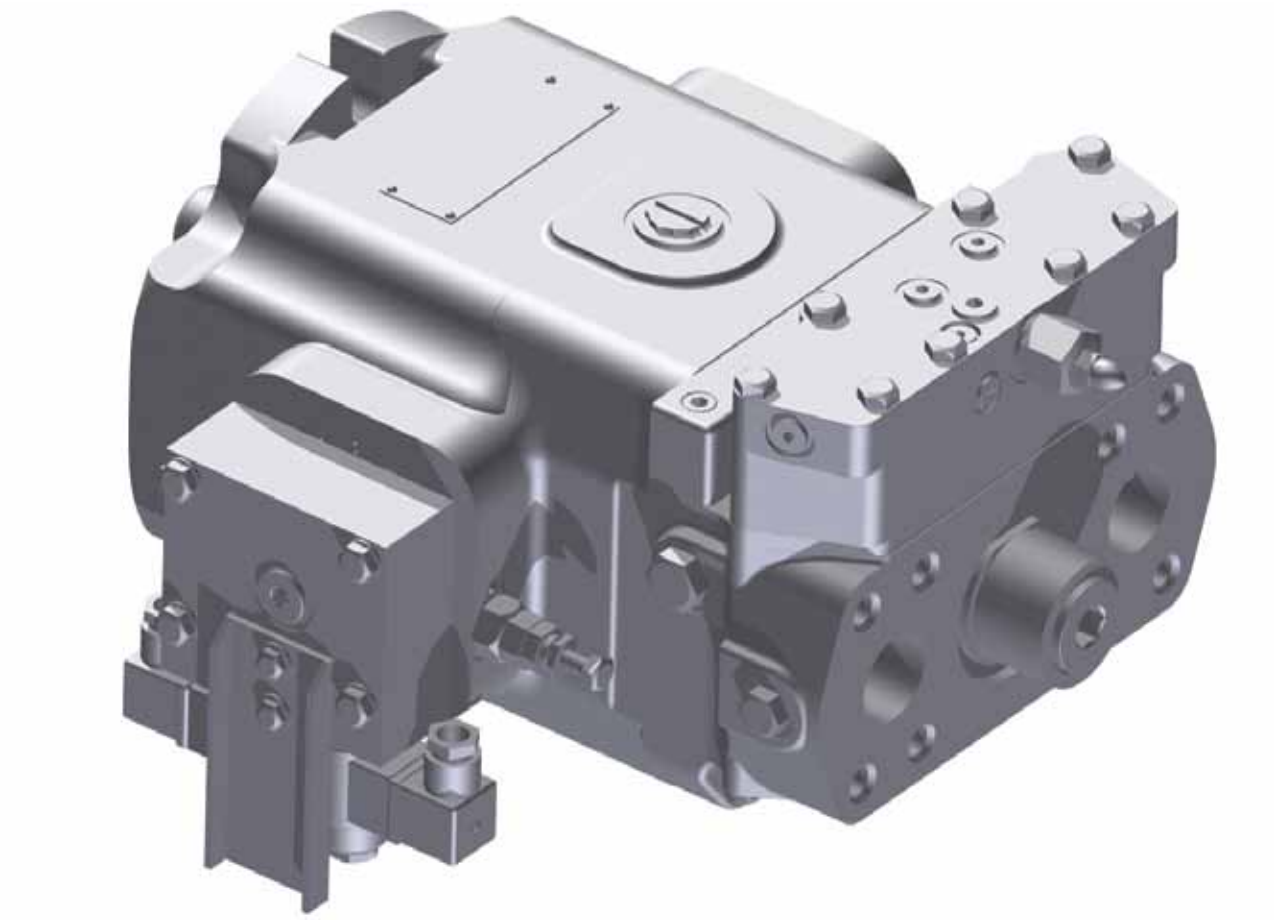


GOLD CUP®
Spare Parts and Exploded Views

P6-7-8 Options

HY28-2667-03/GC/US **Effective: March 15, 2013**

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker

ENGINEERING YOUR SUCCESS.

Hydraulic Pump Division and Denison Hydraulics

The Hydraulic Pump Division of Parker Hannifin was formed in 2004 when our significant piston pump business was expanded through the acquisition of **Denison Hydraulics**. The addition of **Denison** allowed us to marry the wealth of knowledge that both companies have in the design, manufacture, and application of piston products in both open circuit and closed circuit system applications. Since before WWII, **Denison** products have been chosen for Military test stand applications and for shipboard hydraulic applications being recognized as technology leaders.

The heavy duty **GOLD CUP®** series of pumps in this catalog represent a broadening of our product offering with hydrostatic transmission applications in marine, drilling, and shredding applications, among others. The tried and true design of the **GOLD CUP®** product line incorporates features such as integral servo and replenishing pump, hot oil shuttle, and a unique servo control system; all of which combine to provide a rugged self contained package which can withstand the harshest of conditions and continue to perform with trouble free long life.

The division is a leading worldwide manufacturer of hydraulic components and systems for earthmoving and construction vehicles; for mining equipment; for pulp and paper, chemical and other processing equipment; for ships and ordnance equipment; and for such in-plant machines as machine tools, plastic molding, die casters, and stamping presses.

Parker

DENISON Hydraulics

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WARNING - USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

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OFFER OF SALE

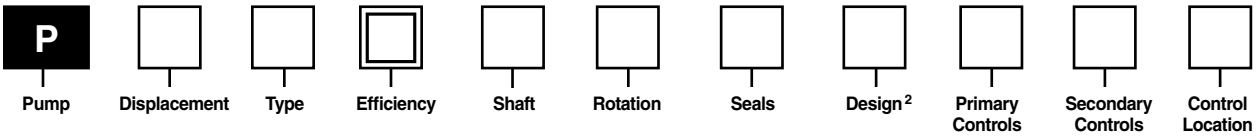
The items described in this document are hereby offered for sale by Parker-Hannifin Corporation, its subsidiaries or its authorized distributor. This offer and its acceptance are governed by the provisions stated in the detailed "Offer of Sale" elsewhere in this document.

Pump Ordering Code **2**
P6-7-8 Sectional Views **4**
Section View - A - Input Shaft & Retainer Assembly **6**
Section View - A - Kits. **8**
Section View - B - Housing, Mtg. Flange, & Stem Assembly **10**
Section View - C - Cam & Cradle Assembly **12**
Section View - D - Rotating Group Assembly **14**
Section View - E - Pump Type - P & D - Port Block Assembly **16**
Section View - E - Pump Type - V - Port Block Assembly. **18**
Section View - E - Pump Type - S & X - Port Block Assembly **20**
Section View - E - Pump Type - R - Port Block Assembly **22**
Section View - E - Pump Type - L - Port Block Assembly **24**
Section View - F - Valve Block Assembly **26**
Offer of Sale **29**

Notes:

1. Parts list and associated drawings shown in this bulletin are for standard model pumps only. All documentation for special “M2” modification pump model numbers must be verified with a HPD Factory Representative prior to ordering parts for such products.
2. * Indicates Special Instructions or Considerations.
3. ** Indicates Common Parts.
4. N/A Indicates Not Available or Not Applicable.
5. All documentation represented in this bulletin is for standard production models only, (as follows):
   - 5.1. P6 = Design Level “C” Model Pump
   - 5.2. P7 = Design Level “A” Model Pump
   - 5.3. P8 = Design Level “A” Model Pump
6. See ordering code for configuration options.
7. All orientation references are described when viewing pump from main drive shaft with valve block up.
8. Assembly part numbers with - 0 suffixes, indicate Buna N (Nitrile) seal compound. For Ethylene Propylene, (EPR), compound, use - 4 suffix. For Fluorocarbon compound use - 5 suffixes.
9. Detail part numbers for O-rings with 671 / 691 prefix, indicate Buna N (Nitrile) seal compound. For Ethylene Propylene, (EPR), compound, use 674 / 694 prefix. For Fluorocarbon compound use 675 / 695 prefix.
10. Drawings with items marked with double balloons “◎”, indicate assemblies.

Parker Hannifin Corporation
Hydraulic Pump Division
Marysville, Ohio USA



Code	Displacement
6	6.00 in³/rev (98 cc/rev)
7	7.25 in³/rev (119 cc/rev)
8	8.00 in³/rev (131 cc/rev)
11	11.0 in³/rev (180 cc/rev)
14	14.0 in³/rev (229 cc/rev)
24	24.6 in³/rev (403 cc/rev)
30	30.6 in³/rev (501 cc/rev)

Code	Type
F	Fixed Displacement, Open/Closed Circuit
M	Fixed Displacement with High Torque Thru-Drive, Open/Closed Circuit
P	Variable Displacement, Closed Circuit
X	Variable Displacement with Medium Torque Thru-Drive, Closed Circuit
S	Variable Displacement with Medium Torque Thru-Drive & Shuttle Package, Closed Circuit
R	Variable Displacement with High Torque Thru-Drive, Closed Circuit
L	Variable Displacement with High Torque Thru-Drive & Shuttle Package, Closed Circuit
V	Variable Displacement, Open Circuit (P6, 7, 8, 11 & 14 only)
D	Variable Displacement, Open & Closed Circuit (P6, 7 & 8 only)

Code	Efficiency
H	High Efficiency (P24 only)
Omit	Standard Efficiency

Code	Shaft
2	Keyed SAE – Mechanical Shaft Seal (Single Lip Seal on P6, 7, 8F/M)
3	Splined SAE – Mechanical Shaft Seal(Single Lip Seal on P6, 7, 8F/M)
4	Keyed SAE-D (Mounting & Shaft) – Mechanical Shaft Seal (P6, 7 & 8 only, Single Lip Seal on Fixed Displacement Pumps)
-5	Splined SAE-D (Mounting & Shaft) – Mechanical Shaft Seal (P6, 7 & 8 only, Single Lip Seal on Fixed Displacement Pumps)
7	Keyed SAE – Double Lip Shaft Seal
8	Splined SAE – Double Lip Shaft Seal
9	Keyed (long) SAE – Double Lip Shaft Seal
10	Keyed (long) SAE – Mechanical Shaft Seal

Code	Rotation
R	Clockwise
L	Counterclockwise

Code	Seals
1	Nitrile (Buna-N)
4	EPR [1, 3]
5	Fluorocarbon

Code	Primary Controls
Omit	None (Fixed Displacement only)
10	Screw Adjustment (Spring Offset to Maximum Displacement)
2A	Cylinder Control w/Adjustable Maximum Volume Stops
2H	Cylinder Control – 3-Position (Spring Control with Zero Adjustment)
2M	Cylinder Control – 2-Position Electrohydraulic w/Adjustable Maximum Volume Stop (Spring Offset to Maximum Displacement) [1]
2N	Cylinder Control – 3-Position (Spring Centered) Electrohydraulic [1]
40	Rotary Servo – Spring Centered
4A	Rotary Servo – Spring Centered w/ Adjustable Maximum Volume Stops
4B	Rotary Servo – Spring Centered w/ Automatic Brake Control
4C	Rotary Servo – Spring centered w/ Adjustable Maximum Volume Stops & Automatic Brake Control
5A	Electrohydraulic Stroker w/Adjustable Maximum Volume Stops [1]
5C	Electrhydraulic Stroker w/Adjustable Maximum Volume Stops & Automatic Brake Control [1]
7D	High IQ with 10 GPM Servo Valve & Volume Indicator [1]
7F	High IQ with 10 GPM Servovalve & 4A (Rotary Servo) Control [1]
7J	High IQ with DF+ Valve & Volume Indicator [1]
7K	High IQ with DF+ Valve & 4A (Rotary Servo) Control [1]
8A	Hydraulic Stroker w/Adjustable Maximum Volume Stops
8C	Hydraulic Stroker w/Adjustable Maximum Volume Stops & Automatic Brake Control
9A	Electrohydraulic Stroker w/Adjustable Maximum Volume Stops [1]
9C	Electrohydraulic Stroker w/Adjustable Maximum Volume Stops & Automatic Brake Control [1]
9D	Electro-hydraulic stroker w/ adjustable maximum volume stops

Code	Secondary Controls
Omit	None (Fixed Displacement only)
2	Volume Indicator
4	Torque Limiter & Volume Indicator
6	Cam Position Feedback Potentiometer [1]
7	Cam Position Feedback RVDT (AC) [1]
8	Cam Position Feedback R VDT (DC) [1]

Code	Control Location
Omit	None (Fixed Displacement only)
A	Primary Control on Port A Side
B	Primary Control on Port B Side

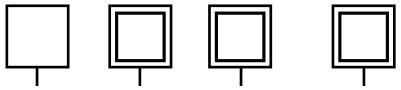
1 Not ATEX approved.
2 Assigned by manufacturer
3 Not available when using “5A” or “5C” primary controls. Pump will be unpainted unless otherwise specified.

= Omit if not required

Parker Hannifin Corporation
Hydraulic Pump Division
Marysville, Ohio USA



Control & Displacement Features



Internal Pump | External Drive | External Mounting | Special Modifications

Control	Code	Control & Displacement Features
2M* & 2N*	00	CETOP3, NG6 Valve, 110AC/60Hz with Hirschmann Connector [1]
	01	CETOP3, NG6 Valve, 12VDC with Hirschmann Connector [1]
	02	CETOP3, NG6 Valve, 240VAC/50Hz with Hirschmann Connector [1]
	03	CETOP3, NG6 Valve, 110VAC/60Hz, Wiring Box [1]
	04	CETOP3, NG6 Valve, 12VDC, Wiring Box [1]
	05	CETOP3 (D03, NG6) Interface, No Valve [1]
	06	CETOP3, NG6 Valve, 24VDC with Hirschmann Connector [1]
	07	CETOP3, NG6 Valve, 110VAC/50Hz with Hirschmann Connector [1]
5**	00	With Deadband [1]
	01	Without Deadband [1]
7**	00	Without Manual Override Shutoff [1]
	01	With Manual Override Shutoff [1] (required for F & K primary options)
8**	00	75-350 PSI (5-24 Bar)
	01	75-435 PSI (5-30 Bar)
	02	100-375 PSI (7-26 Bar)
	03	150-400 PSI (10-28 Bar)
	04	75-250 PSI (5-17 Bar)
9**	00	24VDC
	01	12VDC
All Other	00	None [1]

Pump	Code	Reduced Displacement
P**F & P**M	00	Standard Cam (19°)
	10	P6 with 17° Cam – 5.3 in³/rev (87cc/rev) P7 with 17° Cam – 6.4 in³/rec (105 cc/rev) P8 with 17° Cam – 7.1 in³/rev (116 cc/rev) P11 with 17° Cam – 9.7 in³/rev (160 cc/rev) P14 with 17° Cam – 12.5 in³/rev (205 cc/rev) P24 with 17° Cam – 22.0 in³/rev (360 cc/rev) P30 with 17° Cam – 27.2 in³/rev (446 cc/rev)
	20	P6 with 15° Cam – 4.6 in³/rev (76 cc/rev) P7 with 15° Cam – 5.6 in³/rev (92 cc/rev) P8 with 15° Cam – 6.2 in³/rev (102 cc/rev) P11 with 15° Cam – 8.5 in³/rev (140 cc/rev) P14 with 15° Cam – 10.9 in³/rev (179 cc/rev)
	30	P6 with 13° Cam – 4.0 in³/rev (66 cc/rev) P7 with 13° Cam – 4.8 in³/rev (79 cc/rev) P8 with 13° Cam – 5.3 in³/rev (88 cc/rev)

Code	Internal Pump
0	1.07 in³/rev (17.5 cc/rev) – P6, 7, 8P/S/X/V/D & P11, 14V only** 2.14 in³/rev (35 cc/rev) – P11, 14P/S/X only** 2.81 in³/rev (46 cc.rev) – P24, 30P/S/X only (standard)**
1	1.61 in³/rev (26.4 cc/rev) – P24, 30P/S/X only (auxiliary external replenishing flow required)
2	1.05 in³/rev (17.2 cc/rev) – P24, 30P/S/X only (auxiliary external replenishing flow required)
3	3.56 in³/rev (58.3 cc/rev) – P24, 30P/S/X only
4	4.84 in³/rev (79.3 cc/rev) – P24, 30P/S/X only
5	5.42 in³/rev (88.8 cc/rev) – P24, 30P/S/X only
6	6.10 in³/rev (100.0 cc/rev) – P24, 30P/S/X only
X	No Internal Pump (standard on P*R/L/F/M)

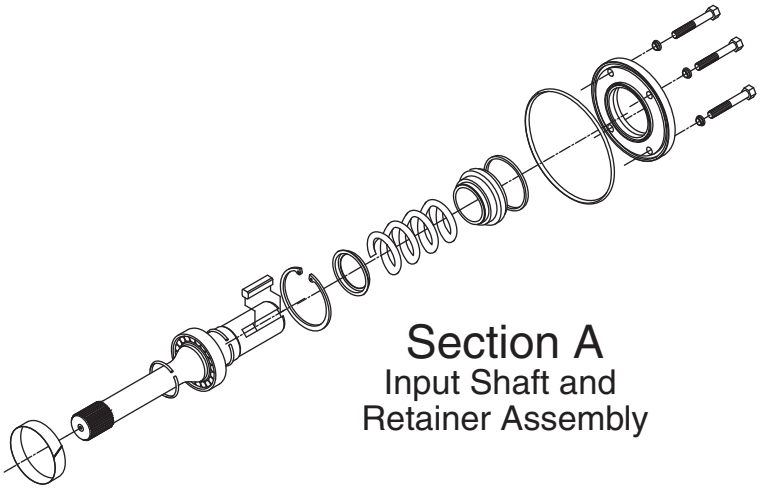
** Omit code if no external drive is required.

Code	External Drive
Omit	None [1]
M	Blanking plate – for P6, 7, 8, 11, 14S/X only
A	SAE-A (SAE 82-2) – P6, 7, 8, 11, 14S/X/R/L/M only
B	SAE-B (SAE 101-2) – P6, 7, 8, 11, 14, 24, 30/S/X/R/L/M SAE-B (SAE 101-4) – P11, 14, 24, 30R/L/M
C	SAE-C (SAE 127-2) – P6, 7, 8, 11, 14, 24, 30R/L/M & P24, 30S/X SAE-C (SAE 127-4) – P11, 14, 24, 30R/L/M
D	SAE-D (SAE 152-4) – P11, 14, 24, 30R/L/M only
E	SAE-E (SAE 165-4) – P11, 14, 24, 30R/L/M only
F	SAE-F (SAE 177-4) – P24, 30R/L/M only

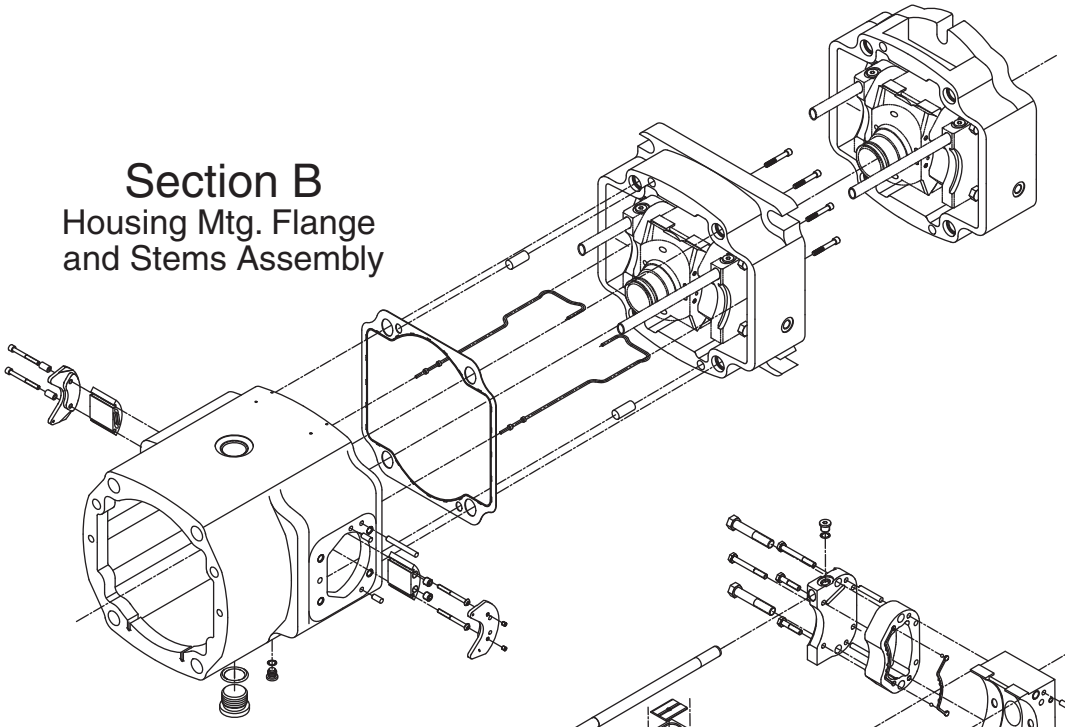
Code	External Mounting
Omit	No External Drive Required
0	No External Pump Mounted
1	External Pump Mounted (must be separately specified) – Requires Special Modification "-M2" [1]
2	ATEX Externally Mounted Pump

Code	Special Modifications
Omit	None
NP	No Paint [1]
EX	ATEX APPROVED PUMP (May contain additional modifications. Contact tech support.)
M2	Other Special Modification (example: bronze caged barrel bearing for low viscosity fluids, tandem pumps, etc.) [1]

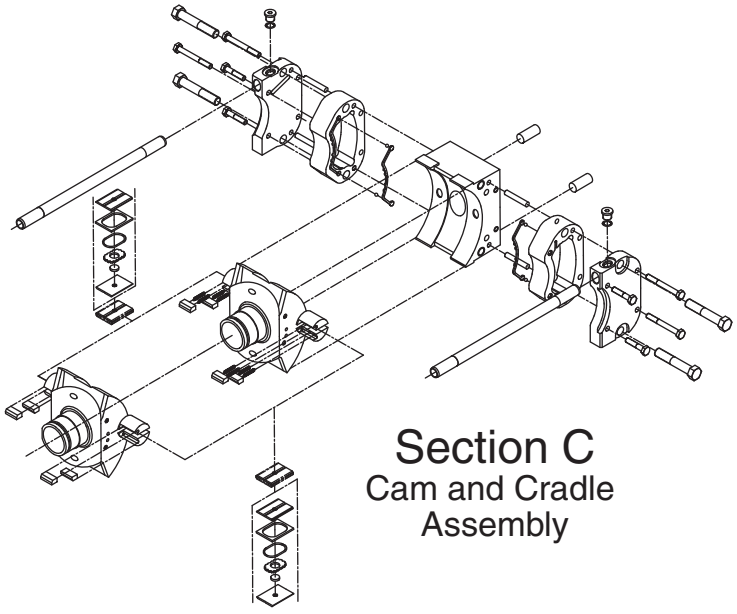
 = Omit if not required



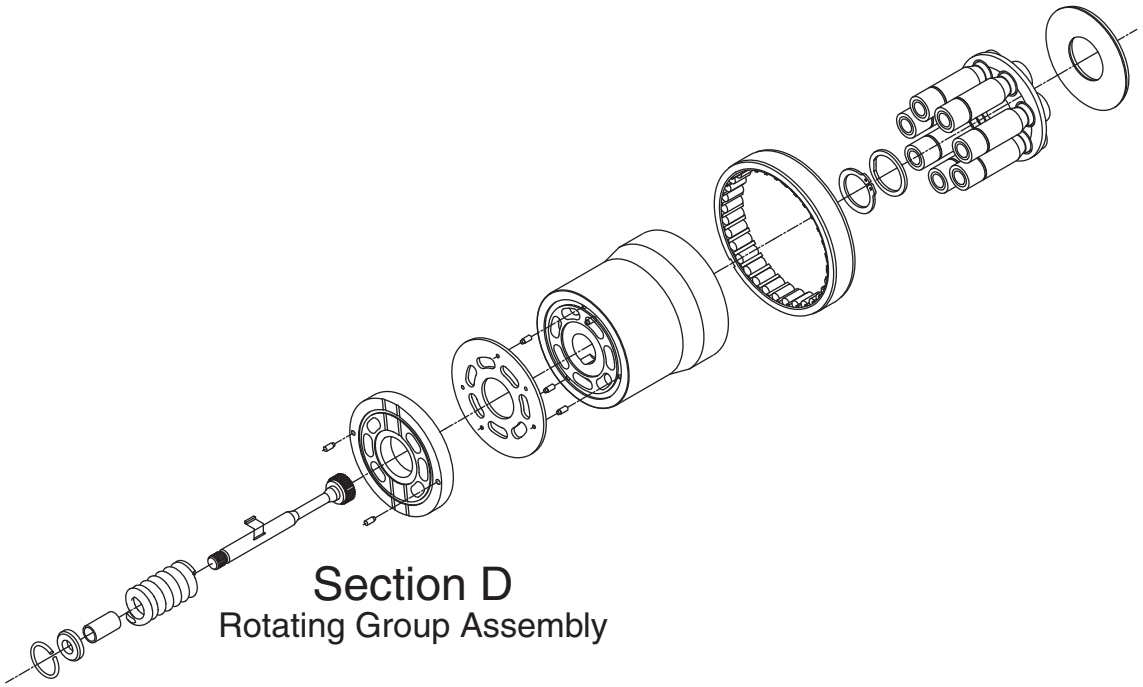
Section A
Input Shaft and
Retainer Assembly



Section B
Housing Mtg. Flange
and Stems Assembly



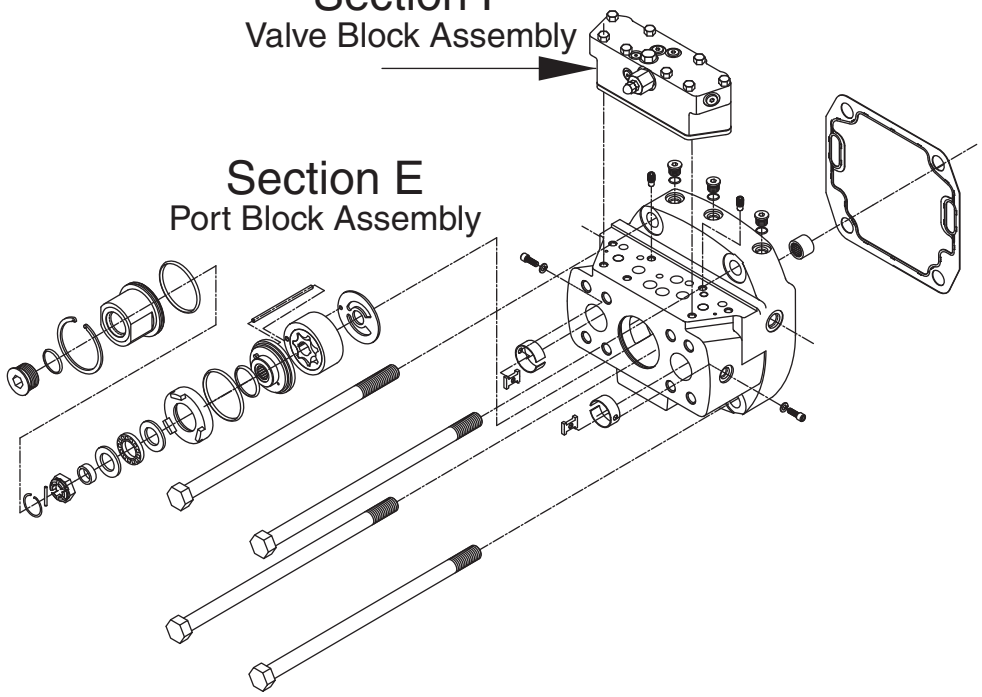
Section C
Cam and Cradle
Assembly



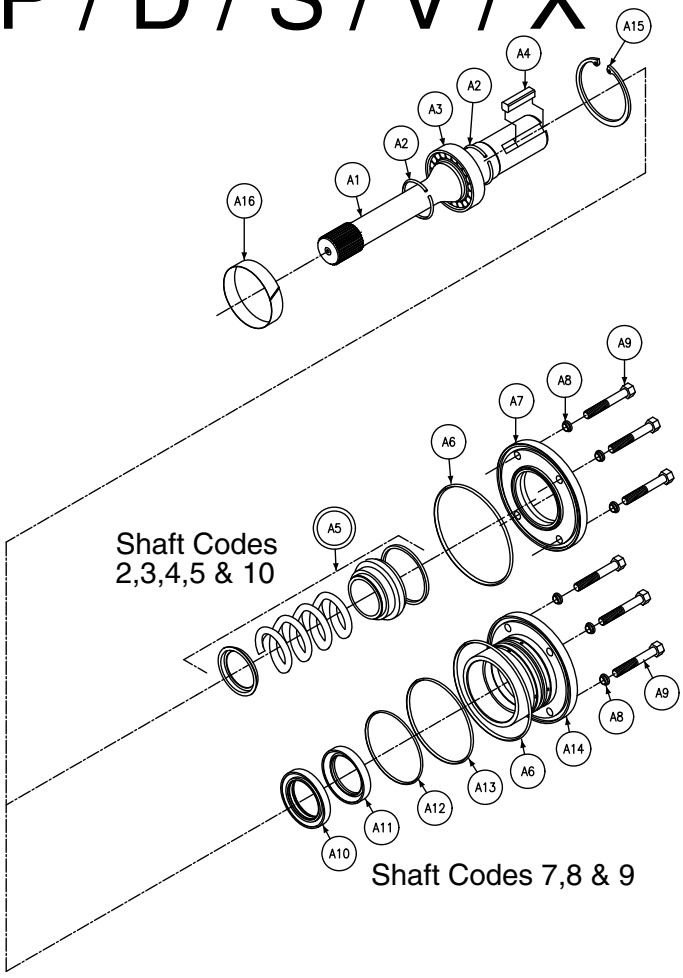
Section D
Rotating Group Assembly

Section F
Valve Block Assembly

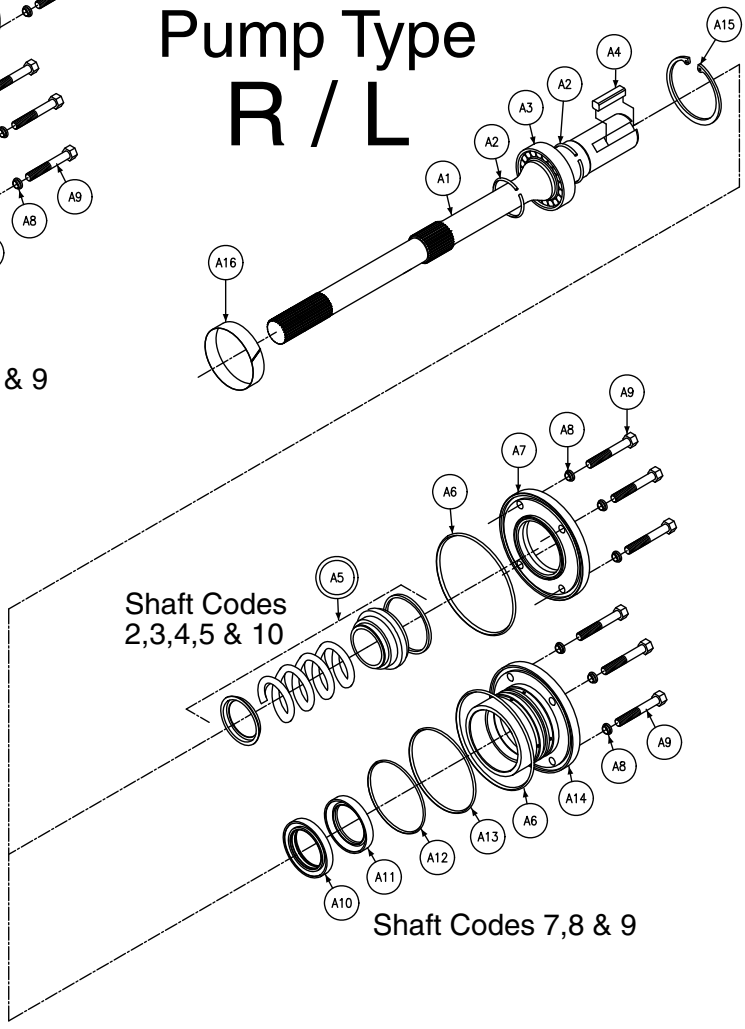
Section E
Port Block Assembly



Pump Type
P / D / S / V / X



Pump Type
R / L



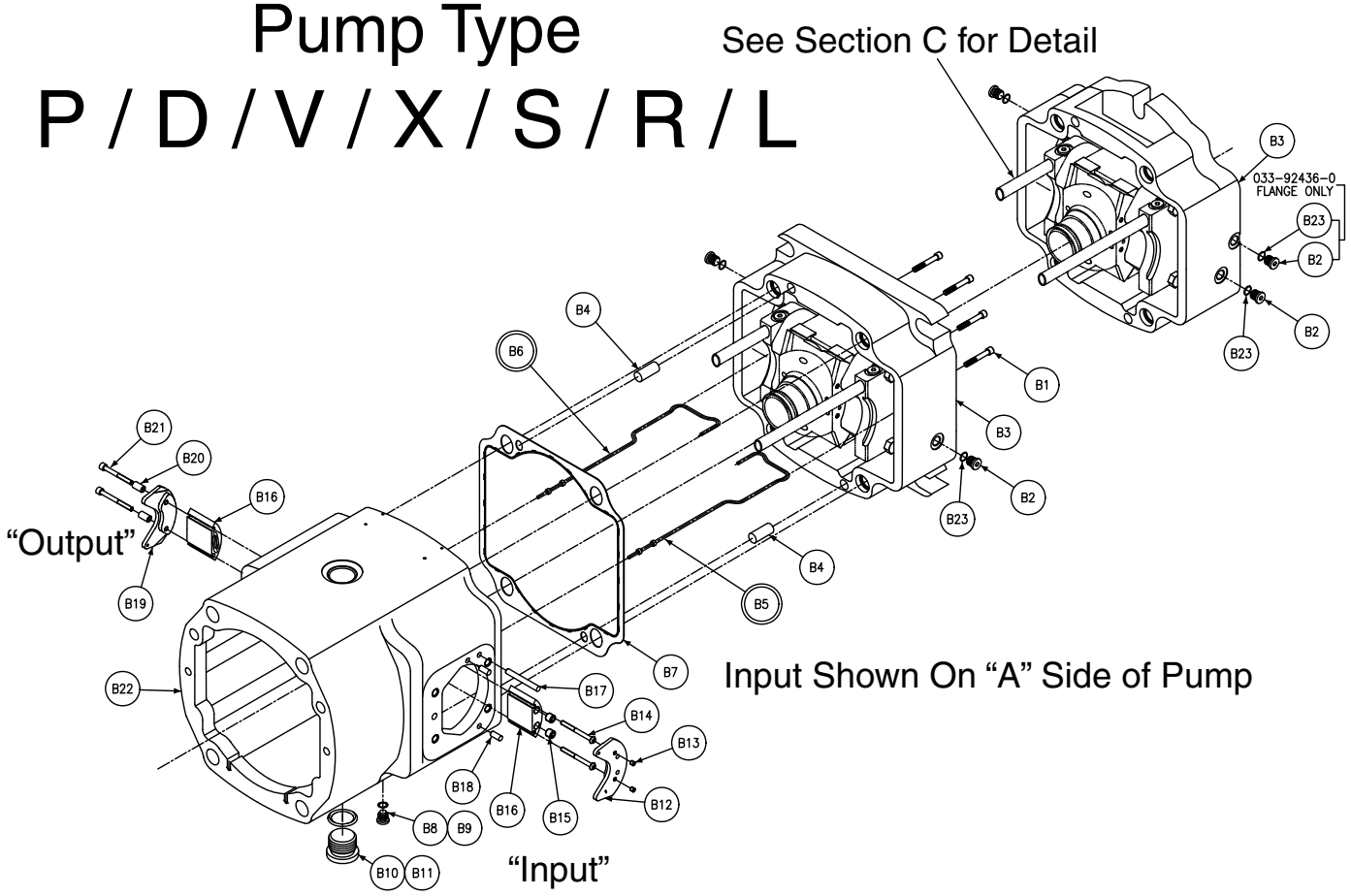
Section A						
P6/7/8 Input shaft and retainer						
Balloon #	**Pump Type**	**Shaft Code**	**Seal Code**	**Item #**	**Description**	**Qty**
A1	P6/7/8 P/D/V/X/S	2	**	033-70579-0	Shaft, Keyed	1
	P6/7/8 P/D/V/X/S	3	**	033-70567-0	Shaft, Splined	
	P6/7/8 P/D/V/X/S	4	**	033-92283-0	Shaft, Keyed	
	P6/7/8 P/D/V/X/S	5	**	033-92282-0	Shaft, Splined	
	P6/7/8 P/D/V/X/S	7	**	033-92959-0	Shaft, Keyed	
	P6/7/8 P/D/V/X/S	8	**	033-92943-0	Shaft, Splined	
	P6/7/8 P/D/V/X/S	9	**	033-93605-0	Shaft, Keyed	
	P6/7/8 P/D/V/X/S	10	**	033-93606-0	Shaft, Keyed	
	P6/7/8 R/L	2	**	033-57862-0	Shaft, Keyed	
	P6/7/8 R/L	3	**	033-57819-0	Shaft, Splined	
	P6/7/8 R/L	4	**	033-93453-0	Shaft, Keyed	
	P6/7/8 R/L	5	**	033-93418-0	Shaft, Splined	
	P6/7/8 R/L	7	**	033-93318-0	Shaft, Keyed	
	P6/7/8 R/L	8	**	033-94244-0	Shaft, Splined	
	P6/7/8 R/L	9	**	033-93611-0	Shaft, Keyed	
	P6/7/8 R/L	10	**	033-93612-0	Shaft, Keyed	
A2	P6/7/8 P/D/V/X/S/R/L	2/3/7/8/9/10	**	033-70817-0	Retaining ring	2
	P6/7/8 P/D/V/X/S/R/L	4/5	**	033-70817-0	Retaining ring	1
A3	P6/7/8 P/D/V/X/S/R/L	2/3/7/8/9/10	**	230-82140-0	Shaft Bearing	1
	P6/7/8 P/D/V/X/S/R/L	4/5	**	230-00207-0	Shaft Bearing	1
A4	P6/7/8 P/D/V/X/S/R/L	2/7	**	033-71348-0	Key	1
	P6/7/8 P/D/V/X/S/R/L	4	**	031-29899-0		
	P6/7/8 P/D/V/X/S/R/L	9/10	**	033-93617-0		
A5	P6/7/8 P/D/V/X/S/R/L	2/3/10	1	623-00006-0	Shaft Seal	1
	P6/7/8 P/D/V/X/S/R/L	2/3/10	4	623-00006-4		
	P6/7/8 P/D/V/X/S/R/L	2/3/10	5	623-00006-5		
	P6/7/8 P/D/V/X/S/R/L	4/5	1	623-00016-0		
	P6/7/8 P/D/V/X/S/R/L	4/5	4	623-00016-4		
	P6/7/8 P/D/V/X/S/R/L	4/5	5	623-00016-5		
A6	P6/7/8 P/D/V/X/S/R/L	2/3/7/8/9/10	1	671-00043-0	Gasket O-ring	1
	P6/7/8 P/D/V/X/S/R/L	2/3/7/8/9/10	4	674-00043-0		
	P6/7/8 P/D/V/X/S/R/L	2/3/7/8/9/10	5	675-00043-0		
	P6/7/8 P/D/V/X/S/R/L	4/5	1	671-00249-0		
	P6/7/8 P/D/V/X/S/R/L	4/5	4	674-00249-0		
	P6/7/8 P/D/V/X/S/R/L	4/5	5	675-00249-0		
A7	P6/7/8 P/D/V/X/S/R/L	2/3/10	**	033-57892-0	Seal Retainer	1
	P6/7/8 P/D/V/X/S/R/L	4/5	**	033-92286-0		
A8	P6/7/8 P/D/V/X/S/R/L	2/3/7/8/9/10	**	631-45003-0	Nyltite Gasket	4
	P6/7/8 P/D/V/X/S/R/L	4/5	**	631-45007-0		
A9	P6/7/8 P/D/V/X/S/R/L	2/3/7/8/9/10	**	306-40144-0	Hex Hd Cap Screw	4
	P6/7/8 P/D/V/X/S/R/L	4/5	**	306-40016-0		
A10	P6/7/8 P/D/V/X/S/R/L	7/8/9	1	620-82066-0	Inner Seal	1
	P6/7/8 P/D/V/X/S/R/L	7/8/9	4	not available		
	P6/7/8 P/D/V/X/S/R/L	7/8/9	5	not available		
A11	P6/7/8 P/D/V/X/S/R/L	7/8/9	1	620-82114-0	Outer Seal	1
	P6/7/8 P/D/V/X/S/R/L	7/8/9	4	not available		
	P6/7/8 P/D/V/X/S/R/L	7/8/9	5	not available		
A12	P6/7/8 P/D/V/X/S/R/L	7/8/9	1	671-00036-0	Gasket O-ring	1
	P6/7/8 P/D/V/X/S/R/L	7/8/9	4	674-00036-0		
	P6/7/8 P/D/V/X/S/R/L	7/8/9	5	675-00036-0		
A13	P6/7/8 P/D/V/X/S/R/L	7/8/9	1	671-00037-0	Gasket O-ring	1
	P6/7/8 P/D/V/X/S/R/L	7/8/9	4	674-00037-0		
	P6/7/8 P/D/V/X/S/R/L	7/8/9	5	675-00037-0		
A14	P6/7/8 P/D/V/X/S/R/L	7/8/9	**	033-92465-0	Seal Retainer	1
A15	P6/7/8 P/D/V/X/S/R/L	2/3/7/8/9/10	**	033-53901-0	Retaining Ring	select fit 1 only
	P6/7/8 P/D/V/X/S/R/L	2/3/7/8/9/10	**	033-53902-0		
	P6/7/8 P/D/V/X/S/R/L	2/3/7/8/9/10	**	033-53903-0		
	P6/7/8 P/D/V/X/S/R/L	4/5	**	356-65139-0	Retaining Ring	1
A16	P6/7/8 P/D/V/X/S	2/3/10	**	033-53948-0	Shim, .008”	select fit 1 only
	P6/7/8 P/D/V/X/S	2/3/10	**	033-53949-0	Shim, .007”	

Seal KIts Contain All Seals for the Following:			
1. Main Pump			
2. Valve Block			
3. Input/Output Controls			
4. Shaft Seal			
Shaft Code	**Pump Type**	**Seal Code**	**Part Number**
2/3/10	P6/7/8 P/D/V	1	S23-17026-0
2/3/10	P6/7/8 P/D/V	4	S23-17026-4
2/3/10	P6/7/8 P/D/V	5	S23-17026-5
4/5	P6/7/8 P/D/V	1	S23-17027-0
4/5	P6/7/8 P/D/V	4	S23-17027-4
4/5	P6/7/8 P/D/V	5	S23-17027-5
7/8/9	P6/7/8 P/D/V	1	S23-17028-0
7/8/9	P6/7/8 P/D/V	4	S23-17028-4
7/8/9	P6/7/8 P/D/V	5	S23-17028-5
2/3/10	P6/7/8 S/X/R/L	1	S23-17029-0
2/3/10	P6/7/8 S/X/R/L	4	S23-17029-4
2/3/10	P6/7/8 S/X/R/L	5	S23-17029-5
4/5	P6/7/8 S/X/R/L	1	S23-17030-0
4/5	P6/7/8 S/X/R/L	4	S23-17030-4
4/5	P6/7/8 S/X/R/L	5	S23-17030-5
7/8/9	P6/7/8 S/X/R/L	1	S23-17031-0
7/8/9	P6/7/8 S/X/R/L	4	S23-17031-4
7/8/9	P6/7/8 S/X/R/L	5	S23-17031-5

Shaft Assemblies		
Composed of Items:		
A1, A2, A3, and A4		
Shaft Code	**Pump Type**	**Part Number**
2	P6/7/8 P/D/V/X/S	S13-41806-0
3	P6/7/8 P/D/V/X/S	S13-41805-0
4	P6/7/8 P/D/V/X/S	S23-15832-0
5	P6/7/8 P/D/V/X/S	S23-15831-0
7	P6/7/8 P/D/V/X/S	S23-16539-0
8	P6/7/8 P/D/V/X/S	S23-16514-0
9	P6/7/8 P/D/V/X/S	S23-17486-0
10	P6/7/8 P/D/V/X/S	S23-17487-0
2	P6/7/8 R/L	S23-12093-0
3	P6/7/8 R/L	S23-12044-0
4	P6/7/8 R/L	S23-17222-0
5	P6/7/8 R/L	S23-17167-0
7	P6/7/8 R/L	S23-16944-0
8	P6/7/8 R/L	S23-18302-0
9	P6/7/8 R/L	S23-17492-0
10	P6/7/8 R/L	S23-17493-0

Pump Type

P / D / V / X / S / R / L



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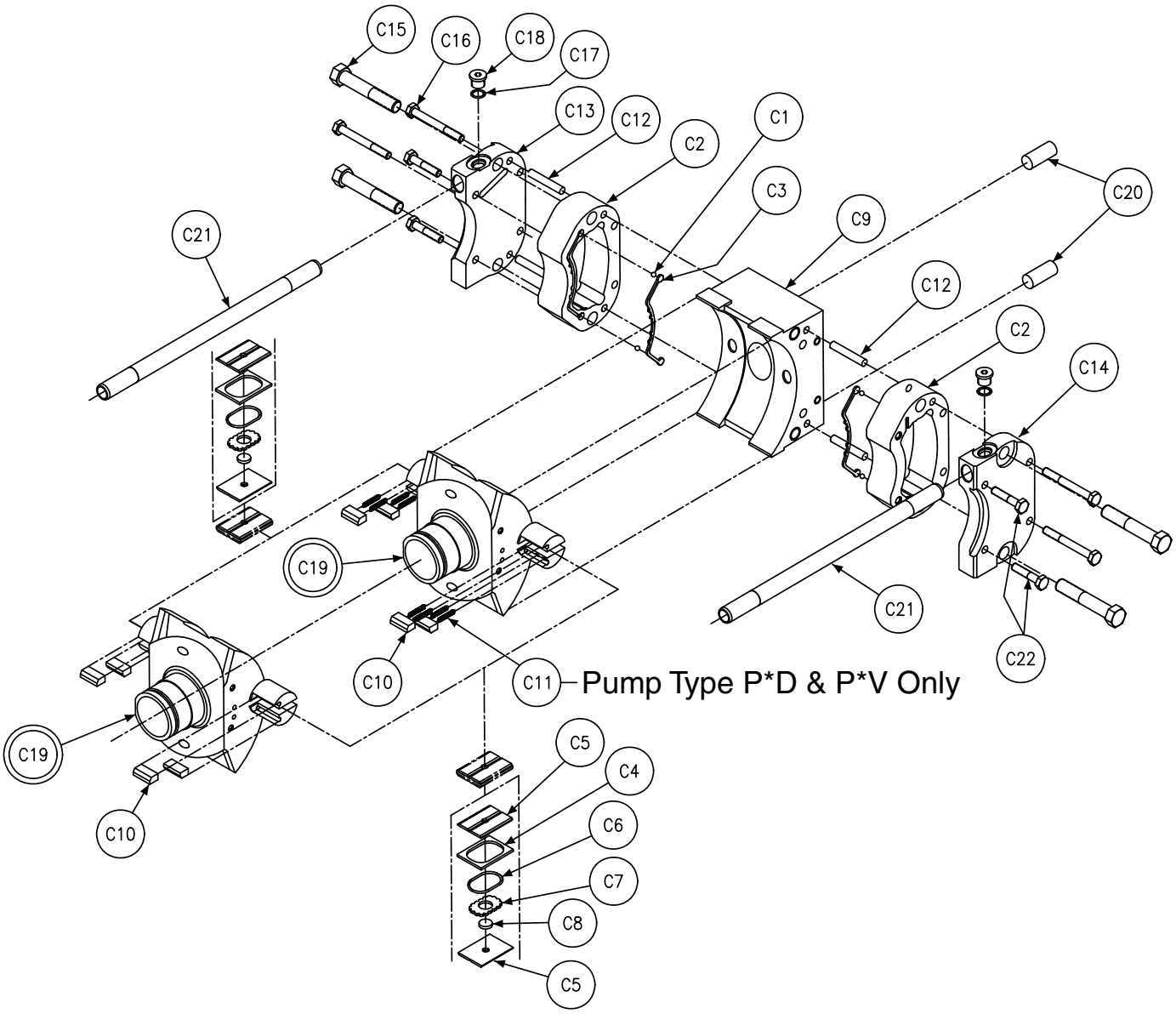
Section View - B - Housing, Mtg. Flange, & Stem Assembly

Section B						
P6/7/8 P/D/V/X/S/R/L Housing and stems						
Balloon #	**Pump Type**	**Shaft Code**	**Seal Code**	**Item #**	**Description**	**Qty**
B1	P6/7/8 P/D/V/X/S/R/L	4/5	**	358-12200-0	Screw Socket Head Cap	4
B2	P6/7/8 P/D/V/X/S/R/L	2/3/10	**	488-35001-0	Hex Socket Plug	2
	P6/7/8 P/D/V/X/S/R/L	4/5	**			2
	P6/7/8 P/D/V/X/S/R/L	7/8/9	**			3
B3	P6/7/8 P/D/V/X/S/R/L	2/3/10	**	033-70604-0	Mounting Flange	1
	P6/7/8 P/D/V/X/S/R/L	4/5	**	033-92280-0		
	P6/7/8 P/D/V/X/S/R/L	7/8/9	**	033-92436-0		
B4	P6/7/8 P/D/V/X/S/R/L	**	**	324-22412-0	Dowel Pin	4
B5	P6/7/8 P/D/V/X/S/R/L	**	**	S13-42403-0	Left Feed Tube	1
B6	P6/7/8 P/D/V/X/S/R/L	**	**	S13-42402-0	Right Feed Tube	1
B7	P6/7/8 P/D/V/X/S/R/L	**	**	033-91067-0	Gasket Housing / Mtg Flange	1
B8	P6/7/8 P/D/V/X/S/R/L	**	1	691-00908-0	Gasket, O-ring	1
	P6/7/8 P/D/V/X/S/R/L	**	4	694-00908-0		
	P6/7/8 P/D/V/X/S/R/L	**	5	695-00908-0		
B9	P6/7/8 P/D/V/X/S/R/L	**	**	033-91106-0	Barrel Bearing Retainer	1
B10	P6/7/8 P/D/V/X/S/R/L	**	**	488-35014-0	Plug Hex Socket	2
B11	P6/7/8 P/D/V/X/S/R/L	**	1	691-00912-0	Gasket, O-ring	2
	P6/7/8 P/D/V/X/S/R/L	**	4	694-00912-0		
	P6/7/8 P/D/V/X/S/R/L	**	5	695-00912-0		
B12	P6/7/8 P/D/V/X/S/R/L	**	**	033-53874-0	Servo Input Plate	1
B13	P6/7/8 P/D/V/X/S/R/L	**	**	312-09032-0	Screw	2
B14	P6/7/8 P/D/V/X/S/R/L	**	**	353-25041-0	Button Head Screw	2
B15	P6/7/8 P/D//X/S/R/L	**	**	033-70819-0	3/8-24 UNF X 3/8 LG Screw with 1/16" dia Orifice	2
	P6/7/8 V	**	**			1
B16	P6/7/8 P/D/V/X/S/R/L	**	**	033-71312-0	Servo Stem	2
B17	P6/7/8 P/D/V/X/S/R/L	**	**	325-16280-0	Spring Pin	2
B18	P6/7/8 P/D/V/X/S/R/L	**	**	324-21608-0	Dowel Pin	4
B19	P6/7/8 P/D/V/X/S/R/L	**	**	033-70546-0	Balance Plate	1
B20	P6/7/8 P/D/V/X/S/R/L	**	**	033-71247-0	Spacer	2
B21	P6/7/8 P/D/V/X/S/R/L	**	**	358-10300-0	Socket Head Cap Screw	2
B22	P6/7/8 P/D/V/X/S/R/L	**	**	033-91108-0	Housing	1
B23	P6/7/8 P/D/V/X/S/R/L	2/3/10	**	691-00904-0	Gasket, O-ring	2
	P6/7/8 P/D/V/X/S/R/L	4/5	**	694-00904-0		2
	P6/7/8 P/D/V/X/S/R/L	7/8/9	**	695-00904-0		3

Stem Kits	
Input Stem Kits Include the Following:	
B12, B13, B14, B15 and B16	
Ouput Stem Kits Include the Following:	
B16, B19, B20 and B21	
	Part Number
P6/7/8 Input Stem Kit	S23-12681-0
P6/7/8 Output Stem Kit	S23-03383-0

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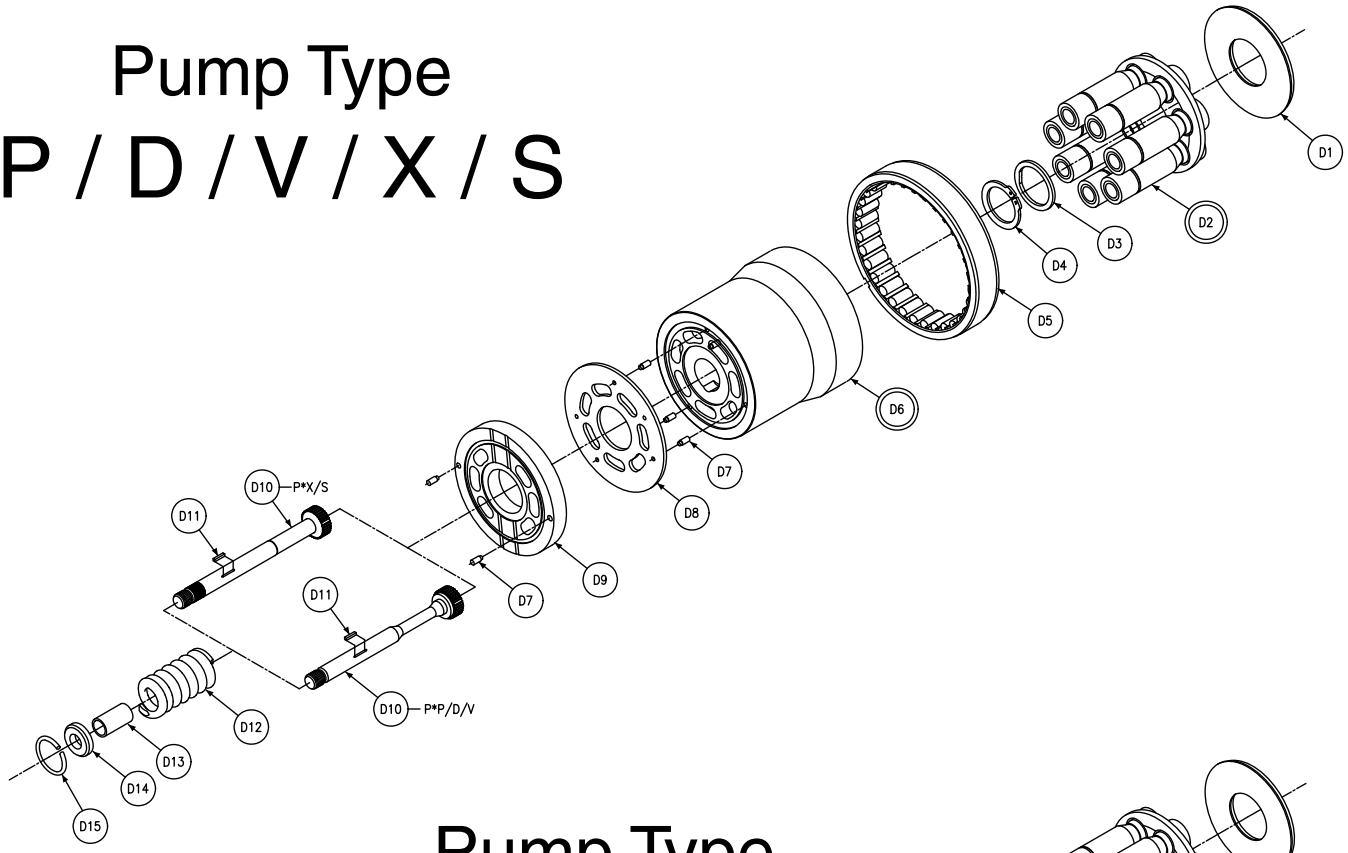
Pump Type
P / D / V / X / S / L / R



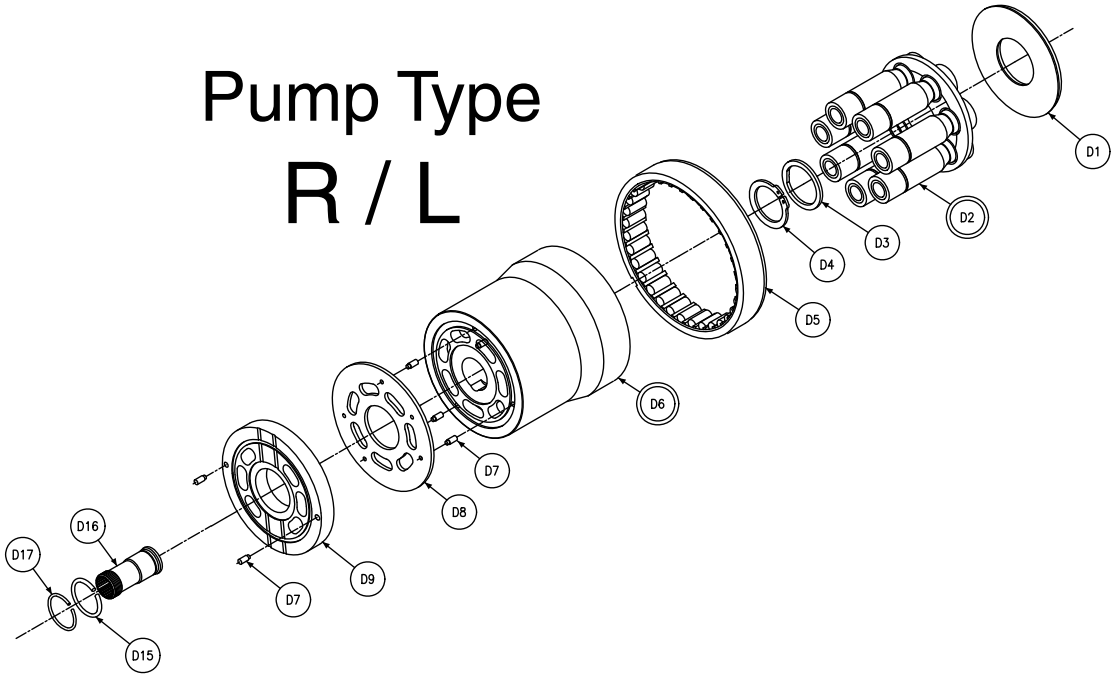
Section C							
P6/7/8 Cam and Cradle Assembly							
Balloon #	**Pump Type**	**Shaft Code**	**Rotation**	**Seal Code**	**Item #**	**Description**	**Qty**
C1	P/D/V/X/S/L/R	**	**	**	201-06001-0	Check Ball	4
C2	P/D/V/X/S/L/R	**	**	**	033-72266-0	Vane Chamber	2
C3	P/D/V/X/S/L/R	**	**	1	606-25036-0	Molded Seal	2
	P/D/V/X/S/L/R	**	**	4	606-25036-4		
	P/D/V/X/S/L/R	**	**	5	606-25036-5		
C4	P/D/V/X/S/L/R	**	**	**	033-70501-0	Vane Seal	2
C5	P/D/V/X/S/L/R	**	**	**	033-70802-0	Vane Seal Backup Plate	4
C6	P/D/V/X/S/L/R	**	**	1	691-00120-0	Gasket O-ring	2
	P/D/V/X/S/L/R	**	**	4	694-00120-0		
	P/D/V/X/S/L/R	**	**	5	695-00120-0		
C7	P/D/V/X/S/L/R	**	**	**	033-70519-0	Vane Spacer	2
C8	P/D/V/X/S/L/R	**	**	**	033-70803-0	Check Valve	2
C9	P/D/V/X/S/L/R	2/3/7/8/9/10	**	**	033-53951-0	Rocker Cradle	1
	P/D/V/X/S/L/R	4/5	**	**	033-92281-0		
C10	P/X/S/L/R	**	**	**	033-70816-0	Vane Holdown	4
	D/V	**	**	**	033-72232-0		
C11	D/V	**	**	**	033-72233-0	Spring Holddown	8
	P/X/S/L/R	**	**	**	**	Not Required	**
C12	P/D/V/X/S/L/R	**	**	**	324-21624-0	Dowel Pins	4
C13	P/D/V/X/S/L/R	**	CCW	**	033-70612-0	Right Control Cover	1
	P/D/V/X/S/L/R	**	CW	**	033-70572-0		
C14	P/D/V/X/S/L/R	**	CCW	**	033-70574-0	Left Control Cover	1
	P/D/V/X/S/L/R	**	CW	**	033-70571-0		
C15	P/D/V/X/S/L/R	**	**	**	306-40183-0	Hex Hd Cap Screw	4
C16	P/D/V/X/S/L/R	**	**	**	306-40187-0	Hex Hd Cap Screw	4
C17	P/D/V/X/S/L/R	**	**	1	691-00904-0	Gasket O-ring	2
	P/D/V/X/S/L/R	**	**	4	694-00904-0		
	P/D/V/X/S/L/R	**	**	5	695-00904-0		
C18	P/D/V/X/S/L/R	**	**	**	488-35001-0	Hex Socket Plug	2
C19	L/R	2/3/4/5/7/8/9/10	**	**	S23-12102-0	Cam Rocker	1
	P/X/S	2/3/4/5/7/8/9/10	**	**	S23-12105-0		
	D/V	2/3/4/5/7/8/9/10	**	**	S23-12104-0		
C20	P/D/V/X/S/L/R	**	**	**	324-22412-0	Dowel Pin	2
C21	P/D/V/X/S/L/R	**	**	**	033-70524-0	Override Tube	2
C22	P/D/V/X/S/L/R	**	**	**	306-40188-0	Hex Hd Cap Screw	4

Cam & Cradle Assy Kits			
Includes items C1 Thru C22			
Part Number	**Pump Type**	**Shaft Code**	**Rotation**
S23-17234-0	P/X/S	2/3/7/8/9/10	CW
S23-17235-0	P/X/S	2/3/7/8/9/10	CCW
S23-17236-0	D/V	2/3/7/8/9/10	CW
S23-17237-0	D/V	2/3/7/8/9/10	CCW
S23-17238-0	R/L	2/3/7/8/9/10	CW
S23-17239-0	R/L	2/3/7/8/9/10	CCW

Pump Type
P / D / V / X / S



Pump Type
R / L

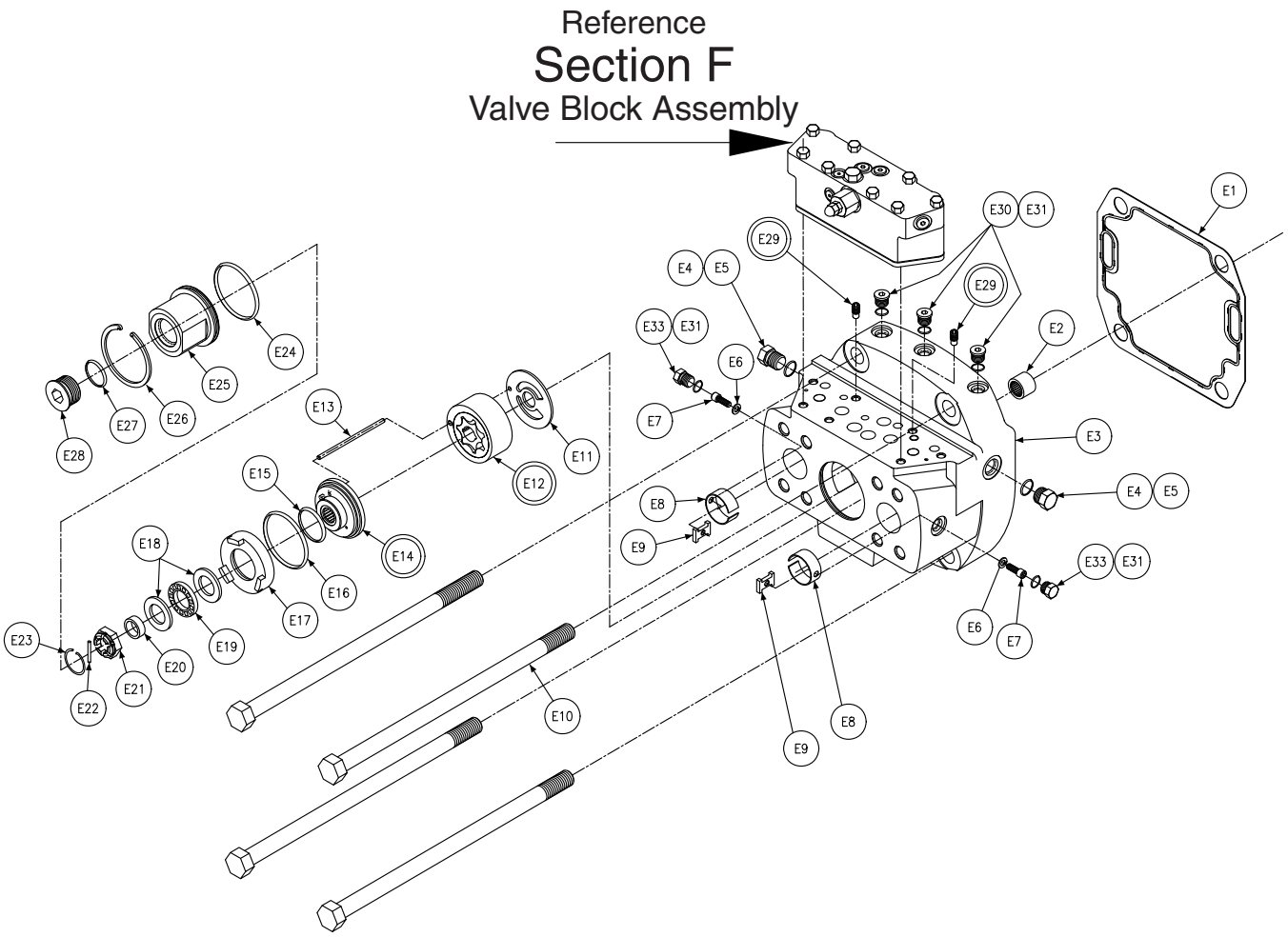


Section D						
P6/7/8 Rotating Group						
Balloon#	**Displacement**	**Pump Type**	**Rotation**	**Item #**	**Description**	**Qty**
D1	**	P/D/V/X/S/R/L	**	033-71261-0	Creep Plate	1
D2	P6	P/D/X/S/R/L	**	S13-43655-0	Piston Shoe & Retainer Assembly	1
	P7	P/D/X/S/R/L	**	S13-42308-0		
	P8	P/D/X/S/R/L	**	S21-11650-0		
	P6	V	**	S13-45375-0		
	P7	V	**	S13-47873-0		
	P8	V	**	S21-11650-0		
D3	**	P/D/V/X/S/R/L	**	033-72249-0	Thrust Washer	1
D4	**	P/D/V/X/S/R/L	**	033-70484-0	Ret. Ring - .077" (1,96mm) Thk - Black	1
	**	P/D/V/X/S/R/L	**	033-70488-0	Ret. Ring - .079" (2,01mm) Thk - Red	
	**	P/D/V/X/S/R/L	**	033-70490-0	Ret. Ring - .081" (2,06mm) Thk - Green	
	**	P/D/V/X/S/R/L	**	035-72175-0	Ret. Ring - .083" (2,11mm) Thk - Yellow	
	**	P/D/V/X/S/R/L	**	035-72176-0	Ret. Ring - .085" (2,16mm) Thk - Blue	
	**	P/D/V/X/S/R/L	**	033-54826-0	Ret. Ring - .087" (2,21mm) Thk - White	
D5	**	P/D/V/X/S/R/L	**	033-91107-0	Barrel Bearing	1
D6	P6	P/D/V/X/S/R/L	**	S13-43657-0	Cylinder Barrel	1
	P7	P/D/V/X/S/R/L	**	S13-47511-0		
	P8	P/D/V/X/S/R/L	**	S23-12718-0		
D7	P6/7/8	P/D/V/X/S/R/L	**	033-49825-0	Face Plate Pin	5
D8	P6	P/D/V/X/S/R/L	**	033-71530-0	Face Plate	1
	P7/8	P/D/V/X/S/R/L	**	033-72532-0		
D9	P6	P/D/X/S/R/L	CW	033-71526-0	Port Plate	1
	P6	P/D/X/S/R/L	CCW	033-71525-0		
	P7	P/D/X/S/R/L	CW	033-72811-0		
	P7	P/D/X/S/R/L	CCW	033-53776-0		
	P8	P/D/X/S/R/L	CW	033-91252-0		
	P8	P/D/X/S/R/L	CCW	033-91553-0		
	P6	V	CW	031-59368-0		
	P6	V	CCW	031-59333-0		
	P7	V	CW	031-54509-0		
	P7	V	CCW	031-54508-0		
	P8	V	CW	031-57379-0		
	P8	V	CCW	031-57372-0		
D10	**	P/D/V	**	033-53956-0	Auxiliary shaft	1
	**	S/X	**	033-91050-0		
D11	**	P/D/V/X/S	**	211-22034-0	Square Key	1
D12	**	P/D/V/X/S	**	033-70493-0	Holddown Spring	1
D13	**	P/D/V/X/S	**	033-53944-0	Holddown Stop	1
D14	**	P/D/V/X/S	**	033-53945-0	Spring Retainer	1
D15	**	P/D/V/X/S/R/L	**	033-70494-0	Retaining Ring	1
D16	**	R/L	**	033-57397-0	Holddown Sleeve	1
D17	**	R/L	**	033-57402-0	Retaining Ring	1

Major Rotating Group Kits			
Composed of Items: D1,D2,D5,D6,D7, D8 and D9			
Displacement	**Pump Type**	**Rotation**	**Part Number**
P6	P/D/X/S/R/L	CW	S23-17087-0
P6	P/D/X/S/R/L	CCW	S23-17088-0
P6	V	CW	S23-17093-0
P6	V	CCW	S23-17094-0
P7	P/D/X/S/R/L	CW	S23-17089-0
P7	P/D/X/S/R/L	CCW	S23-17090-0
P7	V	CW	S23-17095-0
P7	V	CCW	S23-17096-0
P8	P/D/X/S/R/L	CW	S23-17091-0
P8	P/D/X/S/R/L	CCW	S23-17092-0
P8	V	CW	S23-17097-0
P8	V	CCW	S23-17098-0

Barrel Hold Down Kits			
Composed of Items:			
D10,D12,D13,D14 and D15 For P/D/V/X/S			
No Kit Available for R/L Versions			
Displacement	**Model Type**	**Rotation**	**Part Number**
P6/7/8	P/D/V	**	S23-17246-0
P6/7/8	X/S	**	S23-17247-0

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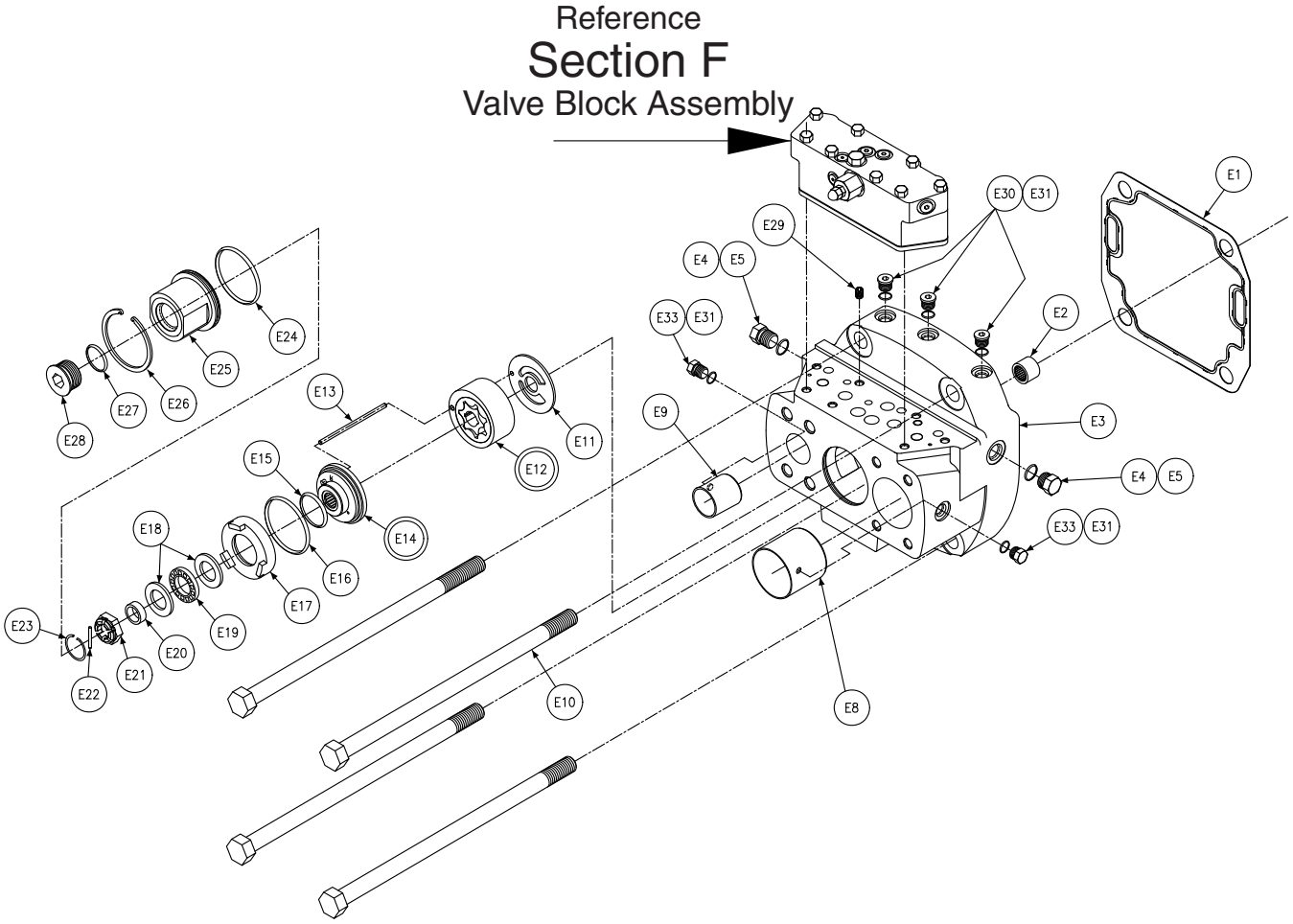
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Section View - E - Pump Type - P & D - Port Block Assembly

Section E						
P6/7/8 P/D Port Block						
Balloon #	**Pump Type**	**Rotation**	**Seal Code**	**Item #**	**Description**	**Qty**
E1	P6/7/8 P/D	**	**	033-91060-0	Port Block Gasket Housing	1
E2	P6/7/8 P/D	**	**	230-82146-0	Needle Bearing	1
E3	P6/7/8 P/D	**	**	033-71296-0	Port Block	1
E4	P6/7/8 P/D	**	**	488-35002-0	Hex Hd Plug	2
E5	P6/7/8 P/D	**	1	691-00908-0	Gasket O-ring	2
	P6/7/8 P/D	**	4	694-00908-0		
	P6/7/8 P/D	**	5	695-00908-0		
E6	P6/7/8 P/D	**	**	348-10016-0	Washer, Lock	2
E7	P6/7/8 P/D	**	**	033-70908-0	Screw	2
E8	P6/7/8 P/D	**	**	033-70502-0	Ring Check, P6/7/8	2
E9	P6/7/8 P/D	**	**	033-70489-0	Clamp	2
E10	P6/7/8 P/D	**	**	306-40056-0	Hex Hd Cap Screw	4
E11	P6/7/8 P/D	**	**	033-71492-0	Side plate	1
E12	P6/7/8 P/D	**	**	S13-43334-0	Eccentric Ring and Gerotor	1
E13	P6/7/8 P/D	**	**	324-21225-0	Dowel Pin	1
E14	P6/7/8 P/D	CW	**	S13-46762-0	Side Plate and Bearing	1
	P6/7/8 P/D	CCW	**	S13-46763-0		
E15	P6/7/8 P/D	**	1	671-00129-0	Gasket O-ring	1
	P6/7/8 P/D	**	4	674-00129-0		
	P6/7/8 P/D	**	5	675-00129-0		
E16	P6/7/8 P/D	**	1	671-00144-0	Gasket O-ring	1
	P6/7/8 P/D	**	4	674-00144-0		
	P6/7/8 P/D	**	5	675-00144-0		
E17	P6/7/8 P/D	**	**	033-70531-0	Pressure Plate	1
E18	P6/7/8 P/D	**	**	350-10065-0	Thrust Washer	2
E19	P6/7/8 P/D	**	**	230-82131-0	Thrust Bearing	1
E20	P6/7/8 P/D	**	**	033-71490-0	Ring, Seal	1
E21	P6/7/8 P/D	**	**	033-53922-0	Holddown Nut	1
E22	P6/7/8 P/D	**	**	033-53921-0	Retaining Pin	1
E23	P6/7/8 P/D	**	**	033-53923-0	Ring, Retaining	1
E24	P6/7/8 P/D	**	1	671-00147-0	Gasket O-ring	1
	P6/7/8 P/D	**	4	674-00147-0		
	P6/7/8 P/D	**	5	675-00147-0		
E25	P6/7/8 P/D	**	**	033-72100-0	Auxiliary End Cover	1
E26	P6/7/8 P/D	**	**	356-65082-0	Ring, Retaining	1
E27	P6/7/8 P/D	**	1	691-00916-0	Gasket O-ring	1
	P6/7/8 P/D	**	4	694-00916-0		
	P6/7/8 P/D	**	5	695-00916-0		
E28	P6/7/8 P/D	**	**	488-35024-0	Plug	1
E29	P6/7/8 P/D	**	**	S13-40266-0	Check Valve	2
E30	P6/7/8 P/D	**	**	488-35041-0	Plug	3
E31	P6/7/8 P/D	**	1	691-00906-0	Gasket O-ring	5
	P6/7/8 P/D	**	4	694-00906-0		
	P6/7/8 P/D	**	5	695-00906-0		
E33	P6/7/8 P/D	**	**	488-35003-0	Hex Hd Plug	2

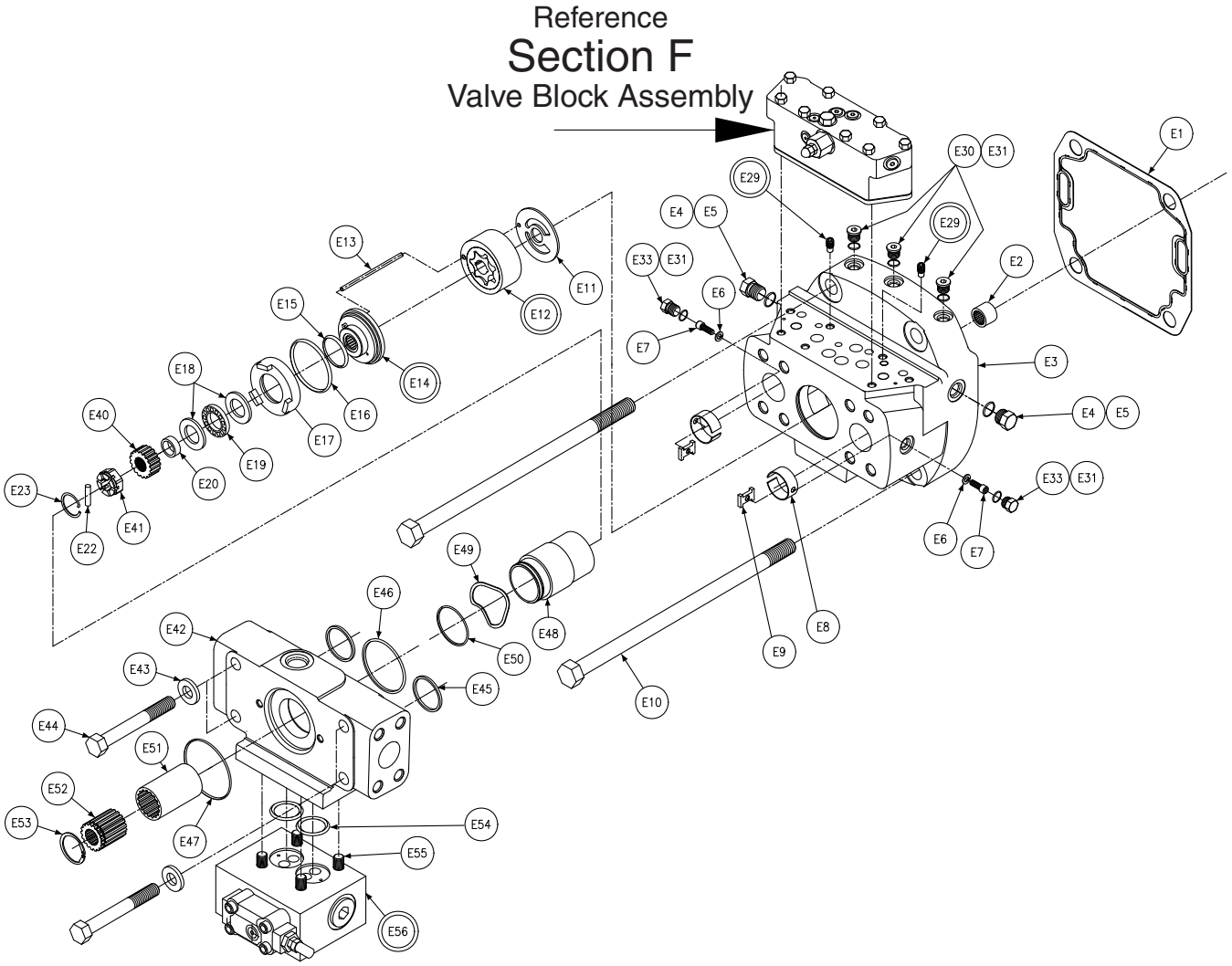
Gerotor Assembly Kit			
Composed of Items: E2,E11,E12,	**Pump Type**	**Rotation**	**Part Number**
E13,E14,E15,E16,E17,E18,E19,& E20	P/V/D/S/X	CW	S13-47314-0
N/A for R/L Versions	P/V/D/S/X	CCW	S13-47315-0

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Marysville, Ohio USA



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Section E						
P6/7/8 V Port Block						
Balloon #	**Pump Type**	**Rotation**	**Seal Code**	**Item #**	**Description**	**Qty**
E1	P6/7/8 V	**	**	033-91060-0	Port block Gasket Housing	1
E2	P6/7/8 V	**	**	230-82146-0	Needle Bearing	1
E3	P6/7/8 V	**	**	033-71911-0	Port Block	1
E4	P6/7/8 V	**	**	488-35002-0	Hex Hd Plug	2
E5	P6/7/8 V	**	1	691-00908-0	Gasket O-ring	2
	P6/7/8 V	**	4	694-00908-0		
	P6/7/8 V	**	5	695-00908-0		
E8	P6/7/8 V	**	**	033-91180-0	Sold Sleeve, P6/7/8 V “A” Port	1
E9	P6/7/8 V	**	**	033-57893-0	Sold Sleeve, P6/7/8 V “B” Port	1
E10	P6/7/8 V	**	**	306-40056-0	Hex Hd Cap Screw	4
E11	P6/7/8 V	**	**	033-71492-0	Side Plate	1
E12	P6/7/8 V	**	**	S13-43334-0	Eccentric Ring and Gerotor	1
E13	P6/7/8 V	**	**	324-21225-0	Dowel Pin	1
E14	P6/7/8 V	CW	**	S13-46762-0	Side Plate and Bearing	1
	P6/7/8 V	CCW	**	S13-46763-0		
E15	P6/7/8 V	**	1	671-00129-0	Gasket O-ring	1
	P6/7/8 V	**	4	674-00129-0		
	P6/7/8 V	**	5	675-00129-0		
E16	P6/7/8 V	**	1	671-00144-0	Gasket O-ring	1
	P6/7/8 V	**	4	674-00144-0		
	P6/7/8 V	**	5	675-00144-0		
E17	P6/7/8 V	**	**	033-70531-0	Pressure Plate	1
E18	P6/7/8 V	**	**	350-10065-0	Thrust Washer	2
E19	P6/7/8 V	**	**	230-82131-0	Thrust Bearing	1
E20	P6/7/8 V	**	**	033-71490-0	Ring, Seal	1
E21	P6/7/8 V	**	**	033-53922-0	Holddown Nut	1
E22	P6/7/8 V	**	**	033-53921-0	Retaining Pin	1
E23	P6/7/8 V	**	**	033-53923-0	Ring, Retaining	1
E24	P6/7/8 V	**	1	671-00147-0	Gasket O-ring	1
	P6/7/8 V	**	4	674-00147-0		
	P6/7/8 V	**	5	675-00147-0		
E25	P6/7/8 V	**	**	033-72100-0	Auxiliary End Cover	1
E26	P6/7/8 V	**	**	356-65082-0	Ring, Retaining	1
E27	P6/7/8 V	**	1	691-00916-0	Gasket O-ring	1
	P6/7/8 V	**	4	694-00916-0		
	P6/7/8 V	**	5	695-00916-0		
E28	P6/7/8 V	**	**	488-35024-0	Plug	1
E29	P6/7/8 V	**	**	353-25037-0	Set Screw	1
E30	P6/7/8 V	**	**	488-35041-0	Plug	3
E31	P6/7/8 V	**	1	691-00906-0	Gasket O-ring	5
	P6/7/8 V	**	4	694-00906-0		
	P6/7/8 V	**	5	695-00906-0		
E33	P6/7/8 V	**	**	488-35003-0	Hex Hd Plug	2

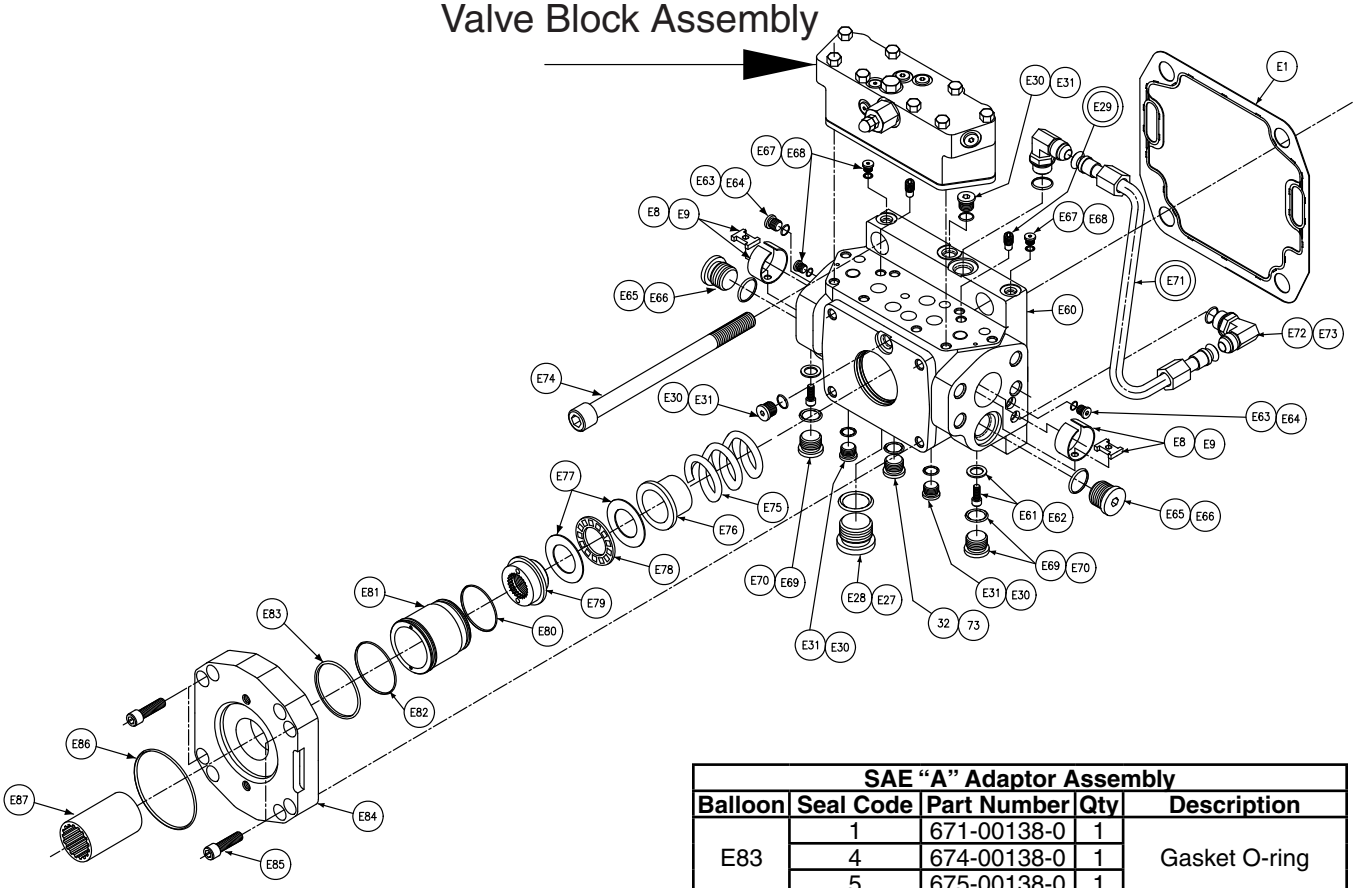


Section E							
P6/7/8 S &X Port Block							
Balloon #	**Pump Type**	**Rotation**	**Seal Code**	**Thru Drive**	**Item #**	**Description**	**Qty**
E1	P6/7/8 S&X	**	**	**	033-91060-0	Port Block Gasket Housing	1
E2	P6/7/8 S&X	**	**	**	230-82146-0	Needle Bearing	1
E3	P6/7/8 S&X	**	**	**	033-71296-0	Port Block	1
E4	P6/7/8 S&X	**	**	**	488-35002-0	Hex Hd Cap Screw	2
E5	P6/7/8 S&X	**	1	**	691-00908-0	Gasket O-ring	2
	P6/7/8 S&X	**	4	**	694-00908-0		
	P6/7/8 S&X	**	5	**	695-00908-0		
E6	P6/7/8 S&X	**	**	**	348-10016-0	Washer, Lock	2
E7	P6/7/8 S&X	**	**	**	033-70908-0	Screw	2
E8	P6/7/8 S&X	**	**	**	033-70502-0	Ring Check, P6/7/8	2
E9	P6/7/8 S&X	**	**	**	033-70489-0	Clamp	2

Continued on next page.

P6/7/8 S &X Port Block (CONTINUED)							
Balloon #	**Pump Type**	**Rotation**	**Seal Code**	**Thru Drive**	**Item #**	**Description**	**Qty**
E10	P6/7/8 S&X	**	**	**	306-40056-0	Hex Hd Cap Screw	4
E11	P6/7/8 S&X	**	**	**	033-71492-0	Side Plate	1
E12	P6/7/8 S&X	**	**	**	S13-43334-0	Eccentric Ring and Gerotor	1
E13	P6/7/8 S&X	**	**	**	324-21225-0	Dowel Pin	1
E14	P6/7/8 S&X	CW	**	**	S13-46762-0	Side Plate and Bearing	1
	P6/7/8 S&X	CCW	**	**	S13-46763-0		
E15	P6/7/8 S&X	**	1	**	671-00129-0	Gasket O-ring	1
	P6/7/8 S&X	**	4	**	674-00129-0		
	P6/7/8 S&X	**	5	**	675-00129-0		
E16	P6/7/8 S&X	**	1	**	671-00144-0	Gasket O-ring	1
	P6/7/8 S&X	**	4	**	674-00144-0		
	P6/7/8 S&X	**	5	**	675-00144-0		
E17	P6/7/8 S&X	**	**	**	033-70531-0	Pressure Plate	1
E18	P6/7/8 S&X	**	**	**	350-10081-0	Thrust Washer	2
E19	P6/7/8 S&X	**	**	**	230-82164-0	Thrust Bearing	1
E20	P6/7/8 S&X	**	**	**	033-72101-0	Ring, Seal	1
E22	P6/7/8 S&X	**	**	**	033-53921-0	Retaining Pin	1
E23	P6/7/8 S&X	**	**	**	033-53923-0	Ring, Retaining	1
E29	P6/7/8 S&X	**	**	**	S13-40266-0	Check Valve	2
E30	P6/7/8 S&X	**	**	**	488-35041-0	Plug	3
E31	P6/7/8 S&X	**	1	**	691-00906-0	Gasket O-ring	5
	P6/7/8 S&X	**	4	**	694-00906-0		
	P6/7/8 S&X	**	5	**	695-00906-0		
E33	P6/7/8 S&X	**	**	**	488-35003-0	Hex Hd Plug	2
E40	P6/7/8 S&X	**	**	**	033-91051-0	Insert	1
E41	P6/7/8 S&X	**	**	**	033-91052-0	Holddown Nut	1
E42	P6/7/8 S	**	**	A	033-91015-0	SAE A Rear Drive Adapter	1
	P6/7/8 S	**	**	B	033-57967-0	SAE B Rear Drive Adapter	
	P6/7/8 X	**	**	A	033-57958-0	SAE A Rear Drive Adapter	
	P6/7/8 X	**	**	B	033-57957-0	SAE B Rear Drive Adapter	
E43	P6/7/8 S&X	**	**	**	350-10136-0	Washer	4
E44	P6/7/8 S&X	**	**	**	306-40088-0	Hex Hd Cap Screw	4
E45	P6/7/8 S&X	**	1	**	691-10131-0	Gasket O-ring	2
	P6/7/8 S&X	**	4	**	694-10131-0		
	P6/7/8 S&X	**	5	**	695-10131-0		
E46	P6/7/8 S&X	**	1	**	671-00147-0	Gasket O-ring	1
	P6/7/8 S&X	**	4	**	674-00147-0		
	P6/7/8 S&X	**	5	**	675-00147-0		
E47	P6/7/8 S&X	**	1	**	671-00155-0	Gasket O-ring	1
	P6/7/8 S&X	**	4	**	674-00155-0		
	P6/7/8 S&X	**	5	**	675-00155-0		
E48	P6/7/8 S&X	**	**	**	033-57966-0	Replenish Isolation Tube	1
E49	P6/7/8 S&X	**	**	**	225-92093-0	Wave Spring	1
E50	P6/7/8 S&X	**	1	**	671-00033-0	Gasket O-ring	1
	P6/7/8 S&X	**	4	**	674-00033-0		
	P6/7/8 S&X	**	5	**	675-00033-0		
E51	P6/7/8 S&X	**	**	**	033-57963-0	Coupling	1
E52	P6/7/8 S&X	**	**	A	033-57965-0	SAE A Insert	1
	P6/7/8 S&X	**	**	B	033-57964-0	SAE B Insert	
E53	P6/7/8 S&X	**	**	**	356-65128-0	Ring, Retaining	1
E54	P6/7/8 S	**	1	**	691-10221-0	Gasket O-ring	2
	P6/7/8 S	**	4	**	694-10221-0		
	P6/7/8 S	**	5	**	695-10221-0		
E55	P6/7/8 S	**	**	**	306-40224-0	Hex Hd Cap Screw	4
E56	P6/7/8 S	**	1	**	080030100003	Hot Oil Shuttle Int Pilot Drain	1

Reference
Section F
Valve Block Assembly



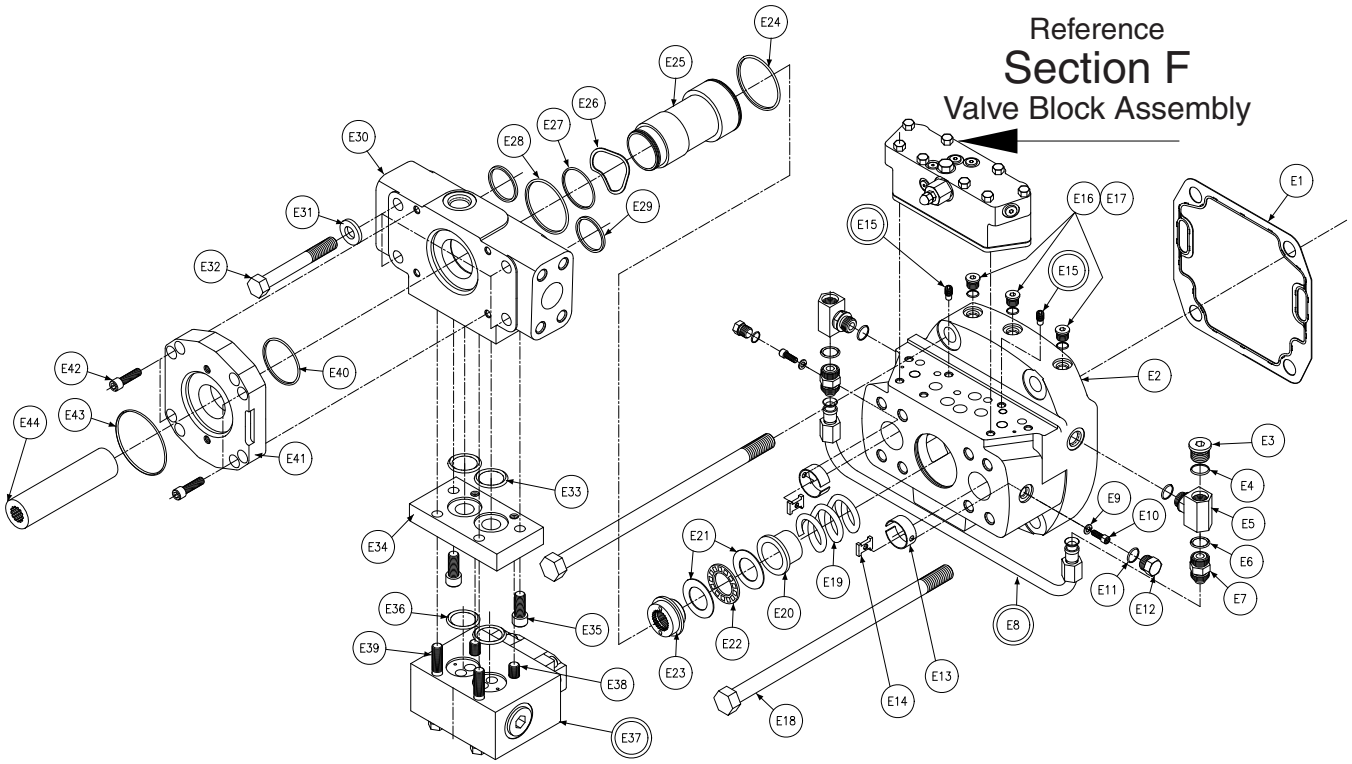
SAE "A" Adaptor Assembly				
Balloon	**Seal Code**	**Part Number**	**Qty**	**Description**
E83	1	671-00138-0	1	Gasket O-ring
	4	674-00138-0	1	
	5	675-00138-0	1	
E84	**	033-92412-0	1	SAE "A" Adaptor
E85	**	358-18180-0	4	Hex Socket Hd Cap Screw
E86	1	671-00152-0	1	Gasket O-ring
	4	674-00152-0	1	
	5	675-00152-0	1	
E87	**	033-92413-0	1	SAE "A" Coupling
Kit P/N S23-15868-0 Contains All Above				

SAE "B" Adaptor Assembly				
Balloon	**Seal Code**	**Part Number**	**Qty**	**Description**
E83	1	671-00138-0	1	Gasket O-ring
	4	674-00138-0	1	
	5	675-00138-0	1	
E84	**	033-57535-0	1	SAE "B" Adaptor
E85	**	358-18200-0	4	Hex Socket Hd Cap Screw
E86	1	671-00155-0	1	Gasket O-ring
	4	674-00155-0	1	
	5	675-00155-0	1	
E87	**	033-57714-0	1	SAE "B" Coupling
Kit P/N S23-16884-0 Contains All Above				

SAE "C" Adaptor Assembly				
Balloon	**Seal Code**	**Part Number**	**Qty**	**Description**
E83	1	671-00138-0	1	Gasket O-ring
	4	674-00138-0	1	
	5	675-00138-0	1	
E84	**	033-57395-0	1	SAE "C" Adaptor
E85	**	358-18200-0	4	Hex Socket Hd Cap Screw
E86	1	671-00250-0	1	Gasket O-ring
	4	674-00250-0	1	
	5	675-00250-0	1	
E87	**	033-57398-0	1	SAE "C" Coupling
Kit P/N S23-16885-0 Contains All Above				

Parker Hannifin Corporation
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Marysville, Ohio USA

Section E						
P6/7/8 R Port block						
Balloon#	**Pump Type**	**Seal Code**	**Thru Drive**	**Item #**	**Description**	**Qty**
E1	P6/7/8 R	**	**	033-91061-0	Port Block Gasket Housing	1
E8	P6/7/8 R	**	**	033-70502-0	Ring Check, P6/7/8 P&D	2
E9	P6/7/8 R	**	**	033-70489-0	Clamp	2
E27	P6/7/8 R	1	**	691-00916-0	Gasket O-ring	1
	P6/7/8 R	4	**	694-00916-0		
	P6/7/8 R	5	**	695-00916-0		
E28	P6/7/8 R	**	**	488-35024-0	Plug	1
E29	P6/7/8 R	**	**	S13-40266-0	Check Valve	2
E30	P6/7/8 R	**	**	488-35041-0	Plug	4
E31	P6/7/8 R	1	**	691-00906-0	Gasket O-ring	4
	P6/7/8 R	4	**	694-00906-0		
	P6/7/8 R	5	**	695-00906-0		
E32	P6/7/8 R	**	**	488-35018-0	Plug	1
E60	P6/7/8 R	**	**	033-57696-0	Port Block	1
E61	P6/7/8 R	**	**	359-00001-0	Screw	2
E62	P6/7/8 R	**	**	033-57450-0	Washer, Gasket	2
E63	P6/7/8 R	**	**	488-35046-0	Plug	2
E64	P6/7/8 R	1	**	691-00902-0	Gasket O-ring	2
	P6/7/8 R	4	**	694-00902-0		
	P6/7/8 R	5	**	695-00902-0		
E65	P6/7/8 R	**	**	033-57408-0	Plug	2
E66	P6/7/8 R	1	**	691-00912-0	Gasket O-ring	2
	P6/7/8 R	4	**	694-00912-0		
	P6/7/8 R	5	**	695-00912-0		
E67	P6/7/8 R	**	**	488-35001-0	Plug	3
E68	P6/7/8 R	1	**	691-00904-0	Gasket O-ring	3
	P6/7/8 R	4	**	694-00904-0		
	P6/7/8 R	5	**	695-00904-0		
E69	P6/7/8 R	**	**	488-35055-0	Plug	2
E70	P6/7/8 R	**	**	691-00910-0	Gasket O-ring	2
	P6/7/8 R	**	**	674-00910-0		
	P6/7/8 R	**	**	695-00910-0		
E71	P6/7/8 R	**	**	S23-17195-0	Tube Assembly	1
E72	P6/7/8 R	**	**	496-15001-0	Elbow	2
E73	P6/7/8 R	1	**	691-00908-0	Gasket O-ring	3
	P6/7/8 R	4	**	694-00908-0		
	P6/7/8 R	5	**	695-00908-0		
E74	P6/7/8 R	**	**	358-24540-0	Hex socket Hd Cap Screw	4
E75	P6/7/8 R	**	**	033-57400-0	Holddown Spring	1
E76	P6/7/8 R	**	**	033-57401-0	Holddown Stop	1
E77	P6/7/8 R	**	**	350-10114-0	Washer	2
E78	P6/7/8 R	**	**	230-82195-0	Bearing, Thrust	1
E79	P6/7/8 R	**	**	033-57396-0	Hold Down Nut	1
E80	P6/7/8 R	1	**	671-00136-0	Gasket O-ring	1
	P6/7/8 R	4	**	674-00136-0		
	P6/7/8 R	5	**	675-00136-0		
E81	P6/7/8 R	**	**	033-57407-0	Replenish Isolation Tube	1
E82	P6/7/8 R	1	**	671-00138-0	Gasket O-ring	1
	P6/7/8 R	4	**	674-00138-0		
	P6/7/8 R	5	**	675-00138-0		



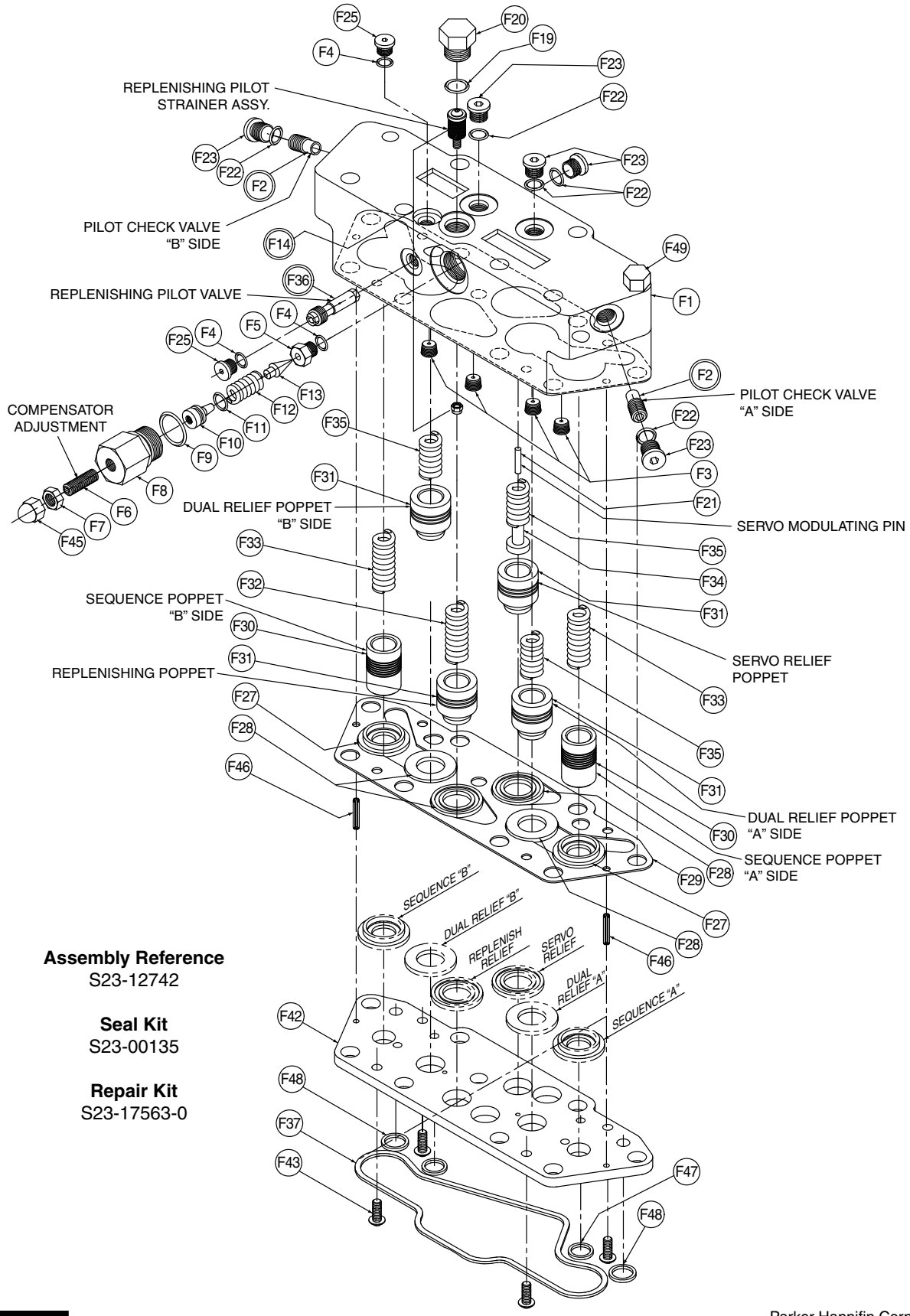
SAE "A" Adaptor Assembly				
Balloon	**Seal Code**	**Part Number**	**Qty**	**Description**
E40	1	671-00138-0	1	Gasket O-ring
	4	674-00138-0		
	5	675-00138-0		
E41	**	033-92412-0	1	SAE "A" Adaptor
E42	**	358-18180-0	4	Soc Hd Cap Screw
E43	1	671-00152-0	1	Gasket O-ring
	4	674-00152-0	1	
	5	675-00152-0	1	
E44	**	033-93454-0	1	SAE "A" Coupling
No Adaptor Kit Part Number Available for L Pumps				

SAE 'B" Adaptor Assembly				
Balloon	**Seal Code**	**Part Number**	**Qty**	**Description**
E40	1	671-00138-0	1	Gasket O-ring
	4	674-00138-0		
	5	675-00138-0		
E41	**	033-57535-0	1	SAE "B" Adaptor
E42	**	358-18200-0	4	Soc Hd Cap screw
E43	1	671-00155-0	1	Gasket O-ring
	4	674-00155-0	1	
	5	675-00155-0	1	
E44	**	033-94248-0	1	SAE "B" Coupling
No Adaptor Kit Part Number Available for L Pumps				

SAE 'C" Adaptor				
Balloon	**Seal Code**	**Part Number**	**Qty**	**Description**
E40	1	671-00138-0	1	Gasket O-ring
	4	674-00138-0		
	5	675-00138-0		
E41	**	033-57395-0	1	SAE "C" Adaptor
E42	**	358-18200-0	4	Soc Hd Cap Screw
E43	1	671-00250-0	1	Gasket O-ring
	4	674-00250-0	1	
	5	675-00250-0	1	
E44	**	S23-18306-0	1	SAE "C" Coupling
No Adaptor Kit Part Number Available for L Pumps				

Parker Hannifin Corporation
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Section E					
P6/7/8 L Port Block					
Balloon#	**Pump Type**	**Seal Code**	**Item #**	**Description**	**Qty**
E1	P6/7/8 L	**	033-91060-0	Port Block Gasket Housing	1
E2	P6/7/8 L	**	033-92951-0	Port Block	1
E3	P6/7/8 L	**	488-35055-0	Plug	2
E4	P6/7/8 L	**	691-00910-0	Gasket O-ring	2
	P6/7/8 L	**	674-00910-0		
	P6/7/8 L	**	695-00910-0		
E5	P6/7/8 L	**	492-15445-0	Branch Tee	2
E6	P6/7/8 L	1	691-00908-0	Gasket O-ring	4
	P6/7/8 L	4	694-00908-0		
	P6/7/8 L	5	695-00908-0		
E7	P6/7/8 L	**	493-15015-0	Connector	2
E8	P6/7/8 L	**	S23-16518-0	Crossover Tube Assembly	1
E9	P6/7/8 L	**	348-10016-0	Washer, Lock	2
E10	P6/7/8 L	**	033-70908-0	Screw	2
E11	P6/7/8 L	1	691-00906-0	Gasket O-ring	2
	P6/7/8 L	4	694-00906-0		
	P6/7/8 L	5	695-00906-0		
E12	P6/7/8 L	**	488-35003-0	Hex Hd Plug	2
E13	P6/7/8 L	**	033-70502-0	Ring Check	2
E14	P6/7/8 L	**	033-70489-0	Clamp	2
E15	P6/7/8 L	**	S13-40266-0	Check Valve	2
E16	P6/7/8 L	**	488-35041-0	Plug	3
E17	P6/7/8 L	1	691-00906-0	Gasket O-ring	3
	P6/7/8 L	4	694-00906-0		
	P6/7/8 L	5	695-00906-0		
E18	P6/7/8 L	**	306-40056-0	Hex Hd Cap Screw	4
E19	P6/7/8 L	**	033-57400-0	Holddown Spring	1
E20	P6/7/8 L	**	033-57401-0	Holddown Stop	1
E21	P6/7/8 L	**	350-10114-0	Washer - Thrust	2
E22	P6/7/8 L	**	230-82195-0	Bearing - Thrust	1
E23	P6/7/8 L	**	033-57396-0	Hold Down Nut	1
E24	P6/7/8 L	1	671-00038-0	Gasket O-ring	1
	P6/7/8 L	4	674-00038-0		
	P6/7/8 L	5	675-00038-0		
E25	P6/7/8 L	**	033-92953-0	Replenish Isolation Tube	1
E26	P6/7/8 L	**	225-92093-0	Spring - Wave	1
E27	P6/7/8 L	1	671-00033-0	Gasket O-ring	1
	P6/7/8 L	4	674-00033-0		
	P6/7/8 L	5	675-00033-0		
E28	P6/7/8 L	1	671-00147-0	Gasket O-ring	1
	P6/7/8 L	4	674-00147-0		
	P6/7/8 L	5	675-00147-0		
E29	P6/7/8 L	1	691-10131-0	Gasket O-ring	2
	P6/7/8 L	4	694-10131-0		
	P6/7/8 L	5	695-10131-0		
E30	P6/7/8 L	**	033-92952-0	Adapter P blk Aux Mtg	1
E31	P6/7/8 L	**	350-10136-0	Washer	4
E32	P6/7/8 L	**	306-40088-0	Hex Hd Cap Screw	4
E33	P6/7/8 L	1	691-10221-0	Gasket O-ring	2
	P6/7/8 L	4	694-10221-0		
	P6/7/8 L	5	695-10221-0		
E34	P6/7/8 L	**	033-92954-0	Shuttle Spacer	1
E35	P6/7/8 L	**	358-20160-0	Socket Head Screw	2
E36	P6/7/8 L	1	691-10221-0	Gasket O-ring	2
	P6/7/8 L	4	694-10221-0		
	P6/7/8 L	5	695-10221-0		
E37	P6/7/8 L	1	080030100003	Hot Oil Shuttle Int Pilot Drain	1
E38	P6/7/8 L	**	306-40224-0	Hex Hd Cap Screw	2
E39	P6/7/8 L	**	306-40175-0	Hex Hd Cap Screw	2



Assembly Reference
S23-12742

Seal Kit
S23-00135

Repair Kit
S23-17563-0

Parker Hannifin Corporation
Hydraulic Pump Division
Marysville, Ohio USA

Section F				
Valve Block Assembly (Reference S23-12742)				
Balloon #	**Seal Code**	**Item #**	**Description**	**Qty**
F1	**	033-91221-0	Valve Body	1
F2	**	S13-40266-0	Valve Check	2
F3	**	033-91249-0	.046 Dia. Orifice Plug	4
F4	1	691-00903-0	Gasket O-ring	3
	4	694-00903-0		
	5	695-00903-0		
F5	**	033-70508-0	Seat	1
F6	**	312-13160-0	Screw-socket hd	1
F7	**	335-13100-0	Nut-Jam	1
F8	**	033-70545-0	Housing Guide	1
F9	1	691-00910-0	Gasket O-ring	1
	4	694-00910-0		
	5	695-00910-0		
F10	**	033-21767-0	Piston	1
F11	1	671-00012-0	Gasket O-ring	1
	4	674-00012-0		
	5	675-00012-0		
F12	**	032-91798-0	Spring	1
F13	**	036-12288-0	Cone	1
F14	**	S13-43240-0	Assy, Repl Strainer	1
F19	1	691-00906-0	Gasket O-ring	1
	4	694-00906-0		
	5	695-00906-0		
F20	**	488-35003-0	Plug	1
F21	**	230-82226-0	Pin 1/8X5/8 (P units)	1
F22	1	691-00904-0	Gasket O-ring	5
	4	694-00904-0		
	5	695-00904-0		
F23	**	488-35001-0	Plug	5
F25	**	488-35049-0	Plug	2
F27	**	033-70507-0	Seat, Sequence	2
F28	**	033-70500-0	Seat, Repl & Servo	4
F29	**	033-91193-0	Gasket, Valve Block	1
F30	**	033-72378-0	Poppet, Sequence	2
F31	**	033-72379-0	Poppet, Dual & Repl.	4
F32	**	033-22141-0	Spring, Repl.	1
F33	**	033-70512-0	Spring, Sequence	2
F34	**	033-70482-0	Spring, Retainer	1
F35	**	033-71086-0	Spring, Dual Relief	3
F36	**	S23-12814-0	Pilot Valve - Repl Relief	1
F37	1	671-00050-0	Gasket O-ring	1
	4	674-00050-0		
	5	675-00050-0		
F42	**	033-91422-0	Plate, Retainer	1
F43	**	353-25078-0	Screw, Button Head	4
F45	**	327-25006-0	Nut, Acron	1
F46	**	325-08120-0	Pin, Spring	2
F47	1	671-00013-0	Gasket O-ring	2
	4	674-00013-0		
	5	675-00013-0		
F48	1	671-00014-0	Gasket O-ring	2
	4	674-00014-0		
	5	675-00014-0		
F49	**	306-40169-0	Screw, HHC 3/8-16 UNC X 3 1/4 Lg. Grade 8	8

Parker Hannifin Corporation
Hydraulic Pump Division
Marysville, Ohio USA

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11. Buyer's Obligation; Rights of Seller. To secure payment of all sums due or otherwise, Seller shall retain a security interest in the goods delivered and this agreement shall be deemed a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest. Seller shall have a security interest in, and lien upon, any property of Buyer in Seller's possession as security for the payment of any amounts owed to Seller by Buyer.

12. Improper Use and Indemnity. Buyer shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including attorney fees), whether for personal injury, property damage, patent, trademark or copyright infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, improper application or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Product; or (d) Buyer's failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.

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14. Limitation on Assignment. Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.

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16. Waiver and Severability. Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.

17. Termination. This agreement may be terminated by Seller for any reason and at any time by giving Buyer thirty (30) days written notice of termination. In addition, Seller may by written notice immediately terminate this agreement for the following: (a) Buyer commits a breach of any provision of this agreement (b) the appointment of a trustee, receiver or custodian for all or any part of Buyer's property (c) the filing of a petition for relief in bankruptcy of the other Party on its own behalf, or by a third party (d) an assignment for the benefit of creditors, or (e) the dissolution or liquidation of the Buyer.

18. Governing Law. This agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement. Disputes between the parties shall not be settled by arbitration unless, after a dispute has arisen, both parties expressly agree in writing to arbitrate the dispute.

19. Indemnity for Infringement of Intellectual Property Rights. Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this Agreement infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

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