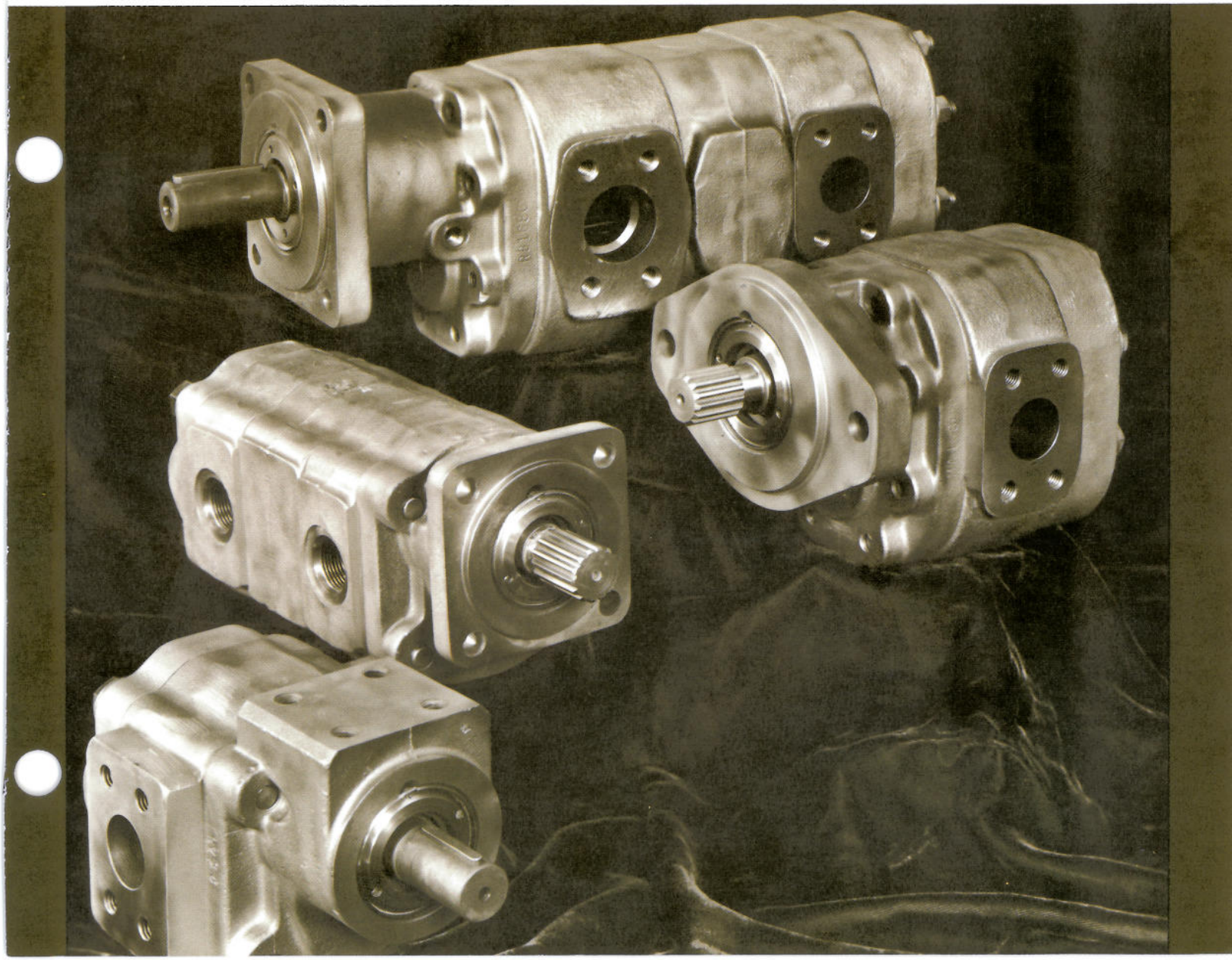
25X™ / 37X™ OIL HYDRAULIC SINGLE & MULTIPLE PUMPS & MOTORS

pressures to
2000 psi/140 bar

output to
90 U.S. gpm/341 lpm

motors up to 80 hp

Commercial Intertech



performance data

25X™/37X™ PUMPS

performance data

Performance data shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with the oil reservoir temperature at 120° F and viscosity 150 SSU at 100° F. Requests for more specific data should be directed to our Technical Service Department through our sales representatives.

multiple units

The shaft selected to drive a multiple pump must be strong enough to carry the power requirements of the application. Each pump series has a PL factor which if exceeded will result in premature shaft failure.

For P25X B Series, the PL factor is 8000. This means, for example, that a maximum of 140 bar/2000 psi can be permitted to act simultaneously on two 2 inch gear widths in a multiple assembly, since 2000 x (2 + 2) = 8000. If the PL factor exceeds 8000, the shaft may be overloaded, and premature failure may be anticipated.

Similarly the PL factor of the 37X Series is 10,000.

The same rule applies to three, four or more section assemblies. At high PL factors, say over 6000 for the 25X series (8000 for the 37X), the Code 7 shaft should be used.

side loads

When the drive shaft of a pump or motor is subjected to a side or overhung load, the shaft end cover code should call for the double outboard bearing.

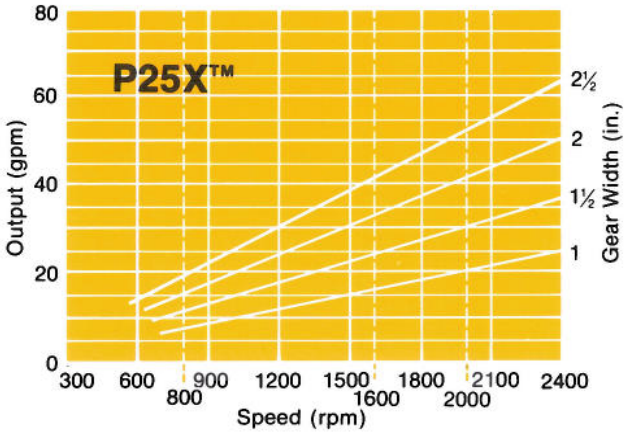
Assemblies with the double outboard bearing may be driven by a standard pinion on the shaft and will carry the load up to the maximum PL rating for the unit. The load on the shaft in such cases, should be no more than 2 inches from the mounting face of the shaft end cover.

NOTE:
Installations involving pump or motor speeds below 400 rpm or exceeding 2000 rpm and/or above 140 bar/2000 psi should be approved by our Technical Service Department through your Commercial representative.

Keep your 25X™/37X™ pumps and motors at their original efficiency... Use only genuine Commercial replacement parts available through your original equipment dealer or your Authorized Commercial Intertech Distributor

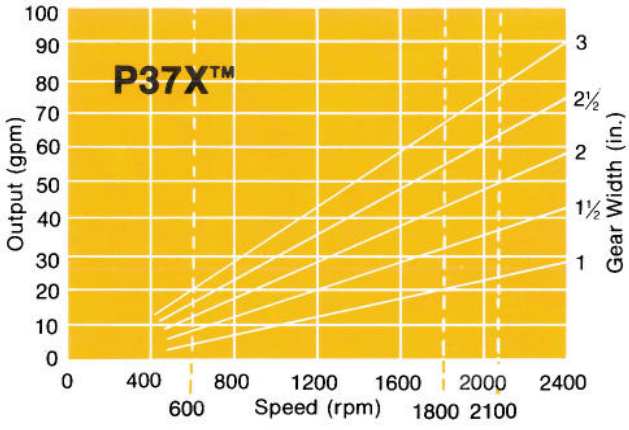
P25X™

AVERAGE OUTPUT — U.S. Gallons at 140 bar/2000 psi



P37X™

AVERAGE OUTPUT — U.S. Gallons at 140 bar/2000 psi

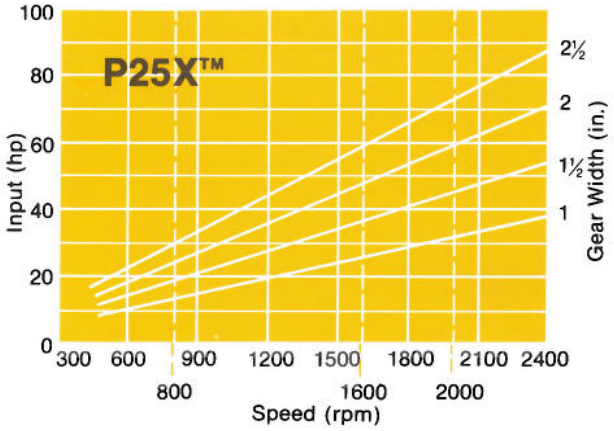


NOTE: In accordance with our policy of continuing product development, we reserve the right to change specifications shown in this catalog without notice.

Average output flow • U.S. Gallons per Minute
• British Imperial Gallons per Minute
• Litres per Minute

Speed rpm	Gear Width (inches) 1	1¼	1½	1¾	2	2¼	2½
900	8.5 7 32	10.5 8.5 40	13 11 49	15 12.5 57	17.5 14.5 66	20 16.5 76	22 18.5 83
1200	12 10 45	15 12.5 57	18 15 68	21 17.5 79	24 20 91	27 22.5 102	30 25 113
1500	15 12.5 57	19 16 72	23 19 87	27 22.5 102	31 26 117	35 29 132	39 32.5 147
1800	18 15 68	23 19 87	27.5 23 104	32.5 27 123	37.5 31 142	42 35 159	47 39 178
2100	21.5 18 81	27 22.5 102	32.5 27 123	38.5 32 145	44 36.5 167	49.5 41 187	55 46 208
2400	25 21 95	31 26 117	37 31 140	44 36.5 167	51 42.5 193	57 47.5 215	63.5 53 240

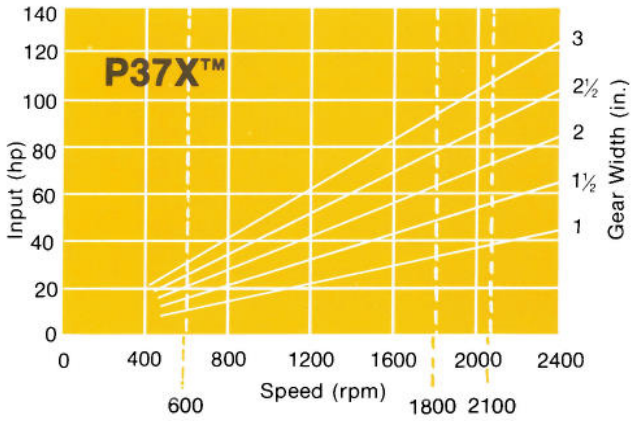
AVERAGE INPUT — (hp) at 140 bar/2000 psi



Average output flow • U.S. Gallons per Minute
• British Imperial Gallons per Minute
• Litres per Minute

Speed rpm	Gear Width (inches) 1	1¼	1½	1¾	2	2¼	2½	3
600	4.5 3.5 17	6.5 5.5 25	8.5 7 32	10.5 8.5 40	12.5 10.5 47	14 11.5 53	16.5 13.5 62	20 16.5 76
1200	12.5 10.5 47	16.5 13.5 62	20 16.5 76	24 20 91	28 23 106	31.5 26 119	35.5 29.5 134	43 35.5 163
1800	20 16.5 76	26 21.5 98	31.5 26 119	37.5 31 142	43.5 36 165	49.5 41 187	55 46 208	66.5 55.5 252
2100	24 20 91	31 26 117	37.5 31 142	44.5 37 168	51 42.5 193	58 48.5 219	64.5 53.5 244	78 65 295
2400	28 23 106	36 30 136	43.5 36 165	51 42.5 193	59 49 223	67 56 254	74.5 62 282	90 75 341

AVERAGE INPUT — (hp) at 140 bar/2000 psi

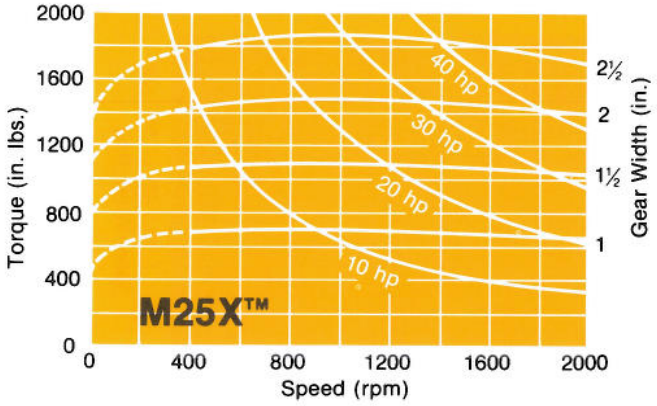


performance data

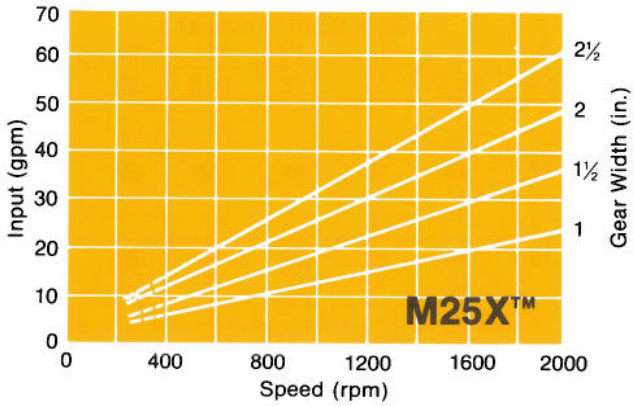
25X™/37X™ MOTORS

M25X™

AVERAGE TORQUE OUTPUT (in. lbs.) at 140 bar/2000 psi

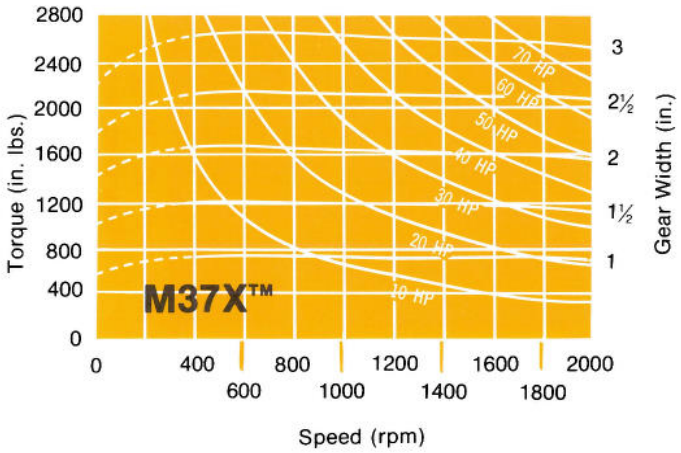


AVERAGE INPUT — U.S. Gallons at 140 bar/2000 psi

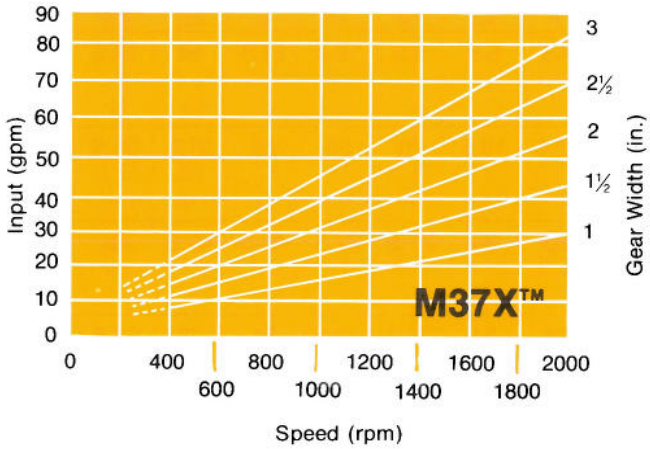


M37X™

AVERAGE TORQUE OUTPUT (in. lbs.) at 140 bar/2000 psi



AVERAGE INPUT — U.S. Gallons at 140 bar/2000 psi



MOTOR DATA (extracted from the average performance curves on the opposite page)

Speed rpm	1" GEAR Output Torque in. lbs. / N m / kpm	1" GEAR Output Power hp / met. hp	1" GEAR Input gpm / igpm / l/min.	1½" GEAR Output Torque in. lbs. / N m / kpm	1½" GEAR Output Power hp / met hp	1½" GEAR Input gpm / igpm / l/min.	2" GEAR Output Torque in. lbs. / N m / kpm	2" GEAR Output Power hp / met. hp	2" GEAR Input gpm / igpm / l/min.	2½" GEAR Output Torque in. lbs. / N m / kpm	2½" GEAR Output Power hp / met hp	2½" GEAR Input gpm / igpm / l/min.
800	670 75.5 7.5	8.5 8.5	10.5 8.5 40	1070 121 12	13.5 13.5	15.5 13 59	1450 164 16.5	18 18	21 17.5 79	1850 209 21	23.5 23.5	26 21.5 98
1200	680 77 7.5	13 13	15.5 13 59	1075 121.5 12	20.5 20.5	22.5 18.5 85	1450 164 16.5	27.5 28	30.5 25.5 115	1840 208 21	35 35.5	37.5 31 142
1600	670 75.5 7.5	17 17	20 16.5 76	1045 118 12	26.5 27	30 25 114	1440 162.5 16.5	36.5 37	40 33.5 151	1750 197.5 20	44.5 45	49.5 41 187
2000	660 74.5 7.5	21 21	25 21 95	1030 116.5 12	32.5 33	37 31 140	1415 160 16	44.5 45	49 40.5 185	1720 194.5 20	54.5 55	61.5 51 233

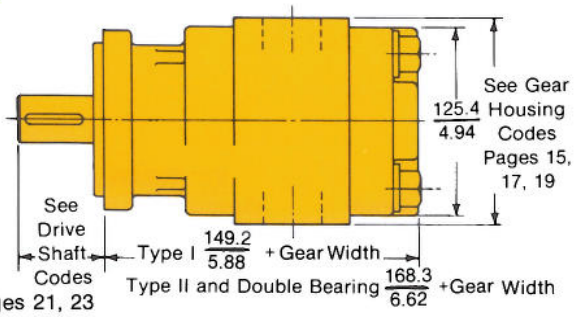
Speed rpm	1" GEAR Output Torque in. lbs. / N m / kpm	1" GEAR Output Power hp / met. hp	1" GEAR Input gpm / igpm / l/min.	1½" GEAR Output Torque in. lbs. / N m / kpm	1½" GEAR Output Power hp / met. hp	1½" GEAR Input gpm / igpm / l/min.	2" GEAR Output Torque in. lbs. / N m / kpm	2" GEAR Output Power hp / met. hp	2" GEAR Input gpm / igpm / l/min.	2½" GEAR Output Torque in. lbs. / N m / kpm	2½" GEAR Output Power hp / met. hp	2½" GEAR Input gpm / igpm / l/min.	3" GEAR Output Torque in. lbs. / N m / kpm	3" GEAR Output Power hp / met. hp	3" GEAR Input gpm / igpm / l/min.
600	750 84.5 8.5	7 7	10.5 8.5 40	1200 135.5 13.5	11.5 11.5	15 12.5 57	1650 186.5 19	15.5 15.5	20 16.5 76	2125 240 24.5	20 20	24.5 20.5 93	2670 301.5 30.5	25.5 25.5	28 23 106
1000	745 84 8.5	12 12	16 13.5 61	1180 133.5 13.5	19 19	23 19 87	1630 184 18.5	26 26	31 26 117	2115 239 24	34.5 35	38 31.5 144	2635 297.5 30	42 42.5	44 36.5 167
1400	730 82.5 8.5	16.5 16.5	21 17.5 79	1165 131.5 13.5	26 26	31 26 117	1610 182 18.5	35 35.5	41 34 155	2100 237 24	47.5 48	51 42.5 193	2595 293 30	57.5 58.5	60 50 227
1800	700 79 8	20 20	26.5 22 100	1140 129 13	32.5 33	39 32.5 147	1590 179.5 18	45 45.5	52 43 197	2075 234.5 24	60 61	64 53 242	2560 289 29.5	73 74	76 63 288

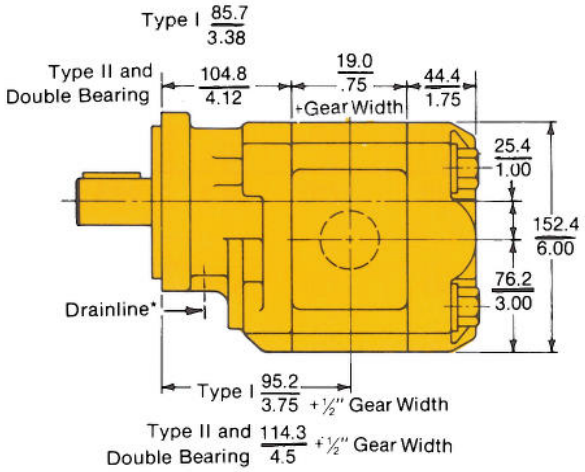
dimensional data

Dimensional data shown in $\frac{\text{mm}}{\text{inches}}$

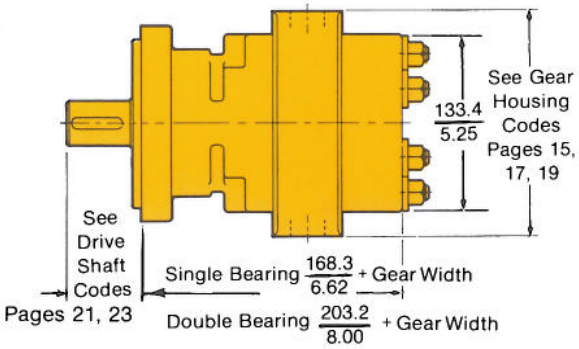
SINGLE UNIT

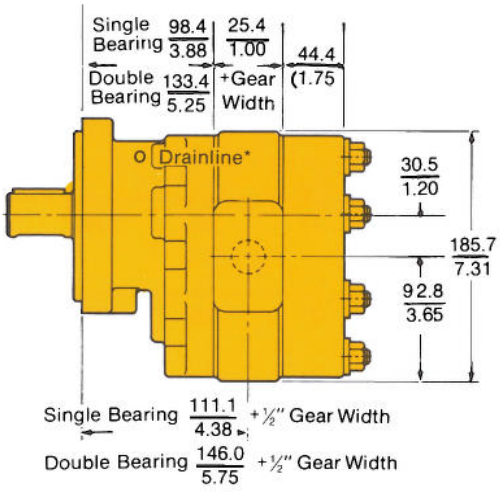
25X™





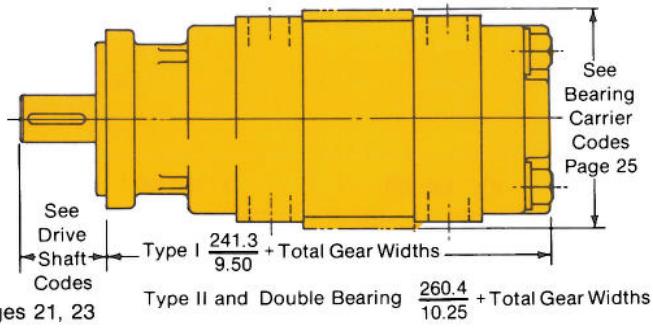
37X™

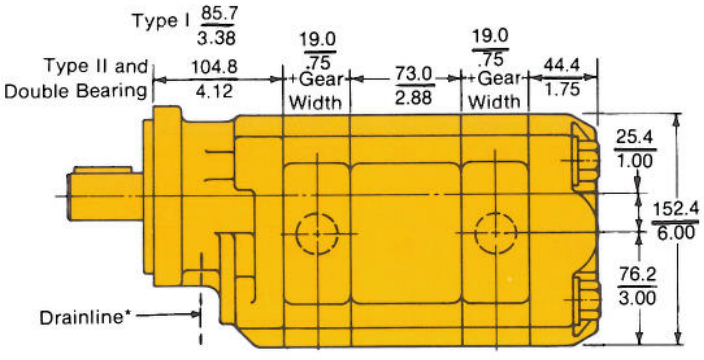




MULTIPLE UNIT

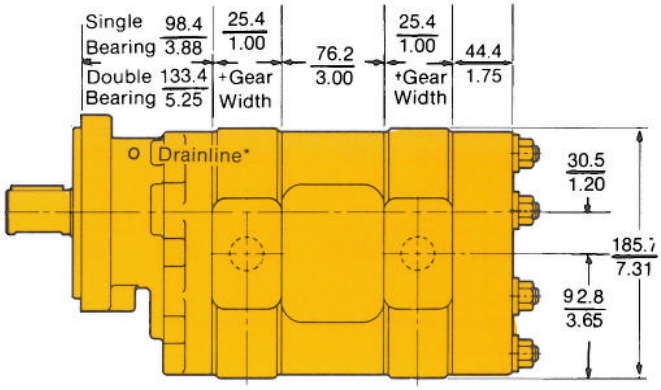
25X™





*Drainline location for motor application.

37X™



approximate weight

SINGLE UNIT

Approximate weight of single pump or motor with SAE B 4-bolt mounting.

TABLE 1

Model	Unit Weight	Gear Width (inches)				
		½	¾	1	1¼	1½
25X	Pounds	37	38.5	40	41.5	43
	KG	16.8	17.5	18.1	18.8	19.5
37X	Pounds	56	58	60	62	64
	KG	25.4	26.3	27.2	28.1	29.0

Model	Unit Weight	Gear Width (inches)				
		1¾	2	2¼	2½	3
25X	Pounds	44.5	46	51.5	53	—
	KG	20.2	20.9	23.4	24.0	—
37X	Pounds	66	68	70	72	76
	KG	29.9	30.8	31.8	32.7	34.5

MULTIPLE UNIT

To determine the approximate weight of a pump or motor with SAE B 4-bolt mounting. . .

1. Determine from Table 1 the approximate weight of a single unit the same size as the first unit of the multiple assembly.
2. From Table 2 determine the approximate weight of each additional unit of the multiple assembly and add to the unit weight of the first unit to estimate total weight of multiple assembly.

TABLE 2

Model	Unit Weight	Gear Width (inches)				
		½	¾	1	1¼	1½
25X	Pounds	27	28.5	30	31.5	33
	KG	12.2	12.9	13.6	14.3	15.0
37X	Pounds	42	44	46	48	50
	KG	19.1	20.0	20.9	21.8	22.7

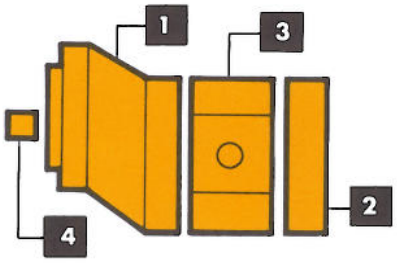
Model	Unit Weight	Gear Width (inches)				
		1¾	2	2¼	2½	3
25X	Pounds	34.5	36	41.5	43	—
	KG	15.6	16.3	18.8	19.5	—
37X	Pounds	52	54	56	58	62
	KG	23.6	24.5	25.4	26.3	28.1

how to specify and code

This catalog contains codes for most widely used models only. Complete codes for assembling all configurations are readily available from our sales representatives.

SINGLE UNIT

Commercial's 25X and 37X pumps and motors are available as single or multiple assemblies. The full assembly code for the finished unit combines individual codes for shaft end cover, port end cover, gear housing, and drive shaft as selected to do the job you require. It is preceded by the letter P or M for pump or motor — and by 25 or 37 to designate the series. Here is an example of the procedure:



M25X™ SINGLE MOTOR

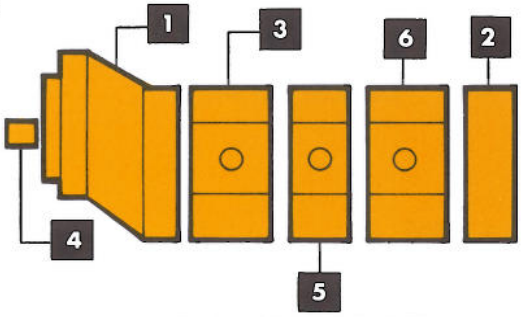
Assembly Code M25X 942 BE IT20-25

Motor ..... M
Series 25
Model X

1. Shaft End Cover (Page 8) 942
2. Port End Cover (Page 12) ..... BE
3. Gear Housing (Page 19) IT20
4. Drive Shaft (Page 21) 25

MULTIPLE UNIT

Multiple units are coded in the same manner except that additional designations for added sub-components must be included. Each section added to the single assembly requires a proper code for a bearing carrier, gear housing, and connecting shaft. Here is an example of an assembly code for a two-section 37X pump:
When specifying split flange porting on multiple units, all coding MUST be cleared by our Technical Service Department.



P37X™ MULTIPLE PUMP

Assembly Code P37X 178 BY VZ20-7 B IL15-1

Pump..... P
Series.....37
Model..... X

1. Shaft End Cover (Page 8) 178
2. Port End Cover (Page 13) ..... BY
3. Gear Housing (Page 15) VZ20
4. Drive Shaft (Page 21) 7
5. Bearing Carrier (Page 25) ..... B
6. Gear Housing (Page 19) IL15
7. Connecting Shaft (Page 20) 1

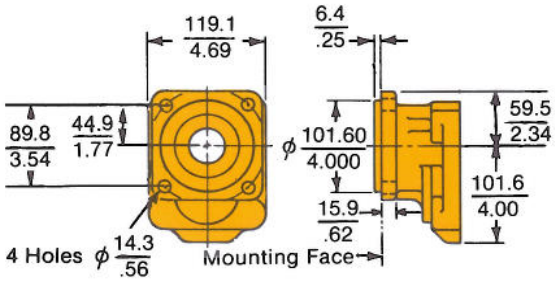
shaft end covers, Type I

Dimensional data shown in $\frac{\text{mm}}{\text{inches}}$

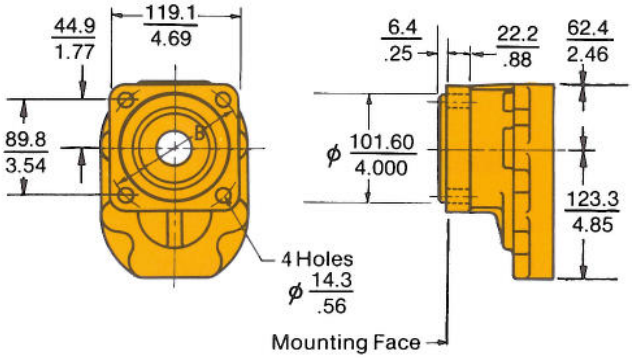
To determine direction of shaft rotation, view the unit with the shaft pointing toward you, and the idler (driven) gear beneath the shaft. With clockwise rotation, flow will be left to right. The inlet port will be on the left, outlet on the right. The flow is in the opposite direction with counter-clockwise rotation. Inverting the pump will reverse the inlet and outlet ports but not the direction of rotation.

SAE B 4-BOLT

25X™



37X™

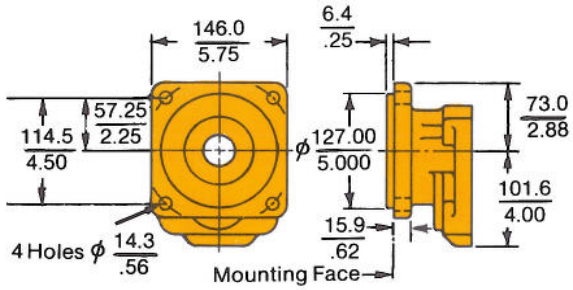


CODE SELECTION

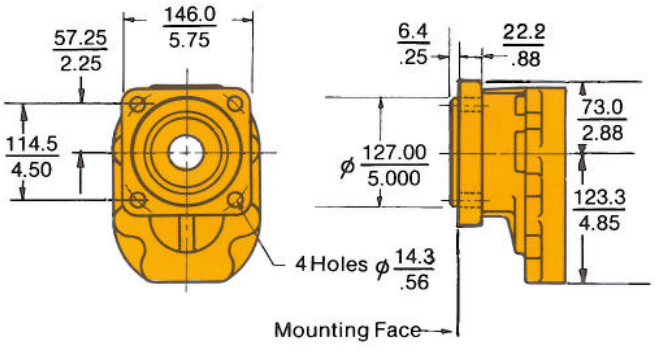
Drain-line ○ Thread	PUMPS Single-Bearing Rotation Clockwise	Counter-Clockwise	Double	Double-Bearing Rotation Double	MOTORS Single-Bearing Rotation Double	Double-Bearing Rotation Double
NONE	142	242	342	—	942	—
¼ NPT	—	—	—	642	742	842
¼ BSPP	—	—	—	1642	1742	1842

SAE C 4-BOLT

25X™



37X™



CODE SELECTION

Drain-line ○ Thread	PUMPS Single-Bearing Rotation Clockwise	Counter-Clockwise	Double	Double-Bearing Rotation Double	MOTORS Single-Bearing Rotation Double	Double-Bearing Rotation Double
NONE	178	278	378	—	978	—
¼ NPT	—	—	—	678	778	878
¼ BSPP	—	—	—	1678	1778	1878

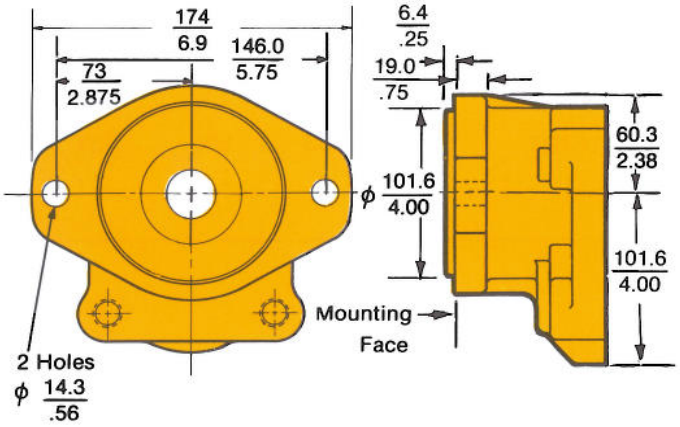
Double bearing shaft end covers can only be used with Code 73, drive shaft (see page 23).

When the drive shaft of a pump or motor is subjected to a side or overhung load, the shaft end cover code should call for the double outboard bearing.

This catalog contains codes for most widely used models only. Complete codes for assembling all configurations are readily available from our sales representatives.

SAE B 2-BOLT

25X™ ONLY

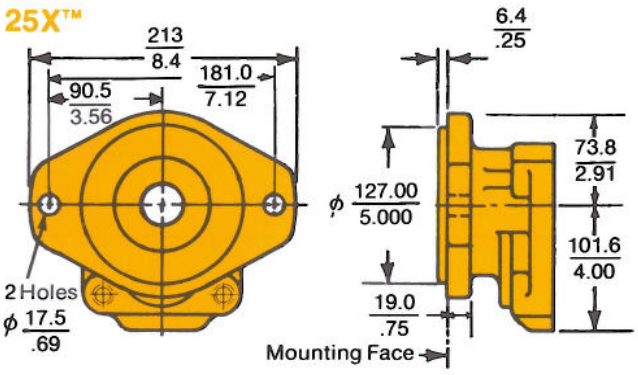


CODE SELECTION

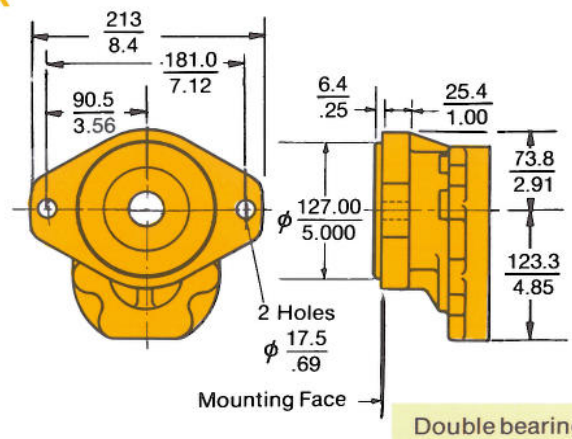
Drain-line	PUMPS Single-Bearing Rotation			Double-Bearing Rotation	MOTORS Single-Bearing Rotation	Double-Bearing Rotation
Thread	Clockwise	Counter-Clockwise	Double	Double	Double	Double
NONE	197	297	397	—	997	—
¼ NPT	—	—	—	697	797	897
¼ BSPP	—	—	—	1697	1797	1897

SAE C 2-BOLT

25X™



37X™



CODE SELECTION

Drain-line	PUMPS Single-Bearing Rotation				MOTORS Single-Bearing Rotation	
Thread	Clockwise	Counter-Clockwise	Double		Double	
NONE	198	298	398	—	998	—
¼ NPT	—	—	—	—	798	—
¼ BSPP	—	—	—	—	1798	—

Double bearing shaft end covers can only be used with Code 73, drive shaft (see page 23).

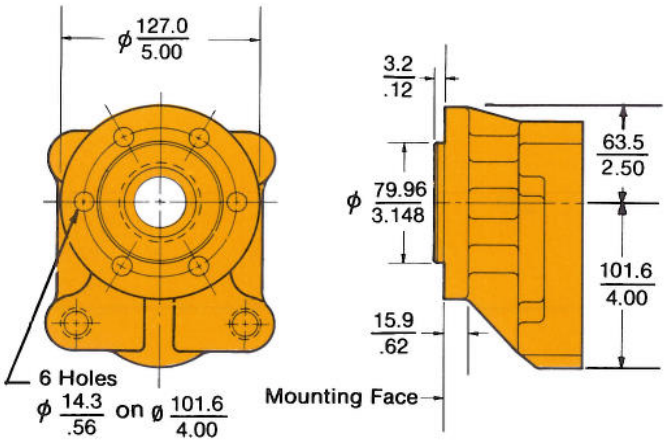
shaft end covers, Type I, continued

Dimensional data shown in mm / inches

To determine direction of shaft rotation, view the unit with the shaft pointing toward you, and the idler (driven) gear beneath the shaft. With clockwise rotation, flow will be left to right. The inlet port will be on the left, outlet on the right. The flow is in the opposite direction with counter-clockwise rotation. Inverting the pump will reverse the inlet and outlet ports but not the direction of rotation.

ROUND FLANGE 6-BOLT

25X™

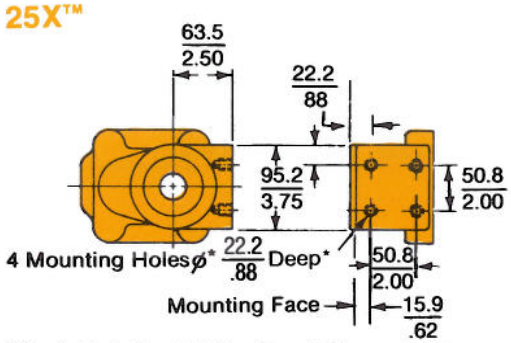


CODE SELECTION

Drain-line	PUMPS Single-Bearing Rotation			MOTORS Single-Bearing Rotation
Thread	Clockwise	Counter-Clockwise	Double	Double
NONE	103	203	303	903
¼ NPT	—	—	—	703
¼ BSPP	—	—	—	1703

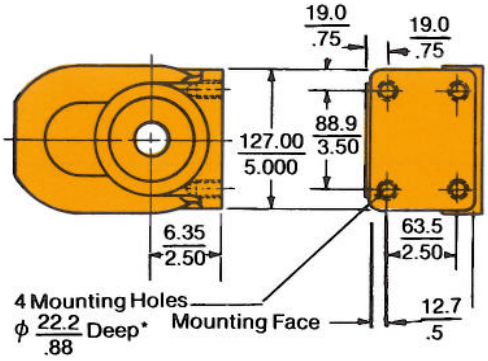
PAD MOUNTING

25X™



*See table to the right for thread size and style.

37X™



*See table to the right for thread size and style.

CODE SELECTION

Series	Drain-line	Mounting Hole	PUMPS Single-Bearing Rotation			PUMPS Double-Bearing Rotation	MOTORS Single-Bearing Rotation	MOTORS Double-Bearing Rotation
		Thread	Clockwise	Counter-Clockwise	Double	Double	Double	Double
25X	NONE	½—13Thd.	100	200	300	—	900	—
		M12 x 1.75	—	—	—	—	—	1900
	¼ NPT	½—13 Thd.	—	—	—	600	700	800
	¼ BSPP	M12 x 1.75	—	—	—	1600	1700	1800
37X	NONE	⅝—11 Thd.	111	211	311	—	911	—
		M16 x 2	—	—	—	—	—	1911
	¼ NPT	⅝—11 Thd.	—	—	—	611	711	811
	¼ BSPP	M16 x 2	—	—	—	1611	1711	1811

Double bearing shaft end covers can only be used with Code 73, drive shaft (see page 23)

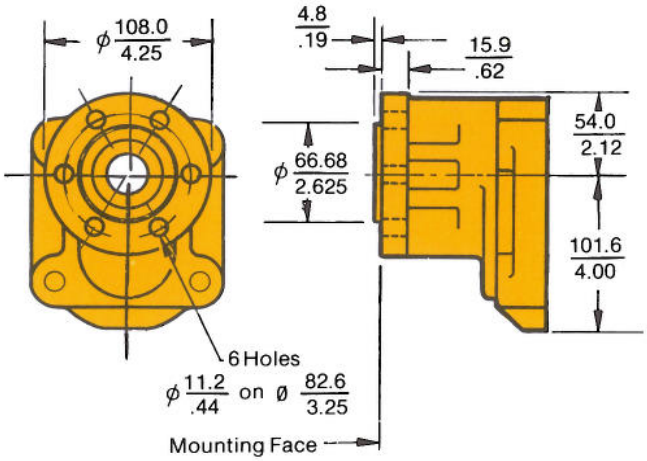
Type II, 25X™ only

When the drive shaft of a pump or motor is subjected to a side or overhung load, the shaft end cover code should call for the double outboard bearing.

This catalog contains codes for most widely used models only. Complete codes for assembling all configurations are readily available from our sales representatives.

ROUND FLANGE 6-BOLT

25X™

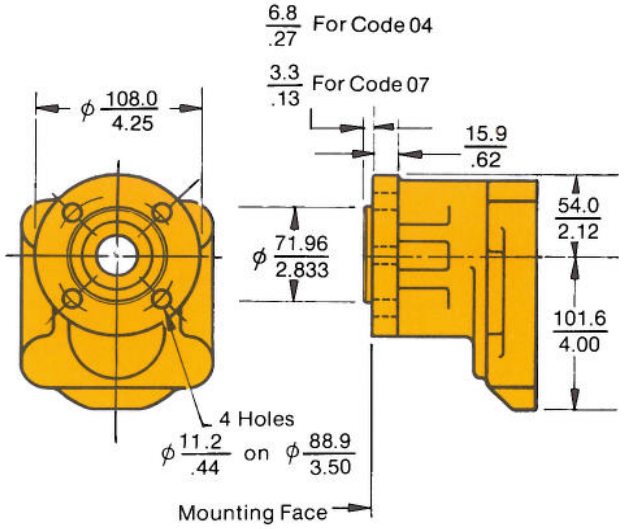


CODE SELECTION

Drain-line ○ Thread	PUMPS Single-Bearing Rotation Clockwise	Counter-Clockwise	Double	MOTORS Single-Bearing Rotation Double
NONE	105	205	305	905
⅛ NPT	—	—	—	705
⅛ BSPP	—	—	—	1705

ROUND FLANGE 4-BOLT

25X™



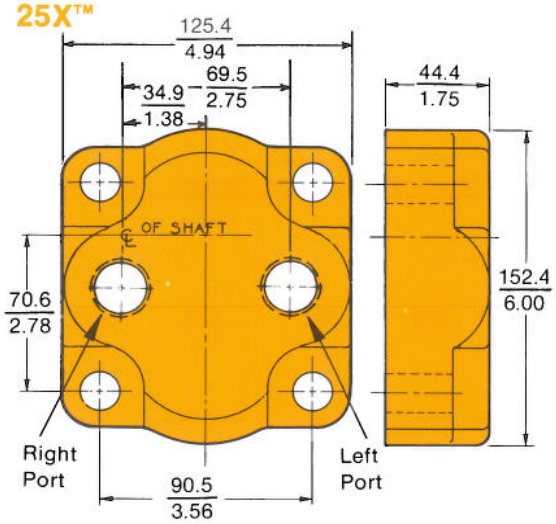
CODE SELECTION

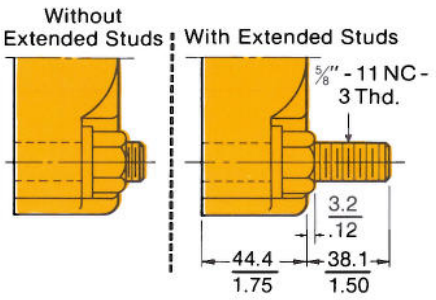
Drain-line ○ Thread	PUMPS Single-Bearing Rotation Clockwise	Counter-Clockwise	Double	MOTORS Single-Bearing Rotation Double
NONE	104	204	304	904
	107	207	307	907
⅛ NPT	—	—	—	704
	—	—	—	707
⅛ BSPP	—	—	—	1704
	—	—	—	1707

port end covers

Dimensional data shown in $\frac{\text{mm}}{\text{inches}}$

25X™





CODE SELECTION

Port Size inches BSPP Metric Left	Port Size inches BSPP Metric Right	Pipe Thread NPT† BSPP For Single Units Only	Pipe Thread NPT† BSPP For Tandem Units Only Without Extended Studs	Pipe Thread NPT† BSPP For Tandem Units Only With Extended Studs	Straight Thread SAE Metric For Single Units Only	Straight Thread SAE Metric For Tandem Units only Without Extended Studs	Straight Thread SAE Metric For Tandem Units only With Extended Studs
NONE	NONE	BE	BI	BY	BE	BI	BY
NONE	¾	CE	CI	CY	LE	LI	LY
NONE	¾	QE	QI	QY	—	—	—
NONE	M26 x 1.5	—	—	—	WE	WI	WY
¾	NONE	FE	FI	FY	KE	KI	KY
¾	NONE	AE	AI	AY	—	—	—
M26 x 1.5	NONE	—	—	—	TE	TI	TY
¾	¾	GE	GI	GY	ME	MI	MY
¾	¾	SE	SI	SY	—	—	—
M26 x 1.5	M26 x 1.5	—	—	—	XE	XI	XY

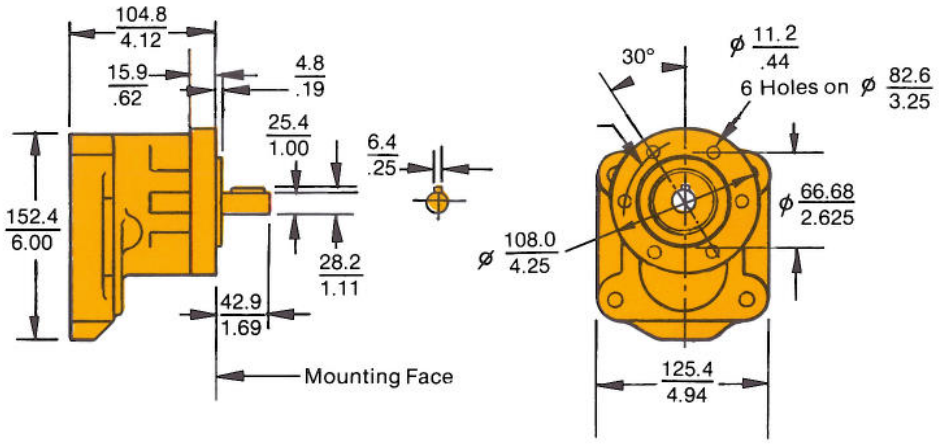
OUTPUT SHAFT TYPE/PUMP ONLY*

25X™

The direction of rotation of the output shaft in the port end cover is the same as that of the input drive shaft. The sum of the torque load on the output shaft and the torque required to drive the pump must not exceed the torque limit of the input shaft.

Each application for this shaft end cover must be cleared through our Technical Service Department.

*Cannot be coded for motors but special assembly numbers are available for motor assemblies.



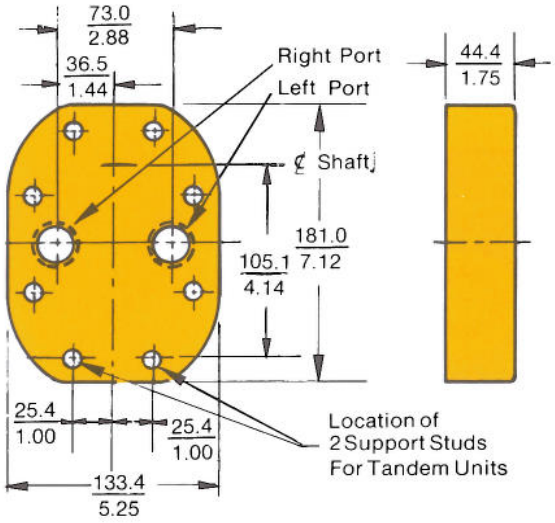
PUMP CODE SELECTION

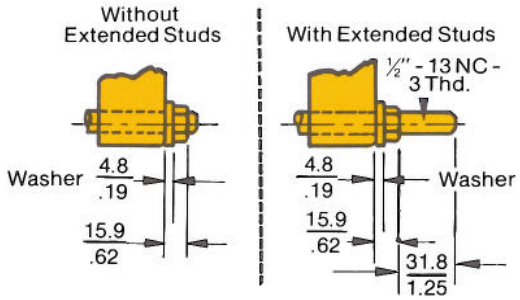
Rotation		
Clockwise	Counter-Clockwise	Double
DO	CO	BO

This catalog contains codes for most widely used models only. Complete codes for assembling all configurations are readily available from our sales representatives.

†NPT threads are not recommended for use at pressures in excess of 100 bar/1500 psi.

37X™





CODE SELECTION

Port Size inches BSPP Metric Left	Port Size inches BSPP Metric Right	Pipe Thread NPT† BSPP For Single Units Only	Pipe Thread NPT† BSPP For Tandem Units Only Without Extended Studs	Pipe Thread NPT† BSPP For Tandem Units Only With Extended Studs	Straight Thread SAE Metric For Single Units Only	Straight Thread SAE Metric For Tandem Units only Without Extended Studs	Straight Thread SAE Metric For Tandem Units only With Extended Studs
NONE	NONE	BA	BU	BY	BA	BU	BY
NONE	¾	CA	CU	CY	NA	NU	NY
NONE	¾	QA	QU	QY	—	—	—
NONE	M26 x 1.5	—	—	—	WA	WU	WY
¾	NONE	FA	FU	FY	PA	PU	PY
¾	NONE	AA	AU	AY	—	—	—
M26 x 1.5	NONE	—	—	—	TA	TU	TY
¾	¾	GA	GU	GY	MA	MU	MY
¾	¾	SA	SU	SY	—	—	—
M26 x 1.5	M26 x 1.5	—	—	—	XA	XU	XY
NONE	1	DA	DU	DY	—	—	—
1	NONE	JA	JU	JY	—	—	—
1	1	LA	LU	LY	—	—	—

U.S. standard and metric thread

Units ordered from codes shown in this catalog will accomodate the following U.S. Standard or Metric threads.

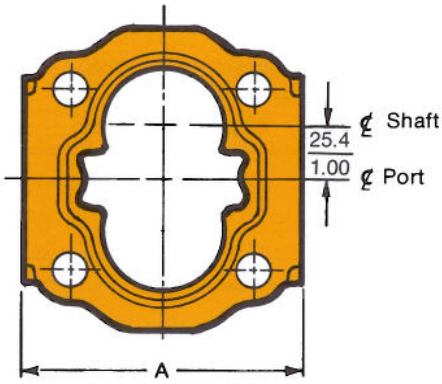
Port Size Inches	Port Size Millimeters	Split Flange Mounting Bolts SAE	Split Flange Mounting Bolts Metric	SAE Straight Thread	Metric Straight Thread	NPT Tapered Thread	BSPP Parallel Thread
¼	6.35	—		—	—	¼ — 18	¼ — 19
⅜	9.52	—		—	—	⅜ — 18	⅜ — 19
½	12.70	5/16 — 18	M8 x 1.25	¾ — 16	M18 x 1.5	½ — 14	½ — 14
⅝	15.88	—	—	⅞ — 14	M22 x 1.5	—	—
¾	19.05	⅜ — 16	M10 x 1.5	1 1/16 — 12	M26 x 1.5	¾ — 14	¾ — 14
⅞	22.22	—	—	1 3/16 — 12	M30 x 1.5	—	—
1	25.40	⅜ — 16	M10 x 1.5	1 5/16 — 12	M33 x 2	1 — 11½	1 — 11
1¼	31.75	7/16 — 14	M10 x 1.5	1⅝ — 12	M42 x 2	1¼ — 11½	1¼ — 11
1½	38.10	½ — 13	M12 x 1.75	1⅞ — 12	M48 x 2	1½ — 11½	1½ — 11
2	50.80	½ — 13	M12 x 1.75	2½ — 12	—	—	2 — 11
2½	63.50	½ — 13	M12 x 1.75	—	—	—	—
3	76.20	⅝ — 11	M16 x 2.0	—	—	—	—

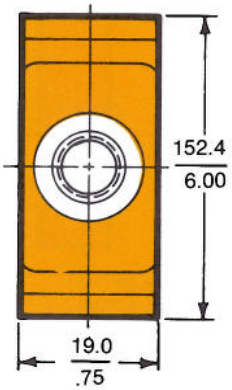
gear housings

Dimensional data shown in $\frac{\text{mm}}{\text{inches}}$

Porting shown in color panels are rated to 2000 psi/140 bar. For other available porting, contact your sales representative from Commercial.

STRAIGHT THREAD PORTS
25X™





A — $\frac{138.1}{5.44}$ For Gear Widths Through 2"

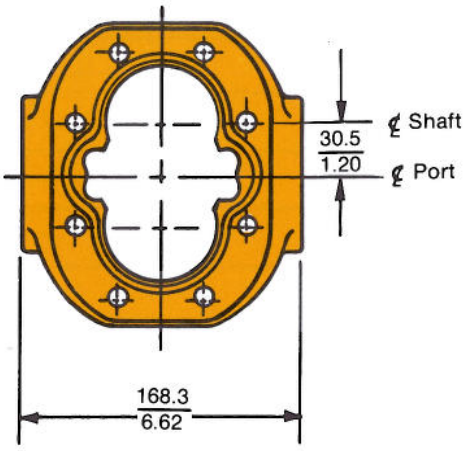
$\frac{171.4}{6.75}$ For 2¼" and 2½" Gear Widths Only

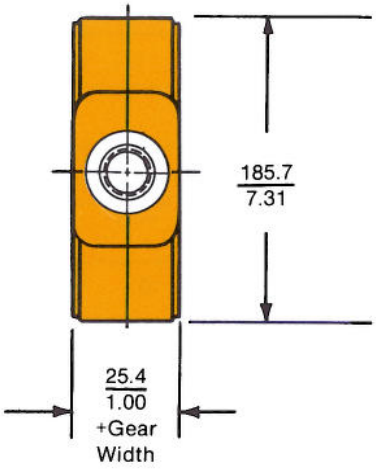
½" and ¾" gear sections are available without porting for secondary pumps in multiple assemblies only.

Code for ½" gear is AB05
AB05

Code for ¾" gear is AB07
AB07

STRAIGHT THREAD PORTS
37X™





This catalog contains codes for most widely used models only. Complete codes for assembling all configurations are readily available from our sales representatives.

NOTE:
Codes shown in black are SAE threads
Codes shown in color are metric threads

CODE SELECTION — SAE / Metric

Port Size O.D. Tube — Inches / Metric		Gear Width (inches)						
Left	Right	1	1¼	1½	1¾	2	2¼	2½
NONE	NONE	AB10 / AB10	AB12 / AB12	AB15 / AB15	AB17 / AB17	AB20 / AB20		
¾ M26 x 1.5	NONE	UR10 / VA10						
NONE	¾ M26 x 1.5	UF10 / WM10						
¾ M26 x 1.5	¾ M26 x 1.5	YR10 / WJ10	YR12 / WJ12					
¾ M26 x 1.5	1* M33 x 2*	YT10* / WK10*	YT12* / WK12*					
1* M33 x 2*	¾ M26 x 1.5	VJ10* / WN10*	VJ12* / WN12*					
1 M33 x 2	1 M33 x 2			VL15 / WQ15	VL17 / WQ17			
1 M33 x 2	1¼* M42 x 2*			VM15* / WS15*	VM17* / WS17*			
1¼* M42 x 2*	1 M33 x 2			VS15* / VR15*	VS17* / VR17*			
1¼ M42 x 2	1¼ M42 x 2					VT20 / YE20	VT22 / YE22	VT25 / YE25
1¼ M42 x 2	1½* M48 x 2*					VU20* / UA20*	VU22* / UA22*	VU25 / UA25
1½* M48 x 2*	1¼ M42 x 2					VZ20* / WF20*	VZ22* / WF22*	VZ25 / WF25

CODE SELECTION — SAE / Metric

Port Size O.D. Tube — Inches / Metric		Gear Width (inches)				
Left	Right	1	1¼	1½	1¾	2
NONE	NONE	AB10 / AB10	AB12 / AB12	AB15 / AB15	AB17 / AB17	AB20 / AB20
¾ M26 x 1.5	NONE	UR10 / VA10				
NONE	¾ M26 x 1.5	UF10 / WM10				
¾ M26 x 1.5	¾ M26 x 1.5	YR10 / WJ10	YR12 / WJ12			
¾ M26 x 1.5	1* M33 x 2*	YT10* / WK10*	YT12 / WK12			
1* M33 x 2*	¾ M26 x 1.5	VJ10* / WN10*	VJ12 / WN12			
1 M33 x 2	1 M33 x 2			VL15 / WQ15	VL17 / WQ17	
1 M33 x 2	1¼* M42 x 2*			VM15* / WS15*	VM17 / WS17*	
1¼* M42 x 2*	1 M33 x 2			VS15* / VR15*	VS17 / VR17*	
1¼ M42 x 2	1¼ M42 x 2				VT17 / YE17	VT20 / YE20
1¼ M42 x 2	1½* M48 x 2*					VU20* / UA20*
1½* M48 x 2*	1¼ M42 x 2					VZ20* / WF20*

*Low pressure inlet only.

gear housings

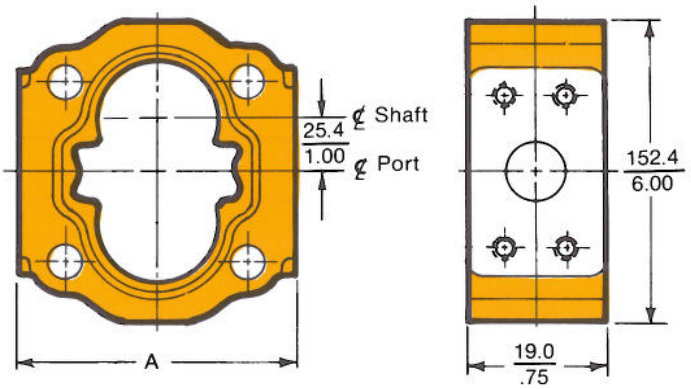
Dimensional data shown in mm / inches

Porting shown in color panels are rated to 2000 psi/140 bar. For other available porting, contact your sales representative from Commercial.

SPLIT FLANGE PORTS

25X™

When specifying split flange porting on multiple units, all coding MUST be cleared by our Technical Service Dept.



A — 138.1 / 5.44 For all AB Codes

134.9 / 5.31 For Gear Widths Through 2"

168.3 / 6.62 For 2¼ and 2½ Gear Widths Only

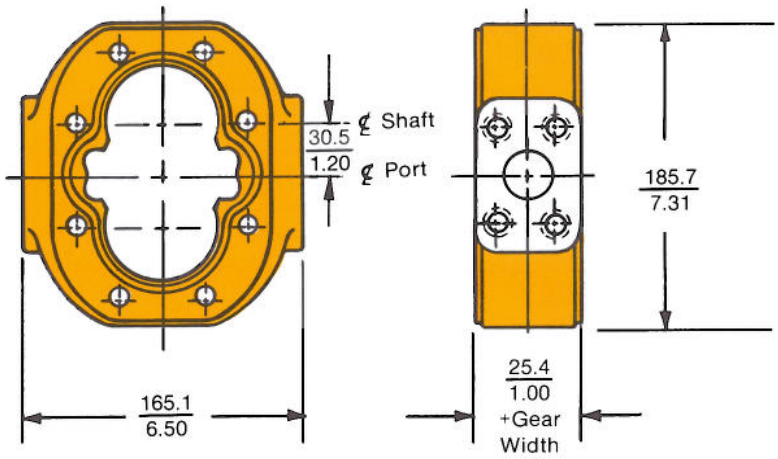
½" and ¾" gear sections are available without porting for secondary pumps in multiple assemblies only.

Code for ½" gear is AB05 / AB05

Code for ¾" gear is AB07 / AB07

SPLIT FLANGE PORTS

37X™



This catalog contains codes for most widely used models only. Complete codes for assembling all configurations are readily available from our sales representatives.

NOTE:
Codes shown in black are SAE threads.
Codes shown in color are metric threads

Port Size Flange Hole Diameter (in.)		CODE SELECTION SAE / Metric — Gear Width (inches)						
Left	Right	1	1¼	1½	1¾	2	2¼	2½
NONE	NONE	AB10 / AB10	AB12 / AB12	AB15 / AB15	AB17 / AB17	AB20 / AB20		
1	1		RL12 / ZQ12					
1	1¼*		RM12* / ZS12*					
1¼*	1		RS12* / SR12*					
1¼	1¼			RT15 / ZE15	RT17 / ZE17			
1¼	1½*			RU15* / OA15*	RU17* / OA17*			
1½*	1¼			RZ15* / RF15*	RZ17* / RF17*			
1½	1½					SC20 / RV20	SC22 / RV22	SC25 / RV25
1½	2*					SD20* / RG20*	SD22* / RG22*	SD25 / RG25
2*	1½					SH20* / RD20*	SH22* / RD22*	SH25 / RD25

Port Size Flange Hole Diameter (in.)		CODE SELECTION SAE / Metric — Gear Width (inches)							
Left	Right	1	1¼	1½	1¾	2	2¼	2½	3
NONE	NONE	AB10 / AB10	AB12 / AB12	AB15 / AB15	AB17 / AB17	AB20 / AB20			
¾	1	ZT10 / ZK10							
1	¾	RJ10 / ZN10							
1	1		RL12 / ZQ12						
1	1¼*		RM12* / ZS12*	RM15 / ZS15					
1¼*	1		RS12* / SR12*	RS15 / SR15					
1¼	1¼			RT15 / ZE15	RT17 / ZE17	RT20 / ZE20			
1¼	1½*				RU17* / OA17*	RU20 / OA20			
1½*	1¼				RZ17* / RF17*	RZ20 / RF20			
1½	1½					SC20 / RV20	SC22 / RV22	SC25 / RV25	SC30 / RV30
1½	2						SD22 / RG22	SD25 / RG25	SD30 / RG30
2	1½						SH22 / RD22	SH25 / RD25	SH30 / RD30
2	2							SK25 / OU25	SK30 / OU30

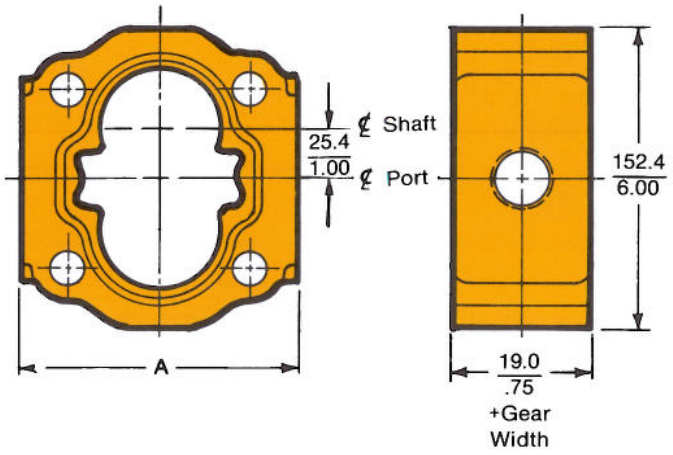
*Low pressure inlet only.

gear housings

Dimensional data shown in $\frac{\text{mm}}{\text{inches}}$

Metric porting shown in color panels are rated to 2000 psi/140 bar. For other available porting, contact your sales representative from Commercial.

PIPE THREAD PORTS
25X™



A — $\frac{138.1}{5.44}$ For Gear Widths Through 2"

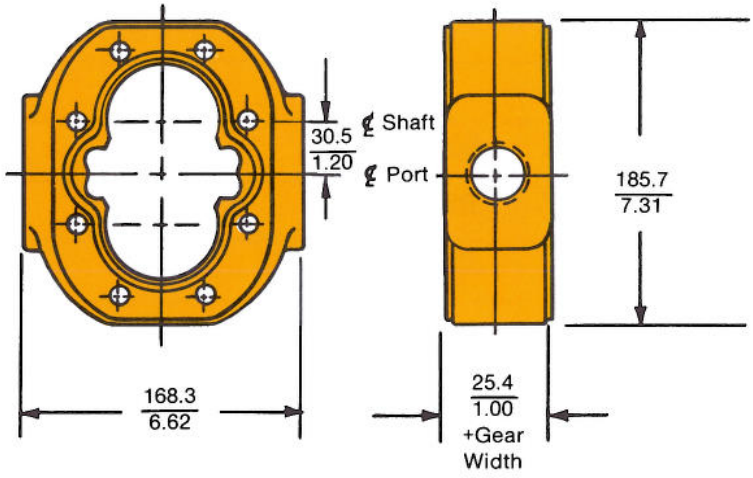
$\frac{171.4}{6.75}$ For 2¼ and 2½ Gear Widths Only

PIPE THREAD PORTS
37X™

½" and ¾" gear sections are available without porting for secondary pumps in multiple assemblies only.

Code for ½" gear is AB05
AB05

Code for ¾" gear is AB07
AB07



NOTE:
Codes shown in black are NPT threads
Codes shown in color are BSPP threads

This catalog contains codes for most widely used models only. Complete codes for assembling all configurations are readily available from our sales representatives.

†NPT threads are not recommended for use at pressures in excess of 100 bar/1500 psi.

CODE SELECTION NPT† / BSPP

Port Size Pipe Diameter (inches) Left	Right	Gear Width (inches) 1	1¼	1½	1¾	2	2¼	2½
NONE	NONE	AB10 / AB10	AB12 / AB12	AB15 / AB15	AB17 / AB17	AB20 / AB20		
NONE	¾	AF10 / EM10						
¾	NONE	AR10 / EA10						
¾	¾	ER10 / EJ10	ER12 / EJ12					
¾	1*	ET10* / EK10*	ET12 / EK12*					
1*	¾	IJ10* / EN10*	IJ12 / EN12*					
1	1		IL12 / —	IL15 / EQ15				
1	1¼*			IM15* / ES15*	IM17 / ES17*			
1¼*	1			IS15* / IR15*	IS17 / IR17*			
1¼	1¼				IT17 / —	IT20 / —	IT22 / IE22	IT25 / IE25
1¼	1½						IU22 / TA22	IU25 / TA25
1½	1¼						IZ22 / JF22	IZ25 / JF25

CODE SELECTION NPT† / BSPP

Port Size Pipe Diameter (inches) Left	Right	Gear Width (inches) 1	1¼	1½	1¾	2	2¼	2½	3
NONE	NONE	AB10 / AB10	AB12 / AB12	AB15 / AB15	AB17 / AB17	AB20 / AB20			
NONE	¾	AF10 / EM10							
¾	NONE	AR10 / EA10							
¾	¾	ER10 / EJ10							
¾	1*	ET10 / EK10*	ET12 / EK12						
1*	¾	IJ10 / EN10*	IJ12 / EN12						
1	1	IL10 / EQ10	IL12 / EQ12	IL15 / EQ15					
1	1¼*			IM15 / ES15*	IM17 / ES17*				
1¼*	1			IS15 / IR15*	IS17 / IR17*				
1¼	1¼				IT17 / IE17	IT20 / IE20	IT22 / IE22	IT25 / IE25	IT30 / IE30
1¼	1½*					IU20 / TA20*	IU22 / TA22	IU25 / TA25	IU30 / TA30
1½*	1¼					IZ20 / JF20*	IZ22 / JF22	IZ25 / JF25	IZ30 / JF30
1½	1½							JC25 / JV25	JC30 / JV30

*Low pressure inlet only.

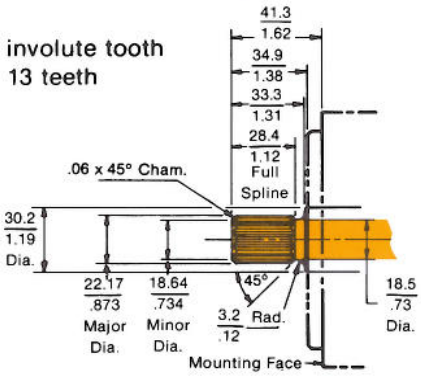
drive shafts, splined

Dimensional data shown in $\frac{\text{mm}}{\text{inches}}$

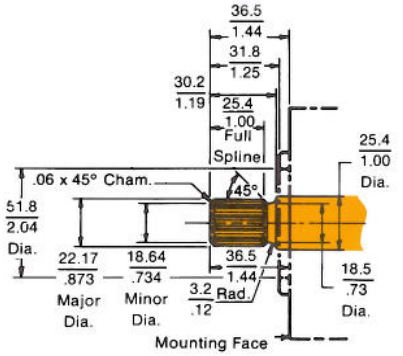
STYLE OF SPLINED SHAFTS

SAE B	SAE C
13 Teeth	14 Teeth
16/32 Pitch	12/24 Pitch
30 Pressure Angle	30 Pressure Angle

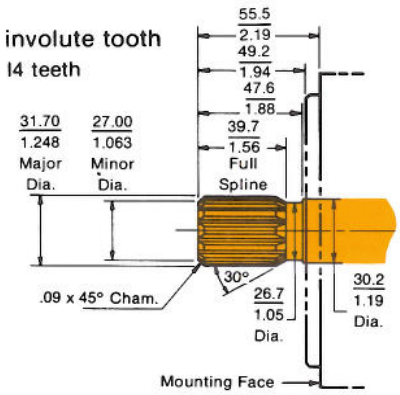
SAE B
25X™ CODE 25 Type 1



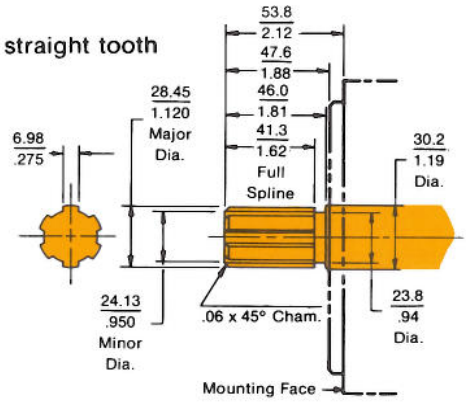
25X™ CODE 48 Type 2



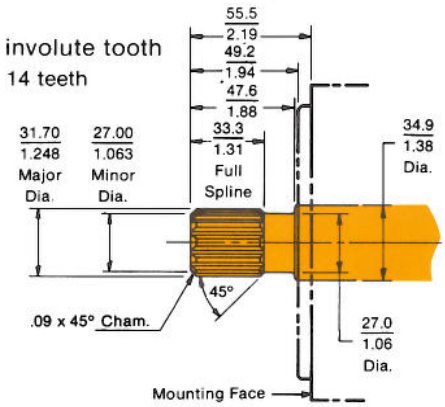
SAE C
25X™ CODE 7 Type 1



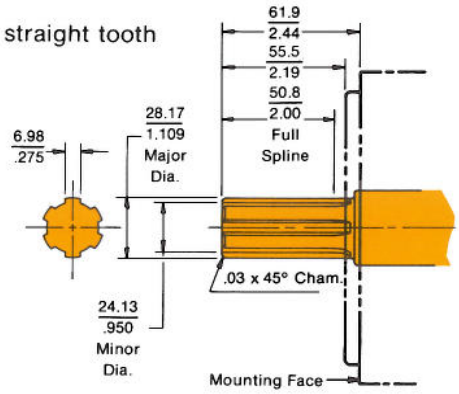
SPLINED 6 TEETH
25X™ CODE 6 Type 1



SAE C
37X™ CODE 7 Single Bearing



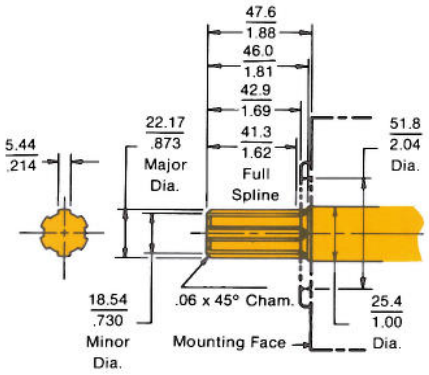
SPLINED 6 TEETH
37X™ CODE 3 Single Bearing



This catalog contains codes for most widely used models only. Complete codes for assembling all configurations are readily available from our sales representatives.

ATTENTION
These illustrations do not necessarily portray the exact drive shaft configuration due to design purposes. To determine coupling engagement, specific details for any shaft may be obtained from your Commercial Intertech sales representative or by phoning our District Sales Office.

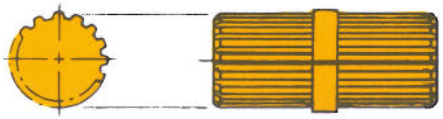
25X™ CODE 99 Type 2



CONNECTING SHAFT

25X™ and 37X™ CODE 1
Type 1, Type 2, Single Bearing, Double Bearing

For Multiple Units Only



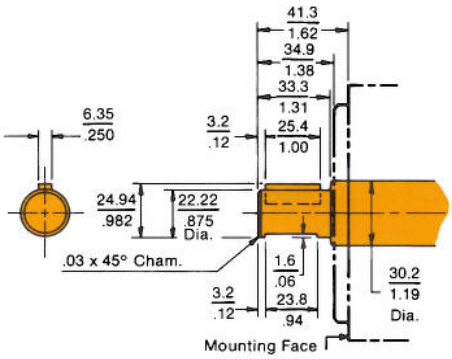
Connecting shafts furnish a continuous driveline through tandem pumps and motors. Adjacent units in tandem are joined by the connecting shaft. When specifying tandem pumps or motors, one connecting shaft (CODE 1) must be specified for every two adjacent pumps or motors.

drive shafts, straight keyed

Dimensional data shown in $\frac{\text{mm}}{\text{inches}}$

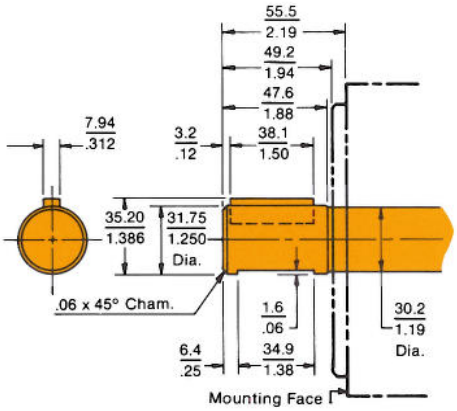
SAE B

25X™ CODE 30 Type 1



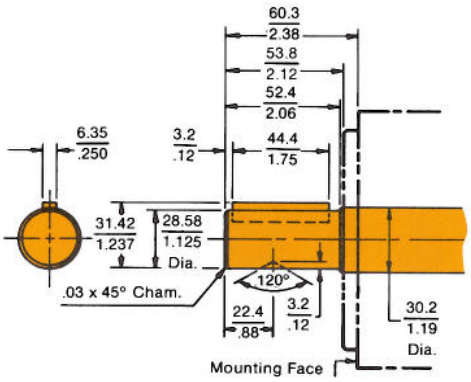
SAE C

25X™ CODE 11 Type 1

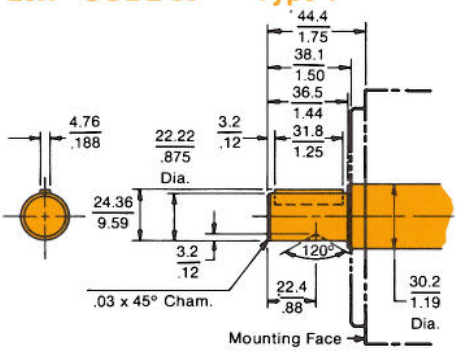


STRAIGHT KEYED

25X™ CODE 2 Type 1

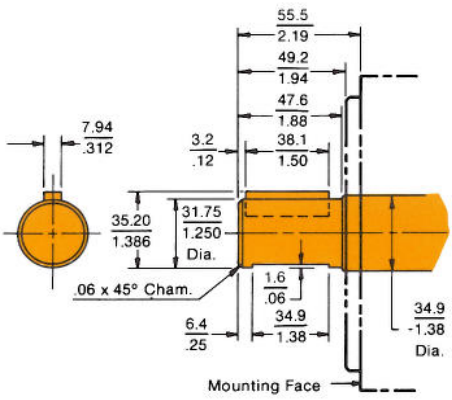


25X™ CODE 38 Type 1



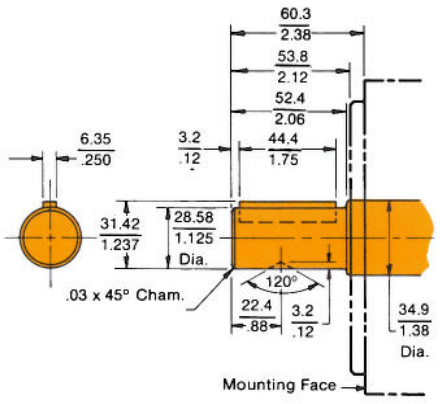
SAE C

37X™ CODE 11 Single Bearing

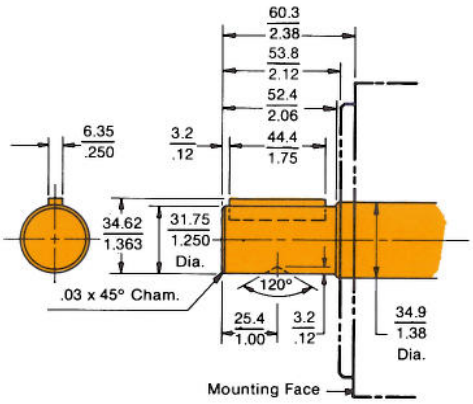


STRAIGHT KEYED

37X™ CODE 2 Single Bearing



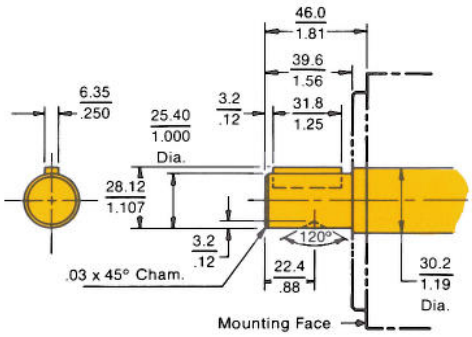
37X™ CODE 8 Single Bearing



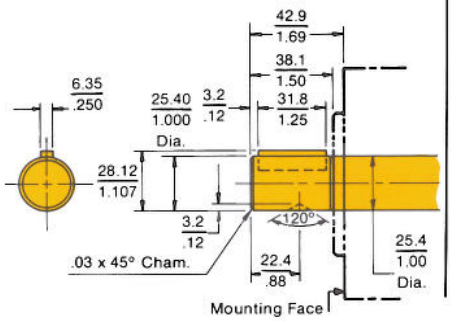
ATTENTION
These illustrations do not necessarily portray the exact drive shaft configuration due to design purposes. To determine coupling engagement, specific details for any shaft may be obtained from your Commercial Intertech sales representative or by phoning our District Sales Office.

This catalog contains codes for most widely used models only. Complete codes for assembling all configurations are readily available from our sales representatives.

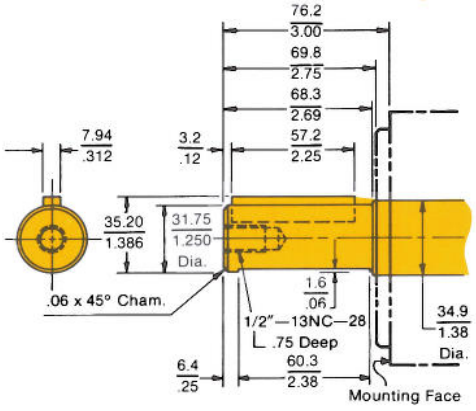
25X™ CODE 43 Type 1



25X™ CODE 47 Type 2



25X™ CODE 73* Double Bearing



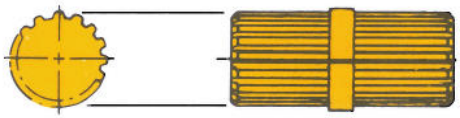
*Code 73 drive shafts can only be used with double-bearing shaft end covers (see pages 8, 9 and 10).

CONNECTING SHAFT

25X™ and 37X™ CODE 1

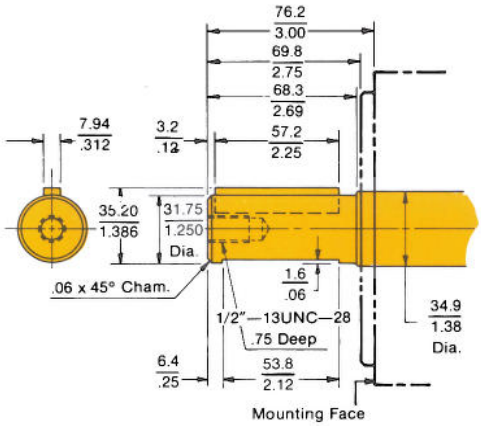
Type 1, Type 2, Single Bearing, Double Bearing

For Multiple Units Only



Connecting shafts furnish a continuous driveline through tandem pumps and motors. Adjacent units in tandem are joined by the connecting shaft. When specifying tandem pumps or motors, one connecting shaft (CODE 1) must be specified for every two adjacent pumps or motors.

37X™ CODE 73* Double Bearing



*Code 73 drive shafts can only be used with double-bearing shaft end covers (see pages 8, 9 and 10).

Use Type 1 drive shafts with Type 1 shaft end covers only.
Use Type 2 drive shafts with Type 2 shaft end covers only.

bearing carriers

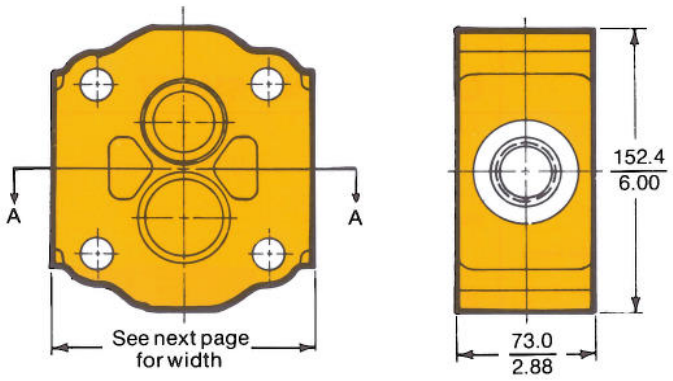
Multiple unit motor installation must be cleared through Commercial's Technical Service Department.

Both pump units of a tandem pump assembly may be fed through the bearing carrier provided inlet flow to each unit does not exceed 21 gpm for the 25X (31 gpm for the 37X). If both units discharge through common porting in the bearing carrier, maximum flow from either unit must not exceed 40 gpm for the 25X (60 gpm for the 37X).

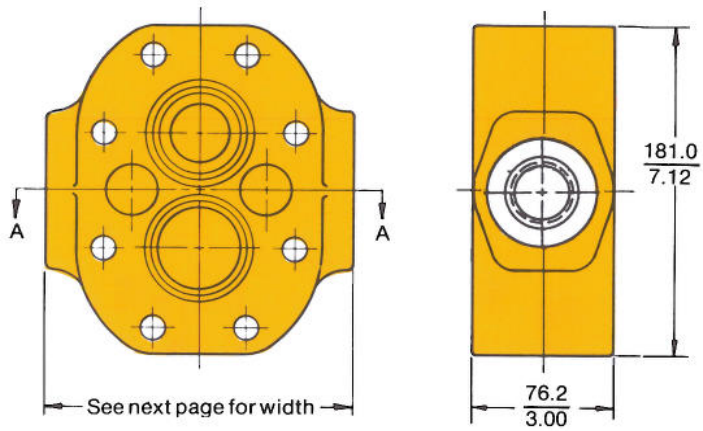
dimensional data shown in $\frac{\text{mm}}{\text{inches}}$

STRAIGHT THREAD PORTS (O.D. Tube)

25X™



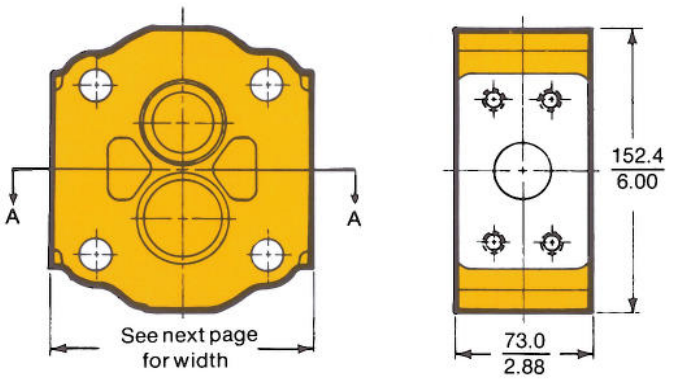
37X™



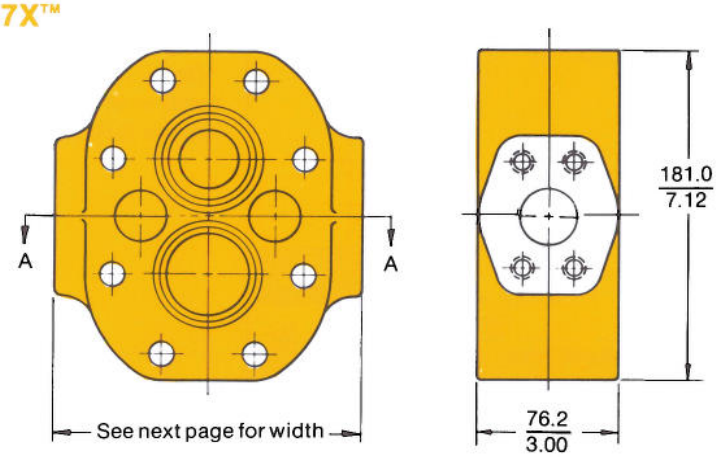
SPLIT FLANGE PORTS

When specifying split flange porting on multiple units, all coding MUST be cleared by our Technical Service Dept.

25X™

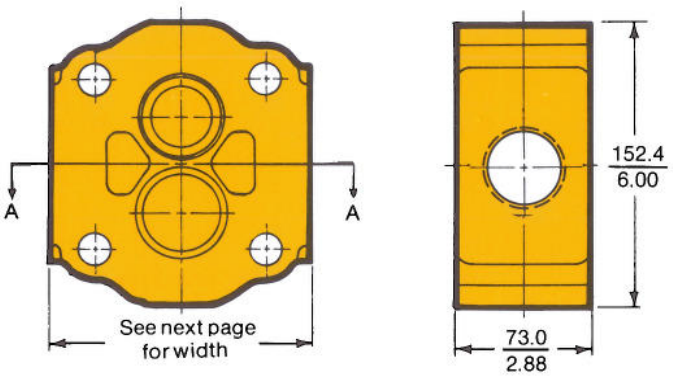


37X™

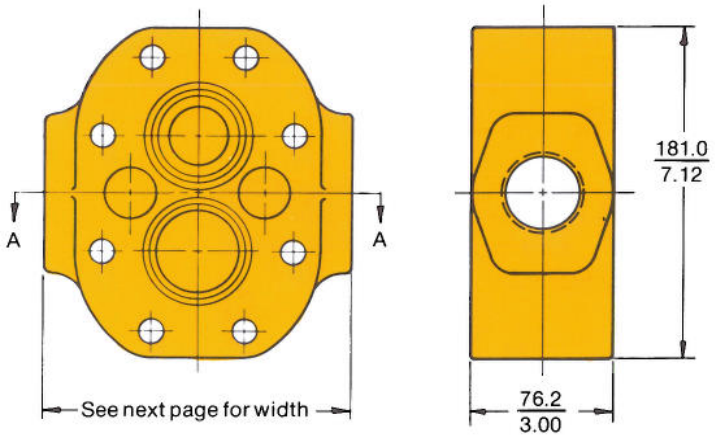


PIPE THREAD PORTS

25X™



37X™



This catalog contains codes for most widely used models only. Complete codes for assembling all configurations are readily available from our sales representatives.

CODE SELECTION

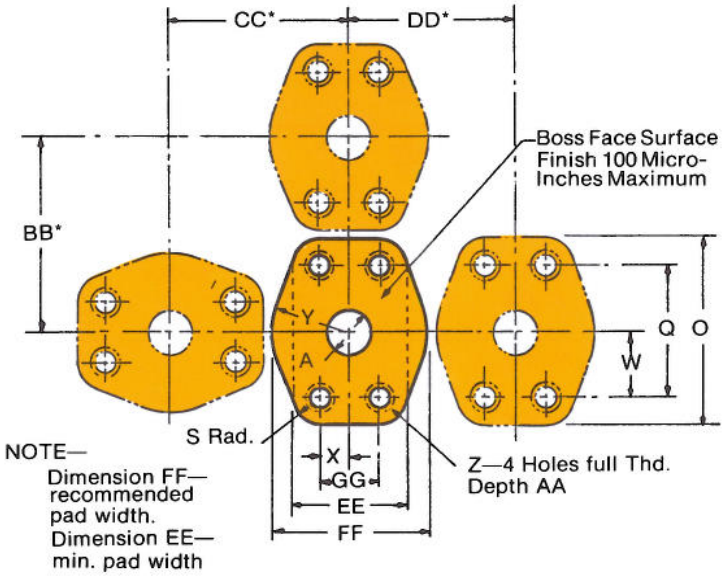
Section A-A (back / front)	25X Port Size inches / metric Left	Right	Width mm / inches	CODE SAE / Metric	37X Port Size inches / metric Left	Right	Width mm / inches	CODE SAE / Metric
	NONE	NONE	131.8 5.19	B B	NONE	NONE	161.9 6.38	B B
	1½ M48 x 2	NONE	146.0 5.75	TH NO	1¼ M42 x 2	NONE	174.6 6.88	NG NN
	NONE	M48 x 2	146.0 5.75	TM ZZ	NONE	M42 x 2	174.6 6.88	NK NZ
	1½ M48 x 2	1 M33 x 2	146.0 5.75	TK PV	1¼ M42 x 2	1 M33 x 2	174.6 6.88	XX PS
	1 M33 x 2	1½ M48 x 2	146.0 5.75	TN RR	1 M33 x 2	1¼ M42 x 2	174.6 6.88	XZ RO
	1 M33 x 2	1 M33 x 2	146.0 5.75	QD GN	1 M33 x 2	1 M33 x 2	174.6 6.88	QD GN
	1¼ M42 x 2	1¼ M42 x 2	146.0 5.75	NV XF	1¼ M42 x 2	1¼ M42 x 2	174.6 6.88	NV XF

Section A-A (back / front)	Port Size (inches) Left	Right	25X Width mm / inches	37X Width mm / inches	CODE SAE / Metric
	NONE	NONE	131.8 5.19	161.9 6.38	B B
	1½	NONE	144.5 5.69	173.0 6.81	FP XN
	NONE	1½	144.5 5.69	173.0 6.81	FT CQ
	1½	1	142.9 5.62	171.4 6.75	XV JM
	1	1½	142.9 5.62	171.4 6.75	XW JR
	1	1	142.9 5.62	171.4 6.75	LP JT
	1¼	1¼	142.9 5.62	171.4 6.75	GL QZ

Section A-A (back / front)	Port Size (inches) Left	Right	25X Width mm / inches	37X Width mm / inches	CODE NPT† / BSPP
	NONE	NONE	131.8 5.19	161.9 6.38	B B
	1½	NONE	146.0 5.75	174.6 6.88	TL MM
	NONE	1½	146.0 5.75	174.6 6.88	TJ MX
	1½	1	146.0 5.75	174.6 6.88	XS HN
	1	1½	146.0 5.75	174.6 6.88	XT HX
	1	1	146.0 5.75	174.6 6.88	DH AS
	1¼	1¼	146.0 5.75	174.6 6.88	BF OE

†NPT threads are not recommended for use at pressures in excess of 100 bar/1500 psi.

4 BOLT FLANGE PORT DIMENSIONS, SAE STANDARD IN INCHES

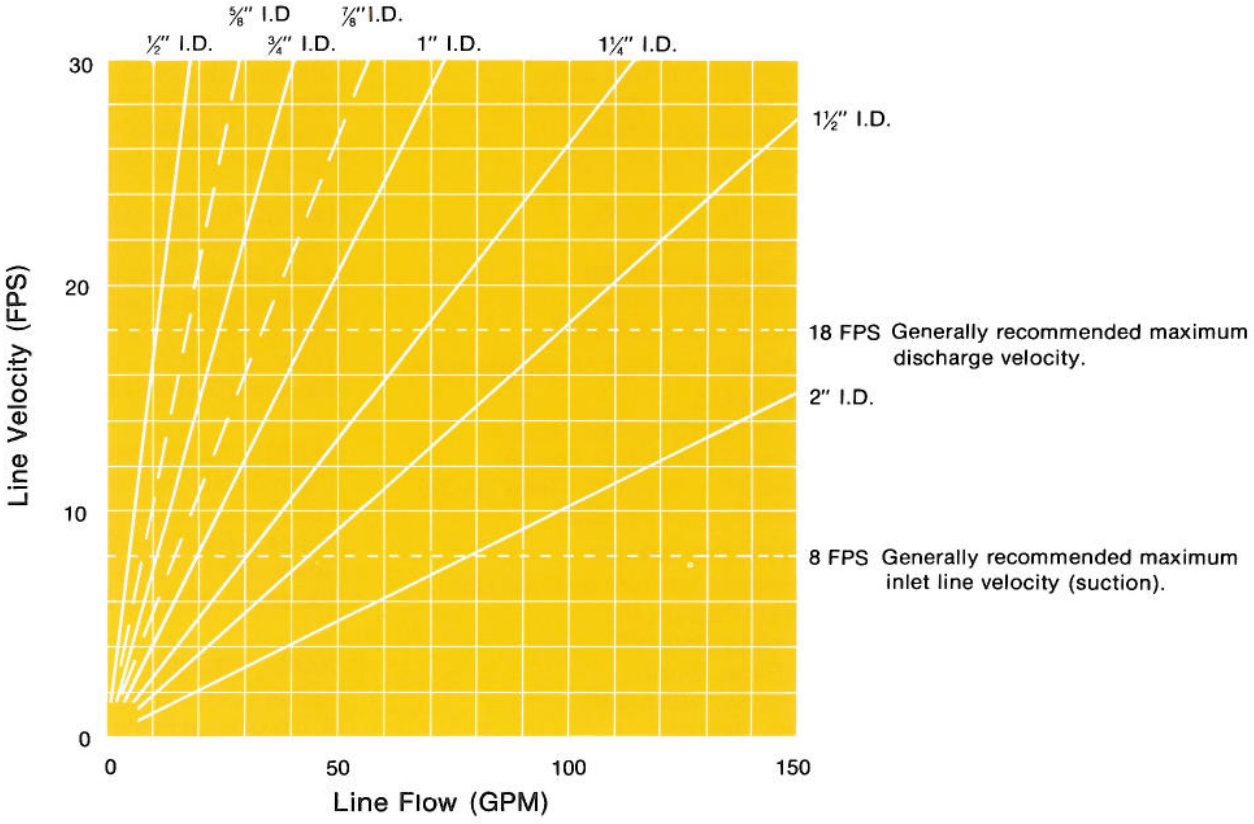


Bolted Flange connections

Nominal Flange Size	A Dia.	O	FF	Q ±0.010	GG ± 0.010	S Rad.	W	X	Y Rad.	Z Thread UNC-2B	AA Min.	BB* Min.	CC* Min.	DD* Min.	EE Min.
½	0.50	2.12	1.81	1.500	0.688	0.31	0.75	0.34	0.91	5/16—18	0.94	2.22	2.06	1.91	1.31
¾	0.75	2.56	2.06	1.875	0.875	0.34	0.94	0.44	1.03	3/8—16	0.88	2.66	2.41	2.16	1.62
1	1.00	2.75	2.31	2.062	1.031	0.34	1.03	0.52	1.16	3/8—16	0.88	2.84	2.62	2.41	1.88
1¼	1.25	3.12	2.88	2.312	1.188	0.41	1.16	0.59	1.44	7/16—14	1.12	3.22	3.09	2.97	2.12
1½	1.50	3.69	3.25	2.750	1.406	0.47	1.38	0.70	1.62	½—13	1.06	3.78	3.56	3.34	2.50
2	2.00	4.00	3.81	3.062	1.688	0.47	1.53	0.84	1.91	½—13	1.06	4.09	4.00	3.91	3.00
2½	2.50	4.50	4.28	3.500	2.000	0.50	1.75	1.00	2.14	½—13	1.19	4.59	4.50	4.38	3.50
3	3.00	5.31	5.16	4.188	2.438	0.56	2.09	1.22	2.58	5/8—11	1.19	5.41	5.34	5.25	4.19

*Dimensions BB, CC, and DD provide .06 in. clearance between flanges, dimensionally on the high limit, when the same size flanges are used on adjacent ports. These dimensions do not apply when more than one size of flanges are used on adjacent ports.

FLOW VELOCITIES THROUGH HOSES AND PIPES



$$FPS = .41 \frac{GPM}{d^2} \text{ (Approx.)}$$

$GPM = 2.4\ d^2 \times FPS$ (Approx.)

d = I.D. of hose or pipe.

Commercial Intertech

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