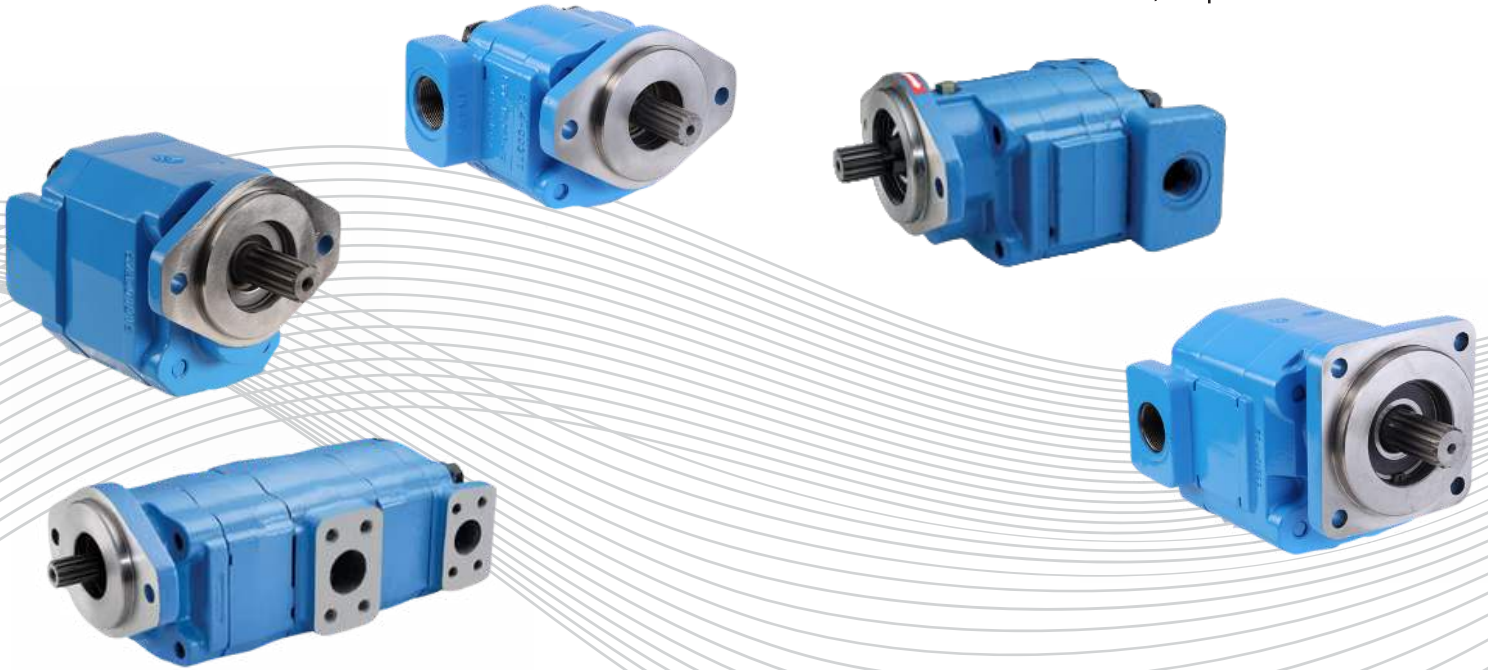




With Permco, it's personal.



Bushing Series

Gear pumps & motors

124/424/197/257/360/460

The Perfection Machining Company was founded in 1964 to design and manufacture replacement parts for the mining industry. Renamed Permco 4 years later, the family-owned business developed a wide array of replacement hydraulic parts and eventually expanded its manufacturing capabilities to include cast iron parts and the resulting complete units. Today, we maintain our focus on customer service and continue a decades-long tradition of developing fluid power systems that meet each of our customer's specific needs. Permco's product offering now includes gear and vane pumps/motors, flow dividers, intensifiers, directional control valves and a variety of accessories and components.

Permco offers the highest quality product possible to our wide customer base of OEMs and distributors. Because we understand that our success depends on the success of our customers, we are committed to reducing customers' costs and increasing the simplicity of doing business with us.

TABLE OF CONTENT



GENERAL INFORMATION 4

GENERAL DATA 6

124 SERIES 7

424 SERIES 10

197 SERIES 12

257 SERIES 15

360 SERIES 18

460 SERIES 21

SHAFT SEAL OPTIONS 23

SHAFT END COVER TYPES 25

DRIVE SHAFTS 26

MOUNTING OPTIONS 30

PORTS 33

BEARING CARRIER TYPES 34

PORT END COVER OPTIONS 35

APPENDIX A (PORT END COVERS) 36

APPENDIX B (GEAR HOUSINGS) 48

APPENDIX C (BEARING CARRIERS) 50

Bearing

Utilizing specialized sleeve bearing technology, gear journals are supported via a hydra-dynamic film, thus allowing continuous working pressures up to 4500 psi (310 bar) dependent upon the series and the selected gear size. At rated speeds up to 3000rpm, the series is compatible with all mineral based hydraulic oils and some fire resistant fluids (water glycol and invert emulsions). Employing high strength iron for all pump body components and an all doweled construction, Permco bushing pumps are well suited for high pressure and high shock load applications.

Bushing

Internal to the Permco bushing pumps are their pressure balanced bronze thrust plates. Being of the floating type, the thrust plates are allowed to move freely, providing a positive seal across the entire face of its mating gear set and ensuring optimum volumetric performance at the highest operating pressures.

Permco bushing pump gears are made from a high quality nickel alloy steel that ensures minimal gear flexure at high operating pressures. By using such a steel, the Permco bushing pumps can be operated over a broad range of working pressures without the ensuing gear wipe of the housing at high pressures that can seriously detract from the volumetric output at lower working pressures.

These series are available in both single and multiple gear housing configurations with a variety of drive shaft and porting options.



GENERAL INFORMATION

FLUID TYPE, TEMPERATURE AND INLET CONDITIONS

Permco Bushing pump series are compatible with mineral base, water glycol and invert emulsion fluids. It is recommended that a premium quality hydraulic fluid with a viscosity range of 150-300 SUS (32-65 cSt.) at 100°F (38°C) be used to assure optimum performance. The normal operating viscosity range is between 55-1000SUS (9-220 cSt.). Start up viscosity must not exceed 2000 SUS (440 cSt.). Under normal operating conditions, fluid

temperatures should not exceed 180°F (82°C) for mineral base fluids and 135°F (57°C) for water glycol and invert emulsions. If temperatures greater than these values are required for a particular application, please consult your Permco representative or call the factory. Inlet

conditions should not exceed 7 in. Hg. For mineral base fluids and 3 in. Hg. For water glycol and invert emulsions. Degassing of the fluid and subsequent cavitation may occur if these values are exceeded. For applications requiring inlet conditions greater than these values, consult your Permco representative. Supercharging the inlet is not recommended.

Maximum operating speeds for all fluids and all gear widths is 2400-3000 rpm.

PL Factor

In multiple pump applications, the strength of the drive shaft will determine the maximum torque that can be delivered to the unit from the prime mover. This relationship is designated as the PL Factor:

$$\sum_{N=1}^{\infty} P_N L_N$$

This calculated number must be less than or equal to the stated figures for selected shaft type.

Example: a two section 7500 series pump is constructed with 2" and 1" gears. operating at 3000 and 2000 psi, respectively. The PL factor will be calculated as:

$$PL = P1L1 + P2L2 + P3L3 + = (3000 \times 2) + (2000 \times 1)$$

$$PL = 8000$$

SHAFT ALIGNMENT

Unit shaft alignment must be within 0.005" (0.127mm) total indicator reading (TIR) using a standard motor coupling. Follow coupling manufacturer's installation instructions to prevent end thrust on shaft. Turn pump shaft to assure freedom of rotation. Pump and motor must be mounted on a rigid base.

SIDE LOADS

An outboard bearing is mandatory for radial (side or overhung) loads imposed upon the drive shaft of the pump. No axial (thrust) loading is permitted on the shaft except for fan motors.

Filtration (mandatory)

To assure maximum performance and life, a 10μ nominal return line filter with a Beta 10 rating of 2.2 is required for the system. Attempting to run the pump without proper filtration will degrade the shaft journals and journal bushings, causing premature failure. a 149μ suction strainer is also suggested for added pump protection, however very high viscosities may dictate not using a strainer.

Mounting restrictions

Mounting position is non-restrictive.

GENERAL DATA



Displacement table for all bushing series

SERIES	GEAR		DISPLACEMENT		THEO. FLOW AT 1000 RPM (GPM)	MAX RPM	MAX PRES- SURE (PSI)
	CODE	SIZE (IN)	IN3	CM3			
124	02	0.25	0.31	.08	1.34	3000	3500
124	03	0.375	0.47	7.7	2.03	3000	3500
124	04	0.423	0.52	8.52	2.25	3000	3500
124	05	0.5	0.62	10.16	2.68	3000	3500
124	07	0.75	0.93	15.24	4.03	3000	3500
124	08	0.875	1.09	17.87	4.72	3000	3500
124	10	1	1.24	20.32	5.37	3000	3500
124	11	1.125	1.4	22.95	6.06	3000	3500
124	12	1.25	1.55	25.4	6.71	3000	3500
124	13	1.375	1.71	28.03	7.4	3000	3250
124	15	1.5	1.86	30.49	8.05	3000	3250
124	17	1.75	2.17	35.57	9.39	3000	2900
124	20	2	2.48	40.65	10.74	3000	2500
197	05	0.5	0.99	16.23	4.29	2400	4000
197	06	0.625	1.23	20.16	5.32	2400	4000
197	07	0.75	1.48	24.26	6.41	2400	4000
197	10	1	1.97	32.29	8.53	2400	4000
197	11	1.125	2.22	36.39	9.61	2400	4000
197	12	1.25	2.46	40.32	10.65	2400	4000
197	15	1.5	2.96	48.51	12.81	2400	3750
197	16	1.625	3.2	52.45	13.85	2400	3500
197	17	1.75	3.45	56.55	14.94	2400	3500
197	18	1.875	3.69	60.48	15.97	2400	3250
197	2	2	3.94	64.58	17.06	2400	3250
257	05	0.5	1.29	21.14	5.58	2400	4500
257	07	0.75	1.93	31.63	8.35	2400	4500
257	10	1	2.57	42.12	11.13	2400	4500
257	12	1.25	3.21	52.61	13.9	2400	4500
257	13	1.375	3.53	57.86	15.28	2400	3500
257	15	1.5	3.86	63.27	16.71	2400	3500
257	17	1.75	4.5	73.76	19.48	2400	3250
257	18	1.875	4.82	79	20.87	2400	3000
257	2	2	5.14	84.24	22.25	2400	3000
257	22	2.25	5.78	94.73	25.02	2400	2750
257	25	2.5	6.43	105.39	27.84	2400	2500
360	05	0.5	1.8	29.5	7.79	2400	3500
360	07	0.75	2.7	44.25	11.69	2400	3500
360	10	1	3.6	59	15.58	2400	3500
360	12	1.25	4.5	73.76	19.48	2400	3500
360	15	1.5	5.4	88.51	23.38	2400	3500
360	17	1.75	6.3	103.26	27.27	2400	3500
360	20	2	7.2	118.01	31.17	2400	3500
360	22	2.25	8.1	132.76	35.06	2400	3250
360	25	2.5	9	147.51	38.96	2400	3000
360	3	3	10.8	177.01	46.75	2400	2250

GENERAL INFORMATION



124 SERIES

- Heavy duty sleeve bushing design in a small frame size
- Working pressure up to 3500 PSI
- Cubic inch displacements from 0.62 through 2.48 per section
- Speeds up to 3000 RPM
- Flows up to 30 GPM per section
- Doweled and high strength cast iron construction
- High strength alloy steel gear and shaft sets
- NPT, BSPP, ORB, SPLIT FLANGE or mixed ports are available
- Pressure balanced wear plates maintain high pump efficiency
- throughout all operating ranges
- Both single inlet/single outlets and single inlet/dual outlet bearing carriers



- 100% factory tested
- Available as a clutch pump
- Available as a fan motor
- High pressure 424 version available in select sizes

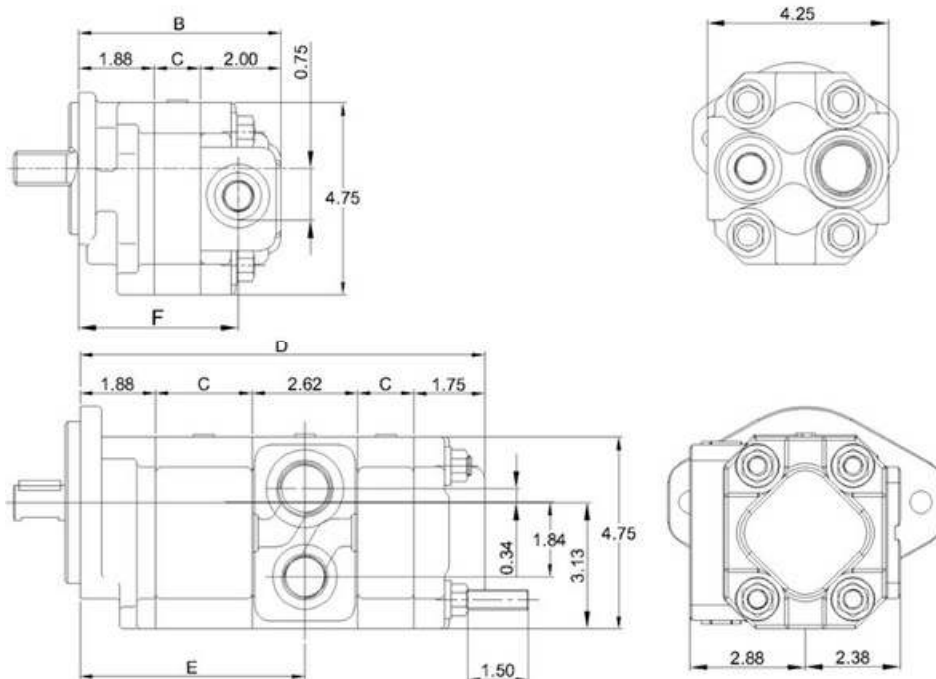
B. 4.27" plus gear width

C. 0.4" plus gear width

D. 7.04" plus total gear width

E. 3.58" plus front gear width

F. 3.27" plus gear width



PERFORMANCE



124

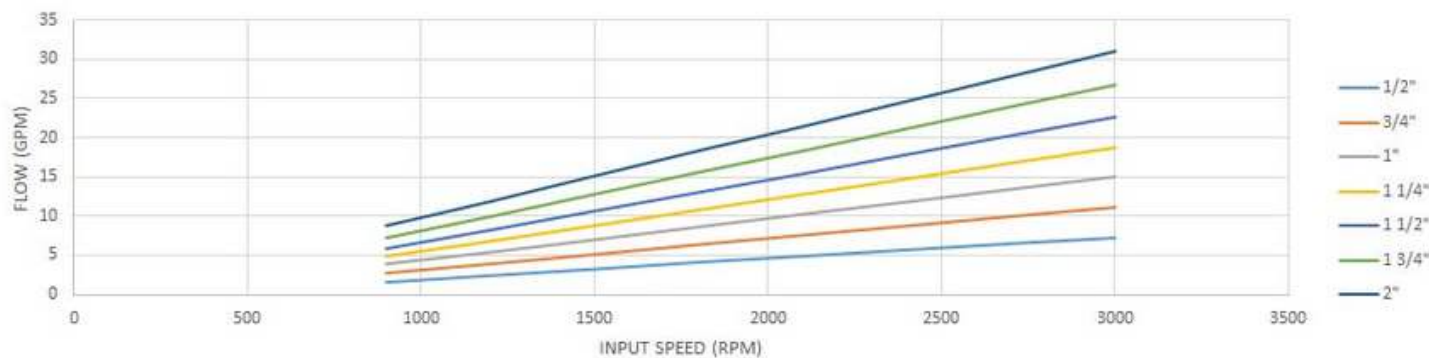
IMPORTANT NOTES: ALL DATA ARE BASED ON PUMP PERFORMANCES

GEAR SIZES 0.5" THROUGH 1 1/2" WERE TESTED AT 3000PSI

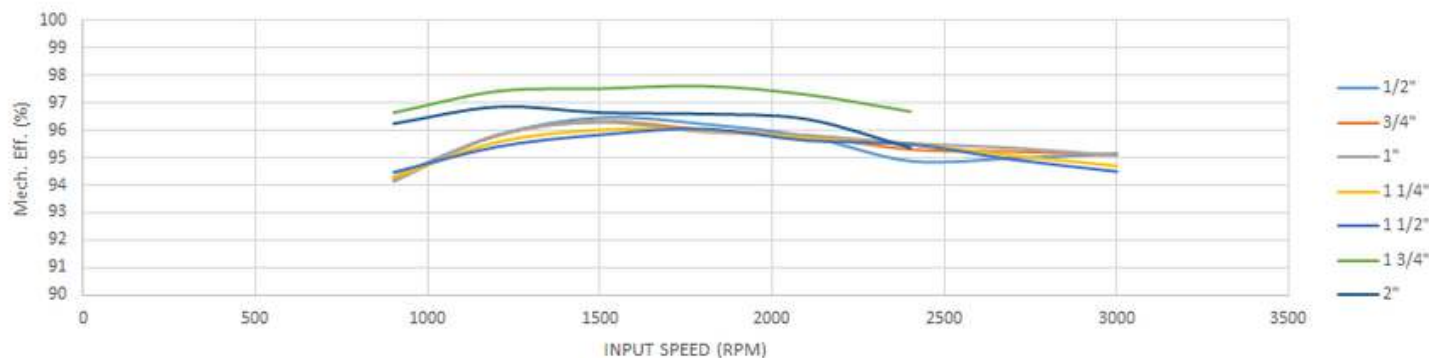
GEAR SIZE 1 3/4" WAS TESTED AT 2750PSI

GEAR SIZE 2" WAS TESTED AT 2500PSI

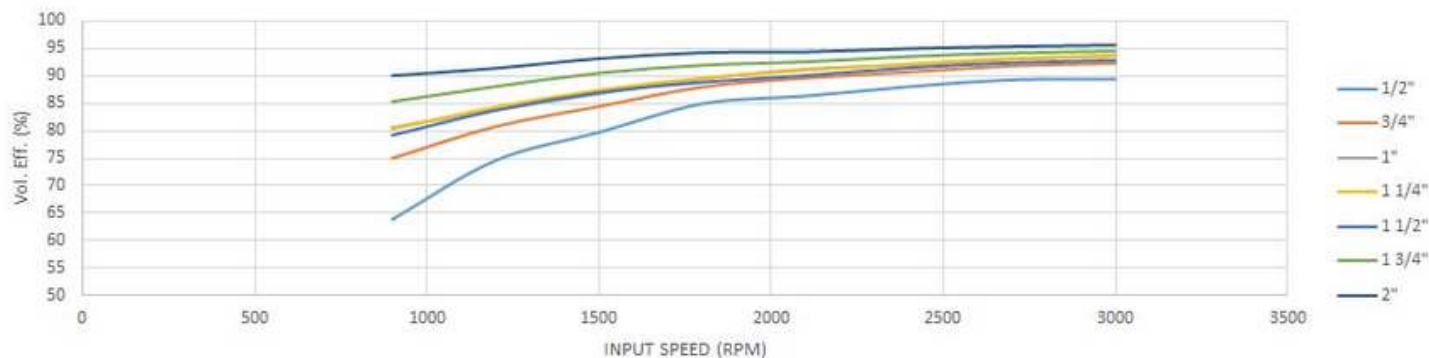
Flow



Mech. Eff.



Vol. Eff.





124 SERIES CODE



1 — PUMP / MOTOR

P	PUMP
M	MOTOR

2 — DISPLACEMENT PER INCH OF GEAR

1.24 IN³ / REV

3 — UNIT TYPE

A	SINGLE
B	MULTIPLE
L	EXTENDED STUDS

4 — SEC DETAILS

CODE	ROTATION	UNIT	OUTBOARD BEARING
0	CLOCKWISE	PUMP	NO
1	COUNTER CLOCKWISE	PUMP	NO
8	BI-ROTATIONAL	MOTOR	NO

5 — MOUNTING OPTION

REFER TO **MOUNTING OPTIONS** SECTION ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

6 — PORT END COVER

REFER TO **APPENDIX A** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

7 — GEAR HOUSING

REFER TO **APPENDIX B** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

8 — DRIVE SHAFT

REFER TO **DRIVE SHAFT** SECTION ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

9 — BEARING CARRIER

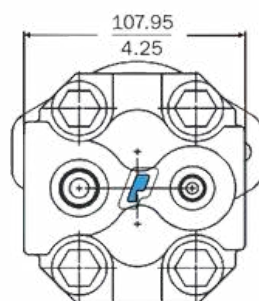
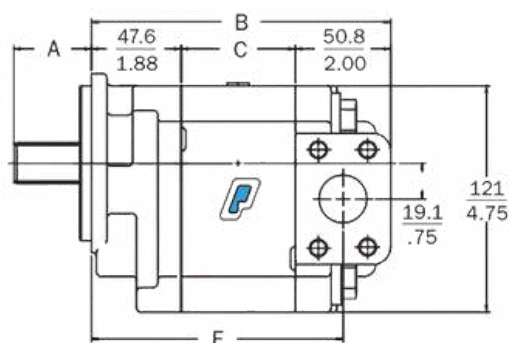
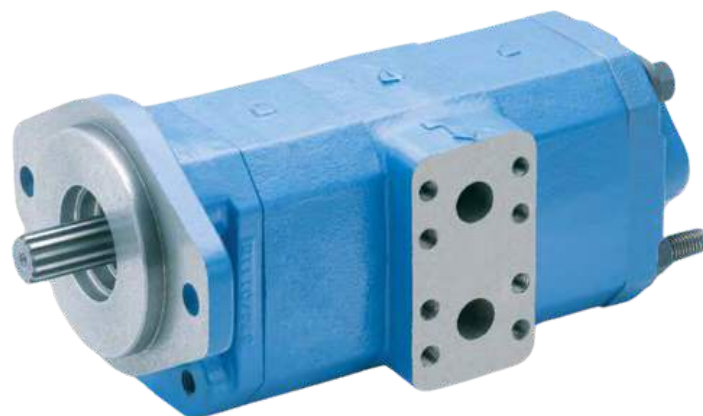
REFER TO **BEARING CARRIER TYPES SECTION AND APPENDIX C** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

GENERAL INFORMATION

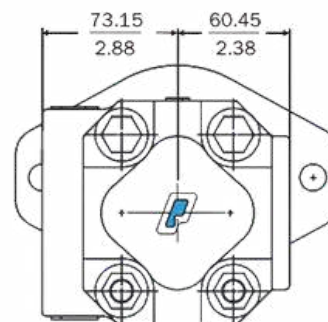
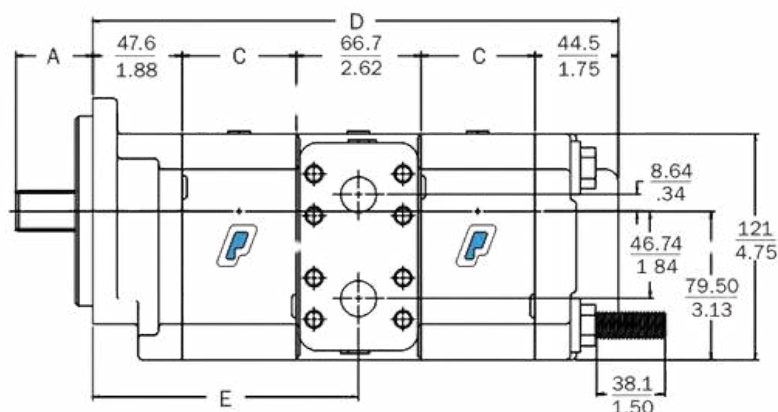


424 SERIES

- Heavy duty sleeve bushing design in a small frame size
- Cubic inch displacements of .62, .93 and 1.24
- Working pressure up to 4500 PSI
- Speeds up to 3000 RPM
- Flows up to 15 GPM
- Doweled and high strength cast iron construction
- High strength alloy steel gear and shaft sets
- A wide range of porting, mounting, and shaft options available
- Pressure balanced wear plates maintain high pump efficiency throughout all operating ranges
- Both single inlet/single outlet and single inlet/dual outlet bearing carriers available



- A. 1.63" SAE "B" shaft shown, other shafts available
- B. 4.27" plus gear width
- C. 0.4" plus gear width
- D. 7.04" plus total gear width
- E. 3.58" plus front gear width
- F. 3.27" plus gear width



PERFORMANCE



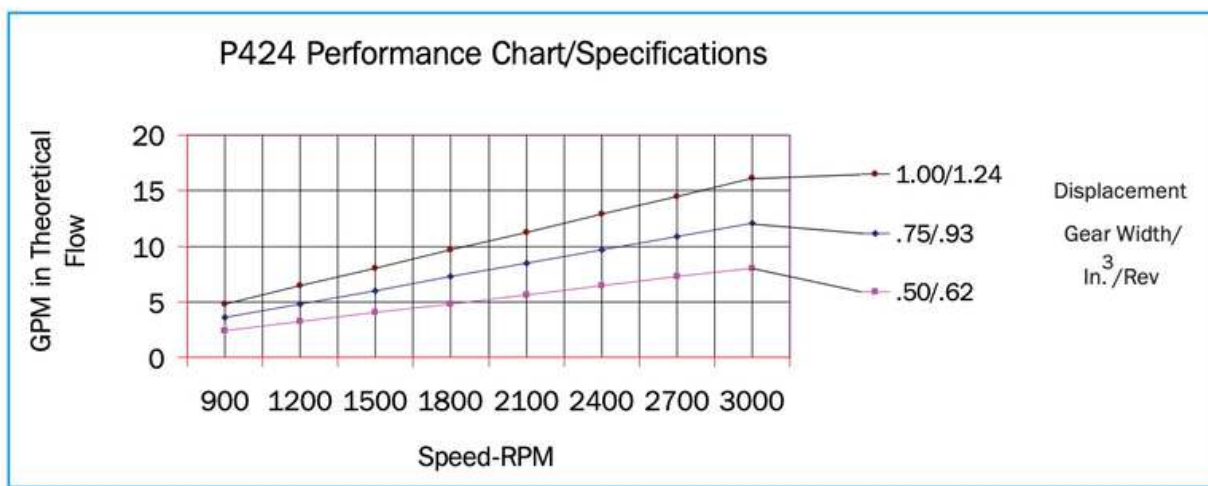
424

IMPORTANT NOTES: ALL DATA ARE BASED ON PUMP PERFORMANCES

GEAR SIZES 0.5" THROUGH 1 1/2" WERE TESTED AT 3000PSI

GEAR SIZE 1 3/4" WAS TESTED AT 2750PSI

GEAR SIZE 2" WAS TESTED AT 2500PSI



GEAR WIDTH (IN)	DISPL CU IN/CC	MAX RPM	MIN RPM	MAX PSI/BAR
.50	.62/10	3000	600	4500/310
.75	.93/15	3000	600	4500/310
1.00	1.24/20	3000	600	4500/310

GENERAL INFORMATION



197 SERIES

- Heavy duty sleeve bushing design in a medium/small framesize
- Working pressure up to 4000 PSI
- Cubic inch displacements from 0.99 through 3.94 per section
- Speeds up to 2400 RPM
- Flows up to 40 GPM per section
- Doweled and high strength cast iron construction
- High strength alloy steel gear and shaft sets
- High strength alloy steel gear and shaft sets
- Pressure balanced wear plates maintain high pump efficiency
- throughout all operating ranges

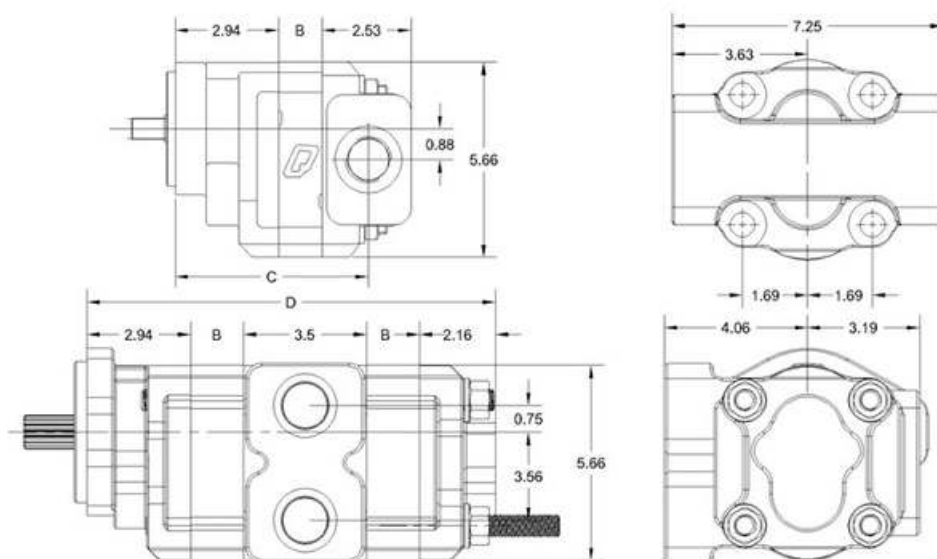


- Both single inlet/single outlets and single inlet/dual outlet bearing carriers
- 100% factory tested

B. 0.50" plus gear width

C. 4.75" plus gear width

D. 9.60" plus total gear width



PERFORMANCE



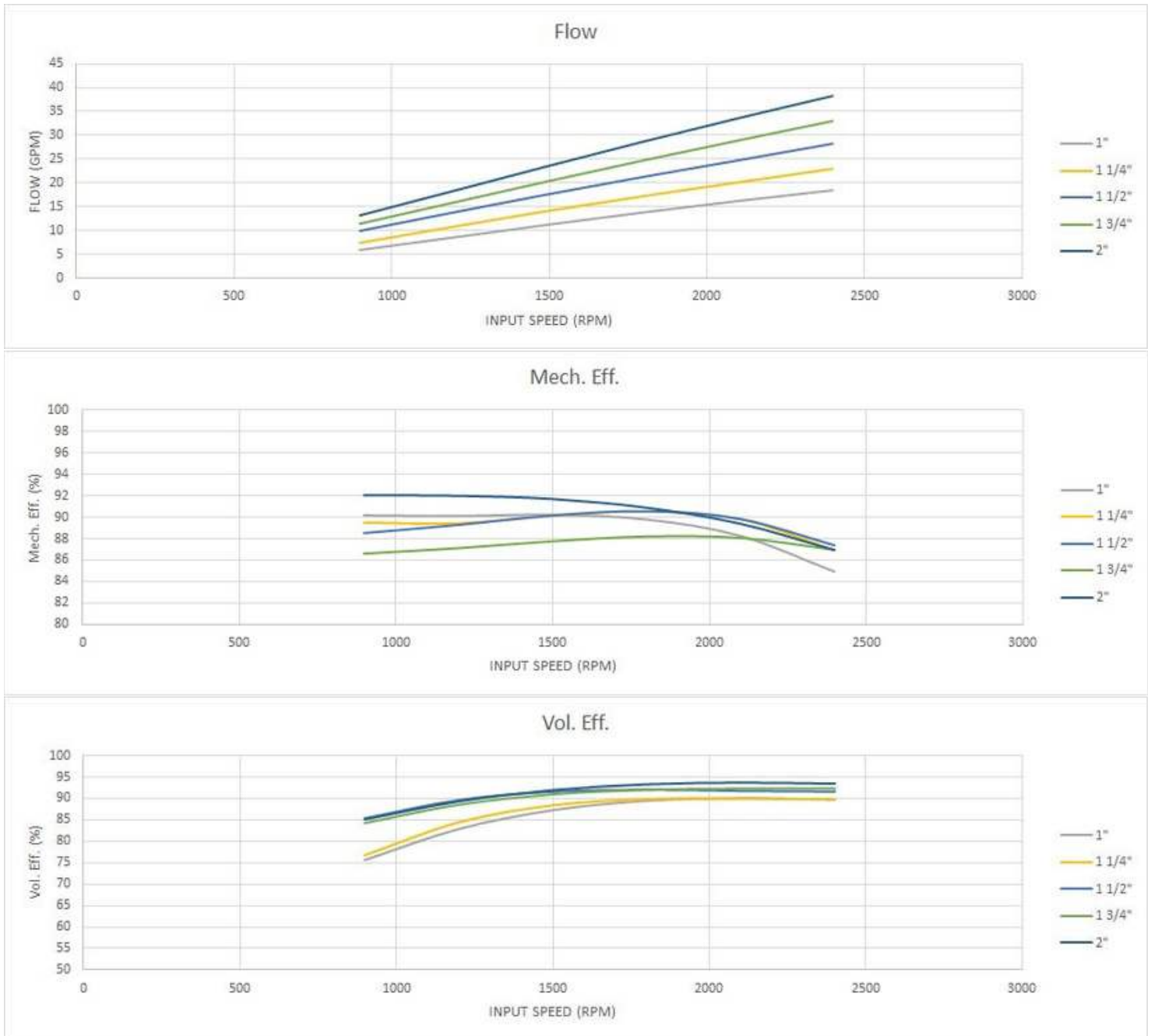
197

IMPORTANT NOTES: ALL DATA ARE BASED ON PUMP PERFORMANCES

GEAR SIZES 1" AND 1 1/4" WERE TESTED AT 4000PSI

GEAR SIZES 1 1/2" AND 1 3/4" WERE TESTED AT 3750PSI

GEAR SIZE 2" WAS TESTED AT 3500PSI



197 SERIES CODE



1 — PUMP / MOTOR

P	PUMP
M	MOTOR

2 — DISPLACEMENT PER INCH OF GEAR

1.97 IN3 / REV

3 — UNIT TYPE

A	SINGLE
B	MULTIPLE
C	CONTINENTAL
L	EXTENDED STUDS

4 — SEC DETAILS

CODE	ROTATION	UNIT	OUTBOARD BEARING
0	CLOCKWISE	PUMP	NO
1	COUNTER CLOCKWISE	PUMP	NO
3	CLOCKWISE	PUMP	YES
4	COUNTER CLOCKWISE	PUMP	YES
7	BI-ROTATIONAL	MOTOR	YES
8	BI-ROTATIONAL	MOTOR	NO

5 — MOUNTING OPTION

REFER TO **MOUNTING OPTIONS** SECTION ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

6 — PORT END COVER

REFER TO **APPENDIX A** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

7 — GEAR HOUSING

REFER TO **APPENDIX B** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

8 — DRIVE SHAFT

REFER TO **DRIVE SHAFT** SECTION ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

9 — BEARING CARRIER

REFER TO **BEARING CARRIER TYPES SECTION** AND **APPENDIX C** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

GENERAL INFORMATION



257 SERIES

- Heavy duty sleeve bushing design in a medium frame size
- Working pressure up to 4500 PSI
- Cubic inch displacements from 1.29 through 6.43 per section
- Speeds up to 2400 RPM
- Flows up to 65 GPM per section
- Doweled and high strength cast iron construction
- High strength alloy steel gear and shaft sets
- BSPP, ORB, SPLIT FLANGE or mixed ports are available
- Pressure balanced wear plates maintain high pump efficiency throughout all operating ranges



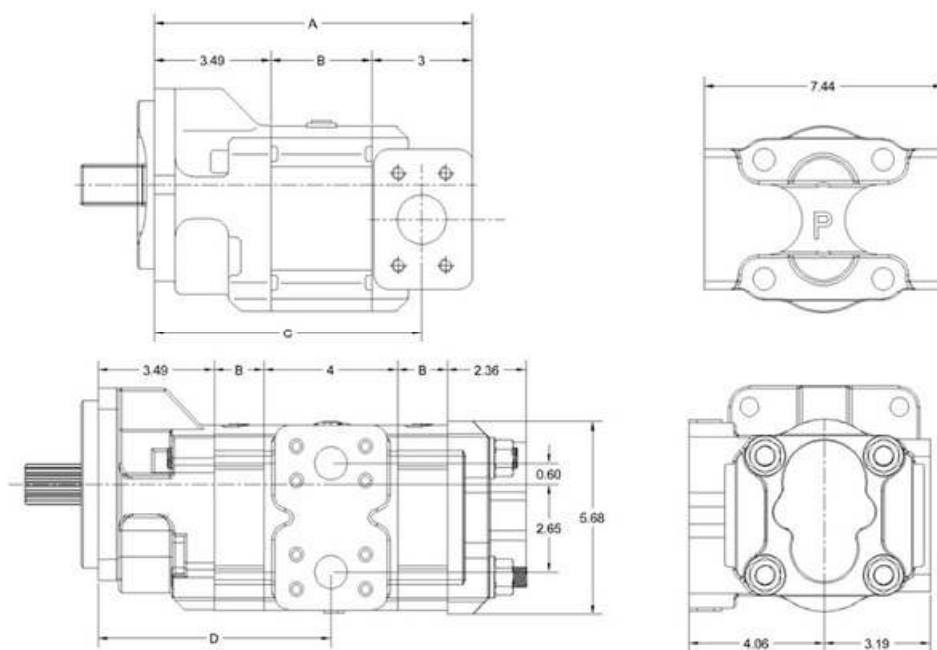
- Both single inlet/single outlets and single inlet/dual outlet bearing carriers
- 100% factory tested

A. 6.69" plus gear width

B. 0.50" plus gear width

C. 5.49" plus gear width

D. 5.99" plus front gear width



PERFORMANCE



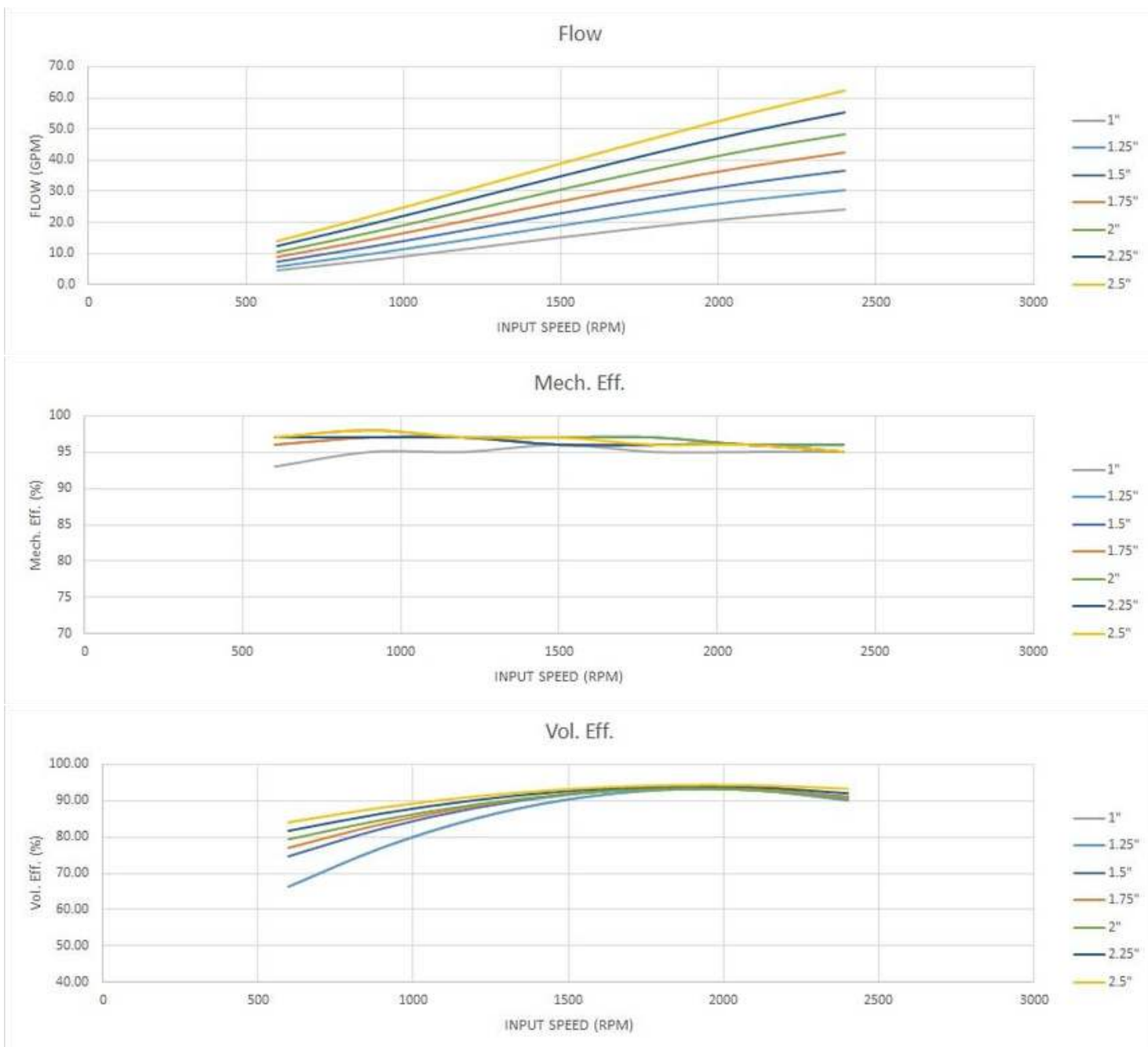
257

IMPORTANT NOTES: ALL DATA ARE BASED ON PUMP PERFORMANCES

GEAR SIZES 1" AND 1 1/4" WERE TESTED AT 4000PSI

GEAR SIZES 1 1/2" AND 1 3/4" WERE TESTED AT 3750PSI

GEAR SIZE 2" WAS TESTED AT 3500PSI



257 SERIES CODE



1 — PUMP / MOTOR

P	PUMP
M	MOTOR

2 — DISPLACEMENT PER INCH OF GEAR

2.57 IN3 / REV

3 — UNIT TYPE

A	SINGLE
B	MULTIPLE
C	CONTINENTAL
L	EXTENDED STUDS

4 — SEC DETAILS

CODE	ROTATION	UNIT	OUTBOARD BEARING
0	CLOCKWISE	PUMP	NO
1	COUNTER CLOCKWISE	PUMP	NO
3	CLOCKWISE	PUMP	YES
4	COUNTER CLOCKWISE	PUMP	YES
7	BI-ROTATIONAL	MOTOR	YES
8	BI-ROTATIONAL	MOTOR	NO

5 — MOUNTING OPTION

REFER TO **MOUNTING OPTIONS** SECTION ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

6 — PORT END COVER

REFER TO **APPENDIX A** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

7 — GEAR HOUSING

REFER TO **APPENDIX B** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

8 — DRIVE SHAFT

REFER TO **DRIVE SHAFT** SECTION ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

9 — BEARING CARRIER

REFER TO **BEARING CARRIER TYPES SECTION** AND **APPENDIX C** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

GENERAL INFORMATION



360 SERIES

- Heavy duty sleeve bushing design in a large frame size
- Working pressure up to 3500 PSI
- Cubic inch displacements from 1.80 through 10.8 per section
- Speeds up to 2400 RPM
- Flows up to 112 GPM per section
- Doweled and high strength cast iron construction
- High strength alloy steel gear and shaft sets
- SPLIT FLANGE, ORB and mixed ports are available



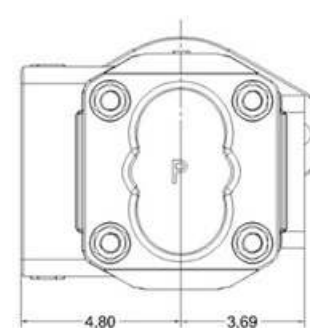
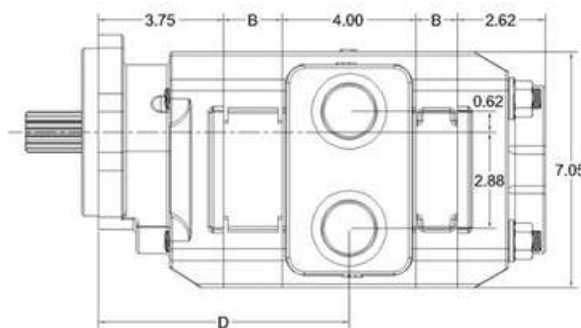
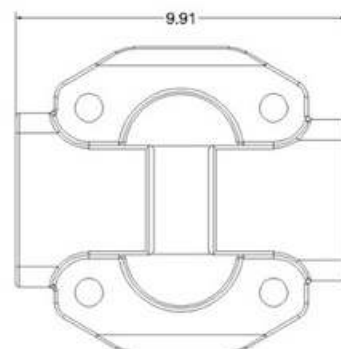
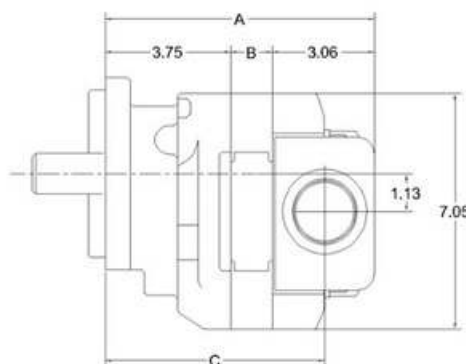
- Pressure balanced wear plates maintain high pump efficiency throughout all operating ranges
- Both single inlet/single outlets and single inlet/dual outlet bearing carriers
- 100% factory tested

A. 7.31" plus gear width

B. 0.5" plus gear width

C. 5.79" plus gear width

D. 6.25" plus front gear width



PERFORMANCE



360

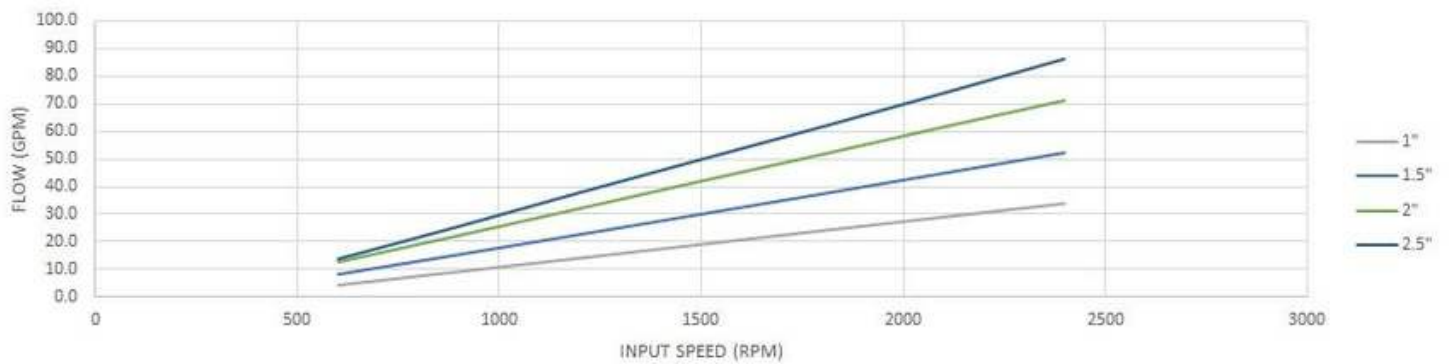
IMPORTANT NOTES: ALL DATA ARE BASED ON PUMP PERFORMANCES

GEAR SIZES 1" ,1 1/2" AND 2" WERE TESTED AT 3500PSI

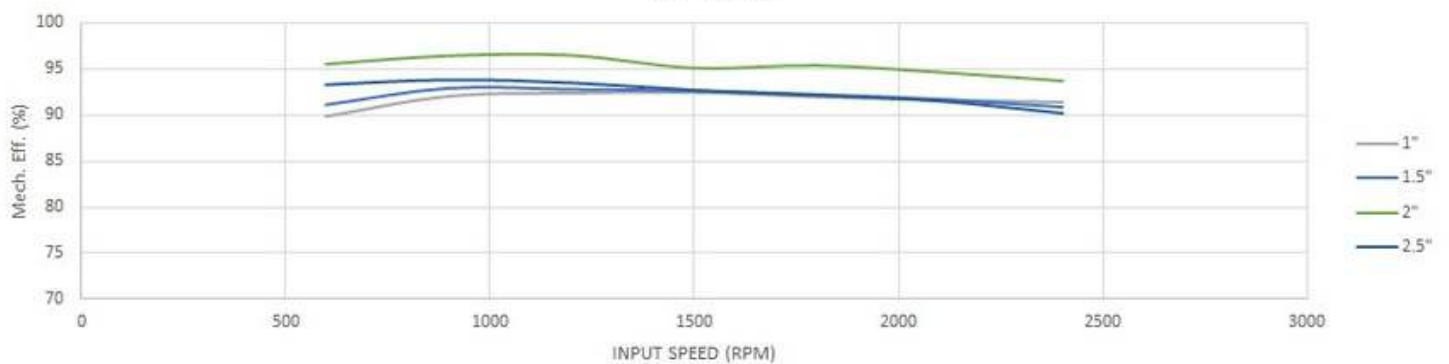
GEAR SIZE 2.5" WAS TESTED AT 3000PSI

ALL TESTS WERE PERFORMED USING ISO 32 OIL @ 120°F

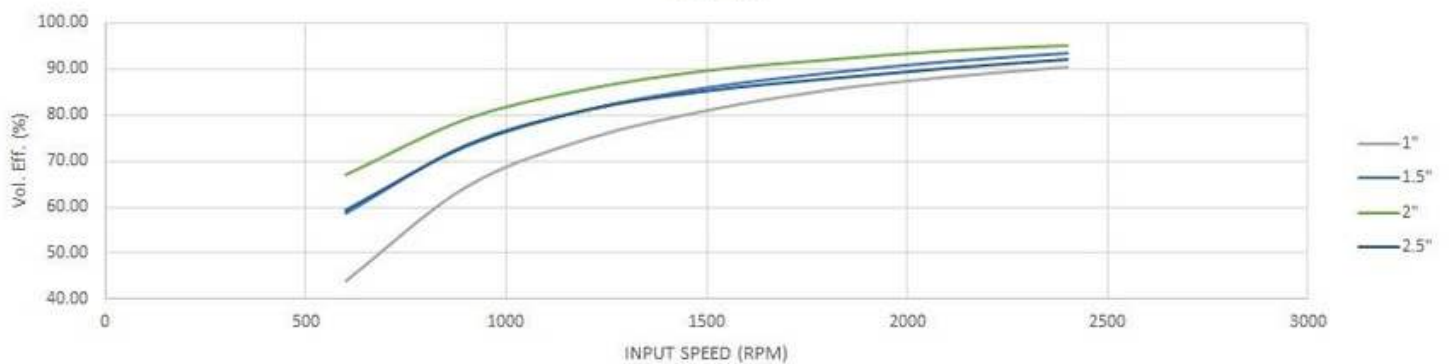
Flow



Mech. Eff.



Vol. Eff.



360 SERIES CODE



1 — PUMP / MOTOR

P	PUMP
M	MOTOR

2 — DISPLACEMENT PER INCH OF GEAR

3.60 IN³ / REV

3 — UNIT TYPE

A	SINGLE
B	MULTIPLE
C	CONTINENTAL
L	EXTENDED STUDS

4 — SEC DETAILS

CODE	ROTATION	UNIT	OUTBOARD BEARING
0	CLOCKWISE	PUMP	NO
1	COUNTER CLOCKWISE	PUMP	NO
3	CLOCKWISE	PUMP	YES
4	COUNTER CLOCKWISE	PUMP	YES
7	BI-ROTATIONAL	MOTOR	YES
8	BI-ROTATIONAL	MOTOR	NO

5 — MOUNTING OPTION

REFER TO **MOUNTING OPTIONS** SECTION ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

6 — PORT END COVER

REFER TO **APPENDIX A** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

7 — GEAR HOUSING

REFER TO **APPENDIX B** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

8 — DRIVE SHAFT

REFER TO **DRIVE SHAFT** SECTION ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

9 — BEARING CARRIER

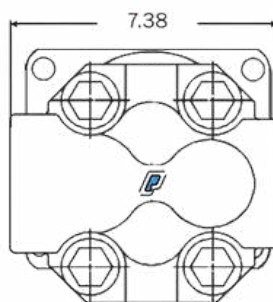
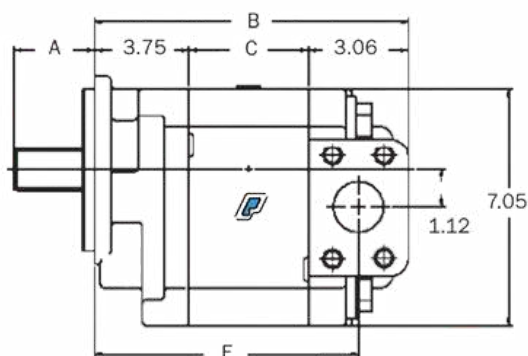
REFER TO **BEARING CARRIER TYPES SECTION** AND **APPENDIX C** ON THIS DOCUMENT FOR A VARIETY OF SELECTIONS

GENERAL INFORMATION

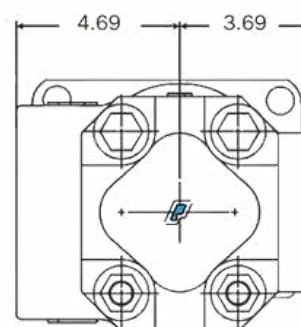
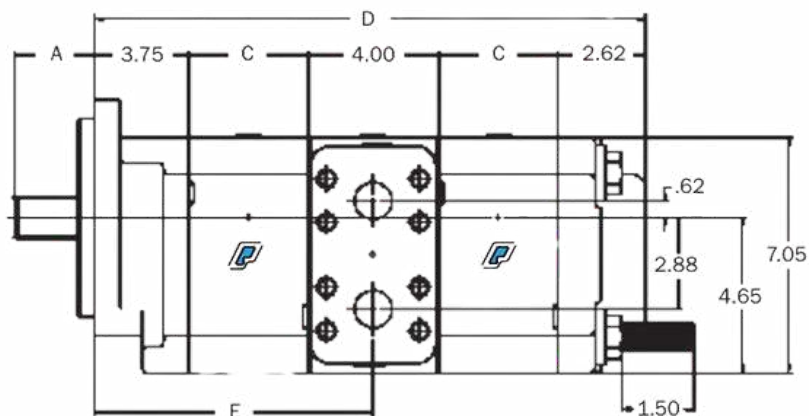


460 SERIES

- Heavy duty sleeve bushing design in a large frame size
- Cubic inch displacements of 2.70, 3.60, 4.50 and 5.40
- Working pressure up to 4500 PSI
- Speeds up to 2400 RPM
- Flows up to 53 GPM
- Doweled and high strength cast iron construction
- 100% factory tested
- High strength alloy steel gear and shaft sets
- A wide range of porting, mounting, and shaft options available
- Pressure balanced wear plates maintain high pump efficiency throughout all operating ranges
- Both single inlet/single outlet and single inlet/dual outlet bearing carriers available



- A. 2.19" SAE "C" shaft shown, other shafts available
- B. 7.31" plus gear width
- C. 0.50" plus gear width
- D. 11.38" plus total gear width
- E. 6.25" plus front gear width
- F. 5.79" plus gear width



PERFORMANCE



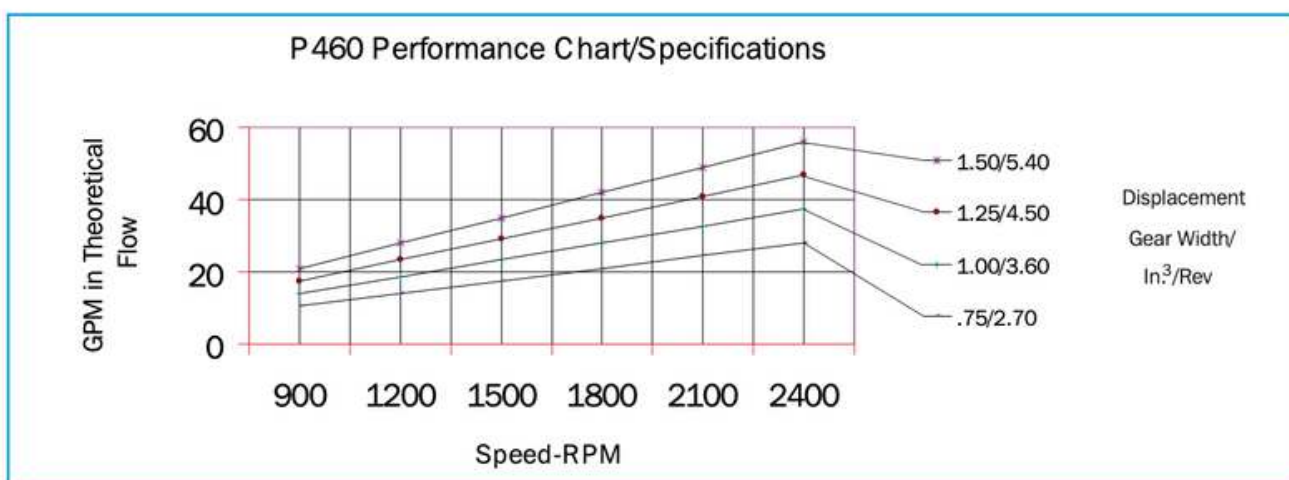
460

IMPORTANT NOTES: ALL DATA ARE BASED ON PUMP PERFORMANCES

GEAR SIZES 1" ,1 1/2" AND 2" WERE TESTED AT 3500PSI

GEAR SIZE 2.5" WAS TESTED AT 3000PSI

ALL TESTS WERE PERFORMED USING ISO 32 OIL @ 120°F



GEAR WIDTH (IN)	DISPL CU IN/CC	MAX RPM	MIN RPM	MAX PSI/BAR
0.75	2.70/44	2400	600	4500/310
1.00	3.60/59	2400	600	4500/310
1.25	4.50/74	2400	600	4500/310
1.50	5.40/89	2400	600	4500/310

SHAFT SEAL OPTIONS

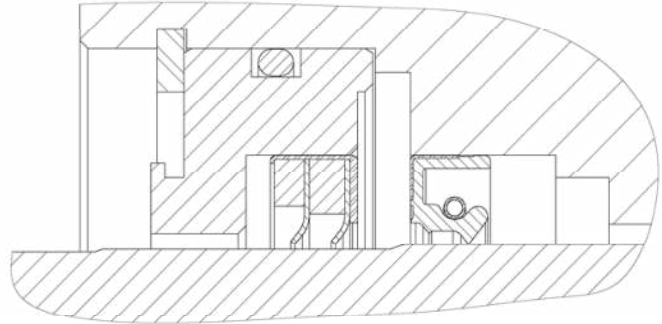


DRY VALVE SHAFT SEAL OPTION

DESCRIPTION: EQUIPPED WITH A STANDARD PUMP SEAL AND AN ADDITIONAL DOUBLE LIP SEAL TO PREVENT AERATION DURING THE DRY VALVE OPERATION

APPLIES TO SERIES: 197, 257, 360

MAXIMUM PRESSURE RATING: 20PSI

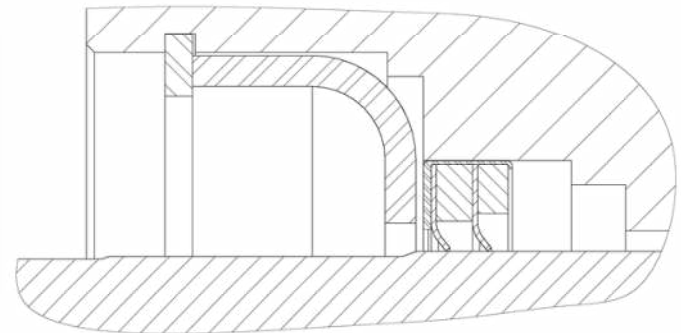


MOTOR SHAFT SEAL OPTION

DESCRIPTION: DOUBLE LIP HIGH PRESSURE SHAFT SEAL TO PREVENT SEAL LEAKAGE DUE TO HIGH RETURN LINE PRESSURE

APPLIES TO SERIES: 124, 197, 257, 360

MAXIMUM PRESSURE RATING: 100PSI

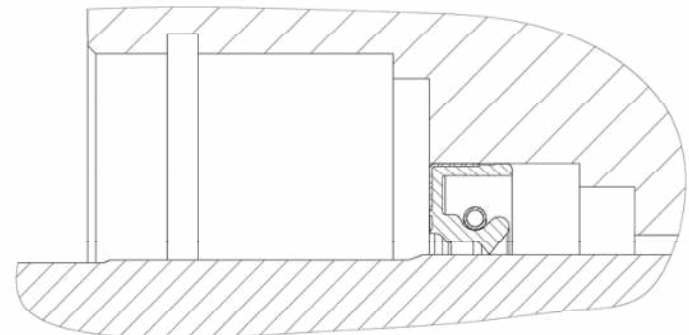


PUMP SHAFT SEAL OPTION

DESCRIPTION: OUR STANDARD PUMP SEAL

APPLIES TO SERIES: 124, 197, 257, 360

MAXIMUM PRESSURE RATING: 20PSI



SHAFT SEAL OPTIONS

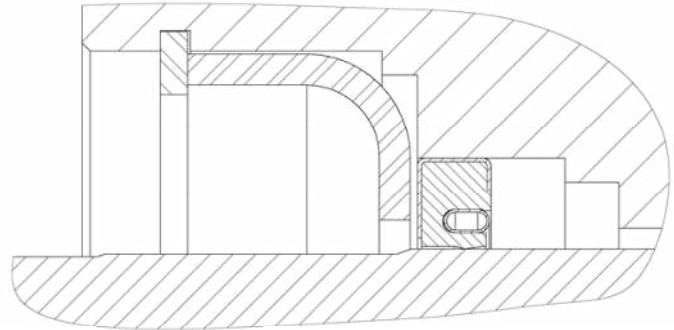


SEVERE DUTY MOTOR SHAFT SEAL OPTION

DESCRIPTION: SPECIFICALLY DESIGNED TO HANDLE HIGH PRESSURE RETURN LINES, IT IS IDEAL FOR APPLICATIONS WITH DYNAMIC BREAKING

APPLIES TO SERIES: 124, 197, 257, 360

MAXIMUM PRESSURE RATING: 200PSI

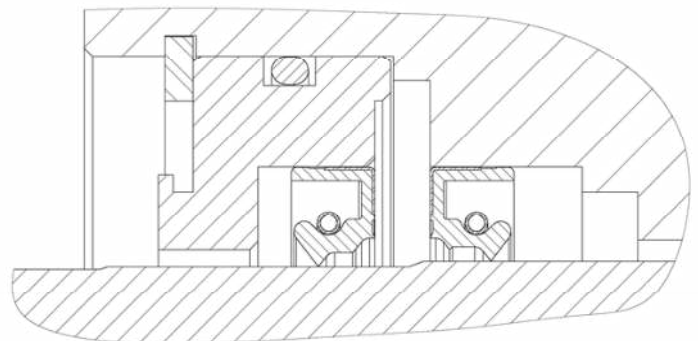


WET SPLINE SHAFT SEAL OPTION

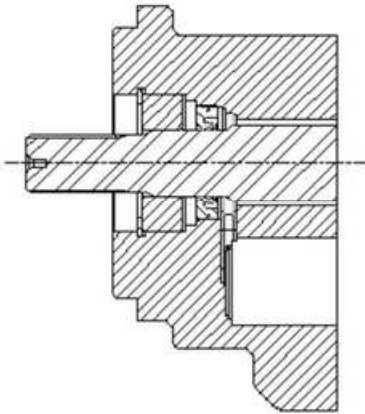
DESCRIPTION: TWO OF OUR STANDARD SEALS SEATED BACK TO BACK. THIS DESIGN IS USED ON PTO WITH WET SPLINE OUTLET

APPLIES TO SERIES: 197, 257, 360

MAXIMUM PRESSURE RATING: 20PSI



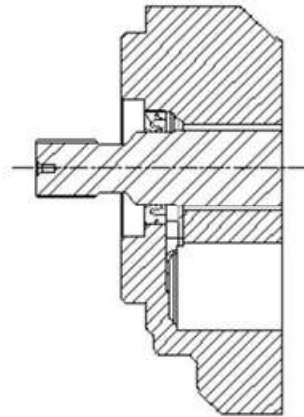
SHAFT END COVER TYPES



TYPE I
(SHOWN WITH INTEGRAL GEAR)

CAPABLE OF ACCEPTING AN ADDITIONAL OUTBOARD BALL BEARING FOR APPLICATIONS WITH SIDE LOADING ON THE SHAFT. IT CAN BE USED WITH INTEGRAL OR CONTINENTAL SHAFTS.

CONTINENTAL SHAFTS MUST BE USED WITH OUTBOARD BEARING.



TYPE II

DESIGNED AS A MORE COMPACT OPTION, IT IS IDEAL FOR TIGHTER INSTALLATION ENVELOPES.

USED WITH INTEGRAL SHAFTS ONLY.

SHAFT TYPES

INTEGRAL GEAR / SHAFT DRIVE GEAR AND EXTERNAL SHAFT ARE CUT FROM A SOLID PIECE OF STEEL. IT CAN BE USED WITH TYPE I AND TYPE II SHAFT END COVERS.

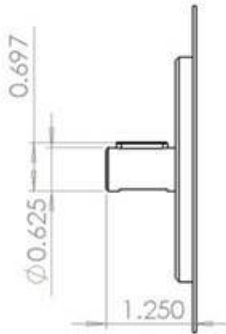
CONTINENTAL GEAR / SHAFT

DRIVE GEAR AND EXTERNAL SHAFT ARE TWO PIECES. THEY ARE CONNECTED TOGETHER BY DIFFERENT METHODS DEPENDING ON THE SERIES. IT MUST BE USED WITH A TYPE I SHAFT END COVER AND OUTBOARD BEARING.

DRIVE SHAFTS



CODE 861 — SAE A KEYED



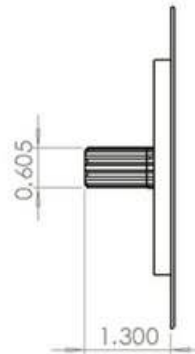
KEY WIDTH: 0.156"

APPLIES TO SERIES: 124

PL FACTOR: 3600

¹86XL FOLLOWS SAE A SHAFT SPECS;
HOWEVER THE SHAFT LENGTH IS EXTENDED
TO 2.312" BASED ON ANSI OPTIONAL LONG
SPEC.

CODE 85 — SAE A SPLINED

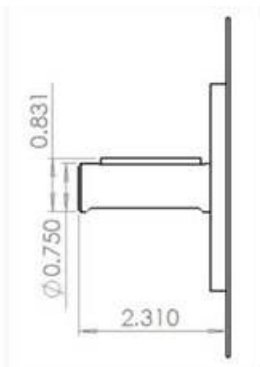


30° INVOLUTE
9 TOOTH 16/32
DP

APPLIES TO SERIES: 124

PL FACTOR: 4450

CODE 24 — SAE AH KEYED

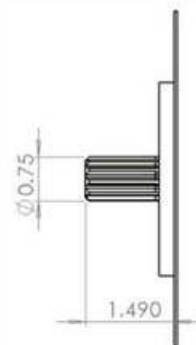


KEY WIDTH: 0.187"

APPLIES TO SERIES: 124

PL FACTOR: 1280

CODE 81 — SAE AH SPLINED



30° INVOLUTE
11 TOOTH 16/32 DP

APPLIES TO SERIES: 124

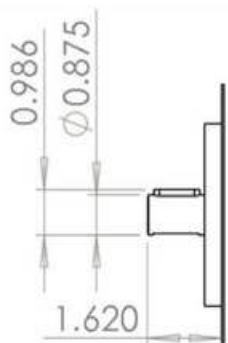
PL FACTOR: 1625

ALL DIMENSIONS ARE IN INCHES UNLESS IT IS SPECIFIED DIFFERENTLY

DRIVE SHAFTS



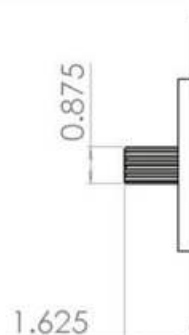
CODE 55 — SAE B KEYED



KEY WIDTH: 0.250"

APPLIES TO SERIES: 124,
197 **124 PL FACTOR:** 9900
197 PL FACTOR: 6250

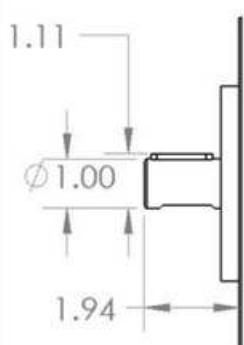
CODE 14 — SAE B SPLINED



30° INVOLUTE
13 TOOTH 16/32 DP

APPLIES TO SERIES: 197, 257
124 PL FACTOR: 13400
197 PL FACTOR: 8450

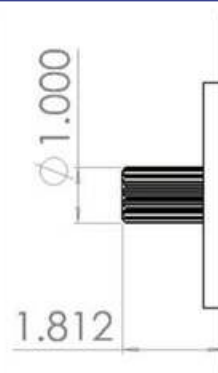
CODE 32 — SAE BB KEYED



KEY WIDTH: 0.250"

APPLIES TO SERIES: 197
PL FACTOR: 9300

CODE 87— SAE BB SPLINED



30° INVOLUTE
15 TOOTH 16/32 DP

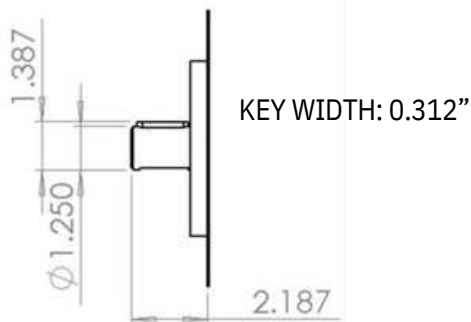
APPLIES TO SERIES: 197, 257, 360
197 PL FACTOR: 13000
257 PL FACTOR: 9900
360 PL FACTOR: 7750

ALL DIMENSIONS ARE IN INCHES UNLESS IT IS SPECIFIED DIFFERENTLY

DRIVE SHAFTS

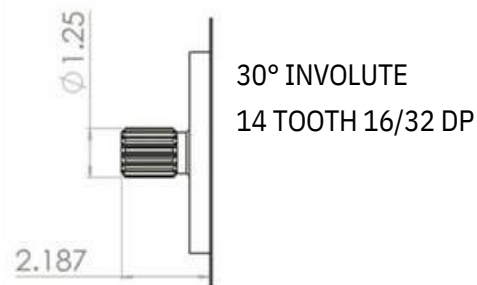


CODE 00 — SAE C KEYED



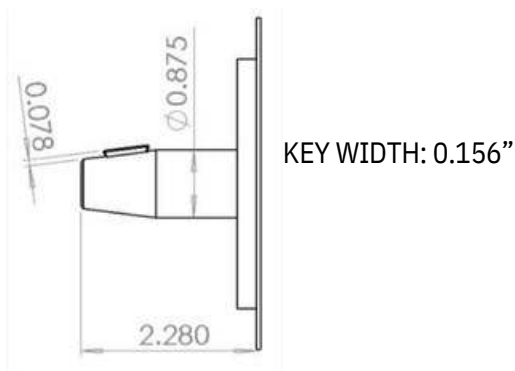
APPLIES TO SERIES: 257,
360 **257 PL FACTOR:** 13900
360 PL FACTOR: 10800

CODE 6 — SAE C SPLINED



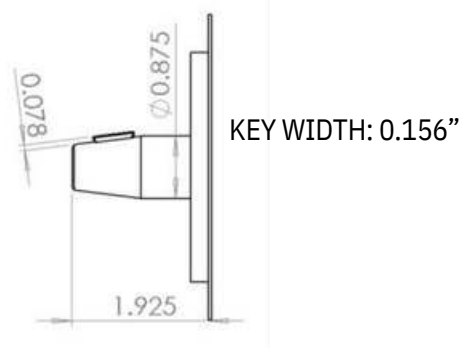
APPLIES TO SERIES: 257,
360 **257 PL FACTOR:** 19100
360 PL FACTOR: 14900

CODE 45 — CLUTCH PUMP



APPLIES TO SERIES: 124
PL FACTOR: CONSULT FACTORY

CODE 99 — CLUTCH PUMP



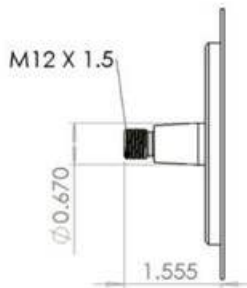
APPLIES TO SERIES: 124
PL FACTOR: CONSULT FACTORY

ALL DIMENSIONS ARE IN INCHES UNLESS IT IS SPECIFIED DIFFERENTLY

DRIVE SHAFTS



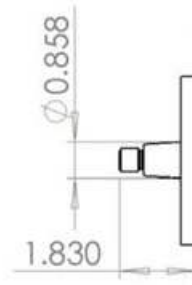
CODE 75 — TAPERED



APPLIES TO SERIES: 124

PL FACTOR: CONSULT FACTORY

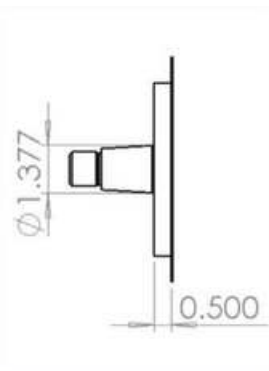
CODE 48 — TAPERED



APPLIES TO SERIES: 197

PL FACTOR: CONSULT FACTORY

CODE TPR — TAPERED



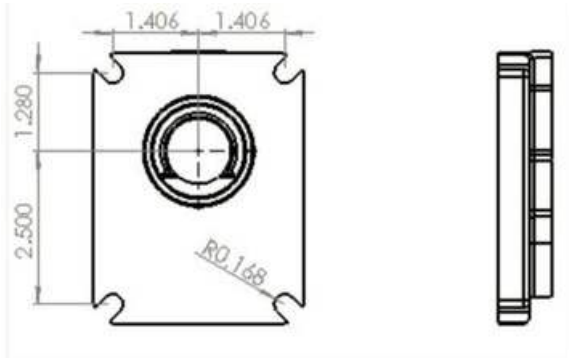
APPLIES TO SERIES: 360

PL FACTOR: CONSULT FACTORY

ALL DIMENSIONS ARE IN INCHES UNLESS IT IS SPECIFIED DIFFERENTLY

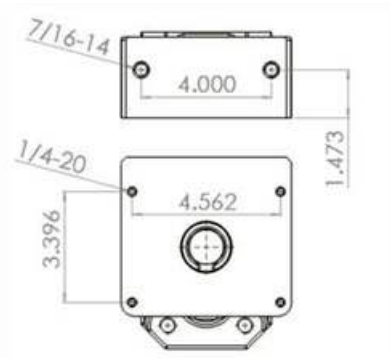
MOUNTING OPTIONS

EURO MOUNT



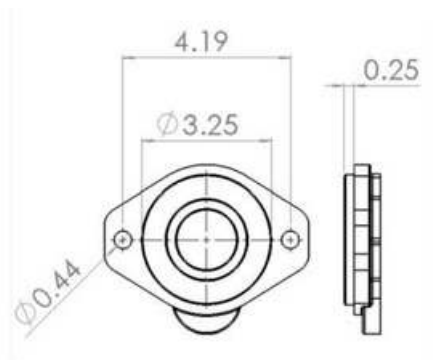
SERIES	CODE	TYPE
124	22	NONE

124 PAD MOUNT



SERIES	CODE	TYPE
124	84	NONE

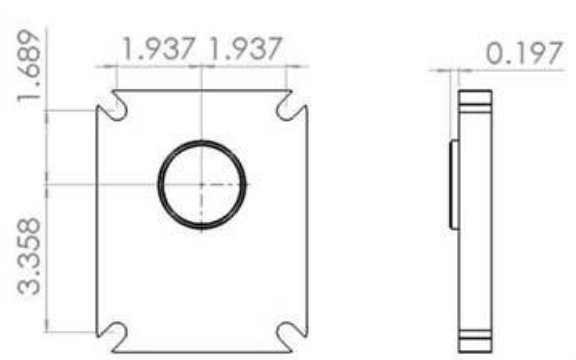
SAE A 2 BOLT



SERIES	CODE	TYPE
124	78*	II
124	82	II
197	83	I

* USED FOR CLUTCH PUMP

DIN MOUNT

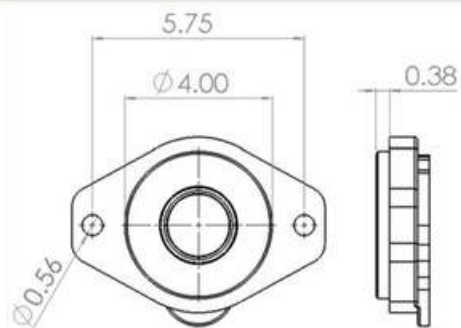


SERIES	CODE	TYPE
197	76	I

ALL DIMENSIONS ARE IN INCHES UNLESS IT IS SPECIFIED DIFFERENTLY

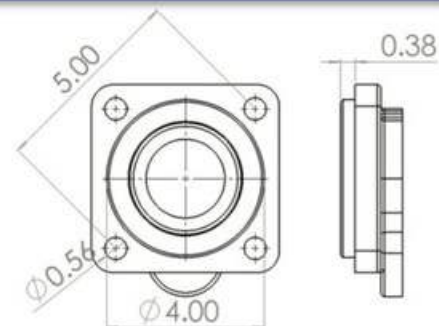
MOUNTING OPTIONS

SAE B 2 BOLT



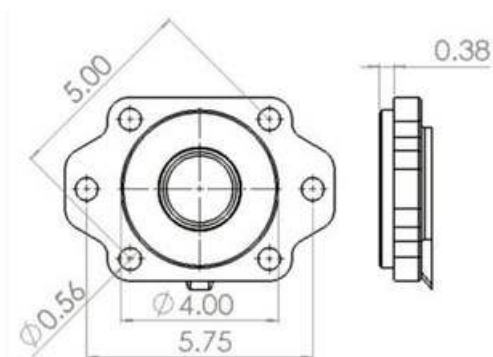
SERIES	CODE	TYPE
124	85	II
197	85	II
197	86	I
257	86	I
360	86	I

SAE B 4 BOLT



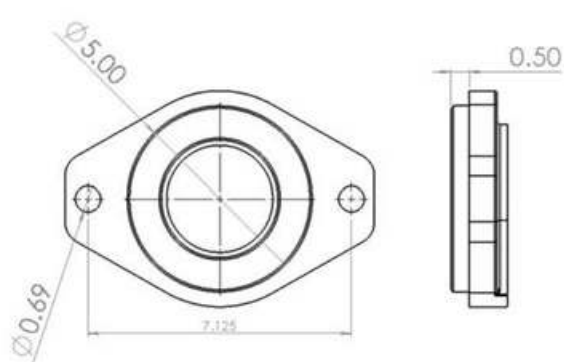
SERIES	CODE	TYPE
197	31	I
257	31	I
360	31	I

SAE B 2&4 BOLTS



SERIES	CODE	TYPE
197	90	I
257	90	I

SAE C 2 BOLT

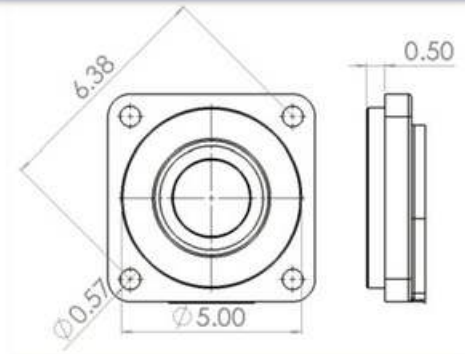


SERIES	CODE	TYPE
257	87	I
360	87	I

ALL DIMENSIONS ARE IN INCHES UNLESS IT IS SPECIFIED DIFFERENTLY

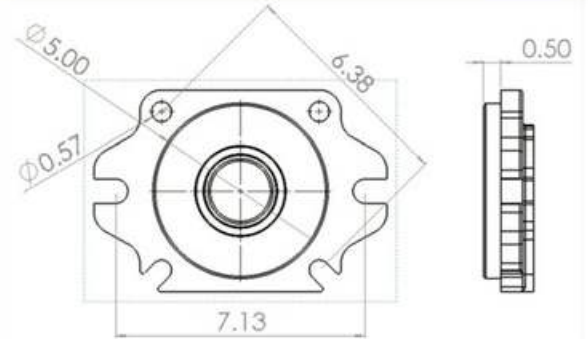
MOUNTING OPTIONS

SAE C 4 BOLT



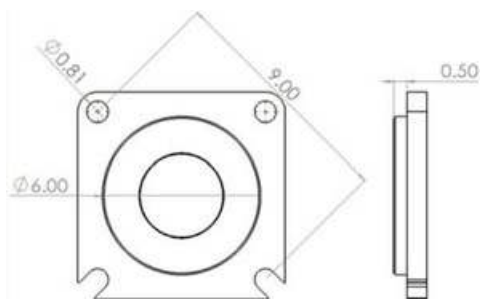
SERIES	CODE	TYPE
197	67	I
257	67	I
360	67	I

SAE C 2&4 BOLTS



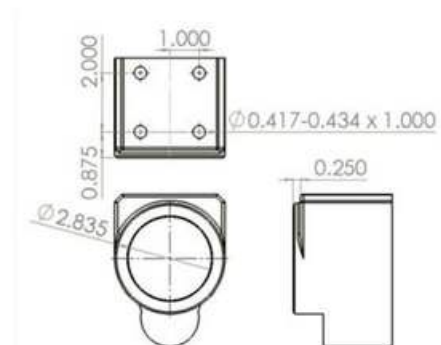
SERIES	CODE	TYPE
197	50	I
257	50	I

SAE D 4 BOLT



SERIES	CODE	TYPE
360	79	I

257 PAD MOUNT

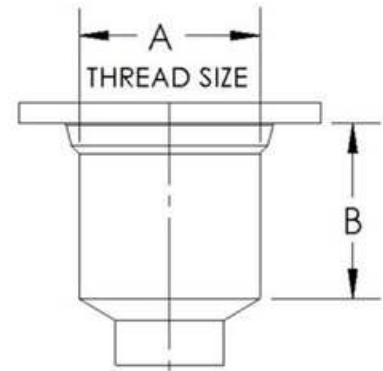


SERIES	CODE	TYPE
257	99	I

ALL DIMENSIONS ARE IN INCHES UNLESS IT IS SPECIFIED DIFFERENTLY

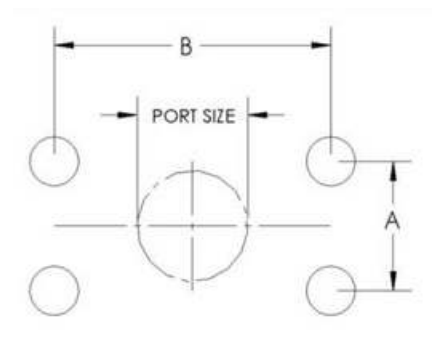
SAE ORB STRAIGHT THREAD O-RING

NORMAL TUBE OD	SAE DASH	A THREAD SIZE	B MIN THREAD DEPTH
1/2	8	3/4-16 UNF-2B	0.562
5/8	10	7/8-14 UNF-2B	0.656
3/4	12	1-1/16-12 UNF-2B	0.750
7/8	14	1-3/16-12 UNF-2B	0.750
1	16	1-5/16-12 UNF-2B	0.750
1 1/4	20	1-5/8-12 UNF-2B	0.750
1 1/2	24	1-7/8-12 UNF-2B	0.750
2	32	2-1/2-12 UNF-2B	0.750



SAE SPLIT FLANGE (CODE 61) WITH UNC THREAD

PORT SIZE	A	B	THREAD SIZE	THREAD DEPTH
1/2	0.69	1.5	5/16-18	0.94
3/4	0.88	1.88	3/8-16	0.88
1	1.03	2.06	3/8-16	0.88
1 1/4	1.19	2.31	7/16-14	1.12
1 1/2	1.41	2.75	1/2-13	1.06
2	1.69	3.06	1/2-13	1.06
2 1/2	2	3.5	1/2-13	1.19

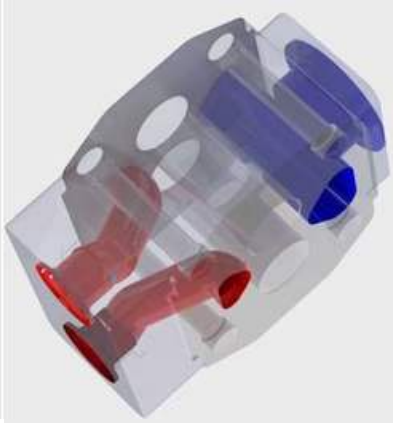
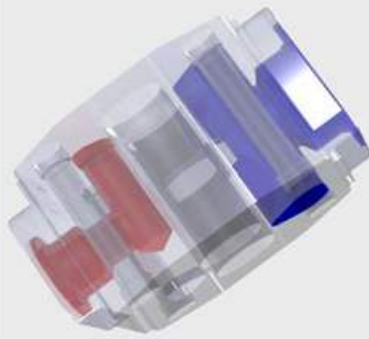


ALL DIMENSIONS ARE IN INCHES UNLESS IT IS SPECIFIED DIFFERENTLY

BEARING CARRIER TYPES



SELECTION OF CORRECT BEARING CARRIER COMES DOWN TO SELECTING A TYPE AS DESCRIBED BELOW THEN CHOOSING THE PORT TYPES. PERMCO BUSHING PUMPS CAN BE PORTED USING DIFFERENT TYPES OF PORTS SUCH AS NPT (TAPERED PIPE), SAE ORB (O-RING), SPLIT FLANGE AND OTHERS. YOU CAN EVEN CHOOSE A COMBINATION OF DIFFERENT PORT TYPES. PLEASE REFER TO THE APPENDIX C FOR A COMPLETE LIST OF ALL AVAILABLE BEARING CARRIER CODES

	DUAL FLOW	SINGLE OUTLET	COMBINED OUTLET
			
DESCRIPTION	FLOW FROM THE TWO PUMP SECTIONS ARE DELIVERED INDIVIDUALLY THROUGH TWO PORTS	FLOW FROM ONE SIDE IS PROVIDED THROUGH A PORT, WHILE THE OTHER SIDES FLOW IS BLOCKED	COMBINED FLOW FROM THE TWO PUMP SECTIONS ARE DELIVERED IN ONE PORT
124 SERIES	YES	YES	NO
197 SERIES	YES	YES	YES
257 SERIES	YES	YES	YES
360 SERIES	YES	YES	YES

PORT END COVER OPTIONS

PORT END COVERS CAN BE PORTED WITH REAR PORTS, SIDE PORTS, COMBINATION OF BOTH OR EVEN LEFT BLANK. IN ADDITION, PORTS CAN BE OF DIFFERENT TYPES SUCH AS NPT (TAPERED PIPE), SAE ORB (O-RING), SPLIT FLANGE AND OTHERS; RESULTING IN A LARGE NUMBER OF PORT END COVER CODE OPTIONS. FOR A COMPLETE LIST OF AVAILABLE OPTIONS, PLEASE REFER TO APPENDIX A. ALL ILLUSTRATIONS IN THIS PAGE SHOW SAE ORB PORTS.

	SIDE PORTS	REAR PORTS
DESCRIPTION	PORTS ARE PERPENDICULAR TO THE PUMPS SHAFT	PORTS ARE PARALLEL TO THE PUMPS SHAFT
124 SERIES		
197 SERIES		
257 SERIES		
360 SERIES		

APPENDIX A PERMCO BUSHING PORT END COVERS

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
124	Multiple	AH	BLANK	CW	BLANK	BLANK	BLANK	BLANK	Pump
124	Single	AB	ORB	CW	0.875"	Side Port On The Left	0.625"	Side Port On The Right	Pump
124	Single	AE	ORB	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
124	Single	AF	ORB	CW	0.875"	Side Port On The Left	0.5"	Side Port On The Right	Pump
124	Single	AI	ORB	CW	0.75"	Side Port On The Left	0.75"	Side Port On The Right	Pump
124	Single	AK	ORB	CW	0.75"	Side Port On The Left	0.625"	Side Port On The Right	Pump
124	Single	AM	ORB	CW	0.75"	Side Port On The Left	0.5"	Side Port On The Right	Pump
124	Single	AU	ORB	CW	1.25"	Side Port On The Left	BLANK	On The Right	Pump
124	Single	AV	ORB	CW	1"	Side Port On The Left	BLANK	On The Right	Pump
124	Single	AW	ORB	CW	0.875"	Side Port On The Left	BLANK	On The Right	Pump
124	Single	AX	ORB	CW	0.75"	Side Port On The Left	BLANK	On The Right	Pump
124	Single	AY	ORB	CW	BLANK	On The Left	1"	Side Port On The Right	Pump
124	Single	BA	ORB	CCW	0.875"	Side Port On The Right	0.625"	Side Port On The Left	Pump
124	Single	BE	ORB	CCW	1.25"	Side Port On The Right	0.875"	Side Port On The Left	Pump
124	Single	BT	ORB	CCW	1.25"	Rear Port On The Right	1" 1"	Rear Port On The Left	Pump
124	Single	CL	NPT	Motor	1"	Side Port	0.75"	Side Port	Motor
124	Single	CM	NPT	Motor	0.75"	Side Port	0.875"	Side Port	Motor
124	Single	CO	ORB	CCW	BLANK	On The Right	0.5"	Side Port On The Left	Pump
124	Single	CP	NPT	Motor	0.5"	Side Port	1"	Side Port	Motor
124	Single	CQ	SF	Motor	1"	Side Port	0.75"	Side Port	Motor
124	Single	CR	SF	Motor	0.75"	Side Port	1"	Side Port	Motor
124	Single	CT	ORB	CCW	1"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
124	Single	DI	SF	CW	1"	Side Port On The Left	0.5"	Side Port On The Right	Pump
124	Single	DJ	SF	CW	1"	Side Port On The Left	0.75"	Side Port On The Right	Pump
124	Single	DK	SF	CW	0.75"	Side Port On The Left	0.5"	Side Port On The Right	Pump
124	Single	DL	SF	CW	0.75"	Side Port On The Left	BLANK	Side Port On The Right	Pump
124	Single	DN	SF	CCW	1"	Side Port On The Right	0.75"	On The Left	Pump
124	Single	DO	ORB	CCW	BLANK	On The Right	1"	Side Port On The Left	Pump
124	Single	EA	ORB	CW	1.25"	Side Port On The Left	0.875"	Side Port On The Right	Pump
124	Single	EB	ORB	CW	1.25"	Side Port On The Left	0.75"	Side Port On The Right	Pump
124	Single	EF	ORB	CW	1.25"	Side Port On The Left	0.625"	Side Port On The Right	Pump
124	Single	EI	ORB	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
124	Single	EK	ORB	CW	1"	Side Port On The Left	BLANK	Side Port On The Right	Pump
124	Single	EN	SF	CCW	0.75"	Side Port On The Right	0.875"	On The Left	Pump
124	Single	ET	ORB	CCW	1.25"	Rear Port On The Right	0.875"	Rear Port On The Left	Pump
124	Single	EU	ORB	CW	1"	Side Port On The Left	0.75"	Side Port On The Right	Pump
124	Single	EV	ORB	CW	1"	Side Port On The Left	0.625"	Side Port On The Right	Pump
124	Single	EW	ORB	CW	1"	Side Port On The Left	0.875"	Side Port On The Right	Pump
124	Single	EX	ORB	CW	0.875"	Side Port On The Left	0.75"	Side Port On The Right	Pump
124	Single	EY	ORB	CW	0.875"	Side Port On The Left	0.5"	Side Port On The Right	Pump
124	Single	FA	ORB	CCW	0.875"	Side Port On The Right	0.75"	Side Port On The Left	Pump
124	Single	FE	ORB	CCW	1.25"	Side Port On The Right	0.75"	Side Port On The Left	Pump
124	Single	GI	ORB	CCW	BLANK	On The Right	0.75"	Rear Port On The Left	Pump
124	Single	IA	ORB	CCW	0.75"	Side Port On The Right	0.75"	Side Port On The Left	Pump
124	Single	ID	SF	CCW	1"	Side Port On The Right	0.625"	Side Port On The Left	Pump
124	Single	IE	ORB	CCW	1.25"	Side Port On The Right	0.75"	Side Port On The Left	Pump
124	Single	IG	ORB	CW	BLANK	On The Left	0.75"	Side Port On The Right	Pump
124	Single	IN	SF	CCW	BLANK	On The Right	1"	Side Port On The Left	Pump
124	Single	IZ	NPT	CCW	1.25"	Side Port On The Right	0.5"	Side Port On The Left	Pump
124	Single	JD	SF	CCW	1"	Side Port On The Right	0.75"	Side Port On The Left	Pump
124	Single	JZ	NPT	CCW	1.25"	Side Port On The Right	0.625"	Side Port On The Left	Pump
124	Single	KA	ORB	CCW	0.75"	Side Port On The Right	0.75"	Side Port On The Left	Pump
124	Single	KD	SF	CCW	0.75"	Side Port On The Right	1"	Side Port On The Left	Pump
124	Single	KE	ORB	CCW	1"	Side Port On The Right	0.875"	Side Port On The Left	Pump
124	Single	KM	ORB	CW	0.875"	Rear Port On The Left	0.5"	Rear Port On The Right	Pump
124	Single	KN	SF	CCW	BLANK	On The Right	0.75"	Side Port On The Left	Pump
124	Single	KO	ORB	CW	0.875"	Rear Port On The Left	0.625"	Rear Port On The Right	Pump
124	Single	KP	ORB	CW	0.875"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
124	Single	KQ	ORB	CW	0.75"	Rear Port On The Left		Rear Port On The Right	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
124	Single	KR	ORB	CW	0.75"	Rear Port On The Left	0.625"	Rear Port On The Right	Pump
124	Single	KS	ORB	CW	0.75"	Rear Port On The Left	0.5"	Rear Port On The Right	Pump
124	Single	KZ	NPT	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
124	Single	LD	SF	CCW	0.75"	Side Port On The Right	0.5"	Side Port On The Left	Pump
124	Single	LO	ORB	CCW	BLANK	On The Right	0.625"	Side Port On The Left	Pump
124	Single	LZ	NPT	CCW	1"	Side Port On The Right	0.75"	Side Port On The Left	Pump
124	Single	MA	ORB	CCW	0.75"	Side Port On The Right	0.5"	Side Port On The Left	Pump
124	Single	MK	ORB	CCW	0.875"	Rear Port On The Right	0.875"	Rear Port On The Left	Pump
124	Single	MO	ORB	CCW	BLANK	On The Right	0.5"	Rear Port On The Left	Pump
124	Single	MT	ORB	CCW	1.25"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
124	Single	ND	SF	CW	1"	Side Port On The Left	BLANK	On The Right	Pump
124	Single	NE	SF	CW	0.75"	Side Port On The Left	BLANK	On The Right	Pump
124	Single	NI	SF	CW	BLANK	On The Left	0.75"	Side Port On The Right	Pump
124	Single	NK	SF	CW	BLANK	On The Left	0.5"	Side Port On The Right	Pump
124	Single	OC	ORB	CW	BLANK	On The Left	0.875"	Side Port On The Right	Pump
124	Single	OD	ORB	CW	BLANK	On The Left	0.75"	Side Port On The Right	Pump
124	Single	OK	ORB	CW	0.75"	Rear Port On The Left	0.875"	Rear Port On The Right	Pump
124	Single	OL	ORB	CW	BLANK	On The Left	0.625"	Side Port On The Right	Pump
124	Single	OM	ORB	CW	BLANK	On The Left	0.5"	Side Port On The Right	Pump
124	Single	OT	ORB	CCW	1"	Rear Port On The Right	0.875"	Rear Port On The Left	Pump
124	Single	PK	ORB	CCW	0.875"	Rear Port On The Right	0.625"	Rear Port On The Left	Pump
124	Single	PL	ORB	CCW	1.25"	Side & Rear On The Right	0.75"	Side & Rear On The Left	Pump
124	Single	PR	ORB	CW	1.25"	Side & Rear On The Left	0.75"	Side & Rear On The Right	Pump
124	Single	PT	ORB	CCW	1"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
124	Single	PV	NPT	CCW	1.25"	Rear Port On The Right	1"	Rear Port On The Left	Pump
124	Single	PZ	NPT	CCW	1"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
124	Single	QK	ORB	CCW	0.75"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
124	Single	QM	ORB	Motor	1"	Rear Port	1"	Rear Port	Motor
124	Single	QP	ORB	Motor	0.75"	Rear Port	0.75"	Rear Port	Motor
124	Single	QR	ORB	Motor	0.5"	Rear Port	0.5"	Rear Port	Motor
124	Single	QT	ORB	CCW	1"	Rear Port On The Right	0.625"	Rear Port On The Left	Pump
124	Single	QW	NPT	Motor	1"	Rear Port	1"	Rear Port	Motor
124	Single	QX	NPT	Motor	0.75"	Rear Port	0.75"	Rear Port	Motor
124	Single	QY	NPT	Motor	0.5"	Rear Port	0.5"	Rear Port	Motor
124	Single	QZ	NPT	CCW	0.75"	Side Port On The Right	0.75"	Side Port On The Left	Pump
124	Single	RK	ORB	CCW	0.75"	Rear Port On The Right	0.625"	Rear Port On The Left	Pump
124	Single	RZ	NPT	CCW	0.75"	Rear Port On The Right	0.5"	Rear Port On The Left	Pump
124	Single	SK	ORB	CCW	0.75"	Rear Port On The Right	0.5"	Rear Port On The Left	Pump
124	Single	SL	ORB	CCW	1.25"	Side & Rear On The Right	0.75"	Side & Rear On The Left	Pump
124	Single	SR	ORB	CW	1.25"	Side & Rear On The Left	0.75"	Side & Rear On The Right	Pump
124	Single	TB	ORB	CW	1.25"	Rear Port On The Left	1"	Rear Port On The Right	Pump
124	Single	TC	ORB	CW	1"	Rear Port On The Left	1"	Rear Port On The Right	Pump
124	Single	TE	ORB	CW	1.25"	Rear Port On The Left	0.875"	Rear Port On The Right	Pump
124	Single	TM	ORB	CW	1.25"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
124	Single	TO	ORB	CW	1"	Rear Port On The Left	0.875"	Rear Port On The Right	Pump
124	Single	TP	ORB	CW	1"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
124	Single	TQ	ORB	CW	1"	Rear Port On The Left	0.625"	Rear Port On The Right	Pump
124	Single	UA	ORB	CCW	1.25"	Side Port On The Right	BLANK	On The Left	Pump
124	Single	UE	ORB	CCW	1"	Side Port On The Right	0.875"	Side Port On The Left	Pump
124	Single	UM	ORB	Motor	1"	Side Port	1"	Side Port	Motor
124	Single	UP	ORB	Motor	0.5"	Side Port	0.5"	Side Port	Motor
124	Single	UQ	ORB	Motor	0.75"	Side Port	0.75"	Side Port	Motor
124	Single	VA	ORB	CCW	1"	Side Port On The Right	BLANK	On The Left	Pump
124	Single	VE	ORB	CCW	1"	Side Port On The Right	0.75"	Side Port On The Left	Pump
124	Single	VP	NPT	CW	1.25"	Rear Port On The Left	1"	Rear Port On The Right	Pump
124	Single	WA	ORB	CCW	0.875"	Side Port On The Right	BLANK	On The Left	Pump
124	Single	WE	ORB	CCW	1"	Side Port On The Right	0.625"	Side Port On The Left	Pump
124	Single	XA	ORB	CCW	0.75"	Side Port On The Right	BLANK	On The Left	Pump
124	Single	XE	ORB	CCW	0.875"	Side Port On The Right	0.875"	Side Port On The Left	Pump
124	Single	YA	ORB	CCW	BLANK	On The Right	1"	Side Port On The Left	Pump
124	Single	YE	ORB	CCW	0.875"	Side Port On The Right	0.75"	Side Port On The Left	Pump
124	Single	ZI	NPT	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
124	Single	ZJ	NPT	CW	1.25"	Side Port On The Left	0.75"	Side Port On The Right	Pump
124	Single	ZK	NPT	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump
124	Single	ZL	NPT	CW	1"	Side Port On The Left	0.75"	Side Port On The Right	Pump
124	Single	ZP	NPT	CW	1"	Rear Port	0.75"	Rear Port	Pump
124	Single	ZQ	NPT	CW	0.75"	Side Port On The Left	0.75"	Side Port On The Right	Pump
124	Single	ZR	NPT	CW	0.75"	Rear Port On The Left	0.5"	Rear Port On The Right	Pump
197	Extended Studs	AX	BLANK	Bi-Rotation	BLANK	BLANK	BLANK	BLANK	Both
197	Multiple	AH	BLANK	Bi-Rotation	BLANK	BLANK	BLANK	BLANK	Both
197	Single	AA	ORB	CW	0.75"	Side Port On The Left	0.5"	Side Port On The Right	Pump
197	Single	AB	ORB	CW	0.75"	BLANK	0.5"	BLANK	Both
197	Single	AB	ORB	CW	0.75"	Rear Port On The Left	0.5"	Rear Port On The Right	Pump
197	Single	AC	ORB	CW	0.75"	Side Port On The Left	0.5"	Rear Port On The Right	Pump
197	Single	AD	ORB	CW	0.75"	Rear Port On The Left	0.5"	Side Port On The Right	Pump
197	Single	AI	ORB	CCW	BLANK	BLANK	0.5"	Side Port On The Left	Pump
197	Single	AJ	ORB	CW	0.5"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	AK	ORB	CW	0.75"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	AL	ORB	CW	1"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	AM	ORB	CW	1.25"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	AN	ORB	CW	1.5"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	AV	ORB	CW	0.75"	Side Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	AW	ORB	CW	0.75"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	AY	ORB	CW	0.75"	Side Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	AZ	ORB	CW	0.75"	Rear Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	BA	ORB	CW	1"	Side Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	BB	ORB	CW	1"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	BC	ORB	CW	1"	Side Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	BD	ORB	CW	1"	Rear Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	BI	ORB	CCW	0.75"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	BV	ORB	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump
197	Single	BW	ORB	CW	1"	Rear Port On The Left	1"	Rear Port On The Right	Pump
197	Single	BY	ORB	CW	1"	Side Port On The Left	1"	Rear Port On The Right	Pump
197	Single	BZ	ORB	CW	1"	Rear Port On The Left	1"	Side Port On The Right	Pump
197	Single	CA	ORB	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
197	Single	CB	ORB	CW	1.25"	Rear Port On The Left	1"	Rear Port On The Right	Pump
197	Single	CC	ORB	CW	1.25"	Side Port On The Left	1"	Rear Port On The Right	Pump
197	Single	CD	ORB	CW	1.25"	Rear Port On The Left	1"	Side Port On The Right	Pump
197	Single	CE	ORB	CW	1.25"	Side Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	CG	ORB	CW	1.25"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	CH	ORB	CW	1.25"	Side Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	CI	ORB	CCW	BLANK	BLANK	1"	Side Port On The Left	Pump
197	Single	CV	ORB	CW	1.25"	Side Port On The Left	1.25"	Side Port On The Right	Pump
197	Single	CW	ORB	CW	1.25"	Rear Port On The Left	1.25"	Rear Port On The Right	Pump
197	Single	CW	ORB	CW	1.25"	Rear Port On The Left	1.25"	Rear Port On The Right	Pump
197	Single	CY	ORB	CW	1.25"	Side Port On The Left	1.25"	Rear Port On The Right	Pump
197	Single	CZ	ORB	CW	1.25"	Rear Port On The Left	1.25"	Side Port On The Right	Pump
197	Single	DA	ORB	CW	1.5"	Side Port On The Left	1.25"	Side Port On The Right	Pump
197	Single	DB	ORB	CW	1.5"	Side Port On The Left	1"	Side Port On The Right	Pump
197	Single	DC	ORB	CW	1.5"	Side Port On The Left	1.25"	Rear Port On The Right	Pump
197	Single	DF	ORB	CW	1.5"	Side Port On The Left	1"	Rear Port On The Right	Pump
197	Single	DI	ORB	CCW	BLANK	BLANK	1.25"	Side Port On The Left	Pump
197	Single	DV	ORB	CW	1.5"	Side Port On The Left	1.5"	Side Port On The Right	Pump
197	Single	EA	ORB	CCW	0.75"	Side Port On The Right	0.5"	Side Port On The Left	Pump
197	Single	EB	ORB	CCW	0.5"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	EC	ORB	CCW	0.5"	Side Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	ED	ORB	CCW	0.5"	Side Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	EI	ORB	CCW	BLANK	BLANK	1.5"	Side Port On The Left	Pump
197	Single	EV	ORB	CW	0.5"	Side Port On The Left	0.5"	Side Port On The Right	Pump
197	Single	EW	ORB	CW	0.5"	Rear Port On The Left	0.5"	Rear Port On The Right	Pump
197	Single	EY	ORB	CW	0.5"	Rear Port On The Left	0.5"	Side Port On The Right	Pump
197	Single	EZ	ORB	CW	0.5"	Side Port On The Left	0.5"	Rear Port On The Right	Pump
197	Single	FA	ORB	CCW	1"	Side Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	FB	ORB	CCW	1"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
197	Single	FC	ORB	CCW	1"	Side Port On The Right	0.75"	Rear Port On The Left	Pump
197	Single	FD	ORB	CCW	1"	Rear Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	FE	ORB	CCW	1.25"	Side Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	FG	ORB	CCW	1.25"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
197	Single	FH	ORB	CW	0.75"	Side Port On The Left	1.25"	Rear Port On The Right	Pump
197	Single	FI	ORB	CCW	BLANK	BLANK	0.5"	Rear Port On The Left	Pump
197	Single	FJ	ORB	CW	0.5"	Rear Port On The Left	BLANK	BLANK	Pump
197	Single	FK	ORB	CW	0.75"	Rear Port On The Left	BLANK	BLANK	Pump
197	Single	FL	ORB	CW	1"	Rear Port On The Left	BLANK	BLANK	Pump
197	Single	FM	ORB	CW	1.25"	Rear Port On The Left	BLANK	BLANK	Pump
197	Single	GA	ORB	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
197	Single	GB	ORB	CCW	1"	Rear Port On The Left	1.25"	Rear Port On The Right	Pump
197	Single	GC	ORB	CCW	1.25"	Side Port On The Right	1"	Rear Port On The Left	Pump
197	Single	GD	ORB	CCW	1.25"	Rear Port On The Right	1"	Side Port On The Left	Pump
197	Single	GI	ORB	CCW	BLANK	BLANK	0.75"	Rear Port On The Left	Pump
197	Single	GJ	ORB	CCW	0.5"	Side Port On The Right	BLANK	BLANK	Pump
197	Single	GK	ORB	CCW	0.75"	Side Port On The Right	BLANK	BLANK	Pump
197	Single	GL	ORB	CCW	1"	Side Port On The Right	BLANK	BLANK	Pump
197	Single	GM	ORB	CCW	1.25"	Side Port On The Right	BLANK	BLANK	Pump
197	Single	GN	ORB	CCW	1.5"	Side Port On The Right	BLANK	BLANK	Pump
197	Single	HA	ORB	CCW	1.5"	Side Port On The Right	1.25"	Side Port On The Left	Pump
197	Single	HC	ORB	CCW	1.5"	Side Port On The Right	1.25"	Rear Port On The Left	Pump
197	Single	HD	ORB	CCW	1.5"	Side Port On The Right	1"	Side Port On The Left	Pump
197	Single	HF	ORB	CCW	1.5"	Side Port On The Right	1"	Rear Port On The Left	Pump
197	Single	HI	ORB	CCW	BLANK	BLANK	1"	Rear Port On The Left	Pump
197	Single	HJ	ORB	CCW	0.5"	Rear Port On The Right	BLANK	BLANK	Pump
197	Single	HK	ORB	CCW	0.75"	Rear Port On The Right	BLANK	BLANK	Pump
197	Single	HL	ORB	CCW	1"	Rear Port On The Right	BLANK	BLANK	Pump
197	Single	HM	ORB	CCW	1.25"	Rear Port On The Right	BLANK	BLANK	Pump
197	Single	IA	ORB	CW	BLANK	BLANK	0.5"	Side Port On The Right	Pump
197	Single	IB	ORB	CW	BLANK	BLANK	0.75"	Side Port On The Right	Pump
197	Single	IC	ORB	CW	BLANK	BLANK	1"	Side Port On The Right	Pump
197	Single	ID	ORB	CW	BLANK	BLANK	1.25"	Side Port On The Right	Pump
197	Single	IE	ORB	CW	BLANK	BLANK	1.5"	Side Port On The Right	Pump
197	Single	IF	ORB	CW	BLANK	BLANK	0.5"	Rear Port On The Right	Pump
197	Single	IG	ORB	CW	BLANK	BLANK	0.75"	Rear Port On The Right	Pump
197	Single	IH	ORB	CW	BLANK	BLANK	1"	Rear Port On The Right	Pump
197	Single	IJ	ORB	CW	BLANK	BLANK	1.25"	Rear Port On The Right	Pump
197	Single	IK	SF	CW	BLANK	BLANK	0.5"	Side Port On The Right	Pump
197	Single	IL	SF	CW	BLANK	BLANK	0.75"	Side Port On The Right	Pump
197	Single	IM	SF	CW	BLANK	BLANK	1"	Side Port On The Right	Pump
197	Single	IN	SF	CW	BLANK	BLANK	1.25"	Side Port On The Right	Pump
197	Single	IO	SF	CW	BLANK	BLANK	1.5"	Side Port On The Right	Pump
197	Single	JA	BSPP	CW	1"	Side Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	JB	BSPP	CW	1"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	JC	BSPP	CW	1"	Side Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	JD	BSPP	CW	1"	Rear Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	JI	ORB	CCW	BLANK	BLANK	1.25"	Rear Port On The Left	Pump
197	Single	JJ	SF	CW	0.5"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	JK	SF	CW	0.75"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	JL	SF	CW	1"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	JM	SF	CW	1.25"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	JN	SF	CW	1.5"	Side Port On The Left	BLANK	BLANK	Pump
197	Single	JV	BSPP	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump
197	Single	JW	BSPP	CW	1"	Rear Port On The Left	1"	Rear Port On The Right	Pump
197	Single	JY	BSPP	CW	1"	Side Port On The Left	1"	Rear Port On The Right	Pump
197	Single	JZ	BSPP	CW	1"	Rear Port On The Left	1"	Side Port On The Right	Pump
197	Single	KA	BSPP	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
197	Single	KB	BSPP	CW	1.25"	Rear Port On The Left	1"	Rear Port On The Right	Pump
197	Single	KC	BSPP	CW	1.25"	Side Port On The Left	1"	Rear Port On The Right	Pump
197	Single	KD	BSPP	CW	1.25"	Rear Port On The Left	1"	Side Port On The Right	Pump
197	Single	KI	SF	CCW	BLANK	BLANK	0.5"	Side Port On The Left	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
197	Single	KJ	SF	CCW	0.5"	Side Port On The Right	BLANK	BLANK	Pump
197	Single	KK	SF	CCW	0.75"	Side Port On The Right	BLANK	BLANK	Pump
197	Single	KL	SF	CCW	1"	Side Port On The Right	BLANK	BLANK	Pump
197	Single	KM	SF	CCW	1.25"	Side Port On The Right	BLANK	BLANK	Pump
197	Single	KN	SF	CCW	1.5"	Side Port On The Right	BLANK	BLANK	Pump
197	Single	KV	BSPP	CW	1.25"	Side Port On The Left	1.25"	Side Port On The Right	Pump
197	Single	KW	BSPP	CW	1.25"	Rear Port On The Left	1.25"	Rear Port On The Right	Pump
197	Single	KY	BSPP	CW	1.25"	Side Port On The Left	1.25"	Rear Port On The Right	Pump
197	Single	KZ	BSPP	CW	1.25"	Rear Port On The Left	1.25"	Side Port On The Right	Pump
197	Single	LA	BSPP	CW	1.5"	Side Port On The Left	1.25"	Side Port On The Right	Pump
197	Single	LC	BSPP	CW	1.5"	Side Port On The Left	1.25"	Rear Port On The Right	Pump
197	Single	LI	SF	CCW	BLANK	BLANK	0.75"	Side Port On The Left	Pump
197	Single	LV	BSPP	CW	1.5"	Side Port On The Left	1.5"	Side Port On The Right	Pump
197	Single	MA	BSPP	CCW	1"	Side Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	MB	BSPP	CCW	1"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
197	Single	MC	BSPP	CCW	1"	Side Port On The Right	0.75"	Rear Port On The Left	Pump
197	Single	MD	BSPP	CCW	1"	Rear Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	MI	SF	CCW	BLANK	BLANK	1"	Side Port On The Left	Pump
197	Single	MV	BSPP	CW	0.75"	Side Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	MW	BSPP	CW	0.75"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	MY	BSPP	CW	0.75"	Rear Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	MZ	BSPP	CW	0.75"	Side Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	NA	BSPP	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
197	Single	NB	BSPP	CCW	1.25"	Rear Port On The Right	1"	Rear Port On The Left	Pump
197	Single	NC	BSPP	CCW	1.25"	Side Port On The Right	1"	Rear Port On The Left	Pump
197	Single	ND	BSPP	CCW	1.25"	Rear Port On The Right	1"	Side Port On The Left	Pump
197	Single	NI	SF	CCW	BLANK	BLANK	1.25"	Side Port On The Left	Pump
197	Single	OA	BSPP	CCW	1.5"	Side Port On The Right	1.25"	Side Port On The Left	Pump
197	Single	OC	BSPP	CCW	1.5"	Side Port On The Right	1.25"	Rear Port On The Left	Pump
197	Single	OI	SF	CCW	BLANK	BLANK	1.5"	Side Port On The Left	Pump
197	Single	PA	SF	CW	0.75"	Side Port On The Left	0.5"	Side Port On The Right	Pump
197	Single	PB	SF	CW	1"	Side Port On The Left	0.5"	Side Port On The Right	Pump
197	Single	PC	SF	CW	1"	Side Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	PD	SF	CW	1.25"	Side Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	PE	SF	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
197	Single	PF	SF	CW	1.5"	Side Port On The Left	1"	Side Port On The Right	Pump
197	Single	PG	SF	CW	1.5"	Side Port On The Left	1.25"	Side Port On The Right	Pump
197	Single	PH	SF	CCW	0.75"	Side Port On The Right	0.5"	Side Port On The Left	Pump
197	Single	PJ	SF	CCW	1"	Side Port On The Right	0.5"	Side Port On The Left	Pump
197	Single	PK	SF	CCW	1"	Side Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	PL	SF	CCW	1.25"	Side Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	PM	SF	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
197	Single	PN	SF	CCW	1.5"	Side Port On The Right	1"	Side Port On The Left	Pump
197	Single	PO	SF	CCW	1.5"	Side Port On The Right	1.25"	Side Port On The Left	Pump
197	Single	PV	SF	CW	0.5"	Side Port On The Left	0.5"	Side Port On The Right	Pump
197	Single	PW	SF	CW	0.75"	Side Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	PX	SF	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump
197	Single	PY	SF	CW	1.25"	Side Port On The Left	1.25"	Side Port On The Right	Pump
197	Single	PZ	SF	CW	1.5"	Side Port On The Left	1.5"	Side Port On The Right	Pump
197	Single	QI	ORB	CW	1.25"	Rear Port On The Left	0.75"	Side Port On The Right	Pump
197	Single	QQ	ORB	Motor	0.75"	Side Port	0.75"	Side Port	Motor
197	Single	RI	ORB	CCW	1.25"	Side Port On The Right	0.75"	Rear Port On The Left	Pump
197	Single	RR	ORB	Motor	1"	Side Port	1"	Side Port	Motor
197	Single	SS	ORB	Motor	1.25"	Side Port	1.25"	Side Port	Motor
197	Single	UU	SF	Motor	0.75"	Side Port	0.75"	Side Port	Motor
197	Single	VA	ORB	CCW	0.75"	Side Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	VB	ORB	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
197	Single	VC	ORB	CCW	1.25"	Side Port On The Right	1.25"	Side Port On The Left	Pump
197	Single	VD	ORB	CCW	1.5"	Side Port On The Right	1.5"	Side Port On The Left	Pump
197	Single	VE	ORB	CCW	0.5"	Side Port On The Right	0.5"	Side Port On The Left	Pump
197	Single	VJ	BSPP	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
197	Single	VK	BSPP	CCW	1.25"	Side Port On The Right	1.25"	Side Port On The Left	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
197	Single	VL	BSPP	CCW	1.5"	Side Port On The Right	1.5"	Side Port On The Left	Pump
197	Single	VM	BSPP	CCW	0.75"	Side Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	VP	SF	CCW	0.5"	Side Port On The Right	0.5"	Side Port On The Left	Pump
197	Single	VV	SF	Motor	1"	Side Port	1"	Side Port	Motor
197	Single	WA	ORB	CCW	0.75"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
197	Single	WB	ORB	CCW	1"	Rear Port On The Left	1"	Rear Port On The Right	Pump
197	Single	WC	ORB	CCW	1.25"	Rear Port On The Left	1.25"	Rear Port On The Right	Pump
197	Single	WE	ORB	CCW	0.5"	Rear Port On The Left	0.5"	Rear Port On The Left	Pump
197	Single	WJ	BSPP	CCW	1"	Rear Port On The Right	1"	Rear Port On The Left	Pump
197	Single	WK	BSPP	CCW	1.25"	Rear Port On The Right	1.25"	Rear Port On The Left	Pump
197	Single	WM	BSPP	CCW	0.75"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
197	Single	WP	SF	CCW	0.75"	Side Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	WW	SF	Motor	1.25"	Side Port	1.25"	Side Port	Motor
197	Single	XP	SF	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
197	Single	XX	ORB	Motor	0.75"	Rear Port	0.75"	Rear Port	Motor
197	Single	YA	ORB	CCW	0.75"	Rear Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	YB	ORB	CCW	1"	Rear Port On The Right	1"	Side Port On The Left	Pump
197	Single	YC	ORB	CCW	1.25"	Rear Port On The Right	1.25"	Side Port On The Left	Pump
197	Single	YE	ORB	CCW	0.5"	Side Port On The Right	0.5"	Rear Port On The Left	Pump
197	Single	YJ	BSPP	CCW	1"	Rear Port On The Right	1"	Side Port On The Left	Pump
197	Single	YK	BSPP	CCW	1.25"	Rear Port On The Right	1.25"	Side Port On The Left	Pump
197	Single	YM	BSPP	CCW	0.75"	Side Port On The Right	0.75"	Rear Port On The Left	Pump
197	Single	YP	SF	CCW	1.25"	Side Port On The Right	1.25"	Side Port On The Left	Pump
197	Single	YY	ORB	Motor	1"	Rear Port	1"	Rear Port	Motor
197	Single	ZA	ORB	CCW	0.75"	Side Port On The Right	0.75"	Rear Port On The Left	Pump
197	Single	ZB	ORB	CCW	1"	Side Port On The Right	1"	Rear Port On The Left	Pump
197	Single	ZC	ORB	CCW	1.25"	Side Port On The Right	1.25"	Rear Port On The Left	Pump
197	Single	ZE	ORB	CCW	0.5"	Rear Port On The Right	0.5"	Side Port On The Left	Pump
197	Single	ZJ	BSPP	CCW	1"	Side Port On The Right	1"	Rear Port On The Left	Pump
197	Single	ZK	BSPP	CCW	1.25"	Side Port On The Right	1.25"	Rear Port On The Left	Pump
197	Single	ZM	BSPP	CCW	0.75"	Rear Port On The Right	0.75"	Side Port On The Left	Pump
197	Single	ZP	SF	CCW	1.5"	Side Port On The Right	1.5"	Side Port On The Left	Pump
257	Single	AA	ORB	CW	0.75"	Side Port On The Left	0.5"	Side Port On The Right	Pump
257	Single	AB	ORB	CW	0.75"	Rear Port On The Left	0.5"	Rear Port On The Right	Pump
257	Single	AC	ORB	CW	0.75"	Side Port On The Left	0.5"	Rear Port On The Right	Pump
257	Single	AD	ORB	CW	0.75"	Side Port On The Left	0.5"	Side Port On The Right	Pump
257	Single	AD	ORB	CW	0.75"	Rear Port On The Left	0.5"	Side Port On The Right	Motor
257	Single	AH	ORB	CW	BLANK	BLANK	BLANK	BLANK	Pump
257	Single	AI	ORB	CCW	BLANK	BLANK	0.5"	Side Port On The Left	Pump
257	Single	AJ	ORB	CW	0.5"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	AK	ORB	CW	0.75"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	AL	ORB	CW	1"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	AM	ORB	CW	1.25"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	AN	ORB	CW	1.5"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	AV	ORB	CW	0.75"	Side Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	AW	ORB	CW	0.75"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
257	Single	AX	ORB	CW	BLANK	BLANK	BLANK	BLANK	Pump
257	Single	AY	ORB	CW	0.75"	Side Port On The Left	0.75"	Rear Port On The Right	Pump
257	Single	AZ	ORB	CW	0.75"	Rear Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	BA	ORB	CW	1"	Side Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	BB	ORB	CW	1"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
257	Single	BC	ORB	CW	1"	Side Port On The Left	0.75"	Rear Port On The Left	Pump
257	Single	BD	ORB	CW	1"	Rear Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	BI	ORB	CCW	BLANK	BLANK	0.75"	Side Port On The Left	Pump
257	Single	BV	ORB	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump
257	Single	BW	ORB	CW	1"	Rear Port On The Left	1"	Rear Port On The Right	Pump
257	Single	BY	ORB	CW	1"	Side Port On The Left	1"	Rear Port On The Right	Pump
257	Single	BZ	ORB	CW	1"	Rear Port On The Left	1"	Side Port On The Right	Pump
257	Single	CA	ORB	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
257	Single	CB	ORB	CW	1.25"	Rear Port On The Left	1"	Rear Port On The Right	Pump
257	Single	CC	ORB	CW	1.25"	Side Port On The Left	1"	Rear Port On The Right	Pump
257	Single	CD	ORB	CW	1.25"	Rear Port On The Left	1"	Side Port On The Right	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
257	Single	CE	ORB	CW	1.25"	Side Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	CG	ORB	CW	1.25"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
257	Single	CH	ORB	CW	1.25"	Side Port On The Left	0.75"	Rear Port On The Right	Pump
257	Single	CI	ORB	CCW	BLANK	BLANK	1"	Side Port On The Left	Pump
257	Single	CV	ORB	CW	1.25"	Side Port On The Left	1.25"	Side Port On The Right	Pump
257	Single	CW	ORB	CW	1.25"	Rear Port On The Left	1.25"	Rear Port On The Right	Pump
257	Single	CY	ORB	CW	1.25"	Side Port On The Left	1.25"	Rear Port On The Left	Pump
257	Single	CZ	ORB	CW	1.25"	Rear Port On The Left	1.25"	Side Port On The Right	Pump
257	Single	DA	ORB	CW	1.5"	Side Port On The Left	1.25"	Side Port On The Right	Pump
257	Single	DB	ORB	CW	1.5"	Side Port On The Left	1"	Side Port On The Right	Pump
257	Single	DC	ORB	CW	1.5"	Side Port On The Left	1.25"	Rear Port On The Right	Pump
257	Single	DF	ORB	CW	1.5"	Side Port On The Left	1"	Rear Port On The Right	Pump
257	Single	DI	ORB	CCW	BLANK	BLANK	1.25"	Side Port On The Left	Pump
257	Single	DV	ORB	CW	1.5"	Side Port On The Left	1.5"	Side Port On The Right	Pump
257	Single	EA	ORB	CCW	0.75"	Side Port On The Right	0.5"	Side Port On The Left	Pump
257	Single	EB	ORB	CCW	0.75"	Rear Port On The Right	0.5"	Rear Port On The Left	Pump
257	Single	EC	ORB	CCW	0.75"	Side Port On The Right	0.5"	Rear Port On The Left	Pump
257	Single	ED	ORB	CCW	0.75"	Rear Port On The Right	0.5"	Side Port On The Left	Pump
257	Single	EI	ORB	CCW	BLANK	BLANK	1.5"	Side Port On The Left	Pump
257	Single	EV	ORB	CW	0.5"	Side Port On The Left	0.5"	Side Port On The Right	Pump
257	Single	EW	ORB	CW	0.5"	Rear Port On The Left	0.5"	Rear Port On The Right	Pump
257	Single	EY	ORB	CW	0.5"	Rear Port On The Left	0.5"	Side Port On The Right	Pump
257	Single	EZ	ORB	CW	0.5"	Side Port On The Left	0.5"	Rear Port On The Right	Pump
257	Single	FA	ORB	CCW	1"	Side Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	FB	ORB	CCW	1"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
257	Single	FC	ORB	CCW	1"	Side Port On The Right	0.75"	Rear Port On The Left	Pump
257	Single	FD	ORB	CCW	1"	Rear Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	FE	ORB	CCW	1.25"	Side Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	FG	ORB	CCW	1.25"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
257	Single	FH	ORB	CCW	1.25"	Rear Port On The Right	0.75"	Rear Port On The Left	Both
257	Single	FI	ORB	CCW	BLANK	BLANK	0.5"	Rear Port On The Left	Pump
257	Single	FJ	ORB	CW	0.5"	Rear Port On The Left	BLANK	BLANK	Pump
257	Single	FK	ORB	CW	0.75"	Rear Port On The Left	BLANK	BLANK	Pump
257	Single	FL	ORB	CW	1"	Rear Port On The Left	BLANK	BLANK	Pump
257	Single	FM	ORB	CW	1.25"	Rear Port On The Left	BLANK	BLANK	Pump
257	Single	GA	ORB	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
257	Single	GB	ORB	CCW	1.25"	Rear Port On The Right	1"	Rear Port On The Left	Pump
257	Single	GC	ORB	CCW	1.25"	Side Port On The Right	1"	Rear Port On The Left	Pump
257	Single	GD	ORB	CCW	1.25"	Rear Port On The Right	1"	Side Port On The Left	Pump
257	Single	GI	ORB	CCW	BLANK	BLANK	0.75"	Rear Port On The Left	Pump
257	Single	GJ	ORB	CCW	0.5"	Side Port On The Right	BLANK	BLANK	Pump
257	Single	GK	ORB	CCW	0.75"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	GL	ORB	CCW	1"	Side Port On The Right	BLANK	BLANK	Pump
257	Single	GM	ORB	CCW	1.25"	Side Port On The Right	BLANK	BLANK	Pump
257	Single	GN	ORB	CCW	1.5"	Side Port On The Right	BLANK	BLANK	Pump
257	Single	HA	ORB	CCW	1.5"	Side Port On The Right	1.25"	Side Port On The Left	Pump
257	Single	HC	ORB	CCW	1.5"	Side Port On The Right	1.25"	Rear Port On The Left	Pump
257	Single	HD	ORB	CCW	1.5"	Side Port On The Right	1"	Side Port On The Left	Pump
257	Single	HE	ORB	CCW	1.5"	Side Port On The Right	1"	Rear Port On The Left	Pump
257	Single	HF	ORB	CCW	1.5"	Side Port On The Right	1"	Rear Port On The Left	Pump
257	Single	HI	ORB	CCW	1"	Side Port On The Left	1"	Rear Port On The Left	Pump
257	Single	HJ	ORB	CCW	0.5"	Rear Port On The Right	BLANK	BLANK	Pump
257	Single	HK	ORB	CCW	0.75"	Rear Port On The Right	BLANK	BLANK	Pump
257	Single	HL	ORB	CCW	1"	Rear Port On The Right	BLANK	BLANK	Pump
257	Single	HM	ORB	CCW	1.25"	Rear Port On The Right	BLANK	BLANK	Pump
257	Single	IA	ORB	CW	BLANK	BLANK	0.5"	Side Port On The Right	Pump
257	Single	IB	ORB	CW	BLANK	BLANK	0.75"	Side Port On The Right	Pump
257	Single	IC	ORB	CW	BLANK	BLANK	1"	Side Port On The Right	Pump
257	Single	ID	ORB	CW	BLANK	BLANK	1.25"	Side Port On The Right	Pump
257	Single	IE	ORB	CW	BLANK	BLANK	1.5"	Side Port On The Right	Pump
257	Single	IF	ORB	CW	BLANK	BLANK	0.5"	Rear Port On The Right	Pump
257	Single	IG	ORB	CW	BLANK	BLANK	0.75"	Rear Port On The Right	Pump
257	Single	IH	ORB	CW	BLANK	BLANK	1"	Rear Port On The Right	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
257	Single	IJ	ORB	CW	BLANK	BLANK	1.25"	Rear Port On The Right	Pump
257	Single	IK	SF	CW	BLANK	BLANK	0.5"	Side Port On The Left	Pump
257	Single	IL	SF	CW	BLANK	BLANK	0.75"	Side Port On The Right	Pump
257	Single	IM	SF	CW	BLANK	BLANK	1"	Side Port On The Right	Pump
257	Single	IN	SF	CW	BLANK	BLANK	1.25"	Side Port On The Right	Pump
257	Single	IO	SF	CW	BLANK	BLANK	1.5"	Side Port On The Right	Pump
257	Single	IP	SF	CW	BLANK	BLANK	2"	Side Port On The Right	Pump
257	Single	JA	BSPP	CW	1"	Side Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	JB	BSPP	CW	1"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
257	Single	JC	BSPP	CW	1"	Side Port On The Left	0.75"	Rear Port On The Right	Pump
257	Single	JD	BSPP	CW	1"	Rear Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	JI	ORB	CCW	BLANK	BLANK	1.25"	Rear Port On The Left	Pump
257	Single	JJ	SF	CW	0.5"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	JK	SF	CW	0.75"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	JL	SF	CW	1"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	JM	SF	CW	1.25"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	JN	SF	CW	1.5"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	JO	SF	CW	2"	Side Port On The Left	BLANK	BLANK	Pump
257	Single	JV	BSPP	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump
257	Single	JW	BSPP	CW	1"	Rear Port On The Left	1"	Rear Port On The Right	Pump
257	Single	JY	BSPP	CW	1"	Side Port On The Left	1"	Rear Port On The Right	Pump
257	Single	JZ	BSPP	CW	1"	Rear Port On The Left	1"	Side Port On The Right	Pump
257	Single	KA	BSPP	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
257	Single	KB	BSPP	CW	1.25"	Rear Port On The Left	1"	Rear Port On The Right	Pump
257	Single	KC	BSPP	CW	1.25"	Side Port On The Left	1"	Rear Port On The Right	Pump
257	Single	KD	BSPP	CW	1.25"	Rear Port On The Left	1"	Side Port On The Right	Pump
257	Single	KI	SF	CCW	BLANK	BLANK	0.5"	Rear Port On The Left	Pump
257	Single	KJ	SF	CCW	0.5"	Side Port On The Right	BLANK	BLANK	Pump
257	Single	KK	SF	CCW	0.75"	Side Port On The Right	BLANK	BLANK	Pump
257	Single	KL	SF	CCW	1"	Side Port On The Right	BLANK	BLANK	Pump
257	Single	KM	SF	CCW	1.25"	Side Port On The Right	BLANK	BLANK	Pump
257	Single	KN	SF	CCW	1.5"	Side Port On The Right	BLANK	BLANK	Pump
257	Single	KO	SF	CCW	2"	Side Port On The Right	BLANK	BLANK	Pump
257	Single	KV	BSPP	CW	1.25"	Side Port On The Left	1.25"	Side Port On The Right	Pump
257	Single	KW	BSPP	CW	1.25"	Rear Port On The Left	1.25"	Rear Port On The Right	Pump
257	Single	KY	BSPP	CW	1.25"	Side Port On The Left	1.25"	Rear Port On The Left	Pump
257	Single	KZ	BSPP	CW	1.25"	Rear Port On The Left	1.25"	Side Port On The Right	Pump
257	Single	LA	BSPP	CW	1.5"	Side Port On The Left	1.25"	Side Port On The Right	Pump
257	Single	LC	BSPP	CW	1.5"	Side Port On The Left	1.25"	Rear Port On The Right	Pump
257	Single	LI	SF	CCW	BLANK	BLANK	0.75"	Side Port On The Left	Pump
257	Single	LV	BSPP	CW	1.5"	Side Port On The Left	1.5"	Side Port On The Right	Pump
257	Single	MA	BSPP	CCW	1"	Side Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	MB	BSPP	CCW	1"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
257	Single	MC	BSPP	CCW	1"	Rear Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	MD	BSPP	CCW	1"	Rear Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	MI	SF	CCW	BLANK	BLANK	1"	Side Port On The Left	Pump
257	Single	MV	BSPP	CW	0.75"	Side Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	MW	BSPP	CW	0.75"	Rear Port On The Left	0.75"	Rear Port On The Right	Pump
257	Single	MY	BSPP	CW	0.75"	Rear Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	MZ	BSPP	CW	0.75"	Side Port On The Left	0.75"	Rear Port On The Right	Pump
257	Single	NA	BSPP	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
257	Single	NB	BSPP	CCW	1.25"	Rear Port On The Right	1"	Rear Port On The Left	Pump
257	Single	NC	BSPP	CCW	1.25"	Side Port On The Left	1"	Rear Port On The Right	Pump
257	Single	ND	BSPP	CCW	1.25"	Rear Port On The Right	1"	Side Port On The Left	Pump
257	Single	NI	SF	CCW	BLANK	BLANK	1.25"	Side Port On The Left	Pump
257	Single	OA	BSPP	CCW	1.5"	Side Port On The Right	1.25"	Side Port On The Left	Pump
257	Single	OC	BSPP	CCW	1.5"	Side Port On The Right	1.25"	Rear Port On The Left	Pump
257	Single	OI	SF	CCW	BLANK	BLANK	1.5"	Side Port On The Left	Pump
257	Single	PA	SF	CW	0.75"	Side Port On The Left	0.5"	Side Port On The Right	Pump
257	Single	PB	SF	CW	1"	Side Port On The Left	0.5"	Side Port On The Right	Pump
257	Single	PC	SF	CW	1"	Side Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	PD	SF	CW	1.25"	Side Port On The Left	0.75"	Side Port On The Right	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
257	Single	PE	SF	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
257	Single	PF	SF	CW	1.5"	Side Port On The Left	1"	Side Port On The Right	Pump
257	Single	PG	SF	CW	1.5"	Side Port On The Left	1.25"	Side Port On The Right	Pump
257	Single	PH	SF	CCW	0.75"	Side Port On The Right	0.5"	Side Port On The Left	Pump
257	Single	PI	SF	CCW	BLANK	BLANK	2"	Side Port On The Left	Pump
257	Single	PJ	SF	CCW	1"	Side Port On The Right	0.5"	Side Port On The Left	Pump
257	Single	PK	SF	CCW	1"	Side Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	PL	SF	CCW	1.25"	Side Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	PM	SF	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
257	Single	PN	SF	CCW	1.5"	Side Port On The Right	1"	Side Port On The Left	Pump
257	Single	PO	SF	CCW	1.5"	Side Port On The Right	1.25"	Side Port On The Left	Pump
257	Single	PP	SF	CW	2"	Side Port On The Left	1.25"	Side Port On The Right	Pump
257	Single	PQ	SF	CW	2"	Side Port On The Left	1.5"	Side Port On The Right	Pump
257	Single	PR	SF	CCW	2"	Side Port On The Right	1.25"	Side Port On The Left	Pump
257	Single	PS	SF	CCW	2"	Side Port On The Right	1.5"	Side Port On The Left	Pump
257	Single	PV	SF	CW	0.5"	Side Port On The Left	0.5"	Side Port On The Right	Pump
257	Single	PW	SF	CW	0.75"	Side Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	PX	SF	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump
257	Single	PY	SF	CW	1.25"	Side Port On The Left	1.25"	Side Port On The Right	Pump
257	Single	PZ	SF	CW	1.5"	Side Port On The Left	1.5"	Side Port On The Right	Pump
257	Single	QI	ORB	CW	1.25"	Rear Port On The Left	0.75"	Side Port On The Right	Pump
257	Single	QQ	ORB	Bi-Rotation	0.75"	Side Port	0.75"	Side Port	Motor
257	Single	RI	ORB	CCW	1.25"	Side Port On The Right	0.75"	Rear Port On The Left	Pump
257	Single	RP	SF	CW	2"	Side Port On The Right	1"	Side Port On The Left	Pump
257	Single	RR	ORB	Bi-Rotation	1"	Side Port	1"	Side Port	Motor
257	Single	SS	ORB	Bi-Rotation	1.25"	Side Port	1.25"	Side Port	Motor
257	Single	TP	SF	CCW	2"	Side Port On The Left	1"	Side Port On The Right	Pump
257	Single	TT	ORB	Bi-Rotation	1.5"	Side Port	1.5"	Side Port	Motor
257	Single	UU	SF	Bi-Rotation	0.75"	Side Port	0.75"	Side Port	Motor
257	Single	VA	ORB	CCW	0.75"	Side Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	VB	ORB	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
257	Single	VC	ORB	CCW	1.25"	Side Port On The Right	1.25"	Side Port On The Left	Pump
257	Single	VD	ORB	CCW	1.5"	Side Port On The Left	1.5"	Side Port On The Right	Pump
257	Single	VE	ORB	CCW	0.5"	Side Port On The Right	0.5"	Side Port On The Left	Pump
257	Single	VJ	BSPP	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
257	Single	VK	BSPP	CCW	1.25"	Side Port On The Right	1.25"	Side Port On The Left	Pump
257	Single	VL	BSPP	CCW	1.5"	Side Port On The Right	1.5"	Side Port On The Left	Pump
257	Single	VM	BSPP	CCW	0.75"	Side Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	VP	SF	CCW	0.5"	Side Port On The Right	0.5"	Side Port On The Left	Pump
257	Single	VV	SF	Bi-Rotation	1"	Side Port	1"	Side Port	Motor
257	Single	WA	ORB	CCW	0.75"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
257	Single	WB	ORB	CCW	1"	Rear Port On The Right	1"	Rear Port On The Left	Pump
257	Single	WC	ORB	CCW	1.25"	Rear Port On The Right	1.25"	Rear Port On The Left	Pump
257	Single	WE	ORB	CW	0.5"	Side Port On The Left	0.5"	Side Port On The Right	Pump
257	Single	WJ	BSPP	CCW	1"	Rear Port On The Right	1"	Rear Port On The Left	Pump
257	Single	WK	BSPP	CCW	1.25"	Rear Port On The Right	1.25"	Rear Port On The Left	Pump
257	Single	WM	BSPP	CCW	0.75"	Rear Port On The Right	0.75"	Rear Port On The Left	Pump
257	Single	WP	SF	CCW	0.75"	Side Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	WW	SF	Bi-Rotation	1.25"	Side Port	1.25"	Side Port	Motor
257	Single	XP	SF	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
257	Single	XX	SF	Bi-Rotation	1.5"	Side Port	1.5"	Side Port	Motor
257	Single	YA	ORB	CCW	0.75"	Rear Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	YB	ORB	CCW	1"	Rear Port On The Right	1"	Side Port On The Left	Pump
257	Single	YC	ORB	CCW	1.25"	Rear Port On The Right	1.25"	Side Port On The Left	Pump
257	Single	YE	ORB	CCW	0.5"	Side Port On The Right	0.5"	Rear Port On The Left	Pump
257	Single	YJ	BSPP	CCW	1"	Side Port On The Right	1"	Rear Port On The Left	Pump
257	Single	YK	BSPP	CCW	1.25"	Rear Port On The Right	1.25"	Side Port On The Left	Pump
257	Single	YM	BSPP	CCW	0.75"	Side Port On The Right	0.75"	Rear Port On The Left	Pump
257	Single	YP	SF	CCW	1.25"	Side Port On The Right	1.25"	Side Port On The Left	Pump
257	Single	YY	ORB	Bi-Rotation	1"	Rear Port	1"	Rear Port	Motor
257	Single	ZA	ORB	CCW	0.75"	Side Port On The Right	0.75"	Rear Port On The Left	Pump
257	Single	ZB	ORB	CCW	1"	Side Port On The Right	1"	Rear Port On The Left	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
257	Single	ZC	ORB	CCW	1.25"	Side Port On The Right	1.25"	Rear Port On The Left	Pump
257	Single	ZE	ORB	CCW	0.5"	Rear Port On The Right	0.5"	Side Port On The Left	Pump
257	Single	ZJ	BSPP	CCW	1"	Side Port On The Right	1"	Rear Port On The Left	Pump
257	Single	ZK	BSPP	CCW	1.25"	Rear Port On The Right	1.25"	Rear Port On The Left	Pump
257	Single	ZM	BSPP	CCW	0.75"	Rear Port On The Right	0.75"	Side Port On The Left	Pump
257	Single	ZP	SF	CCW	1.5"	Side Port On The Right	1.5"	Side Port On The Left	Pump
257	Single	ZZ	ORB	Bi-Rotation	0.75"	Rear Port	0.75"	Rear Port	Motor
360 Motor	Multiple	AZ	BLANK	Motor	BLANK	BLANK	BLANK	BLANK	Motor
360 Motor	Single	BQ	SF	Motor	1.5"	Side Port	1.5"	Side Port	Motor
360 Motor	Single	BR	SF	Motor	1.25"	Side Port	1.25"	Side Port	Motor
360 Motor	Single	BS	SF	Motor	1"	Side Port	1"	Side Port	Motor
360 Motor	Single	BU	SF	Motor	0.75"	Side Port	0.75"	Side Port	Motor
360 Motor	Single	BV	MSF	Motor	1.5"	Side Port	1.5"	Side Port	Motor
360 Motor	Single	BW	MSF	Motor	1.25"	Side Port	1.25"	Side Port	Motor
360 Motor	Single	BX	MSF	Motor	1"	Side Port	1"	Side Port	Motor
360 Motor	Single	BY	MSF	Motor	0.75"	Side Port	0.75"	Side Port	Motor
360 Motor	Single	UB	ORB	Motor	1.25"	Side Port	1.25"	Side Port	Motor
360 Motor	Single	UM	ORB	Motor	1"	Side Port	1"	Side Port	Motor
360 Motor	Single	UQ	ORB	Motor	0.75"	Side Port	0.75"	Side Port	Motor
360 Motor	Single	UW	BSPP	Motor	1.25"	Side Port	1.25"	Side Port	Motor
360 Motor	Single	UX	BSPP	Motor	1"	Side Port	1"	Side Port	Motor
360 Motor	Single	UY	BSPP	Motor	0.75"	Side Port	0.75"	Side Port	Motor
360 Pump	Single	AB	ORB	CW	1.5"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	AE	ORB	CCW	1.5"	Side Port On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	AF	ORB	CW	1.25"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	AH	ORB	CW	BLANK	BLANK	BLANK	BLANK	Pump
360 Pump	Single	AI	ORB	CW	1"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	AK	ORB	CW	BLANK	On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	AM	ORB	CW	BLANK	On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	AO	BSPP	CW	1.5"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	AP	BSPP	CW	1.25"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	AQ	BSPP	CW	1"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	AS	BSPP	CW	BLANK	On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	AT	BSPP	CW	BLANK	On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	BA	ORB	CCW	1.5"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	BD	SF	CCW	2"	Side Port On The Right	1.5"	Side Port On The Left	Pump
360 Pump	Single	BE	ORB	CCW	1.5"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	DB	SF	CW	2"	Side Port On The Left	1.5"	Side Port On The Right	Pump
360 Pump	Single	DE	SF	CW	2"	Side Port On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	DF	SF	CW	2"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	DG	SF	CW	1.5"	Side Port On The Left	1.5"	Side Port On The Right	Pump
360 Pump	Single	DI	SF	CW	1.5"	Side Port On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	DJ	SF	CW	1.5"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	DK	SF	CW	1.25"	Side Port On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	DL	SF	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	DM	SF	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	DN	SF	CCW	2"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	DQ	MSF	CW	2"	Side Port On The Left	1.5"	Side Port On The Right	Pump
360 Pump	Single	DR	MSF	CW	2"	Side Port On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	DS	MSF	CW	2"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	DT	MSF	CW	1.5"	Side Port On The Left	1.5"	Side Port On The Right	Pump
360 Pump	Single	DU	MSF	CW	1.5"	Side Port On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	DV	MSF	CW	1.5"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	DW	MSF	CW	1.25"	Side Port On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	DX	MSF	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	DY	MSF	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	EA	ORB	CW	1.5"	Side Port On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	EB	ORB	CW	1.5"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	ED	SF	CCW	2"	Side Port On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	EF	ORB	CW	1.25"	Side Port On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	EI	ORB	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	EK	ORB	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
360 Pump	Single	EM	BSPP	CW	1.5"	Side Port On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	EN	SF	CCW	1.5"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	EO	BSPP	CW	1.5"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	EQ	BSPP	CW	1.25"	Side Port On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	ER	BSPP	CW	1.25"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	ES	BSPP	CW	1"	Side Port On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	FA	ORB	CCW	1.25"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	FD	SF	CCW	2"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	FE	ORB	CCW	1.25"	Side Port On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	FN	SF	CCW	1.25"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	GD	SF	CCW	1.5"	Side Port On The Right	1.5"	Side Port On The Left	Pump
360 Pump	Single	HA	ORB	CCW	BLANK	BLANK	BLANK	BLANK	Pump
360 Pump	Single	IA	ORB	CCW	1"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	ID	SF	CCW	1.5"	Side Port On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	IE	ORB	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	IN	SF	CCW	1"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	JD	SF	CCW	1.5"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	KA	ORB	CCW	BLANK	On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	KD	SF	CCW	1.25"	Side Port On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	KE	ORB	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	KN	SF	CCW	BLANK	On The Right	1.5"	Side Port On The Left	Pump
360 Pump	Single	LD	SF	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	LN	SF	CCW	BLANK	On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	MA	ORB	CCW	BLANK	On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	MD	SF	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	ME	BSPP	CCW	1.5"	Side Port On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	MN	SF	CCW	BLANK	On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	ND	SF	CW	2"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	NE	SF	CW	1.5"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	NF	SF	CW	1.25"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	NI	SF	CW	1"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	NK	SF	CW	BLANK	On The Left	1.5"	Side Port On The Right	Pump
360 Pump	Single	NL	SF	CW	BLANK	On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	NM	SF	CW	BLANK	On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	NO	MSF	CW	2"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	NQ	MSF	CW	1.5"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	NR	MSF	CW	1.25"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	NS	MSF	CW	1"	Side Port On The Left	BLANK	On The Right	Pump
360 Pump	Single	NU	MSF	CW	BLANK	On The Left	1.5"	Side Port On The Right	Pump
360 Pump	Single	NV	MSF	CW	BLANK	On The Left	1.25"	Side Port On The Right	Pump
360 Pump	Single	NW	MSF	CW	BLANK	On The Left	1"	Side Port On The Right	Pump
360 Pump	Single	OA	BSPP	CCW	1.5"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	OE	BSPP	CCW	1.5"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	ON	MSF	CCW	2"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	PA	BSPP	CCW	1.25"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	QA	BSPP	CCW	1"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	QD	MSF	CCW	2"	Side Port On The Right	1.5"	Side Port On The Left	Pump
360 Pump	Single	QE	BSPP	CCW	1.25"	Side Port On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	QN	MSF	CCW	1.5"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	RD	MSF	CCW	2"	Side Port On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	RE	BSPP	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	RN	MSF	CCW	1.25"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	SA	BSPP	CCW	BLANK	On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	SD	MSF	CCW	2"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	SE	BSPP	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	SN	MSF	CCW	1"	Side Port On The Right	BLANK	On The Left	Pump
360 Pump	Single	TA	BSPP	CCW	BLANK	On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	TD	MSF	CCW	1.5"	Side Port On The Right	1.5"	Side Port On The Left	Pump
360 Pump	Single	UD	MSF	CCW	1.5"	Side Port On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	UN	MSF	CCW	BLANK	On The Right	1.5"	Side Port On The Left	Pump
360 Pump	Single	VD	MSF	CCW	1.5"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	VN	MSF	CCW	BLANK	On The Right	1.25"	Side Port On The Left	Pump

SERIES	TYPE	CODE	PORT	ROTATION	INLET SIZE	INLET LOCATION	OUTLET SIZE	OUTLET LOCATION	UNIT
360 Pump	Single	WD	MSF	CCW	1.25"	Side Port On The Right	1.25"	Side Port On The Left	Pump
360 Pump	Single	WN	MSF	CCW	BLANK	On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	XD	MSF	CCW	1.25"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single	YD	MSF	CCW	1"	Side Port On The Right	1"	Side Port On The Left	Pump
360 Pump	Single			CCW	BLANK	BLANK	BLANK	BLANK	Pump

APPENDIX B PERMCO BUSHING GEAR HOUSINGS

SERIES	UNIT	CODE	GEAR	HOUSING	SPECIAL NOTES
124	Motor	DA05	0.5"	.900"	NONE
124	Motor	DA07	0.75"	1.15"	NONE
124	Motor	DA10	1"	1.40"	NONE
124	Motor	DA12	1.25"	1.65	NONE
124	Motor	DA15	1.5"	1.90"	NONE
124	Motor	DA17	1.75"	2.15"	NONE
124	Motor	DA20	2"	2.40"	NONE
124	Pump	ZA02	0.25"	.650"	NONE
124	Pump	ZA03	0.375"	.775"	NONE
124	Pump	ZA04	0.4375"	.837"	NONE
124	Pump	ZA05	0.5"	.900"	NONE
124	Pump	ZA07	0.75"	1.15"	NONE
124	Pump	ZA08	0.875"	1.27"	NONE
124	Pump	ZA10	1"	1.40"	NONE
124	Pump	ZA11	1.125"	1.52"	NONE
124	Pump	ZA12	1.25"	1.65"	NONE
124	Pump	ZA13	1.375"	1.77"	NONE
124	Pump	ZA15	1.5"	1.90"	NONE
124	Pump	ZA16	1.625"	2.025"	NONE
124	Pump	ZA17	1.75"	2.15"	NONE
124	Pump	ZA20	2"	2.40"	NONE
197	Motor	DA05	0.5"	1.00"	NONE
197	Motor	DA07	0.75"	1.25"	NONE
197	Motor	DA10	1"	1.50"	NONE
197	Motor	DA12	1.25"	1.75"	NONE
197	Motor	DA15	1.5"	2.00"	NONE
197	Motor	DA17	1.75"	2.25"	NONE
197	Motor	DA20	2"	2.50"	NONE
197	Pump	ZA05	0.5"	1.00"	USED FOR BOTH ROTATIONS
197	Pump	ZA06	0.625"	1.125"	USED FOR BOTH ROTATIONS
197	Pump	ZA07	0.75"	1.25"	USED FOR BOTH ROTATIONS
197	Pump	ZA08	0.875"	1.375"	USED FOR BOTH ROTATIONS
197	Pump	ZA10	1"	1.50"	USED FOR BOTH ROTATIONS
197	Pump	ZA11	1.125"	1.625"	USED FOR BOTH ROTATIONS
197	Pump	ZA12	1.25"	1.750"	USED FOR BOTH ROTATIONS
197	Pump	ZA15	1.5"	2.00"	USED FOR BOTH ROTATIONS
197	Pump	ZA16	1.625"	2.125"	USED FOR BOTH ROTATIONS
197	Pump	ZA17	1.75"	2.25"	USED FOR BOTH ROTATIONS
197	Pump	ZA20	2"	2.50"	USED FOR BOTH ROTATIONS
257	Both	ZA05	0.5"	1.00"	NONE
257	Both	ZA07	0.75"	1.25"	NONE
257	Both	ZA10	1"	1.50"	NONE
257	Both	ZA12	1.25"	1.750"	NONE

SERIES	UNIT	CODE	GEAR	HOUSING	SPECIAL NOTES
257	Both	ZA13	1.375"	1.875"	NONE
257	Both	ZA15	1.5"	2.00"	NONE
257	Both	ZA17	1.75"	2.25"	NONE
257	Both	ZA20	2"	2.50"	NONE
257	Both	ZA22	2.25"	2.75"	NONE
257	Both	ZA25	2.5"	3.00"	NONE
257	Motor	ZA05	0.5"	1.00"	NONE
257	Motor	ZA07	0.75"	1.25"	NONE
257	Motor	ZA10	1"	1.50"	NONE
257	Motor	ZA12	1.25"	1.750"	NONE
257	Motor	ZA13	1.375"	1.875"	NONE
257	Motor	ZA15	1.5"	2.00"	NONE
257	Motor	ZA17	1.75"	2.25"	NONE
257	Motor	ZA20	2"	2.50"	NONE
257	Motor	ZA22	2.25"	2.75"	NONE
257	Motor	ZA25	2.5"	3.00"	NONE
360 Motor	Motor	DA05	0.5"	1.00"	NONE
360 Motor	Motor	DA07	0.75"	1.25"	NONE
360 Motor	Motor	DA10	1"	1.50"	NONE
360 Motor	Motor	DA12	1.25"	1.75"	NONE
360 Motor	Motor	DA15	1.5"	2.00"	NONE
360 Motor	Motor	DA17	1.75"	2.25"	NONE
360 Motor	Motor	DA20	2"	2.50"	NONE
360 Motor	Motor	DA22	2.25"	2.75"	NONE
360 Motor	Motor	DA25	2.5"	3.00"	NONE
360 Pump	Pump	ZA05	0.5"	1.00"	NONE
360 Pump	Pump	ZA07	0.75"	1.25"	NONE
360 Pump	Pump	ZA10	1"	1.50"	NONE
360 Pump	Pump	ZA12	1.25"	1.75"	NONE
360 Pump	Pump	ZA14	1.437"	1.940"	NONE
360 Pump	Pump	ZA15	1.5"	2.00"	NONE
360 Pump	Pump	ZA17	1.75"	2.25"	NONE
360 Pump	Pump	ZA18	1.875"	2.375"	NONE
360 Pump	Pump	ZA20	2"	2.50"	NONE
360 Pump	Pump	ZA21	2.125"	2.625"	NONE
360 Pump	Pump	ZA22	2.25"	2.75"	NONE
360 Pump	Pump	ZA25	2.5"	3.00"	NONE

APPENDIX C PERMCO BUSHING BEARING CARRIER

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
124	Dual Outlet	ORB	BQ	CCW	1"	0.875"	REAR	0.875"	FRONT
124	Dual Outlet	ORB	BR	CCW	1"	0.75"	REAR	1"	FRONT
124	Dual Outlet	ORB	BS	CCW	1"	0.75"	REAR	0.75"	FRONT
124	Dual Outlet	ORB	BU	CCW	1"	0.625"	REAR	0.75"	FRONT
124	Dual Outlet	ORB	BV	CCW	1"	0.5"	REAR	0.75"	FRONT
124	Dual Outlet	ORB	BW	CCW	1"	0.625"	REAR	0.625"	FRONT
124	Dual Outlet	ORB	BX	CCW	1"	0.5"	REAR	0.5"	FRONT
124	Dual Outlet	ORB	FI	CCW	1.5"	1"	REAR	1"	FRONT
124	Dual Outlet	ORB	FJ	CCW	1.5"	0.875"	REAR	1"	FRONT
124	Dual Outlet	ORB	FK	CCW	1.5"	0.875"	REAR	0.875"	FRONT
124	Dual Outlet	ORB	FL	CCW	1.5"	0.75"	REAR	1"	FRONT
124	Dual Outlet	ORB	FM	CCW	1.5"	0.75"	REAR	0.75"	FRONT
124	Dual Outlet	ORB	FO	CCW	1.25"	1"	REAR	1"	FRONT
124	Dual Outlet	ORB	FP	CCW	1.25"	0.875"	REAR	1"	FRONT
124	Dual Outlet	ORB	FQ	CCW	1.25"	0.875"	REAR	0.875"	FRONT
124	Dual Outlet	ORB	FR	CCW	1.25"	0.75"	REAR	1"	FRONT
124	Dual Outlet	ORB	FS	CCW	1.25"	0.75"	REAR	0.75"	FRONT
124	Dual Outlet	ORB	FT	CCW	1.25"	0.625"	REAR	0.75"	FRONT
124	Dual Outlet	ORB	FU	CCW	1.25"	0.5"	REAR	0.75"	FRONT
124	Dual Outlet	ORB	FV	CCW	1.25"	0.625"	REAR	0.625"	FRONT
124	Dual Outlet	ORB	FW	CCW	1.25"	0.5"	REAR	0.5"	FRONT
124	Dual Outlet	ORB	FX	CCW	1"	1"	REAR	1"	FRONT
124	Dual Outlet	ORB	FY	CCW	1"	0.875"	REAR	1"	FRONT
124	Dual Outlet	ORB	IF	CW	1.5"	1"	FRONT	1"	REAR
124	Dual Outlet	ORB	JF	CW	1.5"	1"	FRONT	0.875"	REAR
124	Dual Outlet	ORB	KF	CW	1.5"	0.875"	FRONT	0.875"	REAR
124	Dual Outlet	ORB	LF	CW	1.5"	1"	FRONT	0.75"	REAR
124	Dual Outlet	ORB	MF	CW	1.5"	0.75"	FRONT	0.75"	REAR
124	Dual Outlet	ORB	OF	CW	1.25"	1"	FRONT	1"	REAR
124	Dual Outlet	ORB	PF	CW	1.25"	1"	FRONT	0.875"	REAR
124	Dual Outlet	ORB	QB	CW	1"	0.875"	FRONT	0.875"	REAR
124	Dual Outlet	ORB	QF	CW	1.25"	0.875"	FRONT	0.875"	REAR
124	Dual Outlet	ORB	RB	CW	1"	1"	FRONT	0.75"	REAR
124	Dual Outlet	ORB	RF	CW	1.25"	1"	FRONT	0.75"	REAR
124	Dual Outlet	ORB	SB	CW	1"	0.75"	FRONT	0.75"	REAR
124	Dual Outlet	ORB	SF	CW	1.25"	0.75"	FRONT	0.75"	REAR
124	Dual Outlet	ORB	TF	CW	1.25"	0.75"	FRONT	0.625"	REAR
124	Dual Outlet	ORB	UB	CW	1"	0.75"	FRONT	0.625"	REAR
124	Dual Outlet	ORB	UF	CW	1.25"	0.75"	FRONT	0.5"	REAR
124	Dual Outlet	ORB	VB	CW	1"	0.75"	FRONT	0.5"	REAR
124	Dual Outlet	ORB	VF	CW	1.25"	0.625"	FRONT	0.625"	REAR
124	Dual Outlet	ORB	WB	CW	1"	0.625"	FRONT	0.625"	REAR
124	Dual Outlet	ORB	WF	CW	1.25"	0.5"	FRONT	0.5"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
124	Dual Outlet	ORB	XB	CW	1"	0.5"	FRONT	0.5"	REAR
124	Dual Outlet	ORB	XF	CW	1"	1"	FRONT	1"	REAR
124	Dual Outlet	ORB	YF	CW	1"	1"	FRONT	0.875"	REAR
124	Dual Outlet	SF	BZ	CW	1.25"	0.75"	FRONT	0.75"	REAR
124	Dual Outlet	SF	CZ	CW	1.25"	0.75"	FRONT	0.5"	REAR
124	Dual Outlet	SF	DZ	CW	1.25"	0.5"	FRONT	0.5"	REAR
124	Dual Outlet	SF	EZ	CW	1"	0.75"	FRONT	0.75"	REAR
124	Dual Outlet	SF	FZ	CW	1"	0.75"	FRONT	0.5"	REAR
124	Dual Outlet	SF	GZ	CW	1"	0.5"	FRONT	0.5"	REAR
124	Dual Outlet	SF	ZB	CCW	1.25"	0.75"	REAR	0.75"	FRONT
124	Dual Outlet	SF	ZC	CCW	1.25"	0.5"	REAR	0.75"	FRONT
124	Dual Outlet	SF	ZD	CCW	1.25"	0.5"	REAR	0.5"	FRONT
124	Dual Outlet	SF	ZE	CCW	1"	0.75"	REAR	0.75"	FRONT
124	Dual Outlet	SF	ZF	CCW	1"	0.5"	REAR	0.75"	FRONT
124	Dual Outlet	SF	ZG	CCW	1"	0.5"	REAR	0.5"	FRONT
124	Single Outlet	BLANK	B	CW	BLANK	BLANK	BLANK	BLANK	BLANK
124	Single Outlet	BLANK	C	CCW	BLANK	BLANK	BLANK	BLANK	BLANK
124	Single Outlet	BSPP	GN	CW	1.25"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	GO	CW	1"	1"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	GP	CW	1"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	GW	CW	1"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	GX	CW	1"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	GY	CW	0.75"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	JQ	CW	1.5"	1.5"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	JR	CW	1.5"	1.25"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	JS	CW	1.5"	1"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	JT	CW	1.5"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	JU	CW	1.5"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	JV	CW	1.25"	1.25"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	JW	CW	1.25"	1"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	JX	CW	1.25"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	JY	CW	1.25"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	LW	CW	0.75"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	NG	CCW	1.25"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	OG	CCW	1"	1"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	PG	CCW	1"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	QJ	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	RJ	CCW	1.5"	1.25"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	SJ	CCW	1.5"	1"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	TJ	CCW	1.5"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	UJ	CCW	1.5"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	VJ	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	WG	CCW	1"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	WJ	CCW	1.25"	1"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	WL	CCW	0.75"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	XG	CCW	1"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	XJ	CCW	1.25"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	BSPP	YG	CCW	0.75"	0.75"	FRONT	BLANK	BLANK

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
124	Single Outlet	BSPP	YJ	CCW	1.25"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	AJ	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	AL	CCW	1.25"	0.625"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	BJ	CCW	1.5"	1.25"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	EJ	CCW	1.5"	1"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	JA	CW	1.5"	1.5"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	JB	CW	1.5"	1.25"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	JE	CW	1.5"	1"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	JK	CW	1.5"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	JL	CW	1.5"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	JM	CW	1.25"	1.25"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	JN	CW	1.25"	1"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	JO	CW	1.25"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	JP	CW	1.25"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	KJ	CCW	1.5"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	KL	CCW	1.25"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LA	CW	1.25"	0.625"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LJ	CCW	1.5"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LK	CW	1.25"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LM	CW	1"	1"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LP	CW	1"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LQ	CW	1"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LR	CW	1"	0.625"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LS	CW	1"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LT	CW	0.75"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LU	CW	0.75"	0.625"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	LV	CW	0.75"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	MJ	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	ML	CCW	1"	1"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	NJ	CCW	1.25"	1"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	OJ	CCW	1.25"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	PJ	CCW	1.25"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	PL	CCW	1"	0.875"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	QL	CCW	1"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	RL	CCW	1"	0.625"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	SL	CCW	1"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	TL	CCW	0.75"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	UL	CCW	0.75"	0.625"	FRONT	BLANK	BLANK
124	Single Outlet	ORB	VL	CCW	0.75"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	SF	AG	CCW	1.25"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	SF	BG	CCW	1"	1"	FRONT	BLANK	BLANK
124	Single Outlet	SF	BI	CW	1.25"	1.25"	FRONT	BLANK	BLANK
124	Single Outlet	SF	BK	CW	1.25"	1"	FRONT	BLANK	BLANK
124	Single Outlet	SF	BL	CW	1.25"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	SF	EG	CCW	1"	0.75"	FRONT	BLANK	BLANK
124	Single Outlet	SF	GA	CW	1.25"	0.5"	FRONT	BLANK	BLANK
124	Single Outlet	SF	GB	CW	1"	1"	FRONT	BLANK	BLANK
124	Single Outlet	SF	GE	CW	1"	0.75"	FRONT	BLANK	BLANK

SERIES	TYPE	PORT CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
124	Single Outlet	SF	GK	CW	1"	0.5"	FRONT	BLANK
124	Single Outlet	SF	GL	CW	0.75"	0.75"	FRONT	BLANK
124	Single Outlet	SF	GM	CW	0.75"	0.5"	FRONT	BLANK
124	Single Outlet	SF	IB	CCW	1.25"	1.25"	FRONT	BLANK
124	Single Outlet	SF	KB	CCW	1.25"	1"	FRONT	BLANK
124	Single Outlet	SF	KG	CCW	1"	0.5"	FRONT	BLANK
124	Single Outlet	SF	LB	CCW	1.25"	0.75"	FRONT	BLANK
124	Single Outlet	SF	LG	CCW	0.75"	0.75"	FRONT	BLANK
124	Single Outlet	SF	MG	CCW	0.75"	0.5"	FRONT	BLANK
197	Combined Outlet	BSPP	IMG	CW	1"	0.75"	THRU	BLANK
197	Combined Outlet	BSPP	IMH	CW	1"	1"	THRU	BLANK
197	Combined Outlet	BSPP	JMG	CCW	1"	0.75"	THRU	BLANK
197	Combined Outlet	BSPP	JMH	CCW	1"	1"	THRU	BLANK
197	Combined Outlet	BSPP	KMG	CW	1.25"	0.75"	THRU	BLANK
197	Combined Outlet	BSPP	KMH	CW	1.25"	1"	THRU	BLANK
197	Combined Outlet	BSPP	KMI	CW	1.25"	1.25"	THRU	BLANK
197	Combined Outlet	BSPP	LMG	CCW	1.25"	0.75"	THRU	BLANK
197	Combined Outlet	BSPP	LMH	CCW	1.25"	1"	THRU	BLANK
197	Combined Outlet	BSPP	LMI	CCW	1.25"	1.25"	THRU	BLANK
197	Combined Outlet	BSPP	MMG	CW	1.5"	0.75"	THRU	BLANK
197	Combined Outlet	BSPP	MMH	CW	1.5"	1"	THRU	BLANK
197	Combined Outlet	BSPP	MMI	CW	1.5"	1.25"	THRU	BLANK
197	Combined Outlet	BSPP	MMJ	CW	1.5"	1.5"	THRU	BLANK
197	Combined Outlet	BSPP	NMG	CCW	1.5"	0.75"	THRU	BLANK
197	Combined Outlet	BSPP	NMH	CCW	1.5"	1"	THRU	BLANK
197	Combined Outlet	BSPP	NMI	CCW	1.5"	1.25"	THRU	BLANK
197	Combined Outlet	BSPP	NMJ	CCW	1.5"	1.5"	THRU	BLANK
197	Combined Outlet	ORB	QML	CW	1"	0.5"	THRU	BLANK
197	Combined Outlet	ORB	QMM	CW	1"	0.75"	THRU	BLANK
197	Combined Outlet	ORB	QMN	CW	1"	1"	THRU	BLANK
197	Combined Outlet	ORB	RML	CCW	1"	0.5"	THRU	BLANK
197	Combined Outlet	ORB	RMM	CCW	1"	0.75"	THRU	BLANK
197	Combined Outlet	ORB	RMN	CCW	1"	1"	THRU	BLANK
197	Combined Outlet	ORB	SML	CW	1.25"	0.5"	THRU	BLANK
197	Combined Outlet	ORB	SMM	CW	1.25"	0.75"	THRU	BLANK
197	Combined Outlet	ORB	SMN	CW	1.25"	1"	THRU	BLANK
197	Combined Outlet	ORB	SMQ	CW	1.25"	1.25"	THRU	BLANK
197	Combined Outlet	ORB	TML	CCW	1.25"	0.5"	THRU	BLANK
197	Combined Outlet	ORB	TMM	CCW	1.25"	0.75"	THRU	BLANK
197	Combined Outlet	ORB	TMN	CCW	1.25"	1"	THRU	BLANK
197	Combined Outlet	ORB	TMQ	CCW	1.25"	1.25"	THRU	BLANK
197	Combined Outlet	ORB	UML	CW	1.5"	0.5"	THRU	BLANK
197	Combined Outlet	ORB	UMM	CW	1.5"	0.75"	THRU	BLANK
197	Combined Outlet	ORB	UMN	CW	1.5"	1"	THRU	BLANK
197	Combined Outlet	ORB	UMQ	CW	1.5"	1.25"	THRU	BLANK
197	Combined Outlet	ORB	UMR	CW	1.5"	1.5"	THRU	BLANK
197	Combined Outlet	ORB	VML	CCW	1.5"	0.5"	THRU	BLANK
197	Combined Outlet	ORB	VMM	CCW	1.5"	0.75"	THRU	BLANK

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
197	Combined Outlet	ORB	VMN	CCW	1.5"	1"	THRU	BLANK	BLANK
197	Combined Outlet	ORB	VMQ	CCW	1.5"	1.25"	THRU	BLANK	BLANK
197	Combined Outlet	ORB	VMR	CCW	1.5"	1.5"	THRU	BLANK	BLANK
197	Combined Outlet	SF	AMA	CW	1"	0.75"	THRU	BLANK	BLANK
197	Combined Outlet	SF	AMB	CW	1"	1"	THRU	BLANK	BLANK
197	Combined Outlet	SF	BMA	CCW	1"	0.75"	THRU	BLANK	BLANK
197	Combined Outlet	SF	BMB	CCW	1"	1"	THRU	BLANK	BLANK
197	Combined Outlet	SF	CMA	CW	1.25"	0.75"	THRU	BLANK	BLANK
197	Combined Outlet	SF	CMB	CW	1.25"	1"	THRU	BLANK	BLANK
197	Combined Outlet	SF	CMC	CW	1.25"	1.25"	THRU	BLANK	BLANK
197	Combined Outlet	SF	DMA	CCW	1.25"	0.75"	THRU	BLANK	BLANK
197	Combined Outlet	SF	DMB	CCW	1.25"	1"	THRU	BLANK	BLANK
197	Combined Outlet	SF	DMC	CCW	1.25"	1.25"	THRU	BLANK	BLANK
197	Combined Outlet	SF	EMA	CW	1.5"	0.75"	THRU	BLANK	BLANK
197	Combined Outlet	SF	EMB	CW	1.5"	1"	THRU	BLANK	BLANK
197	Combined Outlet	SF	EMC	CW	1.5"	1.25"	THRU	BLANK	BLANK
197	Combined Outlet	SF	EMD	CW	1.5"	1.5"	THRU	BLANK	BLANK
197	Combined Outlet	SF	FMA	CCW	1.5"	0.75"	THRU	BLANK	BLANK
197	Combined Outlet	SF	FMB	CCW	1.5"	1"	THRU	BLANK	BLANK
197	Combined Outlet	SF	FMC	CCW	1.5"	1.25"	THRU	BLANK	BLANK
197	Combined Outlet	SF	FMD	CCW	1.5"	1.5"	THRU	BLANK	BLANK
197	Combined Outlet	SF	GMA	CW	2"	0.75"	THRU	BLANK	BLANK
197	Combined Outlet	SF	GMB	CW	2"	1"	THRU	BLANK	BLANK
197	Combined Outlet	SF	GMC	CW	2"	1.25"	THRU	BLANK	BLANK
197	Combined Outlet	SF	GMD	CW	2"	1.5"	THRU	BLANK	BLANK
197	Combined Outlet	SF	GME	CW	2"	2"	THRU	BLANK	BLANK
197	Combined Outlet	SF	HMA	CCW	2"	0.75"	THRU	BLANK	BLANK
197	Combined Outlet	SF	HMB	CCW	2"	1"	THRU	BLANK	BLANK
197	Combined Outlet	SF	HMC	CCW	2"	1.25"	THRU	BLANK	BLANK
197	Combined Outlet	SF	HMD	CCW	2"	1.5"	THRU	BLANK	BLANK
197	Combined Outlet	SF	HME	CCW	2"	2"	THRU	BLANK	BLANK
197	Dual Outlet	BSPP	IDA	CW	1"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	IDB	CW	1"	1"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	IDC	CW	1"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	IEA	CW	1"	0.75"	FRONT	1"	REAR
197	Dual Outlet	BSPP	IEB	CW	1"	1"	FRONT	1"	REAR
197	Dual Outlet	BSPP	IEC	CW	1"	1.25"	FRONT	1"	REAR
197	Dual Outlet	BSPP	IFA	CW	1"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	IFB	CW	1"	1"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	IFC	CW	1"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	JDA	CCW	1"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	JDB	CCW	1"	1"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	JDC	CCW	1"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	JEA	CCW	1"	0.75"	FRONT	1"	REAR
197	Dual Outlet	BSPP	JEB	CCW	1"	1"	FRONT	1"	REAR
197	Dual Outlet	BSPP	JEC	CCW	1"	1.25"	FRONT	1"	REAR
197	Dual Outlet	BSPP	JFA	CCW	1"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	JFB	CCW	1"	1"	FRONT	1.25"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
197	Dual Outlet	BSPP	JFC	CCW	1"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	KDA	CW	1.25"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	KDB	CW	1.25"	1"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	KDC	CW	1.25"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	KEA	CW	1.25"	0.75"	FRONT	1"	REAR
197	Dual Outlet	BSPP	KEB	CW	1.25"	1"	FRONT	1"	REAR
197	Dual Outlet	BSPP	KEC	CW	1.25"	1.25"	FRONT	1"	REAR
197	Dual Outlet	BSPP	KFA	CW	1.25"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	KFB	CW	1.25"	1"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	KFC	CW	1.25"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	LDA	CCW	1.25"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	LDB	CCW	1.25"	1"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	LDC	CCW	1.25"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	LEA	CCW	1.25"	0.75"	FRONT	1"	REAR
197	Dual Outlet	BSPP	LEB	CCW	1.25"	1"	FRONT	1"	REAR
197	Dual Outlet	BSPP	LEC	CCW	1.25"	1.25"	FRONT	1"	REAR
197	Dual Outlet	BSPP	LFA	CCW	1.25"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	LFB	CCW	1.25"	1"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	LFC	CCW	1.25"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	MDA	CW	1.5"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	MDB	CW	1.5"	1"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	MDC	CW	1.5"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	MEA	CW	1.5"	0.75"	FRONT	1"	REAR
197	Dual Outlet	BSPP	MEB	CW	1.5"	1"	FRONT	1"	REAR
197	Dual Outlet	BSPP	MEC	CW	1.5"	1.25"	FRONT	1"	REAR
197	Dual Outlet	BSPP	MFA	CW	1.5"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	MFB	CW	1.5"	1"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	MFC	CW	1.5"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	NDA	CCW	1.5"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	NDB	CCW	1.5"	1"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	NDC	CCW	1.5"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	BSPP	NEA	CCW	1.5"	0.75"	FRONT	1"	REAR
197	Dual Outlet	BSPP	NEB	CCW	1.5"	1"	FRONT	1"	REAR
197	Dual Outlet	BSPP	NEC	CCW	1.5"	1.25"	FRONT	1"	REAR
197	Dual Outlet	BSPP	NFA	CCW	1.5"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	NFB	CCW	1.5"	1"	FRONT	1.25"	REAR
197	Dual Outlet	BSPP	NFC	CCW	1.5"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	QHA	CW	1"	0.5"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	QHB	CW	1"	0.75"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	QHC	CW	1"	1"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	QHD	CW	1"	1.25"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	QJA	CW	1"	0.5"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	QJB	CW	1"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	QJC	CW	1"	1"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	QJD	CW	1"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	QKA	CW	1"	0.5"	FRONT	1"	REAR
197	Dual Outlet	ORB	QKB	CW	1"	0.75"	FRONT	1"	REAR
197	Dual Outlet	ORB	QKC	CW	1"	1"	FRONT	1"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
197	Dual Outlet	ORB	QKD	CW	1"	1.25"	FRONT	1"	REAR
197	Dual Outlet	ORB	QLA	CW	1"	0.5"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	QLB	CW	1"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	QLC	CW	1"	1"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	QLD	CW	1"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	RHA	CCW	1"	0.5"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	RHB	CCW	1"	0.75"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	RHC	CCW	1"	1"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	RHD	CCW	1"	1.25"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	RJA	CCW	1"	0.5"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	RJB	CCW	1"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	RJC	CCW	1"	1"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	RJD	CCW	1"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	RKA	CCW	1"	0.5"	FRONT	1"	REAR
197	Dual Outlet	ORB	RKB	CCW	1"	0.75"	FRONT	1"	REAR
197	Dual Outlet	ORB	RKC	CCW	1"	1"	FRONT	1"	REAR
197	Dual Outlet	ORB	RKD	CCW	1"	1.25"	FRONT	1"	REAR
197	Dual Outlet	ORB	RLA	CCW	1"	0.5"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	RLB	CCW	1"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	RLC	CCW	1"	1"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	RLD	CCW	1"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	SHA	CW	1.25"	0.5"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	SHB	CW	1.25"	0.75"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	SHC	CW	1.25"	1"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	SHD	CW	1.25"	1.25"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	SJA	CW	1.25"	0.5"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	SJB	CW	1.25"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	SJC	CW	1.25"	1"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	SJD	CW	1.25"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	SKA	CW	1.25"	0.5"	FRONT	1"	REAR
197	Dual Outlet	ORB	SKB	CW	1.25"	0.75"	FRONT	1"	REAR
197	Dual Outlet	ORB	SKC	CW	1.25"	1"	FRONT	1"	REAR
197	Dual Outlet	ORB	SKD	CW	1.25"	1.25"	FRONT	1"	REAR
197	Dual Outlet	ORB	SLA	CW	1.25"	0.5"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	SLB	CW	1.25"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	SLC	CW	1.25"	1"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	SLD	CW	1.25"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	THA	CCW	1.25"	0.5"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	THB	CCW	1.25"	0.75"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	THC	CCW	1.25"	1"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	THD	CCW	1.25"	1.25"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	TJA	CCW	1.25"	0.5"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	TJB	CCW	1.25"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	TJC	CCW	1.25"	1"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	TJD	CCW	1.25"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	TKA	CCW	1.25"	0.5"	FRONT	1"	REAR
197	Dual Outlet	ORB	TKB	CCW	1.25"	0.75"	FRONT	1"	REAR
197	Dual Outlet	ORB	TKC	CCW	1.25"	1"	FRONT	1"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
197	Dual Outlet	ORB	TKD	CCW	1.25"	1.25"	FRONT	1"	REAR
197	Dual Outlet	ORB	TLA	CCW	1.25"	0.5"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	TLB	CCW	1.25"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	TLC	CCW	1.25"	1"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	TLD	CCW	1.25"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	UHA	CW	1.5"	0.5"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	UHB	CW	1.5"	0.75"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	UHC	CW	1.5"	1"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	UHD	CW	1.5"	1.25"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	UJA	CW	1.5"	0.5"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	UJB	CW	1.5"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	UJC	CW	1.5"	1"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	UJD	CW	1.5"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	UKA	CW	1.5"	0.5"	FRONT	1"	REAR
197	Dual Outlet	ORB	UKB	CW	1.5"	0.75"	FRONT	1"	REAR
197	Dual Outlet	ORB	UKC	CW	1.5"	1"	FRONT	1"	REAR
197	Dual Outlet	ORB	UKD	CW	1.5"	1.25"	FRONT	1"	REAR
197	Dual Outlet	ORB	ULA	CW	1.5"	0.5"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	ULB	CW	1.5"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	ULC	CW	1.5"	1"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	ULD	CW	1.5"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	VHA	CCW	1.5"	0.5"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	VHB	CCW	1.5"	0.75"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	VHC	CCW	1.5"	1"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	VHD	CCW	1.5"	1.25"	FRONT	0.5"	REAR
197	Dual Outlet	ORB	VJA	CCW	1.5"	0.5"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	VJB	CCW	1.5"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	VJC	CCW	1.5"	1"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	VJD	CCW	1.5"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	ORB	VKA	CCW	1.5"	0.5"	FRONT	1"	REAR
197	Dual Outlet	ORB	VKB	CCW	1.5"	0.75"	FRONT	1"	REAR
197	Dual Outlet	ORB	VKC	CCW	1.5"	1"	FRONT	1"	REAR
197	Dual Outlet	ORB	VKD	CCW	1.5"	1.25"	FRONT	1"	REAR
197	Dual Outlet	ORB	VLA	CCW	1.5"	0.5"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	VLB	CCW	1.5"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	VLC	CCW	1.5"	1"	FRONT	1.25"	REAR
197	Dual Outlet	ORB	VLD	CCW	1.5"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	SF	AAA	CW	1"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	SF	AAB	CW	1"	1"	FRONT	0.75"	REAR
197	Dual Outlet	SF	AAC	CW	1"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	SF	ABA	CW	1"	0.75"	FRONT	1"	REAR
197	Dual Outlet	SF	ABB	CW	1"	1"	FRONT	1"	REAR
197	Dual Outlet	SF	ABC	CW	1"	1.25"	FRONT	1"	REAR
197	Dual Outlet	SF	ACA	CW	1"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	SF	ACB	CW	1"	1"	FRONT	1.25"	REAR
197	Dual Outlet	SF	ACC	CW	1"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	SF	BAA	CCW	1"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	SF	BAB	CCW	1"	1"	FRONT	0.75"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
197	Dual Outlet	SF	BAC	CCW	1"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	SF	BBA	CCW	1"	0.75"	FRONT	1"	REAR
197	Dual Outlet	SF	BBB	CCW	1"	1"	FRONT	1"	REAR
197	Dual Outlet	SF	BBC	CCW	1"	1.25"	FRONT	1"	REAR
197	Dual Outlet	SF	BCA	CCW	1"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	SF	BCB	CCW	1"	1"	FRONT	1.25"	REAR
197	Dual Outlet	SF	BCC	CCW	1"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	SF	CAA	CW	1.25"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	SF	CAB	CW	1.25"	1"	FRONT	0.75"	REAR
197	Dual Outlet	SF	CAC	CW	1.25"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	SF	CBA	CW	1.25"	0.75"	FRONT	1"	REAR
197	Dual Outlet	SF	CBB	CW	1.25"	1"	FRONT	1"	REAR
197	Dual Outlet	SF	CBC	CW	1.25"	1.25"	FRONT	1"	REAR
197	Dual Outlet	SF	CCA	CW	1.25"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	SF	CCB	CW	1.25"	1"	FRONT	1.25"	REAR
197	Dual Outlet	SF	CCC	CW	1.25"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	SF	DAA	CCW	1.25"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	SF	DAB	CCW	1.25"	1"	FRONT	0.75"	REAR
197	Dual Outlet	SF	DAC	CCW	1.25"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	SF	DBA	CCW	1.25"	0.75"	FRONT	1"	REAR
197	Dual Outlet	SF	DBB	CCW	1.25"	1"	FRONT	1"	REAR
197	Dual Outlet	SF	DBC	CCW	1.25"	1.25"	FRONT	1"	REAR
197	Dual Outlet	SF	DCA	CCW	1.25"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	SF	DCB	CCW	1.25"	1"	FRONT	1.25"	REAR
197	Dual Outlet	SF	DCC	CCW	1.25"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	SF	EAA	CW	1.5"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	SF	EAB	CW	1.5"	1"	FRONT	0.75"	REAR
197	Dual Outlet	SF	EAC	CW	1.5"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	SF	EBA	CW	1.5"	0.75"	FRONT	1"	REAR
197	Dual Outlet	SF	EBB	CW	1.5"	1"	FRONT	1"	REAR
197	Dual Outlet	SF	EBC	CW	1.5"	1.25"	FRONT	1"	REAR
197	Dual Outlet	SF	ECA	CW	1.5"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	SF	ECB	CW	1.5"	1"	FRONT	1.25"	REAR
197	Dual Outlet	SF	ECC	CW	1.5"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	SF	FAA	CCW	1.5"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	SF	FAB	CCW	1.5"	1"	FRONT	0.75"	REAR
197	Dual Outlet	SF	FAC	CCW	1.5"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	SF	FBA	CCW	1.5"	0.75"	FRONT	1"	REAR
197	Dual Outlet	SF	FBB	CCW	1.5"	1"	FRONT	1"	REAR
197	Dual Outlet	SF	FBC	CCW	1.5"	1.25"	FRONT	1"	REAR
197	Dual Outlet	SF	FCA	CCW	1.5"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	SF	FCB	CCW	1.5"	1"	FRONT	1.25"	REAR
197	Dual Outlet	SF	FCC	CCW	1.5"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	SF	GAA	CW	2"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	SF	GAB	CW	2"	1"	FRONT	0.75"	REAR
197	Dual Outlet	SF	GAC	CW	2"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	SF	GBA	CW	2"	0.75"	FRONT	1"	REAR
197	Dual Outlet	SF	GBB	CW	2"	1"	FRONT	1"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
197	Dual Outlet	SF	GBC	CW	2"	1.25"	FRONT	1"	REAR
197	Dual Outlet	SF	GCA	CW	2"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	SF	GCB	CW	2"	1"	FRONT	1.25"	REAR
197	Dual Outlet	SF	GCC	CW	2"	1.25"	FRONT	1.25"	REAR
197	Dual Outlet	SF	HAA	CCW	2"	0.75"	FRONT	0.75"	REAR
197	Dual Outlet	SF	HAB	CCW	2"	1"	FRONT	0.75"	REAR
197	Dual Outlet	SF	HAC	CCW	2"	1.25"	FRONT	0.75"	REAR
197	Dual Outlet	SF	HBA	CCW	2"	0.75"	FRONT	1"	REAR
197	Dual Outlet	SF	HBB	CCW	2"	1"	FRONT	1"	REAR
197	Dual Outlet	SF	HBC	CCW	2"	1.25"	FRONT	1"	REAR
197	Dual Outlet	SF	HCA	CCW	2"	0.75"	FRONT	1.25"	REAR
197	Dual Outlet	SF	HCB	CCW	2"	1"	FRONT	1.25"	REAR
197	Dual Outlet	SF	HCC	CCW	2"	1.25"	FRONT	1.25"	REAR
197	Single Outlet	BSPP	IGX	CW	1"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	IHX	CW	1"	1"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	IXG	CW	1"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	IXH	CW	1"	1"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	JGX	CCW	1"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	JHX	CCW	1"	1"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	JXG	CCW	1"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	JXH	CCW	1"	1"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	KGX	CW	1.25"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	KHX	CW	1.25"	1"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	KIX	CW	1.25"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	KXG	CW	1.25"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	KXH	CW	1.25"	1"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	KXI	CW	1.25"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	LGX	CCW	1.25"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	LHX	CCW	1.25"	1"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	LIX	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	LXG	CCW	1.25"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	LXH	CCW	1.25"	1"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	LXI	CCW	1.25"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	MGX	CW	1.5"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	MHX	CW	1.5"	1"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	MIX	CW	1.5"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	MJX	CW	1.5"	1.5"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	MXG	CW	1.5"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	MXH	CW	1.5"	1"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	MXI	CW	1.5"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	MXJ	CW	1.5"	1.5"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	NGX	CCW	1.5"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	NHX	CCW	1.5"	1"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	NIX	CCW	1.5"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	NJX	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
197	Single Outlet	BSPP	NXG	CCW	1.5"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	NXH	CCW	1.5"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	BSPP	NXI	CCW	1.5"	1.25"	REAR	BLANK	BLANK

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
197	Single Outlet	BSPP	NXJ	CCW	1.5"	1.5"	REAR	BLANK	BLANK
197	Single Outlet	ORB	QLX	CW	1"	0.5"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	QMX	CW	1"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	QNX	CW	1"	1"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	QXL	CW	1"	0.5"	REAR	BLANK	BLANK
197	Single Outlet	ORB	QXM	CW	1"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	ORB	QXN	CW	1"	1"	REAR	BLANK	BLANK
197	Single Outlet	ORB	RLX	CCW	1"	0.5"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	RMX	CCW	1"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	RNX	CCW	1"	1"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	RXL	CCW	1"	0.5"	REAR	BLANK	BLANK
197	Single Outlet	ORB	RXM	CCW	1"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	ORB	RXN	CCW	1"	1"	REAR	BLANK	BLANK
197	Single Outlet	ORB	SLX	CW	1.25"	0.5"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	SMX	CW	1.25"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	SNX	CW	1.25"	1"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	SQX	CW	1.25"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	SXL	CW	1.25"	0.5"	REAR	BLANK	BLANK
197	Single Outlet	ORB	SXM	CW	1.25"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	ORB	SXN	CW	1.25"	1"	REAR	BLANK	BLANK
197	Single Outlet	ORB	SXQ	CW	1.25"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	ORB	TLX	CCW	1.25"	0.5"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	TMX	CCW	1.25"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	TNX	CCW	1.25"	1"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	TQX	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	TXL	CCW	1.25"	0.5"	REAR	BLANK	BLANK
197	Single Outlet	ORB	TXM	CCW	1.25"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	ORB	TXN	CCW	1.25"	1"	REAR	BLANK	BLANK
197	Single Outlet	ORB	TXQ	CCW	1.25"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	ORB	ULX	CW	1.5"	0.5"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	UMX	CW	1.5"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	UNX	CW	1.5"	1"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	UQX	CW	1.5"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	URX	CW	1.5"	1.5"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	UXL	CW	1.5"	0.5"	REAR	BLANK	BLANK
197	Single Outlet	ORB	UXM	CW	1.5"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	ORB	UXN	CW	1.5"	1"	REAR	BLANK	BLANK
197	Single Outlet	ORB	UXQ	CW	1.5"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	ORB	UXR	CW	1.5"	1.5"	REAR	BLANK	BLANK
197	Single Outlet	ORB	VLX	CCW	1.5"	0.5"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	VMX	CCW	1.5"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	VNX	CCW	1.5"	1"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	VQW	CCW	1.5"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	VRX	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
197	Single Outlet	ORB	VXL	CCW	1.5"	0.5"	REAR	BLANK	BLANK
197	Single Outlet	ORB	VXM	CCW	1.5"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	ORB	VXN	CCW	1.5"	1"	REAR	BLANK	BLANK
197	Single Outlet	ORB	VXQ	CCW	1.5"	1.25"	REAR	BLANK	BLANK

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
197	Single Outlet	ORB	VXR	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
197	Single Outlet	SF	AAX	CW	1"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	SF	ABX	CW	1"	1"	FRONT	BLANK	BLANK
197	Single Outlet	SF	AXA	CW	1"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	SF	AXB	CW	1"	1"	REAR	BLANK	BLANK
197	Single Outlet	SF	BAX	CCW	1"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	SF	BBX	CCW	1"	1"	FRONT	BLANK	BLANK
197	Single Outlet	SF	BXA	CCW	1"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	SF	BXB	CCW	1"	1"	REAR	BLANK	BLANK
197	Single Outlet	SF	CAX	CW	1.25"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	SF	CBX	CW	1.25"	1"	FRONT	BLANK	BLANK
197	Single Outlet	SF	CCX	CW	1.25"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	SF	CXA	CW	1.25"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	SF	CXB	CW	1.25"	1"	REAR	BLANK	BLANK
197	Single Outlet	SF	CXC	CW	1.25"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	SF	DAX	CCW	1.25"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	SF	DBX	CCW	1.25"	1"	FRONT	BLANK	BLANK
197	Single Outlet	SF	DCX	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	SF	DXA	CCW	1.25"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	SF	DXB	CCW	1.25"	1"	REAR	BLANK	BLANK
197	Single Outlet	SF	DXC	CCW	1.25"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	SF	EAX	CW	1.5"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	SF	EBX	CW	1.5"	1"	FRONT	BLANK	BLANK
197	Single Outlet	SF	ECX	CW	1.5"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	SF	EDX	CW	1.5"	1.5"	FRONT	BLANK	BLANK
197	Single Outlet	SF	EXA	CW	1.5"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	SF	EXB	CW	1.5"	1"	REAR	BLANK	BLANK
197	Single Outlet	SF	EXC	CW	1.5"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	SF	EXD	CW	1.5"	1.5"	REAR	BLANK	BLANK
197	Single Outlet	SF	FAX	CCW	1.5"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	SF	FBX	CCW	1.5"	1"	FRONT	BLANK	BLANK
197	Single Outlet	SF	FCX	CCW	1.5"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	SF	FDX	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
197	Single Outlet	SF	FXA	CCW	1.5"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	SF	FXB	CCW	1.5"	1"	REAR	BLANK	BLANK
197	Single Outlet	SF	FXC	CCW	1.5"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	SF	FXD	CCW	1.5"	1.5"	REAR	BLANK	BLANK
197	Single Outlet	SF	GAX	CW	2"	0.75"	FRONT	BLANK	BLANK
197	Single Outlet	SF	GBX	CW	2"	1"	FRONT	BLANK	BLANK
197	Single Outlet	SF	GCX	CW	2"	1.25"	FRONT	BLANK	BLANK
197	Single Outlet	SF	GDX	CW	2"	1.5"	FRONT	BLANK	BLANK
197	Single Outlet	SF	GEX	CW	2"	2"	FRONT	BLANK	BLANK
197	Single Outlet	SF	GXA	CW	2"	0.75"	REAR	BLANK	BLANK
197	Single Outlet	SF	GXB	CW	2"	1"	REAR	BLANK	BLANK
197	Single Outlet	SF	GXC	CW	2"	1.25"	REAR	BLANK	BLANK
197	Single Outlet	SF	GXD	CW	2"	1.5"	REAR	BLANK	BLANK
197	Single Outlet	SF	GXE	CW	2"	2"	REAR	BLANK	BLANK
197	Single Outlet	SF	HAX	CCW	2"	0.75"	FRONT	BLANK	BLANK

SERIES	TYPE	PORT CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
197	Single Outlet	SF	HBX	CCW	2"	1"	FRONT	BLANK
197	Single Outlet	SF	HCX	CCW	2"	1.25"	FRONT	BLANK
197	Single Outlet	SF	HDX	CCW	2"	1.5"	FRONT	BLANK
197	Single Outlet	SF	HEX	CCW	2"	2"	FRONT	BLANK
197	Single Outlet	SF	HXA	CCW	2"	0.75"	REAR	BLANK
197	Single Outlet	SF	HXB	CCW	2"	1"	REAR	BLANK
197	Single Outlet	SF	HXC	CCW	2"	1.25"	REAR	BLANK
197	Single Outlet	SF	HXD	CCW	2"	1.5"	REAR	BLANK
197	Single Outlet	SF	HXE	CCW	2"	2"	REAR	BLANK
257	Combined Outlet	BSPP	IMG	CW	1"	0.75"	THRU	BLANK
257	Combined Outlet	BSPP	IMH	CW	1"	1"	THRU	BLANK
257	Combined Outlet	BSPP	JMG	CCW	1"	0.75"	THRU	BLANK
257	Combined Outlet	BSPP	JMH	CCW	1"	1"	THRU	BLANK
257	Combined Outlet	BSPP	KMG	CW	1.25"	0.75"	THRU	BLANK
257	Combined Outlet	BSPP	KMH	CW	1.25"	1"	THRU	BLANK
257	Combined Outlet	BSPP	KMI	CW	1.25"	1.25"	THRU	BLANK
257	Combined Outlet	BSPP	LMG	CCW	1.25"	0.75"	THRU	BLANK
257	Combined Outlet	BSPP	LMH	CCW	1.25"	1"	THRU	BLANK
257	Combined Outlet	BSPP	LMI	CCW	1.25"	1.25"	THRU	BLANK
257	Combined Outlet	BSPP	MMG	CW	1.5"	0.75"	THRU	BLANK
257	Combined Outlet	BSPP	MMH	CW	1.5"	1"	THRU	BLANK
257	Combined Outlet	BSPP	MMI	CW	1.5"	1.25"	THRU	BLANK
257	Combined Outlet	BSPP	MMJ	CW	1.5"	1.5"	THRU	BLANK
257	Combined Outlet	BSPP	NMG	CCW	1.5"	0.75"	THRU	BLANK
257	Combined Outlet	BSPP	NMH	CCW	1.5"	1"	THRU	BLANK
257	Combined Outlet	BSPP	NMI	CCW	1.5"	1.25"	THRU	BLANK
257	Combined Outlet	BSPP	NMJ	CCW	1.5"	1.5"	THRU	BLANK
257	Combined Outlet	ORB	QML	CW	1"	0.5"	THRU	BLANK
257	Combined Outlet	ORB	QMM	CW	1"	0.75"	THRU	BLANK
257	Combined Outlet	ORB	QMN	CW	1"	1"	THRU	BLANK
257	Combined Outlet	ORB	RML	CCW	1"	0.5"	THRU	BLANK
257	Combined Outlet	ORB	RMM	CCW	1"	0.75"	THRU	BLANK
257	Combined Outlet	ORB	RMN	CCW	1"	1"	THRU	BLANK
257	Combined Outlet	ORB	SML	CW	1.25"	0.5"	THRU	BLANK
257	Combined Outlet	ORB	SMM	CW	1.25"	0.75"	THRU	BLANK
257	Combined Outlet	ORB	SMN	CW	1.25"	1"	THRU	BLANK
257	Combined Outlet	ORB	SMQ	CW	1.25"	1.25"	THRU	BLANK
257	Combined Outlet	ORB	TML	CCW	1.25"	0.5"	THRU	BLANK
257	Combined Outlet	ORB	TMM	CCW	1.25"	0.75"	THRU	BLANK
257	Combined Outlet	ORB	TMN	CCW	1.25"	1"	THRU	BLANK
257	Combined Outlet	ORB	TMQ	CCW	1.25"	1.25"	THRU	BLANK
257	Combined Outlet	ORB	UML	CW	1.5"	0.5"	THRU	BLANK
257	Combined Outlet	ORB	UMM	CW	1.5"	0.75"	THRU	BLANK
257	Combined Outlet	ORB	UMN	CW	1.5"	1"	THRU	BLANK
257	Combined Outlet	ORB	UMQ	CW	1.5"	1.25"	THRU	BLANK
257	Combined Outlet	ORB	UMR	CW	1.5"	1.5"	THRU	BLANK
257	Combined Outlet	ORB	VML	CCW	1.5"	0.5"	THRU	BLANK
257	Combined Outlet	ORB	VMM	CCW	1.5"	0.75"	THRU	BLANK

SERIES	TYPE	PORT CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Combined Outlet	ORB	VMN	CCW	1.5"	1"	THRU	BLANK
257	Combined Outlet	ORB	VMQ	CCW	1.5"	1.25"	THRU	BLANK
257	Combined Outlet	ORB	VMR	CCW	1.5"	1.5"	THRU	BLANK
257	Combined Outlet	ORB	WML	CW	2"	0.5"	THRU	BLANK
257	Combined Outlet	ORB	WMM	CW	2"	0.75"	THRU	BLANK
257	Combined Outlet	ORB	WMN	CW	2"	1"	THRU	BLANK
257	Combined Outlet	ORB	WMQ	CW	2"	1.25"	THRU	BLANK
257	Combined Outlet	ORB	WMR	CW	2"	1.5"	THRU	BLANK
257	Combined Outlet	ORB	WMS	CW	2"	2"	THRU	BLANK
257	Combined Outlet	ORB	XML	CCW	2"	0.5"	THRU	BLANK
257	Combined Outlet	ORB	XMM	CCW	2"	0.75"	THRU	BLANK
257	Combined Outlet	ORB	XMN	CCW	2"	1"	THRU	BLANK
257	Combined Outlet	ORB	XMQ	CCW	2"	1.25"	THRU	BLANK
257	Combined Outlet	ORB	XMR	CCW	2"	1.5"	THRU	BLANK
257	Combined Outlet	ORB	XMS	CCW	2"	2"	THRU	BLANK
257	Combined Outlet	SF	AMA	CW	1"	0.75"	THRU	BLANK
257	Combined Outlet	SF	AMB	CW	1"	1"	THRU	BLANK
257	Combined Outlet	SF	BMA	CCW	1"	0.75"	THRU	BLANK
257	Combined Outlet	SF	BMB	CCW	1"	1"	THRU	BLANK
257	Combined Outlet	SF	CMA	CW	1.25"	0.75"	THRU	BLANK
257	Combined Outlet	SF	CMB	CW	1.25"	1"	THRU	BLANK
257	Combined Outlet	SF	CMC	CW	1.25"	1.25"	THRU	BLANK
257	Combined Outlet	SF	DMA	CCW	1.25"	0.75"	THRU	BLANK
257	Combined Outlet	SF	DMB	CCW	1.25"	1"	THRU	BLANK
257	Combined Outlet	SF	DMC	CCW	1.25"	1.25"	THRU	BLANK
257	Combined Outlet	SF	EMA	CW	1.5"	0.75"	THRU	BLANK
257	Combined Outlet	SF	EMB	CW	1.5"	1"	THRU	BLANK
257	Combined Outlet	SF	EMC	CW	1.5"	1.25"	THRU	BLANK
257	Combined Outlet	SF	EMD	CW	1.5"	1.5"	THRU	BLANK
257	Combined Outlet	SF	FMA	CCW	1.5"	0.75"	THRU	BLANK
257	Combined Outlet	SF	FMB	CCW	1.5"	1"	THRU	BLANK
257	Combined Outlet	SF	FMC	CCW	1.5"	1.25"	THRU	BLANK
257	Combined Outlet	SF	FMD	CCW	1.5"	1.5"	THRU	BLANK
257	Combined Outlet	SF	GMA	CW	2"	0.75"	THRU	BLANK
257	Combined Outlet	SF	GMB	CW	2"	1"	THRU	BLANK
257	Combined Outlet	SF	GMC	CW	2"	1.25"	THRU	BLANK
257	Combined Outlet	SF	GMD	CW	2"	1.5"	THRU	BLANK
257	Combined Outlet	SF	GME	CW	2"	2"	THRU	BLANK
257	Combined Outlet	SF	HMA	CCW	2"	0.75"	THRU	BLANK
257	Combined Outlet	SF	HMB	CCW	2"	1"	THRU	BLANK
257	Combined Outlet	SF	HMC	CCW	2"	1.25"	THRU	BLANK
257	Combined Outlet	SF	HMD	CCW	2"	1.5"	THRU	BLANK
257	Combined Outlet	SF	HME	CCW	2"	2"	THRU	BLANK
257	Combined Outlet	SF	YMA	CW	2.5"	0.75"	THRU	BLANK
257	Combined Outlet	SF	YMB	CW	2.5"	1"	THRU	BLANK
257	Combined Outlet	SF	YMC	CW	2.5"	1.25"	THRU	BLANK
257	Combined Outlet	SF	YMD	CW	2.5"	1.5"	THRU	BLANK
257	Combined Outlet	SF	YME	CW	2.5"	2"	THRU	BLANK

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Combined Outlet	SF	YMF	CW	2.5"	2.5"	THRU	BLANK	BLANK
257	Combined Outlet	SF	ZMA	CCW	2.5"	0.75"	THRU	BLANK	BLANK
257	Combined Outlet	SF	ZMB	CCW	2.5"	1"	THRU	BLANK	BLANK
257	Combined Outlet	SF	ZMC	CCW	2.5"	1.25"	THRU	BLANK	BLANK
257	Combined Outlet	SF	ZMD	CCW	2.5"	1.5"	THRU	BLANK	BLANK
257	Combined Outlet	SF	ZME	CCW	2.5"	2"	THRU	BLANK	BLANK
257	Combined Outlet	SF	ZMF	CCW	2.5"	2.5"	THRU	BLANK	BLANK
257	Dual Outlet	BSPP	IDA	CW	1"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	IDB	CW	1"	1"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	IDC	CW	1"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	IEA	CW	1"	0.75"	FRONT	1"	REAR
257	Dual Outlet	BSPP	IEB	CW	1"	1"	FRONT	1"	REAR
257	Dual Outlet	BSPP	IEC	CW	1"	1.25"	FRONT	1"	REAR
257	Dual Outlet	BSPP	IFA	CW	1"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	IFB	CW	1"	1"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	IFC	CW	1"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	JDA	CCW	1"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	JDB	CCW	1"	1"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	JDC	CCW	1"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	JEA	CCW	1"	0.75"	FRONT	1"	REAR
257	Dual Outlet	BSPP	JEB	CCW	1"	1"	FRONT	1"	REAR
257	Dual Outlet	BSPP	JEC	CCW	1"	1.25"	FRONT	1"	REAR
257	Dual Outlet	BSPP	JFA	CCW	1"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	JFB	CCW	1"	1"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	JFC	CCW	1"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	KDA	CW	1.25"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	KDB	CW	1.25"	1"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	KDC	CW	1.25"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	KEA	CW	1.25"	0.75"	FRONT	1"	REAR
257	Dual Outlet	BSPP	KEB	CW	1.25"	1"	FRONT	1"	REAR
257	Dual Outlet	BSPP	KEC	CW	1.25"	1.25"	FRONT	1"	REAR
257	Dual Outlet	BSPP	KFA	CW	1.25"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	KFB	CW	1.25"	1"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	KFC	CW	1.25"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	LDA	CCW	1.25"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	LDB	CCW	1.25"	1"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	LDC	CCW	1.25"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	LEA	CCW	1.25"	0.75"	FRONT	1"	REAR
257	Dual Outlet	BSPP	LEB	CCW	1.25"	1"	FRONT	1"	REAR
257	Dual Outlet	BSPP	LEC	CCW	1.25"	1.25"	FRONT	1"	REAR
257	Dual Outlet	BSPP	LFA	CCW	1.25"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	LFB	CCW	1.25"	1"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	LFC	CCW	1.25"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	MDA	CW	1.5"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	MDB	CW	1.5"	1"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	MDC	CW	1.5"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	MEA	CW	1.5"	0.75"	FRONT	1"	REAR
257	Dual Outlet	BSPP	MEB	CW	1.5"	1"	FRONT	1"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Dual Outlet	BSPP	MEC	CW	1.5"	1.25"	FRONT	1"	REAR
257	Dual Outlet	BSPP	MFA	CW	1.5"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	MFB	CW	1.5"	1"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	MFC	CW	1.5"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	NDA	CCW	1.5"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	NDB	CCW	1.5"	1"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	NDC	CCW	1.5"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	BSPP	NEA	CCW	1.5"	0.75"	FRONT	1"	REAR
257	Dual Outlet	BSPP	NEB	CCW	1.5"	1"	FRONT	1"	REAR
257	Dual Outlet	BSPP	NEC	CCW	1.5"	1.25"	FRONT	1"	REAR
257	Dual Outlet	BSPP	NFA	CCW	1.5"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	NFB	CCW	1.5"	1"	FRONT	1.25"	REAR
257	Dual Outlet	BSPP	NFC	CCW	1.5"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	QHA	CW	1"	0.5"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	QHB	CW	1"	0.75"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	QHC	CW	1"	1"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	QHD	CW	1"	1.25"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	QJA	CW	1"	0.5"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	QJB	CW	1"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	QJC	CW	1"	1"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	QJD	CW	1"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	QKA	CW	1"	0.5"	FRONT	1"	REAR
257	Dual Outlet	ORB	QKB	CW	1"	0.75"	FRONT	1"	REAR
257	Dual Outlet	ORB	QKC	CW	1"	1"	FRONT	1"	REAR
257	Dual Outlet	ORB	QKD	CW	1"	1.25"	FRONT	1"	REAR
257	Dual Outlet	ORB	QLA	CW	1"	0.5"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	QLB	CW	1"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	QLC	CW	1"	1"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	QLD	CW	1"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	RHA	CCW	1"	0.5"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	RHB	CCW	1"	0.75"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	RHC	CCW	1"	1"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	RHD	CCW	1"	1.25"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	RJA	CCW	1"	0.5"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	RJB	CCW	1"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	RJC	CCW	1"	1"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	RJD	CCW	1"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	RKA	CCW	1"	0.5"	FRONT	1"	REAR
257	Dual Outlet	ORB	RKB	CCW	1"	0.75"	FRONT	1"	REAR
257	Dual Outlet	ORB	RKC	CCW	1"	1"	FRONT	1"	REAR
257	Dual Outlet	ORB	RKD	CCW	1"	1.25"	FRONT	1"	REAR
257	Dual Outlet	ORB	RLA	CCW	1"	0.5"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	RLB	CCW	1"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	RLC	CCW	1"	1"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	RLD	CCW	1"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	SHA	CW	1.25"	0.5"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	SHB	CW	1.25"	0.75"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	SHC	CW	1.25"	1"	FRONT	0.5"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Dual Outlet	ORB	SHD	CW	1.25"	1.25"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	SJA	CW	1.25"	0.5"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	SJB	CW	1.25"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	SJC	CW	1.25"	1"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	SJD	CW	1.25"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	SKA	CW	1.25"	0.5"	FRONT	1"	REAR
257	Dual Outlet	ORB	SKB	CW	1.25"	0.75"	FRONT	1"	REAR
257	Dual Outlet	ORB	SKC	CW	1.25"	1"	FRONT	1"	REAR
257	Dual Outlet	ORB	SKD	CW	1.25"	1.25"	FRONT	1"	REAR
257	Dual Outlet	ORB	SLA	CW	1.25"	0.5"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	SLB	CW	1.25"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	SLC	CW	1.25"	1"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	SLD	CW	1.25"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	THA	CCW	1.25"	0.5"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	THB	CCW	1.25"	0.75"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	THC	CCW	1.25"	1"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	THD	CCW	1.25"	1.25"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	TJA	CCW	1.25"	0.5"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	TJB	CCW	1.25"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	TJC	CCW	1.25"	1"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	TJD	CCW	1.25"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	TKA	CCW	1.25"	0.5"	FRONT	1"	REAR
257	Dual Outlet	ORB	TKB	CCW	1.25"	0.75"	FRONT	1"	REAR
257	Dual Outlet	ORB	TKC	CCW	1.25"	1"	FRONT	1"	REAR
257	Dual Outlet	ORB	TKD	CCW	1.25"	1.25"	FRONT	1"	REAR
257	Dual Outlet	ORB	TLA	CCW	1.25"	0.5"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	TLB	CCW	1.25"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	TLC	CCW	1.25"	1"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	TLD	CCW	1.25"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	UHA	CW	1.5"	0.5"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	UHB	CW	1.5"	0.75"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	UHC	CW	1.5"	1"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	UHD	CW	1.5"	1.25"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	UJA	CW	1.5"	0.5"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	UJB	CW	1.5"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	UJC	CW	1.5"	1"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	UJD	CW	1.5"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	UKA	CW	1.5"	0.5"	FRONT	1"	REAR
257	Dual Outlet	ORB	UKB	CW	1.5"	0.75"	FRONT	1"	REAR
257	Dual Outlet	ORB	UKC	CW	1.5"	1"	FRONT	1"	REAR
257	Dual Outlet	ORB	UKD	CW	1.5"	1.25"	FRONT	1"	REAR
257	Dual Outlet	ORB	ULA	CW	1.5"	0.5"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	ULB	CW	1.5"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	ULC	CW	1.5"	1"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	ULD	CW	1.5"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	VHA	CCW	1.5"	0.5"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	VHB	CCW	1.5"	0.75"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	VHC	CCW	1.5"	1"	FRONT	0.5"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Dual Outlet	ORB	VHD	CCW	1.5"	1.25"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	VJA	CCW	1.5"	0.5"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	VJB	CCW	1.5"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	VJC	CCW	1.5"	1"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	VJD	CCW	1.5"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	VKA	CCW	1.5"	0.5"	FRONT	1"	REAR
257	Dual Outlet	ORB	VKB	CCW	1.5"	0.75"	FRONT	1"	REAR
257	Dual Outlet	ORB	VKC	CCW	1.5"	1"	FRONT	1"	REAR
257	Dual Outlet	ORB	VKD	CCW	1.5"	1.25"	FRONT	1"	REAR
257	Dual Outlet	ORB	VLA	CCW	1.5"	0.5"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	VLB	CCW	1.5"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	VLC	CCW	1.5"	1"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	VLD	CCW	1.5"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	WHA	CW	2"	0.5"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	WHB	CW	2"	0.75"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	WHC	CW	2"	1"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	WHD	CW	2"	1.25"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	WJA	CW	2"	0.5"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	WJB	CW	2"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	WJC	CW	2"	1"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	WJD	CW	2"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	WKA	CW	2"	0.5"	FRONT	1"	REAR
257	Dual Outlet	ORB	WKB	CW	2"	0.75"	FRONT	1"	REAR
257	Dual Outlet	ORB	WKC	CW	2"	1"	FRONT	1"	REAR
257	Dual Outlet	ORB	WKD	CW	2"	1.25"	FRONT	1"	REAR
257	Dual Outlet	ORB	WLA	CW	2"	0.5"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	WLB	CW	2"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	WLC	CW	2"	1"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	WLD	CW	2"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	XHA	CCW	2"	0.5"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	XHB	CCW	2"	0.75"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	XHC	CCW	2"	1"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	XHD	CCW	2"	1.25"	FRONT	0.5"	REAR
257	Dual Outlet	ORB	XJA	CCW	2"	0.5"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	XJB	CCW	2"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	XJC	CCW	2"	1"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	XJD	CCW	2"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	ORB	XKA	CCW	2"	0.5"	FRONT	1"	REAR
257	Dual Outlet	ORB	XKB	CCW	2"	0.75"	FRONT	1"	REAR
257	Dual Outlet	ORB	XKC	CCW	2"	1"	FRONT	1"	REAR
257	Dual Outlet	ORB	XKD	CCW	2"	1.25"	FRONT	1"	REAR
257	Dual Outlet	ORB	XLA	CCW	2"	0.5"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	XLB	CCW	2"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	XLC	CCW	2"	1"	FRONT	1.25"	REAR
257	Dual Outlet	ORB	XLD	CCW	2"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	SF	AAA	CW	1"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	SF	AAB	CW	1"	1"	FRONT	0.75"	REAR
257	Dual Outlet	SF	AAC	CW	1"	1.25"	FRONT	0.75"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Dual Outlet	SF	ABA	CW	1"	0.75"	FRONT	1"	REAR
257	Dual Outlet	SF	ABB	CW	1"	1"	FRONT	1"	REAR
257	Dual Outlet	SF	ABC	CW	1"	1.25"	FRONT	1"	REAR
257	Dual Outlet	SF	ACA	CW	1"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	SF	ACB	CW	1"	1"	FRONT	1.25"	REAR
257	Dual Outlet	SF	ACC	CW	1"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	SF	BAA	CCW	1"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	SF	BAB	CCW	1"	1"	FRONT	0.75"	REAR
257	Dual Outlet	SF	BAC	CCW	1"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	SF	BBA	CCW	1"	0.75"	FRONT	1"	REAR
257	Dual Outlet	SF	BBB	CCW	1"	1"	FRONT	1"	REAR
257	Dual Outlet	SF	BBC	CCW	1"	1.25"	FRONT	1"	REAR
257	Dual Outlet	SF	BCA	CCW	1"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	SF	BCB	CCW	1"	1"	FRONT	1.25"	REAR
257	Dual Outlet	SF	BCC	CCW	1"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	SF	CAA	CW	1.25"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	SF	CAB	CW	1.25"	1"	FRONT	0.75"	REAR
257	Dual Outlet	SF	CAC	CW	1.25"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	SF	CBA	CW	1.25"	0.75"	FRONT	1"	REAR
257	Dual Outlet	SF	CBB	CW	1.25"	1"	FRONT	1"	REAR
257	Dual Outlet	SF	CBC	CW	1.25"	1.25"	FRONT	1"	REAR
257	Dual Outlet	SF	CCA	CW	1.25"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	SF	CCB	CW	1.25"	1"	FRONT	1.25"	REAR
257	Dual Outlet	SF	CCC	CW	1.25"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	SF	DAA	CCW	1.25"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	SF	DAB	CCW	1.25"	1"	FRONT	0.75"	REAR
257	Dual Outlet	SF	DAC	CCW	1.25"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	SF	DBA	CCW	1.25"	0.75"	FRONT	1"	REAR
257	Dual Outlet	SF	DBB	CCW	1.25"	1"	FRONT	1"	REAR
257	Dual Outlet	SF	DBC	CCW	1.25"	1.25"	FRONT	1"	REAR
257	Dual Outlet	SF	DCA	CCW	1.25"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	SF	DCB	CCW	1.25"	1"	FRONT	1.25"	REAR
257	Dual Outlet	SF	DCC	CCW	1.25"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	SF	EAA	CW	1.5"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	SF	EAB	CW	1.5"	1"	FRONT	0.75"	REAR
257	Dual Outlet	SF	EAC	CW	1.5"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	SF	EBA	CW	1.5"	0.75"	FRONT	1"	REAR
257	Dual Outlet	SF	EBB	CW	1.5"	1"	FRONT	1"	REAR
257	Dual Outlet	SF	EBC	CW	1.5"	1.25"	FRONT	1"	REAR
257	Dual Outlet	SF	ECA	CW	1.5"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	SF	ECB	CW	1.5"	1"	FRONT	1.25"	REAR
257	Dual Outlet	SF	ECC	CW	1.5"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	SF	FAA	CCW	1.5"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	SF	FAB	CCW	1.5"	1"	FRONT	0.75"	REAR
257	Dual Outlet	SF	FAC	CCW	1.5"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	SF	FBA	CCW	1.5"	0.75"	FRONT	1"	REAR
257	Dual Outlet	SF	FBB	CCW	1.5"	1"	FRONT	1"	REAR
257	Dual Outlet	SF	FBC	CCW	1.5"	1.25"	FRONT	1"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Dual Outlet	SF	FCA	CCW	1.5"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	SF	FCB	CCW	1.5"	1"	FRONT	1.25"	REAR
257	Dual Outlet	SF	FCC	CCW	1.5"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	SF	GAA	CW	2"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	SF	GAB	CW	2"	1"	FRONT	0.75"	REAR
257	Dual Outlet	SF	GAC	CW	2"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	SF	GBA	CW	2"	0.75"	FRONT	1"	REAR
257	Dual Outlet	SF	GBB	CW	2"	1"	FRONT	1"	REAR
257	Dual Outlet	SF	GBC	CW	2"	1.25"	FRONT	1"	REAR
257	Dual Outlet	SF	GCA	CW	2"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	SF	GCB	CW	2"	1"	FRONT	1.25"	REAR
257	Dual Outlet	SF	GCC	CW	2"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	SF	HAA	CCW	2"	0.75"	FRONT	0.75"	REAR
257	Dual Outlet	SF	HAB	CCW	2"	1"	FRONT	0.75"	REAR
257	Dual Outlet	SF	HAC	CCW	2"	1.25"	FRONT	0.75"	REAR
257	Dual Outlet	SF	HBA	CCW	2"	0.75"	FRONT	1"	REAR
257	Dual Outlet	SF	HBB	CCW	2"	1"	FRONT	1"	REAR
257	Dual Outlet	SF	HBC	CCW	2"	1.25"	FRONT	1"	REAR
257	Dual Outlet	SF	HCA	CCW	2"	0.75"	FRONT	1.25"	REAR
257	Dual Outlet	SF	HCB	CCW	2"	1"	FRONT	1.25"	REAR
257	Dual Outlet	SF	HCC	CCW	2"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	SF	YCC	CW	2.5"	1.25"	FRONT	1.25"	REAR
257	Dual Outlet	SF	ZCC	CCW	2.5"	1.25"	FRONT	1.25"	REAR
257	Single Outlet	BSPP	IGX	CW	1"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	IHX	CW	1"	1"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	IXG	CW	1"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	IXH	CW	1"	1"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	JGX	CCW	1"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	JHX	CCW	1"	1"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	JXG	CCW	1"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	JXH	CCW	1"	1"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	KGX	CW	1.25"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	KHX	CW	1.25"	1"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	KIX	CW	1.25"	1.25"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	KXG	CW	1.25"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	KXH	CW	1.25"	1"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	KXI	CW	1.25"	1.25"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	LGX	CCW	1.25"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	LHX	CCW	1.25"	1"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	LIX	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	LXG	CCW	1.25"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	LXH	CCW	1.25"	1"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	LXI	CCW	1.25"	1.25"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	MGX	CW	1.5"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	MHX	CW	1.5"	1"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	MIX	CW	1.5"	1.25"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	MJX	CW	1.5"	1.5"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	MXG	CW	1.5"	0.75"	REAR	BLANK	BLANK

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Single Outlet	BSPP	MXH	CW	1.5"	1"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	MXI	CW	1.5"	1.25"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	MXJ	CW	1.5"	1.5"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	NGX	CCW	1.5"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	NHX	CCW	1.5"	1"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	NIX	CCW	1.5"	1.25"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	NJX	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
257	Single Outlet	BSPP	NXG	CCW	1.5"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	NXH	CCW	1.5"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	NXI	CCW	1.5"	1.25"	REAR	BLANK	BLANK
257	Single Outlet	BSPP	NXJ	CCW	1.5"	1.5"	REAR	BLANK	BLANK
257	Single Outlet	ORB	QLX	CW	1"	0.5"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	QMX	CW	1"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	QNX	CW	1"	1"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	QXL	CW	1"	0.5"	REAR	BLANK	BLANK
257	Single Outlet	ORB	QXM	CW	1"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	ORB	QXN	CW	1"	1"	REAR	BLANK	BLANK
257	Single Outlet	ORB	RLX	CCW	1"	0.5"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	RMX	CCW	1"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	RNX	CCW	1"	1"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	RXL	CCW	1"	0.5"	REAR	BLANK	BLANK
257	Single Outlet	ORB	RXM	CCW	1"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	ORB	RXN	CCW	1"	1"	REAR	BLANK	BLANK
257	Single Outlet	ORB	SLX	CW	1.25"	0.5"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	SMX	CW	1.25"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	SNX	CW	1.25"	1"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	SQX	CW	1.25"	1.25"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	SXL	CW	1.25"	0.5"	REAR	BLANK	BLANK
257	Single Outlet	ORB	SXM	CW	1.25"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	ORB	SXN	CW	1.25"	1"	REAR	BLANK	BLANK
257	Single Outlet	ORB	SXQ	CW	1.25"	1.25"	REAR	BLANK	BLANK
257	Single Outlet	ORB	TLX	CCW	1.25"	0.5"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	TMX	CCW	1.25"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	TNX	CCW	1.25"	1"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	TQX	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	TXL	CCW	1.25"	0.5"	REAR	BLANK	BLANK
257	Single Outlet	ORB	TXM	CCW	1.25"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	ORB	TXN	CCW	1.25"	1"	REAR	BLANK	BLANK
257	Single Outlet	ORB	TXQ	CCW	1.25"	1.25"	REAR	BLANK	BLANK
257	Single Outlet	ORB	ULX	CW	1.5"	0.5"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	UMX	CW	1.5"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	UNX	CW	1.5"	1"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	UQX	CW	1.5"	1.25"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	URX	CW	1.5"	1.5"	FRONT	BLANK	BLANK
257	Single Outlet	ORB	UXL	CW	1.5"	0.5"	REAR	BLANK	BLANK
257	Single Outlet	ORB	UXM	CW	1.5"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	ORB	UXN	CW	1.5"	1"	REAR	BLANK	BLANK
257	Single Outlet	ORB	UXQ	CW	1.5"	1.25"	REAR	BLANK	BLANK

SERIES	TYPE	PORT CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Single Outlet	ORB	UXR	CW	1.5"	1.5"	REAR	BLANK
257	Single Outlet	ORB	VLX	CCW	1.5"	0.5"	FRONT	BLANK
257	Single Outlet	ORB	VMX	CCW	1.5"	0.75"	FRONT	BLANK
257	Single Outlet	ORB	VNX	CCW	1.5"	1"	FRONT	BLANK
257	Single Outlet	ORB	VQX	CCW	1.5"	1.25"	FRONT	BLANK
257	Single Outlet	ORB	VRX	CCW	1.5"	1.5"	FRONT	BLANK
257	Single Outlet	ORB	VXL	CCW	1.5"	0.5"	REAR	BLANK
257	Single Outlet	ORB	VXM	CCW	1.5"	0.75"	REAR	BLANK
257	Single Outlet	ORB	VXN	CCW	1.5"	1"	REAR	BLANK
257	Single Outlet	ORB	VXQ	CCW	1.5"	1.25"	REAR	BLANK
257	Single Outlet	ORB	VXR	CCW	1.5"	1.5"	FRONT	BLANK
257	Single Outlet	ORB	WLX	CW	2"	0.5"	FRONT	BLANK
257	Single Outlet	ORB	WMX	CW	2"	0.75"	FRONT	BLANK
257	Single Outlet	ORB	WNX	CW	2"	1"	FRONT	BLANK
257	Single Outlet	ORB	WQX	CW	2"	1.25"	FRONT	BLANK
257	Single Outlet	ORB	WRX	CW	2"	1.5"	FRONT	BLANK
257	Single Outlet	ORB	WSX	CW	2"	2"	FRONT	BLANK
257	Single Outlet	ORB	WXL	CW	2"	0.5"	REAR	BLANK
257	Single Outlet	ORB	WXM	CW	2"	0.75"	REAR	BLANK
257	Single Outlet	ORB	WXN	CW	2"	1"	REAR	BLANK
257	Single Outlet	ORB	WXQ	CW	2"	1.25"	REAR	BLANK
257	Single Outlet	ORB	WXR	CW	2"	1.5"	REAR	BLANK
257	Single Outlet	ORB	WXS	CW	2"	2"	REAR	BLANK
257	Single Outlet	ORB	XLX	CCW	2"	0.5"	FRONT	BLANK
257	Single Outlet	ORB	XMX	CCW	2"	0.75"	FRONT	BLANK
257	Single Outlet	ORB	XNX	CCW	2"	1"	FRONT	BLANK
257	Single Outlet	ORB	XQX	CCW	2"	1.25"	FRONT	BLANK
257	Single Outlet	ORB	XRX	CCW	2"	1.5"	FRONT	BLANK
257	Single Outlet	ORB	XSX	CCW	2"	2"	FRONT	BLANK
257	Single Outlet	ORB	XXL	CCW	2"	0.5"	REAR	BLANK
257	Single Outlet	ORB	XXM	CCW	2"	0.75"	REAR	BLANK
257	Single Outlet	ORB	XXN	CCW	2"	1"	REAR	BLANK
257	Single Outlet	ORB	XXQ	CCW	2"	1.25"	REAR	BLANK
257	Single Outlet	ORB	XXR	CCW	2"	1.5"	REAR	BLANK
257	Single Outlet	ORB	XXS	CCW	2"	2"	REAR	BLANK
257	Single Outlet	SF	AAX	CW	1"	0.75"	FRONT	BLANK
257	Single Outlet	SF	ABX	CW	1"	1"	FRONT	BLANK
257	Single Outlet	SF	AXA	CW	1"	0.75"	REAR	BLANK
257	Single Outlet	SF	AXB	CW	1"	1"	REAR	BLANK
257	Single Outlet	SF	BAX	CCW	1"	0.75"	FRONT	BLANK
257	Single Outlet	SF	BBX	CCW	1"	1"	FRONT	BLANK
257	Single Outlet	SF	BXA	CCW	1"	0.75"	REAR	BLANK
257	Single Outlet	SF	BXB	CCW	1"	1"	REAR	BLANK
257	Single Outlet	SF	CAX	CW	1.25"	0.75"	FRONT	BLANK
257	Single Outlet	SF	CBX	CW	1.25"	1"	FRONT	BLANK
257	Single Outlet	SF	CCX	CW	1.25"	1.25"	FRONT	BLANK
257	Single Outlet	SF	CXA	CW	1.25"	0.75"	REAR	BLANK
257	Single Outlet	SF	CXB	CW	1.25"	1"	REAR	BLANK

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Single Outlet	SF	CXC	CW	1.25"	1.25"	REAR	BLANK	BLANK
257	Single Outlet	SF	DAX	CCW	1.25"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	SF	DBX	CCW	1.25"	1"	FRONT	BLANK	BLANK
257	Single Outlet	SF	DCX	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
257	Single Outlet	SF	DXA	CCW	1.25"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	SF	DXB	CCW	1.25"	1"	REAR	BLANK	BLANK
257	Single Outlet	SF	DXC	CCW	1.25"	1.25"	REAR	BLANK	BLANK
257	Single Outlet	SF	EAX	CW	1.5"	0.75"	FRONT	BLANK	BLANK
257	Single Outlet	SF	EBX	CW	1.5"	1"	FRONT	BLANK	BLANK
257	Single Outlet	SF	ECX	CW	1.5"	1.25"	FRONT	BLANK	BLANK
257	Single Outlet	SF	EDX	CW	1.5"	1.5"	FRONT	BLANK	BLANK
257	Single Outlet	SF	EXA	CW	1.5"	0.75"	REAR	BLANK	BLANK
257	Single Outlet	SF	EXB	CW	1.5"	1"	REAR	BLANK	BLANK
257	Single Outlet	SF	EXC	CW	1.5"	1.25"	REAR	BLANK	BLANK
257	Single Outlet	SF	EXD	CW	1.5"	1.5"	REAR	BLANK	BLANK
257	Single Outlet	SF	FAX	CCW	1.5"	0.75"	FRONT	BLANK	BLANK
257	Combined Outlet	SF	FBX	CCW	1.5"	1"	FRONT	BLANK	BLANK
257	Combined Outlet	SF	FCX	CCW	1.5"	1.25"	FRONT	BLANK	BLANK
257	Combined Outlet	SF	FDX	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
257	Combined Outlet	SF	FXA	CCW	1.5"	0.75"	REAR	BLANK	BLANK
257	Combined Outlet	SF	FXB	CCW	1.5"	1"	REAR	BLANK	BLANK
257	Combined Outlet	SF	FXC	CCW	1.5"	1.25"	REAR	BLANK	BLANK
257	Combined Outlet	SF	FXD	CCW	1.5"	1.5"	REAR	BLANK	BLANK
257	Combined Outlet	SF	GAX	CW	2"	0.75"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	GBX	CW	2"	1"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	GCX	CW	2"	1.25"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	GDX	CW	2"	1.5"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	GEX	CW	2"	2"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	GXA	CW	2"	0.75"	REAR	BLANK	BLANK
257	Dual Outlet	SF	GXB	CW	2"	1"	REAR	BLANK	BLANK
257	Dual Outlet	SF	GXC	CW	2"	1.25"	REAR	BLANK	BLANK
257	Dual Outlet	SF	GXD	CW	2"	1.5"	REAR	BLANK	BLANK
257	Dual Outlet	SF	GXE	CW	2"	2"	REAR	BLANK	BLANK
257	Dual Outlet	SF	HAX	CCW	2"	0.75"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	HBX	CCW	2"	1"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	HCX	CCW	2"	1.25"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	HDX	CCW	2"	1.5"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	HEX	CCW	2"	2"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	HXA	CCW	2"	0.75"	REAR	BLANK	BLANK
257	Dual Outlet	SF	HXB	CCW	2"	1"	REAR	BLANK	BLANK
257	Dual Outlet	SF	HXC	CCW	2"	1.25"	REAR	BLANK	BLANK
257	Dual Outlet	SF	HXD	CCW	2"	1.5"	REAR	BLANK	BLANK
257	Dual Outlet	SF	HXE	CCW	2"	2"	REAR	BLANK	BLANK
257	Dual Outlet	SF	YAX	CW	2.5"	0.75"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	YBX	CW	2.5"	1"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	YCX	CW	2.5"	1.25"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	YDX	CW	2.5"	1.5"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	YEX	CW	2.5"	2"	FRONT	BLANK	BLANK

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
257	Dual Outlet	SF	YFX	CW	2.5"	2.5"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	YXA	CW	2.5"	0.75"	REAR	BLANK	BLANK
257	Dual Outlet	SF	YXB	CW	2.5"	1"	REAR	BLANK	BLANK
257	Dual Outlet	SF	YXC	CW	2.5"	1.25"	REAR	BLANK	BLANK
257	Dual Outlet	SF	YXD	CW	2.5"	1.5"	REAR	BLANK	BLANK
257	Dual Outlet	SF	YXE	CW	2.5"	2"	REAR	BLANK	BLANK
257	Dual Outlet	SF	YXF	CW	2.5"	2.5"	REAR	BLANK	BLANK
257	Dual Outlet	SF	ZAX	CCW	2.5"	0.75"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	ZBX	CCW	2.5"	1"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	ZCX	CCW	2.5"	1.25"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	ZDX	CCW	2.5"	1.5"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	ZEX	CCW	2.5"	2"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	ZFX	CCW	2.5"	2.5"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	ZXA	CCW	2.5"	0.75"	FRONT	BLANK	BLANK
257	Dual Outlet	SF	ZXB	CCW	2.5"	1"	REAR	BLANK	BLANK
257	Dual Outlet	SF	ZXC	CCW	2.5"	1.25"	REAR	BLANK	BLANK
257	Dual Outlet	SF	ZXD	CCW	2.5"	1.5"	REAR	BLANK	BLANK
257	Dual Outlet	SF	ZXE	CCW	2.5"	2"	REAR	BLANK	BLANK
257	Dual Outlet	SF	ZXF	CCW	2.5"	2.5"	REAR	BLANK	BLANK
360 Motor	Dual Outlet	BSPP	VV	Motor	1.5"	1.5"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	BSPP	WW	Motor	1.25"	1.25"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	BSPP	XX	Motor	1"	1"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	BSPP	YY	Motor	0.75"	0.75"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	MSF	FF	Motor	2"	2"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	MSF	GG	Motor	1.5"	1.5"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	MSF	II	Motor	1.25"	1.25"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	MSF	JJ	Motor	1"	1"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	MSF	KK	Motor	0.75"	0.75"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	ORB	LL	Motor	1.5"	1.5"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	ORB	MM	Motor	1.25"	1.25"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	ORB	PP	Motor	1"	1"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	ORB	QQ	Motor	0.75"	0.75"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	SF	AA	Motor	1.5"	1.5"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	SF	BB	Motor	1.25"	1.25"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	SF	DD	Motor	1"	1"	THRU	BLANK	BLANK
360 Motor	Dual Outlet	SF	ZZ	Motor	2"	2"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	ORB	DO	CCW	2"	1.5"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	ORB	LO	CCW	2"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	ORB	MO	CCW	1.5"	1.5"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	ORB	OD	CW	2"	1.5"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	ORB	OL	CW	2"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	ORB	OM	CW	1.5"	1.5"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	ORB	OP	CW	1.5"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	ORB	OQ	CW	1.25"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	ORB	PO	CCW	1.5"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	ORB	QO	CCW	1.25"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	BT	CCW	2.5"	1.5"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	ET	CCW	2.5"	1.25"	THRU	BLANK	BLANK

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
360 Pump	Dual Outlet	SF	MT	CCW	2"	1.5"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	NT	CCW	2"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	OT	CCW	1.5"	1.5"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	PT	CCW	1.5"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	QT	CCW	1.25"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	TB	CW	2.5"	1.5"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	TE	CW	2.5"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	TM	CW	2"	1.5"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	TN	CW	2"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	TO	CW	1.5"	1.5"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	TP	CW	1.5"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	SF	TQ	CW	1.25"	1.25"	THRU	BLANK	BLANK
360 Pump	Dual Outlet	BSPP	GI	CCW	2"	1.5"	REAR	1.5"	FRONT
360 Pump	Dual Outlet	BSPP	IG	CW	2"	1.5"	FRONT	1.5"	REAR
360 Pump	Dual Outlet	BSPP	IJ	CW	2"	1.5"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	BSPP	IK	CW	2"	1.5"	FRONT	1"	REAR
360 Pump	Dual Outlet	BSPP	IL	CW	2"	1.25"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	BSPP	IM	CW	2"	1.25"	FRONT	1"	REAR
360 Pump	Dual Outlet	BSPP	IO	CW	2"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	BSPP	IP	CW	1.5"	1.5"	FRONT	1.5"	REAR
360 Pump	Dual Outlet	BSPP	IQ	CW	1.5"	1.5"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	BSPP	IR	CW	1.5"	1.5"	FRONT	1"	REAR
360 Pump	Dual Outlet	BSPP	IS	CW	1.5"	1.25"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	BSPP	IT	CW	1.5"	1.25"	FRONT	1"	REAR
360 Pump	Dual Outlet	BSPP	IU	CW	1.5"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	BSPP	IV	CW	1.25"	1.25"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	BSPP	IW	CW	1.25"	1.25"	FRONT	1"	REAR
360 Pump	Dual Outlet	BSPP	IX	CW	1.25"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	BSPP	IY	CW	1"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	BSPP	JI	CCW	2"	1.25"	REAR	1.5"	FRONT
360 Pump	Dual Outlet	BSPP	KI	CCW	2"	1"	REAR	1.5"	FRONT
360 Pump	Dual Outlet	BSPP	LI	CCW	2"	1.25"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	BSPP	MI	CCW	2"	1"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	BSPP	OI	CCW	2"	1"	REAR	1"	FRONT
360 Pump	Dual Outlet	BSPP	PI	CCW	1.5"	1.5"	REAR	1.5"	FRONT
360 Pump	Dual Outlet	BSPP	QI	CCW	1.5"	1.25"	REAR	1.5"	FRONT
360 Pump	Dual Outlet	BSPP	RI	CCW	1.5"	1"	REAR	1.5"	FRONT
360 Pump	Dual Outlet	BSPP	SI	CCW	1.5"	1.25"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	BSPP	TI	CCW	1.5"	1"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	BSPP	UI	CCW	1.5"	1"	REAR	1"	FRONT
360 Pump	Dual Outlet	BSPP	VI	CCW	1.25"	1.25"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	BSPP	WI	CCW	1.25"	1"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	BSPP	XI	CCW	1.25"	1"	REAR	1"	FRONT
360 Pump	Dual Outlet	BSPP	YI	CCW	1"	1"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	AC	CCW	2.5"	1.5"	REAR	1.5"	FRONT
360 Pump	Dual Outlet	MSF	BC	CCW	2.5"	1.5"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	MSF	CA	CW	2.5"	1.5"	FRONT	1.5"	REAR
360 Pump	Dual Outlet	MSF	CB	CW	2.5"	1.5"	FRONT	1.25"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
360 Pump	Dual Outlet	MSF	CD	CW	2.5"	1.5"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CE	CW	2.5"	1.25"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	MSF	CF	CW	2.5"	1.25"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CG	CW	2.5"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CI	CW	2"	1.5"	FRONT	1.5"	REAR
360 Pump	Dual Outlet	MSF	CJ	CW	2"	1.5"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	MSF	CK	CW	2"	1.5"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CL	CW	2"	1.25"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	MSF	CM	CW	2"	1.25"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CO	CW	2"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CP	CW	1.5"	1.5"	FRONT	1.5"	REAR
360 Pump	Dual Outlet	MSF	CQ	CW	1.5"	1.5"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	MSF	CR	CW	1.5"	1.5"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CS	CW	1.5"	1.25"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	MSF	CT	CW	1.5"	1.25"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CU	CW	1.5"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CV	CW	1.25"	1.25"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	MSF	CW	CW	1.25"	1.25"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CX	CW	1.25"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	CY	CW	1"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	MSF	DC	CCW	2.5"	1.5"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	EC	CCW	2.5"	1.25"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	MSF	FC	CCW	2.5"	1.25"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	GC	CCW	2.5"	1"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	IC	CCW	2"	1.5"	REAR	1.5"	FRONT
360 Pump	Dual Outlet	MSF	JC	CCW	2"	1.5"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	MSF	KC	CCW	2"	1.5"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	LC	CCW	2"	1.25"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	MSF	MC	CCW	2"	1.25"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	OC	CCW	2"	1"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	PC	CCW	1.5"	1.5"	REAR	1.5"	FRONT
360 Pump	Dual Outlet	MSF	QC	CCW	1.5"	1.5"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	MSF	RC	CCW	1.5"	1.5"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	SC	CCW	1.5"	1.25"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	MSF	TC	CCW	1.5"	1.25"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	UC	CCW	1.5"	1"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	VC	CCW	1.25"	1.25"	REAR	1.25"	FRONT
360 Pump	Dual Outlet	MSF	WC	CCW	1.25"	1.25"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	XC	CCW	1.25"	1"	REAR	1"	FRONT
360 Pump	Dual Outlet	MSF	YC	CCW	1"	1"	REAR	1"	FRONT
360 Pump	Dual Outlet	ORB	FI	CW	2"	1.5"	FRONT	1.5"	REAR
360 Pump	Dual Outlet	ORB	FJ	CW	2"	1.5"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	ORB	FK	CW	2"	1.5"	FRONT	1"	REAR
360 Pump	Dual Outlet	ORB	FL	CW	2"	1.25"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	ORB	FM	CW	2"	1.25"	FRONT	1"	REAR
360 Pump	Dual Outlet	ORB	FO	CW	2"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	ORB	FP	CW	1.5"	1.5"	FRONT	1.5"	REAR
360 Pump	Dual Outlet	ORB	FQ	CW	1.5"	1.5"	FRONT	1.25"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
360 Pump	Dual Outlet	ORB	FR	CW	1.5"	1.5"	FRONT	1"	REAR
360 Pump	Dual Outlet	ORB	FS	CW	1.5"	1.25"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	ORB	FT	CW	1.5"	1.25"	FRONT	1"	REAR
360 Pump	Dual Outlet	ORB	FU	CW	1.5"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	ORB	FV	CW	1.25"	1.25"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	ORB	FW	CW	1.25"	1.25"	FRONT	1"	REAR
360 Pump	Dual Outlet	ORB	FX	CW	1.25"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	ORB	FY	CW	1"	1"	FRONT	1"	REAR
360 Pump	Dual Outlet	ORB	IF	CCW	2"	1.5"	FRONT	1.5"	REAR
360 Pump	Dual Outlet	ORB	JF	CCW	2"	1.5"	FRONT	1.25"	REAR
360 Pump	Dual Outlet	ORB	KF	CCW	2"	1.5"	FRONT	1"	REAR
360 Pump	Dual Outlet	ORB	LF	CCW	2"	1.25"	FRONT	1.25"	REAR
360 Pump	Single Outlet	ORB	MF	CCW	2"	1.25"	FRONT	1"	REAR
360 Pump	Single Outlet	ORB	OF	CCW	2"	1"	FRONT	1"	REAR
360 Pump	Single Outlet	ORB	PF	CCW	1.5"	1.5"	FRONT	1.5"	REAR
360 Pump	Single Outlet	ORB	QF	CCW	1.5"	1.5"	FRONT	1.25"	REAR
360 Pump	Single Outlet	ORB	QHA	CW	1"	0.5"	FRONT	0.5"	REAR
360 Pump	Single Outlet	ORB	RF	CCW	1.5"	1.5"	FRONT	1"	REAR
360 Pump	Single Outlet	ORB	SF	CCW	1.5"	1.25"	FRONT	1.25"	REAR
360 Pump	Single Outlet	ORB	TF	CCW	1.5"	1.25"	FRONT	1"	REAR
360 Pump	Single Outlet	ORB	UF	CCW	1.5"	1"	FRONT	1"	REAR
360 Pump	Single Outlet	ORB	VF	CCW	1.25"	1.25"	FRONT	1.25"	REAR
360 Pump	Single Outlet	ORB	WF	CCW	1.25"	1.25"	FRONT	1"	REAR
360 Pump	Single Outlet	ORB	XF	CCW	1.25"	1"	FRONT	1"	REAR
360 Pump	Single Outlet	ORB	YF	CCW	1"	1"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	BZ	CCW	2.5"	1.5"	REAR	1.5"	FRONT
360 Pump	Single Outlet	SF	CZ	CCW	2.5"	1.25"	REAR	1.5"	FRONT
360 Pump	Single Outlet	SF	DZ	CCW	2.5"	1"	REAR	1.5"	FRONT
360 Pump	Single Outlet	SF	EZ	CCW	2.5"	1.25"	REAR	1.25"	FRONT
360 Pump	Single Outlet	SF	FZ	CCW	2.5"	1"	REAR	1.25"	FRONT
360 Pump	Single Outlet	SF	GZ	CCW	2.5"	1"	REAR	1"	FRONT
360 Pump	Single Outlet	SF	IZ	CCW	2"	1.5"	REAR	1.5"	FRONT
360 Pump	Single Outlet	SF	JZ	CCW	2"	1.25"	REAR	1.5"	FRONT
360 Pump	Single Outlet	SF	KZ	CCW	2"	1"	REAR	1.5"	FRONT
360 Pump	Single Outlet	SF	LZ	CCW	2"	1.25"	REAR	1.25"	FRONT
360 Pump	Single Outlet	SF	MZ	CCW	2"	1"	REAR	1.25"	FRONT
360 Pump	Single Outlet	SF	OZ	CCW	2"	1"	REAR	1"	FRONT
360 Pump	Single Outlet	SF	PZ	CCW	1.5"	1.5"	FRONT	1.5"	FRONT
360 Pump	Single Outlet	SF	QZ	CCW	1.5"	1.25"	REAR	1.5"	FRONT
360 Pump	Single Outlet	SF	RZ	CCW	1.5"	1"	REAR	1.5"	FRONT
360 Pump	Single Outlet	SF	SZ	CCW	1.5"	1.25"	REAR	1.25"	FRONT
360 Pump	Single Outlet	SF	TZ	CCW	1.5"	1"	REAR	1.25"	FRONT
360 Pump	Single Outlet	SF	UZ	CCW	1.5"	1"	REAR	1"	FRONT
360 Pump	Single Outlet	SF	VZ	CCW	1.25"	1.25"	REAR	1.25"	FRONT
360 Pump	Single Outlet	SF	WZ	CCW	1.25"	1"	REAR	1.25"	FRONT
360 Pump	Single Outlet	SF	XZ	CCW	1.25"	1"	REAR	1"	FRONT
360 Pump	Single Outlet	SF	YZ	CCW	1"	1"	REAR	1"	FRONT
360 Pump	Single Outlet	SF	ZB	CW	2.5"	1.5"	FRONT	1.5"	REAR

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
360 Pump	Single Outlet	SF	ZC	CW	2.5"	1.5"	FRONT	1.25"	REAR
360 Pump	Single Outlet	SF	ZD	CW	2.5"	1.5"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZE	CW	2.5"	1.25"	FRONT	1.25"	REAR
360 Pump	Single Outlet	SF	ZF	CW	2.5"	1.25"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZG	CW	2.5"	1"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZI	CW	2"	1.5"	FRONT	1.5"	REAR
360 Pump	Single Outlet	SF	ZJ	CW	2"	1.5"	FRONT	1.25"	REAR
360 Pump	Single Outlet	SF	ZK	CW	2"	1.5"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZL	CW	2"	1.25"	FRONT	1.25"	REAR
360 Pump	Single Outlet	SF	ZM	CW	2"	1.25"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZO	CW	2"	1"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZP	CW	1.5"	1.5"	FRONT	1.5"	REAR
360 Pump	Single Outlet	SF	ZQ	CW	1.5"	1.5"	FRONT	1.25"	REAR
360 Pump	Single Outlet	SF	ZR	CW	1.5"	1.5"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZS	CW	1.5"	1.25"	FRONT	1.25"	REAR
360 Pump	Single Outlet	SF	ZT	CW	1.5"	1.25"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZU	CW	1.5"	1"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZV	CW	1.25"	1.25"	FRONT	1.25"	REAR
360 Pump	Single Outlet	SF	ZW	CW	1.25"	1.25"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZX	CW	1.25"	1"	FRONT	1"	REAR
360 Pump	Single Outlet	SF	ZY	CW	1"	1"	FRONT	1"	REAR
360 Pump	Single Outlet	MSF	BM	CW	2.5"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	BO	CW	2.5"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	BP	CW	2.5"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	GQ	CW	2"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	GR	CW	2"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	GS	CW	2"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	GT	CW	1.5"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	GU	CW	1.5"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	GV	CW	1.5"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	GW	CW	1.25"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	GX	CW	1.25"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	GY	CW	1"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	MB	CCW	2.5"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	OB	CCW	2.5"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	PB	CCW	2.5"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	QG	CCW	2"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	RG	CCW	2"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	SG	CCW	2"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	TG	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	UG	CCW	1.5"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	VG	CCW	1.5"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	WG	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	XG	CCW	1.25"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	MSF	YG	CCW	1"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	AJ	CCW	2"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	B	CW	0.875"	BLANK	BLANK	BLANK	BLANK
360 Pump	Single Outlet	ORB	BJ	CCW	2"	1.25"	FRONT	BLANK	BLANK

SERIES	TYPE	PORT	CODE	Rotation	INLET SIZE	TOP OUTLET SIZE	TOP OUTLET CONNECTION	BOTTOM OUTLET SIZE	BOTTOM OUTLET CONNECTION
360 Pump	Single Outlet	ORB	C	CCW	0.875"	BLANK	BLANK	BLANK	BLANK
360 Pump	Single Outlet	ORB	EJ	CCW	2"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	JA	CW	2"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	JB	CW	2"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	JE	CW	2"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	JK	CW	1.5"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	JL	CW	1.5"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	JM	CW	1.5"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	JN	CW	1.25"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	JO	CW	1.25"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	JP	CW	1"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	KJ	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	LJ	CCW	1.5"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	MJ	CCW	1.5"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	NJ	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	OJ	CCW	1.25"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	ORB	PJ	CCW	1"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	AG	CCW	2"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	BG	CCW	2"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	BI	CW	2.5"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	BK	CW	2.5"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	BL	CW	2.5"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	EG	CCW	2"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	GA	CW	2"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	GB	CW	2"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	GE	CW	2"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	GK	CW	1.5"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	GL	CW	1.5"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	GM	CW	1.5"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	GN	CW	1.25"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	GO	CW	1.25"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	GP	CW	1"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	IB	CCW	2.5"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	KB	CCW	2.5"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	KG	CCW	1.5"	1.5"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	LB	CCW	2.5"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	LG	CCW	1.5"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	MG	CCW	1.5"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	MQ	CW	2.5"	1.5"	REAR	BLANK	BLANK
360 Pump	Single Outlet	SF	NG	CCW	1.25"	1.25"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	OG	CCW	1.25"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	PG	CCW	1"	1"	FRONT	BLANK	BLANK
360 Pump	Single Outlet	SF	QM	CCW	2.5"	1.5"	REAR	BLANK	BLANK
360 Pump	Single Outlet	SF	QR	CW	1.25"	1"	REAR	BLANK	BLANK
360 Pump	Single Outlet	SF	RQ	CCW	1.25"	1"	REAR	BLANK	BLANK



1500 FROST ROAD

P. O. BOX 2068

STREETSBORO, OHIO 44241

1-800-626-2801

[HTTPS://PERMCO.COM](https://permco.com)



NFPA
*Solutions through
motion technology*