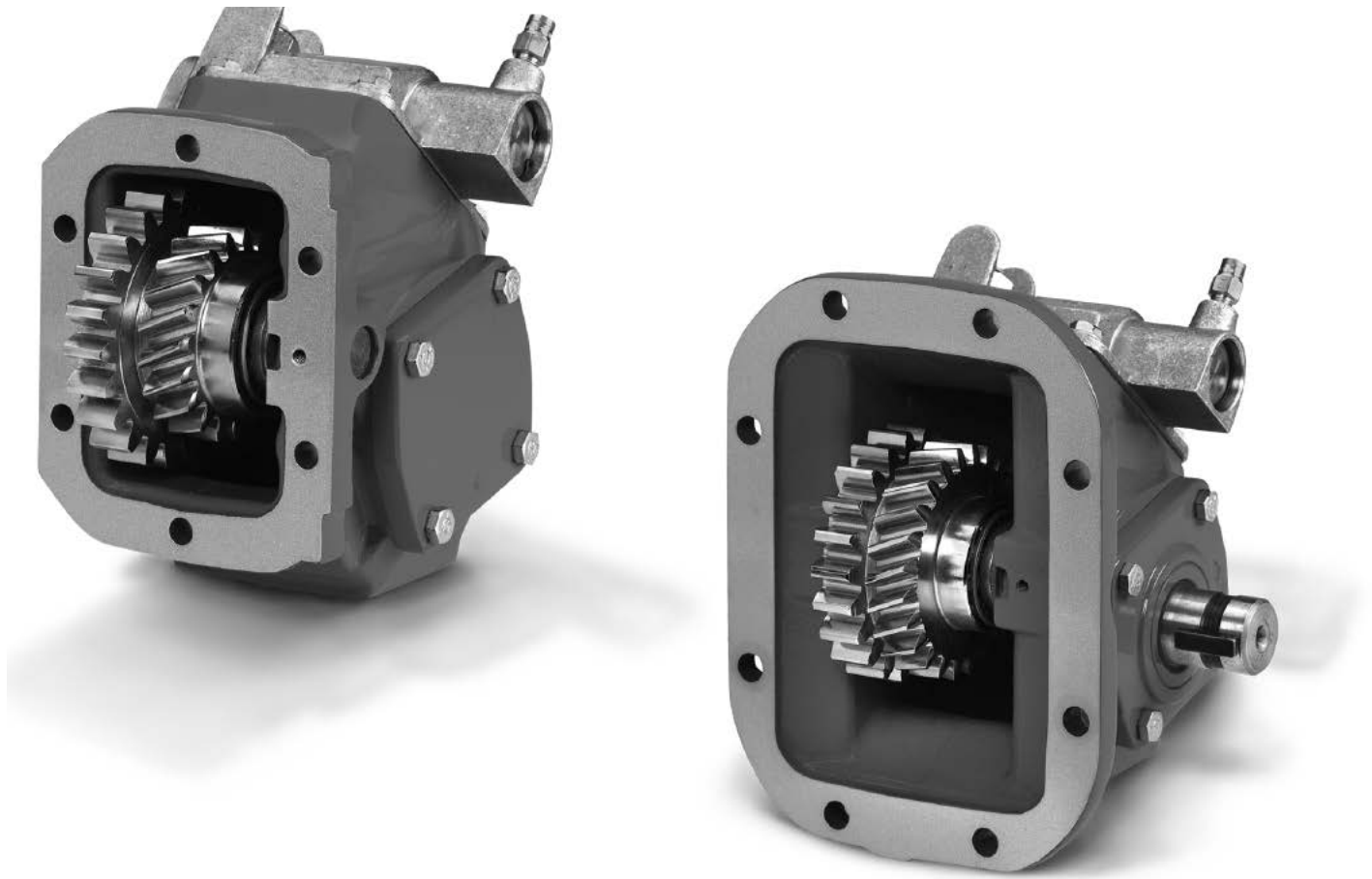


Effective: HY25-2660-M1/US January 15, 2024
Supersedes: HY25-2660-M1/US February 15, 2023



Power Take-Offs Parts List

660, 680 Series



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 distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale".



WARNING: This product can expose you to chemicals including Lead and Lead Compounds, and Di(2-ethylhexyl)phthalate (DEHP) which are 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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660 Series

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680 Series

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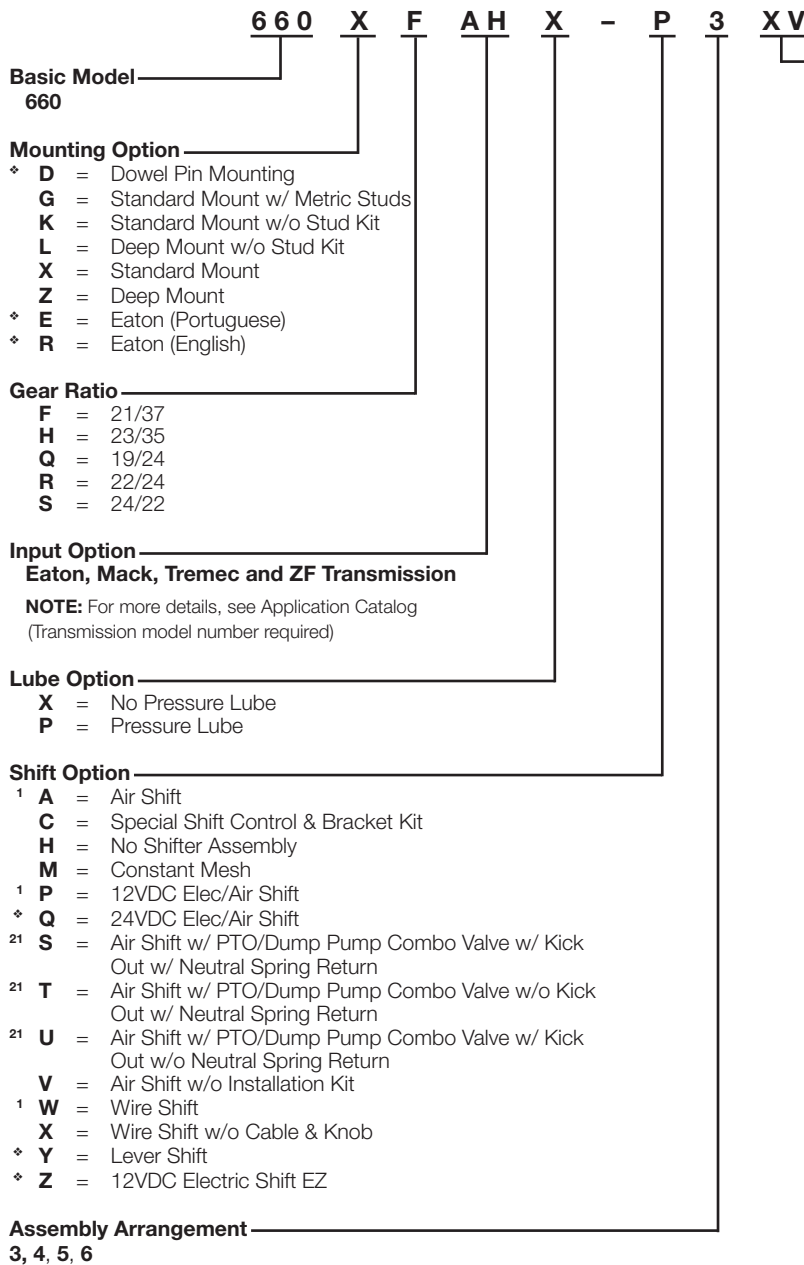
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Model Number Designator



Output Option

Driveline Output

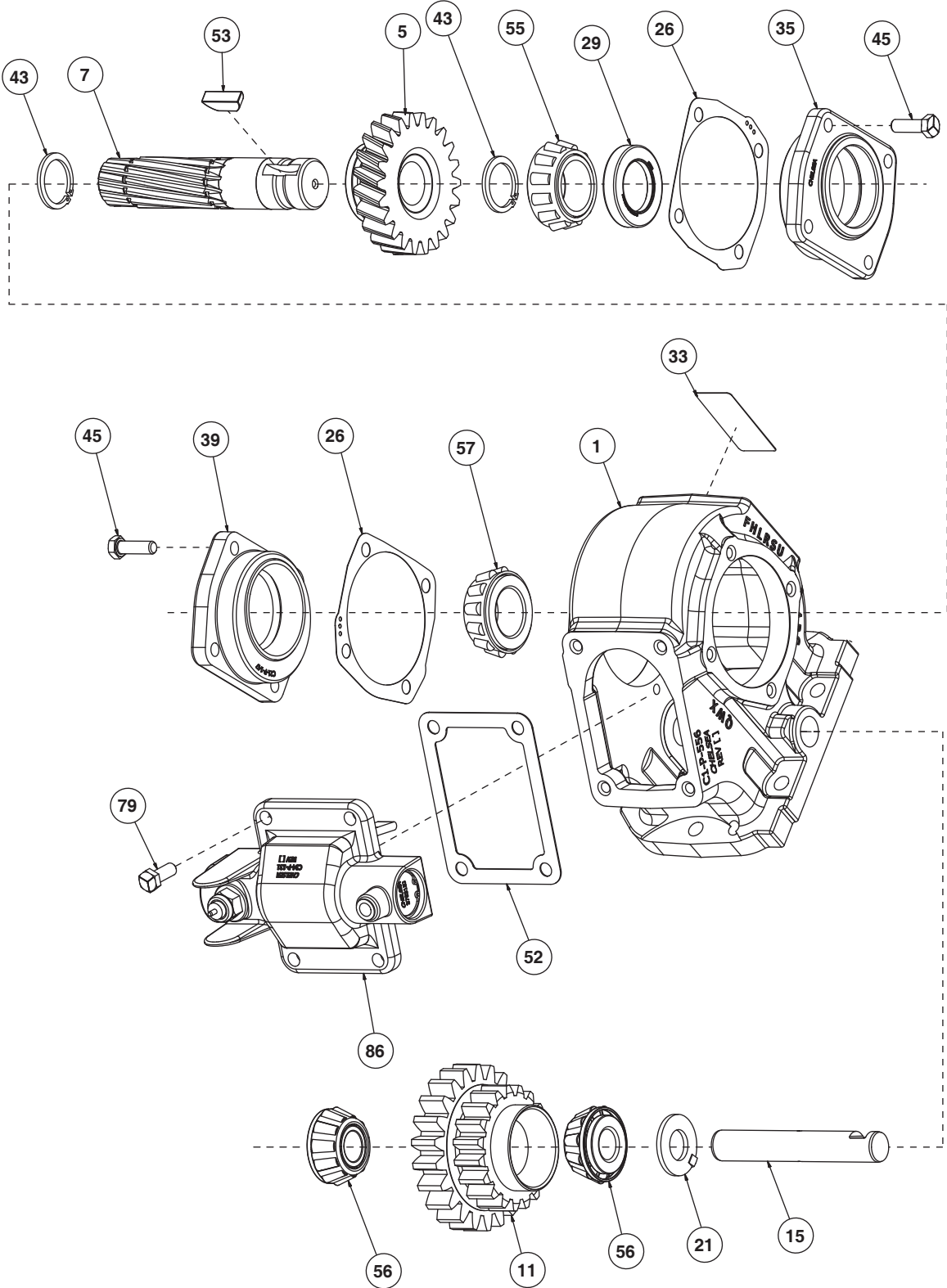
- XD** = Rd Standard Shaft (1-1/4" - 5/16" Key)
XV = 1410 Series Companion Flange
XX = 1-1/4" Tapered Shaft w/ Keyway

Pump Mount

- ♦ **AA** = Special Pump for England
AF = SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)
AK = SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)
AZ = SAE B 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)
 ♦ **FF** = SAE B Pump Flange, SAE B Shaft (Female 7/8" Rd - 1/4" Key)
 ♦ **L*** = Self Lube
GA = Greaseable SAE B 2-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)
GB = Greaseable SAE B 4-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)
 ♦ **GE** = Greaseable SAE A 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)
GF = Greaseable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)
GH = Greaseable SAE B 2-Bolt Rotatable Flange, SAE BB Shaft (1" - 15T)
 ♦ **GJ** = Greaseable SAE B 4-Bolt Rotatable Flange, SAE BB Shaft (1" - 15T)
GK = Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)
 ♦ **GL** = Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)
 ♦ **GP** = Greaseable Special SAE A Pilot & 2-Bolt Flange, SAE B Shaft
⁵⁹ **GQ** = Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)
GR = Greaseable Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)
GY = Greaseable ISO 7653 Pump Mount DIN 5462 Shaft
GZ = Greaseable SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)
RA = Rotatable SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)
RB = Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)
RC = Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)
RD = Rotatable SAE A 2-Bolt Flange, SAE B Shaft (7/8" - 13T)
RE = Rotatable SAE B 4-Bolt Flange, SAE BB Shaft (1" - 15T)
RF = Rotatable SAE B 2-Bolt Flange, SAE BB Shaft (1" - 15T)
 ♦ **RH** = Rotatable SAE B 2-Bolt Flange, SAE BB Shaft (1" - 15T)
RJ = Rotatable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)
RK = Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)
⁷⁹ **RY** = Rotatable ISO 7653 Pump Mount DIN 5462 Shaft
XE = SAE A 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)
 ♦ **XG** = Non-Standard SAE A 2-Bolt Flange, Non-Standard Shaft (3/4" - 3/16" Key) Long
 ♦ **XJ** = Non-Standard SAE A 2-Bolt Flange, Non-Standard Shaft (3/4" - 3/16" Key) Short
XK = SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)
 ♦ **XL** = Non-Standard SAE A 2-Bolt Flange, Non-Standard SAE Shaft (7/8" - 13T)
 ♦ **XO** = Special SAE A Pilot 2-Bolt Flange, Non-Standard Shaft (3/4" - 3/16" Key)
 ♦ **XP** = Special SAE A Pilot 2-Bolt Flange, SAE B Shaft (7/8" - 13T)
⁵⁹ **XQ** = SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)
XR = Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)
XY = ISO 7653 Pump Mount DIN 5462 Shaft

¹ Includes mounting parts.²¹ Includes installation kit, console sold separately.⁵⁹ Same as XK except rotated 90°⁷⁹ Flooded Cavity

♦ No longer a current option per Chelsea Suggested List Price.



Bill of Materials**Parts List
660 Series**

Item	Part Number	Description	Qty.
1	1-P-580	Standard Mount Housing (X & G Mount)	1 or
	1-P-580XD	Standard Mount Housing w/ Dowel Pins (D Mount)	1
	1-P-581	Deep Mount Housing (Z Mount)	1
5	See pages 7-8	Output Gear	1
7	3-P-202	Output Shaft (XD)	1 or
	See pages 7-8	Output Shaft (All Others)	1
11	See pages 7-8	Input Gear	1
15	9-P-60	Idler Shaft (.750") (X Lube Option)	1 or
	9-P-71	Idler Shaft (.750") (P Lube Option)	1
21	14-P-79-1	Spacer (.112"-.114")	A.R.
	14-P-79-2	Spacer (.116"-.118")	A.R.
	14-P-79-3	Spacer (.120"-.122")	A.R.
	14-P-79-4	Spacer (.124"-.126")	A.R.
26	22-P-127-1	Bearing Cap Gasket (.010")	A.R.
	22-P-127-2	Bearing Cap Gasket (.020")	A.R.
	22-P-127-3	Bearing Cap Gasket (.015")	A.R.
29	28-P-216	Oil Seal (XD) (2.004" x 1.250" x .374")	1
	See pages 30-41	Oil Seal	1
33	68-P-51-1	Adhesive Label	1
35	329273X	Bearing Cap Assembly (XD)	1 or
	See pages 30-41	Bearing Cap Assembly (All other Outputs)	1
39	329274X	Bearing Cap Assembly (Closed End)	1 or
	See pages 32 & 41	Bearing Cap Assembly (L & G Outputs)	1
43	378391	Lockring (Constant Mesh)	1 or
		Lockring (All Other Shift Types)	2
45	378430-10	7/16" Hex Head Cap Screw (.312"-18 x 1.000") (XD Output)	4
	See pages 30-40	7/16" Hex Head Cap Screw (.312"-18 x 1.000") (All Other Outputs)	4
52	35-P-8	Shift Gasket Cover	1
53	500007-29	Woodruff Key (XD Output Only)	1
55	550397	Bearing Tapered Cone (1.250" x .812")	1
56	550439	Bearing Tapered Cone (.750" x .859")	2
57	550532	Bearing Tapered Cone (1.181" x .812")	1
N.S.	4-P-178	Spacer (1.255" x 1.505" x .216") (Constant Mesh Shifter) (Type M)	1
N.S.	4-P-177	Spacer (1.255" x 2.005" x .738") (Constant Mesh Shifter) (Type M)	1
N.S. – Not Shown A.R. – As Required			Continued on Next Page

Bill of Materials**Parts List
660 Series**

Item	Part Number	Description	Qty.
79	378430-8	7/16" Hex Head Cap Screw (.312"-18 x .750") (Electric Shift)	4 or
	378430-9	7/16" Hex Head Cap Screw (.312"-18 x .875") (Air Shift & Wire Shift)	4 or
	378430-6	7/16" Hex Head Cap Screw (.312"-18 x .625") (Constant Mesh).....	4
86	See page 9	Air Shifter	
	See page 10	Lever Shifter	
N.S.	34-P-39	Plate Cover Shifter (Constant Mesh)	
	See pages 48-58 for Bill of Materials for the below loose parts.		
		GASKET KITS	
	328948-6X	Gaskets & Installation Instructions (X, Z, G, K, & L).....	1
	328948-27X	Gaskets & Installation Instructions (D)	1
		STUD KITS	
	328170-76X	Standard Mount Stud Kit (X Mount)	1
	328170-77X	Deep Mount Stud Kit (Z Mount)	1
	7170-72X	Metric w/ Dowel Pin Stud Kit (D Mount).....	1
	7170-78X	Metric Mount Stud Kit (G Mount)	1
		INSTALLATION KITS	
	328346-10X	Cable Control Assembly (W Shifter)	1
	328380X	Wire Control Parts Bag (W Shifter)	1
	328751-1X	Indicator Light Installation Kit	1
	329245X	Shifter Bracket Kit (C Shifter).....	1
		AIR SHIFTER INSTALLATION KITS	
	328388-47X	Electric/Air Installation Kit 12VDC (P).....	1
	328388-48X	Electric/Air Installation Kit 24VDC (Q)	1
	328388-65X	Air Shift With Control Valve (S)	1
	328388-72X	Air Shift With Control Valve (T).....	1
	328388-98X	Air Shift Installation Kit (A)	1
		ELECTRIC SHIFT INSTALLATION KITS	
	329166-12X	Electric Shift Installation Kit	1
		SHIFTER KITS	
	329106-39X	Air Shifter Kit (A)	
	329106-43X	Air Shifter Kit (P)	
	329106-45X	Air Shifter Kit (Q)	
	329106-153X	Air Shifter Kit (V)	
	329106-105X	Shifter Kit (Wire Control 3 & 6) (Q, W & X Ratio) (W Option)	
	329106-106X	Shifter Kit (Wire Control 4 & 5) (Q, W & X Ratio) (W Option)	
	329106-107X	Shifter Kit (Wire Control 3 & 6) (Q, W & X Ratio) (X Option)	
	329106-108X	Shifter Kit (Wire Control 4 & 5) (Q, W & X Ratio) (X Option)	
	329106-109X	Shifter Kit (Wire Control 3 & 6) (F, L, R, S, & U Ratio) (W Option)	
	329106-110X	Shifter Kit (Wire Control 4 & 5) (F, L, R, S, & U Ratio) (W Option)	
	329106-111X	Shifter Kit (Wire Control 3 & 6) (F, L, R, S, & U Ratio) (X Option)	
	329106-112X	Shifter Kit (Wire Control 4 & 5) (F, L, R, S, & U Ratio) (X Option)	
	♦ 329106-125X	Easy Shift Shifter Kit 12VDC (3 & 6)	
	♦ 329106-126X	Easy Shift Shifter Kit 12VDC (4 & 5)	

N.S. – Not Shown

Continued on Next Page

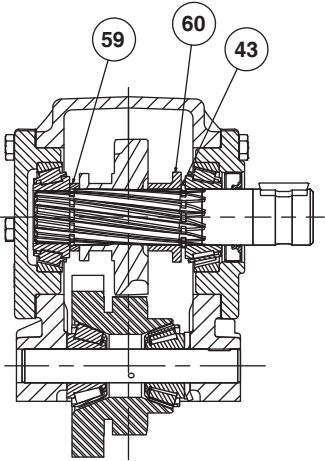
♦ No longer a current option per Chelsea Suggested List Price.

Bill of Materials**Parts List
660 Series**

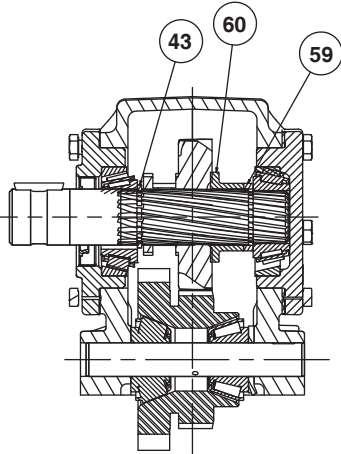
Item	Part Number	Description	Qty.
		SERVICE KITS	
	328356-15X	Shifter Cover Seal Kit (Cable Control).....	1
	328356-17X	Shifter Cover Seal Kit (Air Shift)	1
	328356-26X	Shifter Cover Seal Kit (Lever Control)	1
	329143X	Shifter Shaft Cover Kit (Includes Items 43, 44, 45 on page 3).....	1
	329202X	Indicator Switch Connector Service Kit (Includes 380515, 379640 & 379252)	1
	329303-1X	Seal Kit (Output Options XD, RA, XE, *XG, *XJ, XK, *XL, RB, *XM, *XN, *XO, *XP, XQ, XR, *AA, AK, XX, *LA, *LB, *LC, *LD, *LE and *LF).....	1
	329303-2X	Seal Kit (Output Options AF and *FF).....	1
	329303-3X	Seal Kit (Output Options XY and AZ).....	1
	329310-1X	Bearing and Seal Kit (Output Options XD, RA, XE, *XG, *XJ, XK, *XL, RB, *XO, *XP, XQ, XR, *AA, AK, XX, *LA, *LB, *LC, *LD, *LE and *LF)	1
		SERVICE CONVERSION KITS	
	328390-117X	Air Shift Field Conversion Kit (Wire or Lever to Air)	
	328390-119X	Air Shift Field Conversion Kit 12VDC (Wire to Air)	
	328390-120X	Air Shift Field Conversion Kit 24VDC (Wire to Air)	
	*328390-138X	Electric Shift Field Conversion Kit (Wire to 12VDC) (3 & 6 Assembly)	
	*328390-139X	Electric Shift Field Conversion Kit (Wire to 12VDC) (4 & 5 Assembly)	
	*328390-140X	Easy Shift Conversion Kit (Lever or Air to 12VDC)	
		OUTPUT CONVERSION KITS	
	See pages 54-57	Output Conversion Kits Bill of Materials	

* No longer a current option per Chelsea Suggested List Price.

Constant Mesh



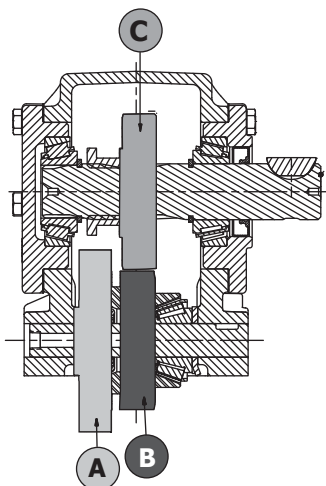
Assembly 3 & 5



Assembly 4 & 6

Item	Part Number	Description	Qty.
43	378391	Lockring	1
59	4-P-178	Spacer (1.255" x 1.505" x .216")	1
60	4-P-177	Spacer (1.255" x 2.005" x .738")	1
N.S.	34-P-39	Cover Plate (For Shifter Opening).....	1

N.S. – Not Shown

Gear Chart

GEAR DESIGNATOR	INPUT GEAR	NO. TEETH A	HELIX ANGLE	NO. TEETH B
660*FAH	5-P-1242	22	Spur	21
660*QAH	5-P-1246	22	Spur	19
660*RAH	5-P-1441	22	Spur	22
660*SAH	5-P-1322	22	Spur	24
♦ 660*UAH	5-P-1323	22	Spur	26
♦ 660*WAH	5-P-1324	22	Spur	26
660*FBG	5-P-1325	23	Left Hand	21
660*QBG	5-P-1326	23	Left Hand	19
♦ 660*SBG	5-P-1327	23	Left Hand	24
♦ 660*UBG	5-P-1328	23	Left Hand	26
♦ 660*WBG	5-P-1329	23	Left Hand	26
660*FDA	5-P-1330	23	Spur	21
660*QDA	5-P-1331	23	Spur	19
660*SDA	5-P-1332	23	Spur	24
♦ 660*UDA	5-P-1333	23	Spur	26
♦ 660*WDA	5-P-1334	23	Spur	26
660*FED	5-P-1335	34	Left Hand	21
660*QED	5-P-1336	34	Left Hand	19
660*SED	5-P-1337	34	Left Hand	24
♦ 660*UED	5-P-1338	34	Left Hand	26
♦ 660*WED	5-P-1339	34	Left Hand	26
660*FJA	5-P-1345	27	Left Hand	21
♦ 660*QJA	5-P-1346	27	Left Hand	19
660*SJA	5-P-1347	27	Left Hand	24
660*UJA	5-P-1348	27	Left Hand	26
♦ 660*WJA	5-P-1349	27	Left Hand	26
♦ 660**BM	5-P-1446	22	Left Hand	
660**ES	5-P-1447	22	Left Hand	
660**EW	5-P-1448	20	Left Hand	

♦ No longer a current option per Chelsea Suggested List Price.

Gear Ratio Options**INPUT RATIO GEARS**

GEAR DESIGNATOR	INPUT GEAR	NO. TEETH B
660*U	5-P-1449	26

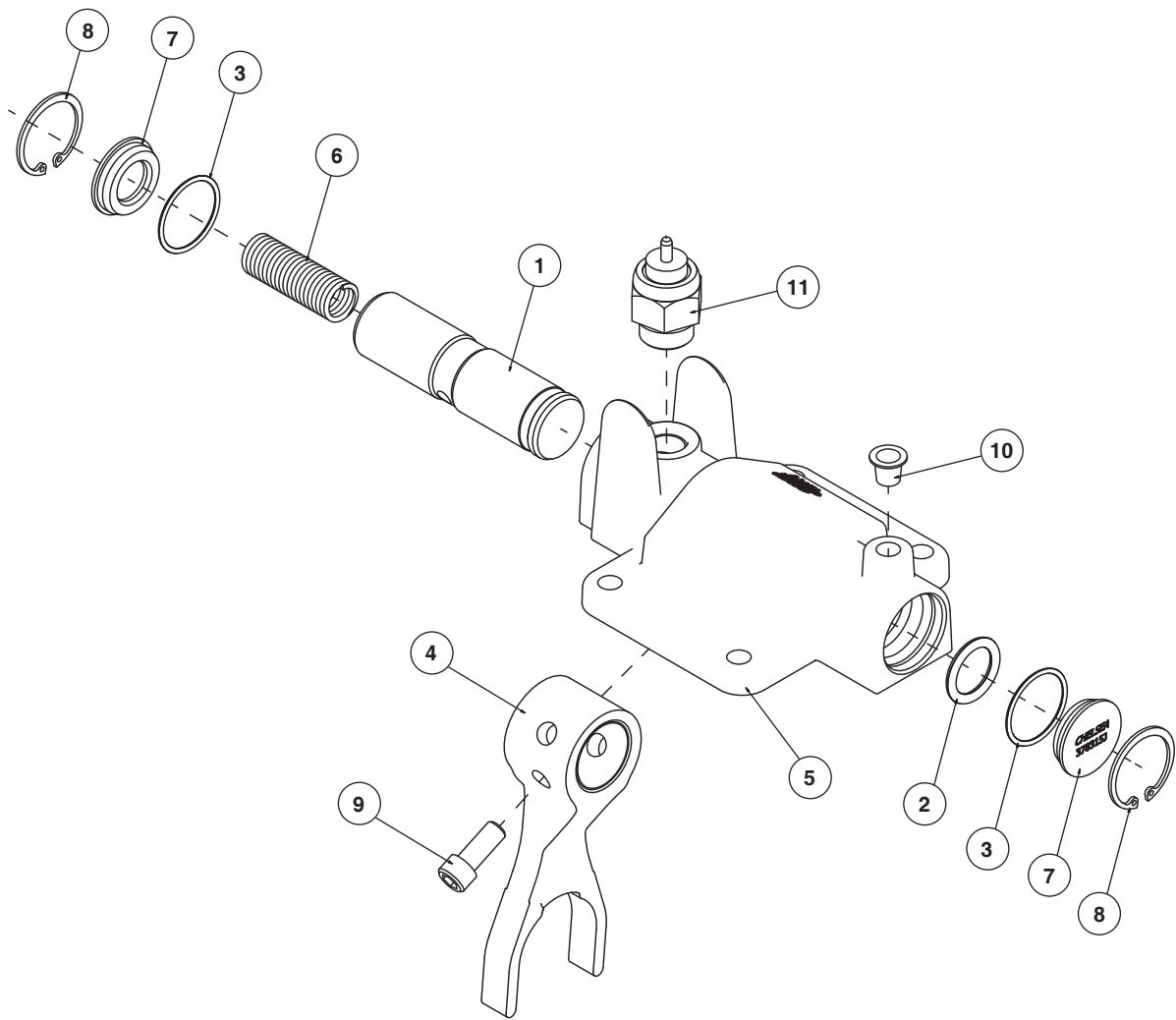
OUTPUT GEARS

GEAR DESIGNATOR	INPUT GEAR	NO. TEETH C
660*F	2-P-797	37
660*H	2-P-919	35
660*Q & *R	2-P-778	24
660*S	2-P-784	22
660*U	2-P-798	20
*660*W	2-P-799	17

NOTE: Check Current Price Sheet for Availability of Input Options

* No longer a current option per Chelsea Suggested List Price.

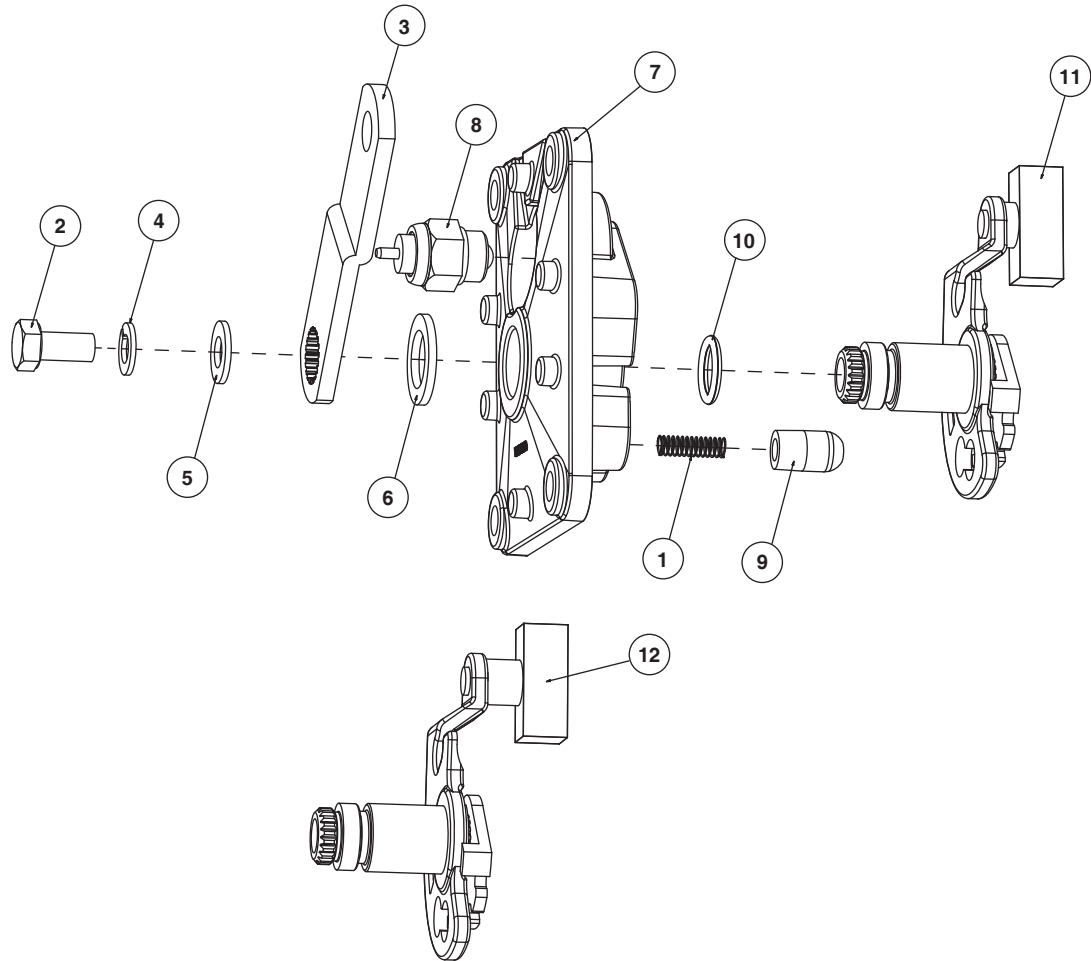
Air Shifter Cover Assembly



Item	Part Number	Description	Qty.
70	329361X	Air Shifter Cover Assembly (A Shift) (includes item 1-11)	1
1	11-P-75	Shifter Shaft.....	1
2	28-P-41	O-ring (.734" x .141").....	1
3	28-P-42	O-ring (1.051" x .070").....	2
4	32-P-180	Shifter Fork.....	1
5	34-P-130	Shifter Cover	1
6	37-P-21	Shifter Spring	1
7	378315	Cover Plug	2
8	378316	Internal Lockring.....	2
9	378447-4	1/4" Socket Hex Head Cap Screw (w/ lockpatch) (.312"-18 x .750")	1
10	500897-5	Shipping Plug	1
11	380515	Indicator Switch (329361X).....	1
		AIR SHIFT CONVERSION KITS	
	328390-117X	Lever or Cable to Air.....	1
	328390-119X	12VDC Lever or Cable to Electric/Air	1
	328390-120X	24VDC Lever or Cable to Electric/Air	1

See [pages 48-58](#) for Kits Bill of Materials

Level Control Shifter Cover Assembly



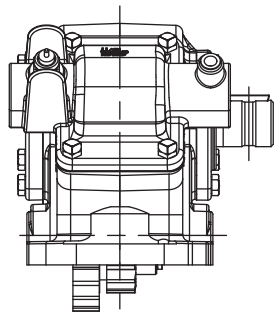
Item	Part Number	Description	Qty.
	329119-1X	Ratios Q, W & X	
	329119-2X	Lever Shifter Cover Assembly (Assembly 3 & 6) (Includes item 1-11).....	1 or
		Lever Shifter Cover Assembly (Assembly 4 & 5) (Includes item 1-11).....	1 or
	329121-1X	Ratios F, H, L, R, S & U	
	329121-2X	Lever Shifter Cover Assembly (Assembly 3 & 6) (Includes item 1-10 & 12)	1 or
		Lever Shifter Cover Assembly (Assembly 4 & 5) (Includes item 1-10 & 12)	1
1	37-P-19	Spring (.220" x 1.188")	1
2	500409-6	Hex Head Cap Screw (.312"-24 x .625")	1
3	51-P-22	Shifter Lever	1
4	500356-10	Lock Washer (.575" x .319" x .056")	1
5	500365-22	Flat Washer (.688" x .344" x .065")	1
6	378004	Flat Washer (.641" x 1.000" x .097")	1
7	34-P-74	Shifter Cover	1
8	380515	Indicator Switch.....	1
9	63-P-16	Shifter Poppet	1
10	28-P-191	O-ring (.549" x .103").....	1
11	329118-1X	Shifter Plate Assembly (329119-1X).....	1 or
	329118-2X	Shifter Plate Assembly (329119-2X).....	1
12	329120-1X	Shifter Plate Assembly (329121-1X).....	1 or
	329120-2X	Shifter Plate Assembly (329121-2X).....	1

See [pages 48-58](#) for Kits Bill of Materials

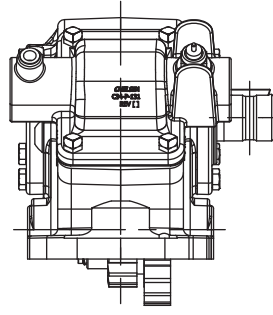
Shift Options**Parts List
660 Series**

For PTOs ordered without the shifter (Shifter Type H), the kits shown below will provide all the components required to complete the assembly.

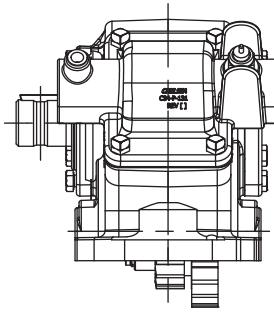
Part Number	Description	Qty.
329106-39X	Air Shift (A option).....	1
329106-153X	Air Shift (V option).....	1
329106-43X	12VDC Electric/Air (P option).....	1
329106-45X	24VDC Electric/Air (Q option).....	1
329106-105X	Cable Shift (Q, W & X Ratios, Assembly 3 & 6, W option).....	1
329106-106X	Cable Shift (Q, W & X Ratios, Assembly 4 & 5, W option).....	1
329106-107X	Cable Shift, Less Cable (Q, W, & X Ratios, Assembly 3 & 6, X option).....	1
329106-108X	Cable Shift, Less Cable (Q, W, & X Ratios, Assembly 4 & 5, X option).....	1
329106-109X	Cable Shift (F, L, R, S & U Ratios, Assembly 3 & 6, W option).....	1
329106-110X	Cable Shift (F, L, R, S & U Ratios, Assembly 4 & 5, W option).....	1
329106-111X	Cable Shift, Less Cable (F, L, R, S & U Ratios, Assembly 3 & 6, X option).....	1
329106-112X	Cable Shift, Less Cable (F, L, R, S & U Ratios, Assembly 4 & 5, X option).....	1
329143X	Shifter Shaft.....	1



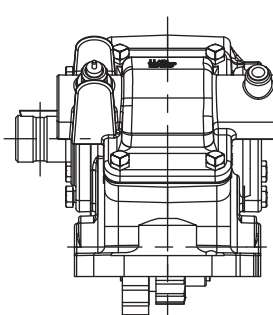
Assembly 3



Assembly 4

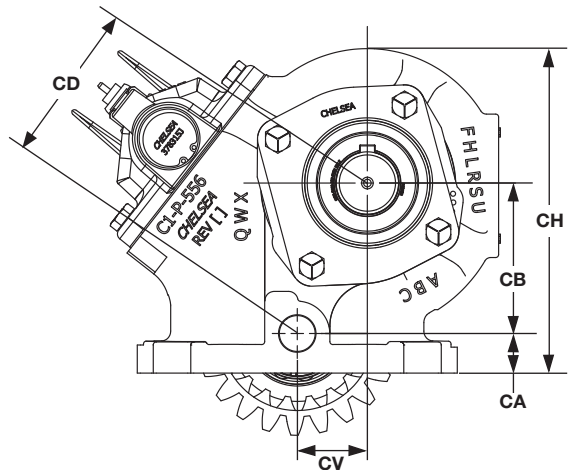


Assembly 5



Assembly 6

PTO Housing Dimensions



PTO Series	Part Number	CA	CB	CD	CH	CV
660 Standard	1-P-580	0.789"	3.007" (F, S, U) 2.908" (Q, W)	3.317" (F, S, U) 3.087" (Q, W)	6.428"	1.401" (F, S, U) 1.032" (Q, W)
660 Deep Mount	1-P-581	0.570"	3.007" (F, S, U) 2.908" (Q, W)	3.317" (F, S) 3.087" (Q, W)	6.207"	1.401" (F, S, U) 1.032" (Q, W)

Model Number Designator

6 8 0 X R A H X - A 3 X D									
Basic Model 680				Output Option					
Mounting Option				Driveline Output					
X = Standard Mount				XD = Rd Standard Shaft (1-1/4" - 5/16" Key) (DT12™)					
G = Standard Mount w/ Metric Studs				XV = 1410 Series Companion Flange (DT12™)					
K = Standard Mount w/o Stud Kit				XX = 1-1/4" Tapered Shaft w/ Keyway					
Z = Deep Mount				Pump Mount					
D = Daimler DT12™ (DT12™)				* AA = Special Pump for England					
Q = Eaton Endurant™				AF = SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)					
Gear Ratio				AK = SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)					
F = 21/37 (DT12™)				AZ = SAE B 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)					
H = 23/35				* FF = SAE B Pump Flange, SAE B Shaft (Female 7/8" Rd - 1/4" Key)					
Q = 19/24 (DT12™)				GA = Greaseable SAE B 2-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)					
R = 22/24				GB = Greaseable SAE B 4-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)					
S = 24/22				* GE = Greaseable SAE A 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)					
Input Option				GF = Greaseable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)					
Eaton, Mack, Tremec and ZF Transmission				GH = Greaseable SAE B 2-Bolt Rotatable Flange, SAE BB Shaft (1" - 15T)					
NOTE: For more details, see Application Catalog (Transmission model number required)				* GJ = Greaseable SAE B 4-Bolt Rotatable Flange, SAE BB Shaft (1" - 15T)					
Lube Option				GK = Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)					
X = No Pressure Lube (DT12™)				* GL = Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)					
P = Pressure Lube				* GP = Greaseable Special SAE A Pilot & 2-Bolt Flange, SAE B Shaft					
Shift Option				59 GQ = Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)					
1 A = Air Shift				GR = Greaseable Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)					
C = Special Shift Control & Bracket Kit				GZ = Greaseable SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)					
D = 12VDC Elec/Air Shifter For Eaton Endurant HD™				GY = Greaseable ISO 7653 Pump Mount DIN 5462 Shaft					
H = No Shifter Assembly				* L* = Self Lube					
M = Constant Mesh (DT12™)				RA = Rotatable SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)					
1 P = 12VDC Elec/Air Shift				RB = Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)					
21 S = Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/ Neutral Spring Return				RC = Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)					
21 T = Air Shift w/ PTO/Dump Pump Combo Valve w/o Kick Out w/ Neutral Spring Return				RD = Rotatable SAE A 2-Bolt Flange, SAE B Shaft (7/8" - 13T)					
21 U = Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/o Neutral Spring Return				RE = Rotatable SAE B 4-Bolt Flange, SAE BB Shaft (1" - 15T)					
V = Air Shift w/o Installation Kit				RF = Rotatable SAE B 2-Bolt Flange, SAE BB Shaft (1" - 15T)					
1 W = Wire Shift				* RH = Rotatable SAE B 2-Bolt Flange, SAE BB Shaft (1" - 15T)					
X = Wire Shift w/o Cable & Knob				RJ = Rotatable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)					
5 = Double Acting (DA) Shift Less Installation kit Daimler DT12™ & Eaton Endurant XD™ (DT12™)				RK = Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T) (DT12™)					
6 = Double Acting (DA) Shift For Eaton Endurant XD™				79 RY = Rotatable ISO 7653 Pump Mount DIN 5462 Shaft					
Assembly Arrangement				XE = SAE A 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)					
3 = Right side - bulge down				* XG = Non-Standard SAE A 2-Bolt Flange, Non-Standard Shaft (3/4"-3/16" Key) Long					
Left side - bulge up (DT12™)				* XJ = Non-Standard SAE A 2-Bolt Flange, Non-Standard Shaft (3/4" - 3/16" Key) Short					
4 = Right side - bulge down				XK = SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)					
Left side - bulge up (DT12™)				* XL = Non-Standard SAE A 2-Bolt Flange, Non-Standard SAE Shaft (7/8" - 13T)					
5 = Left side - bulge down				* XO = Special SAE A Pilot 2-Bolt Flange, Non-Standard Shaft (3/4" - 3/16" Key)					
Right side - bulge up (DT12™)				* XP = Special SAE A Pilot 2-Bolt Flange, SAE B Shaft (7/8" - 13T)					
6 = Left side - bulge down				59 XQ = SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)					
Right side - bulge up (DT12™)				XR = Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)					
				XY = ISO 7653 Pump Mount DIN 5462 Shaft (DT12™)					

1 Includes mounting parts.

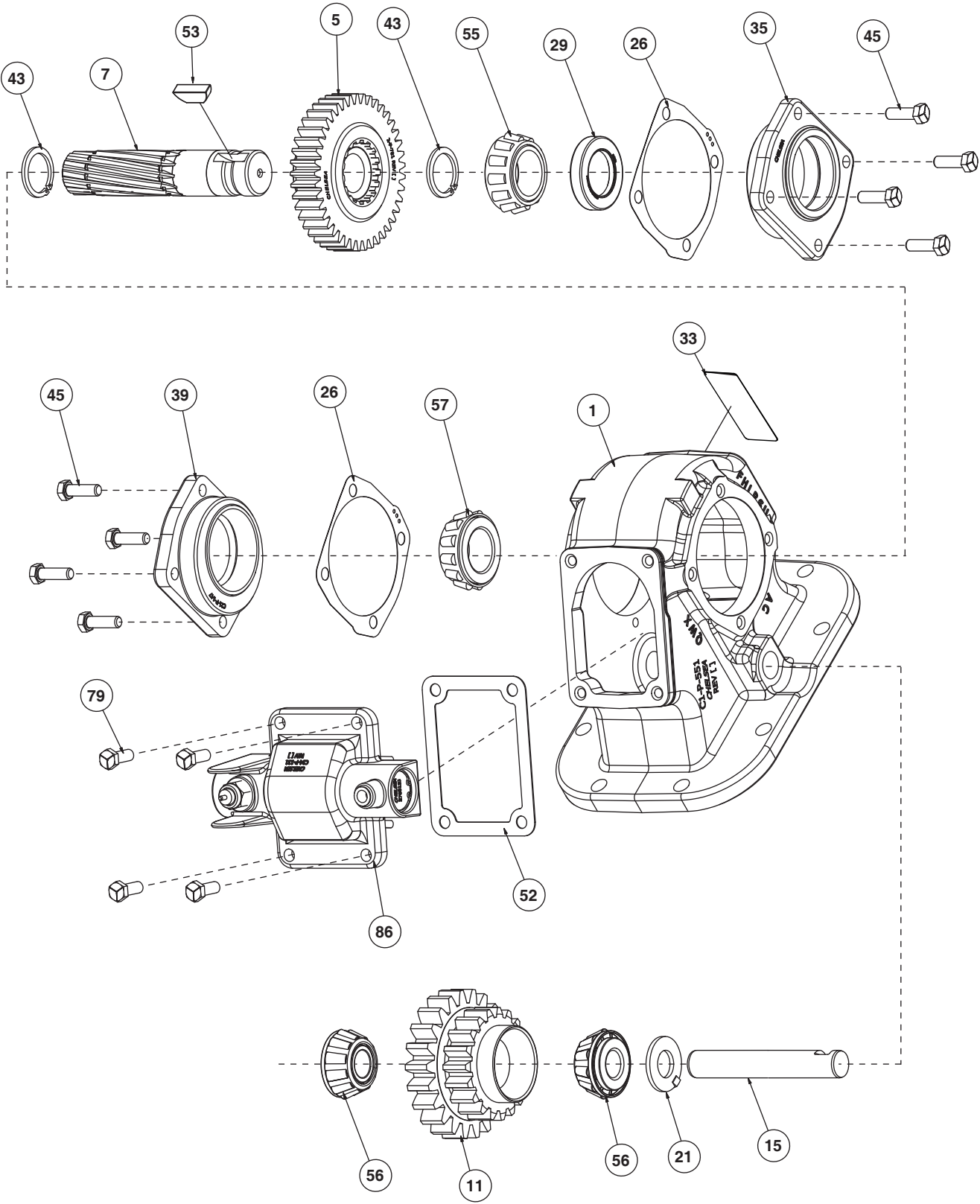
21 Includes installation kit, console sold separately.

59 Same as XK except rotated 90°

79 Flooded Cavity

(DT12™) = Available with Daimler DT12™

* No longer a current option per Chelsea Suggested List Price.



Bill of Materials**Parts List
680 Series**

Item	Part Number	Description	Qty.
1	1-P-573	Standard Mount Housing (X & G Mounting)	1 or
	1-P-582	Deep Mount Housing (Z Mounting)	1 or
	1-P-801	Daimler DT12™ Housing (D Mounting)	1 or
	1-P-780	Eaton Endurant™ Housing (Q Mounting)	1
5	See pages 17-18	Output Gear	1
7	3-P-202	Output Shaft (XD)	1 or
	See pages 17-18	Output Shaft (All Others)	1
11	See pages 17-18	Input Gear	1
15	9-P-60	Idler Shaft (.750") (X Lube Option)	1 or
	9-P-71	Idler Shaft (.750") (P Lube Option)	1
21	14-P-79-1	Spacer (.112"-.114")	A.R.
	14-P-79-2	Spacer (.116"-.118")	A.R.
	14-P-79-3	Spacer (.120"-.122")	A.R.
	14-P-79-4	Spacer (.124"-.126")	A.R.
26	22-P-127-1	Bearing Cap Gasket (.010")	A.R.
	22-P-127-2	Bearing Cap Gasket (.020")	A.R.
	22-P-127-3	Bearing Cap Gasket (.015")	A.R.
29	28-P-216	Standard Output Shaft Oil Seal (2.004" x 1.250" x .374")	1
33	68-P-51-1	Adhesive Label	1
35	329273X	Bearing Cap Assembly (XD)	1
		Bearing Cap Assembly (All other Outputs)	1
39	329274X	Bearing Cap Assembly (Closed End)	1
	See pages 32 & 41	Bearing Cap Assembly (L & G Outputs)	1
43	378391	Lockring (Constant Mesh)	1 or
		Lockring (All Other Shift Types)	2
45	378430-10	7/16" Hex Head Cap Screw (.312"-18 x 1.000") (XD Output)	4
	See pages 30-40	7/16" Hex Head Cap Screw (.312"-18 x 1.000") (All Other Outputs)	4
52	35-P-8	Shift Gasket Cover	1
53	500007-29	Woodruff Key (XD Output Only)	1
55	550397	Bearing Tapered Cone (1.250" x .812")	1
56	550439	Bearing Tapered Cone (.750" x .859")	2
57	550532	Bearing Tapered Cone (1.181" x .812")	1
N.S.	4-P-178	Spacer (1.255" x 1.505" x .216") (Constant Mesh Shifter) (Type M)	1
N.S.	4-P-177	Spacer (1.255" x 2.005" x .738") (Constant Mesh Shifter) (Type M)	1
79	378430-8	Hex Head Cap Screw (.312"-18 x .875") (Electric Shift)	4
	378430-9	Hex Head Cap Screw (.312"-18 x .875") (Air Shift & Wire Shift)	4
	378430-6	Hex Head Cap Screw (.312"-18 x .625") (Constant Mesh)	4
86	See page 21	Air Shifter	
	See page 23	Lever Shifter	
N.S.	34-P-39	Plate Cover Shifter (Constant Mesh)	
N.S. – Not Shown A.R. – As Required			Continued on Next Page

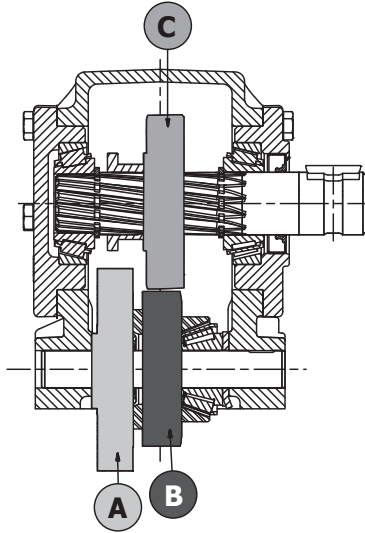
Bill of Materials

Parts List
680 Series

Item	Part Number	Description	Qty.
	See pages 48-58 for Bill of Materials for the below loose parts.		
		GASKET KITS	
	328948-8X	Gaskets & Installation Instructions.....	1
	328948-48X	Gasket & Installation Instructions (Q Mount)	1
	328948-53X	Gasket & Installation Instructions (D Mount)	1
	380711X	Spacer Kit Eaton Endurant XD™ (ME Input Only).....	1
		STUD KITS	
	328170-200X	Standard/Deep Mount Stud Kit (X & Z Mount).....	1
	328170-201X	Metric Standard Mount Stud Kit (G Mount)	1
	328170-219X	Daimler DT12™ Stud Kit (D Mount)	1
	328170-217X	Eaton Endurant HD™ Stud Kit (LZ Input Only)	1
	328170-221X	Eaton Endurant XD™ Stud Kit (ME Input Only)	1
		INSTALLATION KITS	
	328346-10X	Cable Control Assembly (W Shifter)	1
	328751-1X	Indicator Light Installation Kit	1
		AIR INSTALLATION KITS	
	328388-98X	Air Shift Installation Kit (A)	1
	328388-47X	Electric/Air Installation Kit 12VDC (P).....	1
	328388-48X	Electric/Air Installation Kit 24VDC (Q)	1
	328388-65X	Air Shift With Control Valve (S)	1
	328388-72X	Air Shift With Control Valve (T).....	1
	329874-2X	Eaton Endurant HD™ 12VDC Elec/Air Kit (5 & 6 Shifter)	1
		SHIFTER KITS	
	329106-158XB	Endurant HD™ Shifter Kit, Eaton (D Option)	
	329106-16X	DT12™ Retrofit Shifter Kit, Daimler (5 Option)	
		SERVICE KITS	
	328356-15X	Shifter Cover Seal Kit (Cable Control).....	1
	328356-17X	Shifter Cover Seal Kit (Air Shift)	1
	328356-26X	Shifter Cover Seal Kit (Lever Control)	1
	329143X	Shifter Shaft Cover Kit (Includes Items 43, 44, 45 on page 15).....	1
	329202X	Indicator Switch Connector Service Kit (Includes 380515, 379640 & 379252)	1
	329303-6X	Seal Kit (Output Options XD, RA, XE, *XG, *XJ, XK, *XL, RB, *XM, *XN, *XO, *XP, XQ, XR, *AA, AK, XX, *LA, *LB, *LC, *LD, *LE and *LF).....	1
	329303-7X	Seal Kit (Output Options AF and *FF).....	1
	329303-8X	Seal Kit (Output Options XY and AZ).....	1
	329303-9X	Seal Kit (Output Options GA, GB and GR)	1
	329303-10X	Seal Kit (Output Options GF).....	1
	329310-6X	Bearing and Seal Kit (Output Options XD, RA, XE, *XG, *XJ, XK, *XL, RB, *XO, *XP, XQ, XR, *AA, AK, XX, *LA, *LB, *LC, *LD, *LE and *LF)	1
		OUTPUT CONVERSION KITS	
	See pages 54-57	Output Conversion Kits Bill of Materials	

* No longer a current option per Chelsea Suggested List Price.

Gear Ratio Chart



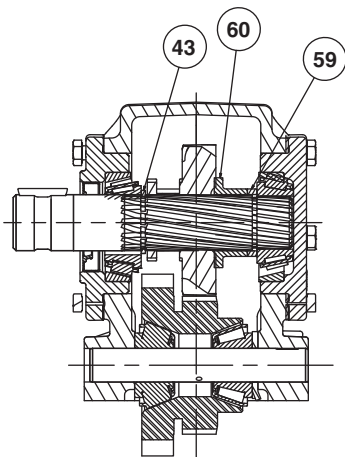
GEAR DESIGNATOR	INPUT GEAR	NO. TEETH A	HELIX ANGLE	NO. TEETH B
680*FAH	5-P-1242	22	Spur	21
680*HAH	5-P-1494	22	Spur	23
680*QAH	5-P-1246	22	Spur	19
680*RAH	5-P-1441	22	Spur	22
680*SAH	5-P-1322	22	Spur	24
♦680*UAH	5-P-1323	22	Spur	26
♦680*WAH	5-P-1324	22	Spur	26
680*FBG	5-P-1325	23	Left Hand	21
680*QBG	5-P-1326	23	Left Hand	19
680*SBG	5-P-1327	23	Left Hand	24
♦680*UBG	5-P-1328	23	Left Hand	26
♦680*WBG	5-P-1329	23	Left Hand	26
680*FDA	5-P-1330	23	Spur	21
680*QDA	5-P-1331	23	Spur	19
680*SDA	5-P-1332	23	Spur	24
♦680*UDA	5-P-1333	23	Spur	26
♦680*WDA	5-P-1334	23	Spur	26
680E*LE	5-P-1431	37	Spur	
680E*LD	5-P-1434	38	Spur	
680DFMA	5-P-1678	20	Left Hand	21
680DFMC	5-P-1680	21	Left Hand	21
680QFME	5-P-1705	26	Spur	21
680DQMB	5-P-1679	20	Left Hand	19
680QHME	5-P-1706	26	Spur	23
680QQME	5-P-1707	26	Spur	19
680QFLZ	5-P-1590	28	Spur	21
680QHLZ	5-P-1591	28	Spur	23
680QRLZ	5-P-1593	28	Spur	22

♦ No longer a current option per Chelsea Suggested List Price.

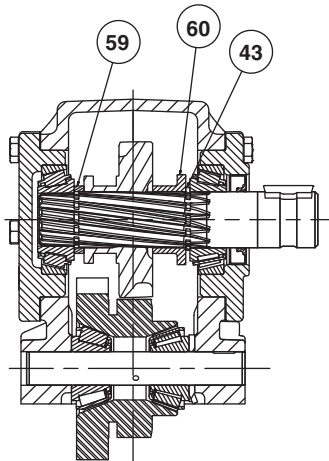
Gear Ratio Chart (Continued)

GEAR DESIGNATOR	OUTPUT GEAR	NO. TEETH C	INTERNAL SPLINE DIRECTION
680*F**	2-P-797	37	Right Hand Standard
680*H	2-P-919	35	Right Hand Standard
680*Q**	2-P-778	24	Right Hand Standard
680*R	2-P-778	35	Right Hand Standard
680*S**	2-P-784	22	Right Hand Standard
680*F	2-P-997	37	Left Hand Opposite
680*H	2-P-998	35	Left Hand Opposite
680*Q	2-P-879	24	Left Hand Opposite
680*R	2-P-879	24	Left Hand Opposite
680*S	2-P-900	22	Left Hand Opposite

Constant Mesh



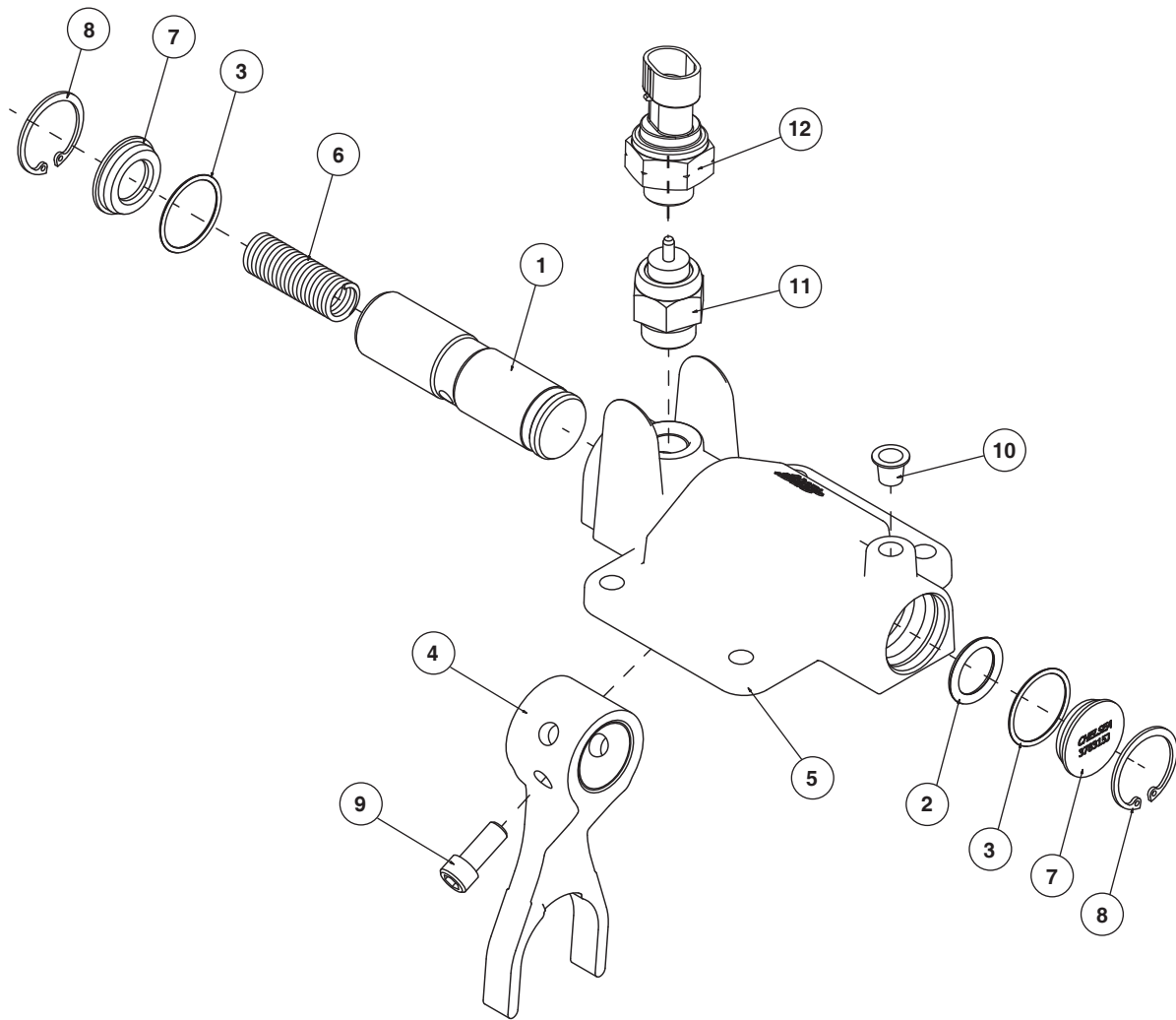
Assembly 3 & 5



Assembly 4 & 6

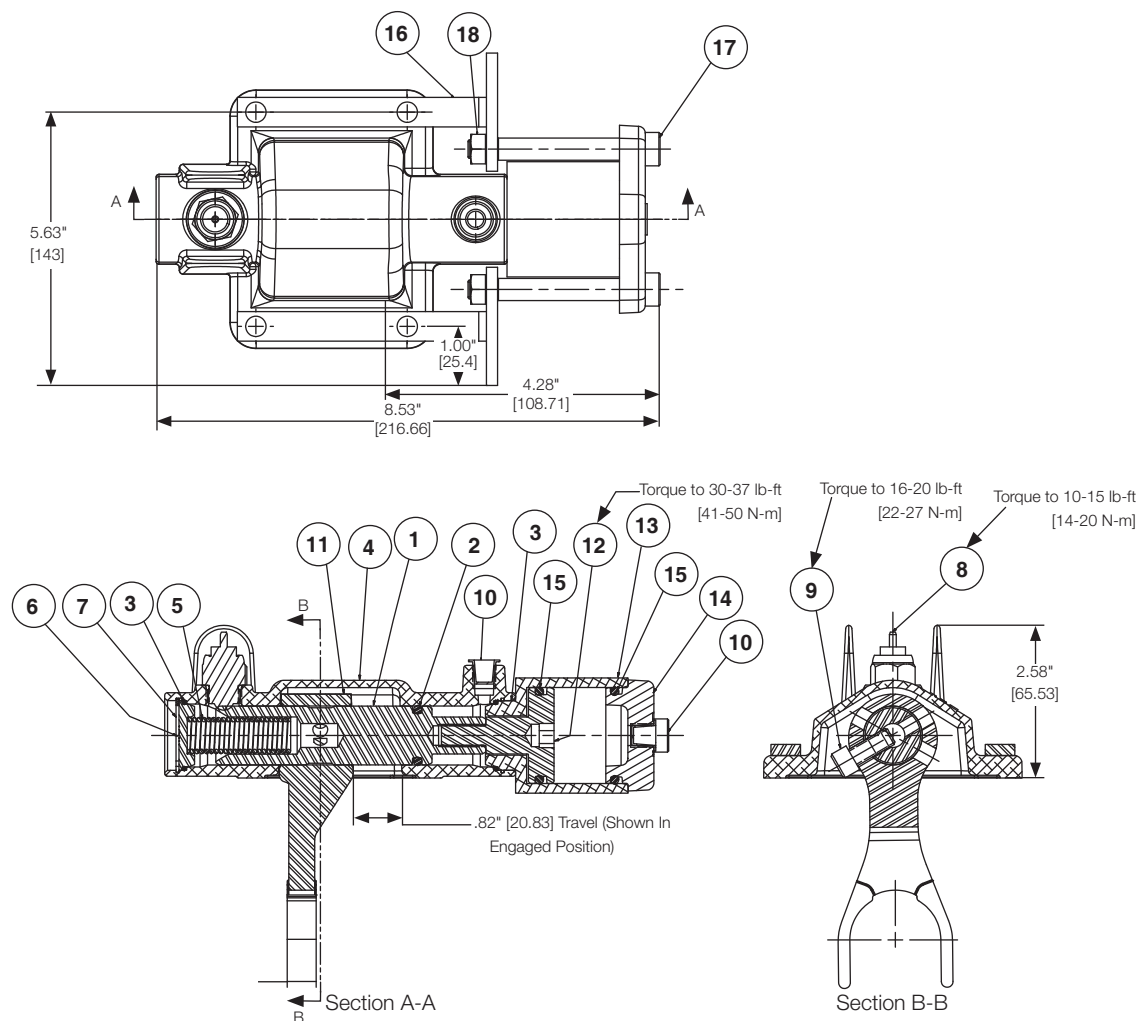
Item	Part Number	Description	Qty.
43	378391	Lockring	1
59	4-P-178	Spacer (1.255" x 1.505" x .216")	1
60	4-P-177	Spacer (1.255" x 2.005" x .738")	1
N.S.	34-P-39	Cover Plate (For Shifter Opening).....	1
N.S. – Not Shown			

Air Shifter Cover Assembly

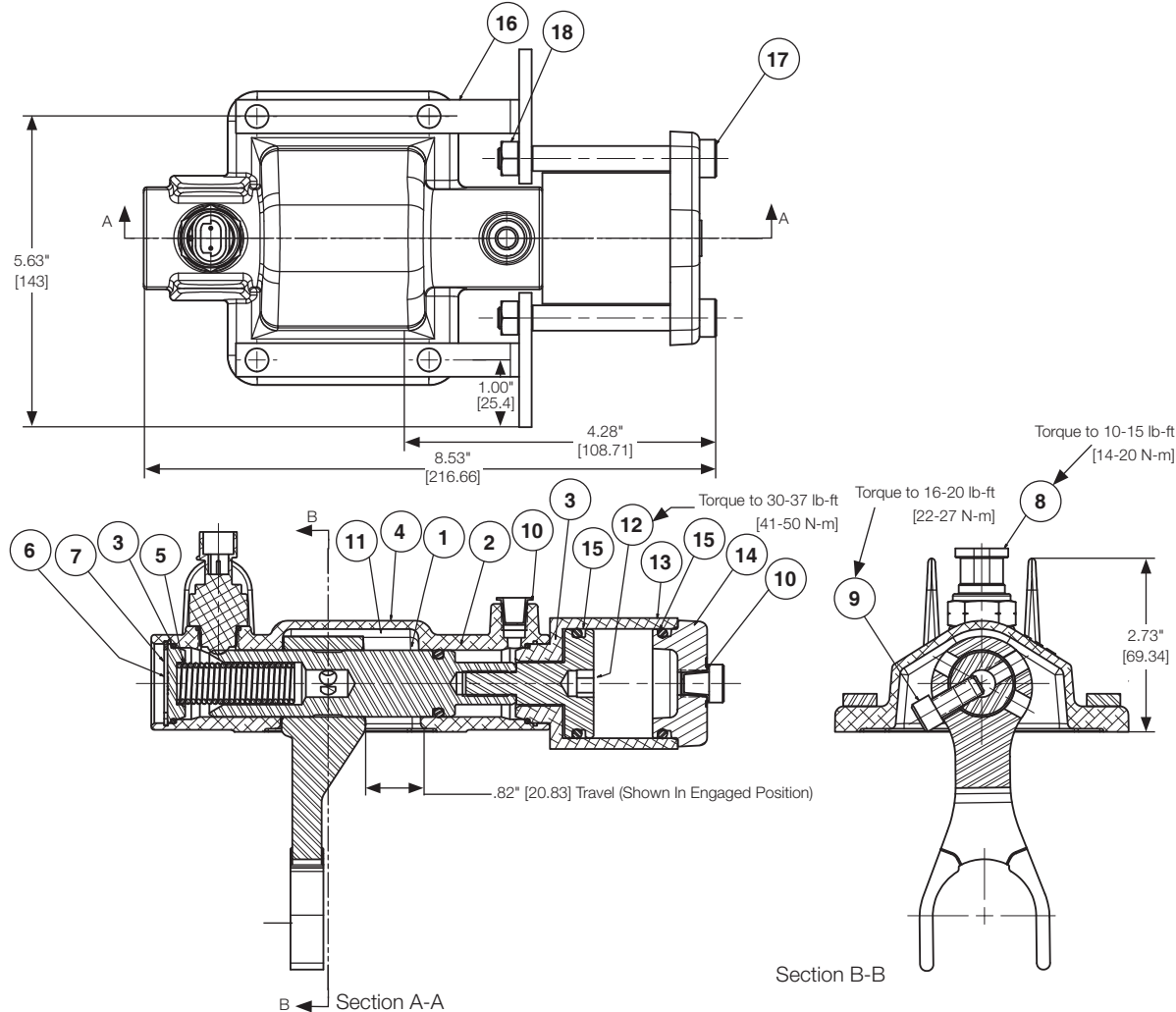


Item	Part Number	Description	Qty.
70	329361-2X	Air Shifter Cover Assembly (D Shift) (includes items 1-10 & 12)	1 or
	329361X	Air Shifter Cover Assembly (A Shift) (includes items 1-11)	1
1	11-P-75	Shifter Shaft.....	1
2	28-P-41	O-ring (.734" x .141").....	1
3	28-P-42	O-ring (1.051" x .070").....	2
4	32-P-180	Shifter Fork.....	1
5	34-P-130	Shifter Cover	1
6	37-P-21	Shifter Spring	1
7	378315	Cover Plug	2
8	378316	Internal Lockring.....	2
9	378447-4	1/4" Socket Hex Head Cap Screw (w/ lockpatch) (.312"-18 x .750")	1
10	500897-5	Shipping Plug	1
11	380515	Indicator Switch (329361X).....	1
12	379990	Indicator Switch (329361-2X).....	1
		AIR SHIFT CONVERSION KITS	
	328390-117X	Lever or Cable to Air.....	1
	328390-119X	12VDC Lever or Cable to Electric/Air	1
	328390-120X	24VDC Lever or Cable to Electric/Air	1

See [pages 48-58](#) for Kit Bill of Materials

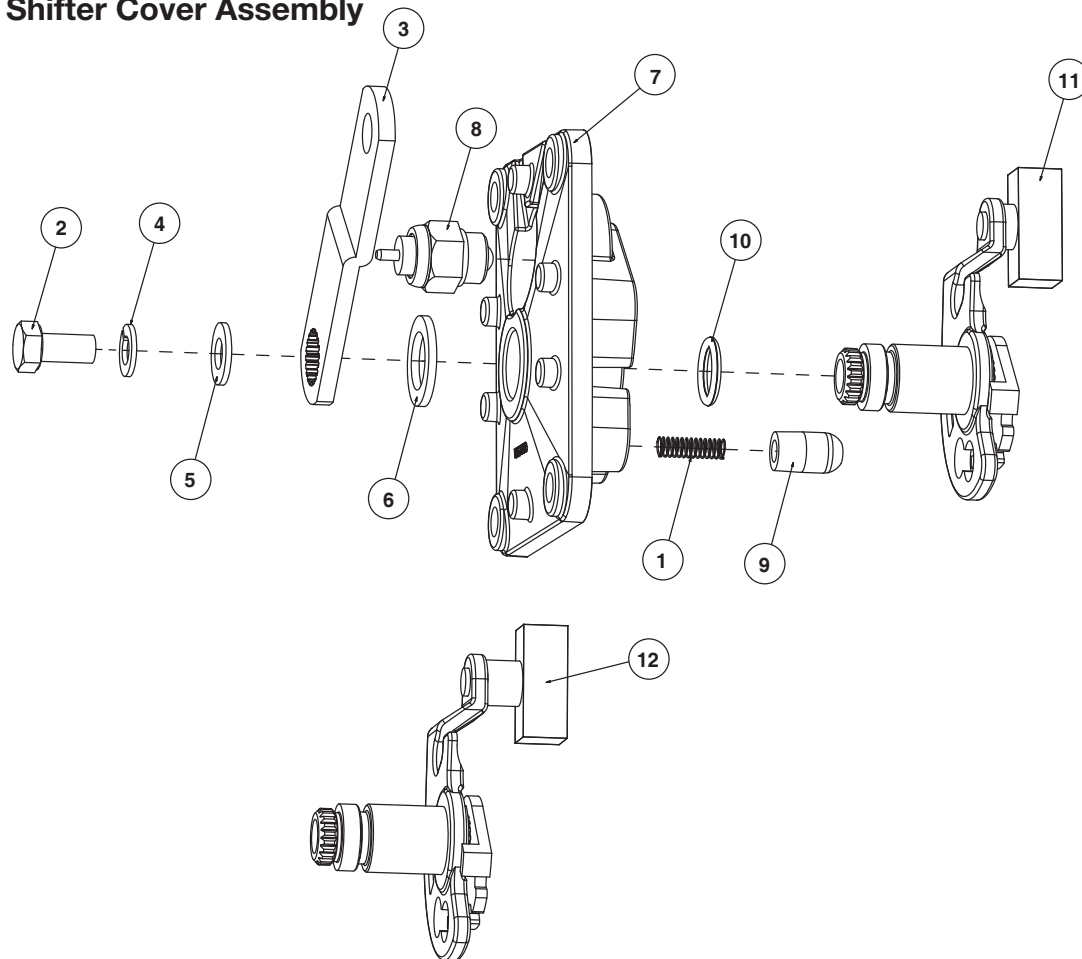
330087X – Air Shifter Cover Assembly Daimler DT12™

Item	Part Number	Description	Qty.
1	380719	DA Shaft Shifter (1.000").....	1
2	28-P-41	O-ring (.734" x .141").....	1
3	28-P-42	O-ring (1.051" x .070").....	2
4	34-P-130	Shift Cover (Air Shift).....	1
5	37-P-21	Spring (.610" x 4.000").....	1
6	378315	Cover Plug	1
7	378316	Internal Lockring.....	1
8	380515	Indicator Switch (6-Bolt, 8-Bolt N.O.).....	1
9	378447-4	Socket Head Cap Screw (.312"-18 x .750").....	1
10	500897-5	Shipping Plug.....	2
11	32-P-180	Shifter Fork.....	1
12	66-P-24	Shifter Piston	1
13	380725	DA Cylinder Shifter	1
14	379027	822, 832 - Cylinder Cap	1
15	28-P-61	O-ring (1.359" x .139").....	2
16	380726	Mounting Bracket DA Shifter	2
17	380722	Shoulder Cap Screw (.312"-18 x 3.000").....	2
18	501145-2	Hex Nut (.312"-18 x .266")	2

330087-1X – Air Shifter Cover Assembly Eaton Endurant XD™

Item	Part Number	Description	Qty.
1	380719	DA Shaft Shifter (1.000").....	1
2	28-P-41	O-ring (.734" x .141").....	1
3	28-P-42	O-ring (1.051" x .070").....	2
4	34-P-130	Shift Cover (Air Shift).....	1
5	37-P-21	Spring (.610" x 4.000")	1
6	378315	Cover Plug	1
7	378316	Internal Lockring	1
8	379990	Indicator Switch (6-Bolt, 8-Bolt N.O.).....	1
9	378447-4	Socket Head Cap Screw (.312"-18 x .750").....	1
10	500897-5	Shipping Plug.....	2
11	32-P-180	Shifter Fork.....	1
12	66-P-24	Shifter Piston	1
13	380725	DA Cylinder Shifter	1
14	379027	Cylinder Cap.....	1
15	28-P-61	O-ring (1.359" x .139").....	2
16	380726	Mounting Bracket DA Shifter	2
17	380722	Shoulder Cap Screw (.312"-18 x 3.000").....	2
18	501145-2	Hex Nut (.312"-18 x .266")	2

NOTE: Use connector harness 330037X to connect to 379990 indicator switch.

Lever Control Shifter Cover Assembly

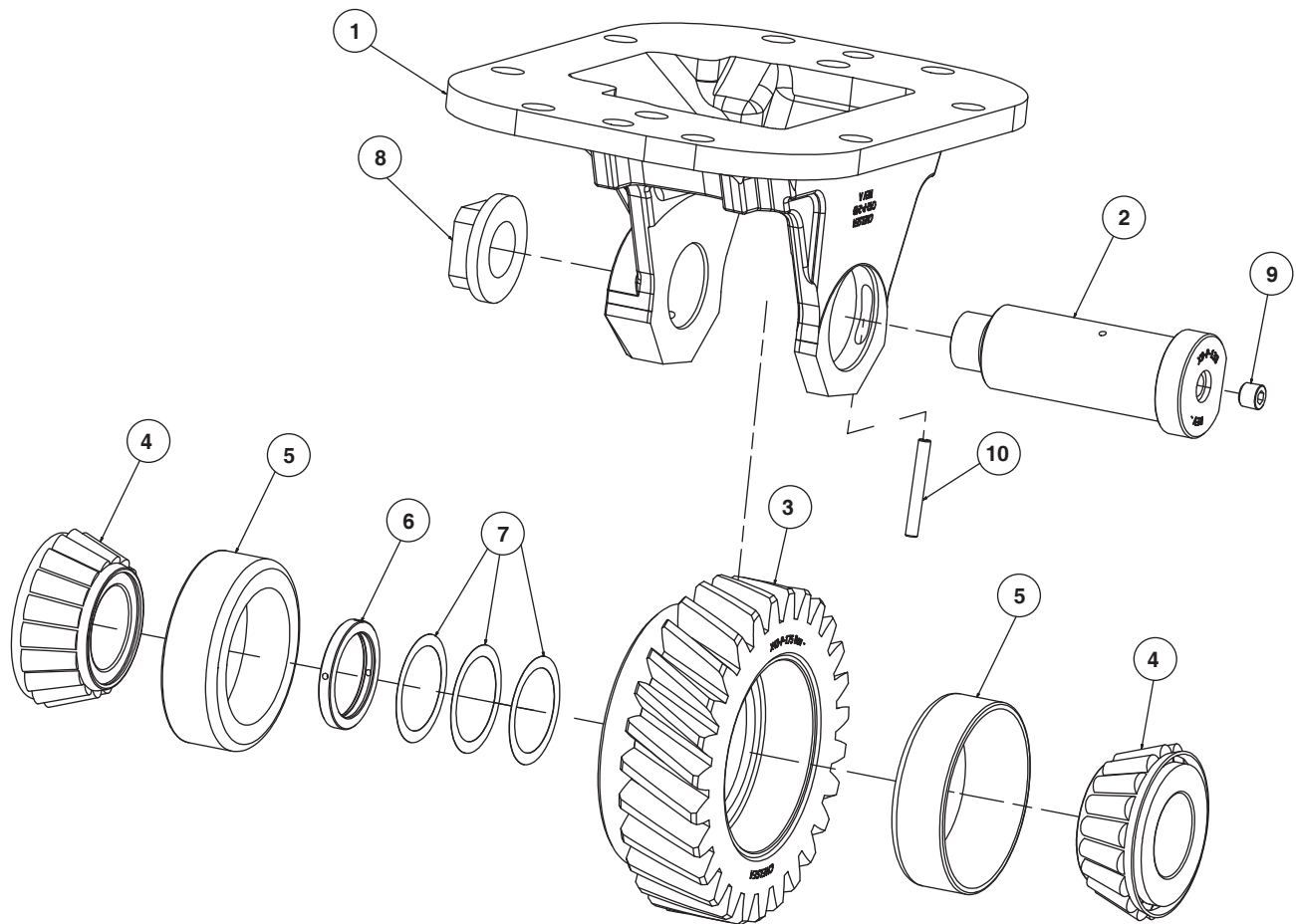
Item	Part Number	Description	Qty.
	329119-1X	Ratios Q, W & X	
	329119-2X	Lever Shifter Cover Assembly (Assembly 3 & 6) (includes item 1-11).....	1 or
		Lever Shifter Cover Assembly (Assembly 4 & 5) (includes item 1-11).....	1 or
	329121-1X	Ratios F, H, L, R, S & U	
	329121-2X	Lever Shifter Cover Assembly (Assembly 3 & 6) (includes item 1-10 & 12).....	1 or
		Lever Shifter Cover Assembly (Assembly 4 & 5) (includes item 1-10 & 12).....	1
1	37-P-19	Spring (.220" x 1.188")	1
2	500409-6	Hex Head Cap Screw (.312"-24 x .625")	1
3	51-P-22	Shifter Lever	1
4	500356-10	Lock Washer (.575" x .319" x .056")	1
5	500365-22	Flat Washer (.688" x .344" x .065")	1
6	378004	Flat Washer (.641" x 1.000" x .097")	1
7	34-P-74	Shifter Cover	1
8	380515	Indicator Switch.....	1
9	63-P-16	Shifter Poppet	1
10	28-P-191	O-ring (.549" x .103").....	1
11	329118-1X	Shifter Plate Assembly (329119-1X).....	1 or
	329118-2X	Shifter Plate Assembly (329119-2X).....	1 or
12	329120-1X	Shifter Plate Assembly (329121-1X).....	1 or
	329120-2X	Shifter Plate Assembly (329121-2X).....	1 or

See [pages 48-58](#) for Kit Bill of Materials

Shift Options**660/680 Series**

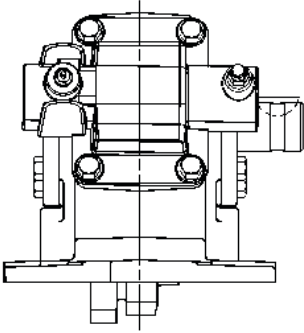
For PTOs ordered without the shifter (Shifter Type H), the kits shown below will provide all the components required to complete the assembly.

Part Number	Description	Qty.
329106-39X	Air Shift (A option).....	1
329106-43X	Electric/Air 12VDC (P option)	1
329106-45X	Electric/Air 24VDC (Q option).....	1
329106-105X	Cable Shift, (Q, W & X Ratios, Assembly 3 & 6, W option).....	1
329106-106X	Cable Shift, (Q, W & X Ratios, Assembly 4 & 5, W option).....	1
329106-107X	Cable Shift, Less Cable (Q, W, & X Ratios, Assembly 3 & 6, X option)	1
329106-108X	Cable Shift, Less Cable (Q, W, & X Ratios, Assembly 4 & 5, X option)	1
329106-109X	Cable Shift, (F, L, S & U Ratios, Assembly 3 & 6, W option).....	1
329106-110X	Cable Shift, (F, L, S & U Ratios, Assembly 4 & 5, W option).....	1
329106-111X	Cable Shift, Less Cable (F, L, S & U Ratios, Assembly 3 & 6, X option).....	1
329106-112X	Cable Shift, Less Cable (F, L, S & U Ratios, Assembly 4 & 5, X option).....	1
329106-153X	Air Shift (V option).....	1
329143X	Shifter Shaft.....	1

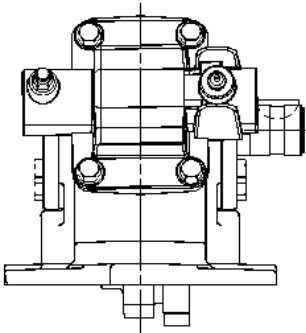
Daimler DT12™ Heavy-Duty Adapters

Item	Part Number	Description	Qty.
1	42-P-255	Input Designator (330032X MA)	1
	42-P-256	Input Designator (330033X MB).....	1
	42-P-255	Input Designator (330034X MC).....	1
2	9-P-130	Adapter Shaft DT12™ HD	1
3	43-P-175	Adapter Gear (330032X MA).....	1
	43-P-176	Adapter Gear (330033X MB)	1
	43-P-177	Adapter Gear (330034X MC)	1
4	562004	Cone Bearing Assembly (1.312" x 3.000" x 1.156").....	2
5	562005	Cup Bearing (1.312" x 3.000" x 1.156").....	2
6	14-P-93	Bearing Spacer (1.314 x 1.700" x .200").....	1
7	55-P-45-1	Shim (1.328" x 1.700" x .001")	A.R.
	55-P-45-2	Shim (1.328" x 1.700" x .003")	A.R.
	55-P-45-3	Shim (1.328" x 1.700" x .006")	A.R.
	55-P-45-4	Shim (1.328" x 1.700" x .009")	A.R.
	55-P-45-5	Shim (1.328" x 1.700" x .012")	A.R.
	55-P-45-6	Shim (1.328" x 1.700" x .015")	A.R.
8	380675.CHD	Flange Nut DT12™.....	1
9	379231	Pipe Plug (.125"-27)	1
10	500597-18	Roll Pin (.188" x 1.500").....	1
11	69-P-37	Caution Tag	1

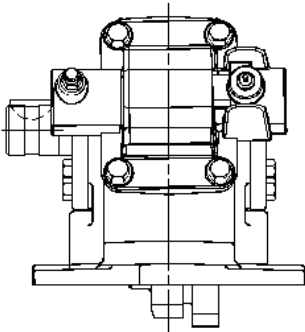
A.R. – As Required



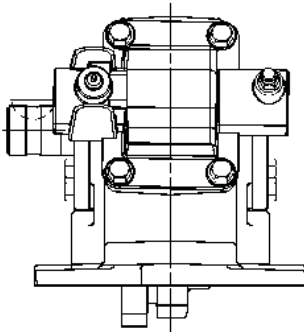
Assembly 3



Assembly 4

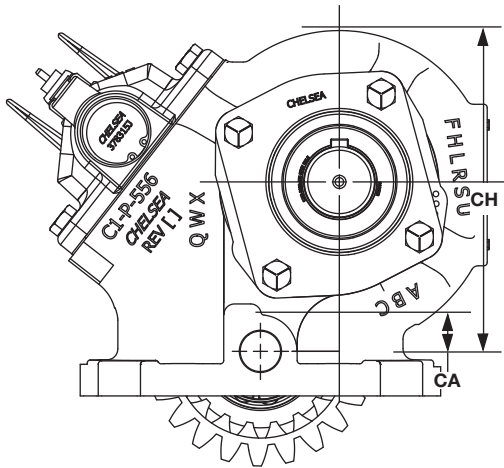


Assembly 5



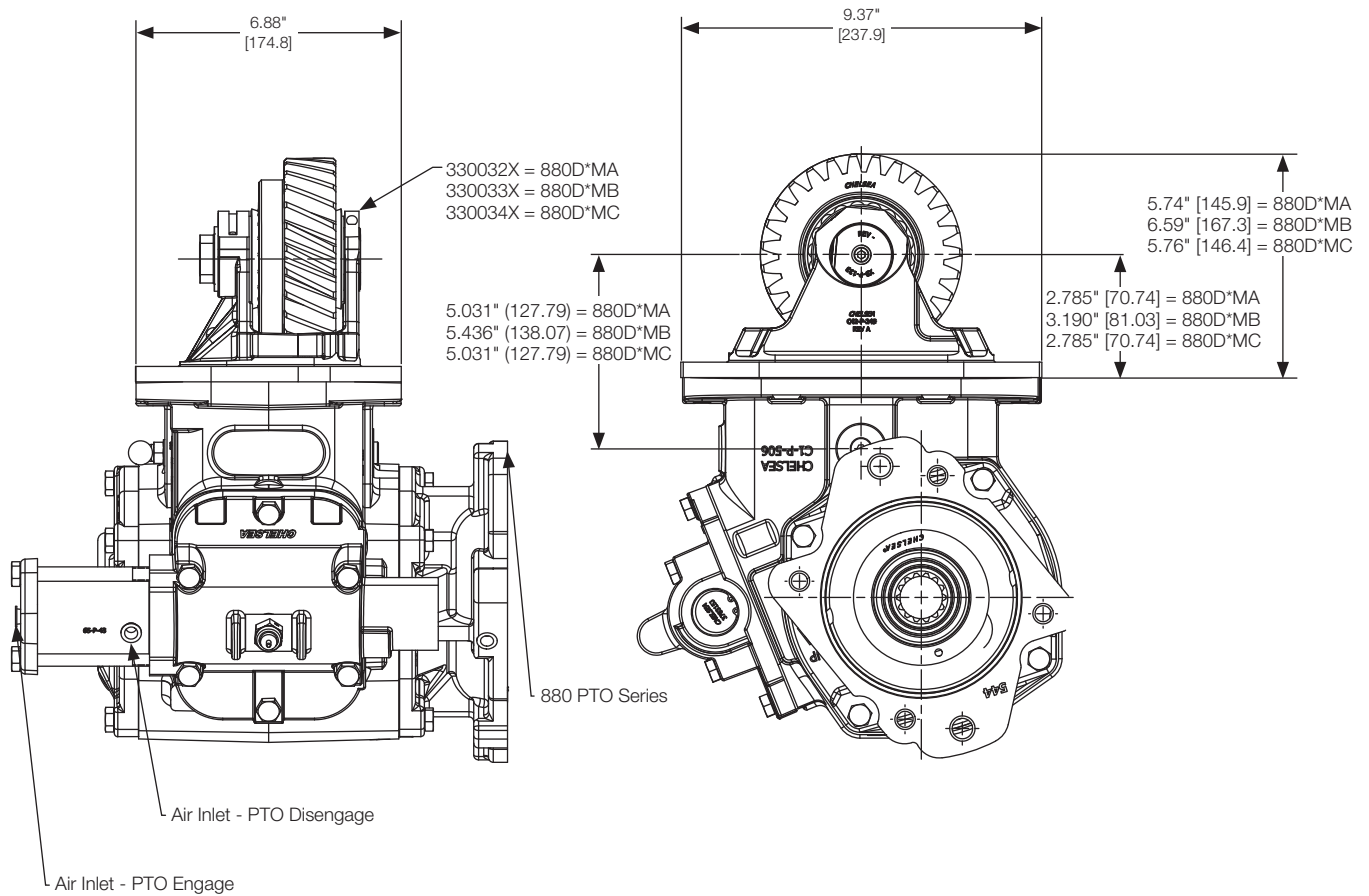
Assembly 6

PTO Housing Dimensions



PTO Series	Part Number	CA	CH
680 Standard (X, G & D Mount)	1-P-573	1.072"	6.708"
680 Deep Mount (Z Mount)	1-P-582	0.930"	6.566"

PTO Dimensions Daimler DT12™ Adapter



Output Options

Output Conversion Kits

Flange Suffix	Flange Type	Shaft Type	Conversion Kit	
AF	SAE B 2 or 4-Bolt	1" - 15T Spline	XD to AF	328591-30X
AK	SAE B 2-Bolt	7/8" - 13T Spline	XD to AK	328591-28X
AZ	SAE 4-Bolt, Non-Standard	1-1/4" - 14T Spline	XD to AZ	328591-70X
*FF	SAE B 2 or 4-Bolt	7/8" - 13T Spline	XD to FF	328591-29X
● GA	Rotatable SAE B 2-Bolt	7/8" - 13T Spline	XD to GA RA to GA	328591-124X 328591-109X
● GB	Rotatable SAE B 4-Bolt	7/8" - 13T Spline	XD to GB RB to GB	328591-125X 328591-110X
*GE	SAE A 2 or 4-Bolt	5/8" - 9T Spline		
● GF	SAE BB 2 or 4-Bolt	1" - 15T Spline	XD to GF AF to GF	328591-123X 328591-111X
● GH	Rotatable SAE BB 2-Bolt	1" - 15T Spline	XD to GH RF to GH	328591-117X 328591-115X
*GJ	Rotatable SAE B 4-Bolt	1" - 15T Spline	XD to GJ RE to GJ	328591-139X 328591-115X
● GK	SAE B 2 or 4-Bolt	7/8" - 13T Spline	XD to GK XK to GK	328591-99X 328591-96X
● GL	Rotatable SAE B 2 or 4-Bolt	7/8" - 13T Spline	XD to GL	328591-163X
*GP	SAE A Pilot 2-Bolt		XD to GP XP to GP	328591-100X 328591-96X
● ■ GQ	SAE B 2 or 4-Bolt	7/8" - 13T Spline	XD to GQ XQ to GQ	328591-101X 328591-96X
● GR	CHELSEA Special 4-Bolt	7/8" - 13T Spline	XD to GR	328591-126X
● GY	DIN 5462 Pump Mounting	DIN 5462	XD to GY	328591-102X
● GZ	SAE B 4-Bolt	1-1/4" - 14T Spline	XD to GZ AZ to GZ	328591-103X 328591-98X
RA	Rotatable SAE B 2-Bolt	7/8" - 13T Spline	XD to RA XR to RA	328591-55X 328591-53X
RB	Rotatable SAE B 4-Bolt	7/8" - 13T Spline	XD to RB XR to RB	328591-56X 328591-54X
RC	Rotatable SAE A 2-Bolt	5/8" - 9T Spline	XD to RC	328591-112X
RD	Rotatable SAE A 2-Bolt	7/8" - 13T Spline	XD to RD	328591-113X
RE	Rotatable SAE B 4-Bolt	1" - 15T Spline	XD to RE	328591-134X
RF	Rotatable SAE B 2-Bolt	1" - 15T Spline	XD to RF	328591-78X
*RH	Rotatable SAE A 2-Bolt		XD to RH	328591-151X
RJ	Rotatable SAE B 2 or 4-Bolt	1" - 15T Spline	XD to RJ (Wet Spline Only)	328591-162X
RK	Rotatable SAE B 2 or 4-Bolt	7/8" - 13T Spline	XD to RK (Wet Spline Only) XD to RK (Dry Spline Only)	328591-160X 328591-159X
RY	Rotatable DIN 5462	DIN 5462	XD to RY	328591-131X
XE	SAE A 2 or 4-Bolt	5/8" - 9T Spline	XD to XE	328591-27X
*XG	SAE A 2-Bolt	3/4" w/ 3/16 Key	XD to XG	328591-10X
*XJ	SAE A 2-Bolt	3/4" w/ 3/16 Key	XD to XJ	328591-11X
XK	SAE B 2 or 4-Bolt	7/8" - 13T Spline	XD to XK	328591-16X

NOTE: Check current price sheet for availability of Output Options

XR to XK Conversion Flange 21-P-525

● Shaft with Grease Fitting

■ Similar to Assembly XK Flange Rotated 90°

► Self-Lube Pump

Continued on Next Page

* No longer a current option per Chelsea Suggested List Price.

Output Options**Output Conversion Kits (Continued)**

Flange Suffix	Flange Type	Shaft Type	Conversion Kit	
*XL	SAE A 2-Bolt	7/8" - 13T Spline	XD to XL	328591-18X
*XO	SAE A Pilot 2-Bolt	3/4" - 3/16 key	XD to XO	328591-26X
*XP	SAE A Pilot 2-Bolt	7/8" - 13T Spline	XD to XP	328591-23X
■XQ	SAE B 2 or 4-Bolt	7/8" - 13T Spline	XD to XQ	328591-17X
XR	CHELSEA Special 4-Bolt	7/8" - 13T Spline	XD to XR	328591-52X
XV	Rd Shaft	1-1/4" with set screw	XD to XV	328591-130X
XX	SAE Tapered Shaft	1-1/4" w/ 5/16" Key	XD to XX	328591-122X
XY	DIN 5462 Pump Mounting	DIN 5462	XD to XY	328591-121X
*L	Self Lube			

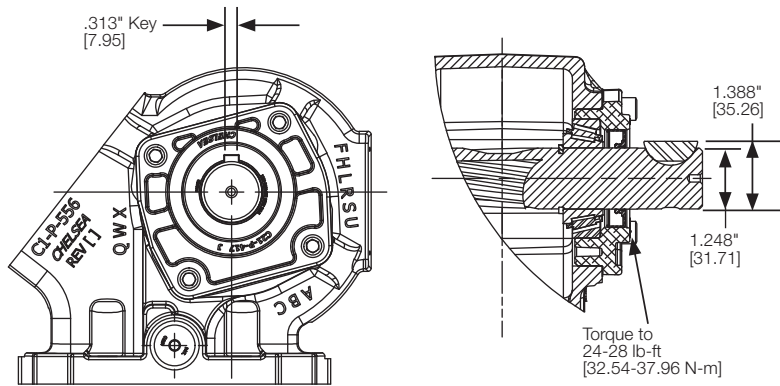
NOTE: Check current price sheet for availability of Output Options

XR to XK Conversion Flange 21-P-525

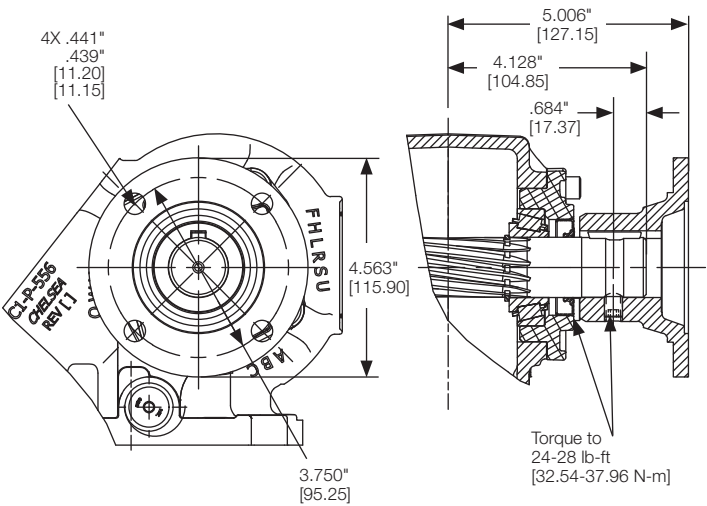
- Shaft with Grease Fitting
- Similar to Assembly XK Flange Rotated 90°
- Self-Lube Pump

* No longer a current option per Chelsea Suggested List Price.

Bill of Materials — Driveline Output



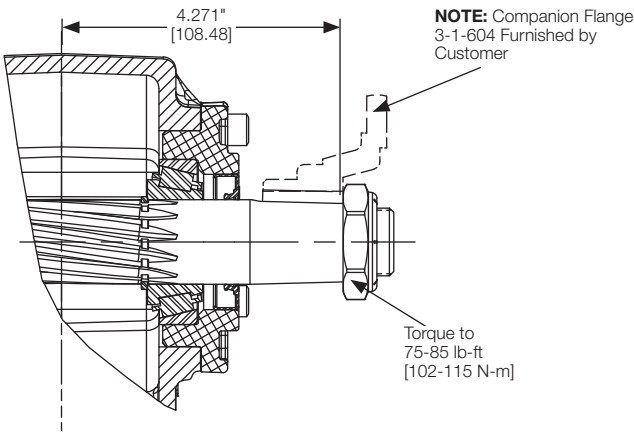
XD Output Option (Greaseable Option) Rd Standard Shaft (1-1/4" - 5/16" Key)		
Part Number	Description	Qty.
3-P-202	Output Shaft.....	1 or
3-P-978	Output Shaft (B Ratio, DT12™ Only)	1
22-P-127-1	Gasket (.010")	A.R.
22-P-127-2	Gasket (.020")	A.R.
22-P-127-3	Gasket (.015")	A.R.
28-P-216	Oil Seal (2.004" x 1.250" x .374")	1
328273X	Bearing Cap Assembly	1
378447-6	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.000")..	4
500007-29	Woodruff Key (.312")	1
†328591-99X	Conversion Kit (XD to GK)	
†328591-100X	Conversion Kit (XD to GP)	
†328591-101X	Conversion Kit (XD to GQ)	
†328591-102X	Conversion Kit (XD to GY)	
†328591-103X	Conversion Kit (XD to GZ)	
†328591-117X	Conversion Kit (XD to GH)	
†328591-123X	Conversion Kit (XD to GF)	
†328591-124X	Conversion Kit (XD to GA)	
†328591-125X	Conversion Kit (XD to GB)	
†328591-126X	Conversion Kit (XD to GJ)	
†328591-139X	Conversion Kit (XD to GK)	
†328591-163X	Conversion Kit (XD to GL)	



XV Output Option 1410 Series Companion Flange		
Part Number	Description	Qty.
3-P-202	Output Shaft.....	1 or
28-P-216	Oil Seal	1
329273X	Bearing Cap Assembly	1
378447-6	Socket Head Cap Screw (.312"-18 x 1.000")	4
500007-29	Woodruff Key.....	1
379828	Companion Flange	1
378454-7	Set Screw.....	1
†328591-130X	Conversion Kit (XD to XV)	

†Conversion Kits do not include all parts listed above. See [pages 54-57](#) for Conversion Kit BOMs.

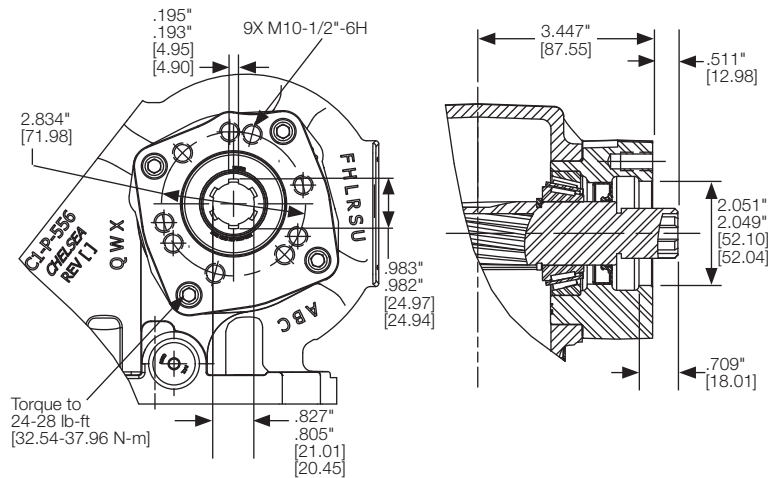
Bill of Materials — Driveline Output (Continued)



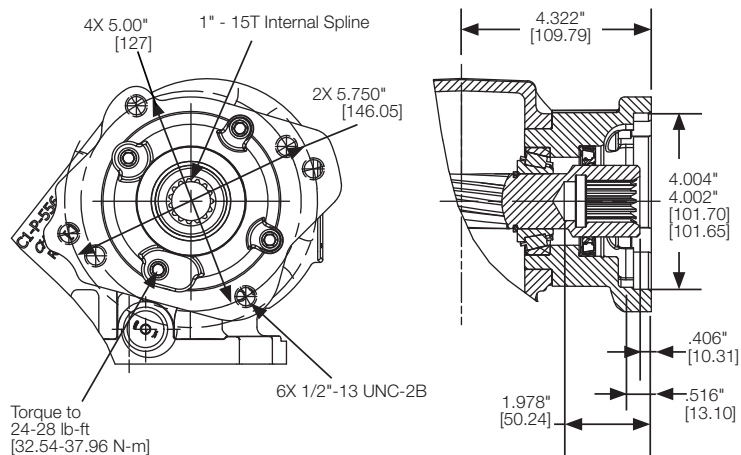
XX Output Option Tapered Output Shaft		
Part Number	Description	Qty.
3-P-766	Output Shaft.....	1
28-P-216	Oil Seal.....	1
328273X	Bearing Cap Assembly	1
378447-6	1/2" Socket Hex Head Cap Screw (.312"-18 x 1.000")..	4
379111	Square Key.....	1
501181	Hex Locknut (1.000"-20)	1
†328591-122X	Conversion Kit (XD to XX)	

Output Options

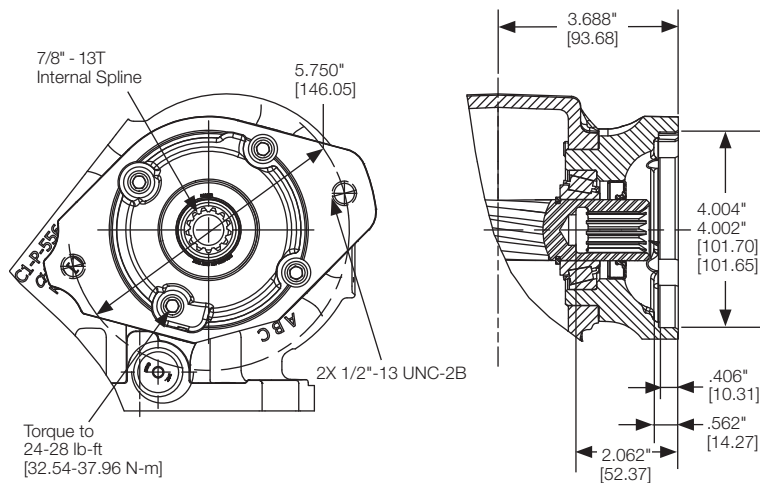
Bill of Materials — Pump Mount



*AA Output Option Special Pump for England		
Part Number	Description	Qty.
3-P-862	Output Shaft.....	1
28-P-216	Oil Seal.....	1
329102X	Bearing Cap Assembly	1
378447-8	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500")..	4



AF Output Option (GF Greasable Option) SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)		
Part Number	Description	Qty.
3-P-854	Output Shaft.....	1
28-P-219	Oil Seal.....	1
329088X	Bearing Cap Assembly	1
329658X	Cover Kit (Wet Spline Only)	1
378447-10	1/4" Socket Hex Head Cap Screw (.312"-18 x 2.000")..	4
†328591-30X	Conversion Kit (XD to AF)	
†328591-111X	Conversion Kit (AF to GF)	



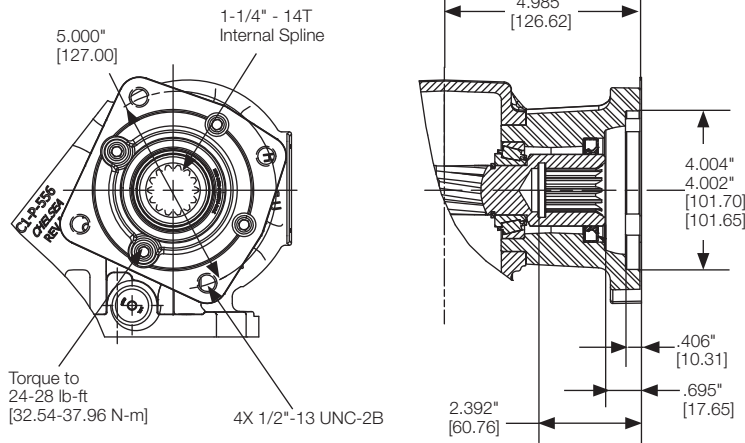
AK Output Option (GZ Greasable Option) SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)		
Part Number	Description	Qty.
3-P-282	Output Shaft.....	1 or
3-P-979	Output Shaft (B Ratio Only).....	1
28-P-216	Oil Seal.....	1
328989X	Bearing Cap Assembly	1
378447-8	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500")..	4
†328591-28X	Conversion Kit (XD to AK)	
†328591-98X	Conversion Kit (AZ to GZ)	

✦ No longer a current option per Chelsea Suggested List Price.

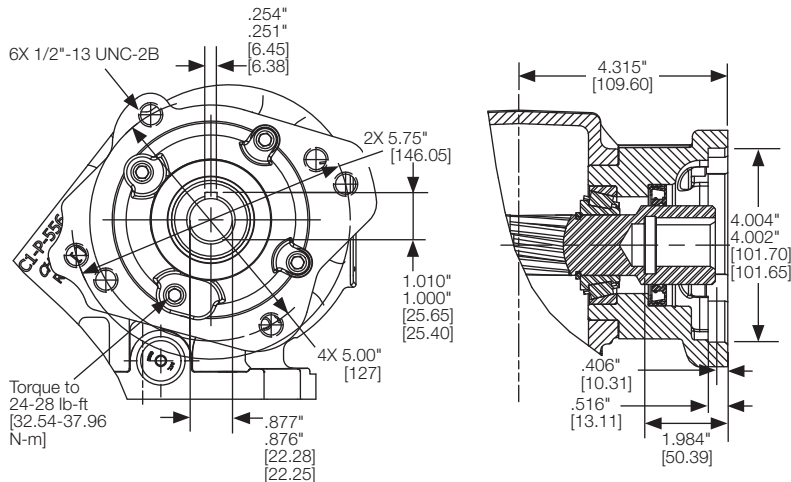
†Conversion Kits do not include all parts listed above. See [pages 54-57](#) for Conversion Kit BOMs.

Output Options

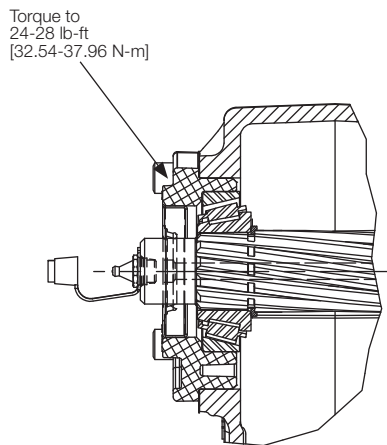
Bill of Materials — Pump Mount (Continued)



AZ Output Option SAE B 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)		
Part Number	Description	Qty.
3-P-844	Output Shaft.....	1
28-P-275	Oil Seal.....	1
329052X	Bearing Cap Assembly	1
378447-11	1/4" Socket Hex Head Cap Screw (.312"-18 x 2.250")..	4
†328591-70X	Conversion Kit (XD to AZ)	



*FF Output Option SAE B Pump Flange, SAE B Shaft (7/8" - 1/4" Key)		
Part Number	Description	Qty.
3-P-851	Output Shaft.....	1
28-P-219	Oil Seal.....	1
329088X	Bearing Cap Assembly	1
378447-10	1/4" Socket Hex Head Cap Screw (.312"-18 x 2.000")	4
†328591-29X	Conversion Kit (XD to FF)	

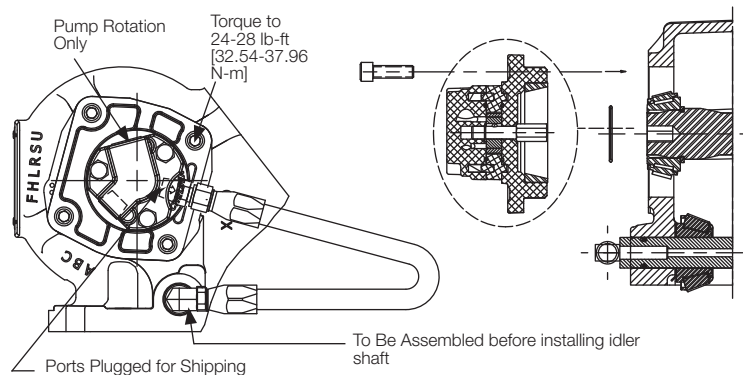


G* Output Option Greaseable Flange		
Part Number	Description	Qty.
3-P-923X	GA, GB, GL ,G Shaft Assemblies.....	1 or
3-P-921X	GF Shaft Assemblies	1 or
3-P-933X	GQ, GK, * GP Shaft Assemblies...	1 or
3-P-938X	GY Shaft Assemblies	1 or
3-P-939X	GZ Shaft Assemblies	1 or
3-P-941X	GH, * GJ Shaft Assemblies	1
3-P-981X	* GE Shaft Assemblies	1
28-P-268	Rear Bearing Cap Shaft Oil Seal ..	1
329273X	Bearing Cap Assembly	1
378447-6	1/4" Socket Hex Head Cap Screw (.312-18 x 1.000") ...	4

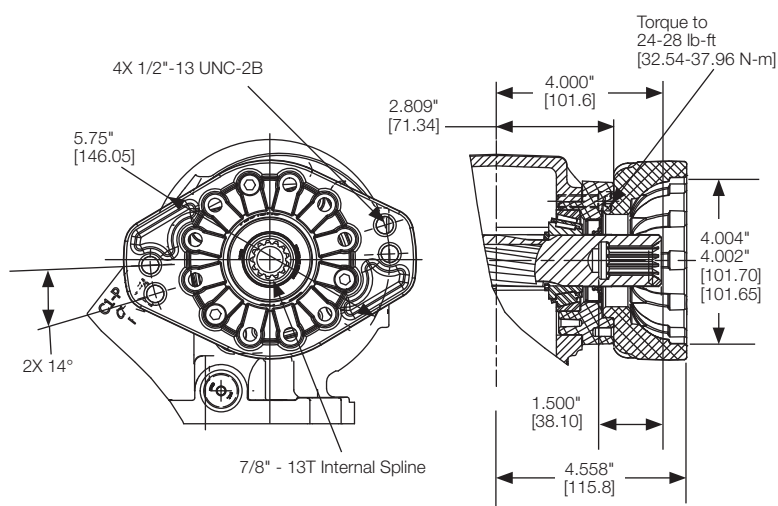
♦ No longer a current option per Chelsea Suggested List Price.

†Conversion Kits do not include all parts listed above. See [pages 54-57](#) for Conversion Kit BOMs.

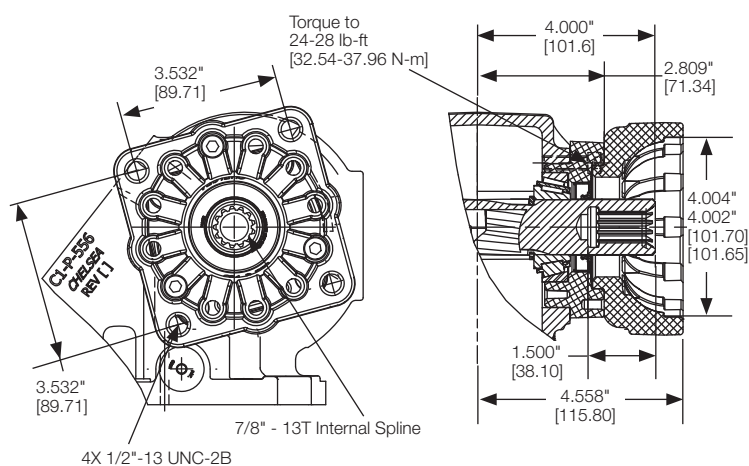
Bill of Materials — Pump Mount (Continued)



L Output Option Self Lube		
Part Number	Description	Qty.
3-P-857	Output Shaft (LD Output).....	1 or
3-P-858	Output Shaft (LA, LB, LC, LE, LF Output)	1
329091X	Lube Pump & Bearing Cap Assembly	1
329092X	Pressure Lube Hose Assembly (Ship Loose)	1
379534	Installation Instruction Tag.....	1
500841-1	90° Street Elbow	1
500897-3	Shipping Plug	1
378447-6	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.000").....	4



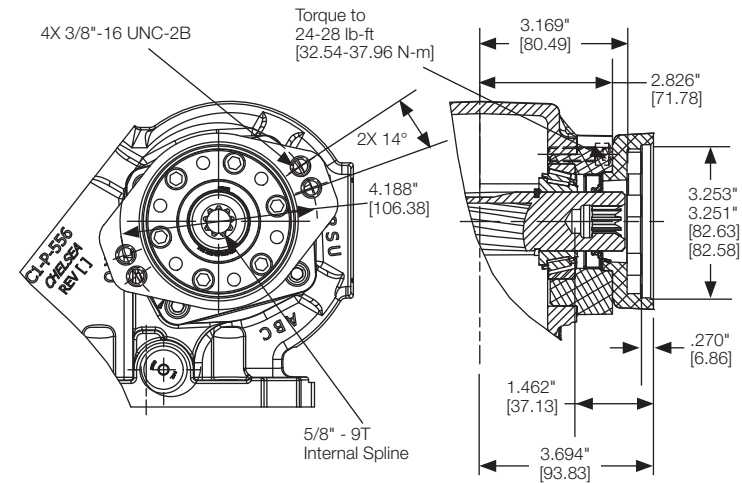
RA Output Option (GA Greasable Option) Rotatable SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)		
Part Number	Description	Qty.
3-P-283	Output Shaft.....	1 or
3-P-980	Output Shaft (B Ratio, DT12™ Only)	1
28-P-216	Oil Seal	1
329195X	Bearing Cap Assembly	1
21-P-628	Pump Flange (Ship Loose w/ Unit)	1
328170-207X	Cap Screw Bag Kit.....	1
378447-6	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.000")..	4
†328591-55X	Conversion Kit (XD to RA)	
†328591-53X	Conversion Kit (XR to RA)	
†328591-109X	Conversion Kit (RA to GA)	



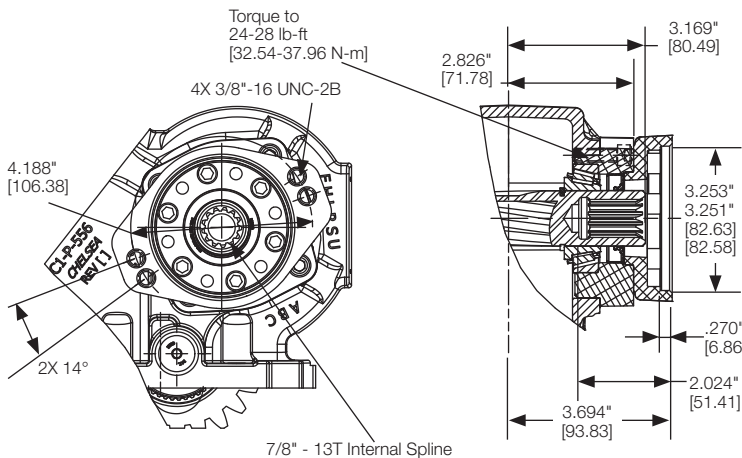
RB Output Option (GB Greasable Option) Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		
Part Number	Description	Qty.
3-P-283	Output Shaft.....	1 or
3-P-980	Output Shaft (B Ratio, DT12™ Only)	1
28-P-216	Oil Seal	1
329195X	Bearing Cap Assembly	1
21-P-572	Pump Flange 4-Bolt (Ship Loose w/ Unit)	1
328170-207X	Cap Screw Bag Kit.....	1
378447-6	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.000")..	4
†328591-56X	Conversion Kit (XD to RB)	
†328591-54X	Conversion Kit (XR to RB)	
†328591-110X	Conversion Kit (RB to GB)	

†Conversion Kits do not include all parts listed above. See [pages 54-57](#) for Conversion Kit BOMs.

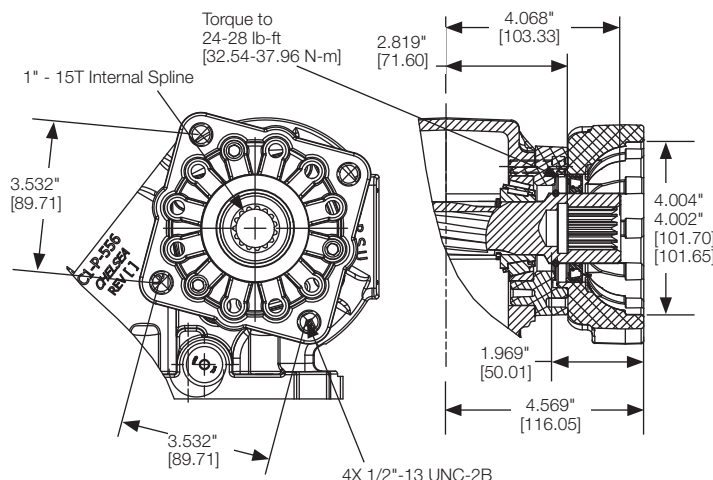
Bill of Materials — Pump Mount (Continued)



RC Output Option Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)		
Part Number	Description	Qty.
3-P-800	Output Shaft.....	1
28-P-216	Oil Seal.....	1
329322X	Bearing Cap Assembly	1
21-P-638	Pump Flange (Ship Loose w/ Unit)	1
328170-210X	Cap Screw Bag Kit	1
378447-6	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.000")..	4
378446-4	1/4" Socket Hex Head Cap Screw (.250"-20 x .750").....	6
†328591-112X	Conversion Kit (XD to RC)	



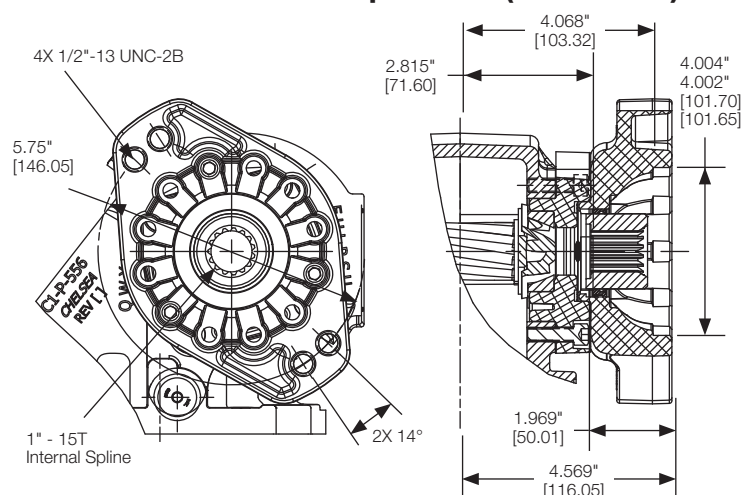
RD Output Option Rotatable SAE A 2-Bolt Flange, SAE B Shaft (7/8" - 13T)		
Part Number	Description	Qty.
3-P-282	Output Shaft.....	1 or
3-P-979	Output Shaft (B Ratio, DT12™ Only)	1
28-P-216	Oil Seal.....	1
329322X	Bearing Cap Assembly	1
21-P-638	Pump Flange (Ship Loose w/ Unit)	1
328170-210X	Cap Screw Bag Kit	1
378447-6	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.000")..	4
378446-4	1/4" Socket Hex Head Cap Screw (.250"-20 x .750").....	6
†328591-113X	Conversion Kit (XD to RD)	



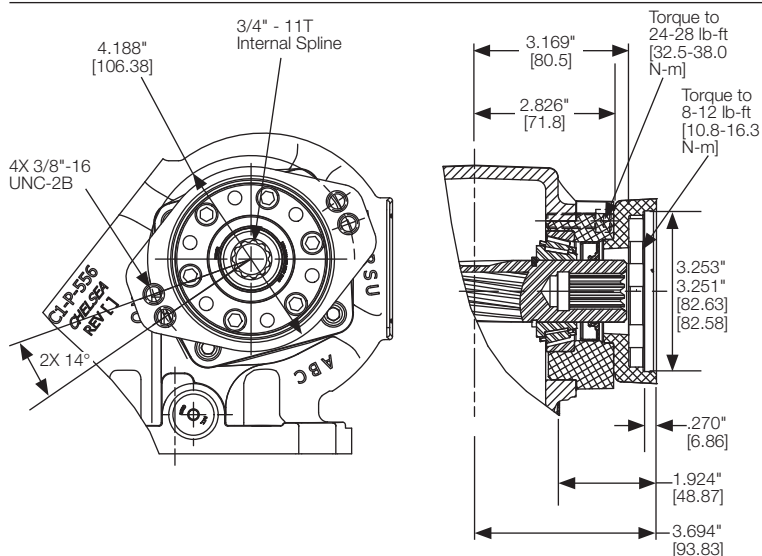
RE Output Option (GJ Greasable Option) Rotatable SAE B 4-Bolt Flange, SAE BB Shaft (1" - 15T)		
Part Number	Description	Qty.
3-P-924	Output Shaft.....	1
28-P-219	Oil Seal.....	1
329264X	Bearing Cap Assembly	1
21-P-654	Pump Flange.....	1
378447-6	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.000")..	7
28-P-271	O-ring.....	1
†328591-134X	Conversion Kit (XD to RE)	
†328591-115X	Conversion Kit (RE to GJ)	

†Conversion Kits do not include all parts listed above. See [pages 54-57](#) for Conversion Kit BOMs.

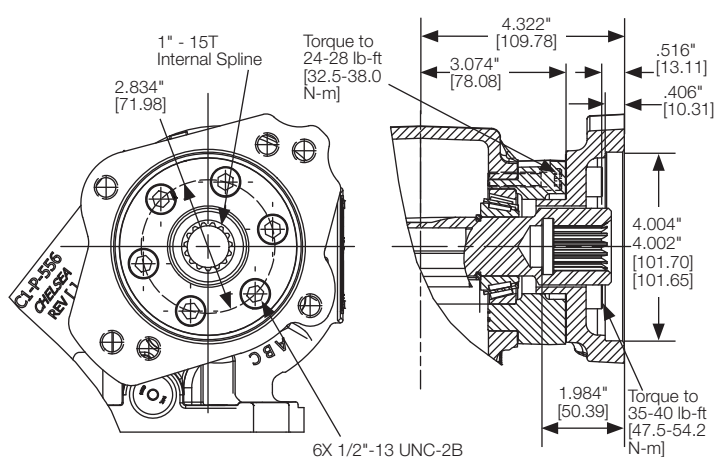
Bill of Materials — Pump Mount (Continued)



RF Output Option (GH Greasable Option) Rotatable SAE B 2 & 4-Bolt Flange, SAE BB Shaft (1" - 15T)		
Part Number	Description	Qty.
3-P-924	Output Shaft.....	1
28-P-219	Oil Seal.....	1
329264X	Bearing Cap Assembly	1
21-P-626	Pump Flange.....	1
378447-6	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.000")..	7
28-P-271	O-ring.....	1
†328591-78X	Conversion Kit (XD to RF)	
†328591-115X	Conversion Kit (RF to GH)	



*RH Output Option Rotatable SAE A 2-Bolt Flange, SAE 19-4 Shaft		
Part Number	Description	Qty.
3-P-1010	Output Shaft.....	1
28-P-216	Oil Seal.....	1
329322X	Bearing Cap Assembly	1
21-P-638	Pump Flange	
	(Ship Loose w/ Unit)	1
378447-6	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.000")..	4
378446-4	1/4" Socket Hex Head Cap Screw (.250"-20 x .750") (In Kit 328170-210X).....	6
328170-210X	Cap Screw Bag Kit.....	1
†328591-151X	Conversion Kit (XD to RH)	

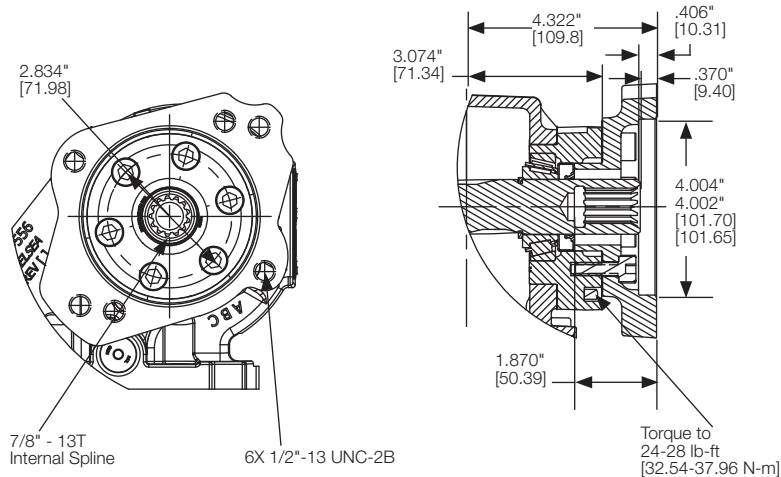


RJ Output Option Rotatable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)		
Part Number	Description	Qty.
3-P-854	Output Shaft.....	1
3-P-1255	Output Shaft (B Ratio, DT12™ Only)	1
329656X	Bearing Cap Assembly (21-P-732)	1
21-P-734	Pump Flange.....	1
379231	Pipe Thread Plug	1
378447-7	Socket Hex Head Cap Screw (.312"-18 x 1.500")	4
379740-6	Socket Hex Head Cap Screw (M10-1.5 x .984")	6
22-P-126	Gasket.....	1
69-P-18	Wet Spline Tag	1
†328591-162X	Conversion Kit (XD to RJ) (Wet Spline Only)	

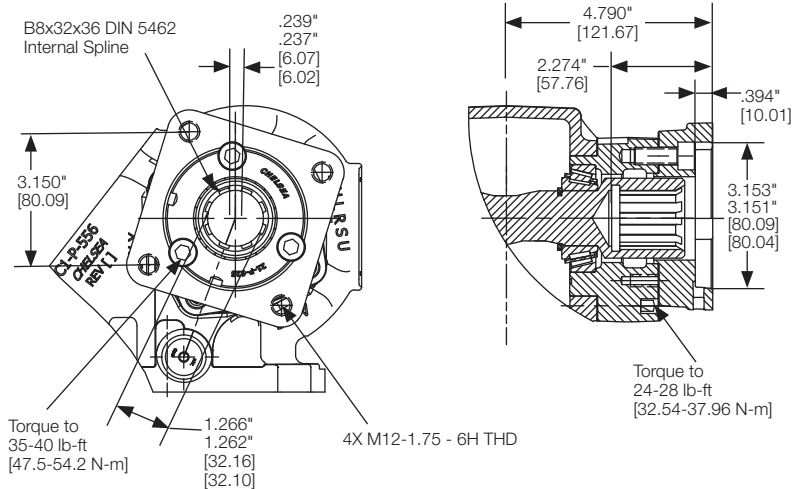
* No longer a current option per Chelsea Suggested List Price.

†Conversion Kits do not include all parts listed above. See pages 54-57 for Conversion Kit BOMs.

Bill of Materials — Pump Mount (Continued)



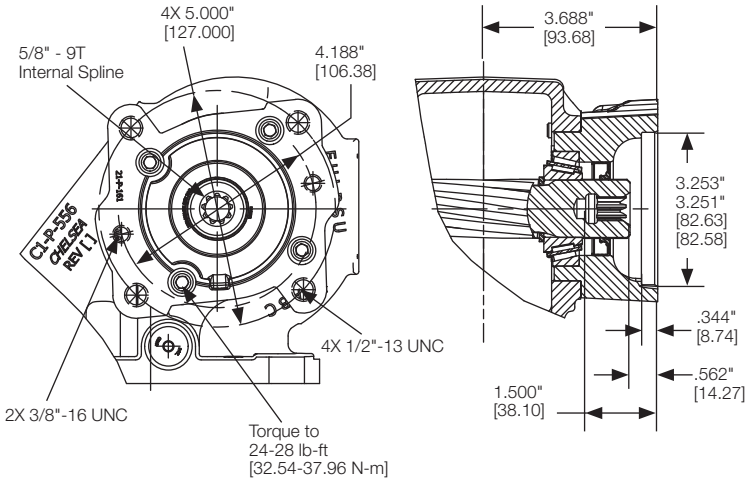
RK Output Option Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (3/4" - 13T)		
Part Number	Description	Qty.
3-P-283	Output Shaft.....	1 or
3-P-980	Output Shaft (B Ratio, DT12™ Only)	1
28-P-216	Oil Seal (Dry Spline Only)	1
329656X	Bearing Cap Assembly	1
21-P-734	Pump Flange	1
379231	Thread Pipe Plug (.125"-27).....	1
22-P-126	Gasket (Bearing Cap to Flange (Wet)).....	1
69-P-18	Wet Spline Tag	1
329057-2X	Pressure Lube Hose	1
329658X	Cover Kit (Wet Spline Only)	1
379740-6	1/4" Socket Hex Head Cap Screw (M10-1.5 x .984")	6
378447-7	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500")..	4
329681X	Installation Kit (Wet Spline).....	1
†328591-160X	Conversion Kit (XD to RK) (Wet Spline Only)	
†328591-159X	Conversion Kit (XD to RK) (Dry Spline Only)	



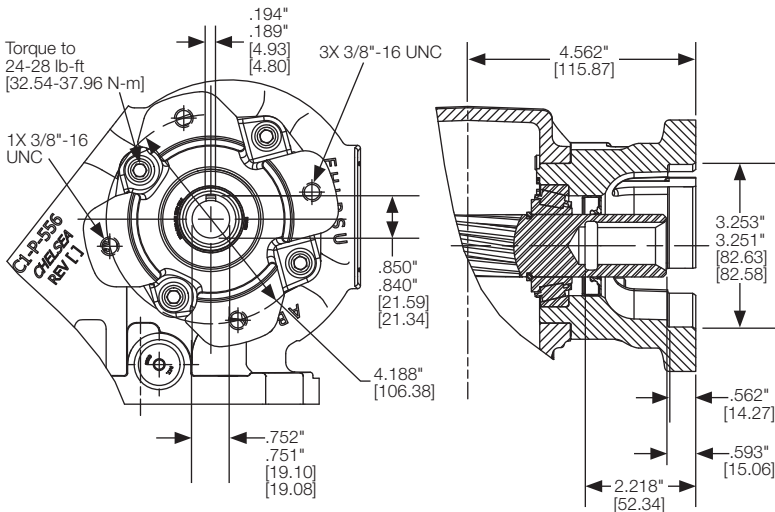
RY Output Option Rotatable ISO 7653 Pump Mounting DIN 5462 Shaft		
Part Number	Description	Qty.
3-P-768	Output Shaft.....	1
21-P-625	Pump Flange (Ships Loose w/ Unit).....	1
329356X	Bearing Cap Assembly	1
378447-8	Socket Head Cap Screw (.312"-18 x 1.500")	4
329355-1X	Standard Loose Parts Kit.....	1
379740-6	Socket Head Cap Screw (M10-1.5 x .984")	3
329659X	Cover Kit (Wet Spline Only)	1
22-P-100	Gasket (In Loose Parts)	1
†328591-131X	Conversion Kit (XD to RY)	

†Conversion Kits do not include all parts listed above. See [pages 54-57](#) for Conversion Kit BOMs.

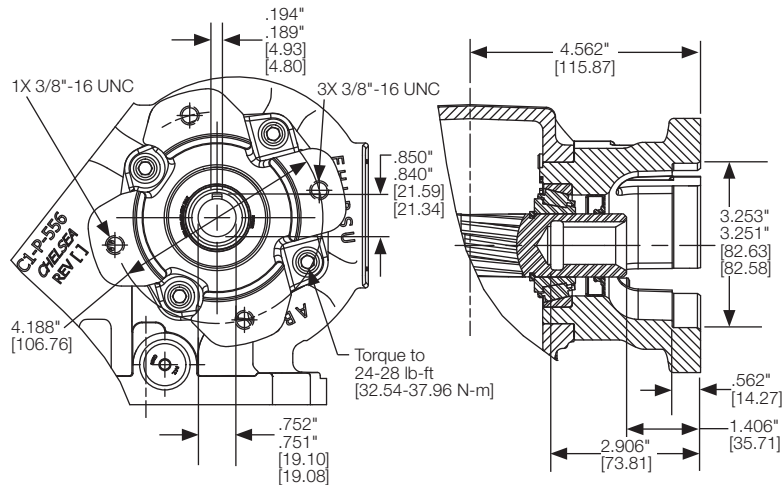
Bill of Materials — Pump Mount (Continued)



XE Output Option SAE B 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)		
Part Number	Description	Qty.
3-P-800	Output Shaft.....	1
28-P-216	Oil Seal.....	1
328328X	Bearing Cap Assembly	1
378447-8	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500") ..	4
†328591-27X	Conversion Kit (XD to XE)	



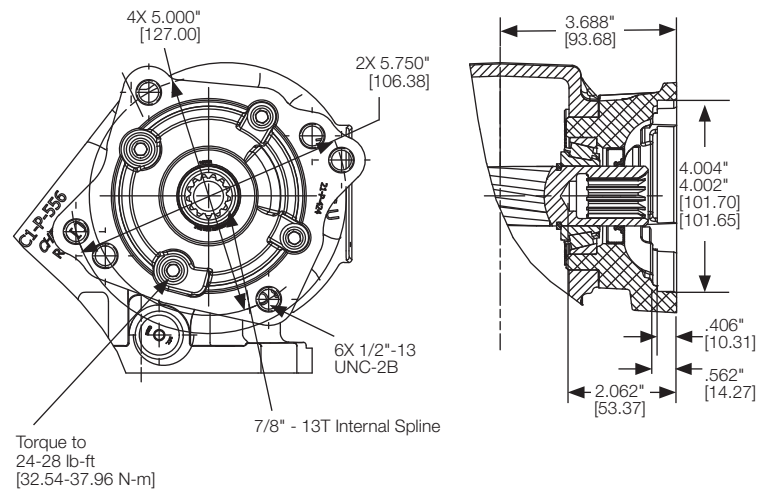
*XG Output Option Non-Standard SAE A 2-Bolt Flange, Non-Standard Shaft (3/4" - 3/16" Key)		
Part Number	Description	Qty.
3-P-281	Output Shaft.....	1
28-P-216	Oil Seal.....	1
328580X	Bearing Cap Assembly	1
378447-8	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500") ..	4
†328591-10X	Conversion Kit (XD to XG)	



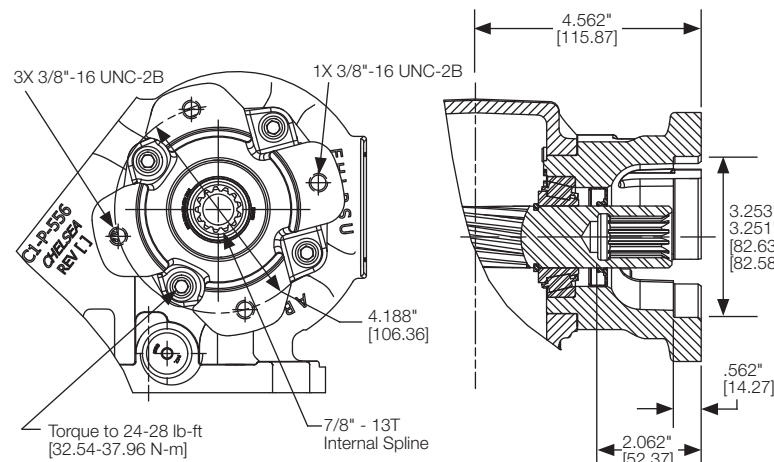
*XJ Output Option Non-Standard SAE A 2-Bolt Flange, Non-Standard Shaft (3/4" - 3/16" Key)		
Part Number	Description	Qty.
3-P-284	Output Shaft.....	1
28-P-216	Oil Seal.....	1
328580X	Bearing Cap Assembly	1
378447-8	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500") ..	4
†328591-11X	Conversion Kit (XD to XJ)	

†Conversion Kits do not include all parts listed above. See pages 54-57 for Conversion Kit BOMs.

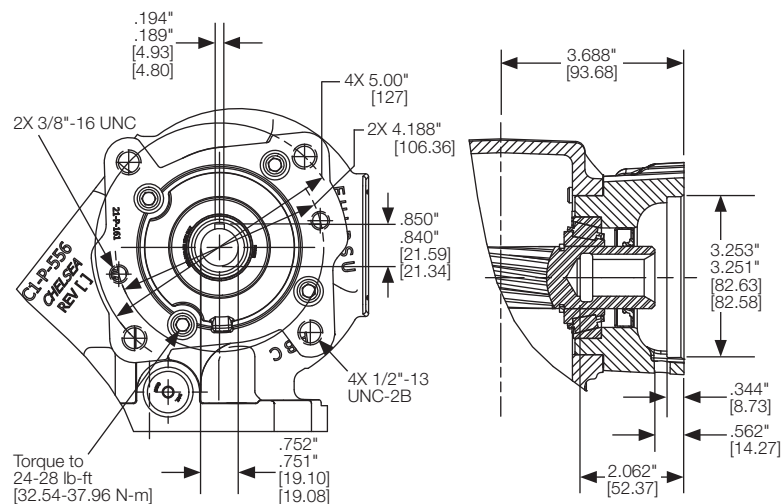
Bill of Materials — Pump Mount (Continued)



XK Output Option (GK Greasable Option) SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		
Part Number	Description	Qty.
3-P-282	Output Shaft.....	1 or
3-P-979	Output Shaft (B Ratio, DT12™ Only)	1
28-P-216	Oil Seal.....	1
328333X	Bearing Cap Assembly	1
328824X	Bearing Cap Assembly (Wet Spline)	1
329658X	Cover Kit (XK, AF, AZ) (Wet Spline Only)	1
378447-8	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500").....	4
†328591-16X	Conversion Kit (XD to XK)	
†328591-96X	Conversion Kit (XK to GK)	



*XL Output Option Non-Standard SAE A 2-Bolt Flange, Non-Standard Shaft (7/8" - 13T)		
Part Number	Description	Qty.
3-P-283	Output Shaft.....	1 or
3-P-980	Output Shaft (B Ratio, DT12™ Only)	1
28-P-216	Oil Seal.....	1
328580X	Bearing Cap Assembly	1
378447-8	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500")..	4
†328591-18X	Conversion Kit (XD to XL)	

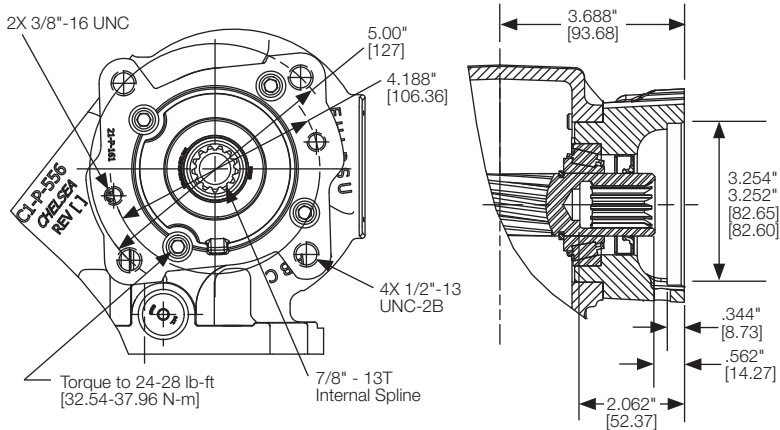


*XO Output Option Special SAE A Pilot 2-Bolt Flange, Non-Standard Shaft (3/4" - 3/16" Key)		
Part Number	Description	Qty.
3-P-284	Output Shaft.....	1
28-P-216	Oil Seal.....	1
328328X	Bearing Cap Assembly	1
378447-8	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500") ..	4
†328591-26X	Conversion Kit (XD to XO)	

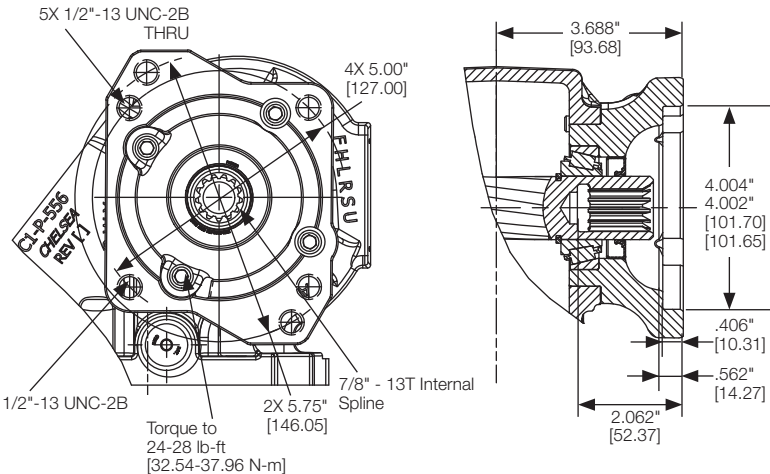
✦ No longer a current option per Chelsea Suggested List Price.

†Conversion Kits do not include all parts listed above. See [pages 54-57](#) for Conversion Kit BOMs.

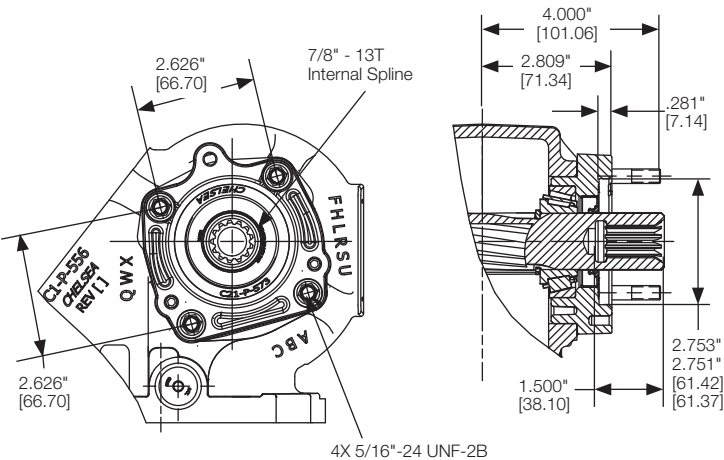
Bill of Materials — Pump Mount (Continued)



*XP Output Option (GP Greasable Option) Special SAE A Pilot 2-Bolt Flange, SAE B Shaft (7/8" - 13T)		
Part Number	Description	Qty.
3-P-282	Output Shaft.....	1 or
3-P-979	Output Shaft (B Ratio, DT12™ Only)	1
28-P-216	Oil Seal.....	1
328328X	Bearing Cap Assembly	1
378447-8	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500") ..	4
†328591-23X	Conversion Kit (XD to XP)	
†328591-96X	Conversion Kit (XP to GP)	



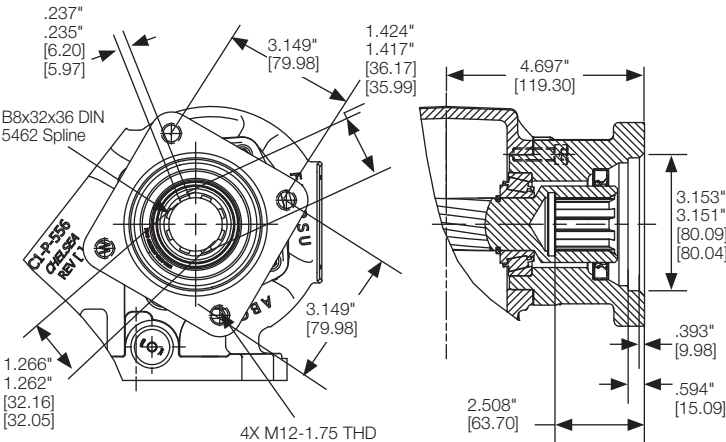
XQ Output Option (GQ Greasable Option) SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		
Part Number	Description	Qty.
3-P-282	Output Shaft.....	1 or
3-P-979	Output Shaft (B Ratio, DT12™ Only)	1
28-P-216	Oil Seal.....	1
328589X	Bearing Cap Assembly	1
378447-8	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.500")	4
†328591-17X	Conversion Kit (XD to XQ)	
†328591-96X	Conversion Kit (XQ to GQ)	



XR Output Option Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)		
Part Number	Description	Qty.
3-P-283	Output Shaft.....	1
28-P-216	Oil Seal.....	1
329194X	Bearing Cap Assembly	1
379673	Hex Shoulder Screw (.312"-24) ...	4
379063	Flat Washer	4
328711X	Pump Mount Kit	1
†328591-52X	Conversion Kit (XD to XR)	

♦ No longer a current option per Chelsea Suggested List Price.

Bill of Materials — Pump Mount (Continued)

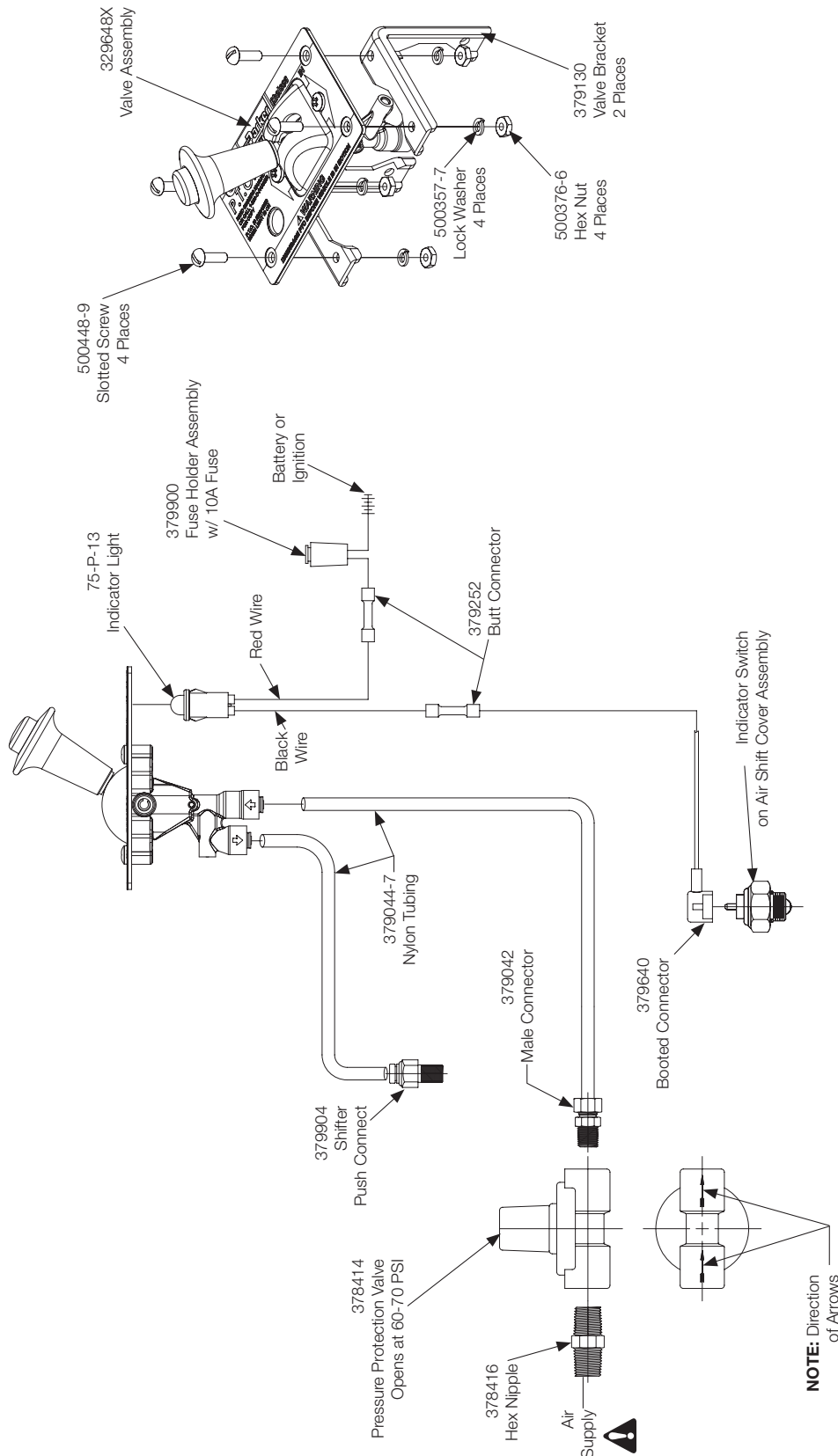


XY Output Option (GY Greasable Option) ISO 7653 Pump Mounting DIN 5462 Shaft		
Part Number	Description	Qty.
3-P-768	Output Shaft.....	1
28-P-275	Oil Seal.....	1
329234X	Bearing Cap Assembly.....	1
378447-6	1/4" Socket Hex Head Cap Screw (.312"-18 x 1.000")..	4
†328591-121X	Conversion Kit (XD to XY)	
†328591-97X	Conversion Kit (XY to GY)	

◆ No longer a current option per Chelsea Suggested List Price.
†Conversion Kits do not include all parts listed above. See [pages 54-57](#) for Conversion Kit BOMs.

Air Shift – A Shift
660/680 Series

(SK-462)

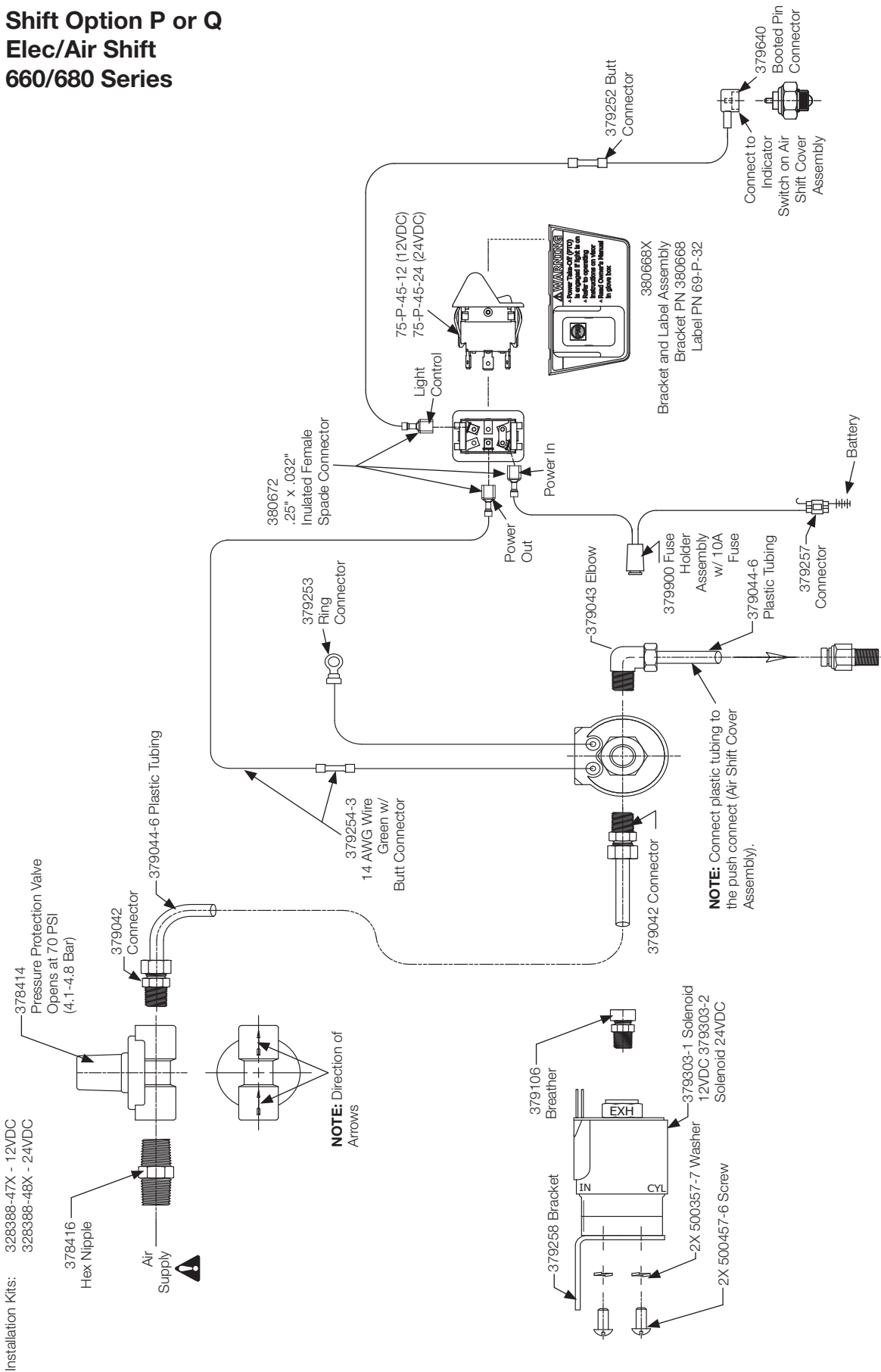


Installation Kit: 328388-98X
 See SK-204 Drilling Template for Control Plate

NOTE: When this installation is used on vehicles with automatic transmissions the PTO drive must be stopped before shifting.

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.

Shift Option P or Q
Elec/Air Shift
660/680 Series



To Air Shift Cover Assembly

WARNING: Connect directly to air supply. Do not use tubing between air supply and pressure protection valve.

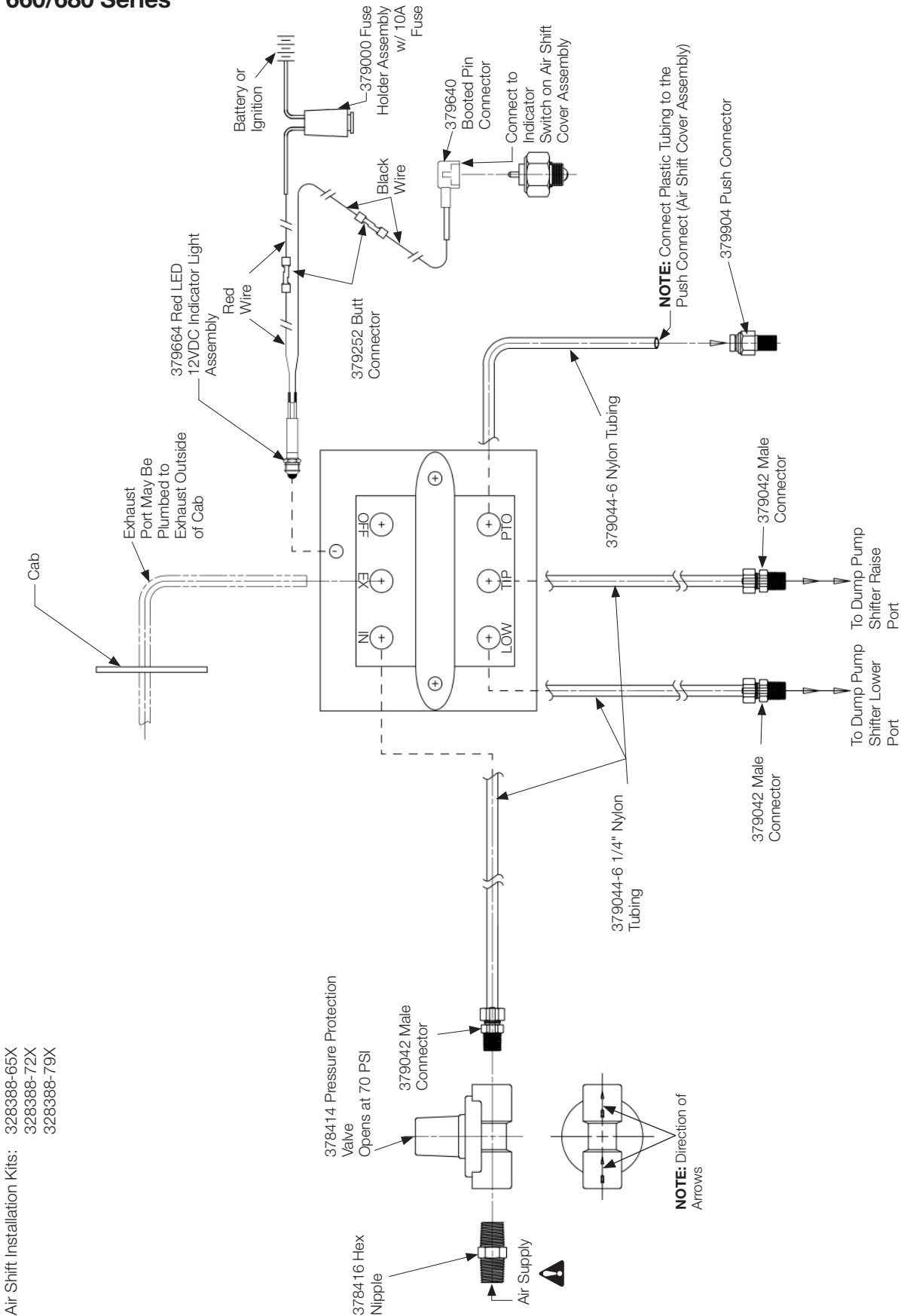
CAUTION: When installing nylon tubing avoid sharp angles, exhaust, and manifold systems.

IMPORTANT: When this installation is used on vehicles with automatic transmissions the PTO drive gear must be stopped before shifting.

NOTE: Tube nut is reusable as long as nylon tubing is not removed from the tube nut.

**Elec/Air Shift – S, T or U Shift
 660/680 Series**

(SK-297 Rev J)

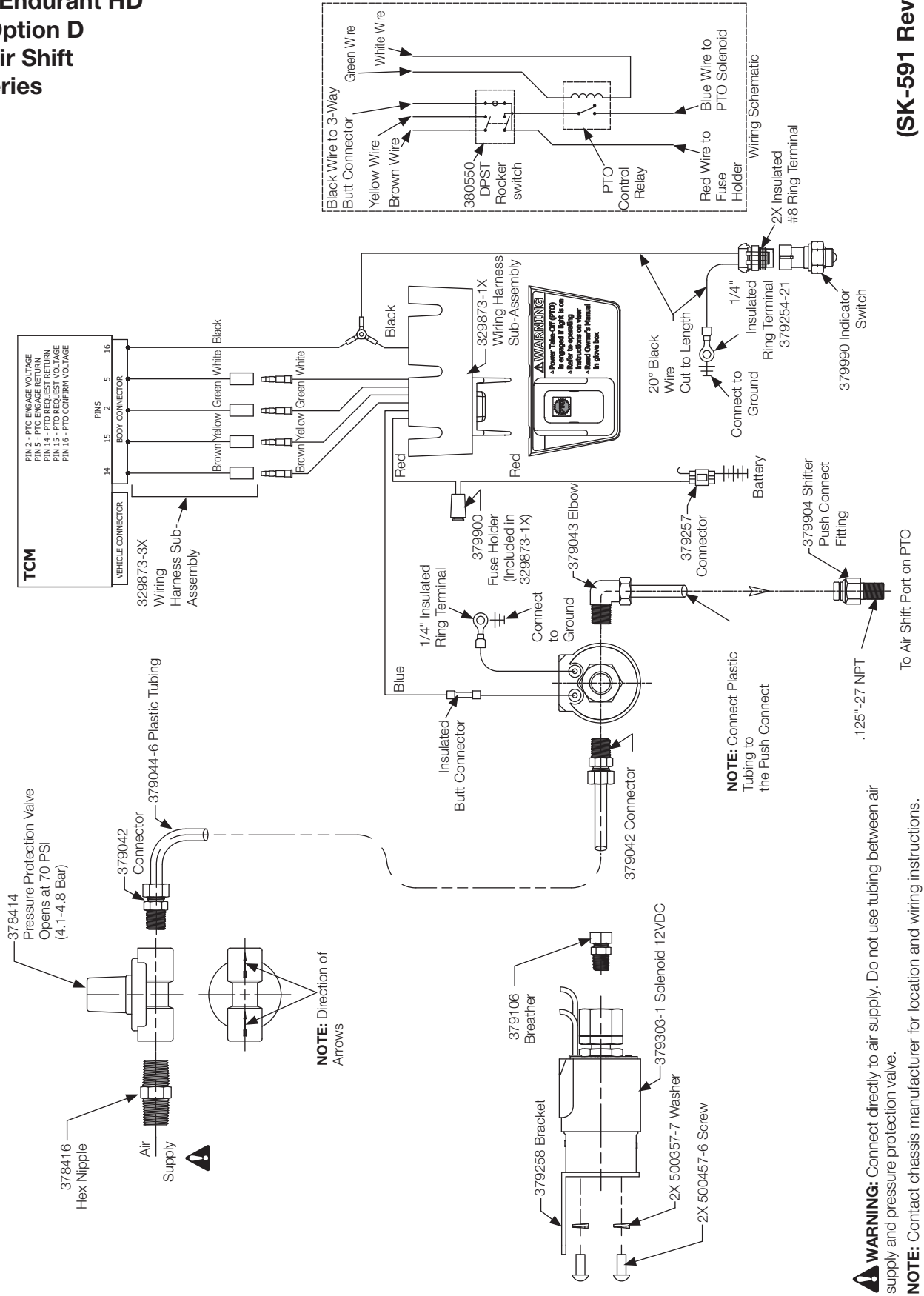


Air Shift Installation Kits:
 328388-65X
 328388-72X
 328388-79X

**Eaton Procision™
 Eaton Endurant HD™
 Shift Option D
 Elec/Air Shift
 680 Series**

(SK-591 Rev G)

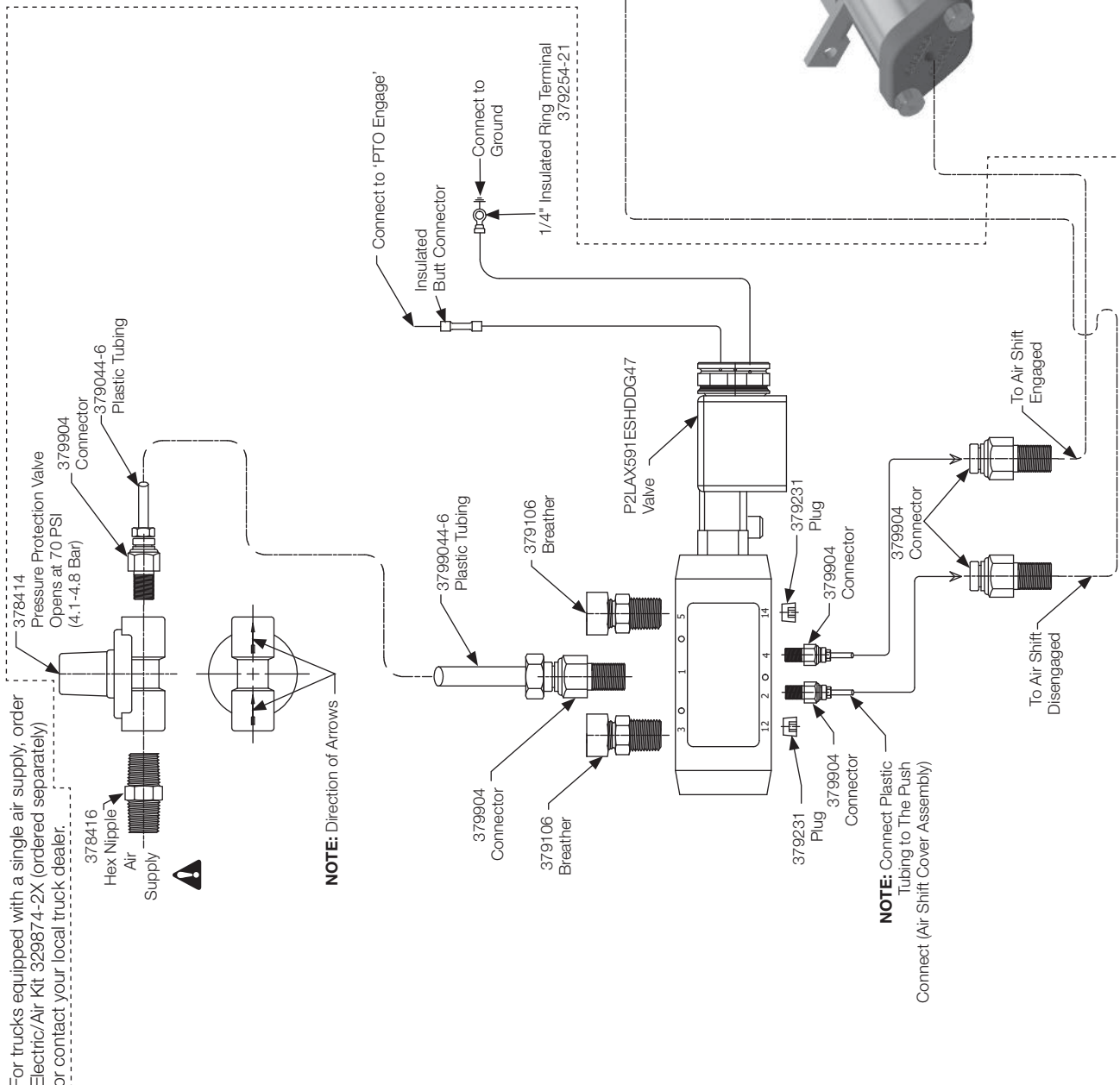
Wiring Harness Kit: 329896X (12VDC)
 Electric/Air Kit: 329874X (12VDC)



Eaton Endurant XD™ & Daimler DT12™
Shift Option 5
Elec/Air Shift
680 Series

(SK-631 Rev F)

---Components included in 329874-2X kit. Order kit separately. These components are not included with PTO



Eaton Endurant XD™
Shift Option 6
Elec/Air Shift
680 Series



Part Number	Description	Qty.	Part Number	Description	Qty.
GASKET KITS			STUD KITS		
328948-6X	Gaskets & Installation Instructions (X, Z, G, K & L) (660 Series)		328170-76X	Stud Kit, Standard (660 Series) X Mount	
35-P-9-1	Mounting Gasket (.010").....	2	379423-15	Stud (.375"-16 x .375"-24 x 1.875")	6
35-P-9-2	Mounting Gasket (.020").....	2	379744	9/16" Hex Head Flange Nut (.375"-24)	6
379085-1	PTO Instruction Decal.....	1	328170-77X Stud Kit, Deep Mount (660 Series) Z Mount		
328946X	Caution Label Kit	1	379744	9/16" Hex Head Flange Nut (.375"-24)	3
379624	Product Warranty Card	1	378431-11	9/16" Hex Head Cap Screw (.375"-16 x 1.125")	3
Owner's Manual	HY25-1135-M1/US	1	379423-12	Stud (.375"-16 x .375"-24 x 1.625")	3
Safety Guide	HY25-1002-M1/US	1	378774	Tablock Washer (.390")	3
328948-8X	Gaskets & Installation Instructions (680 Series)		328170-200X Stud Kit, Standard & Deep Mount (680 Series) X & Z Mount		
328946X	Caution Label Kit	1	379224	Tab Lock Washer (.438")	6
35-P-15-1	Housing Gasket (.010").....	2	379287-12	5/8" Hex Head Cap Screw (.438"-14 x 1.250")	6
35-P-15-2	Housing Gasket (.020").....	2	379424-18	Stud (.438"-14 x .438"-20 x 2.000")	2
379085-1	PTO Instruction Decal.....	1	379745	11/16" Hex Head Flange Nut (.438"-20)	2
379624	Product Warranty Card	1	328170-201X Stud Kit, Metric (680 Series) G Mount		
Owner's Manual	HY25-1135-M1/US	1	379745	Flange Nut (.438"-20)	8
Safety Guide	HY25-1002-M1/US	1	379429-19	Stud (M12-1.75 x 2.000")	8
328948-27X	Gaskets & Installation Instructions (660D Series)		7170-72X Stud Kit, Metric (660 Series) Mount		
379085-1	PTO Instruction Decal.....	1	379428-14	Stud (.375"-24 x M10-1.5 x 1.75")	6
379753	Gasket Sealant	1	379744	9/16" Hex Head Flange Nut (.375"-24)	6
328946X	Caution Decal Kit.....	1	7170-78X Stud Kit, Metric Mount (660 Series) G Mount		
379624	Product Warranty Card	1	379428-16	Stud (.375"-24 x M10-1.5 x 1.875")	6
Owner's Manual	HY25-1135-M1/US	1	379744	Flange Nut (.375"-24)	6
328948-53X	Gasket & Installation DT12™ Adapter	1	328170-217X Stud Kit (680 Series) *LZ Input Only		
328946X	Caution Label Kit	4	380605	Metric Stud (M12-1.75 x .438"-20)	8
35-P-129-1	Mounting Gasket DT12™ (.010")	4	379745	11/16" Hex Head Flange Nut (.438"-20)	8
35-P-129-2	Mounting Gasket DT12™ (.020")	1	328170-219X Stud Kit (680)		
379624	Warranty Card	1	379745	Flange Nut (.438"-20)	8
69-P-39	DA Supplemental Instruction Sheet		380652	Metric Stud (M12-1.75 x 3.000")	8
Owner's Manual	HY25-1135-M1/US	1	380643	Dowel Pin (.472" x .433" x 1.470")	2
Safety Guide	HY25-1002-M1/US	1	328170-221X Stud Kit (680 Series) ME Input Only		
380711X	Spacer Kit Eaton Endurant XD™ (ME Input Only)		379745	Flange Nut (.438"-20)	8
380711	Endurant XD Spacer (.280")	1	380718	Metric Stud (M12-1.75)	8
28-P-381	Mounting Seal O-ring.....	1	Continued on Next Page		

❖ No longer a current option per Chelsea Suggested List Price.
BOMs in each kit group are listed in order based on part number.

Kits Bill of Materials**Parts List****660/680 Series**

Part Number	Description	Qty.	Part Number	Description	Qty.
INSTALLATION INSTRUCTIONS KITS			AIR INSTALLATION KITS		
328346-10X	Cable Control (All)		328388-47X	12VDC Electric Over Air (All) P Shift	
378441-10	Wire (10 ft)	1	328388-46X	Installation Parts Bag Kit	1
378502	Knob	1	378414	Pressure Protection Air Shifter Valve	1
328380X	Mounting Kit		379044-6	Nylon Tubing (Black) (30 ft)	1
378326	Hex Head Bushing Nut (.250"-20).....	1	379252	Electrical Butt Connector	2
50-P-17	Cable Bracket.....	1	379258	Bracket Mounting	1
50-P-19	Swivel Bracket.....	1	379303-1	12VDC Valve Solenoid	1
500396-8	Hex Head Bolt (.250"-20 x .500")	1	75-P-45-12	Electical Rocker Switch 12VDC	1
500568-4	Socket Head Setscrew (.250"-20 x .500")	1	380668X	Bracket and Label Assembly	1
378019	Pivot Pin	1	75-P-46X	Wire and Connectors Kit.....	1
328751-1X	Indicator Light Installation Kit (All)		379106	Breather (.125"-27)	1
68-P-18	Name Plate.....	1	379640	Electrical Booted Connector	1
378978	12VDC Indicator Light	1	328388-48X	24VDC Electric Over Air (All Series) Q Shift	
379900	Fuse Holder	1	379640	Electrical Booted Connector	1
379252	Electrical Speed Limiter Butt Connector.....	2	328388-46X	Installation Parts Bag Kit.....	1
379640	Electrical Booted Connector	1	378414	Pressure Protection Air Shifter Valve	1
			379044-6	Nylon Tubing (Black) (30 ft)	1
			379252	Electrical Butt Connector	2
			379258	Mounting Bracket	1
			379303-2	24VDC Solenoid Valve	1
			75-P-45-24	Electrical Rocker Switch 24VDC	1
			380668X	Bracket and Label Assembly	1
			75-P-46X	Wire and Connectors Kit.....	1
			379106	Breather (.125"-27)	1
			328388-65X	Air-O-Matic Shift (All) S Shift	
			329214X	Air Shifter Valve Assembly.....	1
			378414	Pressure Protection Air Shifter Valve	1
			328388-64X	Air Shift Kit.....	1
			328388-72X	Air Shift (All) T Shift	
			378414	Pressure Protection Valve	1
			329316X	Valve Assembly.....	1
			328388-64X	Air Shift Kit.....	1
			328388-98X	Air Shift Installation Kit (A) (660 Series) Endurant D Shift	
			328388-97X	Fitting & Air Electrical Shift Kit	1
			329090-6X	Valve Kit	1
			379044-6	Tubing (.253" x .179" x 30 ft)	1
			379130	Air Shifter Support Bracket	2
			379640	Electrical Booted Connector	1
			329874X	12VDC Elec/Air Kit (Eaton Endurant HD™) D Shifter (680 Series)	
			378416	Hex Nipple.....	1
			379042	Male Connector	2
			379043	Male Elbow.....	1
			500357-7	Lock Washer	2
			500457-6	Slotted Screw	2
			378414	Pressure Protection Valve	1
			379044-6	Nylon Tubbing	1
			379258	Bracket.....	1
			379303-1	12VDC Valve	1
			379106	Breather Cap	1
			SK-591	Installation Sketch	1

Continued on Next Page

BOMs in each kit group are listed in order based on part number.

Part Number	Description	Qty.
AIR INSTALLATION KITS		
329874-2X	12VDC Elec/Air Kit (Eaton Endurant XD™) 5 & 6 Shift (680 Series)	
378416	Hex Nipple.....	1
378414	Pressure Protection Valve.....	1
379106	Breather (.125"-27)	2
379904	Push Connector	6
P2LAX591ESHDDG47		
	Elec/Air Valve.....	1
379231	Pipe Plug (.125"-27)	2
SK-631	Installation Sketch	1
379044-6	Nylon Tubing (.250" x 35').....	1

Part Number	Description	Qty.
SHIFTER KITS		
329106-39X	Air Shifter Kit (A) (660 Series)	
378430-9	Hex Head Cap Screw (.312"-18 x .875")	4
35-P-8	Shifter Cover Gasket	1
329361X	Air Shifter Cover Assembly	1
328388-98X	Air Shift Installation Kit	1
329106-43X	Air Shifter Kit (P) (660 Series)	
328388-47X	12VDC Electric/Air Shift Installation Kit.....	1
329361X	Air Shifter Cover Assembly	1
378430-9	Hex Head Cap Screw (.312"-18 x .875")	4
35-P-8	Shifter Cover Gasket	1
329106-45X	Air Shifter Kit (Q) (660 Series)	
328388-48X	24VDC Electric/Air Shift Installation Kit.....	1
329361X	Air Shifter Cover Assembly	1
378430-9	Hex Head Cap Screw (.312"-18 x .875")	4
35-P-8	Shifter Cover Gasket	1
329106-105X	Shifter Kit (Wire Control 3 & 6) (Q, W & X Ratio) (W Option) (660 Series)	
328380X	Mounting Parts Kit.....	1
329119-1X	Shifter Cover Wire Assembly.....	1
35-P-8	Shifter Cover Gasket	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .875")	4
378441-10	Wire Cable (10 ft)	1
378502	Knob	1
328751-1X	Installation Light Kit.....	1
329106-106X	Shifter Kit (Wire Control 4 & 5) (Q, W & X Ratio) (W Option) (660 Series)	
328751-1X	Installation Light Kit.....	1
328380X	Mounting Parts Kit.....	1
329119-2X	Shifter Cover Wire Assembly.....	1
35-P-8	Shifter Cover Gasket	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .875")	4
378441-10	Wire Cable (10 ft)	1
378502	Knob	1
329106-107X	Shifter Kit (Wire Control 3 & 6) (Q, W & X Ratio) (W Option) (660 Series)	
328751-1X	Installation Light Kit.....	1
329119-1X	Shifter Cover Wire Assembly	1
35-P-8	Shifter Cover Gasket	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .875")	4
329106-108X	Shifter Kit (Wire Control 4 & 5) (Q, W & X Ratio) (W Option) (660 Series)	
328751-1X	Installation Light Kit.....	1
329119-1X	Shifter Cover Wire Assembly.....	1
35-P-8	Shifter Cover Gasket	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .875")	4

Continued on Next Page

BOMs in each kit group are listed in order based on part number.

Kits Bill of Materials**Parts List****660/680 Series**

Part Number	Description	Qty.	Part Number	Description	Qty.
SHIFTER KITS (Continued)			SHIFTER KITS (Continued)		
329106-109X	Shifter Kit (Wire Control 3 & 6) (F, L, R, S & U Ratio) (W Option) (660 Series)		329106-153X	Air Shifter Kit (V) (660 Series)	
328751-1X	Installation Light Kit.....	1	378430-9	Hex Head Cap Screw (.312"-18 x .875")	4
328380X	Mounting Parts Kit.....	1	35-P-8	Shifter Cover Gasket	1
329121-1X	Shifter Cover Wire Assembly.....	1	379640	Electrical Booted Connector	1
35-P-8	Shifter Cover Gasket	1	378414	Pressure Protection Valve	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .875")	4	329361X	Air Shifter Cover Assembly	1
378441-10	Wire Cable (10 ft).....	1	Owner's Manual	HY25-1135-M1/US	1
378502	Knob	1			
329106-110X	Shifter Kit (Wire Control 4 & 5) (F, L, R, S & U Ratio) (W Option) (660 Series)		329106-158XB	Shifter Kit D Option (Eaton Endurant HD™)	
328380X	Mounting Parts Kit.....	1	378430-9	Hex Head Cap Screw (.312"-18 x .875")	4
329121-2X	Shifter Cover Wire Assembly.....	1	329361-2X	Air Shifter Cover Assembly	1
35-P-8	Shifter Cover Gasket	1	35-P-8	Shifter Cover Gasket	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .875")	4	378391	External Lockring.....	1
378441-10	Wire Cable (10 ft).....	1	329896X	Eaton Precision Wiring Kit.....	1
378502	Knob	1	329874X	Eaton Precision Electric/Air Kit.....	1
328751-1X	Installation Light Kit.....	1	330037X	Wiring Harness Connector.....	1
329106-111X	Shifter Kit (Wire Control 3 & 6) (F, L, R, S & U Ratio) (W Option) (660 Series)		329106-165X	Retrofit Shifter Kit 5 Option (Daimler DT12™) (680 Series)	
328751-1X	Installation Light Kit.....	1	330087X	DA Assembly Air Shifter Cover.....	1
329121-1X	Shifter Cover Wire Assembly.....	1	35-P-8	Shifter Cover Gasket	1
35-P-8	Shifter Cover Gasket	1	379640	Connector Electrical Boost	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .875")	4	378430-10	Hex Cap Screw (.312"-18 x 1.000").....	4
			379042	Male Connector (.250" Tube x)	1
			379043	Male Elbow.....	1
			69-P-39	Supplemental Instructions	1
329106-112X	Shifter Kit (Wire Control 4 & 5) (F, L, R, S & U Ratio) (W Option) (660 Series)		328356-15X	Shifter Cover Seal Kit (Cable Control) (All)	
328751-1X	Installation Light Kit.....	1	22-P-69	Gasket.....	1
329121-2X	Shifter Cover Wire Assembly.....	1	28-P-191	O-ring (.549" x .103").....	1
35-P-8	Shifter Cover Gasket	1	28-P-226	Bearing Cap with Molded Dual L	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .750")	4	35-P-8	Shifter Cover Gasket	1
			35-P-9-1	Mounting Gasket (6-Bolt) (.010").....	2
			35-P-9-2	Mounting Gasket (6-Bolt) (.020").....	2
*329106-125X	12VDC Easy Shift Shifter Kit (3 & 6) (660 Series)		328356-17X	Shifter Cover Seal Kit (Air Shift) (All)	
329165-1X	Shifter Cover	1	22-P-69	Gasket.....	1
329166-12X	Electric Shifter	1	28-P-207	Oil Seal	1
35-P-8	Shifter Cover Gasket	1	28-P-41	O-ring (.734").....	2
378430-8	1/2" Hex Head Cap Screw (.312"-18 x .875")	4	35-P-14	Gasket.....	2
			35-P-8	Shifter Cover Gasket	1
			35-P-9-1	Housing Gasket.....	2
			35-P-9-2	Housing Gasket.....	2
*329106-126X	12VDC Easy Shift Shifter Kit (4 & 5) (660 Series)				
329165-2X	Shifter Cover	1			
329166-12X	Electric Shifter	1			
35-P-8	Shifter Cover Gasket				
378430-8	1/2" Hex Head Cap Screw (.312"-18 x .750")	4			

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* No longer a current option per Chelsea Suggested List Price.

BOMs in each kit group are listed in order based on part number.

Part Number	Description	Qty.	Part Number	Description	Qty.
SERVICE KITS			SERVICE KITS (Continued)		
328356-26X	Shifter Cover Seal Kit (Lever Control) (All)		329303-6X	Seal Kit (Output Options XD, RA, XE, *XG, *XJ, XK, *XL, RB, *XO, XP, XQ, XR, *AA, AK, XX, *LA, *LB, *LC, *LD, *LE and *LF) (680 Series)	
22-P-69	Gasket.....	1	378391	Lockring.....	2
28-P-207	Oil Seal.....	2	35-P-8	Shifter Cover Gasket	1
28-P-226	O-ring.....	1	35-P-9-1	Gasket.....	2
35-P-14	Gasket.....	1	35-P-9-2	Gasket.....	2
35-P-8	Shifter Cover Gasket	1	28-P-216	Oil Seal	1
35-P-9-1	Gasket.....	2	22-P-127-1	Gasket	4
35-P-9-2	Gasket.....	2	22-P-127-2	Gasket.....	4
			22-P-127-3	Gasket.....	4
329143X	Field Conversion Kit (All)		329303-7X	Seal Kit (Output Options AF and *FF) (680 Series)	
35-P-14	Gasket.....	1	378391	Lockring	2
378430-4	Hex Head Cap Screw (.312"-18 x .500") ...	2	28-P-219	Oil Seal.....	1
65-P-23	Shifter Shaft Cover (6-Bolt)	1	35-P-8	Shifter Cover Gasket	1
329202X	Indicator Switch Connector Service Kit (All)		35-P-15-1	Gasket.....	2
379252	Electrical Butt Connector	1	35-P-15-2	Gasket.....	2
380515	Indicator Switch (6-Bolt & 8-Bolt)	1	22-P-127-1	Gasket	4
379640	Electrical Booted Connector	1	22-P-127-2	Gasket.....	4
			22-P-127-3	Gasket.....	4
329303-1X	Seal Kit (Output Options XD, RA, XE, *XG, *XJ, XK, *XL, RB, *XO, *XP, XQ, XR, *AA, AK, XX, *LA, *LB, *LC, *LD, *LE and *LF) (660 Series)		22-P-127-1	Bearing Cap Gasket (.010")	2
378391	Lockring	2	22-P-127-2	Bearing Cap Gasket (.020")	2
35-P-8	Shifter Cover Gasket	1	22-P-127-3	Bearing Cap Gasket (.015")	1
35-P-9-1	Gasket.....	2			
35-P-9-2	Gasket.....	2	329303-8X	Seal Kit (Output Options XY and AZ) (680 Series)	
35-P-15-1	Gasket.....	2	378391	Lockring	2
35-P-15-2	Gasket.....	2	28-P-275	Oil Seal.....	1
28-P-216	Oil Seal.....	1	35-P-8	Shifter Cover Gasket	1
22-P-127-1	Gasket	4	35-P-15-1	Gasket.....	2
22-P-127-2	Gasket.....	4	35-P-15-2	Gasket.....	2
22-P-127-3	Gasket.....	4	22-P-127-1	Gasket	4
			22-P-127-2	Gasket.....	4
329303-2X	Seal Kit (Output Options AF and *FF) (660 Series)		22-P-127-3	Gasket.....	4
378391	Lockring	2			
28-P-219	Oil Seal (2.506" x 1.625" x .375").....	1	329303-9X	Seal Kit (Output Options GA, GB and GR) (680 Series)	
35-P-8	Shifter Cover Gasket	1	550439	Bearings.....	2
35-P-9-1	Mounting Gasket - 6 Bolt (.010").....	2	550397	Bearings.....	1
35-P-9-2	Mounting Gasket - 6 Bolt (.020").....	2	550532	Bearings.....	1
22-P-127-1	Bearing Cap Gasket (.010") ID Punch None	4	378391	Lockring	2
22-P-127-2	Bearing Cap Gasket (.020") ID Punch 2 Holes.....	4	28-P-216	Oil Seal.....	1
22-P-127-3	Bearing Cap Gasket (.030") ID Punch 3 Holes.....	4	35-P-8	Shifter Cover Gasket	1
			14-P-79-4	Washer.....	1
329303-3X	Seal Kit (Output Options XY and AZ) (660 Series)		14-P-79-3	Washer.....	1
378391	Lockring	2	14-P-79-2	Washer.....	1
35-P-8	Shifter Cover Gasket	1	35-P-15-1	Gasket	2
35-P-9-1	Gasket.....	2	35-P-15-2	Gasket	2
35-P-9-2	Gasket.....	2	22-P-127-1	Gasket.....	4
28-P-275	Oil Seal.....	1	22-P-127-2	Gasket.....	4
22-P-127-1	Gasket	4	22-P-127-3	Gasket.....	4
22-P-127-2	Gasket.....	4			
22-P-127-3	Gasket.....	4			

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* No longer a current option per Chelsea Suggested List Price.

BOMs in each kit group are listed in order based on part number.

Kits Bill of Materials**Parts List****660/680 Series**

Part Number	Description	Qty.	Part Number	Description	Qty.
SERVICE KITS (Continued)			SERVICE KITS (Continued)		
329303-10X	Seal Kit (Output Option GF) (680 Series)		328591-52X	Conversion Kit (XD to XR) (All Series)	
378391	Lockring	2	3-P-283	Output Shaft.....	1
28-P-219	Oil Seal.....	1	328711X	Pump Mounting Kit.....	1
35-P-8	Shifter Cover Gasket	1	329194X	Bearing Caps & Cup Assembly (6-Bolt).....	1
35-P-15-1	Gasket	2	378391	Lockring	2
35-P-15-2	Gasket	2	379673	Hex Shoulder Screw (.312"-18 x .312"-24 x 2.361").....	4
22-P-127-1	Gasket.....	4	379063	Flat Washer (.337" x .493" x .047")	4
22-P-127-2	Gasket.....	4	22-P-127-1	Bearing Cap Gasket (.010")	2
22-P-127-3	Gasket.....	4	22-P-127-2	Bearing Cap Gasket (.020")	2
28-P-268	Oil Seal.....	1	22-P-127-3	Bearing Cap Gasket (.015")	1
329310-1X	Bearing and Seal Kit (Output Options XD, RA, XE, *XG, *XJ, XK, XL, RB, *XO, XP, XQ, XR, *AA, AK, XX, *LA, *LB, *LC, *LD, *LE and *LF) (660 Series)		328591-53X	Conversion Kit (XR to RA) (All Series)	
550439	Bearings.....	2	21-P-628	Pump Flange.....	1
550397	Bearings.....	1	378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000").....	7
550532	Bearings.....	1	379638	Mounting Tag.....	1
378391	Lockring	2	328591-54X	Conversion Kit (XR to RB) (All Series)	
28-P-216	Oil Seal.....	1	21-P-572	Pump Flange.....	1
35-P-8	Shifter Cover Gasket	1	378447-6	Socket Head Cap Screw (.312"-18 x 1.000").....	7
35-P-9-1	Gasket.....	2	379638	Mounting Tag.....	1
35-P-9-2	Gasket.....	2			
35-P-15-1	Gasket.....	2			
35-P-15-2	Gasket.....	2			
14-P-79-4	Washer.....	1			
14-P-79-3	Washer.....	1			
14-P-79-2	Washer.....	1			
22-P-127-1	Gasket.....	4			
22-P-127-2	Gasket.....	4			
22-P-127-3	Gasket.....	4			
329310-6X	Bearing and Seal Kit (Output Options XD, RA, XE, *XG, *XJ, XK, XL, RB, *XO, XP, XQ, XR, *AA, AK, XX, *LA, *LB, *LC, *LD, *LE, and *LF) (680 Series)				
328988X	Bearing Cap Assembly (21-P-522).....	1			
378447-10	Socket Head Cap Screw (.312"-18 x 2.000")	4			
378391	Lockring	2			
379688	Lubricant	1			
22-P-127-1	Bearing Cap Gasket (.010")	2			
22-P-127-2	Bearing Cap Gasket (.020")	2			
22-P-127-3	Bearing Cap Gasket (.015")	1			

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BOMs in each kit group are listed in order based on part number.

Part Number	Description	Qty.	Part Number	Description	Qty.
SERVICE CONVERSION KITS			SERVICE CONVERSION KITS (Continued)		
328390-117X	Air Shift Field Conversion Kit (Wire or Lever to Air) (All)		*328390-138X	Electric Shift Field Conversion Kit (Wire or 12VDC) (3 & 6 Assembly) (660 Series)	
35-P-8	Shifter Cover Gasket	1	329165-1X	Shift Cover Assembly.....	1
329361X	Air Shifter Cover Assembly	1	329166-12X	Electric Shift	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .875")	4	35-P-14	Gasket.....	3
328388-98X	Air Shift Installation Kit.....	1	35-P-8	Shifter Cover Gasket	1
Owner's Manual	HY25-1135-M1/US	1	378430-8	1/2" Hex Head Cap Screw (.312"-18 x .750")	4
328390-119X	12VDC Air Shift Field Conversion Kit (Wire to Air) (All)		379718	Installation Instructions Tag.....	1
328388-47X	12VDC Electric/Air Shift Installation Kit.....	1	Owner's Manual	HY25-1135-M1/US	1
329361X	Air Shifter Cover Assembly	1	*328390-139X	Electric Shift Field Conversion Kit (Wire or 12VDC) (4 & 5 Assembly) (660 Series)	
35-P-8	Shifter Cover Gasket	1	329165-2X	Shift Cover Assembly.....	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .875")	4	329166-12X	Electric Shift	1
Owner's Manual	HY25-1135-M1/US	1	35-P-14	Gasket.....	3
328390-120X	24VDC Air Shift Field Conversion Kit (Wire to Air) (All)		35-P-8	Shifter Cover Gasket	1
328388-48X	24VDC Electric/Air Shift Installation Kit.....	1	378430-8	1/2" Hex Head Cap Screw (.312"-18 x .750")	4
329361X	Air Shifter Cover Assembly	1	379718	Installation Instructions Tag.....	1
35-P-8	Shifter Cover Gasket	1	Owner's Manual	HY25-1135-M1/US	1
378430-9	1/2" Hex Head Cap Screw (.312"-18 x .875")	4	*328390-140X	Easy Shift Conversion Kit (Lever or Air to 12VDC) (660 Series)	
Owner's Manual	HY25-1135-M1/US	1	329166-12X	Electric Shift	1
330037X	Connector Kit Eaton Precision Endurant		329225-12X	Electric Shift	1
330037X	Wiring Harness Connector.....	1	35-P-14	Gasket.....	3
330711X	Spacer Kit (489 Series) ME Input Only		35-P-8	Shifter Cover Gasket	1
380711	Endurant XD Spacer (.280").....	1	378430-4	1/2" Hex Head Cap Screw (.312"-18 x .500")	2
28-P-380	O-ring Mounting Seal.....	1	378430-8	1/2" Hex Head Cap Screw (.312"-18 x .750")	4
			379718	Installation Instructions Tag.....	1
			Owner's Manual	HY25-1135-M1/US	1
			328591-55X	Conversion Kit (XD to RA) (All Series)	
			3-P-283	Output Shaft.....	1
			329195X	Bearing Cap & Cup Assembly (6-Bolt)	1
			21-P-628	Pump Flange	1
			378447-6	Socket Head Cap Screw (.312"-18 x 1.000")	7
			378391	Lockring	2
			379638	Field Conversion Tag	1
			379688	Lubricant	1
			22-P-127-1	Bearing Cap Gasket (.010")	2
			22-P-127-2	Bearing Cap Gasket (.020")	2
			22-P-127-3	Bearing Cap Gasket (.015")	1

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BOMs in each kit group are listed in order based on part number.

Kits Bill of Materials**Parts List****660/680 Series**

Part Number	Description	Qty.	Part Number	Description	Qty.
SERVICE CONVERSION KITS (Continued)			OUTPUT CONVERSION KITS		
328591-56X	Conversion Kit (XD to RB) (All Series)		328591-96X	Conversion Kit (XQ to GQ) (All Series)	
3-P-283	Output Shaft.....	1	329273X	Sub-Assembly.....	1
329195X	Bearing Cap & Cup Assembly (6-Bolt)	1	378391	Lockring	2
21-P-572	Pump Flange.....	1	28-P-268	Oil Seal.....	1
378447-6	Socket Head Cap Screw (.312"-18 x 1.000")	7	378447-8	1/4" Socket Head Cap Screw (.312"-18 x 1.500")	4
378391	Lockring	2	28-P-216	Oil Seal.....	1
379638	Field Conversion Tag	1	379819	Grease Fitting Cap.....	1
379688	Lubricant	1	500168-2	Lube Fitting	1
22-P-127-1	Bearing Cap Gasket (.010")	2	3-P-933	Output Shaft.....	1
22-P-127-2	Bearing Cap Gasket (.020")	2	379688	Lubricant	1
22-P-127-3	Bearing Cap Gasket (.015")	1	22-P-127-1	Bearing Cap Gasket (.010")	2
			22-P-127-2	Bearing Cap Gasket (.020")	2
			22-P-127-3	Bearing Cap Gasket (.015")	1
328591-70X	Conversion Kit (XD to AZ) (All Series)		328591-98X	Conversion Kit (AZ to GZ) (All Series)	
3-P-844	Output Shaft.....	1	28-P-268	Oil Seal.....	1
28-P-275	Oil Seal.....	1	329273X	Sub-Assembly.....	1
329052X	Bearing Cap Assembly (21-P-640).....	1	378391	Lockring	2
21-P-626	Pump Flange.....	1	378447-8	1/4" Socket Head Cap Screw (.312"-18 x 1.500")	4
378447-11	1/4" Socket Head Cap Screw (.312"-18 x 2.250")	4	379688	Lubricant	1
378391	Lockring	2	3-P-939	Output Shaft.....	1
379638	Mounting Tag.....	1	379819	Grease Fitting Cap.....	1
379688	Lubricant	1	500168-2	Lube Fitting	1
22-P-127-1	Bearing Cap Gasket (.010")	2	28-P-275	Oil Seal.....	1
22-P-127-2	Bearing Cap Gasket (.020")	2	22-P-127-1	Bearing Cap Gasket (.010")	2
22-P-127-3	Bearing Cap Gasket (.015")	1	22-P-127-2	Bearing Cap Gasket (.020")	2
			22-P-127-3	Bearing Cap Gasket (.015")	1
328591-78X	Conversion Kit (XD to RF) (All Series)		328591-101X	Conversion Kit (XD to GQ) (All Series)	
3-P-924	Output Shaft.....	1	329273X	Sub-Assembly.....	1
28-P-219	Oil Seal.....	1	378391	Lockring	2
329264X	Bearing Cap Assembly (21-P-640).....	1	328589X	Bearing Cap Assembly	1
21-P-626	Pump Flange.....	1	28-P-268	Oil Seal.....	1
378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	4	28-P-216	Oil Seal.....	1
2-P-271	Cap Screw Bag Kit.....	1	378447-8	1/4" Socket Head Cap Screw (.312"-18 x 1.500")	4
378391	Lockring	2	379819	Grease Fitting Cap.....	1
379638	Mounting Tag.....	1	500168-2	Lube Fitting	1
379688	Lubricant	1	3-P-933	Output Shaft.....	1
22-P-127-1	Bearing Cap Gasket (.010")	2	379688	Lubricant	1
22-P-127-2	Bearing Cap Gasket (.020")	2	22-P-127-3	Bearing Cap Gasket (.010")	1
22-P-127-3	Bearing Cap Gasket (.015")	1	22-P-127-2	Bearing Cap Gasket (.020")	2
			22-P-127-1	Bearing Cap Gasket (.015")	2

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BOMs in each kit group are listed in order based on part number.

Part Number	Description	Qty.	Part Number	Description	Qty.
OUTPUT CONVERSION KITS (Continued)			OUTPUT CONVERSION KITS (Continued)		
328591-102X	Conversion Kit (XD to GY) (All Series)		328591-110X	Conversion Kit (RB to GB) (All Series)	
329273X	Sub-Assembly	1	329273X	Sub-Assembly	1
28-P-275	Oil Seal	1	28-P-268	Oil Seal	1
28-P-268	Oil Seal	1	3-P-923	Output Shaft	1
378391	Lockring	2	379688	Lubricant	1
329234X	Bearing Cap Assembly	1	500168-2	Lube Fitting	1
378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.500")	4	379819	Grease Fitting Cap	1
500168-2	Lube Fitting	1	28-P-216	Oil Seal	1
379688	Lubricant	1	378391	Lockring	2
3-P-938	Output Shaft	1	378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	7
379819	Grease Fitting Cap	1	22-P-127-1	Bearing Cap Gasket (.010")	2
22-P-127-1	Bearing Cap Gasket (.010")	2	22-P-127-2	Bearing Cap Gasket (.020")	2
22-P-127-2	Bearing Cap Gasket (.020")	2	22-P-127-3	Bearing Cap Gasket (.015")	1
22-P-127-3	Bearing Cap Gasket (.015")	1			
328591-103X	Conversion Kit (XD to GZ) (All Series)		328591-111X	Conversion Kit (AF to GF) (All Series)	
329273X	Sub-Assembly	1	378447-10	1/4" Socket Head Cap Screw (.312"-18 x 2.000")	4
329052X	Bearing Cap Assembly	1	28-P-268	Oil Seal	1
28-P-268	Oil Seal	1	28-P-219	Oil Seal	1
378447-11	1/4" Socket Head Cap Screw (.312"-18 x 2.250")	4	378391	Lockring	2
378391	Lockring	2	329273X	Sub-Assembly	1
379688	Lubricant	1	379688	Lubricant	1
3-P-939	Output Shaft	1	3-P-921	Output Shaft	1
379819	Grease Fitting Cap	1	500168-2	Lube Fitting	1
500168-2	Lube Fitting	1	379819	Grease Fitting Cap	1
28-P-275	Oil Seal	1	22-P-127-1	Bearing Cap Gasket (.010")	2
22-P-127-1	Bearing Cap Gasket (.010")	2	22-P-127-2	Bearing Cap Gasket (.020")	2
22-P-127-2	Bearing Cap Gasket (.020")	2	22-P-127-3	Bearing Cap Gasket (.015")	1
22-P-127-3	Bearing Cap Gasket (.015")	1			
328591-109X	Conversion Kit (RA to GA) (All Series)		328591-112X	Conversion Kit (XD to RC) (All Series)	
378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	7	3-P-800	Output Shaft	1
28-P-268	Oil Seal	1	28-P-216	Oil Seal (2.004" x 1.250" x .437")	1
3-P-923	Output Shaft	1	329322X	Bearing Cap Assembly	1
379688	Lubricant	1	21-P-638	Pump Flange	1
500168-2	Lube Fitting	1	378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	4
379819	Grease Fitting Cap	1	378391	Lockring	2
28-P-216	Oil Seal	1	379638	Field Conversion Tag	1
378391	Lockring	2	379688	Lubricant	1
329273X	Sub-Assembly	1	378446-4	1/4" Socket Head Cap Screw (.250"-20 x .750")	6
22-P-127-1	Bearing Cap Gasket (.010")	2	22-P-127-1	Bearing Cap Gasket (.010")	2
22-P-127-2	Bearing Cap Gasket (.020")	2	22-P-127-2	Bearing Cap Gasket (.020")	2
22-P-127-3	Bearing Cap Gasket (.015")	1	22-P-127-3	Bearing Cap Gasket (.015")	1

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BOMs in each kit group are listed in order based on part number.

Kits Bill of Materials**Parts List****660/680 Series**

Part Number	Description	Qty.	Part Number	Description	Qty.
OUTPUT CONVERSION KITS (Continued)			OUTPUT CONVERSION KITS (Continued)		
328591-113X	Conversion Kit (XD to RD) (All Series)		328591-121X	Conversion Kit (XD to XY) (All Series)	
21-P-638	Pump Flange.....	1	3-P-768	Output Shaft.....	1
329322X	Bearing Cap Assembly (21-P-640).....	1	28-P-275	Oil Seal.....	1
378391	Lockring	2	329234X	Bearing Cap Assembly (21-P-614).....	1
378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	4	378447-6	Socket Head Cap Screw (.312"-18 x 1.000")	4
379638	Mounting Tag.....	1	378391	Lockring	2
379688	Lubricant	1	379688	Lubricant	1
378446-4	1/4" Socket Head Cap Screw (.312"-18 x 1.500")	6	22-P-127-1	Bearing Cap Gasket (.010")	2
28-P-216	Oil Seal	1	22-P-127-2	Bearing Cap Gasket (.020")	2
3-P-282	Pump Shaft	1	22-P-127-3	Bearing Cap Gasket (.015")	1
22-P-127-1	Bearing Cap Gasket (.010")	2			
22-P-127-2	Bearing Cap Gasket (.020")	2	328591-122X	Conversion Kit (XD to XX) (All Series)	
22-P-127-3	Bearing Cap Gasket (.015")	1	3-P-766	Output Shaft.....	1
			28-P-216	Oil Seal (2.004" x 1.250" x .374").....	1
328591-115X	Conversion Kit (RF to GH) (All Series)		379111	Key (.313" x .313" x 1.031")	1
28-P-268	Oil Seal	1	378447-6	Socket Cap Screw (.312"-18 x 1.000")	4
378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	7	380487	Hex Locknut (1.000"-20)	1
378391	Lockring	2			
28-P-219	Oil Seal	1	328591-123X	Conversion Kit (XD to GF) (All Series)	
329273X	Sub-Assembly	1	329088X	Pump Flange Assembly (6-Bolt)	1
3-P-941	Output Shaft.....	1	329273X	Bearing Cap Sub-Assembly.....	1
379688	Lubricant	1	28-P-268	Oil Seal (2.004" x 1.000" x .437").....	1
379819	Grease Fitting Cap.....	1	28-P-219	Oil Seal (2.506" x 1.625" x .375").....	1
500168-2	Lube Fitting	1	378447-10	1/4" Socket Head Cap Screw (.312"-18 x 2.000")	4
22-P-127-1	Bearing Cap Gasket (.010")	2	378391	Lockring	2
22-P-127-2	Bearing Cap Gasket (.020")	2	3-P-921X	D Shaft Lubricant.....	1
22-P-127-3	Bearing Cap Gasket (.015")	1	22-P-127-1	Bearing Cap Gasket (.010")	2
			22-P-127-2	Bearing Cap Gasket (.020")	2
328591-117X	Conversion Kit (XD to GH) (All Series)		22-P-127-3	Bearing Cap Gasket (.015")	1
28-P-271	O-ring.....	1			
329273X	Sub-Assembly	1	328591-124X	Conversion Kit (XD to GA) (All Series)	
28-P-219	Oil Seal	1	329273X	Bearing Cap Sub-Assembly.....	1
28-P-268	Oil Seal	1	28-P-268	Oil Seal (2.004" x 1.000" x .437").....	1
378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	7	28-P-216	Oil Seal (2.004" x 1.250" x .374").....	1
378391	Lockring	2	21-P-628	Pump Flange	1
21-P-626	Pump Flange.....	1	3-P-923X	Output Shaft Assembly.....	1
329264X	Bearing Cap Assembly	1	378391	Lockring	2
3-P-941	Output Shaft.....	1	329195X	Bearing Cap & Cup Assembly.....	1
379688	Lubricant	1	379638	Field Conversion Tag	1
379819	Grease Fitting Cap.....	1	378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	7
500168-2	Lube Fitting	1	22-P-127-1	Bearing Cap Gasket (.010")	2
22-P-127-1	Bearing Cap Gasket (.010")	2	22-P-127-2	Bearing Cap Gasket (.020")	2
22-P-127-2	Bearing Cap Gasket (.020")	2	22-P-127-3	Bearing Cap Gasket (.015")	1
22-P-127-3	Bearing Cap Gasket (.015")	1			

Continued on Next Page

BOMs in each kit group are listed in order based on part number.

Part Number	Description	Qty.	Part Number	Description	Qty.
OUTPUT CONVERSION KITS (Continued)			OUTPUT CONVERSION KITS (Continued)		
328591-125X	Conversion Kit (XD to GB) (All Series)		328591-134X	Conversion Kit (XD to RE) (All Series)	
329273X	Bearing Cap Sub-Assembly.....	1	3-P-924	Output Shaft.....	1
379638	Field Conversion Tag	1	28-P-219	Oil Seal (2.506" x 1.625" x .375").....	1
378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	7	329264X	Bearing Cap Assembly	1
378391	Lockring	2	21-P-654	Pump Flange	1
329195X	Bearing Cap & Cup Assembly	1	378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	7
3-P-923X	Output Shaft Assembly	1	28-P-271	O-ring (2.484" x 1.625" x .375").....	1
28-P-268	Oil Seal (2.004" x 1.000" x .437").....	1	378391	Lockring	2
28-P-216	Oil Seal (2.004" x 1.250" x .374").....	1	379638	Field Conversion Tag	1
21-P-572	Pump Flange	1	379688	Spline Lubricant.....	1
22-P-127-1	Bearing Cap Gasket (.010")	2	22-P-127-1	Bearing Cap Gasket (.010")	2
22-P-127-2	Bearing Cap Gasket (.020")	2	22-P-127-2	Bearing Cap Gasket (.020")	4
22-P-127-3	Bearing Cap Gasket (.015")	1	22-P-127-3	Bearing Cap Gasket (.015")	1
328591-126X	Conversion Kit (XD to GR) (All Series)		328591-151X	Conversion Kit (XD to RH)	
329273X	Bearing Cap Sub-Assembly.....	1	329322X	Bearing Cap Assembly	1
3-P-923X	Output Shaft Assembly	1	28-P-216	Oil Seal (2.004" x 1.250" x .437").....	1
28-P-268	Oil Seal (2.004" x 1.000" x .437").....	1	3-P-1010	Output Shaft.....	1
28-P-216	Oil Seal (2.004" x 1.250" x .374").....	1	378391	Lockring	2
379673	Shoulder Stud (.337" x .493" x .047")	4	379638	Field Conversion Tag	1
379063	Flat Washer (.337" x .493" x .047")	4	378447-6	1/4" Socket Head Cap Screw (.312"-18 x 1.000")	4
378391	Lockring	2	379688	Lubricant	1
329194X	Bearing Cap & Cup Assembly.....	1	378446-4	3/16" Socket Head Cap Screw (.250"-20 x .750")	6
328711X	Pump Mounting Kit.....	1	21-P-638	Pump Flange	1
22-P-127-1	Bearing Cap Gasket (.010")	2	22-P-127-1	Bearing Cap Gasket (.010)	2
22-P-127-2	Bearing Cap Gasket (.020")	2	22-P-127-2	Bearing Cap Gasket (.020)	2
22-P-127-3	Bearing Cap Gasket (.015")	1	22-P-127-3	Bearing Cap Gasket (.015)	1
328591-130X	Conversion Kit (XD to XV) (All Series)		328591-159X	Conversion Kit (XD to RK) (Dry Spline Only)	
379828	Companion Flange	1	379688	Lubricant	1
378454-7	3/16" Socket Head Setscrew (.375-16" x .500")	1	379638	Field Conversion Tag	1
328591-131X	Conversion Kit (XD to RY) (All Series)		378447-7	1/4" Socket Head Cap Screw (.312"-18 x 1.250")	4
378447-8	1/4" Socket Head Cap Screw (.312"-18 x 1.500")	4	378391	Lockring	2
21-P-625	Pump Flange	1	329656X	Bearing Rotable Flange	1
3-P-768	Output Shaft.....	1	3-P-283	Output Shaft	1
378391	Lockring	1	28-P-216	Oil Seal (2.004" x 1.250" x .374").....	1
329356X	Bearing Cap Assembly	1	21-P-734	Pump Flange	1
329355-1X	Loose Parts Kit.....	1	22-P-127-1	Bearing Cap Gasket (.010")	2
22-P-127-1	Bearing Cap Gasket (.010")	2	22-P-127-2	Bearing Cap Gasket (.020")	2
22-P-127-2	Bearing Cap Gasket (.020")	2	22-P-127-3	Bearing Cap Gasket (.015")	2
22-P-127-3	Bearing Cap Gasket (.015")	1	379740-6	1/4" Socket Head Cap Screw (M10-1.5 x .984")	6

Continued on Next Page

BOMs in each kit group are listed in order based on part number.

Kits Bill of Materials

Part Number	Description	Qty.
OUTPUT CONVERSION KITS (Continued)		
328591-160X	Conversion Kit (XD to RK) (Wet Spline Only)	
329057-4X	Pressure Lube Hose	1
329681X	Wet Spline Installation Kit.....	1
21-P-734	Pump Flange	1
378447-7	1/4" Socket Head Cap Screw (.312"-18 x 1.250")	4
329656X	Bearing Rotable Flange	1
3-P-283	Output Shaft.....	1
22-P-127-1	Bearing Cap Gasket (.010")	2
22-P-127-2	Bearing Cap Gasket (.020")	2
22-P-127-3	Bearing Cap Gasket (.015")	2
378391	Lockring	2
379231	Pipe Plug (.125"-27)	1
379740-6	1/4" Socket Head Cap Screw (M10-1.5 x .984")	6
22-P-126	Gasket.....	1
379638	Field Conversion Tag	1
328591-163X	Conversion Kit (XD to GL)	
3-P-923	Output Shaft Assembly	1
28-P-216	Oil Seal (2.004" x 1.250" x .374").....	1
28-P-268	Oil Seal (2.004" x 1.000" x .437").....	1
21-P-734	Pump Flange	1
329273X	Bearing Cap Assembly	1
329656X	Bearing Cap Assembly	1
378391	Lockring	2
378447-7	1/4" Socket Head Cap Screw (.312"-18 x 1.250")	4
379740-6	1/4" Socket Head Cap Screw (M10-1.5 x .984")	6
28-P-271	Cap Screw Bag	1
379638	Field Conversion Tag	1
379688	Lubricant	1
22-P-127-1	Bearing Cap Gasket (.010")	2
22-P-127-2	Bearing Cap Gasket (.020")	2
22-P-127-3	Bearing Cap Gasket (.015")	1

BOMs in each kit group are listed in order based on part number.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Offer of Sale

WARNING: This product can expose you to chemicals including Lead and Lead Compounds, and Di(2-ethylhexyl)phthalate (DEHP) which are 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

- 1. Definitions.** As used herein, the following terms have the meanings indicated.

Buyer: means any customer receiving a Quote for Products.

Buyer's Property:

means any tools, patterns, plans, drawings, designs, specifications materials, equipment, or information furnished by Buyer, or which are or become Buyer's property.

Confidential Information:

means any technical, commercial, or other proprietary information of Seller, including, without limitation, pricing, technical drawings or prints and/or part lists, which has been or will be disclosed, delivered, or made available, whether directly or indirectly, to Buyer.

Goods: means any tangible part, system or component to be supplied by Seller.

Intellectual Property Rights:

means any patents, trademarks, copyrights, trade dress, trade secrets or similar rights.

Products: means the Goods, Services and/or Software as described in a Quote.

Quote: means the offer or proposal made by Seller to Buyer for the supply of Products.

Seller: means Parker-Hannifin Corporation, all divisions, subsidiaries and businesses selling products under these terms.

Seller's IP: means patents, trademarks, copyrights, or other intellectual property rights relating to the Products, including without limitation, names, designs, images, drawings, models, software, templates, information, any improvements or creations or other intellectual property developed prior to or during the relationship contemplated herein.

Services: means any services to be provided by Seller.

Software: means any software related to the Goods, whether embedded or separately downloaded.

Special Tooling:

means equipment acquired by Seller or otherwise owned by Seller necessary to manufacture Goods, including but not limited to tools, jigs, and fixtures.

Terms: means the terms and conditions of this Offer of Sale.

- 2. Terms.** All sales of Products by Seller will be governed by, and are expressly conditioned upon Buyer's assent to, these Terms. These Terms are incorporated into any Quote provided by Seller to Buyer. Buyer's order for any Products whether communicated to Seller verbally, in writing, by electronic data interface or other electronic commerce, shall constitute acceptance of these Terms. Seller objects to any contrary or additional terms or conditions of Buyer. Reference in Seller's order acknowledgement to Buyer's purchase order or purchase order number shall in no way constitute an acceptance of any of Buyer's terms or conditions of purchase. Any Quote made by Seller to Buyer shall be considered a firm and definite offer and shall not be deemed to be otherwise despite any language on the face of the Quote. Seller reserves all rights to accept or reject any purported acceptance by Buyer to Seller's Quote if such purported acceptance attempts to vary the terms of the Quote. If Seller ships Products after Buyer issues an acceptance to the Quote, any additional or different terms proposed by Buyer will not become part of the parties' business relationship unless agreed to in a writing that is signed by an authorized representative of Seller, excluding email correspondence. If the transaction proceeds without such agreement on the part of Seller, the business relationship will be

governed solely by these Terms and the specific terms in Seller's Quote.

- 3. Price; Payment.** The Products set forth in the Quote are offered for sale at the prices indicated in the Quote. Unless otherwise specifically stated in the Quote, prices are valid for thirty (30) days and do not include any sales, use, or other taxes or duties. Seller reserves the right to modify prices for any reason and at any time by giving ten (10) days prior written notice. Unless otherwise specified by Seller, all prices are F.C.A. Seller's facility (INCOTERMS 2020). All sales are contingent upon credit approval and full payment for all purchases is due thirty (30) days from the date of invoice (or such date as may be specified in the Quote). Under any circumstances, Buyer may not withhold or suspend payment of any amounts due and payable as a deduction, set-off or recoupment of any amount, claim or dispute with Seller. Unpaid invoices beyond the specified payment date incur interest at the rate of 1.5% per month or the maximum allowable rate under applicable law. Seller reserves the right to require advance payment or provision of securities for first and subsequent deliveries if there is any doubt, in Seller's sole determination, regarding the Buyer's creditworthiness or for other business reasons. If the requested advance payment or securities are not provided to Seller's satisfaction, Seller reserves the right to suspend performance or reject the purchase order, in whole or in part, without prejudice to Seller's other rights or remedies, including the right to full compensation. Seller may revoke or shorten any payment periods previously granted in Seller's sole determination. The rights and remedies herein reserved to Seller are cumulative and in addition to any other or further rights and remedies available at law or in equity. No waiver by Seller of any breach by Buyer of any provision of these terms will constitute a waiver by Seller of any other breach of such provision.

- 4. Shipment; Delivery; Title and Risk of Loss.** All delivery dates are approximate, and Seller is not responsible for damages or additional costs resulting from any delay. All deliveries are subject to our ability to procure materials from our suppliers. Regardless of the manner of shipment, delivery occurs and title and risk of loss or damage pass to Buyer, upon placement of the Products with the carrier at Seller's facility. Unless otherwise agreed prior to shipment and for domestic delivery locations only, Seller will select and arrange, at Buyer's sole expense, the carrier and means of delivery. When Seller selects and arranges the carrier and means of delivery, freight and insurance costs for shipment to the designated delivery location will be prepaid by Seller and added as a separate line item to the invoice. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions. Buyer shall not return or repackage any Products without the prior written authorization from Seller, and any return shall be at the sole cost and expense of Buyer.

- 5. Warranty.** The warranty for the Products is as follows:

(i) Seller warrants that all products sold conform to the applicable Parker Chelsea standard specification for the lesser period of 2 years (24 Months) from date of service or 2-1/2 years (30 Months) from date of build (as marked on the product name plate); (ii) Services shall be performed in accordance with generally accepted practices and using the degree of care and skill that is ordinarily exercised and customary in the field to which the Services pertain and are warranted for a period of six (6) months from the date of completion of the Services; and (iii) Software is only warranted to perform in accordance with applicable specifications provided by Seller to Buyer for ninety (90) days from the date of delivery or, when downloaded by a Buyer or end-user, from the date of the initial download. All prices are based upon the exclusive limited warranty stated above, and upon the following disclaimer:

EXEMPTION CLAUSE; DISCLAIMER OF WARRANTY, CONDITIONS, REPRESENTATIONS: THIS WARRANTY IS THE SOLE AND ENTIRE WARRANTY, CONDITION, AND REPRESENTATION, PERTAINING TO PRODUCTS. SELLER DISCLAIMS ALL OTHER WARRANTIES, CONDITIONS, AND REPRESENTATIONS, WHETHER STATUTORY,

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Offer of Sale (Continued)

EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE RELATING TO DESIGN, NONINFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. SELLER DOES NOT WARRANT THAT THE SOFTWARE IS ERROR-FREE OR FAULT-TOLERANT, OR THAT BUYER'S USE THEREOF WILL BE SECURE OR UNINTERRUPTED, UNLESS OTHERWISE AUTHORIZED IN WRITING BY SELLER, THE SOFTWARE SHALL NOT BE USED IN CONNECTION WITH HAZARDOUS OR HIGH-RISK ACTIVITIES OR ENVIRONMENTS. EXCEPT AS EXPRESSLY STATED HEREIN, ALL PRODUCTS ARE PROVIDED "AS IS".

6. Claims; Commencement of Actions. Buyer shall promptly inspect all Products upon receipt. No claims for shortages will be allowed unless reported to Seller within ten (10) days of delivery. Buyer shall notify Seller of any alleged breach of warranty within thirty (30) days after the date the non-conformance is or should have been discovered by Buyer. Any claim or action against Seller based upon breach of contract or any other theory, including tort, negligence, or otherwise must be commenced within twelve (12) months from the date of the alleged breach or other alleged event, without regard to the date of discovery.

7. LIMITATION OF LIABILITY. IN THE EVENT OF A BREACH OF WARRANTY, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE THE NON-CONFORMING PRODUCTS, REPERFORM THE SERVICES, OR REFUND THE PURCHASE PRICE PAID WITHIN A REASONABLE PERIOD OF TIME. IN NO EVENT IS SELLER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING ANY LOSS OF REVENUE OR PROFITS, WHETHER BASED IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCTS.

8. Confidential Information. Buyer acknowledges and agrees that Confidential Information has been and will be received in confidence and will remain the property of Seller. Buyer further agrees that it will not use Seller's Confidential Information for any purpose other than for the benefit of Seller and shall return all such Confidential Information to Seller within thirty (30) days upon request.

9. Loss to Buyer's Property. Buyer's Property will be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the Products manufactured using Buyer's Property. Also, Seller shall not be responsible for any loss or damage to Buyer's Property while it is in Seller's possession or control.

10. Special Tooling. Seller may impose a tooling charge for any Special Tooling. Special Tooling shall be and remain Seller's property. In no event will Buyer acquire any interest in the Special Tooling, even if such Special Tooling has been specially converted or adapted for manufacture of Goods for Buyer and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any Special Tooling or other property owned by Seller in its sole determination at any time.

11. Security Interest. To secure payment of all sums due from Buyer, Seller retains a security interest in all Products delivered to Buyer and, Buyer's acceptance of these Terms is deemed to be 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 Seller's security interest.

12. User Responsibility. Buyer, through its own analysis and testing, is solely responsible for making the final selection of the Products and assuring that all performance, endurance, maintenance, safety and warning requirements of the application of the Products are met. Buyer must analyze all aspects of the application and follow applicable industry standards, specifications, and any technical information provided with the Quote or the Products, such as Seller's instructions, guides and specifications. If Seller provides options of or for Products

based upon data or specifications provided by Buyer, Buyer is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products. In the event Buyer is not the end-user of the Products, Buyer will ensure such end-user complies with this paragraph.

13. Use of Products, Indemnity by Buyer. Buyer shall comply with all instructions, guides and specifications provided by Seller with the Quote or the Products. If Buyer uses or resells the Products in any way prohibited by Seller's instructions, guides or specifications, or Buyer otherwise fails to comply with Seller's instructions, guides and specifications, Buyer acknowledges that any such use, resale, or non-compliance is at Buyer's sole risk. Further, Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, intellectual property infringement or any other claim, arising out of or in connection with: (a) improper selection, design, specification, application, or any misuse of Products; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of Buyer's Property; (d) damage to the Products from an external cause, repair or attempted repair by anyone other than Seller, failure to follow instructions, guides and specifications provided by Seller, use with goods not provided by Seller, or opening, modifying, deconstructing, tampering with or repackaging the Products; or (e) Buyer's failure to comply with these Terms, including any legal or administrative proceedings, collection efforts, or other actions arising from or relating to such failure to comply. Seller shall not indemnify Buyer under any circumstance except as otherwise provided in these Terms.

14. Cancellations and Changes. Buyer may not cancel or modify, including but not limited to movement of delivery dates for the Products, any order 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 and any additional expense. Seller, at any time, may change features, specifications, designs and availability of Products.

15. Assignment. Buyer may not assign its rights or obligations without the prior written consent of Seller.

16. Force Majeure. Seller is not liable for delay or failure to perform any of its obligations by reason of any events or circumstances beyond its reasonable control. Such circumstances include without limitation: accidents, labor disputes or stoppages, government acts or orders, acts of nature, pandemics, epidemics, other widespread illness, or public health emergency, cyber related disruptions, cyber-attacks, ransomware sabotage, delays or failures in delivery from carriers or suppliers, shortages of materials, sudden increases in the price of raw material or components, shutdowns or slowdowns affecting the supply of raw materials or components, or the transportation thereof, oil shortages or oil price increases, energy crisis, energy or fuel interruption, war (whether declared or not) or the serious threat of same, riots, rebellions, acts of terrorism, embargoes, fire or any reason whether similar to the foregoing or otherwise. Seller will resume performance as soon as practicable after the event of force majeure has been removed. All delivery dates affected by an event of force majeure shall be tolled for the duration of such event of force majeure and rescheduled for mutually agreed dates as soon as practicable after the event of force majeure ceases to exist. The right to allocate capacity is in the Seller's sole discretion. An event of force majeure shall not include financial distress, insolvency, bankruptcy, or other similar conditions affecting one of the parties, affiliates and/or subcontractors. An event of force majeure in the meaning of these Terms means any circumstances beyond Seller's control that permanently or temporarily hinders performance, even where that circumstance was already foreseen. Buyer shall not be entitled to cancel any orders following its claim of an event of force majeure.

17. Waiver and Severability. Failure to enforce any provision

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Offer of Sale (Continued)

WARNING: This product can expose you to chemicals including Lead and Lead Compounds, and Di(2-ethylhexyl)phthalate (DEHP) which are 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

of these Terms will not invalidate that provision; nor will any such failure prejudice either party's right to enforce that provision in the future. Invalidity of any provision of these Terms shall not invalidate any other provision herein and, the remaining provisions will remain in full force and effect.

18. Duration. Unless otherwise stated in the Quote, any agreement governed by or arising from these Terms shall: (a) be for an initial duration of one (1) year; and (b) shall automatically renew for successive one-year terms unless terminated by Buyer with at least 180-days written notice to Seller or if Seller terminates the agreement pursuant to Section 19 of these Terms.

19. Termination. Seller may, without liability to Buyer, terminate any agreement governed by or arising from these Terms for any reason and at any time by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate, in writing, if Buyer: (a) breaches any provision of these Terms, (b) becomes or is deemed insolvent, (c) appoints or has appointed a trustee, receiver or custodian for all or any part of Buyer's property, (d) files a petition for relief in bankruptcy on its own behalf, or one is filed against Buyer by a third party, (e) makes an assignment for the benefit of creditors; or (f) dissolves its business or liquidates all or a majority of its assets.

20. Ownership of Rights. Buyer agrees that (a) Seller (and/or its affiliates) owns or is the valid licensee of Seller's IP and (b) the furnishing of information, related documents or other materials by Seller to Buyer does not grant or transfer any ownership interest or license in or to Seller's IP to Buyer, unless expressly agreed in writing. Without limiting the foregoing, Seller retains ownership of all Software supplied to Buyer. In no event shall Buyer obtain any greater right in and to the Software than a right in a license limited to the use thereof and subject to compliance with any other terms provided with the Software. Buyer further agrees that it will not, directly or through intermediaries, reverse engineer, decompile, or disassemble any Software (including firmware) comprising or contained within a Product, except and only to the extent that such activity may be expressly permitted, either by applicable law or, in the case of open-source software, the applicable open-source license.

21. Indemnity for Infringement of Intellectual Property

Rights. Seller is not liable for infringement of any Intellectual Property Rights except as provided in this Section. 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 a third-party claim that one or more of the Products infringes the Intellectual Property Rights of a third party in the country of delivery of the Products by Seller to Buyer. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of any such claim, and Seller having sole control over the defense of the claim including all negotiations for settlement or compromise. If one or more Products is subject to such a claim, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Products, replace or modify the Products to render them non-infringing, or offer to accept return of the Products and refund the purchase price less a reasonable allowance for depreciation. Seller has no obligation or liability for any claim of infringement: (i) arising from information provided by Buyer (including Seller's use of Buyer's Property); or (ii) directed to any Products for which the designs are specified in whole or part by Buyer; or (iii) resulting from the modification, combination or use in a system of any Products. The foregoing provisions of this Section constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for claims of infringement of Intellectual Property Rights.

22. Governing Law. These Terms, the terms of any Quote, and the sale and delivery of all Products are 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 the sale and delivery of the Products.

23. Entire Agreement. These Terms, along with the terms set forth in the Quote, forms the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale and purchase. In the event of a conflict between any term set forth in the Quote and these Terms, the terms set forth in the Quote shall prevail. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter shall have no effect. No modification to these Terms will be binding on Seller unless agreed to in a writing that is signed by an authorized representative of Seller, excluding email correspondence, 'clickwrap' or other purported electronic assent to different or additional terms. Sections 2-25 of these Terms shall survive termination or cancellation of any agreement governed by or arising from these Terms.

24. No 'Wrap' Agreements/No Authority to Bind. Seller's clicking any buttons or any similar action, such as clicking "I Agree" or "Confirm," to utilize Buyer's software or webpage for the placement of orders, is NOT an agreement to Buyer's Terms and Conditions. **NO EMPLOYEE, AGENT OR REPRESENTATIVE OF SELLER HAS THE AUTHORITY TO BIND SELLER BY THE ACT OF CLICKING ANY BUTTON OR SIMILAR ACTION ON BUYER'S WEBSITE OR PORTAL.**

25. Compliance with Laws. Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards, including those of the United States of America, and the country or countries in which Buyer may operate, including without limitation the U.S. Foreign Corrupt Practices Act ("FCPA"), the U.S. Anti-Kickback Act ("Anti-Kickback Act"), U.S. and E.U. export control and sanctions laws ("Export Laws"), the U.S. Food Drug and Cosmetic Act ("FDCA"), and the rules and regulations promulgated by the U.S. Food and Drug Administration ("FDA"), each as currently amended. Buyer agrees to indemnify, defend, and hold harmless Seller from the consequences of any violation of such laws, regulations and standards by Buyer, its employees or agents. Buyer represents that it is familiar with all applicable provisions of the FCPA, the Anti-Kickback Act, Export Laws, the FDCA and the FDA and certifies that Buyer will adhere to the requirements thereof and not take any action that would make Seller violate such requirements. Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly, to any governmental official, foreign political party or official thereof, candidate for foreign political office, or commercial entity or person, for any improper purpose, including the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller. Buyer further represents and agrees that it will not receive, use, service, transfer or ship any Products from Seller in a manner or for a purpose that violates Export Laws or would cause Seller to be in violation of Export Laws. Buyer agrees to promptly and reliably provide Seller all requested information or documents, including end-user statements and other written assurances, concerning Buyer's ongoing compliance with Export Law.

09/22



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