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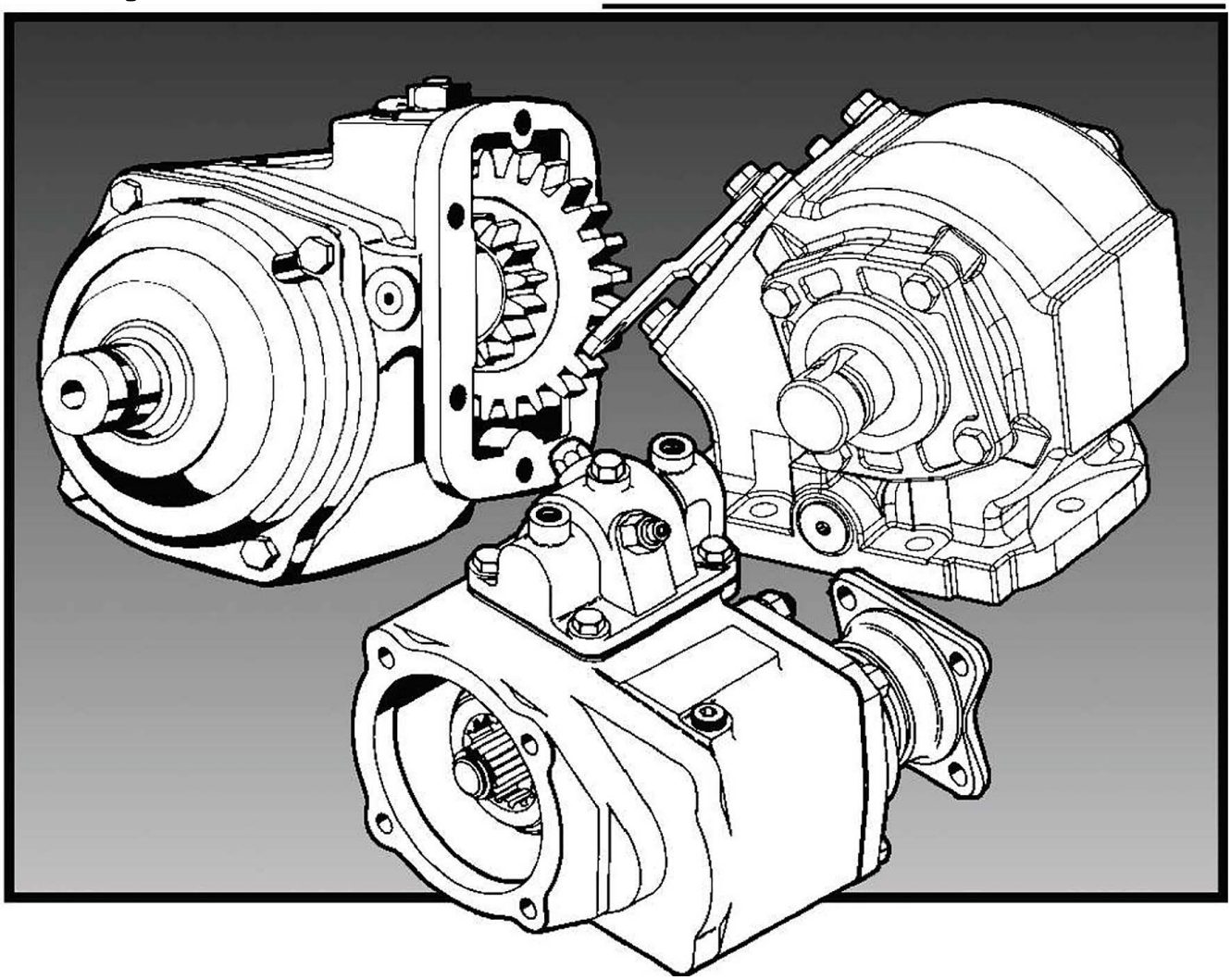
CHELSEA®
Replacement Parts List
230/231 Series Manual

Effective: December 15, 2001
Supersedes: P410-230/231 Dated December 2000

Bulletin HY25-2230-M1/US



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⚠ WARNING

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Parker Hannifin Corporation
Chelsea Products Division
Olive Branch, MS 38654 USA

230 Exploded View 1
230 Bill of Materials 2-3
230 Assembly Arrangements 3
230 Model Number Designation 4
230 Case Dimensions 4
231 Exploded View 5
231 Bill of Materials 6-7
231 Assembly Arrangements 7
231 Model Number Designation 8
231 Case Dimensions 8
230/231 Gear Chart 9
230/231 Air Shift Installation Sketch without E.O.C. 10
230/231 Air Shift Installation Sketch with E.O.C 11
230/231 Air Shift Installation Parts List with E.O.C. 12
230/231 Air Shift Installation with Pilot Valve 13
230/231 Pump Shafts and Flanges 14
Offer of Sale 16

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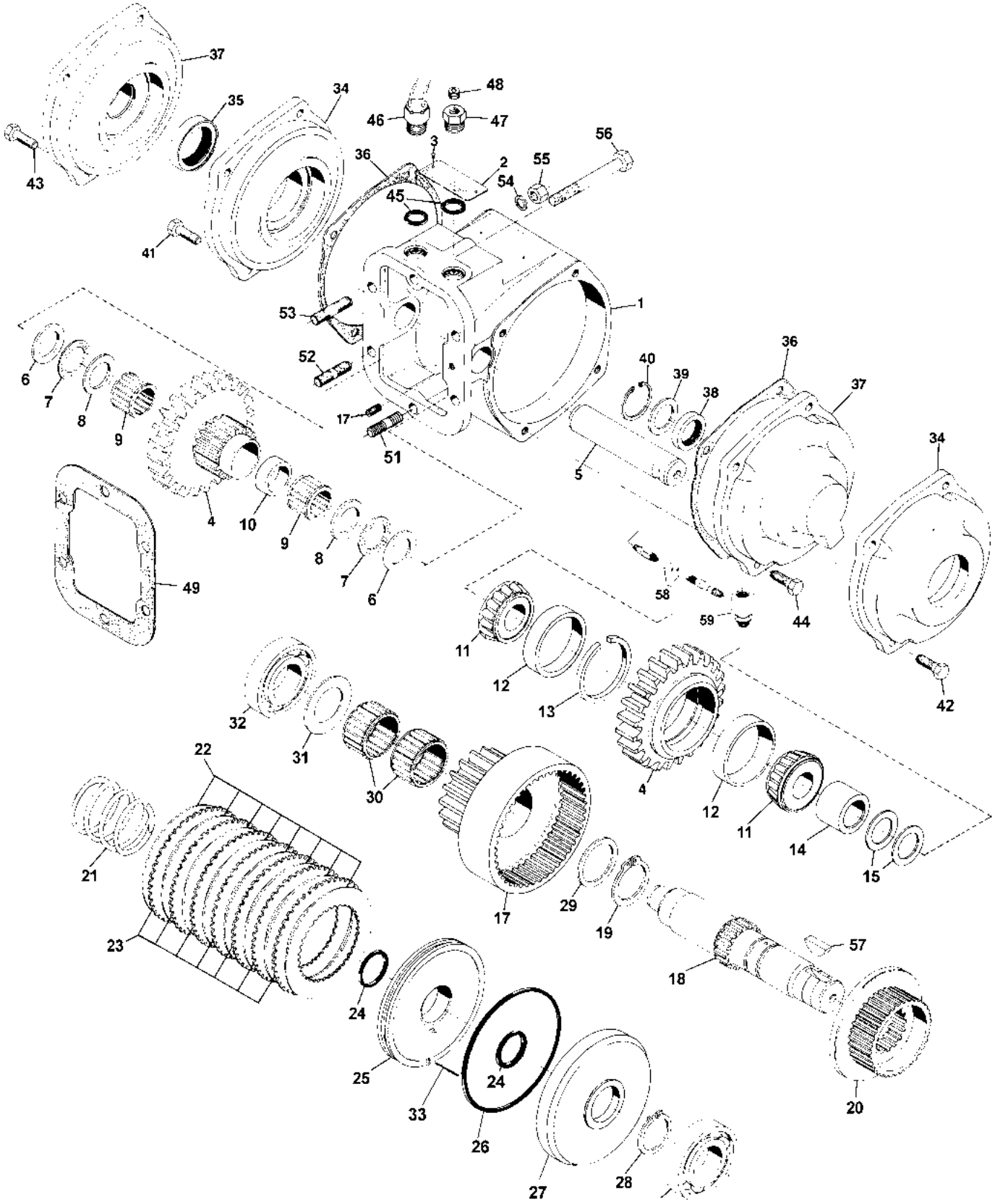
Chelsea Products Division
Olive Branch, MS 38654 USA



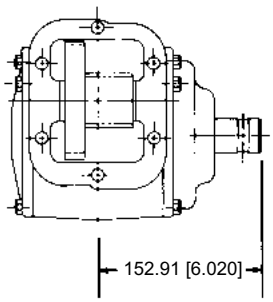
Parker Hannifin Corporation
Chelsea Products Division
Olive Branch, MS 38654 USA

Item		Part Number	Description	Quantity
1	▶	1-P-437	Housing	1
2	▶	68-P-2	Name Plate	1
3	▶	378422	Drive Screw	2
4		See Chart Pg. 9	Gear, Input	1
5	▶	9-P-55	Idler Shaft (Standard No pressure Lube)	1 or
	▶	9-P-54	Idler Shaft (Pressure Lube)	
6	▶	31-P-61	Thrust Washer (Idler Shaft .031")	2
7	▶	560920	Needle Thrust Bearing (Idler Shaft)	2
8	▶	31-P-62	Thrust Washer (Idler Shaft .125")	2
9	▶	550886	Needle Bearing Assembly (Idler Shaft)	2
10	▶	14-P-54	Spacer, Needle Bearing (Idler Shaft)	1
			(Items 11 thru 15 used in "U" Ratios Only)	
11	▶	560968	Bearing Cone	2
12	▶	550221	Bearing Cup	2
13	▶	379313	Lockring	1
14	▶	4-P-143	Spacer	1
15	▶	14-P-15	Input Gear Spacer	AR
16	▶	378452-7	Set Screw (.250"-20 x .500")	1
17		See Chart Pg. 9	Gear, Output	1
		See Chart Pg.14	**Driveshaft and Clutch Assembly (Includes items 18 thru 28)**	1
	▶	328926-1X	"XD" Output/Ass'y 4 & 6 (1.250" round)	
	▶	328926-2X	"XD" Output/Ass'y 3 & 5 (1.250" round)	
18	▶	3-P-677	Output Shaft ("XD" Ass'y 4)	1 or
	▶	3-P-679	Output Shaft ("XD" Ass'y 5)	1
19	▶	379746	Snap Ring	1
20	▶	2-P-458	Inner Clutch Gear	1
21	▶	37-P-39	Clutch Spring	1
22	▶	379485	Friction Disc	8
23	▶	379595	Clutch Plate	7
24		28-P-120	O-Ring	2
25	▶	379325	Piston	1
26	▶	28-P-178	O-Ring	1
27	▶	379323	Clutch Back-up Cylinder	1
28	▶	378576	Snap Ring	1
29	▶	14-P-49	Spacer	1
30	▶	560918	Roller Bearing	2
31	▶	31-P-57	Thrust Washer	1
32	▶	550010	Ball Bearing	2
33	▶	378856	Wiggle Wire (.012" Diameter)	1
34			**Bearing Cover, Open End**	1
	▶	21-P-451	For 3 & 5 Assembly	
	▶	21-P-297	For 4 & 6 Assembly	
35	▶	28-P-225	Oil Seal, Output	1
		28-P-230	Oil Seal, Output ("XY")	1
36	▶	22-P-53	Gasket, Bearing Cover	2
			Bearing Cover Assembly, Closed End	1
	▶	328806-1X	For 3 & 5 Assembly (Includes items 37 thru 40)	
	▶	328807-1X	For 4 & 6 Assembly (Includes items 37 thru 40)	
37			**Bearing Cover, Closed End**	1
	▶	21-P-295	For 3 & 5 Assembly	
	▶	21-P-449	For 4 & 6 Assembly	
38	▶	28-P-179	Oil Seal	1
39	▶	378811	Back-up Plate	1
40	▶	378849	Snap Ring	1
41	▶	378430-10	Capscrew, Hex Head (.3125" - 18 x 1.000") (Ass'y 4 & 6, Standard Shaft)	4
42	▶	378430-12	Capscrew, Hex Head (.3125" - 18 x 1.250") (Ass'y 3 & 5, Standard Shaft)	4
43	▶	378430-10	Capscrew, Hex Head (.3125" - 18 x 1.000") (Closed Ass'y 3 & 5)	4
44	▶	378430-12	Capscrew, Hex Head (.3125" - 18 x 1.250") (Closed Ass'y 4 & 6)	4

Item		Part Number	Description	Quantity
45	▶	**28-P-171**	O-Ring	2
46	▶	**379243**	Speed Sensor (Transducer) Included w/optional Overspeed Control	1
47	▶	**379242**	Adapter Plug	
			With Speed Limiter	1
			Without Speed Limiter	2
48	▶	**379231**	Pipe Plug (.125" - 27 N.P.T.F.)	
			With Speed Limiter	1
			Without Speed Limiter	2
49	▶	**328950-6X**	Mounting Gasket and Installation Instructions	
		35-P-9-1	Mounting Gasket (.010")	1
		35-P-9-2	Mounting Gasket (.020")	1
N.S.		**N.S.S.**	Caution Label Kit	1
N.S.		**N.S.S.**	Owners Manual	1
			LOOSE PARTS	
N.S.		**7170-103X**	Mounting Parts Kit (Allison 1000, 2000/2400)	1 or
	▶	**328170-101X**	Mounting Parts Kit (Includes items 47 thru 52)	1
51	▶	**379457-13**	Shoulder Stud (.375"-16, .375"-24 x 1.750")	1
52		**379423-16**	Stud (.375"-16, .375"-24 x 1.875")	2
53		**379423-14**	Stud (.375"-16, .375"-24 x 1.750")	2
54	▶	**379224**	Tab Lockwasher (.438")	1
55	▶	**379744**	Flange Nut (.375"-24)	5
56	▶	**378935**	Capscrew, Hex Head (.375"-16 x 3.125")	1
57	▶	**500007-29**	Woodruff Key	1
58	▶	**328075X**	Pressure Lube Hose	1
59	▶	**378840**	Street Tee, Allison AT Series and 1000 Series w/ #3 Bell Housing	1
		378880	Street Tee, Allison MT Series 1975 & After	1
	▶	**378970**	Street Tee, Allison AT Series 1974 & Before and 1000/2000/2400 w/ #2 Bell Housing	1
	▶	**378897**	Street Tee, Allison CLT, CLBT & HT Series	1
			For Item 59 see application pages for correct fittings	
			SERVICE KITS	
N.S.		**329043-1X**	Bearing, Seal, Gasket & Clutch Pack Replacement Kit	1
N.S.		**329043-2X**	Bearing, Seal, Gasket & Clutch Pack with Piston and Backup Cylinder Sub Ass'y	1
N.S.		**329043-3X**	Bearing, Seal, Gasket & Clutch Pack with Piston and Backup Cylinder Kit	1

N.S. — Not Shown

Assembly Arrangements



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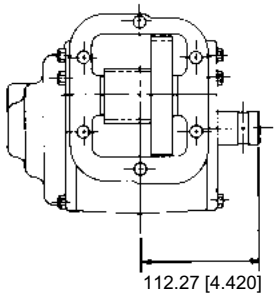

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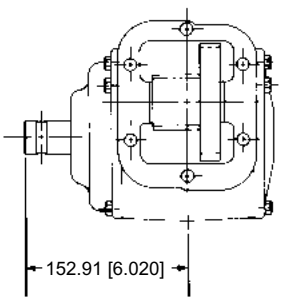

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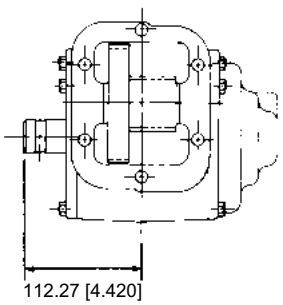

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Parker Hannifin Corporation
Chelsea Products Division
Olive Branch, MS 38654 USA

230 Model Number Designation

230/231 Series

230 X K AK X – P 3 XD

BASIC MODEL
230

MOUNTING TYPE
G = Allison 1000, 2000/2400
X = Standard Mounting

GEAR RATIO
A = 18/53
B = 15/34
D = 24/47
K = 29/42
Q = 34/37
U = No Ratio Gear

INPUT GEAR DESIGNATOR

LUBRICATION
X = No Lubrication
P = Pressure Lube

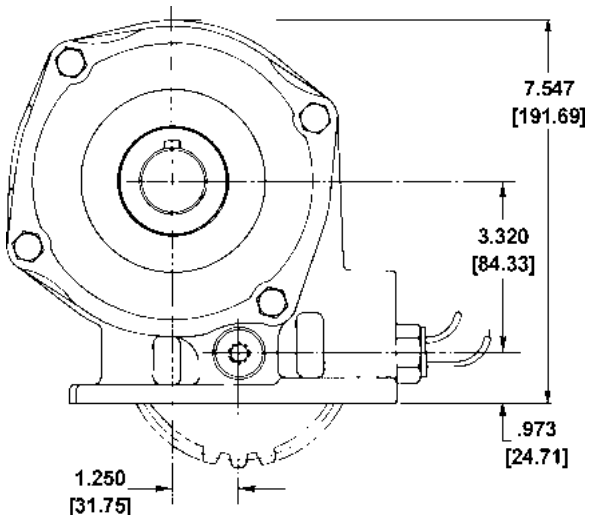
OUTPUT TYPE
XD = 1.250" RD Std.Shaft
XK = S.A.E. "B" 2 or 4 Bolt
XP = S.A.E. "A" 2 Bolt
XR = CHELSEA Special*
XX = 1.250" Tapered**
XY = Special Pump Mount*
AF = S.A.E. "BB" 2 or 4 Bolt
RA = Rotatable S.A.E. "B" 2 Bolt*
RB = Rotatable S.A.E. "B" 4 Bolt*

ASSEMBLY ARRANGEMENT
3, 4, 5, 6

SHIFTER TYPE
A = Air Shift
P = 12 Volt Electric/Air w/o E.O.C.
Q = 24 Volt Electric/Air w/o E.O.C.
N = 12 Volt Electric/Air w/E.O.C.
J = 24 Volt Electric/Air w/E.O.C.

* Only available in 3 & 5 assembly arrangements
** Uses Spicer® 3-1-604 Companion Flange

Case Dimensions



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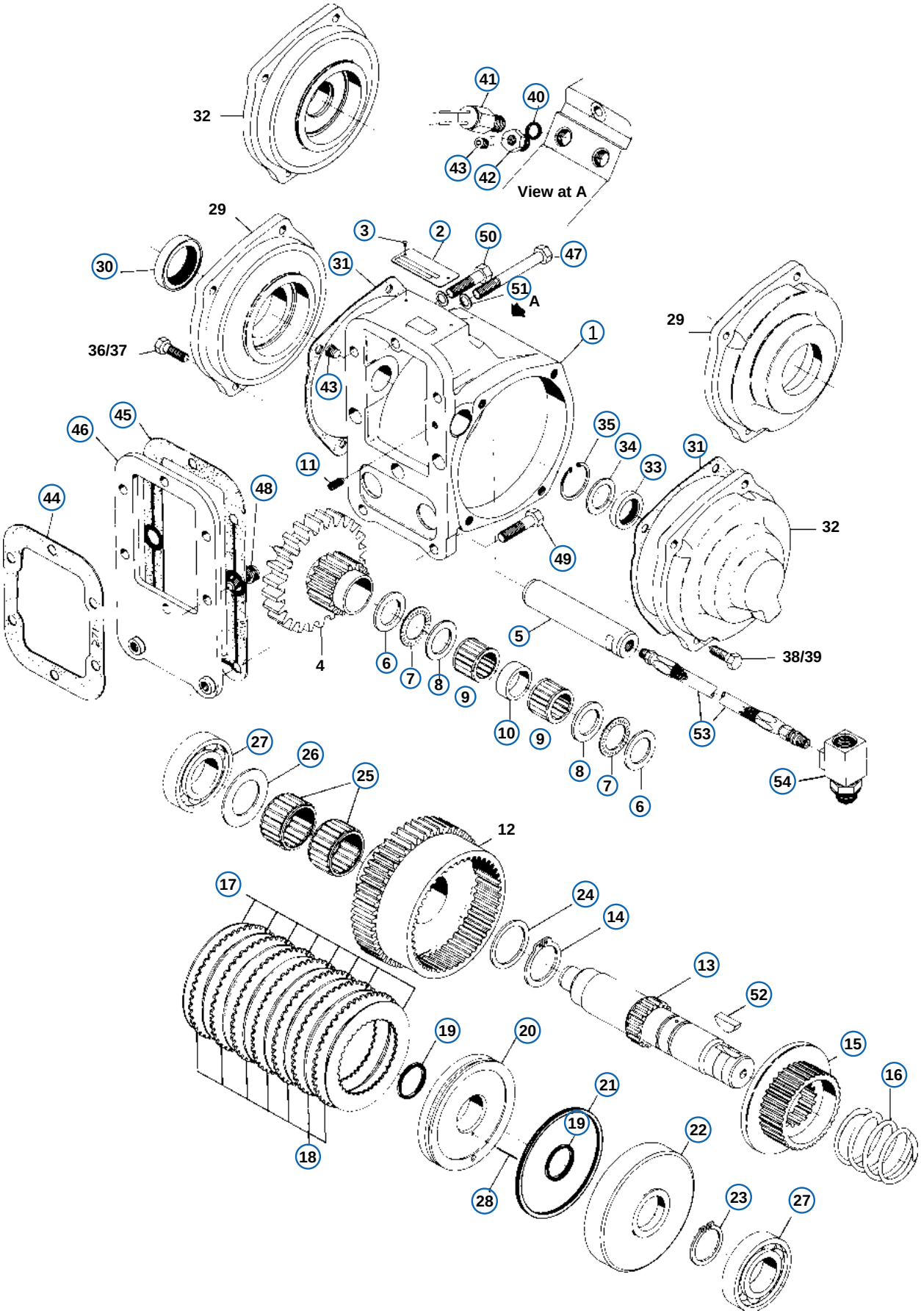

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Olive Branch, MS 38654 USA

Item		Part Number	Description	Quantity
1	▶	1-P-436	Housing	1
2	▶	68-P-2	Name Plate	1
3	▶	378422	Drive Screw	2
4		See Chart Pg. 9	Gear, Input	1
5	▶	9-P-55	Idler Shaft (Standard No Pressure Lube)	1 or
	▶	9-P-54	Idler Shaft (Pressure Lube)	
6	▶	31-P-61	Thrust Washer (Idler Shaft .031")	2
7	▶	560920	Roller Bearing (Idler Shaft)	2
8	▶	31-P-62	Thrust Washer (Idler Shaft .125")	2
9	▶	550886	Needle Bearing Assembly (Idler Shaft)	2
10	▶	14-P-54	Spacer, Needle Bearing (Idler Shaft)	1
11	▶	378452-4	Set Screw (.250"- 20 x .312")	1
12		See Chart Pg. 9	Gear, Output	1
		See Chart Pg.14	**Driveshaft and Clutch Assembly (Includes items 13 thru 23)**	1
	▶	328926-1X	"XD" Output/Ass'y 4 & 6 (1.250" round)	
	▶	328926-2X	"XD" Output/Ass'y 3 & 5 (1.250" round)	
13	▶	3-P-677	Output Shaft ("XD" Ass'y 4)	1 or
	▶	3-P-679	Output Shaft ("XD" Ass'y 5)	1
14	▶	379746	Snap Ring	1
15	▶	2-P-458	Inner Clutch Gear	1
16	▶	37-P-39	Clutch Spring	1
17	▶	379485	Friction Disc	8
18	▶	379595	Clutch Plate	7
19		28-P-120	O-Ring	2
20	▶	379325	Piston	1
21	▶	28-P-178	O-Ring	1
22	▶	379323	Clutch Back-up Cylinder	1
23	▶	378576	Snap Ring	1
24	▶	14-P-49	Spacer, Needle Bearing	1
25	▶	560918	Roller Bearing	2
26	▶	31-P-57	Thrust Washer	1
27	▶	550010	Ball Bearing	2
28	▶	378856	Wiggler Wire (.012" Diameter)	1
29			**Bearing Cover, Open End**	1
	▶	21-P-451	For 3 & 5 Assembly	
	▶	21-P-297	For 4 & 6 Assembly	
30	▶	28-P-225	Oil Seal, Output	1
		28-P-230	Oil Seal, Output ("XY")	1
31	▶	22-P-53	Gasket, Bearing Cover	2
			Bearing Cover Assembly, Closed End	1
	▶	328806-1X	For 3 & 5 Assembly (Includes items 32 thru 35)	
	▶	328807-1X	For 4 & 6 Assembly (Includes items 32 thru 35)	
32			**Bearing Cover, Closed End**	1
	▶	21-P-295	For 3 & 5 Assembly	
	▶	21-P-449	For 4 & 6 Assembly	
33	▶	28-P-179	Oil Seal	1
34	▶	378811	Back-up Plate	1
35	▶	378849	Snap Ring	1
36	▶	378430-10	Capscrew, Hex Head (.312" - 18 x 1.000") (Ass'y 4 & 6, Standard Shaft)	4
37	▶	378430-12	Capscrew, Hex Head (.312" - 18 x 1.250") (Ass'y 3 & 5, Standard Shaft)	4
38	▶	378430-10	Capscrew, Hex Head (.312" - 18 x 1.000") (Closed Ass'y 3 & 5)	4
39	▶	378430-12	Capscrew, Hex Head (.312" - 18 x 1.250") (Closed Ass'y 4 & 6)	4
40	▶	28-P-171	O-Ring (Speed Senor)	2
41	▶	379243	Speed Sensor (Transducer) Included w/optional Overspeed Control	1
42	▶	379242	O-Ring Boss Plug	
			With Speed Limiter	1
			Without Speed Limiter	2

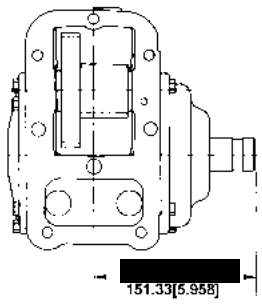
Parts List continued on next page.

Parker Hannifin Corporation
Chelsea Products Division
Olive Branch, MS 38654 USA

Item	Part Number	Description	Quantity
43 ▶	**379231**	Pipe Plug (.125" - 27 N.P.T.F.)	
		With Speed Limiter	1
		Without Speed Limiter	2
▶	**328948-5X**	**Mounting Gasket and Installation Instructions**	
44 ▶	**35-P-69**	Mounting Gasket	1
45 ▶	**35-P-84**	Mounting Gasket	1
N.S.	**N.S.S.**	Caution Label Kit	1
N.S.	**N.S.S.**	Owners Manual	1
▶	**329150X**	**Adapter Plate Assembly (6 Bolt)**	1
46 ▶	**26-P-56**	Adapter Plate	
N.S.	**379608**	Caution Tag	
N.S.	**378448-5**	Capscrew, Socket Head (.375" - 16 x .875") (Adapter Plate)	3
		LOOSE PARTS	
N.S.	**7171-104X**	Mounting Parts Kit (Allison 1000, 2000/2400)	1 or
	7170-74X	Mounting Parts Kit (Includes items 47 thru 51)	1
47 ▶	**378431-27**	Capscrew, Hex Head (.375"-16 x 3.250")	1
48 ▶	**379433-6**	Capscrew, Socket Head (.375"-16 x 1.000")	3
49 ▶	**378431-11**	Capscrew, Hex Head (.375"-16 x 1.125")	2
50	**379286-15**	Capscrew, Hex Head (.375"-16 x 1.625")	2
51 ▶	**378774**	Tab Lockwasher	5
52 ▶	**500007-29**	Woodruff Key	1
53 ▶	**328075X**	Pressure Lube Hose	1
54 ▶	**378840**	Street Tee, Allison AT Series and 1000 Series w/ #3 Bell Housing	1
	378880	Street Tee, Allison MT Series 1975 & After	1
▶	**378970**	Street Tee, Allison AT Series 1974 & Before and 1000/2000/2400 w/ #2 Bell Housing	1
▶	**378897**	Street Tee, Allison CLT, CLBT & HT Series	1
		For Item 54, see application pages for correct fittings	
		SERVICE KITS	
N.S.	**329043-1X**	Bearing, Seal, Gasket & Clutch Pack Replacement Kit	1
N.S.	**329043-2X**	Bearing, Seal, Gasket & Clutch Pack with Piston and Backup Cylinder Sub Ass'y	1
N.S.	**329043-3X**	Bearing, Seal, Gasket & Clutch Pack with Piston and Backup Cylinder Kit	1

N.S. — Not Shown

Assembly Arrangements



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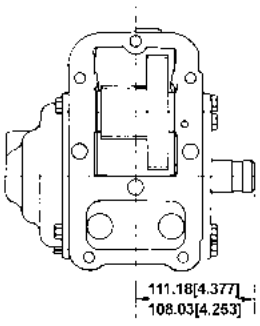

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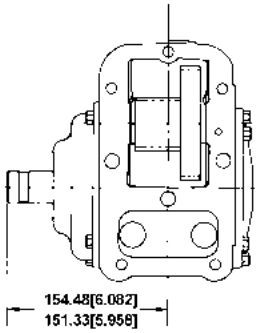

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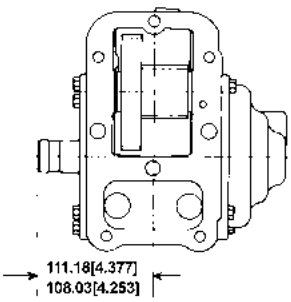

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Parker Hannifin Corporation
Chelsea Products Division
Olive Branch, MS 38654 USA

231 X K AK X – P 3 XD

BASIC MODEL
231

MOUNTING TYPE
G = Allison 1000, 2000/2400
M = 6 Bolt Adaptor Plate

GEAR RATIO
A = 18/53
B = 15/34
D = 24/47
K = 29/42
Q = 34/37

INPUT GEAR DESIGNATOR

LUBRICATION
X = No Lubrication
P = Pressure Lube

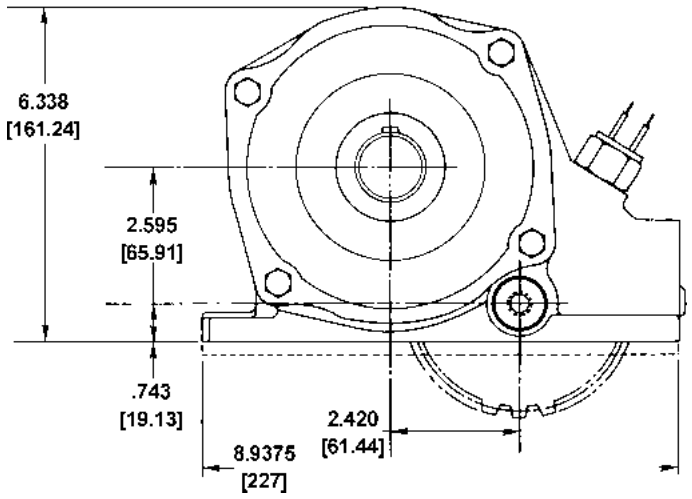
OUTPUT TYPE
XD = 1.250" RD Std.Shaft
XK = S.A.E. “B” 2 or 4 Bolt
XP = S.A.E. “A” 2 Bolt
XR = CHELSEA Special*
XX = 1.250" Tapered**
XY = Special Pump Mount*
AF = S.A.E. “BB” 2 or 4 Bolt
RA = Rotatable S.A.E. “B” 2 Bolt*
RB = Rotatable S.A.E. “B” 4 Bolt*

ASSEMBLY ARRANGEMENT
3, 4, 5, 6

SHIFTER TYPE
A = Air Shift
P = 12 Volt Electric/Air w/o E.O.C.
Q = 24 Volt Electric/Air w/o E.O.C.
N = 12 Volt Electric/Air w/E.O.C.
J = 24 Volt Electric/Air w/E.O.C.

* Only available in 3 & 5 assembly arrangements
** Uses Spicer® 3-1-604 Companion Flange

Case Dimensions



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Olive Branch, MS 38654 USA

Gear Chart

Input Gear Item 4					Output Gear Item 17	
Model Number	**Input Gear Part Number**	**No. Teeth Lg. Cluster**	**No. Teeth Sm. Cluster**	**Gear Type**	**Output Gear Part Number**	**No. Teeth**
230*AAH	5-P-546	25	18	Spur	2-P-473	53
230*AAJ	5-P-567	25	18	Spur	2-P-473	53
230*AAK	5-P-548	25	18	Spur	2-P-473	53
230*AHV	5-P-1295	27	18	Spur	2-P-473	53
230*ADA	5-P-1370	27	18	Spur	2-P-473	53
230*BAH	5-P-547	25	15	Spur	2-P-481	34
230*BAJ	5-P-568	25	15	Spur	2-P-481	34
230*BHV	5-P-1296	27	15	Spur	2-P-481	34
230*BDA	5-P-1371	27	15	Spur	2-P-481	34
230*DAJ	5-P-695	25	24	Spur	2-P-606	47
230*DAK	5-P-807	25	24	Spur	2-P-606	47
230*DHV	5-P-1297	27	20	Spur	2-P-606	47
230*DDA	5-P-1372	27	24	Spur	2-P-606	47
230*KAJ	5-P-769	25	29	Spur	2-P-638	42
230*KDA	5-P-843	27	29	Spur	2-P-638	42
230*QAJ	5-P-770	25	34	Spur	2-P-639	37
230*QDA	5-P-844	27	34	Spur	2-P-639	37
230*UAJ	5-P-1144	25		Spur	2-P-640	17
230*UDB	5-P-995	43		Spur	2-P-748	29
231*AAH	5-P-546	25	18	Spur	2-P-473	53
231*AAJ	5-P-567	25	18	Spur	2-P-473	53
231*AAK	5-P-548	25	18	Spur	2-P-473	53
231*AHV	5-P-1295	27	18	Spur	2-P-473	53
231*BAH	5-P-547	25	15	Spur	2-P-481	34
231*BAJ	5-P-568	25	15	Spur	2-P-481	34
231*BHV	5-P-1296	27	15	Spur	2-P-481	34
231*DAJ	5-P-695	25	24	Spur	2-P-606	47
231*DAK	5-P-807	25	24	Spur	2-P-606	47
231*DHV	5-P-1297	27	20	Spur	2-P-606	47
231*KAK	5-P-881	25	29	Spur	2-P-638	42
231*KAJ	5-P-769	25	29	Spur	2-P-638	42
231*QAJ	5-P-770	25	34	Spur	2-P-639	37

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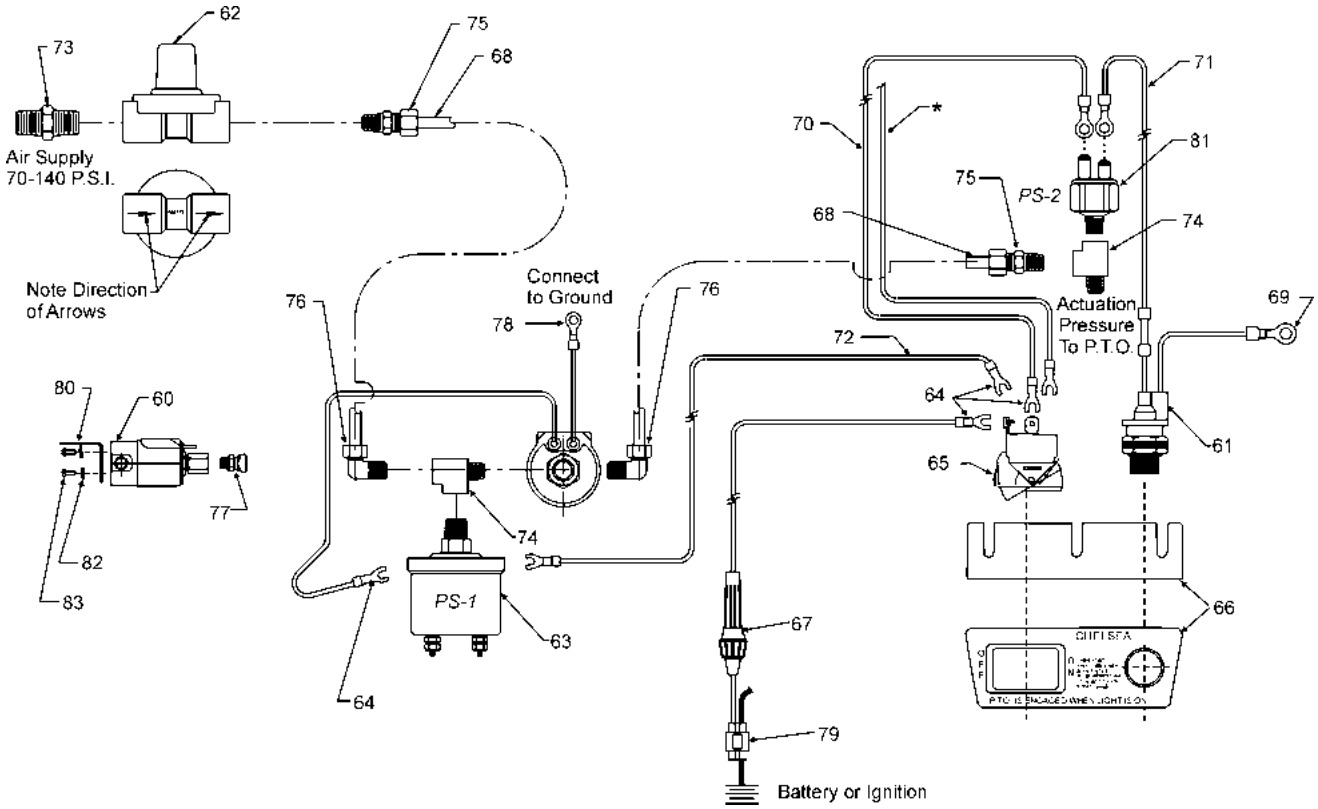
Air Shift Installation Sketch without E.O.C. (SK-226)



Item		Part Number	Description	Quantity
	▶	328388-50X	**12 Volt Air Shift Installation Kit without E.O.C. (Includes items 62 thru 83)**	1
60	▶	379303-1	Solenoid Valve (12 volt)	1
61	▶	378978	Indicator Light (12 volt)	1
	▶	328388-51X	**24 Volt Air Shift Installation Kit without E.O.C. (Includes items 62 thru 83)**	1
60	▶	379303-2	Solenoid Valve (24 volt)	1
61		379005	Indicator Light (24 volt)	1
62	▶	378414	Pressure Protection Valve	1
63	▶	379305	Pressure Switch	1
64	▶	379306	Fork Connector	4
65		378881	Rocker Switch	1
66	▶	379336	Bracket	1
67	▶	378884	Fuse Holder (9 amp.)	1
68		379044-7	Nylon Tubing (35 ft.)	1
69	▶	379253	Ring Connector	1
70	▶	379254-13	#14 Gauge Blue Wire w/ Ring Connector	1
71		379254-15	#14 Gauge Blue Wire w/ Ring and Butt Connector	1
72		379254-8	#14 Gauge Green Wire w/ Fork Connector	1
	▶	328388-49X	**Air Shift Installation Kit (includes items 73 thru 83)**	1
73	▶	378416	Hex Nipple	1
74	▶	378966	Street Tee	2
75	▶	379042	Male Connector	2
76	▶	379043	Male Elbow	2
77	▶	379106	Breather Atmospheric (.125" - 27 NPT)	1
78	▶	379253	Ring Connector	1
79	▶	379257	Splice Connector	1
80	▶	379258	Mounting Bracket, Solenoid	1
81		379547	Pressure Switch	1
82	▶	500357-7	Lockwasher	2
83	▶	500457-6	Mounting Screw	2
*		329336-1X	Allison 1000, 2000/2400 Series Wire Kit	1
	▶	379254-17	Wire w/ Fork Connector (Allison 1000, 2000/2400 Series)	1

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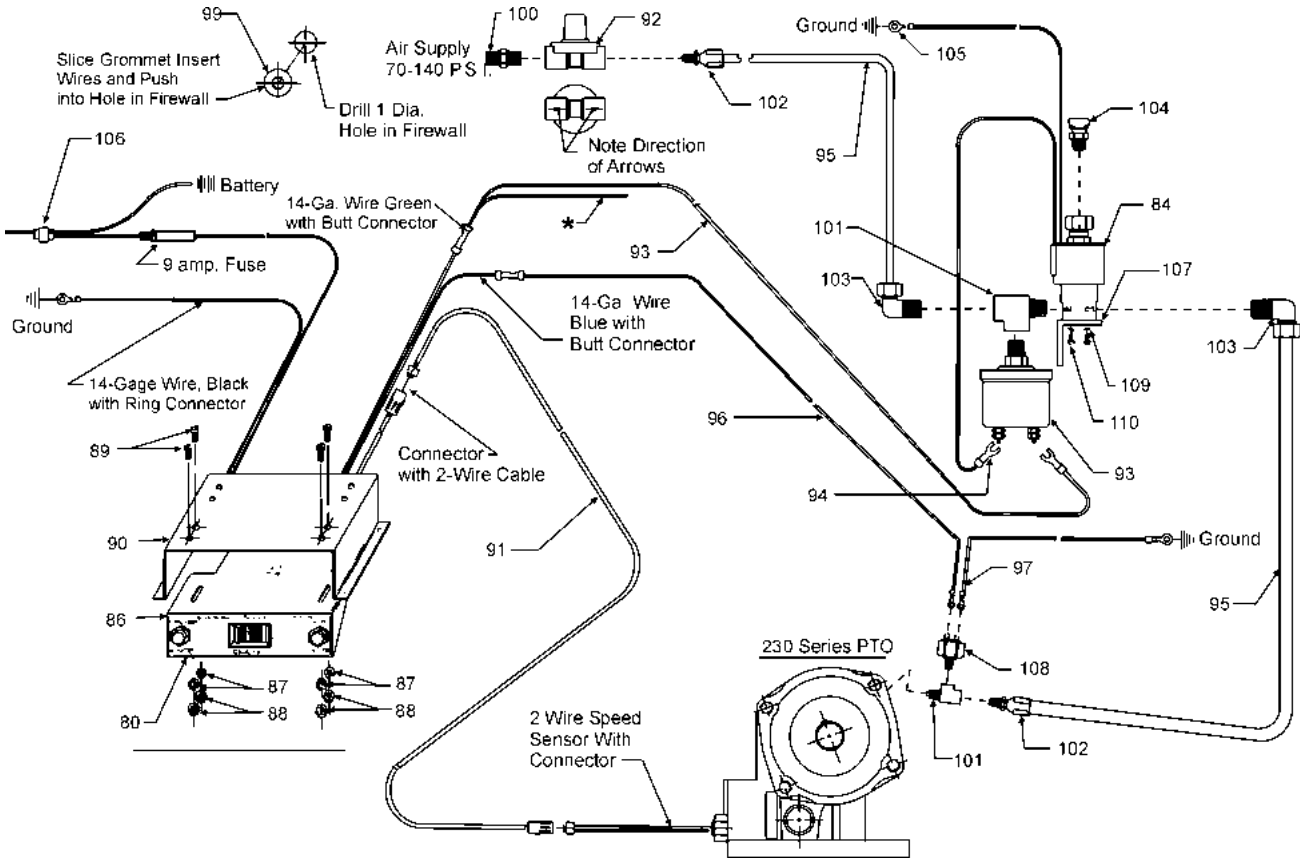
Air Shift Installation Sketch with E.O.C. (SK-227)



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Air Shift Installation Parts List with E.O.C. (SK-227)

Item		Part Number	Description	Quantity
	▶	328388-52X	**12 Volt Air Shift Installation Kit (Includes items 84 thru 110)**	1
84	▶	379303-1	Solenoid Valve (12 volt)	1
85		328924-12X	12 Volt Speed Limiter w/ E.O.C.	1
86		328922-12X	Speed Limiter Control Box (12 volt)	1
	▶	328388-53X	**24 Volt Air Shift Installation Kit (Includes items 84 thru 110)**	1
84	▶	379303-2	Solenoid Valve (24 volt)	1
85		328924-24X	24 Volt Speed Limiter w/ E.O.C.	1
86		328922-24X	Speed Limiter Control Box (24 volt)	1
	▶	328931X	Parts Bag, Mounting	1
87	▶	500357-7	Lockwasher	4
88		500376-6	Hex Nut	4
89	▶	500448-9	Slotted Screw	4
90		379244	Universal Mounting Bracket	1
N.S.		379260	Caution Tag 12 Volt	1 or
N.S.		379261	Caution Tag 24 Volt	1
N.S.		379266	E.O.C. Owners Manual 230/231 Series	1
N.S.		379318	E.O.C. Screwdriver	1
N.S.		68-P-33-1	Spanish Control Plate	1
N.S.		68-P-33-2	French Control Plate	1
91		328923-10X	Speed Switch Connector Cable (10 Ft.)	1 or
		328923-5X	Speed Switch Connector Cable (5 Ft.) Optional	1
92	▶	378414	Pressure Protection Valve	1
93	▶	379305	Pressure Switch	1
94	▶	379306	Fork Connector	4
95		379044-7	Nylon Tubing (35 ft.)	1
96	▶	379254-13	#14 Gauge Blue Wire w/ Ring Connector	1
97	▶	379254-14	#14 Gauge Black Wire w/ 2 Ring Connectors	1
98		379254-8	#14 Gauge Green Wire w/ Fork Connector	1
99	▶	379265	Grommet	1
	▶	328388-49X	**Air Shift Installation Kit (includes items 100 thru 110)**	1
100	▶	378416	Hex Nipple	1
101	▶	378966	Street Tee	2
102	▶	379042	Male Connector	2
103	▶	379043	Male Elbow	2
104	▶	379106	Breather Atmospheric 1/8" - 27 NPT	1
105	▶	379253	Ring Connector	1
106	▶	379257	Splice Connector	1
107	▶	379258	Mounting Bracket Solenoid	1
108		379547	Pressure Switch	1
109	▶	500357-7	Lockwasher	2
110	▶	500457-6	Mounting Screw	2
*		329336-2X	Allison 1000, 2000/2400 Series Wire Kit	1
		379254-18	Wire w/Butt Connector (Allison 1000, 2000/2400 Series)	1
			Connect to J1-6 (TCM) or Wire #106	

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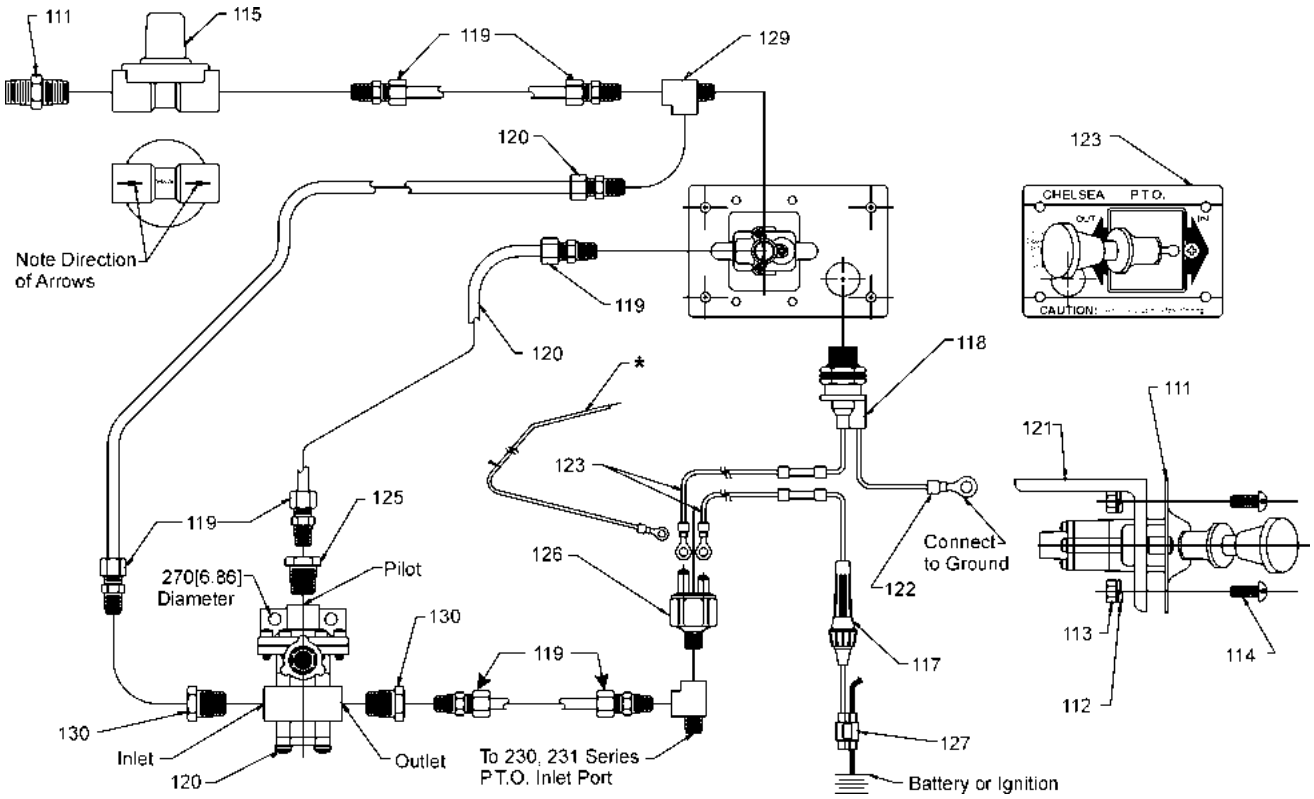
Air Shift Installation with Pilot Valve (SK-246)



Item	Part Number	Description	Quantity
	328388-57X	**Air Shift Installation Kit (with Pilot Valve)**	1
111	**328863X**	Air Valve 2 Position 2 Way	1
▶	**328931X**	Parts Bag, Mounting	1
112 ▶	**500357-7**	Lockwasher	4
113	**500376-6**	Hex Nut	4
114 ▶	**500448-9**	Slotted Screw	4
115 ▶	**378414**	Pressure Protection Valve	1
116 ▶	**378416**	Hex Nipple	1
117 ▶	**378884**	Fuse Holder	1
118 ▶	**378978**	Indicator Light	1
119 ▶	**379042**	Male Connector	8
120	**379044-7**	Nylon Tubing (35 ft.)	1
121 ▶	**379130**	Support Bracket	2
122 ▶	**379253**	Ring Connector	1
123	**379254-15**	Ring Wire & Butt Connector	2
124 ▶	**379257**	Splice Connector	1
125 ▶	**379497**	Pilot Valve	1
126	**379547**	Pressure Switch	1
127 ▶	**379640**	Connector	1
128 ▶	**68-P-27**	Name Plate	1
129 ▶	**500750-1**	Street Tee	2
130 ▶	**379131-1**	Reducer	3
*	**329336-3X**	Allison 1000, 2000/2400 Series Wire Kit	1
▶	**379254-13**	Wire w/Ring Connector (Allison 1000, 2000/2400 Series)	1

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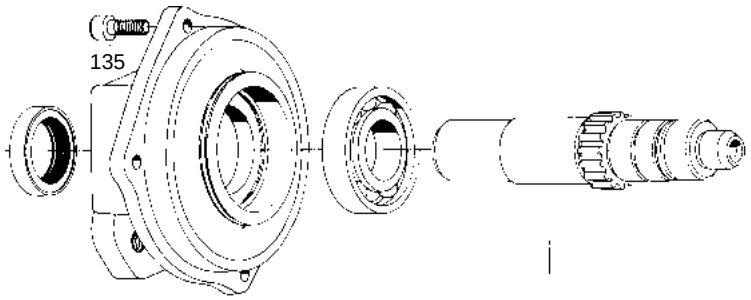

Pump Mounting Suffix (See Note)		Flange Item 131	Seal Item 132	Bearing Item 133	Driveshaft & Clutch Assembly Number *	Driveshaft & Clutch Output Shaft Item 134 **	Hex Socket Head Screw ** Item 135
XK	Assembly 3 & 5	21-P-445	28-P-225	550010	328926-4X	3-P-686	378447-7
	Assembly 4 & 6	21-P-303	28-P-225	550010	328926-3X	3-P-678	378447-6
XP	Assembly 3 & 5	21-P-443	28-P-225	550010	328926-4X	3-P-686	378447-7
	Assembly 4 & 6	21-P-301	28-P-225	550010	328926-3X	3-P-678	378447-6
XR	Assembly 3 & 5 ●	21-P-447	28-P-225	550010	328926-5X	3-P-703	378447-6
XX	Assembly 3 & 5	21-P-451	28-P-225	550010	328926-6X	3-P-787	378447-7
	Assembly 4 & 6	21-P-297	28-P-225	550010	328926-7X	3-P-788	378447-6
XY	Assembly 3 & 5	21-P-468	28-P-230	550010	328926-8X	3-P-825	378447-7
AF	Assembly 3 & 5	21-P-445	28-P-225	550010	328926-9X	3-P-896	378447-7
	Assembly 4 & 6	21-P-303	28-P-225	550010	328926-10X	3-P-895	378447-6
RA	Assembly 3 & 5	21-P-570 ■	28-P-225	550010	328926-5X	3-P-703	378447-6
RB	Assembly 3 & 5	21-P-572 ■	28-P-225	550010	328926-5X	3-P-703	378447-6

* Assembly includes the Pump Shaft shown plus items 19 thru 28 shown on page 3, or items 14 thru 23 page 7.

** 378447-6 (.312"-18 X 1.00")
▶ 378447-7 (.312"-18 X 1.25")

● 328748X Pump to flange mounting kit must be used with “R” suffix.
Kit Contains: (4) 378430-11 Hex Head Cap Screws (.312"-18 x 1.125)
(4) 378919 Washers (Special)
(4) 45-P-11 Bushing Guide

■ Rotatable Flange Mounts to 21-P-447

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Notes

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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 one (1) year from date of installation.
(B) Except 267, 277, 278, 242, 244, 250, 251 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.**

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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 there/to. 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.

9/01-P

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