

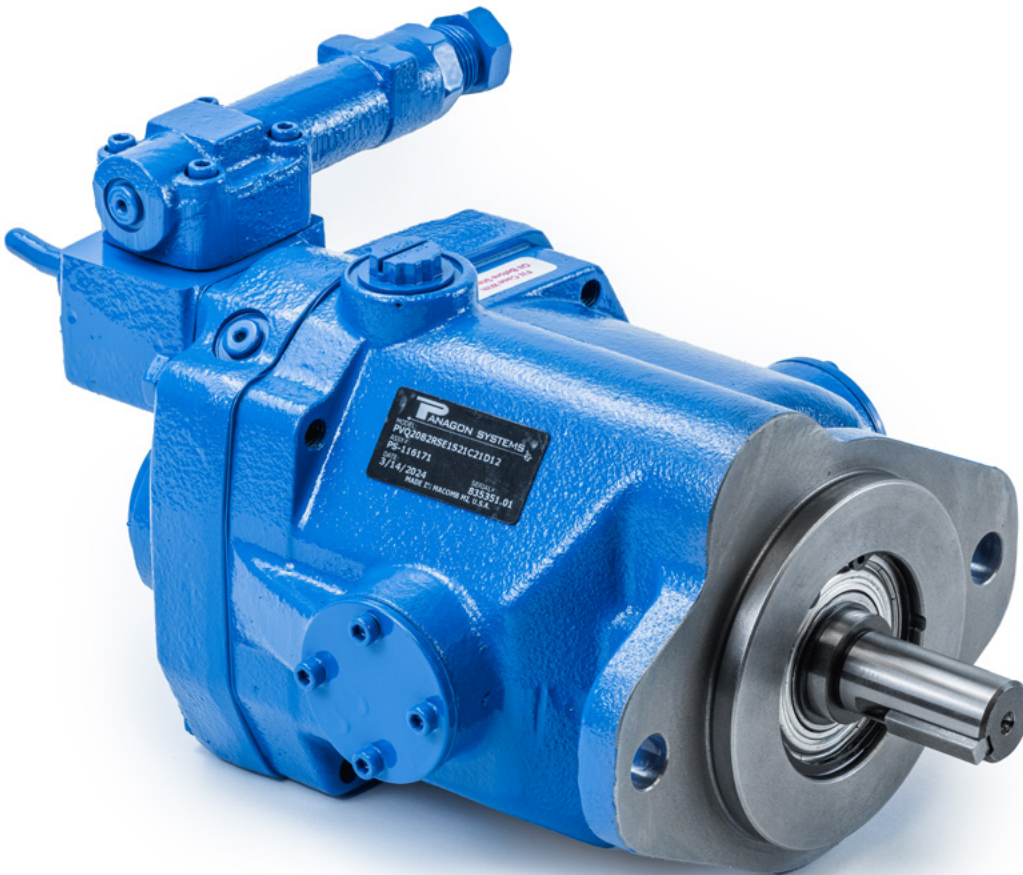


PANAGON
systems

HYDRAULIC PUMP MANUFACTURING

PVQ PISTON PUMP MODELS **BUILT BY US**

PVQ 10/13
PVQ 20/32
PVQ 40/45



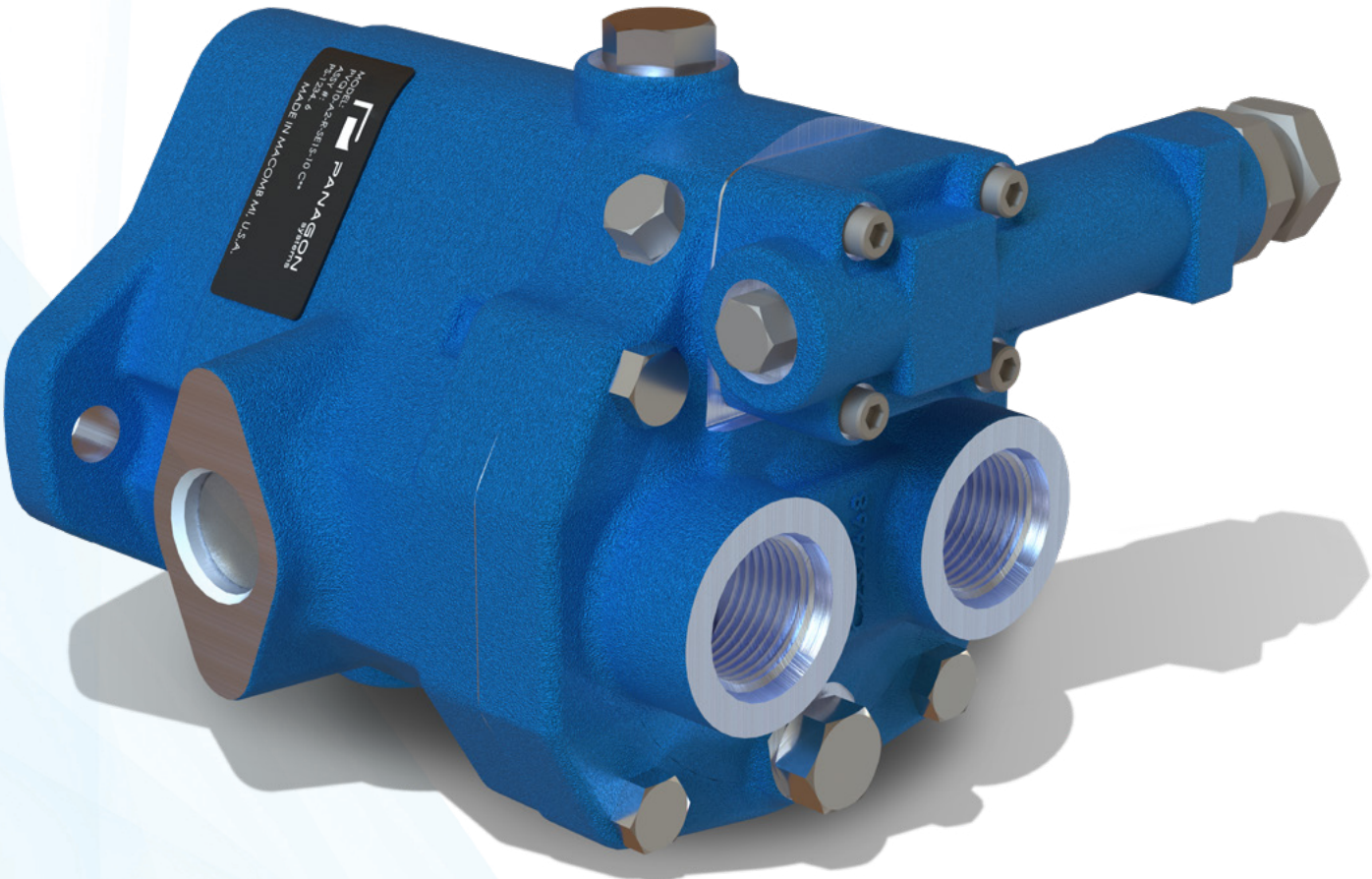
PARTS INFORMATION GUIDE

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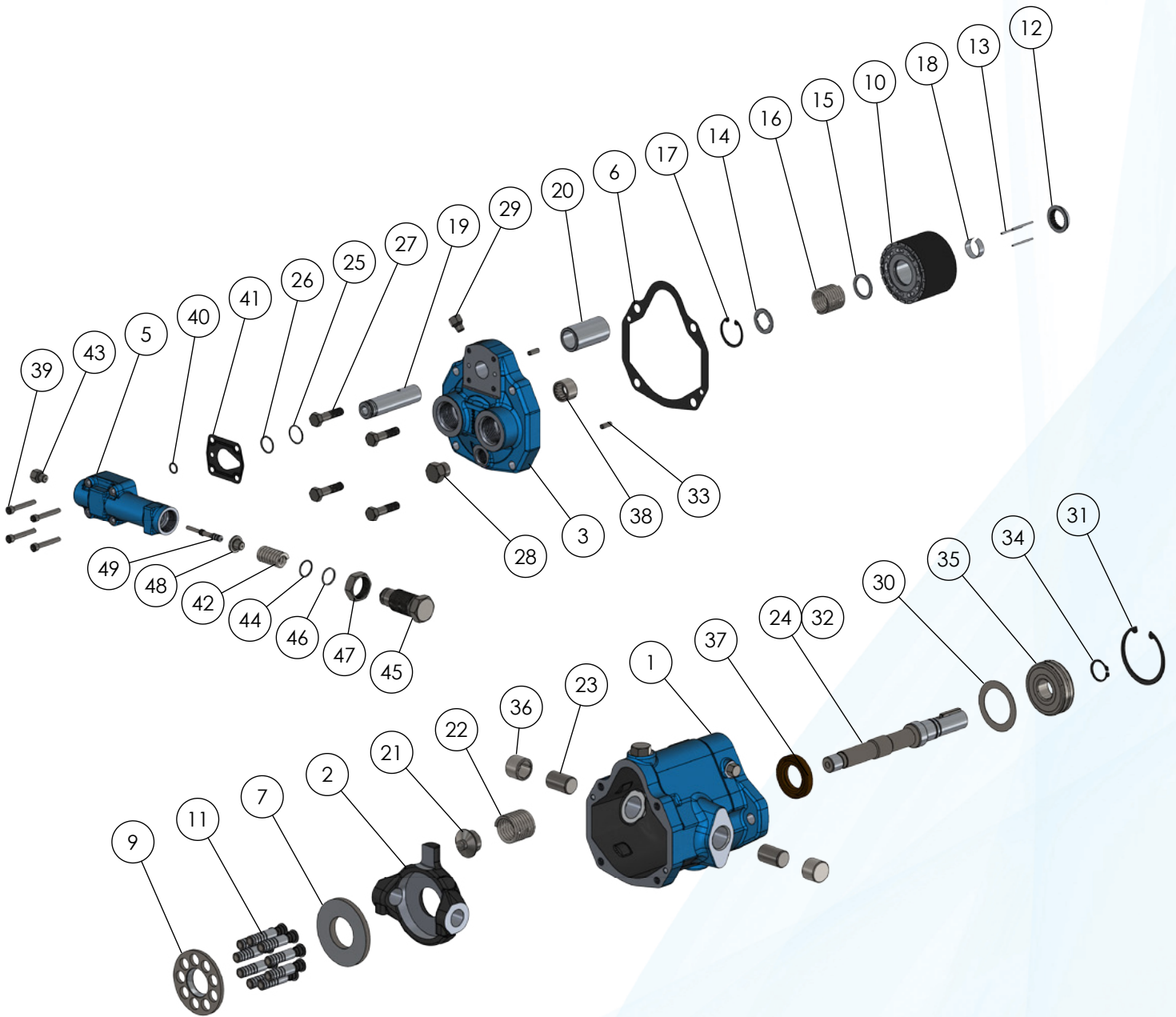


Founded nearly 35 years ago, Panagon Systems has remained a trusted company producing hydraulic parts on demand for a number of shops, manufacturers and industries. The company, located in Macomb, Michigan, is a hydraulic piston pumps and parts manufacturer, providing a vast variety of current and obsolete components. With a variety of CNC machines, Panagon produces finished product from raw materials. Which are then assembled, tested, painted and shipped from our facility. Panagon Systems attempts to fill the void OEM's create by manufacturing the phased out, expensive, unavailable pumps, motors and transmissions.

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Model PVQ10/13



Model PVQ10/13

ITEM	PART NUMBER		QTY	NOTE	DESCRIPTION
	Panagon	OEM			
1	PS1492	308334	1		Housing
2	PS1498	231557	1		Yoke
3		See Table 1	1		Valve Block
4	PS1459	164432	1		Instruction Plate
5	PS576862	932964	1	B/C	Pressure Comp Body
6	PS1381	279615	1	A	Gasket
7	PS967	319245	1	D	Swashplate
9	PS965	274249	1	D	Shoe Plate
10	PS1538	677061	1	D	Cylinder Block (10)
10	PS1542	677060	1	D	Cylinder Block (13)
11	PS576442	942229	9	D	Piston/Shoe S/A (10)
11	PS576463	942230	9	D	Piston/Shoe S/A (13)
12	PS1235	275485	1	D	Spherical Washer
13	PS1303	451936	3	D	Pin
14	PS968	273409	1	D	Lift Limiter
15	PS1302	451924	1	D	Thrust Washer
16	PS963	274787	1	D	Spring
17	PS969	165385-106	1	D	Retaining Ring
18	PS1539	451925	1	D	Pin Retainer
19	PS972	241924	1	B	Control Rod
20	PS971	241579	1	B	Control Piston
21	PS1496	373131	1	B	Seat
22	PS1495	373132	1	B	Inner Spring
23	PS1384	319243	2		Pintle
24		See Table 2	1		Drive Shaft
25	PS1617	185638 (RS-066)	1	B	Retaining Ring
26	PS5811361	104166-015 (173792)	1	A/B	"O"-Ring
27	PS1503	001253	4		Hex Head Cap Screw
28	PS5810893	115046-006 (181728)	2		"O"-Ring Plug S/A #6
29	PS8123	115046-002 (398071)	2		"O"-Ring Plug S/A #2
30	PS1490	190362	1		Seal Retainer
31	PS1373	140356-206	1		Retaining Ring
32		See Table 2	1		Key
33	PS7	95902-050 (167237)	2		Pin
34	PS1372	098653 (-078)	1		Retaining Ring
35	PS1230	283233	1		Bearing
36	PS1334	317572	2		Bearing
37	PS136800	237014	1	A	Shaft Seal
38	PS1238	039465	1		Bearing

ITEM	PART NUMBER		QTY	NOTE	DESCRIPTION
	Panagon	OEM			
39	PS1485	010358	4	C	Socket Head Cap Screw
40	PS134777	104166-011 (262331)	1	C	"O"-Ring
41	PS90309	913451	1	A/C/D	Gasket
42		See Table 3	1	C	Spring
43	PS8123	115046-002 (398071)	1	C	"O"-Ring Plug S/A #2
44	PS134800	104166-015 (173792)	1	A/C	"O"-Ring
45	PS83428	392175	1	C/E	Adjusting Plug
46	PS577672	8770-015 (186947)	1	C	Back-Up Ring
47	PS91024	937039	1	C	Jam Nut
48	PS36	234204	1	C	Seat
49	PS35	356986-L	1	C	Spool

- A Included in PS989 / 919191 Seal Kit (F3 equivalent PS1014 / 919308)
- B Used with Compensator Control Only
- C Included in Pressure Compensator Kit
- D Install gasket with small end of teardrop hole pointing in direction of compensator adj plug
- E Model PVQ13C compensator pressure adjustment shall not exceed 2000 psi

Model PVQ10/13

Table 1 - Valve Block S/A		
Model Code	Panagon	OEM
PVQ 1*.*-R-SE-10-C(*)	PS-1036	02-142930
PVQ 1*.*-R-SS-10-C(*)	PS-93286	02-142932
PVQ 1*.*-L-SE-10-C(*)	PS-93285	02-142931
PVQ 1*.*-L-SS-10-C(*)	PS-93287	02-142933

Table 2 - Shaft and Key			
Panagon		OEM	
Panagon		OEM	
Shaft		Key	
PS973	266162	PS1380	142843
PS1895	286848	--	--
PS1894	883030	PS84378	472255

Table 3 - Comp Kit and Springs						
Model Code	Panagon		OEM		Panagon	
Model	Comp Kit		Comp Spring		Load Sense Spring	
PVQ**C	PS576864	942158	PS37	239371	--	--
PVQ**CM	PS576865	942159	PS45	265693		
PVQ**CG	PS137530	942480	PS37	239371		
PVQ**CMG	PS2205	941353	PS45	265693		
PVQ**C**V(C)11B	PS137534	02-142729	PS37	239371	PS2210	581073
PVQ**C**V(C)11P	PS2207	02-142728				
PVQ**C**V(C)24B	PS2208	02-142730				
PVQ**C**V(C)24P	PS2209	02-142727				
PVQ**CD****	(Refer to service parts information I-3255-S)					

Model PVQ10/13

P V Q 1 0 A 2 R S E 1 S 2 0 C * 2 1 V * 1 1 B D 1 2 S *
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

1 2 3 Pump Series

P Inline piston pump
 V Variable volume
 Q Quiet series

4 5 Displacement In CC/Rev And Pressure

10 10,5 cc/rev (0.64 cir), 210 bar (3000 psi) ratings
 13 13,8 cc/rev (0.84 cir), 140 bar (2000 psi)

6 7 Mounting Flange Specifications

A2 Flange SAE J744 82-2 (SAE A)
 MA Flange ISO 3019/2-80A2HW (available with "N" drive shaft only)

8 Rotation Viewed From Shaft End

R Right hand (cw), standard
 L Left hand (ccw), optional

9 10 Ports, Type and Location

SE SAE O-ring rear port, 1.0625" inlet and outlet (standard)
 SS SAE O-ring side port, 1.3125" inlet and outlet (optional)

11 Shafts, Input

1 Straight keyed SAE "A" modified, .75" dia. x 1.75" long
 3 Splined SAE "A" modified, 9T 16/32 DP major dia. fit
 N Shaft end ISO 3019/2 E20N (available with "MA" mount only)

12 Seals

S Buna N, standard
 F Fluorocarbon, optional

13 14 Pump Design

20 Design number subject to number change. Installation dimensions remain unchanged for designs 10-19.

15 16 Control Type

C** Pressure compensator. PVQ10: Standard model is C21, indicating setting of 210 bar (3000 psi); range is 02-21 in tens of bar (350-3000 psi).

PVQ13: Standard model is C14, indicating factory setting of 138 bar (2000 psi); range is 02-14 in tens of bar (350-2000 psi).
 CM** Low pressure compensator. Standard model is CM7, indicating factory setting of 69 bar (1000 psi); range is 02-10 in tens of bar 350-1500 psi).
 C**V**B Pressure compensator C**, as above with load-sensing. Standard load-sensing setting is 11 bar (160 psi); range 10-17 bar (150-250 psi); with bleed-down orifice. Example: C21V11B indicates PVQ10 compensator with 210 bar pressure setting and 11 bar load-sense differential.
 C**V**P Pressure compensator with load-sensing as C**V**B above, but with bleed-down orifice plugged.
 C**VC**B Pressure compensator with load-sensing. Compensator same as C** above. Standard load-sensing setting is 24 bar (350 psi), range 17-31 bar (250-450 psi). With bleed-down orifice.
 C**VC**P Pressure compensator with load-sensing. Same as C**VC**B above, but with bleed-down orifice plugged.
 CG Pressure compensator modified for hydraulic remote control.
 CD** Electric dual range compensator. PVQ10: CD21 is standard 210 bar setting of high range (24-210 bar). PVQ13: CD14 is standard 140 bar setting of high range (24-140 bar). Both units require low range to be set by customer (20-100 bar).
 UV Unloading Valve for accumulator circuits. See installation details.

Model PVQ10/13

17 18 **Pressure Setting**

21 210 bar (3000 psi) PVQ10
14 140 bar (2000 psi) PVQ13

19 20 **Flow Control Option**

Blank No flow control
V
VC

21 22 **Load Sense Differential Pressure Setting**

Blank No flow control
11
24

23 **Flow Control Option**

Blank No flow control
B
P

24 **Displacement Option**

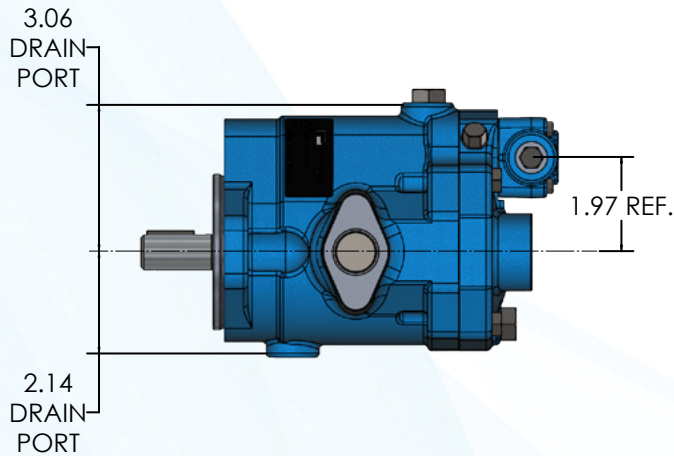
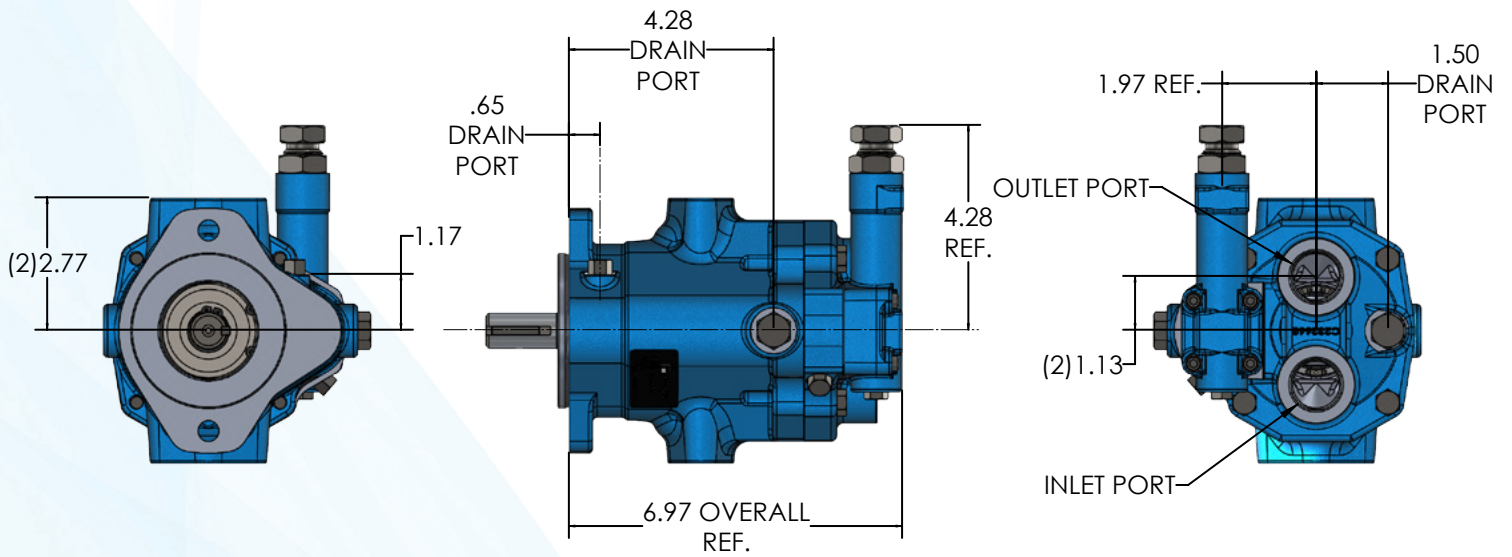
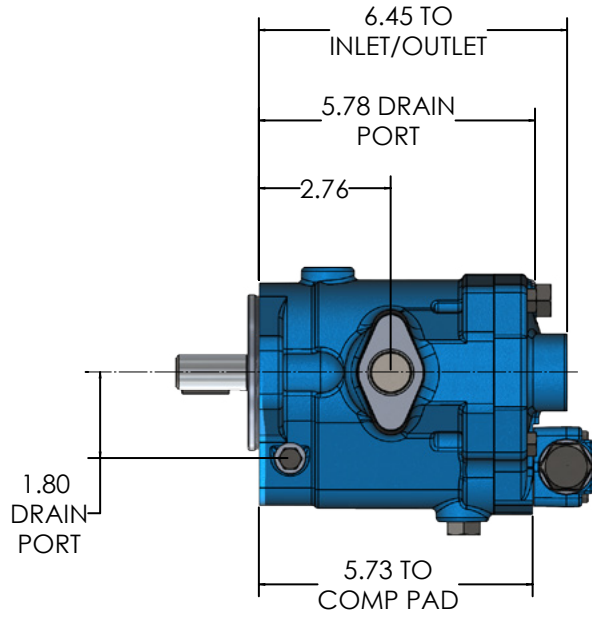
Blank Without adjustable maximum displacement stop (standard).
D Adjustable maximum displacement stop (optional).

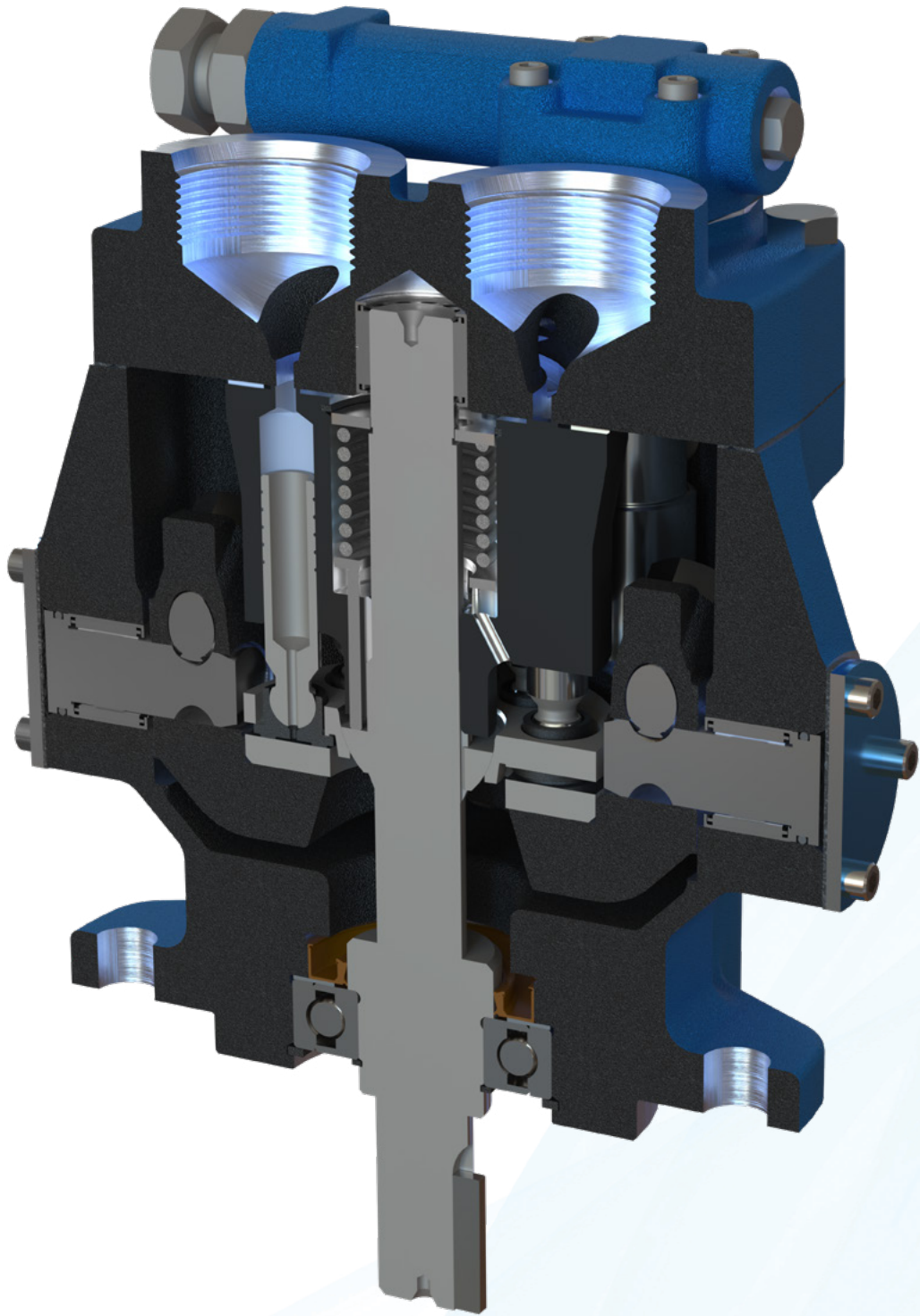
25 26 **Control Design**

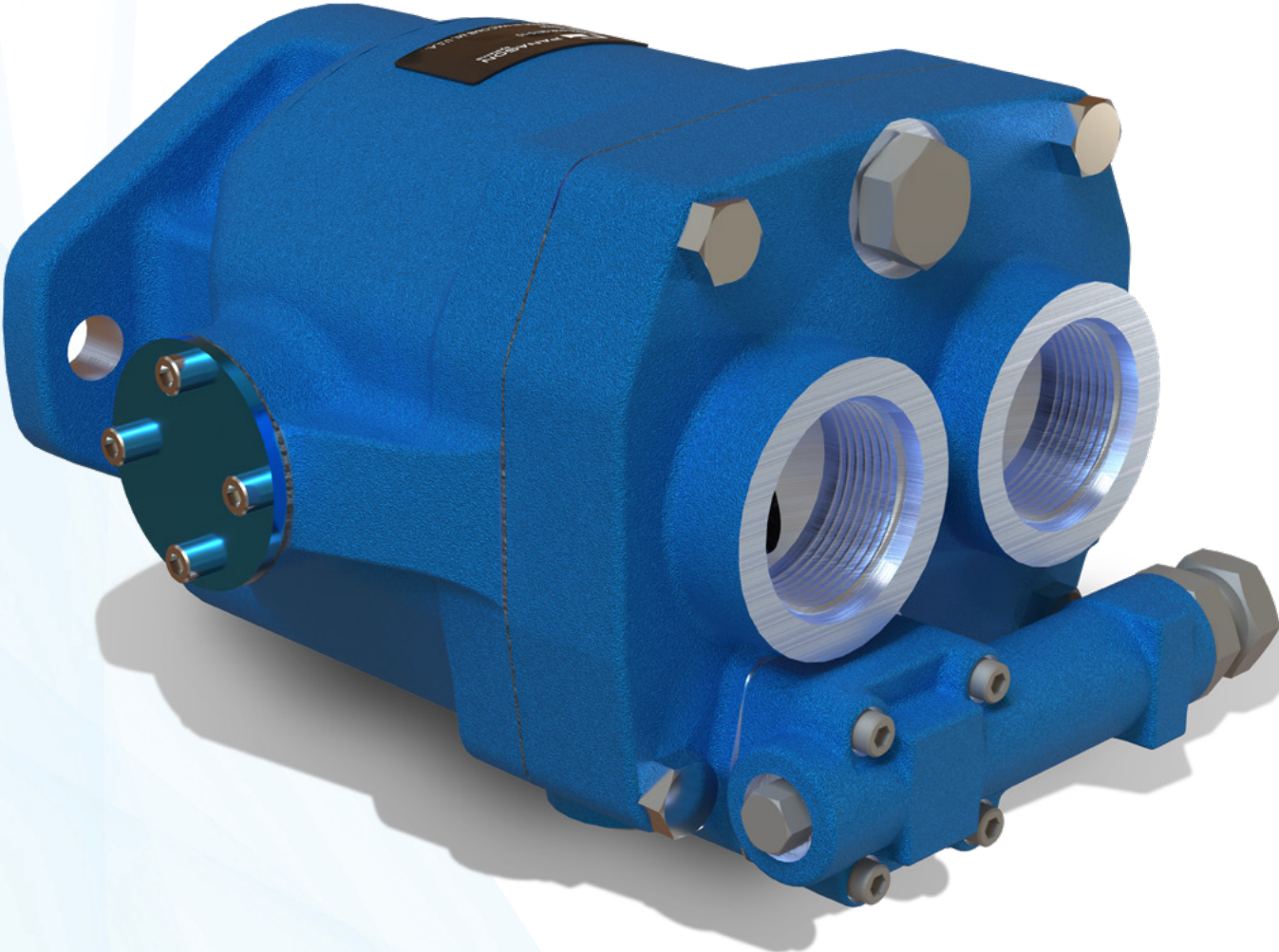
12 O-ring seal design

27 28 **Special Pump Option Suffixes**

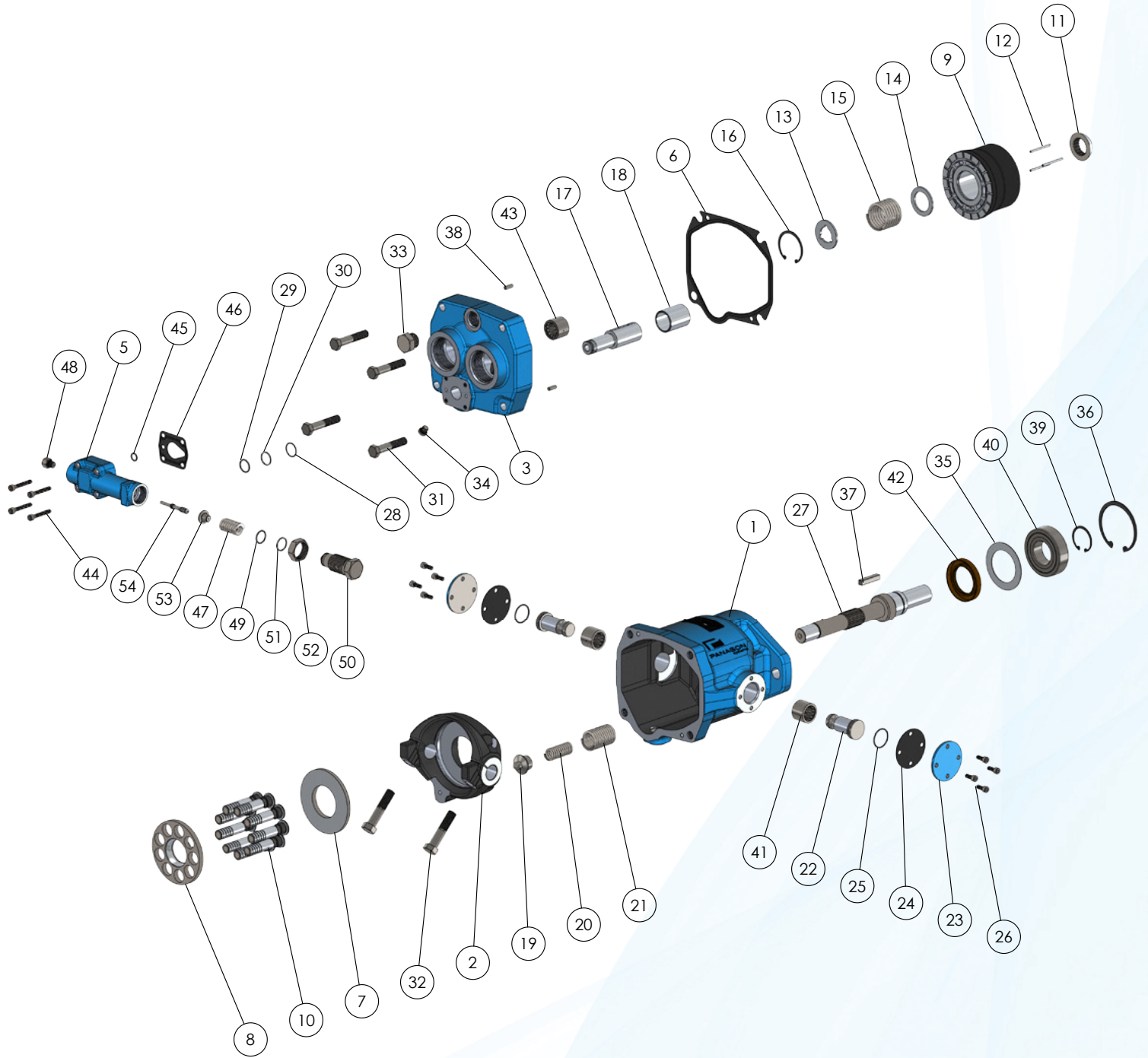
S2 Shaft up mounting
S3 British Standard Parallel Threads Counterbore Ports (ISO R288 threads). Contact Eaton for available configurations.
S9 Special CG compensator for use with electronically modulated relief valves.







Model PVQ20/32



Model PVQ20/32

ITEM	PART NUMBER		QTY	NOTE	DESCRIPTION
	Panagon	OEM			
1	PS90797	932959	1		Housing
2	PS190	342743	1		Yoke
3		See Table 1	1	C	Valve Block
4	PS1459	164432	1	C	Instruction Plate
5	PS-576862	932964	1	B/D	Pressure Compensator Body
6	PS28	317162	1	A	Gasket
7	PS1000	239077	1	E	Swashplate
8	PS996	275961	1	E	Shoe Plate
9	PS48	321703	1	E	Cylinder Block (20)
9	PS160	260860	1	E	Cylinder Block (32)
10	PS576441	942047	9	E	Piston/Shoe S/A (20)
10	PS576440	941887	9	E	Piston/Shoe S/A (32)
11	PS167	423324	1	E	Spherical Washer
12	PS56	248812	3	E	Pin
13	PS58	245223	1	E	Lift Limiter
14	PS171	241954	1	E	Thrust Washer
15	PS169	247294	1	E	Spring
16	PS956	093509	1	E	Retaining Ring
17	PS2429	387828	1	B	Control Rod
18	PS7401	386530	1	B	Control Piston
19	PS12	240535	1	B	Seat
20	PS10	317239	1	B	Inner Spring
21	PS11	278634	1	B	
22	PS4	265425	2		Pintle
23	PS90795	932957	2		Pintle Cover
24	PS90796	932958	2		Pintle Gasket
25	PS134835	166360	2		"O"-Ring
26	PS-5800660	PS-5800660	8		Socket Head Cap Screw
27		See Table 3	1		Drive Shaft
28	PS1617	185638 (RS-066)	1		Retaining Ring
29	PS134800	104166-015 (173792)	1	A	"O"-Ring
30	PS577672	8770-015 (186947)	1	A	Back-Up Ring
31	PS776	001276	4		Hex Head Cap Screw
32	PS958	001306	2		Hex Head Cap Screw
33	PS5814121	115046-008	2		"O"-Ring Plug S/A #8
34	PS8123	115046-002 (398071)	1		"O"-Ring Plug S/A #2
35	PS16	274382	1		Seal Retainer
36	PS19	120428 (-244)	1		Retaining Ring
37		See Table 3	1		Key
38	PS7	95902-050 (167237)	2		Pin
39	PS18	119982 (-118)	1		Retaining Ring
40	PS1201	326805	1		Bearing
41	PS181	012016	2		Bearing
42	PS136797	343573	1	A	Shaft Seal
43	PS181	012016	1	C	Bearing

ITEM	PART NUMBER		QTY	NOTE	DESCRIPTION
	Panagon	OEM			
44	PS1485	010358	4	D	Socket Head Cap Screw
45	PS5813533	104166-011 (262331)	1	D	"O"-Ring
46	PS90309	913451	1	A/D/F	Gasket
47		See Table 2	1	D	Spring
48	PS8123	115046-002 (398071)	1	D	"O"-Ring Plug S/A #2
49	PS5811361	104166-015 (173792)	1	A/D	"O"-Ring
50	PS83428	392175	1	D/G	Adjusting Plug
51	PS5811360	8770-015 (186947)	1	D	Back-Up Ring
52	PS91024	937039	1	D	Jam Nut
53	PS36	234204	1	D	Seat
54	PS35	356986-L	1	D	Spool
55		See Table 3	1	H/J	Coupling
56		See Table 3	1	H/J	Retaining Ring
57		See Table 3	1	H/J	"O"-Ring

- A Included in PS-990 / 919682 Seal Kit (F3 equivalent PS-1015 / 919686)
- B Used with Compensator Control Only
- C Included in Valve Plate S/A
- D Included in Pressure Compensator Kit
- E Included in Rotating Group
- F Install gasket with small end of teardrop hole pointing in direction of compensator adj plug
- G Model PVQ32C compensator pressure adjustment shall not exceed 2000 psi
- H Part used in A9 or A11 Thru Drive unit only
- J Part not shown in exploded view

Model PVQ20/32

Table 1 - Valve Block S/A		
Model Code	Panagon	OEM
PVQ20-**-R-SE-10-C(*)	PS93288	02-142934
PVQ20-**-R-SS-10-C(*)	PS2213	02-142936
PVQ20-**-L-SE-10-C(*)	PS93289	02-142935
PVQ20-**-L-SS-10-C(*)	PS93291	02-142937
PVQ20-**-R-A*(*)-10-C(*)	PS93301	02-143198
PVQ20-**-L-A*(*)-10-C(*)	PS93302	02-143199
PVQ32-**-R-SE-10-C(*)	PS93292	02-142938
PVQ32-**-R-SS-10-C(*)	PS93294	02-142940
PVQ32-**-L-SE-10-C(*)	PS93293	02-142939
PVQ32-**-L-SS-10-C(*)	PS93295	02-142941
PVQ32-**-R-A*(*)-10-C(*)	PS93303	02-143200
PVQ32-**-L-A*(*)-10-C(*)	PS93304	02-143201

Table 3 - Shaft and Thru Drive										
Model Code	Panagon	OEM	Panagon	OEM	Panagon	OEM	Panagon	OEM	Panagon	OEM
Model	Drive Shaft		Key		Coupling		Snap Ring		"O"-Ring	
PVQ**	PS13	270369	PS1456	058303	N/A	N/A	N/A	N/A	N/A	N/A
PVQ**	PS819	292077	N/A	N/A						
PVQ**	PS3630	883219	PS84379	472270						
PVQ**	PS3631	875620	N/A	N/A	PS10103	426770	PS10101	223172	PS134989	351776
PVQ**A9	PS3632	883302	PS1456	058303						
PVQ**A11	PS3633	860501								

Table 5 - Pressure Compensator						
Model Code	Panagon	OEM	Panagon	OEM	Panagon	OEM
Model	Comp. S/A		Spring		Load Sense Spring	
C	PS-576864	942158	PS-37	239371	N/A	N/A
CM	PS-576865	942159		264693		
CG	PS-137530	942480	PS-37	239371		
CMG	PS-2205	941353		264693		
C**V(C)11B	PS-137534	02-142729	PS-37	239371	PS-2210	581073
C**V(C)11P	PS-2207	02-142728				
C**V(C)24B	PS-2208	02-142730			PS-2211	581072
C**V(C)24P	PS-2209	02-142727				
CD**	(Refer to service parts information I-3255-S)					

Model PVQ20/32

P V Q 2 0 A 2 R A 9 S E 1 S 2 1 C * 2 1 V * 1 1 B D 1 2 S *
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

1 2 3 Series PVQ

P Inline piston pump
 V Variable volume
 Q Quiet series

15 16 Pump Design Number

21 Design number subject to change. Installation dimensions remain unchanged for designs 10-19.

4 5 Displacement In cc/Rev and Pressure Ratings

20 21,1 cc/rev (1.29 cir), 210 bar (3000 psi)
 32 32,9 cc/rev (2.01 cir), 140 bar (2000 psi)

17 18 Control Type

C** Pressure compensator. PVQ20: Standard model is C21, indicating setting of 210 bar (3000 psi); range is 02-21 in tens of bar (350-3000 psi). PVQ32: Standard model is C14, indicating factory setting of 138 bar (2000 psi); range is 02-14 in tens of bar (350-2000 psi).
 CM** Low pressure compensator. Standard model is CM7, indicating factory setting of 70 bar (1000 psi); range is 02-10 in tens of bar (350-2000 psi).

6 7 Mounting Flange Specifications

B2 Flange SAE J744 101-2 (SAE B)
 MB Flange ISO 3019/2-100A2HW (available with N" drive shaft only)

8 Rotation Viewed From Shaft End

R Right hand (cw), standard
 L Left hand (ccw), optional

9 10 Thru-drive Without Coupling Available

Blank No thru-drive
 A9 SAE J744 82-2 (SAE A) w/9T spline with side ports only
 A11 SAE J744 82-2 (SAE A) w/11T spline

C**V**B Pressure compensator C**, as above with load-sensing. Standard load-sensing setting is 11 bar (160 psi); range 10-17 bar (150-250 psi); with bleed-down orifice. Example: C21V11B indicates PVQ20 compensator with 210 bar pressure setting and 11 bar load-sense differential.

11 12 Ports, Type and Location

SE SAE O-ring rear port, 1.625" inlet and outlet (standard)
 SS SAE O-ring side port, 1.625" inlet and outlet (optional)

C**V**P Pressure compensator with load-sensing as C**V**B above, but with bleed-down orifice plugged.

13 Shafts, Input

1 Straight keyed SAE "B" modified, 2.31" long
 3 Splined SAE "B" modified, 13T 16/32 DP major dia. fit
 N Shaft end ISO 3019/2 E25N (available with "MB" mount only)
 28 26-tooth splined shaft (Eaton). Used in PVQ20/32 single to mount on PVQ40/45 "B26" thru-drive.

C**VC**B Pressure compensator with load-sensing. Compensator same as C** above. Standard load-sensing setting is 24 bar (350 psi), range 17-31 bar (250-450 psi). With bleed-down orifice.

14 Seals

S Buna N, standard
 F Fluorocarbon, optional

C**VC**P Pressure compensator with load-sensing. Same as C**VC**B above, but with bleed-down orifice plugged.

Model PVQ20/32

- 17 18** CG Pressure compensator modified for hydraulic remote control.
- CD** Electric dual range compensator. PVQ20: CD21 is standard 210 bar setting of high range (24-210 bar). PVQ32: CD14 is standard 140 bar setting of high range (24-140 bar). Both units require low range to be set by customer (20-100 bar).

- 19 20** **Pressure Setting**
- 21 210 bar (3000 psi) PVQ20
14 140 bar (2000 psi) PVQ32

- 21 22** **Flow Control Option**
- Blank No flow control
V
VC

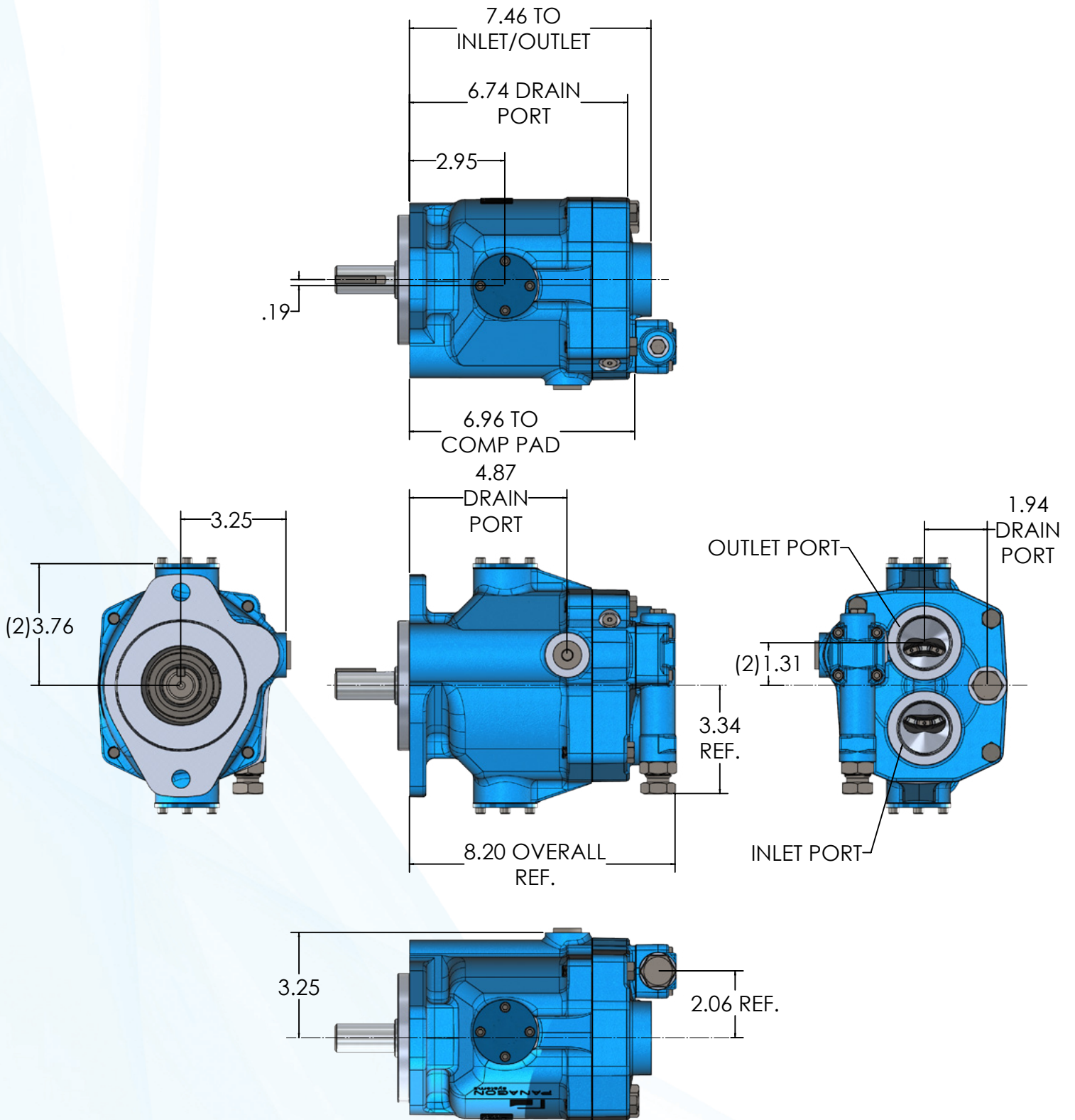
- 23 24** **Load Sense Differential Pressure Setting**
- Blank No flow control

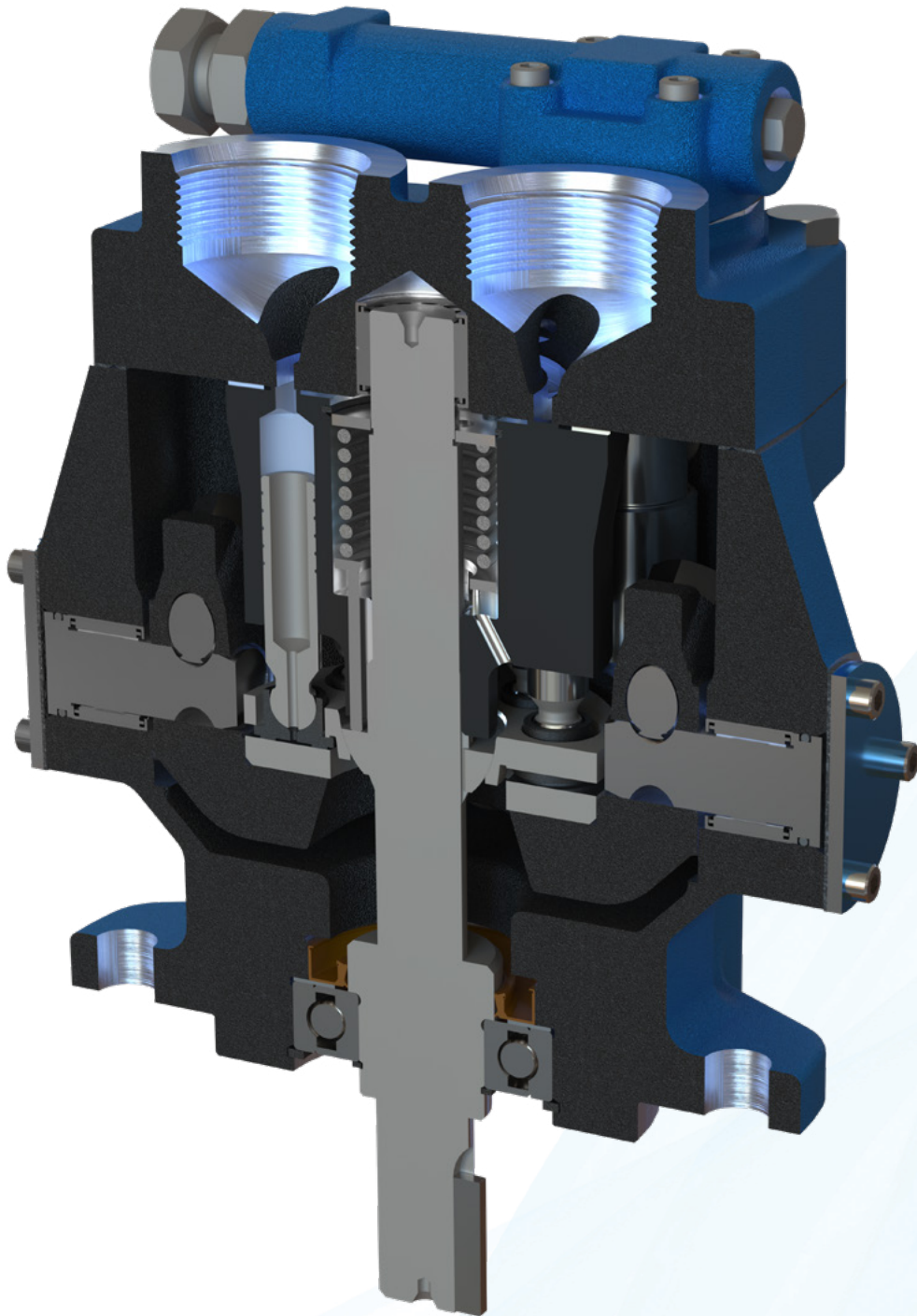
- 25** **Flow Control Optional Features**
- Blank No flow control
B
P

- 26** **Control Option**
- Blank Without adjustable maximum displacement stop (standard)
D Adjustable maximum displacement stop (optional)

- 27 28** **Control Design**
- 12 C** and CM**
12 C**D and CM**D
13 C**V(C)**B and C**V(C)**P
21 UV, CD** CG 30

- 29 30** **Special Pump Option Suffixes**
- S2 Shaft up mounting
S3 British Standard Parallel Threads Counterbore Ports (ISO R288 threads). Contact Eaton for available configurations.
S9 Special CG compensator for use with electronically modulated relief valves





Model PVQ25

P V Q 2 5 A R 1 1 A A 1 0 B 1 1 2 4 0 0 A 2 0 0 1 A P C 9 0 1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

- | | |
|---|---|
| <p>1 2 Code Title
 PV Open circuit piston pump</p> <p>3 4 5 6 Displacement
 Q25A 25.2cm³/r [1.54 in³/r]</p> <p>7 Input Shaft Rotation
 L Left-hand rotation (CCW)
 R Right-hand rotation (CW)</p> <p>8 9 Front Mounting and Input Shaft
 01 2 Bolt B (SAE J744-101-2) with 22.2 [.88] DIA straight keyed shaft (SAE J744-22-1), key included
 05 2 Bolt B (SAE J744-101-2) with 13T 16/32DP 41.1 [1.62] long splined shaft
 09 2 Bolt B (SAE J744-101-2) with 26T 32/64DP splined shaft
 10 Shaft-2 Bolt VDMA A with 25.0 [.984] DIA straight keyed shaft, key included</p> <p>10 11 Main Ports Location and Size
 AU End ports; tube ports per SAE J514, suction 1.625-12 UN-2B, pressure – 1.0625-12 UN-2B SAE
 AV End ports; tube ports per ISO 6149-1, suction M42 x 2, pressure – M27 x 2</p> <p>12 Drain Port Size
 6 M18 metric O-ring port – top (D1)
 7 M18 metric O-ring port–bottom(D2)
 8 M18 metric O-ring port – shaft up
 B .750-16 UNF-2B SAE O-ring port – top (D1)
 C 750-16 UNF-2B SAE O-ring port – bottom (D2)
 D .750-16 UNF-2B SAE O-ring port – shaft up</p> <p>13 Diagnostic Pressure Point
 0 No diagnostic pressure point</p> | <p>14 Controller Type
 C Electric dual range pressure Compensator with directional control valve
 E Unloading valve (accumulator circuits)
 G Adjustable pressure compensator
 H Adjustable pressure and flow compensator
 J Adjustable hydraulic remote control pressure compensator</p> <p>15 16 Pressure Comp./ Unloading Valve Setting
 07 65.5-72.4 bar [950-1050 lbf/in²]
 33 206.8-213.7 bar [3000-3100 lbf/in²]</p> <p>17 18 Flow Comp. Setting Or Unload Standby
 00 No flow compensator setting VLV
 11 9.65-12.41 bar [140-180 lbf/in²]
 24 22.75-25.51 bar [330-370\ lbf/in²]</p> <p>19 20 Secondary Compensator Setting
 00 No secondary compensator setting
 04 186.2-193.1 bar [2700-2800 lbf/in²]</p> <p>21 Control Special Features
 0 No special features
 A Bleed down orifice –
 B External manual stroke adjustment</p> <p>22 Maximum Displacement Option
 1 Standard displacement
 2 Adjustable maximum displacement (set at maximum)</p> <p>23 24 Auxiliary Mounting and Output Shaft
 00 No auxiliary mounting or output shaft</p> <p>25 Shaft Seals
 0 No shaft seal
 1 Standard shaft seal (nitrile) Vitron option
 3 Fluorocarbon
 4 HNBR shaft seal luster glycol fluids</p> |
|---|---|

Model PVQ25

26 27 **Special Features**

AP Cast iron housing and industrial timing

28 29 **Paint**

00 No paint
CD Blue primer

30 **Customer And Unit Identification**

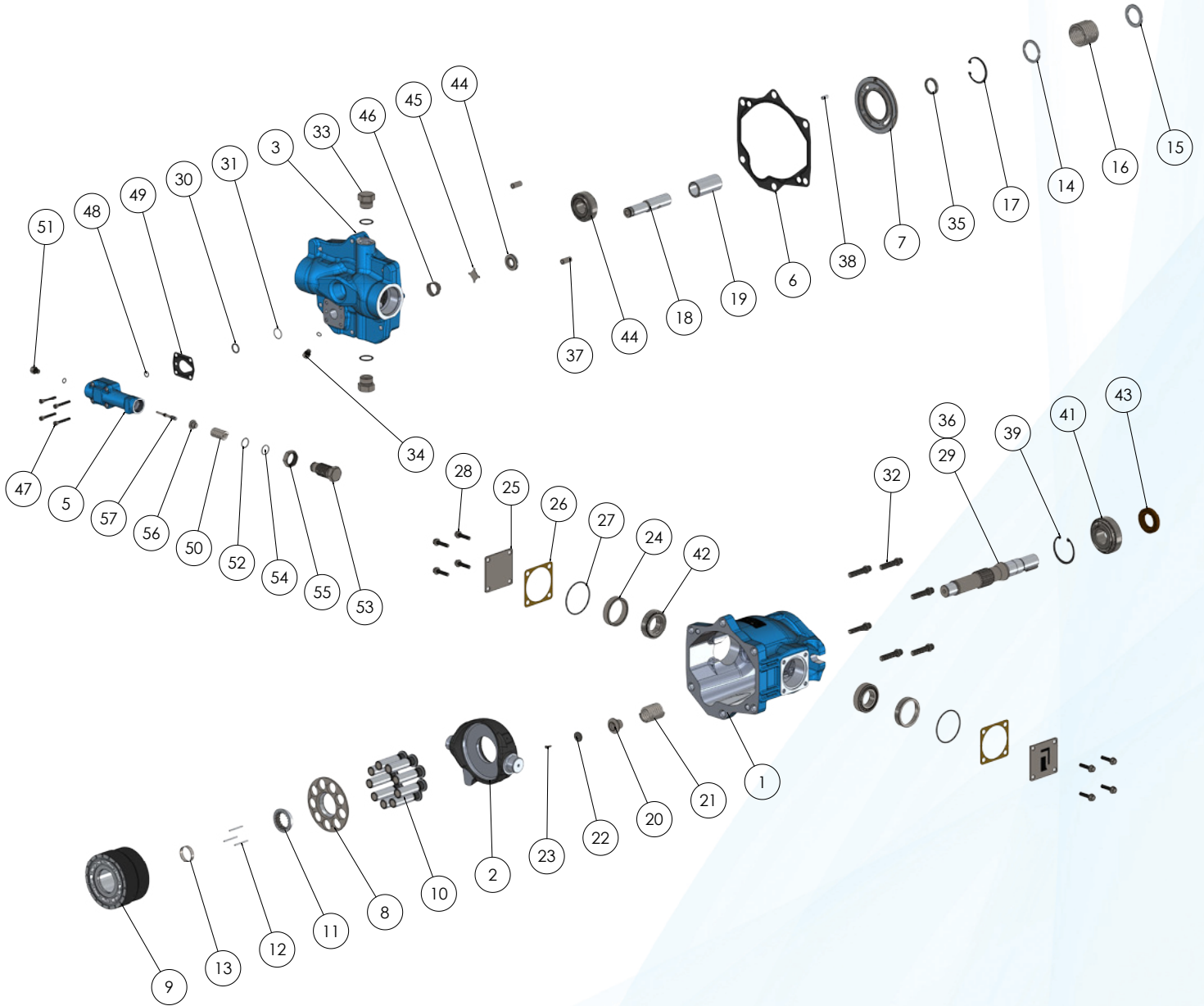
0 STD – mark assembly
Number and build data
Code on plate

31 **Design Code**

A First



Model PVQ40/45



Model PVQ40/45

ITEM	PART NUMBER		QTY	NOTE	DESCRIPTION
	Panagon	OEM			
1	PS11380	502640	1		Housing
2	PS577320	409997	1		Yoke
3	See Table 1		1		Valve Block
4	PS1459	164432	1		Instruction Plate
5	See Table 2		1	A	Pressure Compensator Body
6	PS1417	423617	1	B	Gasket
7	PS2231	629539	1	E/F	Control Plate RH
7	PS3371	631476	1	E/F	Control Plate LH
8	PS1301	402650	1	E	Shoe Plate
9	PS2251	426454	1	E	Cylinder Block 40
9	PS1862	418215	1	F	Cylinder Block 45
10	PS1310	923939	9	E	Piston/Shoe S/A 40
10	PS1932	923946	9	F	Piston/Shoe S/A 45
11	PS1300	402580	1	E/F	Spherical Washer
12	PS1930	248810	3	E/F	Pin
13	PS1928	410050	1	E/F	Pin Retainer
14	PS1925	423368	1	E/F	Lift Limiter
15	PS1923	404932	1	E/F	Thrust Washer
16	PS1919	402579	1	E/F	Spring
17	PS7146	099907	1	E/F	Retaining Ring
18	PS2278	404957	1	G	Control Rod
19		404958	1	G	Control Piston
20	PS8095	409999	1	G	Seat
21	PS11854	410061	1	G	Inner Spring
22	PS8096	409998	1	G	Seat Button
23	PS8097	162160	1	G	Roll Pin
24	PS10082	410053	2		Pintle Spacer
25	PS7568	416637	2		Pintle Cover
26	PS1997	923938	2		Pintle Gasket
27	PS135302	262376	2	B	"O"-Ring
28	PS8100	427172	8		Washer Hex Head Screw
29	See Table 3		1		Drive Shaft
30	PS135122	427682	1	B	"O"-Ring
31	PS1617	185638	1	G	Retaining Ring
32	PS2454	427171	6		Torx Head Screw
33	PS6042	181792	2		"O"-Ring Plug S/A #8
34	PS8123	398071	1		"O"-Ring Plug S/A #2
35	PS1996	942401	1		Shaft Spacer
36	See Table 3		1		Key
37	PS10080	429325	2		Roll Pin
38	PS10079	248910	1		Pin
39	PS1299	085560	1		Retaining Ring
40	PS1335	419627	1	C	Bearing
41	PS1337	417381	2	D	Bearing
42	PS136809	626933	1	B	Shaft Seal
43	PS1834	473914	1		Bearing
44	PS5569	402643	1		Poppet Seat
45	PS5570	402644	1		Poppet Valve
46	PS11852	410054	1		Poppet Spring

ITEM	PART NUMBER		QTY	NOTE	DESCRIPTION
	Panagon	OEM			
47	PS1485	010358	4	A	Socket Head Cap Screw
48	PS5813533	104166-011	1	A	"O"-Ring
49	PS90309	913451	1	A	Gasket
50	See Table 2		1	A	Spring
51	PS8123	398071	1	A	"O"-Ring Plug S/A #2
52	PS5811361	173792	1	A	"O"-Ring
53	PS83428	392175	1	A	Adjusting Plug
54	PS5811360	8770-015	1	A	Back-Up Ring
55	PS91024	937039	1	A	Jam Nut
56	PS36	234204	1	A	Seat
57	See Table 2		1	A	Spool

- A Included in compensator kit
- B Included in standard seal kit PS116222 / 02-348242
- C Included in shaft bearing kit PS1899 / 923988
- D Included in yoke bearing kit PS1898 / 923987
- E Rotating group kit PS1180 / 923948
- F Rotating group kit PS1181 / 923947
- G Included in piston rod kit PS-93672 / 02-328397

Model PVQ40/45

Table 1 - Valve Block S/A				
Model Code	Panagon	OEM	Panagon	OEM
Model	Valve Block		O-Ring	
PVQ45*R*SS	PS137867	933002	--	--
PVQ40*R*SS				
PVQ45*R*SE	PS116522	933017		
PVQ40*R*SE				
PVQ45*L*SS	PS5800532	933016		
PVQ40*L*SS				
PVQ45*L*SE	PS116523	933007		
PVQ40*L*SE				
PVQ4**RAFS	PS577150	937476		
PVQ4**RBSS	PS5814353	627149	PS135428	375422
PVQ4**LAFS		933000	PS134989	351776
PVQ4**LBSS	PS5816700	933021	PS135428	375422

Table 2 - Pressure Compensator										
Model Code	Panagon	OEM	Panagon	OEM	Panagon	OEM	Panagon	OEM	Panagon	OEM
Model	Comp. S/A		Spring		Spool		Gasket		Plug	
"C"-10	PS576322	02-348245	PS37	239371	PS138123	241717	PS90309	913451	PS2265	241621
"CG"-10	PS137530	02-348243			PS1626	296234			PS1623	412940
"CV"-10	PS8083	942441	PS8088	417649	PS3268	278711				

Table 3 - Shaft and Key				
Model Code	Panagon	OEM	Panagon	OEM
Model	Drive Shaft		Key	
PVQ**	PS3634	433559	PS1455	022971
PVQ**	PS1880	428883	PS1456	058303
PVQ**	PS1879	423415	--	--
PVQ**	PS1881	424544	--	--
PVQ**	PS3635	860881	PS84379	472270
PVQ**	PS3636	627172	--	--
PVQ**A9	PS2228	883098	PS1380	142843
	PS2229	586131		
PVQ**B26	PS2230	677131		
	PS1883	423416		

Model PVQ40/45

P V Q 4 0 A R 1 1 A A 1 0 B 1 1 2 4 0 0 A 1 A A 1 A F C D 0 1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1 2	Code Title	PV	Open circuit piston pump	AS	End ports; ISO 6162 flange, suction – 1.500 SAE 4-bolt split flange port with M12 X 1.75 threads; pressure – 1.000 SAE 4-bolt split flange port with M10 X 1.5 threads
3 4 5 6	Displacement	Q40A	41.0cm ³ /r [2.50 in ³ /r]		
		Q45A	45.1cm ³ /4 [2.75 in ³ /r]		
7	Input Shaft	L	Left-hand rotation (CCW)		
			rotation R Right-hand rotation (CW)		
8 9	Front Mounting and Input Shaft	01	2 Bolt B (SAE J744-101-2) with 22.2 [.88] DIA straight key shaft (SAE J744-22-1) (key included)	12	Drain Port Size and Location
		02	2 Bolt B-B (SAE J744-101-2) with 25.4 [1.00] DIA straight key shaft (SAE J744-25-1) (key included)	1	.875-14 UNF-2B SAE O-ring port–top (D1)
		05	2 Bolt B-B (SAE J744-101-2) with 13T 16/32DP 41.1 [1.62] long spline shaft	2	.875-14 UNF-2B SAE O-ring port – bottom (D2)
		08	2 Bolt B-B (SAE J744-101-2) with 15T 16/32DP splined shaft	3	.875-14 UNF-2B SAE O-ring port –shaft up
		09	2 Bolt B (SAE J744-101-2) with 26T 32/64DP splined shaft	6	M18 X 1.5 metric O-ring port – top (D1)
		10	Shaft-2 Bolt VDMA A with 25.0 [.984] DIA straight keyed shaft, key included	7	M18 X 1.5 metric O-ring port – bottom (D2)
				8	M18 X 1.5 metric O-ring port – shaft up
10 11	Main Ports Location and Size	AA	Side ports; tube ports per SAE J514, suction – 1.875-12 UN-2B, pressure – 1.3125-12 UN-2B	13	Diagnostic Pressure Port
		AB	End ports; tube ports per SAE J514, suction – 1.875-12 UN-2B, pressure – 1.3125-12 UN-2B	0	No diagnostic pressure port
		AC	Side ports; SAE J518 flange, suction – 1.500 SAE 4-bolt split flange port (code 61); pressure – 1.000 SAE 4-bolt split flange port (code 61)	1	.4375-20 UNF-2B SAE O-ring port –plugged
		AD	End ports; SAE J518 flange, suction – 1.500 SAE 4-bolt split flange port (code 61); pressure – 1.000 SAE 4-bolt split flange port (code 61)	2	M14 X 1.5 metric O-ring port – plugged
		AE	Side ports; ISO 6149-1 tube, suction – M48 X 2, pressure – M33 X 2	14	Controller Type
		AF	End ports; ISO 6149-1 tube, suction – M48 X 2, pressure – M33 X2	C	Electric dual range pressure compensator with directional control valve
				E	Unloading valve (accumulator circuits)
				G	Adjustable pressure compensator
				H	Adjustable pressure and flow compensator
				J	Adjustable hydraulic remote control pressure compensator
				15 16	Pressure Comp./ Unloading Valve
				07	65.5-72.4 bar [950-1050 lbf/in ²]
				18	182.7-189.6 bar [2650-2750 lbf/in ²]
				33	206.8-213.7 bar [3000-3100 lbf/in ²]
				17 18	Flow Comp. Setting Or Unload Valve Standby
				00	No flow compensator setting
				11	9.65-12.41 bar [140-180 lbf/in ²]
				14	12.41-15.17 bar [180-220 lbf/in ²]
				24	22.75-25.51 bar [330-370 lbf/in ²]
				19 20	Secondary Comp. Setting
				00	No secondary compensator setting
				04	186.2-193.1 bar [2700-2800 lbf/in ²]

Model PVQ40/45

21 Control Special Features

- 0 No special features
- A Bleed down orifice
- B External manual stroke adjustment

22 Maximum Displacement Option

- 1 Standard displacement
- 2 Adjustable maximum displacement (set at maximum)

23 24 Auxiliary Mounting Output Shaft

- 00 No auxiliary mounting or output shaft
- AA 2 Bolt A (SAE J744-82-2) w/ 9T
16/32DP external splined shaft
- AB 2 Bolt A (SAE J744-82-2) w/ 11T
16/32DP external splined shaft
- AC 2 Bolt B (SAE J744-101-2) w/ 13T
16/32 DP internal splined coupling
- AD 2 Bolt B (SAE J744-101-2) w/ 15T
16/32DP internal splined coupling
- AE 2 Bolt B (SAE J744-101-2) w/ 26T
32/64DP external splined shaft
- AH 2 Bolt A (SAE J744-82-2) w/ 9T
16/32DP internal splined coupling
- AJ 2 Bolt A (SAE J744-82-2) w/ 11T
16/32DP internal splined coupling
- AK 2 Bolt B (SAE J744-101-2) w/ 26T
32/64DP internal splined coupling

25 Shaft Seals

- 0 No shaft seal
- 1 Standard shaft seal (fluorocarbon)
- 8 HNBR shaft seal (water glycol)

26 27 Special Features

- AP Cast iron housing and industrial timing

28 29 Paint

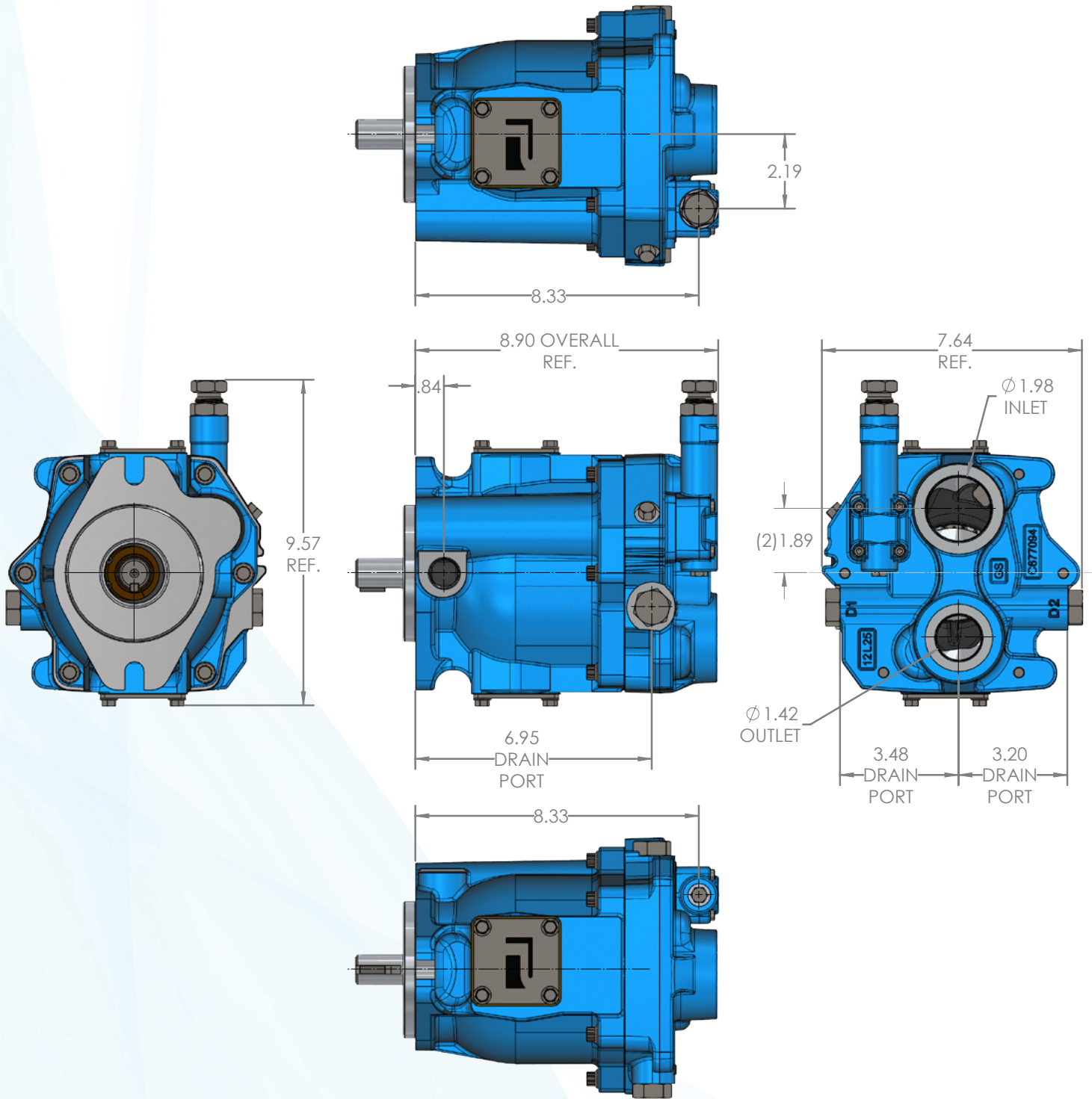
- 00 No paint
- CD Blue primer

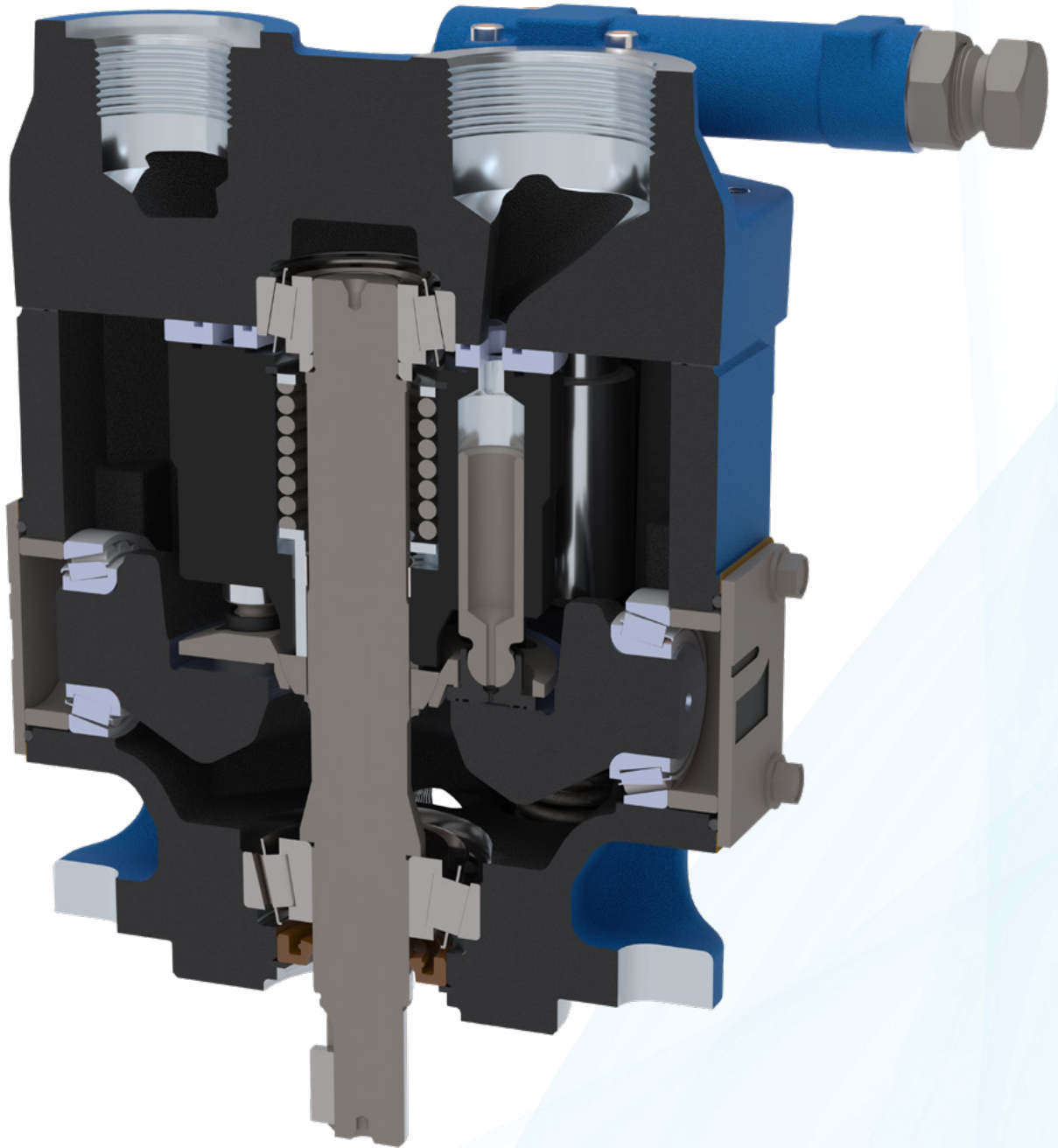
30 Customer and Unit

- 0 STD – mark assembly number, full model code and build date code on plate

31 Design Code

- A First design







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