



Serial No: FR4702276

Trim 5.0625in

**SUBMITTAL**

Quote ID: 9001-190823-042:0:1 QTY: 1  
VIT-BAT 7CHC, 6 Stages

PERFORMANCE ON DESIGN CURVE AT 1770 RPM

	Shut Off	Design [2]	Run Out [5]		
Flow (USGPM)	0.0	250.0	0.0	Best Efficiency	81.50 % at 220.0 USgpm
TDH-Bowl (ft)	195.0	154.0	0.0	Design Flow % BEP	113.64 %
TDH-Disch Flange (ft)	194.2	154.1	0.0	Pump Efficiency	80.14 %
Bowl Efficiency (%)	-	80.60	-	Overall Efficiency	0.00 %
Guaranteed Bowl Efficiency (%)	-	76.57	-	NOL Power	13.6 Hp at 339.0 USgpm
Power (Hp)	-	12.1	-	Guaranteed NOL Power	14.7 Hp at 339.0 USgpm
Guaranteed Power (Hp)	-	13.1	-	Max Power (NOL) at Max Trim	15.0 Hp at 339.0 USgpm
NPSHr (ft) [1]	-	6.7	-	Guaranteed Max Power (NOL) at Max Trim	16.2 Hp at 339.0 USgpm
NPSH Margin (ft) [1]	-	20.6	-	Specified NPSH Ratio	1.1
Hydraulic Thrust(lb)	682.5	539.0	0.0	Thrust Load Power Loss	0.07587 Hp
Thrust (lb)	733.1	583.8	0.0	Total Flow Derate Factor	1.00
Pressure-Bowl (psi)	84.4	66.7	0.0	Total Head Derate Factor	1.00
Pressure-Disch Flange (psi)	84.1	66.7	0.0	Total Efficiency Derate Factor	1.00
Min Submergence (Inch) [3]	-	19.78	-	Actual Submergence	0.00 in
Friction Loss (ft) [4]	-	-0.08	0.00	Shaft Friction Power Loss	-0.02 Hp
Lineshaft Elongation (Inch)	-0.00142	-0.00113	-	Min Flow (MCSF)	55.0 USgpm
Column Elongation (Inch)	-0.00020	-0.00020	-	kWh per 1000 gal	0.00000
Lateral (Inch)	0.12877	0.12907	-	Impeller Running Clearance	0.13 in

[1] at 1st impeller eye [2] rated values [3] from bottom of pump [4] from bowl to disch flange [5] based on user entered TDH

OPERATING CONDITIONS

Specified Flow	250.00 USgpm
Specified TDH	150.00 ft
Rated Speed	1770 RPM
Atmospheric Pressure	12.46 psi
NPSHa at 1st Impeller	27.3 ft
NPSHa at Grade	28.7 ft

FLUID CHARACTERISTICS

Fluid	Water
Fluid Temperature	68.0 °F
Specific Gravity	1.0000
Viscosity	1.0017 cP
Vapor Pressure	0.3393 psi
Density	62 lbs/ft³

MATERIALS & DIMENSIONS

Bowl Data

Bowl Material	Cast Iron with Glass Enamel
Bowl Material Derate Factor	1.00
Impeller Material	316SS
Impeller Matl Derate Factor	1.00
Bowl Shaft Material	416SS
Impeller Attachment	Taper Lock
Taper Lock Material	416SS
Discharge Bowl Material	Cast Iron
Suction Type	Bell
Suction Material	Cast Iron
Bowl Bolting Material	316SS
Sand Collar	304SS
Pipe Plug	Iron
Suction Bearing	Bronze
Discharge Bowl Bearing	Bronze
Intermediate Bowl Bearing	Bronze
Strainer Type	Clip-On Bell Type Strainer
Strainer Material	Galvanized Steel
Tube Adapter Bearing Material	Not Included

Bowl Data

Impeller Trim	5.06 in
Max Impeller Trim	5.25 in
Thrust K-Factor	3.50 Lb/Ft
Bowl Pressure Limit	350 psi
Available Lateral	0.50 in
Bowl Assembly Length (BL)	49.09 in
Disch Bowl Length OLS (O1)	3.75 in
Disch Bowl Length ELS (L2)	4.38 in
Bowl Shaft Diameter	1 3/16" [30.2 mm]
Impeller Balance	Manufacturer's Standard
Impeller Design	Enclosed
Bowl Wear Ring	Not Included
Impeller Wear Ring	Not Included
Suction Pipe Diameter	No Suction Pipe
Bowl Diameter (D)	7.50 in
Bowl Length (L3)	6.38 in
Bowl Flange Diameter (A)	2.81 in
Bowl Flange Thickness (E)	5.30 in
Strainer Length (SL)	1.55 in
Floor Clearance (X)	5.75 in

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<b>Bowl Data</b>	
Min Column Diameter	4 in
Max Column Diameter	6 in
Max Bowl Shaft Diameter	1.19 in

<b>Bowl Data</b>	
Bowl Shaft Length	53.90 in
Bowl Shaft Power Limit	128.13 Hp

**Bowl Specials**

<b>Motor Data</b>	
Driver Type	Vertical Hollow Shaft Motor
Motor Manufacturer	
Motor Speed	1770 RPM
Phase / Frequency	
Enclosure	
Motor Frame	
Inverter Duty	
Steady Bushing	
Motor Coupling	
Insulation Class	
Service Factor	

<b>Motor Data</b>	
Motor Provided By	Customer
Motor Mounted By	Customer
HP Rating	15 Hp
Speed [Poles]	1800 rpm [4 pole]
BD	10.0 in
Mfg Catalog Number	
Motor Part Number	
Driver Size Criteria	Max power on design curve (NOL)
Allow Service Factor	No

**Motor Specials**

<b>Coating Data</b>	
Bowl OD	Goulds Water Technology Standard Blue Enamel
Column ID	Not Included
Column OD	Goulds Water Technology Standard Blue Enamel
Column Bearing Retainer	Not Included
Can ID	Not Included

<b>Coating Data</b>	
Can OD	Not Included
Head ID	Not Included
Head OD	Goulds Water Technology Standard Blue Enamel
Enclosing Tube OD	Not Included
Steel Sub Base	Not Included

**Testing Data**

**Miscellaneous Specials**

<b>Weight Data</b>	
Total Bowl Weight	201 lbs
Unit Bowl Weight	50 lbs / 28 lbs
Strainer Weight	11 lbs

<b>Weight Data</b>	
Total Weight	201 lbs
Total Rotating Weight	23 lbs

**INFO, WARNING & ERROR MESSAGES**

Our offer does not include specific review and incorporation of any Statutory or Regulatory Requirements and the offer is limited to the requirements of the design specifications. Should any Statutory or Regulatory requirements need to be reviewed and incorporated then the Customer is responsible to identify those and provide copies for review and revision of our offer.

Our quotation is offered in accordance with our comments and exceptions identified in our proposal and governed by our standard terms and conditions of sale - Xylem Americas attached hereafter.

For units requiring performance test, all performance tests will be conducted per ANSI/HI 14.6 standards unless otherwise noted in the selection software submittal documents. Test results meeting with grade 2B tolerances for pumps with a rated shaft power of 134HP or less and grade 1B for greater than 134HP will be considered passing.

Customer is responsible for verifying that the recommendations made and the materials selected are satisfactory for the Customer's intended environment and Customer's use of the selected pump. Customer is responsible

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for determining the suitability of Xylem recommendations for all operating conditions within Customer's and/or End User's control. Xylem disclaims all warranties, express or implied warranties, including, but not limited to, warranties of merchantability and fitness for a particular purpose and all express warranties other than the limited express warranty set forth in the attached standard terms and conditions of sale – Xylem Americas attached hereafter.

Xylem does not guarantee any pump intake configuration. The hydraulic and structural adequacies of these structures are the sole responsibility of the Customer or his representatives. Further, Xylem accepts no liability arising out of unsatisfactory pump intake field operating conditions. The Customer or his representatives are referred to the Hydraulic Institute Standards for recommendations on pump intake design. To optimize the hydraulic design of a field pump intake configuration, the Customer should strongly consider performing a detailed scale model pump intake study. However, the adequacies of these recommendations are the sole responsibility of the Customer.

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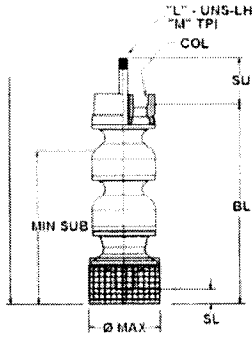


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**OUTLINE DRAWING**

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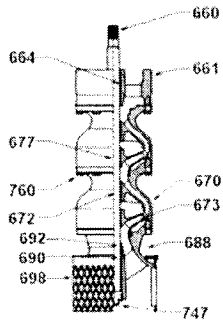
DIMENSIONS	
G [Mounting Flange Dia]	16.00 in
BD Head [Discharge Head Base Dia]	12.00 in
HH [Head Height]	17.00 in
R [Hanger Flange OD]	5.00 in
Column Length (COL)	-49.09 in
COL [Column Diameter]	4.00 in
MIN SUB [Minimum Submergence]	19.78 in
MAX [Max Assembly OD]	7.50 in
BL [Bowl Assembly Length]	49.09 in
L [Shaft Turndown Size]	1.00 in
M [Shaft Thread Pitch]	12.00 in
SU [Shaft Stickup]	8.00 in
SL [Suction Length]	1.55 in

PUMP DATA	
Column Diameter	4" [102mm]
Lineshaft Diameter	1 in [25.4 mm]
Specified Flow	250.00 USgpm
Specified TDH	150.00 ft
Motor Manufacturer	Vertical Hollow Shaft Motor
Driver Type	Vertical Hollow Shaft Motor
Motor Speed	1770 RPM
Phase / Frequency	

WEIGHTS	
Total Bowl Weight	201 lbs
Unit Bowl Weight	50 lbs / 28 lbs
Strainer Weight	11 lbs
Total Weight	201 lbs
Total Rotating Weight	23 lbs

NOTES	
1	Total Pump Length ± 1.0 inch.
2	Tolerance on all dimensions is .12 or ± .12 inch per 5 ft, whichever is greater.
3	All dimensions shown are in inches unless otherwise specified.
4	Drawing not to scale
5	1/2" NPT – Gauge Conn (plugged)
6	Driver may be rotated at 90° intervals about vertical centerline for details refer to driver dimension drawing.
7	Refer to product IOM for impeller setting requirements.
8	This assembly has been designed so that its natural frequency responses avoid the specific operating speeds by an adequate safety margin. The design has assumed the foundation to be rigid.

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**BILL OF MATERIALS**

ITEM	PART NAME	CODE	MATERIAL	ASTM#
<b>Bowl Assembly</b>				
660	Shaft - Bowl	2227	SST 416	A582 S41600
661	Discharge Bowl	1003	Cast Iron CI30	A48 CLASS 30B
664	Bearing - Discharge Bowl	1618	Bronze Bismuth	B584 Modified
668	Bearing Tube Adapt	N/A	Not Included	N/A
670	Bowl - Intermediate	6911	Cast Iron CI30 Enamel	A48
672	Bearing - Intermediate Bowl	1618	Bronze Bismuth	B584 Modified
673	Impeller	1203	SST 316	A744M
677	Taper Lock-Impeller	2217	SST 416	A582M
680	Wear Ring-Bowl	N/A	Not Included	N/A
681	Wear Ring - Impeller	NA	Not Included	NA
688	Suction	1003	Cast Iron CI30	A48 CLASS 30B
690	Bearing - Suction	1109	Bronze C90300 "G" Mod	B584
692	Sandcollar	1205	SST 304	A744M
698	Strainer	6952	Carbon Steel Galv	A123M
747	Pipe Plug	1046	Malleable Iron	A197
760	Capscrew-Hex	2229	SST 316	A276

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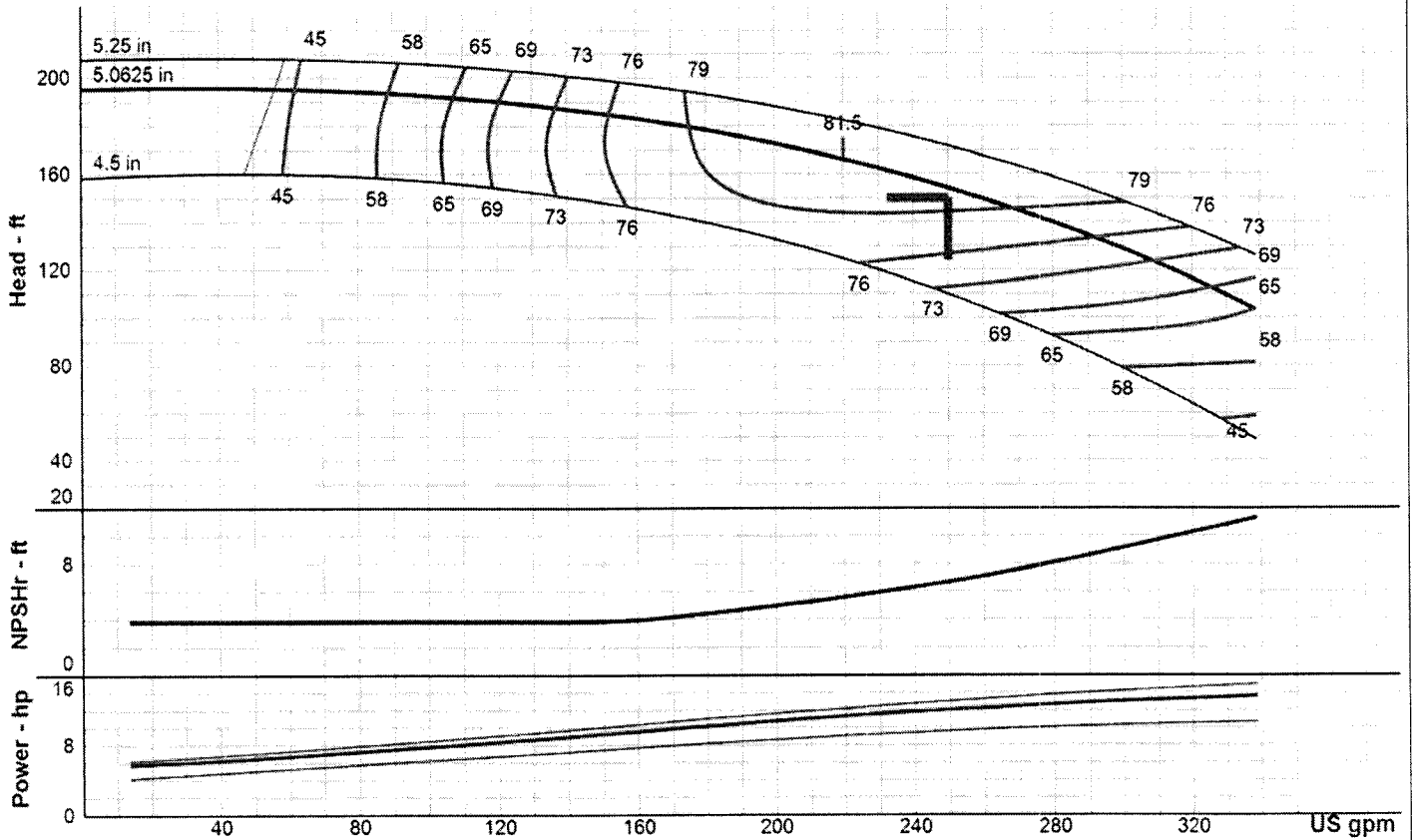


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PERFORMANCE CURVE

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Curve & hydraulic data presented is nominal performance based on ANSI/HI 14.6 acceptance grade 2B. Design values are guaranteed within the following tolerances: Flow  $\pm$  8%, Head  $\pm$  5%, and optionally either Power + 8% or Efficiency - 5% at manufacturer's discretion.

CURVE DATA

Specified Flow	250.00 USgpm	Shut Off TDH (Bowl)	195.0 ft	Max Power (NOL) Flow at Max Trim	339.0 USgpm
Specified TDH	150.00 ft	Shut Off TDH (Disch Flange)	194.3 ft	Recommended Power	15.00 Hp
Rated Speed	1770 RPM	Shut Off Pressure (Bowl)	84.4 psi	Allow Service Factor	No
Atmospheric Pressure	12.46 psi	Shut Off Pressure (Disch Flange)	84.1 psi	kWh per 1000 gal	0.00000
Elevation	4500 ft	Bowl Efficiency at Design	80.60 %	NPSHr at Design	6.7 ft
NPSHa at Grade	28.7 ft	Guaranteed Bowl Efficiency	76.57 %	NPSH Margin at Design	20.6 ft
NPSHa at 1st Impeller	27.3 ft	Best Efficiency	81.50 %	Min Submergence at Design	19.78 in
Fluid	Water	BEP Flow	220.0 USgpm	Thrust at Design	583.8 lb
Fluid Temperature	68.0 °F	Design Flow % BEP	113.64 %	Thrust at Shut Off	733.1 lb
Specific Gravity	1.0000	Pump Efficiency	80.14 %	Bowl Material	Cast Iron with Glass Enamel
Viscosity	1.0017 cP	Friction Loss at Design	-0.08 ft	Bowl Material Derate Factor	1.00
Vapor Pressure	0.3393 psi	Power at Design	12.1 Hp	Impeller Material	316SS
Density	62 lbs/ft <sup>3</sup>	Guaranteed Power	13.1 Hp	Impeller Matl Derate Factor	1.00
Design Flow	250.0 USgpm	NOL Power	13.6 Hp	Total Flow Derate Factor	1.00
Min Flow (MCSF)	55.0 USgpm	Guaranteed NOL Power	14.7 Hp	Total Head Derate Factor	1.00
Design TDH (Bowl)	154.0 ft	Max Power (NOL) Flow	339.0 USgpm	Total Efficiency Derate Factor	1.00
Design TDH (Disch Flange)	154.1 ft	Max Power (NOL) at Max Trim	15.0 Hp	Curve ID	E6207WAPC1
Design Pressure (Bowl)	66.7 psi	Guaranteed Max Power (NOL) at Max Trim	16.2 Hp		
Design Pressure (Disch Flange)	66.7 psi				

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