



ES46-5A

*Parts Catalog*

*Bulletin No. T210-ES46-5A*

June 2000



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Pro Gear & Transmission, Inc.



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**Orlando, FL 32805**



# MODEL ES46-5A

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T210-ES46-5A

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### RATIO TABLE

#### MODEL ES46-5A

|      |      |
|------|------|
| 1st  | 7.16 |
| 2nd  | 3.89 |
| 3rd  | 2.17 |
| 4th  | 1.41 |
| 5th  | 1.00 |
| Rev. | 6.75 |

Parts listed in this catalog may no longer be available. Use with transmission superseding list.

### IDENTIFICATION

The Name Plate (NP-96) affixed to the RIGHT side of the Transmission is stamped with information:

Abbreviations used in this parts list include:

N.S. — Not Shown  
N.S.S. — Not Sold Separately  
N.R. — Not Required

SERIAL

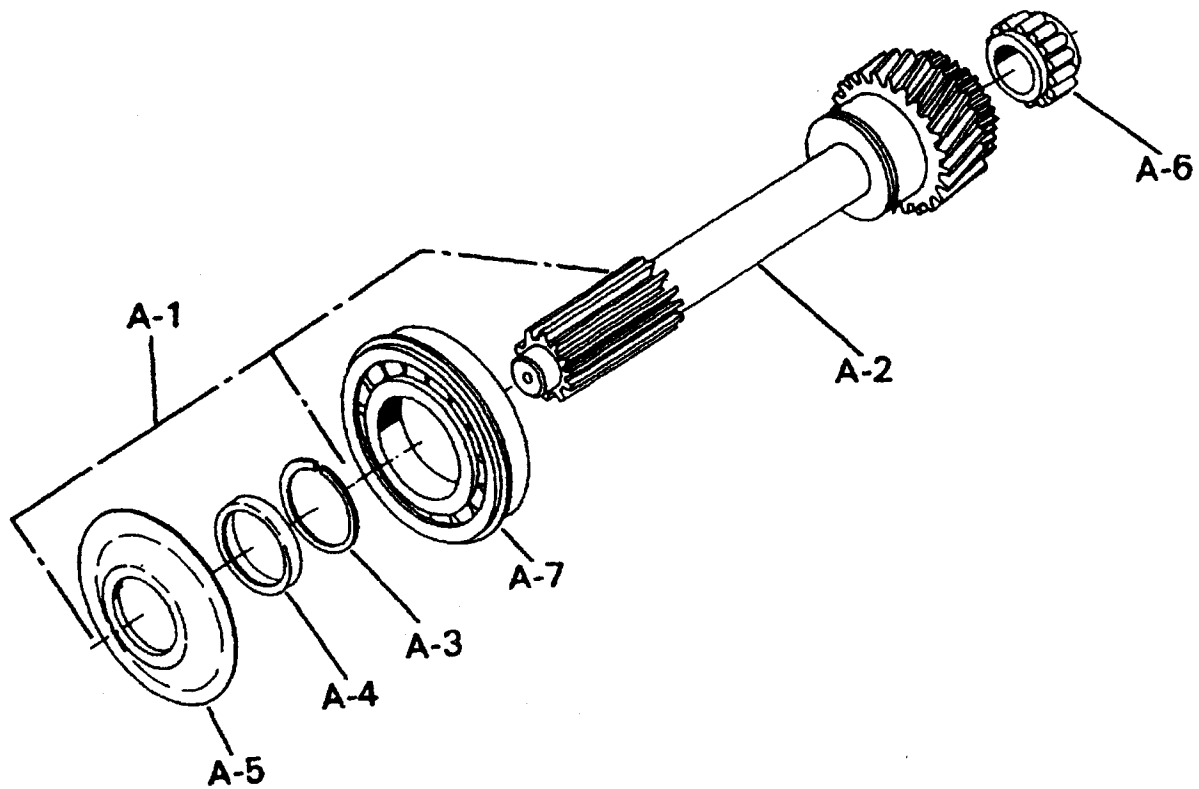
B/M No.  MODEL

In requesting more information on these transmissions, furnish the B/M No. and the Serial Number.

# ES46-5A GEARS and RELATED PARTS

T210-ES46-5A

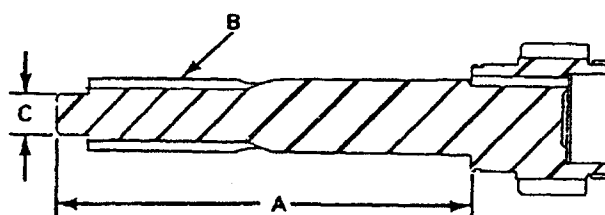
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# EASY SHIFT 5 SPEED MODELS GEARS and RELATED PARTS

T210-ES46-5A

| Ref. No. | Part No.             | Description                                       | Qty. |
|----------|----------------------|---------------------------------------------------|------|
| A-1      | <b>See Tab Bills</b> | <b>Drive Gear Group</b>                           |      |
| A-2      | <b>N.S.S.</b>        | Drive Gear - Sub-Assembly (includes A-2 thru A-5) | 1    |
| A-3      | <b>82-381-2</b>      | Drive Gear (see table below)                      | 1    |
| A-4      | <b>101-468-2</b>     | Snap Ring                                         | 1    |
| A-5      | <b>101-468-1</b>     | Oil Ring                                          | 1    |
| A-6      | <b>56-482-1</b>      | Baffle - Oil                                      | 1    |
| A-7      | <b>101-482-1</b>     | Bearing - Mainshaft Pocket                        | 1    |
|          |                      | Bearing - Drive Gear                              | 1    |



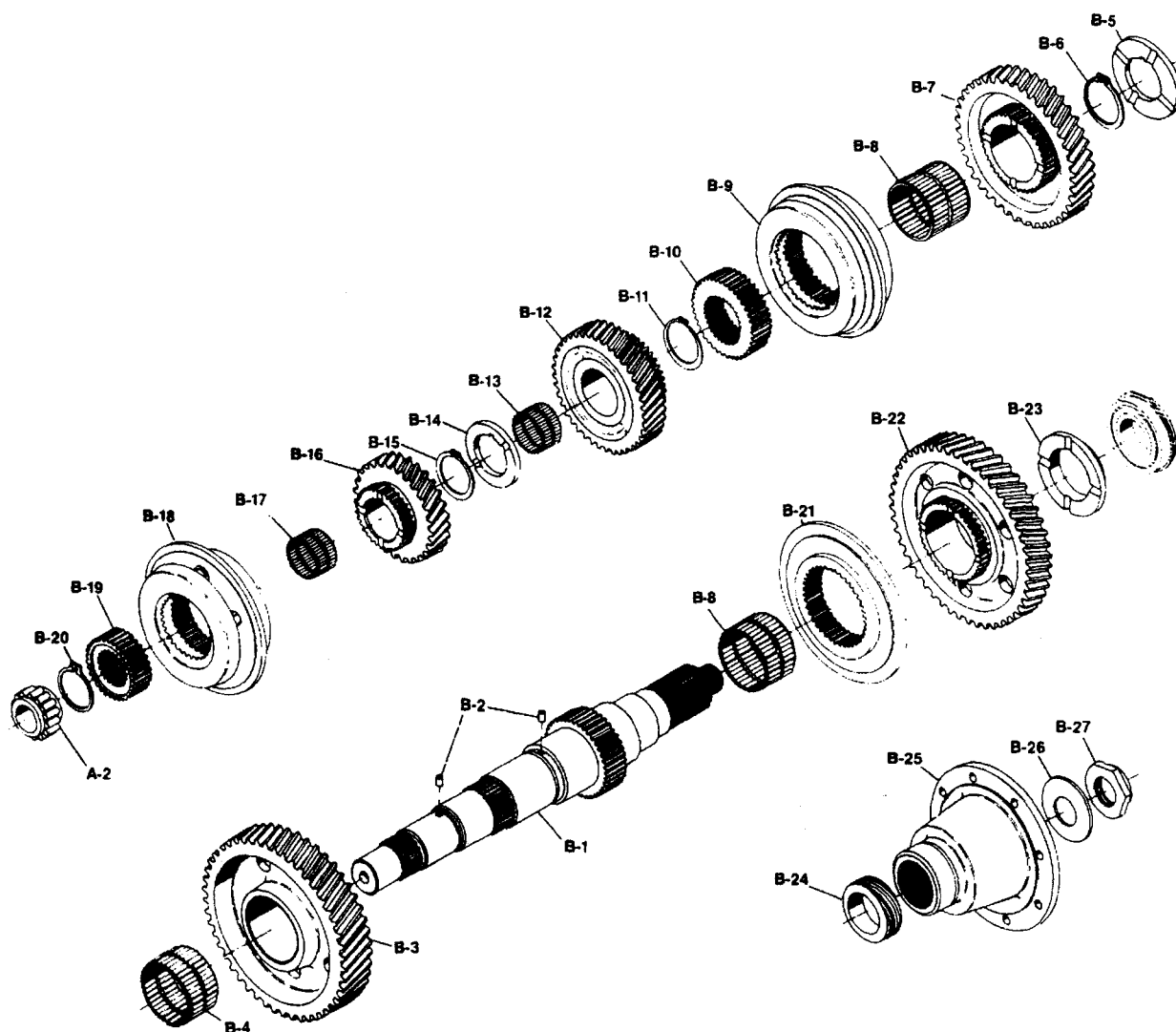
## DRIVE GEAR TABLE

| Teeth | A<br>Input Shaft<br>Length | B<br>Spline Dia. &<br>No. of Teeth | C<br>Pilot<br>Size | Drive Gear<br>Sub-Assembly<br>(Includes 49-468-2) |
|-------|----------------------------|------------------------------------|--------------------|---------------------------------------------------|
| 22T   | 9.89"                      | 1.500"-10 spline                   | .9837"             | 56-35-7-1X                                        |
| 22T   | 9.89"                      | 1.500"-10 spline                   | 1.180"             | 56-35-6-1X                                        |

N.S.S. - Not Sold Separately

# MODEL ES46-5A GEARS and RELATED PARTS

T210-ES46-5A



# EASY SHIFT 5 SPEED MODELS (460 lb-ft)

## GEARS and RELATED PARTS

T210-ES46-5A

| Ref. No. | Part No.      | Description                                    | Qty. |
|----------|---------------|------------------------------------------------|------|
|          |               | <b>Mainshaft Group - Output</b>                |      |
| B-1      | 56-362-1      | Mainshaft                                      | 1    |
| B-2      | 545087        | Pin - Thrust Washer Lock                       | 2    |
| B-3      | 56-8-16       | Gear - 1st Speed Mainshaft (35T)               | 1    |
| B-4      | 550991        | Bearing - 1st Speed Needle                     | 1    |
| B-5      | 49-47-1       | Washer - 1st & 2nd Speed Thrust                | 1    |
| B-6      | 49-381-1      | Snap Ring - 1st & 2nd Thrust Washer            | 1    |
| B-7      | 56-8-12       | Gear - 2nd Speed Mainshaft (38T)               | 1    |
| B-8      | 550963        | Bearing - 2nd & Reverse Needle                 | 2    |
| B-9      | 49-464-1X     | Synchronizer - 2nd & 3rd Mainshaft             | 1    |
| B-10     | 101-466-4     | Gear - 2nd & 3rd Mainshaft Clutch              | 1    |
| B-11     | 40-381-4      | Snap Ring - 2nd & 3rd Clutch Gear              | 1    |
| B-12     | 56-8-13       | Gear - 3rd Speed Mainshaft (34T)               | 1    |
| B-13     | 550968        | Bearing - 3rd Speed Gear                       | 1    |
| B-14     | 49-47-2       | Washer - 3rd & 4th Speed Thrust                | 1    |
| B-15     | 40-381-3      | Snap Ring - 3rd & 4th Thrust Washer            | 1    |
| B-16     | 56-8-15       | Gear - 4th Speed Mainshaft (22T) (for ES46-5A) | 1    |
| B-17     | 550990        | Bearing - 4th Speed Gear                       | 1    |
| B-18     | 101-464-1X    | Synchronizer - 4th & 5th Mainshaft             | 1    |
| B-19     | 56-466-1      | Gear - 4th & 5th Speed Clutch (33T)            | 1    |
| B-20     | 40-381-1      | Snap Ring - 4th & 5th Speed Clutch Gear        | 1    |
| B-21     | 101-465-7     | Clutch Collar- 1st & Rev.                      | 1    |
| B-22     | 56-8-17       | Gear - Reverse (33T)                           | 1    |
| B-23     | 101-47-4      | Washer - Reverse Thrust                        | 1    |
| B-24     | See Tab Bills | Gear - Speedometer Drive                       | 1    |
| B-25     | See Tab Bills | Companion Flange or End Yoke                   | 1    |
| B-26     | 53-205-1      | Washer - Mainshaft Nut                         | 1    |
| B-27     | 501200        | Nut - Mainshaft (1 1/4" - 18)                  | 1    |

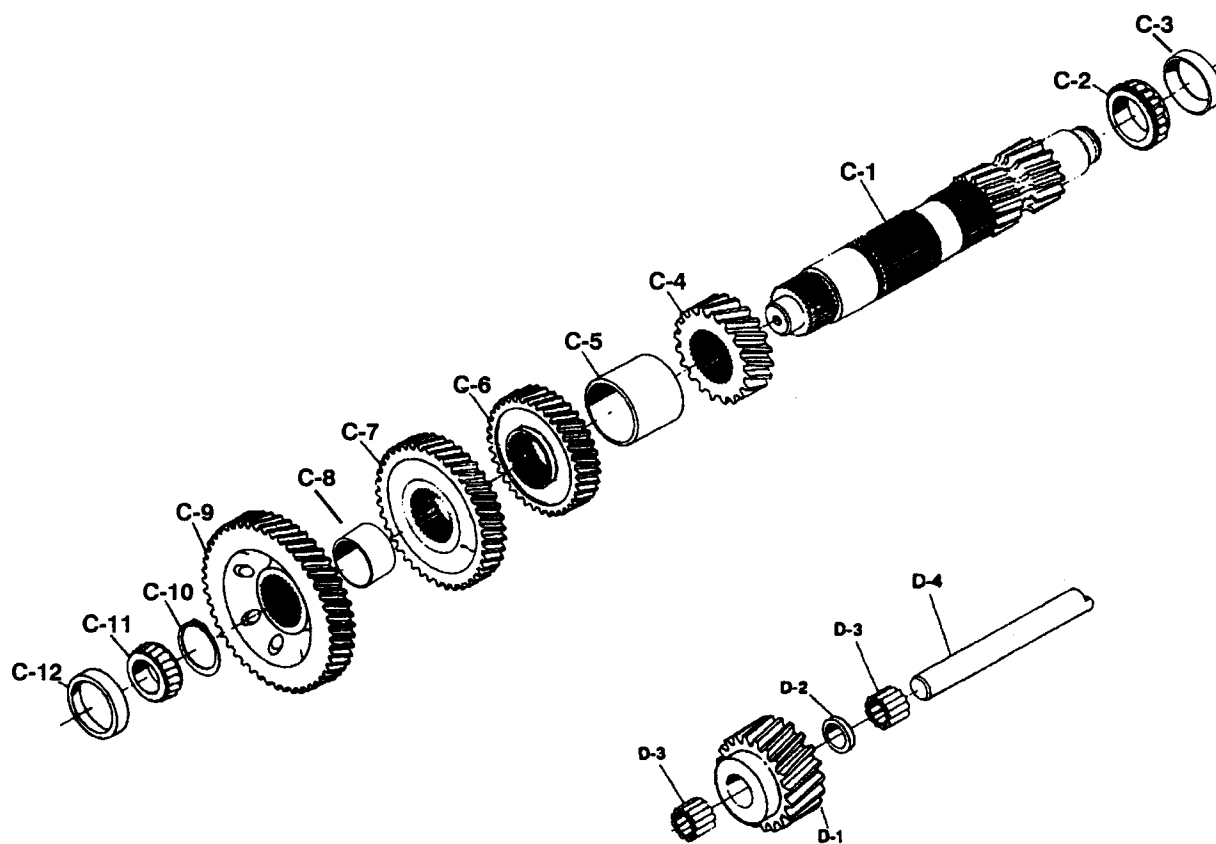
N.S.S. - Not Sold Separately

# MODEL ES46-5A

## GEARS and RELATED PARTS

T210-ES46-5A

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# EASY SHIFT 5 SPEED MODELS (460 lb-ft) CASE GROUP and RELATED PARTS

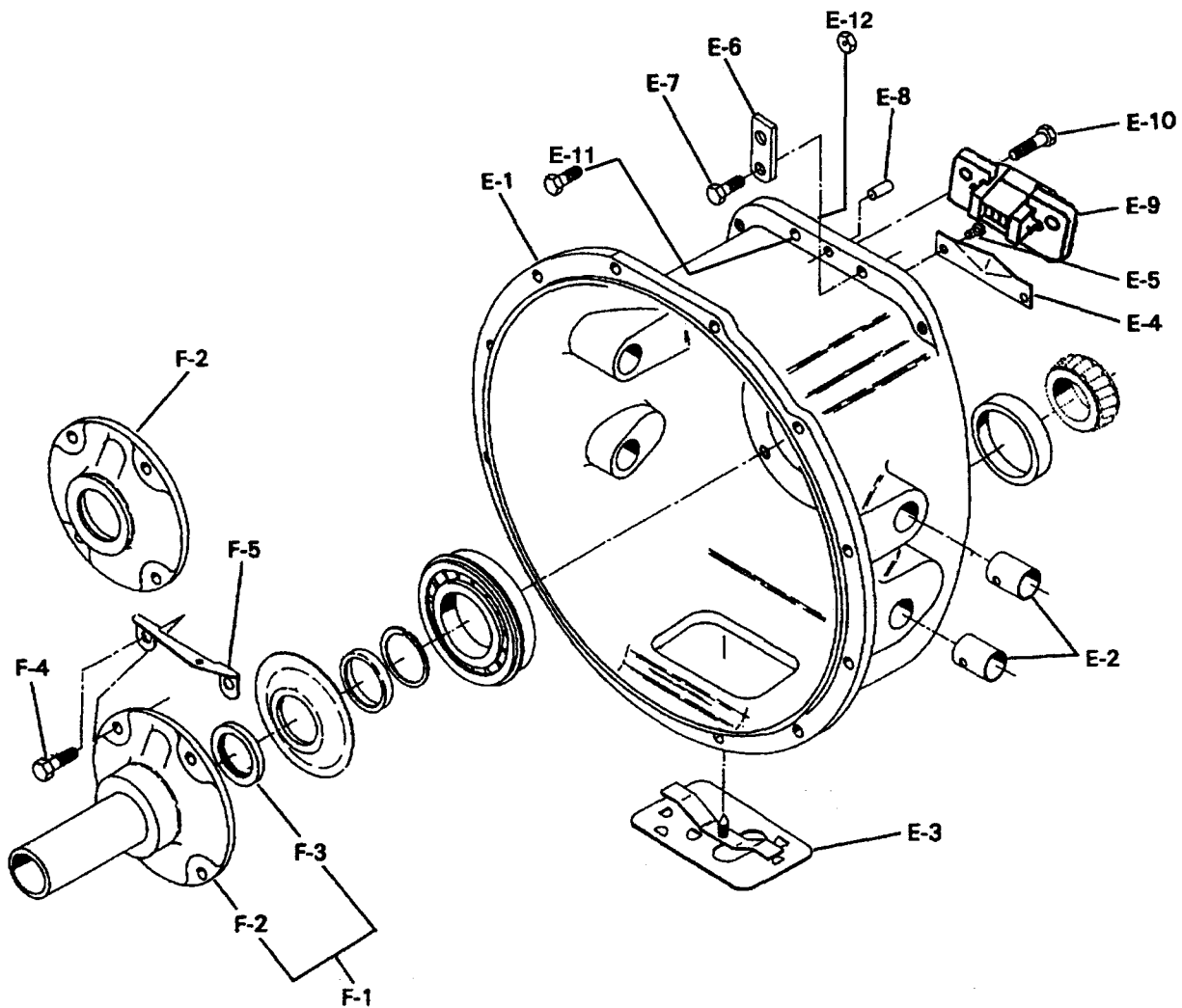
T210-ES46-5A

| Ref. No. | Part No.  | Description                                      | Qty. |
|----------|-----------|--------------------------------------------------|------|
|          |           | <b>Countershaft Group</b>                        |      |
| C-1      | 56-30-3   | Countershaft (without P.T.O. drive)              | 1    |
| C-2      | 550868    | Cone - Bearing - Countershaft Rear               | 1    |
| C-3      | 550978    | Cup - Bearing - Countershaft Rear                | 1    |
| C-4      | 56-196-9  | Gear - 2nd Speed Countershaft (20T)              | 1    |
| C-5      | 49-37-5   | Spacer - 2nd & 3rd Speed Countershaft Gear       | 1    |
| C-6      | 56-196-10 | Gear - 3rd Speed Countershaft (32T)              | 1    |
| C-7      | 56-196-12 | Gear - 4th Speed, Countershaft (32T) for ES46-5A | 1    |
| C-8      | 56-37-2   | Spacer - 4th & 5th Speed Countershaft Gear       | 1    |
| C-9      | 56-1-3    | Gear - Drive (44T) Countershaft                  | 1    |
| C-10     | 56-381-1  | Snap Ring - Countershaft Drive Gear              | 1    |
| C-11     | 550868    | Cone - Bearing - Countershaft Front              | 1    |
| C-12     | 550978    | Cup - Bearing - Countershaft Front               | 1    |
|          |           | <b>Reverse Idler Group</b>                       |      |
| D-1      | 56-5-3    | Gear - Reverse Idler (17T)                       | 1    |
| D-2      | 49-37-7   | Spacer - Bearing Reverse Idler Gear              | 1    |
| D-3      | 550886    | Bearing - Reverse Idler                          | 2    |
| D-4      | 63-60-1   | Shaft - Idler Gear                               | 1    |

N.S.S. - Not Sold Separately

**ES46-5A**  
**CLUTCH HOUSING and DRIVE GEAR BEARING CAP GROUP**  
**T210-ES46-5A**

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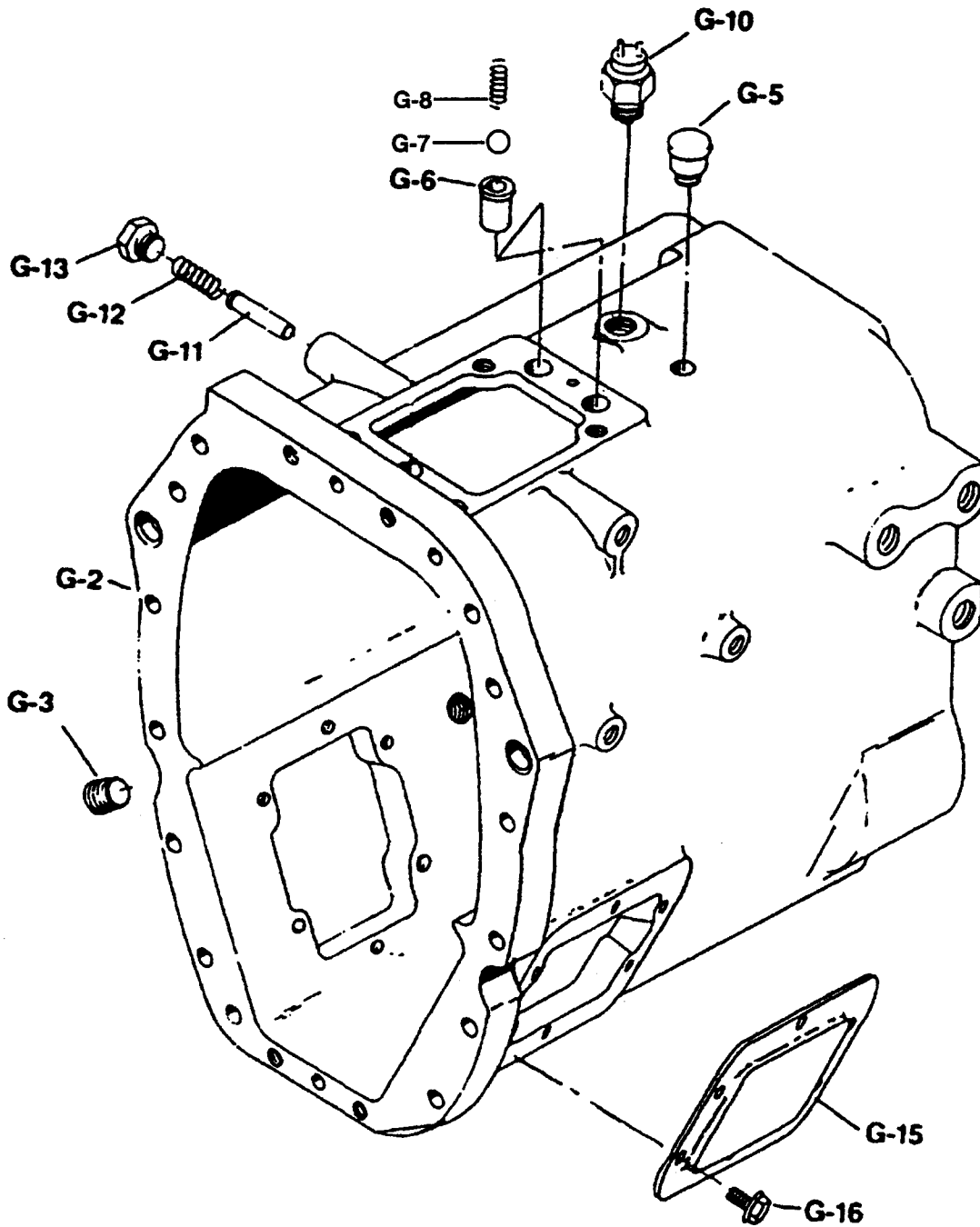
**ES46-5A****CLUTCH HOUSING and DRIVE GEAR BEARING CAP GROUP****T210-ES46-5A**

| <b>Ref. No.</b> | <b>Part No.</b>      | <b>Description</b>                                       | <b>Qty.</b> |
|-----------------|----------------------|----------------------------------------------------------|-------------|
|                 |                      | <b>Clutch Housing Group</b>                              |             |
|                 | <b>101-518-7-2X</b>  | Clutch Housing Assembly (includes E-1 thru E-5)          | <b>1</b>    |
| E-1             | <b>N.S.S.</b>        | Clutch Housing (C101-518-1)                              | <b>1</b>    |
| E-2             | <b>128C-20</b>       | Bushing - Clutch Release Shaft                           | <b>4</b>    |
| E-3             | <b>46-96-2-1X</b>    | Hand Hole Cover                                          | <b>1</b>    |
| E-4             | <b>40-468-1</b>      | Oil Trough                                               | <b>1</b>    |
| E-5             | <b>545141</b>        | Drive Pin                                                | <b>2</b>    |
| E-6             | <b>330969-4</b>      | Lift Hook                                                | <b>1</b>    |
| E-7             | <b>545002-4</b>      | Bolt - Clutch Housing (.375-16 x 1.125)                  | <b>16</b>   |
| E-8             | <b>545086</b>        | Dowel Pin - Clutch Housing to Front Case                 | <b>2</b>    |
| E-9             | <b>101-477-5</b>     | Support - Shift Bar - Front                              | <b>1</b>    |
| E-10            | <b>545002</b>        | Screw - Shift Bar Support - Front                        | <b>2</b>    |
| E-11            | <b>545002-3</b>      | Screw - Case to Clutch Housing                           | <b>2</b>    |
| E-12            | <b>500370-3</b>      | Nut - Case to Clutch Housing                             | <b>2</b>    |
|                 |                      | <b>Drive Gear Bearing Cap Group</b>                      |             |
| F-1             | <b>See Tab Bills</b> | Cap & Seal Assembly - Drive Gear (includes F-2 thru F-3) | <b>1</b>    |
|                 | <b>101-19-2-1X</b>   | Cap & Seal Assembly - (flat cap) (C101-19-1)             | <b>1</b>    |
|                 | <b>101-19-6-1X</b>   | Cap & Seal Assembly - (stem cap) (C101-19-5)             | <b>1</b>    |
| F-2             | <b>N.S.S.</b>        | Cap - Drive Gear                                         | <b>1</b>    |
| F-3             | <b>60-463-10-1X</b>  | Oil Seal (includes installation sleeves)                 | <b>1</b>    |
| F-4             | <b>545002</b>        | Screw - Drive Gear Bearing Cap (.375-16 x 1.00)          | <b>4</b>    |
| F-5             | <b>101-411-1</b>     | Bracket - Clutch Return Spring (Navistar only)           | <b>1</b>    |

N.S.S. - Not Sold Separately

# MODEL ES46-5A CASE GROUP

T210-ES46-5A



# EASY SHIFT 5 SPEED MODELS (460 lb-ft) CASE GROUP and RELATED PARTS

T210-ES46-5A

| Ref. No. | Part No.             | Description                                 | Qty. |
|----------|----------------------|---------------------------------------------|------|
|          |                      | <b>Case Group</b>                           |      |
| G-1      | <b>See Tab Bills</b> | Case Assembly (includes G-1 thru G-6)       | 1    |
| G-2      | <b>N.S.S.</b>        | Case (casting number C49-15-7)              | 1    |
| N.S.     | <b>NP-96</b>         | Name Plate                                  | 1    |
| N.S.     | <b>NP-196</b>        | Patent Plate                                | 1    |
| N.S.     | <b>252-SP</b>        | Pin - Name Plate                            | 4    |
| N.S.     | <b>330934</b>        | Magnet - Ceramic                            | 2    |
| N.S.     | <b>330800</b>        | Plug - Side Hole (3/8" - 16 x 3/4")         | 4    |
| G-3      | <b>545123</b>        | Plug - Filler/Drain (3/4" - 14 N.P.I.F.)    | 2    |
| G-5      | <b>312268</b>        | Breather                                    | 1    |
| G-6      | <b>101-487-1</b>     | Insert - Poppet Spring & Plunger            | 2    |
| G-7      | <b>101-80-2</b>      | Ball - Poppet                               | 2    |
| G-8      | <b>101-72-10</b>     | Spring - Poppet                             | 2    |
| G-10     | <b>313538</b>        | Switch - Back-Up Light (Navistar only)      | 1    |
| or       | <b>313539</b>        | Switch - Back-Up Light (Ford)               | 1    |
| N.S.     | <b>40-263-1</b>      | Sleeve - Back-Up Light (shipping)           | 1    |
| G-11     | <b>49-438-1</b>      | Pin - 1st & Reverse Select Plunger          | 1    |
| G-12     | <b>30-72-6</b>       | Spring - 1st & Reverse Shift Finger Plunger | 1    |
| G-13     | <b>545128</b>        | Plug- 1st & Reverse Plunger                 | 1    |
| G-15     | <b>50-267-2</b>      | Cover - PTO Aperture (6 bolt)               | 2    |
| N.S.     | <b>545056-6</b>      | Anaerobic Sealant                           | A/R  |
| G-16     | <b>330800</b>        | Screw - PTO Aperture Cover (.375-16 x .750) | 12   |

N.S.S. - Not Sold Separately

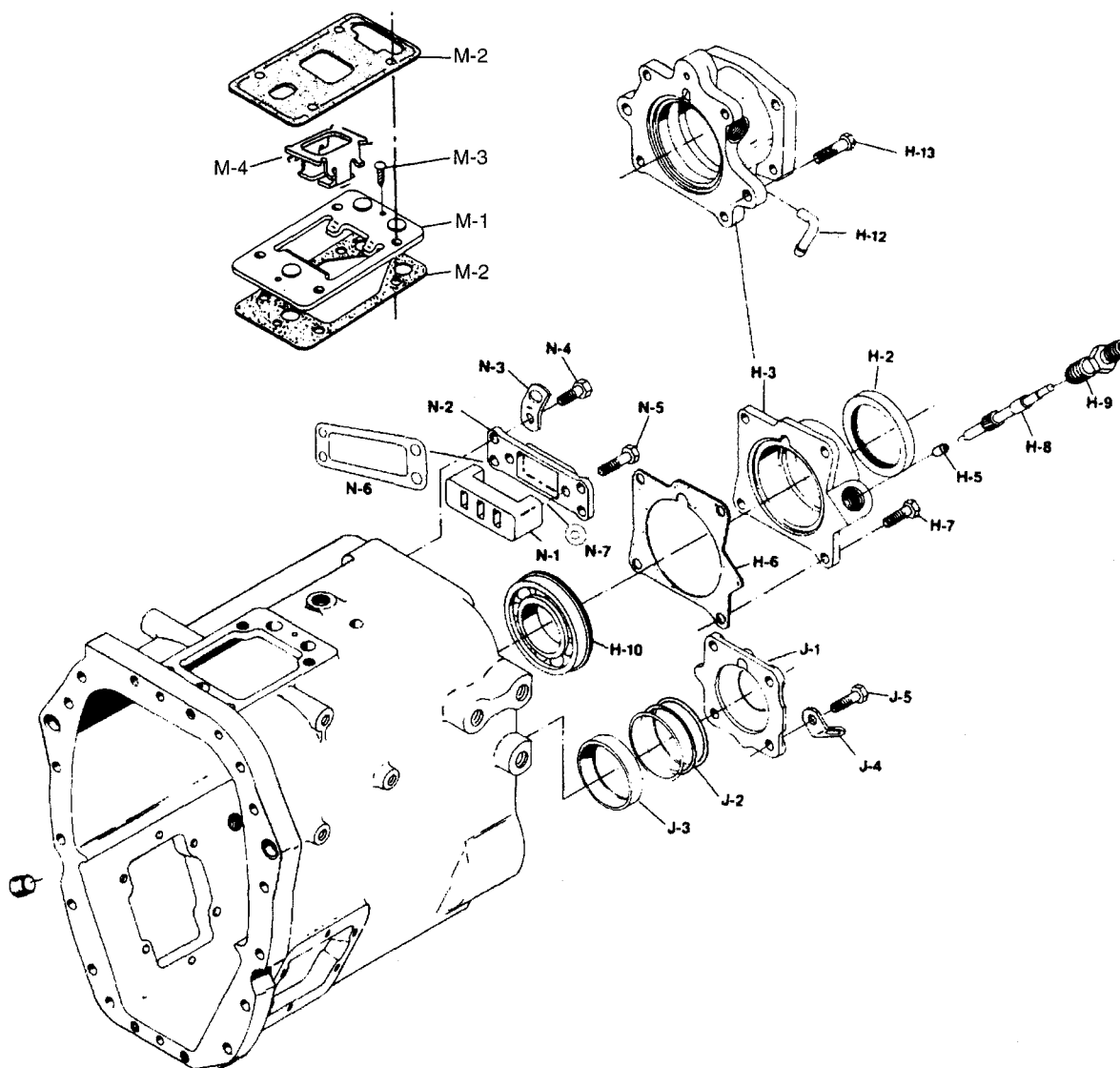
N.S. - Not Shown

A/R - As Required

# MODEL ES46-5A

## REAR BEARING CAP GROUP and RELATED PARTS

T210-ES46-5A



**MAINSHAFT REAR BEARING CAP TABLE**

| Part Number<br>H-1 | Part Number Includes |                |                     |               | Type & Description              | Used By     |
|--------------------|----------------------|----------------|---------------------|---------------|---------------------------------|-------------|
|                    | Oil Seal<br>H-2      | Casting Number | Speedo Bush.<br>H-5 | Gasket<br>H-6 |                                 |             |
| 40-19-19-2X        | 63-463-1             | C40-19-20      | 60-465-1            | 40-223-5      | 12x4 DOM, Mech. Speedo          | Navistar    |
| 40-19-22-2X        | 63-463-1             | C40-19-23      | 60-465-1            | 40-223-5      | 9x3/10x3 Bend. Mech. Speedo     | All         |
| 40-19-38-2X        | 63-463-1             | C40-19-46      | 60-465-1            | 40-223-4      | Air Cap, Mech. Speedo           | Ford & Std. |
| 40-19-39-1X        | 63-463-1             | C40-19-52      | —                   | 40-223-4      | Air Cap, Elec/Mech Speedo       | Nav. & GM   |
| 40-19-41-2X        | 63-463-1             | C40-19-44      | —                   | 40-223-5      | 12x4 Elect. Speedo Only         | Navistar    |
| 40-19-42-2X        | 63-463-1             | C40-19-45      | —                   | 40-223-5      | 9x3 Elect. Speedo Only          | Navistar    |
| 40-19-43-2X        | 63-463-1             | C40-19-46      | —                   | 40-223-4      | Air Cap, Elect. Speedo Only     | Navistar    |
| 40-19-49-2X        | 63-463-1             | C40-19-46      | —                   | 40-223-4      | Air Cap, Elect. Speedo (Metric) | Volvo       |

# MODEL ES46-5A

## REAR BEARING CAP GROUP and RELATED PARTS

T210-ES46-5A

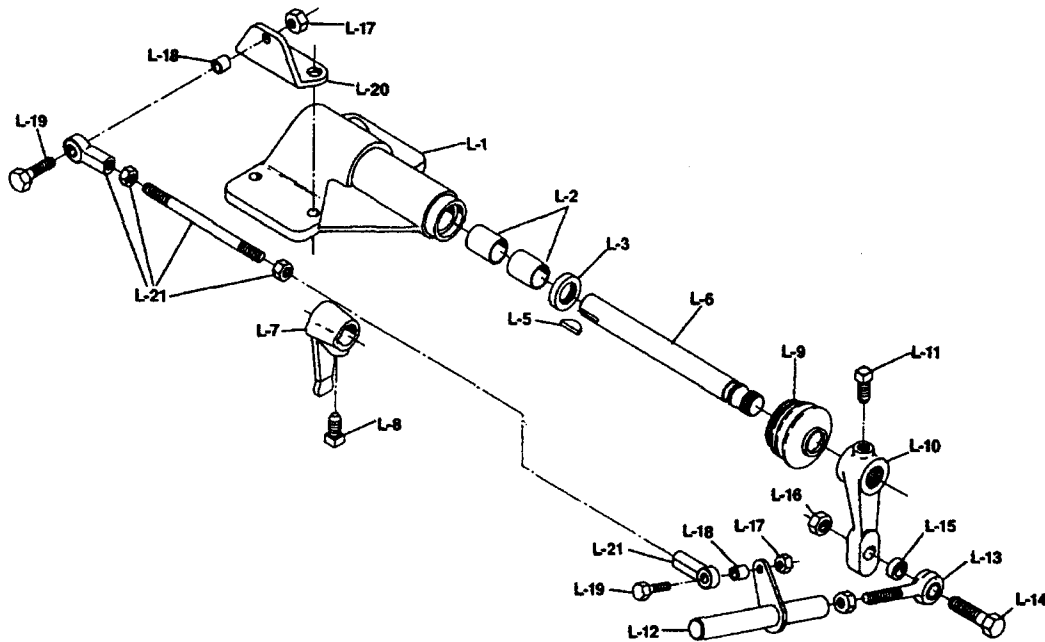
| Ref. No.                                   | Part No.             | Description                                           | Qty. |
|--------------------------------------------|----------------------|-------------------------------------------------------|------|
| <b>Mainshaft Rear Bearing Cap Group</b>    |                      |                                                       |      |
| H-1                                        | <b>See Tab Bills</b> | Cap Assembly - Mainshaft Bearing Rear                 | 1    |
| H-2                                        | <b>63-463-1</b>      | Oil Seal - Mainshaft Rear Bearing Cap                 | 1    |
| H-3                                        | <b>See Page 10</b>   | Cap Sub Assembly - Mainshaft Rear                     | 1    |
| H-4                                        | <b>N.S.S.</b>        | Cap - Mainshaft Rear Bearing                          | 1    |
| H-5                                        | <b>See Page 10</b>   | Bushing - Speedometer                                 | 1    |
| H-6                                        | <b>40-223-4</b>      | Gasket - Mainshaft Rear Bearing Cap                   | 1    |
| or                                         | <b>40-223-5</b>      | Gasket - Mainshaft Rear Bearing Cap (brake only)      | 1    |
| H-7                                        | <b>545002-4</b>      | Bolt - Rear Bearing Cap (.375-16 x 1.125)             | 4    |
| H-8                                        | <b>See Tab Bills</b> | Gear - Speedometer Drive                              | 1    |
| H-9                                        | <b>97-454-2-1X</b>   | Sleeve & Oil Seal                                     | 1    |
| N.S.                                       | <b>44-539-1</b>      | Cap - Speedometer Dust                                | 1    |
| N.S.                                       | <b>55-334-1</b>      | Plug - Speedometer (used without driven gear)         | 1    |
| N.S.                                       | <b>545106</b>        | Plug - Speedometer Outlet (electronic)                | 1    |
| H-10                                       | <b>550989</b>        | Bearing - Mainshaft Rear                              | 1    |
| N.S.                                       | <b>545021</b>        | Plug - Electronic Speedometer (Ford)                  | 1    |
| H-12                                       | <b>37179</b>         | Tube - Vent (assembly to front of transmission)       | 1    |
| H-13                                       | <b>545134</b>        | Bolt - Cap (D.C.M. brake)                             | 2    |
| or                                         | <b>545012</b>        | Plug - Case (rear holes)                              | 2    |
| <b>Countershaft Rear Bearing Cap Group</b> |                      |                                                       |      |
| J-1                                        | <b>101-22-1</b>      | Cap - Countershaft Rear Bearing                       | 1    |
| J-2                                        | <b>49-228-1-1</b>    | Shim - Countershaft Rear Bearing (.0055/.0045)        | 1    |
| or                                         | <b>49-228-1-2</b>    | Shim - Countershaft Rear Bearing (.0110/.0090)        | 1    |
| or                                         | <b>49-228-1-3</b>    | Shim - Countershaft Rear Bearing (.0165/.0135)        | 1    |
| J-3                                        | <b>550978</b>        | Cup - Countershaft Rear Bearing                       | 1    |
| J-4                                        | <b>330564-1</b>      | Lift Hook                                             | 1    |
| J-5                                        | <b>545015</b>        | Bolt - Countershaft Rear Bearing Cap (.375-16 x 1.00) | 4    |
| <b>Interlock Group</b>                     |                      |                                                       |      |
| M-1                                        | <b>101-200-7</b>     | Plate - Interlock Retainer                            | 1    |
| M-2                                        | <b>101-118-1</b>     | Gasket - Case to Interlock Plate (bottom)             | 1    |
| and                                        | <b>101-118-2</b>     | Gasket - Case to Interlock Plate (top)                | 1    |
| M-3                                        | <b>545091</b>        | Screw - Drive (interlock retainer)                    | 2    |
| M-4                                        | <b>101-12-1</b>      | Plate - Interlock                                     | 1    |
| <b>Rear Shaft Bar Support Group</b>        |                      |                                                       |      |
| N-1                                        | <b>49-477-5X</b>     | Support - Rear Shift Bar                              | 1    |
| N-2                                        | <b>40-96-1</b>       | Cap - Rear Shift Bar                                  | 1    |
| N-3                                        | <b>330564-1</b>      | Lift - Hook                                           | 1    |
| N-4                                        | <b>545002</b>        | Screw - Shift Bar Cap (.375-16 x 1.00)                | 4    |
| N-5                                        | <b>545002-9-3</b>    | Screw - Shift Bar Support (.375-16 x 2.250)           | 4    |
| N-6                                        | <b>49-223-1</b>      | Gasket - Shift Bar Cover                              | 1    |

N.S.S.- Not Sold Separately

N.S. - Not Shown

# MODEL ES46-5A REMOTE CONTROL ASSEMBLY

T210-ES46-5A



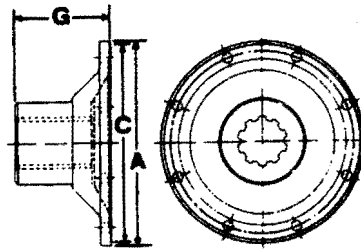
| Ref. No. | Part No.             | Description                                                               | 40-18-1 |     |     |
|----------|----------------------|---------------------------------------------------------------------------|---------|-----|-----|
|          |                      |                                                                           | -2X     | -3X | -6X |
|          | <b>See Tab Bills</b> | Remote Control Assembly                                                   | 1       | 1   | 1   |
|          | <b>40-18-1-1X</b>    | Remote Control Cover Assembly                                             | 1       | 1   | 1   |
| L-1      | <b>N.S.S.</b>        | Remote Control Cover                                                      | 1       | 1   | 1   |
| L-2      | <b>40-24-1</b>       | Bushing - Remote Control Cover                                            | 2       | 2   | 2   |
| L-3      | <b>28P-19</b>        | Seal - Remote Control Rod                                                 | 1       | 1   | 1   |
| N.S.     | <b>40-65-1-1X</b>    | Inner Shifter Shaft, Finger and Key                                       | 1       | 1   | 1   |
| L-5      | <b>500007-19</b>     | Key - Shift Bracket                                                       | 1       | 1   | 1   |
| L-6      | <b>40-65-1</b>       | Shaft - Remote Control                                                    | 1       | 1   | 1   |
| L-7      | <b>40-6-1</b>        | Finger - Shift                                                            | 1       | 1   | 1   |
| L-8      | <b>545063</b>        | Set Screw - $\frac{7}{8}$ " - 20 x .72 Square Head                        | 1       | 1   | 1   |
| L-9      | <b>97-483-3</b>      | Boot - Shift Rod                                                          | 1       | 1   | 1   |
| N.S.     | <b>LW-3-9</b>        | Lockwire                                                                  | 2       | 2   | 2   |
| L-10     | <b>40-6-3</b>        | Control Lever                                                             | 1       | -   | 1   |
| or       | <b>40-6-5</b>        | Control Lever                                                             | -       | 1   | -   |
| L-11     | <b>545136</b>        | Set Screw - $\frac{7}{16}$ " - 14 x $\frac{7}{8}$ Square Head             | 1       | 1   | 1   |
| L-12     | <b>40-65-3-1X</b>    | Shift Rod                                                                 | 1       | 1   | -   |
| L-13     | <b>330938</b>        | Rod End                                                                   | 1       | 1   | -   |
| L-14     | <b>545001-2</b>      | Bolt - Control Lever ( $\frac{1}{2}$ " - 13 x 2 $\frac{1}{4}$ " hex head) | 1       | 1   | -   |
| L-15     | <b>40-38-2</b>       | Spacer - Control Lever Bolt                                               | 1       | 1   | -   |
| L-16     | <b>500370-5</b>      | Nut - Control Lever and Rod End ( $\frac{1}{2}$ " - 13 hex)               | 1       | 1   | -   |
| L-17     | <b>500370-3</b>      | Nut - Tie Rod Assembly Mounting Bolt ( $\frac{3}{8}$ " - 16 hex)          | 2       | 2   | -   |
| L-18     | <b>40-38-3</b>       | Spacer - Tie Rod Assembly Mounting Bolt                                   | 2       | 2   | -   |
| L-19     | <b>545002-5</b>      | Bolt - Tie Rod Assembly ( $\frac{3}{8}$ " - 16 x 1.75 hex hed)            | 2       | 2   | -   |
| L-20     | <b>40-354-3</b>      | Bracket - Tie Rod                                                         | 1       | 1   | -   |
| L-21     | <b>40-65-2-1X</b>    | Tie Rod Assembly                                                          | 1       | 1   | -   |
| L-22     | <b>500371-5</b>      | Nut - Control Shift Rod                                                   | 1       | 1   | 1   |

N.S.S. - Not Sold Separately  
N.S. - Not Shown

# MODEL ES46-5A

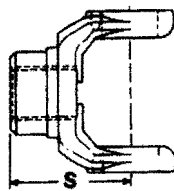
## COMPANION FLANGES and END YOKES

T210-ES46-5A

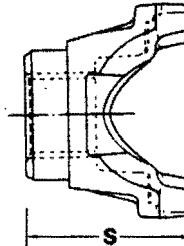


**COMPANION FLANGE**

| Companion Flanges |                         |                                             |                                 |                                             |                                           |                 |
|-------------------|-------------------------|---------------------------------------------|---------------------------------|---------------------------------------------|-------------------------------------------|-----------------|
| Joint Series      | A<br>Flange<br>Diameter | Part No.<br>Companion<br>Flange<br>Assembly | Part No.<br>Companion<br>Flange | G<br>End of Hub<br>to Flange<br>Face Length | C<br>Pilot Diameter<br>F-Female<br>M-Male | Brake<br>Size   |
| 1480/1550         | Rectangular             | —                                           | 53-106-2                        | 2 7/8"                                      | F-3 3/4"                                  | 9 x 3 or 12 x 4 |



**FULL ROUND**



**U-BOLT—BRG. STRAP—HALF ROUND**

| Series | Yoke Style   | End Yoke<br>Part Number | S<br>End of Hub to<br>Center Line Length | Joint Angle | Brake Size |
|--------|--------------|-------------------------|------------------------------------------|-------------|------------|
| 1480   | U-Bolt       | 3-4-8781                | 4 11/64"                                 | 22 1/2°     | —          |
| 1480   | Brg. Strap** | 3-4-8931-2              | 3 29/32"                                 | 23 1/2°     | —          |
| 1550   | U-Bolt       | 4-4-4491                | 4 1/64"                                  | 21 1/2°     | —          |
| 1550   | Brg. Strap*  | 4-4-4491-1              | 4 1/64"                                  | 21 1/2°     | —          |
| 1550   | Brg. Strap** | 4-4-4491-2              | 4 1/64"                                  | 21 1/2°     | —          |
| 1550   | U-Bolt       | 4-4-4601                | 6 27/64"                                 | 22°         | 12 x 4     |
| 1550   | U-Bolt       | 4-4-4611                | 4 11/64"                                 | 22 1/2°     | —          |
| 1550   | Brg. Strap*  | 4-4-4611-1              | 4 11/64"                                 | 22 1/2°     | —          |
| 1550   | Brg. Strap** | 4-4-4611-2              | 4 11/64"                                 | 22 1/2°     | —          |
| 1550   | Half Rnd.    | (A) 4-4-6111-1X         | 7 1/32"                                  | 22°         | 12 x 4     |
| 1610   | Full Rnd.    | 5-4-6321                | 4"                                       | 19°         | —          |
| 1610   | Half Rnd.    | 5-4-6321-1              | 4"                                       | 19°         | —          |
| 1610   | Full Rnd.    | 5-4-6481                | 4 11/64"                                 | 22 1/2°     | —          |
| 1610   | Half Rnd.    | 5-4-6481-1              | 4 11/64"                                 | 22 1/2°     | —          |
| 1610   | Full Rnd.    | 5-4-6491                | 6 21/32"                                 | 22°         | 12 x 4     |
| 1610   | Half Rnd.    | (A) 5-4-7611-1X         | 7 9/16"                                  | 22°         | 12 x 4     |
| 1710   | Full Rnd.    | 6-4-7301                | 5 1/4"                                   | 33 1/2°     | —          |
| 1710   | Half Rnd.    | 6-4-7301-1              | 5 1/4"                                   | 33 1/2°     | —          |

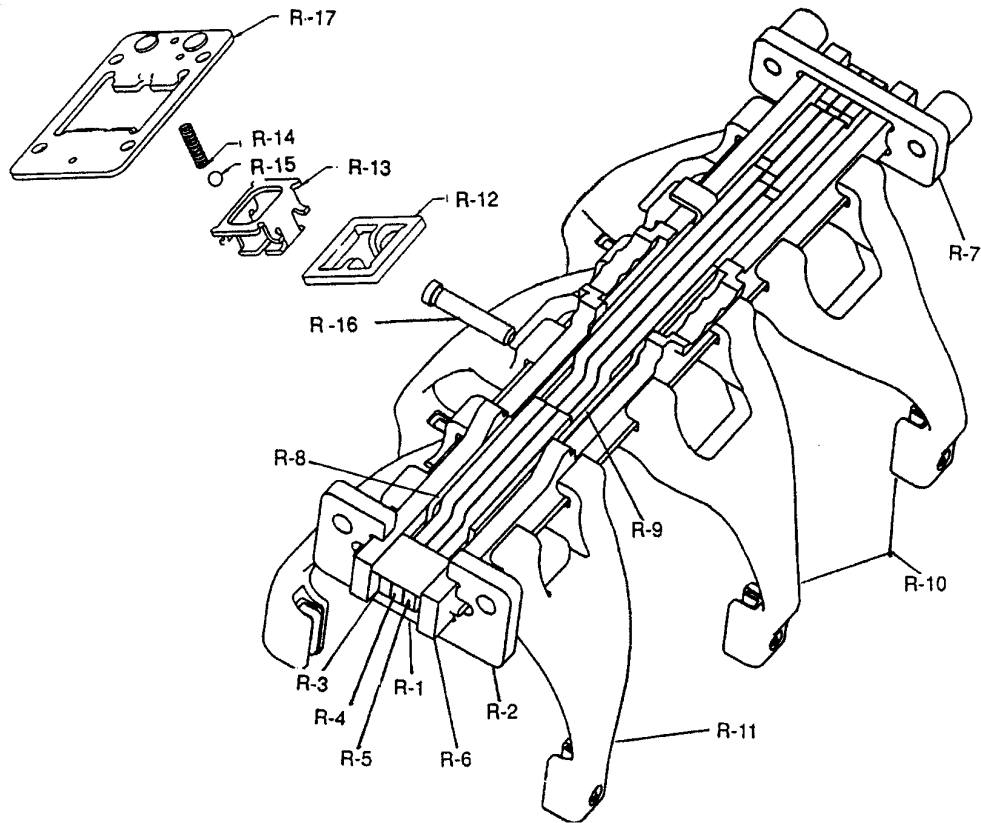
(A) Assembly Includes Brake Drum

\*With Tapped Holes

\*\*With Thru Holes

# EASY SHIFT 5 SPEED MODELS (560 lb-ft) SHIFT BAR and FORK ASSEMBLY

T210-ES56-5A



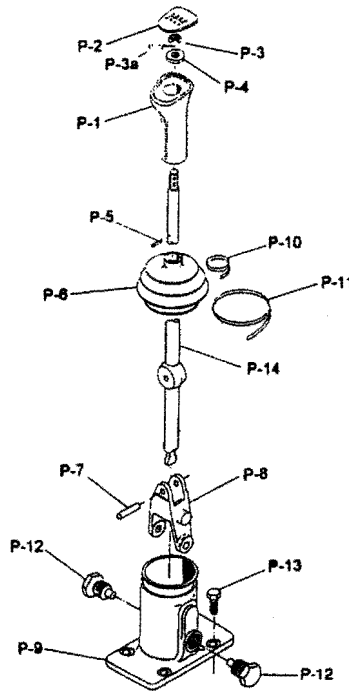
| Ref. No. | Part No.          | Description                                                  | Qty. |
|----------|-------------------|--------------------------------------------------------------|------|
|          | <b>56-69-1-1X</b> | Sub Assy. Opti-Rail Shift System (includes R-1 thru R-12)    | 1    |
| R-1      | <b>56-69-1X</b>   | Sub Assy. - Rail Channel (includes R-2 thru R-9)             | 1    |
| R-2      | <b>101-477-5</b>  | Support - Front Shift Bar                                    | 1    |
| R-3      | <b>NSS</b>        | Rail - Shift 1st/Rev.                                        | 1    |
| R-4      | <b>NSS</b>        | Rail - Shift 2nd/3rd                                         | 1    |
| R-5      | <b>NSS</b>        | Rail - Shift 4th/5th                                         | 1    |
| R-6      | <b>NSS</b>        | Channel                                                      | 1    |
| R-7      | <b>49-477-5X</b>  | Sub Assy. - Rear Shift Bar Support                           | 1    |
| R-8      | <b>NSS</b>        | Spacer - Shift Rail                                          | 1    |
| R-9      | <b>NSS</b>        | Spacer - Shift Rail                                          | 1    |
| R-10     | <b>101-66-27X</b> | Sub Assy. - Shift Fork 1st/Rev 2nd/3rd & Clips               | 2    |
| R-11     | <b>101-66-28X</b> | Sub Assy. - Shift Fork 4th/5th & Clips                       | 1    |
| R-12     | <b>101-999-21</b> | Cross Slide - Shift Rail                                     | 1    |
| N.S.     | <b>56-429-1X</b>  | Kit - Small Parts ES56-5 Opti-Rail (includes A-13 thru R-16) | 1    |
| R-13     | <b>101-12-1</b>   | Interlock Plate                                              | 1    |
| N.S.     | <b>101-487-1</b>  | Insert - Poppet Spring and Ball                              | 2    |
| R-14     | <b>101-72-10</b>  | Spring- Poppet                                               | 2    |
| R-15     | <b>101-80-2</b>   | Ball-Poppet                                                  | 2    |
| R-16     | <b>49-438-1</b>   | Pin - Side Detent                                            | 1    |
| R-17     | <b>101-200-7</b>  | Plate - Interlock Retainer                                   | 1    |

N.S. - Not Shown

N.S.S. - Not Sold Separately

# MODEL ES46-5A SHIFT LEVER and DOME ASSEMBLY

T210-ES46-5A



| Ref. No. | Part No.            | Description                                                | 101-17-2 |      |
|----------|---------------------|------------------------------------------------------------|----------|------|
|          |                     |                                                            | -28X     | -29X |
|          | <b>313768-2X</b>    | <b>Sub-Assembly - Shift Knob (includes P-1 thru P-5)</b>   | 1        | 1    |
| P-1      | <b>39Q-35</b>       | Handle - Shift Lever                                       | 1        | 1    |
| P-2      | <b>49-20-1</b>      | Insert - Shift Lever Handle (ES43-5 & ES53-5)              | 1        | 1    |
| P-2      | <b>101-20-9</b>     | Insert - Shift Lever Handle (ES52-7 & ES066-7B)            | 1        | 1    |
| P-3      | <b>500370-5</b>     | Nut - Shift Knob Retaining                                 | 1        | 1    |
| P-3a     | <b>500357-13</b>    | Washer - Shift Lever Retaining (lock type)                 | 1        | 1    |
| P-4      | <b>204-W</b>        | Washer - Shift Knob                                        | 1        | 1    |
| P-5      | <b>201-438-8</b>    | Pin - Shift Knob                                           | 1        | 1    |
| N.S.     | <b>101-17-2-10X</b> | <b>Sub Assembly - Shift Tower (includes P-6 thru P-13)</b> | 1        | 1    |
| P-6      | <b>101-483-2</b>    | Boot - Shift Tower and Lever                               | 1        | 1    |
| P-7      | <b>53Q-20</b>       | Pin - Pivot (Gimbal)                                       | 1        | 1    |
| P-8      | <b>48Q-60</b>       | Yoke - Shift (Gimbal)                                      | 1        | 1    |
| P-9      | <b>101-17-2</b>     | Tower - Shift (Gimbal)                                     | 1        | 1    |
| P-10     | <b>33Q-15-1</b>     | Tie Cable - Upper                                          | 1        | 1    |
| P-11     | <b>33Q-15-2</b>     | Tie Cable - Lower                                          | 1        | 1    |
| P-12     | <b>313591X</b>      | Kit - Trunion Screws (includes (2) Trunion screws)         | 1        | 1    |
| P-13     | <b>545028</b>       | Screw - Shift Tower                                        | 4        | 4    |
| P-14     | <b>25Q-2594-10</b>  | Shift Lever (26.400" long) Straight                        | 1        | -    |
|          | <b>25Q-2594-11</b>  | Shift Lever (30.712" long) Straight                        | -        | 1    |
|          | <b>2851</b>         | <b>Bulletin — Installation Shift Knob</b>                  | 1        | 1    |
|          |                     | <b>Parts Not Included In Tower Assemblies</b>              |          |      |
| N.S.     | <b>201-483-4</b>    | Boot - Floorboard (oval)                                   |          |      |
| N.S.     | <b>201-483-5</b>    | Boot - Floorboard (rectangular)                            |          |      |
| N.S.     | <b>101-483-13</b>   | Boot - Internal (UPS)                                      | 1        | 1    |

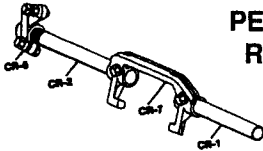
N.S. - Not Shown

N.S.S. - Not Sold Separately

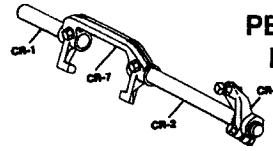
# MODEL ES46-5A

## CLUTCH RELEASE CODE TABLE

T210-ES46-5A



**PEDAL ADJUSTING ARM  
RIGHT SIDE—310473X**



**PEDAL ADJUSTING ARM  
LEFT SIDE—310233X**

### CR-1 SHORT SHAFT

| Part No.  | Length |
|-----------|--------|
| 106C-1142 | 6.125" |
| 106C-1185 | 5.750" |
| 106C-1216 | 4.750" |
| 106C-1278 | 4.812" |
| 106C-1360 | 5.312" |
| 106C-1375 | 6.781" |
| 106C-1498 | 6.500" |
| 330601-1  | 6.250" |

### CR-1 LONG SHAFT (Cont'd)

| Part No.  | Type | Length  |
|-----------|------|---------|
| 106C-1083 | RS-8 | 7.969"  |
| 106C-1094 | RS-8 | 8.469"  |
| 106C-1123 | RS-8 | 12.968" |
| 106C-1315 | RS-8 | 7.625"  |
| 106C-1367 | RS-8 | 10.312" |
| 106C-1375 | RS-8 | 6.781"  |
| 106C-1417 | RS-8 | 7.250"  |
| 106C-1422 | RS-8 | 7.500"  |
| 106C-1490 | RS-8 | 16.000" |
| 106C-1515 | RS-5 | 11.375" |
| 106C-1529 | RS-5 | 8.312"  |
| 330610-5  | RS-8 | 9.469"  |
| 330610-11 | RS-8 | 10.750" |
| 46-510-9  | RS-5 | 7.125"  |
| 330610-10 | RS-8 | 9.500"  |



### CR-2 LONG SHAFT

| Part No.  | Type | Length  |
|-----------|------|---------|
| 106C-438  | RS-5 | 14.000" |
| 106C-617  | RS-8 | 10.469" |
| 106C-839  | RS-8 | 11.469" |
| 106C-939  | RS-8 | 10.000" |
| 106C-953  | RS-8 | 9.750"  |
| 106C-959  | RS-8 | 11.968" |
| 106C-960  | RS-8 | 8.719"  |
| 106C-1046 | RS-8 | 8.968"  |
| 106C-1047 | RS-8 | 9.469"  |

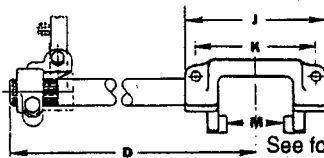
### CR-6 PEDAL ADJ. ARM

|              |                     |
|--------------|---------------------|
| 310233X      | For Left Side Mtg.  |
| 310473X      | For Right Side Mtg. |
| 47-526-1-1X* | Lever Type 7 1/4"   |
| 310873X*     | Lever Type 7 1/4"   |

\*Lever type can be used on either right or left side.

### THRU SHAFT (used with push type clutch)

| Part No.  | Type    | Length  |
|-----------|---------|---------|
| 106C-1566 | Splined | 19.125" |
| 106C-1578 | Splined | 19.500" |
| 49-510-1  | Keyed   | 19.120" |
| 97-510-2  | Splined | 19.313" |



See following page for "D" dimensions.

### CLUTCH RELEASE YOKES

| CR-7                  | Forging No. | Used With         | Type | J      | K      | M      |
|-----------------------|-------------|-------------------|------|--------|--------|--------|
| 105C-64               | F105C64     | Spicer 15 1/2" SP | Pull | 8.000" | 6.500" | 4.895" |
| 105C-68               | F105C99     | Spicer 14" SP     | Pull | 7.125" | 5.750" | 4.132" |
| 105C-117 <sup>1</sup> | F105C118    | Spicer & Others   | Push | 8.375" | 7.000" | 4.885" |
| 105C-124■             | F105C125    | Spicer AL & AR    | Push | 3.750" | 2.125" | 2.885" |
| 105C-132 <sup>2</sup> | F105C118    | Spicer & Others   | Push | 8.375" | 7.000" | 4.885" |
| 105C-137              | F105C138    | Spicer 13" and    | Pull | 8.000" | 6.500" | 4.895" |
|                       | C105C138    | 14" 2P            |      |        |        |        |
| 85-509-3 <sup>3</sup> | F105C118    | Spicer & Others   | Push | 8.375" | 7.000" | 4.885" |

<sup>1</sup>Machined washer surface on yoke front

<sup>2</sup>Machined washer surface on yoke rear (for clearance)

<sup>3</sup>Same as <sup>1</sup> above except contains spring holes in lugs

■ Use 7743X Clutch Release Bearing and (2) 230C-12 Springs

★ CLUTCH RELEASE YOKE ATTACHING PARTS—

Use one KEY 10-30, two SCREWS 330231 and two LOCK WASHERS 500356-12

NOTE: When changing from a two plate to single plate clutch or vice versa, a different bearing cap will be required.

# MODEL ES46-5A CLUTCH RELEASE CODE TABLE

T210-ES46-5A

| Rel.Code<br>See<br>Tab Bill | CR-7<br>Yoke★ | Shaft         |              | Adjustable<br>Arm | D<br>Dim.<br>(In.) | Rel. Code<br>See<br>Tab Bill | CR-7<br>Yoke★ | Shaft         |              | Adjustable<br>Arm | D<br>Dim.<br>(In.) |
|-----------------------------|---------------|---------------|--------------|-------------------|--------------------|------------------------------|---------------|---------------|--------------|-------------------|--------------------|
|                             |               | CR-1<br>Short | CR-2<br>Long |                   |                    |                              |               | CR-1<br>Short | CR-2<br>Long |                   |                    |
| 1                           | 105C-64       | 106C-1142     | 106C-1047    | 310233X           | 11.969             | 61                           | 105C-137      | 106C-1185     | 106C-839     | 310233X           | 13.969             |
| 2                           | 105C-64       | 106C-1185     | 106C-438     | —                 | 16.500             | 62                           | 105C-137      | 106C-1185     | 106C-939     | 310233X           | 12.500             |
| 3                           | 105C-64       | 106C-1185     | 106C-939     | 310233X           | 12.500             | 63                           | 105C-137      | 106C-1185     | 106C-939     | 310473X           | 12.500             |
| 4                           | 105C-64       | 106C-1185     | 106C-1046    | 310233X           | 11.468             | 64                           | 105C-137      | 106C-1185     | 106C-953     | 310473X           | 12.250             |
| 5                           | 105C-64       | 106C-1185     | 106C-1047    | 310233X           | 11.969             | 65                           | 105C-137      | 106C-1185     | 106C-1046    | 310233X           | 11.468             |
| 6                           | 105C-64       | 106C-1185     | 106C-1047    | 47-526-1-1X       | 11.969             | 66                           | 105C-137      | 106C-1185     | 106C-1046    | 310473X           | 11.468             |
| 7                           | 105C-64       | 106C-1544     | 106C-839     | 310233X           | 13.969             | 67                           | 105C-137      | 106C-1185     | 106C-1047    | 310233X           | 11.969             |
| 8                           | 105C-68       | 106C-1142     | 106C-438     | —                 | 16.125             | 68                           | 105C-137      | 106C-1185     | 106C-1083    | 310233X           | 10.469             |
| 9                           | 105C-68       | 106C-1142     | 106C-617     | —                 | 12.594             | 69                           | 105C-137      | 106C-1185     | 106C-1094    | —                 | 10.969             |
| 10                          | 105C-68       | 106C-1142     | 106C-617     | 310233X           | 12.594             | 70                           | 105C-137      | 106C-1185     | 106C-1094    | 310233X           | 10.969             |
| 11                          | 105C-68       | 106C-1142     | 106C-839     | 310233X           | 13.594             | 71                           | 105C-137      | 106C-1185     | 106C-1123    | —                 | 15.468             |
| 12                          | 105C-68       | 106C-1142     | 106C-939     | 310233X           | 12.125             | 72                           | 105C-137      | 106C-1185     | 106C-1123    | 310233X           | 15.468             |
| 13                          | 105C-68       | 106C-1142     | 106C-1046    | 310233X           | 11.093             | 73                           | 105C-137      | 106C-1185     | 106C-1367    | —                 | 12.812             |
| 14                          | 105C-68       | 106C-1142     | 106C-1047    | 310233X           | 11.594             | 74                           | 105C-137      | 106C-1185     | 106C-1367    | 310233X           | 12.812             |
| 15                          | 105C-68       | 106C-1278     | 106C-438     | —                 | 16.125             | 75                           | 105C-137      | 106C-1185     | 106C-1375    | 310873X           | 9.281              |
| 15A                         | 105C-68       | 106C-1278     | 106C-939     | 310473X           | 12.125             | 76                           | 105C-137      | 106C-1185     | 106C-1515    | —                 | 13.875             |
| 15B                         | 105C-68       | 106C-1278     | 106C-939     | 310233X           | 12.125             | 77                           | 105C-137      | 106C-1185     | 106C-1529    | —                 | 10.812             |
| 18                          | 105C-117      | 106C-1142     | 106C-939     | 310233X           | 12.750             | 78                           | 105C-137      | 106C-1185     | 330610-5     | —                 | 11.969             |
| 19                          | 105C-117      | 106C-1185     | 106C-438     | —                 | 16.750             | 78A                          | 105C-137      | 106C-1185     | 46-510-9     | —                 | 9.625              |
| 20                          | 105C-117      | 106C-1185     | 106C-617     | 310233X           | 13.219             | 79                           | 105C-137      | 106C-1216     | 106C-617     | 310233X           | 12.969             |
| 21                          | 105C-117      | 106C-1185     | 106C-839     | 47-526-1-1X       | 14.219             | 80                           | 105C-137      | 106C-1278     | 106C-438     | —                 | 16.500             |
| 22                          | 105C-117      | 106C-1185     | 106C-939     | 310233X           | 12.750             | 83                           | 105C-137      | 106C-1278     | 106C-617     | 310233X           | 12.969             |
| 23                          | 105C-117      | 106C-1185     | 106C-953     | 310873X           | 12.500             | 84                           | 105C-137      | 106C-1278     | 106C-939     | 310233X           | 12.500             |
| 24                          | 105C-117      | 106C-1185     | 106C-960     | 310233X           | 11.469             | 84A                          | 105C-137      | 106C-1278     | 106C-939     | 310473X           | 12.500             |
| 25                          | 105C-117      | 106C-1185     | 106C-1046    | 310233X           | 11.718             | 85                           | 105C-137      | 106C-1278     | 106C-939     | 310873X           | 12.500             |
| 26                          | 105C-117      | 106C-1185     | 106C-1047    | 310233X           | 12.219             | 86                           | 105C-137      | 106C-1278     | 106C-960     | 310233X           | 11.219             |
| 27                          | 105C-117      | 106C-1185     | 106C-1083    | —                 | 10.719             | 87                           | 105C-137      | 106C-1278     | 106C-1046    | —                 | 11.468             |
| 28                          | 105C-117      | 106C-1185     | 106C-1083    | 310233X           | 10.719             | 88                           | 105C-137      | 106C-1278     | 106C-1046    | 310233X           | 11.468             |
| 29                          | 105C-117      | 106C-1185     | 106C-1083    | 310473X           | 10.719             | 89                           | 105C-137      | 106C-1278     | 106C-1047    | —                 | 11.969             |
| 30                          | 105C-117      | 106C-1185     | 106C-1094    | 310233X           | 11.219             | 90                           | 105C-137      | 106C-1278     | 106C-1047    | 310233X           | 11.969             |
| 31                          | 105C-117      | 106C-1185     | 106C-1094    | 310873X           | 11.219             | 91                           | 105C-137      | 106C-1278     | 106C-1083    | 310233X           | 10.469             |
| 32                          | 105C-117      | 106C-1185     | 106C-1169    | 310233X           | 11.875             | 91A                          | 105C-137      | 106C-1278     | 106C-1083    | 310473X           | 10.469             |
| 33                          | 105C-117      | 106C-1185     | 106C-1315    | —                 | 10.375             | 92                           | 105C-137      | 106C-1278     | 106C-1094    | 310233X           | 10.969             |
| 34                          | 105C-117      | 106C-1185     | 106C-1315    | 310233X           | 10.375             | 92A                          | 105C-137      | 106C-1278     | 106C-1315    | 310233X           | 10.125             |
| 35                          | 105C-117      | 106C-1185     | 106C-1315    | 47-526-1-1X       | 10.375             | 93                           | 105C-137      | 106C-1278     | 106C-1375    | 310233X           | 9.281              |
| 35A                         | 105C-117      | 106C-1185     | 106C-1375    | 310873X           | 9.531              | 94                           | 105C-137      | 106C-1278     | 106C-1422    | 310233X           | 10.000             |
| 36                          | 105C-117      | 106C-1185     | 106C-1417    | 310233X           | 10.000             | 95                           | 105C-137      | 106C-1278     | 106C-1529    | —                 | 10.812             |
| 37                          | 105C-117      | 106C-1185     | 106C-1417    | 310873X           | 10.000             | 96                           | 105C-137      | 106C-1360     | 106C-1083    | —                 | 10.469             |
| 38                          | 105C-117      | 106C-1185     | 106C-1490    | 310233X           | 18.750             | 96A                          | 105C-137      | 106C-1360     | 106C-1417    | 310233X           | 9.750              |
| 39                          | 105C-117      | 106C-1278     | 106C-939     | 310233X           | 12.750             | 97                           | 105C-137      | 106C-1360     | 106C-1422    | 310233X           | 10.000             |
| 40                          | 105C-117      | 106C-1278     | 106C-960     | 310873X           | 11.469             | 98                           | 105C-137      | 106C-1375     | 106C-438     | 310233X           | 16.500             |
| 41                          | 105C-117      | 106C-1278     | 106C-1047    | 310233X           | 12.219             | 99                           | 105C-137      | 106C-1498     | 106C-438     | —                 | 16.500             |
| 42                          | 105C-117      | 106C-1278     | 106C-1094    | 310233X           | 11.219             | 100                          | 105C-137      | 106C-1498     | 106C-617     | 310233X           | 12.969             |
| 43                          | 105C-117      | 106C-1278     | 106C-1315    | 310233X           | 10.375             | 101                          | 105C-137      | 106C-1498     | 106C-617     | 310473X           | 12.969             |
| 44                          | 105C-117      | 106C-1278     | 106C-1367    | 310233X           | 13.062             | 102                          | 105C-137      | 106C-1498     | 106C-939     | 310233X           | 12.500             |
| 45                          | 105C-117      | 106C-1360     | 106C-1083    | 310233X           | 10.719             | 103                          | 105C-137      | 106C-1498     | 106C-939     | 310473X           | 12.500             |
| 46                          | 105C-117      | 106C-1360     | 106C-1315    | 310233X           | 10.375             | 104                          | 105C-137      | 106C-1498     | 106C-953     | 310233X           | 12.250             |
| 46A                         | 105C-117      | 106C-1360     | 330610-10    | —                 | 12.250             | 105                          | 105C-137      | 106C-1498     | 106C-959     | 310233X           | 14.468             |
| 49                          | 105C-124■     | 106C-1185     | 106C-438     | —                 | 14.313             | 106                          | 105C-137      | 106C-1498     | 106C-1046    | 310233X           | 11.468             |
| 50                          | 105C-124■     | Thru Shaft    | 106C-1566    | 310233X           | —                  | 107                          | 105C-137      | 106C-1498     | 106C-1047    | —                 | 11.969             |
| 51                          | 105C-124■     | Thru Shaft    | 106C-1566    | 310473X           | —                  | 108                          | 105C-137      | 106C-1498     | 106C-1047    | 310233X           | 11.969             |
| 52                          | 105C-124■     | Thru Shaft    | 106C-1566    | 310873X           | —                  | 109                          | 105C-137      | 106C-1498     | 106C-1083    | 310233X           | 10.469             |
| 52A                         | 105C-124■     | Thru Shaft    | 49-510-1     | 310233X           | —                  | 110                          | 105C-137      | 106C-1498     | 106C-1094    | —                 | 10.969             |
| 53                          | 105C-132      | 106C-1185     | 106C-1047    | 310233X           | 9.782              | 112                          | 105C-137      | 330601-1      | 106C-939     | 310233X           | 12.500             |
| 54                          | 105C-132      | 106C-1185     | 106C-1083    | 310233X           | 8.282              | 112A                         | 85-509-3      | 106C-1278     | 106C-939     | 310233X           | 12.750             |
| 55                          | 105C-132      | 106C-1185     | 106C-1417    | 310873X           | 7.563              | 113                          | 85-509-3      | 106C-1360     | 106C-1417    | 310233X           | 10.000             |
| 56                          | 105C-132      | 106C-1185     | 49-510-9     | —                 | 7.438              | 114                          | 85-509-3      | Thru Shaft    | 106C-1578    | 310233X           | —                  |
| 57                          | 105C-132      | 106C-1278     | 46-510-9     | —                 | 7.438              | 114A                         | 85-509-3      | Thru Shaft    | 106C-1578    | 310473X           | —                  |
| 59                          | 105C-137      | 106C-1185     | 106C-438     | —                 | 16.500             | 115                          | 85-509-3      | Thru Shaft    | 106C-1578    | 310873X           | —                  |
| 60                          | 105C-137      | 106C-1185     | 106C-617     | 310233X           | 12.969             | 116                          | 312916        | Thru Shaft    | 97-510-2     | —                 | —                  |

■ Use 7743X Clutch Release Bearing and (2) 230C-12 Springs

# MODEL ES46-5A OVERHAUL KITS

## T210-ES46-5A

| Part No.     | Description                                                         | Qty. |
|--------------|---------------------------------------------------------------------|------|
|              | <b>Major Overhaul Kit</b>                                           |      |
| 56-400-1X    | Major Overhaul Kit                                                  | 1    |
| 501200       | Nut - Mainshaft Output                                              | 1    |
| 53-205-1     | Washer - Mainshaft Nut                                              | 1    |
| 313401-34X   | Thrust Washer Kit                                                   | 1    |
| 56-429-1X    | Shifter Housing Small Parts Kit                                     | 1    |
| 56-432-1X    | Minor Overhaul Kit                                                  | 1    |
|              | <b>Minor Overhaul Kit (included in major overhaul kit)</b>          |      |
| 56-432-1X    | Minor Overhaul Kit                                                  | 1    |
|              | <b>Bearings</b>                                                     |      |
| 56-482-1     | Mainshaft Pocket                                                    | 1    |
| 550989       | Mainshaft Rear Cone                                                 | 1    |
| 101-482-1    | Drive Gear Front                                                    | 1    |
| 550963       | Mainshaft 2nd & Reverse                                             | 2    |
| 550886       | Reverse Idler Gear                                                  | 2    |
| 550989       | Mainshaft Rear                                                      | 1    |
| 550868       | Countershaft Rear & Front - Cone                                    | 2    |
| 550978       | Countershaft Rear & Front - Cup                                     | 2    |
| 550968       | Mainshaft 3rd Needle                                                | 1    |
| 550991       | Mainshaft 1st Speed                                                 | 1    |
| 550990       | Mainshaft 4th Speed                                                 | 1    |
| 101-486-1    | Clip - Shift Fork                                                   | 6    |
| 60-463-10-1X | Seal - Drive Gear                                                   | 1    |
| 63-463-1     | Seal - Mainshaft Rear                                               | 1    |
| 545077       | #2 Moly Grease (packet)                                             | 1    |
| 545080-1     | Loctite - Threadlock Adhesive (vial)                                | 1    |
| 312475-47X   | Gasket Kit                                                          | 1    |
| 313438-3X    | Shim Kit - Countershaft Rear                                        | 1    |
| 56-381-2X    | Snap Ring - Kit                                                     | 1    |
|              | Service Manual                                                      | 1    |
| 2770         | Bulletin - Bearing Lube Instruction                                 | 1    |
| 2783         | Bulletin - Loctite Application for Mainshaft Nut                    | 1    |
|              | <b>Thrust Washer Kit (included in major overhaul kit)</b>           |      |
| 313401-34X   | Thrust Washer Kit (included in major overhaul kit)                  | 1    |
| 49-47-2      | Mainshaft - 3rd & 4th Speed                                         | 1    |
| 49-47-1      | Mainshaft - 1st & 2nd Speed                                         | 1    |
| 101-47-4     | Mainshaft - Reverse                                                 | 1    |
| 545087       | Pin - Lock                                                          | 2    |
|              | <b>Shifter Housing Small Parts (included in major overhaul kit)</b> |      |
| 56-429-1X    | Shifter Housing Small Parts (included in major overhaul kit)        | 1    |
| 101-80-2     | Ball - Poppet                                                       | 2    |
| 101-487-1    | Insert - Poppet Spring and Ball                                     | 2    |
| 49-438-1     | Pin - 1st and Reverse Select Plunger                                | 1    |
| 101-72-10    | Spring - Shift Bar Poppet                                           | 2    |
| 30-72-6      | Spring - 1st & Reverse Shift Finger Plunger                         | 1    |

# MODEL ES46-5A OVERHAUL KITS

T210-ES46-5A

| Part No.            | Description                                              | Qty.     |
|---------------------|----------------------------------------------------------|----------|
| <b>312475-47X</b>   | <b>Gasket Kit (included in minor overhaul kit)</b>       | <b>1</b> |
| <b>40-223-4</b>     | Mainshaft Rear Bearing Cap                               | 1        |
| <b>40-223-5</b>     | Mainshaft Rear Bearing Cap (D.C.M. brake)                | 1        |
| <b>101-118-1</b>    | Tower                                                    | 1        |
| <b>101-118-2</b>    | Tower                                                    | 1        |
| <b>545056-10</b>    | Anaerobic Sealant                                        | 1        |
| <b>49-223-1</b>     | Gasket - Shift Bar Cover                                 | 1        |
| <b>2792</b>         | Bulletin - Liquid Gasket                                 | 1        |
| <b>56-381-2X</b>    | <b>Snap Ring Kit (included in minor overhaul kit)</b>    | <b>1</b> |
| <b>40-381-3</b>     | Mainshaft 3rd & 4th Thrust Washer                        | 1        |
| <b>56-381-1</b>     | Countershaft Head End Gear                               | 1        |
| <b>40-381-4</b>     | Mainshaft 2nd & 3rd Clutch Gear                          | 1        |
| <b>49-381-1</b>     | Mainshaft 1st & 2nd Speed Thrust Washer                  | 1        |
| <b>82-381-2</b>     | Mainshaft Front Bearing                                  | 1        |
| <b>40-381-1</b>     | 4th & 5th Gear                                           | 1        |
| <b>313438-3X</b>    | <b>Shim Kit (included in minor overhaul kit)</b>         | <b>1</b> |
| <b>49-228-1-3</b>   | Countershaft Rear Bearing Cap (.0165/.0135)              | 1        |
| <b>49-228-1-2</b>   | Countershaft Rear Bearing Cap (.0110/.0090)              | 1        |
| <b>49-228-1-1</b>   | Countershaft Rear Bearing Cap (.055/.0045)               | 1        |
| <b>2793</b>         | Bulletin - Countershaft Shim Kit                         | 1        |
| <b>60-463-10-1X</b> | <b>Breakdown of Oil Seals in the Minor Overhaul Kit</b>  |          |
|                     | <b>Sub Assembly - Oil Seal &amp; Installation Sleeve</b> | <b>1</b> |
| <b>60-463-10</b>    | Seal - Drive Gear Bearing Cap                            | 1        |
| <b>40-204-1</b>     | Sleeve - Oil Seal Installation (1.75 diameter shaft)     | 1        |
| <b>40-204-2</b>     | Sleeve - Oil Seal Installation (1.50 diameter shaft)     | 1        |
| <b>2821</b>         | Bulletin - Oil Seal Installation Instruction             | 1        |
| <b>40-204-3</b>     | Sleeve - Oil Seal Installation (1.375 diameter shaft)    | 1        |

## THE ANAEROBIC SEALANT SHOULD BE APPLIED AS FOLLOWS:

Approx. (4)cc for C/S Bearing Caps  
Approx. (4)cc for Rear Shift Bar Support  
Approx. (6)cc for Drive Gear Bearing Cap

A 50cc tube is supplied in the Minor Overhaul Kit

# MODEL ES46-5A

## TABULATED BILLS OF MATERIAL

### T210-ES46-5A

| Tab No.       | Used By         | For Use With Clutch | CLUTCH HOUSING |                  |                 | Main Drive Gear | Drive Gear Bearing Cap F-1 | Case Assembly G-1 |
|---------------|-----------------|---------------------|----------------|------------------|-----------------|-----------------|----------------------------|-------------------|
|               |                 |                     | S A E          | Assembly No. E-1 | Rel. Code Pages |                 |                            |                   |
| Model ES46-5A |                 |                     |                |                  |                 |                 |                            |                   |
| 301737        |                 |                     |                |                  |                 |                 |                            |                   |
| -1            | Navistar        | Push Type           | 2              | 101-518-7-1X     | —               | 56-35-6-1X      | 101-19-6-1X                | 49-15-6-1X        |
| -2            | Navistar        | Push Type           | 2              | 101-518-7-1X     | —               | 56-35-6-1X      | 101-19-6-1X                | 49-15-6-1X        |
| -3            | Navistar        | Push Type           | 2              | 101-518-7-1X     | —               | 56-35-6-1X      | 101-19-6-1X                | 49-15-6-1X        |
| -4            | Navistar        | Push Type           | 2              | 101-518-7-1X     | —               | 56-35-6-1X      | 101-19-6-1X                | 49-15-6-1X        |
| -5            | American Trans. | Push Type           | 2              | 101-518-7-1X     | —               | 56-35-6-1X      | 101-19-6-1X                | 49-15-6-1X        |
| -6            |                 |                     |                |                  |                 |                 |                            |                   |
| -7            |                 |                     |                |                  |                 |                 |                            |                   |
| -8            |                 |                     |                |                  |                 |                 |                            |                   |
| -9            |                 |                     |                |                  |                 |                 |                            |                   |
| -10           |                 |                     |                |                  |                 |                 |                            |                   |
| -11           |                 |                     |                |                  |                 |                 |                            |                   |
| -12           |                 |                     |                |                  |                 |                 |                            |                   |
| -13           |                 |                     |                |                  |                 |                 |                            |                   |
| -14           |                 |                     |                |                  |                 |                 |                            |                   |
| -15           |                 |                     |                |                  |                 |                 |                            |                   |
| -16           |                 |                     |                |                  |                 |                 |                            |                   |
| -17           |                 |                     |                |                  |                 |                 |                            |                   |
| -18           |                 |                     |                |                  |                 |                 |                            |                   |
| -19           |                 |                     |                |                  |                 |                 |                            |                   |
| -20           |                 |                     |                |                  |                 |                 |                            |                   |
| -21           |                 |                     |                |                  |                 |                 |                            |                   |
| -22           |                 |                     |                |                  |                 |                 |                            |                   |
| -23           |                 |                     |                |                  |                 |                 |                            |                   |
| -24           |                 |                     |                |                  |                 |                 |                            |                   |
| -25           |                 |                     |                |                  |                 |                 |                            |                   |
| -26           | Navistar        | Push Type           | 2              | 101-518-7-1X     | —               | 56-35-6-1X      | 101-19-6-1X                | 49-15-6-1X        |
| -27           |                 |                     |                |                  |                 |                 |                            |                   |
| -28           |                 |                     |                |                  |                 |                 |                            |                   |
| -29           |                 |                     |                |                  |                 |                 |                            |                   |
| -30           |                 |                     |                |                  |                 |                 |                            |                   |
| -31           |                 |                     |                |                  |                 |                 |                            |                   |
| -32           |                 |                     |                |                  |                 |                 |                            |                   |

# MODEL ES46-5A

## TABULATED BILLS OF MATERIAL

T210-ES46-5A

| Tab No.       | Mainshaft<br>Rear Brg. Cap<br>Assembly<br>H-1 | Speedometer                             |                       | End Yoke<br>or<br>Companion<br>Flange | Shifter             |                                      |                            |
|---------------|-----------------------------------------------|-----------------------------------------|-----------------------|---------------------------------------|---------------------|--------------------------------------|----------------------------|
|               |                                               | Drive Gear<br>or Signal<br>Gear<br>B-24 | Driven<br>Gear<br>H-7 |                                       | Housing<br>Assembly | Lever &<br>Dome<br>Assembly<br>Pages | Remote<br>Control<br>Pages |
| Model ES46-5A |                                               |                                         |                       |                                       |                     |                                      |                            |
| 301737        |                                               |                                         |                       |                                       |                     |                                      |                            |
| -1            | 40-19-53-2X                                   | 53-452-5                                | —                     | —                                     | —                   | —                                    | —                          |
| -2            | 40-19-42-2X                                   | 53-452-5                                | —                     | —                                     | —                   | —                                    | —                          |
| -3            | 40-19-41-2X                                   | 53-452-5                                | —                     | —                                     | —                   | —                                    | —                          |
| -4            | 40-19-43-2X                                   | 53-452-5                                | —                     | —                                     | —                   | —                                    | —                          |
| -5            | 40-19-53-2X                                   | 53-452-5                                | —                     | —                                     | —                   | —                                    | —                          |
| -6            |                                               |                                         |                       |                                       |                     |                                      |                            |
| -7            |                                               |                                         |                       |                                       |                     |                                      |                            |
| -8            |                                               |                                         |                       |                                       |                     |                                      |                            |
| -9            |                                               |                                         |                       |                                       |                     |                                      |                            |
| -10           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -11           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -12           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -13           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -14           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -15           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -16           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -17           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -18           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -19           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -20           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -21           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -22           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -23           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -24           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -25           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -26           | 201-37-7                                      | 53-452-5                                | —                     | —                                     | —                   | —                                    | —                          |
| -27           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -28           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -29           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -30           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -31           |                                               |                                         |                       |                                       |                     |                                      |                            |
| -32           |                                               |                                         |                       |                                       |                     |                                      |                            |

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