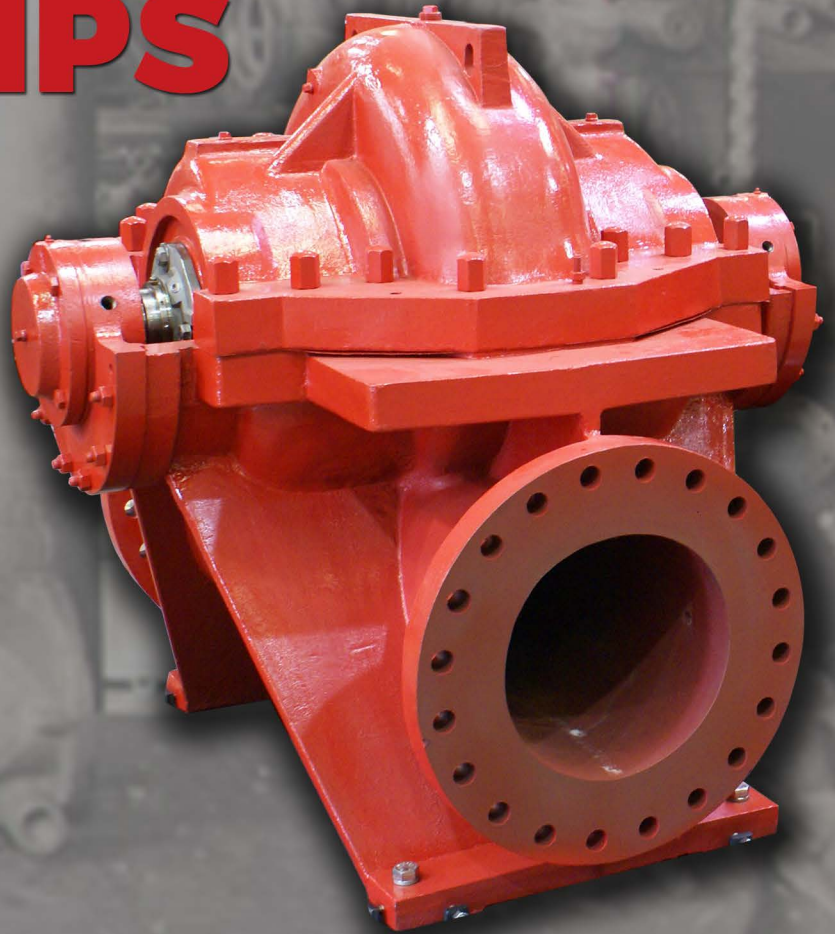




AMERICAN-MARSH PUMPS

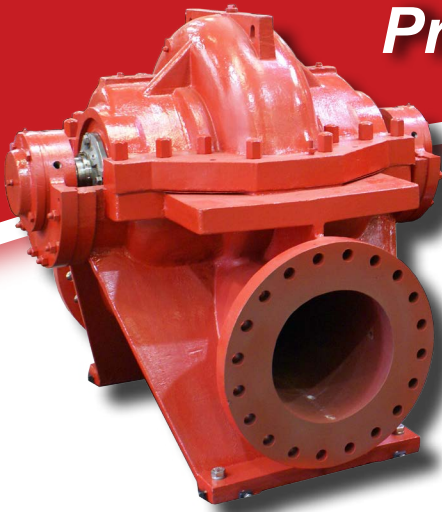
HORIZONTAL SPLIT CASE FIRE PUMPS



www.american-marsh.com

DURABILITY BY DESIGN SINCE 1873.

Product Overview



American-Marsh Model FP-HD Horizontal Split Case pumps are used in a variety of fire protection services every day. These rugged and efficient centrifugal pumps are designed for long life and low operational costs. The FP-HD series horizontal split case pumps feature double-suction impellers, removable and replaceable stuffing boxes, heavy wall shaft sleeves with outer diameter o-ring and oversized shafts to provide the end user with a superior, reliable product. Each model has a removable rotating assembly that can be serviced without disturbing the driver or piping. Models are available in a packed orientation for use in demanding applications. All pumps have been tested to fully meet UL & FM specifications.

Model FP-HD Specifications

CASING is of high-tensile cast iron or other specified material. It is of the volute type, with double suction, split on the horizontal centerline, with the suction and discharge nozzles cast integral with the lower half. Suction and discharge nozzles are casted of 250 psi dimensions and all models feature a 250 psi case working pressure. Removal of the upper casing gives complete access to the interior of the pump without disturbing piping connections or pump alignment. The casing utilizes *Thru-Bore* line boring technology, simplifying the machining operation and allows the advantage of using only a few modular rotating assemblies. The *Thru-Bore* feature allows for the complete removal and replacement of the stuffing boxes without replacing the casing.

IMPELLER is of the double suction, enclosed, non-overloading type. It is made of bronze or other specified material, machined and polished all over. All impellers are hydraulically and dynamically balanced prior to assembly. The impeller is keyed to the shaft and secured by locknuts. It is adjustable for position.

CASE WEAR RINGS are made of bronze or other specified material. They are designed with a large wearing surface with the diameter at wearing surface reduced to a minimum, and are firmly secured in the casing by dowel pins

SHAFT is of high-strength 420 stainless steel, ground and polished to a smooth surface. It is designed for extra stiffness to avoid all critical speeds in operation. The shaft is threaded for bearing and impeller lock nuts. The portion of the shaft that is exposed to the pumped fluid is covered with renewable bronze shaft sleeves, screwed on against the impeller with right and left hand threads, which cannot work loose during operation. Shaft sleeves have external o-rings, in lieu of internal o-rings, to stop leakage of product.

STUFFING BOXES/SEAL CHAMBERS are extra deep, being designed for packing and lantern ring. Under each stuffing box is a drip pocket with tapped drain outlet. The stuffing boxes are completely removable and replaceable.

BEARINGS, both inboard and outboard ball bearings are of the single-row, deep-groove type, precision grade, with cartridge mounting, permitting the removal of the shaft without exposing or disturbing the bearing assembly. They are of extra-large capacity for both radial and thrust loads. The outboard bearing is confined rigidly in the bearing housing, to take end thrust, while the inboard bearing is set with sufficient clearance to allow for shaft expansion. All bearings are sized to maintain a minimum of 50,000-hour bearing life. Each bearing is designed for grease lubrication and is provided with a water slinger to prevent leakage from the stuffing box into the bearing. A zerker fitting is furnished for each bearing. Each bearing housing is sealed from water leakage by the use of an oil lip seal.

Both bearings can be removed and replaced without removing the rotating assembly from the pump, greatly simplifying the repair process.

Performance Specifications

SIZES: 2.5" to 10" (64-350 mm)

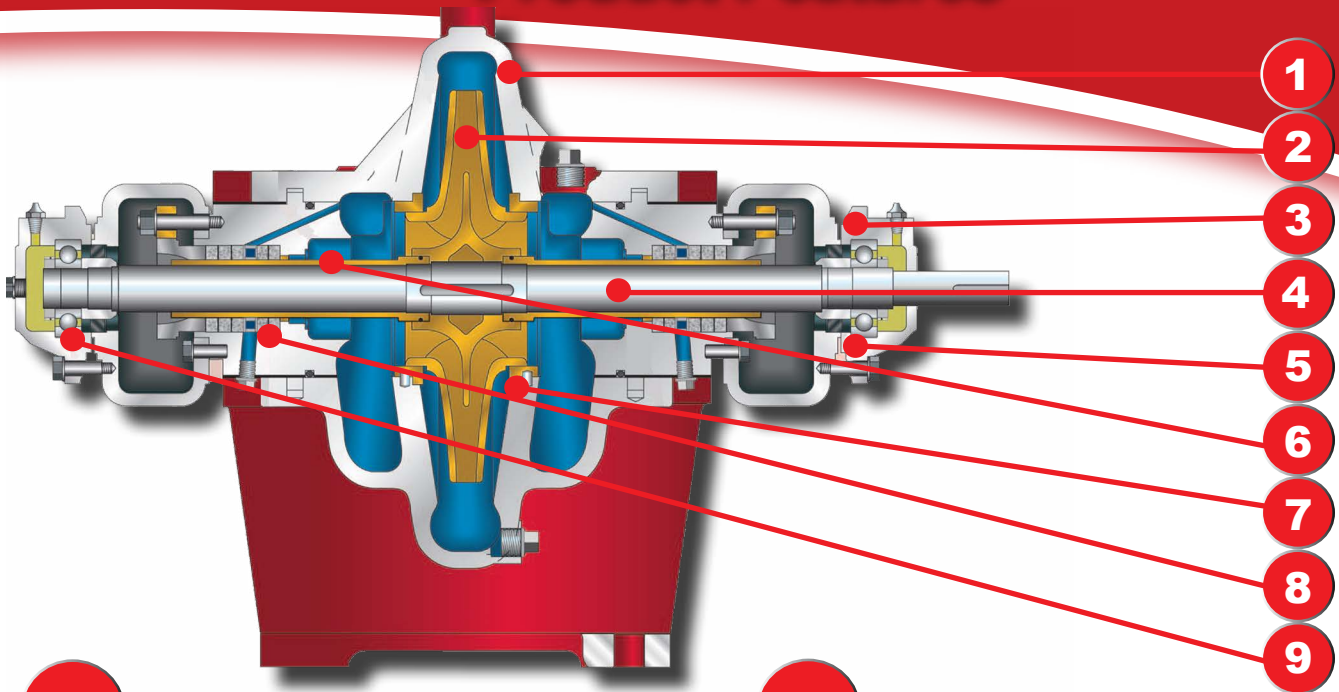
FLOWS: Up to 4,000 gpm (908 m³/hr)

HEADS: Up to 640 feet (195 meters)

PRESSURE: Up to 250 psi

- UL Listed Certified & Approved Pumps
- Compliance to NFPA 20 Design Regulations
- Matches FM Approval requirements
- Multiple Range of Flow and Pressures

Product Features



1

HEAVY DUTY CASING

- Horizontally split for easy access
- Standard 250 lb. case working pressure
- Standard ASTM A48 Class 30 cast iron
- Heavy wall thickness to provide for generous corrosion allowance and high working pressures
- Volute type casing with double suction provides suction and discharge nozzles cast integral with the lower half of the casing
- Suction and discharge connections are in lower half, allowing removal or inspection of upper half and rotating assembly without disturbing piping or driver
- Casing has Thru-Bore which allows the removal of the entire rotating assembly, including both stuffing boxes and the entire bearing housing assembly

2

IMPELLERS

- Fully balanced before assembly
- Expertly machined to customer specifications
- Double suction minimizes axial thrust, enclosed, non-overloading bronze standard, other alloys available

3

SHAFT SLEEVES

- Standard replaceable bronze sleeves protect shaft from wear and corrosion

4

BEARING HOUSINGS

- Both bearings are protected by lip seals to keep contaminants out of bearing
- Cartridge bearing arrangement allows the removal of the entire bearing housing assembly with the rotating element
- Both the inboard and outboard bearing can be completely replaced without disturbing any other part of the rotating assembly housing

5

HEAVY DUTY SHAFT

- High strength 420 stainless steel material standard
- Designed and sized specially for the pump and its applications

6

HEAVY DUTY INBOARD BEARINGS

- Carries radial load; free to move axially
- Heavy duty, deep-groove type ball bearing, purge grease type lubrication standard

7

CASE WEAR RINGS

- Pinned to prevent rotation
- Standard bronze or other specified alloy
- Allows smooth transfer of fluid into impeller eye, increasing efficiency and lowering NPSH
- Renewable, permits easy maintenance of proper running clearances

8

STUFFING BOXES

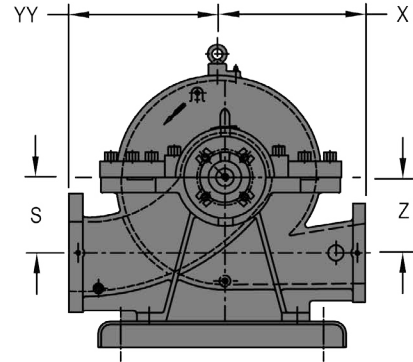
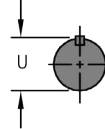
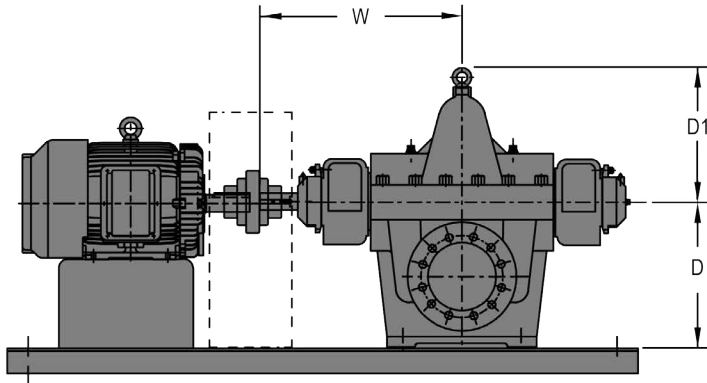
- Packed with bronze lantern ring and gland
- Fully removable with the rotating assembly
- Both stuffing boxes have integral vortex suppressors to minimize inlet losses

9

HEAVY DUTY OUTBOARD BEARINGS

- Maintains impellers in their central position
- Fixed rigidly in housing to take end thrust load
- Heavy duty deep-groove type ball-thrust bearing, purge grease type lubrication standard

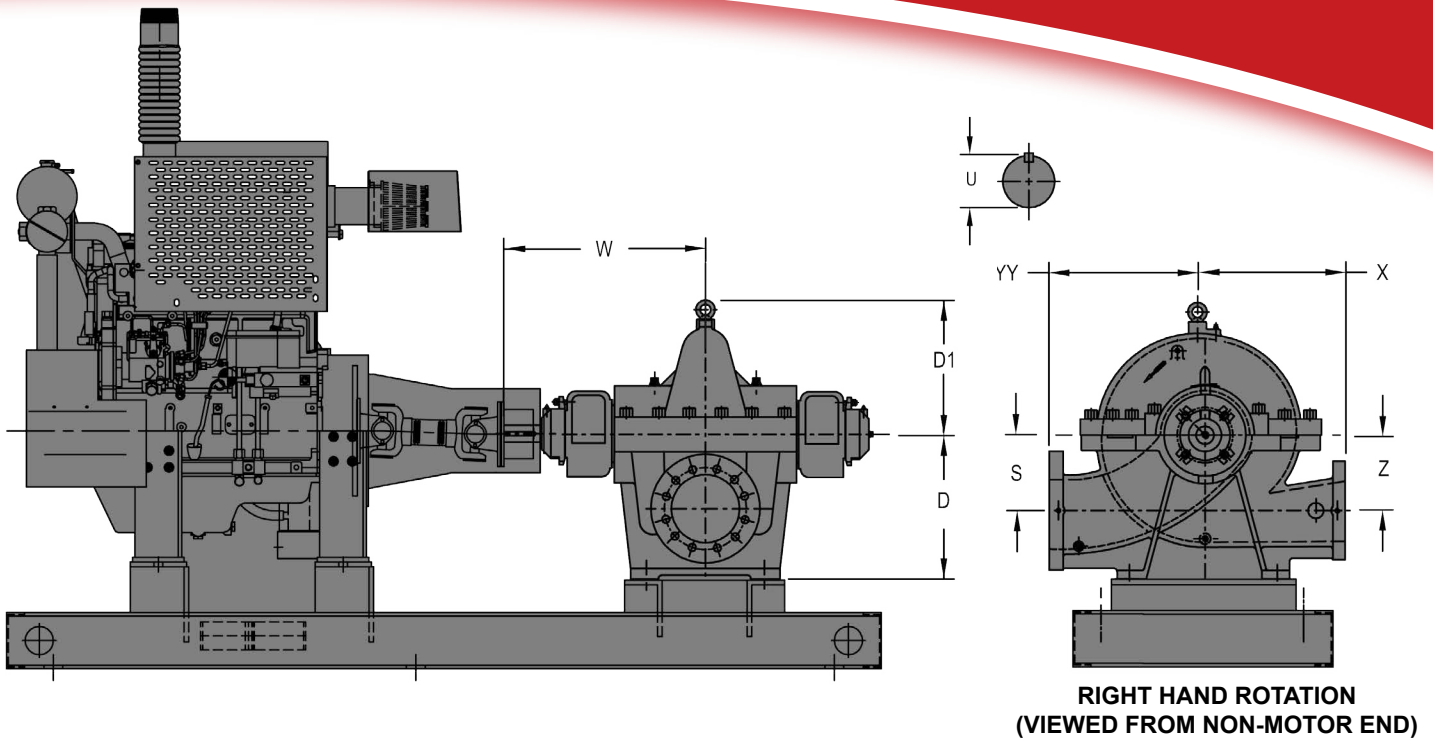
FP-HD Dimensions



**RIGHT HAND ROTATION
(VIEWED FROM NON-MOTOR END)**

Pump Size	D	D1	S	U	W	X	YY	Z	Weight (lbs.)
2.5x3-10	9.875	7.750	5.125	1.125	16.313	8.875	11.063	5.125	265
3x4-10	11.000	7.625	5.125	1.125	16.313	9.063	10.625	5.125	287
4x5-18	15.375	11.813	8.250	1.625	20.250	13.813	15.750	8.250	1117
5x6-15	15.375	11.688	8.250	1.625	20.250	13.813	15.750	8.250	694
4x6-10	13.375	8.563	6.688	1.625	20.250	9.875	12.188	6.688	430
5x6-10	13.375	8.875	7.125	1.125	17.500	9.875	12.813	7.125	518
5x6-11	13.375	10.063	6.313	1.125	16.313	11.438	12.188	6.313	408
5x8-18	19.688	13.875	10.250	2.125	24.313	17.750	18.875	10.250	1223
6x8-18	21.250	14.750	10.650	2.125	24.313	17.750	20.063	10.650	1311
6x8-15	17.313	11.313	8.250	1.625	20.250	13.813	16.125	8.250	750
6x8-22	21.250	18.250	11.813	2.125	23.063	19.688	23.625	11.813	1585
8x10-18	21.250	14.688	10.625	2.125	24.313	17.750	26.000	10.625	1426
8x12-21	21.688	19.250	11.438	2.500	24.313	20.688	22.250	11.438	1631
10x14-20	22.063	20.063	10.250	2.375	29.625	17.688	21.188	14.188	2450

FP-HD Dimensions



Pump Size	D	D1	S	U	W	X	YY	Z	Weight (lbs.)
2.5x3-10	9.875	7.750	5.125	1.125	16.313	8.875	11.063	5.125	265
3x4-10	11.000	7.625	5.125	1.125	16.313	9.063	10.625	5.125	287
4x5-18	15.375	11.813	8.250	1.625	20.250	13.813	15.750	8.250	1117
5x6-15	15.375	11.688	8.250	1.625	20.250	13.813	15.750	8.250	694
4x6-10	13.375	8.563	6.688	1.625	20.250	9.875	12.188	6.688	430
5x6-10	13.375	8.875	7.125	1.125	17.500	9.875	12.813	7.125	518
5x6-11	13.375	10.063	6.313	1.125	16.313	11.438	12.188	6.313	408
5x8-18	19.688	13.875	10.250	2.125	24.313	17.750	18.875	10.250	1223
6x8-18	21.250	14.750	10.650	2.125	24.313	17.750	20.063	10.650	1311
6x8-15	17.313	11.313	8.250	1.625	20.250	13.813	16.125	8.250	750
6x8-22	21.250	18.250	11.813	2.125	23.063	19.688	23.625	11.813	1585
8x10-18	21.250	14.688	10.625	2.125	24.313	17.750	26.000	10.625	1426
8x12-21	21.688	19.250	11.438	2.500	24.313	20.688	22.250	11.438	1631
10x14-20	22.063	20.063	10.250	2.375	29.625	17.688	21.188	14.188	2450

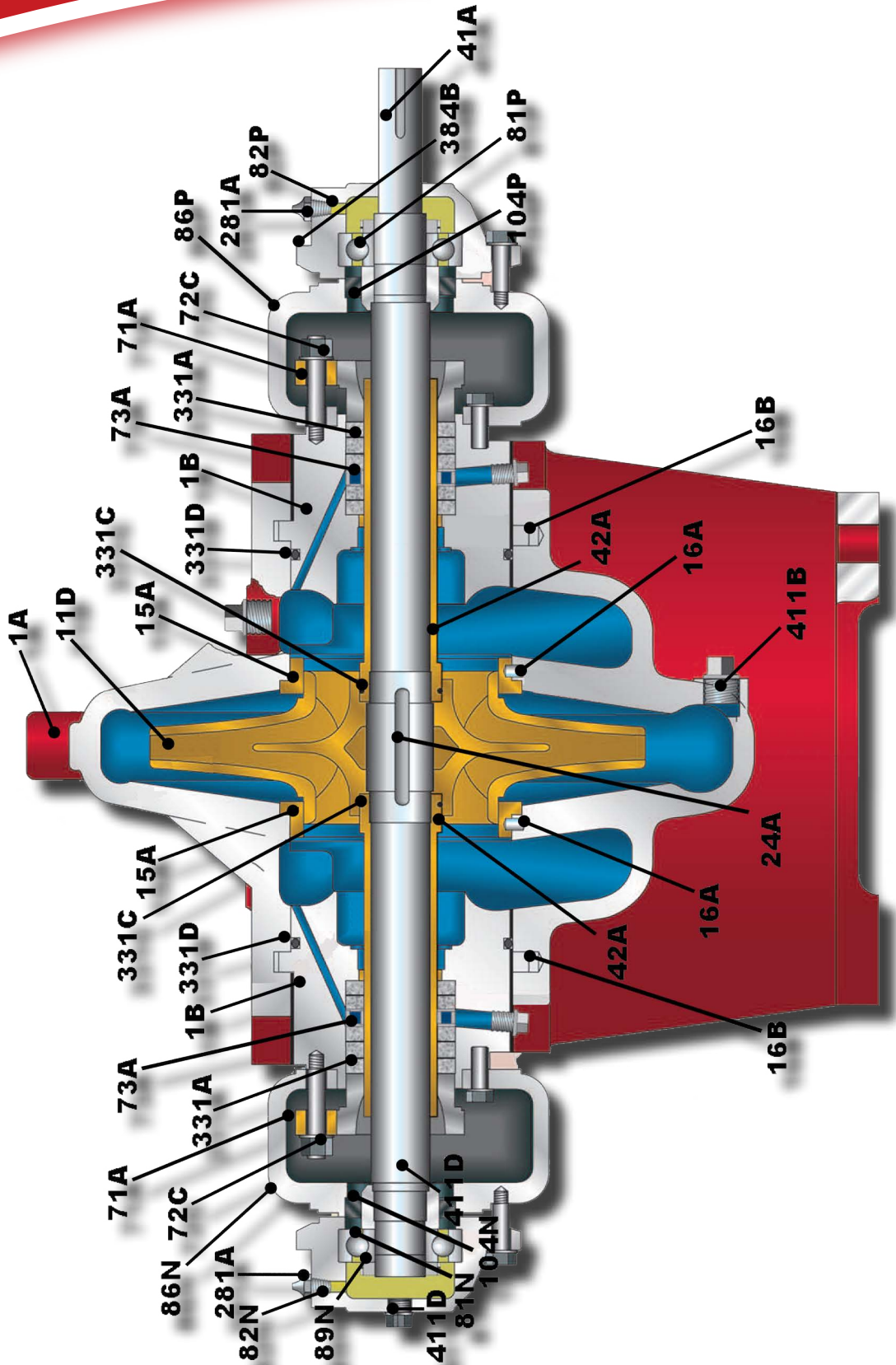
UL Listed/FM Approved Range of Pumps

Model	Flow (GPM)	Speed (RPM)	Size	Pressure Range (PSI)	UL Listing	FM Approval	Max Working Pressure (PSI)
2.5 x 3-10 FP-HD	250	2900	2.5 x 3	100-110		•	250
2.5 x 3-10 FP-HD	250	3500	2.5 x 3	146-163		•	250
3 x 4-10 FP-HD	250	2900	3 x 4	96-106		•	250
2.5 x 3-10 FP-HD	300	2900	2.5 x 3	98-110		•	250
2.5 x 3-10 FP-HD	300	3500	2.5 x 3	145-161		•	250
3 x 4-10 FP-HD	300	2900	3 x 4	95-105		•	250
4 x 5-18 FP-HD	400	1760	4 x 5	102-126	•	•	290
2.5 x 3-10 FP-HD	400	3500	2.5 x 3	140-154		•	250
3 x 4-10 FP-HD	400	2800	3 x 4	46	•		250
3 x 4-10 FP-HD	400	3000	3 x 4	54	•		250
3 x 4-10 FP-HD	400	3600	3 x 4	82-109	•		250
3 x 4-10 FP-HD	400	2900	3 x 4	93-103		•	250
3 x 4-10 FP-HD	400	3500	3 x 4	136-149		•	250
SP80/24	400	3600	3 x 4	82-113		•	250
3 x 4-10 FP-HD	450	2800	3 x 4	44	•		250
3 x 4-10 FP-HD	450	3000	3 x 4	52	•		250
4 x 5-18 FP-HD	450	1760	4 x 5	102-126	•	•	290
3 x 4-10 FP-HD	450	3600	3 x 4	81-108	•		250
SP80/24	450	3600	3 x 4	82-110		•	250
5 x 6-15-FP-HD	500	1450	5 x 6	45-67		•	250
4 x 5-18 FP-HD	500	1760	4 x 5	100-126	•	•	290
3 x 4-10 FP-HD	500	3600	3 x 4	108	•		250
3 x 4-10 FP-HD	500	3500	3 x 4	134-147		•	250
4 x 6-10 FP-HD	500	2900	4 x 6	87-114		•	250
4 x 6-10 FP-HD	500	3500	4 x 6	126-166		•	250
5 x 6-10 FP-HD	500	2900	5 x 6	95-115		•	250
5 x 6-10 FP-HD	500	3500	5 x 6	139-163		•	250
5 x 6-11 FP-HD	500	2900	5 x 6	116-167		•	250
5 x 6-11 FP-HD	500	3500	5 x 6	169-238		•	250
5 x 6-12 FP-HK	500	3500	5 x 6	374-482		•	250
5 x 6-12b FP-HK	500	2900	5 x 6	287-373		•	250
5 x 6-15 FP-HD	500	1450	5 x 6	45-67	•		290
SP80/24	500	3600	3 x 4	81-108		•	250
5 x 6-15 FP-HD	750	1760	5 x 6	70-100	•	•	290
5 x 8-18 FP-HD	750	1450	5 x 8	88-118	•	•	290
6 x 8-18 FP-HD	750	1450	6 x 8	88-115	•	•	290
5 x 8-18 FP-HD	750	1760	5 x 8	130-178	•	•	290
4 x 6-10 FP-HD	750	3500	4 x 6	122-160		•	250
5 x 6-10 FP-HD	750	2900	5 x 6	93-111		•	250
5 x 6-10 FP-HD	750	3500	5 x 6	136-162		•	250
5 x 6-11 FP-HD	750	2900	5 x 6	116-166		•	250
5 x 6-11 FP-HD	750	3500	5 x 6	188-237		•	250
5 x 6-15 FP-HD	750	2900	5 x 6	204-280		•	250

UL Listed/FM Approved Range of Pumps

Model	Flow (GPM)	Speed (RPM)	Size	Pressure Range (PSI)	UL Listing	FM Approval	Max Working Pressure (PSI)
6 x 8-15 FP-HD	1000	1450	6 x 8	45-67	•		290
6 x 8-22 FP-HD	1000	1100	6 x 8	77-88	•	•	290
5 x 8-18 FP-HD	1000	1450	5 x 8	85-116		•	250
6 x 8-18 FP-HD	1000	1450	6 x 8	86-114	•	•	290
6 x 8-18 FP-HD	1000	1760	6 x 8	127-168	•	•	290
5 x 8-18 FP-HD	1000	1760	5 x 8	129-178		•	250
6 x 8-22 FP-HD	1000	1450	6 x 8	142-155	•	•	290
5 x 6-10 FP-HD	1000	2900	5 x 6	89-108		•	250
5 x 6-10 FP-HD	1000	3500	5 x 6	132-156		•	250
5 x 6-15 FP-HD	1000	2900	5 x 6	197-277		•	250
SP150/48SS	1000	1760	6 x 8	102		•	250
6 x 8-15 FP-HD	1250	1760	6 x 8	70-100	•		290
6 x 8-22 FP-HD	1250	1100	6 x 8	75-86	•	•	290
6 x 8-18 FP-HD	1250	1450	6 x 8	85-112	•	•	290
8 x 10-18 FP-HD	1250	1450	8 x 10	96-117	•	•	290
6 x 8-18 FP-HD	1250	1760	6 x 8	124-166	•	•	290
5 x 8-18 FP-HD	1250	1760	5 x 8	125-174		•	250
6 x 8-22 FP-HD	1250	1450	6 x 8	142-153	•	•	290
5 x 6-10 FP-HD	1250	2900	5 x 6	84		•	250
8 x 12-21 FP-HD	1500	1100	8 x 12	67-79	•	•	290
6 x 8-22 FP-HD	1500	1100	6 x 8	72-83	•	•	290
8 x 10-18 FP-HD	1500	1450	8 x 10	94-117	•	•	290
8 x 10-15 FP-HD	1500	1450	8 x 10	45-62	•		290
6 x 8-18 FP-HD	1500	1760	6 x 8	121-162	•		290
6 x 8-22 FP-HD	1500	1450	6 x 8	138-151	•		290
8 x 10-18 FP-HD	1500	1760	8 x 10	142-172	•		290
8 x 10-15 FP-HD	2000	1760	8 x 10	70-91	•		290
8 x 10-18 FP-HD	2000	1450	8 x 10	90-115	•		290
8 x 10-18 FP-HD	2000	1760	8 x 10	139-172	•		290
8 x 12-21 FP-HD	2000	1100	8 x 12	65-77	•		290
8 x 12-21 FP-HD	2000	1450	8 x 12	123-139	•		290
8 x 10-18 FP-HD	2500	1760	8 x 10	133-168	•		290
8 x 12-21 FP-HD	2500	1450	8 x 12	120-136	•		290
10 x 14-20 FP-HD	2500	1100	10 x 14	61-65	•		230
10 x 14-20 FP-HD	3000	1100	10 x 14	61-65	•		230
10 x 14-20 FP-HD	3000	1450	10 x 14	106-112	•		230
10 x 14-20 FP-HD	3500	1150	10 x 14	60-64	•		230
10 x 14-20 FP-HD	3500	1450	10 x 14	106-112	•		230
10 x 14-20 FP-HD	4000	1450	10 x 14	106-111	•		230

Sectional Drawing



Material Construction Details/Parts List

PARTS LIST

NO.	PART	MATERIAL	# REQUIRED
1A	CASING	CAST IRON	1
1B	STUFFING BOX	CAST IRON	2
11D	IMPELLER	BRONZE	1
15A	CASE WEAR RING	BRONZE	2
16A	DOWEL PIN	STEEL	2
16B	DOWEL PIN	STEEL	2
24A	IMPELLER KEY	420 STAINLESS STEEL	1
41A	SHAFT	420 STAINLESS STEEL	1
42A	SHAFT SLEEVE	BRONZE	2
71A	STUFFING BOX GLAND	CAST IRON	2
72C	HINGE NUT & BOLT	18-8 STAINLESS STEEL	4
73A	LANTERN RING	BRONZE	2
82N	OUTBOARD BEARING HOUSING	CAST IRON	1
82P	INBOARD BEARING HOUSING	CAST IRON	1
86N	OUTBOARD BEARING ARM	CAST IRON	1
86P	INBOARD BEARING ARM	CAST IRON	1
104P	INBOARD LIP SEAL	COMMERCIAL	1
281A	ZERK FITTING	18-8 STAINLESS STEEL	2
331A	PACKING	CARBON GRAPHITE	1 SET
331C	SHAFT SLEEVE O-RING	EDPM	2
331D	STUFFING BOX O-RING	EDPM	2
353A	CASING GASKET	C-4401 KLINGERSIL	1
381B	CASING CAPSCREW	18-8 STAINLESS STEEL	VARIES
384B	BEARING CAP CAPSCREWS	18-8 STAINLESS STEEL	8
411A	PLUG, VENT	STEEL	1
411B	PLUG, DRAIN	STEEL	1
411D	PLUG, BEARING HOUSING	STEEL	1



AMERICAN-MARSH PUMPS

