1850	2320	2890	3610		
	5	0	0	180*	280	450	710	890	1110	1390	1740	2170	2680	
	7-1/2	0	0	0	200*	310	490	610	750	930	1140	1410	1720	
10	0	0	0	0	250*	390	490	600	750	930	1160	1430	1760	
15	0	0	0	0	170*	270*	340	430	530	660	820	1020	1260	

- Lengths without an asterisk meet the U.S. National Electrical Code ampacity for either individual conductors or jacketed 60°C cable.
- Length marked with an asterisk meet the NEC ampacity only for individual conductor 60°C cable in free air or water, not in conduit. If cable rated other than 60°C is used, lengths remain unchanged, but the minimum size acceptable for each rating must be based on the NEC table column for that temperature cable.
- Flat molded cable is considered jacketed cable.
- Maximum lengths shown maintain motor voltage at 95% of service entrance voltage, running at maximum nameplate amperes. If service entrance voltage will be at least motor nameplate voltage under normal load conditions, 50% additional length is permissible for all sizes.
- This table is based on copper wire. If aluminum wire is to be used, it must be two sizes larger.
- The portion of total cable length which is between the supply and single phase control box with line contactor should not exceed 25% of the maximum allowable length to ensure reliable contactor operation. Single phase control boxes without line contactors may be connected at any point in the total cable length.
- Lengths represent a 5% voltage drop. If 3% is required, multiply by 0.6 for maximum length.

Table 21 - Cable Selection for Three Phase Motor

Three Phase, 60Hz (Service Entrance to Motor) - Values are Maximum Length in Feet														
Three Wire Cable														
	HP	AWG Copper Wire Size												
		14	12	10	8	6	4	3	2	1	0	00	000	0000
230V Three Phase	1-1/2	420	670	1060	1670	2610	4050	5030	6160	7530	9170	0	0	0
	2	320	510	810	1280	2010	3130	3890	4770	5860	7170	8780	0	0
	3	240	390	620	990	1540	2400	2980	3660	4480	5470	6690	8020	9680
	5	140	230	370	590	920	1430	1790	2190	2690	3290	4030	4850	5870
	7-1/2	0	160*	260	420	650	1020	1270	1560	1920	2340	2870	3440	4160
	10	0	0	190*	310	490	760	950	1170	1440	1760	2160	2610	3160
	15	0	0	0	210*	330	520	650	800	980	1200	1470	1780	2150
	20	0	0	0	0	250*	400	500	610	760	930	1140	1380	1680
	25	0	0	0	0	0	320*	400	500	610	750	920	1120	1360
	30	0	0	0	0	0	260*	330*	410*	510	620	760	930	1130
460V Three Phase	1-1/2	1700	2710	4270	6730									
	2	1300	2070	3270	5150	8050								
	3	1000	1600	2520	3970	6200								
	5	590	950	1500	2360	3700	5750							
	7-1/2	420	680	1070	1690	2640	4100	5100	6260	7680				
	10	310	500	790	1250	1960	3050	3800	4680	5750	7050			
	15		340*	540	850	1340	2090	2600	3200	3930	4810	5900	7110	
	20			410*	650	1030	1610	2000	2470	3040	3730	4580	5530	
	25				530*	830	1300	1620	1990	2450	3010	3700	4470	5430
	30				430*	680	1070	1330	1640	2030	2490	3060	3700	4500
	40					500*	790	980	1210	1490	1830	2250	2710	3290
	50						640*	800	980	1210	1480	1810	2190	2650
	60						540*	670*	830*	1020	1250	150	1850	2240
	75								680*	840*	1030	1260	1520	1850
	100									620*	760*	940*	1130	1380
	125											740*	890*	1000*
150												760	920*	
175													810*	
200														

Cable Splicing

First select correct cable based on motor rating and length required. Then follow the steps below

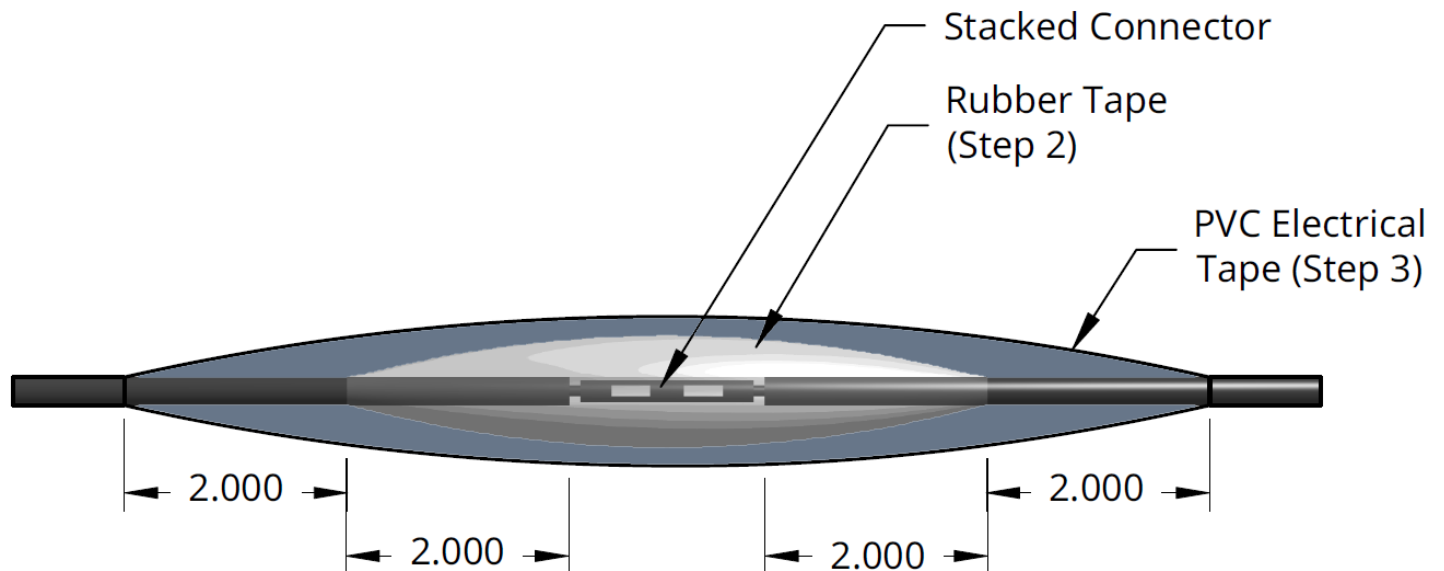
600V Tape Splicing

1. Strip individual conductor insulation only as far as necessary to provide room for a stake type connector. Tubular connectors of the staked type are preferred. If the connector O.D. is not as large as the cable insulation, build-up with rubber electrical tape.
2. Tape the individual joints with rubber electrical tape, using two layers: the first extending two inches beyond each end of the conductor insulation end, the second layer two inches beyond the ends of the first layer. Wrap tightly, eliminating air spaces as much as possible.
3. Tape over the rubber electrical tape with #33 Scotch electrical tape or equivalent, using two layers as in step "B" and making each layer overlap the end of the preceding layer by at least two inches.

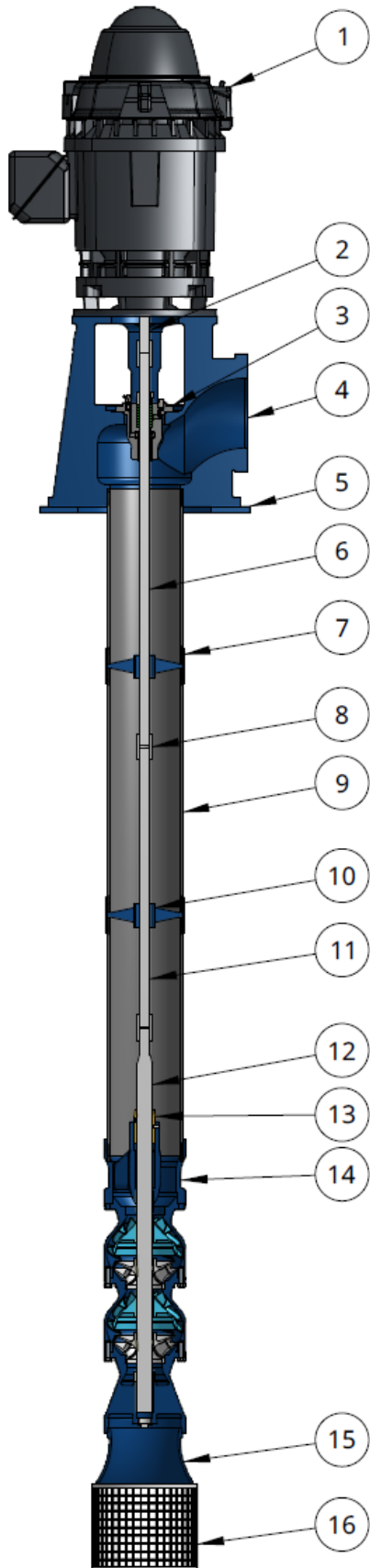
Note:

- In the case of a cable with three conductors encased in a single outer sheath, tape the individual conductors as described, staggering joints.
- Total thickness of tape should be no less than the thickness of the conductor insulation.

Figure 14: Cable Splicing

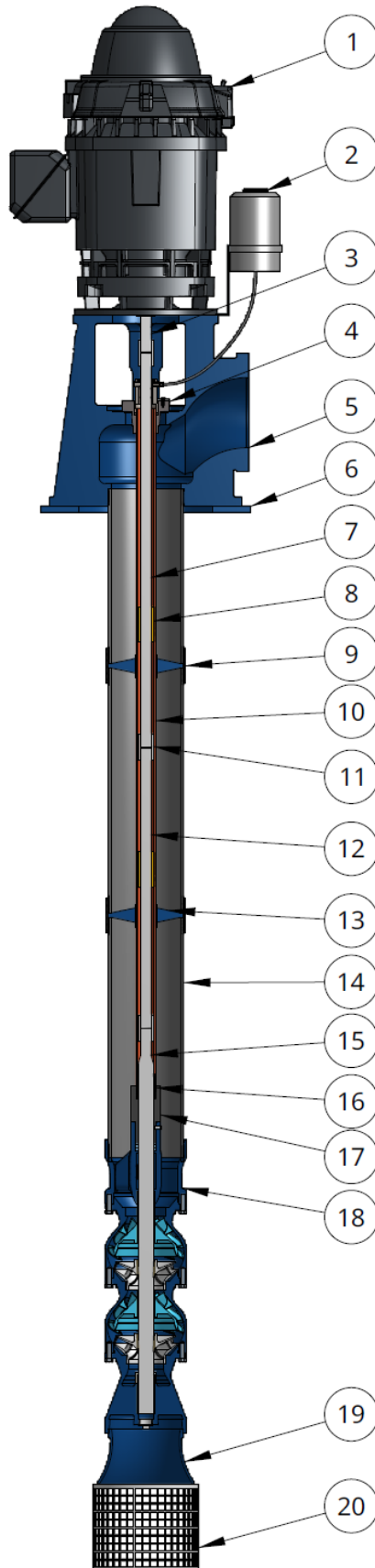


Typical Pump Assembly Layout – Open Lineshaft



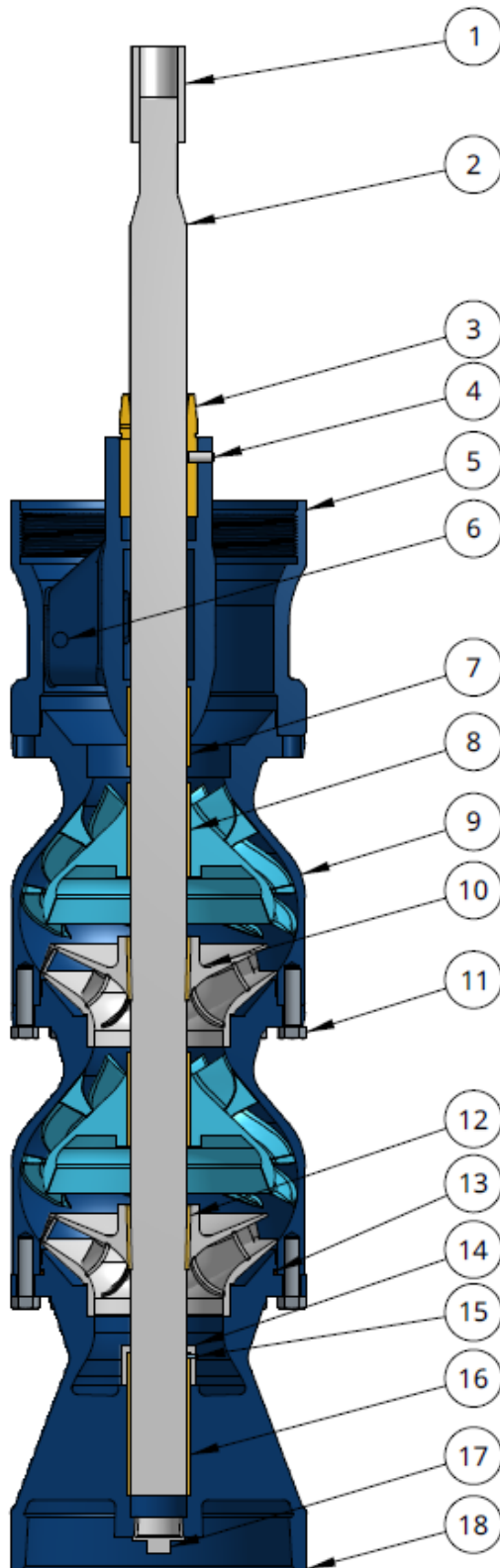
Item No.	Description
1	Vertical Hollowshaft Motor
2	Headshaft
3	Stuffing Box Assembly
4	Discharge Head
5	Foundation Plate
6	Lineshaft - Top
7	Column Coupling
8	Shaft Coupling
9	Column Pipe
10	Spider
11	Lineshaft - Intermediate
12	Bowl Shaft
13	Bearing - Discharge Case Upper
14	Bowl Assembly
15	Suction Bell
16	Strainer

Typical Pump Assembly Layout – Enclosed Lineshaft



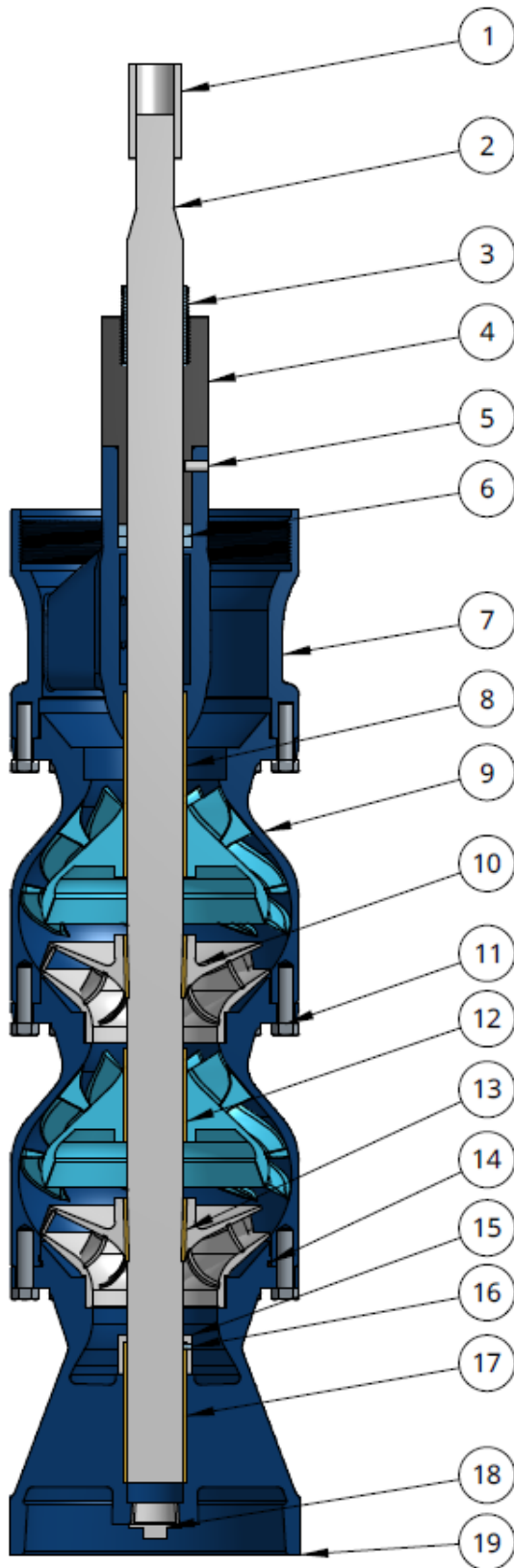
Item No.	Description
1	Vertical Hollowshaft Motor
2	Oil Reservoir
3	Headshaft
4	Oil Tensioner Assembly
5	Discharge Head
6	Foundation Plate
7	Lineshaft - Top
8	Lineshaft Bearing
9	Column Coupling
10	Oil Tube
11	Shaft Coupling
12	Lineshaft - Intermediate
13	Spider
14	Column Pipe
15	Bowl Shaft
16	Bearing - Lineshaft
17	Inner Column Adapter
18	Bowl Assembly
19	Suction Bell
20	Strainer

Typical Bowl Assembly Layout – Open Lineshaft



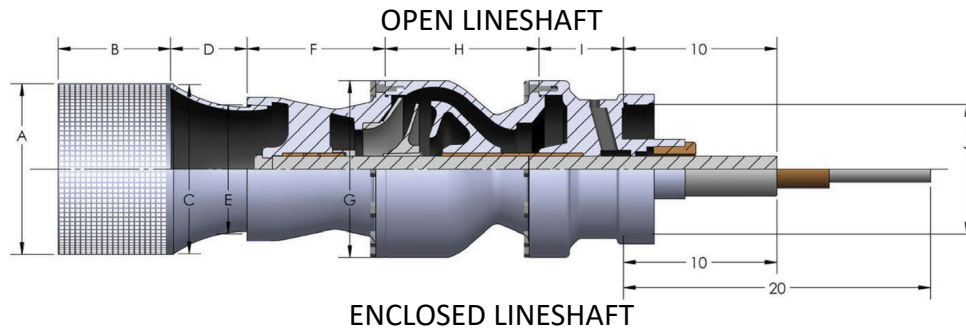
Item No.	Description
1	Lineshaft Coupling
2	Bowl Shaft
3	Bearing - Discharge Case Upper
4	Set Screw - Discharge Case
5	Discharge Case
6	Plug - Discharge Case
7	Bearing - Discharge Case Lower
8	Bearing - Bowl
9	Bowl
10	Impeller - Enclosed or Semi Open
11	Capscrew
12	Collet
13	O-Ring
14	Sand Cap
15	Set Screw - Sand Cap
16	Bearing - Suction Case
17	Plug - Suction Case
18	Suction Case

Typical Bowl Assembly Layout – Enclosed Lineshaft



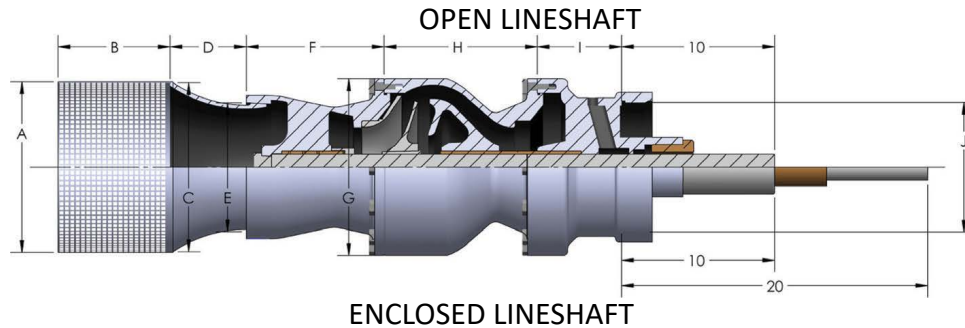
Item No.	Description
1	Lineshaft Coupling
2	Bowl Shaft
3	Bearing - Lineshaft
4	Inner Column Adapter
5	Set Screw - Discharge Case
6	Lip Seal
7	Discharge Case
8	Bearing - Discharge Case
9	Bowl
10	Impeller - Enclosed or Semi Open
11	Capscrew
12	Bearing - Bowl
13	Collet
14	O-Ring
15	Sand Cap
16	Set Screw - Sand Cap
17	Bearing - Suction Case
18	Plug - Suction Case
19	Suction Case

VERTICAL TURBINE BOWL DIMENSIONS



MODEL		BASKET STRAINER (OPTIONAL)	SUCTION BELL (OPTIONAL)		BOWL ASSEMBLY					WEIGHTS		BOWL SHAFT DIA.	COL. SIZE J	SUCTION SIZE E	LATERAL										
IMPELLER TYPE			DIMENSIONS IN INCHES												1ST STAGE	ADD STAGE	STANDARD	MAX							
ENCLOSED	SEMI-OPEN	A	B	C	D	F	G	H	I																
5IC		8.250	6.000	N/A		5.750	5.200	4.000	3.750	50	15	1.000	4	4	0.500	0.560									
5KC								4.630									55	15	0.310	0.310					
5LC								4.813													51	13	0.250	0.250	
5HC						5.560	75	15	0.438	0.630															
5WC						4.750					60				20	0.375	0.625								
5YC						5.900	57	16										0.380	0.625						
6IC						5.500			90	30	0.440				0.625										
6KC						5.870	75	15								0.500	0.500								
6LC						5.500			60	20								0.380	0.750						
6HC	6HS					5.870	105	30			0.380				0.750										
6WC		7.750	85	30	0.438	0.438																			
6YC		7.500					100	30	0.500	0.560															
7LC	7LS	10.000	11.000	9.000							4.000	7.500	7.130	6.375	3.750	90	30	1.188	6	5	0.500	0.500			
7HC	7HS				7.000	105	30	0.380						0.750											
7WC					5.625				100	30		0.438	0.438												
7YC					4.125	105	35								0.500	0.560									
8IC	8IS				10.000			11.000	9.000	4.000				7.500			7.130				6.500	3.875	100	30	1.188
8KC	8KS					6.250	105					35	0.560								0.750				
8LC	8LS					8.250								105	35	0.560	0.750								
8HC	8HS					7.255	105					35										0.560	0.750		
8QC	8QS					7.375							105	35	0.560						0.750				
8RC	8RS					8.500	185					60				0.880	1.250								
8WC	8WS	9.250	185	65		0.750					2.000														
9LC	9LS	12.000					9.750					11.000	5.000	9.250	9.250			8.500	5.375	190	65	1.500	6 or 8	6 or 8	
9HC	9HS		9.250	185												65	0.880	1.250							
9WC	9WS		9.250			185					65			0.750	1.875										
9YC	9YS		7.630	190	65			0.630	0.750																
10IC	10IS		9.500			8.400				180	60					0.750	1.000								
10KC	10KC			8.500	190									55	0.880			1.130							
10LC	10LS		9.000	190		55		0.750	1.130																
10MC	10MS		9.000		8.500					5.500	190			55		1.688	8		8	0.880	1.130				
10HC	10HS			8.500		190									55			0.750							1.130
10WC	10WS		8.500	190	55			0.750	1.130																
10YC	10YS	8.500	190			55	0.750			1.130															
10ZC	10ZS	8.500		190	55						0.750	1.130													

VERTICAL TURBINE BOWL DIMENSIONS



MODEL		BASKET STRAINER (OPTIONAL)	SUCTION BELL (OPTIONAL)	BOWL ASSEMBLY						WEIGHTS		BOWL SHAFT DIA.	COL SIZE J	SUCTION SIZE E	LATERAL																				
ENCLOSED	SEMI-OPEN			DIMENSIONS IN INCHES						1ST STAGE	ADD STAGE				STANDARD	MAX																			
		A	B	C	D	F	G	H	I																										
11LC	11LS	12.000	9.750	11.000	5.000	10.000	11.000	9.875	5.625	275	100	1.688	6 or 8	8	0.750	0.880																			
11MC	11MS							12.375							285	110	2.000	2.000																	
11HC	11HS							14.000	10.750	13.000	6.000				11.250	11.000	6.500	345	120	1.938	8 or 10	8 or 10	1.500	1.500											
11LCXL																							11.000	9.000	270	110	0.625	0.875							
11MCXL																													11.500	10.000	250	105	8	0.630	1.000
11HCXL																																			
11RC	11RS	14.000	10.750	13.000	6.000	11.250	11.000	6.500	345	120	1.938	8 or 10	8 or 10	1.500	1.500																				
12DC	12DS															12.000	9.750	11.000	5.000	8.750	11.500	9.000	270	110	1.688	6,8 or 10	6 or 8	0.625	0.875						
12EC	12ES	14.000	10.750	13.000	6.000	9.000	10.000	10.000	250	105	1.688	8 or 10	8	0.630	1.000																				
12IC	12IS															14.000	10.750	13.000	6.000	9.000	11.500	10.500	245	95	1.688	8 or 10	8 or 10	1.250	1.500						
12KC	12KS	14.000	10.750	13.000	6.000	9.000	11.750	11.250	260	105	1.688	8 or 10	8 or 10	0.880	2.000																				
12LC	12LS															16.000	12.750	15.000	7.000	11.000	11.500	11.502	7.000	355	110	1.938	10 or 12	10 or 12	0.900	1.250					
12MC	12MS	14.000	10.750	13.000	6.000	9.125	12.130	10.750	5.250	265	115	1.688	8 or 10	8 or 10	0.880																2.130				
12HC	12HS															14.000	10.750	13.000	6.000	11.000	12.500	14.000	7.250	385	155	1.938	10	10	2.000	3.250					
12RC	12RS	16.000	12.750	15.000	7.000	11.279	13.625	8.440	475	155	1.938	10 or 12	10 or 12	1.250	2.000																				
12XC	12XS															16.000	12.750	15.000	7.000	13.188	14.170	8.438	550	215	2.188	10 or 12	10 or 12	2.000	2.250						
12WC	12WS	16.000	12.750	15.000	7.000	13.188	14.170	8.438	535	230	2.188	10 or 12	10 or 12	2.250	4.000																				
14LC	14LS															16.000	12.750	15.000	7.000	14.000	14.750	16.875	8.875	565	225	2.438	14	Bell	0.750	2.250					
14MC	14MS	16.000	12.750	15.000	7.000	10.748	15.256	14.748	8.438	565	225	2.438	14	Bell	0.750																2.250				
14HC	14HS															16.000	12.750	15.000	7.000	18.940	17.760	16.752	12.992	565	225	2.688	Flanged	Bell	0.900	2.510					
14LCXL		16.000	12.750	15.000	7.000	18.940	17.760	16.752	12.992	565	225	2.688	Flanged	Bell	0.900																2.510				
14MCXL																16.000	12.750	15.000	7.000	18.940	17.760	16.752	12.992	565	225	2.688	Flanged	Bell	0.900	2.510					
14HCXL		16.000	12.750	15.000	7.000	18.940	17.760	16.752	12.992	565	225	2.688	Flanged	Bell	0.900																2.510				
14WC	14WS															16.000	12.750	15.000	7.000	18.940	17.760	16.752	12.992	565	225	2.688	Flanged	Bell	0.900	2.510					
14YC		16.000	12.750	15.000	7.000	18.940	17.760	16.752	12.992	565	225	2.688	Flanged	Bell	0.900																2.510				
14YCXL																16.000	12.750	15.000	7.000	18.940	17.760	16.752	12.992	565	225	2.688	Flanged	Bell	0.900	2.510					
15WC	15WS	16.000	12.750	15.000	7.000	18.940	17.760	16.752	12.992	565	225	2.688	Flanged	Bell	0.900																2.510				
16MC																16.000	12.750	15.000	7.000	18.940	17.760	16.752	12.992	565	225	2.688	Flanged	Bell	0.900	2.510					
18MC		16.000	12.750	15.000	7.000	18.940	17.760	16.752	12.992	565	225	2.688	Flanged	Bell	0.900																2.510				

BOWL ASSEMBLY PRESSURE LIMITS

MODEL	Maximum Bowl Working Pressure (PSIG)	
	Cast Iron CL 30	Ductile Iron Double Bolting
	Std Bolts (Grade 8)	Std Bolts (Grade 8)
5I	480	720
5K		
5L	480	720
5H		
5W	480	720
5Y		
6D	480	720
6E		
6I	360	600
6K		
6L	420	720
6H		
6W	200	N/A
6Y		
7L	415	720
7H		
7W	310	720
7Y		
8I	310	600
8K		
8L	425	790
8H		
8Q	364	600
8R		
8W	364	600
8Z	321	N/A
9L	400	860
9H		
9W	530	920
9Y		
10I	375	790
10K		

Notes:

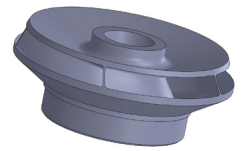
1. Pressure units based on maximum operating pressure of pump at any point on performance curve, normally occurring at shutoff.
2. Threaded bowl connection.
3. To insure proper sealing at bowl mating surfaced:
 Either O-ring or liquid gasket material recommended on all ductile iron, double-bolted bowl assemblies.

BOWL ASSEMBLY PRESSURE LIMITS

MODEL	Maximum Bowl Working Pressure (PSIG)	
	Cast Iron CL 30	Ductile Iron Double Bolting
	Std Bolts (Grade 8)	Std Bolts (Grade 8)
10L	430	790
10M		
10H		
10W	322	500
10Y		
10Z		
11L	380	680
11M		
11H		
11R	497	808
12D	340	680
12E		
12I		
12K	340	680
12L		
12M		
12H	300	610
12R		
12W		
12X	300	610
12Z		
13M		
13Y	357	580
14L	340	720
14M		
14H		
14W	330	700
14Y	327	700
15W	260	410
16M	335	620
18M	308	562
20M	380	650

Notes:

1. Pressure units based on maximum operating pressure of pump at any point on performance curve, normally occurring at shutoff.
2. Threaded bowl connection.
3. To insure proper sealing at bowl mating surfaced:
 Either O-ring or liquid gasket material recommended on all ductile iron, double-bolted bowl assemblies.

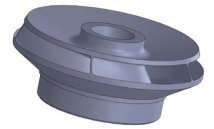


IMPELLER MECHANICAL DATA

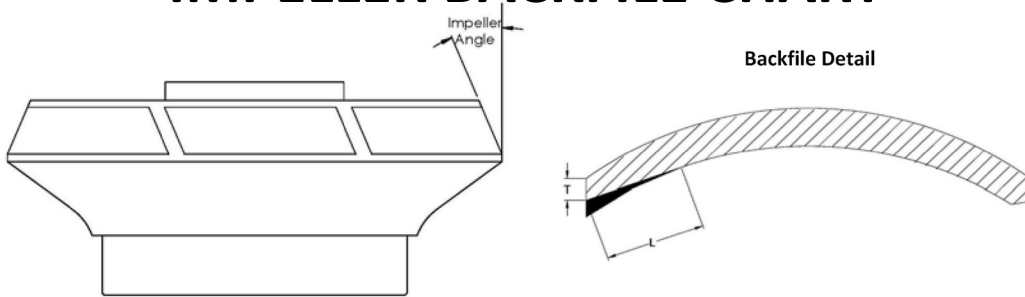
Model	Standard Lateral (in)	Max. Lateral (in)	Allowable Sphere (in)	Net Eye Area (in ²)	A (in)	B (in)	No. of Vanes	Impeller Weight (lbs)	
								Closed	Open
5L	0.31	0.31	0.22	2.95	4.07	0.42	5	1.8	N/A
5H	0.31	0.31	0.22	2.95	4.07	0.42	8	1.8	N/A
6L	0.38	0.63	0.22	4.12	4.22	0.48	5	2.1	N/A
6H	0.38	0.63	0.22	4.12	4.22	0.48	8	2.1	N/A
7L	0.50	0.50	0.43	6.44	5.72	5.72	5	3.9	N/A
7H	0.50	0.50	0.43	6.44	5.72	5.72	8	3.9	N/A
7W	0.38	0.75	0.83	10.11	5.65	1.11	4	4.3	N/A
7Y	0.38	0.75	0.83	10.11	5.65	1.11	7	4.5	N/A
8L	0.50	0.56	0.43	8.51	5.93	0.71	5	5.0	N/A
8H	0.50	0.56	0.43	8.51	5.93	0.71	8	4.9	N/A
8W	0.56	0.88	0.46	14.58	6.16	1.36	7	5.4	N/A
9L	0.88	1.25	0.56	10.93	7.40	0.79	5	6.6	3.5
9H	0.88	1.25	0.56	10.93	7.40	0.79	8	6.7	3.7
10I	0.63	0.75	0.45	8.64	7.72	0.60	5	7.3	4.1
10K	0.63	0.75	0.45	8.64	7.72	0.60	8	7.3	4.2
10W	0.88	1.13	0.87	19.41	8.25	1.21	6	7.9	4.9
10Y	0.75	1.13	0.87	19.41	8.25	1.53	6	8.1	4.9
10Z	0.50	0.88	1.43	26.70	8.25	1.70	6	9.2	5.3
11L	0.75	0.88	0.68	15.71	8.81	0.93	5	10.9	5.8
11M	0.75	0.88	0.68	15.71	8.81	0.93	7	11.0	6.0
11H	0.75	0.88	0.68	15.71	8.81	0.93	8	10.9	6.0
12D	0.63	0.88	0.63	12.69	9.31	0.83	5	14.1	7.9
12E	0.63	0.88	0.50	12.69	9.50	0.81	8	14.6	8.0
12I	0.63	1.00	0.62	18.92	9.31	0.88	5	12.9	7.1
12K	0.63	1.00	0.62	18.92	9.31	0.88	8	14.4	7.6
12L	1.00	1.75	0.73	18.19	9.50	1.00	5	15.2	8.8
12M	1.00	1.75	0.73	18.19	9.50	1.00	7	15.2	8.9
12H	1.00	1.75	0.73	18.19	9.50	1.00	8	14.7	8.4
12R	0.75	1.50	0.75	32.39	9.56	1.62	6	10.5	6.4
12Z	0.90	1.25	0.67	38.33	9.70	1.82	7	19.8	11.6
13M	0.88	2.13	0.75	21.00	9.94	1.08	8	14.2	N/A
14L	1.00	2.00	0.98	30.23	10.96	1.35	5	23.3	14.2
14M	1.00	2.00	0.98	30.23	10.96	1.35	7	23.6	13.8
14H	1.00	2.00	0.98	30.23	10.96	1.35	8	23.5	14.0
14Y	2.25	4.00	0.84	39.36	11.81	1.87	8	34.7	N/A

Notes:

1. Net eye area = (area of impeller opening) - (cross sectional area of shaft)

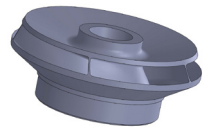


IMPELLER BACKFILE CHART

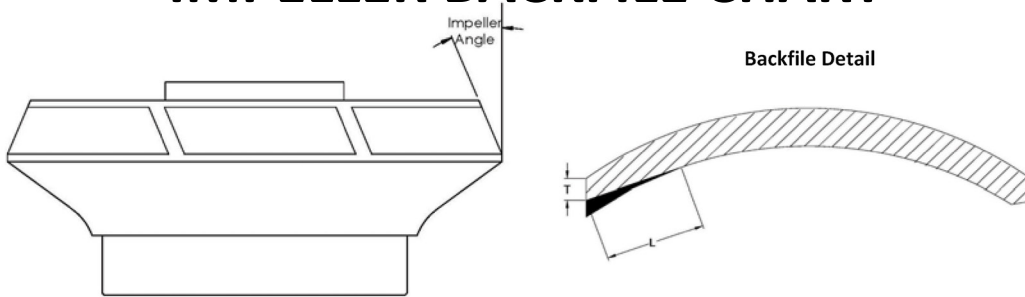


Impeller	Angle	Backfile	
		T	L
5IC	20°	0.125	0.750
5KC			
5LC	25°	0.063	
5HC			
5WC	26°	0.313	
5YC			
6DC	20°	0.125	
6DS			
6EC			
6ES			
6IC	27°	0.063	
6IS			
6KC	20°		1.000
6KS			
6LC	25°		0.063
6HC			
6HS			
6WC			
6YC	22°		1.000
7LC			
7HC			
7LS			
7HS			
7WC	18°	0.125	0.750
7YC		0.063	
8IC	18°	0.125	0.750
8IS		0.125	
8KC	18°	0.063	0.750
8KS		0.063	
8LC	25°	0.125	0.750
8LS			

Impeller	Angle	Backfile		
		T	L	
8HC	25	0.125	0.750	
8HS				
8QC	29°	0.188		
8QS				
8RC		0.125		
8RS				
8WC	24°	0.063		
8WS				
8ZS	24°	0.063		
9LC	20°	0.125		1.000
9LS		0.063		
9HC		0.125		
9HS				
9WC	17°	0.375		
9WS		0.250		
9YC				
9YS	20°	0.188		
10IC		0.063		
10IS		0.125		
10KC				
10KS	25°	0.188		
10LC				
10LS	25°	0.125		
10MC				
10MS	25°	0.188		
10HC				
10HS	33.25°	0.125		
10WC				
10WS				
10YC	0.063			



IMPELLER BACKFILE CHART



Impeller	Angle	Backfile	
		T	L
10YS	33.25°	0.063	1.000
10ZC	42°		
10ZS			
11LC	23°	0.125	
11LS			
11MC			
11MS			
11HC			
11HS		0.063	
11RC	19°	0.125	
11RS			
12DC	25°		
12DS			
12EC			
12ES			
12IC	23°		0.063
12IS			
12KC	23°		0.063
12KS			
12LC	28°	0.125	1.250
12LS			
12MC		0.063	
12MS			
12HC			
12HS			

Impeller	Angle	Backfile		
		T	L	
12RC	30°	0.125	1.250	
12RS				
12WC	32°			
12WS				
12XC				
12XS				
12ZC	35°			
12ZS				
13MC	30°			0.063
13YC	31°			0.125
14LC	25°		0.063	
14LS			0.125	
14MC			0.063	
14MS			0.125	
14HC			0.063	
14HS		0.125	1.500	
14WC	26°			
14WS		0.188		
14YC	31°			
14YS				
15WC	27°	0.375		
15WS				
16M	25°	0.313		
18MC	26°			
20HC	25°			
20LC				

VERTICAL TURBINE MATERIALS OF CONSTRUCTION OPEN LINESHAFT

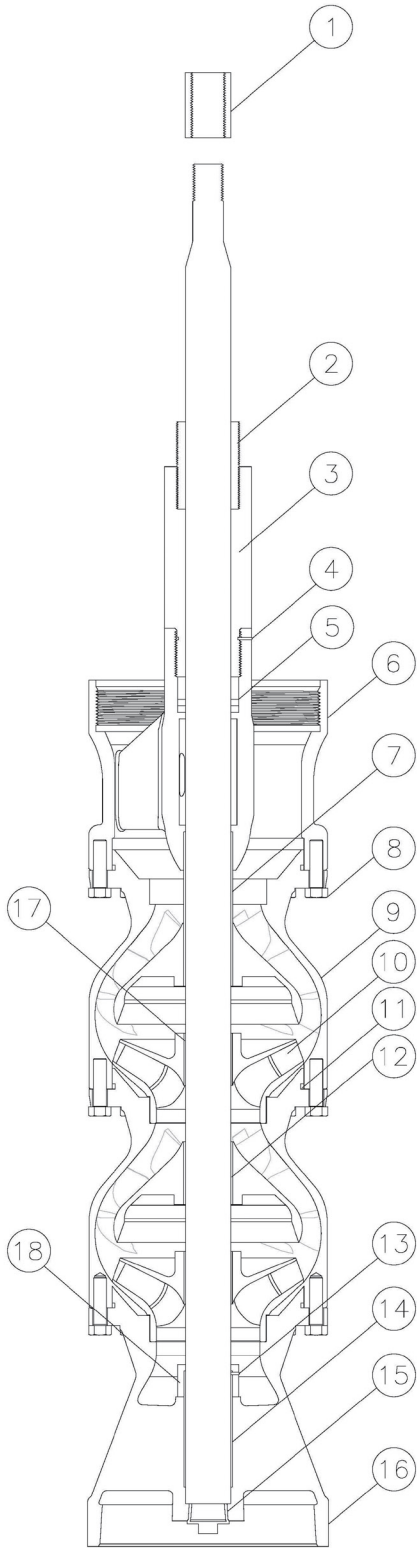


DESCRIPTION	MATERIAL	SPECIFICATION
SUCTION CASE PLUG	GALVANIZED	ASTM A-197
SUCTION CASE	CAST IRON	ASTM A48 CL30
O-RING	BUNA-N	BUNA-N
SUCTION BEARING	BRONZE LEAD FREE	907LF
SAND CAP	STAINLESS STEEL	ASTM A582 TYPE 416
SAND CAP SET SCREW	STAINLESS STEEL	ASTM A193,A320,F593
BOWL	CAST IRON VITREOUS ENAMELED	ASTM A48 CL30
BOWL BEARING	BRONZE LEAD FREE	907LF
IMPELLER	STAINLESS STEEL	ASTM A743/744 CF8 (304SS)
COLLET	STAINLESS STEEL	ASTM A582 type 416
DISCHARGE CASE LOWER BEARING	BRONZE LEAD FREE	907LF
DISCHARGE CASE	DUCTILE IRON	ASTM A536 Gr. 65-45-12
DISCHARGE CASE UPPER BEARING	BRONZE LEAD FREE	907LF
DISCHARGE CASE PLUG	GALVANIZED	ASTM A-197
DISCHARGE CASE SET SCREW	STAINLESS STEEL	ASTM A193,A320,F593
CAPSCREW	STAINLESS STEEL	ASTM A193,A320,F593

VERTICAL TURBINE MATERIALS OF CONSTRUCTION ENCLOSED LINESHAFT



DESCRIPTION	MATERIAL	SPECIFICATION
SUCTION CASE PLUG	GALVANIZED	ASTM A-197
SUCTION CASE	CAST IRON	ASTM A48 CL30
O-RING	BUNA-N	BUNA-N
SUCTION BEARING	BRONZE LEAD FREE	907LF
SAND CAP	STAINLESS STEEL	ASTM A582 TYPE 416
SAND CAP SET SCREW	STAINLESS STEEL	ASTM A193,A320,F593
BOWL	CAST IRON VITREOUS ENAMALED	ASTM A48 CL30
BOWL BEARING	BRONZE LEAD FREE	907LF
IMPELLER	STAINLESS STEEL	ASTM A743/744 CF8 (304SS)
COLLET	STAINLESS STEEL	ASTM A582 type 416
DISCHARGE CASE LOWER BEARING	BRONZE LEAD FREE	907LF
DISCHARGE CASE	DUCTILE IRON	ASTM A536 Gr. 65-45-12
LIP SEALS	STEEL CASE / NITRILE LIP	
TUBE ADAPTER	DUCTILE IRON	ASTM A536 Gr. 65-45-12
DISCHARGE CASE SET SCREW	STAINLESS STEEL	ASTM A193,A320,F593
CAPSCREW	STAINLESS STEEL	ASTM A193,A320,F593

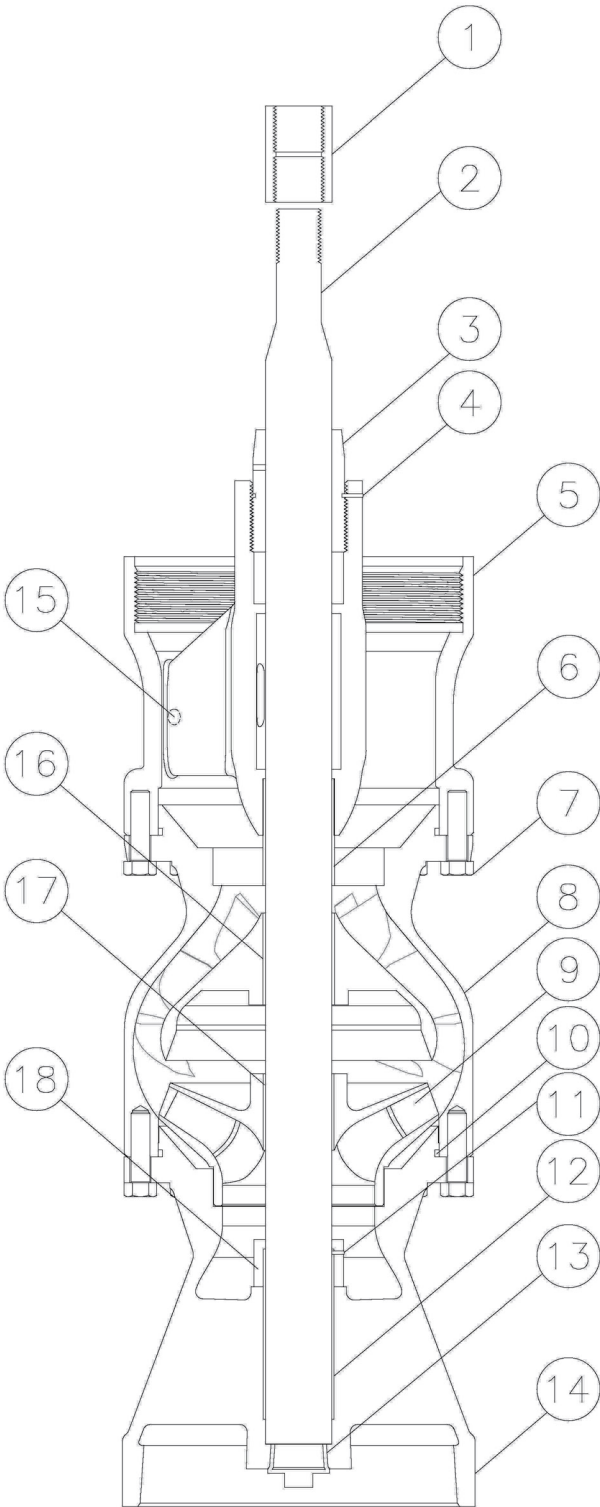


#	PART NUMBER	DESCRIPTION	MATERIAL	QTY
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

CUSTOMER				DATE	PO
PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		

TURBINE PUMP

OPEN LINESHAFT BOWL ASSEMBLY - PARTS DIAGRAM



#	PART NUMBER	DESCRIPTION	MATERIAL	QTY
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

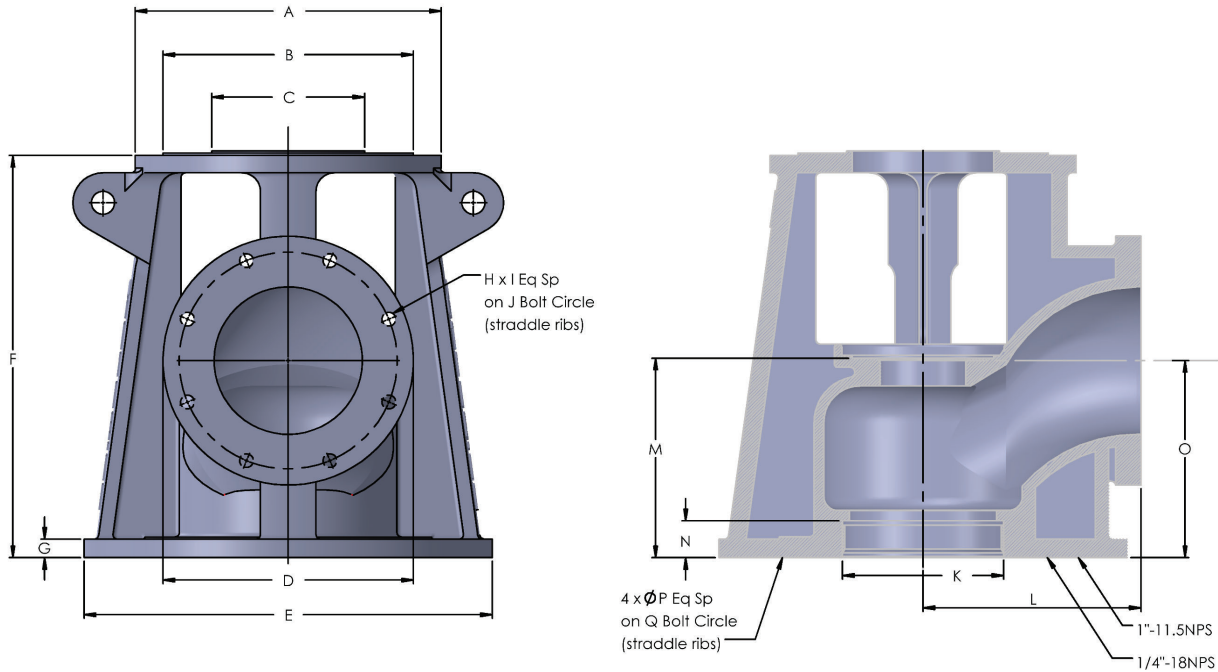
CUSTOMER				DATE	PO
PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		



**RESERVED
FOR
COLUMN
ASSEMBLY**



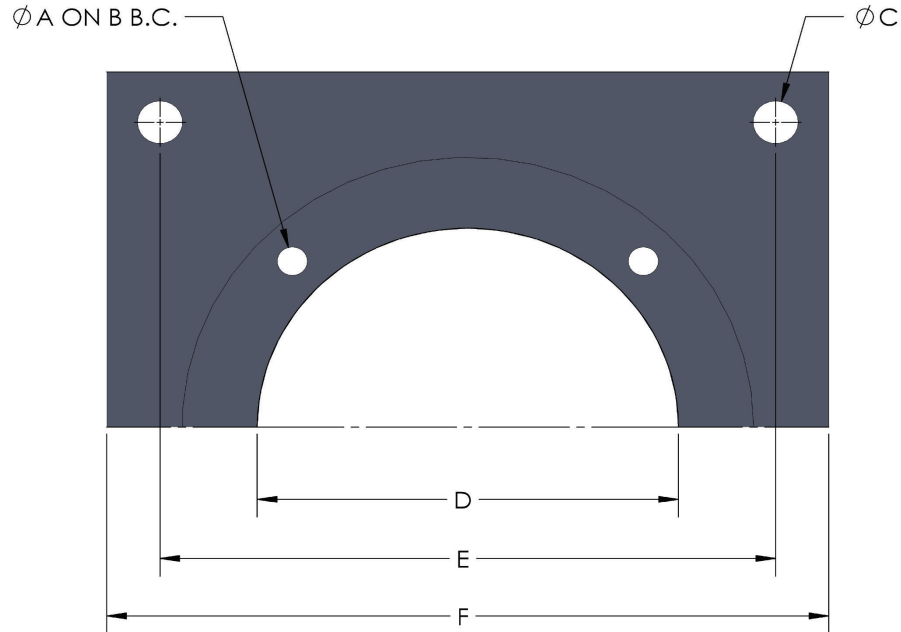
TYPE "A" DISCHARGE HEAD DIMENSIONS



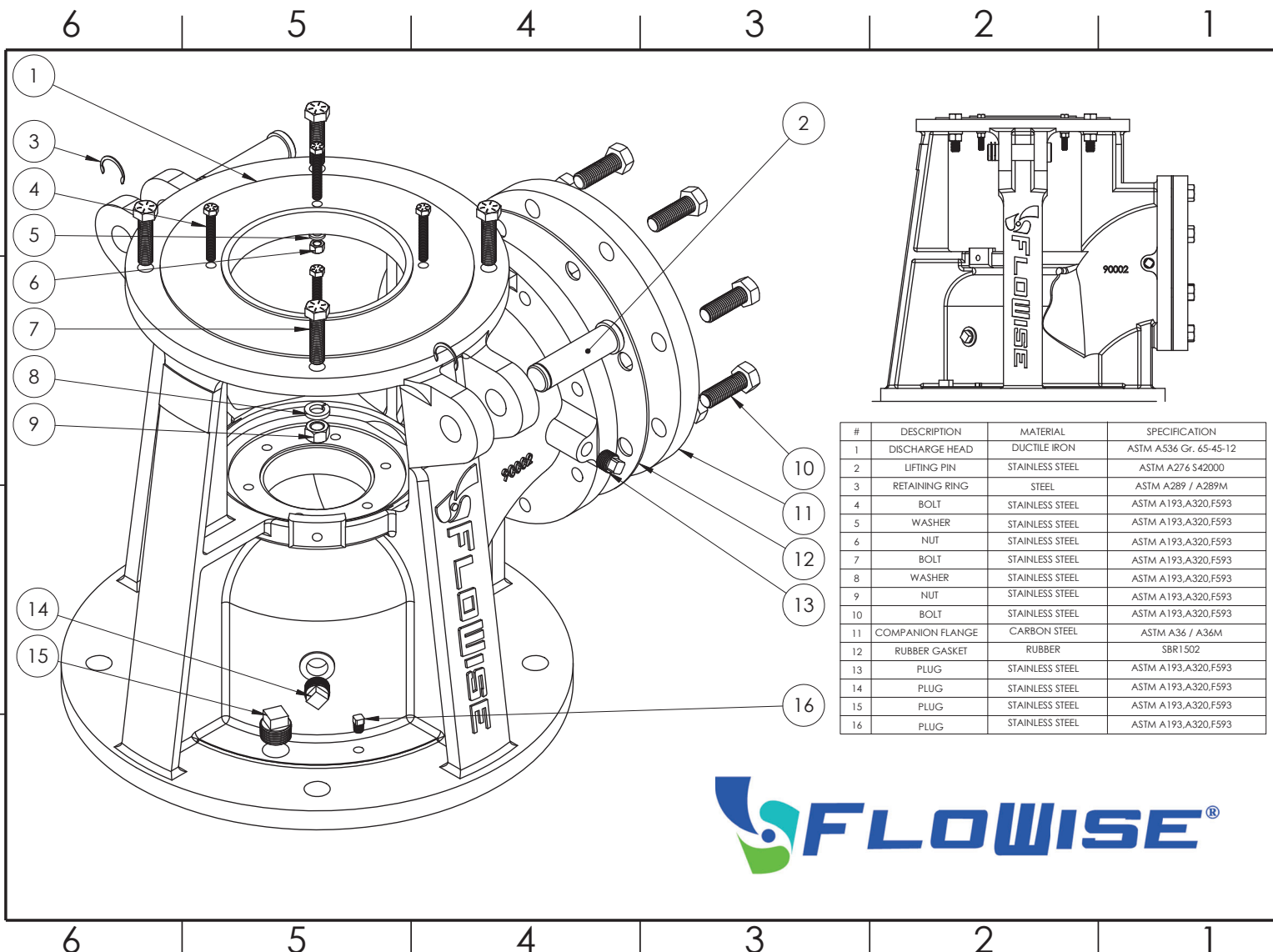
MODEL	MOTOR BD	MAX SHAFT SIZE	DIMENSIONS IN INCHES							
			A	B	C	D	E	F	G	H
TDH-FW4X4X12	12	1.250	12.00	NA	8.24	9.00	17.00	18.41	0.80	8
TDH-FW6X6X12-16	12, 16	1.938	16.50	13.49	8.24	11.00	20.00	20.31	0.90	8
TDH-FW8X8X12-16	12, 16	1.938	16.50	13.49	8.24	13.50	22.00	21.81	1.00	8
TDH-FW10X10X16	16	2.437	16.50	13.49	NA	16.00	23.50	23.44	1.15	12
TDH-FW12X12X16	16	2.437	20.00	13.49	NA	19.00	26.00	24.44	1.30	12

MODEL	DIMENSIONS IN INCHES (CONT.)									WEIGHT
	I	J	K	L	M	N	O	P	Q	
TDH-FW4X4X12	5/8-11UNC	7.50	4	11.75	7.16	1.50	10.69	1	14.25	181
TDH-FW6X6X12-16	3/4-10UNC	9.50	6	11.75	9.06	1.75	10.69	1	17.00	277
TDH-FW8X8X12-16	3/4-10UNC	11.75	8	11.75	10.56	2.00	10.69	1 1/8	18.75	348
TDH-FW10X10X16	7/8-9UNC	14.25	10	11.75	12.19	2.75	10.69	1 1/8	21.25	450
TDH-FW12X12X16	7/8-9UNC	17.00	12	14.75	13.19	2.75	10.69	1 1/4	22.75	635

SOLE PLATE DIMENSIONS



MODEL	DIMENSIONS IN INCHES						PLATE HEIGHT	WEIGHT
	A	B	C	D	E	F		
TDH-FW4X4X12	7/8-9 UNC	14.250	1.250	12.000	22.000	24.000	1.000	85
TDH-FW6X6X12-16	7/8-9 UNC	17.000	1.250	14.500	22.000	24.000	1.000	113
TDH-FW8X8X12-16	1-8 UNC	18.750	1.250	16.500	22.000	24.000	1.000	99
TDH-FW10X10X16	1-8 UNC	21.250	1.250	18.500	24.000	26.000	1.000	114
TDH-FW12X12X16	1-1/8-7 UNC	22.750	1.250	20.500	26.000	28.000	1.250	135



#	DESCRIPTION	MATERIAL	SPECIFICATION
1	DISCHARGE HEAD	DUCTILE IRON	ASTM A536 Gr. 65-45-12
2	LIFTING PIN	STAINLESS STEEL	ASTM A276 S42000
3	RETAINING RING	STEEL	ASTM A289 / A289M
4	BOLT	STAINLESS STEEL	ASTM A193,A320,F593
5	WASHER	STAINLESS STEEL	ASTM A193,A320,F593
6	NUT	STAINLESS STEEL	ASTM A193,A320,F593
7	BOLT	STAINLESS STEEL	ASTM A193,A320,F593
8	WASHER	STAINLESS STEEL	ASTM A193,A320,F593
9	NUT	STAINLESS STEEL	ASTM A193,A320,F593
10	BOLT	STAINLESS STEEL	ASTM A193,A320,F593
11	COMPANION FLANGE	CARBON STEEL	ASTM A36 / A36M
12	RUBBER GASKET	RUBBER	SBR1 502
13	PLUG	STAINLESS STEEL	ASTM A193,A320,F593
14	PLUG	STAINLESS STEEL	ASTM A193,A320,F593
15	PLUG	STAINLESS STEEL	ASTM A193,A320,F593
16	PLUG	STAINLESS STEEL	ASTM A193,A320,F593



6 5 4 3 2 1

D

D

C

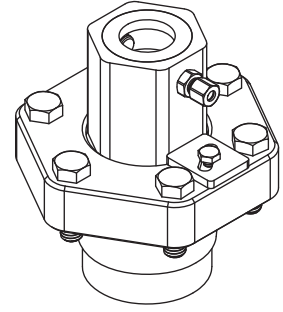
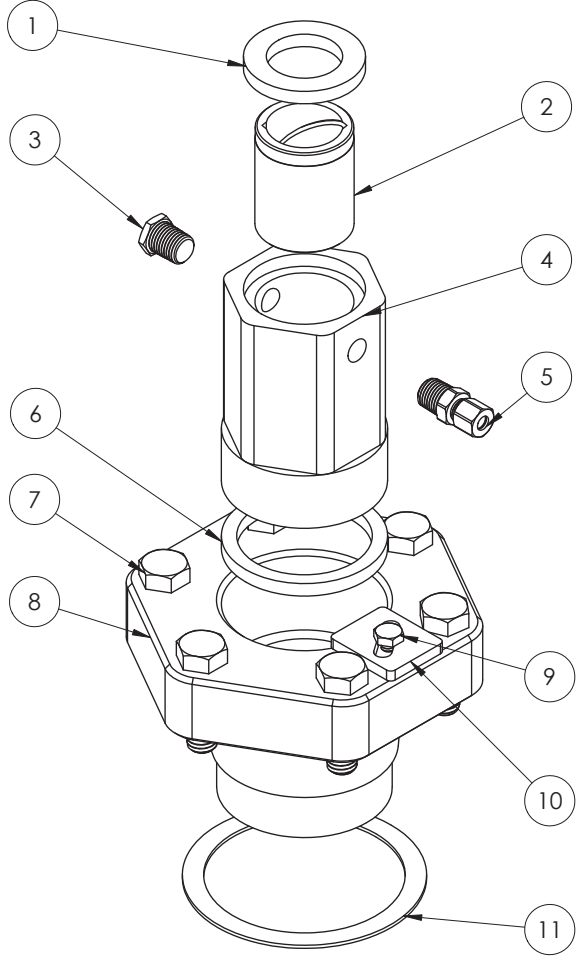
C

B

B

A

A

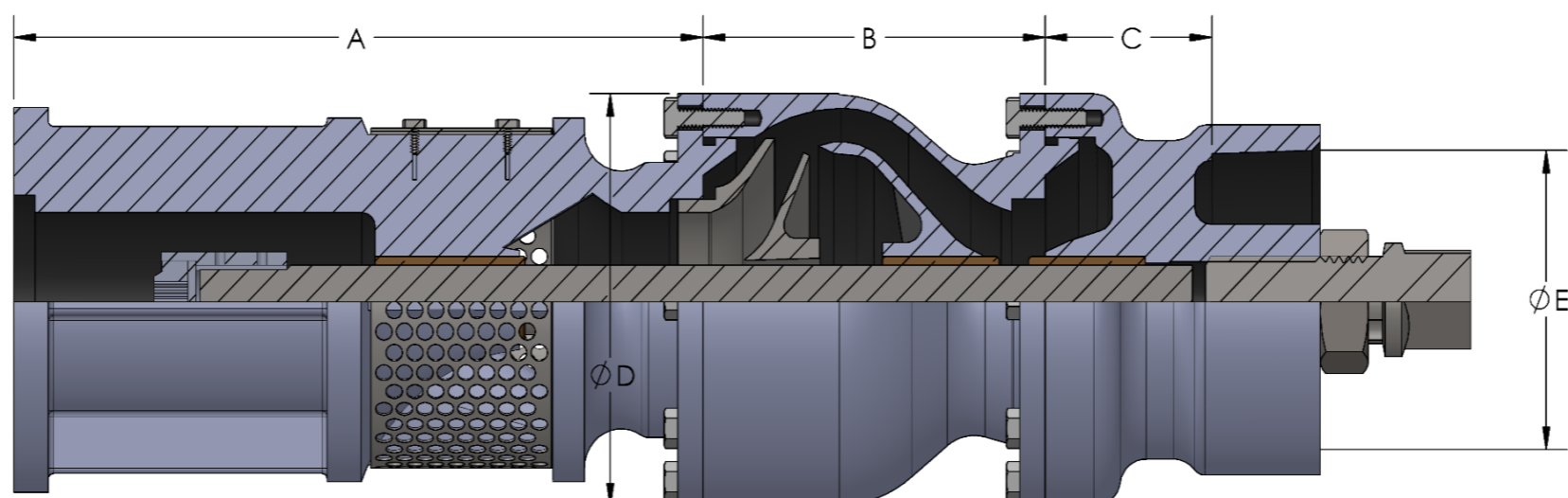


#	DESCRIPTION	MATERIAL	SPECIFICATION
1	LIP SEAL	Buna-N	
2	BEARING	BRONZE	907LF
3	PLUG	STAINLESS STEEL	ASTM A193,A320,F593
4	STRETCH NUT	STAINLESS STEEL	ASTM A29 1045
5	COMPRESSION FITTING	STEEL	ASTM A193,A320,F593
6	PACKING	GRAPHITE	GRAPHITE FILLED PTFE FIBER
7	BOLT	STAINLESS STEEL	ASTM A193,A320,F593
8	STRETCH HOUSING	DUCTILE IRON	ASTM A536GR. 65-45-12
9	BOLT	STAINLESS STEEL	ASTM A193,A320,F593
10	LOCK PLATE	STEEL	ASTM A29 1045
11	CRUSH RING	COPPER	110 COPPER



6 5 4 3 2 1

SUBMERSIBLE TURBINE BOWL DIMENSIONS



MODEL	MOTOR SIZE	BOWL ASSEMBLY				WEIGHTS		BOWL SHAFT DIA.	DISCHARGE SIZE
		DIMENSIONS IN INCHES				1ST STAGE	ADD STAGE		
		A	B	C	D				
5LC	4	8.380	4.630	2.495	5.200	55	15	1.000	4
	6	10.339							
	8	12.371							
5HC	4	8.380	5.130	2.495	5.900	60	20	1.000	4
	6	10.339							
	8	12.371							
6LC	4	8.380	6.375	2.750	7.130	90	30	1.188	6
	6	10.339							
	8	12.371							
6HC	4	8.380	7.000	2.750	7.130	105	30	1.188	6
	6	10.339							
	8	12.371							
7LC	6	12.880	6.500	3.370	9.250	185	60	1.500	8
	8	14.560							
	10	15.225							
7HC	6	12.880	7.375	3.370	9.250	185	60	1.500	8
	8	14.560							
	10	15.225							
7W	6	12.880	8.500	4.370	11.000	275	100	1.688	8
	8	14.560							
	10	15.225							
7Y	6	12.880	9.875	4.370	11.000	275	100	1.688	8
	8	14.560							
	10	15.225							
8LC	6	12.880	8.500	3.370	9.250	185	60	1.500	8
	8	14.560							
	10	15.225							
8HC	6	12.880	7.375	3.370	9.250	185	60	1.500	8
	8	14.560							
	10	15.225							
8WC	6	12.880	8.500	4.370	11.000	275	100	1.688	8
	8	14.560							
	10	15.225							
9LC	6	14.128	9.875	4.370	11.000	275	100	1.688	8
	8	16.357							
	10	16.357							
9HC	6	14.128	8.500	3.370	9.250	185	60	1.500	8
	8	16.357							
	10	16.357							
10IC	6	14.128	7.630	3.370	9.500	190	65	1.500	8
	8	16.357							
	10	16.357							
10KC	6	14.128	8.500	4.370	11.000	275	100	1.688	8
	8	16.357							
	10	16.357							
11LC	8	18.215	9.875	4.370	11.000	275	100	1.688	8
	10								
11MC	8	18.215	9.875	4.370	11.000	275	100	1.688	8
	10								
11HC	8	18.215	9.875	4.370	11.000	275	100	1.688	8
	10								

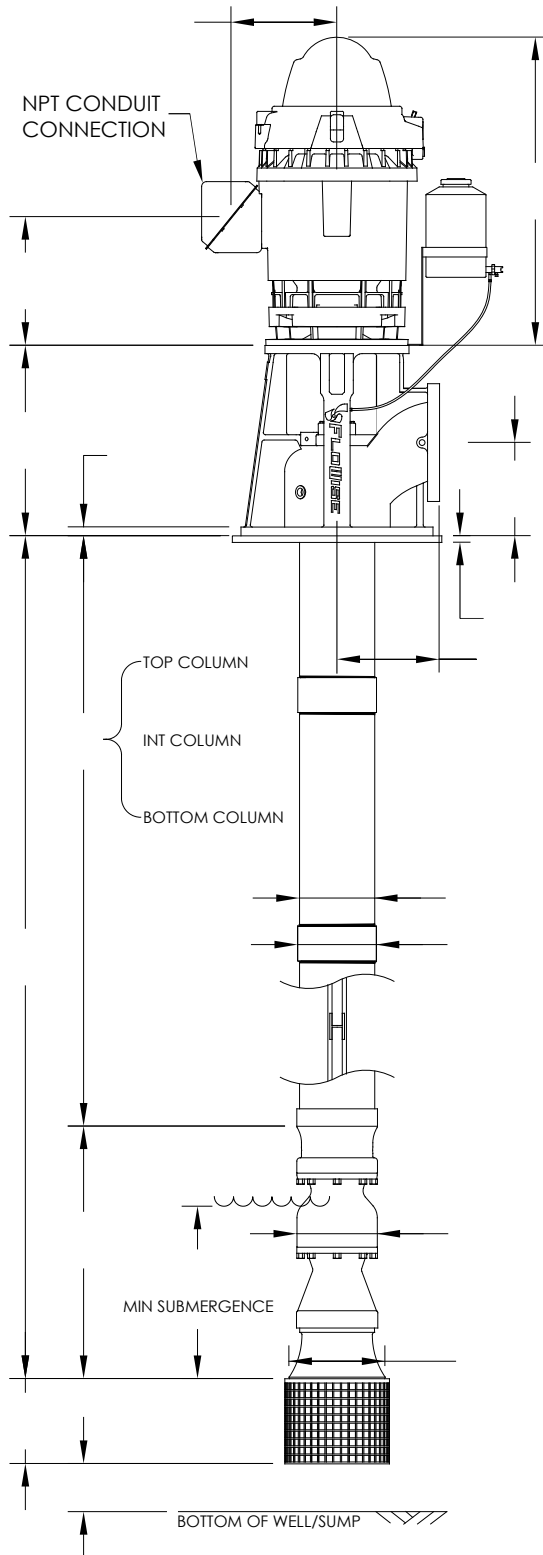
VERTICAL TURBINE MATERIALS OF CONSTRUCTION SUBMERSIBLE TURBINE



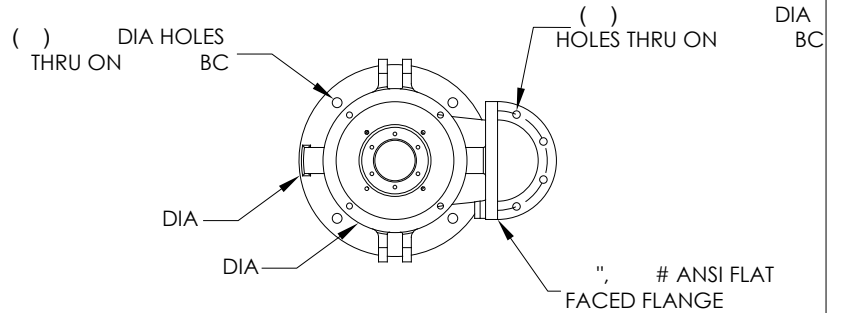
DESCRIPTION	MATERIAL	SPECIFICATION
SUBMERSIBLE BRACKET	DUCTILE IRON	ASTM A536 Gr. 65-45-12
SUBMERSIBLE BRACKET SCREEN	304SS	ASTM A240
O-RING	BUNA-N	4926-70
SUBMERSIBLE MOTOR BRACKET BEARING	BRONZE LEAD FREE	907LF
SCREEN CAPSCREW	STAINLESS STEEL	ASTM A193,A320,F593
BOWL	CAST IRON VITREOUS ENAMELED	ASTM A48 CL30
BOWL BEARING	BRONZE LEAD FREE	907LF
IMPELLER	STAINLESS STEEL	ASTM A743/744 CF8 (304SS)
COLLET	STAINLESS STEEL	ASTM A582 type 416
DISCHARGE CASE BEARING	BRONZE LEAD FREE	907LF
DISCHARGE CASE	DUCTILE IRON	ASTM A536 Gr. 65-45-12
SUBMERSIBLE UPTHRUST PLUG	STAINLESS STEEL	ASTM A743/744 CF8
JAM NUT	STAINLESS STEEL	ASTM A276
CAPSCREW	STAINLESS STEEL	ASTM A193,A320,F593

TURBINE PUMP

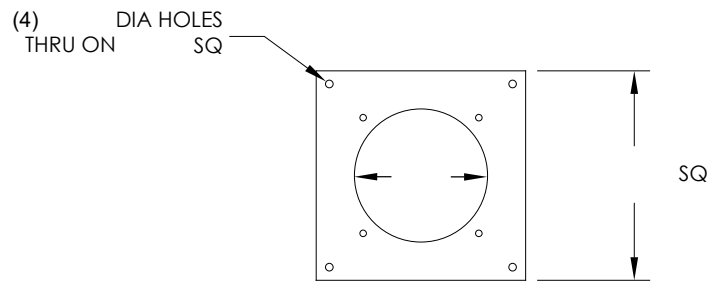
CAST DISCHARGE HEAD, THREADED COLUMN, ENCLOSED LINESHAFT



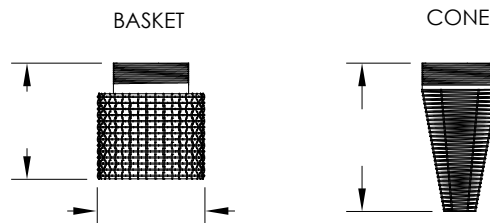
DISCHARGE HEAD



SOLE PLATE



STRAINER OPTIONS



SHAFT AND COLUMN

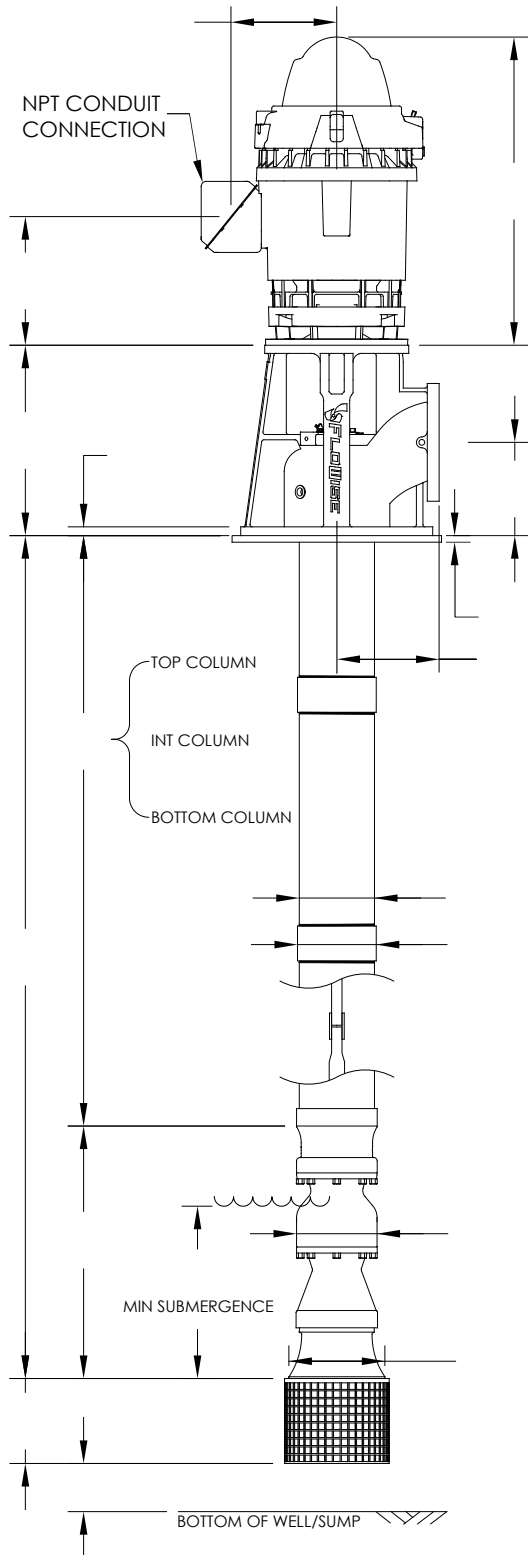
HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
OIL TUBE Ø	
COLUMN WALL	

NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

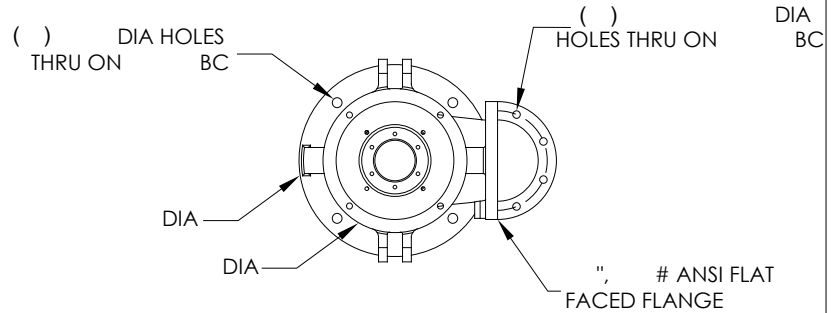
CUSTOMER				DATE	PO
PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		

TURBINE PUMP

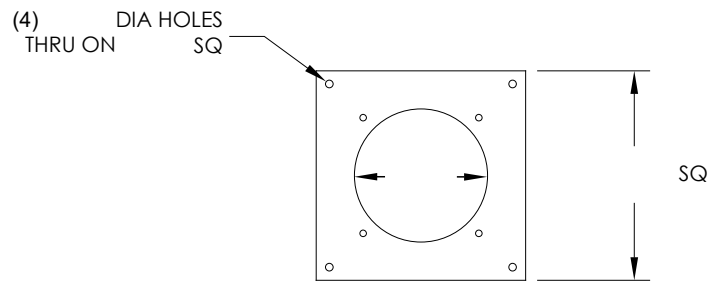
CAST DISCHARGE HEAD, THREADED COLUMN, OPEN LINESHAFT



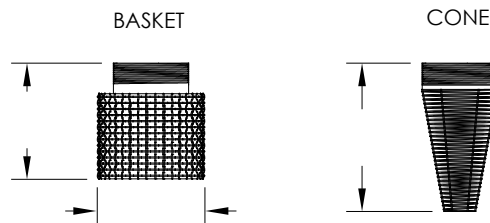
DISCHARGE HEAD



SOLE PLATE



STRAINER OPTIONS



SHAFT AND COLUMN

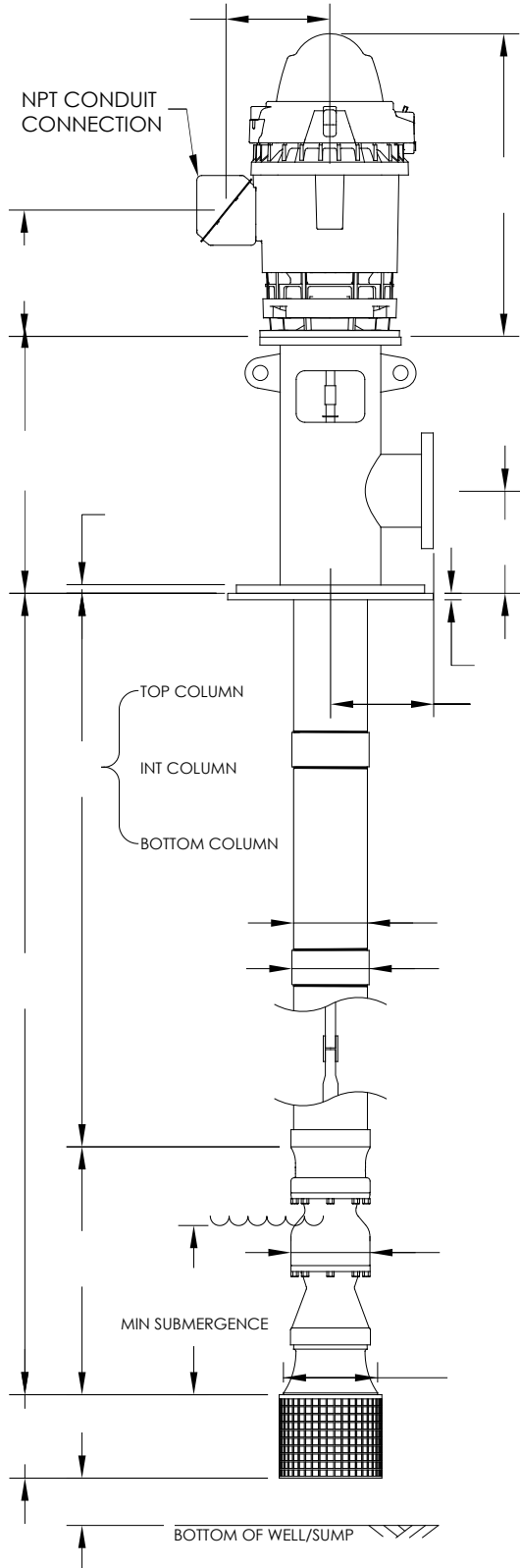
HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
COLUMN WALL	

NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

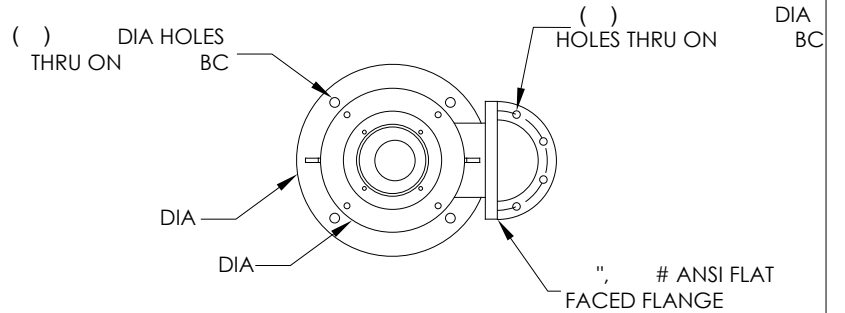
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PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		

TURBINE PUMP

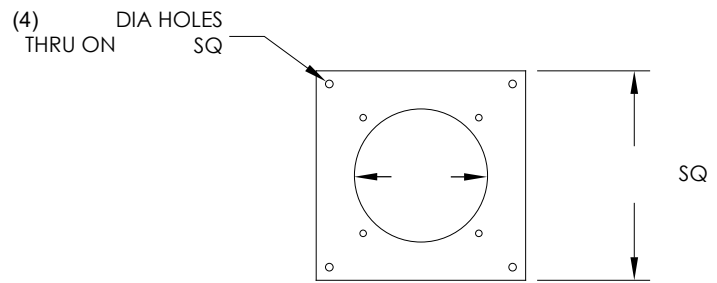
FABRICATED DISCHARGE HEAD, THREADED COLUMN, OPEN LINESHAFT



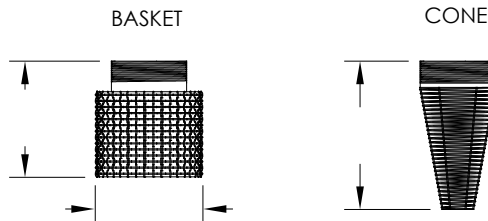
DISCHARGE HEAD



SOLE PLATE



STRAINER OPTIONS



SHAFT AND COLUMN

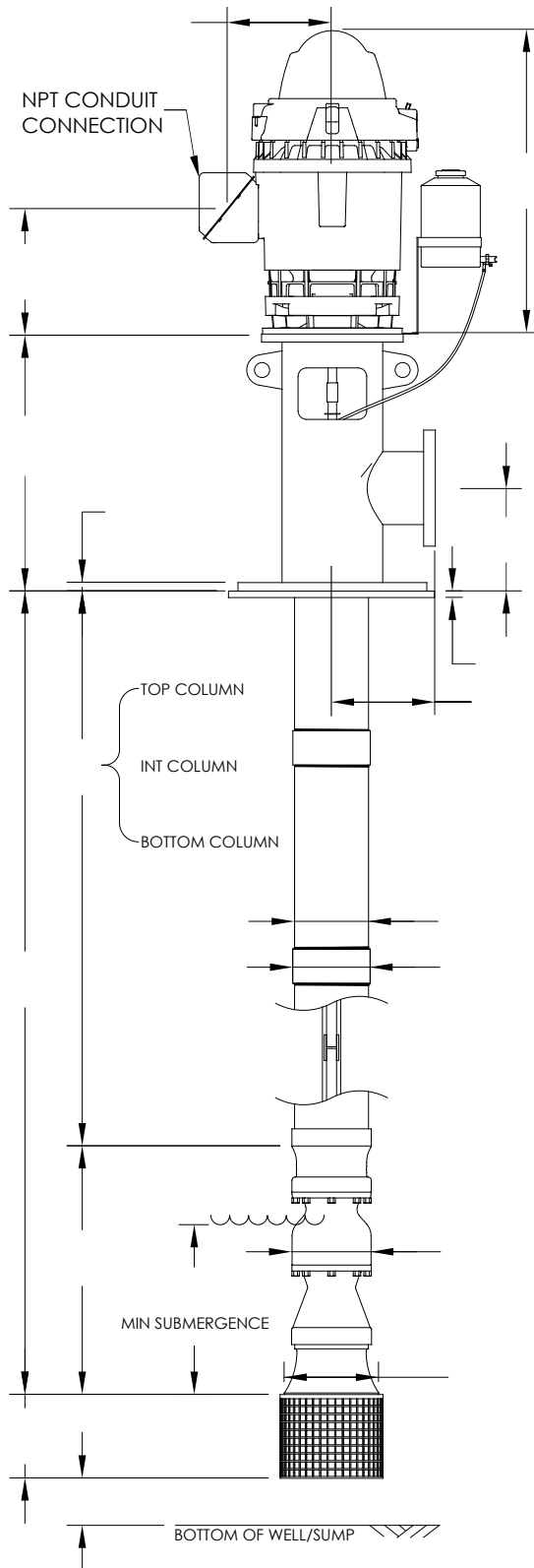
HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
COLUMN WALL	

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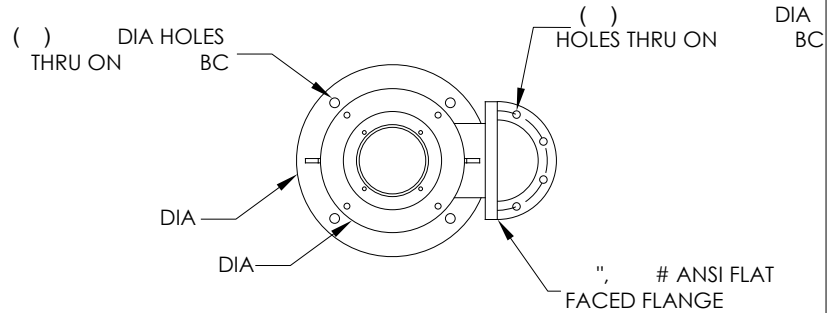
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MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
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RPM	VOLTS	PH	HZ		

TURBINE PUMP

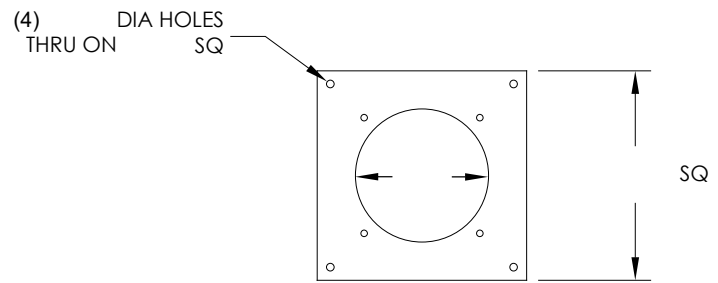
FABRICATED DISCHARGE HEAD, THREADED COLUMN, ENCLOSED LINESHAFT



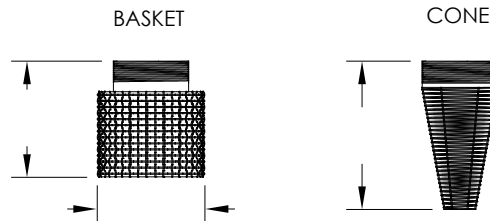
DISCHARGE HEAD



SOLE PLATE



STRAINER OPTIONS



SHAFT AND COLUMN

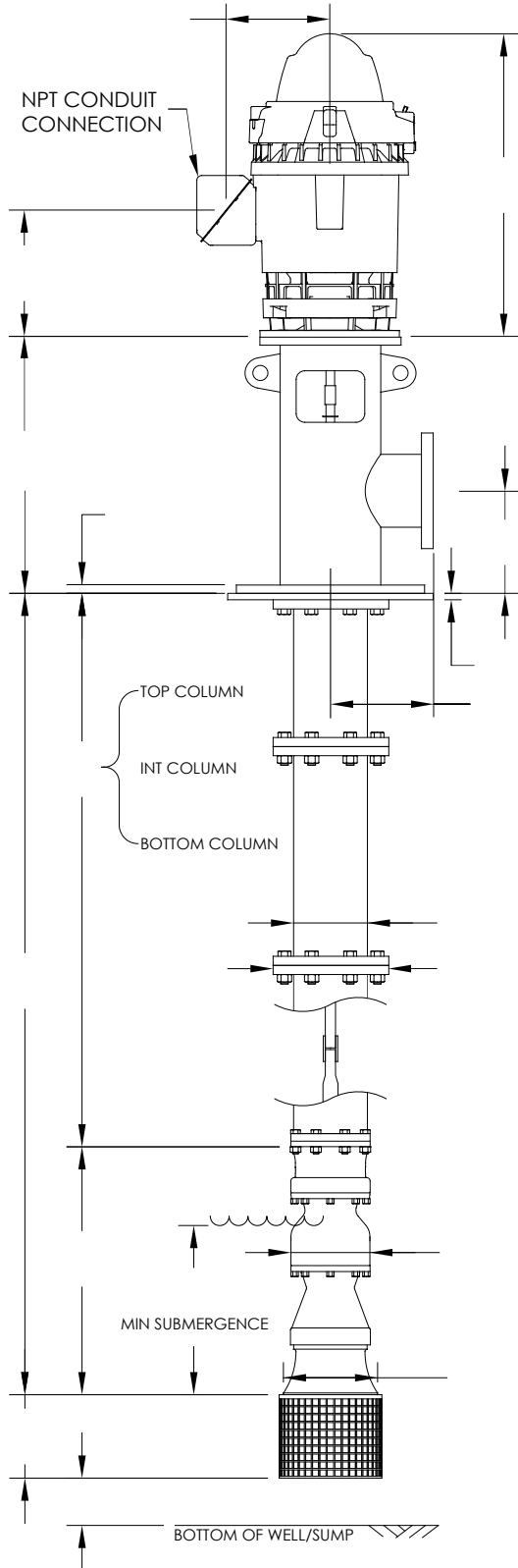
HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
OIL TUBE Ø	
COLUMN WALL	

NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

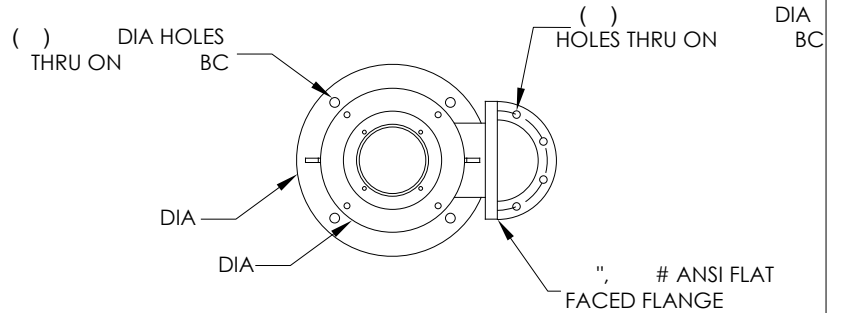
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PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
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RPM	VOLTS	PH	HZ		

TURBINE PUMP

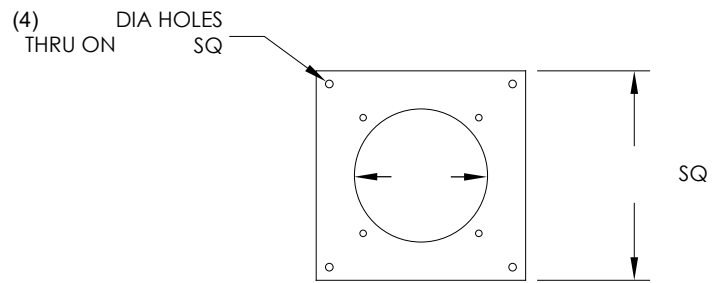
FABRICATED DISCHARGE HEAD, FLANGED COLUMN, OPEN LINESHAFT



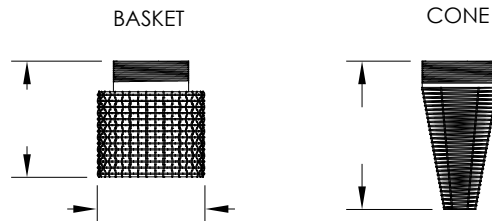
DISCHARGE HEAD



SOLE PLATE



STRAINER OPTIONS



SHAFT AND COLUMN

HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
COLUMN WALL	

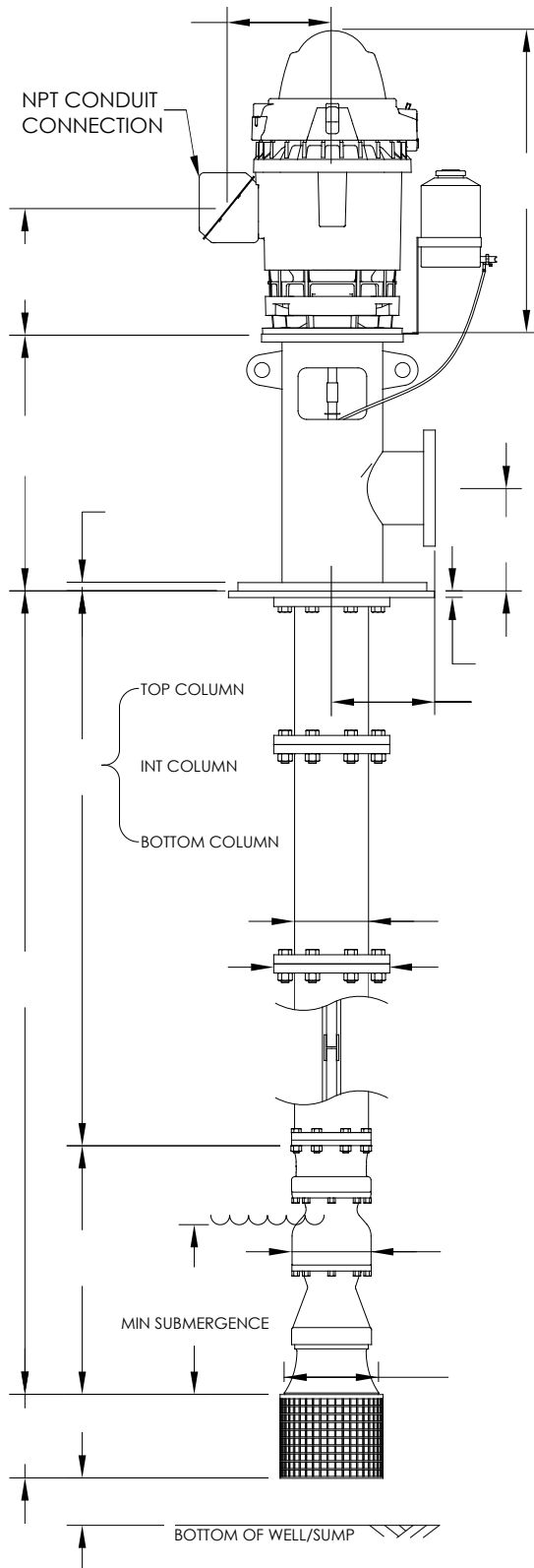
NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

CUSTOMER				DATE	PO
PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		

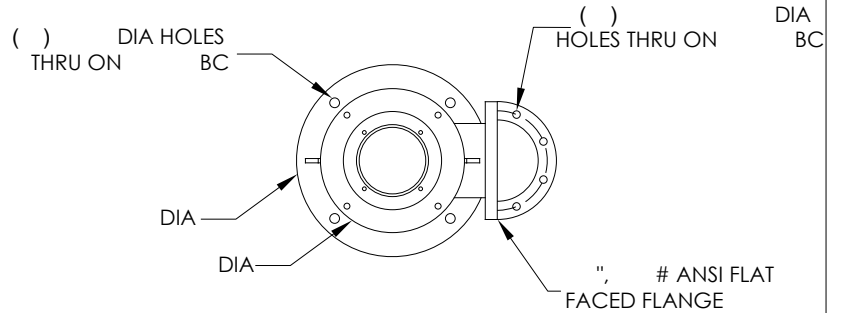


TURBINE PUMP

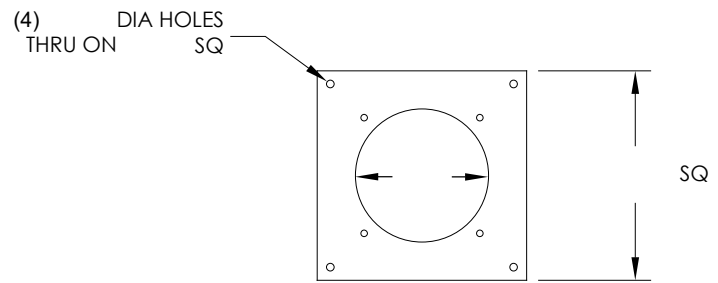
FABRICATED DISCHARGE HEAD, FLANGED COLUMN, ENCLOSED LINESHAFT



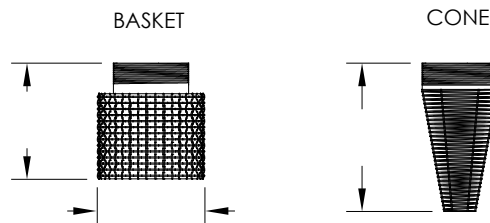
DISCHARGE HEAD



SOLE PLATE



STRAINER OPTIONS



SHAFT AND COLUMN

HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
OIL TUBE Ø	
COLUMN WALL	

NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

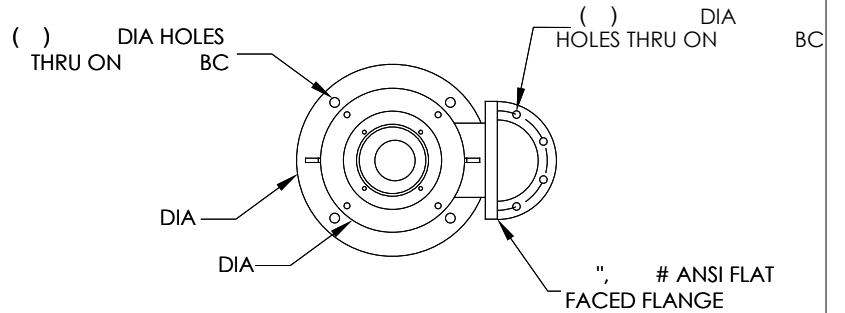
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MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
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RPM	VOLTS	PH	HZ		



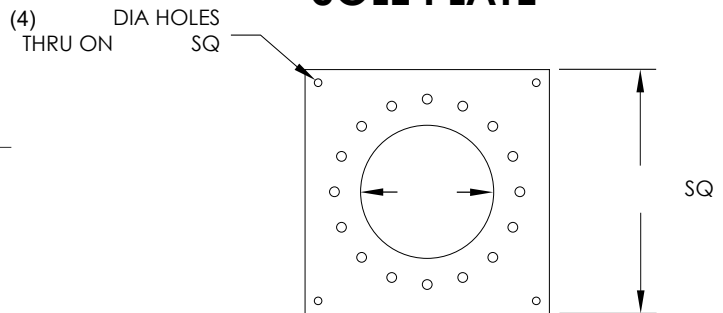
TURBINE PUMP

FABRICATED DISCHARGE HEAD, THREADED COLUMN, OPEN LINESHAFT, BARREL

DISCHARGE HEAD



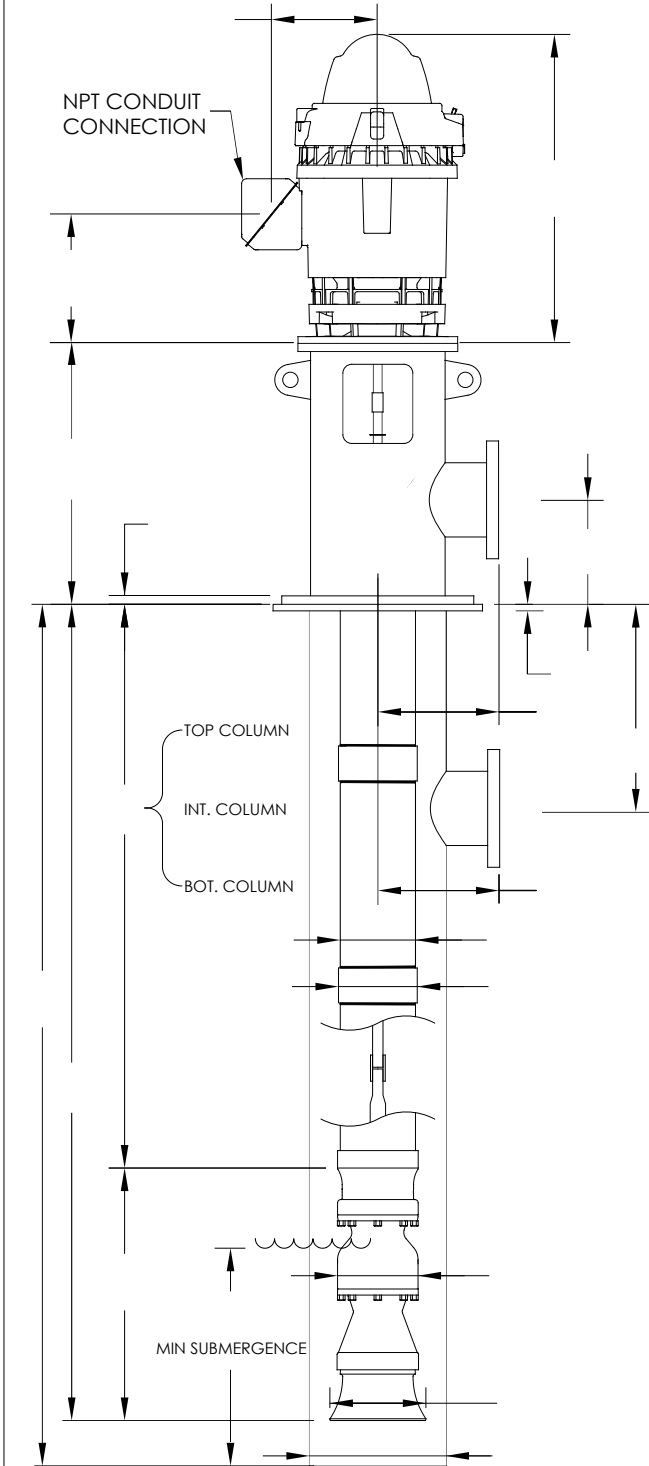
SOLE PLATE



SHAFT AND COLUMN

HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
COLUMN WALL	
BARREL WALL	

NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

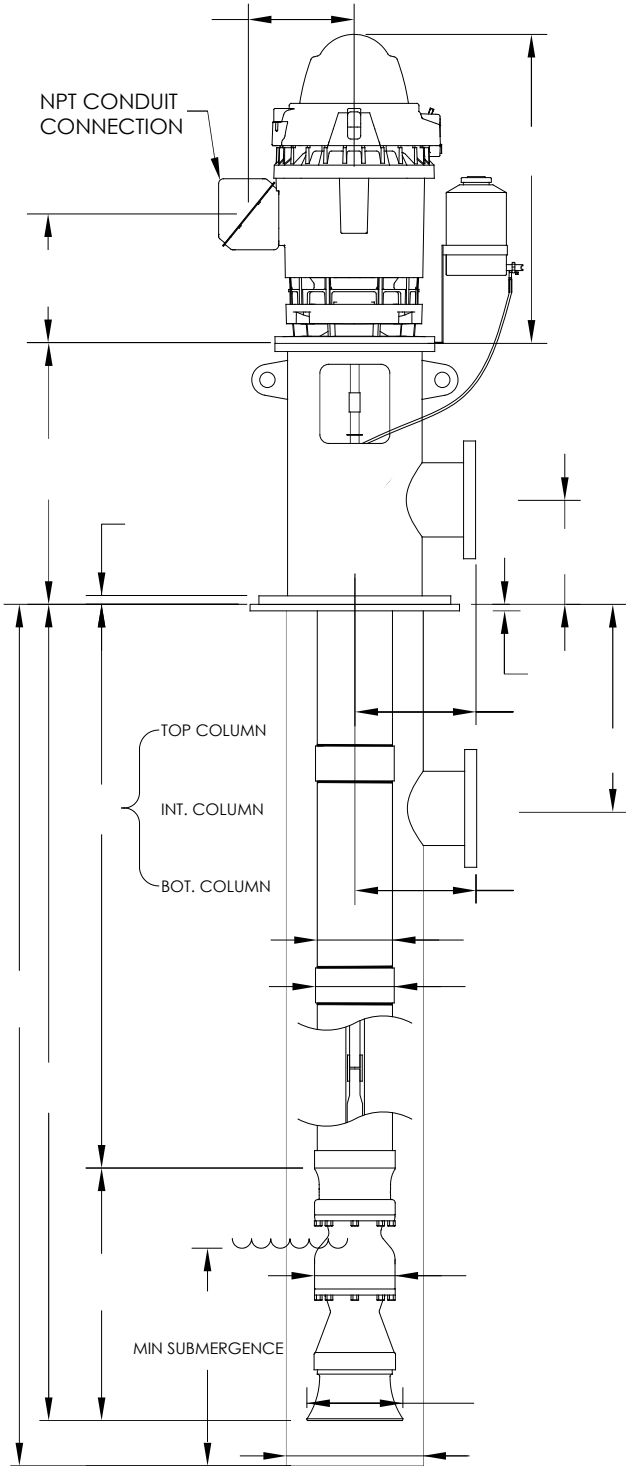


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PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		

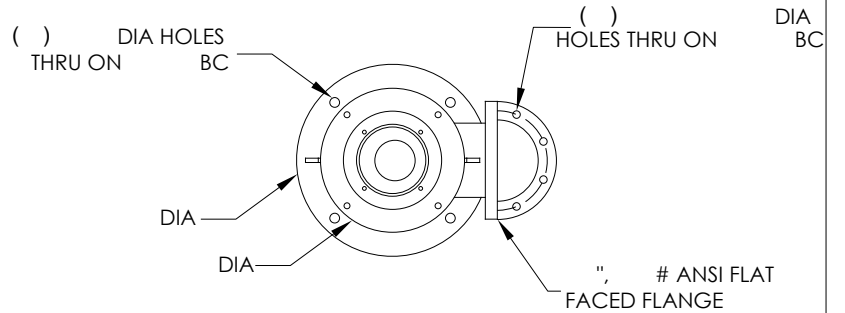


TURBINE PUMP

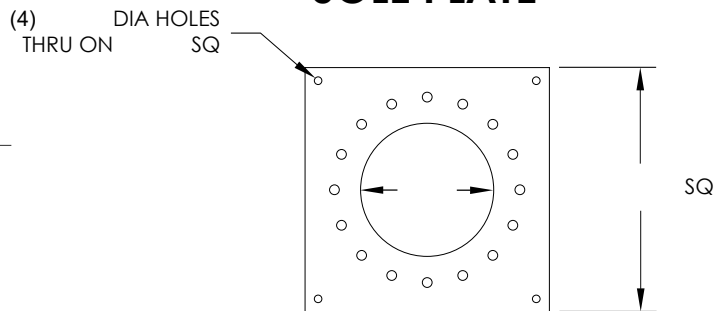
FABRICATED DISCHARGE HEAD, THREADED COLUMN, ENCLOSED LINESHAFT, BARREL



DISCHARGE HEAD



SOLE PLATE



SHAFT AND COLUMN

HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
OIL TUBE Ø	
COLUMN WALL	
BARREL WALL	

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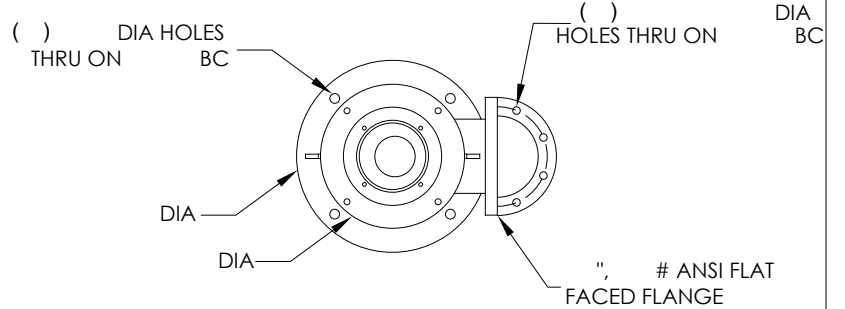
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RPM	VOLTS	PH	HZ		



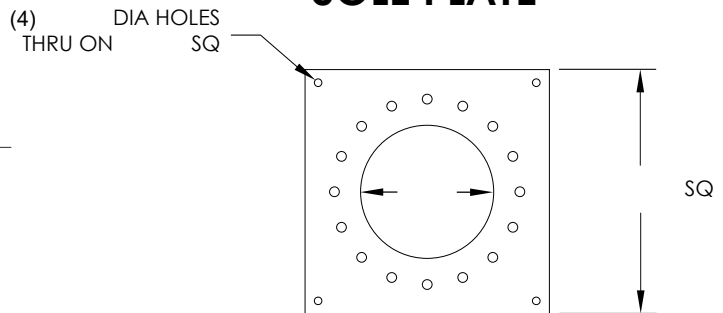
TURBINE PUMP

FABRICATED DISCHARGE HEAD, FLANGED COLUMN, OPEN LINESHAFT, BARREL

DISCHARGE HEAD



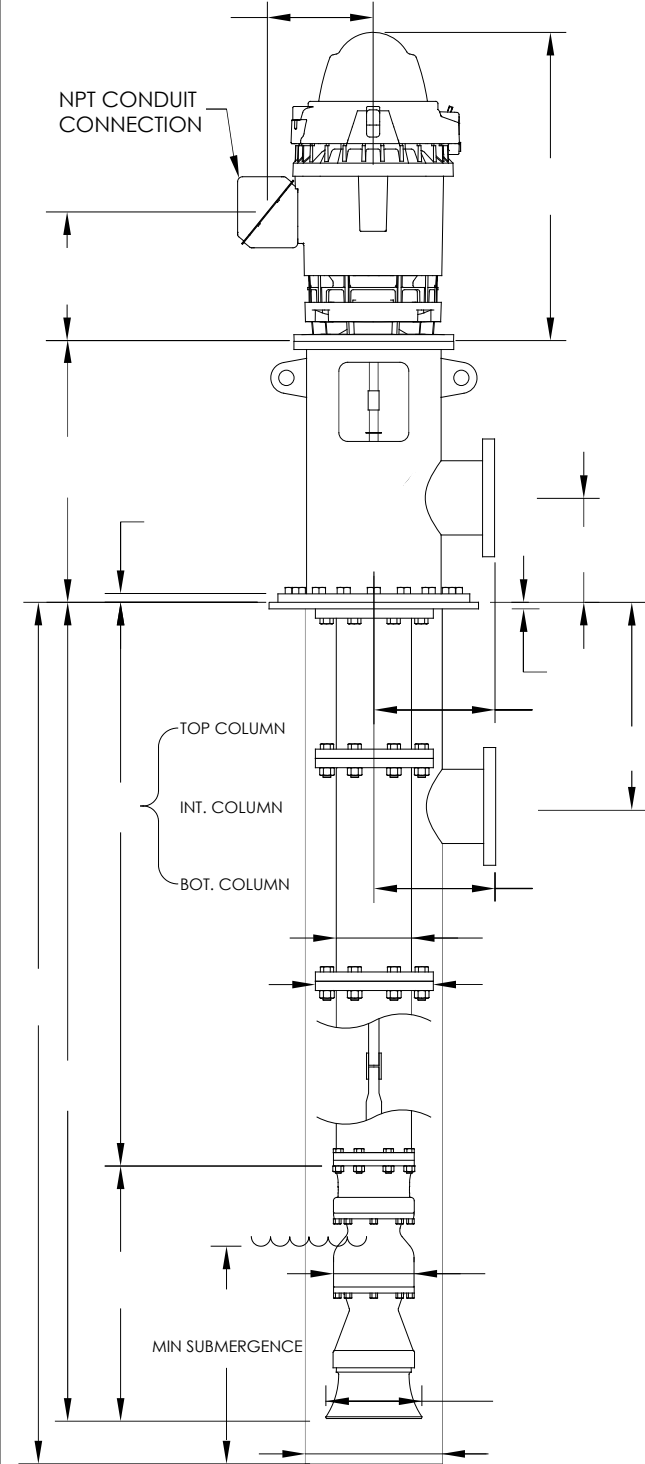
SOLE PLATE



SHAFT AND COLUMN

HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
COLUMN WALL	
BARREL WALL	

NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

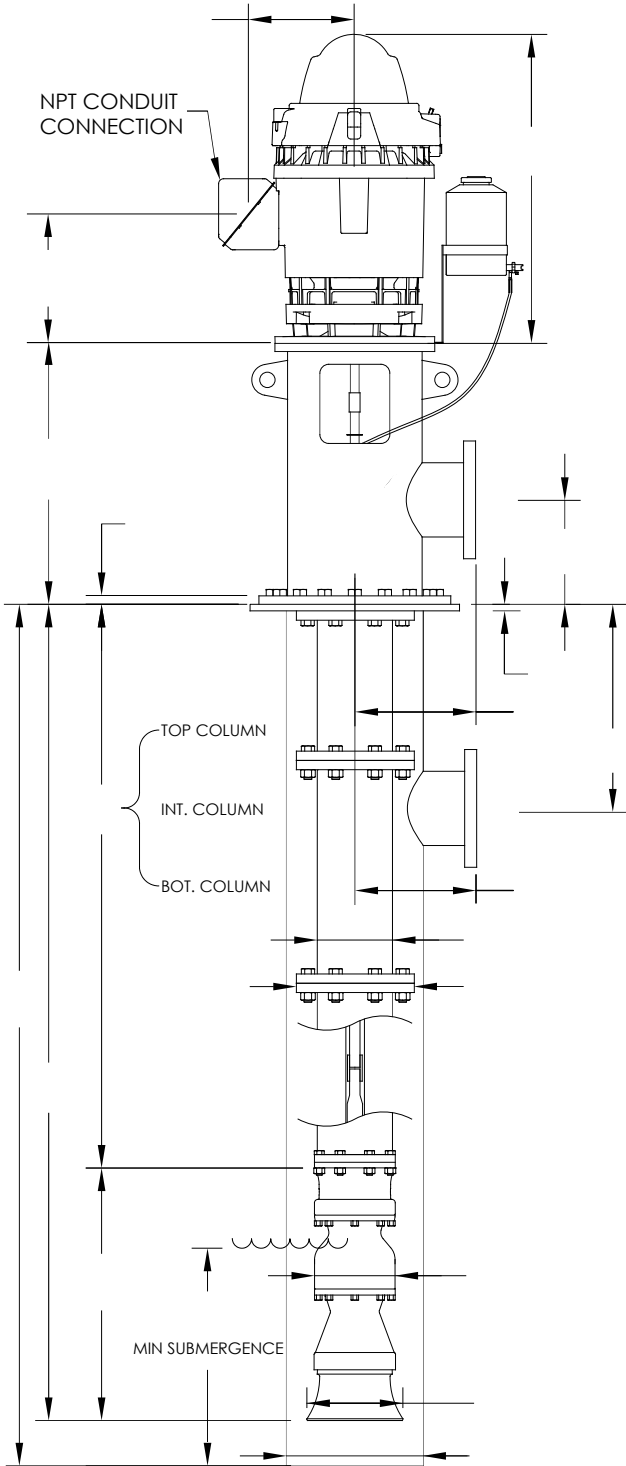


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RPM	VOLTS	PH	HZ		

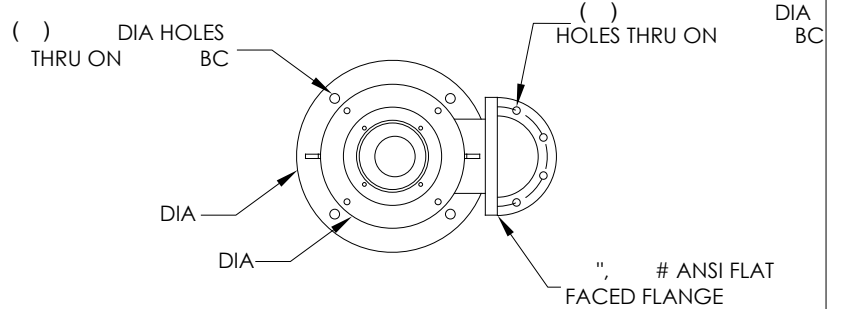


TURBINE PUMP

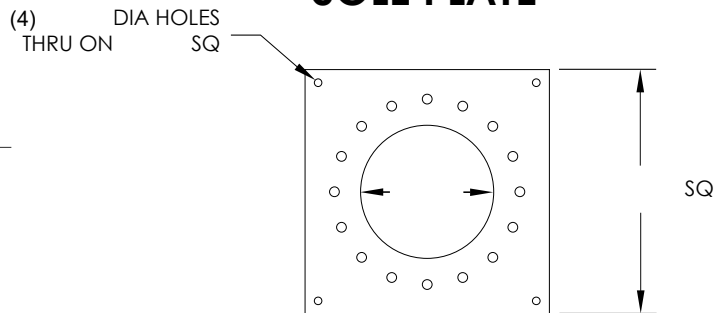
FABRICATED DISCHARGE HEAD, FLANGED COLUMN, ENCLOSED LINESHAFT, BARREL



DISCHARGE HEAD



SOLE PLATE



SHAFT AND COLUMN

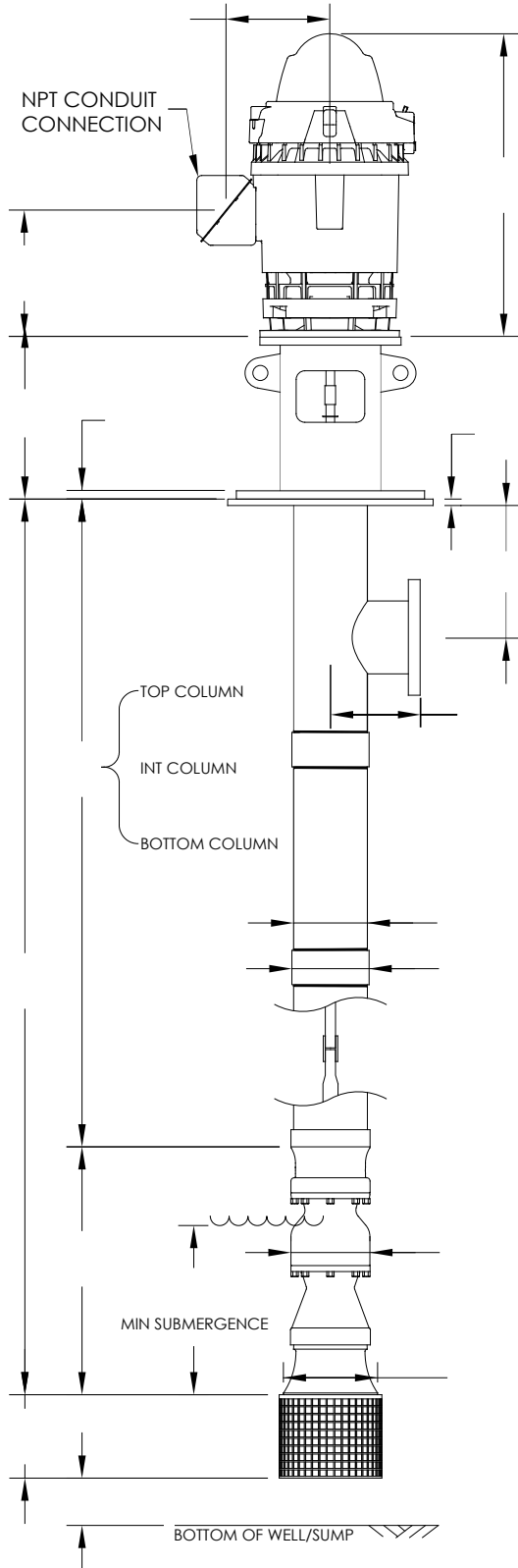
HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
OIL TUBE Ø	
COLUMN WALL	
BARREL WALL	

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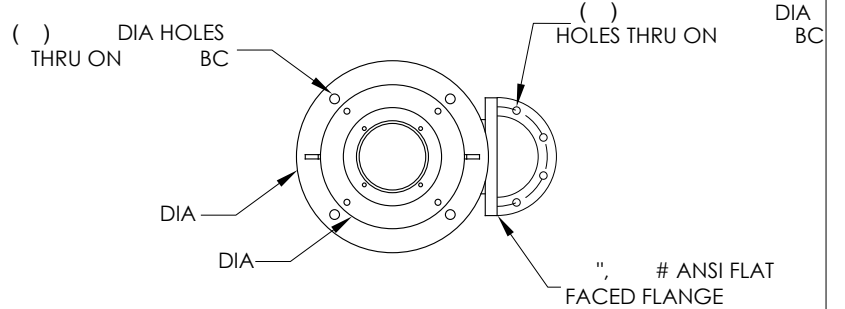
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PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		

TURBINE PUMP

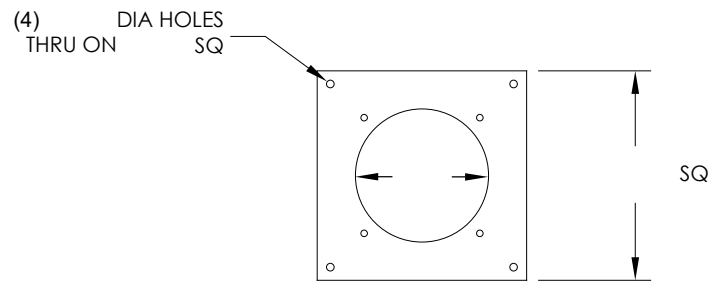
MOTOR PEDESTAL, UNDERGROUND DISCH., THREADED COLUMN, OPEN LINESHAFT



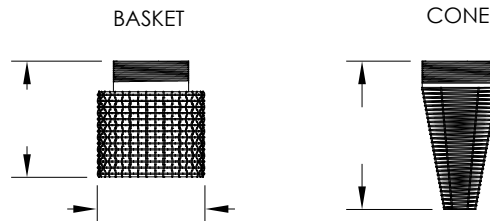
MOTOR PEDESTAL AND DISCHARGE FLANGE



SOLE PLATE



STRAINER OPTIONS



SHAFT AND COLUMN

HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
COLUMN WALL	

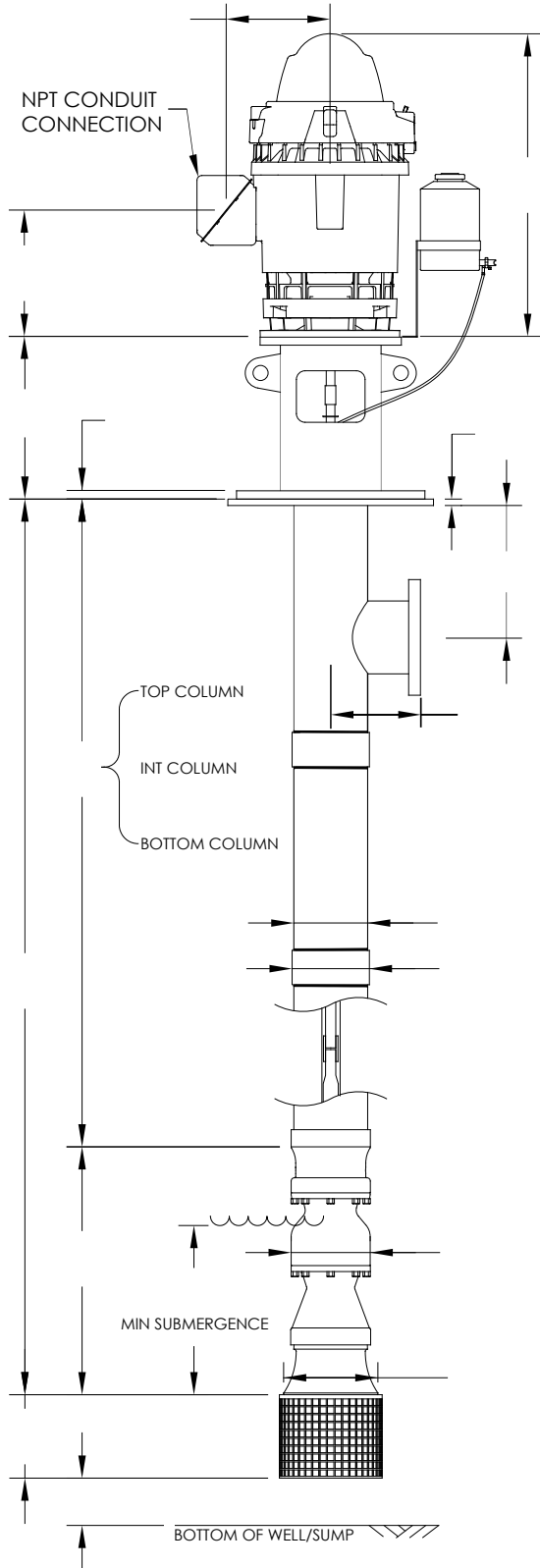
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PROJECT				PREPARED BY	
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RPM	VOLTS	PH	HZ		

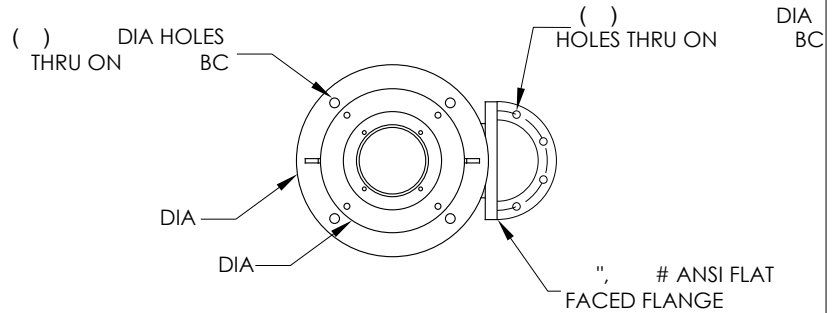


TURBINE PUMP

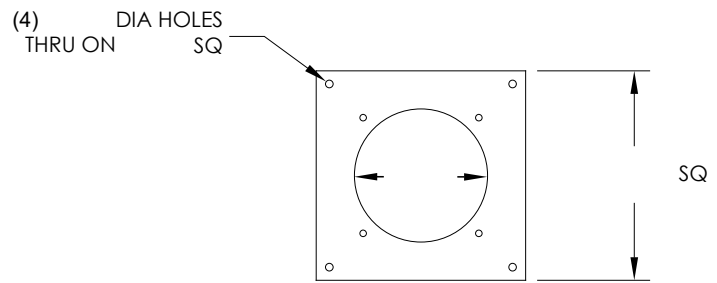
MOTOR PEDESTAL, UNDERGROUND DISCH., THREADED COL., ENCLOSED LINESHAFT



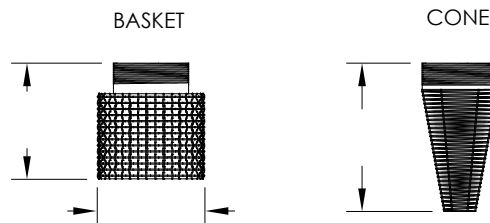
MOTOR PEDESTAL AND DISCHARGE FLANGE



SOLE PLATE



STRAINER OPTIONS



SHAFT AND COLUMN

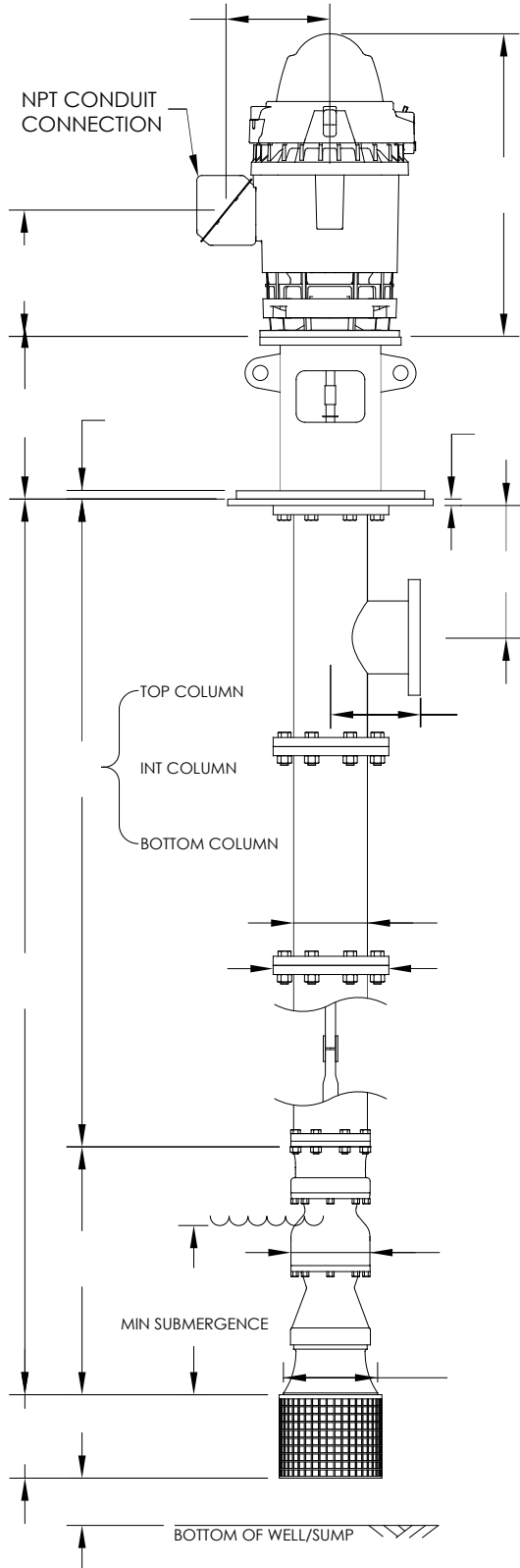
HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
OIL TUBE Ø	
COLUMN WALL	

NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

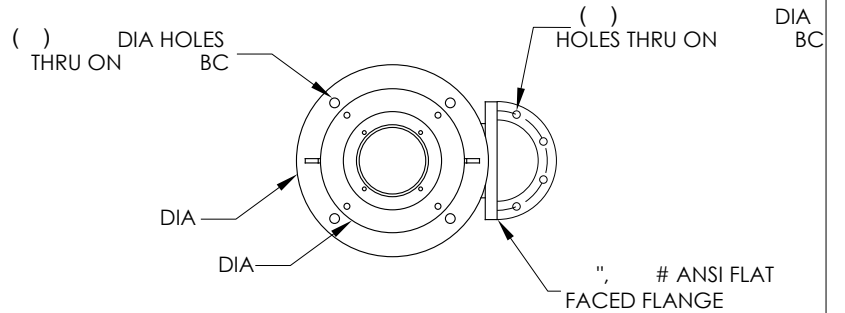
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RPM	VOLTS	PH	HZ		

TURBINE PUMP

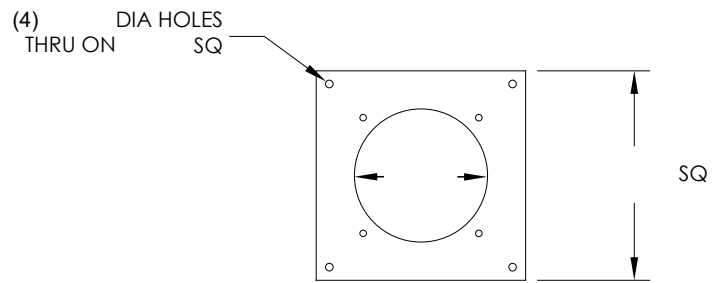
MOTOR PEDESTAL, UNDERGROUND DISCH., FLANGED COLUMN, OPEN LINESHAFT



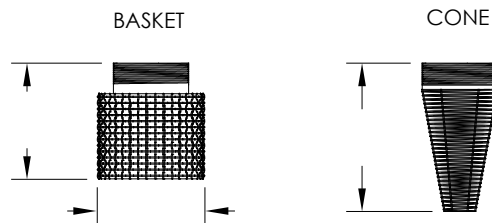
MOTOR PEDESTAL AND DISCHARGE FLANGE



SOLE PLATE



STRAINER OPTIONS



SHAFT AND COLUMN

HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
COLUMN WALL	

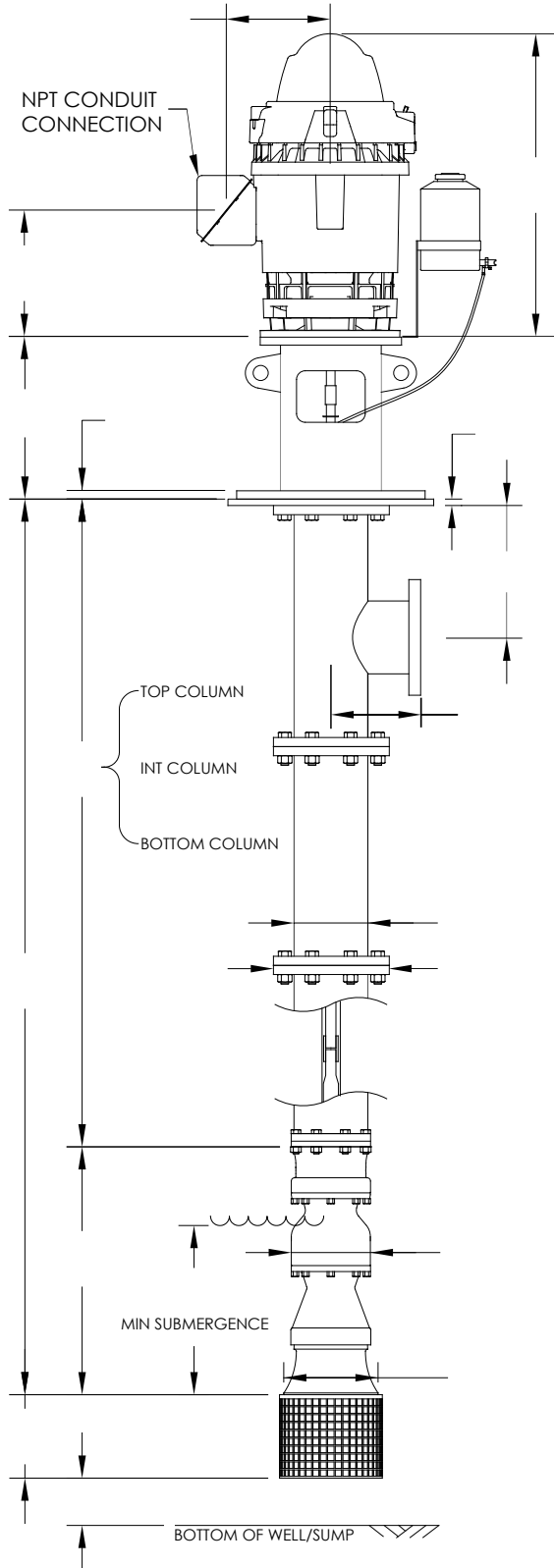
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PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
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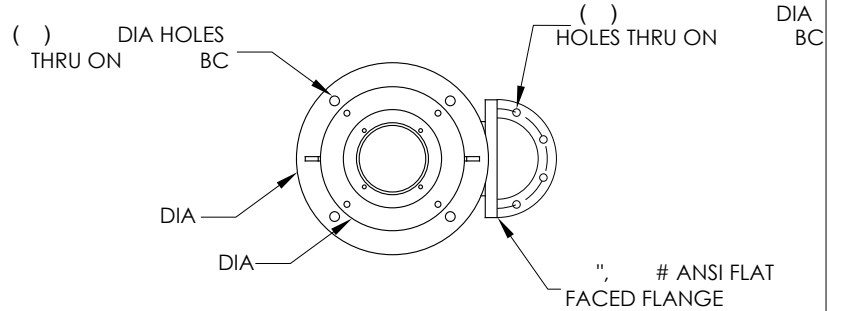


TURBINE PUMP

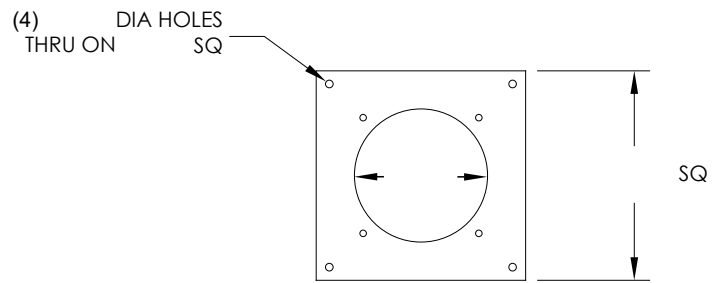
MOTOR PEDESTAL, UNDERGROUND DISCH., FLANGED COL., ENCLOSED LINESHAFT



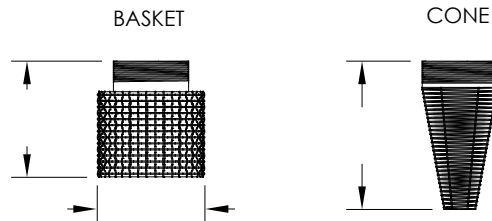
MOTOR PEDESTAL AND DISCHARGE FLANGE



SOLE PLATE



STRAINER OPTIONS



SHAFT AND COLUMN

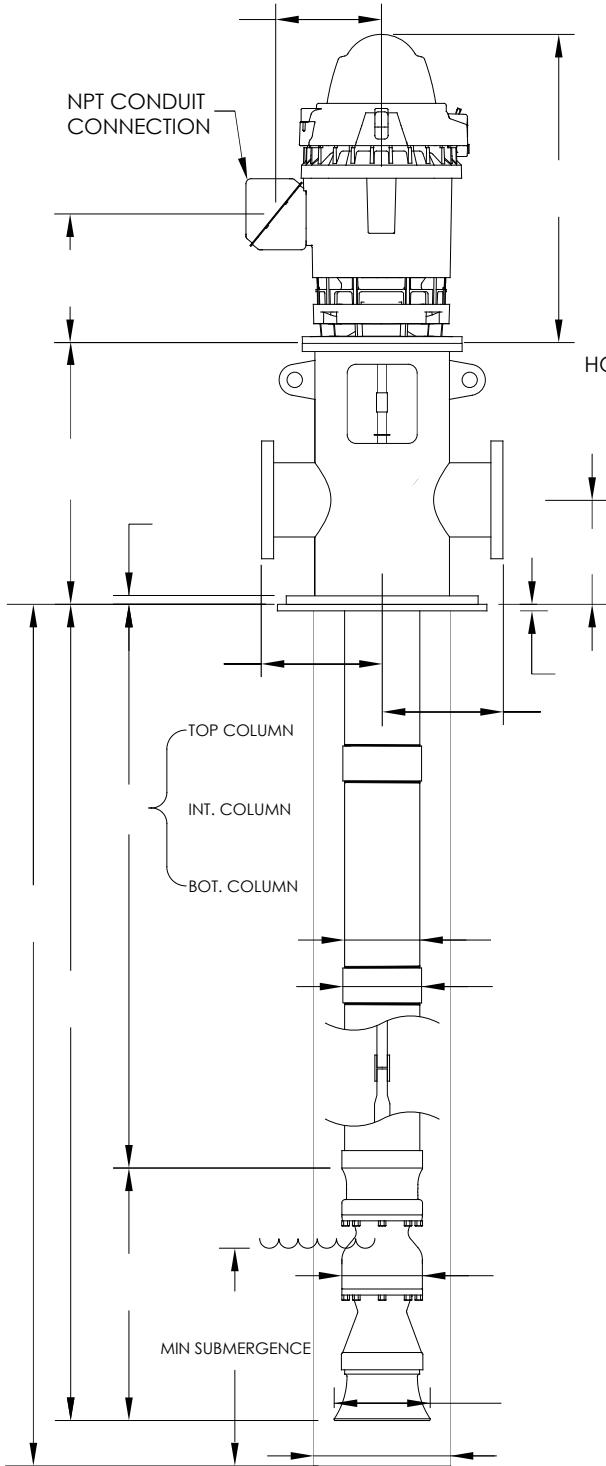
HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
OIL TUBE Ø	
COLUMN WALL	

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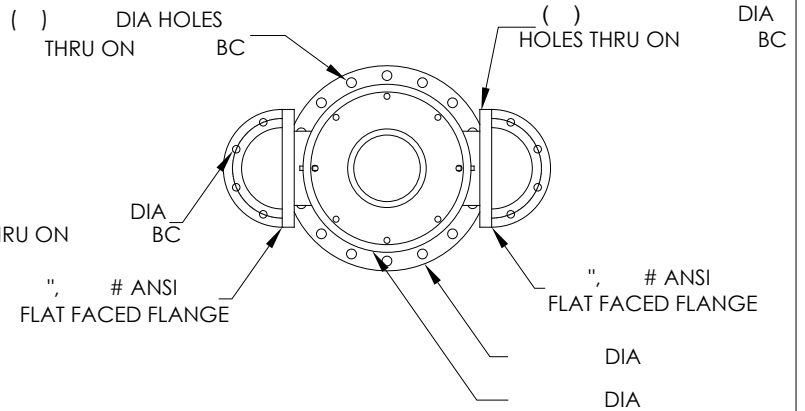
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PROJECT				PREPARED BY	
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RPM	VOLTS	PH	HZ		

TURBINE PUMP

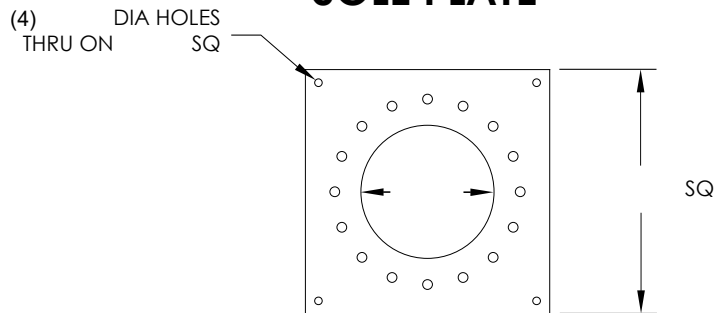
TEE DISCHARGE HEAD, THREADED COLUMN, OPEN LINESHAFT



DISCHARGE HEAD



SOLE PLATE



SHAFT AND COLUMN

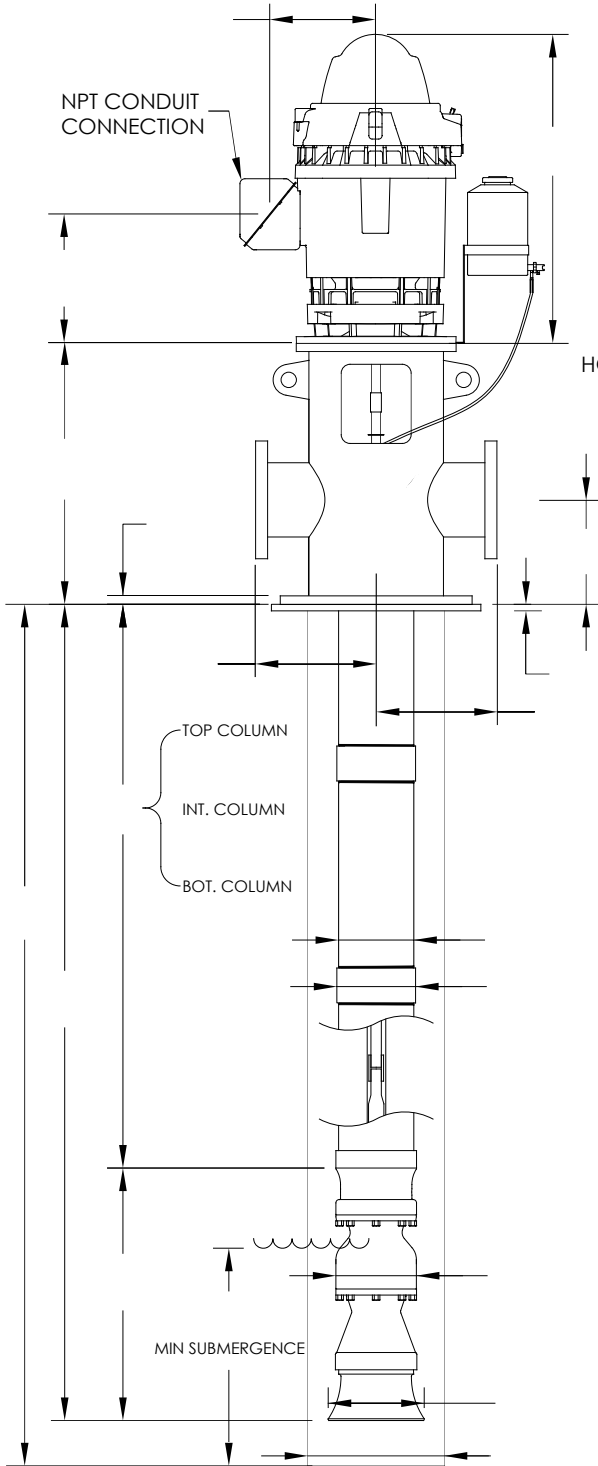
HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
COLUMN WALL	
BARREL WALL	

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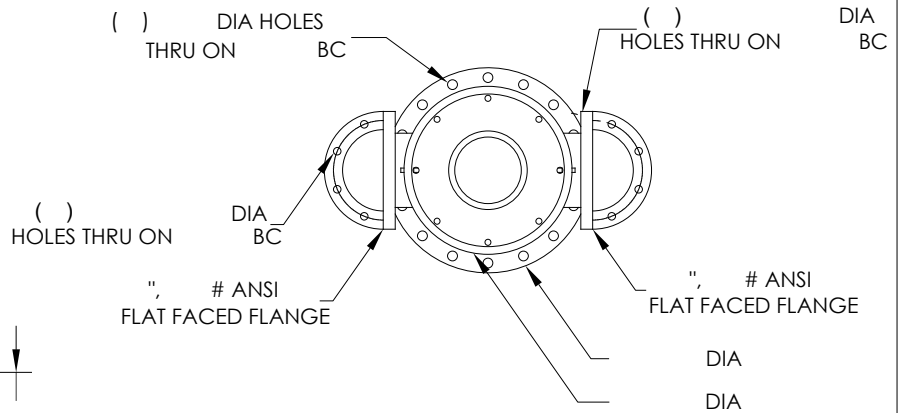
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PROJECT				PREPARED BY	
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RPM	VOLTS	PH	HZ		

TURBINE PUMP

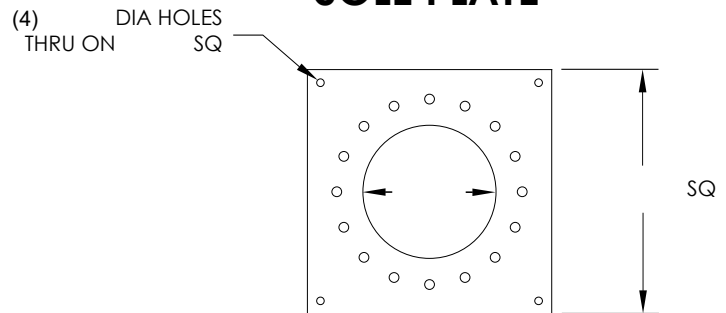
TEE DISCHARGE HEAD, THREADED COLUMN, ENCLOSED LINESHAFT



DISCHARGE HEAD



SOLE PLATE



SHAFT AND COLUMN

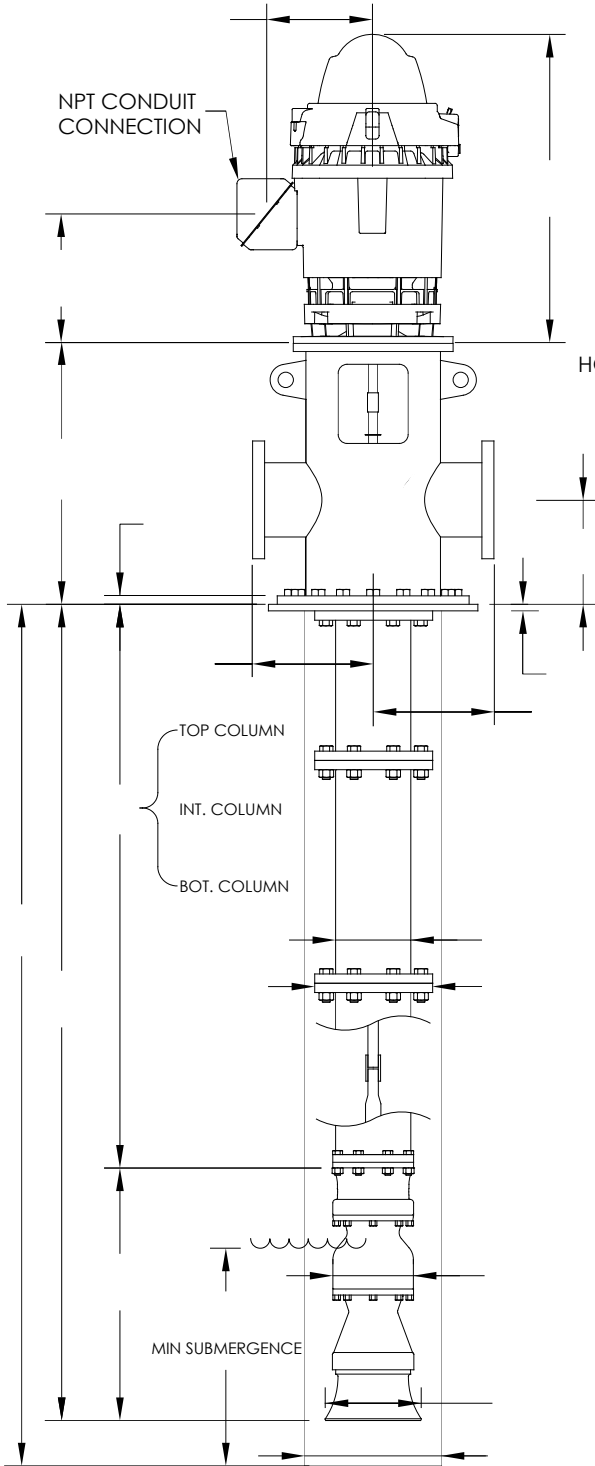
HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
OIL TUBE Ø	
COLUMN WALL	
BARREL WALL	

NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED.
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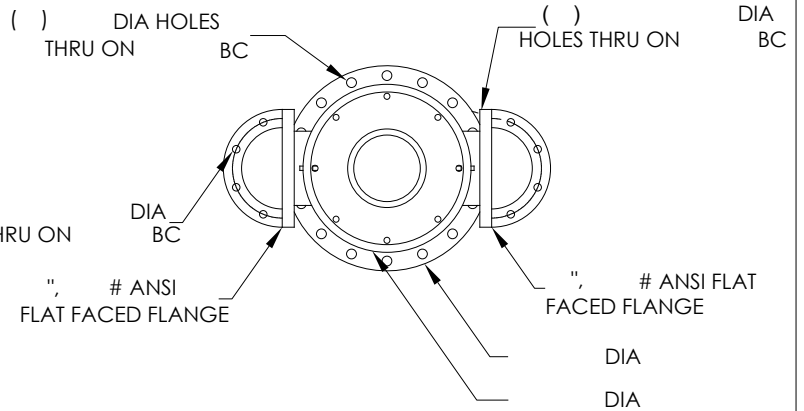
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PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		

TURBINE PUMP

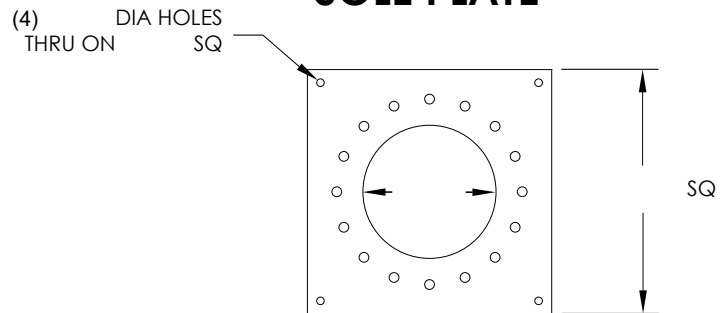
TEE DISCHARGE HEAD, FLANGED COLUMN, OPEN LINESHAFT



DISCHARGE HEAD



SOLE PLATE



SHAFT AND COLUMN

HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
COLUMN WALL	
BARREL WALL	

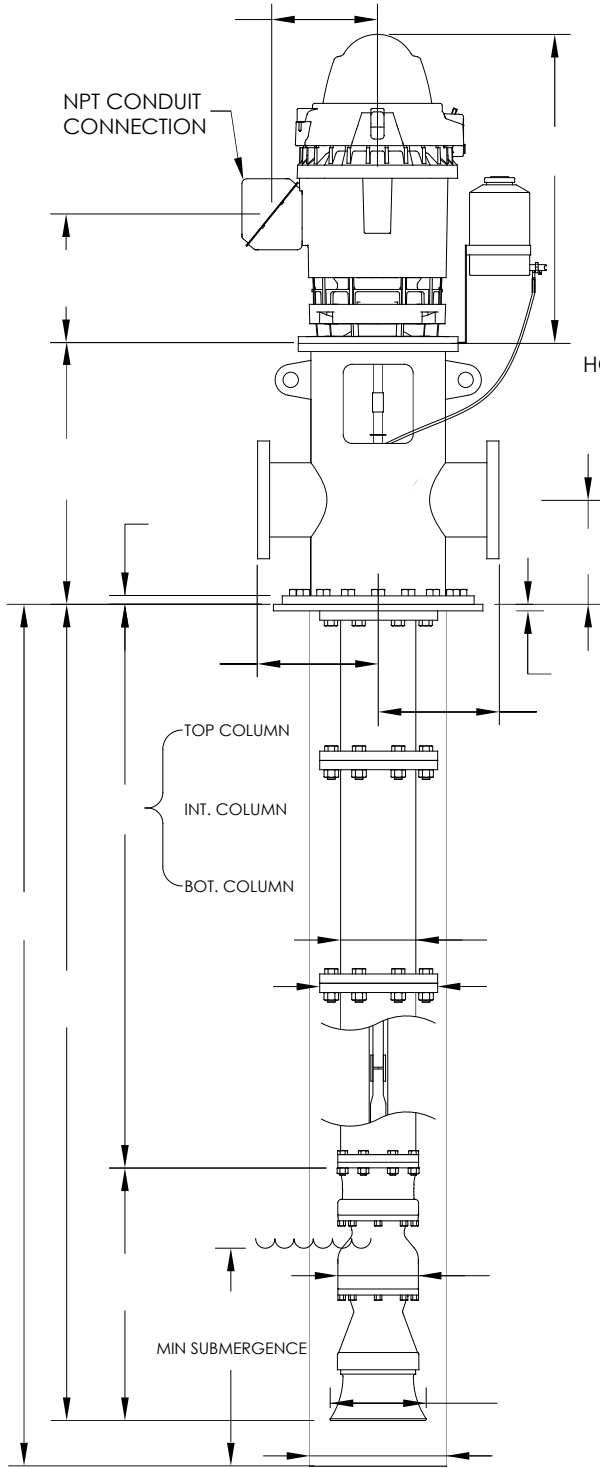
NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

CUSTOMER				DATE	PO
PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		

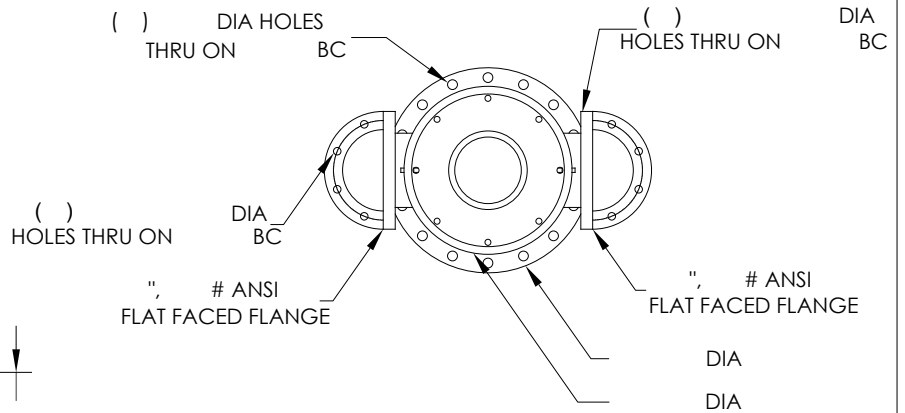


TURBINE PUMP

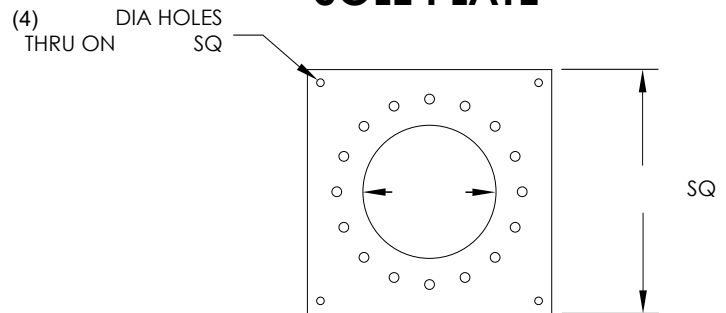
TEE DISCHARGE HEAD, FLANGED COLUMN, ENCLOSED LINESHAFT



DISCHARGE HEAD



SOLE PLATE



SHAFT AND COLUMN

HEADSHAFT Ø	
LINESHAFT Ø	
BOWLSHAFT Ø	
OIL TUBE Ø	
COLUMN WALL	
BARREL WALL	

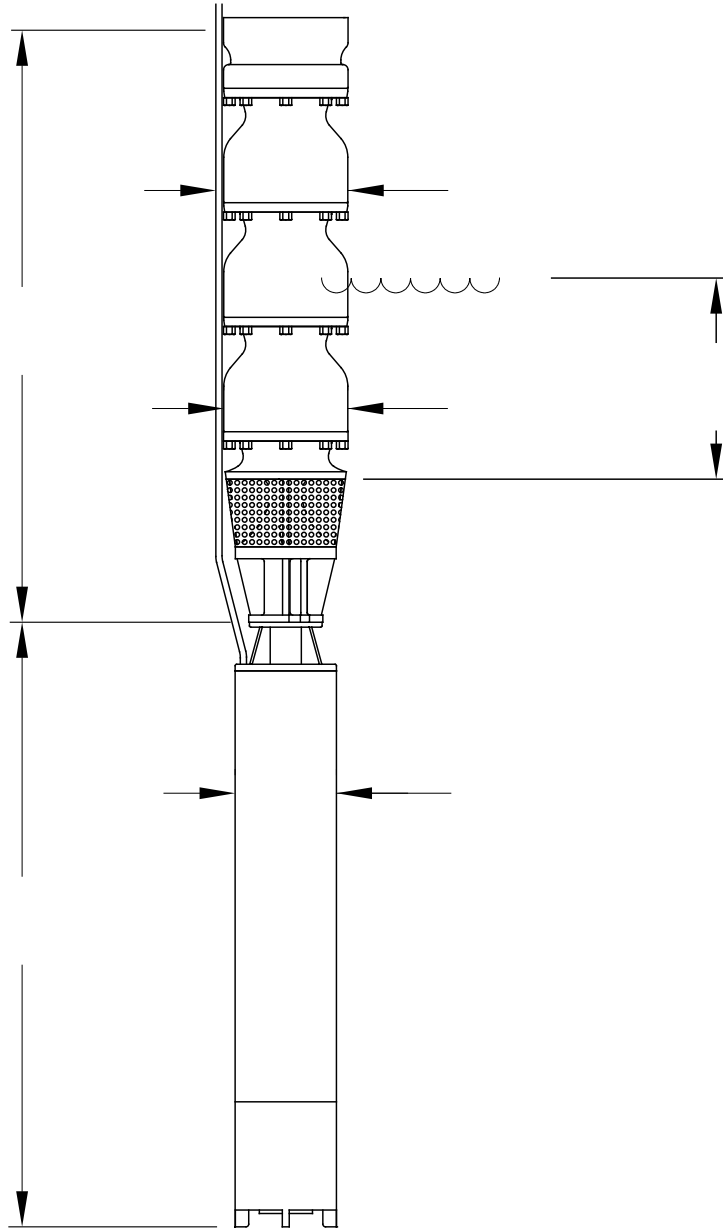
NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED.
DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

CUSTOMER				DATE	PO
PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		



SUBMERSIBLE TURBINE PUMP

SUBMERSIBLE MOTOR AND BOWL ASSEMBLY



NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED.
DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

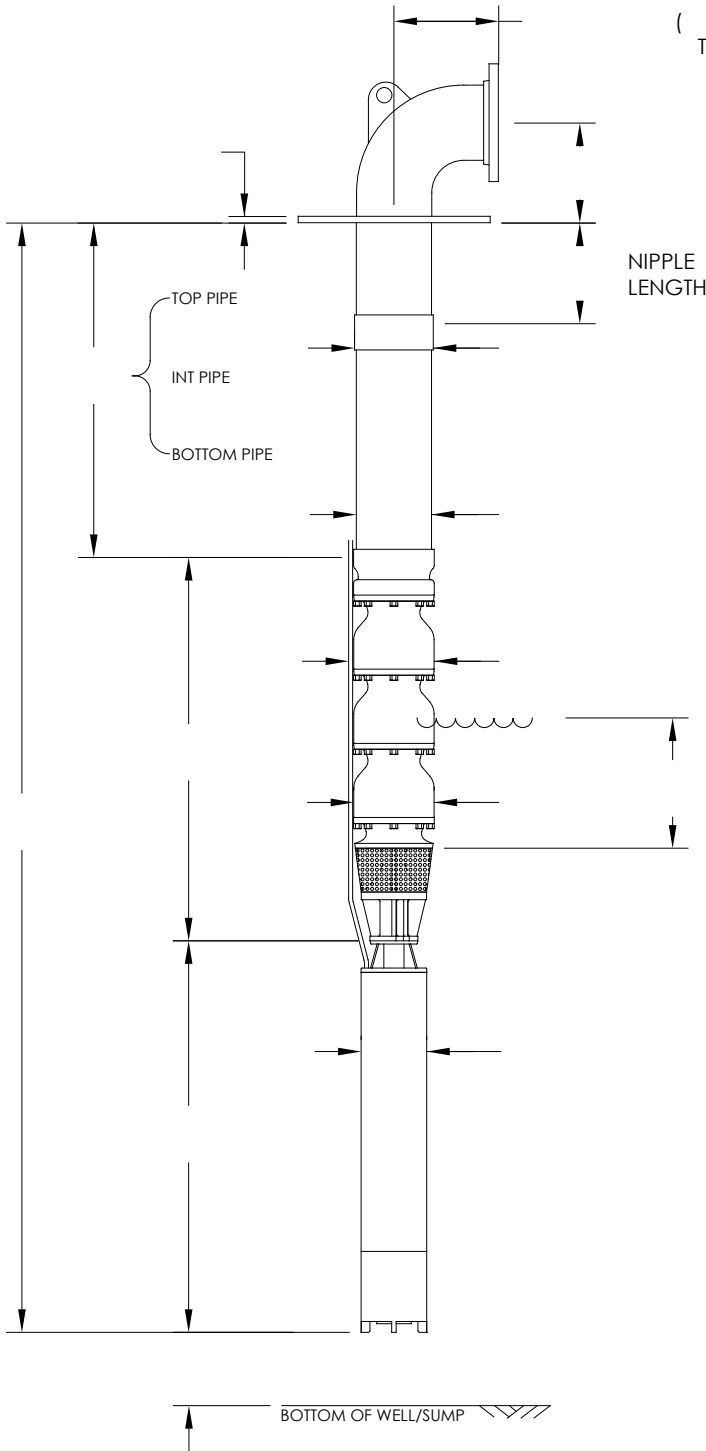
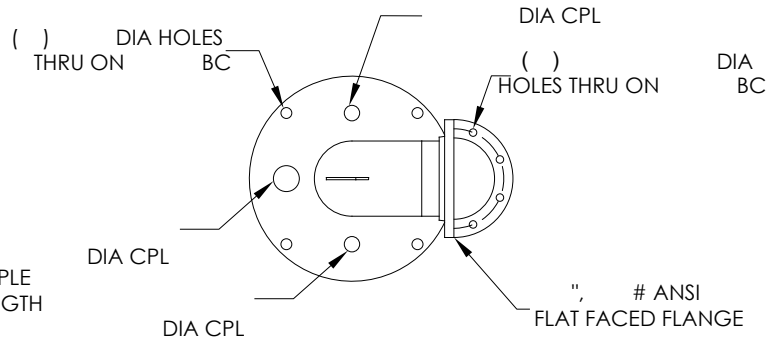
CUSTOMER				DATE	PO
PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG		HP	NEMA		
RPM	VOLTS	PH	HZ		



SUBMERSIBLE TURBINE PUMP

FABRICATED DISCHARGE ELBOW, THREADED DISCHARGE PIPE, FLANGED DISCHARGE

DISCHARGE ELBOW



SHAFT AND DISCHARGE PIPE

BOWLSHAFT Ø	
PIPE WALL	

NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION OR INSTALLATION UNLESS CERTIFIED. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO VARIOUS TOLERANCES.

CUSTOMER				DATE	PO
PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG		HP	NEMA		
RPM	VOLTS	PH	HZ		



**RESERVED
FOR
PARTS LISTING**