

Item	Product Code/Number	Description	Pricing Adjustment to Base Bid
1	PP44S10L71-D2.9-GL2 CP900	Credit - Downgrade to Trailer Mounted, Engine Driven, 4" Pump (44S10) Pump Specifications - Pump Model: 44S10 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 10.00" (FULL) - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Platform: GL2 75 Gal - Package Type: Open - DOT Trailer w/ Electric Brakes - Engine Make/Model/HP/Tier: Deutz / D2.9L4A / 36 HP / FT4 - Control Panel: LOFA CP900-AF (Standard) - Block Heater: No (Standard) - Fan Type: Blower (Standard) - Transmission: No - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	-\$4,490.00
2	PP66S14L71-4045HFC06 UP3B CP900	Upgrade to Trailer Mounted, Engine Driven, Larger Capacity 6" Pump (66S14) Pump Specifications - Pump Model: 66S14 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 14.00" (FULL) - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Platform: UP3B 135 Gal - Package Type: Open - DOT Trailer w/ Electric Brakes - Engine Make/Model/HP/Tier: John Deere / 4045HFC06 / 142 HP / FT4 - Control Panel: LOFA CP900-AF (Standard) - Block Heater: No (Standard) - Fan Type: Blower (Standard) - Transmission: No - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	\$39,770.00

Item	Product Code/Number	Description	Pricing Adjustment to Base Bid
3	PP88S12L71-TCD3.6 UP3B CP900	Upgrade to Trailer Mounted, Engine Driven, 8" Pump (88S12) Pump Specifications - Pump Model: 88S12 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 12.25" (FULL) - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Platform: UP3B 135 Gal - Package Type: Open - DOT Trailer w/ Electric Brakes - Engine Make/Model/HP/Tier: Deutz / TCD3.6 / 99 HP / FT4 - Control Panel: LOFA CP900-AF (Standard) - Block Heater: No (Standard) - Fan Type: Blower (Standard) - Transmission: No - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	\$35,810.00
4	PP108S17L71-6090CI550 GL4 CP900	Upgrade to Trailer Mounted, Engine Driven, 10" Pump (10S17) Pump Specifications - Pump Model: 108S17 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 17.50" (FULL) - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Platform: GL4 250 Gal - Package Type: Open - DOT Trailer w/ Electric Brakes - Engine Make/Model/HP/Tier: John Deere / 6090CI550 / 341 HP / FT4 - Control Panel: LOFA CP900-AF (Standard) - Block Heater: No (Standard) - Fan Type: Blower (Standard) - Transmission: No - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	\$118,710.00

Item	Product Code/Number	Description	Pricing Adjustment to Base Bid
5	PPTP128S20-6136CI440-GL4 CP900	Upgrade to Trailer Mounted, Engine Driven, 12" Pump (128S12) Pump Specifications - Pump Model: 128S20 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 19.25" - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Platform: GL4 250 Gal - Package Type: Open - DOT Trailer w/ Electric Brakes - Engine Make/Model/HP/Tier: John Deere / 6136CI440A / 598 HP / FT4 - Control Panel: LOFA CP900-AF (Standard) - Block Heater: No (Standard) - Fan Type: Blower (Standard) - Transmission: No - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	\$163,720.00
6	SAPP44S10L71-D2.9-GL2 CP900	Upgrade to sound attenuated enclosure for Trailer Mounted, Engine Driven, 4" Pump Option (Option 1 must also be selected)	\$18,760.00
7	SAPPTP66S12L71-TD2.9-GL2 CP900	Upgrade to sound attenuated enclosure for Trailer Mounted, Engine Driven, 6" Pump Option	\$18,150.00
8	SAPP66S14L71-4045HFC06 UP3B CP900	Upgrade to sound attenuated enclosure for Trailer Mounted, Engine Driven, Larger Capacity 6" Pump Option (Option 2 must also be selected)	\$28,490.00
9	SAPP88S12L71-TCD3.6 UP3B CP900	Upgrade to sound attenuated enclosure for Trailer Mounted, Engine Driven, 8" Pump Option (Option 3 must also be selected)	\$28,490.00

Item	Product Code/Number	Description	Pricing Adjustment to Base Bid
10	44S10-40-4-BASE_SKID	Credit - Downgrade from trailer mounted, engine driven to skid mounted, electric motor for 4" Pump Option (44S10) Pump Specifications - Pump Model: 44S10 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 10.00" (FULL) - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Base Type: EPAK – Base Package - Motor Mfr / Model No.: Non-Specific ("Z") - - Speed: 60 Hz/4 Pole - 1800 RPM - Frame Size/HP: 324T/40 HP - Volts/Phase/Hz: 230/460/3/60 - Efficiency Type: Premium Efficiency (Standard) - Enclosure Type: TEFC (Standard) - Motor Drive: No Drive - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	-\$28,720.00
11	66S12-60-4-BASE_SKID	Credit - Downgrade from trailer mounted, engine driven to skid mounted, electric motor for 6" Pump Option (66S12) Pump Specifications - Pump Model: 66S12 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 11" - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Base Type: EPAK – Base Package - Motor Mfr / Model No.: Non-Specific ("Z") - - Speed: 60 Hz/4 Pole - 1800 RPM - Frame Size/HP: 404T/60 HP - Volts/Phase/Hz: 230/460/3/60 - Efficiency Type: Premium Efficiency (Standard) - Enclosure Type: TEFC (Standard) - Motor Drive: No Drive - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	-\$25,300.00

Item	Product Code/Number	Description	Pricing Adjustment to Base Bid
12	66S14-125-4-BASE_SKID	Credit - Downgrade from trailer mounted, engine driven to skid mounted, electric motor for Larger Capacity 6" Pump Option (66S14) - Pump Model: 66S14 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 14.00" (FULL) - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Base Type: EPAK – Base Package - Motor Mfr / Model No.: Non-Specific ("Z") - - Speed: 60 Hz/4 Pole - 1800 RPM - Frame Size/HP: 444T/125 HP - Volts/Phase/Hz: 230/460/3/60 - Efficiency Type: Premium Efficiency (Standard) - Enclosure Type: TEFC (Standard) - Motor Drive: No Drive - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	-\$8,400.00
13	88S12-100-4-BASE_SKID	Credit - Downgrade from trailer mounted, engine driven to skid mounted, electric motor for 8" Pump Option (88S12) Pump Specifications - Pump Model: 88S12 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 12.25" (FULL) - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Base Type: EPAK – Base Package - Motor Mfr / Model No.: Non-Specific ("Z") - - Speed: 60 Hz/4 Pole - 1800 RPM - Frame Size/HP: 405T/100 HP - Volts/Phase/Hz: 230/460/3/60 - Efficiency Type: Premium Efficiency (Standard) - Enclosure Type: TEFC (Standard) - Motor Drive: No Drive - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	-\$11,380.00

Item	Product Code/Number	Description	Pricing Adjustment to Base Bid
14	108S17-350-4-BASE_SKID	Upgrade from trailer mounted, engine driven to skid mounted, electric motor for 10" Pump Option (108S17) Pump Specifications - Pump Model: 108S17 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 17.50" (FULL) - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Base Type: EPAK – Base Package - Motor Mfr / Model No.: Non-Specific ("Z") - - Speed: 60 Hz/4 Pole - 1800 RPM - Frame Size/HP: 449T/350 HP - Volts/Phase/Hz: 230/460/3/60 - Efficiency Type: Premium Efficiency (Standard) - Enclosure Type: TEFC (Standard) - Motor Drive: No Drive - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	\$14,740.00
15	128S20-600-4-BASE_SKID	Upgrade from trailer mounted, engine driven to skid mounted, electric motor for 12" Pump Option (128S20) Pump Specifications - Pump Model: 128S20 - Pump Type: Pioneer Prime - Volute discharge orientation: Top Horizontal (TH, Standard) - Vacuum Pump Orientation (PP): No Preference (Standard) - Impeller Trim: 19.25" - Seal Type: Rundry Mech. Seal, SiC/WC (Standard) - Bearing Frame: SAE - No Preference (Std for Diesel Pkgs) - No Preference (Std for Diesel Packages) Drive Coupling - Materials of Construction: 71 - "Ductile Iron w/ CA6Nm Impeller" - Paint Color: Pioneer Green (Standard) Package Specifications - Base Type: EPAK – Base Package - Motor Mfr / Model No.: Non-Specific ("Z") - - Speed: 60 Hz/4 Pole - 1800 RPM - Frame Size/HP: 586/7T/600HP - Volts/Phase/Hz: 230/460/3/60 - Efficiency Type: Premium Efficiency (Standard) - Enclosure Type: TEFC (Standard) - Motor Drive: No Drive - See attached specification sheet for complete details - Entire package completely assembled, primed, and painted prior to shipment	\$48,690.00
16	GL2 PLATFORM	Credit- Downgrade to skid base (Delete Trailer) for 4" Pump Option (Option 1 must also be selected)	-\$3,470.00

Item	Product Code/Number	Description	Pricing Adjustment to Base Bid
17	GL2 PLATFORM	Credit- Downgrade to skid base (Delete Trailer) for 6" Pump Option	-\$3,470.00
18	UP3B PLATFORM	Credit- Downgrade to skid base (Delete Trailer) for Larger Capacity 6" Pump Option (Option 2 must also be selected)	-\$5,540.00
19	UP3B PLATFORM	Credit- Downgrade to skid base (Delete Trailer) for 8" Pump Option (Option 3 must also be selected)	-\$5,540.00
20	GL4 PLATFORM	Credit- Downgrade to skid base (Delete Trailer) for 10" Pump Option (Option 4 must also be selected)	-\$10,710.00
21	GL4 PLATFORM	Credit- Downgrade to skid base (Delete Trailer) for 12" Pump Option (Option 5 must also be selected)	-\$10,710.00
22	V050-PPI-01	Add VFD to skid mounted, electric motor 4" Pump Option (Option 10 must also be selected)	\$16,700.00
23	V075-PPI-01	Add VFD to skid mounted, electric motor 6" Pump Option (Option 11 must also be selected)	\$19,020.00
24	V150-PPI-01	Add VFD to skid mounted, electric motor 6" Larger Capacity Pump Option (Option 12 must also be selected)	\$25,360.00
25	V100-PPI-01	Add VFD to skid mounted, electric motor 8" Pump Option (Option 13 must also be selected)	\$19,110.00
26	V350-PPI-01	Add VFD to skid mounted, electric motor 10" Pump Option (Option 14 must also be selected)	\$54,610.00
27	Add - BC	Optional Equipment – 12-Volt Trickle Battery Charger	\$200.00
28	Add - HR	Optional Equipment – Hose Rack (4", 6", 8" Packages Only)	\$2,250.00
29	N/A	Included – 3-Watt Solar Battery Charger	\$0.00
30	N/A	Included – Stainless Steel Hardware	\$0.00
31	N/A	Included – Stainless Steel Muffler	\$0.00
32	N/A	Included – Brakes	\$0.00
33	N/A	Included - 2-Year Warranty	\$0.00

Pioneer Prime Diesel-Driven Trailer Package

PP44S10L71-D2.9L4

44S10-PPI-01-D

PUMP SPECIFICATIONS

Size	4" x 4" (100 x 100 mm)
Impeller Diameter	10" (254 mm)
Max Flow	1,520 gpm (345 m ³ /h)
Max Head	155 feet (47 meters)
Solids Size	3" (76 mm)
Max. Operating Temp.	200 °F (93 °C)
Max. Operating Press.	260 psi (1800 kPa)

ENGINE SPECIFICATIONS

FT4 Engine Type	Deutz D2.9L, 4-Cylinder Diesel
Displacement	177 cu. in. (2.9 l)
Fuel Consumption	2.07 gph (7.83 l/h) @ 1800 rpm
Continuous HP	36 HP (27 kW) @ 1800 rpm
Peak Intermittent HP Rating	49 HP (36.5 kW)
FT4 Specifics (Def or No Def, DOC, SCR, etc.)	DOC
Instrument Panel	Oil pressure gauge, voltmeter, hourmeter, tachometer

PIONEER PRIME PRIMING SYSTEM

Priming System	Mechanically driven diaphragm-style vacuum pump
Air Removal Cap.	50 cfm (.02 cms)
Priming Chamber	Positive sealing air separation w/stainless steel components
Discharge Check Valve	Swing style; ductile iron w/nitrile disc
Run Dry System	Oil-lubricated mech. seal allows pump to run completely dry without damage



FEATURES AND BENEFITS

- Indefinite run-dry capability
- Extreme flow technology
- Environmentally safe priming system: Pioneer Prime
- Auto-start controls

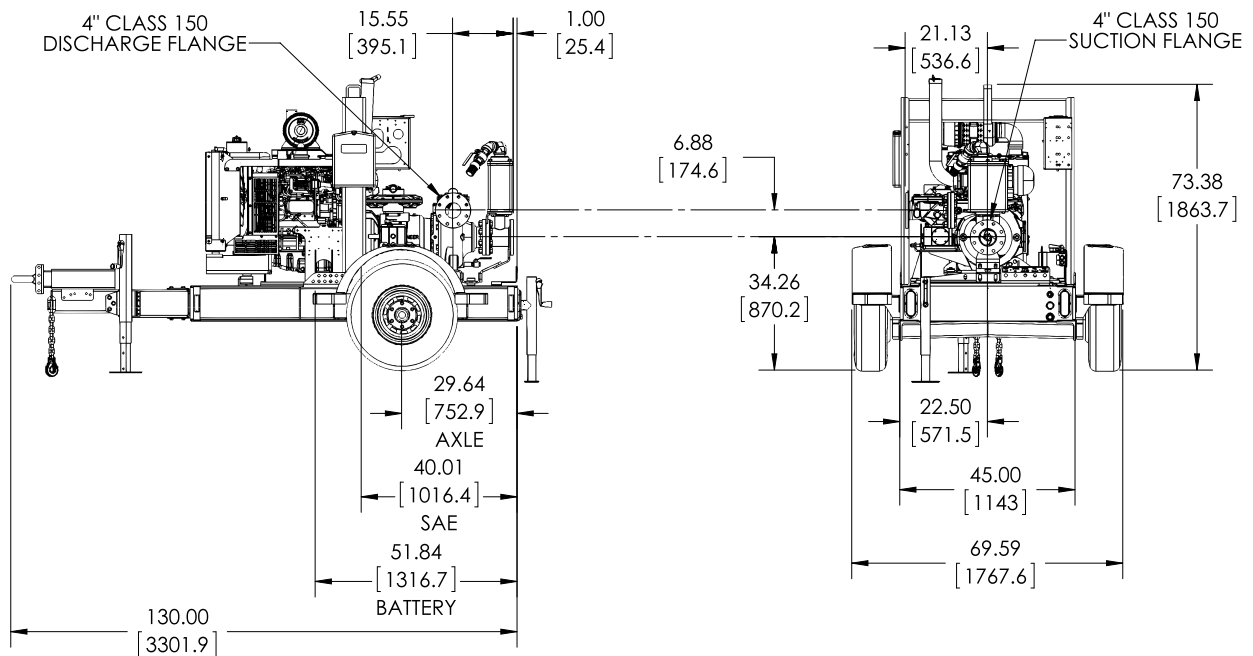
PACKAGE SPECIFICATIONS

Fuel Capacity	75 gal (284 L)
Control Panel	LOFA CP900
Operating Speed (Min. / Max.)	1,000 / 2,200 rpm
Weight (Dry / Wet)	3,000 lbs / 3,533 lbs
Instrument Compatibility	High/low level floats, transducers
Trailer Brakes	Electric

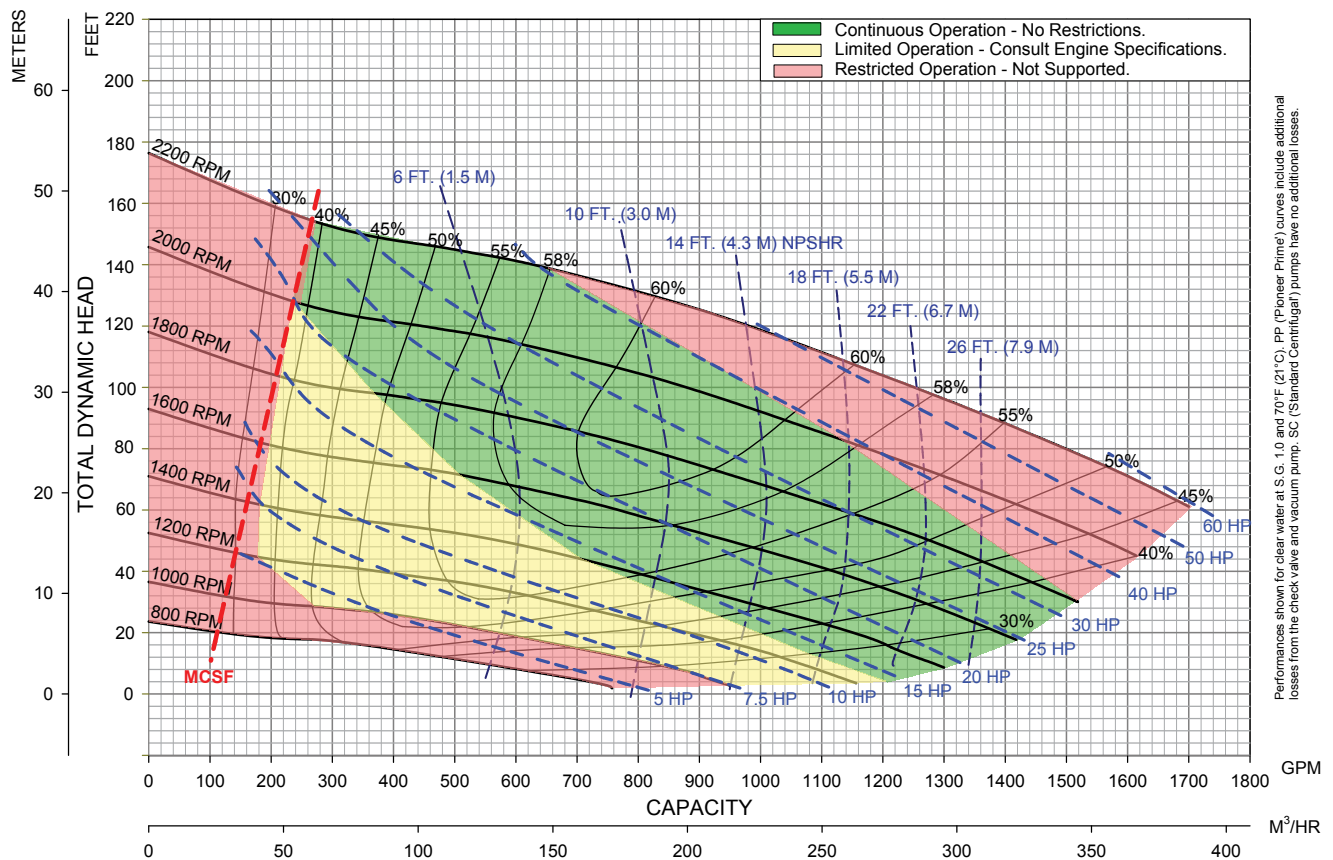
MATERIALS OF CONSTRUCTION

Impeller	CA6NM Stainless Steel
Shaft	17-4 PH Stainless Steel
Wear Ring	ASTM A48 Class 40 Gray Iron
Suction Cover	Ductile Iron ASTM A536 65-45-12
Volute	Ductile Iron ASTM A536 65-45-12
Brac-Plate/Bracket	Ductile Iron ASTM A536 65-45-12
Mechanical Seal	Silicon Carbide rotating and Tungsten Carbide stationary

MECHANICAL DIMENSIONS



PERFORMANCE CURVE



Pioneer Prime Sound Attenuated Diesel-Driven Centrifugal Pump Trailer Package

SAPP44S10L71-D2.9L4

44S10-PPI-02-D

PUMP SPECIFICATIONS

Size	4" x 4" (100 x 100 mm)
Impeller Diameter	10" (254 mm)
Max Flow	1,520 gpm (345 m ³ /h)
Max Head	155 feet (47 meters)
Solids Size	3" (76 mm)
Max. Operating Temp.	200 °F (93 °C)
Max. Operating Press.	260 psi (1,800 kPa)

ENGINE SPECIFICATIONS

FT4 Engine Type	Deutz D2.9L, 4-Cylinder Diesel
Displacement	177 cu. in. (2.9 l)
Fuel Consumption	2.07 gph (7.83 l/h) @ 1,800 rpm
Continuous HP	36 HP (27 kW) @ 1,800 rpm
Peak Intermittent HP Rating	49 HP (36.5 kW)
FT4 Specifics (Def or No Def, DOC, SCR, etc.)	DOC
Instrument Panel	Oil pressure gauge, voltmeter, hourmeter, tachometer

PIONEER PRIME PRIMING SYSTEM

Priming System	Mechanically driven diaphragm-style vacuum pump
Air Removal Cap.	50 cfm (.02 cms)
Priming Chamber	Positive sealing air separation w/stainless steel components
Discharge Check Valve	Swing style; ductile iron w/nitrile disc
Run Dry System	Oil-lubricated mech. seal allows pump to run completely dry without damage

FEATURES AND BENEFITS

- Indefinite run-dry capability
- Extreme flow technology
- Environmentally safe priming system: Pioneer Prime
- Auto-start controls

PACKAGE SPECIFICATIONS

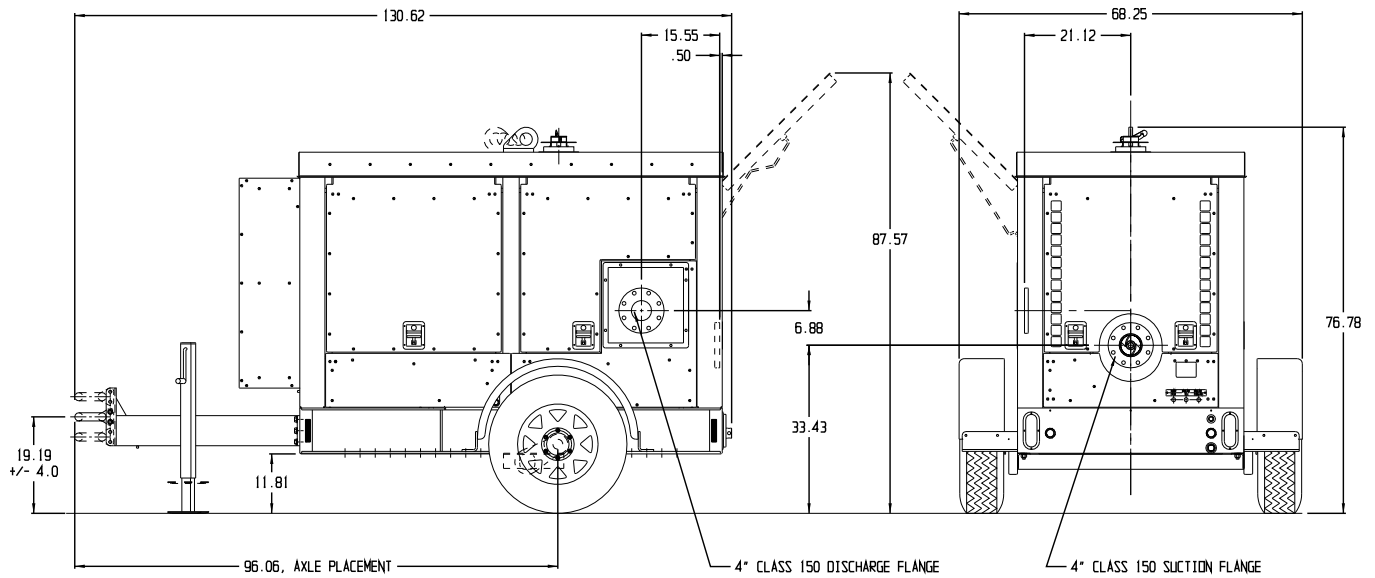
Fuel Capacity	75 gal (284 L)
Control Panel	LOFA CP900
Operating Speed (Min. / Max.)	1,000 / 2,200 rpm
Weight (Dry / Wet)	3670 lbs / 4200 lbs
Instrument Compatibility	High/low level floats
Trailer Brakes	Electric
Enclosure dB(A)	69 dB(A) @ 23 feet (7 meters)
Rating	

MATERIALS OF CONSTRUCTION

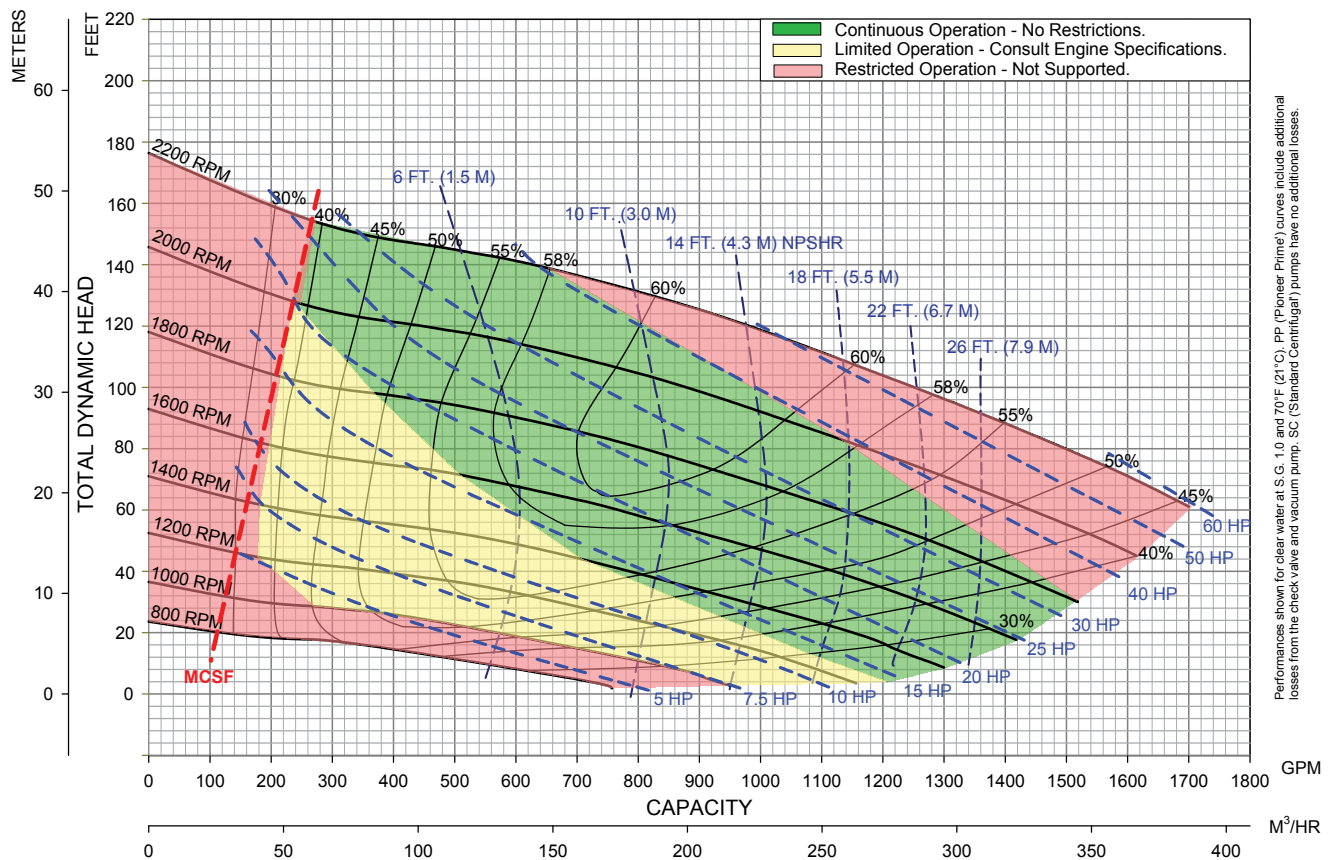
Impeller	CA6NM Stainless Steel
Shaft	17-4 PH Stainless Steel
Wear Ring	ASTM A48 Class 40 Gray Iron
Suction Cover	Ductile Iron ASTM A536 65-45-12
Volute	Ductile Iron ASTM A536 65-45-12
Brac-Plate/Bracket	Ductile Iron ASTM A536 65-45-12
Mechanical Seal	Silicon Carbide rotating and Tungsten Carbide stationary



MECHANICAL DIMENSIONS



PERFORMANCE CURVE



SCOPE OF SUPPLY

Quote Information	
Quote No.	2036721
Quote Date	18 Aug 2023
Project name	Default
Est. Leadtime ARO	N/A

Customer Information	
To	
Street Address	
City/State/Zip	/ /
Phone No.	

Pump		
Order No.	Qty	Description
	1	Pioneer Pump / ElectricPAK
		Pump Options
		Priming System: Pioneer Priming System - Top Mounted
		Impeller Trim: 10
		Volute Orientation: Top Horizontal Discharge
		Pump Material: Ductile Iron Casing, CA6NM Stainless Steel Impeller
		Mounting: SAE 3 - No Coupling

Base		
Order No.	Qty	Description
1		Packaging Options
		Package Type: Package Electric Driven
44S103T701000T-040H4B1	1	Package Selected: 44S103T701000T-040H4B1
		Base Type: Stationary Base
		Pressure Gauge Kit: Not Fitted
		Single Point Lifting Bail: Not Fitted
		Pump Drain Kit: Not Fitted
		Suction Connection: Class 150 Flange
		Discharge Connection: Class 150 Flange

PEP Controls		
Order No.	Qty	Description
1		Controls
		Pioneer ElectricPAK VFD: Exclude ElectricPAK VFD
		Power Quick Connect Junction Box: Exclude

Pump Performance Datasheet

Company Name	
Company contact number	
Quote Number	2036721
Project name	Default

Model/Order No.	44S10
Stages	1
Quantity of pumps in parallel	1
Based on curve number	44S10-1800
Saved Date	22 Aug 2023 10:30 AM

Operating Conditions

Flow, rated	: 884.5 USgpm
Head, rated (requested)	: 74.13 ft
Head, rated (actual)	: 74.13 ft
Suction pressure, rated / max	: 0.00 / 0.00 psi.g
NPSH available	: Ample
Site Supply Frequency	: 60 Hz

Performance

Speed criteria	: Synchronous
Speed	: 1800 rpm
Impeller dia.	: 10.00 in
Impeller diameter, maximum	: 10.00 in
Impeller diameter, minimum	: 8.00 in
Efficiency	: 58.15 %
NPSH required / margin required	: 13.26 / 0.00 ft
Ns (imp. eye flow) / Nss (imp. eye flow)	: 1,764 / 6,928 US Units
MCSF	: 214.0 USgpm
Head max.	: 117.9 ft
Head rise to shutoff	: 59.00 %
Flow, best eff. point	: 725.6 USgpm
Flow ratio, rated / BEP	: 121.90 %
Diameter ratio (rated / max)	: 100.00 %
Head ratio (rated dia / max dia)	: 100.00 %
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Selection status	: Acceptable

Liquid

Liquid type	: Water
Additional liquid description	:
Solids diameter, max	: 0.00 in
Solids concentration, by volume	: 0.00 %
Temperature	: 68.00 deg F
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Vapor pressure, rated	: 0.34 psi.a

Material

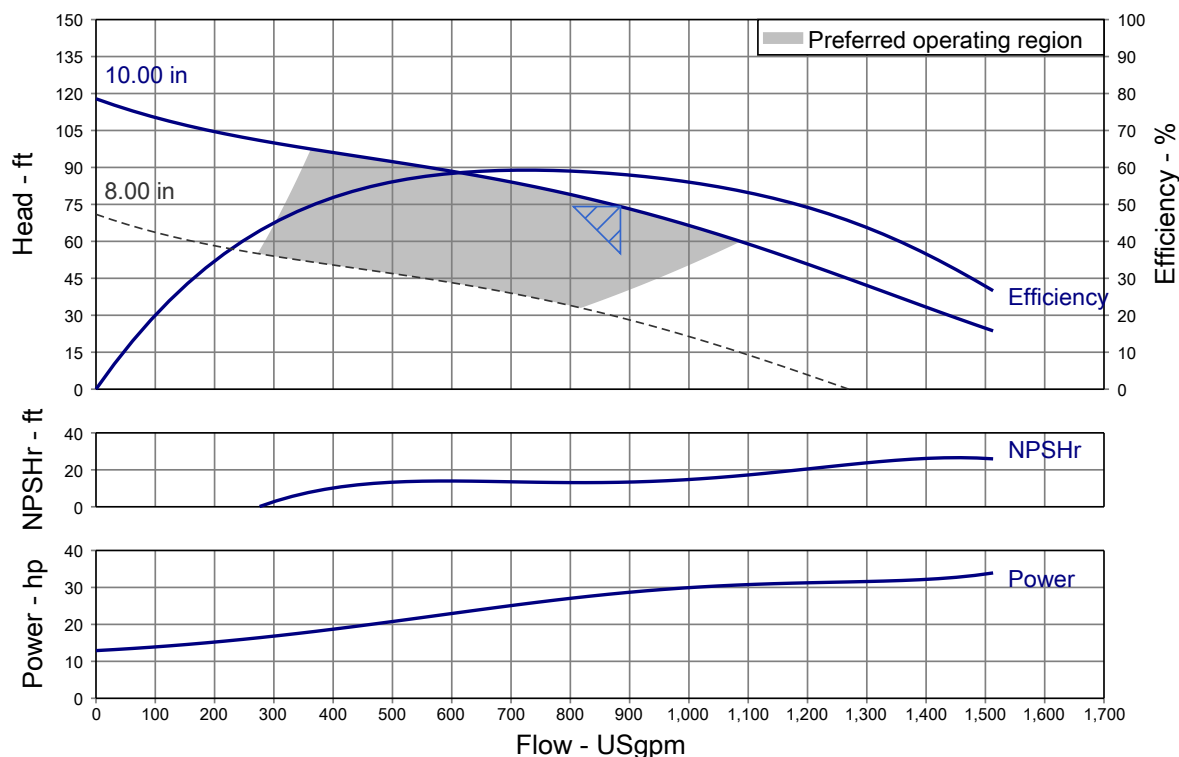
Material selected	: Standard
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Pressure Data

Shut off pressure	: 51.01 psi.g
Maximum allowable working pressure	: N/A
Maximum allowable suction pressure	: N/A
Hydrostatic test pressure	: N/A

Driver & Power Data (@Max density)

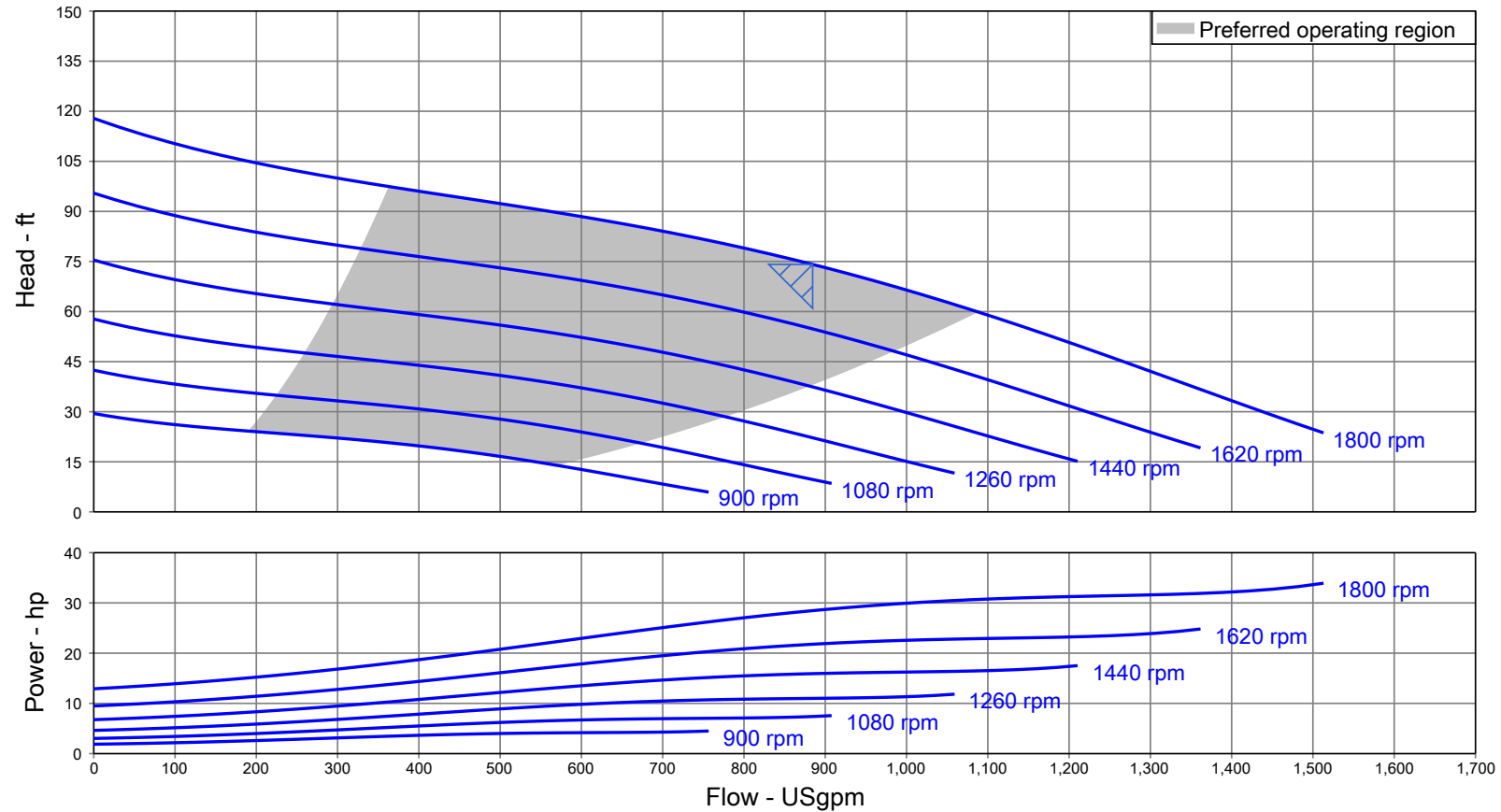
Driver sizing specification	: Maximum power
Margin over specification	: 0.00 %
Service factor	: 1.15 (used)
Power, hydraulic	: 16.55 hp
Power, rated	: 28.46 hp
Power, maximum	: 33.92 hp
Motor rating	: 30.00 hp / 22.37 kW



Multi-Speed Performance Curve

Company Name	
Company contact number	

Quote Number	2036721
Quote Date	18 Aug 2023
Project name	Default

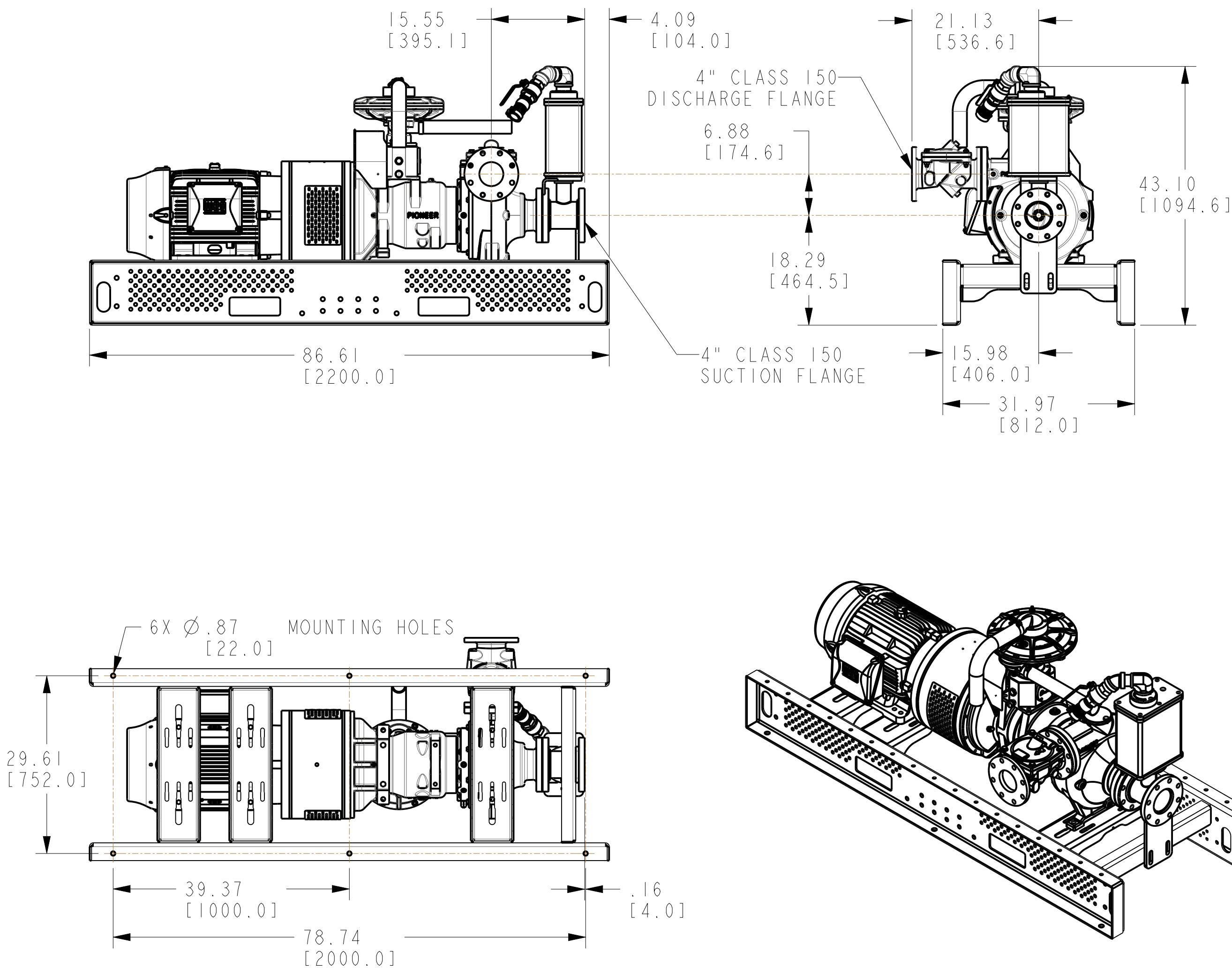


Description	: 44S10
Stages	: 1
Flow, rated	: 884.5 USgpm
Head, rated	: 74.13 ft

Speed	: 1800 rpm
Based on curve number	: 44S10-1800
Efficiency	: 58.15 %
Power, rated	: 28.46 hp
Impeller dia.	: 10.00 in

NPSH required	: 13.26 ft
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Saved Date	: 22 Aug 2023 10:30 AM

F
E
D
C
B
A



NOTE: MOTOR MODEL IS FOR REPRESENTATION ONLY. MOTOR FRAME SIZE AND MOTOR BRAND SUBJECT TO CHANGE.



MODEL: A.3 MODIFIED: FALSE STATE: Prototype

DRAWING: A.4 MODIFIED: FALSE

REVISION ECN DESCRIPTION ZONE INITIALS DATE

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RELEASED FOR PRODUCTION

RWC
2022-02-17

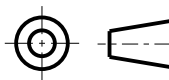
TOLERANCES UNLESS OTHERWISE SPECIFIED

$\angle = \pm .5^\circ$
X.X = ± 0.02 [.5]
X.XX = ± 0.02 [.5]
X.XXX = ± 0.005 [.13]

DIMENSIONS ARE IN INCH [MM]

Creo
MATH CAD DATA
DO NOT SCALE

ASME Y14.5-2009



MATH CAD DATA
AND DRAWING
REVISION MUST
MATCH

CONTROLLED PRODUCT

NO CHANGES TO SOURCING
WITHOUT PRIOR APPROVAL

REQUIRED APPROVALS

ENGINEERING MANUFACTURING MARKETING AGENCY

DIMENSION BALLOONS

TOTAL ON DRAWING
LAST NUMBER USED

CRITICAL TO QUALITY

TOTAL ON DRAWING
LAST NUMBER USED

DRAWN BY: RWC, 2022-02-17

APPROVED: RWC, 2022-02-17

SIMILAR TO: FIRST USED:

MAKE FROM PART NUMBER: MODEL NUMBER: 44S10_MED_324-6TC

ENGINEERING MATERIAL SPECIFICATION (EMS):

TITLE DIM PAGE, 44S10 MED BASE, 324T-365T

SIZE C DWG NO 21439A

DWG REV A SHEET 1 OF 2

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DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase Product code : 12700710
Catalog # : 04018ET3E324T-W22G

Frame	: 324/6T	Locked rotor time	: 36s (cold) 20s (hot)
Output	: 40 HP (30 kW)	Temperature rise	: 80 K
Poles	: 4	Duty cycle	: Cont.(S1)
Frequency	: 60 Hz	Ambient temperature	: -20°C to +40°C
Rated voltage	: 230/460 V	Altitude	: 1000 m.a.s.l.
Rated current	: 94.2/47.1 A	Protection degree	: IP55
L. R. Amperes	: 575/287 A	Cooling method	: IC411 - TEFC
LRC	: 6.1x(Code G)	Mounting	: F-1
No load current	: 34.0/17.0 A	Rotation ¹	: Both (CW and CCW)
Rated speed	: 1770 rpm	Noise level ²	: 66.0 dB(A)
Slip	: 1.67 %	Starting method	: Direct On Line
Rated torque	: 119 ft.lb	Approx. weight ³	: 573 lb
Locked rotor torque	: 229 %		
Breakdown torque	: 240 %		
Insulation class	: F		
Service factor	: 1.25		
Moment of inertia (J)	: 9.16 sq.ft.lb		
Design	: B		

Output	25%	50%	75%	100%	Foundation loads	
Efficiency (%)	0.000	93.6	94.1	94.1	Max. traction	: 707 lb
Power Factor	0.00	0.72	0.80	0.85	Max. compression	: 1280 lb

		Drive end	Non drive end
Bearing type	:	6312 C3	6212 C3
Sealing	:	V'Ring	V'Ring
Lubrication interval	:	20000 h	20000 h
Lubricant amount	:	21 g	13 g
Lubricant type	:	Mobil Polyrex EM	

Notes
USABLE @208V 104A SF 1.15 SFA 120A

This revision replaces and cancel the previous one, which must be eliminated.

- (1) Looking the motor from the shaft end.
- (2) Measured at 1m and with tolerance of +3dB(A).
- (3) Approximate weight subject to changes after manufacturing process.
- (4) At 100% of full load.

These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1.

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page Revision 1 / 1		
Checked by				
Date	07/12/2021			

Pioneer Prime Sound Attenuated Diesel-Driven Centrifugal Pump Trailer Package

SAPP66S12L7-TD2.9L4

66S12-PPI-02-D



PUMP SPECIFICATIONS

Size	6" x 6" (150 x 150 mm)
Impeller Diameter	11" (279 mm)
Max Flow	2,840 gpm (645 m³/h)
Max Head	182 feet (55 meters)
Solids Size	3" (76 mm)
Max. Operating Temp.	200 °F (93 °C)
Max. Operating Press.	260 psi (1,800 kPa)

ENGINE SPECIFICATIONS

FT4 Engine Type	Deutz TD2.9L, 4-Cylinder Diesel
Displacement	177 cu. in. (2.9 l)
Fuel Consumption	3.07 gph (11.62 l/h) @ 1,800 rpm
Continuous HP	59 HP (44 kW) @ 1,800 rpm
Peak Intermittent HP Rating	74 HP (55 kW)
FT4 Specifics (Def or No Def, DOC, SCR, etc.)	DOC
Instrument Panel	Oil pressure gauge, voltmeter, hourmeter, tachometer

PIONEER PRIME PRIMING SYSTEM

Priming System	Mechanically driven diaphragm-style vacuum pump
Air Removal Cap.	50 cfm (.02 cms)
Priming Chamber	Positive sealing air separation w/stainless steel components
Discharge Check Valve	Swing style; ductile iron w/nitrile disc
Run Dry System	Oil-lubricated mech. seal allows pump to run completely dry without damage

FEATURES AND BENEFITS

- Indefinite run-dry capability
- Extreme flow technology
- Environmentally safe priming system: Pioneer Prime
- Auto-start controls

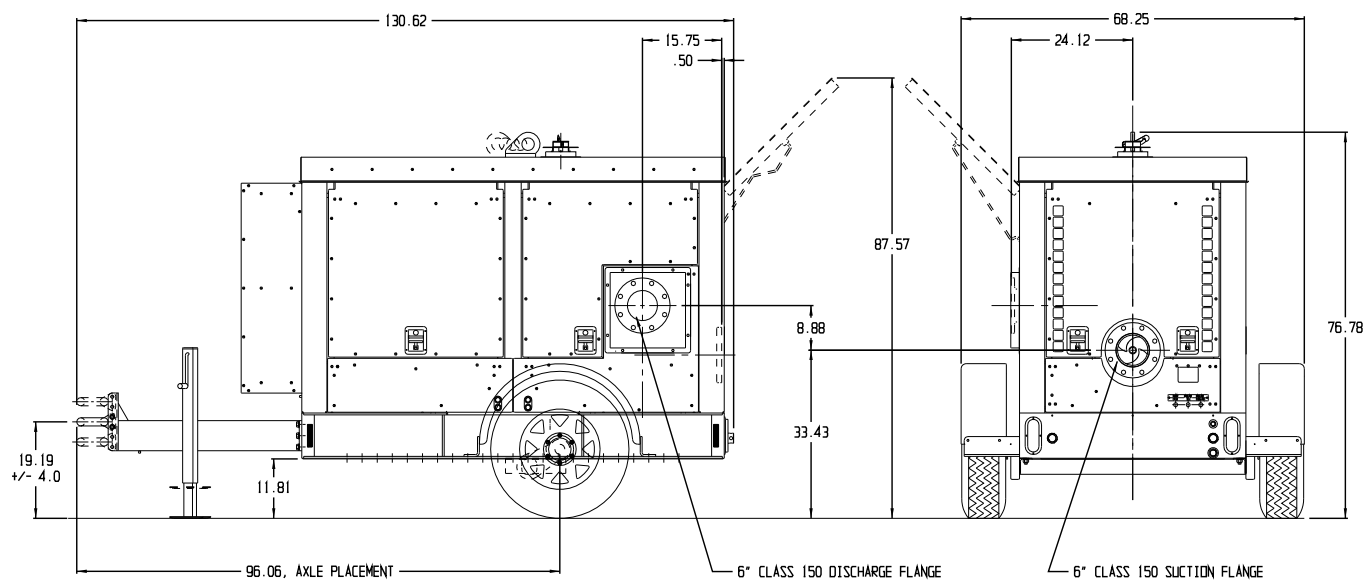
PACKAGE SPECIFICATIONS

Fuel Capacity	75 gal (284 L)
Control Panel	LOFA CP800
Operating Speed (Min. / Max.)	1,000 / 2,200 rpm
Weight (Dry / Wet)	3,400 lbs / 3,932 lbs
Instrument Compatibility	High/low level floats
Trailer Brakes	Electric
Enclosure dB(A)	68 dB(A) @ 23 feet (7 meters)
Rating	

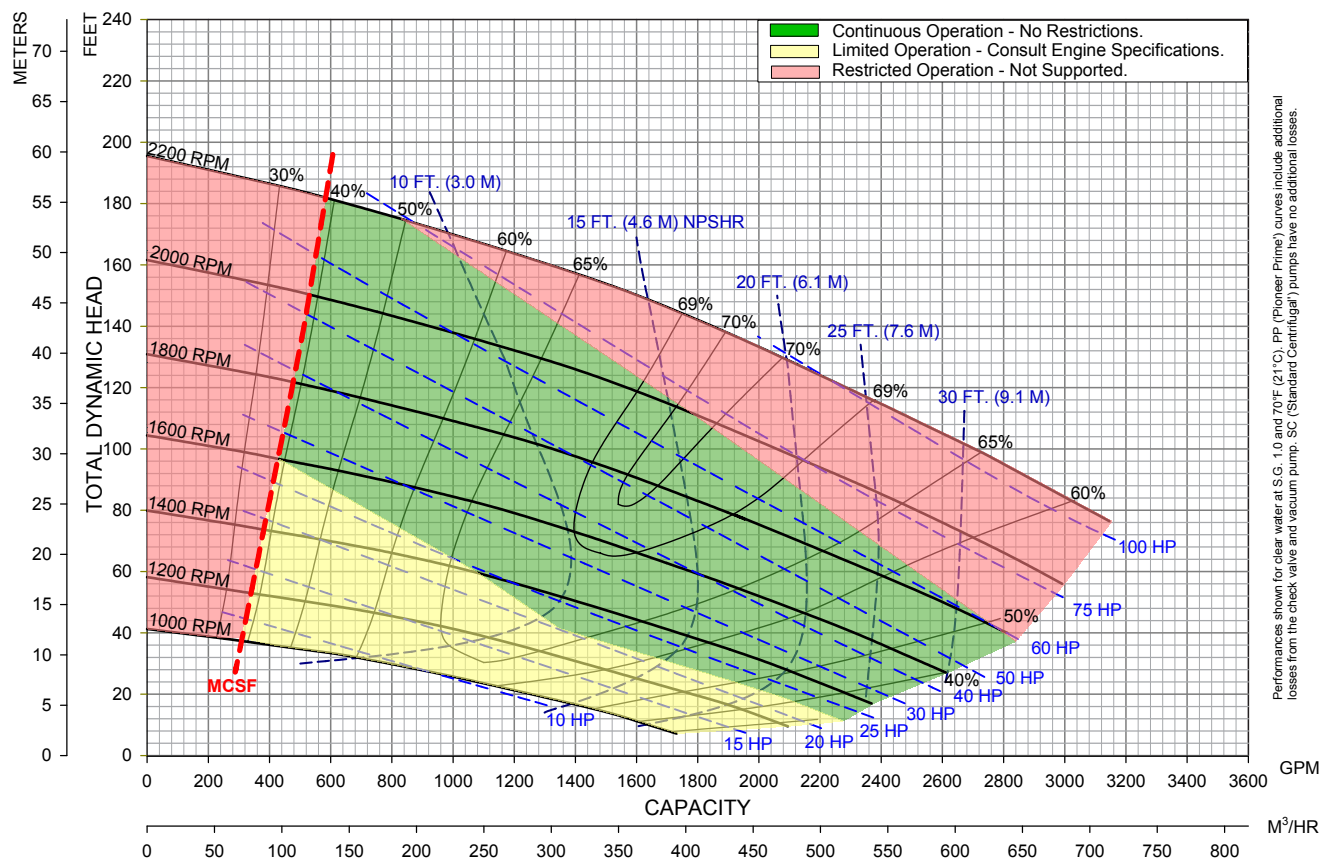
MATERIALS OF CONSTRUCTION

Impeller	CA6NM Stainless Steel
Shaft	17-4 PH Stainless Steel
Wear Ring	ASTM A48 Class 40 Gray Iron
Suction Cover	Ductile Iron ASTM A536 65-45-12
Volute	Ductile Iron ASTM A536 65-45-12
Brac-Plate/Bracket	Ductile Iron ASTM A536 65-45-12
Mechanical Seal	Silicon Carbide rotating and Tungsten Carbide stationary

MECHANICAL DIMENSIONS



PERFORMANCE CURVE



SCOPE OF SUPPLY

Quote Information	
Quote No.	2036721
Quote Date	18 Aug 2023
Project name	Default
Est. Leadtime ARO	N/A

Customer Information	
To	
Street Address	
City/State/Zip	/ /
Phone No.	

Pump		
Order No.	Qty	Description
	1	Pioneer Pump / ElectricPAK
		Pump Options
		Priming System: Pioneer Priming System - Top Mounted
		Impeller Trim: 11
		Volute Orientation: Top Horizontal Discharge
		Pump Material: Ductile Iron Casing, CA6NM Stainless Steel Impeller
		Mounting: SAE 3 - No Coupling

Base		
Order No.	Qty	Description
1		Packaging Options
		Package Type: Package Electric Driven
66S123T701100T-060H4B1	1	Package Selected: 66S123T701100T-060H4B1
		Base Type: Stationary Base
		Pressure Gauge Kit: Not Fitted
		Single Point Lifting Bail: Not Fitted
		Pump Drain Kit: Not Fitted
		Suction Connection: Class 150 Flange
		Discharge Connection: Class 150 Flange

PEP Controls		
Order No.	Qty	Description
1		Controls
		Pioneer ElectricPAK VFD: Exclude ElectricPAK VFD
		Power Quick Connect Junction Box: Exclude

Pump Performance Datasheet

Company Name	
Company contact number	
Quote Number	2036721
Project name	Default

Model/Order No.	66S12
Stages	1
Quantity of pumps in parallel	1
Based on curve number	66S12
Saved Date	29 Aug 2023 8:57 AM

Operating Conditions

Flow, rated	: 1,655.7 USgpm
Head, rated (requested)	: 84.53 ft
Head, rated (actual)	: 84.53 ft
Suction pressure, rated / max	: 0.00 / 0.00 psi.g
NPSH available	: Ample
Site Supply Frequency	: 60 Hz

Performance

Speed criteria	: Synchronous
Speed	: 1800 rpm
Impeller dia.	: 11.00 in
Impeller diameter, maximum	: 12.00 in
Impeller diameter, minimum	: 9.00 in
Efficiency	: 69.14 %
NPSH required / margin required	: 13.50 / 0.00 ft
Ns (imp. eye flow) / Nss (imp. eye flow)	: 2,360 / 9,863 US Units
MCSF	: 489.3 USgpm
Head max.	: 128.0 ft
Head rise to shutoff	: 51.42 %
Flow, best eff. point	: 1,598.5 USgpm
Flow ratio, rated / BEP	: 103.57 %
Diameter ratio (rated / max)	: 91.67 %
Head ratio (rated dia / max dia)	: 77.32 %
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Selection status	: Acceptable

Liquid

Liquid type	: Water
Additional liquid description	:
Solids diameter, max	: 0.00 in
Solids concentration, by volume	: 0.00 %
Temperature	: 68.00 deg F
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Vapor pressure, rated	: 0.34 psi.a

Material

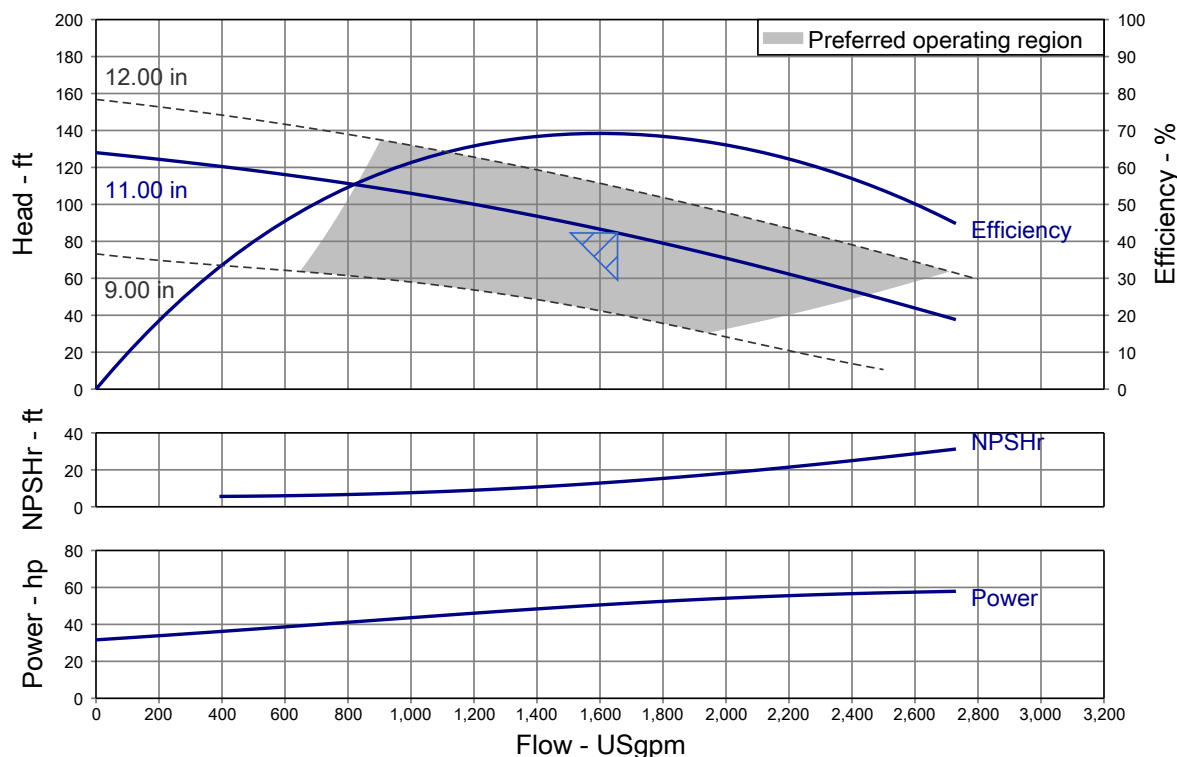
Material selected	: Standard
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Pressure Data

Shut off pressure	: 55.39 psi.g
Maximum allowable working pressure	: N/A
Maximum allowable suction pressure	: N/A
Hydrostatic test pressure	: N/A

Driver & Power Data (@Max density)

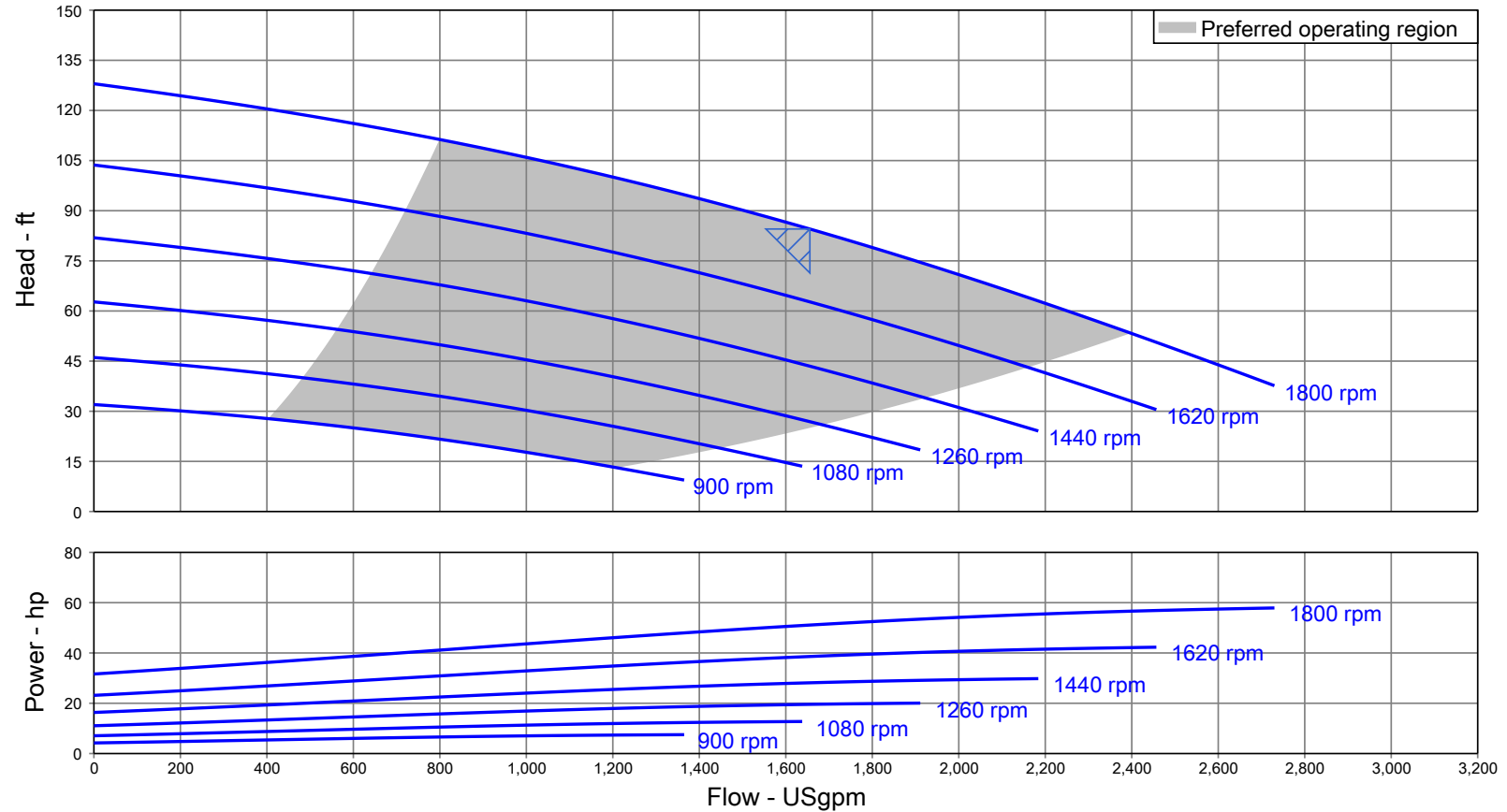
Driver sizing specification	: Maximum power
Margin over specification	: 0.00 %
Service factor	: 1.15 (used)
Power, hydraulic	: 35.33 hp
Power, rated	: 51.10 hp
Power, maximum	: 57.90 hp
Motor rating	: 60.00 hp / 44.74 kW



Multi-Speed Performance Curve

Company Name	
Company contact number	

Quote Number	2036721
Quote Date	18 Aug 2023
Project name	Default

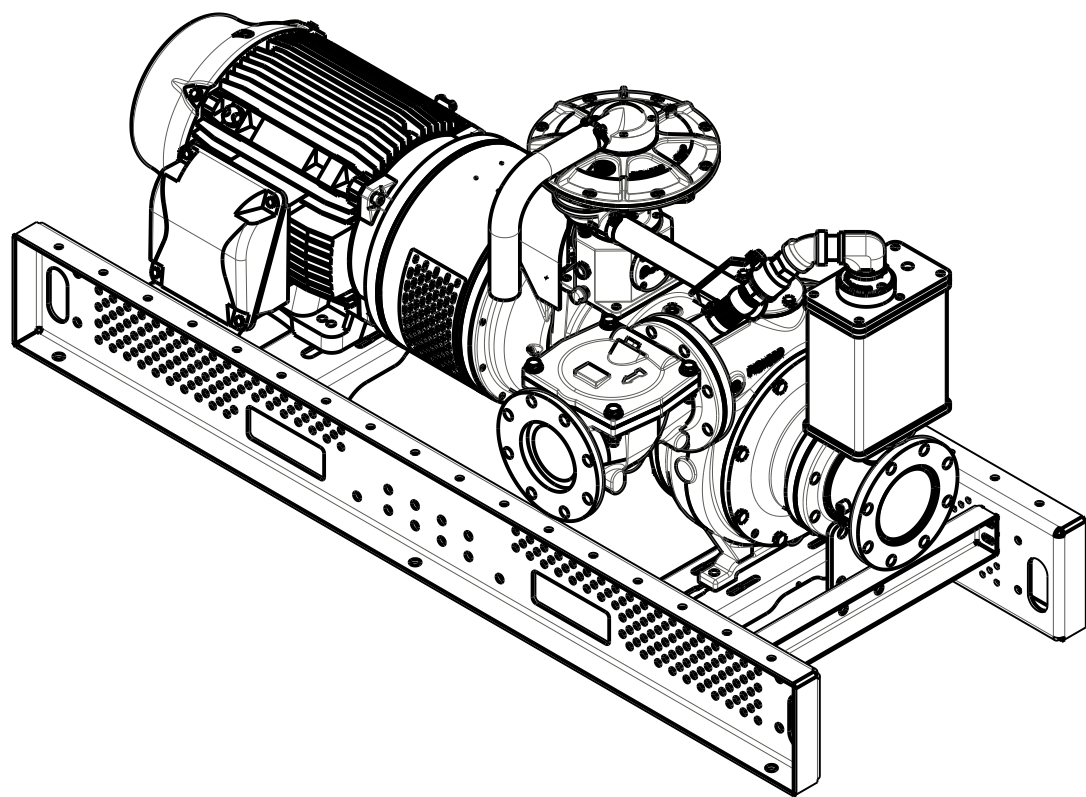
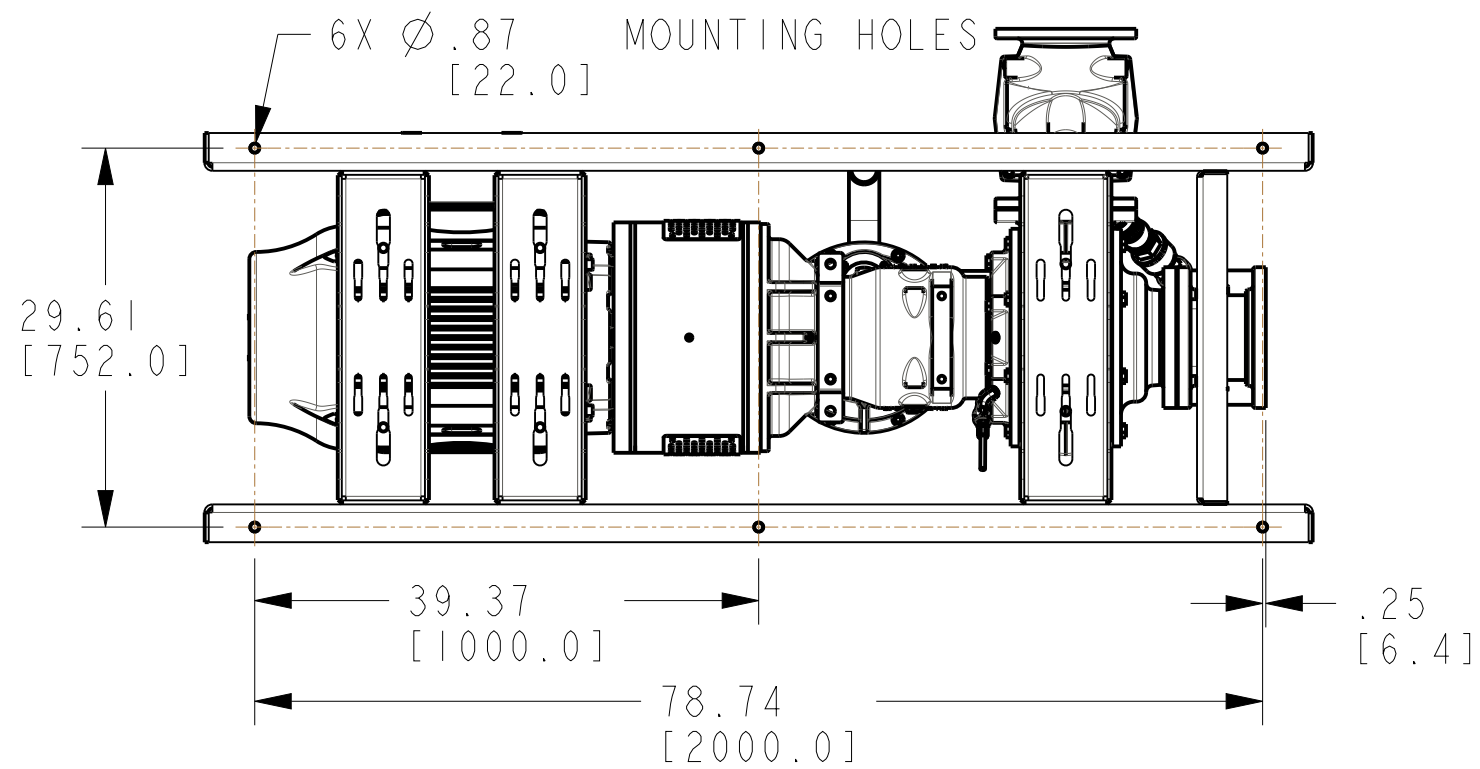
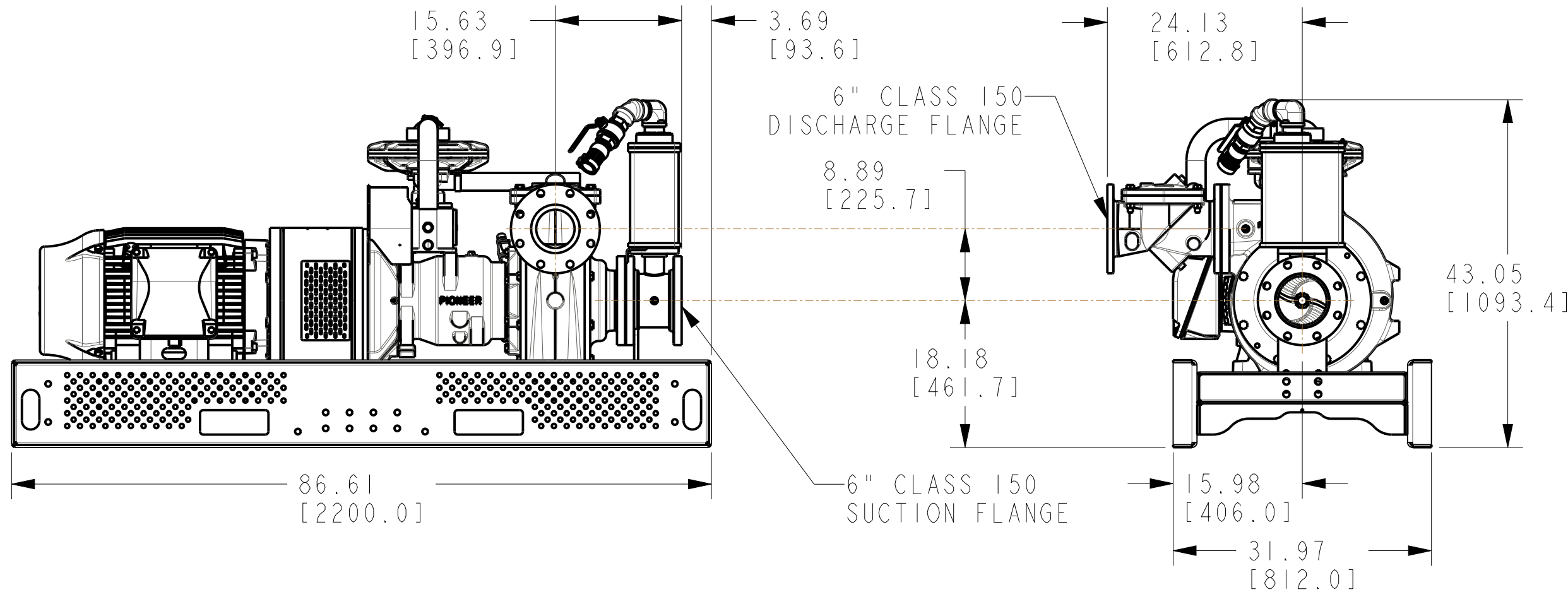


Description	: 66S12
Stages	: 1
Flow, rated	: 1,655.7 USgpm
Head, rated	: 84.53 ft

Speed	: 1800 rpm
Based on curve number	: 66S12
Efficiency	: 69.14 %
Power, rated	: 51.10 hp
Impeller dia.	: 11.00 in

NPSH required	: 13.50 ft
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Saved Date	: 29 Aug 2023 8:57 AM

REVISION	ECN	DESCRIPTION	ZONE	INITIALS DATE
00	.	RELEASED FOR PRODUCTION	.	RWC 2022-02-10



TOLERANCES UNLESS OTHERWISE SPECIFIED	
$\angle$	$\pm .5^\circ$
X.X	± 0.02 [.5]
X.XX	± 0.02 [.5]
X.XXX	± 0.005 [.13]

DIMENSIONS ARE IN INCH [MM]

Creo MATH CAD DATA DO NOT SCALE	ASME Y14.5-2009		MATH CAD DATA AND DRAWING REVISION MUST MATCH
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CONTROLLED PRODUCT

NO CHANGES TO SOURCING
WITHOUT PRIOR APPROVAL

REQUIRED APPROVALS

ENGINEERING	MANUFACTURING	MARKETING	AGENCY
.	.	.	.

DIMENSION BALLOONS

	TOTAL ON DRAWING	.
	LAST NUMBER USED	.

CRITICAL TO QUALITY

	TOTAL ON DRAWING	.
	LAST NUMBER USED	.

DRAWN BY: RWC, 2022-02-10	FIRST USED:
APPROVED: RWC, 2022-02-10	
SIMILAR TO:	MODEL NUMBER: 66S12_MED_364-5TC
MAKE FROM PART NUMBER:	ENGINEERING MATERIAL SPECIFICATION (EMS):

TITLE **DIM PAGE, 66S12 MED BASE, 324T-365T**

SIZE C	DWG NO 21433A	DWG REV A	SHEET 1 OF 2
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NOTE: MOTOR MODEL IS FOR REPRESENTATION ONLY. MOTOR FRAME SIZE AND MOTOR BRAND SUBJECT TO CHANGE.

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase Product code : 12693674
Catalog # : 06018ET3E364T-W22G

Frame	: 364/5T	Locked rotor time	: 27s (cold) 15s (hot)
Output	: 60 HP (45 kW)	Temperature rise	: 80 K
Poles	: 4	Duty cycle	: Cont.(S1)
Frequency	: 60 Hz	Ambient temperature	: -20°C to +40°C
Rated voltage	: 208-230/460 V	Altitude	: 1000 m.a.s.l.
Rated current	: 151-137/68.5 A	Protection degree	: IP55
L. R. Amperes	: 936-849/425 A	Cooling method	: IC411 - TEFC
LRC	: 6.2x(Code G)	Mounting	: F-1
No load current	: 44.8-52.0/26.0 A	Rotation ¹	: Both (CW and CCW)
Rated speed	: 1780 rpm	Noise level ²	: 67.0 dB(A)
Slip	: 1.11 %	Starting method	: Direct On Line
Rated torque	: 177 ft.lb	Approx. weight ³	: 919 lb
Locked rotor torque	: 220 %		
Breakdown torque	: 240 %		
Insulation class	: F		
Service factor	: 1.25		
Design	: B		

Output	25%	50%	75%	100%	Foundation loads	
Efficiency (%)	0.000	94.1	94.5	95.0	Max. traction	: 1007 lb
Power Factor	0.00	0.71	0.80	0.83	Max. compression	: 1927 lb

		Drive end	Non drive end
Bearing type	:	6314 C3	6314 C3
Sealing	:	WSeal	WSeal
Lubrication interval	:	12000 h	12000 h
Lubricant amount	:	27 g	27 g
Lubricant type	:	Mobil Polyrex EM	

Notes

This revision replaces and cancel the previous one, which must be eliminated.

- (1) Looking the motor from the shaft end.
- (2) Measured at 1m and with tolerance of +3dB(A).
- (3) Approximate weight subject to changes after manufacturing process.
- (4) At 100% of full load.

These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1.

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page Revision 1 / 1		
Checked by				
Date	07/12/2021			

Pioneer Prime Diesel-Driven Centrifugal Pump Trailer Package

PP66S14L71-4045HFC06

66S14-PPI-01-J



PUMP SPECIFICATIONS

Size	6" x 6" (150 x 150 mm)
Impeller Diameter	14" (356 mm)
Max Flow	3120 gpm (709 m3ph)
Max Head	255 feet (78 meters)
Solids Size	3" (75 mm)
Max. Operating Temp.	200 °F (93 °C)
Max. Operating Press.	260 psi (1800 kPa)

ENGINE SPECIFICATIONS

FT4 Engine Type	John Deere 4045HFC06
Displacement	275 cu in (4.5L)
Fuel Consumption	7.03 gal/hr (26.6L/hr)
Continuous HP	142 hp 106 kW
Peak Intermittent HP Rating	173 hp (126kW)
FT4 Specifics (Def or No Def, DOC, SCR, etc.)	DOC
Instrument Panel	Oil pressure gauge, voltmeter, hourmeter, tachometer

PIONEER PRIME PRIMING SYSTEM

Priming System	Mechanically driven diaphragm-style vacuum pump
Air Removal Cap.	50 cfm (.02 cms)
Priming Chamber	Positive sealing air separation w/ stainless steel components
Discharge Check Valve	Swing style; ductile iron w/nitrile disc
Run Dry System	Oil-lubricated mech. seal allows pump to run completely dry without damage

FEATURES AND BENEFITS

- Indefinite run-dry capability
- Extreme flow technology
- Environmentally safe priming system: Pioneer Prime
- Auto-start controls

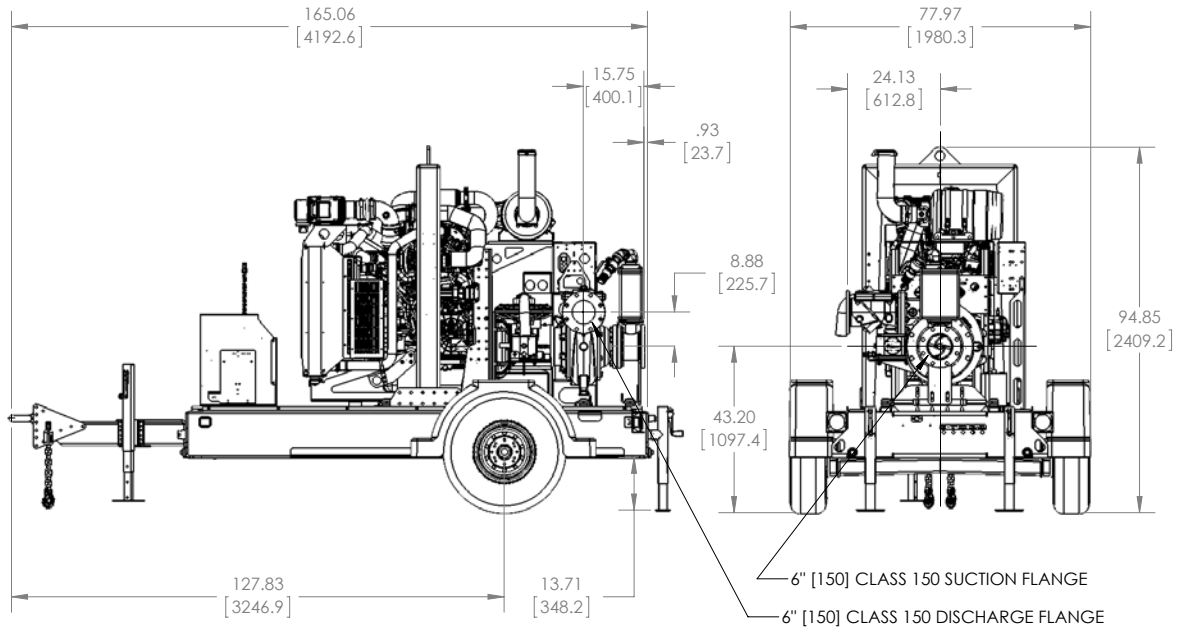
PACKAGE SPECIFICATIONS

Fuel Capacity	135 gal
Control Panel	LOFA CP900
Operating Speed (Min. / Max.)	1,200 / 2,000 rpm
Weight (Dry / Wet)	5,560 lbs / 6,520 lbs
Instrument Compatibility	High/low level floats, transducers
Trailer Brakes	Electric

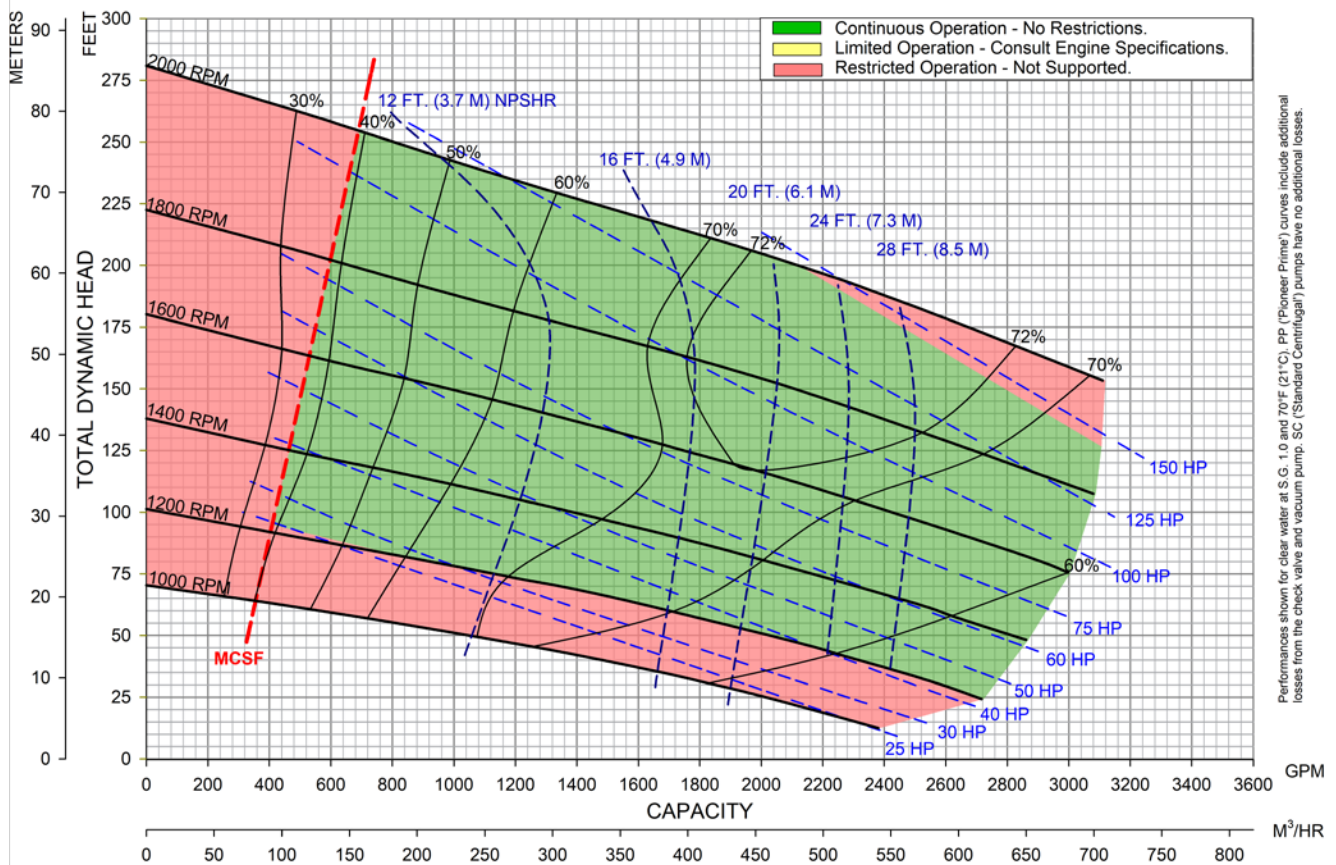
MATERIALS OF CONSTRUCTION

Impeller	CA6NM Stainless Steel
Shaft	17-4 PH Stainless Steel
Wear Ring	ASTM A48 Class 40 Gray Iron
Suction Cover	Ductile Iron ASTM A536 65-45-12
Volute	Ductile Iron ASTM A536 65-45-12
Brac-Plate/Bracket	Ductile Iron ASTM A536 65-45-12
Mechanical Seal	Silicon Carbide rotating and Tungsten Carbide stationary

MECHANICAL DIMENSIONS



PERFORMANCE CURVE



SCOPE OF SUPPLY

Quote Information	
Quote No.	2036721
Quote Date	18 Aug 2023
Project name	Default
Est. Leadtime ARO	N/A

Customer Information	
To	
Street Address	
City/State/Zip	/ /
Phone No.	

Pump		
Order No.	Qty	Description
	1	Pioneer Pump / ElectricPAK
		Pump Options
		Priming System: Pioneer Priming System - Top Mounted
		Impeller Trim: 14
		Volute Orientation: Top Horizontal Discharge
		Pump Material: Ductile Iron Casing, CA6NM Stainless Steel Impeller
		Mounting: SAE 3 - No Coupling

Base		
Order No.	Qty	Description
1		Packaging Options
		Package Type: Package Electric Driven
66S143T701400T-125H4C1	1	Package Selected: 66S143T701400T-125H4C1
		Base Type: Stationary Base
		Pressure Gauge Kit: Not Fitted
		Single Point Lifting Bail: Not Fitted
		Pump Drain Kit: Not Fitted
		Suction Connection: Class 150 Flange
		Discharge Connection: Class 150 Flange

PEP Controls		
Order No.	Qty	Description
1		Controls
		Pioneer ElectricPAK VFD: Exclude ElectricPAK VFD
		Power Quick Connect Junction Box: Exclude

Pump Performance Datasheet

Company Name	
Company contact number	
Quote Number	2036721
Project name	Default

Model/Order No.	66S14
Stages	1
Quantity of pumps in parallel	1
Based on curve number	66S14
Saved Date	23 Aug 2023 1:49 PM

Operating Conditions

Flow, rated	: 2,131.1 USgpm
Head, rated (requested)	: 146.2 ft
Head, rated (actual)	: 146.2 ft
Suction pressure, rated / max	: 0.00 / 0.00 psi.g
NPSH available	: Ample
Site Supply Frequency	: 60 Hz

Performance

Speed criteria	: Synchronous
Speed	: 1800 rpm
Impeller dia.	: 14.00 in
Impeller diameter, maximum	: 14.00 in
Impeller diameter, minimum	: 12.00 in
Efficiency	: 73.04 %
NPSH required / margin required	: 21.35 / 0.00 ft
Ns (imp. eye flow) / Nss (imp. eye flow)	: 2,001 / 8,287 US Units
MCSF	: 644.0 USgpm
Head max.	: 222.8 ft
Head rise to shutoff	: 52.39 %
Flow, best eff. point	: 2,160.4 USgpm
Flow ratio, rated / BEP	: 98.64 %
Diameter ratio (rated / max)	: 100.00 %
Head ratio (rated dia / max dia)	: 100.00 %
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Selection status	: Acceptable

Liquid

Liquid type	: Water
Additional liquid description	:
Solids diameter, max	: 0.00 in
Solids concentration, by volume	: 0.00 %
Temperature	: 68.00 deg F
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Vapor pressure, rated	: 0.34 psi.a

Material

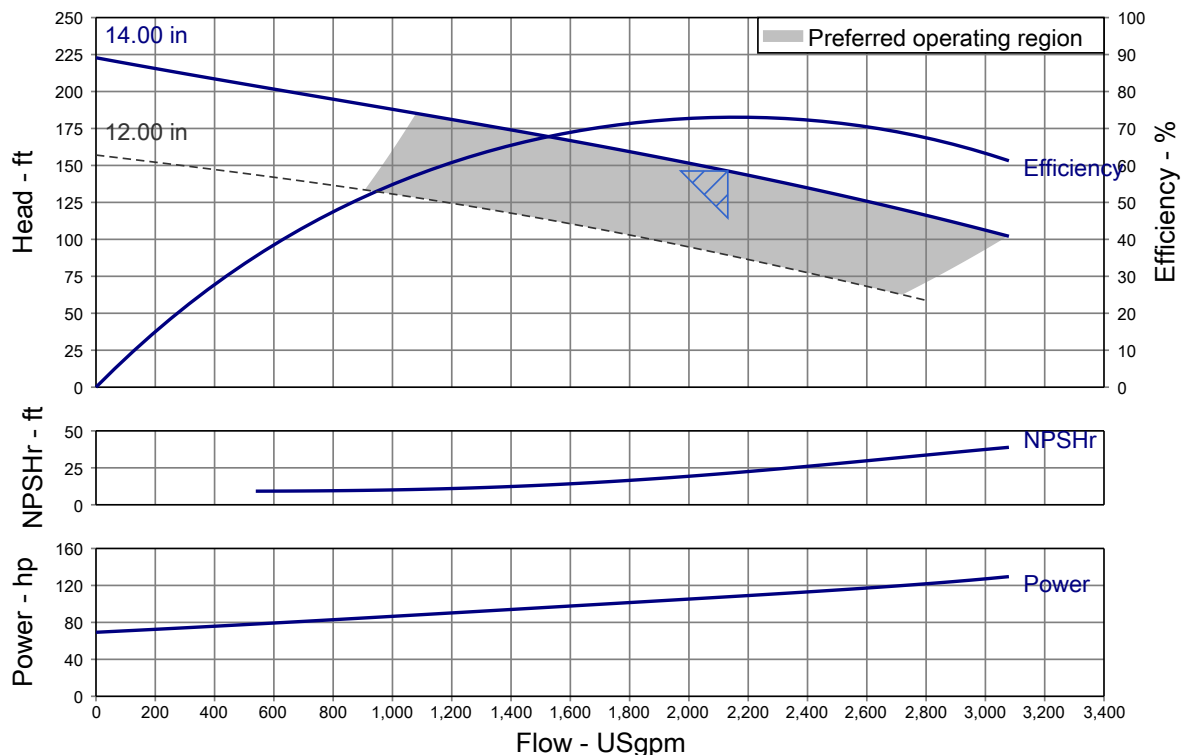
Material selected	: Standard
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Pressure Data

Shut off pressure	: 96.44 psi.g
Maximum allowable working pressure	: N/A
Maximum allowable suction pressure	: N/A
Hydrostatic test pressure	: N/A

Driver & Power Data (@Max density)

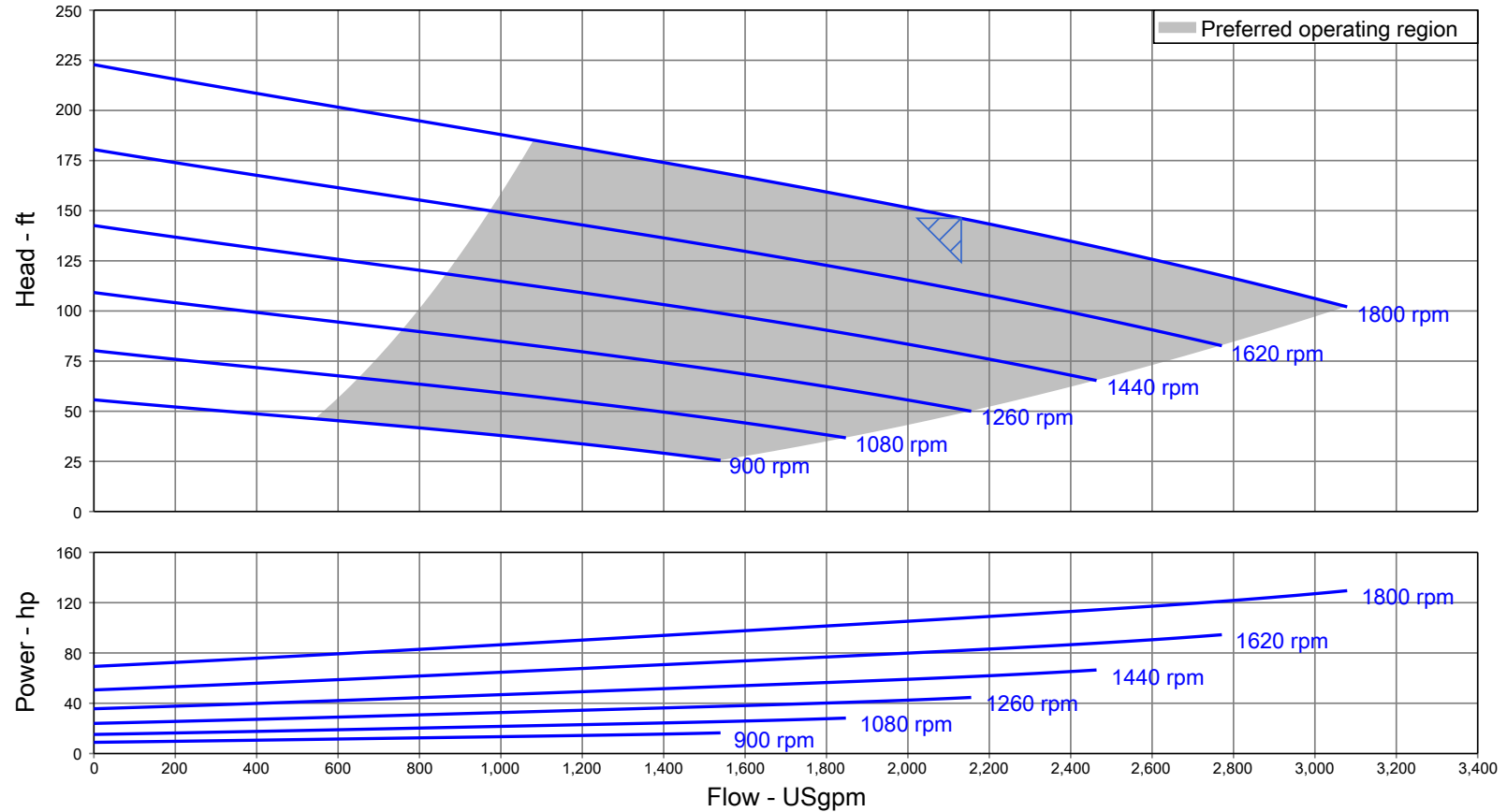
Driver sizing specification	: Maximum power
Margin over specification	: 0.00 %
Service factor	: 1.15 (used)
Power, hydraulic	: 78.67 hp
Power, rated	: 108 hp
Power, maximum	: 130 hp
Motor rating	: 125 hp / 93.21 kW



Multi-Speed Performance Curve

Company Name	
Company contact number	

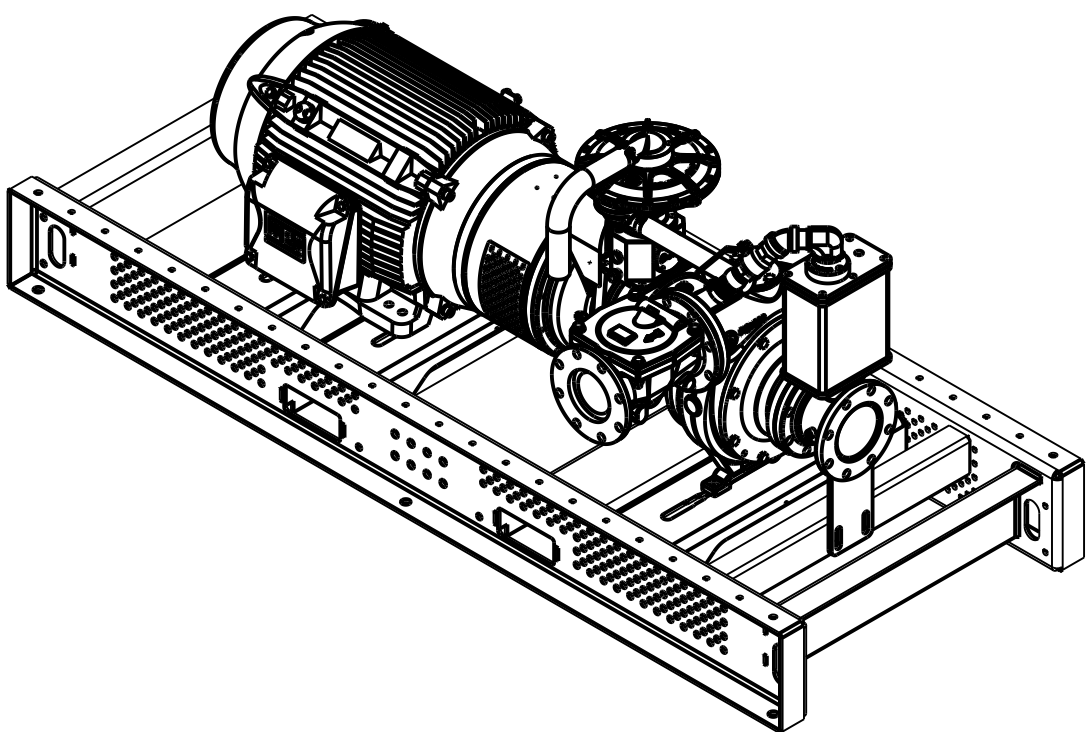
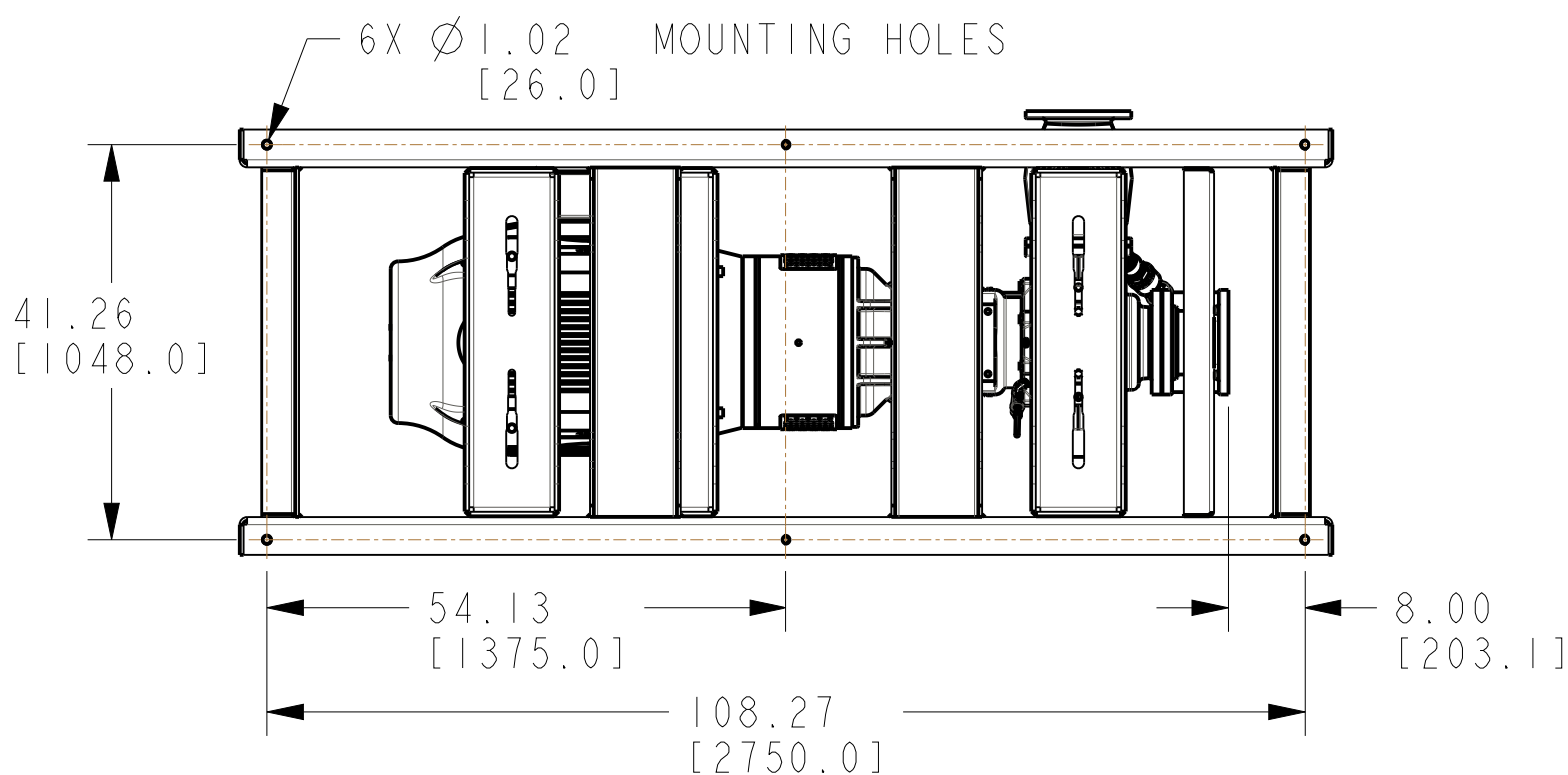
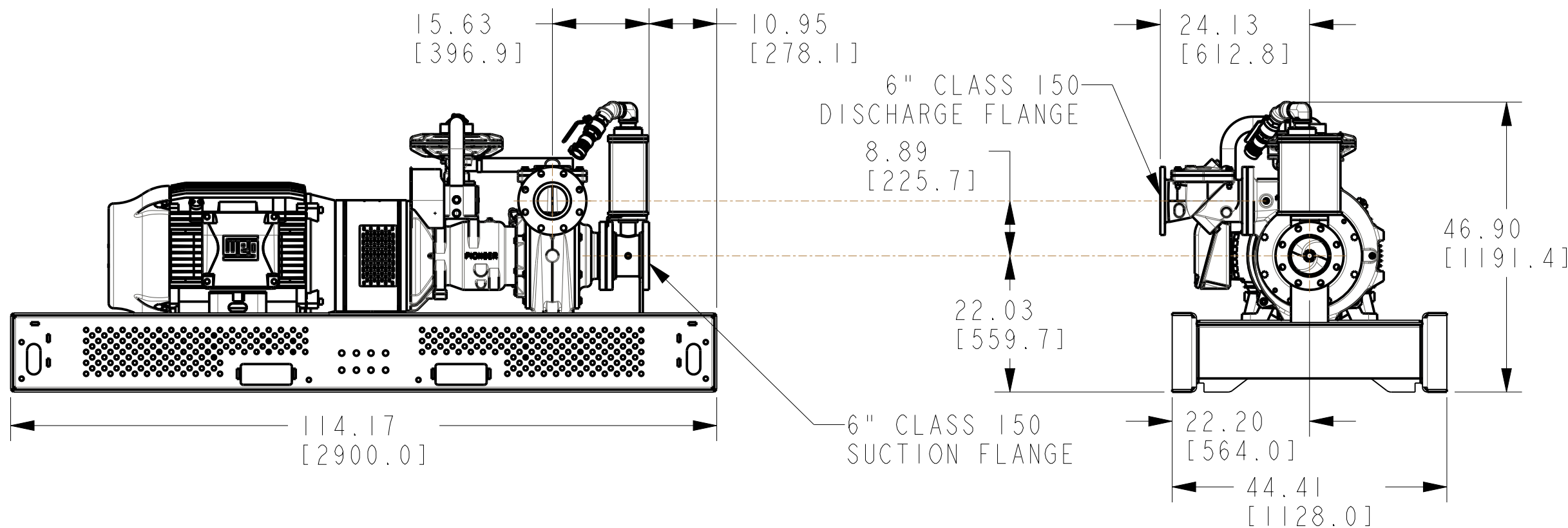
Quote Number	2036721
Quote Date	18 Aug 2023
Project name	Default



Description	: 66S14
Stages	: 1
Flow, rated	: 2,131.1 USgpm
Head, rated	: 146.2 ft

Speed	: 1800 rpm
Based on curve number	: 66S14
Efficiency	: 73.04 %
Power, rated	: 108 hp
Impeller dia.	: 14.00 in

NPSH required	: 21.35 ft
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Saved Date	: 23 Aug 2023 1:49 PM

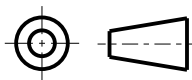


TOLERANCES UNLESS OTHERWISE SPECIFIED
∠ = ±.5°
X.X = ±0.02 [.5]
X.XX = ±0.02 [.5]
X.XXX = ±0.005 [.13]

DIMENSIONS ARE IN INCH [MM]

Creo
MATH CAD DATA
DO NOT SCALE

ASME Y14.5-2009



MATH CAD DATA
AND DRAWING
REVISION MUST
MATCH

CONTROLLED PRODUCT

NO CHANGES TO SOURCING
WITHOUT PRIOR APPROVAL

REQUIRED APPROVALS

ENGINEERING	MANUFACTURING	MARKETING	AGENCY
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DIMENSION BALLOONS

X	TOTAL ON DRAWING	.
	LAST NUMBER USED	.

CRITICAL TO QUALITY

X	TOTAL ON DRAWING	.
	LAST NUMBER USED	.

DRAWN BY: RWC, 2022-02-22
APPROVED: RWC, 2022-02-22

SIMILAR TO: FIRST USED:
MAKE FROM PART NUMBER: . MODEL NUMBER: 66S14_LRG_444-5TC
ENGINEERING MATERIAL SPECIFICATION (EMS):

TITLE **DIM PAGE, 66S14 LRG BASE, 444T-449T**

SIZE C DWG NO **21444A**

DWG REV A SHEET 1 OF 2

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NOTE: MOTOR MODEL IS FOR REPRESENTATION ONLY. MOTOR FRAME SIZE AND MOTOR BRAND SUBJECT TO CHANGE.

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase Product code : 13273169
Catalog # : 12518ET3E444T-W22G

Frame	: 444/5T	Locked rotor time	: 48s (cold) 27s (hot)
Output	: 125 HP	Temperature rise	: 80 K
Poles	: 4	Duty cycle	: Cont.(S1)
Frequency	: 60 Hz	Ambient temperature	: -20°C to +40°C
Rated voltage	: 230/460 V	Altitude	: 1000 m.a.s.l.
Rated current	: 278/139 A	Protection degree	: IP55
L. R. Amperes	: 1807/904 A	Cooling method	: IC411 - TEFC
LRC	: 6.5x(Code G)	Mounting	: F-1
No load current	: 80.0/40.0 A	Rotation ¹	: Both (CW and CCW)
Rated speed	: 1780 rpm	Noise level ²	: 73.0 dB(A)
Slip	: 1.11 %	Starting method	: Direct On Line
Rated torque	: 368 ft.lb	Approx. weight ³	: 1648 lb
Locked rotor torque	: 200 %		
Breakdown torque	: 229 %		
Insulation class	: F		
Service factor	: 1.15		
Moment of inertia (J)	: 57.2 sq.ft.lb		
Design	: B		

Output	25%	50%	75%	100%	Foundation loads	
Efficiency (%)	94.9	95.0	95.4	95.4	Max. traction	: 1777 lb
Power Factor	0.52	0.74	0.82	0.85	Max. compression	: 3425 lb

		Drive end	Non drive end
Bearing type	:	6319 C3	6316 C3
Sealing	:	WSeal	WSeal
Lubrication interval	:	8000 h	10000 h
Lubricant amount	:	45 g	34 g
Lubricant type	:	Mobil Polyrex EM	

Notes
USABLE @208V 307A SF 1.00 SFA 307A

This revision replaces and cancel the previous one, which must be eliminated.
(1) Looking the motor from the shaft end.
(2) Measured at 1m and with tolerance of +3dB(A).
(3) Approximate weight subject to changes after manufacturing process.
(4) At 100% of full load.

These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1.

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page Revision 1 / 1		
Checked by				
Date	20/12/2021			

Pioneer Prime Diesel-Driven Trailer Package

PP88S12L71-TCD3.6

88S12-PPI-01-D

PUMP SPECIFICATIONS

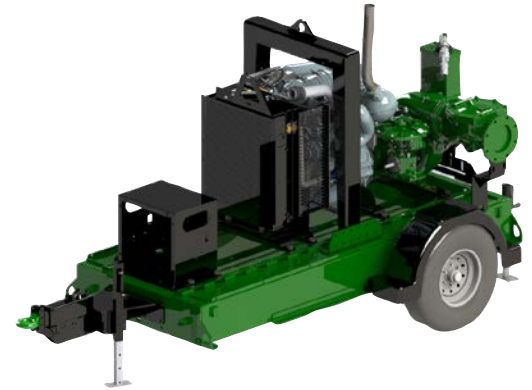
Size	8" x 8" (200 x 200 mm)
Impeller Diameter	12.25" (311 mm)
Max Flow	5,040 gpm (1,150 m ³ /h)
Max Head	180 feet (55 meters)
Solids Size	3" (76 mm)
Max. Operating Temp.	200 °F (93 °C)
Max. Operating Press.	260 psi (1,800 kPa)

ENGINE SPECIFICATIONS

FT4 Engine Type	Deutz TCD3.6L4
Displacement	220 cu. in. (3.6 l)
Fuel Consumption	5.5 gph (21 l/h) @ 1,800 rpm
Continuous HP	111 HP (83 kW) @ 1,800 rpm
Peak Intermittent HP Rating	134 HP (100 kW)
FT4 Specifics (Def or No Def, DOC, SCR, etc.)	DOC
Instrument Panel	Oil pressure gauge, voltmeter, hourmeter, tachometer

PIONEER PRIME PRIMING SYSTEM

Priming System	Mechanically driven diaphragm-style vacuum pump
Air Removal Cap.	50 cfm (.02 cms)
Priming Chamber	Positive sealing air separation w/stainless steel components
Discharge Check Valve	Swing style; ductile iron w/nitrile disc
Run Dry System	Oil-lubricated mech. seal allows pump to run completely dry without damage



FEATURES AND BENEFITS

- Indefinite run-dry capability
- Extreme flow technology
- Environmentally safe priming system: Pioneer Prime
- Auto-start controls

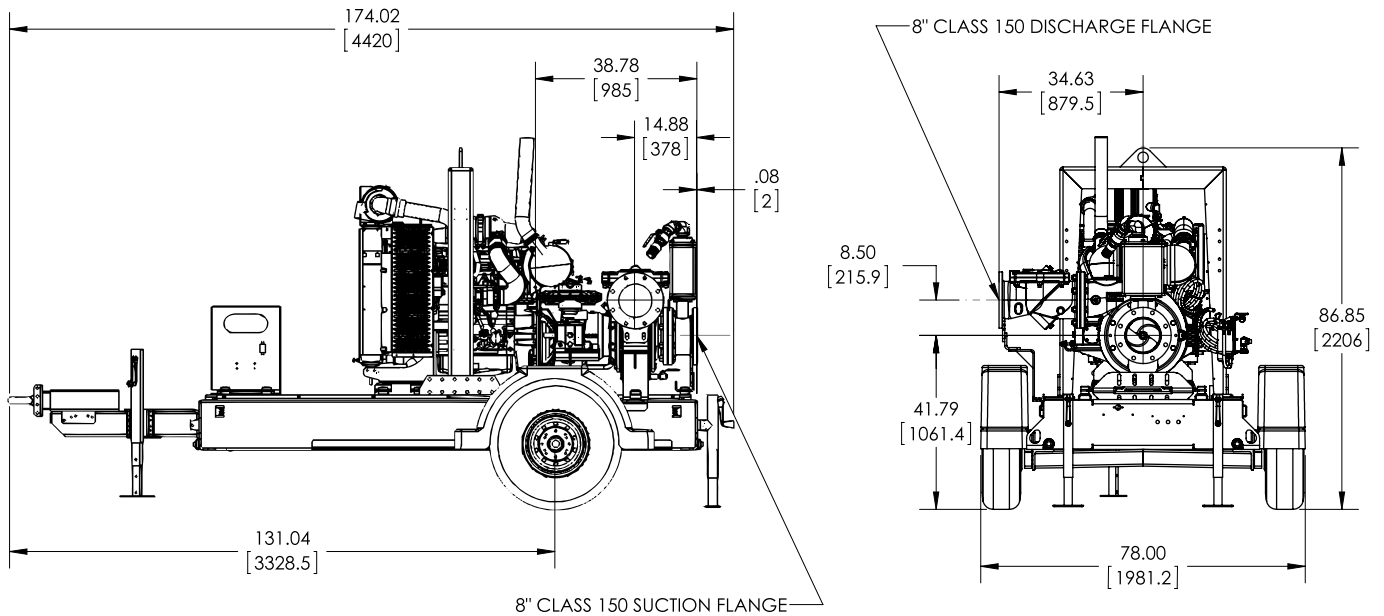
PACKAGE SPECIFICATIONS

Fuel Capacity	135 gal (511 L)
Control Panel	LOFA CP900
Operating Speed (Min. / Max.)	1,000 / 2,000 rpm
Weight (Dry / Wet)	5,040 lbs / 6,000 lbs
Instrument Compatibility	High/low level floats
Trailer Brakes	Electric

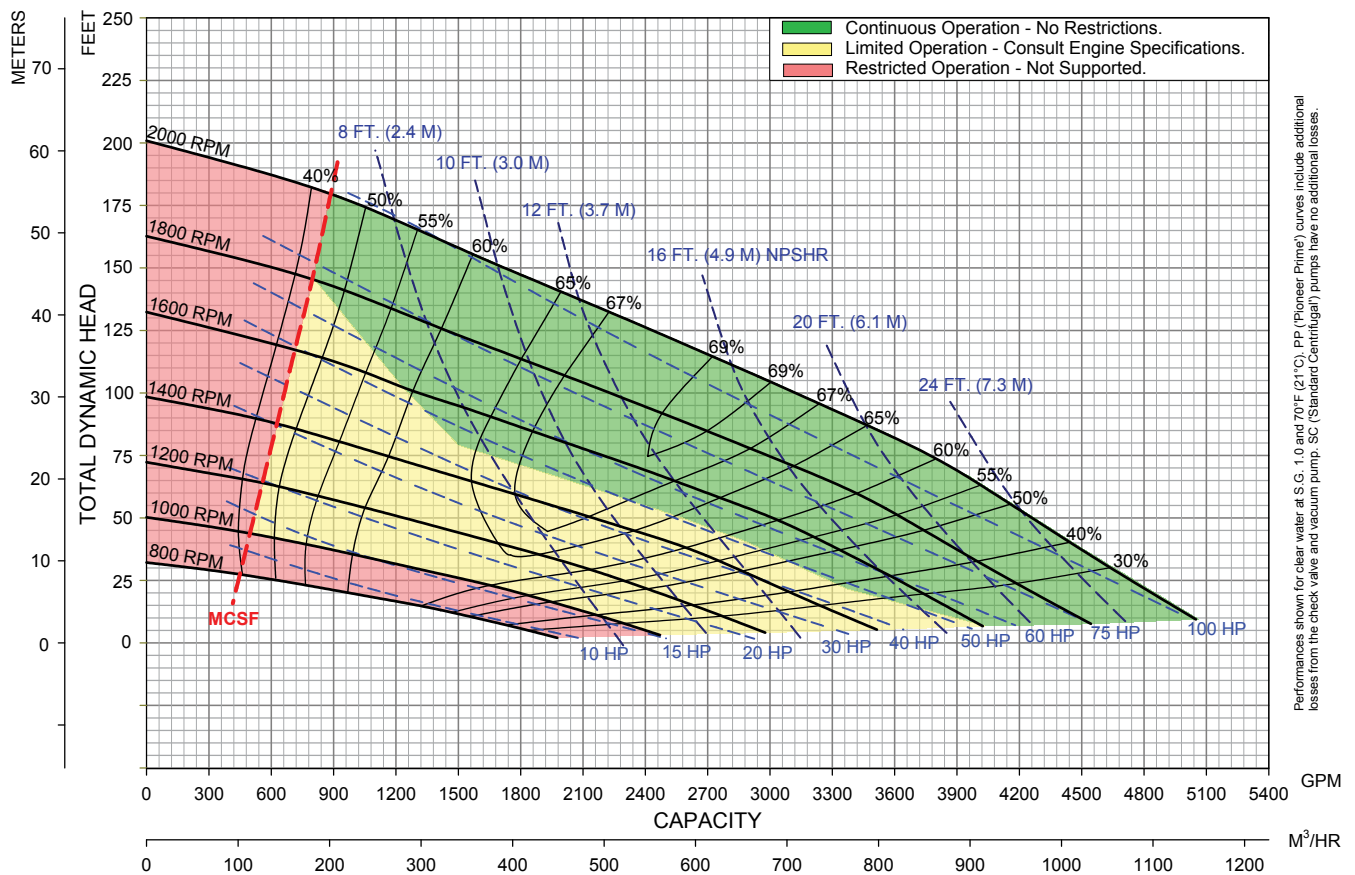
MATERIALS OF CONSTRUCTION

Impeller	CA6NM Stainless Steel
Shaft	17-4 PH Stainless Steel
Wear Ring	ASTM A48 Class 40 Gray Iron
Suction Cover	Ductile Iron ASTM A536 65-45-12
Volute	Ductile Iron ASTM A536 65-45-12
Brac-Plate/Bracket	Ductile Iron ASTM A536 65-45-12
Mechanical Seal	Silicon Carbide rotating and Tungsten Carbide stationary

MECHANICAL DIMENSIONS



PERFORMANCE CURVE



Pioneer Prime Sound Attenuated Diesel-Driven Trailer Package

SAPP88S12L71-TCD3.6

88S12-PPI-02-D

PUMP SPECIFICATIONS

Size	8" x 8" (200 x 200 mm)
Impeller Diameter	12.25" (311 mm)
Max Flow	5,040 gpm (1,150 m ³ /h)
Max Head	180 feet (55 meters)
Solids Size	3" (76 mm)
Max. Operating Temp.	200 °F (93 °C)
Max. Operating Press.	260 psi (1,800 kPa)

ENGINE SPECIFICATIONS

FT4 Engine Type	Deutz TCD3.6L4
Displacement	220 cu. in. (3.6 l)
Fuel Consumption	5.5 gph (21 l/h) @ 1,800 rpm
Continuous HP	111 HP (83 kW) @ 1,800 rpm
Peak Intermittent HP Rating	134 HP (100 kW)
FT4 Specifics (Def or No Def, DOC, SCR, etc.)	DOC
Instrument Panel	Oil pressure gauge, voltmeter, hourmeter, tachometer

PIONEER PRIME PRIMING SYSTEM

Priming System	Mechanically driven diaphragm-style vacuum pump
Air Removal Cap.	50 cfm (.02 cms)
Priming Chamber	Positive sealing air separation w/stainless steel components
Discharge Check Valve	Swing style; ductile iron w/nitrile disc
Run Dry System	Oil-lubricated mech. seal allows pump to run completely dry without damage

FEATURES AND BENEFITS

- Indefinite run-dry capability
- Extreme flow technology
- Environmentally safe priming system: Pioneer Prime
- Auto-start controls

PACKAGE SPECIFICATIONS

Fuel Capacity	135 gal (511 L)
Control Panel	LOFA CP900
Operating Speed (Min. / Max.)	1,000 / 2,000 rpm
Weight (Dry / Wet)	5,970 lbs / 6,930 lbs
Instrument Compatibility	High/low level floats
Trailer Brakes	Electric
Enclosure dB(A)	69 dB(A) @ 23 feet (7 meters)
Rating	

MATERIALS OF CONSTRUCTION

Impeller	CA6NM Stainless Steel
Shaft	17-4 PH Stainless Steel
Wear Ring	ASTM A48 Class 40 Gray Iron
Suction Cover	Ductile Iron ASTM A536 65-45-12
Volute	Ductile Iron ASTM A536 65-45-12
Brac-Plate/Bracket	Ductile Iron ASTM A536 65-45-12
Mechanical Seal	Silicon Carbide rotating and Tungsten Carbide stationary



SCOPE OF SUPPLY

Quote Information	
Quote No.	2036721
Quote Date	18 Aug 2023
Project name	Default
Est. Leadtime ARO	N/A

Customer Information	
To	
Street Address	
City/State/Zip	/ /
Phone No.	

Pump		
Order No.	Qty	Description
	1	Pioneer Pump / ElectricPAK
		Pump Options
		Priming System: Pioneer Priming System - Top Mounted
		Impeller Trim: 12.25
		Volute Orientation: Top Horizontal Discharge
		Pump Material: Ductile Iron Casing, CA6NM Stainless Steel Impeller
		Mounting: SAE 3 - No Coupling

Base		
Order No.	Qty	Description
1		Packaging Options
		Package Type: Package Electric Driven
88S123T701225T-100H4B1	1	Package Selected: 88S123T701225T-100H4B1
		Base Type: Stationary Base
		Pressure Gauge Kit: Not Fitted
		Single Point Lifting Bail: Not Fitted
		Pump Drain Kit: Not Fitted
		Suction Connection: Class 150 Flange
		Discharge Connection: Class 150 Flange

PEP Controls		
Order No.	Qty	Description
1		Controls
		Pioneer ElectricPAK VFD: Exclude ElectricPAK VFD
		Power Quick Connect Junction Box: Exclude

Pump Performance Datasheet

Company Name	
Company contact number	
Quote Number	2036721
Project name	Default

Model/Order No.	88S12
Stages	1
Quantity of pumps in parallel	1
Based on curve number	88S12
Saved Date	22 Aug 2023 10:42 AM

Operating Conditions

Flow, rated	: 2,598.6 USgpm
Head, rated (requested)	: 82.76 ft
Head, rated (actual)	: 82.76 ft
Suction pressure, rated / max	: 0.00 / 0.00 psi.g
NPSH available	: Ample
Site Supply Frequency	: 60 Hz

Performance

Speed criteria	: Synchronous
Speed	: 1800 rpm
Impeller dia.	: 12.25 in
Impeller diameter, maximum	: 12.25 in
Impeller diameter, minimum	: 9.00 in
Efficiency	: 64.03 %
NPSH required / margin required	: 12.40 / 0.00 ft
Ns (imp. eye flow) / Nss (imp. eye flow)	: 2,909 / 13,310 US Units
MCSF	: 805.5 USgpm
Head max.	: 156.3 ft
Head rise to shutoff	: 88.88 %
Flow, best eff. point	: 2,317.7 USgpm
Flow ratio, rated / BEP	: 112.12 %
Diameter ratio (rated / max)	: 100.00 %
Head ratio (rated dia / max dia)	: 100.00 %
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Selection status	: Acceptable

Liquid

Liquid type	: Water
Additional liquid description	:
Solids diameter, max	: 0.00 in
Solids concentration, by volume	: 0.00 %
Temperature	: 68.00 deg F
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Vapor pressure, rated	: 0.34 psi.a

Material

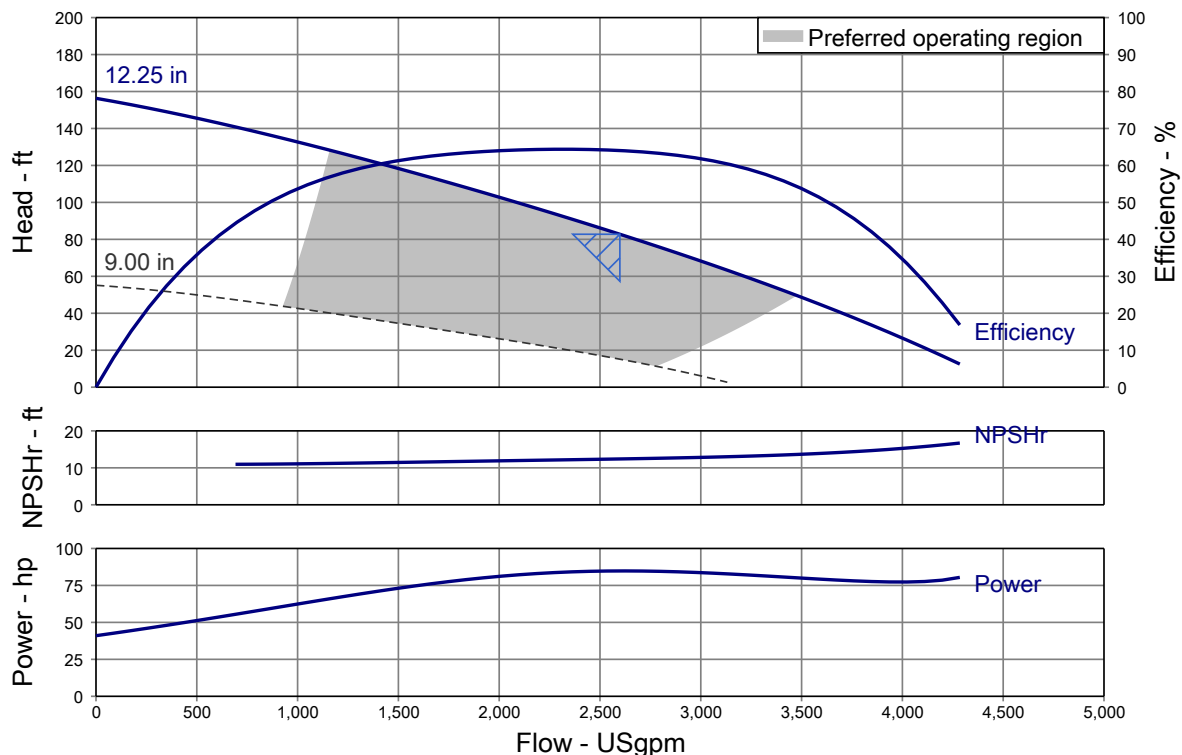
Material selected	: Standard
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Pressure Data

Shut off pressure	: 67.65 psi.g
Maximum allowable working pressure	: N/A
Maximum allowable suction pressure	: N/A
Hydrostatic test pressure	: N/A

Driver & Power Data (@Max density)

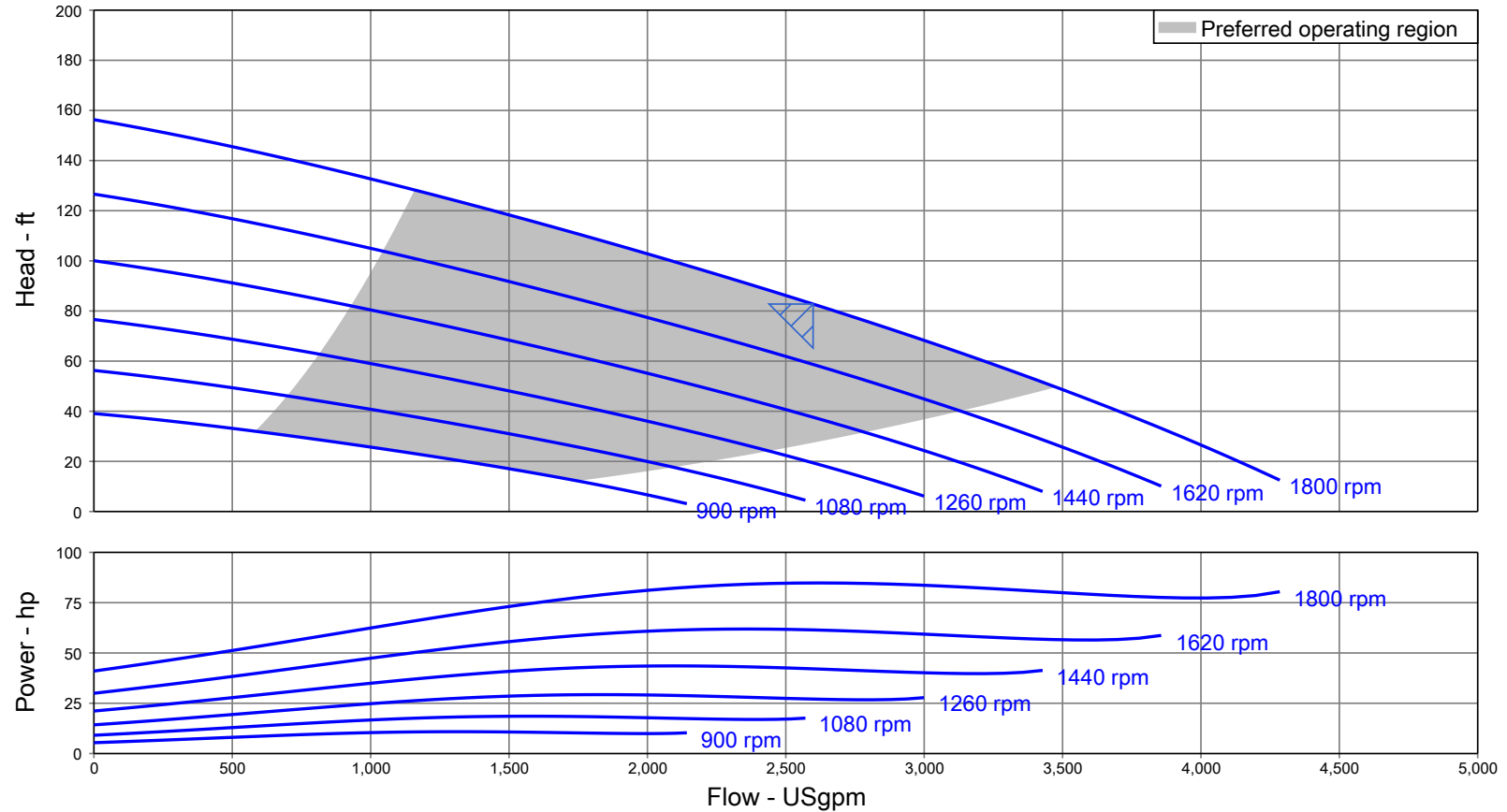
Driver sizing specification	: Maximum power
Margin over specification	: 0.00 %
Service factor	: 1.15 (used)
Power, hydraulic	: 54.30 hp
Power, rated	: 84.80 hp
Power, maximum	: 84.80 hp
Motor rating	: 75.00 hp / 55.93 kW



Multi-Speed Performance Curve

Company Name	
Company contact number	

Quote Number	2036721
Quote Date	18 Aug 2023
Project name	Default

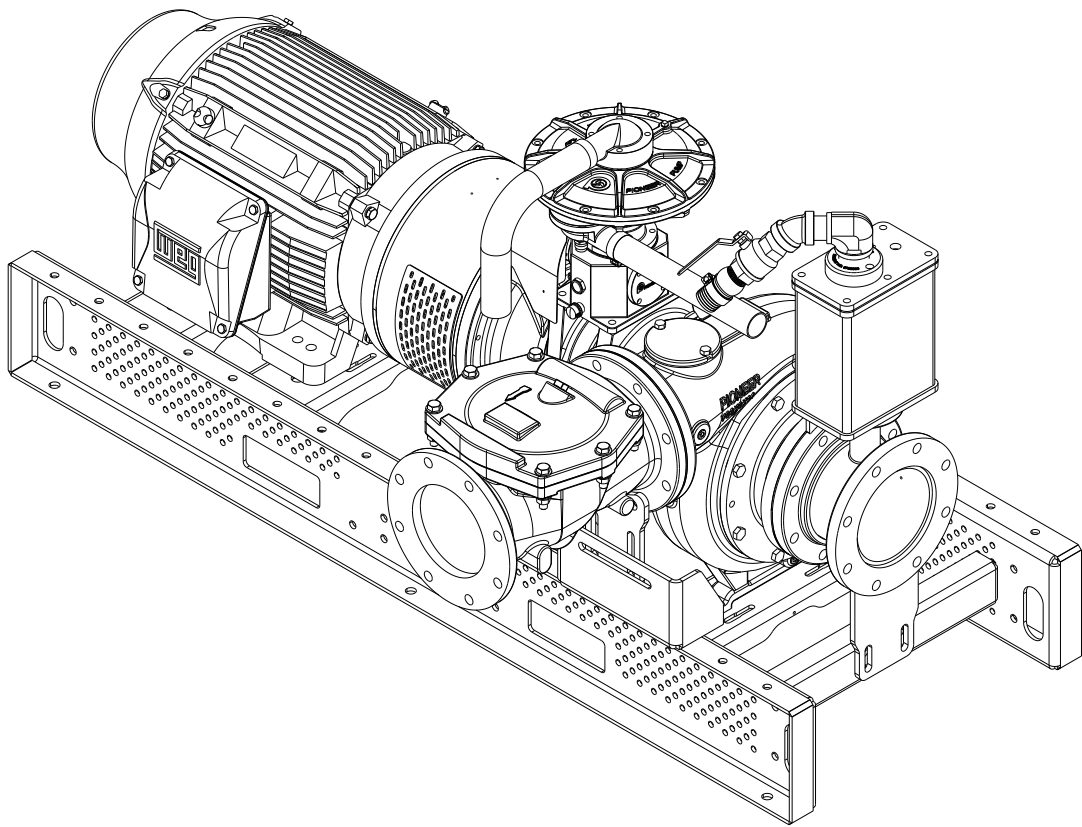
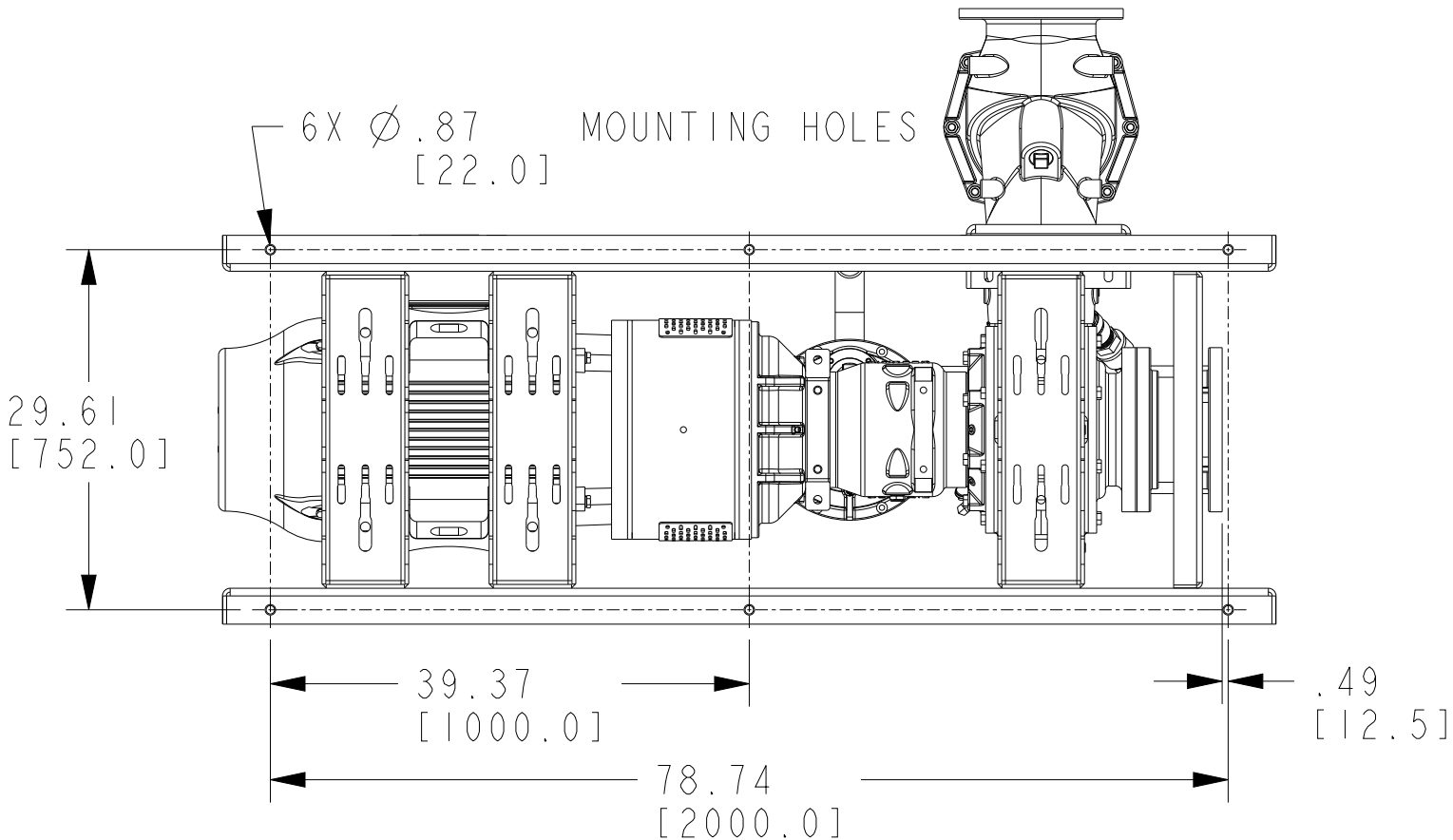
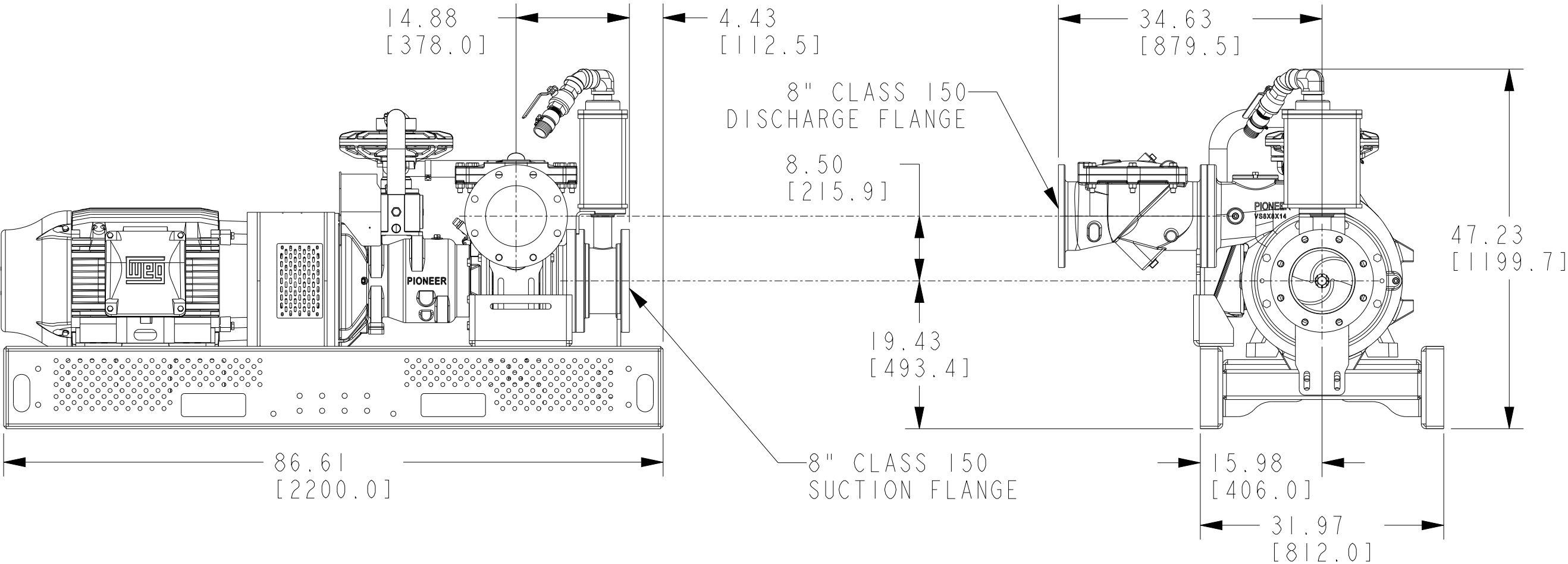


Description	: 88S12
Stages	: 1
Flow, rated	: 2,598.6 USgpm
Head, rated	: 82.76 ft

Speed	: 1800 rpm
Based on curve number	: 88S12
Efficiency	: 64.03 %
Power, rated	: 84.80 hp
Impeller dia.	: 12.25 in

NPSH required	: 12.40 ft
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Saved Date	: 22 Aug 2023 10:42 AM

REVISION	ECN	DESCRIPTION	ZONE	INITIALS DATE
00	.	RELEASED FOR PRODUCTION	.	RWC 2022-02-17



NOTE: MOTOR MODEL IS FOR REPRESENTATION ONLY. MOTOR FRAME SIZE AND MOTOR BRAND SUBJECT TO CHANGE.

TOLERANCES UNLESS OTHERWISE SPECIFIED	
$\angle$	$\pm .5^\circ$
X.X	± 0.02 [.5]
X.XX	± 0.02 [.5]
X.XXX	± 0.005 [.13]

DIMENSIONS ARE IN INCH [MM]

Creo MATH CAD DATA DO NOT SCALE	ASME Y14.5-2009		MATH CAD DATA AND DRAWING REVISION MUST MATCH
DRAWN BY: RWC, 2022-02-17	APPROVED: RWC, 2022-02-17	FIRST USED:	
SIMILAR TO:	MAKE FROM PART NUMBER: .	MODEL NUMBER: 88SI2_MED_404-5TC	
ENGINEERING MATERIAL SPECIFICATION (EMS):			

CONTROLLED PRODUCT	
NO CHANGES TO SOURCING WITHOUT PRIOR APPROVAL	
REQUIRED APPROVALS	
ENGINEERING	MANUFACTURING
MARKETING	AGENCY
DIMENSION BALLOONS	
	TOTAL ON DRAWING .
	LAST NUMBER USED .
CRITICAL TO QUALITY	
	TOTAL ON DRAWING .
	LAST NUMBER USED .

TITLE	DIM PAGE, 88SI2 MED BASE, 324T-405T		
SIZE	DWG NO	21437A	DWG REV
C			A
THE INFORMATION DISCLOSED HEREIN INCLUDES PROPRIETARY RIGHTS OF FRANKLIN ELECTRIC. NEITHER THIS DRAWING NOR THE INFORMATION DISCLOSED THEREIN SHALL BE REPRODUCED OR TRANSFERRED TO OTHER DOCUMENTS OR USED OR DISCLOSED TO OTHERS FOR ANY PURPOSE, EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY FRANKLIN ELECTRIC.			SHEET 1 OF 2

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase Product code : 12693788
Catalog # : 10018ET3E405T-W22G

Frame	: 404/5T	Locked rotor time	: 23s (cold) 13s (hot)
Output	: 100 HP (75 kW)	Temperature rise	: 80 K
Poles	: 4	Duty cycle	: Cont.(S1)
Frequency	: 60 Hz	Ambient temperature	: -20°C to +40°C
Rated voltage	: 230/460 V	Altitude	: 1000 m.a.s.l.
Rated current	: 226/113 A	Protection degree	: IP55
L. R. Amperes	: 1650/825 A	Cooling method	: IC411 - TEFC
LRC	: 7.3x(Code H)	Mounting	: F-1
No load current	: 76.0/38.0 A	Rotation ¹	: Both (CW and CCW)
Rated speed	: 1780 rpm	Noise level ²	: 68.0 dB(A)
Slip	: 1.11 %	Starting method	: Direct On Line
Rated torque	: 295 ft.lb	Approx. weight ³	: 1170 lb
Locked rotor torque	: 240 %		
Breakdown torque	: 260 %		
Insulation class	: F		
Service factor	: 1.25		
Moment of inertia (J)	: 29.9 sq.ft.lb		
Design	: B		

Output	25%	50%	75%	100%	Foundation loads	
Efficiency (%)	94.6	95.0	95.0	95.4	Max. traction	: 2087 lb
Power Factor	0.51	0.77	0.84	0.87	Max. compression	: 3257 lb

		Drive end	Non drive end
Bearing type	:	6316 C3	6314 C3
Sealing	:	WSeal	WSeal
Lubrication interval	:	10000 h	12000 h
Lubricant amount	:	34 g	27 g
Lubricant type	:	Mobil Polyrex EM	

Notes
USABLE @208V 245A SF 1.10 SFA 270A

This revision replaces and cancel the previous one, which must be eliminated.

- (1) Looking the motor from the shaft end.
- (2) Measured at 1m and with tolerance of +3dB(A).
- (3) Approximate weight subject to changes after manufacturing process.
- (4) At 100% of full load.

These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1.

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page Revision 1 / 1		
Checked by				
Date	20/12/2021			

Pioneer Prime Diesel-Driven Centrifugal Pump Trailer Package

PP108S17L71-6090CI550

108S17-PPI-01-J



PUMP SPECIFICATIONS

Size	10" x 8" (254 x 200 mm)
Impeller Diameter	17" (445 mm)
Max Flow	7,000 gpm (1,590 m ³ /h)
Max Head	380 feet (116 meters)
Solids Size	3.5" (90 mm)
Max. Operating Temp.	200 °F (93 °C)
Max. Operating Press.	260 psi (1800 kPa)

ENGINE SPECIFICATIONS

FT4 Engine Type	John Deere 6090CI550
Displacement	549 cu. in. (9.0 l)
Fuel Consumption	15.97 gph (60.4 l/h) @ 1800 rpm
Continuous HP	341 HP (250 kW) @ 1800 rpm
Peak Intermittent HP Rating	350 HP (257 kW)
FT4 Specifics (Def or No Def, DOC, SCR, etc.)	DOC / DPF / SCR
Instrument Panel	Oil pressure gauge, voltmeter, hourmeter, tachometer

PIONEER PRIME PRIMING SYSTEM

Priming System	Mechanically driven diaphragm-style vacuum pump
Air Removal Cap.	50 cfm (.02 cms)
Priming Chamber	Positive sealing air separation w/stainless steel components
Discharge Check Valve	Swing style; ductile iron w/nitrile disc
Run Dry System	Oil-lubricated mech. seal allows pump to run completely dry without damage

FEATURES AND BENEFITS

- Indefinite run-dry capability
- Extreme flow technology
- Environmentally safe priming system: Pioneer Prime
- Auto-start controls

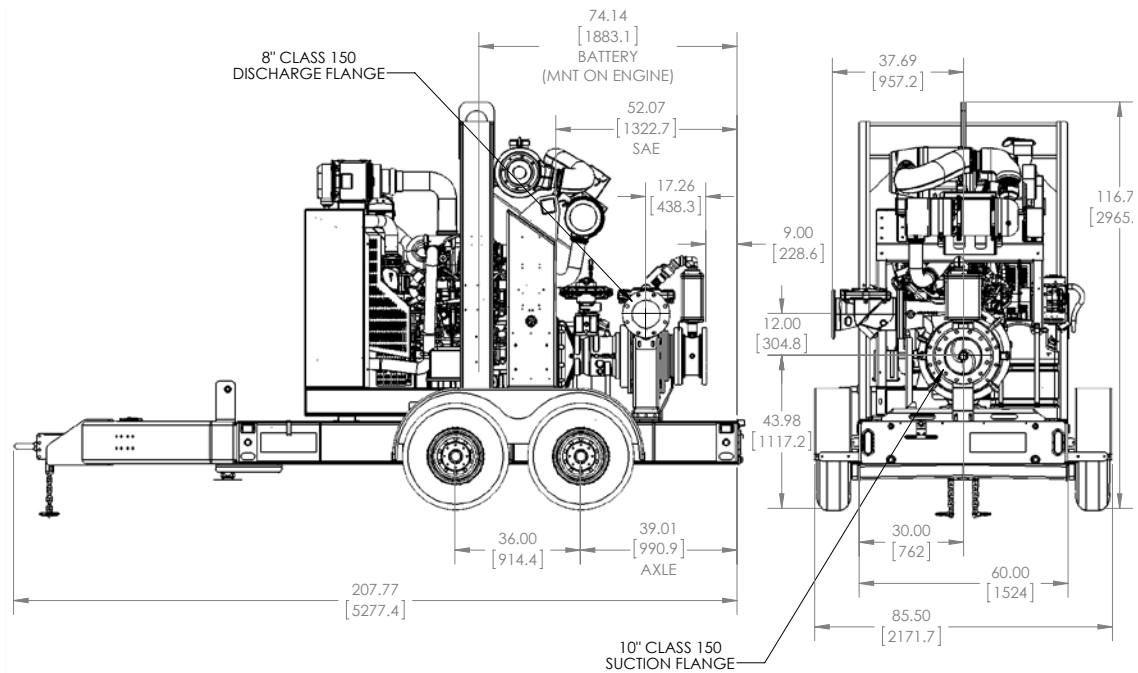
PACKAGE SPECIFICATIONS

Fuel Capacity	250 gal (946 L)
Control Panel	LOFA CP900
Operating Speed (Min. / Max.)	1,000 / 2,400 rpm
Weight (Dry/Wet)	10,520 lbs / 12,300 lbs
Instrument Compatibility	High/low level floats, transducers
Trailer Brakes	Electric

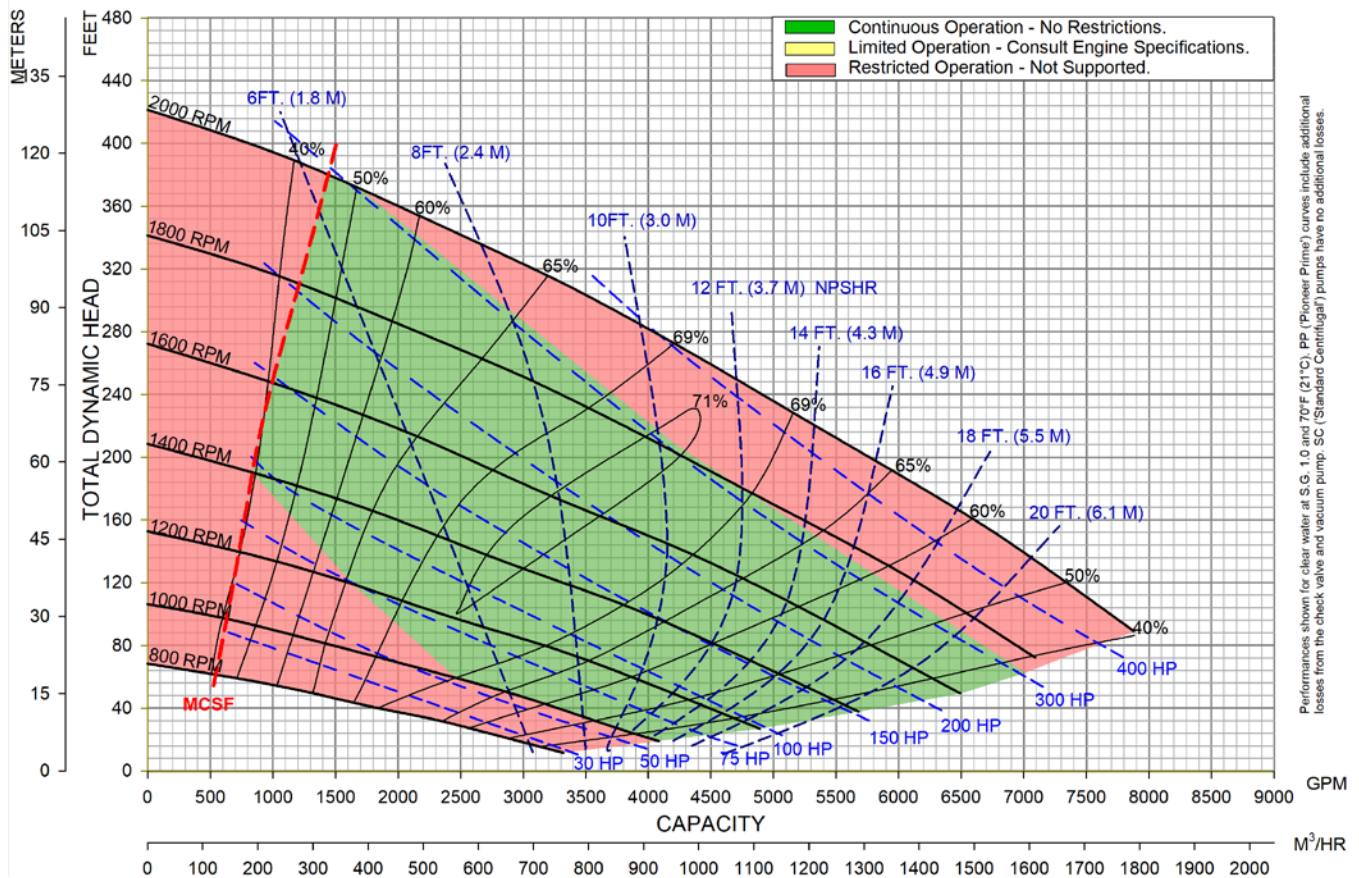
MATERIALS OF CONSTRUCTION

Impeller	CA6NM Stainless Steel
Shaft	17-4 PH Stainless Steel
Wear Ring	ASTM A48 Class 40 Gray Iron
Suction Cover	Ductile Iron ASTM A536 65-45-12
Volute	Ductile Iron ASTM A536 65-45-12
Brac-Plate/Bracket	Ductile Iron ASTM A536 65-45-12
Mechanical Seal	Silicon Carbide rotating and Tungsten Carbide stationary

MECHANICAL DIMENSIONS



PERFORMANCE CURVE



SCOPE OF SUPPLY

Quote Information	
Quote No.	2036721
Quote Date	18 Aug 2023
Project name	Default
Est. Leadtime ARO	N/A

Customer Information	
To	
Street Address	
City/State/Zip	/ /
Phone No.	

Pump		
Order No.	Qty	Description
	1	Pioneer Pump / ElectricPAK
		Pump Options
		Priming System: Pioneer Priming System - Top Mounted
		Impeller Trim: 17.5
		Volute Orientation: Top Horizontal Discharge
		Pump Material: Ductile Iron Casing, CA6NM Stainless Steel Impeller
		Mounting: SAE 3 - No Coupling

Base		
Order No.	Qty	Description
1		Packaging Options
		Package Type: Package Electric Driven
108S173T701750T-350H4C1	1	Package Selected: 108S173T701750T-350H4C1
		Base Type: Stationary Base
		Pressure Gauge Kit: Not Fitted
		Single Point Lifting Bail: Not Fitted
		Pump Drain Kit: Not Fitted
		Suction Connection: Class 150 Flange
		Discharge Connection: Class 150 Flange

PEP Controls		
Order No.	Qty	Description
1		Controls
		Pioneer ElectricPAK VFD: Exclude ElectricPAK VFD
		Power Quick Connect Junction Box: Exclude

Pump Performance Datasheet

Company Name	
Company contact number	
Quote Number	2036721
Project name	Default

Model/Order No.	108S17
Stages	1
Quantity of pumps in parallel	1
Based on curve number	108S17
Saved Date	22 Aug 2023 1:55 PM

Operating Conditions

Flow, rated : 4,081.5 USgpm
 Head, rated (requested) : 214.3 ft
 Head, rated (actual) : 214.3 ft
 Suction pressure, rated / max : 0.00 / 0.00 psi.g
 NPSH available : Ample
 Site Supply Frequency : 60 Hz

Performance

Speed criteria : Synchronous
 Speed : 1800 rpm
 Impeller dia. : 17.50 in
 Impeller diameter, maximum : 17.50 in
 Impeller diameter, minimum : 14.00 in
 Efficiency : 71.82 %
 NPSH required / margin required : 9.42 / 0.00 ft
 Ns (imp. eye flow) / Nss (imp. eye flow) : 1,941 / 21,939 US Units
 MCSF : 1,166.0 USgpm
 Head max. : 349.4 ft
 Head rise to shutoff : 63.00 %
 Flow, best eff. point : 3,861.4 USgpm
 Flow ratio, rated / BEP : 105.70 %
 Diameter ratio (rated / max) : 100.00 %
 Head ratio (rated dia / max dia) : 100.00 %
 Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] : 1.00 / 1.00 / 1.00 / 1.00
 Selection status : Acceptable

Liquid

Liquid type : Water
 Additional liquid description :
 Solids diameter, max : 0.00 in
 Solids concentration, by volume : 0.00 %
 Temperature : 68.00 deg F
 Fluid density : 1.000 / 1.000 SG
 Viscosity : 1.00 cP
 Vapor pressure, rated : 0.34 psi.a

Material

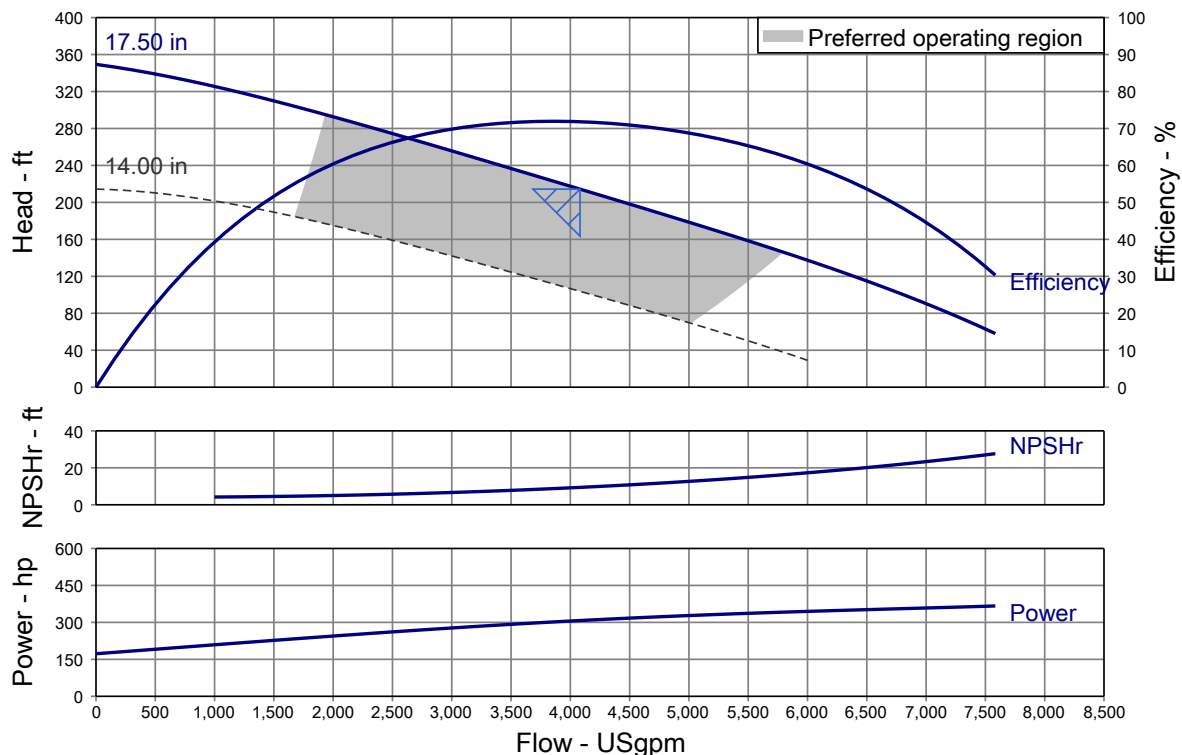
Material selected : Standard

Pressure Data

Shut off pressure : 151.2 psi.g
 Maximum allowable working pressure : N/A
 Maximum allowable suction pressure : N/A
 Hydrostatic test pressure : N/A

Driver & Power Data (@Max density)

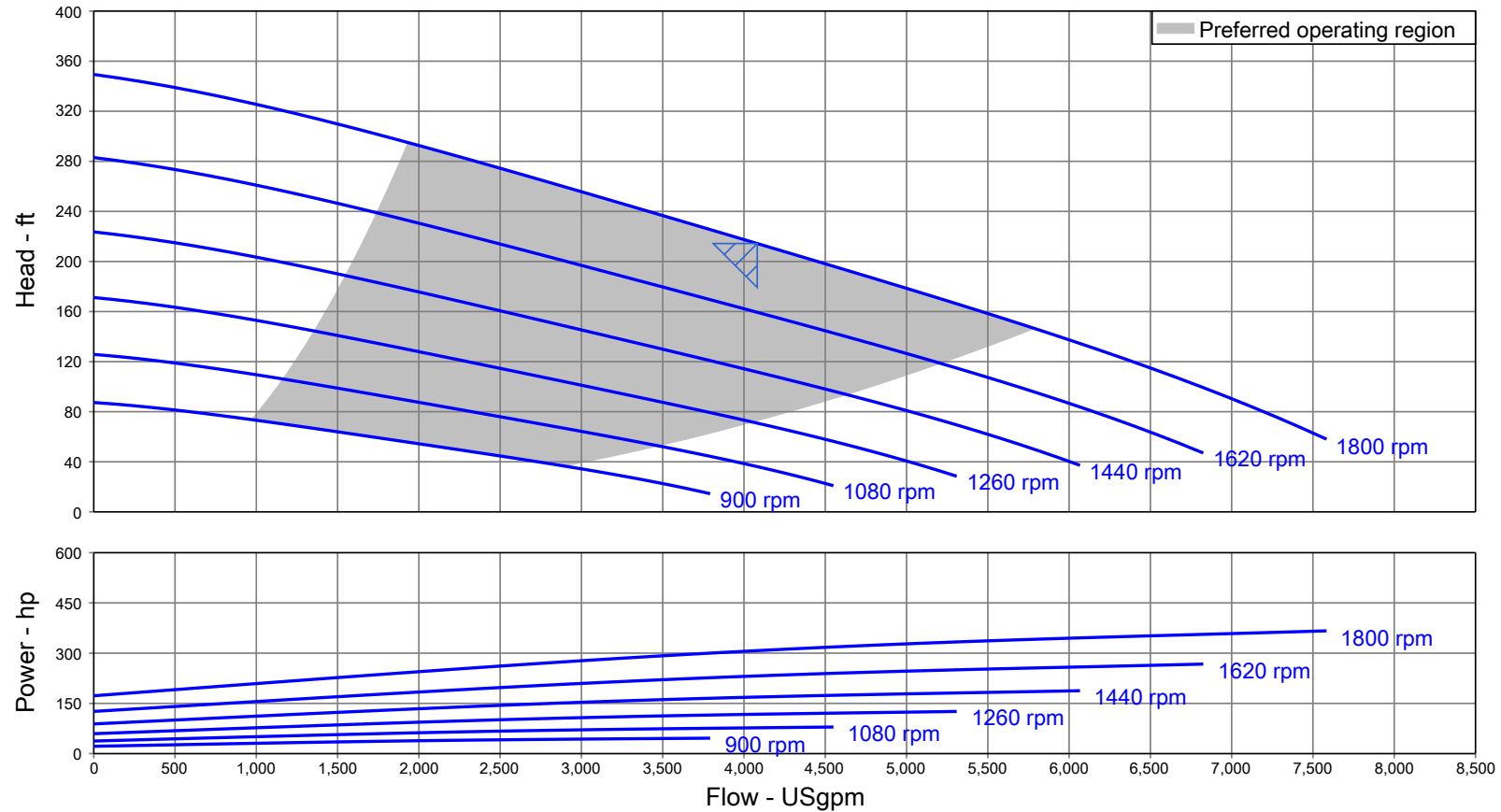
Driver sizing specification : Maximum power
 Margin over specification : 0.00 %
 Service factor : 1.15 (used)
 Power, hydraulic : 221 hp
 Power, rated : 308 hp
 Power, maximum : 367 hp
 Motor rating : 350 hp / 261 kW



Multi-Speed Performance Curve

Company Name	
Company contact number	

Quote Number	2036721
Quote Date	18 Aug 2023
Project name	Default

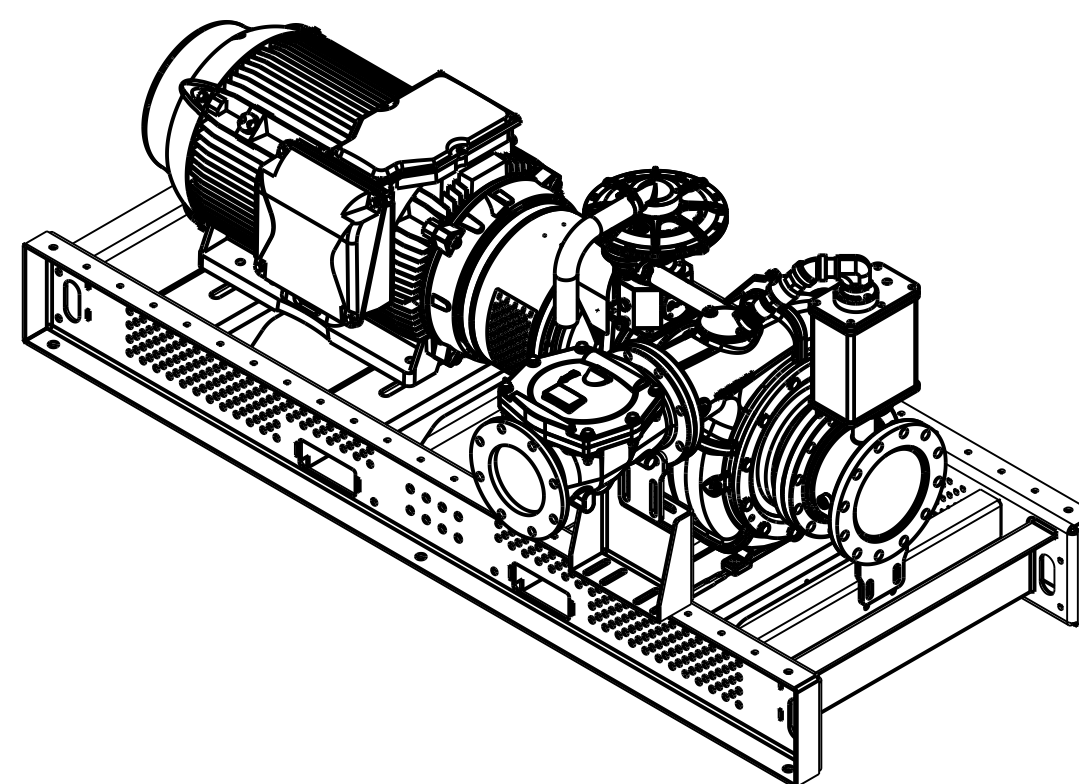
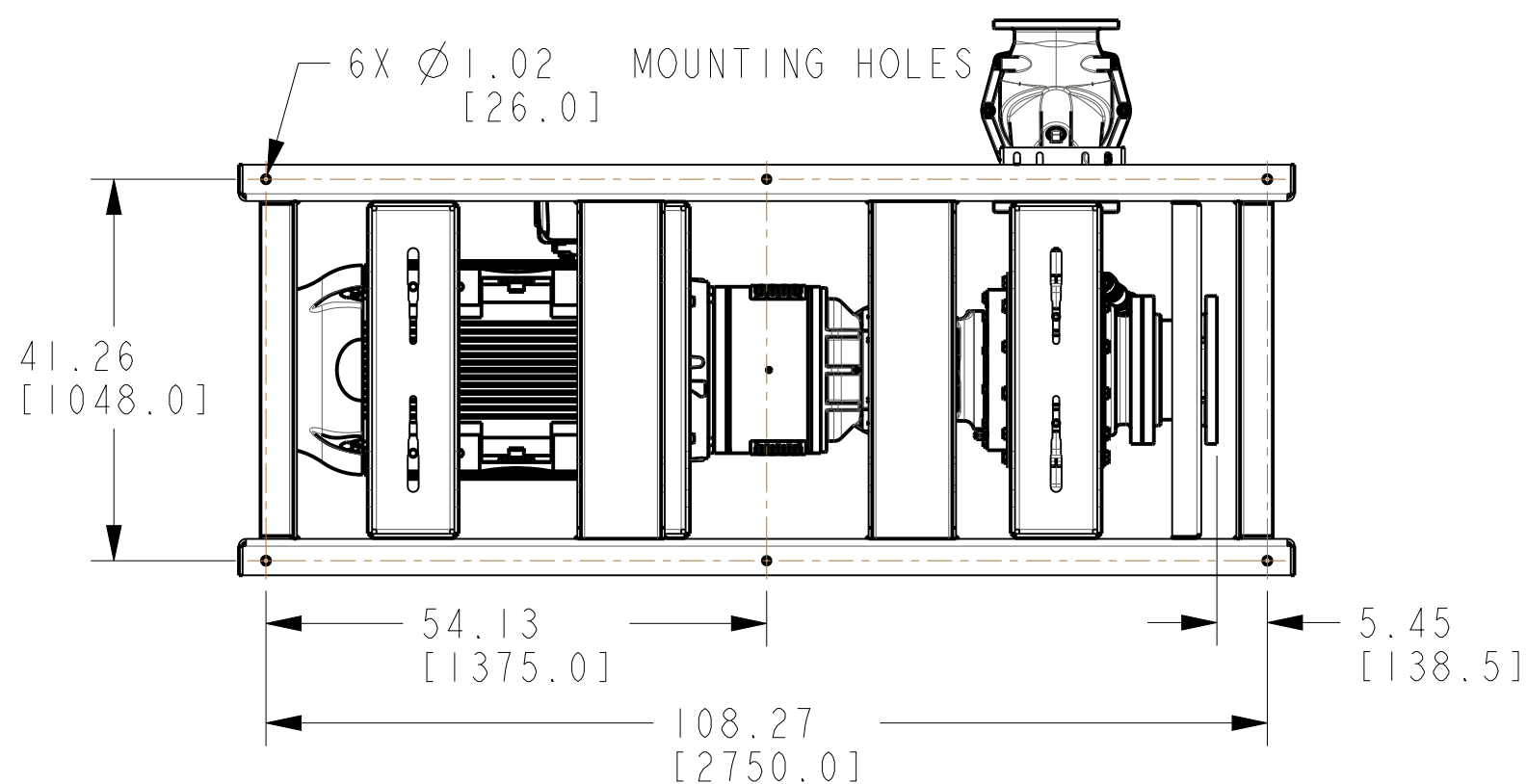
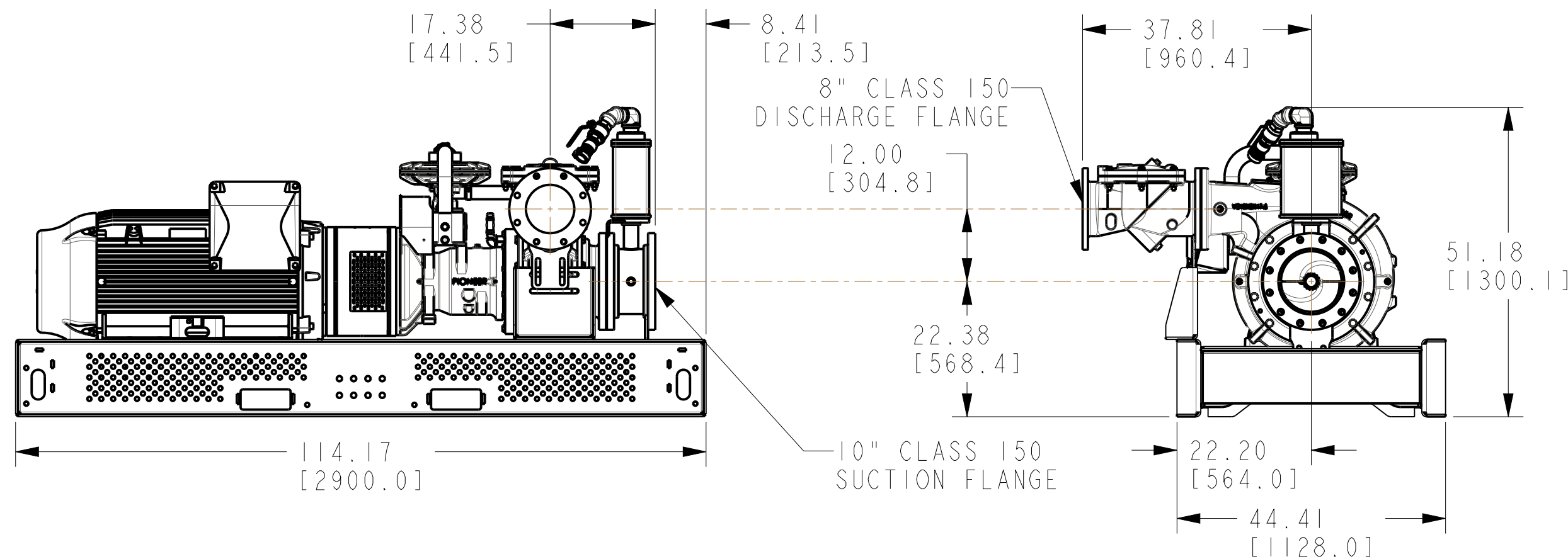


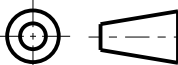
Description	: 108S17
Stages	: 1
Flow, rated	: 4,081.5 USgpm
Head, rated	: 214.3 ft

Speed	: 1800 rpm
Based on curve number	: 108S17
Efficiency	: 71.82 %
Power, rated	: 308 hp
Impeller dia.	: 17.50 in

NPSH required	: 9.42 ft
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Saved Date	: 22 Aug 2023 1:55 PM

MODEL: A.2		MODIFIED: FALSE		STATE: Prototype	
DRAWING: A.1		MODIFIED: FALSE			
REVISION	ECN	DESCRIPTION		ZONE	INITIALS DATE
00	.	RELEASED FOR PRODUCTION		.	RWC 2022-02-22



TOLERANCES UNLESS OTHERWISE SPECIFIED			
$\angle = \pm .5^\circ$ $X.X = \pm 0.02 [.5]$ $X.XX = \pm 0.02 [.5]$ $X.XXX = \pm 0.005 [.13]$			
DIMENSIONS ARE IN INCH [MM]			
Creo MATH CAD DATA DO NOT SCALE		ASME Y14.5-2009	 MATH CAD DATA AND DRAWING REVISION MUST MATCH
DRAWN BY: RWC, 2022-02-22		APPROVED: RWC, 2022-02-22	
SIMILAR TO:		FIRST USED:	
MAKE FROM PART NUMBER:		MODEL NUMBER: 108S17_LRG_447-9TC	
ENGINEERING MATERIAL SPECIFICATION (EMS):			
TITLE DIM PAGE, 108S17 LRG BASE, 444T-449T			
SIZE C	DWG NO	21448A	DWG REV A
SHEET 1		OF 2	
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CONTROLLED PRODUCT			
NO CHANGES TO SOURCING WITHOUT PRIOR APPROVAL			
REQUIRED APPROVALS			
ENGINEERING	MANUFACTURING	MARKETING	AGENCY
DIMENSION BALLOONS			
	TOTAL ON DRAWING		
	LAST NUMBER USED		
CRITICAL TO QUALITY			
	TOTAL ON DRAWING		
	LAST NUMBER USED		

NOTE: MOTOR MODEL IS FOR REPRESENTATION ONLY. MOTOR FRAME SIZE AND MOTOR BRAND SUBJECT TO CHANGE.

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase Product code : 11473721
Catalog # : 35018ET3G449T-W22

Frame	: 447/9T	Locked rotor time	: 25s (cold) 14s (hot)
Output	: 350 HP (260 kW)	Temperature rise	: 80 K
Poles	: 4	Duty cycle	: Cont.(S1)
Frequency	: 60 Hz	Ambient temperature	: -20°C to +40°C
Rated voltage	: 460 V	Altitude	: 1000 m.a.s.l.
Rated current	: 399 A	Protection degree	: IP55
L. R. Amperes	: 3192 A	Cooling method	: IC411 - TEFC
LRC	: 8.0x(Code J)	Mounting	: F-1
No load current	: 135 A	Rotation ¹	: Both (CW and CCW)
Rated speed	: 1785 rpm	Noise level ²	: 75.0 dB(A)
Slip	: 0.83 %	Starting method	: Direct On Line
Rated torque	: 1030 ft.lb	Approx. weight ³	: 3043 lb
Locked rotor torque	: 280 %		
Breakdown torque	: 280 %		
Insulation class	: F		
Service factor	: 1.15		
Moment of inertia (J)	: 118 sq.ft.lb		
Design	: A		

Output	25%	50%	75%	100%	Foundation loads	
Efficiency (%)	95.7	95.8	96.2	96.2	Max. traction	: 7234 lb
Power Factor	0.48	0.73	0.82	0.85	Max. compression	: 10277 lb

		Drive end	Non drive end
Bearing type	:	6322 C3	6319 C3
Sealing	:	WSeal	WSeal
Lubrication interval	:	6000 h	8000 h
Lubricant amount	:	60 g	45 g
Lubricant type	:	Mobil Polyrex EM	

Notes

This revision replaces and cancel the previous one, which must be eliminated.

- (1) Looking the motor from the shaft end.
- (2) Measured at 1m and with tolerance of +3dB(A).
- (3) Approximate weight subject to changes after manufacturing process.
- (4) At 100% of full load.

These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1.

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page 1 / 6 Revision		
Checked by				
Date	23/02/2021			

Pioneer Prime Diesel-Driven Centrifugal Pump Trailer Package

PP128S20L71-6135CI550

128S20-PPI-01-J

PUMP SPECIFICATIONS

Size	12"x 8" (300 mm x 200 mm)
Impeller Diameter	19.25" (500 mm)
Max Flow	8,400 gpm (1908 m ³ /h)
Max Head	480 feet (146 meters)
Solids Size	3" (76 mm)
Max. Operating Temp.	200 °F (93 °C)
Max. Operating Press.	260 psi (1793 kPa)

ENGINE SPECIFICATIONS

FT4 Engine Type	John Deere 6135CI550
Displacement	824 cu.in (13.5 L)
Fuel Consumption	25.35 g/h (95.9 l/h)
Continuous HP	527 hp (388 kW)
Peak Intermittent HP Rating	617 hp (454 kW)
FT4 Specifics (Def or No Def, DOC, SCR, etc.)	DOC, DPF, SCR, EGR
Instrument Panel	Oil pressure gauge, voltmeter, hourmeter, tachometer

PIONEER PRIME PRIMING SYSTEM

Priming System	Mechanically driven diaphragm-style vacuum pump
Air Removal Cap.	50 cfm (.02 cms)
Priming Chamber	Positive sealing air separation w/stainless steel components
Discharge Check Valve	Swing style; ductile iron w/nitrile disc
Run Dry System	Oil-lubricated mech. seal allows pump to run completely dry without damage



FEATURES AND BENEFITS

- Indefinite run-dry capability
- Extreme flow technology
- Environmentally safe priming system: Pioneer Prime
- Auto-start controls

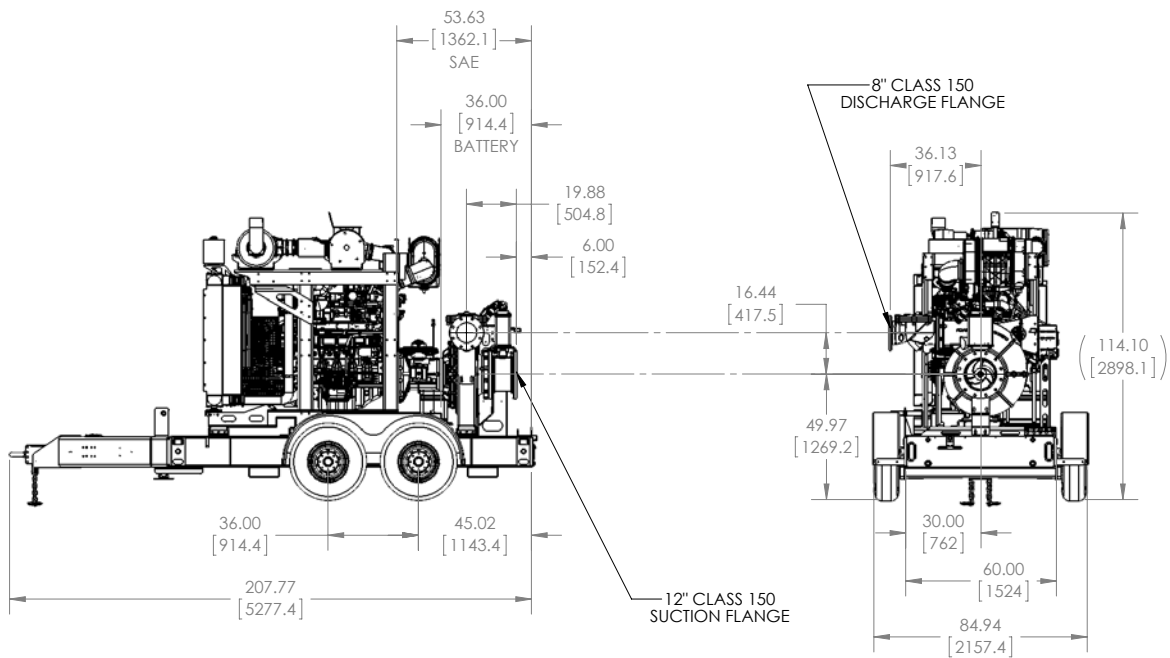
PACKAGE SPECIFICATIONS

Fuel Capacity	250 gal (946 L)
Control Panel	LOFA CP900
Operating Speed (Min. / Max.)	1,000 / 1,950 rpm
Weight (Dry / Wet)	12,920 lbs / 14,695 lbs
Instrument Compatibility	High/low level floats, transducers
Trailer Brakes	Electric

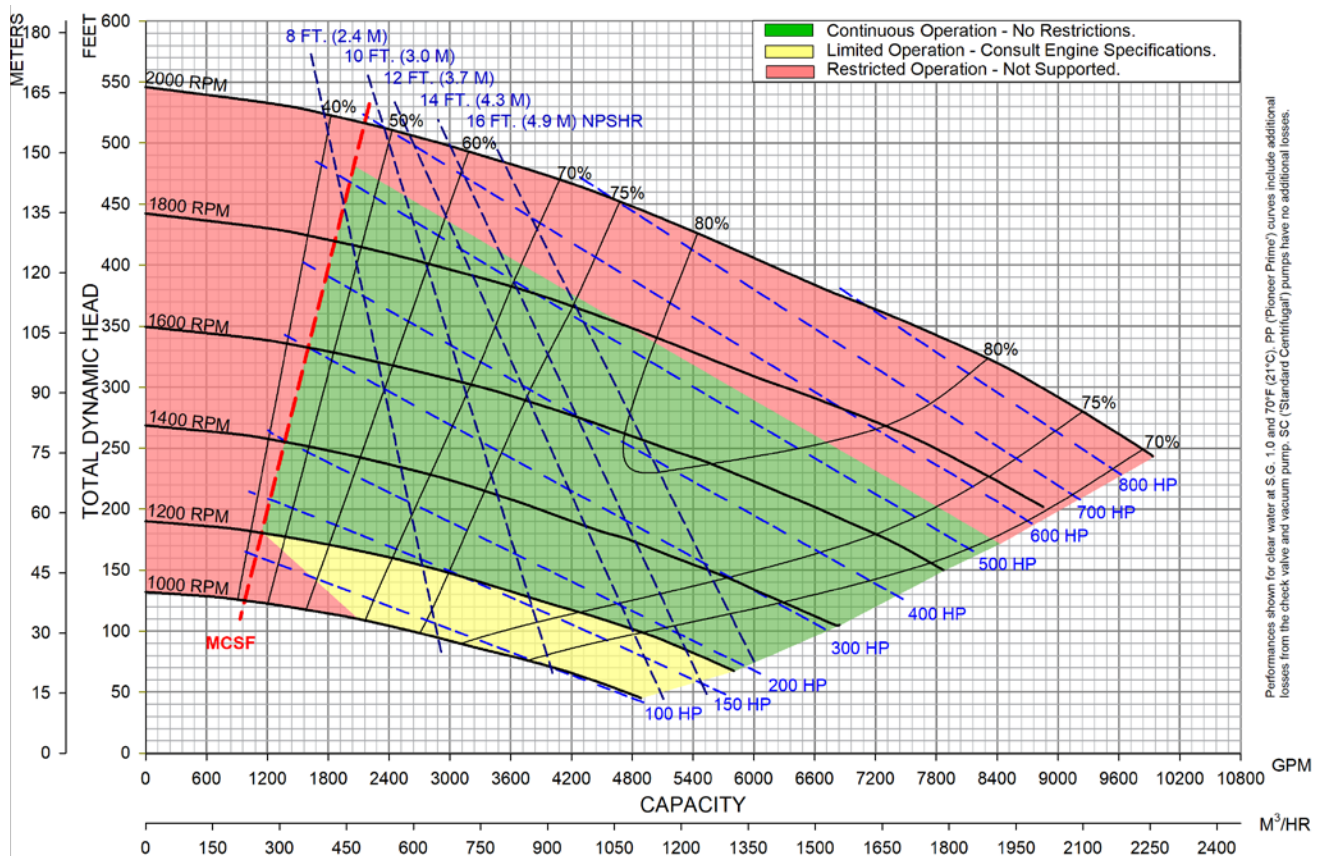
MATERIALS OF CONSTRUCTION

Impeller	CA6NM Stainless Steel
Shaft	17-4 PH Stainless Steel
Wear Ring	ASTM A48 Class 40 Gray Iron
Suction Cover	Ductile Iron ASTM A536 65-45-12
Volute	Ductile Iron ASTM A536 65-45-12
Brac-Plate/Bracket	Ductile Iron ASTM A536 65-45-12
Mechanical Seal	Silicon Carbide rotating and Tungsten Carbide stationary

MECHANICAL DIMENSIONS



PERFORMANCE CURVE



SCOPE OF SUPPLY

Quote Information	
Quote No.	2036721
Quote Date	18 Aug 2023
Project name	Default
Est. Leadtime ARO	N/A

Customer Information	
To	
Street Address	
City/State/Zip	/ /
Phone No.	

Pump		
Order No.	Qty	Description
	1	Pioneer Pump / ElectricPAK Pump Options Priming System: Pioneer Priming System - Top Mounted
		Impeller Trim: 19.25
		Volute Orientation: Top Horizontal Discharge
		Pump Material: Ductile Iron Casing, CA6NM Stainless Steel Impeller
		Mounting: Bareshaft

Kits		
Order No.	Qty	Description
1		Maintenance Parts Kits Include Maintenance Kits?: Exclude All Kits

Pump Performance Datasheet

Company Name	
Company contact number	
Quote Number	2036721
Project name	Default

Model/Order No.	128S20
Stages	1
Quantity of pumps in parallel	1
Based on curve number	128S20
Saved Date	22 Aug 2023 2:20 PM

Operating Conditions

Flow, rated	: 5,345.2 USgpm
Head, rated (requested)	: 295.4 ft
Head, rated (actual)	: 295.4 ft
Suction pressure, rated / max	: 0.00 / 0.00 psi.g
NPSH available	: Ample
Site Supply Frequency	: 60 Hz

Performance

Speed criteria	: Synchronous
Speed	: 1800 rpm
Impeller dia.	: 19.25 in
Impeller diameter, maximum	: 20.00 in
Impeller diameter, minimum	: 19.00 in
Efficiency	: 77.28 %
NPSH required / margin required	: 18.52 / 0.00 ft
Ns (imp. eye flow) / Nss (imp. eye flow)	: 1,754 / 15,453 US Units
MCSF	: 1,664.6 USgpm
Head max.	: 421.9 ft
Head rise to shutoff	: 42.86 %
Flow, best eff. point	: 5,327.4 USgpm
Flow ratio, rated / BEP	: 100.33 %
Diameter ratio (rated / max)	: 96.25 %
Head ratio (rated dia / max dia)	: 88.42 %
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Selection status	: Acceptable

Liquid

Liquid type	: Water
Additional liquid description	:
Solids diameter, max	: 0.00 in
Solids concentration, by volume	: 0.00 %
Temperature	: 68.00 deg F
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Vapor pressure, rated	: 0.34 psi.a

Material

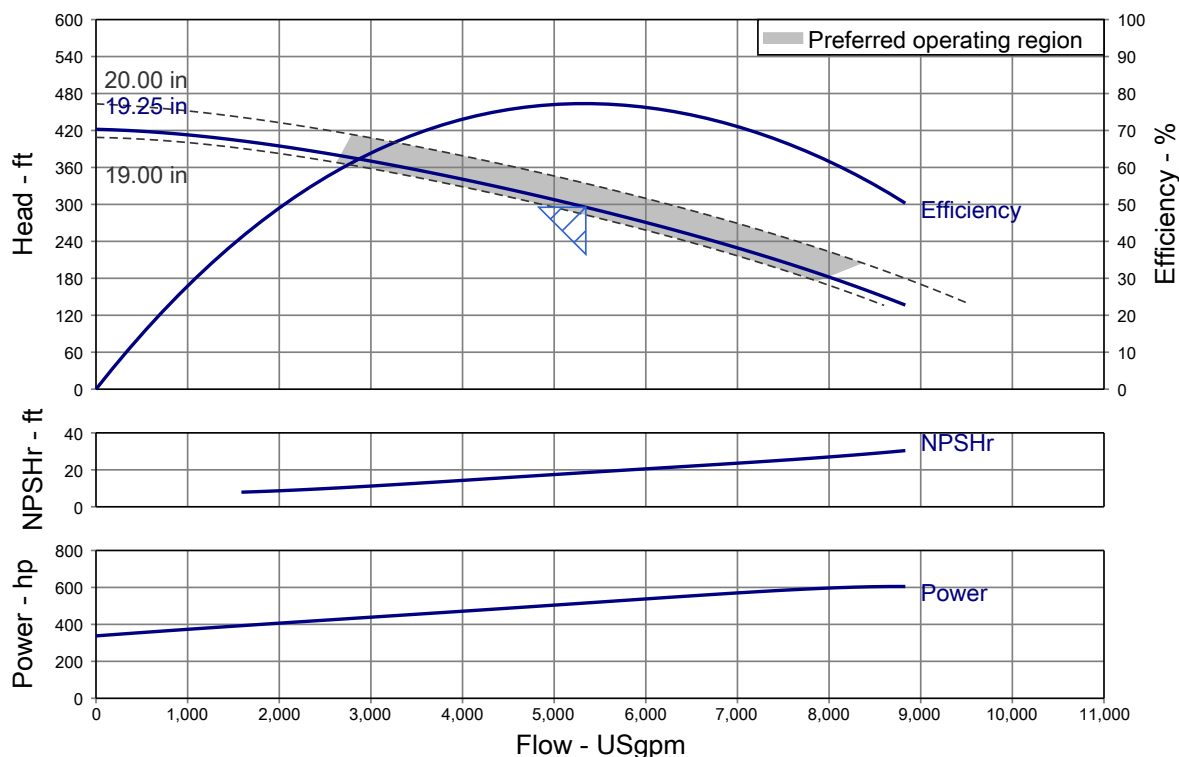
Material selected	: Standard
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Pressure Data

Shut off pressure	: 182.6 psi.g
Maximum allowable working pressure	: N/A
Maximum allowable suction pressure	: N/A
Hydrostatic test pressure	: N/A

Driver & Power Data (@Max density)

Driver sizing specification	: Maximum power
Margin over specification	: 0.00 %
Service factor	: 1.15 (used)
Power, hydraulic	: 399 hp
Power, rated	: 516 hp
Power, maximum	: 605 hp
Motor rating	: 600 hp / 447 kW



DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase Product code : 11679237
Catalog # : 60018ET3G586/7-W22

Frame	: 586/7T	Locked rotor time	: 28s (cold) 16s (hot)
Output	: 600 HP (440 kW)	Temperature rise	: 80 K
Poles	: 4	Duty cycle	: Cont.(S1)
Frequency	: 60 Hz	Ambient temperature	: -20°C to +40°C
Rated voltage	: 460 V	Altitude	: 1000 m.a.s.l.
Rated current	: 665 A	Protection degree	: IP55
L. R. Amperes	: 4722 A	Cooling method	: IC411 - TEFC
LRC	: 7.1x(Code G)	Mounting	: F-1
No load current	: 210 A	Rotation ¹	: Both (CW and CCW)
Rated speed	: 1790 rpm	Noise level ²	: 78.0 dB(A)
Slip	: 0.56 %	Starting method	: Direct On Line
Rated torque	: 1740 ft.lb	Approx. weight ³	: 4663 lb
Locked rotor torque	: 229 %		
Breakdown torque	: 250 %		
Insulation class	: F		
Service factor	: 1.15		
Moment of inertia (J)			

Output	25%	50%	75%	100%	Foundation loads	
Efficiency (%)	96.0	96.2	96.4	96.5	Max. traction	: 6726 lb
Power Factor	0.50	0.74	0.82	0.86	Max. compression	: 11390 lb

		<u>Drive end</u>	<u>Non drive end</u>
Bearing type	:	6322 C3	6319 C3
Sealing	:	Taconite Labyrinth	Taconite Labyrinth
Lubrication interval	:	6000 h	8000 h
Lubricant amount	:	60 g	45 g
Lubricant type	:	Mobil Polyrex EM	

Notes

This revision replaces and cancel the previous one, which must be eliminated.

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Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page 1 / 2 Revision		
Checked by				
Date	03/10/2018			



Franklin Electric

ELECTRICPAK™ VFD

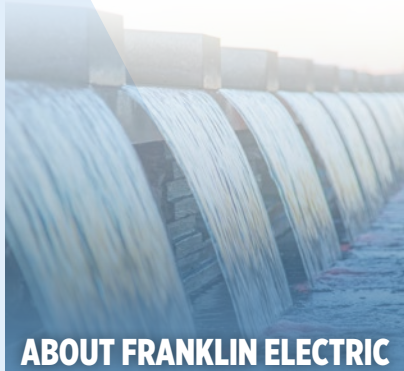
VARIABLE FREQUENCY DRIVE WITH SMARTPRIME™ CONTROL INTERFACE



pioneerpump.com



YOUR PARTNER FOR **WATER SYSTEMS**



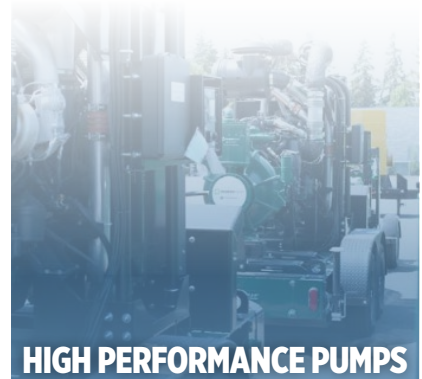
ABOUT FRANKLIN ELECTRIC

Franklin Electric is a global provider of complete systems for the movement of water.



ABOUT PIONEER PUMP

Pioneer Pump, a brand of Franklin Electric, specializes in the engineering and manufacturing of large centrifugal pumps and packages.



HIGH PERFORMANCE PUMPS

Transport water and wastewater for any sized job with our proven portfolio of centrifugal pumps.



WE'RE DRIVING PIONEER PUMP INTO THE FUTURE

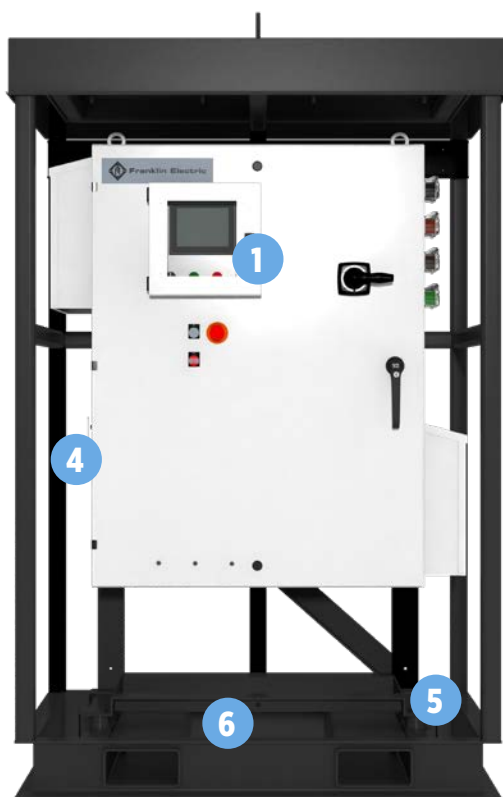
A variable frequency drive (VFD) on the jobsite needs to be as tough as the environment it's in. That's why we've taken the best features of our most popular VFD system and re-packaged it to withstand the demands of transport and deliver a more intuitive startup experience with our SmartPrime™ touchscreen interface. You get the operating performance you need, packaged the way that works best for you: full ElectricPAK™ system or standalone skid.

ElectricPAK™ VFD



STANDALONE SKID PACKAGE – FOR VERSATILITY IN APPLICATIONS

The rugged, packaged drive solution you've been waiting for is here. Choose from standalone skid mounted or fully integrated ElectricPAK options:



1 SMARTPRIME CONTROL INTERFACE

- Intuitive interface offers comprehensive programming options with an easy-to-use design
- Auto Mode lets users set up pre-programmed behavior including: constant pressure, maintain, and float control

2 FAN SYSTEM

- Upgraded cooling system capable of maintaining operation in ambient temperatures up to 50°C (122 °F)

3 QUICK CONNECT POWER GLAND PANEL

- Easily supply power without having it access internal components



4 FLOAT AND TRANSDUCER CONNECTIONS

- Dedicated direct connections for easy plug-and-play functionality

5 VIBRATION-ISOLATED VFD PANEL

- Secures and protects against wear and tear during transport, installation and onsite operation

6 FULLY-WELDED CAGE

- Rigid steel construction offers robust impact-protection
- Lifting-eye and fork pockets allow for easy transportation and installation



SMARTPRIME CONTROL INTERFACE

No learning curve required: the powerful SmartPrime interface is as intuitive to use as a mobile app.

- Handle all aspects of operation from a streamlined central hub with easy-to-navigate graphics. Get fast startup and simple monitoring – eliminating the need for complex keypad setup and programming.
- Two SmartPrime mode options help operators get packages up and running with just a few touches:
 - Manual mode lets users adjust basic pump parameters using simple on-screen tools and includes analog sensor monitoring for up to four control and data variables.
 - Auto mode lets users fine tune parameters based on their specific surface dewatering telemetry: level transducers, float switches, pressure transducer or flow meter. This mode features clear graphic displays of real-time pump conditions.
- Alternative Hand Mode allows users to operate the panel with tactile push buttons and door mounted speed potentiometer. Hand mode tracks and logs alarms onto an SD card for future reference.



INTEGRATED ELECTRICPAK – FROM PUMP TO CONTROLS



The integrated ElectricPAK is a modular offering of electric-driven pump packages engineered from the ground up to offer a fully streamlined experience for owners and operators. Each configured assembly includes a high-performance pump, electric motor and variable frequency drive option that provides total system optimization.

ELECTRICPAK VFD

The ElectricPAK VFD is a rugged, portable variable frequency drive solution designed to withstand the demands of mobile dewatering applications. It features an industry-leading touchscreen interface, known as SmartPrime. Inside the unit, the VFD uses Franklin Electric's proven electronics to deliver dependable performance and optimized motor control.

50 & 75 HP

- Panel Size: 48"x 36"x 16"
- Skid Platform: Small
- Skid Size: 52"x 85"x 34"

100 & 150 HP

- Panel Size: 60"x 36"x 16"
- Skid Platform: Small
- Skid Size: 52"x 85"x 34"

200 & 350 HP

- Panel Size: 60"x 60"x 24"
- Skid Platform: Large
- Skid Size: 80"x 88"x 49"

MODEL INFORMATION

SKU	Max. HP	Voltage	HP Range	Operational HP Range
V050-PPI-01	50	460	25-50	25-50
V075-PPI-01	75		60-75	40-75
V100-PPI-01	100		100	50-100
V150-PPI-01	150		125-150	75-150
V250-PPI-01	250		200-250	125-250
V350-PPI-01	350		300-350	200-350



50 & 75 HP



100 & 150 HP



200 & 350 HP