



## Chelsea PTO 859 Parts Manual

Pro Gear and Transmission presents Chelsea 859 Series PTO parts manual to assist in identifying the parts for your Chelsea Power Take Off unit.

If you need any assistance identifying the correct Power Take Off unit for your truck and equipment, contact your Chelsea replacement part specialists at Pro Gear and Transmission.

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# **CHELSEA<sup>®</sup>**

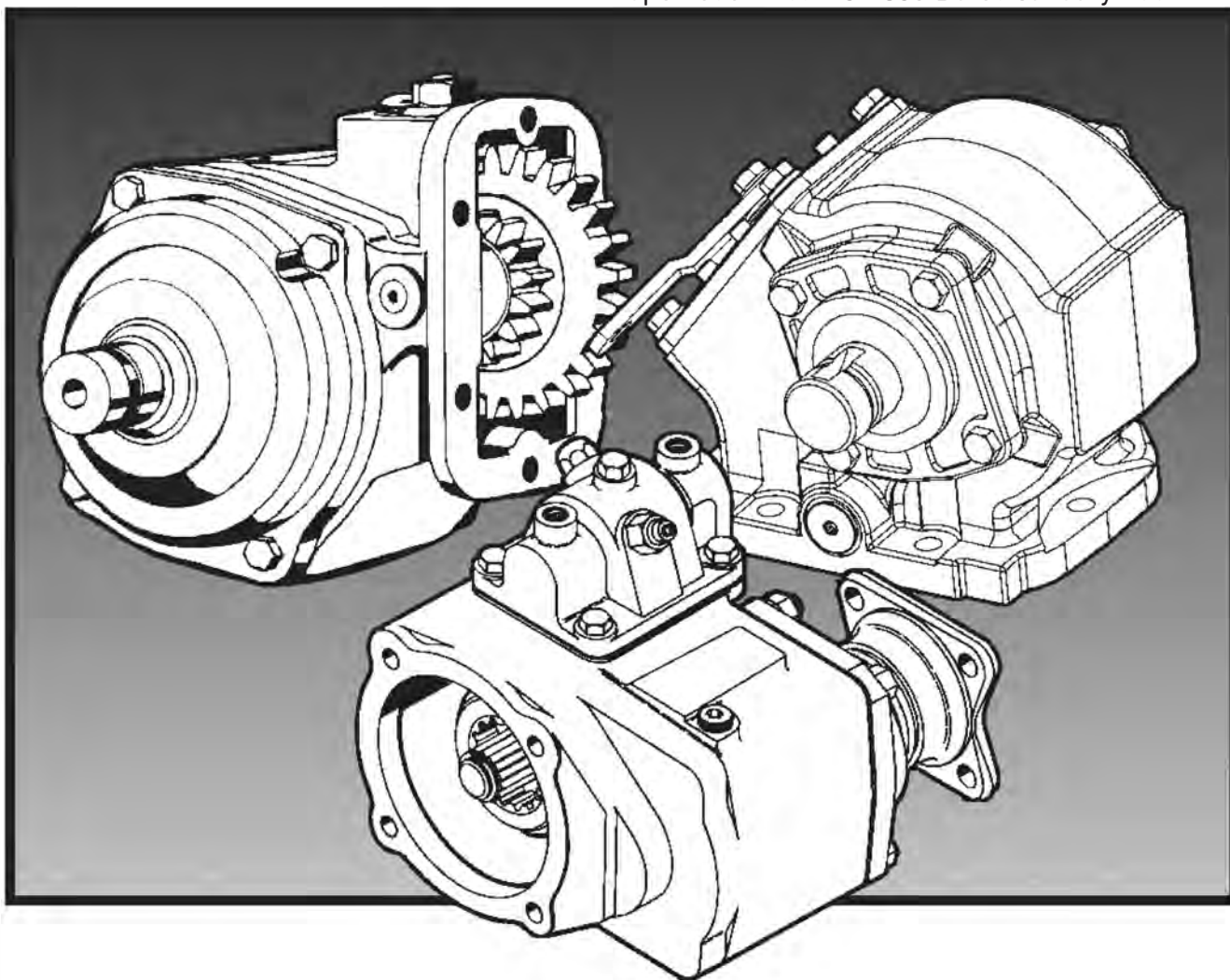
## **Parts List**

### **859 Series**

Bulletin HY25-2859-M1/US

Effective: June 15, 2009

Supersedes: HY25-2859 Dated January 2007





## **WARNING**

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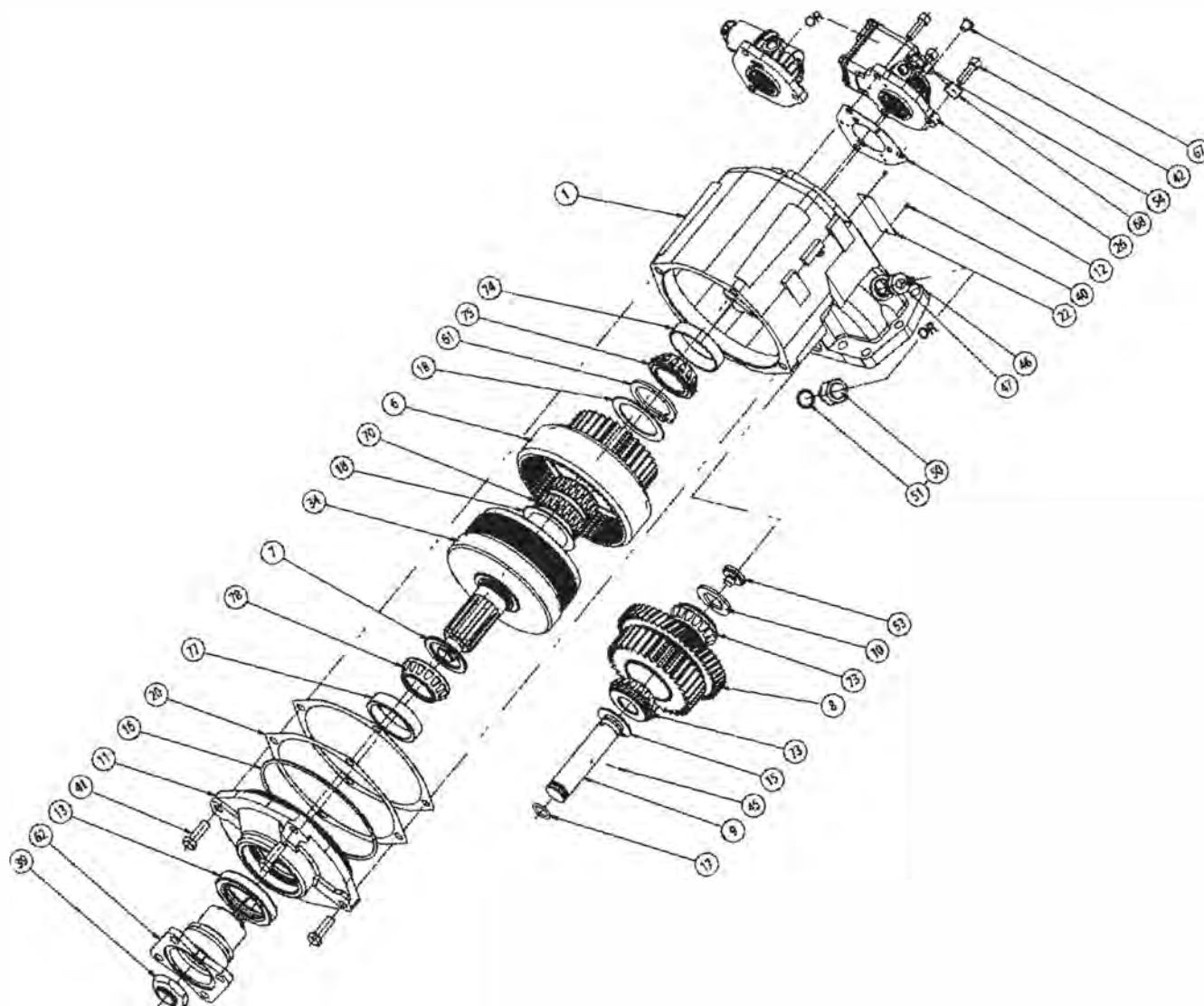
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## Bill of Materials

## Power Take-Off

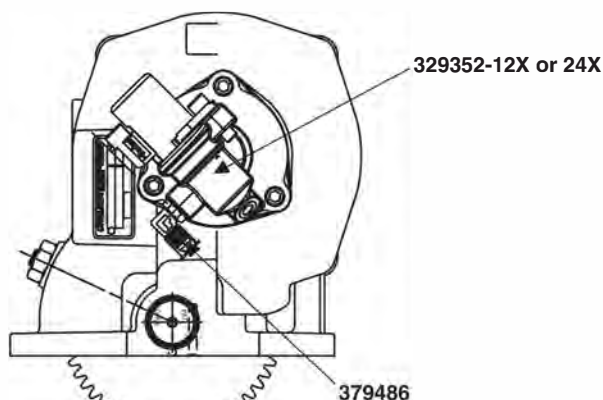
## 859 Series

Item	Part Number	Description	Quantity
1	1-P-609X	PTO Housing .....	1
6	See Page 5	Output Gear .....	1
7	See Below	Spacer, Drive Shaft .....	1
	4-P-162	Spacer "XV" Output	
	See Page 6 & 7	Spacer (All Other Outputs)	
8	See Page 5	Input Gear .....	1
9	9-P-92	Idler Shaft (Pressure Lube) .....	1
10	14-P-80-1	Tabbed Washer (.110"-.112") .....	1 or
	14-P-80-2	Tabbed Washer (.115"-.117") .....	1 or
	14-P-80-3	Tabbed Washer (.120"-.122") .....	1 or
	14-P-80-4	Tabbed Washer (.124"-.126") .....	1
11	See Below	Bearing Cap .....	1
	21-P-517	Bearing Cap ("XV" Output)	
	See Page 6 & 7	Bearing Cap (All Other Outputs)	
12	22-P-112	Gasket, Valve Cap .....	1
13	See Below	Oil Seal .....	1
	28-P-211	Oil Seal ("XV" Output)	
	See Page 6 & 7	Oil Seal (All Other Outputs)	
15	31-P-94	Thrust Washer .....	1
16	28-P-196	O-Ring .....	1
17	28-P-198	O-Ring .....	1
18	31-P-92	Thrust Washer .....	2
20	55-P-20-1	Shim, Bearing Cap (.003 Green) .....	A.R.
	55-P-20-2	Shim, Bearing Cap (.010 Brown)	
	55-P-20-3	Shim, Bearing Cap (.020 Yellow)	
22	68-P-2	Name Plate .....	1
24	329252X	Seal Cap Assembly ("G" & "H" Shift Only) .....	1
26	329352-12X	Valve & Valve Cap Assembly (12V) .....	1 or
	329352-24X	Valve & Valve Cap Assembly (24V) .....	1 or
	329442-12X	Valve & Valve Cap Assembly (12V) ("KV" Pitch Only) .....	1 or
	329442-24X	Valve & Valve Cap Assembly (24V) ("KV" Pitch Only) .....	1
34	See Below	Drive Shaft & Clutch Ass'y .....	1
	329647-1X	Drive Shaft & Clutch Ass'y (3-P-1024) ("AB", "AC", "XV" Output)	
	See Page 6 & 7	Drive Shaft & Clutch Ass'y (All Other Outputs)	
39	378382	Hex Locknut ("XV", "AB", "AC" Only) .....	1
40	378422	Drive Screw .....	2
41	378431-11	Hex Capscrew .375"-16 x 1.125" .....	4
42	378447-6	Soc Capscrew .312"-18 x 1.000" .....	3
45	378856	Wiggler Wire .....	1
46	379231	Pipe Plug .125"-27 NPTF (Without E.O.C. Only) .....	1
47	379242	O-Ring Boss Plug .....	1
50	28-P-171	O-Ring (With E.O.C. Only) .....	1
51	379243	Speed Sensor .....	1
53	379719	NWD Plug .....	1
54	379486	90° Elbow, O-Ring Boss .....	1
61	379511	Lockring (5160-200) .....	1
62	See Below	Companion Flange .....	1
	3-1-3431	Companion Flange ("XV" Output)	
	See Page 6 & 7	Companion Flange (All Other Outputs)	

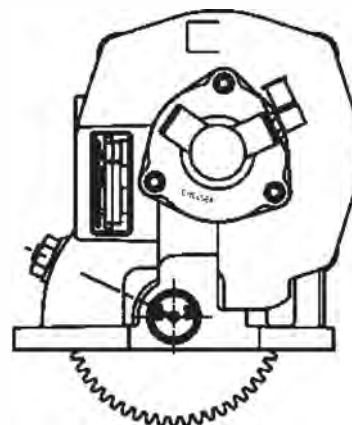
A.R. — As Required

**Bill of Materials****Power Take-Off  
859 Series**

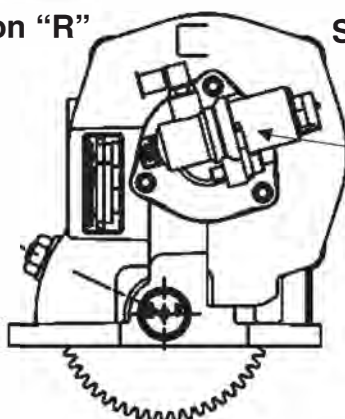
Item	Part Number	Description	Quantity
67	<b>500897-3</b>	Shipping Plug.....	1
68	<b>379564-2</b>	Shipping Cap ("G" & "H" Shift Qty. 3).....	3
70	<b>560975</b>	Caged Roller Bearing.....	2
73	<b>560978</b>	Tapered Bearing Cone.....	2
74	<b>560982</b>	Tapered Bearing Cup.....	1
75	<b>560986</b>	Tapered Bearing Cone.....	1
77	See Below <b>560982</b> <a href="#">See Page 6 &amp; 7</a>	Tapered Bearing Cup..... Tapered Bearing Cup ("XV" Output) Tapered Bearing Cup (All Other Outputs)	1  
78	See Below <b>560986</b> <a href="#">See Page 6 &amp; 7</a>	Tapered Bearing Cone..... Tapered Bearing Cone ("XV" Output) Tapered Bearing Cone (All Other Outputs)	1  
		<b>Loose Parts</b>	
	<b>7170-86X</b>	Mounting Kit ("FJ" Input).....	1
	<b>7170-118X</b>	Mounting Kit ("KV" Input).....	1
	<b>328948-9X</b>	Gasket & Installation Instructions.....	1
	<b>329141-1X</b>	Hose Assembly.....	1
	<b>329130-1X</b>	Hose Assembly (Remote Valve Option Only).....	1
	<b>328075X</b>	Hose Assembly (Remote Valve Option Only).....	1
	<b>328924-12X</b>	Control Box 12V (With E.O.C.).....	1 or
	<b>328924-24X</b>	Control Box 24V (With E.O.C.).....	1
	See Below	<b>Installation Kit</b>	
		<b>Allison</b>	
	<b>329024-12X</b>	Installation Kit 12V w/o E.O.C.....	1 or
	<b>329024-24X</b>	Installation Kit 24V w/o E.O.C.....	1 or
	<b>329076X</b>	Installation Kit 12V & 24V (With E.O.C.).....	1 or
	<b>329237-12X</b>	Installation Kit 12V Remote Valve.....	1 or
	<b>329237-24X</b>	Installation Kit 24V Remote Valve.....	1
		<b>Caterpillar</b>	
	<b>329443-12X</b>	Installation Kit 12V.....	1 or
	<b>329443-24X</b>	Installation Kit 24V.....	1 or
	<b>329444X</b>	Installation Kit 12 & 24 Volt (With E.O.C.).....	1 or
	<b>329445-12X</b>	Installation Kit 12V Remote Valve.....	1 or
	<b>329445-24X</b>	Installation Kit 24V Remote Valve.....	1 or
		<b>Service Kits</b>	
	<b>329071-20X</b>	Gasket And Seal Kit	
	<b>329071-37X</b>	Bearing Kit	
	<b>329071-8X</b>	Clutch Repair Kit	
	<b>329175-12X</b>	Conversion Kit 12V Remote Valve	
	<b>329447-12X</b>	Kit, Remote Valve Conversion 12V ("KV" Input)	
	<b>329447-24X</b>	Kit, Remote Valve Conversion 24V ("KV" Input)	
	<b>329175-12X</b>	E.O.C. Field Conversion Kit 12V	
	<b>329175-24X</b>	E.O.C. Field Conversion Kit 24V	
	<b>329240-12X</b>	Conversion Kit 12V Remote Mount Valve	
	<b>329240-24X</b>	Conversion Kit 24V Remote Mount Valve	



859 Lubrication Option "R"



Shifter Options "G" &amp; "H" for Remote Mounted Value



View "KV" Input Gear

## Model Number Designation

	859	X	G	FJ	P	-	B	5	XV	
<b>Basic Model</b>	859 (Heavy Duty Hydraulic Shift)									<b>Output Designations</b>
										XS = Class "C" 2 & 4 Bolt Pump XV = 1410 Series Flange XY = Pump Mt. Meiller Pump AB = Din 120 Flange AC = Din 100 Flange AZ = S.A.E. "B" 2 & 4 Bolt BA = "XV" w/ Drage Brake BB = "AB" w/ Drage Brake BC = "AC" w/ Drage Brake
<b>Mounting Type</b>										<b>Assembly Arrangement</b>
X = Standard Mount (10 Bolts)										5 = Gear Forward Shaft Rear Bulge Up Right Side Bulge Down Left Side
<b>Gear Ratio</b>										<b>Shifter Type</b>
G = 24/43 J = 26/41 M = 28/39 R = 31/36 S = 32/34 T = 34/36 W = 37/30										B = 12V Hydraulic D = 24V Hydraulic G = 12V Remote Valve H = 24V Remote Valve K = 12V Hyd With E.O.C. L = 24V Hyd With E.O.C. M = 12 Volt w/o Installation Kit-329024-12X (Europe Only) N = 24 Volt w/o Installation Kit-329024-24X (Europe Only)
<b>Input Gear Designator</b>										<b>Lubrication</b>
FJ = Allison KV = Caterpillar										P = Pressure Lube R = Valve Cap Rotated 120°

## Gear and Hose Charts

## 859 Series

## Gear Chart

Model Number	Input Gear Part Number Item No. 4	Helix Angle	Number Teeth Lg/Sm	Output Gear Item No. 2	
				Part Number	Number Teeth
859*GFJ	5-P-1160	RH	50/24	2-P-752	43
859*JFJ	5-P-1394	RH	50/26	2-P-827	41
859*MFJ	5-P-1161	RH	50/28	2-P-753	39
859*RFJ	5-P-1162	RH	50/31	2-P-754	36
859*SFJ	5-P-1392	RH	50/32	2-P-826	34
859*TFJ	5-P-1212	RH	50/34	2-P-764	33
859*WFJ	5-P-1309	RH	50/35	2-P-796	28
859*GKV	5-P-1360	LH	45/24	2-P-752	43
859*JKV	5-P-1397	LH	45/26	2-P-827	41
859*MKV	5-P-1398	LH	45/28	2-P-753	39
859*RKV	5-P-1399	LH	45/31	2-P-754	36
859*SKV	5-P-1400	LH	45/32	2-P-826	34
859*TKV	5-P-1401	LH	45/34	2-P-764	33

## Hose Chart Allison

Pressure Hose Chart (Transmission to P.T.O.)			
Trans	Location	Hose	Comments
MD	Left	329130-5X	26.5" w/o Hose Clamp
MD	Right	329075-1X	26.5" w/ Hose Clamp
HD	Left	329130-4X	22.0" w/o Hose Clamp
HD	Top Right	329075-2X	42.0" w/ Hose Clamp
MD	Left	329130-5X	26.5" w/o Hose Clamp
MD	Right	329075-1X	26.5" w/ Hose Clamp
HD	Left	329130-5X	26.5" w/o Hose Clamp
HD	Top Right	329075-4X	47.0" w/ Hose Clamp

## Hose Chart Caterpillar

Trans.	P.T.O.	P.T.O. Location	High Oil Pressure Location	P.T.O. Valve Location	P.T.O. Fitting	Trans. Fitting	Trans.-P.T.O. Valve Hose #
CX31	859	Driver (LHS)	LHS	Attached	379486	379812	329075-1X
		Driver (LHS)	Rear				329075-5X
		Pass. (RHS)	LHS				329075-5X
		Pass. (RHS)	Rear			379486	329075-5X
		Driver (LHS)	LHS	Remote	379486	379812	329130-6X
		Driver (LHS)	Rear				329130-6X
		Pass. (RHS)	LHS				329130-6X
		Pass. (RHS)	Rear				329130-6X

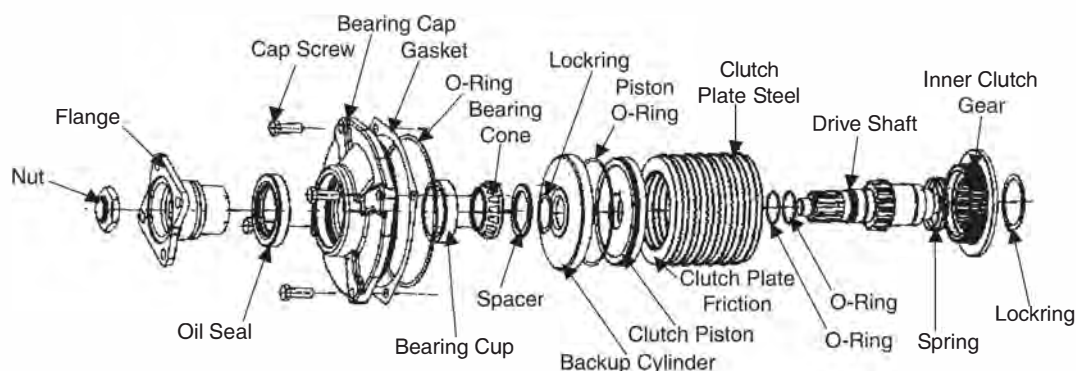
LHS = Left Side of Transmission, 8 o'clock position

RHS = Right Side of Transmission, 1 o'clock position

## NOTES:

1. P.T.O. Fitting 379486 and Transmission Fitting 379812 included with the P.T.O. Unit. If Using 379486 in Transmission it Must be Purchased Separately
2. Hoses to be Purchased Separately

Flange Suffix	Flange Type	Shaft Type	Conversion Kit
AB	DIN 120	1.5" - 10 Teeth	None
AC	DIN 100	1.5" - 10 Teeth	None
AZ	S.A.E. "B" 2 or 4 Bolt	S.A.E. "C", 1.25" - 14 Teeth	329160-44X
XS	S.A.E. "C" 2 or 4 Bolt	S.A.E. "C", 1.25" - 14 Teeth	329160-29X
XY	DIN 5462	88 x 32 x 6 - 8 Teeth	329160-40X
BA (XV)	1410 w/ Drage Brake Flange	1.5" - 10 Teeth	—
BB (AB)	DIN 120 w/ Drage Brake Flange	1.5" - 10 Teeth	329160-60X
BC (AC)	DIN 100 w/ Drage Brake Flange	1.5" - 10 Teeth	329160-60X



### Flange Bill of Materials

Item	Part Number	Description	Quantity
AB	4-P-162	Spacer .....	1
	21-P-517	Bearing Cap .....	1
	28-P-211	Oil Seal .....	1
	329647-1X	Drive Shaft Assembly .....	1
	3-P-1024	Output Shaft .....	1
	28-P-194	O-Ring .....	2
	28-P-260	O-Ring .....	1
	37-P-24	Spring .....	1
	379531-1	Piston .....	1
	379523-1	Back-up Cylinder .....	1
	2-P-844	Inner Clutch Gear .....	1
	379776	Clutch Plate (Steel) .....	7
	379489	Clutch Plate (Friction) .....	8
	379465	Lockring .....	1
	380080	Lockring .....	1
	378431-11	Hex Cap Screw (.375"-16 x 1.125") .....	4
	378382	Hex Locknut .....	1
	379558	Companion Flange .....	1
	560982	Bearing Cup .....	1
	560986	Bearing Cone .....	1
AC	4-P-162	Spacer .....	1
	21-P-517	Bearing Cap .....	1
	28-P-211	Oil Seal .....	1
	329647-1X	Drive Shaft Assembly .....	1
	3-P-1024	Output Shaft .....	1
	28-P-194	O-Ring .....	2
	28-P-260	O-Ring .....	1
	37-P-24	Spring .....	1
	379531-1	Piston .....	1
	379523-1	Back-up Cylinder .....	1
	2-P-844	Inner Clutch Gear .....	1
	379776	Clutch Plate (Steel) .....	7
	379489	Clutch Plate (Friction) .....	8
	379465	Lockring .....	1
	380080	Lockring .....	1
	378431-11	Hex Cap Screw (.375"-16 x 1.125") .....	4

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Item	Part Number	Description	Quantity
AZ	379742	Companion Flange .....	1
	560982	Bearing Cup .....	1
	560986	Bearing Cone .....	1
	4-P-161	Spacer .....	1
	21-P-539	Bearing Cap .....	1
	28-P-219	Oil Seal .....	1
	329647-2X	Drive Shaft Assembly .....	1
	3-P-1025	Output Shaft .....	1
	28-P-194	O-Ring .....	2
	28-P-260	O-Ring .....	1
	37-P-24	Spring .....	1
	379531-1	Piston .....	1
	379523-1	Back-up Cyclinder .....	1
	2-P-844	Inner Clutch Gear .....	1
	379776	Clutch Plate (Steel) .....	7
	379489	Clutch Plate (Friction) .....	8
	379465	Lockring .....	1
	380080	Lockring .....	1
	378431-11	Hex Cap Screw (.375"-16 x 1.125") .....	4
	560977	Bearing Cup .....	1
	560976	Bearing Cone .....	1
XS	4-P-161	Spacer .....	1
	21-P-515	Bearing Cap .....	1 or
	21-P-544	Bearing Cap (Wet Spline) .....	1
	28-P-219	Oil Seal .....	1
	329647-2X	Drive Shaft Assembly .....	1
	3-P-1025	Output Shaft .....	1
	28-P-194	O-Ring .....	2
	28-P-260	O-Ring .....	1
	37-P-24	Spring .....	1
	379531-1	Piston .....	1
	379523-1	Back-up Cyclinder .....	1
	2-P-844	Inner Clutch Gear .....	1
	379776	Clutch Plate (Steel) .....	7
	379489	Clutch Plate (Friction) .....	8
	379465	Lockring .....	1
	380080	Lockring .....	1
	379231	Pipe Plug (Wet Spline) .....	1
	378431-11	Hex Cap Screw (.375"-16 x 1.125") .....	4
	560977	Bearing Cup .....	1
	560976	Bearing Cone .....	1
XY	4-P-182	Spacer .....	1
	21-P-615	Bearing Cap .....	1
	28-P-275	Oil Seal .....	1
	329647-3X	Drive Shaft Assembly .....	1
	3-P-1026	Output Shaft .....	1
	28-P-194	O-Ring .....	2
	28-P-260	O-Ring .....	1
	37-P-24	Spring .....	1
	379531-1	Piston .....	1
	379523-1	Back-up Cyclinder .....	1
	2-P-844	Inner Clutch Gear .....	1
	379776	Clutch Plate (Steel) .....	7
	379489	Clutch Plate (Friction) .....	8
	379465	Lockring .....	1
	380080	Lockring .....	1
	378431-11	Hex Cap Screw (.375"-16 x 1.125") .....	4
	550258	Bearing Cup .....	1
	550257	Bearing Cone .....	1

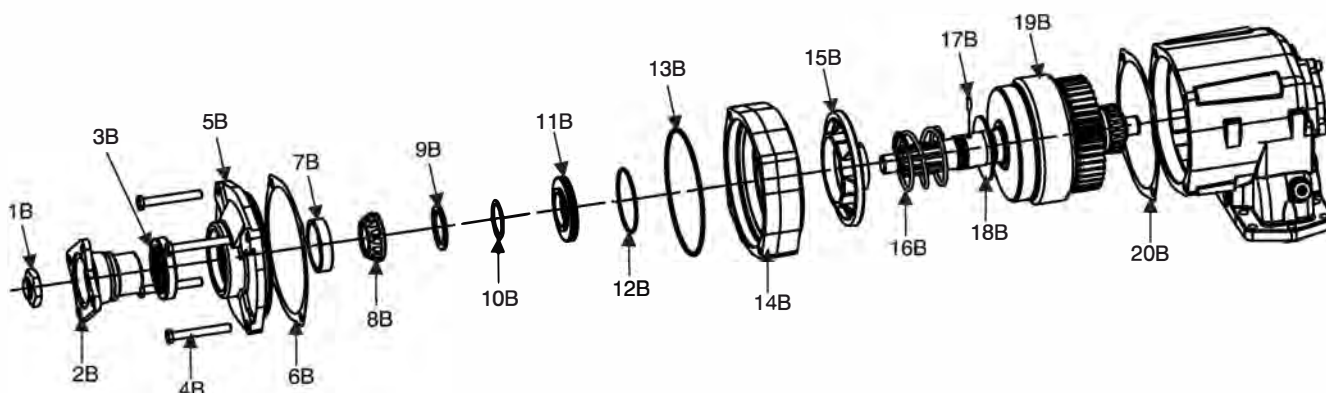
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## Flange Bill of Materials

## 859 Series

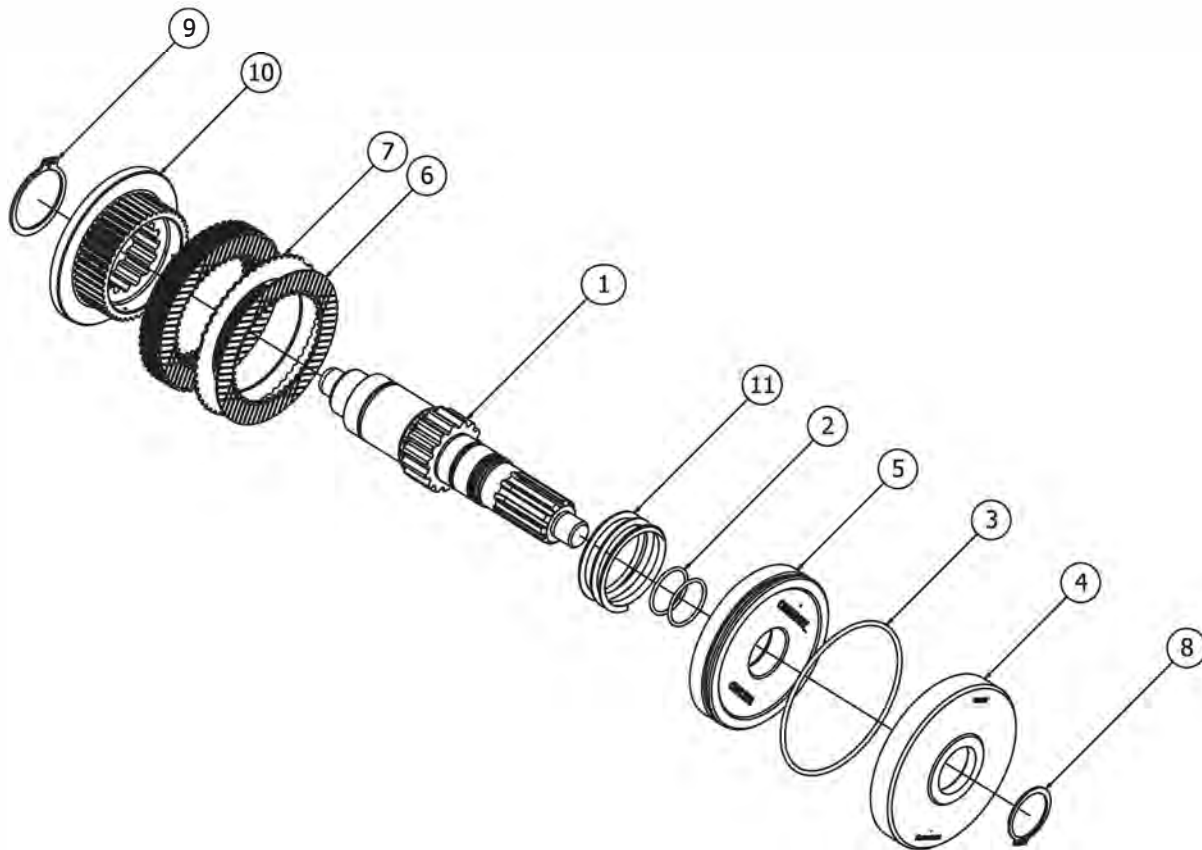
Item	Part Number	Description	Quantity
	379560	Spline Coupling .....	1
	378898	Flat Head Socket Screw (.438"-14 x 1.000") .....	1
	379231	Pipe Plug (.125"-27) .....	1

## BA, BB &amp; BC Outputs

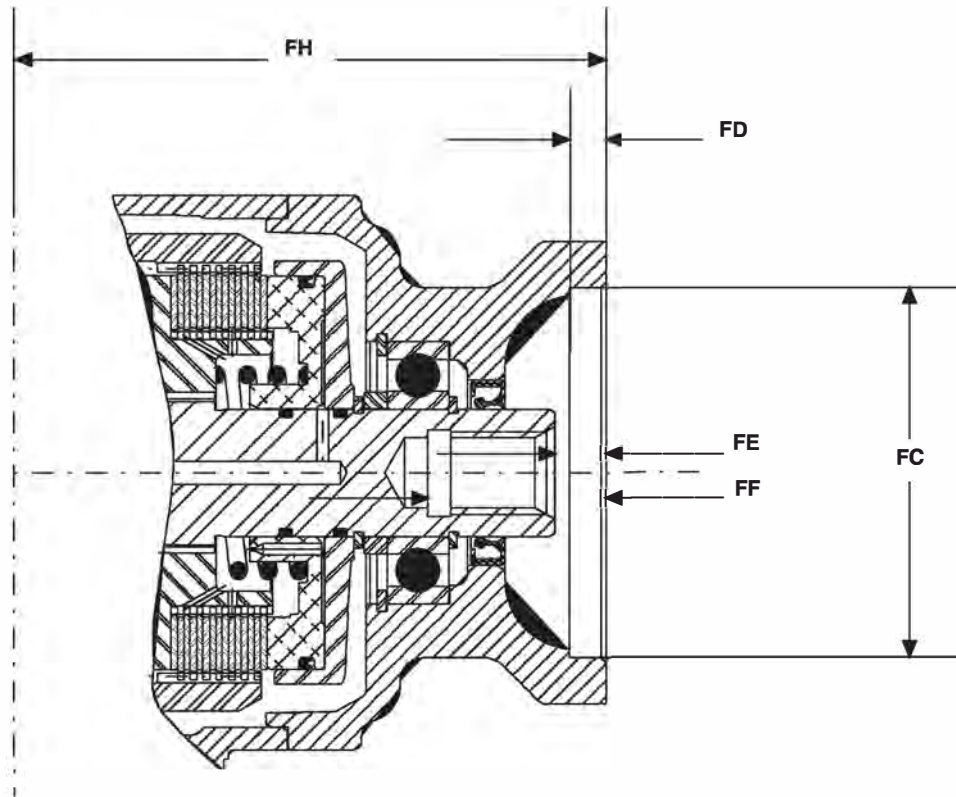


Item	Part Number	Description	Quantity
1B	378382	Hex Lock Nut .....	1
2B	3-1-3431	Companion Flange (1410 Series) .....	1 or
	379742	Companion Flange (DIN100) .....	1 or
	379558	Companion Flange (DIN120) .....	1
3B	28-P-211	Oil Seal .....	1
4B	378431-26	Hex Capscrew 3.75"-16 x 1.125" .....	4
5B	21-P-517	Bearing Cap .....	1
6B	55-P-20-1	Bearing Cap SHIM (.003 Green) .....	A.R.
	55-P-20-2	Bearing Cap SHIM (.010 Brown) .....	
	55-P-20-3	Bearing Cap SHIM (.020 Yellow) .....	
7B	560982	Bearing Cap .....	1
8B	560986	Bearing Cone .....	1
9B	379746	Lock Ring .....	1
10B	31-P-70	Spacer .....	1
11B	66-P-50	Piston .....	1
12B	28-P-252	O-Ring .....	1
13B	28-P-196	O-Ring .....	1
14B	23-P-71	Bearing Cap Spacer .....	1
15B	380007	Brake Disc .....	1
16B	37-P-60	Spring .....	1
17B	379977	Pin .....	1
18B	31-P-116	Thrust Washer .....	1
19B	See page 9	Drive Shaft & Clutch Ass'y .....	1
20B	22-P-98	Gasket .....	1

A.R. — As Required

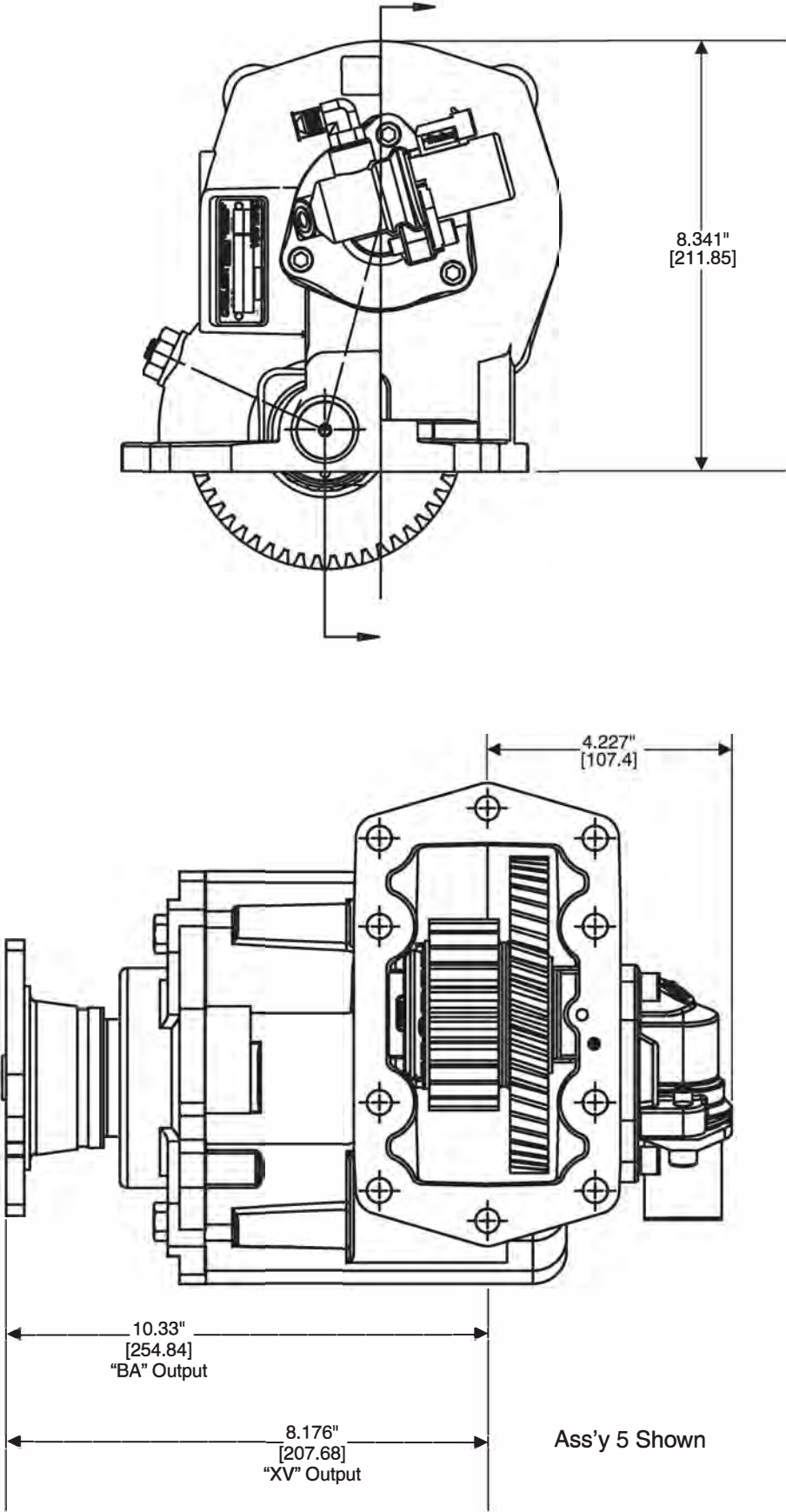
**329647 - \*X**

Item	Part Number	Description	Quantity
1	<b>3-P-1024</b>	Shaft, Output 10T Straight ("AB", "AC", "XV") (329647-1X) .....	1 or
	<b>3-P-1025</b>	Shaft, Output 10T Straight 1-1/4 T. ("AZ", "XS") (329647-2X) .....	1 or
	<b>3-P-1026</b>	Shaft, Output 10T Straight 10T. Straight ("XY") (329647-3X) .....	1 or
	<b>3-P-1027</b>	Shaft, Output 10T Straight 10T. Straight ("BA", "BB", "BC") (329647-4X) .....	1
2	<b>28-P-194</b>	O-Ring (1.424" x .103") ("BA", "BB", "BC") .....	4
		(All Others) .....	2
3	<b>28-P-260</b>	O-Ring (4.984" x .139") .....	1
4	<b>379523-1</b>	Cylinder Clutch Back-up .....	1
5	<b>379531-1</b>	Piston Clutch .....	1
6	<b>379489</b>	Disc Friction .....	8
7	<b>379776</b>	Plate Clutch .....	7
8	<b>379465</b>	Lockring .....	1
9	<b>380080</b>	Lockring .....	1
10	<b>2-P-844</b>	Gear, Clutch Inner .....	1
11	<b>37-P-24</b>	Spring (2.531" x 2.13") .....	1



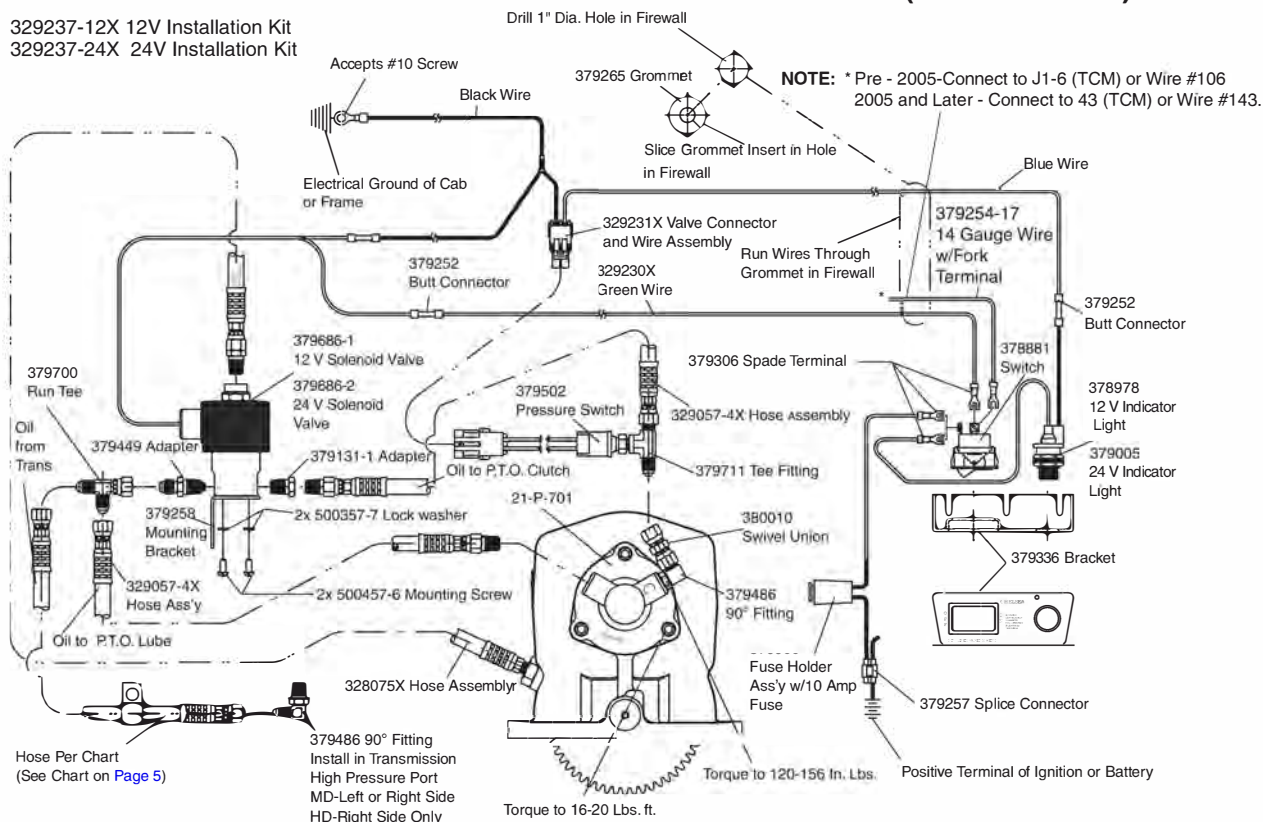
Pump Flange Suffix	Bolt Circle Diameter	BOLT HOLES		FC	FD	FE	FF	FH	OUTPUT SHAFT
		Tapered Hole	No. Equally Spaced	Female Pilot Diameter	Pilot Depth	Face To End Of Shaft	Face Thru Hole	Face To Center Of P.T.O.	Hole Diameter
AZ	5.750"-2 5.000"-8	.500"-13		$\frac{4.004"}{4.002"}$	.436"	.348"	2.392"	7.299"	1.25"-14 Spline
XS	7.125" 6.375"	.625"-11 .500"-13	2 4	$\frac{5.002"}{5.004"}$	.531"	.699"	2.574"	7.607"	1.25"-14 Spline
XY	4.455" (113-157)	M12-1.75"	4	$\frac{3.151"}{3.153"}$ (80.035) (80.086)	.394" (10.007)	.516" (13.106)	2.500" (63.500)	9.153" (232.486)	8- Spline DIN 5462

Numbers in parenthesis are mm.



## Shift Installation Kit 859 Series with Remote Mount Solenoid (SK-432 Rev C) Allison

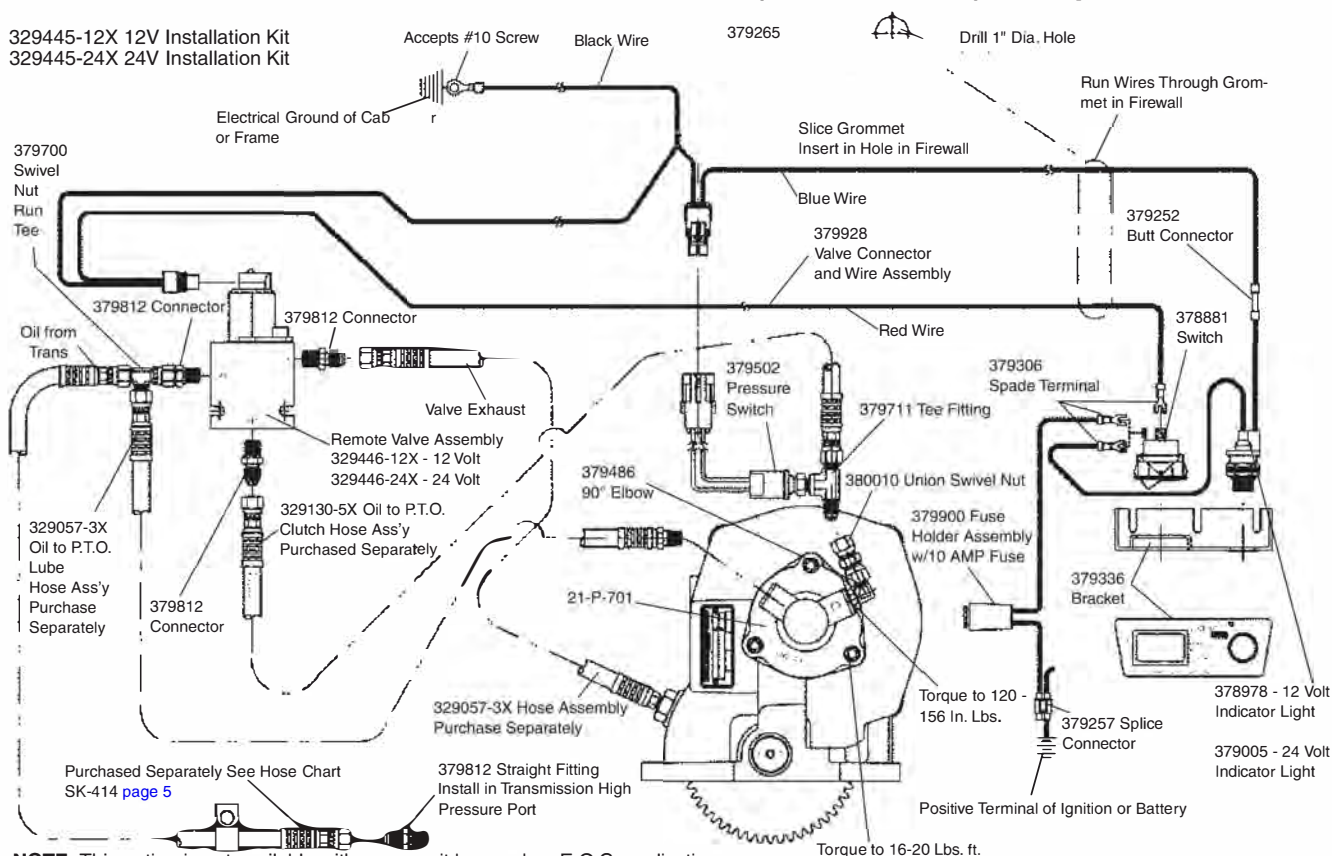
329237-12X 12V Installation Kit  
329237-24X 24V Installation Kit



NOTE: This option is not available with nor can it be used on E.O.C. applications.

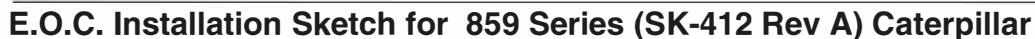
## Remote Mount Installation Sketch for 859 Series (SK-413 Rev C) Caterpillar

329445-12X 12V Installation Kit  
329445-24X 24V Installation Kit



NOTE: This option is not available with nor can it be used on E.O.C. applications.

329443-12X - For 12v Installation Kit  
329443-24X - For 24v Installation Kit



of Cab or Frame

379257 Splice Connector

Positive Terminal of Ignition or Battery

Run Wire Through Grommet in Firewall

379928 Valve Connector and Wire Assembly

Black Wire

Electrical Ground of Cab or Frame

Accepts #10 Screw

Blue Wire

Red Wire

Green Wire

Fuse Holder w/ 9 AMP Fuse (Part of EOC)

Chelsea Speed Limiter 328924-12X 12 volt 328924-24X 24 volt

Speed Sensor Extension Cable 328923-10X (10 ft. Supplied w/ E.O.C.) 328923-5X (5 ft. Optional Cable)

Run Cable Through Grommet in Firewall

Hose Purchased Separately -414 page 5

379502 Pressure Switch Torque Between 120-144 Lb.in

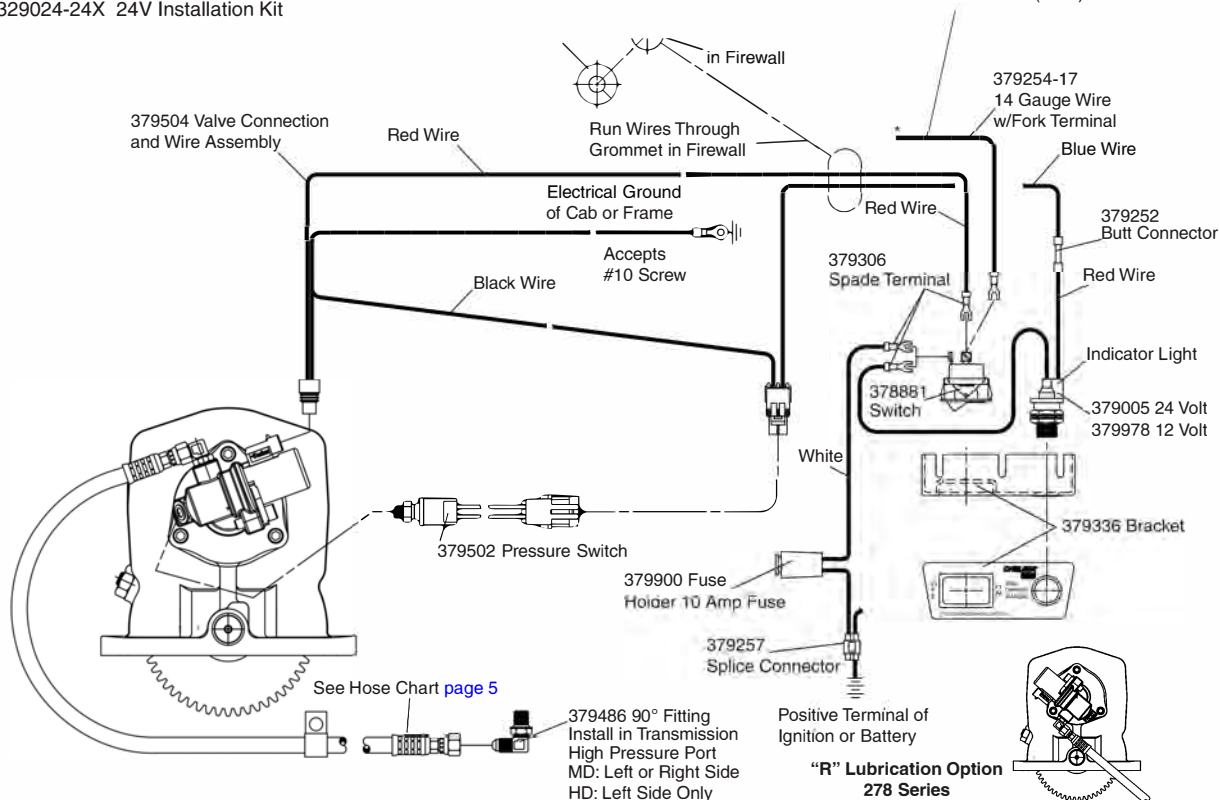
379812 Straight Fitting Install In TIP

Torque to 16-20 Lbs. ft.

**Shift Installation Kit 859 Series without Electronic Overspeed Control (SK-347 Rev E)**

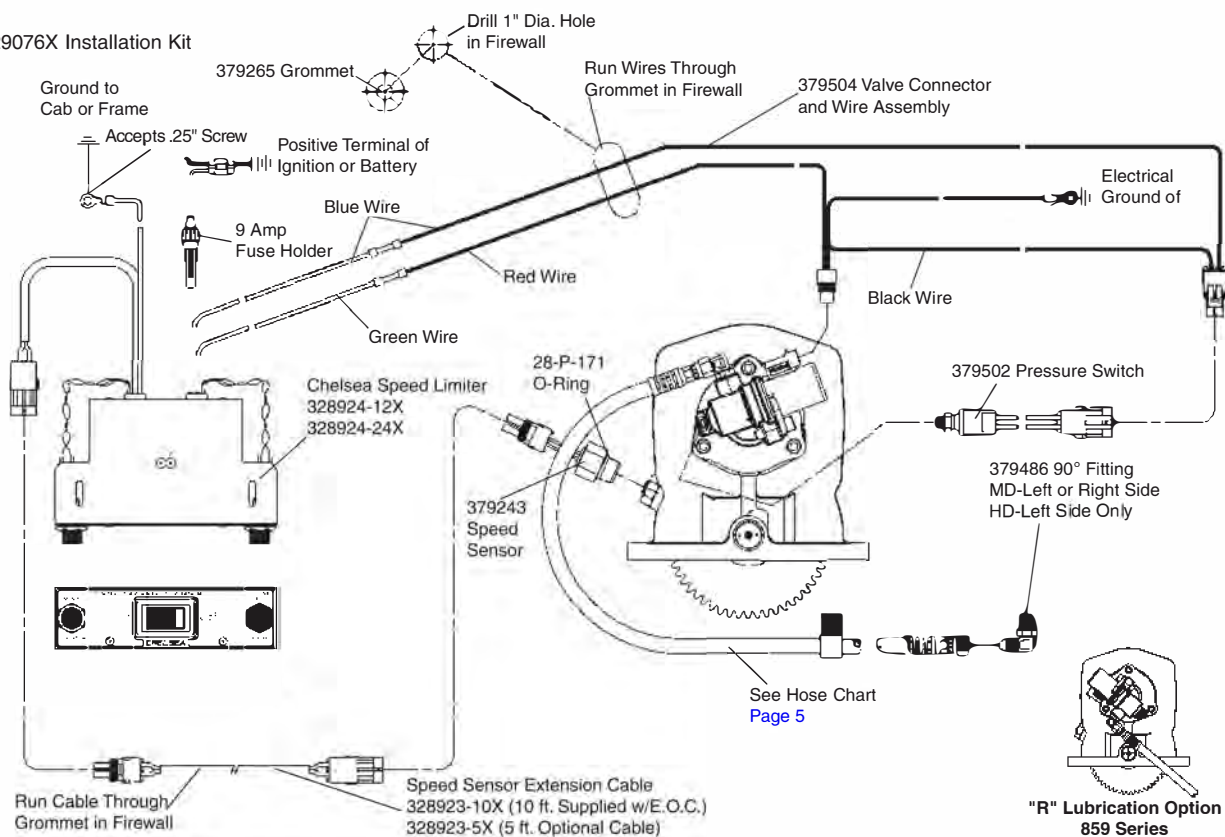
329024-12X 12V Installation Kit  
 329024-24X 24V Installation Kit

**NOTE:** \* Pre - 2005-Connect to J1-6 (TCM) or Wire #106  
 2005 and Later - Connect to 43 (TCM) or Wire #143.



**Shift Installation Kit 859 Series with Electronic Overspeed Control (SK-348 Rev C)**

329076X Installation Kit



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

## Offer of Sale

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

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

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

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

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

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

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

**7. Special Tooling:** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter,

discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

**8. Buyer's Property:** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

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

**10. Indemnity For Infringement of Intellectual Property Rights:** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. Patents, U.S. Trademarks, copyrights, trade dress and trade secrets (hereinafter 'Intellectual Property Rights'). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

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

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

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

6/08-P



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TG 03/08