Catalog HY13-PMD300/US PGP/PGM315 Characteristics

PGP/PGM 300/400 Series Gear Pumps & Motors

- Three-piece cast iron construction High efficiency and long life in severe operating environments.
- Low friction bushing Provides strength in heavy duty applications.
- Balanced thrust plates
 Optimize pump efficiency.
- Largest journal bearings available for high pressure and long life.



Product Features	Description
Pump type	Heavy-duty, cast iron, external gear
Mounting	SAE standard flanges
Ports	SAE split flanges and other types of threaded ports, see Specifications
Shaft style	SAE splined, keyed, and others, see Specifications
Maximum speed	400 - 3000 rpm, see Specifications
Theoretical displacement	See Specifications 0.62 to 2.48 in ³
Drive	Clockwise, counterclockwise, double. Direct drive with flexible coupling is recommended. Pumps subject to radial loads must be specified with an outboard bearing. Axial loading is not allowed.
Inlet pressure	30 psia (15psig) maximum pressure / 5 in. Hg maximum vacuum at operating temperature
Outlet pressure	See Specifications
Hydraulic fluids	Mineral oil, fire resistant fluids: water-oil emulsions 60/40, MFB; water-glycol, HFC; phosphate-esters, HFD (FPM seals required)

Product Features	Description
Fluid viscocity	From 7.5 to 1600 cSt (50 to 7500 sus). Recommended 15 to 75 cSt.
Fluid temperature	Mineral oil with standard seals: 0°F to 180°F (-20°C to 80°C); Fire resistant fluids HFB, HFC: 0°F to 150°F (-20°C to 65°C)
Filtration	ISO 4406 code: • 19/16 at 2000 psi/140 bar • 17/14 at 3000 psi/210 bar • 15/12 at 4000 psi/275 bar
Direction of rotation (looking at the drive shaft)	CW, CCW, Bi-Rotational
Multiple pump assemblies	Up to 6 gear selections of the same model, even with different gear widths
Separate or common inlet capability	Common

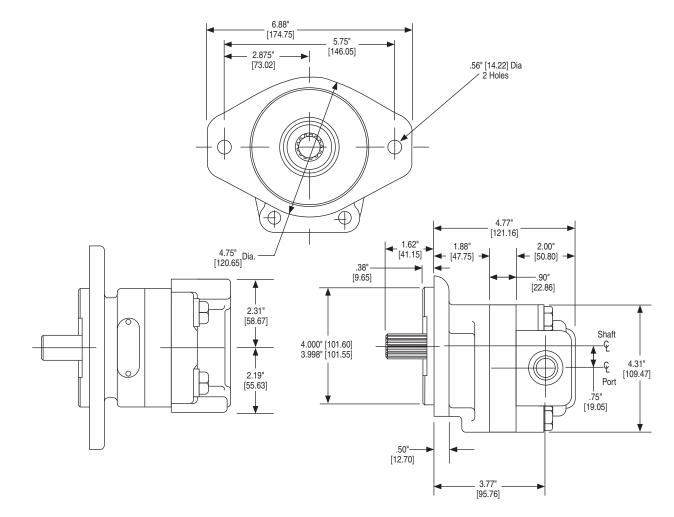


PGP/PGM315 Specifications

PGP315 Frame Size	05	07	10	12	15	17	20
Displacement – cm ³ /rev	10.2	15.2	20.3	25.4	30.5	35.6	40.6
(in ³ /rev)	(0.62)	(0.93)	(1.24)	(1.55)	(1.86)	(2.17)	(2.48)
Max continuous pressure – bar	241	241	241	241	228	200	172
(psi)	(3,500)	(3,500)	(3,500)	(3,500)	(3,300)	(2,900)	(2,500)
Max Speed – RPM	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Approximate Weight – Lbs.	16.0	17	18	19	20	21	22
[kg]	[7.2]	[7.7]	[8.2]	[8.6]	[9.1]	[9.5]	[10.0]

PGM315 Frame Size	05	07	10	12	15	17	20
Displacement – cm³/rev	10.2	15.2	20.3	25.4	30.5	35.6	40.6
(in³/rev)	(0.62)	(0.93)	(1.24)	(1.55)	(1.86)	(2.17)	(2.48)
Max continuous pressure – bar	241	241	241	241	228	200	172
(psi)	(3,500)	(3,500)	(3,500)	(3,500)	(3,300)	(2,900)	(2,500)
Max Speed – RPM	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Approximate Weight – Lbs.	16.0	17	18	19	20	21	22
[kg]	[7.2]	[7.7]	[8.2]	[8.6]	[9.1]	[9.5]	[10.0]

PGP/PGM315 Dimensions





PGP315	Pump	Performance	Data
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Speed	Output Flow				Gear Widths			
RPM	Input Power	1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"
	GPM	2.0	3.2	4.4	5.5	6.7	7.9	9.0
000	LPM	8	12	17	21	26	30	34
900	HP	5	8	11	13	15	15	15
	kW	4	6	8	10	11	11	11
	GPM	2.8	4.4	6.0	7.6	9.2	10.7	12.2
1200	LPM	11	17	23	29	35	40	46
1200	HP	7	11	14	18	20	21	20
	kW	5	8	11	13	15	15	15
	GPM	3.6	5.6	7.7	9.6	11.6	13.5	15.4
1500	LPM	14	21	29	36	44	51	58
1500	HP	9 7	13	18	22	25	26	25
	kW	7	10	13	16	19	19	19
	GPM	4.4	6.8	9.3	11.6	14.0	16.3	18.6
1800	LPM	17	26	35	44	53	62	70
1000	HP	11	16	21	27	30	31	30
	kW	8	12	16	20	22	23	23
	GPM	5.2	8.1	10.9	13.6	16.4	19.1	21.8
2100	LPM	20	30	41	51	62	72	83
2100	HP	12	19	25	31	35	36	35
	kW	9	14	18	23	26	27	26
	GPM	6.0	9.3	12.5	15.6	18.8	21.9	25.1
2400	LPM	23	35	47	59	71	83	95
2400	HP	14	21	28	35	40	41	40
	kW	11	16	21	26	30	31	30
	GPM	7.7	11.7	15.7	19.6	23.7	27.6	31.5
3000	LPM	29	44	59	74	90	104	119
3000	HP	18	27	35	44	50	51	51
	kW	13	20	26	33	37	38	38

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 SUS at 100° F.

NOTE: Pump output flow is at the maximum rated pressure.

PGM315 Motor Performance Data

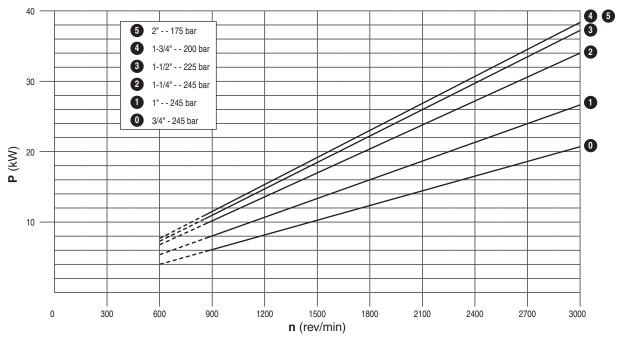
						Gear \	Vidths				
Speed RPM	Output Torque	1 3500	") psi	1-1 3500	/4") psi		/2") psi		3/4") psi) psi
		Α	В	A	В	Α	В	A	В	A	В
900	in/lbs	7.1	665	8.3	830	9.6	940	10.9	965	12.2	950
900	Nm	27	75.1	32	93.8	37	106.2	41	109.0	46	107.3
1200	in/lbs	8.8	665	10.5	830	12.2	940	13.8	965	15.5	950
1200	Nm	33	75.1	40	93.8	46	106.2	52	109.0	59	107.3
1500	in/lbs	10.6	660	12.6	825	14.7	935	16.7	955	18.8	945
1500	Nm	40	74.6	48	93.2	56	105.6	63	107.9	71	106.8
1800	in/lbs	12.3	655	14.7	820	17.2	930	19.6	950	22.1	940
1000	Nm	46	74.0	56	92.6	65	105.1	74	107.3	84	106.2
2100	in/lbs	14.0	655	16.8	820	19.7	930	22.5	950	25.4	940
2100	Nm	53	74.0	64	92.6	75	105.1	85	107.3	96	106.2
2400	in/lbs	15.7	640	18.9	800	22.2	910	25.4	930	28.8	920
2400	Nm	59	72.3	72	90.4	84	102.8	96	105.1	109	103.9
3000	in/lbs	19.0	640	23.0	800	27.2	905	31.2	925	35.3	915
3000	Nm	72	72.3	87	90.4	103	102.3	118	104.5	134	103.4

A: Input Flow GPM/LPM; B: Output Torque IN/LBS/Nm

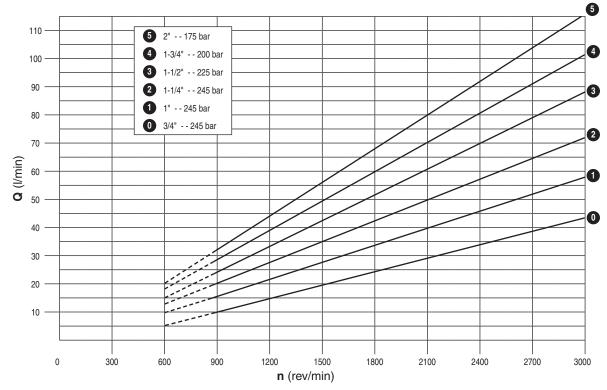
NOTE: In accordance with our policy of continuing product development, we reserve the right to change specifications shown in this catalog without notice.



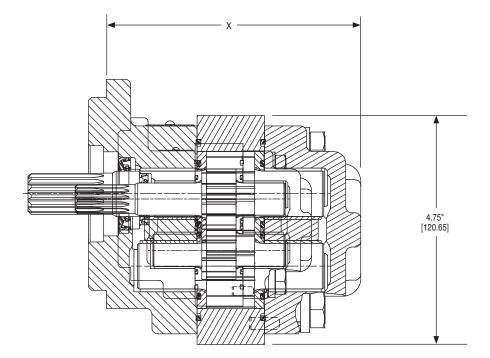
Input



Output



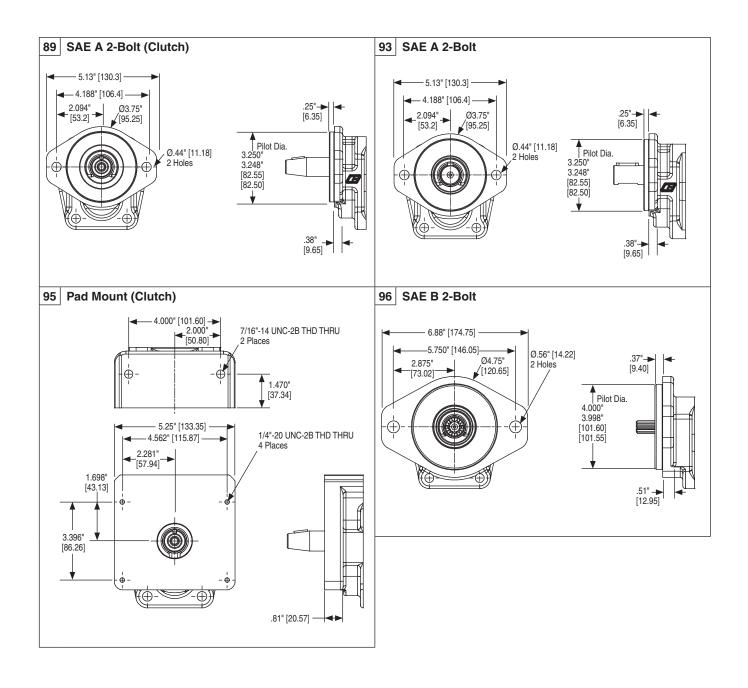




			XC	DIMENSION			
Code	05	07	10	12	15	17	20
89	4.78"	5.03"	5.28"	5.53"	5.78"	6.03"	6.28"
	[121.41]	[127.76]	[134.11]	[140.46]	[146.81]	[153.16]	[159.51]
93	4.78"	5.03"	5.28"	5.53"	5.78"	6.03"	6.28"
	[121.41]	[127.76]	[134.11]	[140.46]	[146.81]	[153.16]	[159.51]
95	5.52"	5.77"	6.02"	6.27"	6.52"	6.77"	7.02"
	[140.21]	[146.56]	[152.91]	[159.26]	[165.61]	[171.96]	[178.31]
96	4.78"	5.03"	5.28"	5.53"	5.78"	6.03"	6.28"
	[121.41]	[127.76]	[134.11]	[140.46]	[146.81]	[153.16]	[159.51]

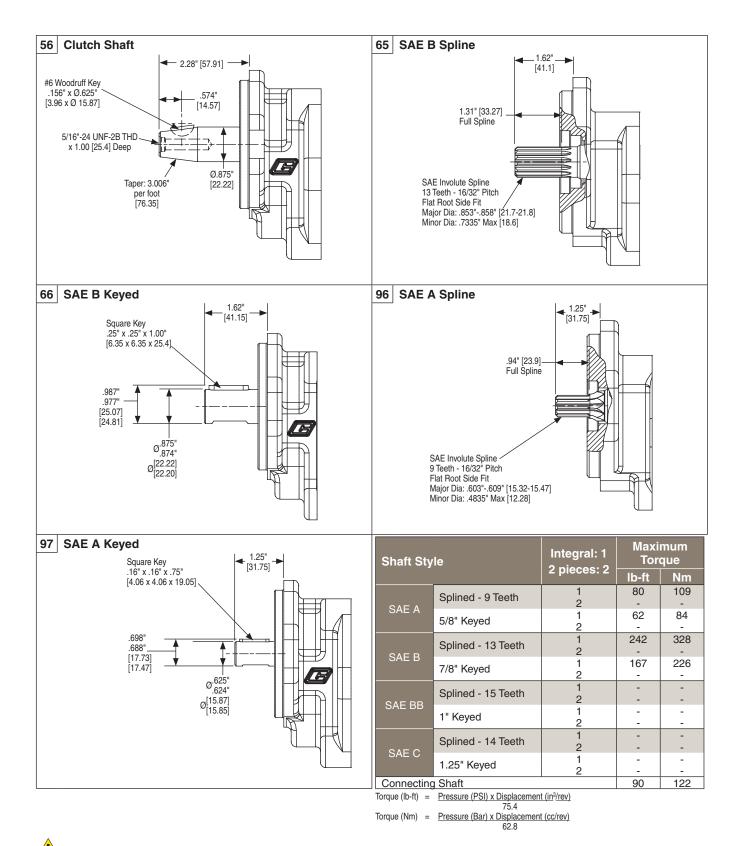


Catalog HY13-PMD300/US PGP/PGM315 Shaft End Cover (cont.)





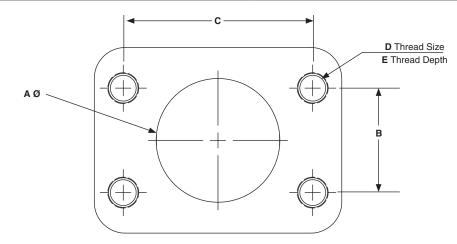
Catalog HY13-PMD300/US PGP/PGM315 Drive Shafts





SAE Flanged Ports UNC Thread (SSS)

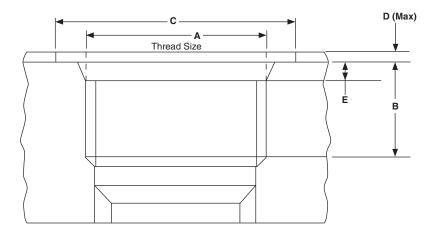
	Α	l	В)	D	E	
inch	mm	inch	mm	inch	mm	UNC	inch	mm
0.50	12.7	0.69	17.5	1.50	38.1	5/16"-18	0.94	23.9
0.75	19.1	0.88	22.3	1.88	47.7	3/8"-16	0.88	22.4
1.00	25.4	1.03	26.2	2.06	52.2	3/8"-16	0.88	22.4
1.25	31.8	1.19	30.2	2.31	58.7	7/16"-14	1.12	28.4
1.50	38.1	1.41	35.7	2.75	69.9	1/2"-13	1.06	26.9
2.00	50.8	1.69	42.9	3.06	77.8	1/2"-13	1.06	26.9
2.50	63.5	2.00	50.8	3.50	88.9	1/2"-13	1.19	30.2





SAE Straight Thread (ODT)

ODT	Α	E	3	(C	[)		-
	UNF	inch	mm	inch	mm	inch	mm	inch	mm
1/2"	3/4"-16	.56	14.3	1.19	30.2	.09	2.4	.10	2.55
5/8"	7/8"-14	.66	16.7	1.34	34.1	.09	2.4	.10	2.55
3/4"	1-1/16"-12	.75	19.1	1.62	41.3	.09	2.4	.13	3.30
1"	1-5/16"-12	.75	19.1	1.91	48.5	.09	2.4	.13	3.30
1-1/4"	1-5/8"-12	.75	19.1	2.27	57.7	.09	2.4	.13	3.35
1-1/2"	1-7/8"-12	.75	19.1	2.56	65.0	.09	2.4	.13	3.35
2"	2-1/2"-12	.75	19.1	3.48	88.4	.09	2.4	.13	3.35





Tandem: Repeat if Necessary

9 9

Code	1 – Туре
Р	Pump (PE for flurocarbon seals)
М	Motor (no tandem motors available)

PG

Code	2 – Unit
Α	Single Unit
В	Tandem Unit (flush studs)
L	Unit with Extended Studs

Code	3 – Shaft End Cover	
1	Pump, cw w/o O.B. bearing	
2	Pump, ccw w/o O.B. bearing	
9 Motor, bi-rot w/o O.B. bearing + 1/4" ODT drain		

Code	4 – Shaft End Cover	
89	SAE 2-Bolt for clutch	
93	SAE A 2-Bolt	
95	Pad Mount for clutch	
96	SAE B 2-Bolt	

Code	5 – Port End Cover			
SIDE PORTED				
CW	CCW	IN	OUT	
SAE Split	t Flange (p	ump)		
EJ	JE	1"	3/4"	
EK	KE	1"	1/2"	
EL	LE	3/4"	3/4"	
EM	ME	3/4"	1/2"	
OE	EO	1"	-	
OF	FO	3/4"	-	
OJ	JO	-	3/4"	
OL	LO	-	1/2	
SAE Split Flange (motor)				
DR-Double		1"	1"	
DS-Double		3/4"	3/4"	
Unported (pump)				
BI		Unp	orted	

Code	5 – Port End Cover (cont.)				
SIDE POP	SIDE PORTED (cont.)				
CW	CCW IN OUT				
OD Tube	Porting (pu	imp)			
FB	BF	1-1/4"	1"		
FC	CF	1-1/4"	7/8"		
FG	GF	1-1/4"	3/4"		
FJ	JF	1-1/4"	5/8"		
FL	LF	1"	1"		
FV	VF	1"	7/8"		
FW	WF	1"	3/4"		
FX	XF	1"	5/8"		
FY	YF	7/8"	7/8"		
FZ	ZF	7/8"	3/4"		
BC	СВ	7/8"	5/8"		
BG	GB	7/8"	1/2"		
BJ	JB	3/4"	3/4"		
BL	LB	3/4"	5/8"		
BN	NB	3/4"	1/2"		
BV	VB	1-1/4"	-		
BW	WB	1"	-		
BX	ХВ	7/8"	-		
BY	YB	3/4"	-		
BZ	ZB	-	1"		
PD	DP	-	7/8"		
PE	EP	-	3/4"		
PM	MP	-	5/8"		
PN	NP	-	1/2"		
OD TUBE	PORTING	(motor)			
VN-D	Double	1"	1"		
VR-D	Double	3/4"	3/4"		
VQ-D	VQ-Double		1/2"		

Code	5 – Port	End Cover	(cont.)
REAR PO			. ,
CW	CW CCW		OUT
OD Tube I	Porting (pu	ump)	
UC	CU	1-1/4"	1"
UF	FU	1-1/4"	7/8"
UN	NU	1-1/4"	3/4"
UD	DU	1"	1"
UP	PU	1"	7/8"
UQ	QU	1"	3/4"
UR	RU	1"	5/8"
LN	NL	7/8"	7/8"
LP	PL	7/8"	3/4"
LQ	QL	7/8"	5/8"
LR	RL	3/4"	3/4"
LS	SL	3/4"	5/8"
LT	TL	3/4"	1/2"
OD Tube Porting (motor)			
RN-Double		1"	1"
RQ-D	ouble	3/4"	3/4"
RS-D	ouble	1/2"	1/2"
BSPP Por	ting (moto	or)	
RT-Double		1"	1"
RV-Double		3/4"	3/4"
RW-Double		1/2"	1/2"
National I	Pipe Threa	d (motor)	
RX-Double		1"	1"
RY-Double		3/4"	3/4"
RZ-Double		1/2"	1/2"

Code	6 – Gear Housing	
AB	Pump	
EB	Motor	



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PGP/PGM 300/400 Series Gear Pumps & Motors

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Tandem: Repeat if Necessary

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Code	7 – Gear Width					
	Gear	in.³			Max Pressure	
	Width	/rev.	/rev.	psi	bar	
05	1/2"	.62	10.2	3500	241	
07	3/4"	.93	15.2	3500	241	
10	1"	1.24	20.3	3500	241	
12	1-1/4"	1.55	25.4	3500	241	
15	1-1/2"	1.86	30.5	3300	228	
17	1-3/4"	2.17	35.6	2900	200	
20	2"	2.48	40.6	2500	172	

PG

315

Code	8 – Drive Shaft
56	Clutch Pump Tapered, 5/16 - 24 thd. (internal), #6 Woodruff Keyed (single unit only); 1:4 taper
65	SAE B Splined
66	SAE B Keyed
96	SAE A Splined
97	SAE A Keyed
For Single or Tandem Units - unless noted	

Code	9 – Bearing Carriers			
DUAL	OUTLET	- PUMP	ONLY	
Outlets: for clockwise porting the top port number comes first; for counter-clockwise porting the bottom port number comes first				
CW	CCW	IN	OL	JT
SAE S	plit Flan	ge		
СА	AC	1-1/4"	3/4"	3/4"
DA	AD	1-1/4"	3/4"	1/2"
EA	AE	1-1/4"	1/2"	1/2"
FA	AF	1"	3/4"	3/4"
GA	AG	1"	3/4"	1/2"
HA	AH	1"	1/2"	1/2"
OD Tu	be Portin	g		
JG	GJ	1-1/2"	1"	1"
KG	GK	1-1/2"	1"	7/8"
LG	GL	1-1/2"	7/8"	7/8"
MG	GM	1-1/2"	1"	3/4"
NG	GN	1-1/2"	3/4"	3/4"
PG	GP	1-1/4"	1"	1"
QG	GQ	1-1/4"	1"	7/8"
RG	GR	1-1/4"	7/8"	7/8"
SG	GS	1-1/4"	1"	3/4"
TG	GT	1-1/4"	3/4"	3/4"
UG	GU	1-1/4"	3/4"	5/8"
VG	GV	1-1/4"	3/4"	1/2"
WG	GW	1-1/4"	5/8"	5/8"
XG	GX	1-1/4"	1/2"	1/2"
YG	GY	1"	1"	1"
ZG	GZ	1"	1"	7/8"
RC	CR	1"	7/8"	7/8"
SC	CS	1"	1"	3/4"
тс	СТ	1"	3/4"	3/4"
VC	CV	1"	3/4"	5/8"
WC	CW	1"	3/4"	1/2"
XC	СХ	1"	5/8"	5/8"
YC	CY	1"	1/2"	1/2"

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Code	code 9 – Bearing Carriers (cont.)				
SINGLE	SINGLE OUTLET - PUMP ONLY				
Outlet for front section					
CW	CCW	IN	OUT		
SAE Spli	t Flange				
CJ	JC	1-1/4"	1-1/4"		
CL	LC	1-1/4"	1"		
СМ	MC	1-1/4"	3/4"		
HB	BH	1-1/4"	1/2"		
HC	СН	1"	1"		
HF	FH	1"	3/4"		
HL	LH	1"	1/2"		
HM	MH	3/4"	3/4"		
HN	NH	3/4"	1/2"		
OD Tube	OD Tube Porting				
KB	BK	1-1/2"	1-1/2"		
КС	СК	1-1/2"	1-1/4"		
KF	FK	1-1/2"	1"		
KL	LK	1-1/2"	7/8"		
KM	МК	1-1/2"	3/4"		
KN	NK	1-1/4"	1-1/4"		
КО	ОК	1-1/4"	1"		
KP	РК	1-1/4"	7/8"		
KQ	QK	1-1/4"	3/4"		
MB	BM	1-1/4"	5/8"		
ML	LM	1-1/4"	1/2"		
MN	NM	1"	1"		
MQ	QM	1"	7/8"		
MR	RM	1"	3/4"		
MS	SM	1"	5/8"		
МТ	ТМ	1"	1/2"		
MU	UM	3/4"	3/4"		
MV	VM	3/4"	5/8"		
MW	WM	3/4"	1/2"		
Common	Inlet Pass	age			
С	D	No I	Ports		

Code	10 – Connecting Shaft	
1	Connecting Shaft	
For connecting tandem units		

