4500C Series Vortex Pumps

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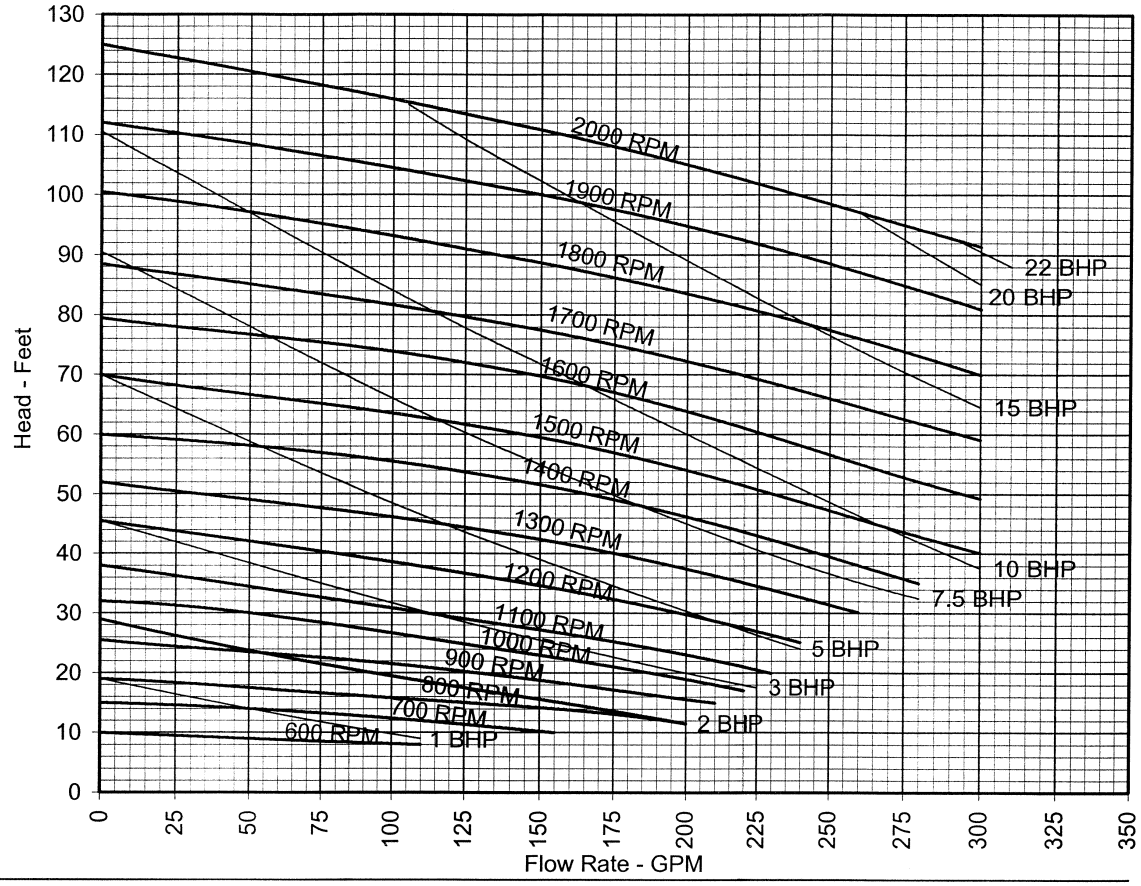
2"
4523C
Horizontal

Multiple
RPM

IMPELLER

SUCTION
2"
(Option 3")

MAX
SPHERE
2.0"



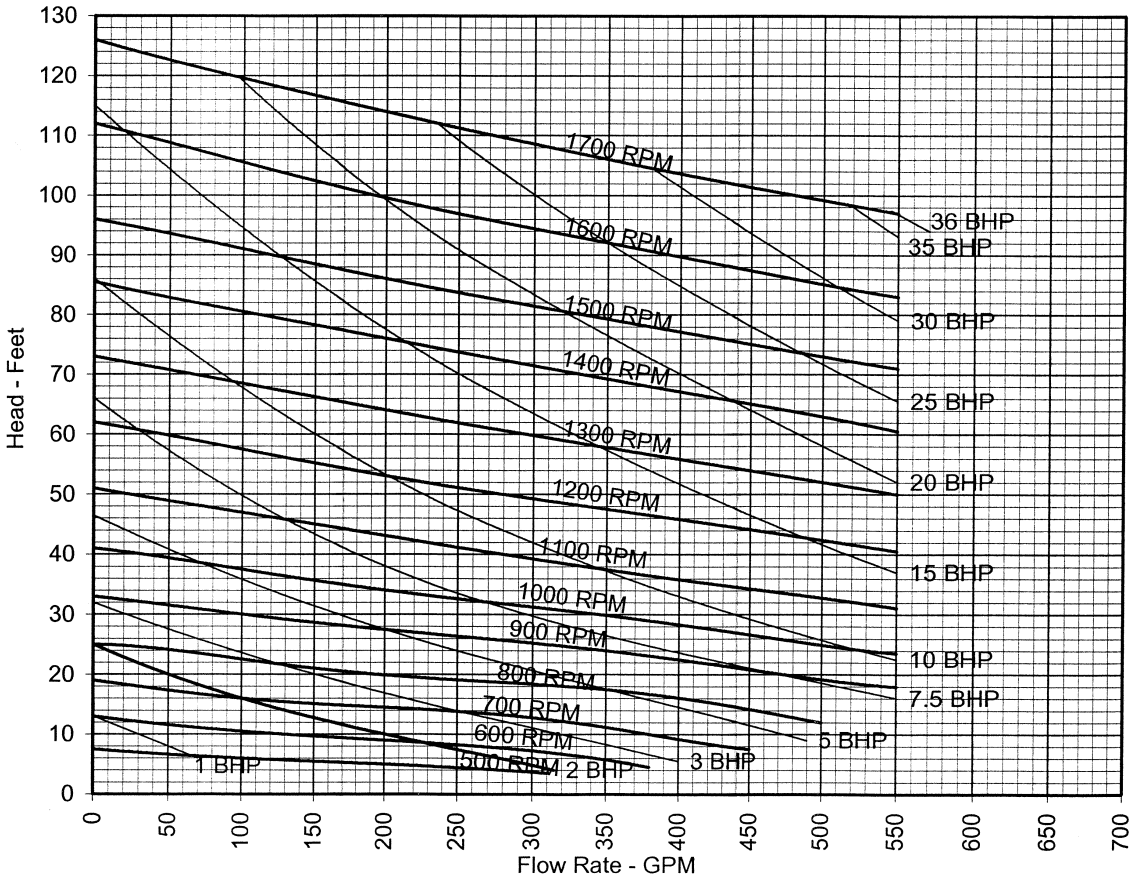
3"
4523C
Horizontal

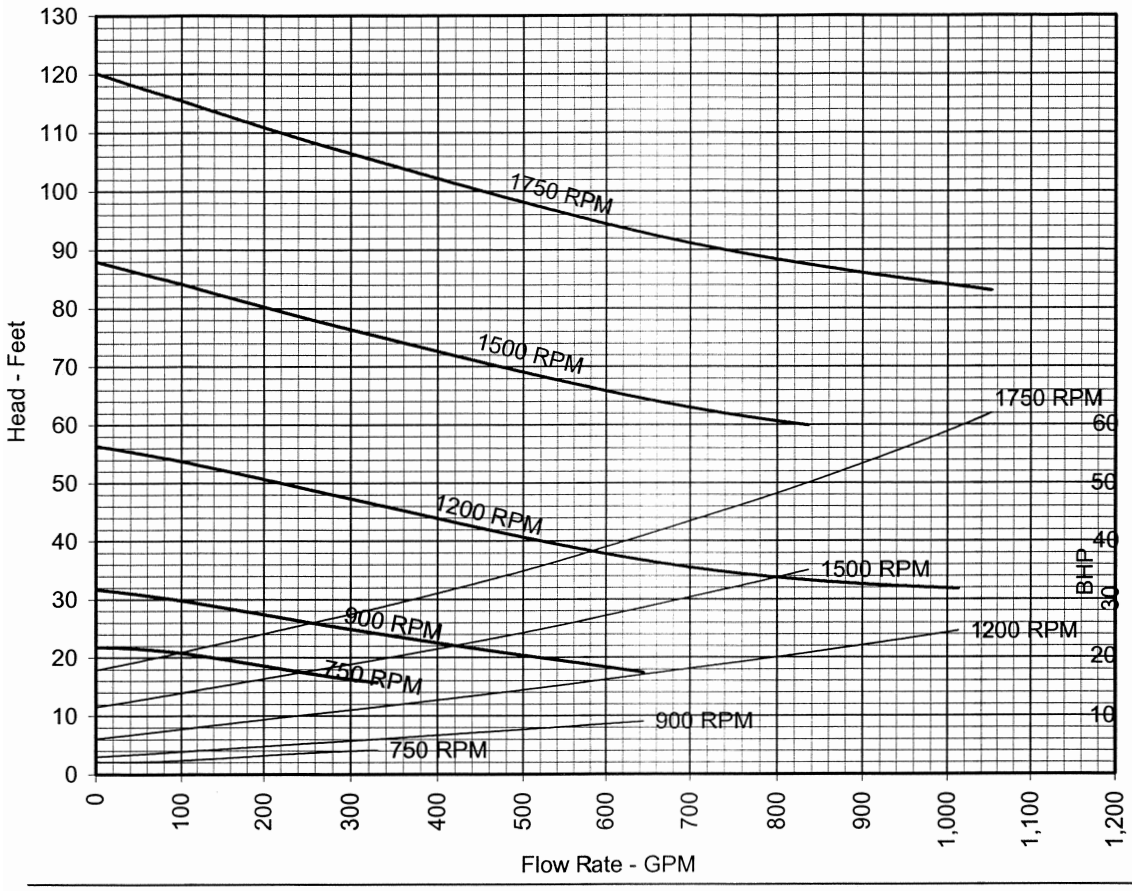
Multiple
RPM

IMPELLER

SUCTION
3"
(Option 4")

MAX
SPHERE
3.0"





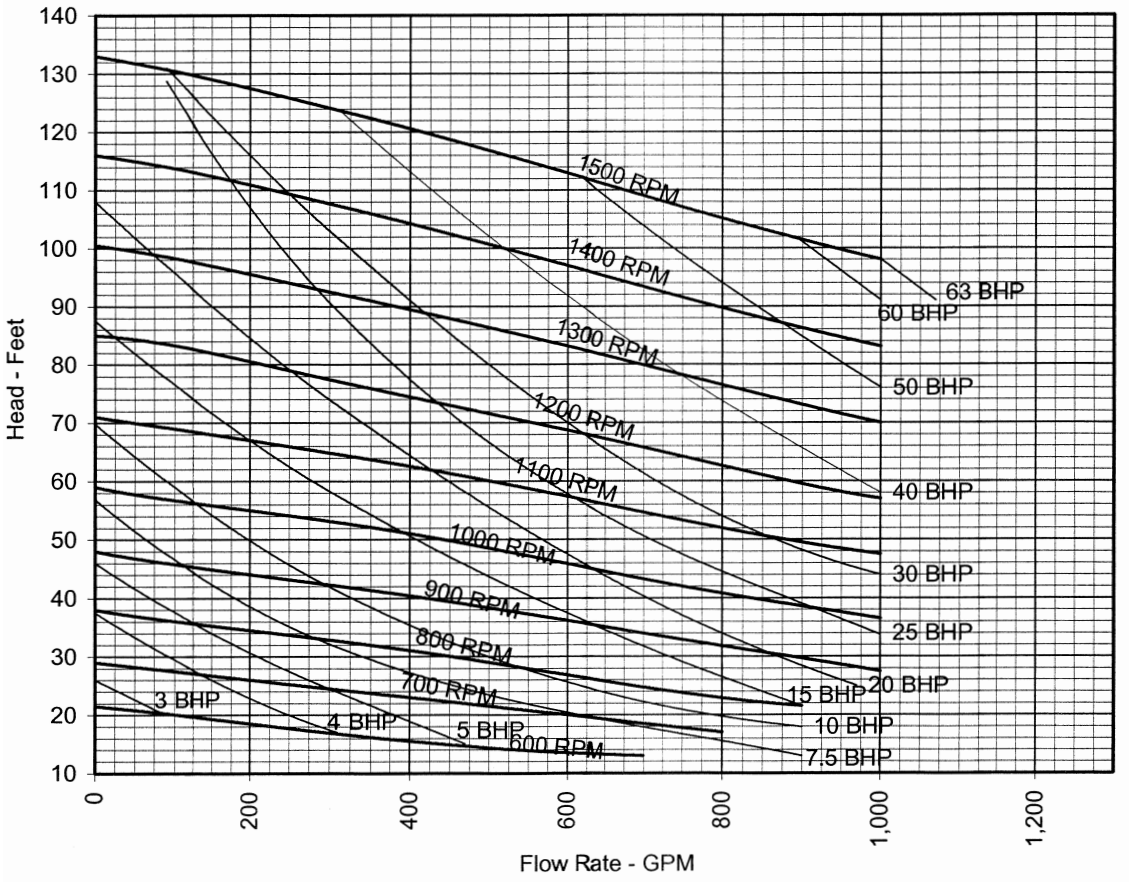
4"
4522C
Horizontal

Multiple
RPM

IMPELLER
14"

SUCTION
4"

MAX
SPHERE
4.0"



4"
4523C
Horizontal

Multiple
RPM

IMPELLER
16"

SUCTION
4"
(Option 5" or 6")

MAX
SPHERE
4.0"

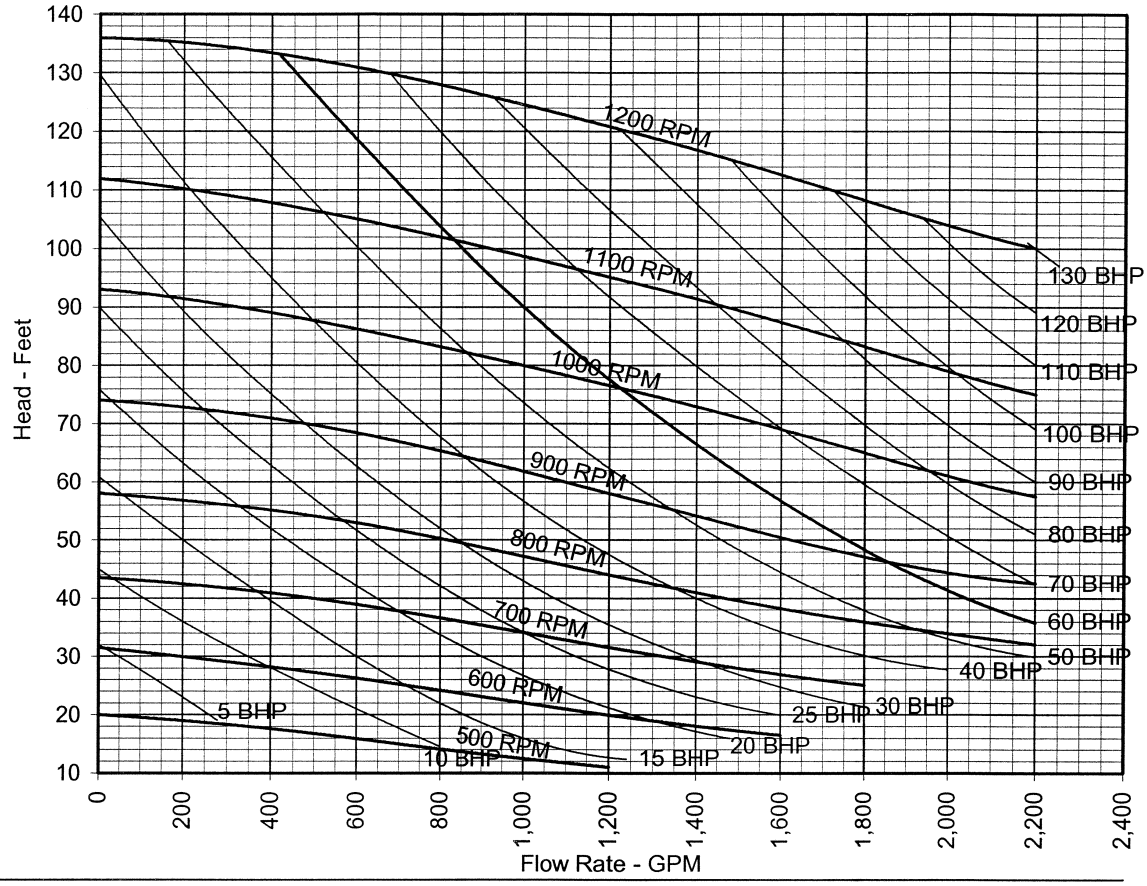
6"
4523C
Horizontal

Multiple
RPM

IMPELLER

SUCTION
6"
(Option 8")

MAX
SPHERE
6.0"



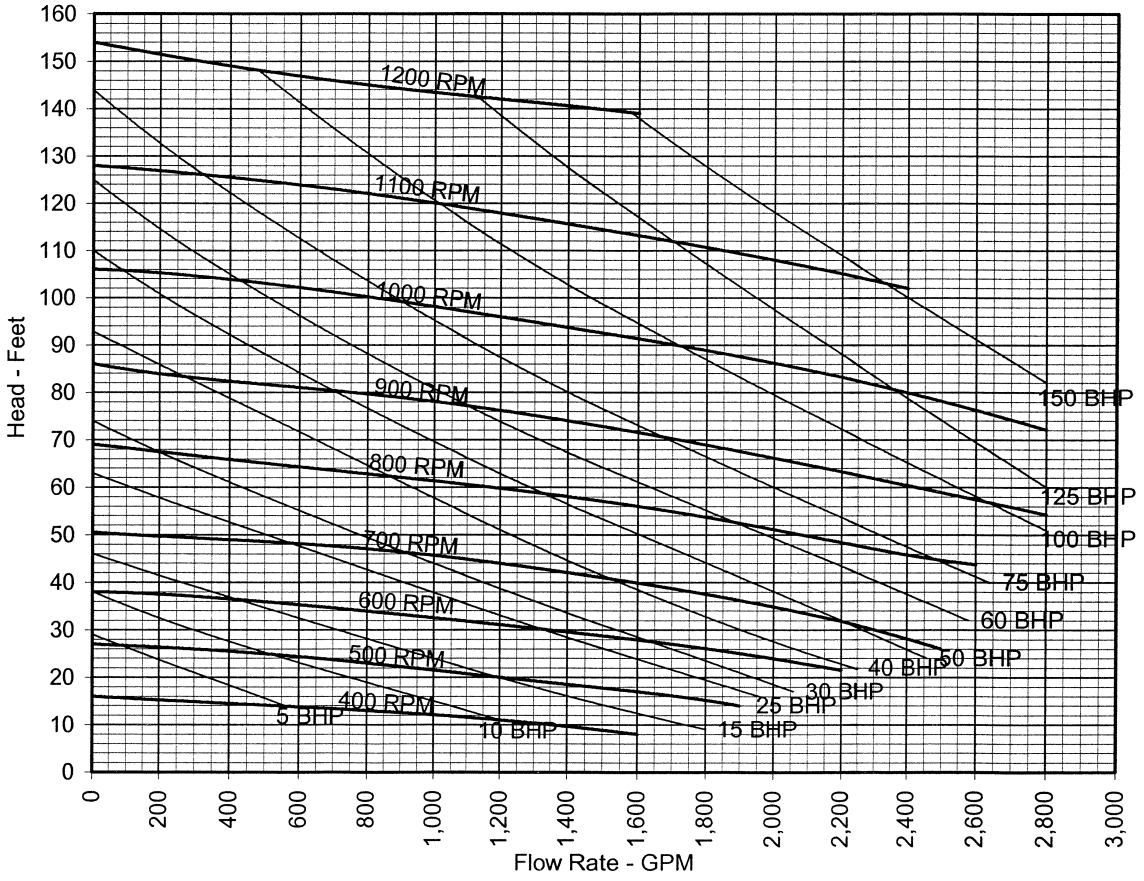
8"
4523C
Horizontal

Multiple
RPM

IMPELLER

SUCTION
8"
(Option 10")

MAX
SPHERE
8.0"



4500C Vortex Pumps

		Standard	Options
Type	Horizontal, single-stage, cup-type vortex impeller, frame mounted	x	
Rotation	CW or CCW as viewed from driver end, specify on order	x	
Volute	One-piece, radially split and flanged side tangential discharge, reversible for opposite rotation	x	
Impeller	Cupped-type, vortex flow	x	
Suction Flange	Separate one-piece casting	x	
Wearplate	One-piece	x	
Shaft	Accurately machined over entire length for tapered bore	x	
Shaft Sleeve	Straight type, affixed & sealed with O-ring to prevent leakage between sleeve and shaft	x	
Gland Housing	Separate one-piece casting	x	
Gland	2-piece, 2-bolt, split type	x	
Bearing - Radial (Inboard)	2" - 6" Pumps, Two, single row ball-type, oil lubricated	x	
	8" Pumps, Two, spherical roller-type, oil lubricated	x	
Bearing - Thrust (Outboard)	Three, single row angular contact ball-type, oil lubricated	x	
Lubrication	Oil	x	
Auxiliary Connections	Casing Vent		x
	Casing Drain		x
	Gland housing lantern ring or vent	x	
Baseplate	Bent form or welded structural steel, pedestal mounts, and guard		x
V-Belt Drives	Variable Speed - Stationary Control	x	
	Variable Speed - Motion Control, Spring Loaded		x
Coupling	Flexible, pin and buffer or flexible sleeve (mfg. Option)	x	
	Steelflex type		x
	Spacer type		x

HEAVY DUTY 4500C RECESSED IMPELLER PUMP SPECIFICATION

PART 1, GENERAL

1.01 The following specification describes the design of ___ horizontal vortex-type slurry pumping unit(s). The design of these units shall be such that they are capable of pumping slurries, which may contain trash, stringy material, organic solids and grit without becoming clogged.

1.02 QUALITY ASSURANCE

A. Pump(s) shall be supplied by the manufacture as specified herein or by an approved equal and shall be designed for use intended in the application described.
B. Pump(s) shall be furnished with correctly sized motor, V-belt drive and drive guards and be mounted on a common base, as well as supply any other accessories as specifically called out in these specifications. All equipment shall carry a manufacturer's warranty.
C. All of the pumps supplied per these specifications shall be the product of a single manufacturer.

1.03 PERFORMANCE

A. The pumps shall be designed for continuous operation and will be operated continuously under normal service.
B. OPERATION CRITERIA

	Capacity (GPM)	Total Dynamic Head (FT)	Max. Pump Speed (RPM)	Solids Size	Min. Suction Dia. (in.)	Min. Disch. Dia. (in.)	Min. Motor Size (HP)
Design Condition							
Secondary Condition							

PART 2, PRODUCTS

2.01 A. PUMPS

1. Manufacturers

a. Pump(s) shall be the product of Fairbanks Nijhuis®.

2. Design

a. Pump(s) shall be specifically designed to pump slurries that may contain solids, rags and grit.
b. This vortex pump design shall be such that trash and solids do not have to pass through the impeller. The impeller shall be recessed from the path of flow from the pump suction to pump discharge. All flow paths shall be equal to or greater than the pump suction size.
c. The hydraulic design of the cupped-type vortex impeller shall be such that performance is not negatively affected with the occurrence of wear. The impeller design shall be such that as wear occurs, the length of the impeller vanes increases. The impeller shall be made from ASTM A532, cast iron with a nominal hardness of 600-650 BHN. Radial design impellers or impellers that include pump-out vanes on the rear shroud are not acceptable.

d. An independently replaceable suction flange made of ASTM A532 shall be provided. The suction flange shall be easily assessable and replaceable, without the need to disassemble any other components of the pump.
e. A removable wear plate shall be provided which directs flow to the center of the volute from behind the impeller. It shall be made of ASTM A532 with a nominal hardness of 600-650 BHN. Bolted directly to the bearing housing shall be a separate stuffing box so that it can be easily removed. The stuffing box shall not be integral with the wear plate.
f. The pump casing shall be ASTM A532 material with a nominal hardness of 600-650 BHN. It shall be of the radially split type design such that the impeller can be removed without disturbing the piping. It shall also be designed so that it can be used for opposite rotation installations.
g. The pump hydraulic curve shall slope continuously upward to shutoff. Pumps with curves that contain a dip or dogleg are not acceptable.
h. Slotted raised-face 125-lb. flanges shall be incorporated into the volute design. These flanges shall be ground smooth to ensure an accurate fit with the piping. The casing shall also include slots in which to house the bolts used to fasten the volute to the bearing housing and suction piece.

3. Materials of Construction

a. Wear parts including the volute, impeller, wear plate and suction flange shall be ASTM A532 material with a nominal hardness of 600-650 BHN.

4. Bearing Housing

a. The bearing housing material shall be ASTM A48CL-30 cast iron.
b. A hardened shaft sleeve shall protect the shaft throughout the sealing area. The shaft material shall be ASTM A108, Grade 4140 heat-treated steel.
c. The three thrust angular contact ball bearings and the two single-row radial ball bearings shall be oil lubricated. Bearings shall carry a minimum B10 life of 100,000 hours at the best efficiency point. A pressure vent plus oil fill and drain taps along with a built-in oil level sight glass shall be included with the bearing frame.

5. Shaft Sealing

a. Packing and HardMetal Sleeve. Synthetic fiber graphite-impregnated packing and a Teflon water seal ring shall be used to seal the shaft. An adjustable split bronze gland shall hold the packing in the gland housing. The bearing housing shall incorporate a tapped ¾" NPT hole to which drain piping can be connected to carry off any leakage through the packing. To prevent leakage between the shaft and sleeve, an O-ring sealed shaft sleeve shall be provided. The sleeve shall be ASTM A532 cast steel with a minimum hardness of 600 Brinell. Stainless steel sleeves will not be acceptable.

- ALTERNATE -

b. Mechanical Seal. The pump shall be furnished with a single cartridge mechanical seal that requires no external water flushing. The seal faces shall be tungsten carbide versus silicon carbide with Viton elastomers and 316 stainless steel parts. The base of the gland housing shall be fitted with a SpiralTrac flow modification device to remove large solids from the gland housing and eject them behind the impeller. Seals that utilize large open areas with the seal faces exposed to the pumpage shall not be acceptable. A sleeve shall be provided to protect the shaft from abrasive wear and be O-ring sealed to prevent leakage between the shaft and the sleeve. The sleeve shall be stainless steel construction of 300-350 BHN. Seals requiring a water or product flush may be furnished in lieu of the non-flushed seal, provided the contractor furnishes all of the external auxiliary equipment necessary for the flushing system. This system shall include, but not be limited to stainless steel tubing, pressure gauge, flowmeter, shutoff and isolation valves, manual throttle valve, strainer, pump, isolated water supply system, solenoid valve in a suitable enclosure,

associated wiring, and modifications to the motor control center to actuate the solenoid valve.

6. Horizontal Mounting with V-Belt Drives between Motor and Pump.
   a. A fabricated steel base with a minimum thickness of 3/8" shall be provided that is suitable to adequately support the weight of the pump, motor, drive and drive guard.
   b. An adjustable motor base shall be furnished whose design is such that the motor can easily be moved to accommodate appropriate tensioning of the V-belt drive.
   c. A "stationary control" variable speed drive complete with belts and sheaves shall be installed on the base with the pump and motor. This type of drive is to provide a means to adjust speeds while the drive is not operating.
   d. An enclosed and approved metal belt guard shall be provided.

7. Motor. The motor provided shall meet NEMA standards and shall be _____ type, _____ HP, _____ Phase, _____ Hertz, _____ Volt, _____ RPM.

- OPTIONAL TESTING -

8. Tests
   a. Performance Testing

(Performance Test Option #1)

1. Each pump shall be factory certified tested in accordance with the latest edition of Hydraulic Institute codes. At least six test points shall be taken including the design condition and shutoff. Test results shall include capacity, head, efficiency and horsepower from shutoff to 150% of rated capacity.

(Performance Test Option #2)

2. A registered Professional Engineer shall review and certify the test results prior to shipment.

(Performance Test Option #3)

3. The owner or his representative shall witness the certified performance test.

   b. Hardness Testing

(Hardness Test Option #1)

1. Individual hard metal castings shall be Brinell tested prior to shipment. A minimum of two places shall be checked on each casting to verify the material conforms to ASTM A532. These tests shall be by the ASTM Method E-10 and shall be conducted at the manufacturer's plant.

(Hardness Test Option #2)

2. A Registered Professional Engineer shall review and certify the test results prior to shipment.

(Hardness Test Option #3)

3. The owner or his representative shall witness the hardness testing.

9. Pumps shall be manufactured by companies whose management system is registered to ISO-9001:2000.

4500C						
	4522C	4523C				
Pump Size (Discharge Size)	4	2	3	4	6	8
Suction Size (Standard)	4	2	3	4	6	8
Suction Size (Optional)	N/A	3	4	5, 6	N/A	10
Shaft Diameter:						
at Impeller (taper)	2 to 1-1/8	1-1/4 to 5/8	2 to 1-1/8	2 to 1-1/8	2-1/4 to 1-3/8	3 to 1-7/8
at Sleeve	2	1-1/4	2	2	2-1/4	3
at Coupling	2	1-3/8	2	2	2-5/16	3-3/16
Thrust Bearing No.	MRC 7311PJDU	RTF	MRC 7311PJDU	MRC 7311PJDU	MRC 7312PJDU	FAFNIR 7317WN SU
Radial Bearing No.	MRC 211M	RTF	MRC 211M	MRC 211M	MRC 212M	22217CJW33C3
Gland Housing						
Packing:						
Size	1/2	3/8	1/2	1/2	1/2	1/2
No. Rings per Box	4	4	4	4	5	4
Lantern Ring Width	1/2	9/16	1/2	1/2	1/2	1/2
Mechanical Seal: (2)						
Type (Standard)	(3)	(3)	(3)	(3)	(3)	(3)
Recommended flush water:						
Pressure	(4)	(4)	(4)	(4)	(4)	(4)
Flow (GPM)	1/2 - 1	1/2 - 1	1/2 - 1	1/2 - 1	1/2 - 1	1/2 - 1
Sleeve OD	2-1/2	1-3/4	2-1/2	2-1/2	2-3/4	3-3/4
Box ID	3-1/2	2-1/2	3-1/2	3-1/2	3-3/4	4-3/4
Box Depth	2.6	2.6	2.6	2.6	3.1	3.1
Distance to nearest obstruction (5)	2.15	2.00	2.15	2.15	2.15	3.35
Gland Bolt Size	.50 - 13	.375 - 16	.50 - 13	.50 - 13	.50 - 13	.50 - 13
No. of Gland Bolts	4	4	4	4	4	2
Casing Working, PSI (6)	75	75	75	75	75	75
Nominal Casting Thickness:						
Casing	3/4	1/2	9/16	3/4	3/4	7/8
Suction Flange	1-1/4	7/8	1	1-1/4	1-1/4	1-1/2
Shipping Wt. (Basic Pump) (lbs.)	820	370	710	960	1260	2025

(1) All Dimensions are in inches.

(2) Different seal housing required.

(3) Standard mechanical seal is a John Crane Type 1 or equal double seal (flushed - NOT deadheaded) with Viton O-ring, stainless steel wetted parts, and carbon on ceramic upper faces and carbon on ceramic lower faces. Contact the factory for other types of mechanical seals availability.

(4) Shutoff pressure or 10 PSI above operating pressure whichever is greater. (Not required with a slurry seal.)

(5) Distance from top of stuffing box to face of bearing cap.

(6) These are maximum values based on standard construction. If higher values are required, contact the factory.

4500C - Standard Fitted Pumps

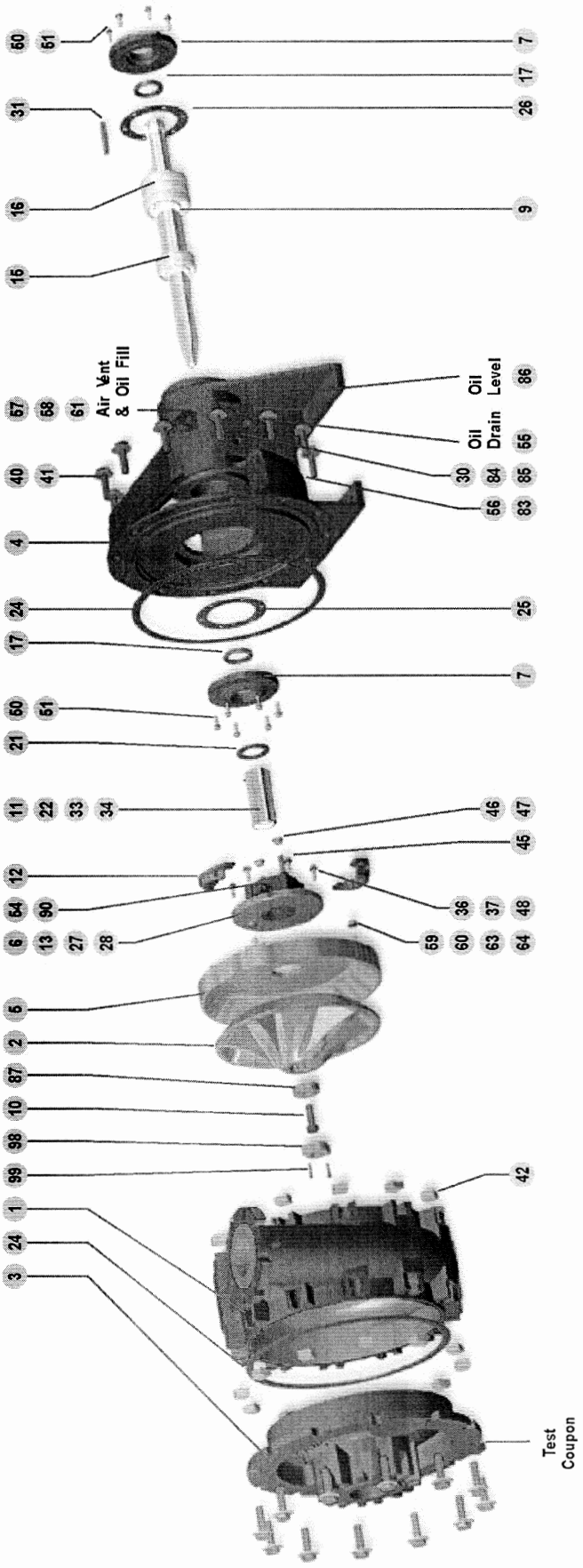
Ref. No.	Description	Material	Specifications (1)
1	Case	Ni-Hard (650 BHN)	ASTM A-532
2	Impeller	Ni-Hard (650 BHN)	ASTM A-532
3	Flange, Suction	Ni-Hard (650 BHN)	ASTM A-532
4	Housing, Bearing	Cast Iron	ASTM A48 CL30
5	Wearplate	Ni-Hard (650 BHN)	ASTM A-532
6	Housing, Gland	Cast Iron	ASTM A48 CL30
7	Cap, Bearing	Cast Iron	ASTM A48 CL30
9	Shaft	Steel	AISI 4140
10	Bolt, Hex Head	Steel	Commercial
11	Sleeve, Shaft	Stainless Steel	ASTM A276 (Heat treated to 450 BHN)
12	Gland, Split	Bronze	ASTM B584 AL836
13	Ring, Lantern *	Teflon	Commercial
15	Bearing, Inboard	Steel	Commercial
16	Bearing, Outboard	Steel	Commercial
17	Seal, Oil	Viton	Commercial
20	Ring, Retaining *	Steel	Commercial
21	Slinger	Rubber	Neoprene
22	O-Ring, Shaft Sleeve	Viton	Commercial
24	Gasket, Case	Rubber	Neoprene
25	Shim, Bearing Cap	Nylon	Commercial
26	Shim, Bearing Cap	Nylon	Commercial
27	Gasket, Gland Housing *	Vegetable Fiber	Commercial
28	Ring, Packing *	Synthetic, Graphite Impregnated	Commercial
29	Plate, Serial *	Stainless Steel	Commercial
30	Drive Screw *	Steel	Commercial
31	Key, Square Shaft	Steel	Commercial
33	Set Screw, Shaft Sleeve	Steel	Commercial
34	Set Screw, Shaft Sleeve	Steel	Commercial
36	Washer, Rubber	Rubber	Neoprene
37	Washer, Cupped	Steel	Commercial
40	Bolt, Hex Head	Steel	Commercial
41	Washer, Flat	Steel	Commercial
42	Nut, Square Head	Steel	Commercial
45	Stud, Tap End	Steel	Commercial
46	Nut, Hex Head	Steel	Commercial
47	Washer, Flat	Steel	Commercial
48	Bolt, Hex Head	Steel	Commercial
50	Bolt, Hex Head	Steel	Commercial
51	Washer, Lock	Steel	Commercial
54	Pipe Plug, NPTM	Steel	Commercial
55	Pipe Plug, NPTM *	Steel	Commercial
56	Caplug Plug, NPTM *	Steel	Commercial
57	Bushing, NPTM *	Steel	Commercial
58	Vent, Air *	Steel	Commercial
59	Stud, Tap End	Steel	Commercial
60	Nut, Hex Head	Steel	Commercial
61	Street Elbow, 90 deg. NPT *	Cast Iron	Commercial
63	Washer, Cupped	Steel	Commercial
64	Washer, Rubber	Rubber	Neoprene
83	Street Elbow, NPT F x M *	Cast Iron	Commercial
84	Sight Window, NPT *	Glass	Commercial
87	Washer, Thrust	Steel	Commercial
98	Collar, Locking	Cast Steel	Commercial
99	Cap Screw, Socket Head	Steel	Commercial

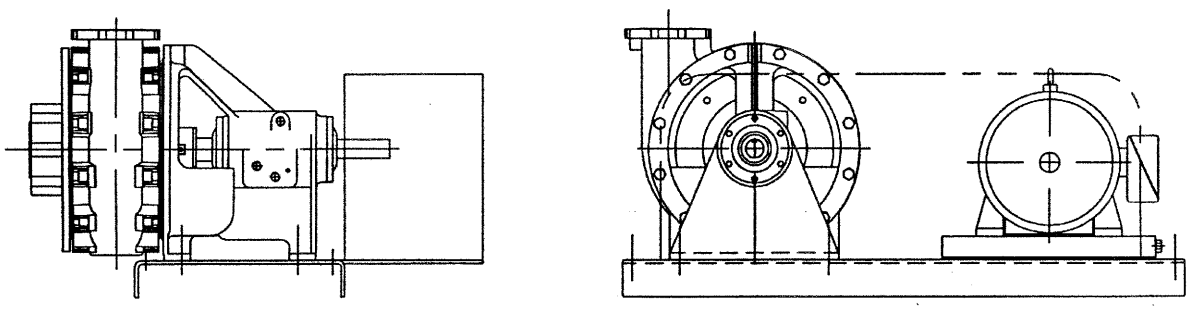
* Not Shown

Options to Basic Pumps

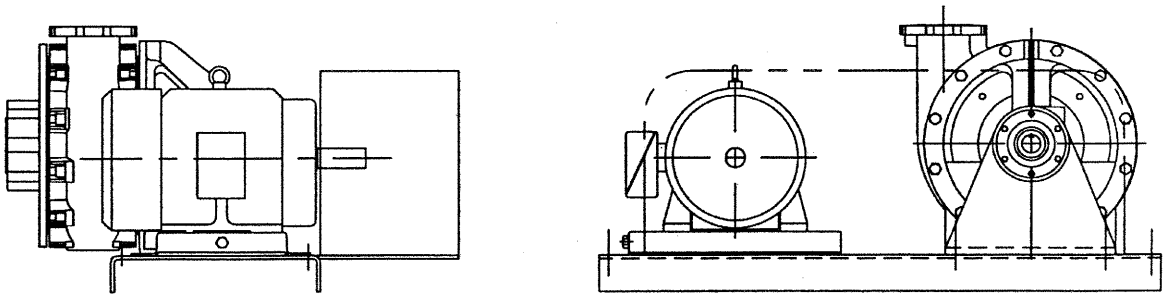
Ref. No.	Description	Material	Specifications (1)
11	Sleeve, Shaft	Hard Metal	620 Brinell
11	Sleeve, Shaft	Ceramic	Vickers Hardness 3.3 - 4.1 MPa m(1/2)
28	Mechanical Seal	----	----
*	Nose Cone*	Ni-Hard (650 BHN)	ASTM A532

* Not Shown

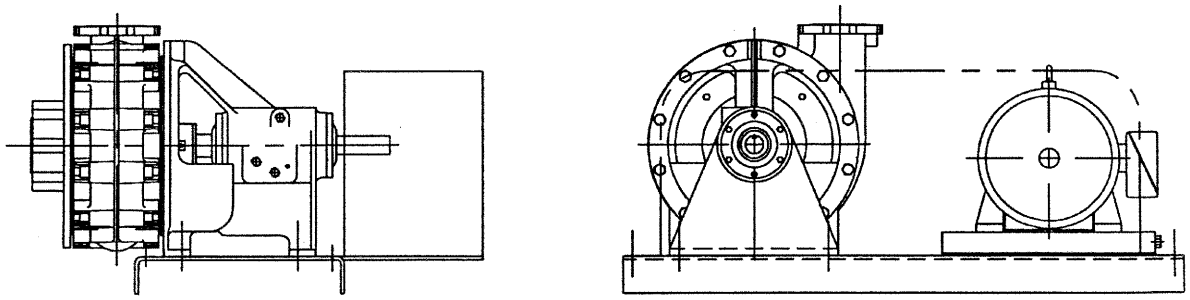




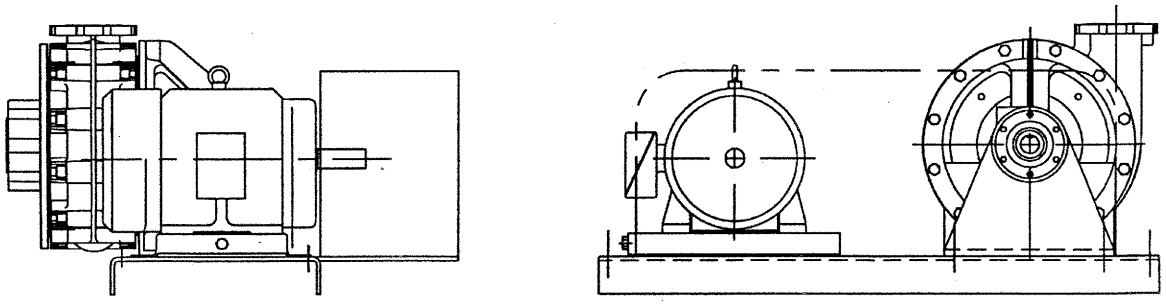
CLOCKWISE ROTATION RIGHT HAND ARRANGEMENT



CLOCKWISE ROTATION LEFT HAND ARRANGEMENT



COUNTER CLOCKWISE ROTATION RIGHT HAND ARRANGEMENT

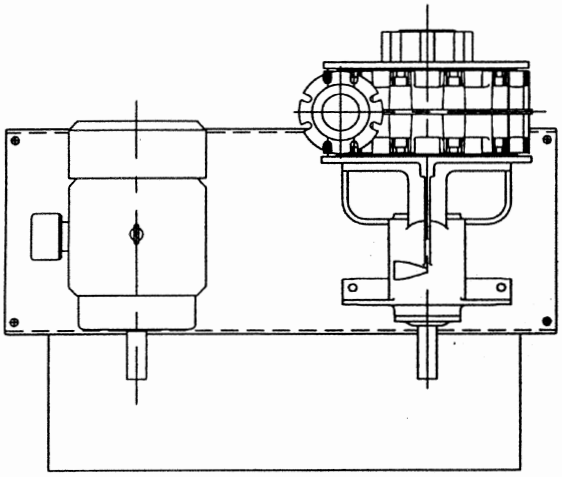


COUNTER CLOCKWISE ROTATION LEFT HAND ARRANGEMENT

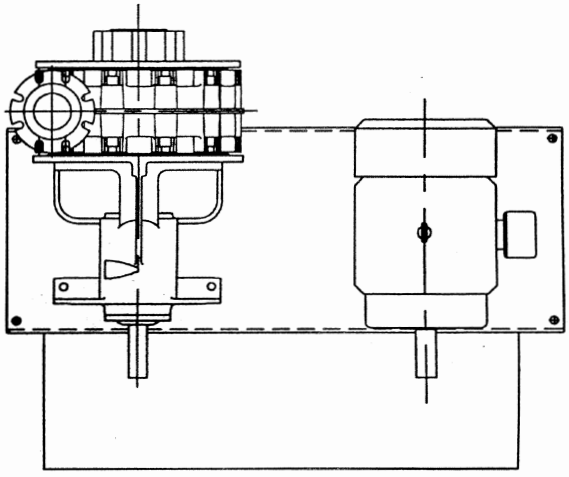
BELT DRIVE ARRANGEMENT FRONT & SIDE VIEW

Fairbanks Morse
PENTAIR PUMP GROUP

DWG NO 4520S001 REV NO 0

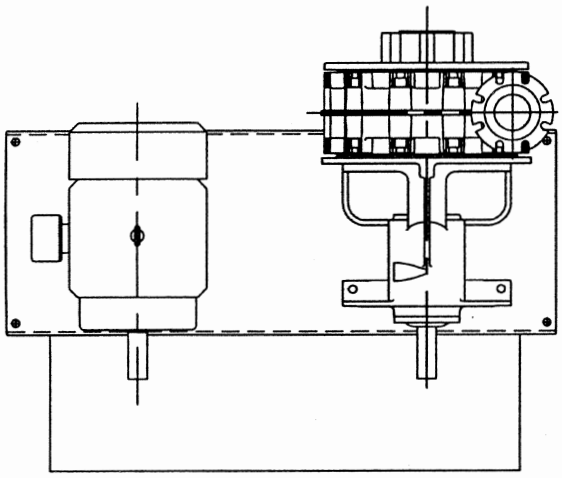


LEFT HAND ARRANGEMENT

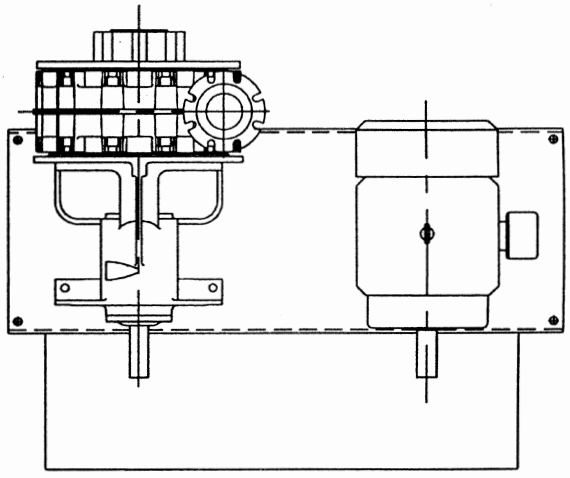


RIGHT HAND ARRANGEMENT

CLOCKWISE ROTATION



LEFT HAND ARRANGEMENT



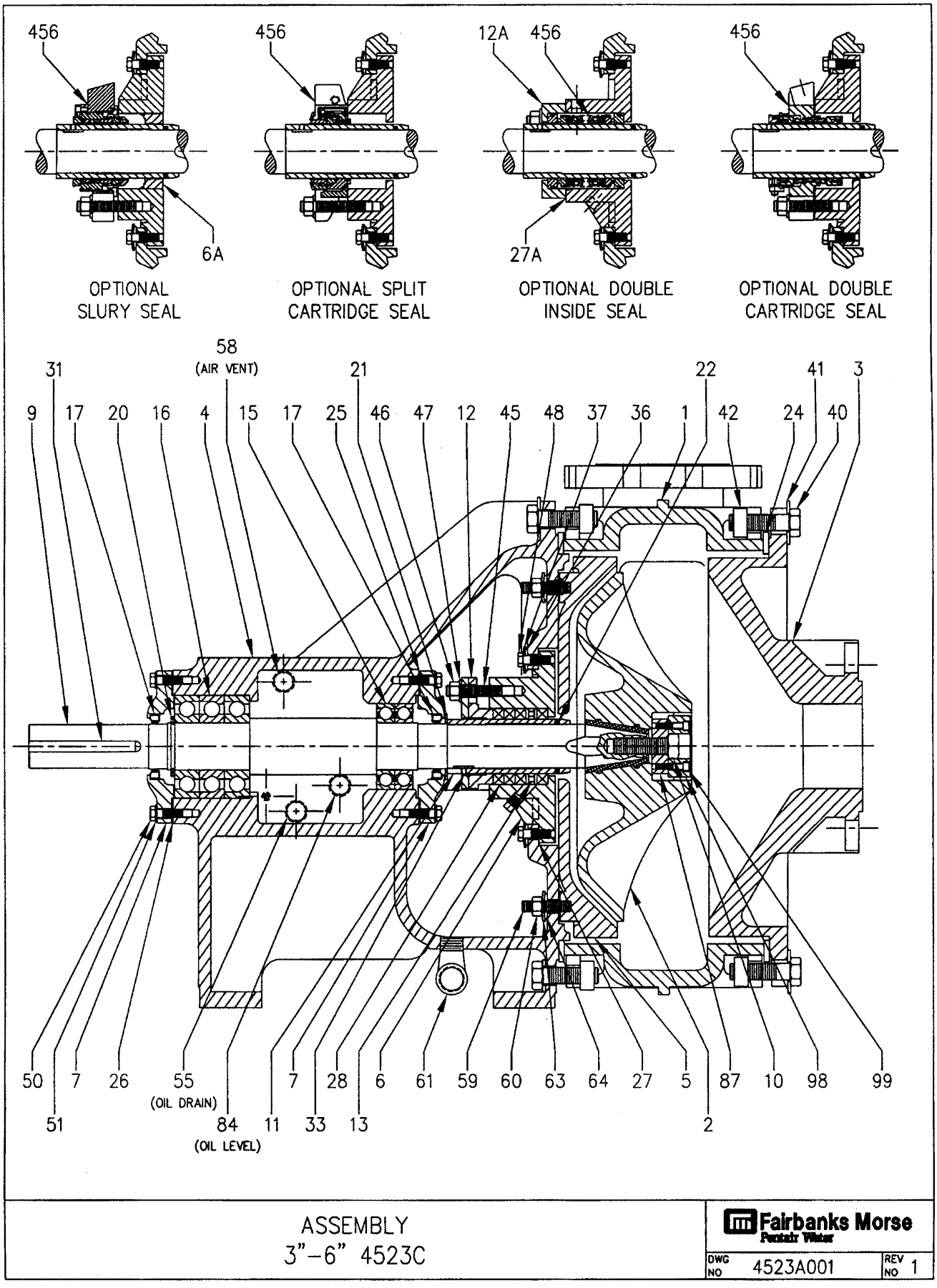
RIGHT HAND ARRANGEMENT

COUNTER CLOCKWISE ROTATION

BELT DRIVE ARRANGEMENT TOP VIEW

Fairbanks Morse
PENTAIR PUMP GROUP

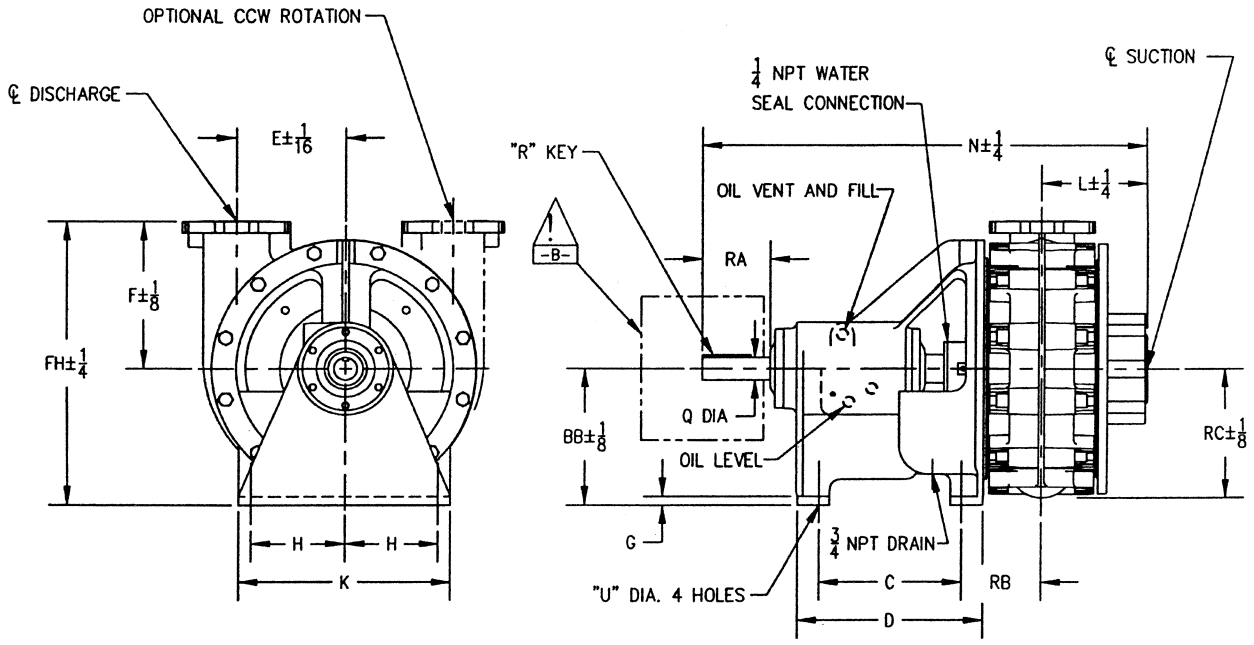
DWG NO 4520S002 REV NO 0


456
6A
OPTIONAL
SLURY SEAL
456
OPTIONAL SPLIT
CARTRIDGE SEAL
12A
456
27A
OPTIONAL DOUBLE
INSIDE SEAL
456
OPTIONAL DOUBLE
CARTRIDGE SEAL
58
(AIR VENT)
31
21
22
41
3
9
17
20
16
4
15
17
25
46
47
12
45
48
37
36
1
42
24
40
50
7
26
55
(OIL DRAIN)
51
84
(OIL LEVEL)
11
7
28
33
6
13
61
59
60
63
64
27
5
2
87
10
98
99
ASSEMBLY
3"–6" 4523C
Fairbanks Morse
Pentair Water
DWG NO 4523A001
REV NO 1

WARNING

DO NOT OPERATE THIS MACHINE WITHOUT PROTECTIVE GUARD IN PLACE. ANY OPERATION OF THIS MACHINE WITHOUT PROTECTIVE GUARD CAN RESULT IN SEVERE BODILY INJURY.

-A- SUPPLIED BY FMPC -B- SUPPLIED BY OTHERS



PUMP	SUCT	DISCH	C	D	E	F	G	H	K	L	N	Q	R	U	BB	FH	RA	RB	RC
2" 4523C	2	2	9	12	7	9 1/2	5/8	5 1/2	13	6 3/4	28	1 3/8	5/16 SQ	3/4	8 1/2	18	3 1/2	4 3/4	8 3/8
2" 4523C	3	2	9	12	7	9 1/2	5/8	5 1/2	13	6 3/4	28	1 3/8	5/16 SQ	3/4	8 1/2	18	3 1/2	4 3/4	8 3/8
3" 4523C	3	3	12 1/2	16	8 1/4	11	7/8	7	16	7 1/2	36 1/8	2	1/2 SQ	7/8	11	22	5 1/2	6 1/8	10 1/4
3" 4523C	4	3	12 1/2	16	8 1/4	11	7/8	7	16	7 1/2	36 1/8	2	1/2 SQ	7/8	11	22	5 1/2	6 1/8	10 1/4
4" 4522C	4	4	12 1/2	16	8 1/4	13	7/8	7	16	8	37 1/8	2	1/2 SQ	7/8	11	24	5 1/2	6 5/8	10 1/4
4" 4523C	4	4	12 1/2	16	9 1/4	13	7/8	8	18	9	38 1/4	2	1/2 SQ	7/8	12	25	5 1/2	6 7/8	11 1/2
4" 4523C	5	4	12 1/2	16	9 1/4	13	7/8	8	18	9	38 1/4	2	1/2 SQ	7/8	12	25	5 1/2	6 7/8	11 1/2
4" 4523C	6	4	12 1/2	16	9 1/4	13	7/8	8	18	12	41 1/4	2	1/2 SQ	7/8	12	25	5 1/2	6 7/8	11 1/2
6" 4523C	6	6	14 1/2	18	11 1/4	16	5/8	9	20	11 1/8	44	2 5/16	5/8 SQ	7/8	14	30	5 7/8	8	14 1/2
6" 4523C	8	6	14 1/2	18	11 1/4	16	5/8	9	20	11 1/8	44	2 5/16	5/8 SQ	7/8	14	30	5 7/8	8	14 1/2
8" 4523C	8	8	19	23	14 1/2	17	7/8	9 3/4	21 1/2	13 3/4	58 1/2	3 3/16	3/4 SQ	1	15 3/4	32 3/4	10 3/4	10	17 1/8
8" 4523C	10	8	19	23	14 1/2	17	7/8	9 3/4	21 1/2	13 3/4	58 1/2	3 3/16	3/4 SQ	1	15 3/4	32 3/4	10 3/4	10	17 1/8

NOTES:
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(2) ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.
(3) SUCTION AND DISCHARGE GAUGE CONNECTIONS ARE NOT AVAILABLE AND SHOULD BE LOCATED ON ADJACENT PIPING.
(4) CASING AND SUCTION FLANGES ARE PROVIDED AS CAST. PIPING SHOULD BE FITTED TO PUMP WITH HEAVY NEOPRENE GASKETS AFTER PUMP IS SET AND LEVELED.
(5) NOT FOR CONSTRUCTION, INSTALLATION, OR APPLICATION PURPOSES UNLESS CERTIFIED. DIMENSIONS SHOWN MAY VERY DUE TO NORMAL MANUFACTURING TOLERANCES.

CUSTOMER					P.O. NO.	
JOB NAME					TAG NAME	
PUMP SIZE AND MODEL		GPM	TDH	RPM	ROTATION	
MOTOR	HP	FRAME	PHASE	HERTZ	VOLTS	ENCLOSURE
CERTIFIED FOR			CERTIFIED BY		DATE	

Fairbanks Morse
PENTAIR PUMP GROUP

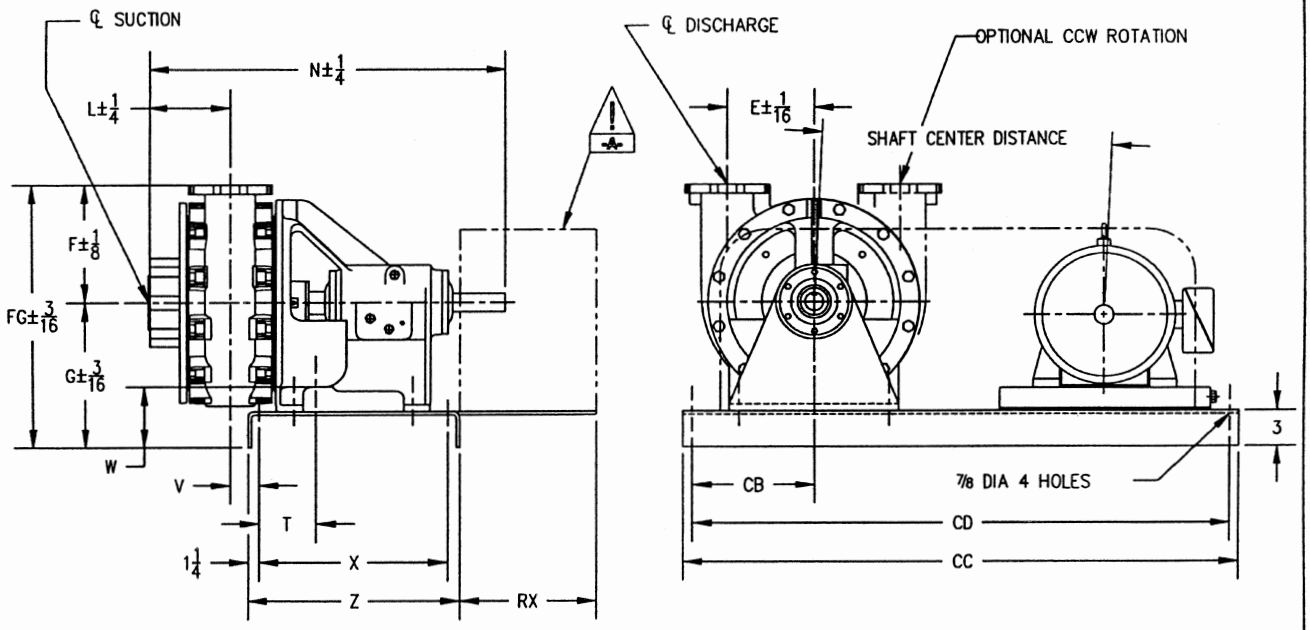
BASIC PUMP DIMENSIONS 4520C

DWG NO 4520S010 REV NO 1

⚠ WARNING

DO NOT OPERATE THIS MACHINE WITHOUT PROTECTIVE GUARD IN PLACE. ANY OPERATION OF THIS MACHINE WITHOUT PROTECTIVE GUARD CAN RESULT IN SEVERE BODILY INJURY.

-A- SUPPLIED BY FMPC -B- SUPPLIED BY OTHERS



PUMP	SUCT	DISCH	E	F	G	L	N	W	FG	SHAFT CENTERS	MOTOR FRAMES	T	V	X	Z	CB	CC	CD	RX
2" 4523C	2	2	7	9 1/2	11 1/2	6 3/4	28	5 15/16	21	18 3/8–23 3/4	182T–284T	6 15/16	1/16	17 1/2	20	10 1/4	47	45	15
2" 4523C	3	2	7	9 1/2	11 1/2	6 3/4	28	5 15/16	21	18 3/8–23 3/4	182T–284T	6 15/16	1/16	17 1/2	20	10 1/4	47	45	15
3" 4523C	3	3	8 1/4	11	14	7 1/2	36 1/8	4 15/16	25	18–22 7/8	182T–284T	3 1/16	5 1/16	17 1/2	20	10 1/4	47	45	15
										22 3/4–31 1/2	286T–365T	6 13/16	2 5/16	20	22 1/2	13	60	58	15
3" 4523C	4	3	8 1/4	11	14	7 1/2	36 1/8	4 15/16	25	18–22 7/8	182T–284T	3 1/16	5 1/16	17 1/2	20	10 1/4	47	45	15
										22 3/4–31 1/2	286T–365T	6 13/16	2 5/16	20	22 1/2	13	60	58	15
4" 4522C	4	4	8 1/4	13	14	8	37 1/8	4 15/16	27	18–22 7/8	182T–284T	3 1/16	5 9/16	17 1/2	20	10 1/4	47	45	15
										22 3/4–31 1/2	286T–365T	6 13/16	2 13/16	20	22 1/2	13	60	58	15
4" 4523C	4	4	9 1/4	13	15	9	38 1/4	4 1/16	28	18 1/8–23	182T–284T	4	5 3/4	17 1/2	20	10 1/4	47	45	15
										22 5/8–31 1/2	286T–365T	6 3/4	3	20	22 1/2	13	60	58	15
4" 4523C	5	4	9 1/4	13	15	9	38 1/4	4 1/16	28	18 1/8–23	182T–284T	4	5 3/4	17 1/2	20	10 1/4	47	45	15
										22 5/8–31 1/2	286T–365T	6 3/4	3	20	22 1/2	13	60	58	15
4" 4523C	6	4	9 1/4	13	15	12	41 1/4	4 1/16	28	18 1/8–23	182T–284T	4	5 3/4	17 1/2	20	10 1/4	47	45	15
										22 5/8–31 1/2	286T–365T	6 3/4	3	20	22 1/2	13	60	58	15

NOTES:
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(2) ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.
(3) SUCTION AND DISCHARGE GAUGE CONNECTIONS ARE NOT AVAILABLE AND SHOULD BE LOCATED ON ADJACENT PIPING.
(4) BASES ARE DESIGNED TO BE COMPLETELY FILLED WITH GROUT.
(5) CASING AND SUCTION FLANGES ARE PROVIDED AS CAST. PIPING SHOULD BE FITTED TO PUMP WITH HEAVY NEOPRENE GASKETS AFTER PUMP IS SET AND LEVELED.
(6) NOT FOR CONSTRUCTION, INSTALLATION, OR APPLICATION PURPOSES UNLESS CERTIFIED. DIMENSIONS SHOWN MAY VERY DUE TO NORMAL MANUFACTURING TOLERANCES.

CUSTOMER					P.O. NO.	
JOB NAME					TAG NAME	
PUMP SIZE AND MODEL		GPM	TDH	RPM	ROTATION	DISCH POS
MOTOR	HP	FRAME	PHASE	HERTZ	VOLTS	ENCLOSURE
CERTIFIED FOR			CERTIFIED BY		DATE	

Fairbanks Morse
PENTAIR PUMP GROUP

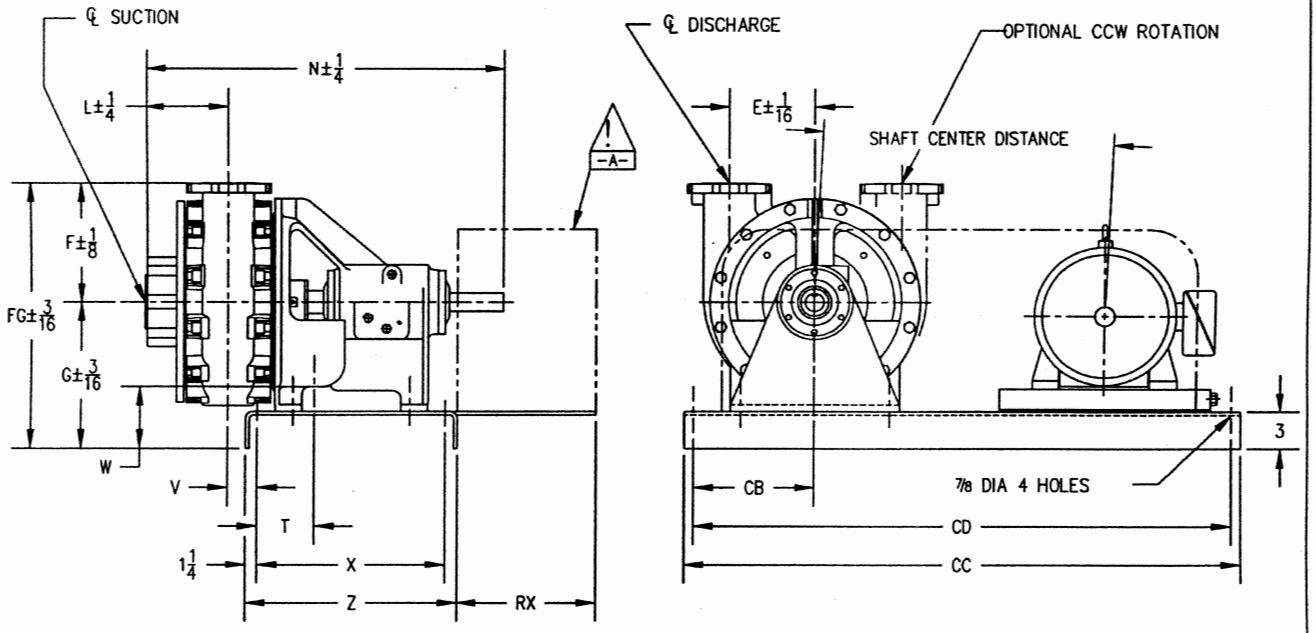
SETTING PLAN
4520C
R.H. ARRANGEMENT

DWG NO 4520S020 REV NO 1

⚠ WARNING

DO NOT OPERATE THIS MACHINE WITHOUT PROTECTIVE GUARD IN PLACE. ANY OPERATION OF THIS MACHINE WITHOUT PROTECTIVE GUARD CAN RESULT IN SEVERE BODILY INJURY.

–A– SUPPLIED BY FMPC –B– SUPPLIED BY OTHERS



PUMP	SUCT	DISCH	E	F	G	L	N	W	FG	SHAFT CENTERS	MOTOR FRAMES	T	V	X	Z	CB	CC	CD	RX
6" 4523C	6	6	11 1/4	16	18	11 1/8	44	3 1/16	34	25 1/8–31	215T–286T	9 3/8	1 7/8	24 1/2	27	13	58	56	15
										28 9/16–35 9/16	324T–445T	12 3/8	1 1/8	27 1/2	30	14 1/4	67	65	22
6" 4523C	8	6	11 1/4	16	18	11 1/8	44	3 1/16	34	25 1/8–31	215T–286T	9 3/8	1 7/8	24 1/2	27	13	58	56	15
										28 9/16–35 9/16	324T–445T	12 3/8	1 1/8	27 1/2	30	14 1/4	67	65	22
8" 4523C	8	8	14 1/2	17	18 3/4	13 3/4	58 1/2	3 5/16	35 3/4	25 1/4–31 1/8	215T–286T	5 3/16	9	24 1/2	27	13	58	56	15
										28 5/8–35 5/8	324T–445T	8 3/16	6	27 1/2	30	14 1/4	67	65	22
8" 4523C	10	8	14 1/2	17	18 3/4	13 3/4	58 1/2	3 5/16	35 3/4	25 1/4–31 1/8	215T–286T	5 3/16	9	24 1/2	27	13	58	56	15
										28 5/8–35 5/8	324T–445T	8 3/16	6	27 1/2	30	14 1/4	67	65	22

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CUSTOMER					P.O. NO.	
JOB NAME					TAG NAME	
PUMP SIZE AND MODEL		GPM	TDH	RPM	ROTATION	DISCH POS
MOTOR	HP	FRAME	PHASE	HERTZ	VOLTS	ENCLOSURE
CERTIFIED FOR			CERTIFIED BY		DATE	

Fairbanks Morse
PENTAIR PUMP GROUP

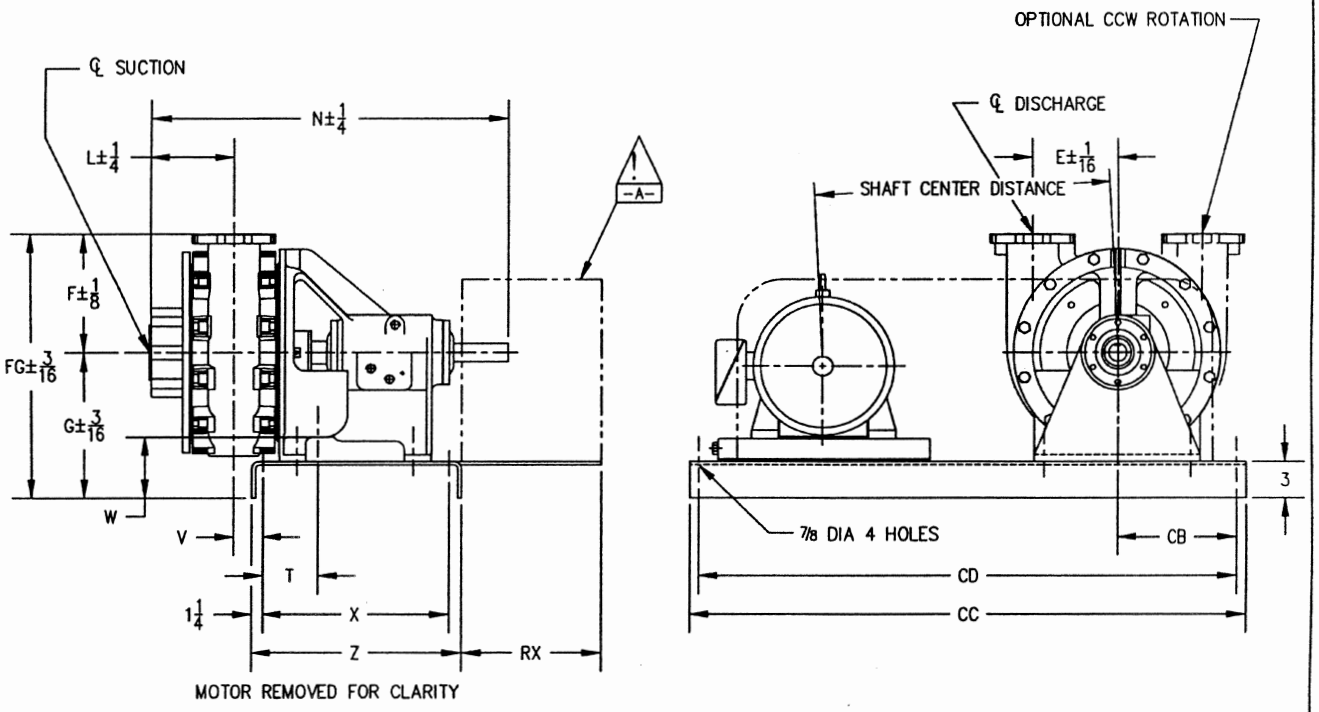
SETTING PLAN
4520C
R.H. ARRANGEMENT

DWG NO 4520S021 REV NO 1

⚠ WARNING

DO NOT OPERATE THIS MACHINE WITHOUT PROTECTIVE GUARD IN PLACE. ANY OPERATION OF THIS MACHINE WITHOUT PROTECTIVE GUARD CAN RESULT IN SEVERE BODILY INJURY.

–A– SUPPLIED BY FMPC –B– SUPPLIED BY OTHERS



PUMP	SUCT	DISCH	E	F	G	L	N	W	FG	SHAFT CENTERS	MOTOR FRAMES	T	V	X	Z	CB	CC	CD	RX
2" 4523C	2	2	7	9 1/2	11 1/2	6 3/4	28	5 15/16	21	18 3/8–23 3/4	182T–284T	6 15/16	1/16	17 1/2	20	10 1/4	47	45	15
2" 4523C	3	2	7	9 1/2	11 1/2	6 3/4	28	5 15/16	21	18 3/8–23 3/4	182T–284T	6 15/16	1/16	17 1/2	20	10 1/4	47	45	15
3" 4523C	3	3	8 1/4	11	14	7 1/2	36 1/8	4 15/16	25	18–22 7/8	182T–284T	3 1/16	5 1/16	17 1/2	20	10 1/4	47	45	15
										22 3/4–31 1/2	286T–365T	6 13/16	2 5/16	20	22 1/2	13	60	58	15
3" 4523C	4	3	8 1/4	11	14	7 1/2	36 1/8	4 15/16	25	18–22 7/8	182T–284T	3 1/16	5 1/16	17 1/2	20	10 1/4	47	45	15
										22 3/4–31 1/2	286T–365T	6 13/16	2 5/16	20	22 1/2	13	60	58	15
4" 4522C	4	4	8 1/4	13	14	8	37 1/8	4 15/16	27	18–22 7/8	182T–284T	3 1/16	5 9/16	17 1/2	20	10 1/4	47	45	15
										22 3/4–31 1/2	286T–365T	6 13/16	2 13/16	20	22 1/2	13	60	58	15
4" 4523C	4	4	9 1/4	13	15	9	38 1/4	4 1/16	28	18 1/8–23	182T–284T	4	5 3/4	17 1/2	20	10 1/4	47	45	15
										22 5/8–31 1/2	286T–365T	6 3/4	3	20	22 1/2	13	60	58	15
4" 4523C	5	4	9 1/4	13	15	9	38 1/4	4 1/16	28	18 1/8–23	182T–284T	4	5 3/4	17 1/2	20	10 1/4	47	45	15
										22 5/8–31 1/2	286T–365T	6 3/4	3	20	22 1/2	13	60	58	15
4" 4523C	6	4	9 1/4	13	15	12	41 1/4	4 1/16	28	18 1/8–23	182T–284T	4	5 3/4	17 1/2	20	10 1/4	47	45	15
										22 5/8–31 1/2	286T–365T	6 3/4	3	20	22 1/2	13	60	58	15

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CUSTOMER					P.O. NO.	Fairbanks Morse PENTAIR PUMP GROUP
JOB NAME					TAG NAME	
PUMP SIZE AND MODEL		GPM	TDH	RPM	ROTATION	DISCH POS
MOTOR	HP	FRAME	PHASE	HERTZ	VOLTS	ENCLOSURE
CERTIFIED FOR			CERTIFIED BY		DATE	SETTING PLAN 4520C L.H. ARRANGEMENT
					DWG NO 4520S022	REV NO 1

⚠ WARNING

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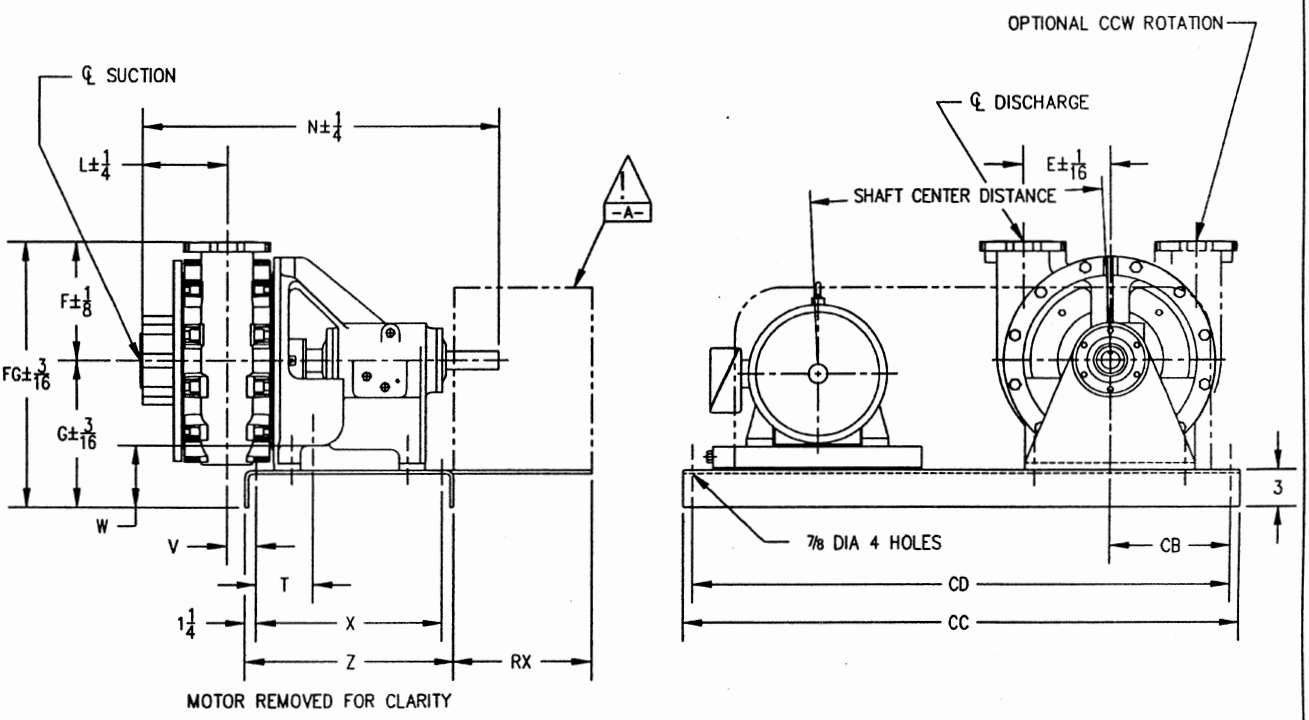

PUMP	SUCT	DISCH	E	F	G	L	N	W	FG	SHAFT CENTERS	MOTOR FRAMES	T	V	X	Z	CB	CC	CD	RX
6" 4523C	6	6	11 1/4	16	18	11 1/8	44	31 1/16	34	25 1/8–31	215T–286T	9 3/8	1 7/8	24 1/2	27	13	58	56	15
										28 9/16–35 9/16	324T–445T	12 3/8	1 1/8	27 1/2	30	14 1/4	67	65	22
6" 4523C	8	6	11 1/4	16	18	11 1/8	44	31 1/16	34	25 1/8–31	215T–286T	9 3/8	1 7/8	24 1/2	27	13	58	56	15
										28 9/16–35 9/16	324T–445T	12 3/8	1 1/8	27 1/2	30	14 1/4	67	65	22
8" 4523C	8	8	14 1/2	17	18 3/4	13 3/4	58 1/2	31 5/16	35 3/4	25 1/4–31 1/8	215T–286T	5 3/16	9	24 1/2	27	13	58	56	15
										28 5/8–35 5/8	324T–445T	8 3/16	6	27 1/2	30	14 1/4	67	65	22
8" 4523C	10	8	14 1/2	17	18 3/4	13 3/4	58 1/2	31 5/16	35 3/4	25 1/4–31 1/8	215T–286T	5 3/16	9	24 1/2	27	13	58	56	15
										28 5/8–35 5/8	324T–445T	8 3/16	6	27 1/2	30	14 1/4	67	65	22

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CUSTOMER					P.O. NO.	
JOB NAME					TAG NAME	
PUMP SIZE AND MODEL		GPM	TDH	RPM	ROTATION	DISCH POS
MOTOR	HP	FRAME	PHASE	HERTZ	VOLTS	ENCLOSURE
CERTIFIED FOR			CERTIFIED BY		DATE	

Fairbanks Morse
PENTAIR PUMP GROUP

SETTING PLAN
4520C
L.H. ARRANGEMENT

DWG NO 4520S023 REV NO 1