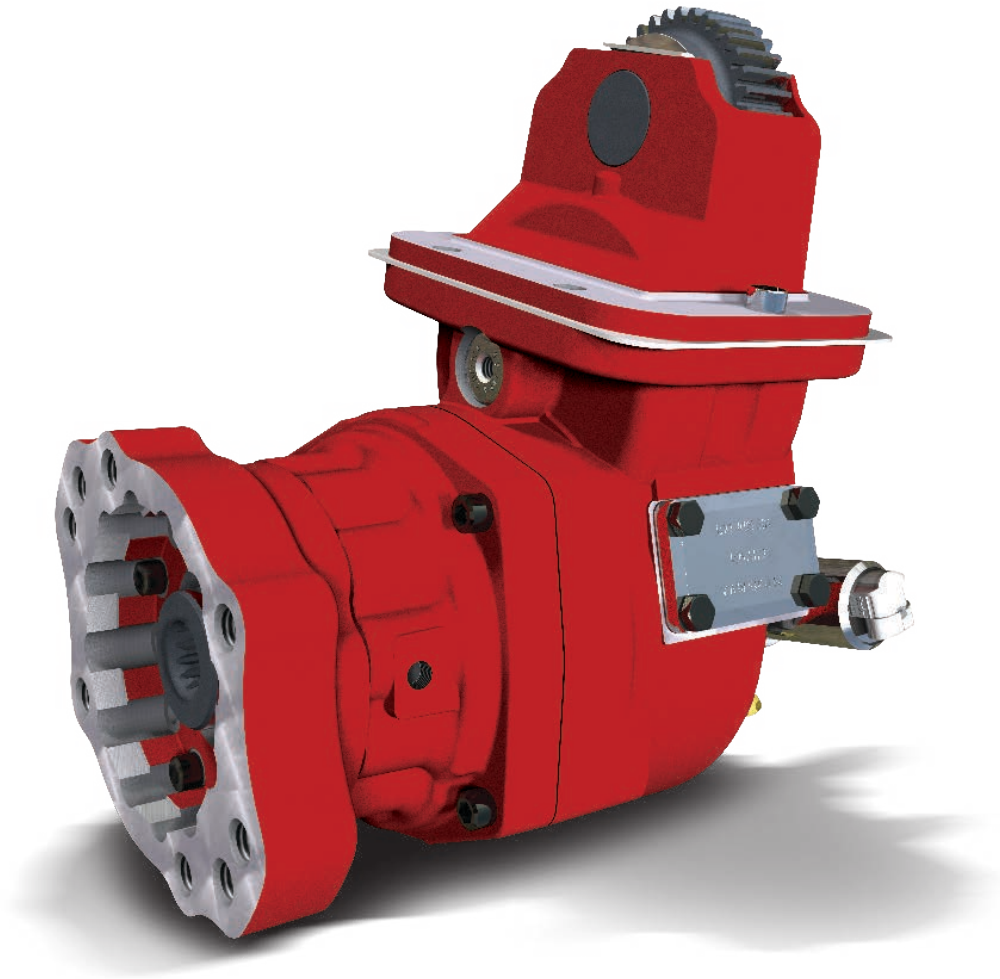


Effective: HY25-2272F-M1/US December 15, 2024  
Supersedes: HY25-2272F-M1/US December 15, 2023



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# Power Take-Offs Parts List

## 272-Ford Series

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### **WARNING – User Responsibility**

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

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

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

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

### **Offer of Sale**

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized 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](http://www.P65Warnings.ca.gov)

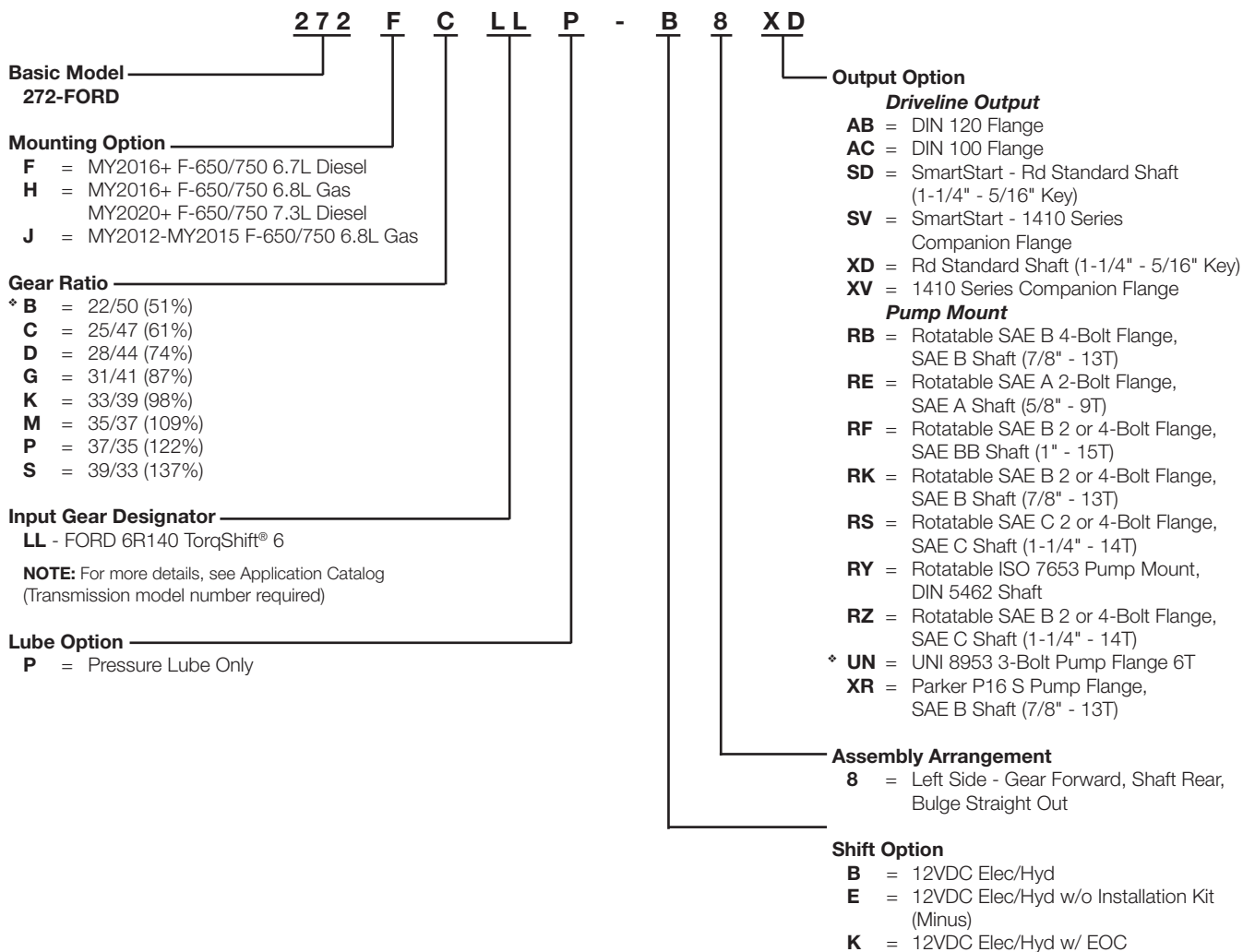
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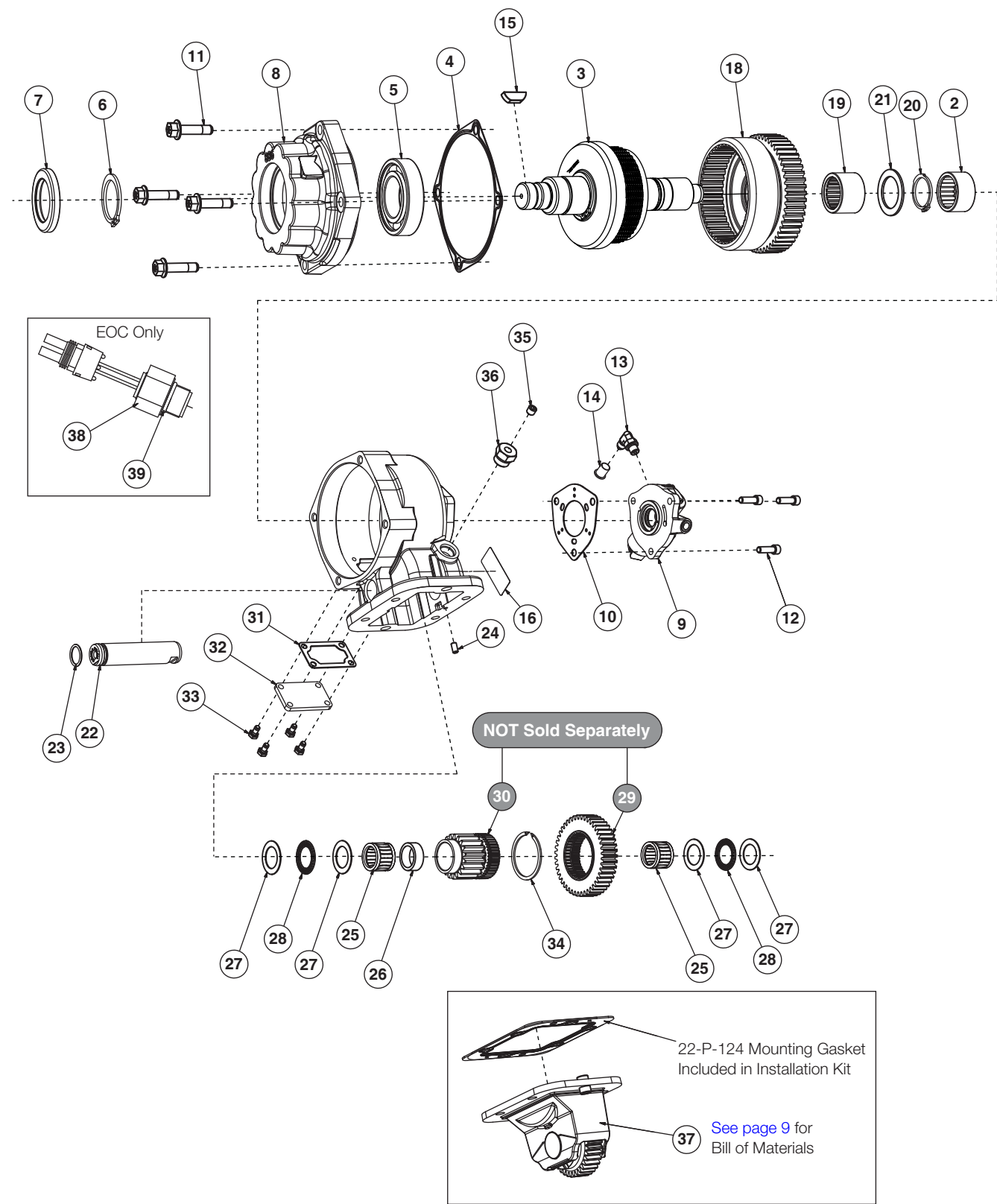
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**Model Number Designator****272-Ford Series**

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



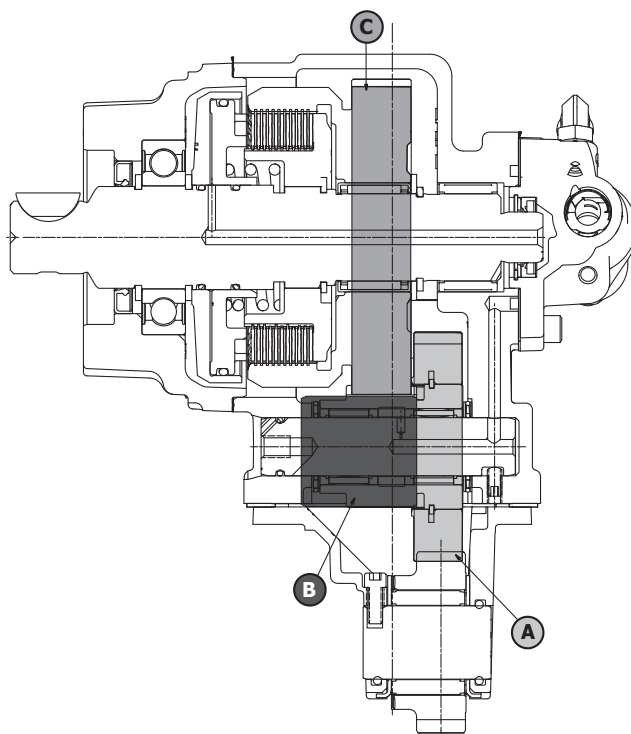
**Bill of Materials****Parts List****272-Ford Series**

Item	Part Number	Description	Qty.
1	<b>1-P-757</b>	Machined Housing (8 Arrangement).....	1
2	<b>560972</b>	Needle Roller Bearing Assembly (1.500" x 1.875" x 1.000").....	1
3	<a href="#">See page 12</a>	Drive Shaft & Clutch Assembly.....	1
4	<b>22-P-151</b>	Shim Gasket.....	1
5	<b>550311</b>	Ball Bearing (1.770" x 3.346" x .748").....	1
6	<b>379555</b>	Lockring.....	1
7	<b>28-P-267</b>	Oil Seal (2.627" x 1.750" x .312").....	1
8	<b>21-P-886</b>	Bearing Cap .....	1
9	<a href="#">See page 8</a>	Hydraulic Valve Cap Assembly w/ Lube (12VDC) .....	1
10	<b>22-P-112</b>	Valve Cap Gasket .....	1
11	<b>380563-14</b>	Hex Flange Head Cap Screw (.375"-16 x 1.500") (Non-Shaft Brake Option) .....	4
12	<b>378447-6</b>	Socket Head Cap Screw (.312"-18 x 1.000").....	3
13	<b>379486</b>	90° Elbow (.438"-20) (Hydraulic Shift Options Only) .....	1
14	<b>379564-2</b>	Thread Cap (.438") (Hydraulic Shift Options Only) .....	1
15	<b>500007-29</b>	Woodruff Key (XD Output Only).....	1
16	<b>68-P-51-1</b>	Adhesive Label .....	1
18	<a href="#">See page 5</a>	Output Gear .....	1
19	<b>561088</b>	Bearing Needle Roller Assembly (1.500" x 1.875" x 1.250").....	1
20	<b>379746</b>	Lockring.....	1
21	<b>31-P-70</b>	Thrust Washer (1.507" x 2.167" x .094").....	1
22	<b>9-P-109</b>	Idler Shaft (1.000").....	1
23	<b>28-P-198</b>	O-ring (.798" x .103").....	1
24	<b>378452-7</b>	Socket Head Set Screw (.250"-20 x .500").....	1
25	<b>550886</b>	Bearing Needle Roller Assembly (1.000" x 1.312" x 1.000").....	2
26	<b>14-P-54</b>	Spacer (1.035" x 1.310" x .462") .....	1
27	<b>31-P-61</b>	Thrust Washer (1.007" x 1.542" x .031").....	4
28	<b>560920</b>	Thrust Bearing (1.000" x .078").....	2
<b>Not Sold Separately</b>			
29	<a href="#">See page 5</a>	Input Gear .....	1
30	<a href="#">See page 5</a>	Ratio Gear .....	1
31	<b>35-P-118</b>	Plate Gasket.....	1
32	<b>34-P-315</b>	Cover Plate.....	1
33	<b>378429-4</b>	Hex Head Cap Screw (.250"-20 x .500") .....	4
34	<b>379522</b>	Lockring.....	1
35	<b>379231</b>	Pipe Plug (.125"-27) .....	1
36	<b>379242</b>	Straight Adapter (.125"-27 x .750"-16) .....	1
37	<b>329901X</b>	Adapter Assembly .....	1
38	<b>379917</b>	Speed Sensor (EOC Only) .....	1
39	<b>28-P-171</b>	O-ring (.644" x .087") (EOC Only).....	1
40	<b>6-P-30</b>	Caution Tag (E Shifter Only) .....	1
41	<b>379504</b>	Pressure Switch.....	1
N.S. – Not Shown			Continued on Next Page

**Bill of Materials**Parts List  
**272-Ford Series**

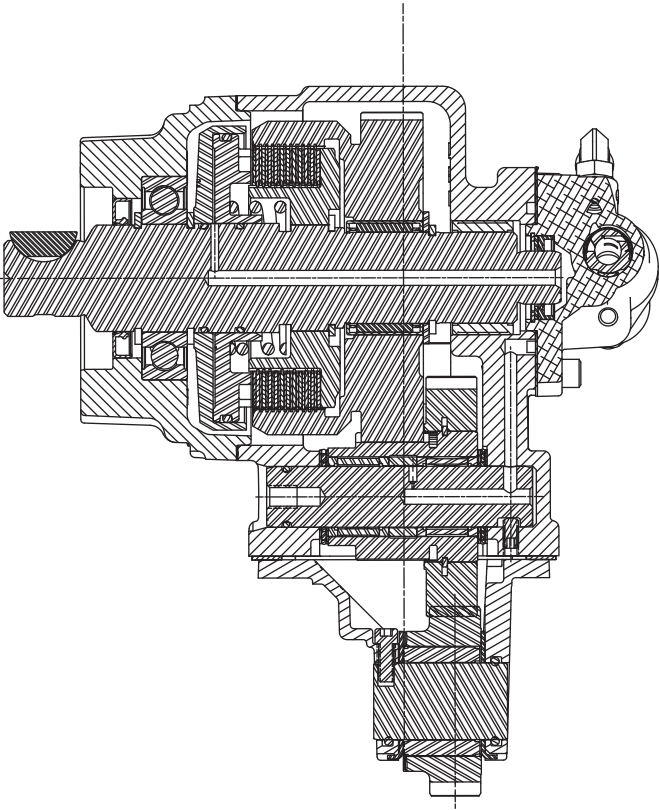
Item	Part Number	Description	Qty.
	<b>See pages 24-27 for Bill of Materials for the below loose parts.</b>		
		<b>SERVICE KITS</b>	
	<b>329071-63X</b>	Bearing Kit (Adapter parts ordered separately, <a href="#">see page 9</a> ) .....	1
	<b>329923X</b>	Gasket & Seal Kit .....	1
	<b>330154X</b>	Gear & Clutch Plates Kit .....	1
		<b>STUD KITS</b>	
	<b>8000-46X</b>	Stud Mounting Kit .....	1
		<b>INSTALLATION INSTRUCTIONS KITS</b>	
	<b>329248-5X</b>	Gasket & Installation Instructions Kit (All).....	1
		<b>INSTALLATION KITS</b>	
	<b>329918X</b>	Installation & Mounting Kit (2011+ Diesel - F Mount; B Shift Option) .....	1 or
	<b>329919X</b>	EOC Installation & Mounting Kit (2011+ Diesel - F Mount/2016+ Gas - H Mount; K Shift Option) .....	1 or
	<b>329920X</b>	Installation & Mounting Kit (2013-2015 Gas - J Mount; B Shift Option) .....	1 or
	<b>329922X</b>	Installation & Mounting Kit (2016 + Gas - H Mount; B Shift Option).....	1 or
	<b>329931X</b>	Heat Shield Kit (H & J Mount) .....	1
	<b>329952X</b>	Installation & Mounting Kit (H & J Less Wiring Harness - All Mounting; E Shift Option) .....	1
		<b>CONVERSION KITS</b>	
	<b>329921X</b>	EOC Conversion Kit (F & H Mount Only) .....	1
	<a href="#">See pages 26-27</a>	Output Conversion Kits Bill of Materials	



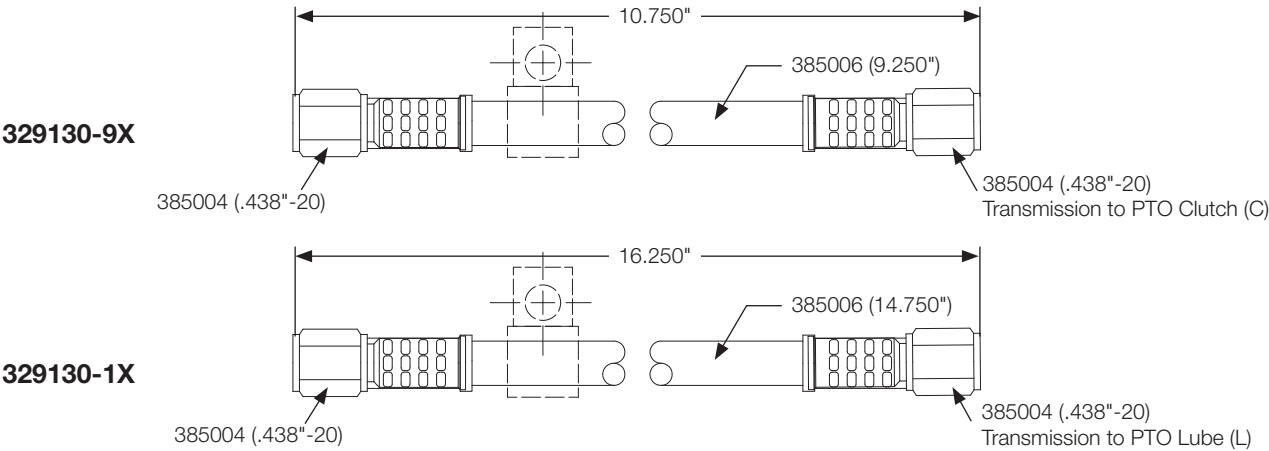


GEAR DESIGNATOR	INPUT GEAR ASSEMBLY	NOT Sold Separately				OUTPUT GEAR (18)	NO. TEETH C
		INPUT GEAR (29)	NO. TEETH A	RATIO GEAR (30)	NO. TEETH B		
272*CLL	5-P-1557-3X	5-P-1557	45	5-P-1560	25	2-P-977	47
272*DLL	5-P-1557-4X	5-P-1557	45	5-P-1561	28	2-P-978	44
272*GLL	5-P-1557-5X	5-P-1557	45	5-P-1562	31	2-P-979	41
272*KLL	5-P-1557-6X	5-P-1557	45	5-P-1563	33	2-P-980	39
272*MLL	5-P-1557-7X	5-P-1557	45	5-P-1564	35	2-P-981	37
272*PLL	5-P-1557-8X	5-P-1557	45	5-P-1565	37	2-P-982	35
272*SLL	5-P-1557-9X	5-P-1557	45	5-P-1566	39	2-P-983	33

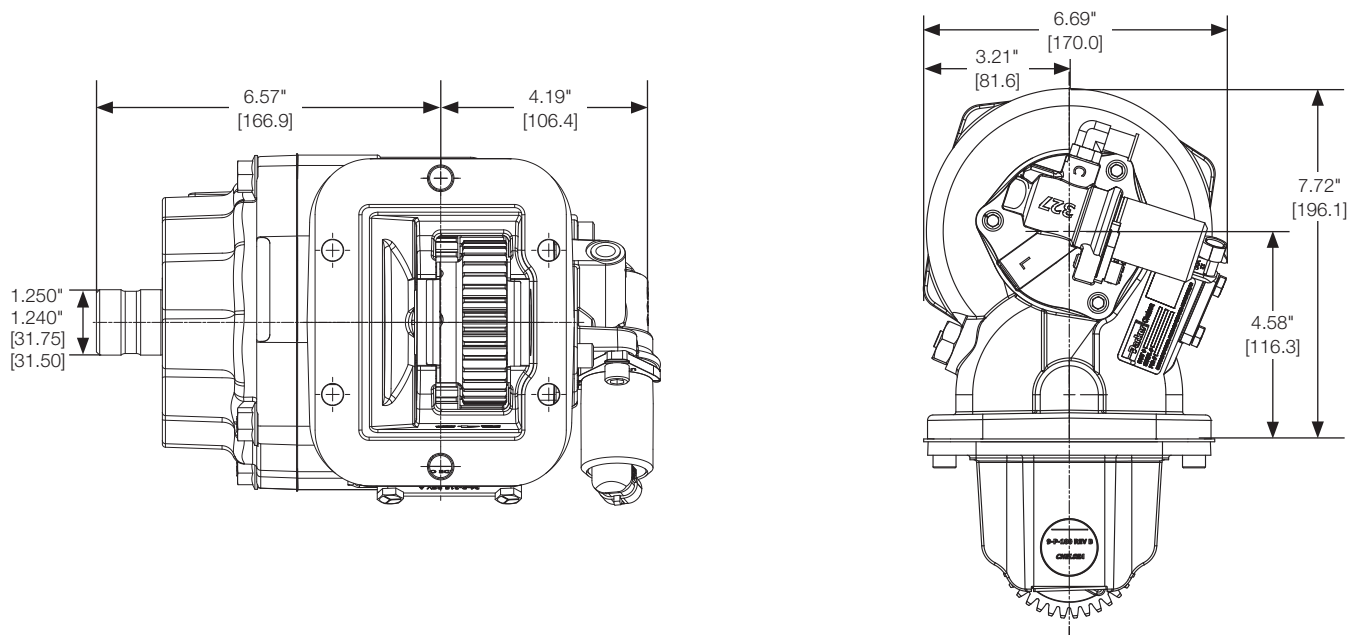
**Pressure Lube**



**Hose Assembly Identification**

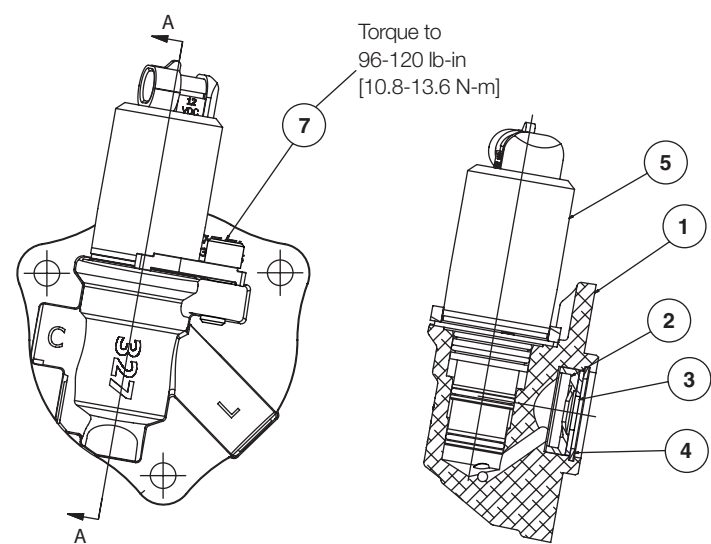


## Housing Dimensions



Assembly Arrangement 8

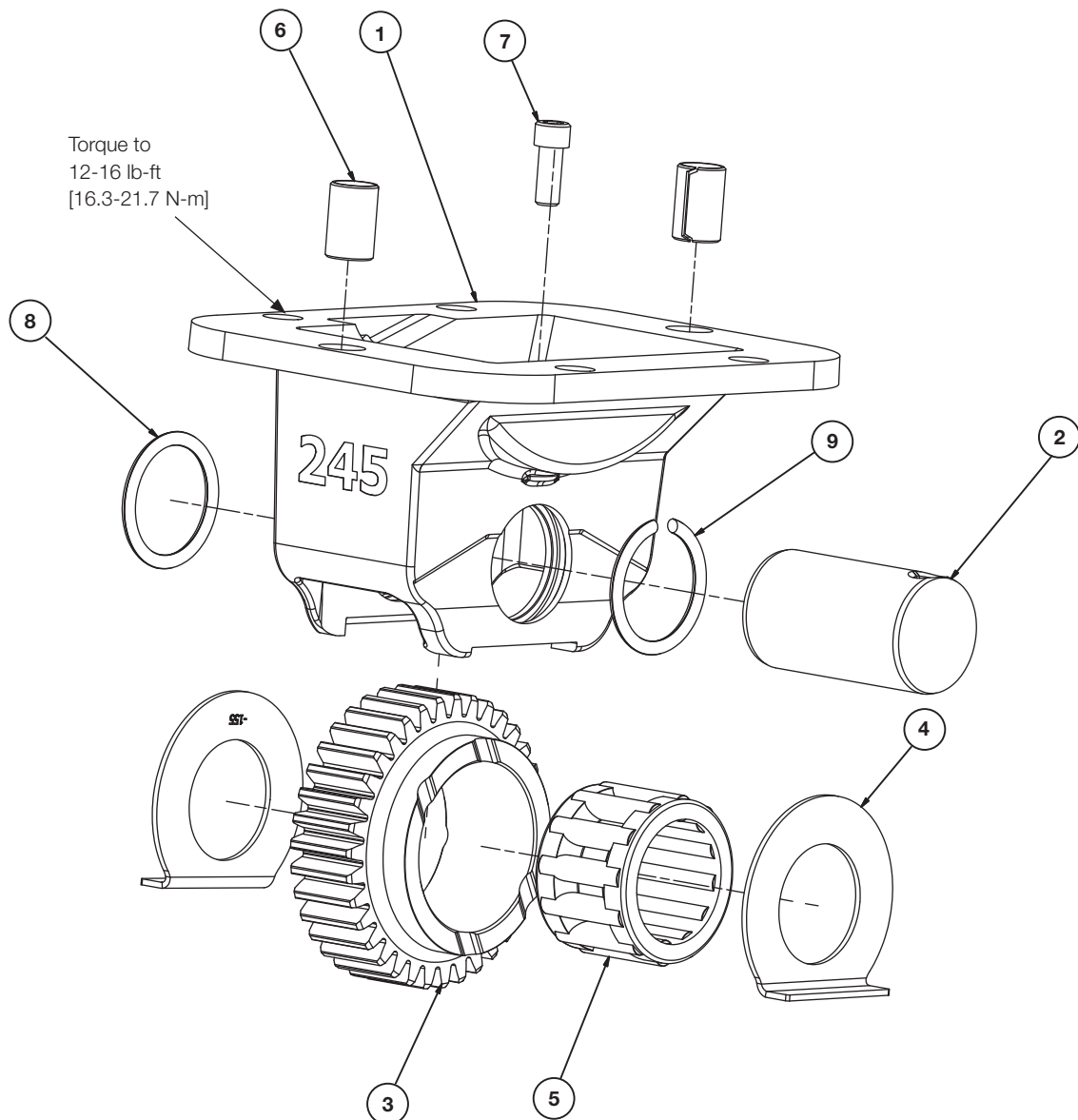
**Valve Cap Assembly (Hydraulic) – 329872-1X**



Pressure Lube	Shift Option	Assembly
Yes	B, E, & K	329872-1X

Item	Part Number	Description	Qty.
1	34-P-327	High Pressure w/ Lube Valve Cap Solenoid Port (329872-1X).....	1
2	28-P-119	Oil Seal (1.379" x .875" x .250").....	1
3	378811	Seal Back-Up Plate.....	1
4	378849	Lockring.....	1
5	380123-12	Non-Regulating Cartridge Valve 12VDC (329872-1X) .....	1
7	378447-4	Head Cap Screw Socket (.312"-18 x .750") .....	1
N.S.	329071-83X	Hydraulic Solenoid Valve O-ring Kit.....	1

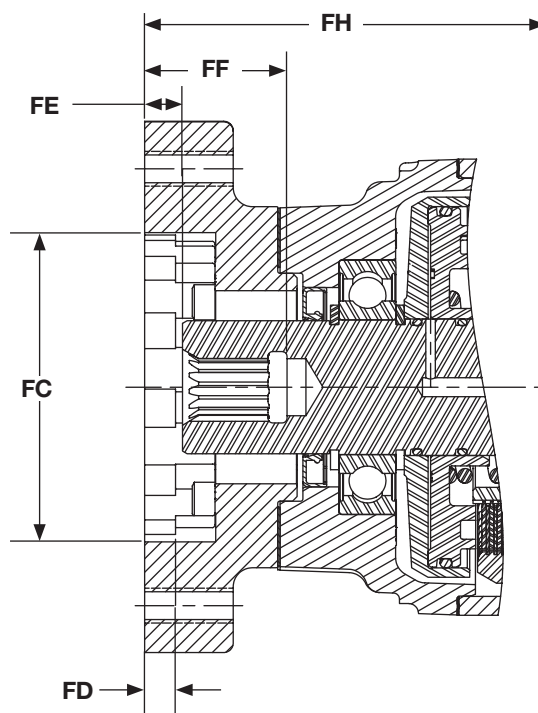
N.S. – Not Shown

**Adapter Assembly 329901X**

Item	Part Number	Description	Qty.
1	<b>42-P-245</b>	Housing Adapter .....	1
2	<b>9-P-100</b>	Shaft Idler (1.260").....	1
3	<b>5-P-1555</b>	Adapter Gear (35T).....	1
4	<b>35-P-155</b>	Thrust Washer (1.280" x 2.300" x .064").....	2
5	<b>561029</b>	Needle Roller Bearing Assembly (1.260" x 1.811" x 1.260").....	1
6	<b>385078</b>	Bushing Dowel (10.870" x 13.010" x 20.000") .....	2
7	<b>379431-3</b>	Socket Head Cap Screw (.250"-20 x .625").....	1
8	<b>28-P-336</b>	O-ring (1.171" x .139").....	1
9	<b>28-P-337</b>	O-ring (1.171" x .139") (Modified).....	1

## Output Options

## Pump Flange &amp; Shaft Dimensions



Pump Flange Suffix	Bolt Circle Dia.	Bolt Holes		FC	FD	FE	FF	FH	Output Shaft	
		Tapped Hole	No. Equally Spaced	Female Pilot Dia.	Pilot Depth	Face to End of Shaft	Face thru Hole	Face to Center of PTO	Nominal Shaft Size M = Male F = Female	Key-way Width
RB •	5.000"	1/2"-13 UNC-2B	4	4.003"	.406"	.497"	1.872"	6.861"	7/8" - 13T Spline - F	–
RE •	4.188"	5/16"-18 UNC-2B	16	3.251"	.344"	.400"	1.502"	5.640"	5/8" - 9T Spline - F	–
RF •	5.000"	1/2"-13 UNC-2B	4	4.003"	.406"	.592"	2.060"	6.861"	1" - 15T Spline - F	–
	5.750"		2 ■							
RK •	5.000"	1/2"-13 UNC-2B	4	4.003"	.406"	.497"	1.872"	6.861"	7/8" - 13T Spline - F	–
	5.750"		2 ■							
RS •	6.375"	1/2"-13 UNC-2B	4	5.004"	.531"	.730"	2.700"	6.861"	1-1/4" - 14T Spline - F	–
	7.125"	5/8" - 11 UNC-2B	2	5.004"						
RY •	4.454"	M12-1.75	4	3.152" [80 mm]	–	.581"	2.281"	6.456"	DIN 5462 - F	–
RZ •	5.000"	1/2"-13 UNC-2B	4	4.003"	.406"	.730"	2.700"	6.861"	1-1/4" - 14T Spline - F	–
	5.750"		2 ■							
XD/SD	–	–	–	–	–	–	–	6.570"	1-1/4" Round	5/16"
XR	3.712"	–	–	2.752"	–	1.176"	–	5.188"	7/8" - 13T Spline - F	–
XV/SV	3.750"	.442" ▶	4	2.751"	.083"	–	–	7.486"	1-1/2" - 10T Spline - M	–

• Rotatable Flange Rotates in 30° Increments  
 ■ Two Set of Holes Spaced 15° Apart  
 ▶ Not Tapped

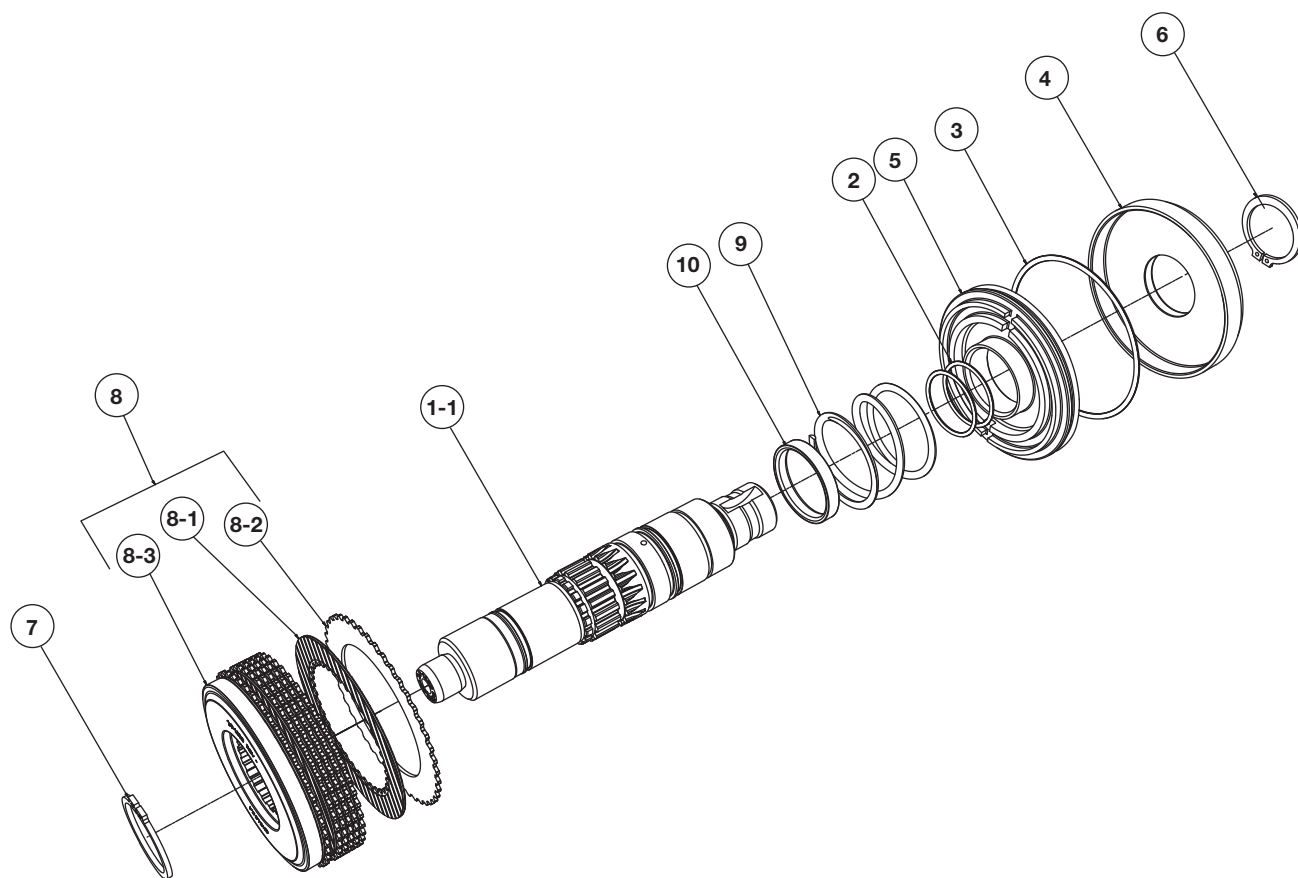
**Output Options****Output Conversion Kits**

Output Option	Flange Type	Shaft Type	Conversion Kit	
RB	SAE B 4-Bolt Flange	SAE B Shaft (7/8" - 13T)	XD to RB	329160-145X
RE	SAE A 2-Bolt Flange	SAE A Shaft (5/8" - 9T)	XD to RE	329160-118X
RF	SAE B 2 or 4-Bolt Flange	SAE BB Shaft (1" - 15T)	XD to RF	329160-104X
RK	SAE B 2 or 4-Bolt Flange	SAE B Shaft (7/8" - 13T)	XD to RK	329160-100X
RS	SAE C 2 or 4-Bolt Flange	SAE C Shaft (1-1/4" - 14T)	XD to RS	329160-106X
RY	ISO 7653 Pump Mount	DIN 5462 Shaft	XD to RY	329160-108X
RZ	SAE B 2 or 4-Bolt Flange	SAE C Shaft (1-1/4" - 14T)	XD to RZ	329160-110X
SD	N/A	Rd Standard Shaft (1-1/4" - 5/16" Keyed)	XD to SD	329160-142X
SV	1410 Series Companion Flange	(1-1/2" - 10T)	XD to SV	329160-110X
XV	1410 Series Companion Flange	(1-1/2" - 10T)	XD to XV	329160-144X
XR	Chelsea Special (Cloverleaf)	SAE B Shaft (7/8" - 13T)	XD to XR	329160-143X

N/A – Not Applicable

**NOTE:** Check Current Price Sheet for Availability of Output Options.**SAE Chart**

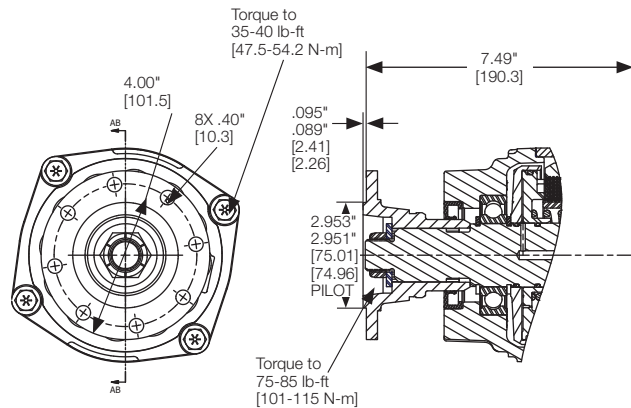
SAE Standard	A	B	BB	C	D
Flange Pilot	3.250"	4.000"	N/A	5.000"	6.000"
Shaft	.625"	.875"	1.000"	1.250"	1.750"
Spline Count	9T	13T	15T	14T	13T
N/A – Not Applicable					

**Drive Shaft & Clutch Assembly – 329832-\*X**

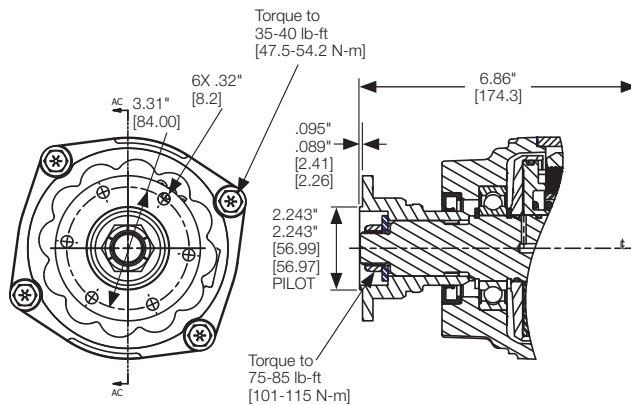
Item	Part Number	Description	Qty.
1-1	<b>3-P-1133</b>	XD Output Shaft (329832-1X) .....	1 or
	<b>3-P-1134</b>	XV Output Shaft 10T Straight (329832-2X).....	1 or
	<b>3-P-1135</b>	RB, RK & XR Output Shaft (7/8" - 13T) (329832-3X) .....	1 or
	<b>3-P-1136</b>	RF Output Shaft (1" - 15T) (329832-4X) .....	1 or
	<b>3-P-1137</b>	RS, RZ Output Shaft (1-1/4" - 14T) (329832-5X).....	1 or
	<b>3-P-1138</b>	RY Output Shaft (DIN 8T) (329832-6X).....	1
	<b>3-P-1168</b>	SD SmartStart, Output Shaft (329828-9X) .....	1
	<b>3-P-1169</b>	SV SmartStart, 10T Straight Output Shaft (329828-10X).....	1
	<b>3-P-1170</b>	RE Output Shaft (5/8" - 9T) (329832-8X).....	1
2	<b>28-P-285</b>	O-ring (1.597" x .103").....	2
3	<b>28-P-178</b>	O-ring (4.484" x .138").....	1
4	<b>380051</b>	Clutch Back -Up Cylinder .....	1
5	<b>380110-2</b>	Clutch Piston .....	1
6	<b>379555</b>	Lockring .....	1
7	<b>380069</b>	Lockring .....	1
8	<b>330154X</b>	Gear & Clutch Plates Kit .....	1
8-1	<b>379485</b>	Friction Disc.....	8
8-2	<b>379595</b>	Clutch Plate.....	7
8-3	<b>2-P-1038</b>	Inner Hub Gear .....	1
9	<b>37-P-72</b>	Spring (2.140" x 1.941").....	1
10	<b>42-P-213</b>	Spacer.....	1



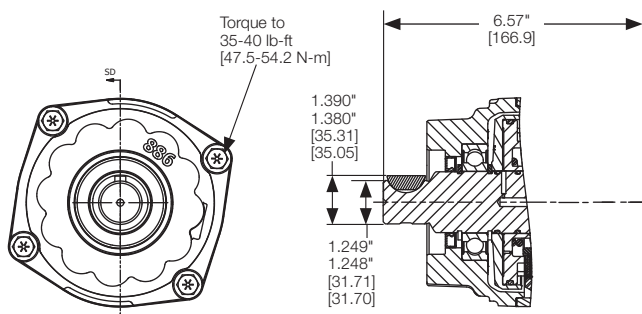
## Bill of Materials - Driveline Output



AB Output Option DIN 120 Flange		
Part Number	Description	Qty.
329832-2X	Drive Shaft & Clutch ASSY (3-P-1134 Shaft) (Air) .....	1
21-P-211	Oil Seal (3.001" x 2.000" x .375").....	1
21-P-886	Bearing Cap .....	1
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
380486	Thin Nylon Lock Nut (.875"-14).....	1
380076-13	Hardened Flat Washer (.950" x 1.762" x .157").....	1
379558	Companion Flange .....	1
†329160-112X	Conversion Kit (XD to AB)	



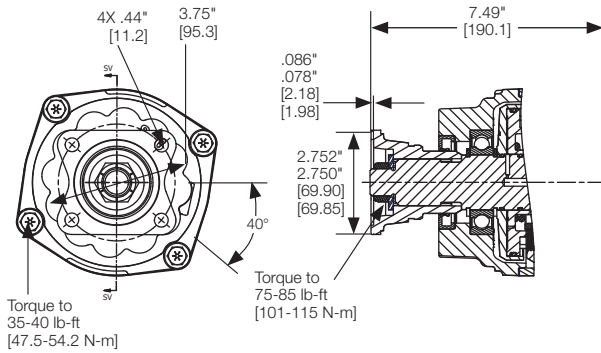
AC Output Option DIN 100 Flange		
Part Number	Description	Qty.
329832-2X	Drive Shaft & Clutch ASSY (3-P-1134 Shaft) (Air) .....	1
21-P-211	Oil Seal (3.001" x 2.000" x .375").....	1
21-P-886	Bearing Cap .....	1
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
380486	Thin Nylon Lock Nut (.875"-14).....	1
380076-13	Hardened Flat Washer (.950" x 1.762" x .157").....	1
379742	Companion Flange .....	1
†329160-113X	Conversion Kit (XD to AC)	



SD Output Option Rd Standard Shaft (1-1/4" - 5/16" Key) – SmartStart		
Part Number	Description	Qty.
329832-9X	Shaft & Clutch ASSY SmartStart (3-P-1168).....	1
28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1
21-P-886	Bearing Cap .....	1
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
500007-29	Woodruff Key.....	1
†329160-142X	Conversion Kit (XD to SD)	

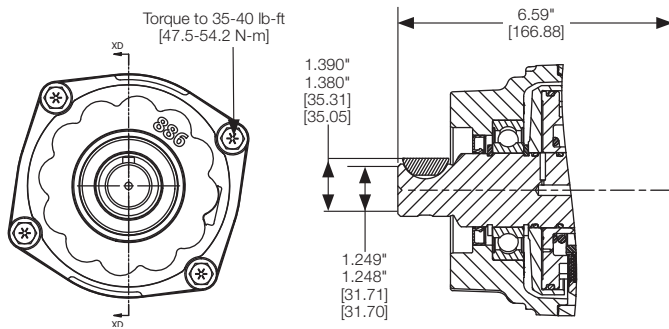
†Conversion Kits do not include all parts shown above. See pages 26-27 for Conversion Kit BOMs.

## Bill of Materials - Driveline Output (Continued)

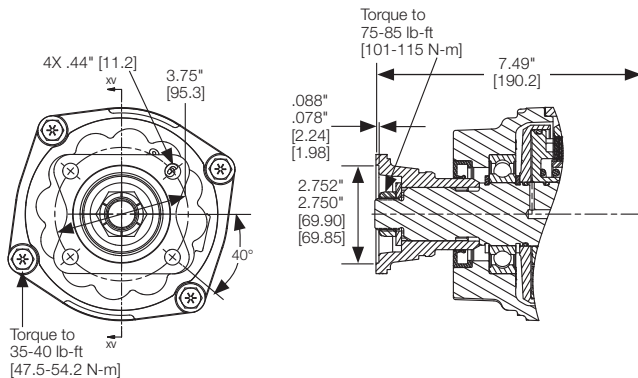


SV Output Option 1410 Series Companion Flange – SmartStart*		
Part Number	Description	Qty.
329832-10X	Shaft & Clutch ASSY SmartStart (3-P-1169) .....	1
21-P-886	Bearing Cap .....	1
28-P-211	Oil Seal (3.001" x 2.000" x .375") .....	1
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
380486	Thin Nylon Lock Nut (.875"-14) .....	1
380076-13	Hardened Flat Washer (.950" x 1.762" x .157") .....	1
380503	1410 Series Companion Flange .....	1
†329160-144X	Conversion Kit (XD to SV)	

\* 1-1/2" - 10T Spline Shaft



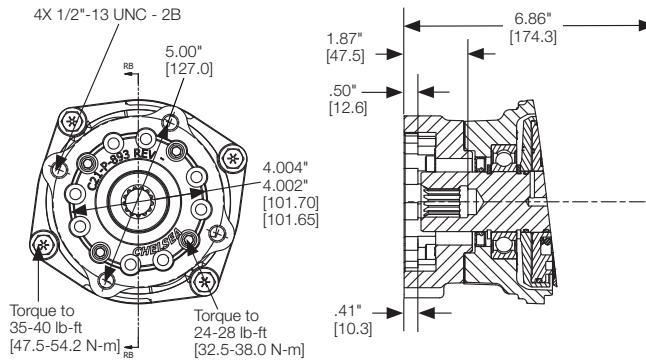
XD Output Option Rd Standard Shaft (1-1/4" - 5/16" Key)		
Part Number	Description	Qty.
329832-1X	Shaft & Clutch ASSY (3-P-1133) .....	1
28-P-267	Oil Seal (2.627" x 1.750" x .312") .....	1
21-P-886	Bearing Cap .....	1
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
500007-29	Woodruff Key .....	1



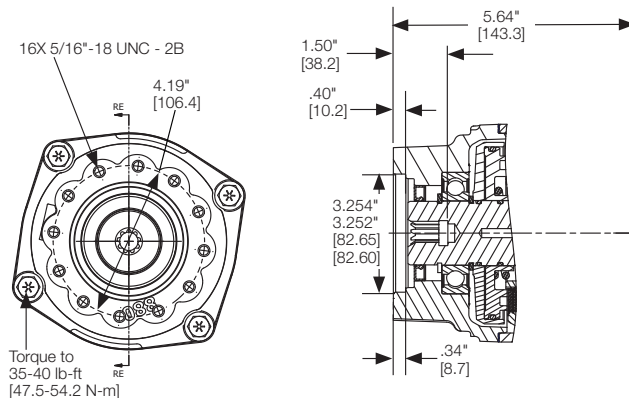
XV Output Option 1410 Series Companion Flange*		
Part Number	Description	Qty.
329832-2X	Shaft & Clutch ASSY (3-P-1134 Shaft) .....	1
28-P-211	Oil Seal (3.001" x 2.000" x .375") .....	1
21-P-886	Bearing Cap .....	1
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
380486	Thin Nylon Lock Nut (.875"-14) .....	1
380076-13	Hardened Flat Washer (.950" x 1.762" x .157") .....	1
380503	1410 Series Companion Flange .....	1
†329160-116X	Conversion Kit (XD to XV)	

\* 1-1/2" - 10T Spline Shaft

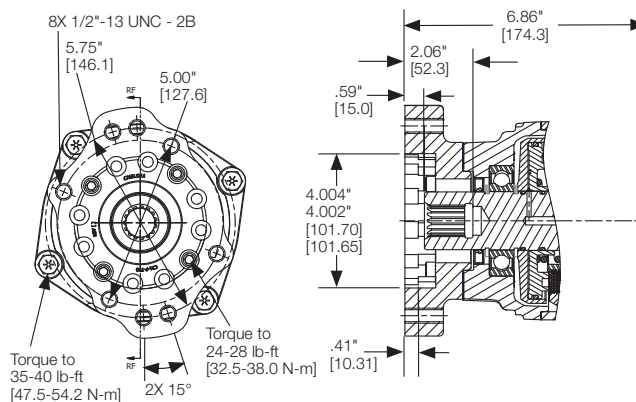
†Conversion Kits do not include all parts shown above. See pages 26-27 for Conversion Kit BOMs.

**Output Options****272-Ford Series****Bill of Materials - Pump Mount**

<b>RB Output Option</b>		
<b>Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)</b>		
<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
<b>329832-3X</b>	Shaft & Clutch ASSY (3-P-1135 Shaft).....	1
<b>28-P-267</b>	Oil Seal (2.627" x 1.750" x .312").....	1
<b>21-P-885</b>	Bearing Cap .....	1 or
<b>380563-14</b>	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
<b>328170-216X</b>	Cap Screw Kit (378447-8 Qty. 4) .....	1
<b>21-P-894</b>	Pump Flange .....	1
<b>35-P-101</b>	Bearing Cap Gasket .....	1
<b>†329160-145X</b>	<b>Conversion Kit (XD to RB)</b>	

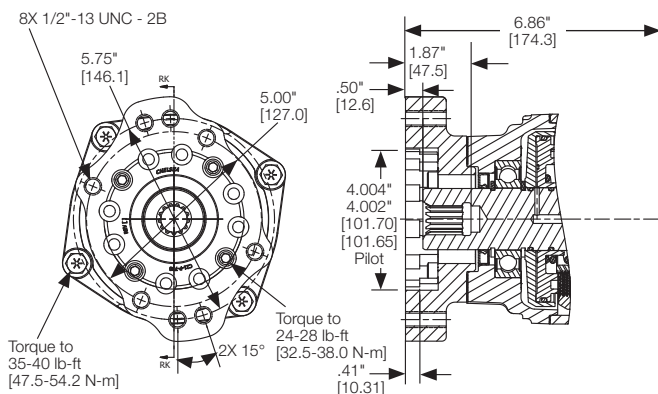


<b>RE Output Option</b>		
<b>Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)</b>		
<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
<b>329832-8X</b>	Shaft & Clutch ASSY (3-P-1170 Shaft).....	1
<b>28-P-267</b>	Oil Seal (2.627" x 1.750" x .312").....	1
<b>21-P-880</b>	Bearing Cap (RE) .....	1
<b>380563-14</b>	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
<b>†329160-118X</b>	<b>Conversion Kit (XD to RE)</b>	

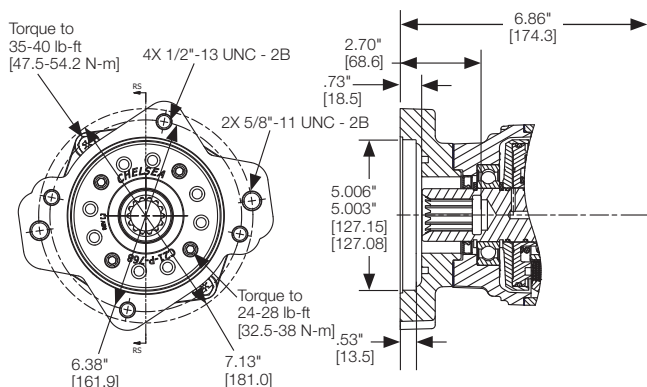


<b>RF Output Option</b>		
<b>Rotatable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)</b>		
<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
<b>329832-4X</b>	Shaft & Clutch ASSY (3-P-1136 Shaft) .....	1
<b>28-P-267</b>	Oil Seal (2.627" x 1.750" x .312").....	1
<b>21-P-885</b>	Bearing Cap .....	1 or
<b>380563-14</b>	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
<b>328170-216X</b>	Cap Screw Kit (378447-8 Qty. 4) .....	1
<b>21-P-731</b>	Pump Flange .....	1
<b>35-P-101</b>	Bearing Cap Gasket .....	1
<b>†329160-104X</b>	<b>Conversion Kit (XD to RF)</b>	

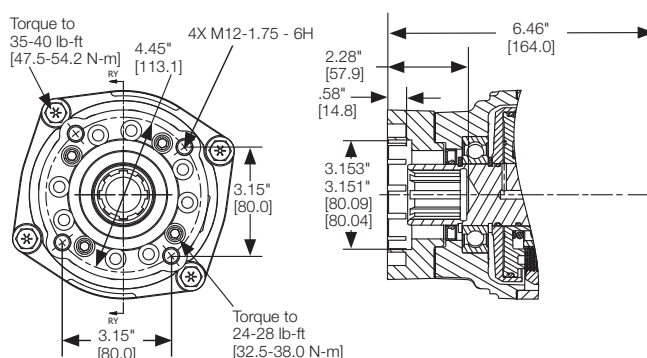
†Conversion Kits do not include all parts shown above. See pages 26-27 for Conversion Kit BOMs.

**Output Options****272-Ford Series****Bill of Materials - Pump Mount (Continued)**

<b>RK Output Option</b>		
<b>Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)</b>		
<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
<b>329832-3X</b>	Shaft & Clutch ASSY (3-P-1135 Shaft).....	1
<b>28-P-267</b>	Oil Seal (2.627" x 1.750" x .312").....	1
<b>21-P-885</b>	Bearing Cap .....	1 or
<b>380563-14</b>	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
<b>328170-216X</b>	Cap Screw Kit (378447-8 Qty. 4) .....	1
<b>21-P-731</b>	Pump Flange .....	1
<b>35-P-101</b>	Bearing Cap Gasket .....	1
<b>†329160-100X</b>	<b>Conversion Kit (XD to RK)</b>	



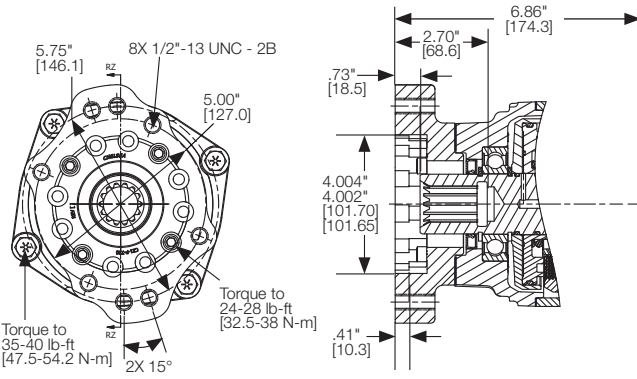
<b>RS Output Option</b>		
<b>Rotatable SAE C 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)</b>		
<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
<b>329832-5X</b>	Shaft & Clutch ASSY (3-P-1137 Shaft).....	1
<b>28-P-267</b>	Oil Seal (2.627" x 1.750" x .312").....	1
<b>21-P-885</b>	Bearing Cap .....	1 or
<b>380563-14</b>	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
<b>328170-216X</b>	Cap Screw Kit (378447-8 Qty. 4) .....	1
<b>21-P-769</b>	Pump Flange .....	1
<b>35-P-101</b>	Bearing Cap Gasket .....	1
<b>†329160-106X</b>	<b>Conversion Kit (XD to RS)</b>	



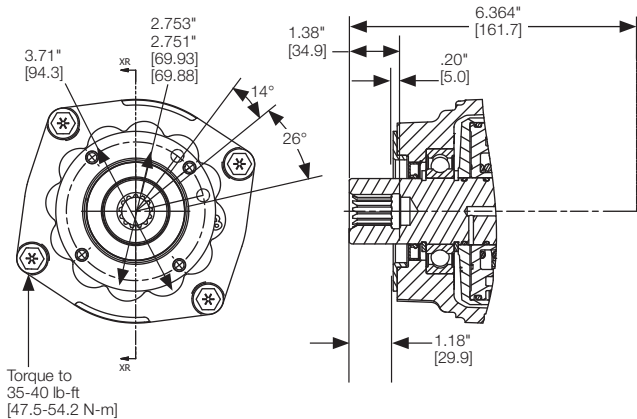
<b>RY Output Option</b>		
<b>Rotatable ISO 7653 Pump Mount, DIN 5462 Shaft</b>		
<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
<b>329832-6X</b>	Shaft & Clutch ASSY (3-P-1138 Shaft).....	1
<b>28-P-267</b>	Oil Seal (2.627" x 1.750" x .312").....	1
<b>21-P-885</b>	Bearing Cap .....	1 or
<b>380563-14</b>	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
<b>328170-216X</b>	Cap Screw Kit (378447-8 Qty. 4) .....	1
<b>21-P-771</b>	Pump Flange .....	1
<b>35-P-101</b>	Bearing Cap Gasket .....	1
<b>†329160-108X</b>	<b>Conversion Kit (XD to RY)</b>	

†Conversion Kits do not include all parts shown above. See pages 26-27 for Conversion Kit BOMs.

Bill of Materials - Pump Mount (Continued)



RZ Output Option		
Rotatable SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)		
Part Number	Description	Qty.
329832-5X	Shaft & Clutch ASSY (3-P-1137 Shaft).....	1
28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1
21-P-885	Bearing Cap .....	1 or
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
328170-216X	Cap Screw Kit (378447-8 Qty. 4) .....	1
21-P-731	Pump Flange .....	1
35-P-101	Bearing Cap Gasket .....	1
†329160-110X	Conversion Kit (XD to RZ)	



XR Output Option		
Parker P16 S Pump Flange, SAE B Shaft (7/8" - 13T)		
Part Number	Description	Qty.
329832-3X	Shaft & Clutch ASSY (3-P-1135 Shaft).....	1
28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1
21-P-885	Bearing Cap .....	1
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") ....	4
4-P-209	Spacer (Included in Kit).....	1
328748X	XR Pump Mounting Kit .....	1
†329160-143X	Conversion Kit (XD to XR)	

†Conversion Kits do not include all parts shown above. See pages 26-27 for Conversion Kit BOMs.



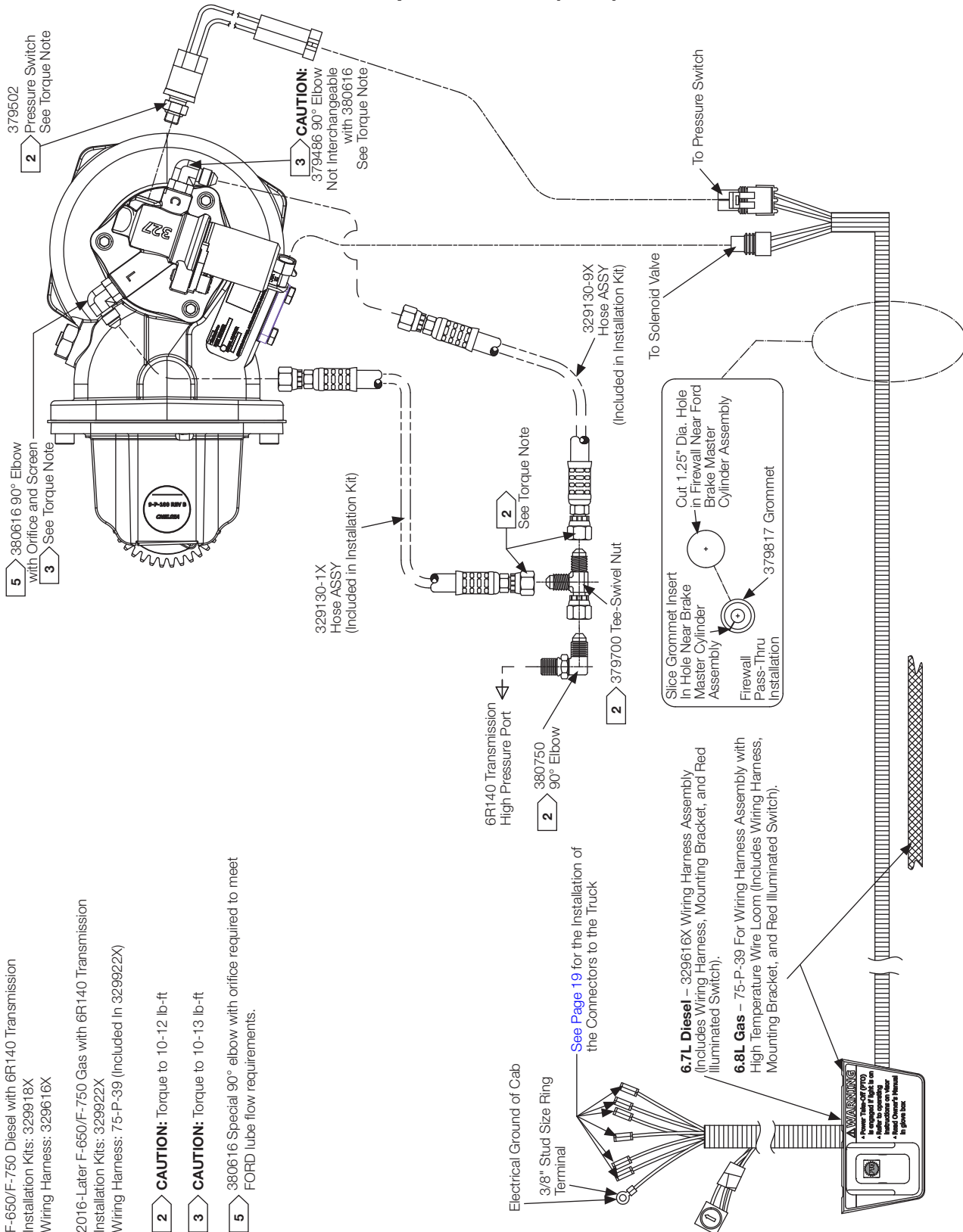
## Wiring Installation (Shift Option B)

Medium Duty F-650/F-750 – MY2016-MY2025 – 6.7L Diesel

Medium Duty F-650/F-750 – MY2016-MY2019 – 6.8L Gas

Medium Duty F-650/F-750 – MY2020-MY2025 – 7.3L Gas

272F & 272H w/o Electronic Overspeed Control (EOC)



**NOTE:** Strip wire ends 0.25" Prior to installing connector.

**Wiring Installation Chart (Shift Option B)**  
**Medium Duty F-650/F-750 – MY2016-MY2025 – 6.7L Diesel**  
**272F w/o Electronic Overspeed Control (EOC)**

(SK-611 Rev B)

Medium Duty F-650/F-750 – DIESEL							
Chelsea PTO Wire Color		Blunt cut wires found on Driver Side behind Data Link					
		Stationary Mode			Mobile Mode		
		Function	Ford Wire Color	Circuit	Function	Ford Wire Color	Circuit
329616X Wiring Harness	Purple	12VDC Power	Yellow/Gray	#CBB35	12VDC Power	Yellow/Gray	#CBB35
	Yellow	PTO REQ1	Yellow/Green	#CE912	PTO REQ1	NOT USED	
	Yellow	PTO REQ2	NOT USED	#CE912	PTO REQ2	Blue/Orange <sup>(1)</sup>	#CE933
	White	PTO VREF	White/Brown	#LE434	PTO VREF	White/Brown	#LE434
	Green	PTO RPM	Green	#CE914	PTO RPM	Green	#CE914
	Gray	PTO RTN	Gray/Violet	#RE327	PTO RTN	Gray/Violet	#RE327
	Blue/White	PTO RELAY	Blue/White	#CE326	PTO RELAY	Blue/White	#CE326
<b>NOTE:</b> <sup>(1)</sup> Mobile Mode is not available on the 2016 GAS Trucks.							

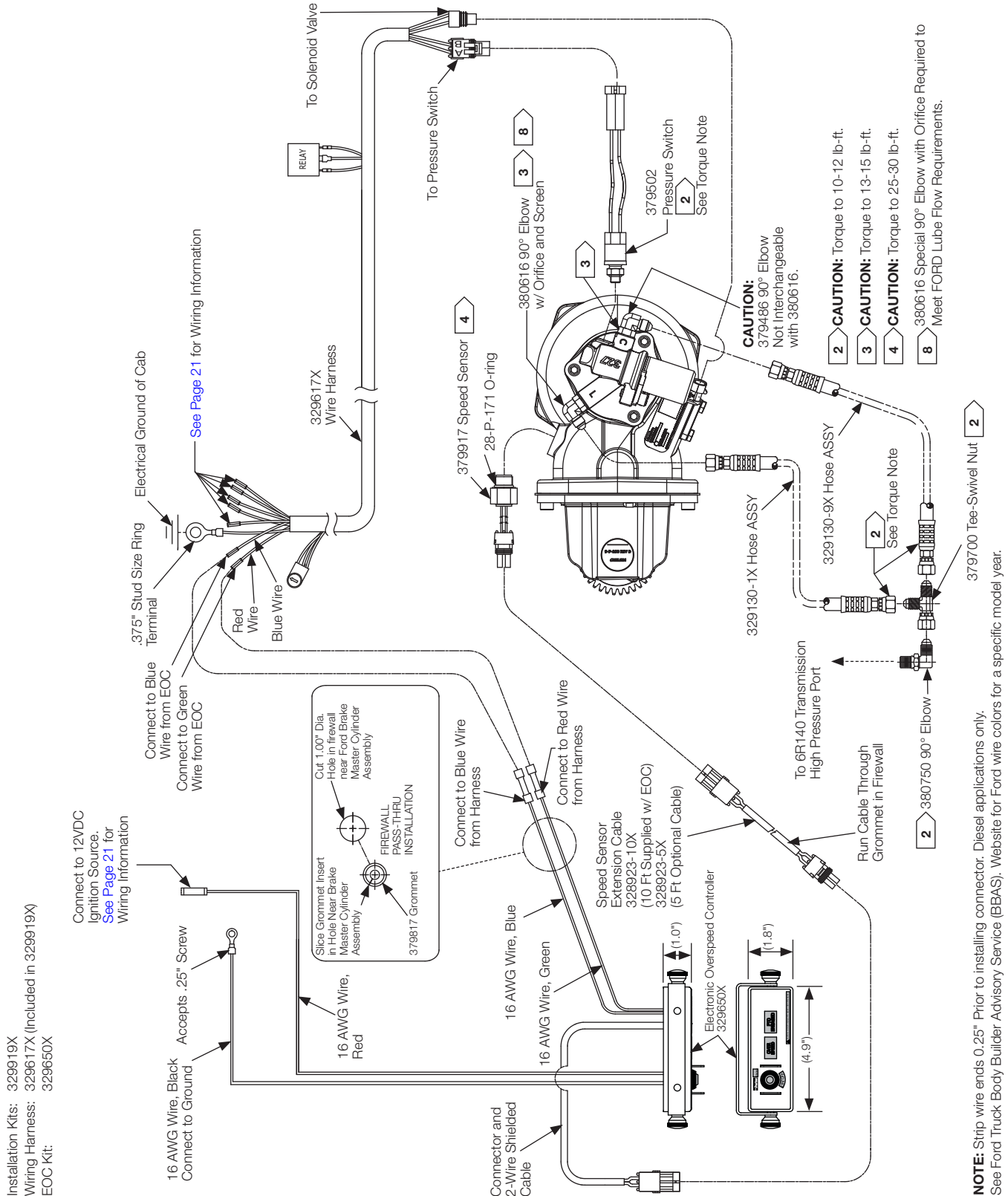
**Medium Duty F-650/F-750 – MY2016-MY2019 – 6.8L Gas**  
**Medium Duty F-650/F-750 – MY2020-MY2025 – 7.3L Gas**  
**272H w/o Electronic Overspeed Control (EOC)**

(SK-611 Rev B)

Medium Duty F-650/750 – GAS							
Chelsea PTO Wire Color		Blunt cut wires found Driver Side behind Data Link					
		Stationary Mode			Mobile <sup>(1)</sup>		
		Function	Ford Wire Color	Circuit	Function	Ford Wire Color	Circuit
75-P-39 Wiring Harness	Yellow/Gray	12VDC Power	Yellow/Gray Circuit	#CBB35	12VDC Power	Yellow/Gray Circuit	#CBB35
	Yellow/Blue	PTO REQ1	Yellow/Blue	#CE912	PTO REQ1	2016 - N/A	
						2017-2018 - Blue/Red	#CE933
	Blue	PTO REQ2	2016 - Blue/Orange or Red <sup>(2)</sup> 2017-2018 - NOT USED	#CE933	PTO REQ2	2016 - N/A <sup>(1)</sup>	
						2017-2018 - N/A	
	Yellow/Green	PTO VREF	Yellow/Green	#LE424	PTO VREF	Yellow/Green	#LE424
	Green	PTO RPM	Green	#CE914	PTO RPM	Green	#CE914
	Yellow/Violet	PTO RTN	Yellow/Violet	#RE407	PTO RTN	Yellow/Violet	#RE407
	Blue/White	PTO RELAY	Blue/White	#CE326	PTO RELAY	Blue/White	#CE326
<b>NOTE:</b> <sup>(1)</sup> Mobile Mode is not available on the 2016 GAS Trucks. <sup>(2)</sup> Blue/Orange prior to March 2016. Blue/Red after March 2016. <b>NOTE:</b> Some early build 2016 6.8L gas F-650/750 vehicles have 2 identically colored wires for PTO, which are located in the blunt cut harness under the driver side dash. They are Yellow/Green stripes. Use a voltmeter to identify which circuit you need: <ul style="list-style-type: none"> <li>One wire has 0VDC to ground (PCM PIN C1551B-84 Circuit #CE912).</li> <li>One has +5VDC to ground (PTO VREF, PCM PIN 01551B-52 Circuit #LE424).</li> <li>Circuit #CE912 will be changing to Yellow/Blue in later production.</li> </ul> <b>NOTE:</b> Early build 2016 6.8L gas F-650/750 vehicles (built before 10/22/15) have an incorrectly pinned customer access circuit. Circuit #CE326 is pinned in PCM connector C175B PIN 96. This circuit should be located at PIN 98. Vehicles built after 10/22/15 will have this circuit in the correct PCM connector cavity. Reference Ford SVE Bulletin Q-241 for more information.							

**Wiring Installation (Shift Option K)**  
**Medium Duty F-650/F-750 – MY2016-MY2025 – 6.7L Diesel**  
**Medium Duty F-650/F-750 – MY2017-MY2019 – 6.8L Gas**  
**Medium Duty F-650/F-750 – MY2020-MY2025 – 7.3L Gas**  
**272F & 272H w/ Electronic Overspeed Control (EOC)**

**(SK-612)**





**Wiring Installation Chart (Shift Option K) (SK-612)**  
**Medium Duty F-650/F-750 – MY2016-MY2025 – 6.7L Diesel**  
**272F w/ Electronic Overspeed Control (EOC)**

	Chelsea PTO Wire Harness	Stationary Mode			Mobile Mode		
		Function	Ford Wire Color	Circuit	Function	Ford Wire Color	Circuit
329617X Wiring Harness	White	PTO REF	White/Brown	#LE434	PTO REF	White/Brown	#LE434
	Gray	PTO RTN	Gray/Violet	#RE327	PTO RTN	Gray/Violet	#RE327
	Green	PTO RPM	Green	#CE914	PTO RPM	Green	#CE914
	Blue/White	PTO RLY	Blue/White	#CE326	PTO RLY	Blue/White	#CE326
	Black w/ Ring Terminal	Chassis Ground			Chassis Ground		
	Yellow	PTO REQ1	Yellow/Green	#CE912	PTO REQ2	Blue/Orange (Before March 2016) <sup>(1)</sup> Blue/Red (After March 2016) <sup>(1)</sup>	#CE933
	Blue	Chelsea EOC Blue Wire			Chelsea EOC Blue Wire		
	Red	Chelsea EOC Green Wire			Chelsea EOC Green Wire		

**NOTE:** <sup>(1)</sup> Early MY2011 Product Units may come with two Blunt Cut Blue/Gray Stripe wires. One wire will be for PTO Function (PTORS2) the other will be a Customer Wire for "Park Only Output" (TRO-P).  
**NOTE:** EOC not available for MY2016 & Prior.  
Refer to Ford Body Builders web site for more on this subject.

**Wiring Installation Chart (Shift Option K) (SK-612)**  
**Medium Duty F-650/F-750 – MY2017-MY2019 – 6.8L Gas**  
**Medium Duty F-650/F-750 – MY2020-MY2025 – 7.3L Gas**  
**272H w/ Electronic Overspeed Control (EOC)**

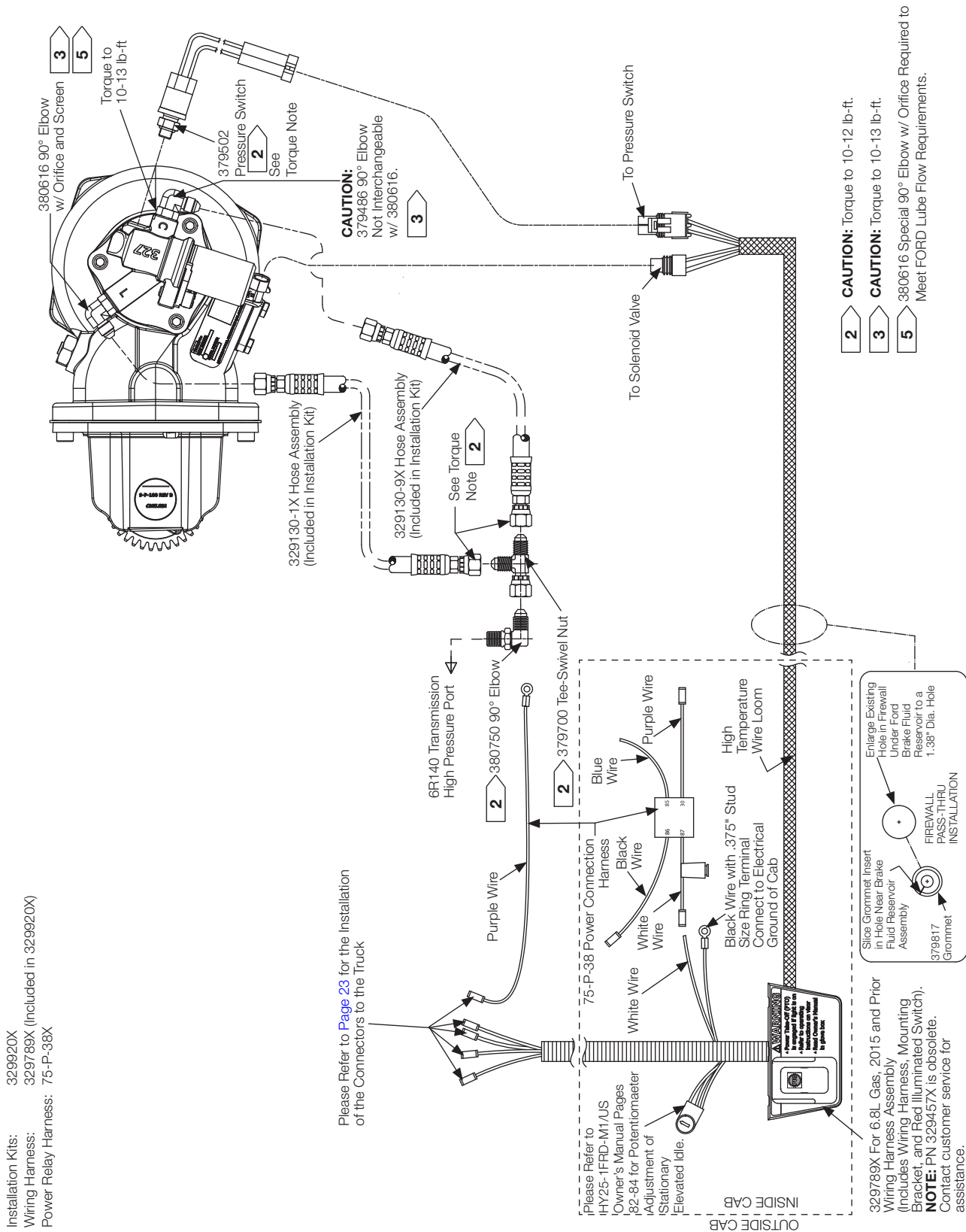
	Chelsea PTO Wire Harness	Stationary Mode			Mobile Mode		
		Function	Ford Wire Color	Circuit	Function	Ford Wire Color	Circuit
329617X Wiring Harness	White	PTO REF	Yellow/Green	#LE424	PTO REF	Yellow/Green	#LE424
	Gray	PTO RTN	Yellow/Violet	#RE407	PTO RTN	Yellow/Violet	#RE407
	Green	PTO RPM	Green	#CE914	PTO RPM	Green	#CE914
	Blue/White	PTO RLY	Blue/White	#CE326	PTO RLY	Blue/White	#CE326
	Black w/ Ring Terminal	Chassis Ground			Chassis Ground		
	Yellow	PTO REQ1	Yellow/Green F250-550 Yellow/Blue F-650/750	#CE912	PTO REQ2	Blue/Orange <sup>(1)</sup>	#CE933
	Blue	Chelsea EOC Blue Wire			Chelsea EOC Blue Wire		
	Red	Chelsea EOC Green Wire			Chelsea EOC Green Wire		

**NOTE:** <sup>(1)</sup> Early MY2011 Product Units may come with two Blunt Cut Blue w/ Gray Stripe wires. One wire will be for PTO Function (PTORS2) the other will be a Customer Wire for "Park Only Output" (TRO-P).  
**NOTE:** EOC not available for MY2016 & Prior.  
Refer to Ford Body Builders web site for more on this subject.

12VDC Power	Stationary Mode or Mobile Mode
Chelsea EOC Wire	F-650/F-750
Red Wire	MY2016-MY2018 #CBB35 Yellow/Gray
Black w/ Ring Terminal	Chassis Ground

**Wiring Installation (Shift Option B)**  
**Medium Duty F-650 – MY2012-MY2015 – 6.8L Gas**  
**272J w/o Electronic Overspeed Control (EOC)**

**(SK-613 Rev A)**



**Wiring Installation Chart (Shift Option B)**  
**Medium Duty F-650 – MY2012-MY2015 – 6.8L Gas**  
**272J w/o Electronic Overspeed Control (EOC)**

**(SK-613 Rev A)**

**Wiring Interface Configurations**

Chelsea PTO Wire Harness		Stationary Mode (Mobile Mode Not Available)		
		Function	Ford Wire Color	Circuit
75-P-38 Power Connection Harness	<b>Under Hood</b>			
	Purple w/ Butt Connector (80")		Violet/Yellow	#870
	Purple w/ Ring Terminal (80")		Battery Junction Box Battery Connection Post	
	<b>Under Dash</b>			
	Black		Ford Ground Circuit Black	#57
	Blue		12VDC Blue/Green	
	Purple		Violet/Yellow	#870
	White		Chelsea White Wire on 329789X Main Harness	
329789X Main Harness	<b>Under Hood</b>			
	Green	PTO RPM	Ford Circuit (Green)	#CE914
	Blue/White	PTO RLY	Ford Circuit (Blue/White)	#CE326
	Blue	PTO REQ2	Blue/Orange or Blue/Red (effective March 2016)	#CE933
	Yellow	PTO REQ1	Yellow/Green	#CE912
	<b>Under Dash</b>			
	Black w/ Ring Terminal		Chassis Ground	

**Kits Bill of Materials**

## Parts List

**272-FORD Series**

Part Number	Description	Qty.	Part Number	Description	Qty.
<b>SERVICE KITS</b>			<b>STUD KITS</b>		
<b>329071-63X</b>	<b>Bearing Kit</b>		<b>8000-46X</b>	<b>Metric Stud Kit</b>	
379746	Lockring .....	1	379428-24	Metric Stud	
378263	Internal Lockring .....	1		(.375"-24 x M10-1.5 x 2.375") .....	6
379555	Lockring .....	1	379744	Flange Nut (.375"-24) .....	6
560972	Needle Roller Bearing Assembly		Continued on Next Page		
	(1.500" x 1.875" x 1.000") .....	2			
550311	Ball Bearing (1.770" x 3.346" x .748") .....	1			
550439	Tapered Cone Bearing (.750" x .859") .....	2			
31-P-102	Thrust Washer (.754" x .440" x .030") .....	1			
14-P-73-1	Spacer (.762" x 1.500" x .150") .....	1			
14-P-73-2	Spacer (.762" x 1.500" x .153") .....	1			
14-P-73-3	Spacer (.762" x 1.500" x .156") .....	1			
<b>329071-83X</b>	<b>Hydraulic Solenoid Valve O-ring Kit</b>				
2016V-7	O-ring (.614" x .070") .....	1			
2017V-7	O-ring (.676" x .070") .....	1			
2020V-7	O-ring (.864" x .070") .....	2			
<b>329923X</b>	<b>Gasket &amp; Seal Kit</b>				
22-P-112	Valve Cap Gasket .....	1			
22-P-151	Bearing Cap Gasket .....	1			
28-P-119	Oil Seal (1.379" x .875" x .250") .....	1			
28-P-178	O-ring (4.359" x .138") .....	1			
28-P-198	O-ring (.798" x .103") .....	1			
28-P-211	Oil Seal (3.001" x 2.000" x .375") .....	1			
28-P-285	O-ring (1.597" x .103") .....	2			
35-P-118	Plate Gasket .....	1			
28-P-267	Oil Seal (2.627" x 1.750" x .312") .....	1			
22-P-124	Mounting Gasket .....	2			
<b>330154X</b>	<b>Gear &amp; Clutch Plates Kit</b>				
379485	Friction Disc .....	8			
379595	Clutch Plate .....	7			
2-P-1038	Inner Hub Gear .....	1			

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

**Kits Bill of Materials**

## Parts List

**272-FORD Series**

Part Number	Description	Qty.	Part Number	Description	Qty.
<b>INSTALLATION INSTRUCTIONS KITS</b>			<b>INSTALLATION KITS</b>		
<b>329248-5X</b>	<b>Gasket &amp; Installation Instructions Kit</b>		<b>329918X</b>	<b>Installation &amp; Mounting Kit</b>	
22-P-124	Mounting Gasket .....	1	<b>(2011+ Diesel - F Mount; B Shift Option)</b>		
69-P-21	Caution Label .....	1	329616X	Wiring Harness w/o EOC .....	1
328946X	Caution Label Kit .....	1	379502	Pressure Switch .....	1
379085-2	Instructions Label .....	1	380569	90° Elbow - M10 to JIC4 .....	1
379624	Product Warranty Card .....	1	379817	Grommet .....	1
Owner's Manual	HY25-1FRD-M1/US .....	1	380616	90° Elbow w/ Orifice and Screen (.438"-20)....	1
Safety Guide	HY25-1002-M1/US .....	1	329130-1X	Hose Assembly (16.25") .....	1
			329130-9X	Hose Assembly (10.75") .....	1
			379700	Swivel Nut Tee (.438"-20) .....	1
			<b>329919X</b>	<b>EOC Installation &amp; Mounting Kit</b>	
			<b>(2011+ Diesel, F Mount/2016+ Gas, H Mount; K Shift Option)</b>		
			329617X	Wiring Harness w/ EOC .....	1
			379502	Pressure Switch .....	1
			380569	90° Elbow - M10 to JIC4 .....	1
			379817	Grommet .....	1
			380616	90° Elbow w/ Orifice and Screen (.438"-20)....	1
			329130-1X	Hose Assembly (16.25") .....	1
			329130-9X	Hose Assembly (10.75") .....	1
			379700	Swivel Nut Tee (.438"-20) .....	1
			<b>329920X</b>	<b>Installation &amp; Mounting Kit</b>	
			<b>(2013-2015 Gas - J Mount; B Shift Option)</b>		
			329789X	Wiring Harness w/o EOC .....	1
			379502	Pressure Switch .....	1
			380569	90° Elbow - M10 to JIC4 .....	1
			379817	Grommet .....	1
			380616	90° Elbow w/ Orifice and Screen (.438"-20)....	1
			329130-1X	Hose Assembly (16.25") .....	1
			329130-9X	Hose Assembly (10.75") .....	1
			379700	Swivel Nut Tee (.438"-20) .....	1
			<b>329922X</b>	<b>Installation &amp; Mounting Kit</b>	
			<b>(2016+ Gas - H Mount; B Shift Option)</b>		
			75-P-39	Wiring Harness w/o EOC 272H .....	1
			379502	Pressure Switch .....	1
			380569	90° Elbow - M10 to JIC4 .....	1
			379817	Grommet .....	1
			380616	90° Elbow w/ Orifice and Screen (.438"-20)....	1
			329130-1X	Hose Assembly (16.25") .....	1
			329130-9X	Hose Assembly (10.75") .....	1
			379700	Swivel Nut Tee (.438"-20) .....	1

Continued on Next Page

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

**Kits Bill of Materials**

## Parts List

**272-FORD Series**

Part Number	Description	Qty.	Part Number	Description	Qty.
<b>INSTALLATION KITS</b>			<b>OUTPUT CONVERSION KITS</b>		
<b>329952X</b>	<b>Installation &amp; Mounting Kit</b>		<b>329160-100X</b>	<b>Conversion Kit (XD to RK)</b>	
	<b>(Less Wiring Harness - All Mounts;</b>		379555	Lockring .....	1
	<b>E Shift Option)</b>		379688	Spline Lubricant.....	1
379502	Pressure Switch.....	1	379746	Lockring .....	1
380569	90° Elbow - M10 to JIC4 .....	1	380069	Lockring .....	1
379817	Grommet.....	1	28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1
380616	90° Elbow w/ Orifice and Screen (.438"- 20)...	1	21-P-731	Pump Flange .....	1
329130-1X	Hose Assembly (16.25") .....	1	21-P-885	Bearing Cap .....	1
329130-9X	Hose Assembly (10.75") .....	1	22-P-151	Bearing Cap Gasket .....	1
379700	Swivel Nut Tee (.438"-20) .....	1	28-P-285	O-ring (1.597" x .103").....	2
			328170-216X	Cap Screw Kit .....	1
			380563-14	Hex Flange Head Cap Screw	
				(.375"-16 x 1.500") .....	4
			3-P-1135	Output Shaft RK .....	1
			<b>329160-104X</b>	<b>Conversion Kit (XD to RF)</b>	
			379555	Lockring .....	1
			379688	Spline Lubricant.....	1
			379746	Lockring .....	1
			380069	Lockring .....	1
			21-P-731	Pump Flange .....	1
			21-P-885	Bearing Cap .....	1
			22-P-151	Bearing Cap Gasket .....	1
			28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1
			28-P-285	O-ring (1.597" x .103").....	2
			328170-216X	Cap Screw Kit .....	1
			380563-14	Hex Flange Head Cap Screw	
				(.375"-16 x 1.500") .....	4
			3-P-1136	Output Shaft RF .....	1
			<b>329160-106X</b>	<b>Conversion Kit (XD to RS)</b>	
			379555	Lockring .....	1
			379688	Spline Lubricant.....	1
			379746	Lockring .....	1
			380069	Lockring .....	1
			21-P-769	Pump Flange RS .....	1
			21-P-885	Bearing Cap .....	1
			22-P-151	Bearing Cap Gasket .....	1
			28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1
			28-P-285	O-ring (1.597" x .103").....	2
			328170-216X	Cap Screw Kit .....	1
			380563-14	Hex Flange Head Cap Screw	
				(.375"-16 x 1.500") .....	4
			3-P-1137	Output Shaft RS .....	1
			<b>329160-108X</b>	<b>Conversion Kit (XD to RY)</b>	
			379555	Lockring .....	1
			379688	Spline Lubricant.....	1
			379746	Lockring .....	1
			380069	Lockring .....	1
			21-P-771	Pump Flange RY .....	1
			21-P-885	Bearing Cap .....	1
			22-P-151	Bearing Cap Gasket .....	1
			28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1
			28-P-285	O-ring (1.597" x .103").....	2
			328170-216X	Cap Screw Kit .....	1
			380563-14	Hex Flange Head Cap Screw	
				(.375"-16 x 1.500") .....	4
			3-P-1138	Output Shaft RY .....	1

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

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**Kits Bill of Materials****Parts List****272-FORD Series**

Part Number	Description	Qty.	Part Number	Description	Qty.
<b>OUTPUT CONVERSION KITS (Continued)</b>			<b>OUTPUT CONVERSION KITS (Continued)</b>		
<b>329160-110X</b>	<b>Conversion Kit (XD to RZ)</b>		<b>329160-143X</b>	<b>Conversion Kit (XD to XR)</b>	
379555	Lockring .....	1	379555	Lockring .....	1
379688	Spline Lubricant.....	1	379688	Spline Lubricant.....	1
379746	Lockring .....	1	379746	Lockring .....	1
380069	Lockring .....	1	380069	Lockring .....	1
21-P-731	Pump Flange .....	1	22-P-151	Bearing Cap Gasket .....	1
21-P-885	Bearing Cap .....	1	28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1
22-P-151	Bearing Cap Gasket .....	1	28-P-285	O-ring (1.597" x .103").....	2
28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1	380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") .....	4
28-P-285	O-ring (1.597" x .103").....	2	3-P-1135	Output Shaft XR .....	1
328170-216X	Cap Screw Kit .....	1	329906X	Pump Kit XR.....	1
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") .....	4	21-P-885	Bearing Cap .....	1
3-P-1137	Output Shaft RZ .....	1			
<b>329160-116X</b>	<b>Conversion Kit (XD to XV)</b>		<b>329160-144X</b>	<b>Conversion Kit (XD to SV)</b>	
379555	Lockring .....	1	379555	Lockring .....	1
380503	1410 Series Companion Flange.....	1	380503	1410 Series Companion Flange.....	1
379746	Lockring .....	1	379746	Lockring .....	1
380069	Lockring .....	1	380069	Lockring .....	1
380486	Thin Nylon Lock Nut (.875"-14).....	1	380486	Thin Nylon Lock Nut (.875"-14).....	1
22-P-151	Bearing Cap Gasket .....	1	22-P-151	Bearing Cap Gasket .....	1
28-P-211	Oil Seal (3.001" x 2.000" x .375").....	1	28-P-211	Oil Seal (3.001" x 2.000" x .375").....	1
28-P-285	O-ring (1.597" x .103").....	2	28-P-285	O-ring (1.597" x .103").....	2
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") .....	4	380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") .....	4
380076-13	Hardened Flat Washer (.950" x 1.762" x .157") .....	1	380076-13	Hardened Flat Washer (.950" x 1.762" x .157") .....	1
3-P-1134	Output Shaft XV.....	1	3-P-1169	Output Shaft.....	1
<b>329160-118X</b>	<b>Conversion Kit (XD to RE)</b>		<b>329160-145X</b>	<b>Conversion Kit (XD to RB)</b>	
379555	Lockring .....	1	379555	Lockring .....	1
379688	Spline Lubricant.....	1	379688	Spline Lubricant.....	1
379746	Lockring .....	1	379746	Lockring .....	1
380069	Lockring .....	1	380069	Lockring .....	1
21-P-880	Bearing Cap RE .....	1	22-P-151	Bearing Cap Gasket .....	1
22-P-151	Bearing Cap Gasket .....	1	28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1
28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1	28-P-285	O-ring (1.597" x .103").....	2
28-P-285	O-ring (1.597" x .103").....	2	380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") .....	4
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500") .....	4	3-P-1135	Output Shaft RB .....	1
3-P-1170	Output Shaft RE .....	1	21-P-885	Bearing Cap .....	1
			21-P-894	Pump Flange .....	1
<b>329160-142X</b>	<b>Conversion Kit (XD to SD)</b>		328170-216X	Cap Screw Kit .....	1
379555	Lockring .....	1	<b>329921X</b>	<b>EOC Conversion Kit (F &amp; H Mount; K Shift)</b>	
379746	Lockring .....	1	329617X	Wiring Harness w/ EOC.....	1
380069	Lockring .....	1	329650X	Electronic Overspeed Control .....	1
22-P-151	Bearing Cap Gasket .....	1	379917	Speed Sensor .....	1
28-P-267	Oil Seal (2.627" x 1.750" x .312").....	1	28-P-171	O-ring (.644" x .087").....	1
28-P-285	O-ring (1.597" x .103").....	2			
380563-14	Hex Flange Head Cap Screw (.375"-16 x 1.500").....	4			
3-P-1168	Output Shaft.....	1			
500007-29	Woodruff Key.....	1			

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

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**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](http://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,**

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**Offer of Sale (Continued)**

**AND REPRESENTATIONS, WHETHER STATUTORY, 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, RE-PERFORM 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 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. Invalidation of any provision of these Terms shall not

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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](http://www.P65Warnings.ca.gov)

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



**Parker-Hannifin Corporation**

Chelsea Products Division  
8225 Hacks Cross Rd  
Olive Branch, MS 38654  
United States

Phone: +1 (662) 895-1011  
Email: [chd\\_support@support.parker.com](mailto:chd_support@support.parker.com)

[www.Parker.com/Chelsea](http://www.Parker.com/Chelsea)

PN: HY25-2272F-M1/US  
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