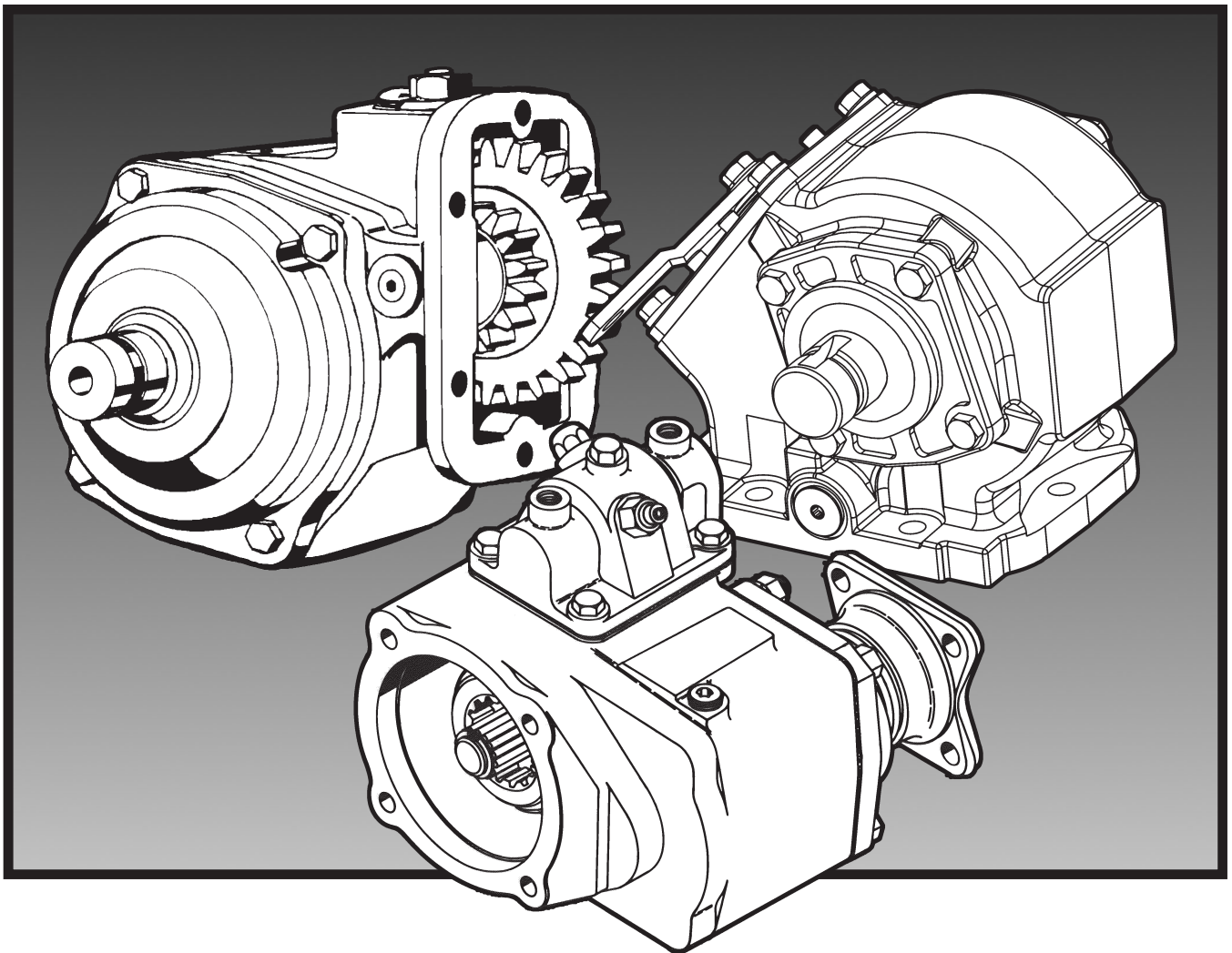


Parts List 236 Series

Effective: January 15, 2009
Supersedes: HY25-2236-M1/US Dated July 2007



 **WARNING**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS 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 and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

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

© Copyright 2009, Parker Hannifin Corporation, All Rights Reserved

Contents

236 Series

Exploded View1

Bill of Materials 2-3

Assembly Arrangements4

Case Dimensions4

Model Number Designation4

Gear Charts5

P.T.O. Combo Valve Installation Sketch6

Air Shift Installation without E.O.C. Bill of Materials7

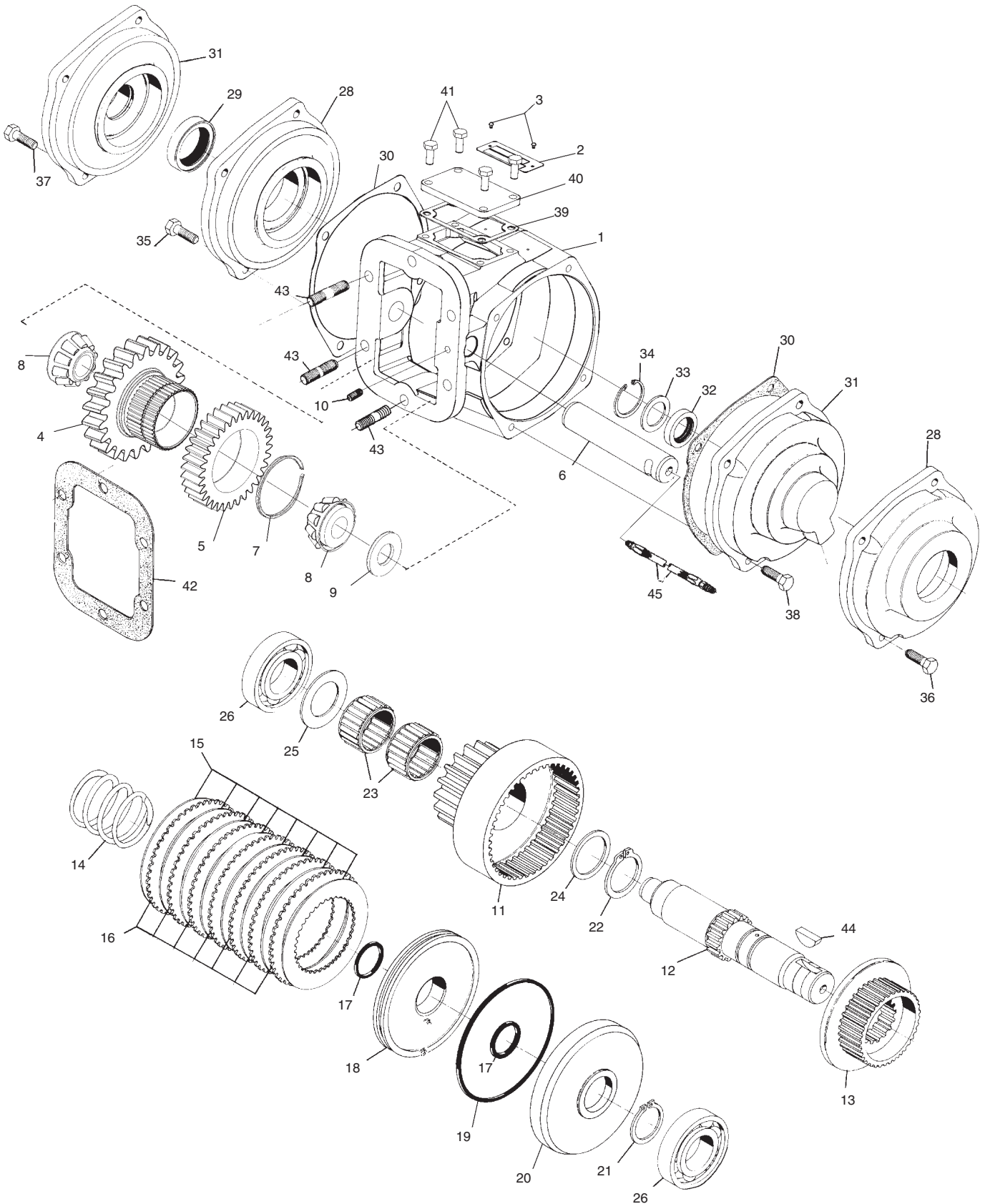
Air Shift with Pilot Valve Bill of Materials8

Pump Shafts and Flanges9

Shaft Brake (“BD”) Bill of Material10

Pump Flange Conversion Kits Bills of Materials 11-14

Offer of Sale16



Item	Part Number	Description	Quantity
1	1-P-588	Housing, Standard Mount ("X" & "G")	1 or
	1-P-593	Housing, Deep Mount ("Z")	1 or
	1-P-594X	Housing, Dowel Pin Mount ("D")	1
2	68-P-2	Name Plate.....	1
3	378422	Drive Screw	2
4	See Chart Pg. 5	Gear - Input	1
5	See Chart Pg. 5	Gear - Input Ratio	1
6	9-P-60	Idler Shaft (Standard No pressure Lube).....	1 or
	9-P-71	Idler Shaft (Pressure Lube)	1
7	379522	Lock Ring.....	1
8	550439	Bearing Cone	2
9	14-P-74-2	Input Gear Spacer (.115 - .117).....	A.R.
	14-P-74-3	Input Gear Spacer (.118 - .120).....	A.R.
	14-P-74-4	Input Gear Spacer (.121 - .123).....	A.R.
	14-P-74-5	Input Gear Spacer (.124 - .126).....	A.R.
10	378452-7	Set Screw (.250"-20 x .500") "X", "G" & "D" Mounting.....	1 or
	378452-4	Set Screw (.250"-20 x .312") "Z" Mounting	1
11	See Chart Pg. 5	Gear - Output.....	1
	See Chart Pg. 8	Driveshaft and Clutch Assembly (Includes items 12 thru 21)	1
	328926-1X	"XD" Output/Ass'y 4 & 6	
	328926-2X	"XD" Output/Ass'y 3 & 5	
	328926-3X	"XK", "XP" Output/Ass'y 4 & 6	
	328926-4X	"XK", "XP" Output/Ass'y 3 & 5	
	328926-5X	"XR", "RA", "RB" Output/Ass'y 3 & 5	
	328926-6X	"XX" Output/Ass'y 3 & 5	
	328926-7X	"XX" Output/Ass'y 4 & 6	
	328926-8X	"XY" Output/Ass'y 3 & 5	
	328926-9X	"AF" Output/Ass'y 3 & 5	
	328926-10X	"AF" Output/Ass'y 4 & 6	
	328926-11X	"RF" Output/Ass'y 3 & 5	
	328926-12X	"XE" Output/Ass'y 3 & 5	
	328926-13X	"BD" Output/Ass'y 3 & 5	
12	3-P-677	Output Shaft ("XD" Ass'y 4 & 6).....	1 or
	3-P-679	Output Shaft ("XD" Ass'y 3 & 5).....	1 or
	3-P-678	Output Shaft ("XK", "XP" Ass'y 4 & 6).....	1 or
	3-P-686	Output Shaft ("XK", "XP" Ass'y 3 & 5).....	1 or
	3-P-703	Output Shaft ("XR", "RA", "RB" Ass'y 3 & 5).....	1 or
	3-P-787	Output Shaft ("XX" Ass'y 3 & 5).....	1 or
	3-P-788	Output Shaft ("XX" Ass'y 4 & 6).....	1 or
	3-P-825	Output Shaft ("XY" Ass'y 3 & 5).....	1 or
	3-P-896	Output Shaft ("AF" Ass'y 3 & 5).....	1 or
	3-P-895	Output Shaft ("XD" Ass'y 4 & 6).....	1 or
	3-P-957	Output Shaft ("RF" Ass'y 3 & 5).....	1 or
	3-P-964	Output Shaft ("XE" Ass'y 3 & 5).....	1 or
	3-P-970	Output Shaft ("BD" Ass'y 3 & 5).....	1
13	2-P-458	Inner Clutch Gear	1
14	37-P-39	Clutch Spring.....	1
15	379485	Friction Disc.....	8
16	379595	Clutch Plate	7
17	28-P-244	O-Ring	2
	329179X	Piston Assembly	1
18	380057	Piston.....	1
19	28-P-178	O-Ring	1
20	379323	Clutch Back-up Cylinder	1
21	378576	Snap Ring.....	1
22	379746	Lock Ring External	1
23	560918	Roller Bearing.....	2
24	14-P-49	Spacer	1
25	31-P-57	Thrust Washer (Output Shaft), All Except "BD"	1 or
	31-P-113	Thrust Washer ("BD" Output Shaft)	1
26	550010	Ball Bearing	2

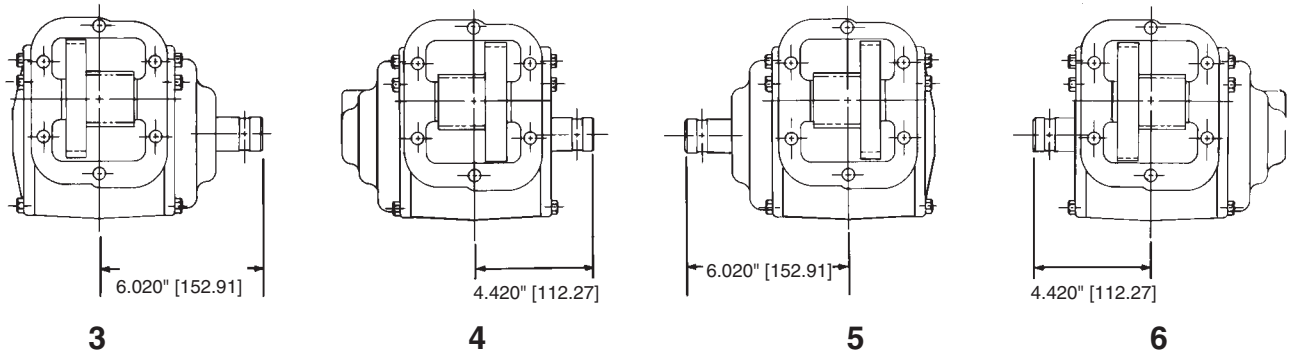
A.R. — As Required

Bill of Materials

Item	Part Number	Description	Quantity
28	21-P-451 21-P-297	Bearing Cover - Open End1 For 3 & 5 Assembly ("XX", "XD" & "BD" Outputs) For 4 & 6 Assembly ("XX" & "XD" Outputs)	
	All Others See Pg. 9		
29	28-P-225	Oil Seal, Output ("XD" & "BD" Output Only).....1 or	
	See Chart Pg. 8	Oil Seal, Output (All Others).....1	
30	22-P-53	Gasket - Bearing Cover2	
	328806-1X 328807-1X 328807-3X	Bearing Cover Assembly - Closed End1 For 3 & 5 Assembly (Includes items 31 thru 34) For 4 & 6 Assembly (Includes items 31 thru 34) For 3 & 5 Assembly "BD" (includes items 31 thru 34)	
31	21-P-295 21-P-449	Bearing Cover - Closed End1 For 3 & 5 Assembly For 4 & 6 Assembly	
32	28-P-179	Oil Seal.....1	
33	378811	Back-up Plate1	
34	378849	Snap Ring.....1	
35	378430-10	Capscrew - Hex Head .3125" - 18 x 1.000" (Ass'y 4 & 6, Standard Shaft).....4 or	
36	378430-12	Capscrew - Hex Head .3125" - 18 x 1.250" (Ass'y 3 & 5, Standard Shaft).....4 or	
37	378430-10	Capscrew - Hex Head .312" - 18 x 1.000" (Closed Ass'y 3 & 5), Except "BD"4 or	
38	378430-12	Capscrew - Hex Head .312" - 18 x 1.250" (Closed Ass'y 4 & 6, "BD" 3 & 5),4	
39	35-P-93	Gasket, Cover Plate (No E.O.C.)1	
40	34-P-133	Cover Plate (No E.O.C.)1	
41	378429-6	Hex Capscrew .250"-20 x .625".....4	
42	328950-6X 35-P-9-1 35-P-9-2	Mounting Gasket and Installation Instructions Mounting Gasket (.010").....2 Mounting Gasket (.020").....2	
N.S.	328946X	Caution Label Kit1	
	7170-1X	Loose Parts Mounting Parts Kit (Standard)1 or	
43	379423-14	Stud, .375"-16 & .375"-24 x 1.750"6	
N.S.	379744	Flange Nut, .375"-24"6	
N.S.	7170-72X	Mounting Parts Kit (Metric).....1 or	
N.S.	328170-95X	Mounting Parts Kit (Deep Mount)1	
44	500007-29	Woodruff Key ("XD" & "BD" Outputs Only).....1	
45	328075X	Pressure Lube Hose.....1	
	328748X 328948-24X	Pump Mounting Kit ("XR" Output Only)1 Sealant and Installation Instructions ("D" Mount Only)1	
	329043-7X 329043-8X 329043-3X	Service Kits Bearing, Seal, Gasket & Clutch Pack Replacement Kit.....1 Bearing, Seal, Gasket, Piston and Clutch Pack Kit1 Clutch Repair Kit.....1	
	328594-17X 328594-18X 328594-19X 328594-20X	Bearing and Spacer Kit, "X" Lube ("X", "D", "G" & "K" Housing).....1 Bearing and Spacer Kit, "P" Lube ("X", "D", "G" & "K" Housing).....1 Bearing and Spacer Kit, "X" Lube ("Z", "L" Housings)1 Bearing and Spacer Kit, "P" Lube ("Z", "L" Housings)1	
	329043-9X 329043-11X 329043-13X	Retrofit Kit, "XD" to "BD" 3 & 5 Ass'y1 Overhaul Kit, "BD" 3 & 5 Ass'y (Brake Section Only).....1 Gasket & Seal Kit, "BD" Option.....1	

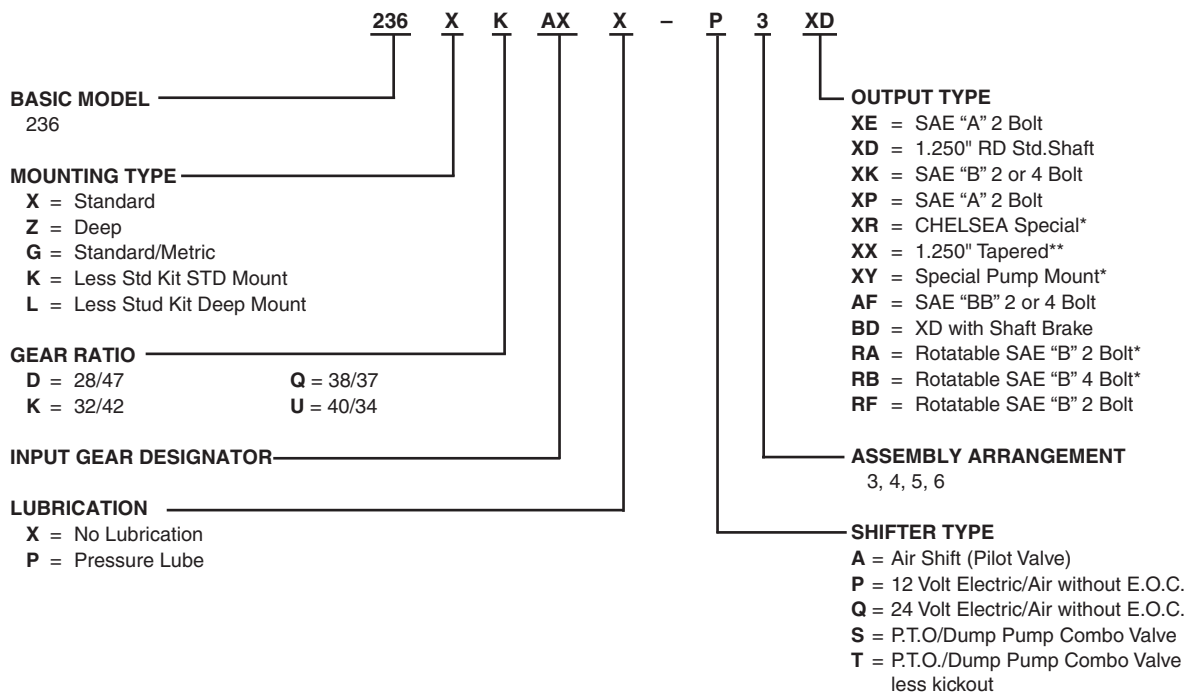
N.S. — Not Shown

Assembly Arrangements ("XD" Output Shown)



NOTE: Centerline of P.T.O. to End of Shaft "BD" Output Option is 6.020" for All Arrangements.

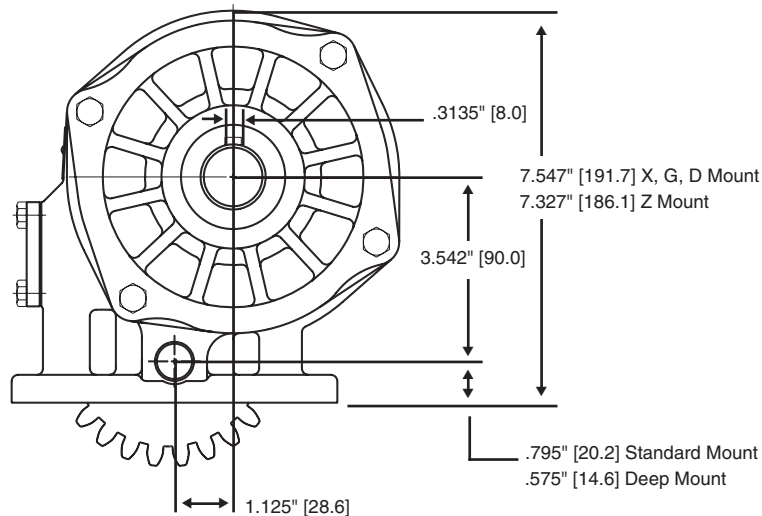
Model Number Designation



* Only available in 3 & 5 assembly arrangements

** Uses Spicer® 3-1-604 Companion Flange

Case Dimensions



Gear Charts

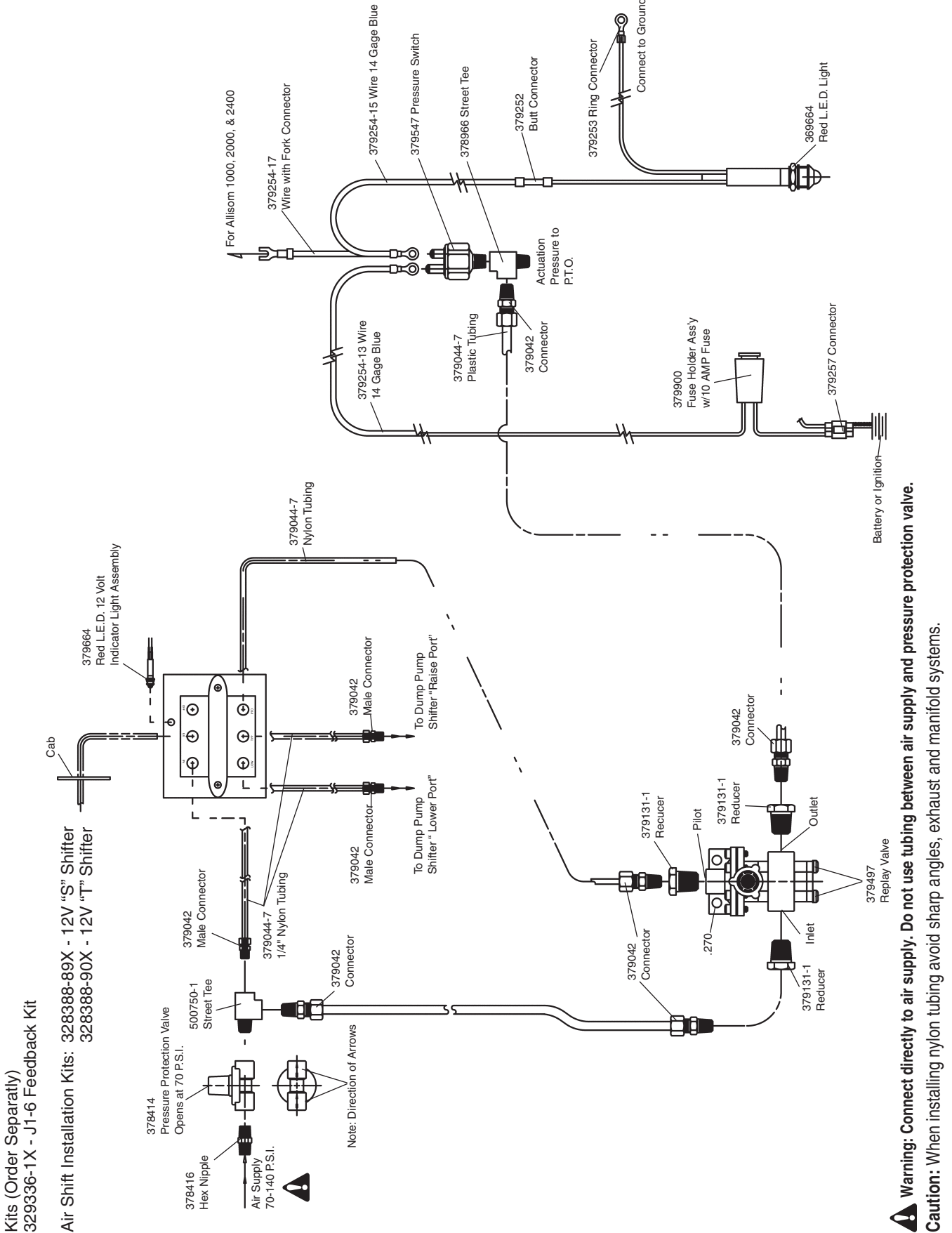
Gear Chart

Input Gears Item 4				Input Gears Item 4			
Model Number	Input Gear Part Number	Gear Type	No. Teeth	Model Number	Input Gear Part Number	Gear Type	No. Teeth
236**AB	5-P-1001	SPUR	19	236**HD	5-P-1189	Right Hand	25
236**AH	5-P-1004	SPUR	22	236**HF	5-P-1191	Right Hand	17
236**AP	5-P-1006	Left Hand	21	236**HG	5-P-1192	Right Hand	19
236**AR	5-P-1008	Left Hand	21	236**HH	5-P-1193	Right Hand	28
236**AX	5-P-1010	Left Hand	22	236**HL	5-P-1196	Right Hand	22
236**BG	5-P-1015	Left Hand	23	236**HM	5-P-1197	Right Hand	20
236**BM	5-P-1020	Left Hand	22	236**HR	5-P-1201	Right Hand	26
236**BP	5-P-1022	Right Hand	26	236**HS	5-P-1202	Right Hand	26
236**BQ	5-P-1023	Left Hand	25	236**HY	5-P-1237	Left Hand	26
236**BR	5-P-1024	Right Hand	26	236**JA	5-P-1243	Left Hand	27
236**BS	5-P-1025	Left Hand	26	236**JC	5-P-1247	Right Hand	27
236**CB	5-P-1029	Left Hand	25	236**JG	5-P-1256	Left Hand	28
236**DA	5-P-1037	SPUR	23	236**JH	5-P-1257	Left Hand	29
236**DB	5-P-1038	SPUR	39	236**JK	5-P-1261	Left Hand	24
236**DM	5-P-1045	Left Hand	17	236**JL	5-P-1262	Right Hand	24
236**DN	5-P-1046	Left Hand	19	236**JM	5-P-1263	Left Hand	22
236**DU	5-P-1050	Left Hand	28	236**JN	5-P-1264	Right Hand	22
236**ES	5-P-1059	Left Hand	22	236**JP	5-P-1268	Right Hand	33
236**EV	5-P-1060	SPUR	40	236**JS	5-P-1310	Left Hand	20
236**EW	5-P-1061	Left Hand	20	236**JU	5-P-1316	Left Hand	25
236**FN	5-P-1070	Left Hand	26	236**JW	5-P-1319	Left Hand	23
236**GQ	5-P-1150	Left Hand	26	236**JY	5-P-1312	Right Hand	20
236**GY	5-P-1184	Right Hand	21	236**KA	5-P-1318	Right Hand	25
236**HA	5-P-1186	Right Hand	22	236**KB	5-P-1321	Right Hand	23
236**HB	5-P-1187	Right Hand	23	236**KX	5-P-1411	Left Hand	26

Ratio Gear Chart

Input Ratio Gears Item 5			Output Ratio Gears Item 11		
Ratio	Part Number	No. Teeth	Ratio	Part Number	No. Teeth
236*D	5-P-1378	28	236*D	2-P-606	47
236*K	5-P-1379	32	236*K	2-P-638	42
236*Q	5-P-1380	38	236*Q	2-P-639	37
236*U	5-P-1381	40	236*U	2-P-810	34

P.T.O./Combo Valve Installation Sketch, 236 Series (SK-429 Rev A)

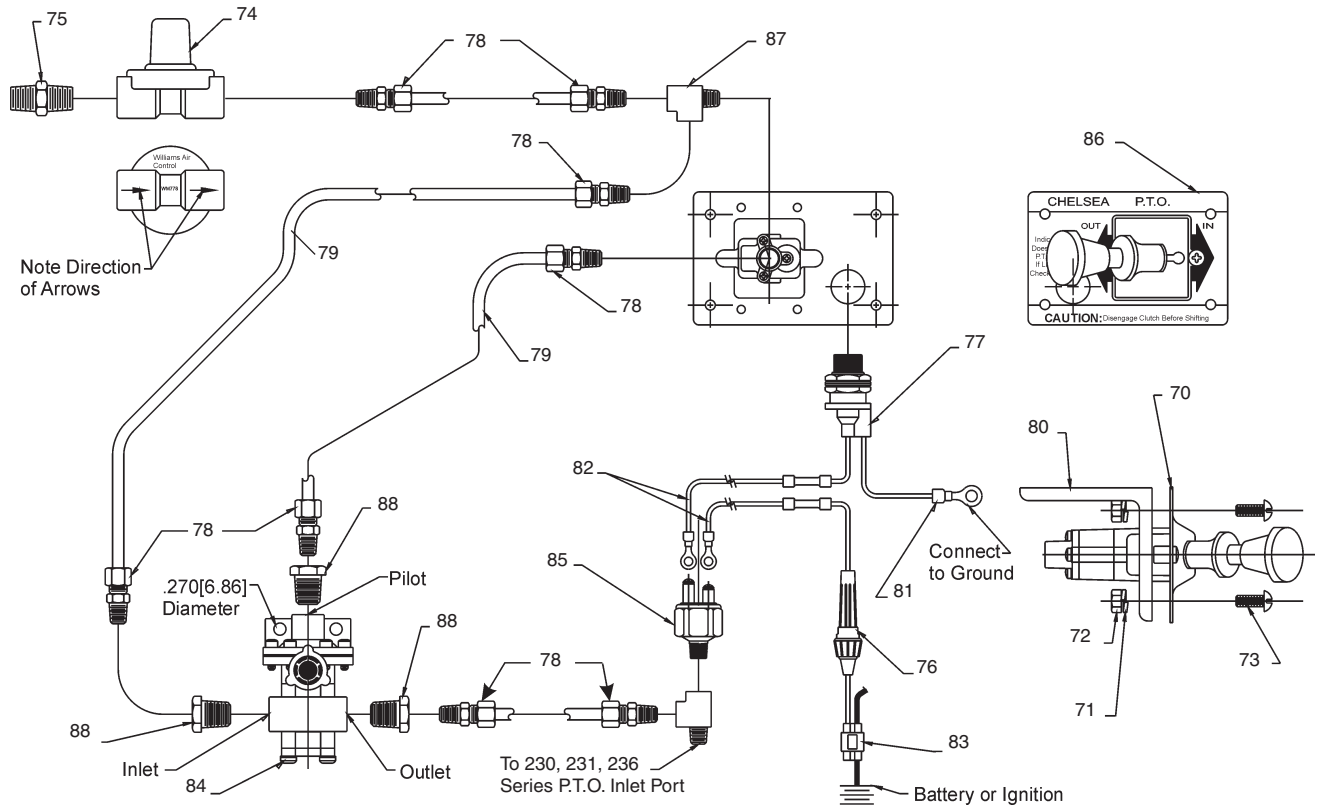


Kits (Order Separately)
329336-1X - J1-6 Feedback Kit

Air Shift Installation Kits: 328388-89X - 12V "S" Shifter
328388-90X - 12V "T" Shifter

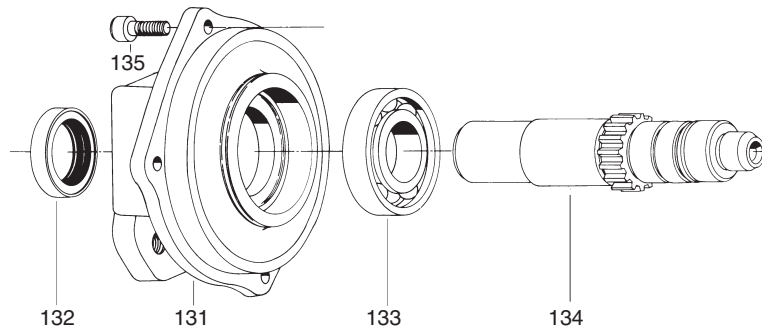
Warning: Connect directly to air supply. Do not use tubing between air supply and pressure protection valve.
Caution: When installing nylon tubing avoid sharp angles, exhaust and manifold systems.

Air Shift Installation With Pilot Valve (SK-246)



Item	Part Number	Description	Quantity
	328388-57X	Air Shift Installation Kit (With Pilot Valve)	1
70	328863X	Air Valve 2 Position 2 Way	1
	328931X	Parts Bag, Mounting	1
71	500357-7	Lockwasher	4
72	500376-6	Hex Nut	4
73	500448-9	Slotted Screw	4
74	378414	Pressure Protection Valve	1
75	378416	Hex Nipple	1
76	379900	Fuse Holder (10 amp.)	1
77	378978	Indicator Light	1
78	379042	Male Connector	8
79	379044-7	Nylon Tubing (35 ft.)	1
80	379130	Support Bracket	2
81	379253	Ring Connector	1
82	379254-15	Ring Wire & Butt Connector	2
83	379257	Splice Connector	1
84	379497	Pilot Valve	1
85	379547	Pressure Switch	1
N.S.	379640	Connector	1
86	68-P-27	Name Plate	1
87	500750-1	Street Tee	2
88	379131-1	Reducer	3

Pump Shafts & Flanges

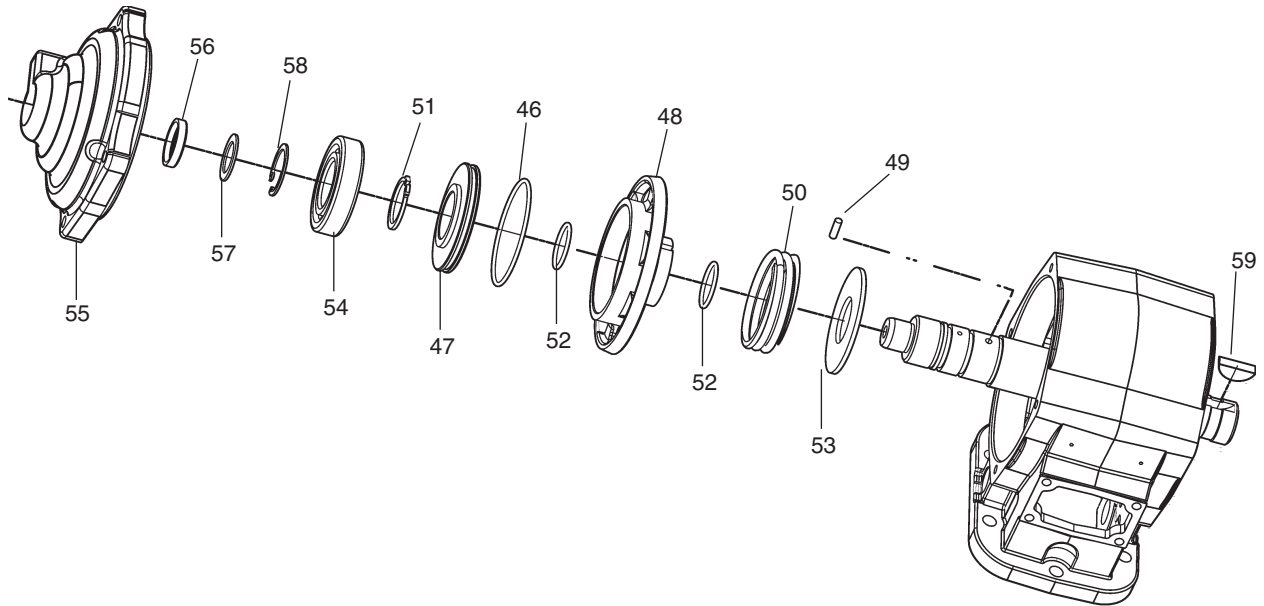


Pump Mounting Suffix (See Note)	Flange Item 131	Bearing Cap Gasket	Seal Item 132	Bearing Item 133	Driveshaft & Clutch		Output Shaft Spacer	Hex Socket Head Screw Item 135
					Assembly Number *	Output Shaft Item 134		
BD Assembly 3 & 5	21-P-451	22-P-53 (2)	28-P-225	550010	328926-13X	3-P-970		378430-12
XE Assembly 3 & 5	21-P-568	22-P-53 (2)	28-P-225	550010	328926-12X	3-P-964	4-P-183	378447-7
XK Assembly 3 & 5 Assembly 4 & 6	21-P-445	22-P-53 (2)	28-P-225	550010	328926-4X	3-P-686		378447-7
	21-P-303	22-P-53 (2)	28-P-225	550010	328926-3X	3-P-678		378447-6
XP Assembly 3 & 5 Assembly 4 & 6	21-P-443	22-P-53 (2)	28-P-225	550010	328926-4X	3-P-686		378447-7
	21-P-301	22-P-53 (2)	28-P-225	550010	328926-3X	3-P-678		378447-6
XR Assembly 3 & 5 (Only)	21-P-447	22-P-53 (2)	28-P-225	550010	328926-5X	3-P-703		378447-6
XX Assembly 3 & 5 Assembly 4 & 6	21-P-297	22-P-53 (2)	28-P-225	550010	328926-6X	3-P-787		378430-12
	21-P-297	22-P-53 (2)	28-P-225	550010	328926-7X	3-P-788		378430-10
XY Assembly 3 & 5	21-P-468	22-P-53 (2)	28-P-230	550010	328926-8X	3-P-825		378447-7
AF Assembly 3 & 5 Assembly 4 & 6	21-P-445	22-P-53 (2)	28-P-225	550010	328926-9X	3-P-896		378447-7
	21-P-303	22-P-53 (2)	28-P-225	550010	328926-10X	3-P-895		378447-6
RA Assembly 3 & 5•	21-P-570	22-P-53 (2)	28-P-225	550010	328926-5X	3-P-703		378447-6
RB Assembly 3 & 5•	21-P-572	22-P-53 (2)	28-P-225	550010	328926-5X	3-P-703		378447-6
RF Assembly 3 & 5•	21-P-628	22-P-53 (2)	28-P-225	550010	328926-11X	3-P-957		378447-7

The Rotatable Flanges attach to the 21-P-447 Flange

- - 328748X Pump to Flange Mounting Kit Must Be Used with "R" Suffix
 Kit Contains: (4) 378430-11 Hex Head Capscrews (.3125" - 18 x 1.125")
 (4) 378919 Washers (Special)
 (4) 45-P-11 Bushing Guide

* - Assembly Includes the Pump Shaft Shown Plus Items 13 thru 22 on page 2



Item	Part Number	Description	Quantity
	329410X	Brake Assembly ("BD" Output)	1
46	28-P-252	O-Ring	1
47	66-P-49	Piston.....	1
48	379976	Brake Disk	1
49	379977	Pin (.187" x .625").....	1
50	37-P-24	Spring, Manual Transmissions.....	1
51	378576	Retaining Ring	1
52	28-P-244	O-Ring	2
53	31-P-113	Thrust Washer ("BD" Output Shaft)	1
54	550010	Ball Bearing	1
	328807-3X	Bearing Cap Sub Assembly (Closed End 3 & 5, "BD")	
55	21-P-670	Bearing Cap	1
56	28-P-179	Oil Seal.....	1
57	378811	Back-up Plate	1
58	378849	Retainer Ring.....	1
59	500007-29	Woodruff Key ("XD" & "BD" Outputs Only).....	1

Conversion Kit Number	Ass'y	Flange Type	Shaft Type	
329043-9X	XD to BD	3 & 5	Shaft Brake	1.25" Round w/key
329160-11X	XD to XK	3 & 5	S.A.E. "B" 2 or 4 Bolt Flange	S.A.E. "B" .875" 13 - Tooth
329160-12X	XD to XP	3 & 5	S.A.E. "A" 2 Bolt (4.188 BC) w/ S.A.E. "B" 4 Bolt (5.0" BC)	S.A.E. "B" .875" 13 - Tooth
329160-13X	XD to XR	3 & 5	For Parker P16 "S" Flange Pumps	S.A.E. "B" .875" 13 - Tooth
329160-14X	XD to XY	3 & 5	DIN 5462	DIN 5462
329160-15X	XD to XK	4 & 6	S.A.E. "B" 2 or 4 Bolt Flange	S.A.E. "B" .875" 13 - Tooth
329160-16X	XD to XP	4 & 6	S.A.E. "A" 2 Bolt (4.188 BC) w/ S.A.E. "B" 4 Bolt (5.0" BC)	S.A.E. "B" .875" 13 - Tooth
329160-33X	XD to RA	3 & 5	S.A.E. "B" 2 Bolt Rotatable Flange	S.A.E. "B" .875" 13 - Tooth
329160-34X	XD to RB	3 & 5	S.A.E. "B" 4 Bolt Rotatable Flange	S.A.E. "B" .875" 13 - Tooth
329160-35X	XR to RA	3 & 5	S.A.E. "B" 2 Bolt Rotatable Flange	S.A.E. "B" .875" 13 - Tooth
329160-36X	XR to RB	3 & 5	S.A.E. "B" 4 Bolt Rotatable Flange	S.A.E. "B" .875" 13 - Tooth
329160-43X	XD to XX	All	DIN 100	Round Tapered w/ key
329160-46X	XD to RF	3 & 5	S.A.E. "B" 2 Bolt Rotatable Flange	S.A.E. "BB" 1.0" 15 - Tooth
329160-50X	XD to AF	3 & 5	S.A.E. "B" 2 or 4 Bolt Flange	S.A.E. "BB" 1.0" 15 - Tooth
329160-51X	XD to AF	4 & 6	S.A.E. "B" 2 or 4 Bolt Flange	S.A.E. "BB" 1.0" 15 - Tooth
329160-55X	XD to XE	3 & 5	S.A.E. "A" Pilot 2 Bolt	S.A.E. .625" 9 - Tooth

Bills of Material for Pump Flange Conversion Kits

Part Number	Description	Quantity
329043-9X	Conversion Kit (XD to BD)	
378576	Snap Ring.....	2
379977	Pin	1
550010	Bearing, Roller.....	1
22-P-53	Bearing Cap Gasket	2
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	4
31-P-113	Washer, Spacer	1
328807-3X	Bearing Cap Assembly.....	1
329410X	Brake Assembly.....	1
37-P-24	Spring.....	1
3-P-970	Pump Shaft.....	1
500007-29	Woodruff Key	1
379746	Snap Ring.....	1
35-P-9-1	Gasket	2
35-P-9-2	Gasket	2
328160-11X	Conversion Kit (XD to XK)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-445	Bearing Cap	1
22-P-53	Bearing Cap Gasket.....	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	1
378447-7	Socket Head Capscrew (.312" - 18 x 1.250")	4
3-P-686	Pump Shaft.....	1
328160-12X	Conversion Kit (XD to XP)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-443	Bearing Cap	1
22-P-53	Bearing Cap Gasket.....	2
28-P-178	O-Ring	1
28-P-179	Oil Seal	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	1
378447-7	Socket Head Capscrew (.312" - 18 x 1.250")	4
3-P-686	Pump Shaft.....	1

Part Number	Description	Quantity
328160-13X	Conversion Kit (XD to XR)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-447	Bearing Cap	1
22-P-53	Bearing Cap Gasket.....	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	1
378447-7	Socket Head Capscrew (.312" - 18 x 1.250").....	4
3-P-703	Pump Shaft.....	1
328160-14X	Conversion Kit (XD to XY)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
378898	Flat Head Socket Capscrew (.438" - 14 x 1.00").....	1
379335	Coupling, Splined	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-468	Bearing Cap	1
22-P-53	Bearing Cap Gasket.....	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-230	Oil Seal.....	1
28-P-244	O-Ring	1
378447-7	Socket Head Capscrew (.312" - 18 x 1.250").....	4
3-P-825	Pump Shaft.....	1
328160-15X	Conversion Kit (XD to XK)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-303	Bearing Cap	1
22-P-53	Bearing Cap Gasket.....	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	1
378447-6	Socket Head Capscrew (.312" - 18 x 1.00").....	4
3-P-678	Pump Shaft.....	1
328160-16X	Conversion Kit (XD to XP)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-301	Bearing Cap	1
22-P-53	Bearing Cap Gasket.....	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	1
378447-6	Socket Head Capscrew (.312" - 18 x 1.00").....	4
3-P-678	Pump Shaft.....	1

Pump Flange Conv. Kits Bills of Materials

Part Number	Description	Quantity
328160-33X	Conversion Kit (XD to RA)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-447	Bearing Cap	1
21-P-628	Pump Flange	1
22-P-53	Bearing Cap Gasket.....	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	1
378447-6	Socket Head Capscrew (.312" - 18 x 1.00")	4
378447-7	Socket Head Capscrew (.312" - 18 x 1.250")	4
3-P-703	Pump Shaft.....	1
328160-34X	Conversion Kit (XD to RB)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-447	Bearing Cap	1
21-P-572	Pump Flange	1
22-P-53	Bearing Cap Gasket.....	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	2
378447-6	Socket Head Capscrew (.312" - 18 x 1.00")	4
378447-7	Socket Head Capscrew (.312" - 18 x 1.250")	4
3-P-703	Pump Shaft.....	1
328160-35X	Conversion Kit (XR to RA)	
21-P-628	Pump Flange	1
378447-6	Socket Head Capscrew (.312" - 18 x 1.00")	4
328160-36X	Conversion Kit (XR to RB)	
21-P-572	Pump Flange	1
378447-6	Socket Head Capscrew (.312" - 18 x 1.00")	4
328160-43X	Conversion Kit (XD to XX)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379111	Square Key.....	1
379746	Lock Ring.....	1
501181	Hex Nut.....	1
22-P-53	Bearing Cap Gasket.....	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	2
378430-10	Hex Capscrew (.312" - 18 x 1.00")	4
378430-12	Hex Capscrew (.312" - 18 x 1.25")	4
3-P-787	Pump Shaft.....	1
3-1-604	Companion Flange (Sold Separately)	1

Part Number	Description	Quantity
329160-46X	Conversion Kit (XD to RF)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-447	Bearing Cap	1
21-P-628	Pump Flange	1
22-P-53	Bearing Cap Gasket	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	2
378447-6	Socket Head Capscrew (.312" - 18 x 1.00")	4
378447-7	Socket Head Capscrew (.312" - 18 x 1.250")	4
3-P-957	Pump Shaft.....	1
329160-50X	Conversion Kit (XD to AF)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-445	Bearing Cap	1
22-P-53	Bearing Cap Gasket	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	2
378447-7	Socket Head Capscrew (.312" - 18 x 1.250")	4
3-P-896	Pump Shaft.....	1
329160-51X	Conversion Kit (XD to AF)	
378576	Snap Ring.....	1
378849	Retainer Ring	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-303	Pump Flange	1
22-P-53	Bearing Cap Gasket	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-224	Oil Seal.....	2
28-P-225	Oil Seal.....	1
378447-6	Socket Head Capscrew (.312" - 18 x 1.00")	4
3-P-895	Pump Shaft.....	1
329160-55X	Conversion Kit (XD to XE)	
378576	Snap Ring.....	1
379688	Grease Packet.....	1
379746	Lock Ring.....	1
21-P-568	Bearing Cap	1
22-P-53	Bearing Cap Gasket	2
28-P-178	O-Ring	1
28-P-179	Oil Seal.....	1
28-P-225	Oil Seal.....	1
28-P-244	O-Ring	2
378447-7	Socket Head Capscrew (.312" - 18 x 1.250")	4
3-P-964	Pump Shaft.....	1
4-P-183	Spacer	1

Offer of Sale

The items described in this document and other documents or descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors are hereby offered for sale at prices to be established by Parker Hannifin Corporation, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any such items, when communicated to Parker Hannifin Corporation, its subsidiary or an authorized distributor ("Seller") verbally or in writing, shall constitute acceptance of this offer.

1. Terms and Conditions of Sale: All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

2. Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

3. Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

4. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of:

(A) All Power Take-Off units 18 months from date of sale.

(B) Except 267, 269, 277, 278, 246, 247, 250, and 859 series two (2) years from date of installation. **THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED. NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGNS OR SPECIFICATIONS.**

5. Limitation Of Remedy: SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

6. Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. 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 items sold hereunder, 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.

8. 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 (2) 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.

9. Taxes: Unless otherwise indicated on the face hereof, 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 the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. 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 Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. Patents, U.S. Trademarks, copyrights, trade dress and trade secrets (hereinafter '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 an item sold pursuant to this contract 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 an item sold hereunder 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 said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item 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 items 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 item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter 'Events of Force Majeure'). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

6/08-P



Parker Hannifin Corporation
Chelsea Products Division
8225 Hacks Cross Road
Olive Branch, Mississippi 38654 USA
Tel: (662) 895-1011
Fax: (662) 890-5379
www.parker.com/chelsea

TGI 01/09