

GOLD CUP[®] **P/M24-30 Variable Displacement** Spare Parts and Exploded Views

HY28-2678-03/GC/US Effective: January 2024



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 and motors 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.



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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.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

OFFER OF SALE

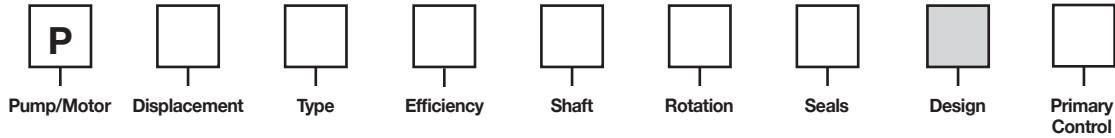
The items described in this document are hereby offered for sale by Parker-Hannifin Corporation, its subsidiaries or its authorized distributor. This offer and its acceptance are governed by the provisions stated in the detailed "Offer of Sale" elsewhere in this document.

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Notes:

1. Parts list and associated drawings shown in this bulletin are for standard variable volume model pump and motors only. All documentation for special "M2" modification model numbers must be verified with 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. P24 = Design Level "E" Model Pump
 - 5.2. P30 = Design Level "B" Model Pump
 - 5.3. M24 = Design Level "D" Model Motor
 - 5.4. M30 = Design Level "A" Model Motor
6. See ordering code for configuration options.
7. All orientation references are described when viewing unit from main drive shaft.
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, indicates Buna N (Nitrile) seal compound. For Ethylene Propylene, (EPR), compound, use -4 suffix. For Fluorocarbon compound, use -5 suffixes.
10. Drawings with items marked with double balloons indicate assemblies.





Code	Pump/Motor
P	Pump
M	Motor

Code	Displacement
24	24.6 in ³ /rev (403 cc/rev)
30	30.6 in ³ /rev (501 cc/rev)

Code	Type
P	Variable displacement, closed circuit (Pumps only)
X	Variable displacement with medium torque thru-drive, closed circuit (Pumps only)
S	Variable displacement with medium torque thru-drive & shuttle package, closed circuit (Pumps only)
R	Variable displacement with high torque thru-drive
L	Variable displacement with high torque thru-drive & shuttle package
V	Variable displacement (Motors only)
H	Variable displacement with medium torque thru-drive & shuttle package, closed circuit (Motors only)

Code	Efficiency
H	High Efficiency (24 Only)
Omit	Standard Efficiency (All Displacements)
E	Extreme Duty Barrel Bearing/Standard Efficiency (All Displacements)

Code	Shaft
1	Splined SAE - floating shaft w/mechanical seal
2	Keyed SAE - mechanical shaft
3	Splined SAE - mechanical shaft
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

¹ Not ATEX approved

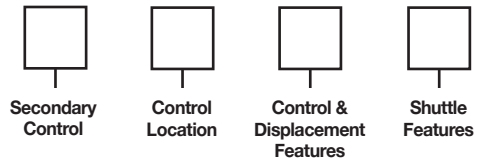
Code	Rotation
R	Clockwise (Pumps only)
L	Counterclockwise (Pumps only)
N	Bidirectional (Motors only)

Code	Seals
1	Nitrile (Buna N)
4	EPR (not available with "5A" or "5C" primary controls or "E" secondary control) (unpainted pump unless otherwise specified)
5	Flourocarbon (Viton)

Design letter (assigned by manufacturer)

Code	Primary Control
10	Screw adjustment (spring offset to maximum displacement) (Pumps only)
2A	Cylinder control w/ adjustable maximum volume stops
2H	Cylinder control - 3 position (spring centered with zero adjustment) (Pumps only)
2M	Cylinder control - 2 position electro-hydraulic w/ adjustable maximum volume stop (spring offset to minimum displacement)
2N	Cylinder control - 3 position (spring centered) electro-hydraulic (Pumps only)
40	Rotary servo - spring centered (Pumps only)
4A	Rotary servo - spring centered w/ adjustable maximum volume stops (Pumps only)
4B	Rotary servo - spring centered w/ automatic brake control (Pumps only)
4C	Rotary servo - spring centered w/ adjustable maximum volume stops & automatic brake control (Pumps only)
5A	Electro-hydraulic stroker w/ adjustable maximum volume stops
5C	Electro-hydraulic stroker w/ adjustable maximum volume stops & automatic brake control (Pumps only)
7D	High IQ with 10 gpm servovalve & volume indicator (Pumps only)
7F	High IQ with 10 gpm servovalve & 4A (rotary servo) control (Pumps only)
7J	High IQ with DF+ valve & volume indicator (Pumps only)
7K	High IQ with DF+ valve & 4A (rotary servo) control (Pumps only)
7Q	High IQ with digital DF+ valve & volume indicator (Only with "8" secondary control) (Pumps only)
7R	High IQ with digital DF+ valve & 4A (rotary servo) control (Only with "8" secondary control) (Pumps only)
8A	Hydraulic stroker w/ adjustable maximum volume stops
8C	Hydraulic stroker w/ adjustable maximum volume stops & automatic brake control (Pumps only)
9A	Electro-hydraulic stroker w/ adjustable maximum volume stops 1
9C	Electro-hydraulic stroker w/ adjustable maximum volume stops & automatic brake control 1 (Pumps only)
9D	Electro-hydraulic stroker w/ adjustable maximum volume stops (Pumps only)





Code	Secondary Control
0	Volume indicator (Motors only)
2	Volume indicator (Pumps only)
3	Reverse Compensator (Spring Offset Max. + Volume Indicator (Motors only to be used with 8A primary control))
4	Torque limiter & volume indicator (Pumps only)
5	Reverse Compensator (Spring Offset Min. + Volume Indicator (Motors only to be used with 8A primary control))
6	Cam position feedback potentiometer
7	Cam position feedback RVDT (AC)
8	Cam position feedback RVDT (DC)
9	Hall Effect Cam position feedback
E	Intelligence Enable w/ sensors (only P,X,S,R,L Type and with only 9A Primary Control) (Pumps only)
U	Reverse compensator (3) + cam position feedback potentiometer (6) (Motors only to be used with 8A primary control)
V	Reverse compensator (3) + cam position feedback RVDT (7) (Motors only to be used with 8A primary control)
W	Reverse compensator (3) + cam position feedback RVDT (8) (Motors only to be used with 8A primary control)
X	Reverse compensator (5) + cam position feedback potentiometer (6) (Motors only to be used with 8A primary control)
Y	Reverse compensator (5) + cam position feedback RVDT (7) (Motors only to be used with 8A primary control)
Z	Reverse compensator (5) + cam position feedback RVDT (8) (Motors only to be used with 8A primary control)

Code	Control Location
A	Primary control on port A side
B	Primary control on port B side

Code	Shuttle Features (Motors only)
Omit	(Pumps only)
0	Without Orifices
1	With Orifices

Control	Pump Codes	Motor Codes	Control & Displacement Features
2M*	00	0	4D01 valve, 110VAC/60Hz with Hirschmann connector
	01	1	4D01 valve, 12VDC with Hirschmann connector
	02	2	4D01 valve, 240VAC/50Hz with Hirschmann connector
	03	3	4D01 valve, 110VAC/60Hz, wiring box
	04	4	4D01 valve, 12VDC, wiring box
	05	5	Cetop3 (D03)(NG6) interface, no directional valve
	06	6	4D01 valve, 24VDC with Hirschmann connector
	07	7	4D01 valve, 110VAC/50Hz with Hirschmann connector
2N*	00	-	4D01 valve, 110VAC/60Hz with Hirschmann connector (Pumps only)
	01	-	4D01 valve, 12VDC with Hirschmann connector (Pumps only)
	02	-	4D01 valve, 240VAC/50Hz with Hirschmann connector (Pumps only)
	03	-	4D01 valve, 110VAC/60Hz, wiring box (Pumps only)
	04	-	4D01 valve, 12VDC, wiring box (Pumps only)
	05	-	Cetop3 (D03)(NG6) interface, no directional valve (Pumps only)
	06	-	4D01 valve, 24VDC with Hirschmann connector (Pumps only)
5**	00	0	With deadband
	01	1	Without deadband
7**	00	-	Without manual override shutoff (required for 7D, 7J & 7Q Primary Controls) (Pumps only)
	01	-	With manual override shutoff (required for 7F, 7K & 7R primary options) (Pumps only)
8**	00	0	75 - 350 psi (5 - 24 bar)
	01	1	75 - 435 psi (5 - 30 bar)
	02	-	100 - 380 psi (7 - 26 bar) (Pumps only)
	03	-	150 - 400 psi (10 - 28 bar) (Pumps only)
	04	-	75 - 250 psi (5 - 17 bar) (Pumps only)
9**	00	0	24VDC
	01	1	12VDC
All Other	00	0	None





Internal Pump



External Drive



External Mounting



Special Modifications

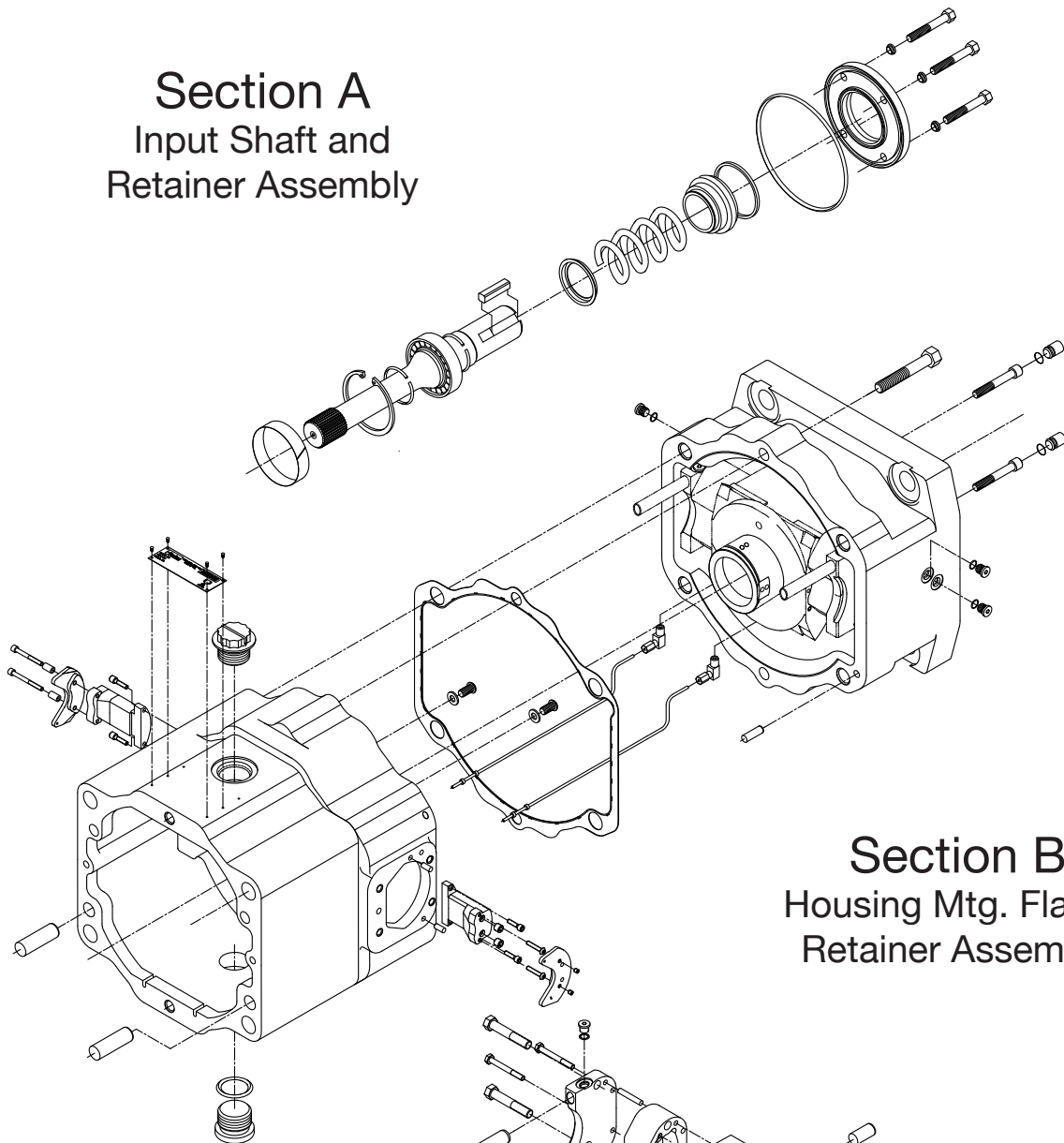
Code	Internal Pump
Omit	All Motors
0	2.81 in ³ /rev. (46 cc/rev.) (P/S/X only) (standard)
1	1.61 in ³ /rev. (26.4 cc/rev.) (P/S/X only) (auxiliary external replenishing flow required)
2	1.05 in ³ /rev. (17.2 cc/rev.) (P/S/X only) (auxiliary external replenishing flow required)
3	3.56 in ³ /rev. (58.3 cc/rev.) (P/S/X only)
4	4.84 in ³ /rev. (79.3 cc/rev.) (P/S/X only)
5	5.42 in ³ /rev. (88.8 cc/rev.) (P/S/X only)
6	6.10 in ³ /rev. (100.0 cc/rev.) (P/S/X only)
X	No internal pump (standard on R/L)

Code	External Drive
Omit	None
M	Steel Blanking Plate Less Coupling (X/S/R/L only)
B	SAE-B (SAE 101-2 for S/X) SAE-B (SAE 101-2 & SAE 101-4 for R/L)
C	SAE-C (SAE 127-2 for S/X) SAE-C (SAE 127-2 & SAE 127-4 for R/L)
D	SAE-D (SAE 152-4) (R/L only)
E	SAE-E (SAE 165-4) (R/L only)
F	SAE-F (SAE 177-4) (R/L only)

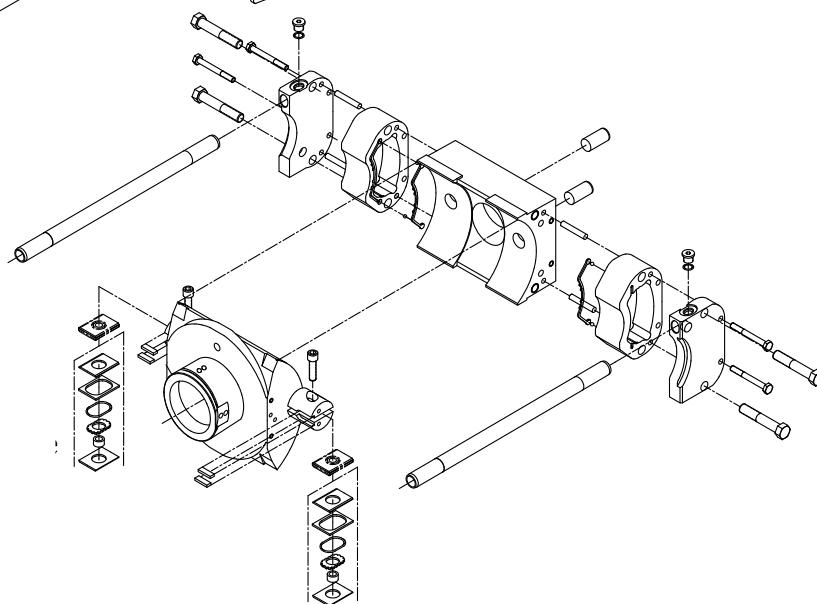
Code	External Mounting
Omit	No external mount
0	No external pump mounted
1	External pump mounted (requires special modification "-M2") (must be separately specified)
2	External Hazardous Rated pump mounted (requires special modification "-EX") (must be separately specified)

Code	Special Modifications
Omit	None (Unit Painted Black)
NP	No Paint
EX	ATEX APPROVED PUMPS without "E" secondary control (EX: Bronze Caged Barrel Bearing Pumps, etc.)
M2	Other special modification (example: bronze caged barrel bearing for low viscosity fluids, tandem pumps, etc.)

Section A Input Shaft and Retainer Assembly



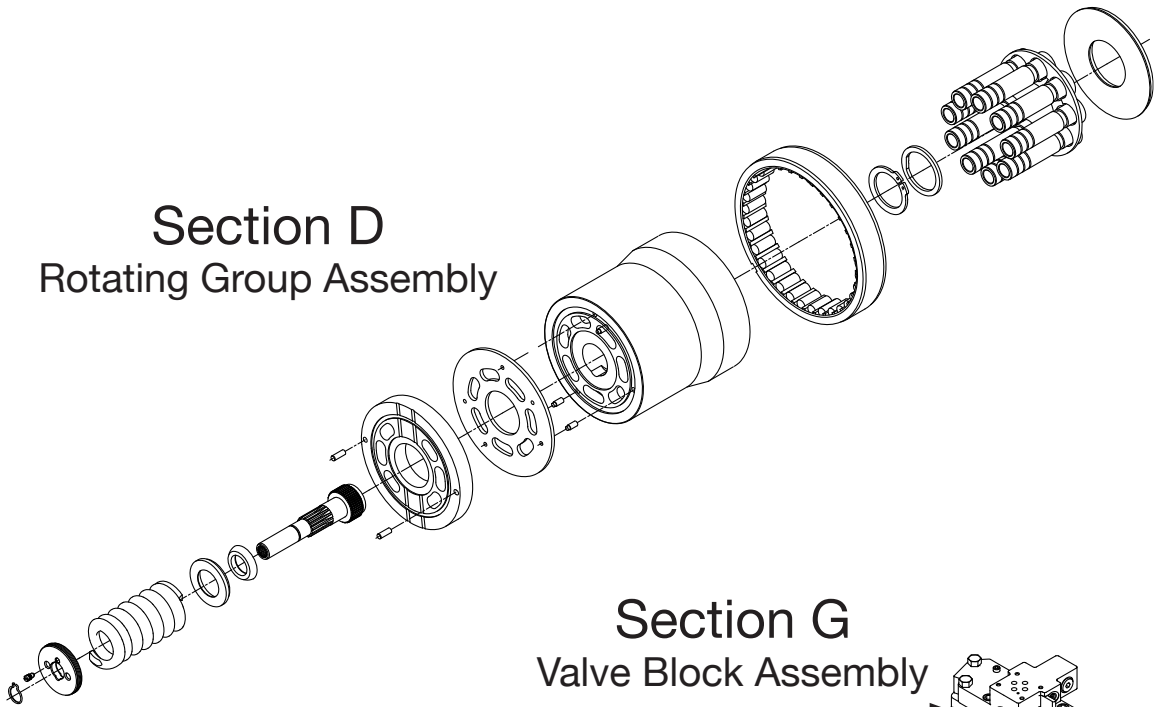
Section B Housing Mtg. Flange Retainer Assembly



Section C Cam and Cradle Assembly

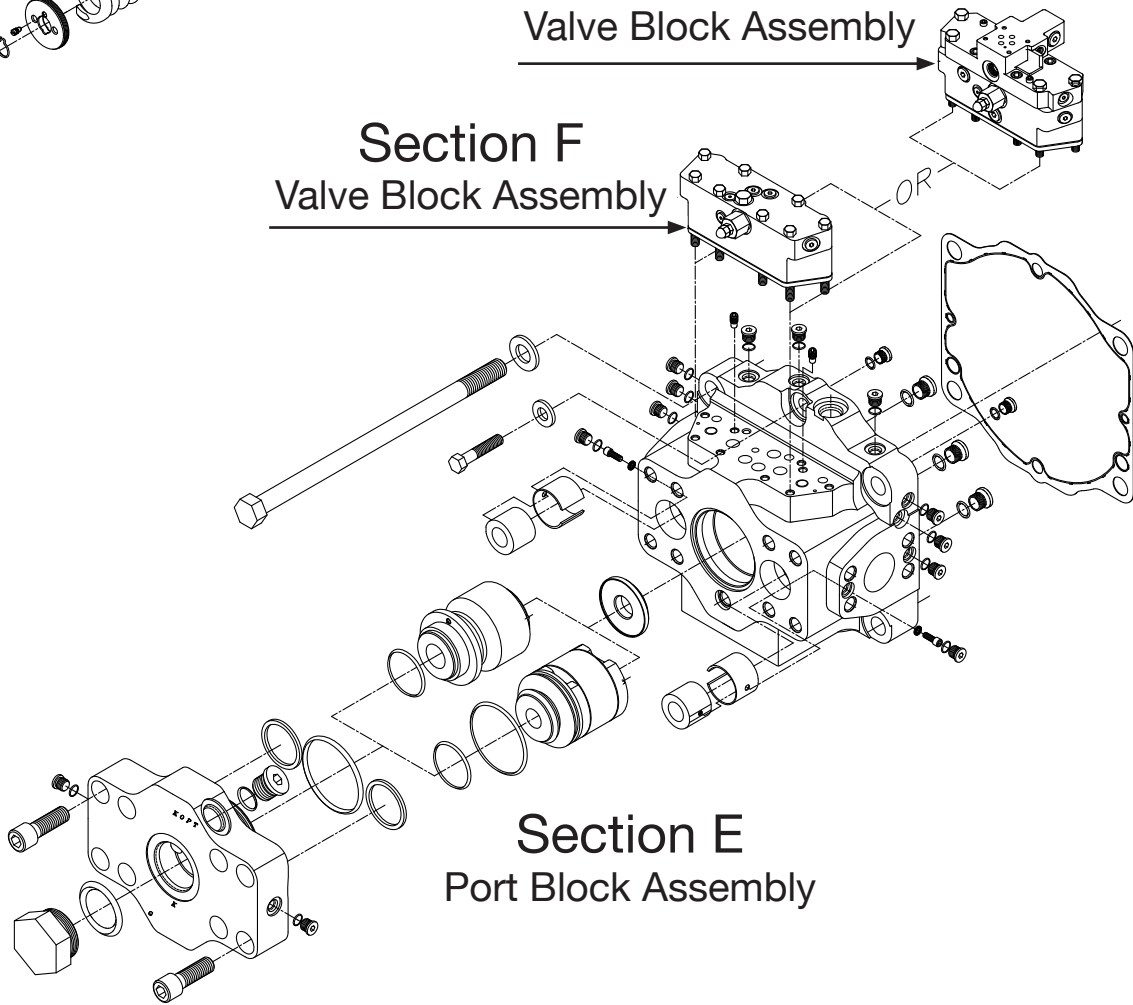


Section D
Rotating Group Assembly



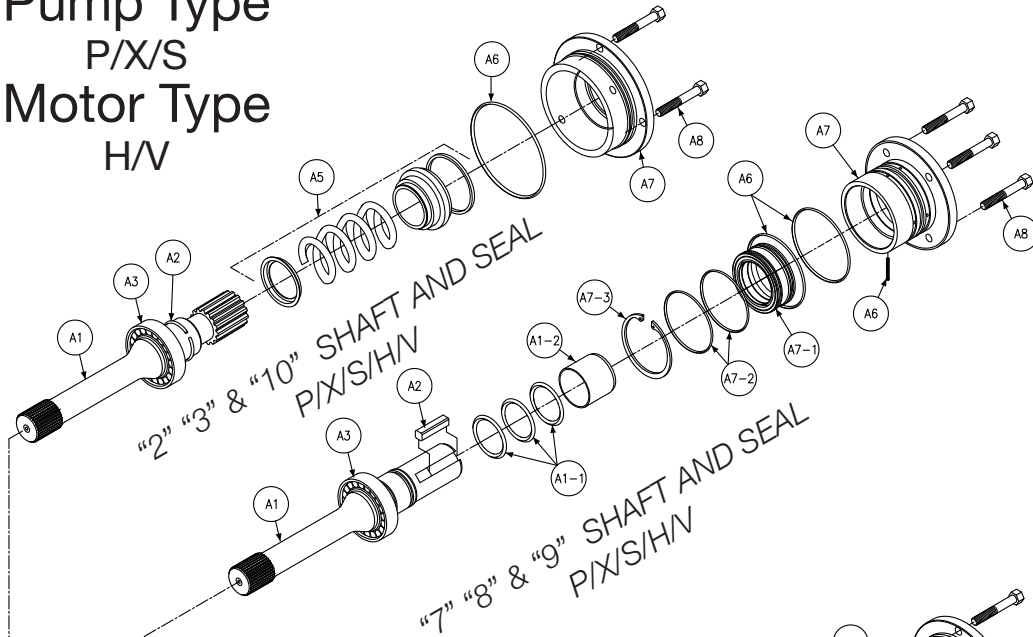
Section G
Valve Block Assembly

Section F
Valve Block Assembly

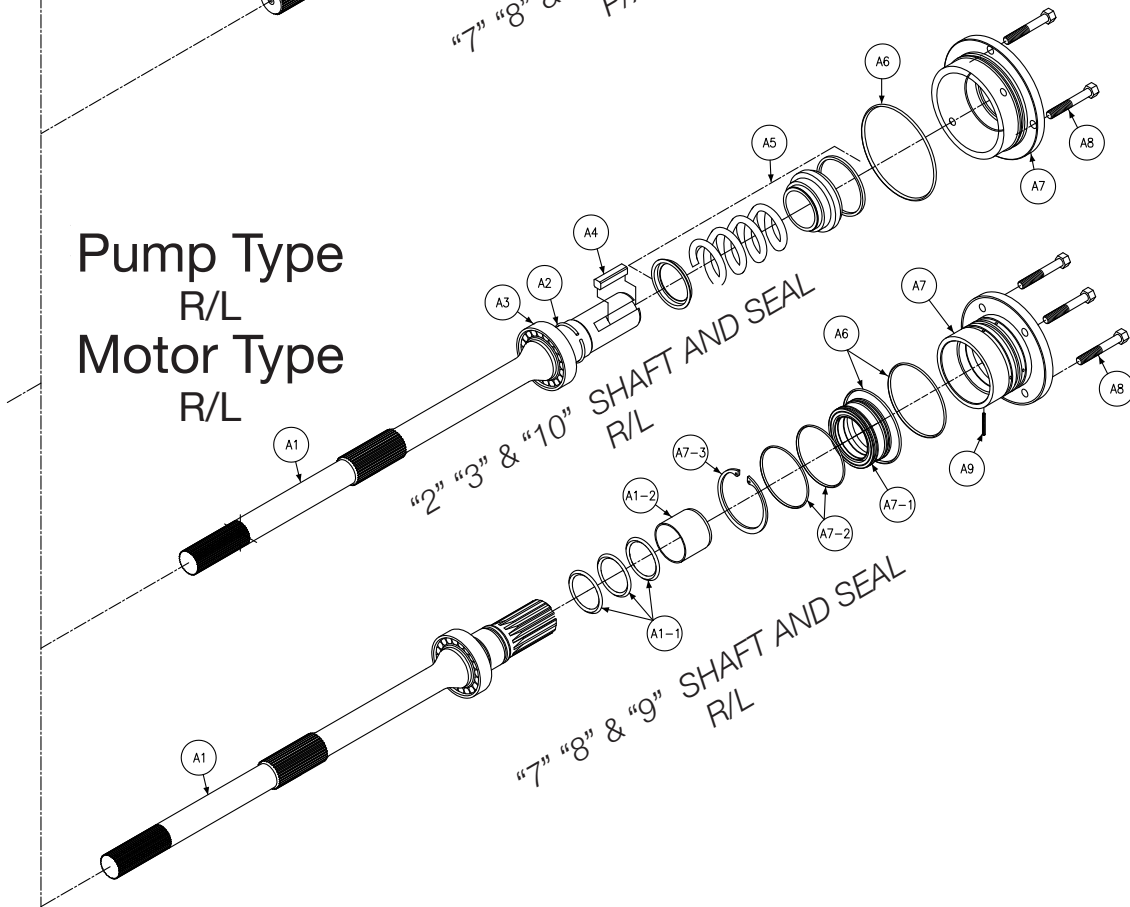


Section E
Port Block Assembly

Pump Type
P/X/S
Motor Type
H/V



Pump Type
R/L
Motor Type
R/L



Section View - A - Input Shaft & Retainer Assembly

Balloon #	Pump/Motor	Type	Shaft Code	Seal Code	Item #	Description	Qty
A1	P	P/X/S	2	**	033-91140-0	Shaft, Keyed SAE-F, Mech Shaft Seal, No Rear Drive	1
	M	H/V					
	P	P/X/S	3	**	033-91139-0	Shaft, Spline SAE-F, With Neck, Mech Shaft Seal, No Rear Drive	
	M	H/V					
	P	P/X/S	7	**	*033-94118-0	Shaft, Keyed SAE-F, Double Lip Seal, No Rear Drive	
	M	H/V					
	P	P/X/S	8	**	*033-94177-0	Shaft, Spline SAE-F, With Neck, Double Lip Seal, No Rear Drive	
	M	H/V					
	P	P/X/S	9	**	*033-94192-0	Shaft, Keyed SAE-F, Double Lip Seal, No Rear Drive, Ext. Lg. Keyway	
	M	H/V					
	P	P/X/S	10	**	033-93610-0	Shaft, Keyed SAE-F, Mech Shaft Seal, No Rear Drive, Ext. Lg. Keyway	
	M	H/V					
	P/M	R/L	2	**	033-92843-0	Shaft, Keyed SAE-F, Mech Shaft Seal, With Rear Drive	
	P/M	R/L	3	**	033-92729-0	Shaft, Spline SAE-F, No Neck, Mech Shaft Seal, With Rear Drive	
P/M	R/L	7	**	*033-94178-0	Shaft, Keyed SAE-F, Double Lip Seal, With Rear Drive		
P/M	R/L	8	**	*033-94179-0	Shaft, Spline SAE-F, No Neck, Double Lip Seal, With Rear Drive		
P/M	R/L	9	**	033-93615-0	Shaft, Keyed SAE-F, Double Lip Seal, With Rear Drive, Ext. Lg. Keyway		
P/M	R/L	10	**	033-93616-0	Shaft, Keyed SAE-F, Mech Shaft Seal, With Rear Drive, Ext. Lg. Keyway		
a1-1	P/M	P/X/S/ R/L/H/V	7/8/9	1	671-00133-0	O RING	3
				4	674-00133-0		
				5	675-00133-0		
a1-2	P/M	P/X/S/ R/L/H/V	7/8/9	**	033-94117-0	SLEEVE SHAFT	1
A2	P/M	P/X/S/ R/L/H/V	2/3/ 9/10	**	033-71712-0	RETAINING RING	2
	P/M	P/X/S/ R/L/H/V	7/8/9	**	NOT USED		1
A3	P/M	P/X/S/ R/L/H/V	2/3/7/ 8/9/10	**	230-82213-0	SHAFT BEARING	1
A4	P/M	P/X/S/ R/L/H/V	2/7	**	033-71910-0	KEY	1
			9/10	**	033-93619-0		

Continued on next page.



Section View - A - Input Shaft & Retainer Assembly

Balloon #	Pump/Motor	Type	Shaft Code	Seal Code	Item #	Description	Qty
A5	P/M	P/X/S/ R/L/H/V	2/3/10	4	623-00015-4	SHAFT SEAL	1
				5	623-00015-5		
A6	P/M	P/X/S/ R/L/H/V	2/3/10	1	671-00246-0	O RING	1
				4	674-00246-0		
				5	675-00246-0		
			7/8/9	1	671-00246-0	O RING	2
				4	674-00246-0		
				5	675-00246-0		
A7	P/M	P/X/S/ R/L/H/V	2/3/10	**	033-57472-0	MECH SEAL RETAINER	1
			7/8/9	**	033-95951-0	DOUBLE LIP RETAINER	
a7-1	P/M	P/X/S/ R/L/H/V	7/8/9	**	620-82126-0	SEAL SHAFT LIP BI-DIRECTIONAL	4
a7-2	P/M	P/X/S/ R/L/H/V	7/8/9	1	671-00149-0	O RING	2
				4	674-00149-0		
				5	675-00149-0		
a7-3	P/M	P/X/S/ R/L/H/V	7/8/9	**	356-65160-0	RETAINING RING	1
A8	P/M	P/X/S/ R/L/H/V	2/3/7/ 8/9/10	**	306-40123-0	SCREW HHC 3/8-16UNC x 1 1/4 IG	4
A9	P/M	P/X/S/ R/L/H/V	7/8/9	**	325-08160-0	ROLL PIN	1
Note: Shaft part numbers marked * are not usable without assembled with items a1-1 & a1-2 (o'rings & sleeve) Using special tools P/N 213-0-004202 – See Page 11 for details							

Seal Kits Contain All Seals for the Following:
NOTE: Seal kits for "M" mod pumps and for aux. pumps require part verification with HPD factory representatives. Standard Seal Kits below contain seals for the following: 1. Main Pump 2. Valve Block 3. Input/Output Controls 4. Shaft Seal

Pump/Motor	Type	Shaft Code	Rotation	Seal Code	Part Number
P	P	2/3	**	1	S23-18006-0
				4	S23-18006-4
				5	S23-18006-5
P	R	2/3	**	1	S23-18016-0
				5	S23-18016-5
P	X	2/3	**	1	S23-11514-0
				4	S23-11514-4
				5	S23-11514-5
P	P	7/8/9	CW	1	S23-17038-0
				4	S23-17038-4
				5	S23-17038-5
P	P	7/8/9	CCW	1	S23-17039-0
				4	S23-17039-4
				5	S23-17039-5
P	R	7/8/9	CW	1	S23-18017-0
				5	S23-18017-5
P	R	7/8/9	CCW	1	S23-18018-0
				5	S23-18018-5
P	X	7/8/9	CW	1	S23-18022-0
				5	S23-18022-5
P	X	7/8/9	CCW	1	S23-18023-0
				5	S23-18023-5
P	S	2/3	**	1	S23-17040-0
				4	S23-17040-4
				5	S23-17040-5
P	L	2/3	**	1	S23-18019-0
				5	S23-18019-5
P	S	7/8/9	CW	1	S23-17041-0
				4	S23-17041-4
				5	S23-17041-5
P	S	7/8/9	CCW	1	S23-17042-0
				5	S23-17042-5
P	L	7/8/9	CW	1	S23-18020-0
				5	S23-18020-5
P	L	7/8/9	CCW	1	S23-18021-0
				5	S23-18021-5
*P	S	2/3	**	1	S23-11600-0
				5	S23-11600-5
*P	S	7/8/9	CW	1	S23-15696-0
				5	S23-15696-5
*P	S	7/8/9	CCW	1	S23-15697-0
				5	S23-15697-5

*Contains seals for T6C auxiliary Pump

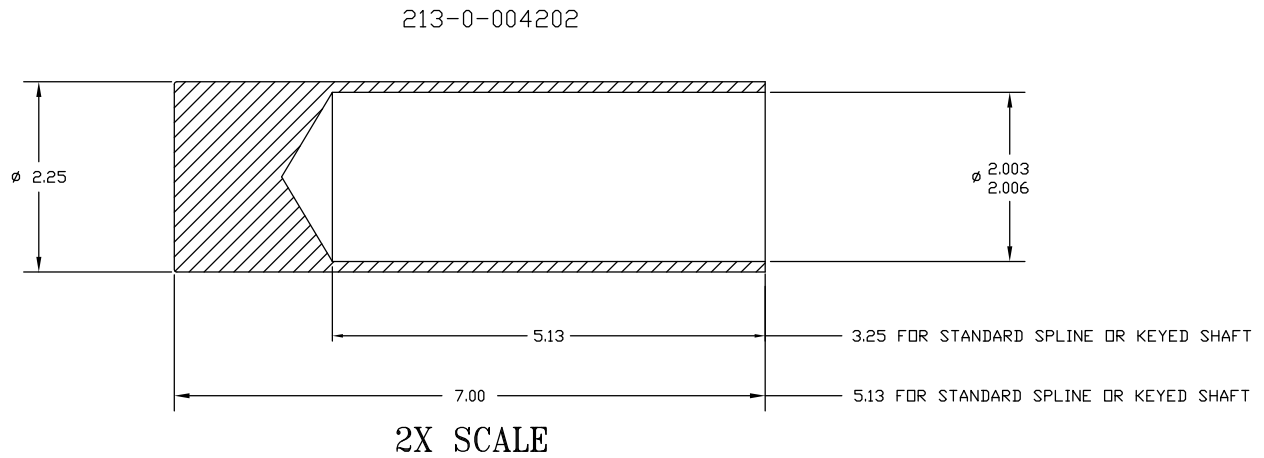


24/30 Seal Retainer Assembly Kits Composed of Items: A6, A7, A7-1, A7-2, A7-3 and A9					
Type	Pump/Motor	Type	Rotation	Seal Code	Part Number
7/8/9	P/M	P/X/S/H/V/R/L	Bi-Directional	1	S23-19757 -0
7/8/9	P/M	P/X/S/H/V/R/L	Bi-Directional	5	S23-19757-5

Seal Kits Contain All Seals for the Following: 1. Main Motor Less Shuttle 2. Input/Output Controls 3. Shaft Seal (Mechanical)				
Type	Pump/Motor	Type	Seal Code	Part Number
2/3/10	M	H/V	1	S23-17747-0K
2/3/10	M	H/V	4	S23-17747-4K
2/3/10	M	H/V	5	S23-17747-5K

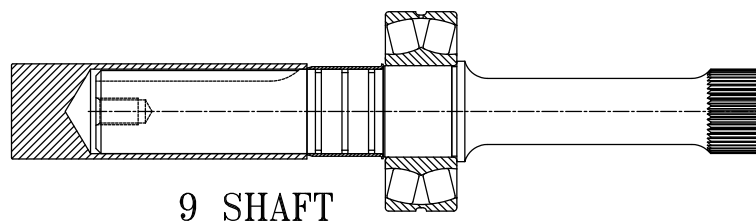
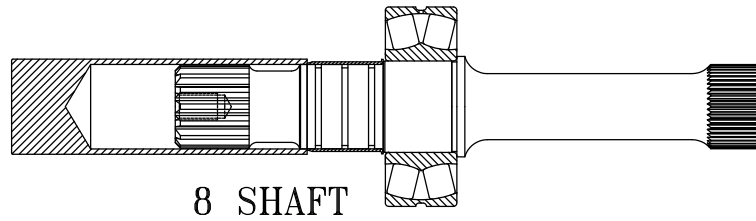
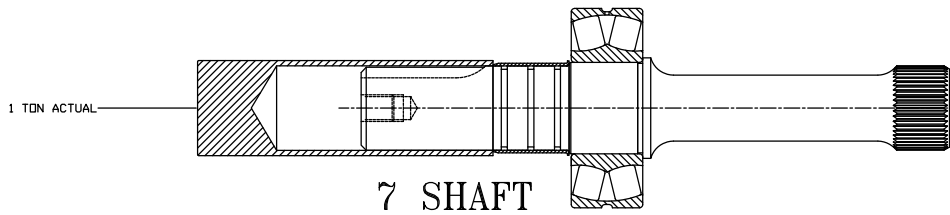
P/M24/30 Shaft and Bearing Assembly Kits Composed of Items: A1, a1-1, a1-2, A2, A3 and A4 as applicable		
Type	Shaft Code	Part Number
P/S/X/H/V	2	S23-12475-0
P/S/X/H/V	3	S23-12474-0
P/S/X/H/V	7	S23-18233-0
P/S/X/H/V	8	S23-18234-0
P/S/X/H/V	9	S23-18235-0
P/S/X/H/V	10	S23-17491-0
R/L	2	S23-16362-0
R/L	3	S23-16364-0
R/L	7	S23-16473-0
R/L	8	S23-16475-0
R/L	9	S23-17496-0
R/L	10	S23-17167-0

Replacement shaft sleeves & o'rings are available for Type P/S/X/H/V/R/L with 7/8/9 shafts. However special tool P/N 213-0-004202 is required to remove and install the sleeve.
Note: See Page 12 for tool details.

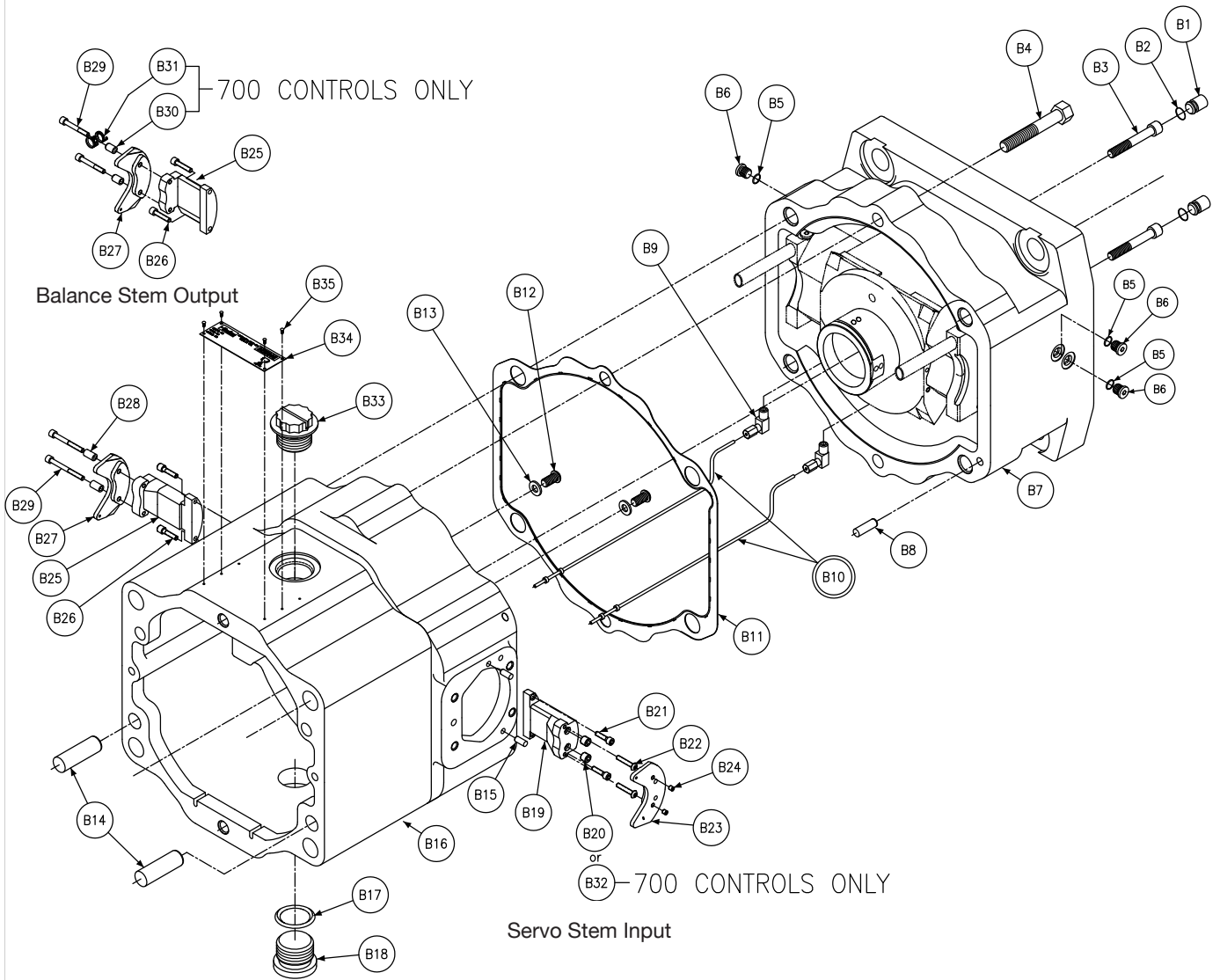


INSTLLATION

DO NOT HAMMER OR OTHERWISE IMPACT
 APPLY A CONSTANT PRESSING FORCE ONLY



Pump Type
P/X/S/L/R
Motor Type
H/V/L/R



Note: Above view shows input on "A" side of pump.

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

Balloon #	Pump/Motor	Displacement	Type	Seal Code	Item #	Description	Qty
B1	P/M	24/30	**	**	033-57475-0	PLUG	2
B2	P/M	24/30	**	1	671-00111-0	O RING	2
				4	674-00111-0		
				5	675-00111-0		
B3	P/M	24/30	**	**	358-16260-0	SHCS 3/8-16UNC x 2 1/4	2
B4	P/M	24/30	**	**	306-40009-0	SHCS 5/8-11UNC x 3	2
B5	P/M	24/30	**	1	691-00904-0	O RING	3
				4	694-00904-0		
				5	695-00904-0		
B6	P/M	24/30	**	**	488-35001-0	PLUG	3
B7	P/M	24/30	**	**	033-91137-0	MOUNTING FLANGE	1
B8	P/M	24/30	**	**	324-22416-0	DOWEL PIN 3/8 x 1	1
B9	P/M	24/30	**	**	473-15041-0	FITTING ELBOW	2
B10	P/M	24	**	**	S13-44469-0	PRESSURE FEED TUBE	2
		30	**	**	S23-12172-0		
B11	P/M	24/30	**	**	033-91082-0	GASKET MTG. FLG.	1
B12	P/M	24/30	**	**	353-25088-0	SHCS 5/16-18 UNC x 5/8	2
B13	P/M	24/30	**	**	345-10020-0	WASHER 11/32	2
B14	P/M	24/30	**	**	324-24832-0	PIN 3/4 DIA x 2.00	2
B15	P/M	24/30	**	**	324-21608-0	PIN 1/4 x 1/2	4
B16	P/M	24	**	**	033-57150-0	HOUSING	1
		30	**	**	033-57925-0		
B17	P/M	24/30	**	1	691-00920-0	O RING	1
				4	694-00920-0		
				5	695-00920-0		
B18	P/M	24/30	**	**	488-35019-0	PLUG	1
B19	P/M	24/30	**	**	033-91256-0	SERVO STEM	1
B20	P/M	24/30	**	**	033-70819-0	ORIFICE .062	2
B21	P/M	24/30	**	**	358-10120-0	SHCS #10-24 UNC x 3/4	2
B22	P/M	24/30	**	**	353-25023-0	BHCS 10-24UNC x1/2	2
B23	P/M	24/30	**	**	033-53874-0	SERVO PLATE	1
B24	P/M	24/30	**	**	312-09032-0	S SET 10-32 UNF x 3/16	2
B25	P/M	24/30	**	**	033-71774-0	BALANCE STEM	1
B26	P/M	24/30	**	**	358-10120-0	SHCS #10-24 UNC x 3/4	2

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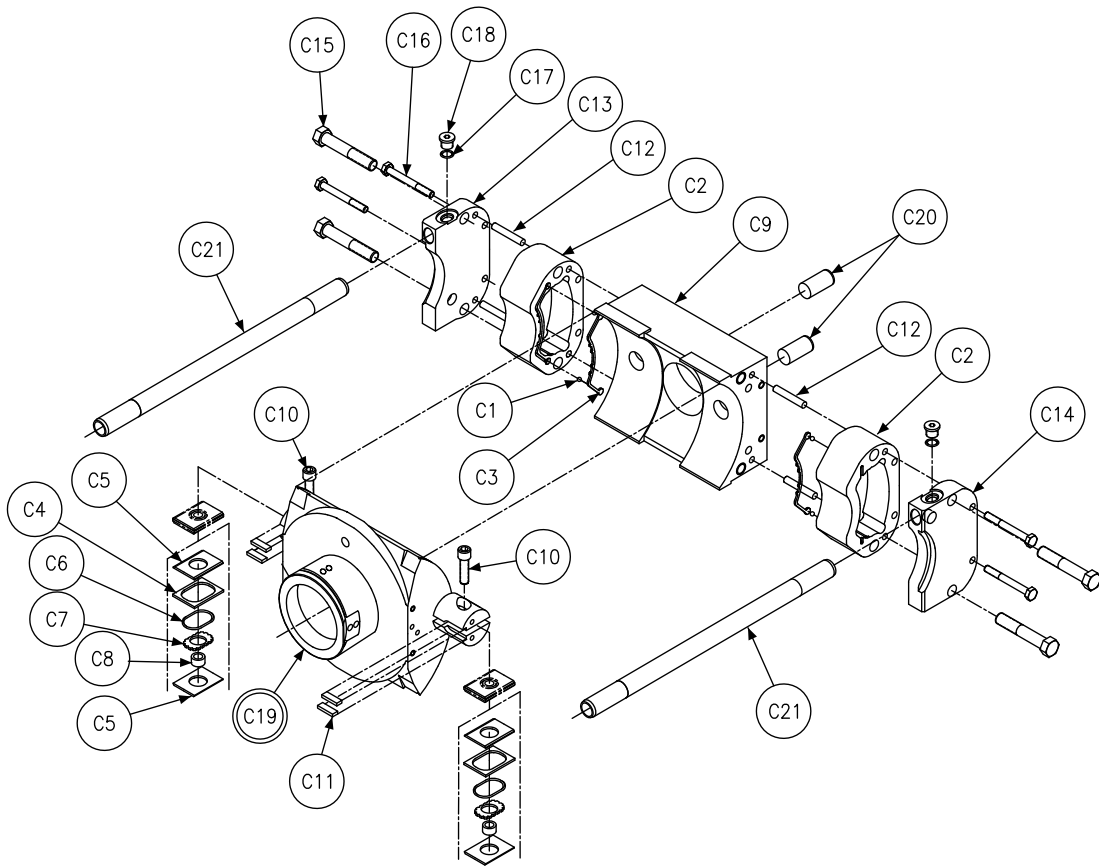
Balloon #	Pump/Motor	Displacement	Type	Seal Code	Item #	Description	Qty
B27	P/M	24/30	**	**	033-70546-0	BALANCE PLATE	1
B28	P/M	24/30	**	**	033-71247-0	SPACER	2
B29	P/M	24/30	**	**	359-09180-0	SHCS 10-32 UNF x 1 1/4	2
B30	P/M	24/30	**	**	033-57270-0	SPACER	2
B31	P/M	24/30	**	**	033-57271-0	FEEDBACK SPRING	1
B32	P/M	24/30	**	**	033-93765-0	ORIFICE .043	2
B33	P/M	24/30	**	**	449-00020-0	SHIPPING PLUG	1
B34	P	24/30	**	**	033-71907-0	NAMEPLATE	1
	M	24/30	**	**	033-71908-0		
B35	P/M	24/30	**	**	320-10203-0	DRIVE SCREW	4

Stem Kits

Input Stem Kits Include the Following: B19, B20, B21, B22, B23 and B24
 Input Stem Kits for 700 Control Include the Following: B19, B21, B22, B23, B24 and B32
 Output Stem Kits Include the Following: B21, B25, B27, B28 and B29
 Output Stem Kits for 700 Control Include the Following: B21, B25, B27, B29, B30 and B31

	Part Number
Motor and Pump 24/30 Input Stem Kit	S23-15110-0
Motor and Pump 24/30 Output Stem Kit	S23-03950-0
Pump 24/30 Input Stem Kit for 700 Control	S23-03951-0
Pump 24/30 Output Stem Kit for 700 Control	S23-03949-0

Pump Type
P/V/X/S/R/L
Motor Type
H/V/R/L



Section View - C - Cam & Cradle Assembly

Section C 24/30 Cam and Cradle Assembly									
Balloon #	Pump/Motor	Displacement	Type	Shaft Code	Rotation	Seal Code	Item #	Description	Qty
C1	P/M	24/30	P/X/S/ L/R/H/V	2/3/7/ 8/9/10	**	**	201-06001-0	CHECK BALL	4
C2	P/M	24/30	P/X/S/ L/R/H/V	**	**	**	033-71757-0	VANE CHAMBER	2
C3	P/M	24/30	P/X/S/ L/R/H/V	**	**	1	606-25045-0	MOLDED SEAL	2
						4	606-25040-4		
						5	606-25040-5		
C4	P/M	24/30	P/X/S/ L/R/H/V	**	**	**	033-71714-0	VANE SEAL	2
C5	P/M	24/30	P/X/S/ L/R/H/V	**			033-71726-0	VANE SEAL BACKUP PLATE	4
C6	P/M	24/30	P/X/S/ L/R/H/V	**	1	**	691-00128-0	O RING	2
	P/M	24/30	P/X/S/ L/R/H/V	**	4	**	694-00128-0		
	P/M	24/30	P/X/S/ L/R/H/V	**	5	**	695-00128-0		
C7	P/M	24/30	P/X/S/ L/R/H/V	**	**	**	033-71727-0	VANE SPACER	2
C8	P/M	24/30	P/X/S/ L/R/H/V	**	**	**	033-59806-0	SPACER (.2500/.2495-BLUE)	2
							033-59983-0	SPACER (.2515/.2510-YELLOW)	
							033-59984-0	SPACER (.2530/.2525-GREEN)	
							033-96138-0	SPACER (.2485/.2480-WHITE)	
C9	P/M	24/30	P/X/S/ L/R/H/V	**	**	**	033-91141-0	ROCKER CRADLE	1
C10	P/M	24/30	P/X/S/ L/R/H/V	**	**	**	359-13160-0	SHCS 5/16-24 UNF x 1	
C11	P/M	24/30	P/X/S/ L/R/H/V	**	**	**	033-70816-0	VANE HOLDDOWN	4
C12	P/M	24/30	P/X/S/ L/R/H/V	**	**	**	324-22428-0	PIN 3/8 x 1 3/4	4
C13	P	24/30	P/X/S/ L/R	**	CCW	**	033-71595-0	RIGHT CONTROL COVER	1
	P	24/30	P/X/S/ L/R		CW		033-71598-0		
	M	24/30	H/V		N				

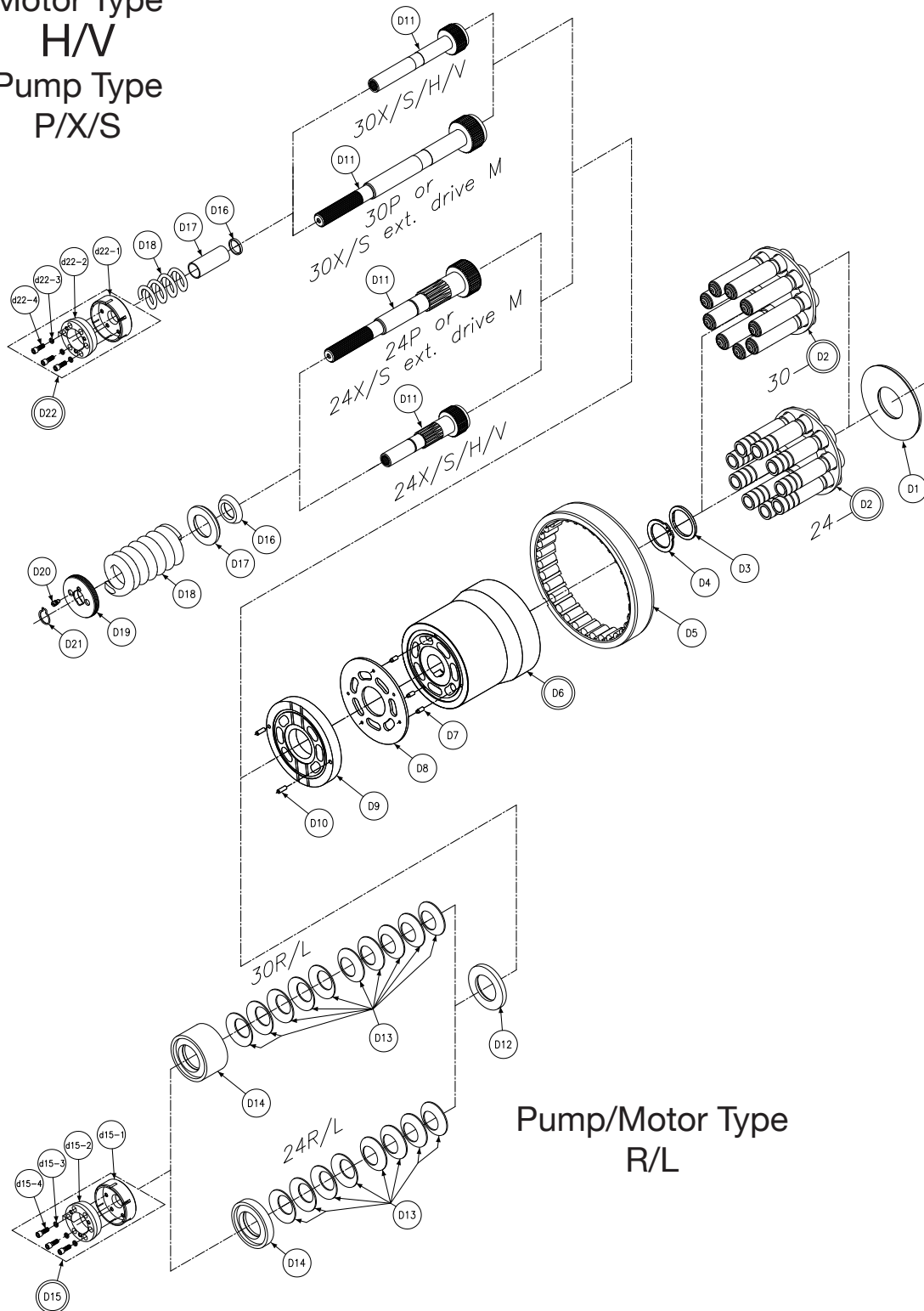
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Section C 24/30 Cam and Cradle Assembly									
Balloon #	Pump/Motor	Displacement	Type	Shaft Code	Rotation	Seal Code	Item #	Description	Qty
C14	P	24/30	P/X/S/L/R	**	CCW	**	033-71593-0	LEFT CONTROL COVER	1
	P	24/30	P/X/S/L/R		CW		033-71597-0		
	M	24/30	H/V		N				
C15	P/M	24/30	P/X/S/L/R/H/V	**	**	**	306-40174-0	HHCS 1/2-13 UNC x 3 1/4	4
C16	P/M	24/30	P/X/S/L/R/H/V	**	**	**	306-40035-0	HHCS 3/8-16 UNC x 3	4
C17	P/M	24/30	P/X/S/L/R/H/V	**	1	**	691-00905-0	O RING	2
	P/M	24/30	P/X/S/L/R/H/V	**	4	**	694-00905-0		
	P/M	24/30	P/X/S/L/R/H/V	**	5	**	695-00905-0		
C18	P/M	24/30	P/X/S/L/R/H/V	**	"	**	488-35020-0	HEX SOCKET PLUG	2
C19	P/M	24/30	P/X/S/L/R/H/V	**	**	**	S23-12482-0	CAM ROCKER	1
C20	P/M	24/30	P/X/S/L/R/H/V	**	**	**	324-24028-0	DOWEL PIN	2
C21	P/M	24	P/X/S/L/R/H/V	**	**	**	033-71731-0	OVERRIDE TUBE	2
		30					033-57933-0		

Cam & Cradle Assembly Kits Includes Items C1 Thru C19 and C21				
Part Number	Pump Type	Motor Type	Shaft Code	Rotation
S23-17242-5	P/X/S/L/R	H/V	2/3/7/8/9/10	CW-N
S23-17243-5	P/X/S/L/R		2/3/7/8/9/10	CCW

Motor Type
H/V
Pump Type
P/X/S



Section View - D - Rotating Group Assembly

Balloon #	Pump/Motor	Displacement	Type	Efficiency	Rotation	Ext. Drive X/S only	Item #	Description	Qty
D1	P/M	**	P/S/X/ R/L/H/V	**	**	**	033-91653-0	CREEP PLATE	1
D2	P/M	24	P/S/X/ R/L/H/V	**	**	**	S13-44470-0	PISTON SHOE & RETAINER ASSEMBLY	1
	P/M	24	P/S/X/ R/L/H/V	H	**	**	S23-17399-0		
	P/M	30	P/S/X/ R/L/H/V	**	**	**	S23-12684-0		
D3	P/M	24/30	P/S/X/ R/L/H/V	**	**	**	033-59805-0	THRUST WASHER	1
D4	P/M	24/30	P/S/X/ R/L/H/V	**	**	**	033-92754-0	RET RING .078/.077 THK BLACK	SELECT FIT ONE ONLY
	P/M	24/30	P/S/X/ R/L/H/V	**	**	**	033-59746-0	RET RING .079/.081 THK BLUE	
	P/M	24/30	P/S/X/ R/L/H/V	**	**	**	033-71717-0	RET RING .081/.083 THK RED	
	P/M	24/30	P/S/X/ R/L/H/V	**	**	**	033-91130-0	RET RING .083/.085 THK. WHITE	
	P/M	24/30	P/S/X/ R/L/H/V	**	**	**	035-71717-0	RET RING .085/.087 THK GREEN	
	P/M	24/30	P/S/X/ R/L/H/V	**	**	**	035-71716-0	RET RING .087/.089 THK YELLOW	
D5	P/M	24/30	P/S/X/ R/L/H/V	**	**	**	033-93046-0	BARREL BEARING	1
D6	P/M	24	P/S/X/ R/L/H/V	**	**	**	S23-12091-0	CYLINDER BARREL	1
	P/M	24	P/S/X/ R/L/H/V	**	**	**	S23-12170-0		
D7	P/M	24/30	P/S/X/ R/L/H/V	**	**	**	033-59747-0	FACE PLATE PIN	3
D8	P/M	24	P/S/X/ R/L/H/V	**	**	**	033-71748-0	FACE PLATE	1
	P/M	30	P/S/X/ R/L/H/V	**	**	**	033-57571-0		
D9	P	24	P/S/X/ R/L	**	CW	**	033-71752-0	PORT PLATE	1
	P	24	P/S/X/ R/L	**	CCW	**	033-71753-0		
	P	24	P/S/X/ R/L	H	CW	**	033-93581-0		
	P	24	P/S/X/ R/L	H	CCW	**	033-93580-0		
	P	30	P/S/X/ R/L	**	CC	**	033-91238-0		
	P	30	P/S/X/ R/L	**	CCW	**	033-91237-0		
	M	24	H/V	**	N	**	033-71751-0		
	M	30	H/V	**	N	**	033-91149-0		

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Section View - D - Rotating Group Assembly

Balloon #	Pump/Motor	Displacement	Type	Efficiency	Rotation	Ext. Drive X/S only	Item #	Description	Qty
D10	P/M	24/30	P/S/X/ R/L/H/V	**	**	**	324-21610-0	DOWEL PIN	2
D11	P/M	24	P/X/S	**	**	M	033-57257-0	* AUX. HOLDDOWN SHAFT	1
	P/M	30	P/X/S	**	**	M	033-91188-0		
	P/M	24	S/X/H/V	**	**	**	033-93535-0	** AUX. HOLDDOWN SHAFT	1
	P/M	30	S/X/H/V	**	**	**	033-93536-0		
D12	P/M	24/30	R/L	**	**	**	033-92790-0	WASHER DISC SPRING BACKUP	1
D13	P/M	24	R/L	**	**	**	033-92725-0	DISC SPRING BARREL HOLDDOWN	8
	P/M	30	R/L	**	**	**	033-92725-0		10
D14	P/M	24	R/L	**	**	**	033-92916-0	RETAINER BBL HD DISC SPG	1
	P/M	30	R/L	**	**	**	033-92788-0		
D15	P/M	24/30	R/L	**	**	**	S23-17350-0	BARREL HOLDDOWN NUT	1
d15-1	P/M	24/30	R/L	**	**	**	033-94648-0	NUT BARREL HLDOWN	1
d15-2	P/M	24/30	R/L	**	**	**	033-94649-0	INSERT BARREL HOLDDOWN	1
d15-3	P/M	24/30	R/L	**	**	**	358-12100-0	SCREW, SHC 1/4-20 UNC X	6
d15-4	P/M	24/30	R/L	**	**	**	346-60036-0	LOCKWASHER 1/4 HI COLLAR	6
D16	P/M	24	P/S/X/ H/V	**	**	M	033-57147-0	SPHERICAL SEAT	1
	P/M	30	P/S/X/ H/V	**	**	M	033-95942-0	STOP, BARREL	1
D17	P/M	24	P/S/X/ H/V	**	**	M	033-57138-0	SPRING RETAINER	1
	P/M	30	P/S/X/ H/V	**	**	M	350-10171-0	WASHER	1
D18	P/M	24	P/S/X/ H/V	**	**	M	033-57136-0	SPRING, BARREL HOLDDOWN	1
	P/M	30	P/S/X/ H/V	**	**	M	033-95941-0		
D19	P/M	24	P/S/X/ H/V	**	**	M	033-57139-0	HOLDDOWN ADJ SCREW	1
D20	P/M	24	P/S/X/ H/V	**	**	M	033-57241-0	HOLDDOWN ADJ SCREW LOCK	1
D21	P/M	24	P/S/X/ H/V	**	**	M	033-57239-0	LOCK RING	1

Continued on next page.



Section View - D - Rotating Group Assembly

Balloon #	Pump/Motor	Displacement	Type	Efficiency	Rotation	Ext. Drive X/S only	Item #	Description	Qty
D22	P/M	30	P/S/X/H/V	**	**	M	S23-19788-0	BARREL HOLDDOWN NUT	1
d22-1	P/M	30	P/S/X/H/V	**	**	M	033-95972-0	NUT BARREL HLDOWN	1
d22-2	P/M	30	P/S/X/H/V	**	**	M	033-94649-0	INSERT BARREL HOLDDOWN	1
d22-3	P/M	30	P/S/X/H/V	**	**	M	358-12100-0	SCREW, SHC 1/4-20 UNC X	6
d22-4	P/M	30	P/S/X/H/V	**	**	M	346-60036-0	LOCKWASHER 1/4 HI COLLAR	6

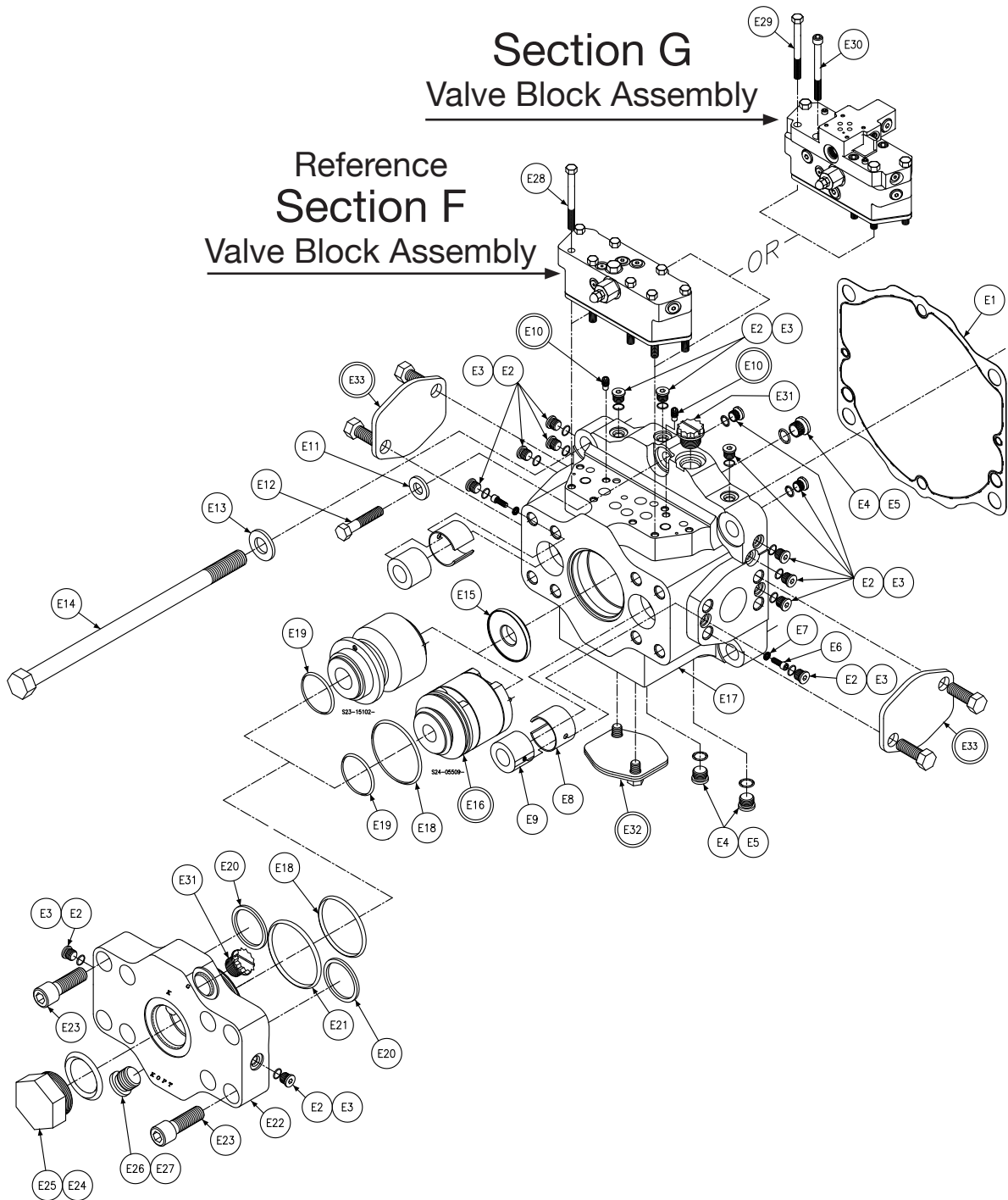
IMPORTANT NOTES: 1,2,3,4

- 1.* AUXILIARY DRIVE SHAFT 033-57257-0 MUST BE USED WITH REAR COVER ASSEMBLY S23-15182 FOR P24 "P" TYPE PUMPS OR P24 "X" OR "S" TYPE PUMPS WITH "M", (BLANKING PLATE).
- 2.* AUXILIARY DRIVE SHAFT 033-91188-0 MUST BE USED WITH REAR COVER ASSEMBLY S23-15122 FOR P30 "P" TYPE PUMPS OR P30 "X" OR "S" TYPE PUMPS WITH "M", (BLANKING PLATE).
- 3.** AUXILIARY DRIVE SHAFT 033-93535-0 MUST BE USED WITH REAR COVER ASSEMBLY S23-15183, (SAE-B EXT MOUNT), OR S23-15172, (SAE-C EXT. MOUNT), FOR P24 "X" & "S" TYPE PUMPS ONLY
- 4.** AUXILIARY DRIVE SHAFT 033-93536-0 MUST BE USED WITH REAR COVER ASSEMBLY S23-15125, (SAE-B EXT MOUNT), OR S23-17546, (SAE-C EXT. MOUNT), FOR P30 "X" & "S" TYPE PUMPS ONLY

Major Rotating Group Kit Composed of items: D1,D2,D5,D6.D7.D8,D9 AND D10				
Pump/Motor	Displacement	Type	Rotation	Part Number
P	24	P/S/X/R/L	CW	S23-17111-0
P	24	P/S/X/R/L	CCW	S23-17112-0
P	30	P/S/X/R/L	CW	S23-17113-0
P	30	P/S/X/R/L	CCW	S23-17114-0
M	24	H/V	N	S23-17115-0
M	30	H/V	N	S23-17116-0

Barrel Hold Down Kit S23-17253-0 and S23-17255-0 Composed of items: D11 AND D18 S23-17254-0 and S23-17256-0 Composed of items: D11, D16, D17, D18 and d22-1 No Kit available for R/L versions				
Pump/Motor	Displacement	Type	Ext Drive	Part Number
P	24	P	-	S23-17253-0
		X/S	M	
P	30	P	-	S23-17254-0
		X/S	M	
P	24	S/X/H/V	**	S23-17255-0
P	30	S/X/H/V	**	S23-17256-0





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

Section E P24/30 TYPE P PORT BLOCK									
Balloon #	Pump/Motor	Displacement	Type	Rotation	Seal Code	Internal Pump	Item #	Description	Qty
E1	P	24/30	P	**	**	0/1/2/3/4/5/6/X	033-91085-0	PORT BLOCK GASKET	1
E2	P	24/30	P	**	**	0/1/2/3/4/5/6/X	488-35041-0	PLUG 6HP5N	15
E3	P	24/30	P	**	1	0/1/2/3/4/5/6/X	691-00906-0	O RING	15
	P	24/30	P	**	4	0/1/2/3/4/5/6/X	674-00906-0		
	P	24/30	P	**	5	0/1/2/3/4/5/6/X	695-00906-0		
E4	P	24/30	P	**	**	0/1/2/3/4/5/6/X	488-35018-0	PLUG 8HP5N	3
E5	P	24/30	P	**	1	0/1/2/3/4/5/6/X	691-00908-0	O RING	2
	P	24/30	P	**	4	0/1/2/3/4/5/6/X	694-00908-0		
	P	24/30	P	**	5	0/1/2/3/4/5/6/X	695-00908-0		
E6	P	24/30	P	**	**	0/1/2/3/4/5/6/X	359-11140-0	SCREW SHC	2
E7	P	24/30	P	**	**	0/1/2/3/4/5/6/X	350-10168-0	LOCKWASHER	2
E8	P	24/30	P	**	**	0/1/2/3/4/5/6/X	035-72355-0	RING CHECK	2
E9	P	24/30	P	**	**	0/1/2/3/4/5/6/X	033-94747-0	RING CHECK STOP	2
E10	P	24/30	P	**	**	0/1/2/3/4/5/6/X	S13-40266-0	CHECK VALVE	2
E11	P	24/30	P	**	**	0/1/2/3/4/5/6/X	350-10136-0	WASHER 5/8	2
E12	P	24/30	P	**	**	0/1/2/3/4/5/6/X	306-40008-0	SCREW HHC 5/8-11UNC	2
E13	P	24/30	P	**	**	0/1/2/3/4/5/6/X	350-10135-0	WASHER 7/8	4
E14	P	24	P	**	**	0/1/2/3/4/5/6/X	306-40221-0	SCREW HHC 7/8-9UNC x 13	4
	P	30	P	**	**	0/1/2/3/4/5/6/X	306-40230-0	SCREW HHC 7/8-9UNC x 14	
E15	P	24/30	P	**	**	0/1/2/3/4/5/6/X	033-91073-0	WASHER SEALING	1
E16	P	24/30	P	CW	**	0	S24-11918-0	VANE PUMP CART. ASSY 2.81 CIPR	1
	P	24/30	P	CCW	**		S24-05562-0		
	P	24/30	P	CW	**	1	S24-11789-0	VANE PUMP CART. ASSY 1.61 CIPR	
	P	24/30	P	CCW	**		S24-51206-0		
	P	24/30	P	CW	**	2	S24-11697-0	VANE PUMP CART. ASSY 1.05 CIPR	
	P	24/30	P	CCW	**		S24-11778-0		
	P	24/30	P	CW	**	3	S24-05342-0	VANE PUMP CART. ASSY 3.56 CIPR	
	P	24/30	P	CCW	**		S24-05563-0		
	P	24/30	P	CW	**	4	S24-05509-0	VANE PUMP CART. ASSY 4.84 CIPR	
	P	24/30	P	CCW	**		S24-05510-0		
	P	24/30	P	CW	**	5	S24-63562-0	VANE PUMP CART. ASSY 5.42 CIPR	
	P	24/30	P	CCW	**		S24-44844-0		
	P	24/30	P	CW	**	6	S24-63563-0	VANE PUMP CART. ASSY 6.10 CIPR	
	P	24/30	P	CCW	**		S24-63564-0		
P	24/30	P	CW/CCW	**	X	S23-15102-0	BLANK		
E17	P	24/30	P	**	**	**	033-91564-0	PORT BLOCK	1

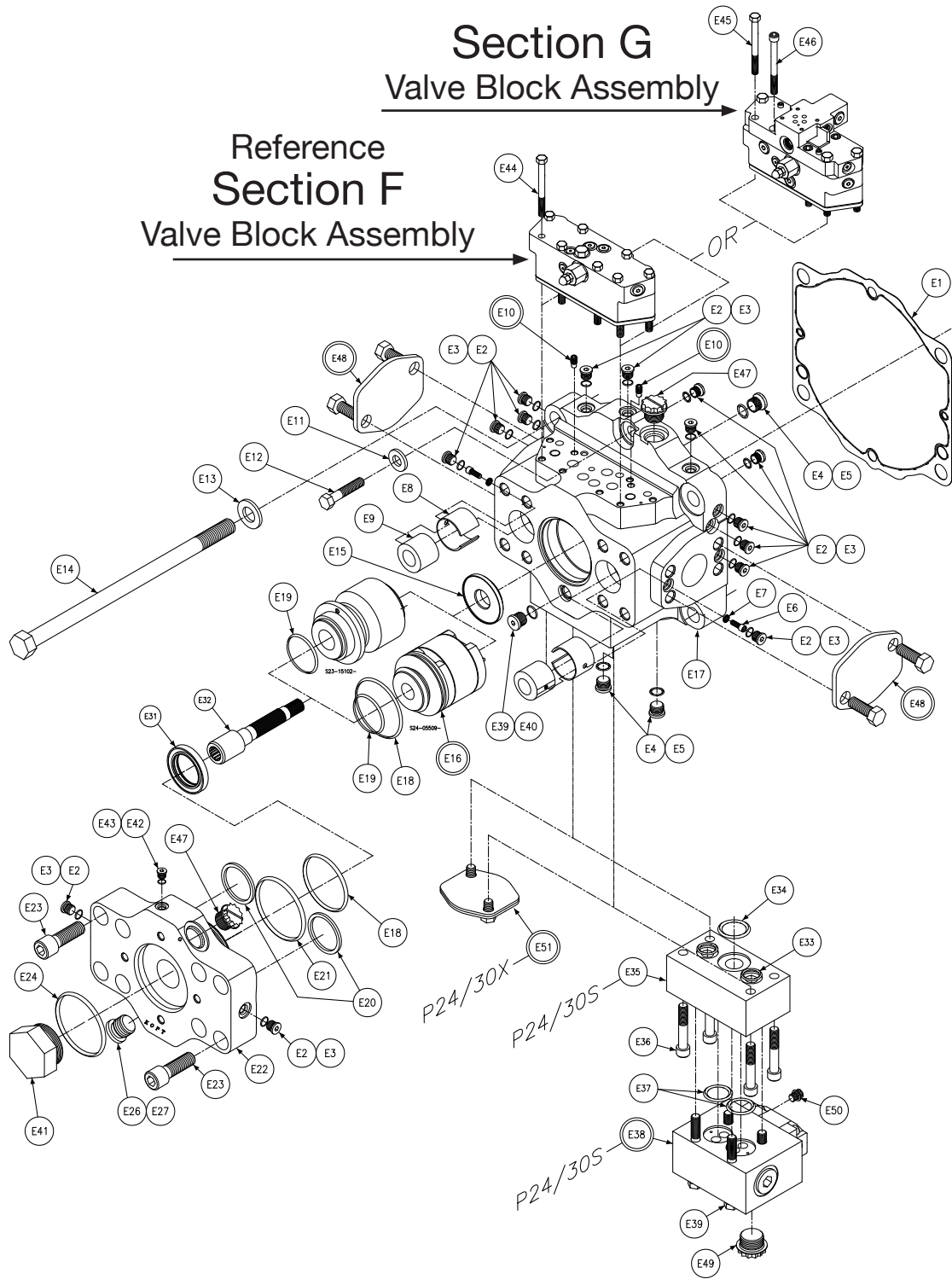
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Section View - E - Pump Type - P - Port Block Assembly

Section E P24/30 TYPE P PORT BLOCK									
Balloon #	Pump/Motor	Displacement	Type	Rotation	Seal Code	Internal Pump	Item #	Description	Qty
E18	P	24/30	P	**	1	0/1/2/3/4/5/6	691-00238-0	O RING	2
	P	24/30	P	**	4	0/1/2/3/4/5/6	694-00238-0		
	P	24/30	P	**	5	0/1/2/3/4/5/6	695-00238-0		
	P	24/30	P	**	1	X	671-00238-0		1
	P	24/30	P	**	4	X	674-00238-0		
	P	24/30	P	**	5	X	675-00238-0		
E19	P	24/30	P	**	1	0/1/2/3/4/5/6/X	691-10229-0	SQUARE O RING	1
	P	24/30	P	**	4	0/1/2/3/4/5/6/X	694-10229-0		
	P	24/30	P	**	5	0/1/2/3/4/5/6/X	695-10229-0		
E20	P	24/30	P	**	1	0/1/2/3/4/5/6/X	691-10228-0	SQUARE O RING	2
	P	24/30	P	**	4	0/1/2/3/4/5/6/X	694-10228-0		
	P	24/30	P	**	5	0/1/2/3/4/5/6/X	695-10228-0		
E21	P	24/30	P	**	1	0/1/2/3/4/5/6/X	671-00242-0	O RING	1
	P	24/30	P	**	4	0/1/2/3/4/5/6/X	674-00242-0		
	P	24/30	P	**	5	0/1/2/3/4/5/6/X	675-00242-0		
E22	P	24/30	P	**	**	0/1/2/3/4/5/6/X	033-91566-0	REAR COVER WITH -32 PORT	1
E23	P	24/30	P	**	**	0/1/2/3/4/5/6/X	358-26240-0	SCREW SHC ¾-10UNC x 2	8
E24	P	24/30	P	**	1	0/1/2/3/4/5/6/X	691-00932-0	O RING	1
	P	24/30	P	**	4	0/1/2/3/4/5/6/X	694-00932-0		
	P	24/30	P	**	5	0/1/2/3/4/5/6/X	695-00932-0		
E25	P	24/30	P	**	**	0/1/2/3/4/5/6/X	488-35059-0	HH PLUG 32P5N	1
E26	P	24/30	P	**	1	0/1/2/3/4/5/6/X	691-00916-0	O RING	1
	P	24/30	P	**	4	0/1/2/3/4/5/6/X	694-00916-0		
	P	24/30	P	**	5	0/1/2/3/4/5/6/X	695-00916-0		
E27	P	24/30	P	**	**	0/1/2/3/4/5/6/X	488-35024-0	PLUG 16 HP5N	1
E28	P	24/30	P	**	**	0/1/2/3/4/5/6/X	306-40242-0	SCREW HHC 3/8- 16UNC x 3-1/4	8
E29	P	24/30	P	**	**	0/1/2/3/4/5/6/X	306-40132-0	SCREW HHC 3/8-16 UNC x 4 1/4	4
E30	P	24/30	P	**	**	0/1/2/3/4/5/6/X	358-16360-0	SCREW SHC 3/8-16 UNC x 4	4
E31	P	24/30	P	**	**	0/1/2/3/4/5/6/X	449-00018-0	SHIPPING PLUG	2
E32	P	24/30	P	**	**	0/1/2/3/4/5/6/X	S13-09338-0	SHIPPING COVER ASSY	1
E33	P	24/30	P	**	**	0/1/2/3/4/5/6/X	S13-45080-0	SHIPPING COVER ASSY	2

Rear Cover Kit Composed of Items: E18, E20, E22, E23, E24, E25, E26, E27 & Part Number Auxiliary Shaft 033-57257-0 for P24 Type "P" Pumps E18, E20, E22, E23, E24, E25, E26, E27 & Part Number Auxiliary Shaft 033-91188-0 for P30 Type "P" Pumps				
Pump/Motor	Displacement	Type	Seal Code	Part Number
P	24	P	**	S23-15152-0
			1	S23-15182-0
			5	S23-15182-5
P	30	P	**	S23-15122-0
			1	S23-15122-0
			5	S23-15122-5



Section View - E - Pump Type - S & X - Port Block Assembly

Section E P24/30 TYPE X & S PORT BLOCK										
Balloon #	Pump/Motor	Displ.	Type	Rotation	Ext. Drive	Seal Code	Internal Pump	Item #	Description	Qty
E1	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	033-91085-0	PORT BLOCK GASKET	1
E2	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	488-35041-0	PLUG 6HP5N	15
E3	P	24/30	X/S	**	B/C/M	1	0/1/2/3/4/ 5/6/X	691-00906-0	O RING	15
	P	24/30	X/S	**	B/C/M	4	0/1/2/3/4/ 5/6/X	674-00906-0		
	P	24/30	X/S	**	B/C/M	5	0/1/2/3/4/ 5/6/X	695-00906-0		
E4	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	488-35018-0	PLUG 8HP5N	3
E5	P	24/30	X/S	**	B/C/M	1	0/1/2/3/4/ 5/6/X	691-00908-0	O RING	3
	P	24/30	X/S	**	B/C/M	4	0/1/2/3/4/ 5/6/X	694-00908-0		
	P	24/30	X/S	**	B/C/M	5	0/1/2/3/4/ 5/6/X	695-00908-0		
E6	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	359-11140-0	SCREW SHC	2
E7	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	350-10168-0	LOCKWASHER	2
E8	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	035-72355-0	RING CHECK	2
E9	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	033-94747-0	RING CHECK STOP	2
E10	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	S13-40266-0	CHECK VALVE	2
E11	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	350-10136-0	WASHER 5/8	2
E12	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	306-40008-0	SCREW HHC 5/8-11 UNC	2
E13	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	350-10135-0	WASHER 7/8	4
E14	P	24	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	306-40221-0	SCREW HHC 7/8- 9UNC x 13	4
	P	30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	306-40230-0	SCREW HHC 7/8- 9UNC x 14	
E15	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	033-91073-0	WASHER SEALING	1

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Section View - E - Pump Type - S & X - Port Block Assembly

Section E P24/30 TYPE X & S PORT BLOCK										
Balloon #	Pump/Motor	Displ.	Type	Rotation	Ext. Drive	Seal Code	Internal Pump	Item #	Description	Qty
E16	P	24/30	X/S	CW	B/C/M	**	0	S24-11918-0	VANE PUMP CART. ASSY 2.81 CIPR	1
	P	24/30	X/S	CCW	B/C/M	**		S24-05562-0		
	P	24/30	X/S	CW	B/C/M	**	1	S24-11789-0	VANE PUMP CART. ASSY 1.61 CIPR	
	P	24/30	X/S	CCW	B/C/M	**		S24-51206-0		
	P	24/30	X/S	CW	B/C/M	**	2	S24-11697-0	VANE PUMP CART. ASSY 1.05 CIPR	
	P	24/30	X/S	CCW	B/C/M	**		S24-11778-0		
	P	24/30	X/S	CW	B/C/M	**	3	S24-05342-0	VANE PUMP CART. ASSY 3.56 CIPR	
	P	24/30	X/S	CCW	B/C/M	**		S24-05563-0		
	P	24/30	X/S	CW	B/C/M	**	4	S24-05509-0	VANE PUMP CART. ASSY 4.84 CIPR	
	P	24/30	X/S	CCW	B/C/M	**		S24-05510-0		
	P	24/30	X/S	CW	B/C/M	**	5	S24-63562-0	VANE PUMP CART. ASSY 5.42 CIPR	
	P	24/30	X/S	CCW	B/C/M	**		S24-44844-0		
	P	24/30	X/S	CW	B/C/M	**	6	S24-63563-0	VANE PUMP CART. ASSY 6.10 CIPR	
	P	24/30	X/S	CCW	B/C/M	**		S24-63564-0		
P	24/30	X/S	CW/CCW	B/C/M	**	X	S23-15102-0	BLANK		
E17	P	24/30	S	**	B/C/M	**	0/1/2/3/4/5/6/X	033-91604-0	PORT BLOCK	1
	P	24/30		**	B/C/M	**	0/1/2/3/4/5/6/X	033-91564-0		
E18	P	24/30	X/S	**	B/C/M	1	0/1/2/3/4/5/6	691-00238-0	O RING	2
	P	24/30	X/S	**	B/C/M	4	0/1/2/3/4/5/6	694-00238-0		
	P	24/30	X/S	**	B/C/M	5	0/1/2/3/4/5/6/	695-00238-0		
	P	24/30	X/S	**	B/C/M	1	X	671-00238-0		1
	P	24/30	X/S	**	B/C/M	4	X	674-00238-0		
	P	24/30	X/S	**	B/C/M	5	X	675-00238-0		
E19	P	24/30	X/S	**	B/C/M	1	0/1/2/3/4/5/6/X	691-10229-0	SQUARE O RING	1
	P	24/30	X/S	**	B/C/M	4	0/1/2/3/4/5/6/X	694-10229-0		
	P	24/30	X/S	**	B/C/M	5	0/1/2/3/4/5/6/X	695-10229-0		

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Section View - E - Pump Type - S & X - Port Block Assembly

Section E P24/30 TYPE X & S PORT BLOCK										
Balloon #	Pump/Motor	Displ.	Type	Rotation	Ext. Drive	Seal Code	Internal Pump	Item #	Description	Qty
E20	P	24/30	X/S	**	B/C/M	1	0/1/2/3/4/5/6/X	691-10228-0	SQUARE O RING	2
	P	24/30	X/S	**	B/C/M	4	0/1/2/3/4/5/6/X	694-10228-0		
	P	24/30	X/S	**	B/C/M	5	0/1/2/3/4/5/6/X	695-10228-0		
E21	P	24/30	X/S	**	B/C/M	1	0/1/2/3/4/5/6/X	671-00242-0	O RING	1
	P	24/30	X/S	**	B/C/M	4	0/1/2/3/4/5/6/X	674-00242-0		
	P	24/30	X/S	**	B/C/M	5	0/1/2/3/4/5/6/X	675-00242-0		
E22	P	24/30	X/S	**	B	**	0/1/2/3/4/5/6/X	033-91605-0	COVER WITH SAE-B AUX. MTG	1
	P	24/30	X/S	**	C	**	0/1/2/3/4/5/6/X	033-91624-0	COVER WITH SAE-C AUX. MTG	
	P	24/30	X/S	**	M	**	0/1/2/3/4/5/6/X	033-91566-0	COVER WITH -32 PORT	
E23	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/5/6/X	358-26240-0	SCREW SHC 3/4-10 UNC x 2	8
E24	P	24/30	X/S	**	B	1	0/1/2/3/4/5/6/X	671-00155-0	O RING	1
	P	24/30	X/S	**	B	4	0/1/2/3/4/5/6/X	674-00155-0		
	P	24/30	X/S	**	B	5	0/1/2/3/4/5/6/X	675-00155-0		
	P	24/30	X/S	**	C	1	0/1/2/3/4/5/6/X	671-00159-0		
	P	24/30	X/S	**	C	4	0/1/2/3/4/5/6/X	674-00159-0		
	P	24/30	X/S	**	C	5	0/1/2/3/4/5/6/X	675-00159-0		
	P	24/30	X/S	**	M	1	0/1/2/3/4/5/6/X	691-00932-0		
	P	24/30	X/S	**	M	4	0/1/2/3/4/5/6/X	674-00932-0		
	P	24/30	X/S	**	M	5	0/1/2/3/4/5/6/X	695-00932-0		
E26	P	24/30	X/S	**	B/C/M	1	0/1/2/3/4/5/6/X	691-00916-0	O RING	1
	P	24/30	X/S	**	B/C/M	4	0/1/2/3/4/5/6/X	694-00916-0		
	P	24/30	X/S	**	B/C/M	5	0/1/2/3/4/5/6/X	695-00916-0		

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Section View - E - Pump Type - S & X - Port Block Assembly

Section E P24/30 TYPE X & S PORT BLOCK										
Balloon #	Pump/Motor	Displ.	Type	Rotation	Ext. Drive	Seal Code	Internal Pump	Item #	Description	Qty
E27	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	488-35024-0	PLUG 16 HP5N	1
E31	P	24/30	X/S	**	B	**	0/1/2/3/4/ 5/6/X	620-82066-0	LIP SEAL	1
	P	24/30	X/S	**	C	**	0/1/2/3/4/ 5/6/X	620-82069-0		
E32	P	24/30	X/S	**	B	**	0/1/2/3/4/ 5/6/X	033-93537-0	COUPLING	1
	P	24/30	X/S	**	C	**	0/1/2/3/4/ 5/6/X	033-93538-0		
E33	P	24/30	S	**	B/C/M	1	0/1/2/3/4/ 5/6/X	691-10214-0	SQUARE O RING	2
	P	24/30	S	**	B/C/M	4	0/1/2/3/4/ 5/6/X	694-10214-0		
	P	24/30	S	**	B/C/M	5	0/1/2/3/4/ 5/6/X	695-10214-0		
E34	P	24/30	S	**	B/C/M	1	0/1/2/3/4/ 5/6/X	671-00223-0	O RING	1
	P	24/30	S	**	B/C/M	4	0/1/2/3/4/ 5/6/X	674-00223-0		
	P	24/30	S	**	B/C/M	5	0/1/2/3/4/ 5/6/X	675-00223-0		
E35	P	24/30	S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	033-57188-0	ADAPTER SHUTTLE	1
E36	P	24/30	S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	358-20280-0	SCREW SHC 1/2-13 UNC x 2 1/2	4
E37	P	24/30	S	**	B/C/M	1	0/1/2/3/4/ 5/6/X	691-10221-0	SQUARE O RING	2
	P	24/30	S	**	B/C/M	4	0/1/2/3/4/ 5/6/X	694-10221-0		
	P	24/30	S	**	B/C/M	5	0/1/2/3/4/ 5/6/X	695-10221-0		
E38	P	24/30	S	**	B/C/M	1	0/1/2/3/4/ 5/6/X	080030100001	SHUTTLE EXTERNAL PILOT DR.	1
	P	24/30	S	**	B/C/M	5	0/1/2/3/4/ 5/6/X	080030100002		
E39	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/ 5/6/X	488-35041-0	PLUG 6HP5N	1
E40	P	24/30	X/S	**	B/C/M	1	0/1/2/3/4/ 5/6/X	691-00906-0	O RING	1
	P	24/30	X/S	**	B/C/M	4	0/1/2/3/4/ 5/6/X	674-00906-0		
	P	24/30	X/S	**	B/C/M	5	0/1/2/3/4/ 5/6/X	695-00906-0		

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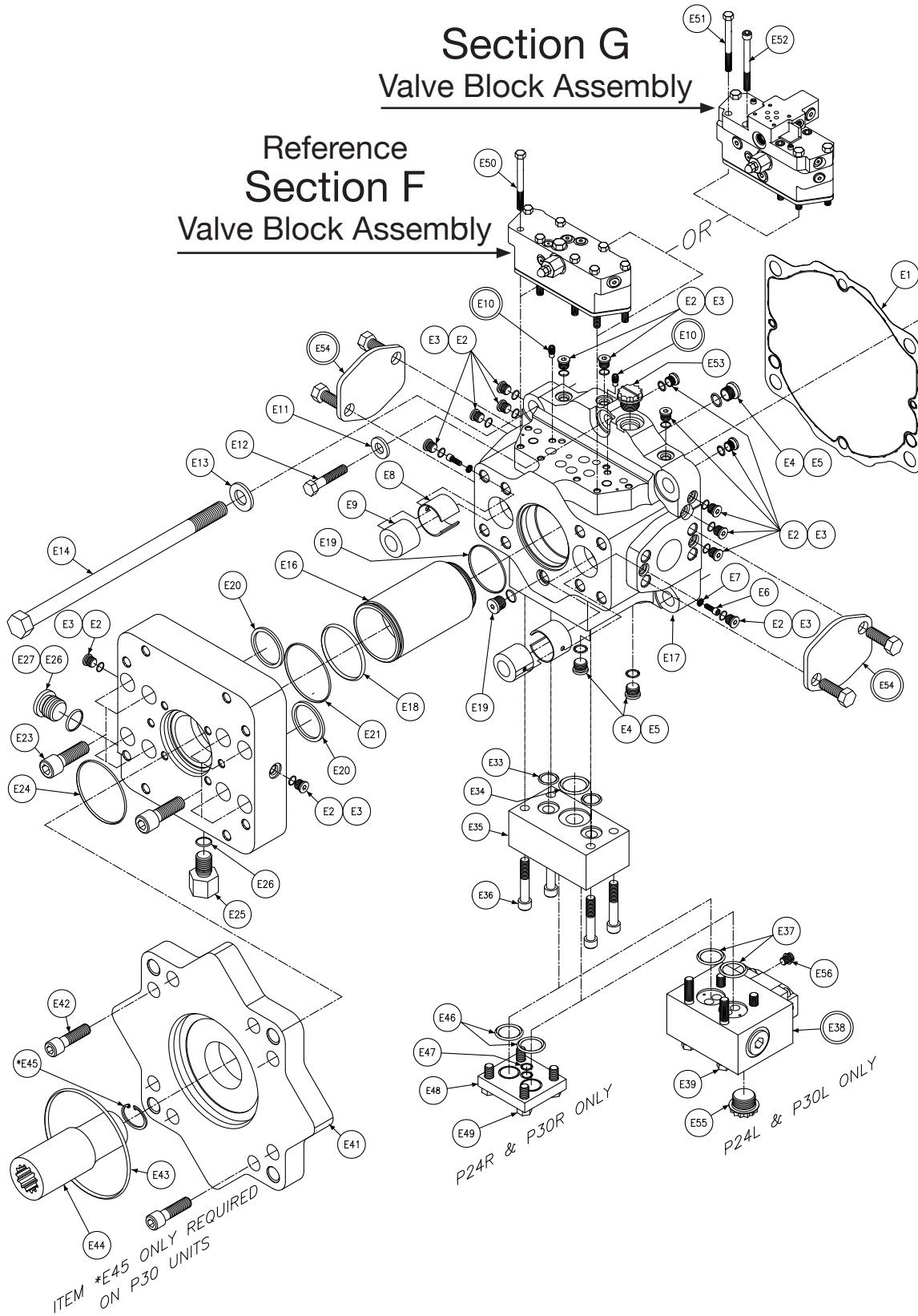


Section View - E - Pump Type – S & X - Port Block Assembly

Section E P24/30 TYPE X & S PORT BLOCK										
Balloon #	Pump/Motor	Displ.	Type	Rotation	Ext. Drive	Seal Code	Internal Pump	Item #	Description	Qty
E41	P	24/30	X/S	**	M	**	0/1/2/3/4/5/6/X	488-35059-0	HEX HEAD PLUG 32P5N	1
E42	P	24/30	X/S	**	B/C/M	5	0/1/2/3/4/5/6/X	488-35001-0	PLUG 4 HP5N	
E43	P	24/30	X/S	**	B/C/M	1	0/1/2/3/4/5/6/X	691-00904-0	O RING	1
	P	24/30	X/S	**	B/C/M	4	0/1/2/3/4/5/6/X	694-00904-0		
	P	24/30	X/S	**	B/C/M	5	0/1/2/3/4/5/6/X	695-00904-0		
E44	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/5/6/X	306-40242-0	SCREW HHC 3/8-16 UNC x 3-1/4	8
E45	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/5/6/X	306-40132-0	SCREW HHC 3/8-16 UNC x 4 1/4	4
E46	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/5/6/X	358-16360-0	SCREW SHC 3/8-16 UNC x 4	4
E47	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/5/6/X	449-00018-0	SHIPPING PLUG	2
E48	P	24/30	X/S	**	B/C/M	**	0/1/2/3/4/5/6/X	S13-45080-0	SHIPPING COVER ASSY	2
E49	P24/30		S	**	B/C/M	**	0/1/2/3/4/5/6/X	449-00019-0	SHIPPING PLUG	1
E50	P24/30		S	**	B/C/M	**	0/1/2/3/4/5/6/X	449-00013-0	SHIPPING PLUG	1
E51	P24/30		X	**	B/C/M	**	0/1/2/3/4/5/6/X	S13-09338-0	SHIPPING ED COVER ASSY	1

Rear Cover Kit Composed of Items:					
E18, E20, E22 thru E27, E31, E32, E42, E43 & Part Number Auxiliary Shaft 033-93535-0 for P24 Type "X" or "S" Pumps					
E18, E20, E22 thru E27, E31, E32, E42, E43 & Part Number Auxiliary Shaft 033-93536-0 for P30 Type "X" or "S" Pumps					
Pump/Motor	Displacement	Type	Seal Code	Part Number	Description
P	24	X/S	**	S23-15183-0	SAE-B EXT MOUNT
			1	S23-15183-0	
			5	S23-15183-5	
P	24	X/S	**	S23-17172-0	SAE-C EXT MOUNT
			1	S23-17172-0	
			5	S23-17172-5	
P	30	X/S	**	S23-15125-0	SAE-B EXT MOUNT
			1	S23-15125-0	
			5	S23-15125-5	
P	30	X/S	**	S23-17546-0	SAE-C EXT MOUNT
			1	S23-17546-0	
			5	S23-17546-5	





Section View - E - Pump Type - R & L - Port Block Assembly

Section E P24/30 TYPE R & L PORT BLOCK								
Balloon #	Pump/Motor	Displacement	Type	Ext. Drive	Seal Code	Item #	Description	Qty
E1	P	24/30	R/L	M/B/C/D/E/F	**	033-91085-0	PORT BLOCK GASKET	1
E2	P	24/30	R/L	M/B/C/D/E/F	**	488-35041-0	PLUG 6HP5N	15
E3	P	24/30	R/L	M/B/C/D/E/F	1	691-00906-0	O RING	15
					4	674-00906-0		
					5	695-00906-0		
E4	P	24/30	R/L	M/B/C/D/E/F	**	488-35018-0	PLUG 8HP5N	3
E5	P	24/30	R/L	M/B/C/D/E/F	1	691-00908-0	O RING	3
					4	694-00908-0		
					5	695-00908-0		
E6	P	24/30	R/L	M/B/C/D/E/F	**	359-11140-0	SCREW SHC	2
E7	P	24/30	R/L	M/B/C/D/E/F	**	350-10168-0	LOCKWASHER	2
E8	P	24/30	R/L	M/B/C/D/E/F	**	035-72355-0	RING CHECK	2
E9	P	24/30	R/L	M/B/C/D/E/F	**	033-94747-0	RING CHECK STOP	2
E10	P	24/30	R/L	M/B/C/D/E/F	**	S13-40266-0	CHECK VALVE	2
E11	P	24/30	R/L	M/B/C/D/E/F	**	350-10136-0	WASHER 5/8	2
E12	P	24/30	R/L	M/B/C/D/E/F	**	306-40008-0	SCREW HHC 5/8-11UNC	2
E13	P	24/30	R/L	M/B/C/D/E/F	**	350-10135-0	WASHER 7/8	4
E14	P	24	R/L	M/B/C/D/E/F	**	306-40221-0	SCREW HHC 7/8-9UNC x 13	4
		30				306-40230-0	SCREW HHC 7/8-9UNC x 14	
E16	P	24/30	R/L	M/B/C/D/E/F	**	033-92816-0	SLEEVE REPLEN ISOLATION	1
E17	P	24/30	R/L	M/B/C/D/E/F	**	033-91604-0	PORT BLOCK	1
E18	P	24/30	R/L	M/B/C/D/E/F	1	691-00238-0	O RING	1
					4	694-00238-0		
					5	695-00238-0		
E19	P	24/30	R/L	M/B/C/D/E/F	1	671-00122-0	O RING	1
					4	674-00122-0		
					5	675-00122-0		
E20	P	24/30	R/L	M/B/C/D/E/F	1	691-10228-0	SQUARE O RING	2
					4	694-10228-0		
					5	695-10228-0		
E21	P	24/30	R/L	M/B/C/D/E/F	1	671-00242-0	O RING	1
					4	674-00242-0		
					5	675-00242-0		

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Section View - E - Pump Type - R & L - Port Block Assembly

Section E P24/30 TYPE R & L PORT BLOCK								
Balloon #	Pump/Motor	Displacement	Type	Ext. Drive	Seal Code	Item #	Description	Qty
E22	P	24/30	R/L	M/B/C/D/E/F	**	033-92814-0	COVER WITH SAE-B AUX. MTG	1
E23	P	24/30	R/L	M/B/C/D/E/F	**	358-26280-0	SCREW SHC 3/4-10UNC x 2 1/2	8
E24	P	24/30	R/L	M/B/C/D/E/F	1	671-00155-0	O RING	1
					4	674-00155-0		
					5	675-00155-0		
E25	P	24/30	R/L	M/B/C/D/E/F	**	033-93464-0	PLUG SPECIAL	1
E26	P	24/30	R/L	M/B/C/D/E/F	1	691-00916-0	O RING	2
					4	694-00916-0		
					5	695-00916-0		
E27	P	24/30	R/L	M/B/C/D/E/F	**	488-35024-0	PLUG 16 HP5N	1
E33	P	24/30	R/L	M/B/C/D/E/F	1	691-10214-0	SQUARE O RING	2
					4	694-10214-0		
					5	695-10214-0		
E34	P	24/30	R/L	M/B/C/D/E/F	1	671-00223-0	O RING	1
					4	674-00223-0		
					5	675-00223-0		
E35	P	24/30	R/L	M/B/C/D/E/F	**	033-57188-0	ADAPTER SHUTTLE	1
E36	P	24/30	R/L	M/B/C/D/E/F	**	358-20280-0	SCREW SHC 1/2-13UNC x 2 1/2 SQUARE O RING	4 2
E37	P	24/30	R/L	M/B/C/D/E/F	1	691-10221-0		
					4	694-10221-0		
					5	695-10221-0		
E38	P	24/30	L	M/B/C/D/E/F	1	080030100001	SHUTTLE EXTERNAL PILOT DR.	1
	P	24/30	L		5	080030100002		
E41	P	24/30	R/L	M	**	P2-075-1009-03	BLANKING PLATE	1
				C	**	033-92827-0	ADAPTOR REAR SAE-C EXT MOUNT	
				D	**	033-92828-0	ADAPTOR REAR SAE-D EXT MOUNT	
				E	**	033-92823-0	ADAPTOR REAR SAE-E EXT MOUNT	
				F	**	033-92824-0	ADAPTOR REAR SAE-F EXT MOUNT	
E42	P	24/30	R/L	M	**	306-40077-0	SCREW HHC 1/2-13 UNC x 1 3/4	2
				C/D/E/F	**	358-24240-0	SCREW SHC 5/8-11UNC x 2	4

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Section View - E - Pump Type - R & L - Port Block Assembly

Section E P24/30 TYPE R & L PORT BLOCK								
Balloon #	Pump/Motor	Displacement	Type	Ext. Drive	Seal Code	Item #	Description	Qty
E43	P	24/30	R/L	M	1	691-00920-0	O RING BLANKING PLATE	1
					4	694-00920-0		
					5	695-00920-0		
				C	1	671-00159-0	O RING SAE-C EXT MOUNT	
					4	674-00159-0		
					5	675-00159-0		
				D	1	671-00163-0	O RING SAE-D EXT MOUNT	
					4	674-00163-0		
					5	675-00163-0		
				E	1	671-00165-0	O RING SAE-E EXT MOUNT	
					4	674-00165-0		
					5	675-00165-0		
				F	1	671-00262-0	O RING SAE-F EXT MOUNT	
					4	674-00262-0		
					5	675-00262-0		
E44	P	24/30	R/L	M	**	488-35019-0	PLUG	1
				B	**	033-92834-0	COUPLING REAR SAE-B EXT MOUNT	
				C	**	033-92835-0	COUPLING REAR SAE-C EXT MOUNT	
				D	**	033-92836-0	COUPLING REAR SAE-D EXT MOUNT	
				E	**	033-92836-0	COUPLING REAR SAE-E EXT MOUNT	
				F	**	033-92778-0	COUPLING REAR SAE-F EXT MOUNT	
E45	P	30	R/L	B	**	356-30156-0	RET RING CPLG SAE-B EXT MOUNT	1
				C	**		RET RING CPLG SAE-C EXT MOUNT	
				D	**		RET RING CPLG SAE-D EXT MOUNT	
				E	**		RET RING CPLG SAE-E EXT MOUNT	
				F	**		RET RING CPLG SAE-F EXT MOUNT	
E46	P	24/30	R	M/B/C/D/E/F	1	691-00024-0	O RING	2
					4	694-00024-0		
					5	695-00024-0		

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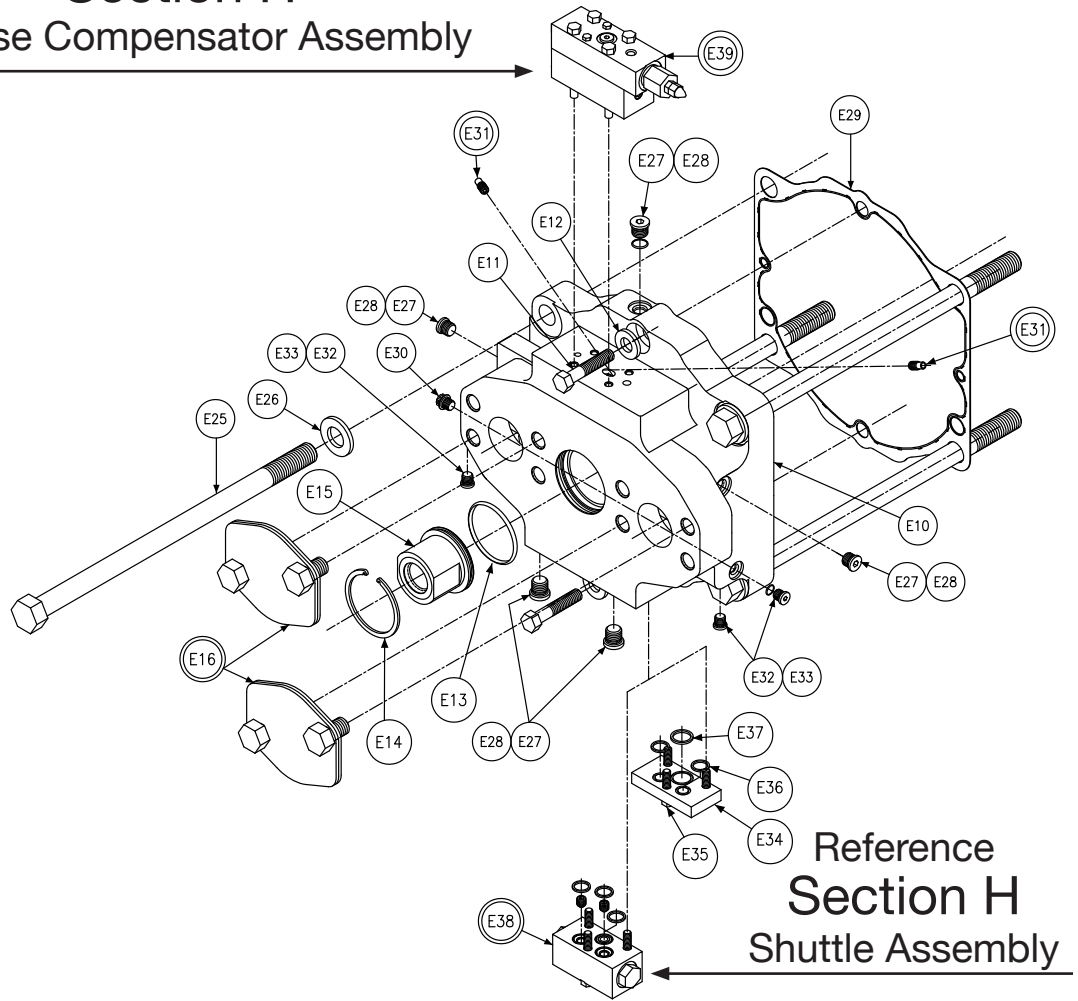
Section View - E - Pump Type - R & L - Port Block Assembly

Section E P24/30 TYPE R & L PORT BLOCK								
Balloon #	Pump/Motor	Displacement	Type	Ext. Drive	Seal Code	Item #	Description	Qty
E47	P	24/30	R	M/B/C/D/E/F	1	691-00015-0	O RING	1
					4	694-00015-0		
					5	695-00015-0		
E48	P	24/30	R	M/B/C/D/E/F	**	033-57642-0	COVER SHUTTLE PAD	1
E49	P	24/30	R	M/B/C/D/E/F	**	306-40080-0	SCREW HHC 1/2-13UNC x 1 1/4	4
E50	P	24/30	R/L	M/B/C/D/E/F	**	306-40242-0	SCREW HHC 3/8-16UNC x 3-1/4	8
E51	P	24/30	R/L	M/B/C/D/E/F	**	306-40132-0	SCREW HHC 3/8-16 UNC x 4 1/4	4
E52	P	24/30	R/L	M/B/C/D/E/F	**	358-16360-0	SCREW SHC 3/8-16 UNC x 4	4
E53	P	24/30	R/L	M/B/C/D/E/F	**	449-00018-0	SHIPPING PLUG	1
E54	P	24/30	R/L	M/B/C/D/E/F	**	S13-45080-0	SHIPPING COVER ASSY	2
E55	P	24/30	L	M/B/C/D/E/F	**	449-00019-0	SHIPPING PLUG	1
E56	P	24/30	L	M/B/C/D/E/F	**	449-00013-0	SHIPPING PLUG	1

Kit Rear Adaptor Mounting Composed of Items: E41, E42, E43 & E44 for P24 Type Pumps E41, E42, E43, E44 & E45 for P30 Type Pumps					
Pump/Motor	Displacement	Type	Seal Code	Part Number	Description
P	24/30	R/L	1	S23-19371-0	"M" BLANKING PLATE
			5	S23-19371-5	
P	24	R/L	1	S23-16340-0	SAE-C EXT MOUNT
			5	S23-16340-5	
			1	S23-16341-0	SAE-D EXT MOUNT
			5	S23-16341-5	
			1	S23-16342-0	SAE-E EXT MOUNT
			5	S23-16342-5	
			1	S23-16343-0	SAE-F EXT MOUNT
			5	S23-16343-5	
P	30	R/L	1	S23-16351-0	SAE-C EXT MOUNT
			5	S23-16351-5	
			1	S23-16352-0	SAE-D EXT MOUNT
			5	S23-16352-5	
			1	S23-16353-0	SAE-E EXT MOUNT
			5	S23-16353-5	
			1	S23-16354-0	SAE-F EXT MOUNT
			5	S23-16354-5	

Kit Shuttle Assembly Composed of Items: E37, E38 & E39 for P24/30L Type Pumps Composed of Items: E46, E47, E48 & E49 for P24/30R Type Pumps					
Pump/Motor	Displacement	Type	Seal Code	Part Number	Description
P	24/30	L	1	080030100001	Shuttle EXT Pilot Drain
			5	080030100002	
P	24/30	R	1	S23-11843-0	SHUTLE PAD COVER
			5	S23-11843-5	

Reference
Section H
Reverse Compensator Assembly

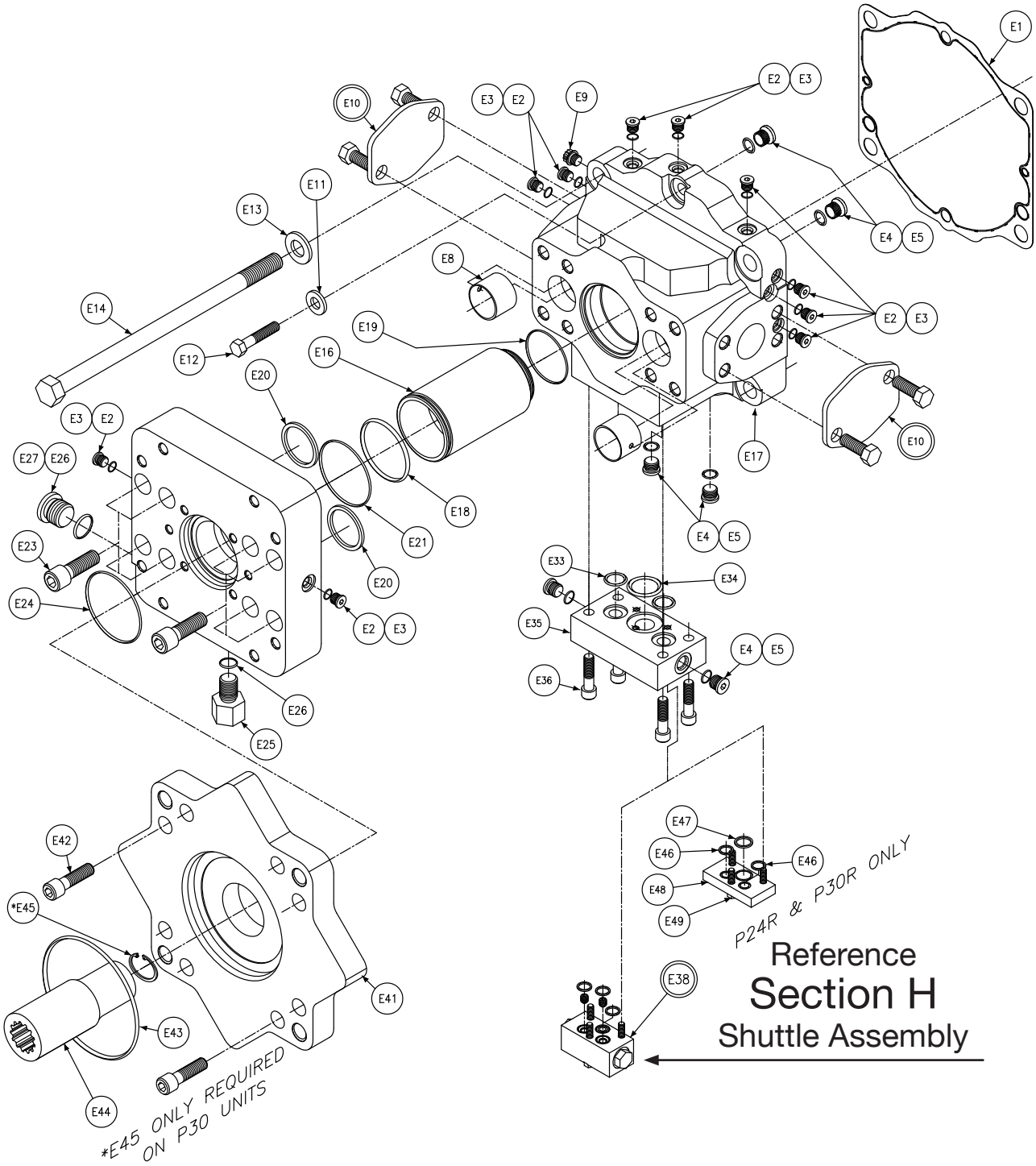


Reference
Section H
Shuttle Assembly

Section View - E - Motor Type - H & V - Port Block Assembly

Section E M24/30 H & V Port Block								
Balloon #	Pump/Motor	Displ.	Type	Secondary Control	Seal Code	Item #	Description	Qty
E10	M	24/30	H/V	0/6/7/8/U/V/W/X/Y/Z	**	033-57920-0	PORT BLOCK	1
	M	24/30	H/V	3/5	**	033-91215-0	REV COMP PORT BLK	
E11	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	306-40022-0	SCREW, HHC 5/8-11 UNC x 2 1/2	2
E12	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	350-10136-0	WASHER	2
E13	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	1	671-00147-0	O RING	1
	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	4	674-00147-0		
	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	5	675-00147-0		
E14	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	356-65082-0	SNAP RING	1
E15	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	033-72100-0	END COVER	1
E16	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	S13-45080-0	SHIPPING COVER ASSY	2
E25	M	24	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	306-40221-0	SCREW HHC 7/8-9UNC x 13	4
	M	30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	306-40230-0	SCREW, HHC 7/8-9 UNC x 14	
E26	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	350-10135-0	WASHER	4
E27	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	488-35041-0	PLUG	4
E28	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	1	691-00906-0	O RING	4
	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	4	674-00906-0		
	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	5	695-00906-0		
E29	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	033-91085-0	GASKET	1
E30	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	449-00013-0	SHIPPING PLUG	1
E31	M	24/30	H/V	3/5	**	S13-40266-0	CHECK VALVE	2
E32	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	488-35001-0	PLUG	3
E33	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	1	691-00904-0	O RING	3
	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	4	674-00904-0		
	M	24/30	H/V	0/3/5/6/7/8/U/V/W/X/Y/Z	5	695-00904-0		
E34	M	24/30	V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	033-71649-0	COVER PLATE	1
E35	M	24/30	V	0/3/5/6/7/8/U/V/W/X/Y/Z	**	306-40071-0	SCREW, HHC 5/16-18 UNC x 1	3
E36	M	24/30	V	0/3/5/6/7/8/U/V/W/X/Y/Z	1	691-10014-0	GASKET	2
	M	24/30	V	0/3/5/6/7/8/U/V/W/X/Y/Z	4	674-00014-0		
	M	24/30	V	0/3/5/6/7/8/U/V/W/X/Y/Z	5	695-10014-0		
E37	M	24/30	V	0/3/5/6/7/8/U/V/W/X/Y/Z	1	691-10019-0	GASKET	1
	M	24/30	V	0/3/5/6/7/8/U/V/W/X/Y/Z	4	674-00019-0		
	M	24/30	V	0/3/5/6/7/8/U/V/W/X/Y/Z	5	695-10019-0		
E38	M	24/30	H	0/3/5/6/7/8/U/V/W/X/Y/Z	**	SEE SECTION H	SHUTTLE WITHOUT ORIFICES	1
	M	24/30	H	0/3/5/6/7/8/U/V/W/X/Y/Z	**		SHUTTLE WITH ORIFICES	
E39	M	24/30	H/V	3/5	**	SEE SECTION H	COMPENSATOR REV PRESS	1





Section View - E - Motor Type - R & L - Port Block Assembly

Section E M24/30 TYPE R & L PORT BLOCK								
Balloon #	Pump/Motor	Displacement	Type	Ext. Drive	Seal Code	Item #	Description	Qty
E1	M	24/30	R/L	B/C/D/E/F	**	033-91085-0	PORT BLOCK GASKET	1
E2	M	24/30	R/L	B/C/D/E/F	**	488-35041-0	PLUG 6HP5N	13
E3	M	24/30	R/L	B/C/D/E/F	1	691-00906-0	O RING	13
					4	674-00906-0		
					5	695-00906-0		
E4	M	24/30	R/L	B/C/D/E/F	**	488-35018-0	PLUG 8HP5N	6
E5	M	24/30	R/L	B/C/D/E/F	1	691-00908-0	O RING	6
					4	694-00908-0		
					5	695-00908-0		
E8	M	24/30	R/L	B/C/D/E/F	**	033-93313-0	SOLID RING CHECK	2
E9	M	24/30	R/L	B/C/D/E/F	**	449-00015-0	SHIPPING PLUG	1
E10	M	24/30	R/L	B/C/D/E/F	**	S13-45080-0	SHIPPING COVER ASSY	2
E11	M	24/30	R/L	B/C/D/E/F	**	350-10136-0	WASHER 5/8	2
E12	M	24/30	R/L	B/C/D/E/F	**	306-40008-0	SCREW, HHC 5/8-11 x 2-1/4	2
E13	M	24/30	R/L	B/C/D/E/F	**	350-10135-0	WASHER 7/8	4
E14	M	24	R/L	B/C/D/E/F	**	306-40221-0	SCREW HHC 7/8-9UNC x 13	4
	M	30	R/L			306-40230-0	SCREW HHC 7/8-9UNC x 14	
E16	P	24/0	R/ L	B/C/D/E/F	**	033-92816-0	SLEEVE REPLEN ISOLATION	1
E17	P	24/30	R/ L	B/C/D/E/F	**	033-93657-0	PORT BLOCK	1
E18	M	24/30	R/L	B/C/D/E/F	1	691-00238-0	O RING	1
					4	694-00238-0		
					5	695-00238-0		
E19	M	24/30	R/L	B/C/D/E/F	1	671-00233-0	O RING	1
					4	674-00233-0		
					5	675-00233-0		
E20	M	24/30	R/L	B/C/D/E/F	1	691-10228-0	SQUARE O RING	2
					4	694-10228-0		
					5	695-10228-0		
E21	M	24/30	R/L	B/C/D/E/F	1	671-00242-0	O RING	1
					4	674-00242-0		
					5	675-00242-0		

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Section View - E - Motor Type - R & L - Port Block Assembly

Section E M24/30 TYPE R & L PORT BLOCK								
Balloon #	Pump/Motor	Displacement	Type	Ext. Drive	Seal Code	Item #	Description	Qty
E22	M	24/30	R/L	B/C/D/E/F	**	033-92814-0	COVER WITH SAE-B AUX. MTG	1
E23	M	24/30	R/L	B/C/D/E/F	**	358-26280-0	SCREW SHC 3/4-10 UNC x 2 1/2	8
E24	M	24/30	R/L	B/C/D/E/F	1	671-00155-0	O RING	1
					4	674-00155-0		
					5	675-00155-0		
E25	M	24/30	R/L	B/C/D/E/F	**	033-93464-0	PLUG SPECIAL	1
E26	M	24/30	R/L	B/C/D/E/F	1	691-00916-0	O RING	2
					4	694-00916-0		
					5	695-00916-0		
E27	M	24/30	R/L	B/C/D/E/F	**	488-35024-0	PLUG 16 HP5N	1
E33	M	24/30	R/L	B/C/D/E/F	1	691-00214-0	O RING	2
					4	694-00214-0		
					5	695-00214-0		
E34	M	24/30	R/L	B/C/D/E/F	1	691-00223-0	O RING	1
					4	694-00223-0		
					5	695-00223-0		
E35	M	24/30	R/L	B/C/D/E/F	**	033-93830-0	ADAPTER SHUTTLE	1
E36	M	24/30	R/L	B/C/D/E/F	**	358-20220-0	SCREW, SHC 1/2-13 UNC X 1 3/4	4
E38	M	24/30	L	B/C/D/E/F	**	See Kit P/N Below	SHUTTLE VALVE, NO ORIFICES	1
					**	See Kit P/N Below	SHUTTLE VALVE, WITH ORIFICES	
E41	M	24/30	R/L	C	**	033-92827-0	ADAPTOR REAR SAE-C EXT MOUNT	1
				D	**	033-92828-0	ADAPTOR REAR SAE-D EXT MOUNT	
				E	**	033-92823-0	ADAPTOR REAR SAE-E EXT MOUNT	
				F	**	033-92824-0	ADAPTOR REAR SAE-F EXT MOUNT	
E42	M	24/30	R/L	C/D/E/F	**	358-24240-0	SCREW SHC 5/8-11 UNC x 2	4

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Section View - E - Motor Type - R & L - Port Block Assembly

Section E M24/30 TYPE R & L PORT BLOCK								
Balloon #	Pump/Motor	Displacement	Type	Ext. Drive	Seal Code	Item #	Description	Qty
E43	M	24/30	R/L	C	1	671-00159-0	O RING SAE-C EXT MOUNT	1
				C	4	674-00159-0		
				C	5	675-00159-0		
				D	1	671-00163-0	O RING SAE-D EXT MOUNT	
				D	4	674-00163-0		
				D	5	675-00163-0		
				E	1	671-00165-0	O RING SAE-E EXT MOUNT	
				E	4	674-00165-0		
				E	5	675-00165-0		
				F	1	671-00262-0	O RING SAE-F EXT MOUNT	
				F	4	674-00262-0		
				F	5	675-00262-0		
E44	M	24/30	R/L	B	**	033-92834-0	COUPLING REAR SAE-B EXT MOUNT	1
				C	**	033-92835-0	COUPLING REAR SAE-C EXT MOUNT	
				D	**	033-92836-0	COUPLING REAR SAE-D EXT MOUNT	
				E	**	033-92836-0	COUPLING REAR SAE-E EXT MOUNT	
				F	**	033-92778-0	COUPLING REAR SAE-F EXT MOUNT	
E45	M	30	R/L	B	**	356-30156-0	RETAINING RING CPLG SAE-B EXT MOUNT	1
				C	**		RETAINING RING CPLG SAE-C EXT MOUNT	
				D	**		RETAINING RING CPLG SAE-D EXT MOUNT	
				E	**		RETAINING RING CPLG SAE-E EXT MOUNT	
				F	**		RETAINING RING CPLG SAE-F EXT MOUNT	

Continued on next page.



Section View - E - Motor Type - R & L - Port Block Assembly

Section E M24/30 TYPE R & L PORT BLOCK								
Balloon #	Pump/Motor	Displacement	Type	Ext. Drive	Seal Code	Item #	Description	Qty
E46	M	24/30	R	B/C/D/E/F	1	691-10014-0	SQUARE O RING	2
					4	674-00014-0		
					5	695-10014-0		
E47	M	24/30	R	B/C/D/E/F	1	691-10019-0	SQUARE O RING	1
					4	674-00019-0		
					5	695-10019-0		
E48	M	24/30	R	B/C/D/E/F	**	033-71649-0	COVER SHUTTLE PAD	1
E49	M	24/30	R	B/C/D/E/F	**	306-40071-0	SCREW, HHC 5/16-18 UNC x 1	3

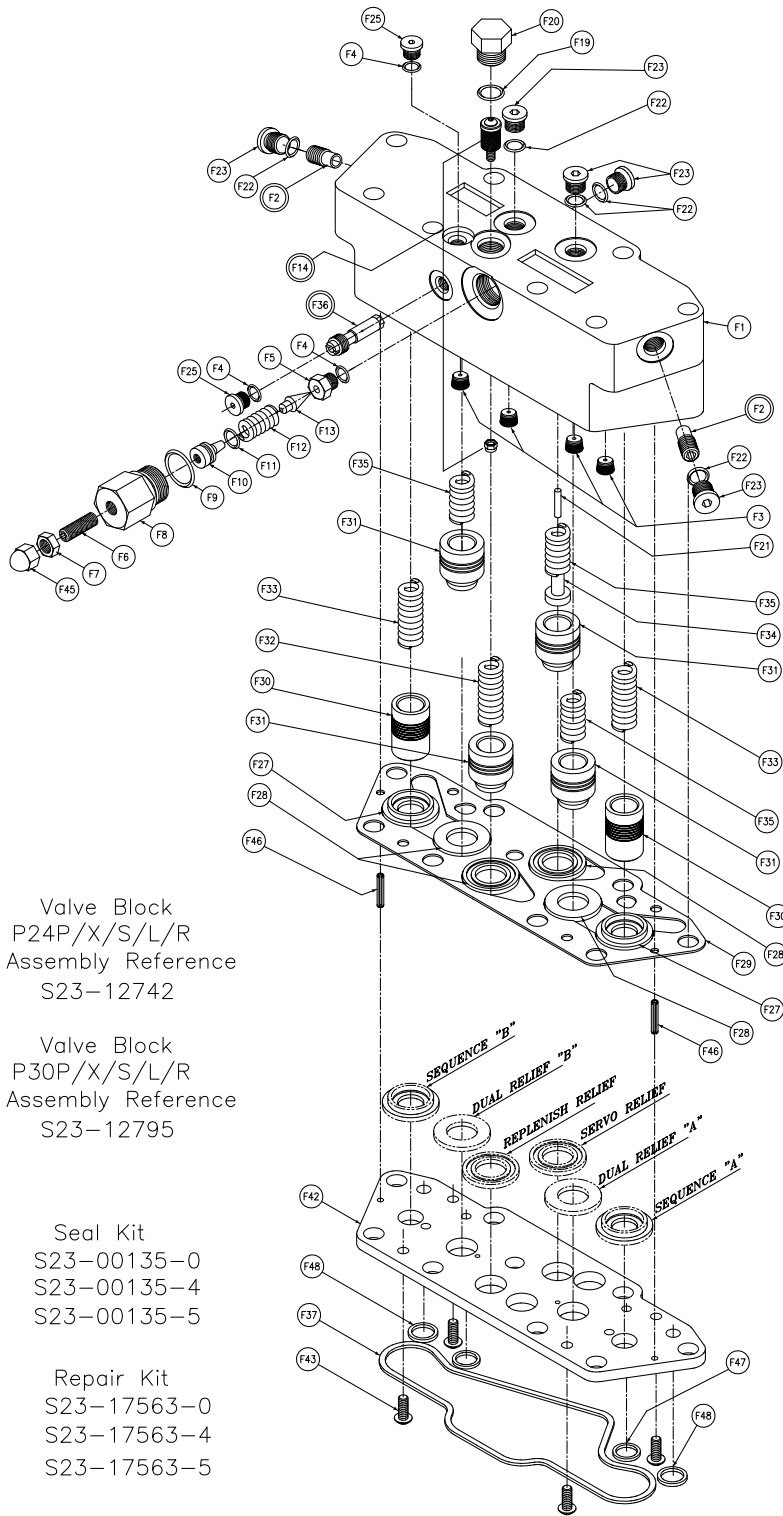
Kit Rear Adaptor Mounting Composed of Items: E41, E42, E43 & E44 for M24 Type Pumps E41, E42, E43, E44 & E45 for M30 Type Pumps					
Pump/Motor	Displacement	Type	Seal Code	Part Number	Description
M	24	R/L	1	S23-16340-0	SAE-C EXT MOUNT
			5	S23-16340-5	
			1	S23-16341-0	SAE-D EXT MOUNT
			5	S23-16341-5	
			1	S23-16342-0	SAE-E EXT MOUNT
			5	S23-16342-5	
			1	S23-16343-0	SAE-F EXT MOUNT
5	S23-16343-5				
M	30	R/L	1	S23-16351-0	SAE-C EXT MOUNT
			5	S23-16351-5	
			1	S23-16352-0	SAE-D EXT MOUNT
			5	S23-16352-5	
			1	S23-16353-0	SAE-E EXT MOUNT
			5	S23-16353-5	
			1	S23-16354-0	SAE-F EXT MOUNT
5	S23-16354-5				

Section View - E - Motor Type - R & L - Port Block Assembly

Kit Shuttle Assembly (without orifices)				
Pump/Motor	Displacement	Type	Seal Code	Part Number
M	24/30	L	1	S13-48273-0
			4	S13-48273-4
			5	S13-48273-5

Kit Shuttle Assembly (with orifices)				
Pump/Motor	Displacement	Type	Seal Code	Part Number
M	24/30	L	1	S13-48776-0
			4	S13-48776-4
			5	S13-48776-5

Kit Blanking Plate for Shuttle Composed of Items: E46, E45, E48 and E49				
Pump/Motor	Displacement	Type	Seal Code	Part Number
M	24/30	R	1	S23-00181-0
			4	S23-00181-4
			5	S23-00181-5



Section View - F - Pump Valve Block Assembly

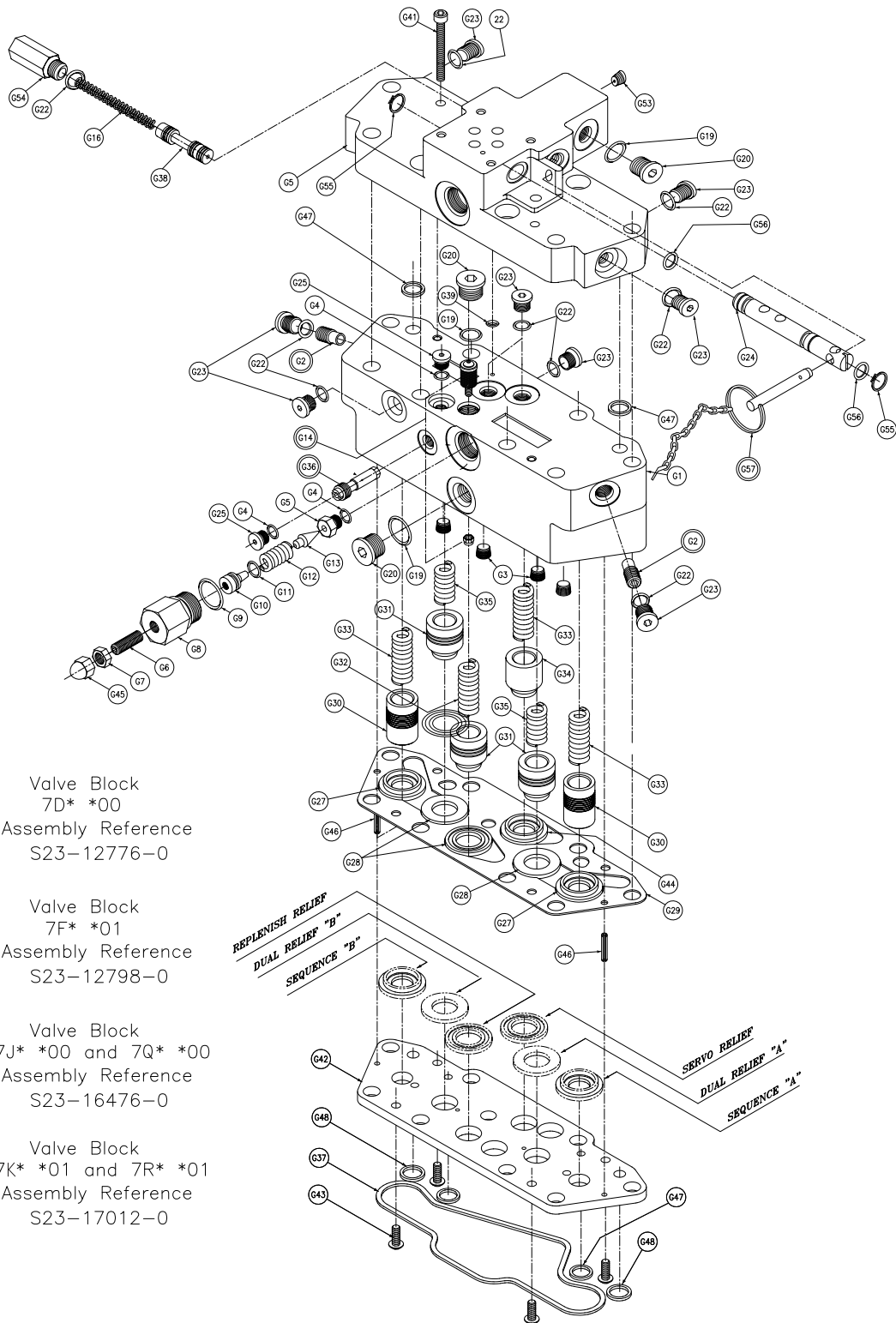
Section F P24/30 Valve Blocks Assembly							
Balloon #	Pump/ Motor	Displacement	Type	Seal Code	Item #	Description	Qty
F1	P	24	P/X/S/L/R	**	033-91221-0	VALVE BLK	1
	P	30	P/X/S/L/R		033-91334-0		
F2	P	24/30	P/X/S/L/R	**	S13-40266-0	VALVE CHECK	2
F3	P	24/30	P/X/S/L/R	**	033-91249-0	ORIFICE (.0465 DIA.) PLUG	4
F4	P	24/30	P/X/S/L/R	1	691-00903-0	O RING	3
	P	24/30	P/X/S/L/R	4	674-00903-0		
	P	24/30	P/X/S/L/R	5	695-00903-0		
F5	P	24/30	P/X/S/L/R	**	033-70508-0	SEAT	1
F6	P	24/30	P/X/S/L/R	**	312-13160-0	SCREW, SOC HD	1
F7	P	24/30	P/X/S/L/R	**	335-13100-0	NUT, HEX JAM	1
F8	P	24/30	P/X/S/L/R	**	033-70545-0	GUIDE-HOUSING	1
F9	P	24/30	P/X/S/L/R	1	691-00910-0	O RING	1
	P	24/30	P/X/S/L/R	4	674-00910-0		
	P	24/30	P/X/S/L/R	5	695-00910-0		
F10	P	24/30	P/X/S/L/R	**	036-21767-0	PISTON SEAL	1
F11	P	24/30	P/X/S/L/R	1	671-00012-0	O RING	2
	P	24/30	P/X/S/L/R	4	674-00012-0		
	P	24/30	P/X/S/L/R	5	675-00012-0		
F12	P	24/30	P/X/S/L/R	**	032-91798-0	SPRING	1
F13	P	24/30	P/X/S/L/R	**	036-12288-0	CONE	1
F14	P	24/30	P/X/S/L/R	**	S13-43240-0	SERVO STRAINER	1
F19	P	24/30	P/X/S/L/R	1	691-00906-0	O RING	1
	P	24/30	P/X/S/L/R	4	674-00906-0		
	P	24/30	P/X/S/L/R	5	695-00906-0		
F20	P	24/30	P/X/S/L/R	**	488-35003-0	PLUG	1
F21	P	24	P/X/S/L/R	**	230-82226-0	PIN 1/8 X 4/8	1
	P	30	P/X/S/L/R	**	033-92868-0	PIN .156 X .615	
F22	P	24/30	P/X/S/L/R	1	691-00904-0	O RING	5
	P	24/30	P/X/S/L/R	4	674-00904-0		
	P	24/30	P/X/S/L/R	5	695-00904-0		
F23	P	24/30	P/X/S/L/R	**	488-35001-0	PLUG	5
F25	P	24/30	P/X/S/L/R	**	488-35049-0	PLUG	2
F27	P	24/30	P/X/S/L/R	**	033-70507-0	SEAT SEQ REL	2

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Section View - F - Pump Valve Block Assembly

Section F P24/30 Valve Blocks Assembly							
Balloon #	Pump/ Motor	Displacement	Type	Seal Code	Item #	Description	Qty
F28	P	24/30	P/X/S/L/R	**	033-70500-0	REPL. + SERVO SEAT	4
F29	P	24/30	P/X/S/L/R	**	033-91193-0	GASKET	1
F30	P	24/30	P/X/S/L/R	**	033-72378-0	POPPET, SEQ.	2
F31	P	24/30	P/X/S/L/R	**	033-72379-0	POPPET, DUAL + REPL	4
F32	P	24/30	P/X/S/L/R	**	033-22141-0	SPRING, REPL	1
F33	P	24/30	P/X/S/L/R	**	033-70512-0	SPRING, SEQ./SERVO	2
F34	P	24/30	P/X/S/L/R	**	033-70482-0	SPRING RETAINER	1
F35	P	24/30	P/X/S/L/R	**	033-71086-0	SPRING, DUAL RELIEF	3
F36	P	24/30	P/X/S/L/R	**	S23-12814-0	VALVE, REPLEN PILOT	1
F37	P	24/30	P/X/S/L/R	1	671-00050-0	O RING	1
	P	24/30	P/X/S/L/R	4	674-00050-0		
	P	24/30	P/X/S/L/R	5	675-00050-0		
F42	P	24/30	P/X/S/L/R	**	033-91422-0	RETAINER PLATE	1
F43	P	24/30	P/X/S/L/R	**	353-25078-0	SCREW, BUTTON HD	4
F45	P	24/30	P/X/S/L/R	**	327-25006-0	NUT, ACORN	1
F46	P	24/30	P/X/S/L/R	**	325-08120-0	PIN, ROLL 1/8 X ¾ LG	2
F47	P	24/30	P/X/S/L/R	1	671-00013-0	O RING	2
	P	24/30	P/X/S/L/R	4	674-00013-0		
	P	24/30	P/X/S/L/R	5	675-00013-0		
F48	P	24/30	P/X/S/L/R	1	671-00014-0	O RING	2
	P	24/30	P/X/S/L/R	4	674-00014-0		
	P	24/30	P/X/S/L/R	5	675-00014-0		
F49	P	24/30	P/X/S/L/R	**	306-40169-0	SCREW HHC	8

Section View - G - Pump Valve Block Assembly for 700 Control



Valve Block
7D* *00
Assembly Reference
S23-12776-0

Valve Block
7F* *01
Assembly Reference
S23-12798-0

Valve Block
7J* *00 and 7Q* *00
Assembly Reference
S23-16476-0

Valve Block
7K* *01 and 7R* *01
Assembly Reference
S23-17012-0

Section View - G - Pump Valve Block Assembly for 700 Control

Section G P24/30 Valve Blocks Assemblies for 700 Control					
Balloon #	Primary 700 Control	Seal Code	Item #	Description	Qty
G1	ALL	**	033-91335-0	VALVE BLK	1
G2	ALL	**	S13-40266-0	VALVE CHECK	2
G3	ALL	**	033-91249-0	ORIFICE (.0465 DIA.) PLUG	4
G4	ALL	1	691-00903-0	O RING	3
	ALL	4	674-00903-0		
	ALL	5	695-00903-0		
G5	ALL	**	033-70508-0	SEAT	1
G6	ALL	**	312-13160-0	SCREW, SOC HD	1
G7	ALL	**	335-13100-0	NUT, HEX JAM	1
G8	ALL	**	033-70545-0	GUIDE-HOUSING	1
G9	ALL	1	691-00910-0	O RING	1
	ALL	4	674-00910-0		
	ALL	5	695-00910-0		
G10	ALL	**	036-21767-0	PISTON SEAL	1
G11	ALL	1	671-00012-0	O RING	2
	ALL	4	674-00012-0		
	ALL	5	675-00012-0		
G12	ALL	**	032-91798-0	SPRING	1
G13	ALL	**	036-12288-0	CONE	1
G14	ALL	**	S13-43240-0	SERVO STRAINER	1
G15	7F* **01	**	033-54446-0	MANIFOLD FOR SHUTOFF	1
	7D* **00	**	033-54389-0	MANIFOLD LESS SHUTOFF	
	7K* **01, 7R* **01	**	033-93376-0	MANIFOLD FOR SHUTOFF	
	7J* **00, 7Q* **00	**	033-62887-0	MANIFOLD LESS SHUTOFF	
G16	ALL	**	225-92083-0	SPRING	1
G19	ALL	1	691-00906-0	O RING	3
	ALL	4	674-00906-0		
	ALL	5	695-00906-0		
G20	ALL	**	488-35041-0	PLUG	3
G22	ALL	1	691-00904-0	O RING	11
	ALL	4	674-00904-0		
	ALL	5	695-00904-0		
G23	ALL	**	488-35001-0	PLUG	10

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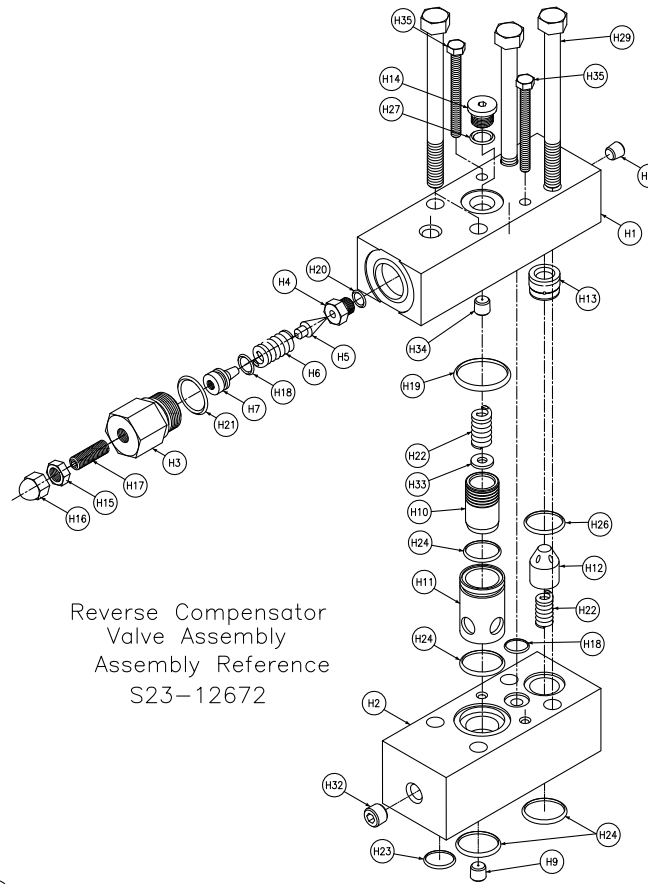
Section View - G - Pump Valve Block Assembly for 700 Control

Section G P24/30 Valve Blocks Assemblies for 700 Control					
Balloon #	Primary 700 Control	Seal Code	Item #	Description	Qty
G24	ALL	**	033-93866-0	SERVO SPOOL	1
G25	ALL	**	488-35049-0	PLUG	2
G27	ALL	**	033-70507-0	SEAT SEQ REL	2
G28	ALL	**	033-70500-0	REPL. + SERVO SEAT	3
G29	ALL	**	033-91193-0	GASKET	1
G30	ALL	**	033-72378-0	POPPET, SEQ.	2
G31	ALL	**	033-72379-0	POPPET, DUAL + REPL	3
G32	ALL	**	033-22141-0	SPRING, REPL	1
G33	ALL	**	033-70512-0	SPRING, SEQ./SERVO	3
G34	ALL	**	033-54398-0	POPPET SERVO	1
G35	ALL	**	033-71086-0	SPRING, DUAL RELIEF	2
G36	ALL	**	S23-12814-0	VALVE, REPLEN PILOT	1
G37	ALL	1	671-00050-0	O RING	1
	ALL	4	674-00050-0		
	ALL	5	675-00050-0		
G38	ALL	**	033-54392-0	SPOOL	1
G39	ALL	1	671-00008-0	O RING	2
	ALL	4	674-00008-0		
	ALL	5	675-00008-0		
G41	ALL	**	358-10180-0	SCREW SHC	2
G42	ALL	**	033-91422-0	RETAINER PLATE	1
G43	ALL	**	353-25078-0	SCREW, BUTTON HD	4
G44	ALL	**	033-54399-0	SERVO SEAT	1
G45	ALL	**	327-25006-0	NUT, ACORN	1
G46	ALL	**	325-08120-0	PIN, ROLL 1/8 X 3/4 LG	2
G47	ALL	1	671-00013-0	O RING	2
	ALL	4	674-00013-0		
	ALL	5	675-00013-0		
G48	ALL	1	671-00014-0	O RING	2
	ALL	4	674-00014-0		
	ALL	5	675-00014-0		
G50	ALL	**	449-00013-0	PLUG SHIPPING	1

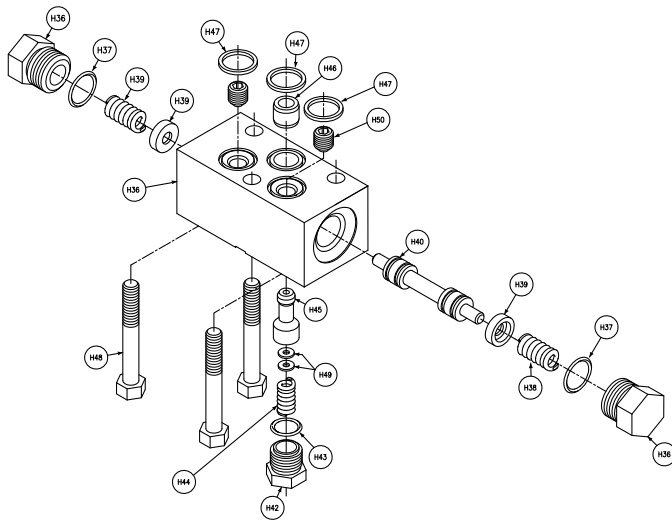
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Section View - G - Pump Valve Block Assembly for 700 Control

Section G P24/30 Valve Blocks Assemblies for 700 Control					
Balloon #	Primary 700 Control	Seal Code	Item #	Description	Qty
G53	ALL	**	033-25528-0	ORIFICE	1
G54	ALL	**	035-54400-0	PLUG	1
G55	7F* *01, 7K* *01, 7R* *01	**	356-31043-0	RING RETAINING	2
G56	7F* *01, 7K* *01, 7R* *01	1	671-00011-0	O RING	2
	7F* *01, 7K* *01, 7R* *01	4	674-00011-0		
	7F* *01, 7K* *01, 7R* *01	5	675-00011-0		
G57	7F* *01, 7K* *01, 7R* *01	**	S23-02208-0	PIN	1



Reverse Compensator
Valve Assembly
Assembly Reference
S23-12672



Shuttle Valve
Assembly Reference
S13-48776

Shuttle Valve Less Item H50
Assembly Reference
S13-48273

Section H M24/30 Shuttle & Reverse Compensator Assemblies							
Balloon #	Pump/ Motor	Displacement	Type	Seal Code	Item #	Description	Qty
H1	M	24/30	H/V	**	033-53832-0	COVER	1
H2	M	24/30	H/V	**	033-53833-0	BODY REVERSE COMPENSATOR	1
H3	M	24/30	H/V	**	033-70545-0	GUIDE-HOUSING	1
H4	M	24/30	H/V	**	033-70508-0	SEAT	1
H5	M	24/30	H/V	**	036-12288-0	CONE	1
H6	M	24/30	H/V	**	032-91798-0	SPRING COMP	1
H7	M	24/30	H/V	**	036-21767-0	PISTON SEAL	1
H8	M	24/30	H/V	**	036-38448-0	SPRING	1
H9	M	24/30	H/V	**	035-25528-0	ORIFICE #51(.067) 1/16 PT	1
H10	M	24/30	H/V	**	033-91226-0	PISTON	1
H11	M	24/30	H/V	**	036-38464-0	SLEEVE	1
H12	M	24/30	H/V	**	035-49407-0	POPPET	1
H13	M	24/30	H/V	**	035-49406-0	SEAT	1
H14	M	24/30	H/V	**	488-35001-0	PLUG	1
H15	M	24/30	H/V	**	335-13100-0	NUT, HEX JAM	1
H16	M	24/30	H/V	**	327-13005-0	NUT, ACORN	1
H17	M	24/30	H/V	**	312-13160-0	SCREW, SOCHD	1
H18	M	24/30	H/V	1	671-00012-0	O RING	2
	M	24/30	H/V	4	674-00012-0		
	M	24/30	H/V	5	675-00012-0		
H19	M	24/30	H/V	1	691-00022-0	O RING	1
	M	24/30	H/V	4	674-00022-0		
	M	24/30	H/V	5	675-00022-0		
H20	M	24/30	H/V	1	691-00903-0	O RING	1
	M	24/30	H/V	4	674-00903-0		
	M	24/30	H/V	5	695-00903-0		
H21	M	24/30	H/V	1	691-00910-0	O RING	1
	M	24/30	H/V	4	674-00910-0		
	M	24/30	H/V	5	695-00910-0		
H22	M	24/30	H/V	**	036-38449-0	SPRING	2
H23	M	24/30	H/V	1	691-10014-0	GASKET	1
	M	24/30	H/V	4	674-00014-0		
	M	24/30	H/V	5	695-10014-0		

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Section H M24/30 Shuttle & Reverse Compensator Assemblies							
Balloon #	Pump/ Motor	Displacement	Type	Seal Code	Item #	Description	Qty
H24	M	24/30	H/V	1	691-00018-0	O RING	4
	M	24/30	H/V	4	674-00018-0		
	M	24/30	H/V	5	695-00018-0		
H26	M	24/30	H/V	1	691-00017-0	O RING	1
	M	24/30	H/V	4	674-00017-0		
	M	24/30	H/V	5	675-00017-0		
H27	M	24/30	H/V	1	691-00904-0	O RING	1
	M	24/30	H/V	4	674-00904-0		
	M	24/30	H/V	5	695-00904-0		
H29	M	24/30	H/V	**	306-40197-0	SCREW, HHC	4
H31	M	24/30	H/V	**	431-90104-0	1/16 PIPE PLUG	1
H32	M	24/30	H/V	**	431-90204-0	1/8 PIPE PLUG	1
H33	M	24/30	H/V	**	345-10008-0	WASHER	1
H34	M	24/30	H/V	**	800599	ORFICE .033/036 1/16 PIPE	1
H35	M	24/30	H/V	**	306-40167-0	SCREW, HHC	2
H36	M	24/30	H/L	**	033-93510-0	PLUG	2
H37	M	24/30	H/L	**	691-00908-0	O RING	2
	M	24/30	H/L	**	674-00908-0		
	M	24/30	H/L	**	695-00908-0		
H38	M	24/30	H/L	**	033-70515-0	SPRING	2
H39	M	24/30	H/L	**	033-70495-0	WASHER	2
H40	M	24/30	H/L	**	033-70529-0	SPOOL	1
H41	M	24/30	H/L	**	033-53117-0	SHUTTLE VALVE BODY	1
H42	M	24/30	H/L	**	033-72129-0	PLUG	1
H43	M	24/30	H/L	**	691-00906-0	O RING	1
	M	24/30	H/L	**	674-00906-0		
	M	24/30	H/L	**	695-00906-0		
H44	M	24/30	H/L	**	033-71923-0	SPRING	1
H45	M	24/30	H/L	**	033-71925-0	SPOOL	1
H46	M	24/30	H/L	**	033-53154-0	SEAT	1
H47	M	24/30	H/L	1	691-10016-0	GASKET	3
	M	24/30	H/L	4	674-10016-0		
	M	24/30	H/L	5	695-20016-0		
H48	M	24/30	H/L	**	306-40106-0	SCREW, HHC	3
H49	M	24/30	H/L	**	345-20004-0	WASHER BRASS	2
H50	M	24/30	H/L	**	033-53523-0	ORFICE .078	2

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3. Delivery Dates; Title and Risk; Shipment. All delivery dates are approximate and Seller shall not be responsible for any damages resulting from any delay. Regardless of the manner of shipment, title to any products and risk of loss or damage shall pass to Buyer upon tender to the carrier at Seller's facility (i.e., when it's on the truck, it's yours). Unless otherwise stated, Seller may exercise its judgment in choosing the carrier and means of delivery. No deferment of shipment at Buyers' request beyond the respective dates indicated will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's changes in shipping, product specifications or in accordance with Section 13, herein.
4. Warranty. Seller warrants that the Products sold hereunder shall be free from defects in material or workmanship for a period of eighteen months from the date of delivery to Buyer. The prices charged for Seller's products are based upon the exclusive limited warranty stated above, and upon the following disclaimer: **DISCLAIMER OF WARRANTY: THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS PROVIDED HEREUNDER. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**
5. Claims; Commencement of Actions. Buyer shall promptly inspect all Products upon delivery. No claims for shortages will be allowed unless reported to the Seller within 10 days of delivery. No other claims against Seller will be allowed unless asserted in writing within 60 days after delivery or, in the case of an alleged breach of warranty, within 30 days after the date within the warranty period on which the defect is or should have been discovered by Buyer. Any action based upon breach of this agreement or upon any other claim arising out of this sale (other than an action by Seller for any amount due to Seller from Buyer) must be commenced within thirteen months from the date of tender of delivery by Seller or, for a cause of action based upon an alleged breach of warranty, within thirteen months from the date within the warranty period on which the defect is or should have been discovered by Buyer.
6. LIMITATION OF LIABILITY. UPON NOTIFICATION, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE A DEFECTIVE PRODUCT, OR REFUND THE PURCHASE PRICE. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, EVEN IF SELLER HAS BEEN NEGLIGENT, WHETHER IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS.
7. Contingencies. Seller shall not be liable for any default or delay in performance if caused by circumstances beyond the reasonable control of Seller.
8. User Responsibility. The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product 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 and follow applicable industry standards and Product information. If Seller provides Product or system options, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.
9. Loss to Buyer's Property. Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.
10. Special Tooling. A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.
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.
13. Cancellations and Changes. Orders shall not be subject to cancellation or change by Buyer for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change product features, specifications, designs and availability with notice to Buyer.
14. Limitation on Assignment. Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.
15. Entire Agreement. This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of the agreement. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.
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.
20. Taxes. Unless otherwise indicated, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of Products.
21. Equal Opportunity Clause. For the performance of government contracts and where dollar value of the Products exceed \$10,000, the equal employment opportunity clauses in Executive Order 11246, VEVRAA, and 41 C.F.R. §§ 60-1.4(a), 60-741.5(a), and 60-250.4, are hereby incorporated.

June 2023

Added M24-30 Variable Motor options to existing P24-30 Catalog Number:
HY28-2678-03/GC/US



WARNING

The products described in this catalog can expose you to chemicals, including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

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