



## Chelsea PTO 680 Parts Manual

Pro Gear and Transmission presents Chelsea 680 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.

Pro Gear stocks every part for your Parker Chelsea PTO including: PTO housings, mounts, driveshafts, gears, bearings, gaskets, cable shift cover assembly, post and plate assembly, brackets, stud kits, seal kits, lever control assembly, air shift cover assembly, direct mount pump conversion kits, stud kits including English and metric references, CAT D&H parts and much more.

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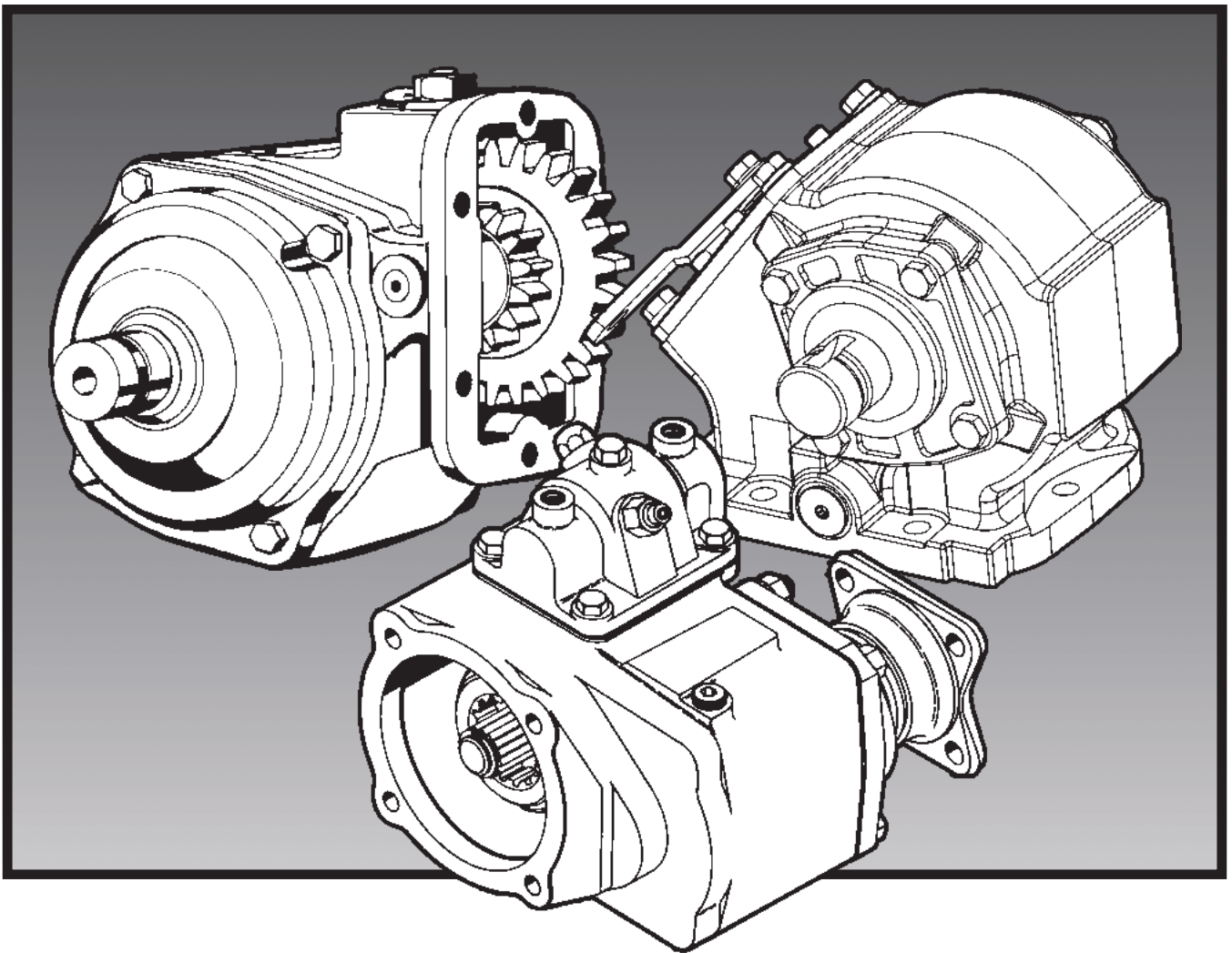
**CHELSEA<sup>®</sup>**

Bulletin HY25-2660-M1/US

## Parts List 660/680 Series

Effective: May 15, 2004  
Supersedes: HY25-2660-M1/US Dated Jan. 2002

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 **WARNING**

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

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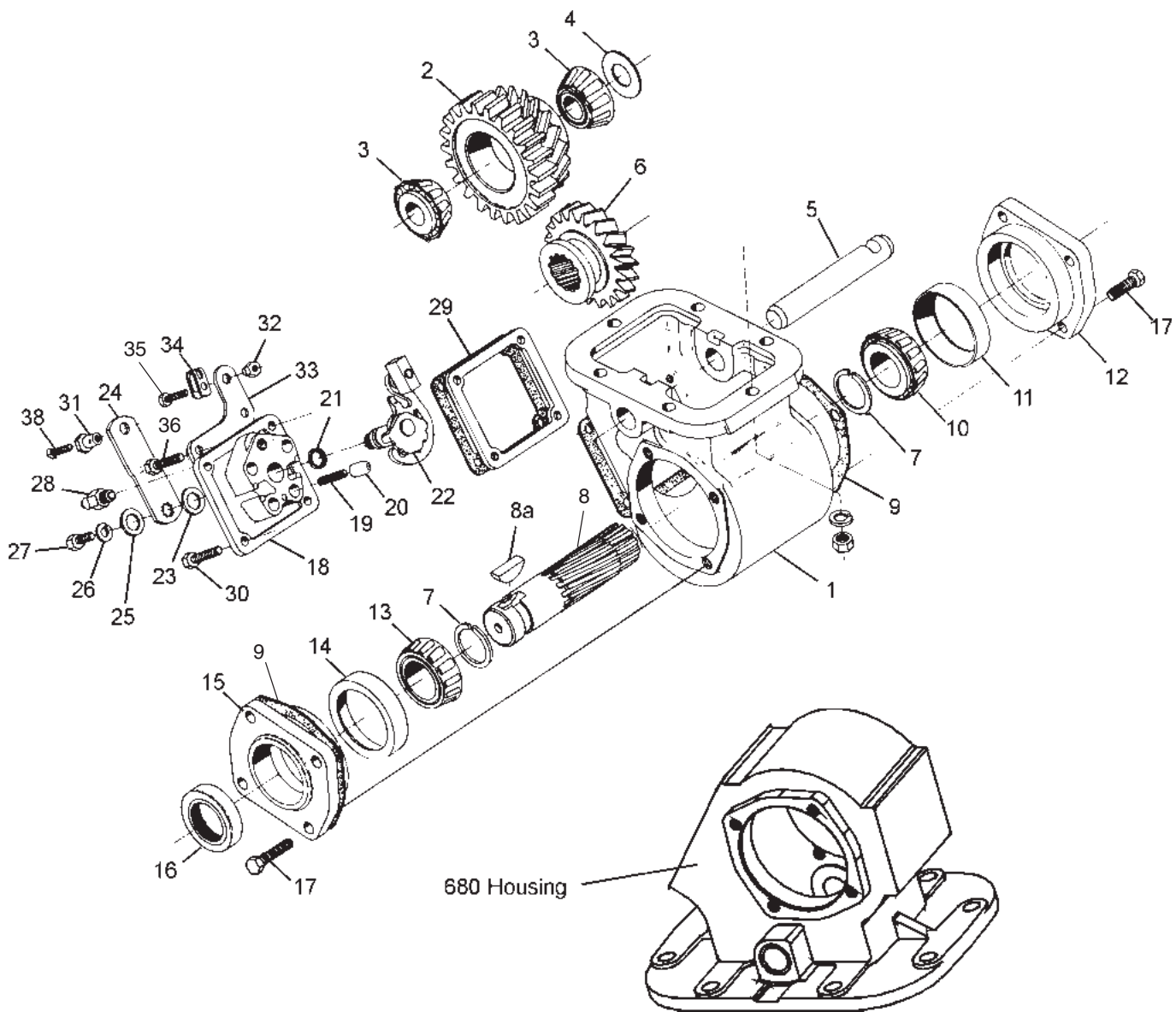
**Offer of Sale**

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".

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## Bill of Materials

## 660/680 Series

| Item | Part Number                        | Description                                                                    | Quantity |      |
|------|------------------------------------|--------------------------------------------------------------------------------|----------|------|
|      |                                    |                                                                                | 660      | 680  |
| 1    | ► <a href="#">1-P-580</a>          | Housing, Standard Mount ("X" & "G" Mounting)                                   | 1 or     | -    |
|      | ► <a href="#">1-P-581</a>          | Housing, Deep Mount ("Z" Mounting)                                             | 1        | -    |
|      | ► <a href="#">1-P580XD</a>         | Housing, Standard Mount w/ Dowel Pins                                          | 1        | -    |
|      | ► <a href="#">1-P-573</a>          | Housing, Standard Mount ("X" & "G" Mounting)                                   | -        | 1 or |
|      | ► <a href="#">1-P-582</a>          | Housing, Deep Mount ("Z" Mounting)                                             | -        | 1    |
| 2    | <a href="#">See Chart Page 9</a>   | Input Gear                                                                     | 1        | 1    |
| 3    | ► <a href="#">550439</a>           | Bearing Cone, Input                                                            | 2        | 2    |
| 4    | <a href="#">14-P-74-2</a>          | Spacer (.115-.117)                                                             | A.R.     | A.R. |
|      | <a href="#">14-P-74-3</a>          | Spacer (.118-.120)                                                             | A.R.     | A.R. |
|      | <a href="#">14-P-74-4</a>          | Spacer (.121-.123)                                                             | A.R.     | A.R. |
|      | <a href="#">14-P-74-5</a>          | Spacer (.124-.126)                                                             | A.R.     | A.R. |
| 5    | ► <a href="#">9-P-71</a>           | Idler Shaft, Pressure Lube                                                     | 1 or     | 1 or |
|      | ► <a href="#">9-P-60</a>           | Idler Shaft                                                                    | 1        | 1    |
| 6    | <a href="#">See Chart Page 9</a>   | Output Gear                                                                    | 1        | 1    |
| 7    | ► <a href="#">378391</a>           | Lockring                                                                       | 2        | 2    |
| 8    | ► <a href="#">3-P-202</a>          | Drive Shaft, Output (1-1/4" Round)                                             | 1        | 1    |
| 8a   | <a href="#">500007-29</a>          | Woodruff Key ("XD" Output)                                                     | 1        | 1    |
| 9    | <a href="#">22-P-24-1</a>          | Bearing Cap Gasket (.010)                                                      | A.R.     | A.R. |
|      | <a href="#">22-P-24-2</a>          | Bearing Cap Gasket (.020)                                                      | A.R.     | A.R. |
|      | <a href="#">22-P-24-3</a>          | Bearing Cap Gasket (.015)                                                      | A.R.     | A.R. |
| 10   | ► <a href="#">550532</a>           | Bearing Cone                                                                   | 1        | 1    |
| 11   | ► <a href="#">550221</a>           | Bearing Race                                                                   | 1        | 1    |
|      | <a href="#">See Chrt Pgs 11-14</a> | Bearing Cap (Closed End)                                                       |          |      |
|      | ► <a href="#">329274X</a>          | Bearing Cap Ass'y, Closed End<br>(See Chart Pages 11-14 for "L" & "G" Options) | 1        | 1    |
| 12   | ► <a href="#">21-P-131</a>         | Bearing Cap Ass'y, Closed End                                                  | 1        | 1    |
| 13   | ► <a href="#">550397</a>           | Bearing Cone (Output)                                                          | 1        | 1    |
| 14   | ► <a href="#">550221</a>           | Bearing Race (Output)                                                          | 1        | 1    |
|      | <a href="#">See Chrt Pgs 11-14</a> | Bearing Cap (Open End)                                                         |          |      |
|      | ► <a href="#">329273X</a>          | Bearing Cap Ass'y, Open End (See Chart Page 11-14 for Other Options)           | 1        | 1    |
| 15   | ► <a href="#">21-P-130</a>         | Bearing Cap, Open End ("XD" Output)                                            | 1        | 1    |
| 16   | ► <a href="#">28-P-216</a>         | Oil Seal, Standard Output Shaft                                                | 1        | 1    |
| 17   | ► <a href="#">378430-10</a>        | Hex Capscrew .312"-18 x 1.000"                                                 | 4        | 4    |
|      |                                    | <b>CABLE CONTROL COVER ASSEMBLIES</b>                                          |          |      |
|      |                                    | For Ratios Q & W                                                               |          |      |
|      | ► <a href="#">329119-1X</a>        | Assemblies 3 & 6                                                               | 1        | 1    |
|      | ► <a href="#">329119-2X</a>        | Assemblies 4 & 5                                                               | 1        | 1    |
|      |                                    | <b>FOR RATIOS F &amp; S &amp; U</b>                                            |          |      |
|      | ► <a href="#">329121-1X</a>        | Assemblies 3 & 6                                                               | 1        | 1    |
|      | ► <a href="#">329121-2X</a>        | Assemblies 4 & 5                                                               | 1        | 1    |
|      |                                    | <b>All the shift cover assemblies shown include items 18 thru 21</b>           |          |      |
| 18   | ► <a href="#">34-P-74</a>          | Shifter Cover                                                                  | 1        | 1    |
| 19   | ► <a href="#">37-P-19</a>          | Spring                                                                         | 1        | 1    |
| 20   | ► <a href="#">63-P-16</a>          | Poppet Pin                                                                     | 1        | 1    |
| 21   | ► <a href="#">28-P-191</a>         | O-Ring                                                                         | 1        | 1    |
|      |                                    | <b>POST &amp; PLATE ASS'Y FOR RATIOS Q &amp; W</b>                             |          |      |
| 22   | ► <a href="#">329118-1X</a>        | For Assemblies 3 & 6                                                           | 1        | 1    |
|      | ► <a href="#">329118-2X</a>        | For Assemblies 4 & 5                                                           | 1        | 1    |
|      |                                    | <b>POST &amp; PLATE ASS'Y FOR RATIOS F &amp; S &amp; U</b>                     |          |      |
| 22   | ► <a href="#">329120-1X</a>        | For Assemblies 3 & 6                                                           | 1        | 1    |
|      | ► <a href="#">329120-2X</a>        | For Assemblies 4 & 5                                                           | 1        | 1    |
| 23   | ► <a href="#">378004</a>           | Flat Washer                                                                    | 1        | 1    |
| 24   | ► <a href="#">51-P-22</a>          | Shifter Lever                                                                  | 1        | 1    |
| 25   | ► <a href="#">500365-22</a>        | Flat Washer                                                                    | 1        | 1    |
| 26   | ► <a href="#">500356-10</a>        | Lock Washer                                                                    | 1        | 1    |
| 27   | ► <a href="#">500409-6</a>         | Hex Capscrew                                                                   | 1        | 1    |
| 28   | <a href="#">379639</a>             | Indicator Switch, Pin Style                                                    | 1        | 1    |
| 29   | ► <a href="#">35-P-8</a>           | Gasket, Shift Cover                                                            | 1        | 1    |
| 30   | ► <a href="#">378430-9</a>         | Hex Capscrew .312"-18 x .875"                                                  | 4        | 4    |

N.S. — Not Shown

A.R. — As Required

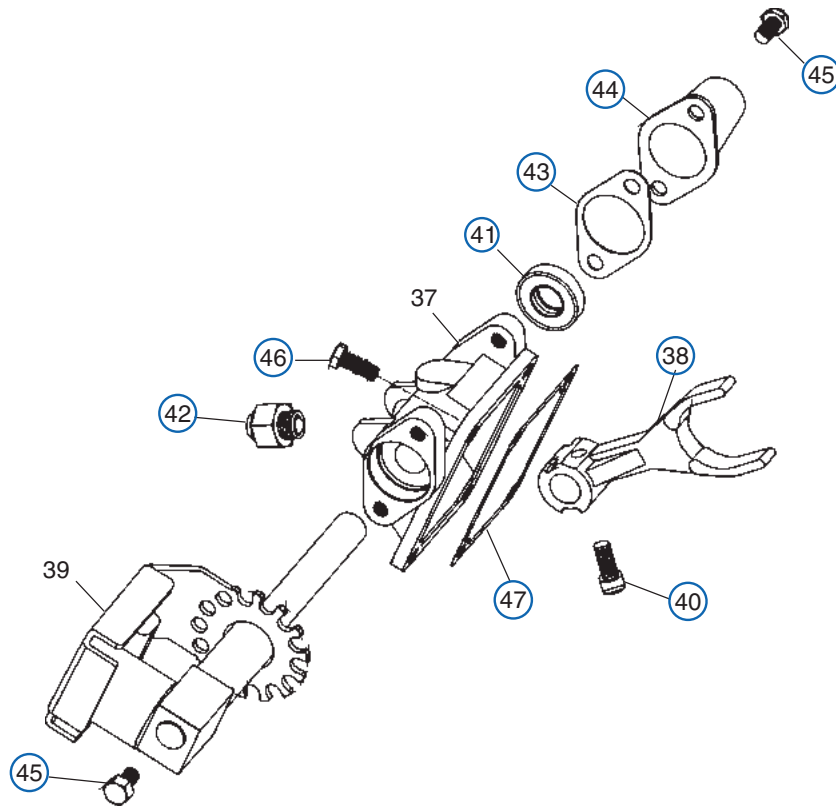


## Bill of Materials

## 660/680 Series

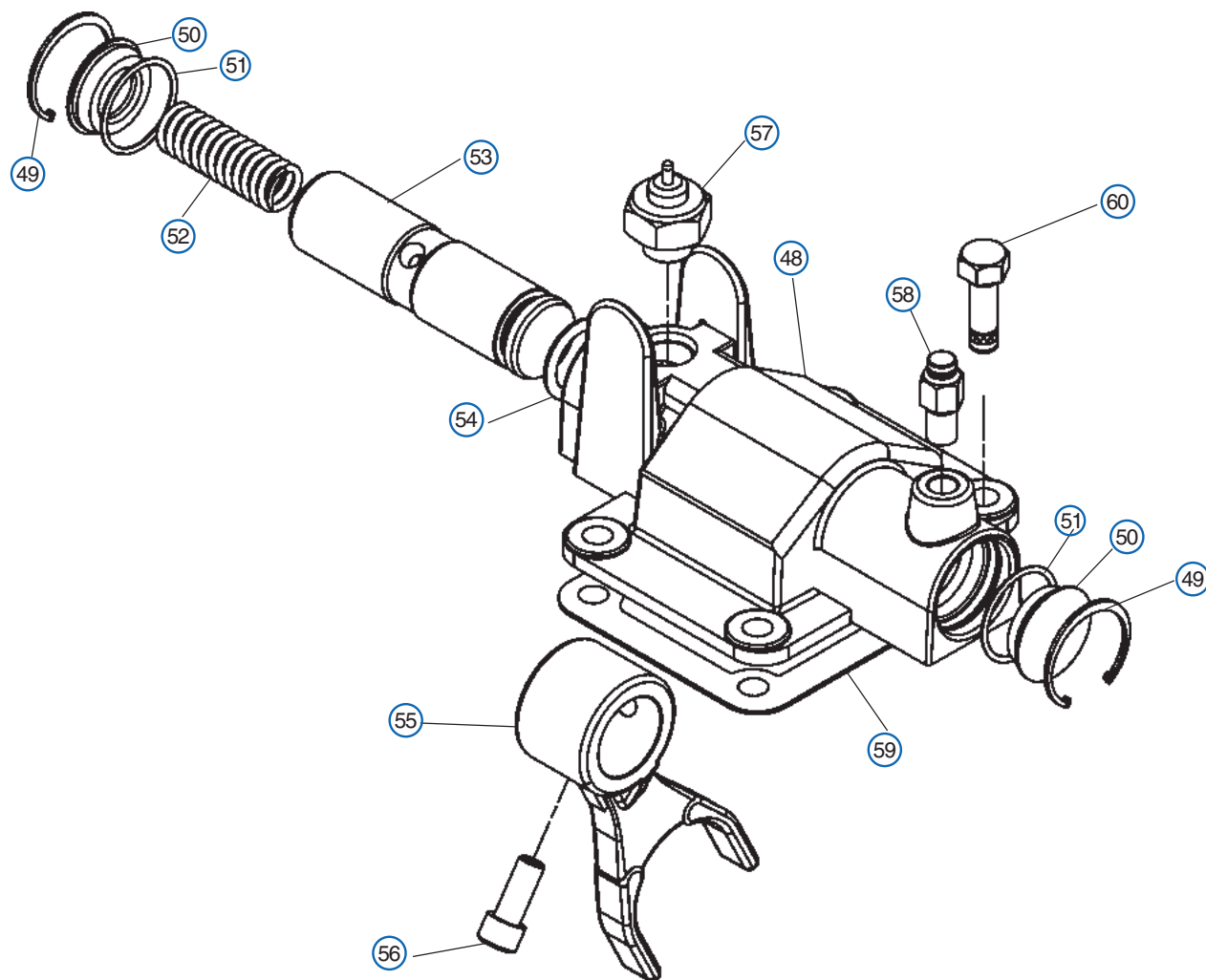
| Item | Part Number                   | Description                                                                                                                | Quantity |     |
|------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------|-----|
|      |                               |                                                                                                                            | 660      | 680 |
|      |                               | <b>Parts Shipped Loose</b>                                                                                                 |          |     |
|      | ▶ <a href="#">328170-200X</a> | Stud Kit, Standard/Deep Mount                                                                                              | -        | 1   |
|      | ▶ <a href="#">328170-201X</a> | Stud Kit, Metric Standard Mount                                                                                            | -        | 1   |
|      | ▶ <a href="#">328170-76X</a>  | Stud Kit, Standard Mount                                                                                                   | 1        | -   |
|      | ▶ <a href="#">328170-77X</a>  | Stud Kit, Deep Mount                                                                                                       | 1        | -   |
|      | ▶ <a href="#">7170-78X</a>    | Stud Kit, Metric Mount                                                                                                     | 1        | -   |
|      | ▶ <a href="#">7170-72X</a>    | Stud Kit, Metric w/Dowel Pin                                                                                               | 1        | -   |
|      | ▶ <a href="#">328346-10X</a>  | Cable Control Assembly<br>(Includes 378441-10 Cable and 378502 Knob)                                                       | 1        | 1   |
|      | ▶ <a href="#">328380X</a>     | Wire Control Parts Bag (contains items 31 - 36)                                                                            | 1        | 1   |
| 31   | ▶ <a href="#">378019</a>      | Pivot Pin                                                                                                                  | 1        | 1   |
| 32   | ▶ <a href="#">378326</a>      | Hex Nut (.250" - 20)                                                                                                       | 1        | 1   |
| 33   | ▶ <a href="#">50-P-17</a>     | Mounting Bracket                                                                                                           | 1        | 1   |
| 34   | ▶ <a href="#">50-P-19</a>     | Swivel Bracket                                                                                                             | 1        | 1   |
| 35   | ▶ <a href="#">500396-8</a>    | Hexhead Screw (.250" -20 x .750")                                                                                          | 1        | 1   |
| 36   | ▶ <a href="#">500568-4</a>    | Set Screw (.250" - 20 x .500")                                                                                             | 1        | 1   |
|      | ▶ <a href="#">329245X</a>     | Shifter Bracket Kit (Special Shift Control And Kit)                                                                        | 1        | 1   |
|      | ▶ <a href="#">328388-37X</a>  | Air Shift Installation Kit ("A")                                                                                           | 1        | 1   |
|      | ▶ <a href="#">328388-47X</a>  | Electric/Air Installation Kit 12V ("P")                                                                                    | 1        | 1   |
|      | ▶ <a href="#">328388-48X</a>  | Electric/Air Installation Kit 24V ("Q")                                                                                    | 1        | 1   |
|      | ▶ <a href="#">328388-65X</a>  | Air Shift With Control Valve ("S")                                                                                         | 1        | 1   |
|      | ▶ <a href="#">328388-72X</a>  | Air Shift With Control Valve ("T")                                                                                         | 1        | 1   |
|      | ▶ <a href="#">329166-12X</a>  | Electric Shift Installation Kit 12V                                                                                        | 1        | 1   |
|      | ▶ <a href="#">328751-1X</a>   | Indicator Light Installation Kit                                                                                           | 1        | 1   |
|      | ▶ <a href="#">68-P-18</a>     | Name Plate                                                                                                                 | 1        | 1   |
|      | ▶ <a href="#">378978</a>      | 12V Indicator Light                                                                                                        | 1        | 1   |
|      | ▶ <a href="#">379900</a>      | 10-AMP Fuse Holder                                                                                                         | 1        | 1   |
|      | ▶ <a href="#">379252</a>      | Butt Connector                                                                                                             | 2        | 2   |
|      | ▶ <a href="#">379640</a>      | Booted Connector                                                                                                           | 1        | 1   |
|      | ▶ <a href="#">328948-6X</a>   | Gaskets & Installation Instructions                                                                                        | 1        | -   |
|      | ▶ <a href="#">328948-8X</a>   | Gaskets & Installation Instructions                                                                                        | -        | 1   |
|      | ▶ <a href="#">329202X</a>     | <b>Service And Repair Kits</b><br>Indicator Switch Connector Service Kit<br>(Includes 379639, 379640 & 379252)             | 1        | 1   |
|      | ▶ <a href="#">329218X</a>     | Indicator Switch Service Kit (Includes 379640 & 379252)                                                                    | 1        | 1   |
|      | ▶ <a href="#">328356-15X</a>  | Shifter Cover Seal Kit (Cable Control)                                                                                     | 1        | 1   |
|      | ▶ <a href="#">328356-17X</a>  | Shifter Cover Seal Kit (Air Shift)                                                                                         | 1        | 1   |
|      | ▶ <a href="#">328356-26X</a>  | Shifter Cover Seal Kit (Lever Control)                                                                                     | 1        | 1   |
|      | ▶ <a href="#">329143X</a>     | Shifter Shaft Cover Kit<br>(Includes Items 43, 44, 45 on pg. 4)                                                            | 1        | 1   |
|      | ▶ <a href="#">329303-1X</a>   | Seal Kit (Output Options XD, RA, XE, XG, XJ, XK, XL, RB, XM, XN<br>XO, XP, XQ, XR, AA, AK, XX, LA, LB, LC, LD, LE and LF)  | 1        | -   |
|      | ▶ <a href="#">329303-2X</a>   | Seal Kit (Output Options AF and FF)                                                                                        | 1        | -   |
|      | ▶ <a href="#">329303-3X</a>   | Seal Kit (Output Options XY and AZ)                                                                                        | 1        | -   |
|      | ▶ <a href="#">329303-4X</a>   | Seal Kit (Output Options GA, GB and GR)                                                                                    | 1        | -   |
|      | ▶ <a href="#">329303-5X</a>   | Seal Kit (Output Options GF)                                                                                               | 1        | -   |
|      | ▶ <a href="#">329303-6X</a>   | Seal Kit (Output Options XD, RA, XE, XG, XJ, XK, XL, RB, XM, XN<br>XO, XP, XQ, XR, AA, AK, XX, LA, LB, LC, LD, LE and LF)  | -        | 1   |
|      | ▶ <a href="#">329303-7X</a>   | Seal Kit (Output Options AF and FF)                                                                                        | -        | 1   |
|      | ▶ <a href="#">329303-8X</a>   | Seal Kit (Output Options XY and AZ)                                                                                        | -        | 1   |
|      | ▶ <a href="#">329303-9X</a>   | Seal Kit (Output Options GA, GB and GR)                                                                                    | -        | 1   |
|      | ▶ <a href="#">329303-10X</a>  | Seal Kit (Output Options GF)                                                                                               | -        | 1   |
|      | ▶ <a href="#">329310-1X</a>   | Bearing And Seal Kit (Output Options XD, RA, XE, XG, XJ, XK, XL,<br>RB, XO, XP, XQ, XR, AA, AK, XX, LA, LB, LC, LD and LF) | 1        | -   |
|      | ▶ <a href="#">329310-2X</a>   | Bearing And Seal Kit (Output Options AF and FF)                                                                            | 1        | -   |
|      | ▶ <a href="#">329310-3X</a>   | Bearing And Seal Kit (Output Options XY and AZ)                                                                            | 1        | -   |
|      | ▶ <a href="#">329310-4X</a>   | Bearing And Seal Kit (Output Options GA, GB and GR)                                                                        | 1        | -   |
|      | ▶ <a href="#">329310-5X</a>   | Bearing And Seal Kit (Output Options GF)                                                                                   | 1        | -   |
|      | ▶ <a href="#">329310-6X</a>   | Bearing And Seal Kit (Output Options XD, RA, XE, XG, XJ, XK, XL,<br>RB, XO, XP, XQ, XR, AA, AK, XX, LA, LB, LC, LD and LF) | -        | 1   |
|      | ▶ <a href="#">329310-7X</a>   | Bearing And Seal Kit (Output Options AF and FF)                                                                            | -        | 1   |
|      | ▶ <a href="#">329310-8X</a>   | Bearing And Seal Kit (Output Options XY and AZ)                                                                            | -        | 1   |
|      | ▶ <a href="#">329310-9X</a>   | Bearing And Seal Kit (Output Options GA, GB and GR)                                                                        | -        | 1   |
|      | ▶ <a href="#">329310-10X</a>  | Bearing And Seal Kit (Output Options GF)                                                                                   | -        | 1   |

N.S. - Not Shown



| Item | Part Number        | Description                                               | Quantity |     |
|------|--------------------|-----------------------------------------------------------|----------|-----|
|      |                    |                                                           | 660      | 680 |
|      | <b>329165-1X</b>   | SHIFT COVER ASSEMBLY 12V (Ass'y 3 & 6)                    | 1        | 1   |
|      | <b>329165-2X</b>   | SHIFT COVER ASSEMBLY 12V (Ass'y 4 & 5)                    | 1        | 1   |
|      |                    | (All the assemblies shown above include items 37 thru 45) |          |     |
| 37   | <b>34-P-76</b>     | Shift Cover                                               | 1        | 1   |
| 38 ► | <b>32-P-166</b>    | Shifter Fork                                              | 1        | 1   |
| 39   | <b>329255-12X</b>  | Electric Shift Ass'y                                      | 1        | 1   |
| 40 ► | <b>378447-4</b>    | Socket Head Capscrew                                      | 1        | 1   |
| 41 ► | <b>28-P-207</b>    | Oil Seal                                                  | 1        | 1   |
| 42   | <b>379639</b>      | Indicator Switch                                          | 1        | 1   |
| 43 ► | <b>35-P-14</b>     | Gasket, Shifter Shaft Cover                               | 1        | 1   |
| 44 ► | <b>65-P-23</b>     | Shifter Shaft Cover                                       | 1        | 1   |
| 45 ► | <b>378430-4</b>    | Hex Capscrew (.312"-18 x .500")                           | 4        | 4   |
| 46 ► | <b>378430-8</b>    | Hex Capscrew (.312"-18 x .750")                           | 4        | 4   |
| 47 ► | <b>35-P-8</b>      | Gasket, Shifter Cover                                     | 1        | 1   |
|      |                    | <b>E-Z Shift Conversion Kits</b>                          |          |     |
|      | <b>328390-138X</b> | Cable To Electric 12V (Ass'y 3 & 6)                       | 1        | 1   |
|      | <b>328390-139X</b> | Cable To Electric 12V (Ass'y 4 & 5)                       | 1        | 1   |
|      | <b>328390-140X</b> | Lever Or Air To 12V Easy Shift (ASS'Y 3, 4, 5 & 6)        | 1        | 1   |





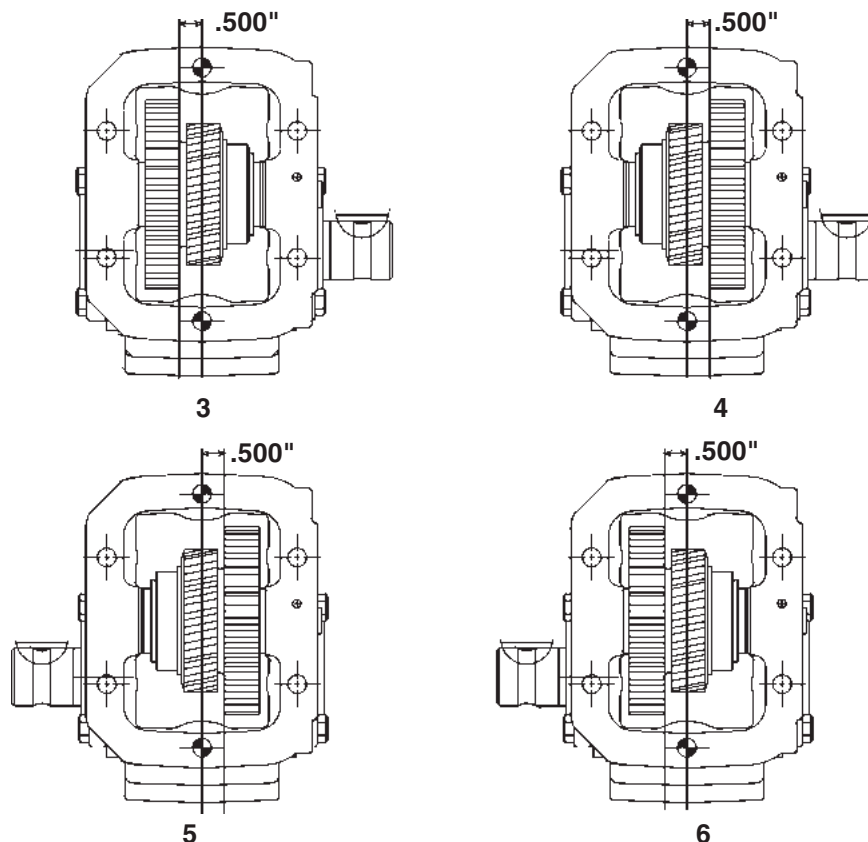
| Item | Part Number          | Description                                                     | Quantity |     |
|------|----------------------|-----------------------------------------------------------------|----------|-----|
|      |                      |                                                                 | 660      | 680 |
|      | ➤ <b>329361X</b>     | Shifter Cover Assembly, Air Shift ( Includes Items 48-57) ..... | 1        | 1   |
| 48   | ➤ <b>34-P-130</b>    | Shifter Cover .....                                             | 1        | 1   |
| 49   | ➤ <b>378316</b>      | Snap Ring .....                                                 | 2        | 2   |
| 50   | ➤ <b>378315</b>      | Cover Plug .....                                                | 2        | 2   |
| 51   | ➤ <b>28-P-42</b>     | O-Ring .....                                                    | 2        | 2   |
| 52   | ➤ <b>37-P-21</b>     | Shifter Spring .....                                            | 1        | 1   |
| 53   | ➤ <b>11-P-75</b>     | Shaft, Shifter .....                                            | 1        | 1   |
| 54   | ➤ <b>28-P-41</b>     | O-Ring .....                                                    | 1        | 1   |
| 55   | ➤ <b>32-P-180</b>    | Shifter Fork .....                                              | 1        | 1   |
| 56   | ➤ <b>378447-4</b>    | Capscrew, Socket Head w/ lockpatch (.312"-18 x .750") .....     | 1        | 1   |
| 57   | ➤ <b>379639</b>      | Indicator Switch (Normally OFF) .....                           | 1        | 1   |
| 58   | ➤ <b>379904</b>      | Push Connect, for 1/4" tubing .....                             | 1        | 1   |
| 59   | ➤ <b>35-P-8</b>      | Gasket, Shifter Cover .....                                     | 1        | 1   |
| 60   | ➤ <b>378430-8</b>    | Capscrew, Hex Head (.312"-18 x .750") .....                     | 4        | 4   |
|      |                      | <b>Air Shift Conversion Kits</b>                                |          |     |
|      | ➤ <b>328390-117X</b> | Lever or Cable to Air .....                                     | 1        | 1   |
|      | ➤ <b>328390-119X</b> | Lever or Cable to Electric/Air, 12V .....                       | 1        | 1   |
|      | ➤ <b>328390-120X</b> | Lever or Cable to Electric/Air, 24V .....                       | 1        | 1   |

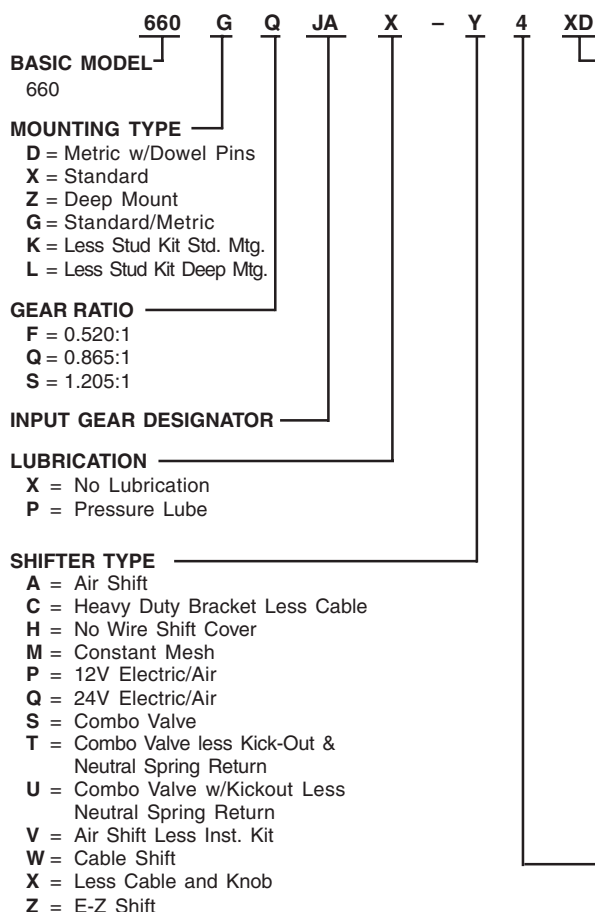
N.S. - Not Shown

For P.T.O.'s ordered without the shifter (Shifter Type "H"), the kits shown below will provide all the components required to complete the assembly.

| Part Number                   | Description                                                           | Quantity |     |
|-------------------------------|-----------------------------------------------------------------------|----------|-----|
|                               |                                                                       | 660      | 680 |
| ▶ <a href="#">329106-39X</a>  | AIR SHIFT ("A" option)                                                | 1        | 1   |
| ▶ <a href="#">329106-43X</a>  | ELECTRIC/AIR 12V ("P" option)                                         | 1        | 1   |
| <a href="#">329106-45X</a>    | ELECTRIC/AIR 24V ("Q" option)                                         | 1        | 1   |
| ▶ <a href="#">329106-105X</a> | CABLE SHIFT (Q, W & X Ratios, Ass'y 3 & 6, "W" option)                | 1        | 1   |
| ▶ <a href="#">329106-106X</a> | CABLE SHIFT (Q, W & X Ratios, Ass'y 4 & 5, "W" option)                | 1        | 1   |
| ▶ <a href="#">329106-107X</a> | CABLE SHIFT, Less Cable (Q, W, & X Ratios, Ass'y 3 & 6, "X" option)   | 1        | 1   |
| ▶ <a href="#">329106-108X</a> | CABLE SHIFT, Less Cable (Q, W, & X Ratios, Ass'y 4 & 5, "X" option)   | 1        | 1   |
| ▶ <a href="#">329106-109X</a> | CABLE SHIFT (F, L, S & U Ratios, Ass'y 3 & 6, "W" option)             | 1        | 1   |
| ▶ <a href="#">329106-110X</a> | CABLE SHIFT (F, L, S & U Ratios, Ass'y 4 & 5, "W" option)             | 1        | 1   |
| ▶ <a href="#">329106-111X</a> | CABLE SHIFT, Less Cable (F, L, S & U Ratios, Ass'y 3 & 6, "X" option) | 1        | 1   |
| ▶ <a href="#">329106-112X</a> | CABLE SHIFT, Less Cable (F, L, S & U Ratios, Ass'y 4 & 5, "X" option) | 1        | 1   |
| <a href="#">329106-125X</a>   | E-Z SHIFT (Ass'y 3 & 6, "Z" option)                                   | 1        | 1   |
| <a href="#">329106-126X</a>   | E-Z SHIFT (Ass'y 4 & 5, "Z" option)                                   | 1        | 1   |
| ▶ <a href="#">329106-153X</a> | AIR SHIFT ("V" option)                                                | 1        | 1   |
| ▶ <a href="#">329143X</a>     | DUST COVER KIT FOR LEVER & AIR SHIFTERS                               | 1        | 1   |

## Assembly Arrangements

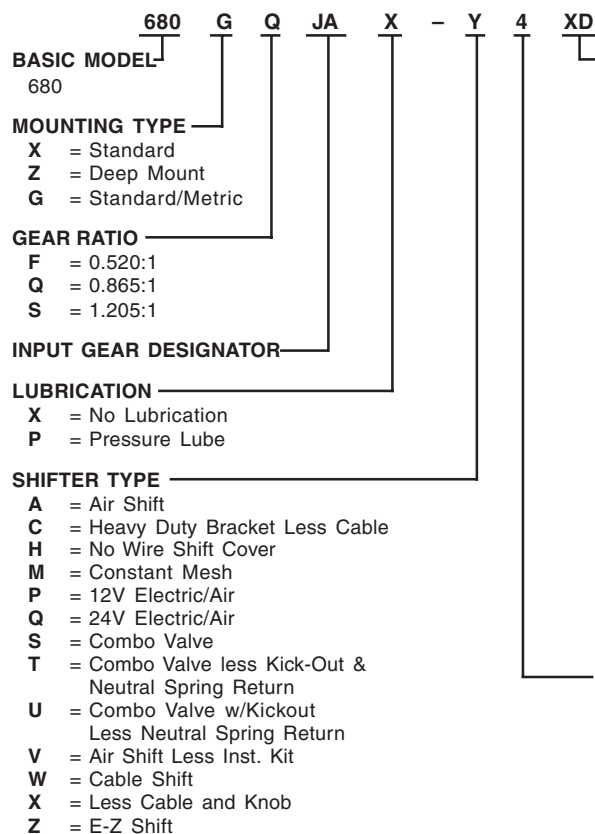


**Model Number Designation****Power Take-Offs****660/680 Series****OUTPUT TYPE**

AA = Special for England  
AK = S.A.E. "B" 2 Bolt  
AF = S.A.E. "BB" 2 or 4 Bolt  
AZ = S.A.E. "B" 4 Bolt 1.250" 14T  
FF = S.A.E. "B" 2 or 4 Bolt  
GA = Greasable Rotatable "B" 2 Bolt  
GB = Greasable Rotatable "B" 4 Bolt  
GF = Greasable S.A.E. "BB" 2 or 4 Bolt  
GH = Greasable Rotatable "BB" 2 Bolt  
GJ = Greaseable Rot. SAE "BB" 4 Bolt 1" 15T  
GK = Greasable S.A.E. "B" 2 or 4 Bolt  
GM = Greaseable DIN 5462 8T  
GQ = Greasable S.A.E. "B" 2 or 4 Bolt  
GR = Greasable CHELSEA Special  
GP = Greasable S.A.E. "A" 2 or 4 Bolt  
GY = Greasable DIN 5462 Flange w/ 1.245" 12T  
GZ = Greasable S.A.E. "B" 4 Bolt 1.250" 14T  
LA = S.A.E. "B" 2 Bolt w/Self Lube  
LB = S.A.E. "A" 2 Bolt w/Self Lube  
LC = S.A.E. "B" 2 or 4 Bolt w/Self Lube  
LD = 1.250" Rd. w/Self Lube  
LF = S.A.E. "B" 2 or 4 Bolt w/Self Lube  
MY = DIN 5462 8T  
RA = Rotatable S.A.E. "B" 2 Bolt  
RB = Rotatable S.A.E. "B" 4 Bolt  
RC = Rotatable S.A.E. "A" 2 Bolt  
RD = Rotatable S.A.E. "A" 2 Bolt  
RE = Rot. SAE "BB" 4 Bolt 1" 15T  
RF = Rotatable S.A.E. "BB" 2 Bolt  
RY = Rotatable Din 5462  
XD = 1.250" Rd.  
XE = S.A.E. "A" 2 or 4 Bolt  
XG = S.A.E. "A" 2 Bolt  
XJ = S.A.E. "A" 2 Bolt  
XK = S.A.E. "B" 2 or 4 Bolt  
XL = S.A.E. "A" 2 Bolt  
XO = S.A.E. "A" 2 Bolt  
XP = S.A.E. "A" 2 Bolt  
XQ = S.A.E. "B" 2 or 4 Bolt  
XR = CHELSEA Special  
XV = 1.250" Rd.\*  
XX = 1.250" Rd. S.A.E. Taper  
XY = Din 5462

**ASSEMBLY ARRANGEMENT**

3, 4, 5, 6

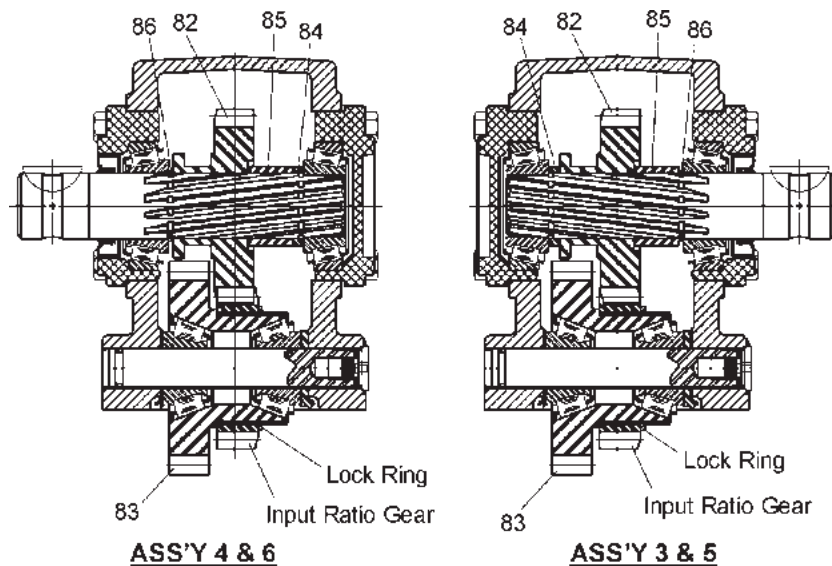
**OUTPUT TYPE**

AA = Special for England  
AF = S.A.E. "BB" 2 or 4 Bolt  
AK = S.A.E. "B" 2 Bolt  
AZ = S.A.E. "B" 4 Bolt 1.250" 14T  
FF = S.A.E. "B" 2 or 4 Bolt  
GA = Greasable Rotatable "B" 2 B  
GB = Greasable Rotatable "B" 4 Bolt  
GF = Greasable S.A.E. "BB" 2 or 4 Bolt  
GH = Greasable Rotatable "BB" 2 Bolt  
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GQ = Greasable S.A.E. "B" 2 or 4 Bolt  
GR = Greasable CHELSEA Special  
GY = Greasable DIN 5462 Flange w/1.245" 12T  
GZ = Greasable S.A.E. "B" 4 Bolt 1.250" 14T  
LA = S.A.E. "B" 2 Bolt w/Self Lube  
LB = S.A.E. "A" 2 Bolt w/Self Lube  
LC = S.A.E. "B" 2 or 4 Bolt w/Self Lube  
LD = 1.250" Rd. w/Self Lube  
LF = S.A.E. "B" 2 or 4 Bolt w/Self Lube  
MY = DIN 5462 8T  
RA = Rotatable S.A.E. "B" 2 Bolt  
RB = Rotatable S.A.E. "B" 4 Bolt  
RC = Rotatable S.A.E. "A" 2 Bolt  
RD = Rotatable S.A.E. "A" 2 Bolt  
RE = Rot. SAE "BB" 4 Bolt 1" 15T  
RF = Rotatable S.A.E. "BB" 2 Bolt  
RY = Rotatable DIN 5462  
XD = 1.250" Rd.  
XE = S.A.E. "A" 2 or 4 Bolt  
XG = S.A.E. "A" 2 Bolt  
XJ = S.A.E. "A" 2 Bolt  
XK = S.A.E. "B" 2 or 4 Bolt  
XL = S.A.E. "A" 2 Bolt  
XO = S.A.E. "A" 2 Bolt  
XP = S.A.E. "A" 2 Bolt  
XQ = S.A.E. "B" 2 or 4 Bolt  
XR = CHELSEA Special  
XV = 1.250" Rd.\*  
XX = 1.250" Rd. S.A.E. Taper  
XY = DIN 5462

**ASSEMBLY ARRANGEMENT**

3, 4, 5, 6

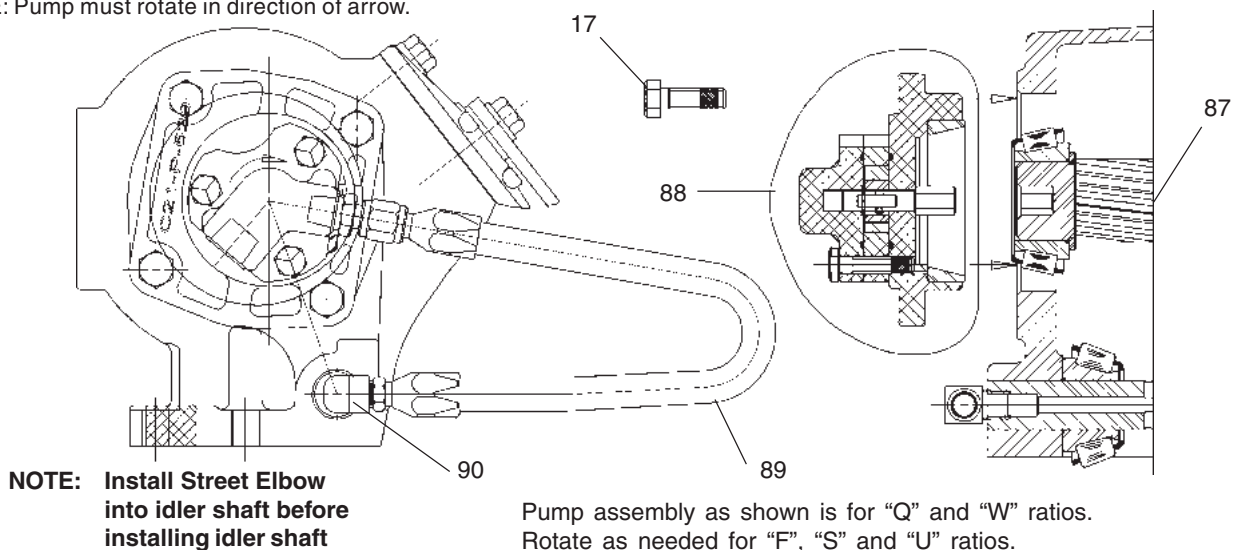
\* Companion Flange **379828**



| Item | Part Number                     | Description                                     | Quantity |     |
|------|---------------------------------|-------------------------------------------------|----------|-----|
|      |                                 |                                                 | 660      | 680 |
| 82   | <a href="#">See Chart Pg. 9</a> | Output Gear .....                               | 1        | 1   |
| 89   | <a href="#">See Chart Pg. 9</a> | Input Gear .....                                | 1        | 1   |
| 84 ► | <a href="#">4-P-178</a>         | Spacer, Drive Shaft .....                       | 1        | 1   |
| 85 ► | <a href="#">4-P-177</a>         | Spacer, Drive Shaft .....                       | 1        | 1   |
| 86 ► | <a href="#">378391</a>          | Lockring .....                                  | 1        | 1   |
| N.S. | <a href="#">34-P-39</a>         | Cover Plate (For Shifter Opening) .....         | 1        | 1   |
| N.S. | <a href="#">35-P-8</a>          | Gasket, Cover Plate (For Shifter Opening) ..... | 1        | 1   |

**Self Lube Parts**

NOTE: Pump must rotate in direction of arrow.



| Item | Part Number               | Description                                | Quantity |     |
|------|---------------------------|--------------------------------------------|----------|-----|
|      |                           |                                            | 660      | 680 |
| 17 ► | <a href="#">378430-10</a> | Hex Capscrew .312"-18 x 1.00" .....        | 4        | 4   |
| 87 ► | <a href="#">3-P-857</a>   | Output Shaft (LD Output) .....             | 1        | 1   |
|      | <a href="#">3-P-858</a>   | Output Shaft (LA, LB, LC, LF Output) ..... | 1        | 1   |
| 88   | <a href="#">329091X</a>   | Lube Pump & Bearing Cap Assembly .....     | 1        | 1   |
| 89 ► | <a href="#">329092X</a>   | Pressure Lube Hose Assembly .....          | 1        | 1   |
| 90 ► | <a href="#">500841-1</a>  | 90° Street Elbow .....                     | 1        | 1   |

**Input Gear Chart****Power Take-Offs****660/680 Series**

| Model Number | Part No. Input Gear      | Helix Angle     | No. Teeth Input Gear | No. Teeth Ratio Gear | Part No. Output Gear    | No. teeth Output Gear |
|--------------|--------------------------|-----------------|----------------------|----------------------|-------------------------|-----------------------|
| 660*FAH      | <a href="#">5-P-1242</a> | Spur            | 22                   | 21                   | <a href="#">2-P-797</a> | 37                    |
| 660*QAH      | <a href="#">5-P-1246</a> | Spur            | 22                   | 19                   | <a href="#">2-P-778</a> | 24                    |
| 660*SAH      | <a href="#">5-P-1322</a> | Spur            | 22                   | 24                   | <a href="#">2-P-784</a> | 22                    |
| 660*FBG      | <a href="#">5-P-1325</a> | Left Hand Helix | 23                   | 21                   | <a href="#">2-P-797</a> | 37                    |
| 660*QBG      | <a href="#">5-P-1326</a> | Left Hand Helix | 23                   | 19                   | <a href="#">2-P-778</a> | 24                    |
| 660*SBG      | <a href="#">5-P-1327</a> | Left Hand Helix | 23                   | 24                   | <a href="#">2-P-784</a> | 22                    |
| 660*FDA      | <a href="#">5-P-1330</a> | Spur            | 23                   | 21                   | <a href="#">2-P-797</a> | 37                    |
| 660*QDA      | <a href="#">5-P-1331</a> | Spur            | 23                   | 19                   | <a href="#">2-P-778</a> | 24                    |
| 660*SDA      | <a href="#">5-P-1332</a> | Spur            | 23                   | 24                   | <a href="#">2-P-784</a> | 22                    |
| 660*FED      | <a href="#">5-P-1335</a> | Left Hand Helix | 34                   | 21                   | <a href="#">2-P-797</a> | 37                    |
| 660*QED      | <a href="#">5-P-1336</a> | Left Hand Helix | 34                   | 19                   | <a href="#">2-P-778</a> | 24                    |
| 660*SED      | <a href="#">5-P-1337</a> | Left Hand Helix | 34                   | 24                   | <a href="#">2-P-784</a> | 22                    |
| 660*FJA      | <a href="#">5-P-1345</a> | Left Hand Helix | 27                   | 21                   | <a href="#">2-P-797</a> | 37                    |
| 660*QJA      | <a href="#">5-P-1346</a> | Left Hand Helix | 27                   | 19                   | <a href="#">2-P-778</a> | 24                    |
| 660*SJA      | <a href="#">5-P-1347</a> | Left Hand Helix | 27                   | 24                   | <a href="#">2-P-784</a> | 22                    |
| 680*FAH      | <a href="#">5-P-1242</a> | Spur            | 22                   | 21                   | <a href="#">2-P-797</a> | 37                    |
| 680*QAH      | <a href="#">5-P-1246</a> | Spur            | 22                   | 19                   | <a href="#">2-P-778</a> | 24                    |
| 680*SAH      | <a href="#">5-P-1322</a> | Spur            | 22                   | 24                   | <a href="#">2-P-784</a> | 22                    |
| 680*FBG      | <a href="#">5-P-1325</a> | Left Hand Helix | 23                   | 21                   | <a href="#">2-P-797</a> | 37                    |
| 680*QBG      | <a href="#">5-P-1326</a> | Left Hand Helix | 23                   | 19                   | <a href="#">2-P-778</a> | 24                    |
| 680*SBG      | <a href="#">5-P-1327</a> | Left Hand Helix | 23                   | 24                   | <a href="#">2-P-784</a> | 22                    |

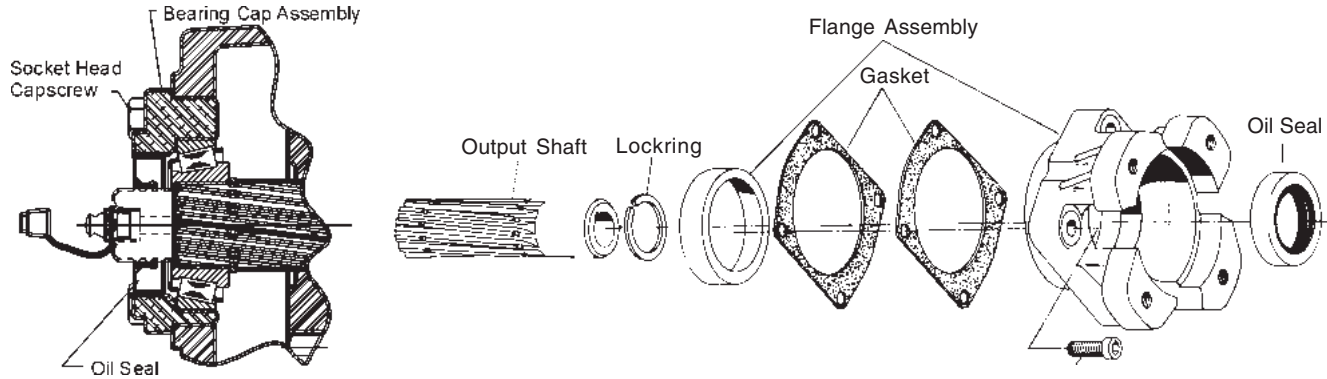
N.S. - Not Shown

| Flange Suffix | Flange Type                    | Shaft Type             | Conversion Kit                                                               |
|---------------|--------------------------------|------------------------|------------------------------------------------------------------------------|
| AA            | Special for England            | .982"-6 Spline         |                                                                              |
| AF            | S.A.E. "B" 2 or 4 Bolt         | 1.0"-15 Spline         | XD to AF <a href="#">328591-30X</a>                                          |
| AK            | S.A.E. "B" 2 Bolt              | 7/8"-13 Spline         | XD to AK <a href="#">328591-28X</a>                                          |
| AZ            | S.A.E. 4 Bolt                  | 1-1/4"-14 Spline       | XD to AZ <a href="#">328591-70X</a>                                          |
| FF            | S.A.E. "B" 2 or 4 Bolt         | 7/8" Round             | XD to FF <a href="#">328591-29X</a>                                          |
| ● GA          | Rotatable S.A.E. "B" 2 Bolt    | 7/8"-13 Spline         | XD to GA <a href="#">328591-124X</a><br>RA to GA <a href="#">328591-109X</a> |
| ● GB          | Rotatable S.A.E. "B" 4 Bolt    | 7/8"-13 Spline         | XD to GB <a href="#">328591-125X</a><br>RB to GB <a href="#">328591-110X</a> |
| ● GF          | S.A.E. "BB" 2 or 4 Bolt        | 1.0"-15 Spline         | XD to GF <a href="#">328591-123X</a><br>AF to GF <a href="#">328591-111X</a> |
| ● GH          | Rotatable S.A.E. "BB" 2 Bolt   | 1.0"-15 Spline         | XD to GH <a href="#">328591-117X</a><br>RF to GH <a href="#">328591-115X</a> |
| ● GJ          | S.A.E. "B" 4 Bolt Rotatable    | 1.0"-15 Spline         | XD to GJ <a href="#">328591-139X</a><br>RE to GJ <a href="#">328591-115X</a> |
| ● GK          | S.A.E. "B" 2 or 4 Bolt         | 7/8"-13 Spline         | XD to GK <a href="#">328591-99X</a><br>XK to GK <a href="#">328591-96X</a>   |
| ● GM          | Din 5462 Pump Mounting         | DIN 5462               | XD to GM <a href="#">328591-147X</a>                                         |
| ● GP          | S.A.E. "A" Pilot 2 or 4 Bolt   | 7/8"-13 Spline         | XD to GP <a href="#">328591-100X</a><br>XP to GP <a href="#">328591-96X</a>  |
| ● ■ GQ        | S.A.E. "B" 2 or 4 Bolt         | 7/8"-13 Spline         | XD to GQ <a href="#">328591-101X</a><br>XQ to GQ <a href="#">328591-96X</a>  |
| ● GR          | Chelsea Special 4 Bolt         | 7/8"-13 Spline         | XD to GR <a href="#">328591-126X</a>                                         |
| ● GY          | Din 5462 Pump Mounting         | DIN 5462               | XD to GY <a href="#">328591-102X</a><br>XY to GY <a href="#">328591-97X</a>  |
| ● GZ          | S.A.E. "B" 4 Bolt              | 1-1/4"-14 Spline       | XD to GZ <a href="#">328591-103X</a><br>AZ to GZ <a href="#">328591-98X</a>  |
| » LA          | S.A.E. "B" 2 Bolt              | 7/8"-13 Spline         | AK to LA <a href="#">328591-44X</a>                                          |
| » LB          | S.A.E. "A" Pilot 2 Bolt        | 7/8"-13 Spline         | XP to LB <a href="#">328591-45X</a>                                          |
| » LC          | S.A.E. "B" 2 or 4 Bolt         | 7/8"-13 Spline         | XQ to LC <a href="#">328591-46X</a>                                          |
| » LD          | Similar to "XD"                | 1-1/4" Round           | XD to LD                                                                     |
| » LF          | S.A.E. "B" 2 or 4 Bolt         | 7/8"-13 Spline         | XK to LF <a href="#">328591-48X</a>                                          |
| MY            | Din 5462 Pump Mounting         | DIN 5462               | XD to MY <a href="#">328591-146X</a>                                         |
| PA            | Parker P2-060 Pump Mounting    | 7/8"-13 Spline         | XD to PA <a href="#">328591-143X</a>                                         |
| PF            | Parker P2-060 Pump Mounting    | 1.0"-15 Spline         | XD to PF <a href="#">328591-142X</a>                                         |
| RA            | Rotatable S.A.E. "B" 2 Bolt    | 7/8"-13 Spline         | XD to RA <a href="#">328591-55X</a><br>XR to RA <a href="#">328591-53X</a>   |
| RB            | Rotatable S.A.E. "B" 4 Bolt    | 7/8"-13 Spline         | XD to RB <a href="#">328591-56X</a><br>XR to RB <a href="#">328591-54X</a>   |
| RC            | Rotatable S.A.E. "A" 2 Bolt    | 5/8"-9 Spline          | XD to RC <a href="#">328591-112X</a>                                         |
| RD            | Rotatable S.A.E. "A" 2 Bolt    | 7/8"-13 Spline         | XD to RD <a href="#">328591-113X</a>                                         |
| RE            | S.A.E. "B" 4 Bolt Rotatable    | 1.0"-15 Spline         | XD to RE <a href="#">328591-134X</a>                                         |
| RF            | Rotatable S.A.E. "B" 2 Bolt    | 1.0"-15 Spline         | XD to RF <a href="#">328591-78X</a>                                          |
| RY            | Rotatable DIN 5462             | DIN 5462               | XD to RY <a href="#">328591-131X</a>                                         |
| XE            | S.A.E. "A" 2 or 4 Bolt         | 5/8"-9 Spline          | XD to XE <a href="#">328591-27X</a>                                          |
| XG            | Non-standard-S.A.E. "A" 2 Bolt | 3/4" Round w/ 3/16 key | XD to XG <a href="#">328591-10X</a>                                          |
| XJ            | Non-standard 2 Bolt            | 3/4" Round             | XD to XJ <a href="#">328591-11X</a>                                          |
| XK            | S.A.E. "B" 2 or 4 Bolt         | 7/8"-13 Spline         | XD to XK <a href="#">328591-16X</a>                                          |
| XL            | Non-standard 2 Bolt            | 7/8"-13 Spline         | XD to XL <a href="#">328591-18X</a>                                          |
| XO            | S.A.E. "A" Pilot 2 Bolt        | 3/4" Round w/ 3/16 key | XD to XO <a href="#">328591-26X</a>                                          |
| XP            | S.A.E. "A" Pilot 2 Bolt        | 7/8"-13 Spline         | XD to XP <a href="#">328591-23X</a>                                          |
| ■ XQ          | S.A.E. "B" 2 or 4 Bolt         | 7/8"-13 Spline         | XD to XQ <a href="#">328591-17X</a>                                          |
| XR            | Chelsea Special 4 Bolt         | 7/8"-13 Spline         | XD to XR <a href="#">328591-52X</a>                                          |
| XV            | Round Shaft                    | 1-1/4" w/ set screw    | XD to XV <a href="#">328591-130X</a>                                         |
| XX            | S.A.E. Tapered Shaft           | 1-1/4" w/ 5/16" key    | XD to XX <a href="#">328591-122X</a>                                         |
| XY            | Din 5462 Pump Mounting         | DIN 5462               | XD to XY <a href="#">328591-121X</a>                                         |

NOTE: Check Current Price Sheet for Availability of Output Options

XR to "XK" Conversion Flange 21-P-525





| Output | Part Number | Description                                      | Qty  |
|--------|-------------|--------------------------------------------------|------|
| AA     | 3-P-862     | Output Shaft .....                               | 1    |
|        | ➤ 28-P-216  | Oil Seal .....                                   | 1    |
|        | 329102X     | Bearing Cap Assy.(21-P-532) .....                | 1    |
|        | ➤ 378447-8  | Socket Head Capscrew (.312" - 18 x 1.5") .....   | 4    |
| AF     | 3-P-854     | Output Shaft .....                               | 1    |
|        | ➤ 28-P-219  | Oil Seal .....                                   | 1    |
|        | 329088X     | Bearing Cap Assy.(21-P-522) .....                | 1    |
|        | ➤ 378447-10 | Socket Head Capscrew (.312" - 18 x 1.5") .....   | 4    |
| AK     | 3-P-282     | Output Shaft .....                               | 1    |
|        | ➤ 28-P-216  | Oil Seal .....                                   | 1    |
|        | 328989X     | Bearing Cap Assy.(21-P-472) .....                | 1    |
|        | ➤ 378447-8  | Socket Head Capscrew (.312" - 18 x 1.5") .....   | 4    |
| AZ     | 3-P-844     | Output Shaft .....                               | 1    |
|        | 28-P-230    | Oil Seal .....                                   | 1    |
|        | ➤ 329052X   | Bearing Cap Assy.(21-P-508) .....                | 1    |
|        | 379982      | Hex Washer Flange Bolt (.312" - 18 x 2.5") ..... | 4    |
| FF     | 3-P-851     | Output Shaft .....                               | 1    |
|        | ➤ 28-P-219  | Oil Seal .....                                   | 1    |
|        | 329088X     | Bearing Cap Assy. (21-P-522) .....               | 1    |
|        | ➤ 378447-10 | Socket Head Capscrew (.312" - 18 x 2.0") .....   | 4    |
| G      | 3-P-923X    | "GA", "GB", "GR", Shaft Assemblies .....         | 1 or |
|        | ➤ 3-P-921X  | "GF" Shaft Assemblies .....                      | 1 or |
|        | 3-P-933X    | "GQ", "GK", "GP" Shaft Assemblies .....          | 1 or |
|        | ➤ 3-P-938X  | "GM", "GY" Shaft Assemblies .....                | 1 or |
|        | 3-P-939X    | "GZ" Shaft Assemblies .....                      | 1 or |
|        | ➤ 3-P-941X  | "GH", "GJ" Shaft Assemblies .....                | 1    |
|        | ➤ 500168-2  | Lube Fitting (Zerk) .....                        | 1    |
|        | ➤ 379819    | Grease Fitting Cap .....                         | 1    |
|        | ➤ 379688    | Coupling Lube Pack (5/8 fl.oz) .....             | 1    |
|        | ➤ 28-P-268  | Rear Bearing Cap Shaft Oil Seal .....            | 1    |
|        | 329273X     | Rear Bearing Cap Assembly .....                  | 1    |
|        | ➤ 378430-10 | Rear Bearing Cap Hex Head Capscrew .....         | 4    |
| L      | 3-P-857     | Output Shaft ("LD") .....                        | 1    |
|        | 3-P-858     | Output Shaft ("LA", "LB", "LC", "LF") .....      | 1    |
|        | 329091X     | Lube Pump & Bearing Cap Assy. ....               | 1    |
|        | ➤ 329092X   | Pressure Lube Hose Assy. ....                    | 1    |
|        | ➤ 500841-1  | Elbow 90° Street .....                           | 1    |
|        | ➤ 378430-10 | Hex Capscrew (.312" - 18 x 1.0") .....           | 4    |

Continued on following page

## Output Options Bills of Material

## Power Take-Offs

## 660/680 Series

| Output | Part Number   | Description                                     | Qty |
|--------|---------------|-------------------------------------------------|-----|
| MY     | 3-P-768       | Output Shaft .....                              | 1   |
|        | ► 28-P-275    | Oil Seal .....                                  | 1   |
|        | 329412X       | Bearing Cap Assy. (21-P-675) .....              | 1   |
|        | ► 378447-6    | Socket Head Capscrew (.312" - 18 x 1.0") .....  | 4   |
| RA     | 3-P-283       | Output Shaft .....                              | 1   |
|        | ► 28-P-216    | Oil Seal .....                                  | 1   |
|        | ► 329195X     | Bearing Cap Assy. (21-P-574) .....              | 1   |
|        | ► 21-P-628    | Pump Flange (Ship Loose with unit) .....        | 1   |
|        | ► 378447-6    | Socket Head Capscrew .....                      | 4   |
|        | ► 328170-207X | Capscrew Bag Kit .....                          | 1   |
|        | ► 378447-6    | Socket Head Capscrew .....                      | 3   |
| RB     | 3-P-283       | Output Shaft .....                              | 1   |
|        | ► 28-P-216    | Oil Seal .....                                  | 1   |
|        | ► 329195X     | Bearing Cap Assy. (21-P-574) .....              | 1   |
|        | ► 21-P-572    | Pump Flange (Ship Loose with unit) .....        | 1   |
|        | ► 378447-6    | Socket Head Capscrew .....                      | 4   |
|        | ► 328170-207X | Capscrew Bag Kit .....                          | 1   |
|        | ► 378447-6    | Socket Head Capscrew .....                      | 3   |
| RC     | 3-P-800       | Output Shaft .....                              | 1   |
|        | ► 28-P-216    | Oil Seal .....                                  | 1   |
|        | ► 329322X     | Bearing Cap Assy (21-P-640) .....               | 1   |
|        | ► 21-P-638    | Pump Flange .....                               | 1   |
|        | ► 378447-6    | Socket Head Capscrew (.312" - 18 x 1.0") .....  | 4   |
|        | ► 328170-210X | Capscrew Bag Kit .....                          | 1   |
|        | ► 378446-4    | Socket Head Capscrew (.250" - 20 x .75") .....  | 6   |
| RD     | 3-P-282       | Output Shaft .....                              | 1   |
|        | ► 28-P-216    | Oil Seal .....                                  | 1   |
|        | ► 329322X     | Bearing Cap Assy (21-P-640) .....               | 1   |
|        | ► 21-P-638    | Pump Flange .....                               | 1   |
|        | ► 378447-6    | Socket Head Capscrew (.312" - 18 x 1.0") .....  | 4   |
|        | ► 328170-210X | Capscrew Bag Kit .....                          | 1   |
|        | ► 378446-4    | Socket Head Capscrew (.250" - 20 x .75") .....  | 6   |
| RE     | 3-P-924       | Output Shaft .....                              | 1   |
|        | ► 28-P-219    | Oil Seal .....                                  | 1   |
|        | ► 329264X     | Bearing Cap Assy. (21-P-629) .....              | 1   |
|        | ► 21-P-654    | Pump Flange .....                               | 1   |
|        | ► 378447-6    | Socket Head Capscrew (.312" - 18 x 1.0") .....  | 7   |
|        | ► 28-P-271    | O-Ring .....                                    | 1   |
| RF     | 3-P-924       | Output Shaft .....                              | 1   |
|        | ► 28-P-219    | Oil Seal .....                                  | 1   |
|        | ► 329264X     | Bearing Cap Assy. (21-P-629) .....              | 1   |
|        | ► 21-P-626    | Pump Flange .....                               | 1   |
|        | ► 378447-6    | Socket Head Capscrew (.312" - 18 x 1.0") .....  | 7   |
|        | ► 28-P-271    | O-Ring .....                                    | 1   |
| RY     | 3-P-768       | Output Shaft .....                              | 1   |
|        | ► 21-P-625    | Pump Flange .....                               | 1   |
|        | ► 329356X     | Bearing Cap Assy (21-P-532) .....               | 1   |
|        | ► 378447-8    | Socket Head Capscrew (.312" - 18 x 1.5") .....  | 4   |
|        | ► 329355-1X   | Standard Loose Parts Kit .....                  | 1   |
|        | ► 379740-6    | Socket Head Capscrew (M10 - 1.5" x .984") ..... | 3   |
|        | ► 22-P-100    | Gasket .....                                    | 1   |
|        | ► 22-P-84     | Gasket .....                                    | 1   |
|        | ► 379231      | Pipe Plug .....                                 | 2   |

Continued on following page

## Output Options Bills of Material

## 660/680 Series

| Output | Part Number | Description                                    | Qty  |
|--------|-------------|------------------------------------------------|------|
| XE     | 3-P-800     | Output Shaft .....                             | 1    |
|        | ► 28-P-216  | Oil Seal .....                                 | 1    |
|        | ► 328328X   | Bearing Cap Assy. (21-P-161) .....             | 1    |
|        | ► 378447-8  | Socket Head Capscrew (.312" - 18 x 1.5") ..... | 4    |
| XG     | 3-P-281     | Output Shaft .....                             | 1    |
|        | ► 28-P-216  | Oil Seal .....                                 | 1    |
|        | ► 328580X   | Bearing Cap Assy. (21-P-259) .....             | 1    |
|        | ► 378447-8  | Socket Head Capscrew (.312" - 18 x 1.5") ..... | 4    |
| XJ     | 3-P-284     | Output Shaft .....                             | 1    |
|        | ► 28-P-216  | Oil Seal .....                                 | 1    |
|        | ► 328580X   | Bearing Cap Assy. (21-P-259) .....             | 1    |
|        | ► 378447-8  | Socket Head Capscrew (.312" - 18 x 1.5") ..... | 4    |
| XK     | 3-P-282     | Output Shaft .....                             | 1    |
|        | ► 28-P-216  | Oil Seal .....                                 | 1    |
|        | ► 328333X   | Bearing Cap Assy. (21-P-424) .....             | 1    |
|        | ► 378447-8  | Socket Head Capscrew (.312" - 18 x 1.5") ..... | 4    |
| XL     | 3-P-283     | Output Shaft .....                             | 1    |
|        | ► 28-P-216  | Oil Seal .....                                 | 1    |
|        | ► 328580X   | Bearing Cap Assy. (21-P-259) .....             | 1    |
|        | ► 378447-8  | Socket Head Capscrew (.312" - 18 x 1.5") ..... | 4    |
| XO     | 3-P-284     | Output Shaft .....                             | 1    |
|        | ► 28-P-216  | Oil Seal .....                                 | 1    |
|        | ► 328328X   | Bearing Cap Assy. (21-P-161) .....             | 1    |
|        | ► 378447-8  | Socket Head Capscrew (.312" - 18 x 1.5") ..... | 4    |
| XP     | 3-P-282     | Output Shaft .....                             | 1    |
|        | ► 28-P-216  | Oil Seal .....                                 | 1    |
|        | ► 328328X   | Bearing Cap Assy. (21-P-161) .....             | 1    |
|        | ► 378447-8  | Socket Head Capscrew (.312" - 18 x 1.5") ..... | 4    |
| XQ     | 3-P-282     | Output Shaft .....                             | 1    |
|        | ► 28-P-216  | Oil Seal .....                                 | 1    |
|        | ► 328589X   | Bearing Cap Assy. (21-P-269) .....             | 1    |
|        | ► 378447-8  | Socket Head Capscrew (.312" - 18 x 1.5") ..... | 4    |
| XR     | 3-P-283     | Output Shaft .....                             | 1    |
|        | ► 28-P-216  | Oil Seal .....                                 | 1    |
|        | ► 329194X   | Bearing Cap Assembly (21-P-574) .....          | 1    |
|        | ► 379673    | Hex Shoulder Screw (.312" - 24) .....          | 4    |
|        | ► 379063    | Flat Washer .....                              | 4    |
|        | ► 328711X   | Pump Mounting Kit .....                        | 1    |
|        | ► 378919    | Washer .....                                   | 4    |
|        | 500963-1    | Hex Lock Nut (.312" - 24) .....                | 4    |
| XV     | 3-P-202     | Output Shaft .....                             | 1    |
|        | ► 28-P-216  | Oil Seal .....                                 | 1    |
|        | ► 329273X   | Bearing Cap Assy. for 660 & 680 Series .....   | 1 or |
|        | ► 328273X   | Bearing Cap Assy. (21-P-418) .....             | 1    |
|        | ► 378430-10 | Hex Capscrew (.312" - 18 x 1.0") .....         | 4    |
|        | ► 500007-29 | Woodruff Key .....                             | 1    |
|        | ► 379828    | Companion Flange .....                         | 1    |
|        | 378431-8    | Set Screw .....                                | 1    |

Continued on following  
page

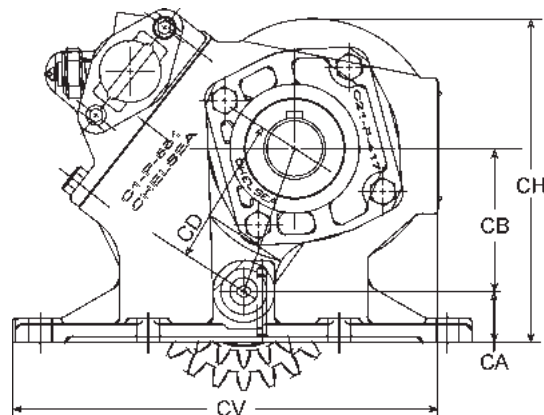
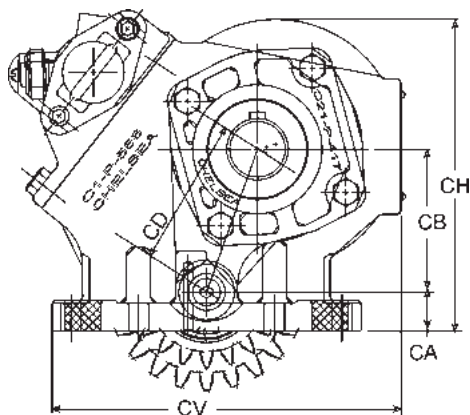
**Output Options Bills of Material**

**660/680 Series**

| Output | Part Number                 | Description                                    | Qty  |
|--------|-----------------------------|------------------------------------------------|------|
| XX     | 3-P-766                     | Output Shaft .....                             | 1    |
|        | ▶ <a href="#">28-P-216</a>  | Oil Seal .....                                 | 1    |
|        | ▶ <a href="#">329273X</a>   | Bearing Cap Assy. for 660 & 680 Series .....   | 1 or |
|        | ▶ <a href="#">328273X</a>   | Bearing Cap Assy. (21-P-418) .....             | 1    |
|        | ▶ <a href="#">378430-10</a> | Hex Capscrew (.312" - 18 x 1.0") .....         | 4    |
|        | ▶ <a href="#">379111</a>    | Square Key .....                               | 1    |
|        | <a href="#">501181</a>      | Hex Locknut (1.0" - 20) .....                  | 1    |
| XY     | 3-P-768                     | Output Shaft .....                             | 1    |
|        | ▶ <a href="#">28-P-275</a>  | Oil Seal .....                                 | 1    |
|        | ▶ <a href="#">329234X</a>   | Bearing Cap Assy. (21-P-614) .....             | 1    |
|        | ▶ <a href="#">378447-6</a>  | Socket Head Capscrew (.312" - 18 x 1.0") ..... | 4    |

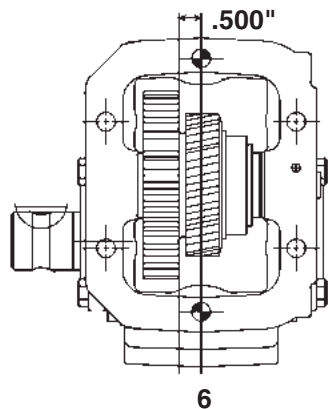
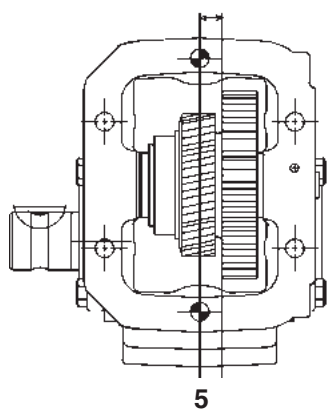
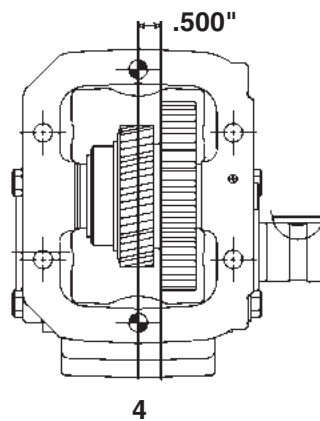
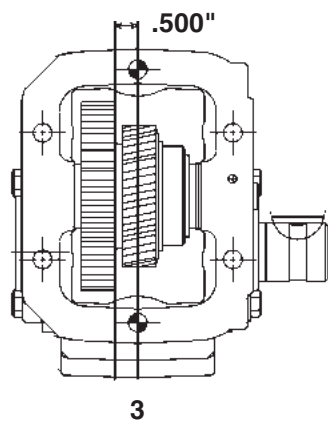
## Dimensions

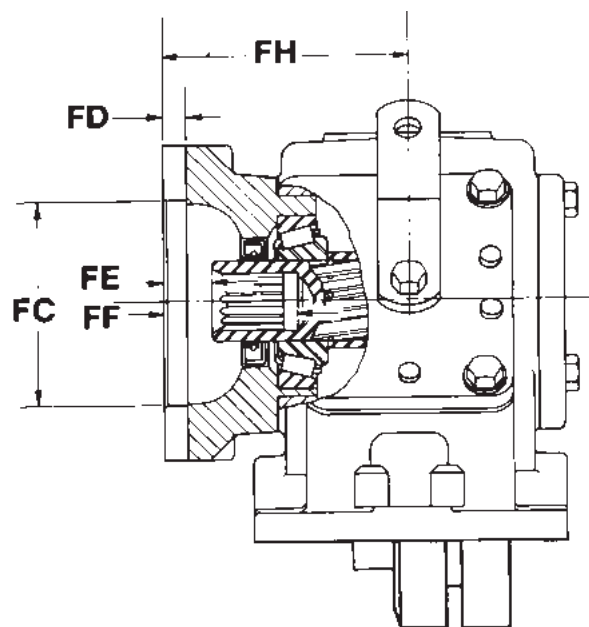
## Power Take-Offs 660/680 Series



| P.T.O. Series  | Part Number             | CA    | CB                           | CD                         | CH    | CV    |
|----------------|-------------------------|-------|------------------------------|----------------------------|-------|-------|
| 660 Standard ► | <a href="#">1-P-580</a> | 0.789 | 3.007 (F, S)<br>2.908 (Q)    | 3.317 (F, S)<br>3.087 (Q ) | 6.428 | 7.000 |
| 660 Deep Mount | <a href="#">1-P-581</a> | 0.570 | 3.007 (F, S)<br>2.908 (Q, W) | 3.317 (F, S)<br>3.087 (Q ) | 6.207 | 7.000 |
| 680 Standard ► | <a href="#">1-P-573</a> | 1.072 | 3.007 (F, S)<br>2.908 (Q)    | 3.317 (F, S)<br>3.087 (Q)  | 6.708 | 8.500 |
| 680 Deep Mount | <a href="#">1-P-582</a> | 0.930 | 3.007 (F, S)<br>2.908 (Q)    | 3.317 (F, S)<br>3.087 (Q)  | 6.566 | 8.500 |

## Assembly Arrangements





| Pump<br>Flange<br>Suffix | Bolt<br>Circle<br>Dia. | BOLT HOLES      |                          | FC                      | FD             | FE                         | FF                   | FH                             | OUTPUT SHAFT         |                 |
|--------------------------|------------------------|-----------------|--------------------------|-------------------------|----------------|----------------------------|----------------------|--------------------------------|----------------------|-----------------|
|                          |                        | Tapped<br>Hole  | No.<br>Equally<br>Spaced | Female<br>Pilot<br>Dia. | Pilot<br>Depth | Face to<br>end of<br>Shaft | Face<br>thru<br>Hole | Face to<br>Center of<br>P.T.O. | Hole<br>Dia.         | Keyway<br>Width |
| AA                       | 2.834                  | M10-1.5         | 6                        | 2.050                   | N/A            | N/A                        | N/A                  | 3.447                          | .982/.816 - 6 Spline | —               |
| AF, GF                   | 5.750                  | .500"-13        | 2                        | 4.003                   | 0.406          | 0.516                      | 1.984                | 4.322                          | 1"-15 Spline         | —               |
|                          | 5.000                  | .500"-13        | 4                        | 4.003                   | 0.406          | 0.516                      | 1.984                | 4.322                          | —                    | —               |
| AK                       | 5.750                  | .500"-13        | 2                        | 4.003                   | 0.406          | 0.562                      | 2.062                | 3.688                          | 7/8" - 13 Spline     | —               |
| AZ, GZ                   | 5.000                  | .500"-13        | 4                        | 4.003                   | 0.406          | 0.695                      | 2.392                | 4.985                          | 1 1/4" - 14 Spline   | —               |
| FF                       | 5.750                  | .500"-13        | 2                        | 4.003                   | 0.406          | 0.516                      | 1.984                | 4.322                          | 7/8" Round           | 1/4"            |
|                          | 5.000                  | .500"-13        | 4                        | 4.003                   | 0.406          | 0.516                      | 1.984                | 4.322                          | —                    | —               |
| MY, GM                   | 4.454                  | M12-1.75        | 12                       | 3.152                   | 0.393          | 0.594                      | 2.508                | 4.697                          | DIN 5462             | —               |
| ● PA                     | 5.750                  | 0.563           | 2                        | 4.003                   | 0.406          | 0.558                      | 2.058                | 4.558                          | 7/8"-13 Spline       | —               |
| ● PF                     | 5.750                  | 0.563           | 2                        | 4.003                   | 0.406          | 0.501                      | 1.969                | 4.569                          | 1"-15 Spline         | —               |
| ● RA, GA                 | 5.750                  | .500"-13        | 2 ■                      | 4.003                   | 0.406          | 0.558                      | 2.058                | 4.588                          | 7/8"-13 Spline       | —               |
| ● RB, GB                 | 5.000                  | .500"-13        | 4                        | 4.003                   | 0.406          | 0.558                      | 2.058                | 4.588                          | 7/8"-13 Spline       | —               |
| ● RC                     | 4.188                  | .375"-16        | 2 ■                      | 3.253                   | 0.270          | 0.525                      | 1.462                | 3.694                          | 5/8"-9 Spline        | —               |
| ● RD                     | 4.188                  | .375"-16        | 2 ■                      | 3.253                   | 0.270          | 0.525                      | 1.462                | 3.694                          | 7/8"-13 Spline       | —               |
| ● RE, GJ                 | 5.000                  | .500"-13        | 4                        | 4.003                   | 0.406          | 0.501                      | 1.969                | 4.569                          | 1.0"-15 Spline       | —               |
| ● RF, GH                 | 5.750                  | .500"-13        | 2 ■                      | 4.003                   | 0.406          | 0.501                      | 1.969                | 4.569                          | 1"-15 Spline         | —               |
| ● RY                     | 4.454                  | M12-1.75        | 4                        | 3.152                   | 0.394          | 0.618                      | 2.274                | 4.790                          | DIN 5462             | —               |
| XE                       | 5.000                  | .500"-13        | 4                        | 3.253                   | 0.344          | 0.562                      | 1.500                | 3.688                          | 5/8"-9 Spline        | —               |
| XG                       | 4.188                  | .375"-16        | 4                        | 3.253                   | 0.562          | 0.593                      | 2.218                | 4.562                          | 3/4" Round           | 3/16"           |
| XJ                       | 4.188                  | .375"-16        | 4                        | 3.253                   | 0.562          | 1.406                      | 2.906                | 4.562                          | 3/4" Round           | 3/16"           |
| XK, GK                   | 5.750                  | .531"           | 2                        | 4.003                   | 0.406          | 0.562                      | 2.062                | 3.688                          | 7/8"-13 Spline       | —               |
|                          | 5.000                  | .531"           | 4                        | 4.003                   | 0.406          | 0.562                      | 2.062                | 3.688                          | —                    | —               |
| XL                       | 4.188                  | .375"-16        | 4                        | 3.253                   | 0.562          | 0.562                      | 2.062                | 4.562                          | 7/8"-13 Spline       | —               |
| XO                       | 5.000                  | .500"-13        | 4                        | 3.253                   | 0.344          | 0.562                      | 2.062                | 3.688                          | 3/4" Round           | 3/16"           |
|                          | 4.188                  | .375"-16        | 2                        | 3.253                   | 0.344          | 0.562                      | 2.062                | 3.688                          | —                    | —               |
| XP, GP                   | 5.000                  | .500"-13        | 4                        | 3.253                   | 0.344          | 0.562                      | 2.062                | 3.688                          | 7/8"-13 Spline       | —               |
|                          | 4.188                  | .375"-16        | 2                        | 3.253                   | 0.344          | 0.562                      | 2.062                | 3.688                          | —                    | —               |
| XY, GY                   | 4.454                  | M12-1.75        | 4                        | 3.152                   | 0.393          | 0.594                      | 2.508                | 4.697                          | DIN 5462             | —               |
| XQ, GQ                   | 5.750                  | .500"-13        | 2                        | 4.003                   | 0.406          | 0.562                      | 2.062                | 3.688                          | 7/8"-13 Spline       | —               |
|                          | 5.000                  | .500"-13        | 4                        | 4.003                   | 0.406          | 0.562                      | 2.062                | 3.688                          | —                    | —               |
| XR, GR                   | 3.710                  | .312"-24(Studs) | 4                        | 2.752                   | 0.281          | N/A                        | N/A                  | 2.809                          | 7/8"-13 Spline       | —               |
| XV                       | 3.75                   | .438" ▶         | 4                        | 2.750                   | 0.088          | N/A                        | N/A                  | 5.030                          | 1.25" Round          | 5/16"           |

● Rotatable Flange Rotates in 30° Increments

■ Two Set of Holes Spaced 14° Apart

▶ Not Tapped

**NOTE:** To convert an "XR" to an "XK", use conversion flange number 21-P-5255.

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



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

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

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

(A) All Power Take-Off units one (1) year from date of installation.

(B) Except 267, 277, 278, 242, 244, 245, 250, 251 and 859 series two (2) years from date of installation. **THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED. NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGNS OR SPECIFICATIONS.**

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

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

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

in its sole discretion at any time.

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

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

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

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

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

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

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