



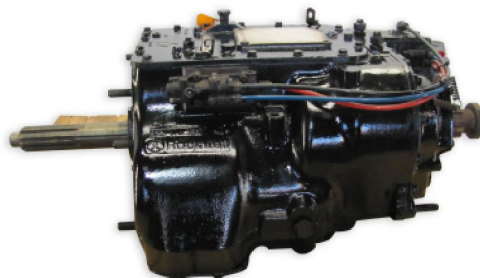
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## Rockwell Meritor "G Platform" 9 Speed MO-15G9B-E15 Parts Manual

Pro Gear and Transmission presents ZF Meritor's Platform "G" 9-Speed MO-15G9B-E15 Transmission Parts Manual to assist in identifying your Rockwell - Meritor transmission.

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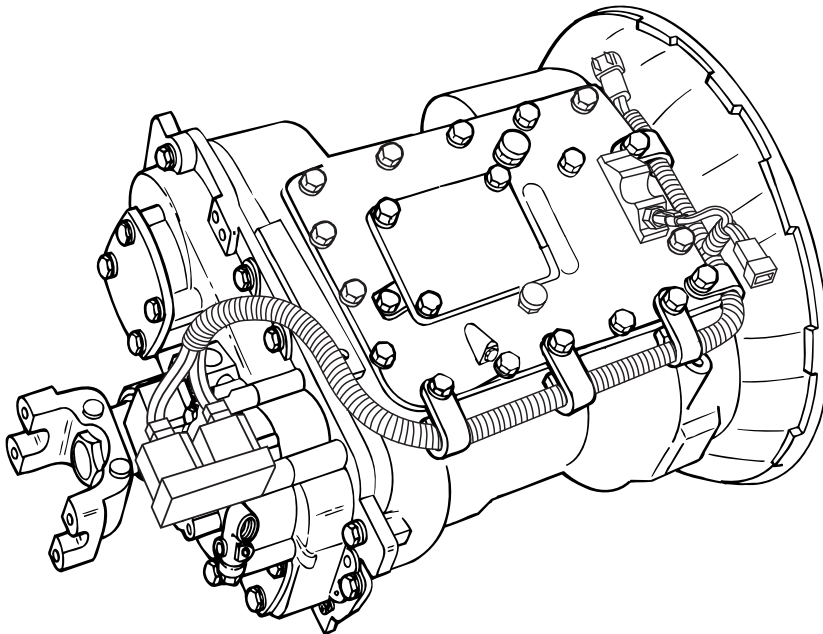
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# 9- and 10-Speed Transmissions Platform "G"

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Parts Book PB-20146



**Pro Gear & Transmission, Inc.**

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Phone: 407-871-1901

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## Introduction

|                                                |   |
|------------------------------------------------|---|
| How To Use This Parts Book .....               | 1 |
| Transmission Model Number Identification ..... | 2 |
| Transmission Model Numbers                     |   |
| How to Read Transmission Serial Numbers        |   |
| Transmission Replacements .....                | 3 |
| Transmission Sealants                          |   |

## Main Case

|                                                |    |
|------------------------------------------------|----|
| Transmission Case .....                        | 4  |
| Clutch Housing Assembly — Standard Mount ..... | 6  |
| Clutch Housing Assembly — Nodal Mount .....    | 7  |
| Input Shaft Bearing Retainer .....             | 8  |
| Oil Pump Assembly — Integral Mounting .....    | 10 |

## Main Gear

|                                                                 |    |
|-----------------------------------------------------------------|----|
| Input Shaft Assembly .....                                      | 11 |
| Main Shaft Assembly — 9-Speed Direct Drive .....                | 13 |
| Main Shaft Assembly — 9-Speed Overdrive “A” Ratio .....         | 15 |
| Main Shaft Assembly — 9-Speed Overdrive “B” Ratio .....         | 17 |
| Main Shaft Assembly — 10-Speed Direct Drive .....               | 19 |
| Main Shaft Assembly — 10-Speed Overdrive “A” Ratio .....        | 21 |
| Main Shaft Assembly — 10-Speed Overdrive “C” Ratio .....        | 23 |
| Main Countershaft Assembly — 9-Speed Direct Drive .....         | 24 |
| Main Countershaft Assembly — 9-Speed Overdrive “A” Ratio .....  | 25 |
| Main Countershaft Assembly — 9-Speed Overdrive “B” Ratio .....  | 26 |
| Main Countershaft Assembly — 10-Speed Direct Drive .....        | 27 |
| Main Countershaft Assembly — 10-Speed Overdrive “A” Ratio ..... | 29 |
| Main Countershaft Assembly — 10-Speed Overdrive “C” Ratio ..... | 31 |
| Reverse Idler Assembly .....                                    | 32 |

## Auxiliary Case Assembly

|                                                    |    |
|----------------------------------------------------|----|
| Transmission Rear Cover Assembly .....             | 33 |
| Auxiliary Drive Gear Assembly .....                | 34 |
| Auxiliary Countershaft Assembly .....              | 35 |
| Synchronizer Assembly .....                        | 36 |
| Output Shaft Assembly .....                        | 37 |
| Piston Housing Assembly/Air Filter Regulator ..... | 39 |

## Speedometer Items .....

|                              |    |
|------------------------------|----|
| Electronic Speedometer ..... | 41 |
|------------------------------|----|



# Table of Contents

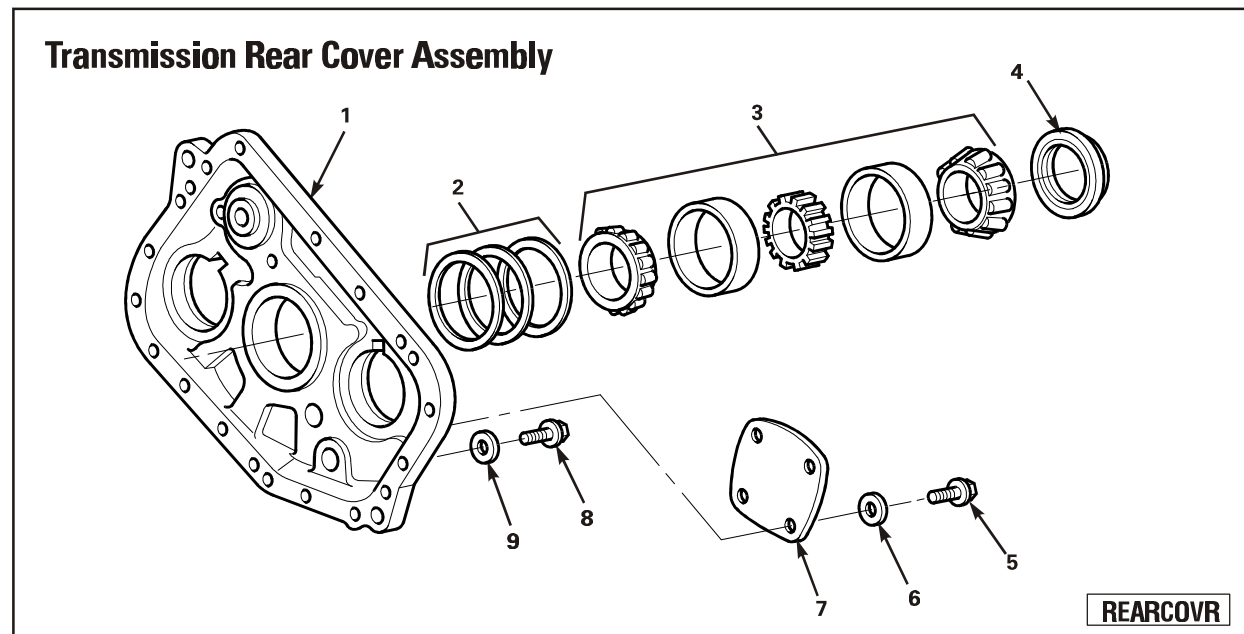


|                                                                                    |     |
|------------------------------------------------------------------------------------|-----|
| <b>Top Cover Assembly</b> .....                                                    | 42  |
| Top Cover Assembly — Standard Direct (Manual) Electric Over Air .....              | 43  |
| Top Cover Assembly — Standard Overdrive (Manual) Electric Over Air .....           | 45  |
| Top Cover Assembly — Forward Direct (Manual) Electric Over Air .....               | 47  |
| Top Cover Assembly — Forward Overdrive (Manual) Electric Over Air .....            | 49  |
| Top Cover Assembly — Standard Direct (ESS) .....                                   | 51  |
| Top Cover Assembly — Standard Overdrive (ESS) .....                                | 53  |
| Top Cover Assembly — Forward Direct (ESS) .....                                    | 55  |
| Top Cover Assembly — Forward Overdrive (ESS) .....                                 | 57  |
| Top Cover Assembly (SureShift ONLY) .....                                          | 58  |
| Shift Forks and Shafts (SureShift ONLY) .....                                      | 59  |
| <br><b>Controls</b> .....                                                          |     |
| Shift Knob — Electric Over Air (EOA), available with optional Shift-n-Cruise ..... | 60  |
| Shift Knob — Engine Synchro Shift (ESS) .....                                      | 61  |
| Shift Lever .....                                                                  | 62  |
| Pedestal Shifter .....                                                             | 63  |
| Cast Iron Shift Tower Assembly .....                                               | 65  |
| Remote Control Assembly — Standard Position .....                                  | 67  |
| Remote Control Assembly — Forward Position .....                                   | 69  |
| Isolator Assembly — Straight Lever .....                                           | 71  |
| Isolator Assembly — Close Bend 90 degrees .....                                    | 72  |
| Wire Harness — Platform “G” (Standard) .....                                       | 73  |
| Wire Harness — Platform “G” (Standard) Volvo Only .....                            | 75  |
| Wire Harness (ESS TCU) .....                                                       | 77  |
| Wire Harness — Engine Synchro Shift (ESS) .....                                    | 78  |
| Wiring Harness and Sensors — SureShift .....                                       | 79  |
| Cruise Control Retrofit Kit (Kit 5366) .....                                       | 80  |
| Display Gauge .....                                                                |     |
| SureShift Transmission Control Unit (TCU) .....                                    | 81  |
| <br><b>Labels</b> .....                                                            |     |
| Cab Shift Labels (Manual) — 9-Speed Transmission .....                             | 82  |
| Cab Shift Labels (Manual) — 10-Speed Transmission .....                            | 83  |
| Cab Shift Labels (ESS and ESS TCU) — 9-Speed Transmission .....                    | 84  |
| Cab Shift Labels (ESS and ESS TCU) — 10-Speed Transmission .....                   | 85  |
| Cab Shift Labels (SureShift) .....                                                 | 86  |
| Lubricant Label .....                                                              | 87  |
| <br><b>Output Yokes</b> .....                                                      | 88  |
| Yokes .....                                                                        | 89  |
| <br><b>Special Service Tools</b> .....                                             | 90  |
| Special Service Tools (Manual) .....                                               | 91  |
| Shift-n-Cruise™ Tester (ESS™) .....                                                | 92  |
| EOA Shift Knob Tester .....                                                        |     |
| <br><b>Kits</b> .....                                                              | 93  |
| <br><b>Numerical Parts Listing</b> .....                                           | 101 |

## How To Use This Parts Book

This parts book contains information for ZF Meritor's Platform "G" nine- and ten-speed transmissions. Each component table in this catalog contains the following information:

- ① **Item** ..... The numbers in the **Item** column correspond to the numbers in the illustration that identify parts.
- ② **Quantity (Qty.)** ..... The numbers in the **Quantity** column indicate the parts required in each component.
- ③ **Part** ..... The number that corresponds to the item you will order
- ④ **Description** ..... Designates the part name



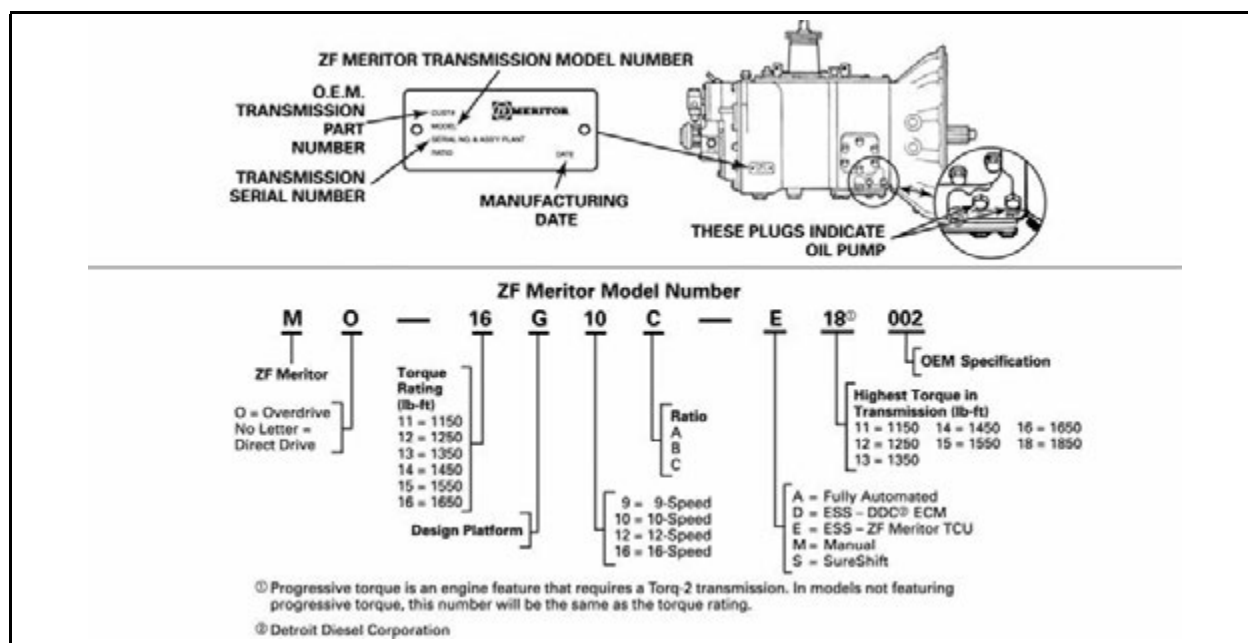
### Transmission Rear Cover Assembly — 9- and 10-Speed

| ①<br>Item | ②<br>Qty. | ③<br>Part Number | ④<br>Description                                                                                                                     |
|-----------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1         | 1         | 3293-Q-1109      | Cover, Rear                                                                                                                          |
| 2         | NSS       | 2803-D-2968      | Output Bearing Selective Spacer (Blue), Used on Serial Numbers LB-00011318 and Below. <b>NOTE:</b> Replace with same color spacer.   |
|           | NSS       | 2803-F-2970      | Output Bearing Selective Spacer (Green), Used on Serial Numbers LB-00011318 and Below. <b>NOTE:</b> Replace with same color spacer.  |
|           | NSS       | 2803-E-2969      | Output Bearing Selective Spacer (Yellow), Used on Serial Numbers LB-00011318 and Below. <b>NOTE:</b> Replace with same color spacer. |
| 3         | 1         | A1-1228-J-1414   | Bearing Assembly, Output                                                                                                             |
| 4         | 1         | A-1205-V-2596    | Oil Seal Assembly                                                                                                                    |
| 5         | 8         | 10X-1660         | Bolt/Capscrew (Auxiliary Countershaft Bearing Cover)                                                                                 |
| 6         | 8         | 1229-B-1666      | Flat Washer (Bearing Cover)                                                                                                          |
| 7         | 2         | 3266-D-1278      | Cover, Bearing Auxiliary, Countershaft Rear 9 and 10                                                                                 |
| 8         | 18        | 10X-1659         | Bolt/Capscrew, 3/8"-16 UNC-2A x 1-1/2"                                                                                               |
| 9         | 18        | 1229-B-1666      | Flat Washer                                                                                                                          |

# Introduction



## Transmission Model Number Identification



## Transmission Model Numbers

Platform "G" transmissions are available in three shift system configurations:

1. Platform "G" Electric Over Air (EOA) — Standard Version
2. Platform "G" Engine Synchro Shift (ESS) with Detroit Diesel (DDC) ECM **1** and ZF Meritor TCU **2**
3. Platform "G" SureShift

| Transmission Description       | Electric-Over-Air (EOA)     | Engine Synchro Shift (ESS) |                         | SureShift     |
|--------------------------------|-----------------------------|----------------------------|-------------------------|---------------|
|                                | G Platform Standard Version | DDC ECM <b>1</b>           | ZF Meritor TCU <b>2</b> |               |
| 9-Speed Direct Drive, A Ratio  | M-15G9A-M15                 | M-15G9A-D15                | M-15G9A-E15             | M-15G9A-S15   |
| 9-Speed Overdrive, A Ratio     | MO-14G9A-M14                | MO-14G9A-D14               | MO-14G9A-E14            | MO-14G9A-S14  |
| 9-Speed Overdrive, B Ratio     | MO-15G9B-M15                | MO-15G9B-D15               | MO-15G9B-E15            | MO-15G9B-S15  |
| 10-Speed Direct Drive, A Ratio | M-15G10A-M15                | M-15G10A-D15               | M-15G10A-E15            | M-15G10A-S15  |
| 10-Speed Overdrive, A Ratio    | MO-16G10A-M16               | MO-16G10A-D16              | MO-16G10A-E16           | MO-16G10A-S16 |
| 10-Speed Overdrive, C Ratio    | MO-16G10C-M18               | MO-16G10C-D18              | MO-16G10C-E18           | MO-16G10C-S18 |

**1** DDC ECM = Detroit Diesel Company Engine Control Module

**2** TCU = ZF Meritor Transmission Control Unit

## How to Read Transmission Serial Numbers

### First Two Letters

LB = New

### Second Two Digits

Year manufactured: For example, 99 = 1999; 00 = 2000; 01 = 2001

### Last Digits

Number at Manufacture

### Sample:

|     |      |                       |
|-----|------|-----------------------|
| LB  | 00   | 011318                |
| New | 2000 | Number at Manufacture |

**NOTE:** The letters **LR** or **FLR** at the beginning of a serial number indicate a reman transmission.

## Transmission Replacements

### Remanufactured (REMAN) Transmissions

ZF Meritor offers remanufactured (REMAN) transmissions when you require a complete transmission replacement. REMAN transmissions come equipped in four basic configurations.

Call ArvinMeritor's Worldwide Aftermarket at 888-725-9355 to order a ZF Meritor REMAN transmission.

- Standard top cover with an oil pump
- Standard top cover without an oil pump
- Forward top cover with an oil pump
- Forward top cover without an oil pump

### How to Determine the Correct REMAN Transmission Number

1. Record the transmission model printed on the identification plate. The identification plate is mounted to the transmission.
2. Remove the two sets of torque rating digits and the OEM specification number.

**Example:**

MO-16 G10C-E 18 002 → MO-G10C-E

3. Add the correct top cover designation to the end of the model number.
  - Add "S" for a standard top cover
  - Add "F" for a forward top cover
  - Add "X" for SureShift

**Example:** MO-G10C-ES

4. If the transmission has an oil pump, add "P" to the end of the model number.

**Example:** MO-G10C-ESP

5. Add "R" at the end of the model number to designate a REMAN transmission.

**Example:** MO-G10C-ESPR

## Transmission Sealants

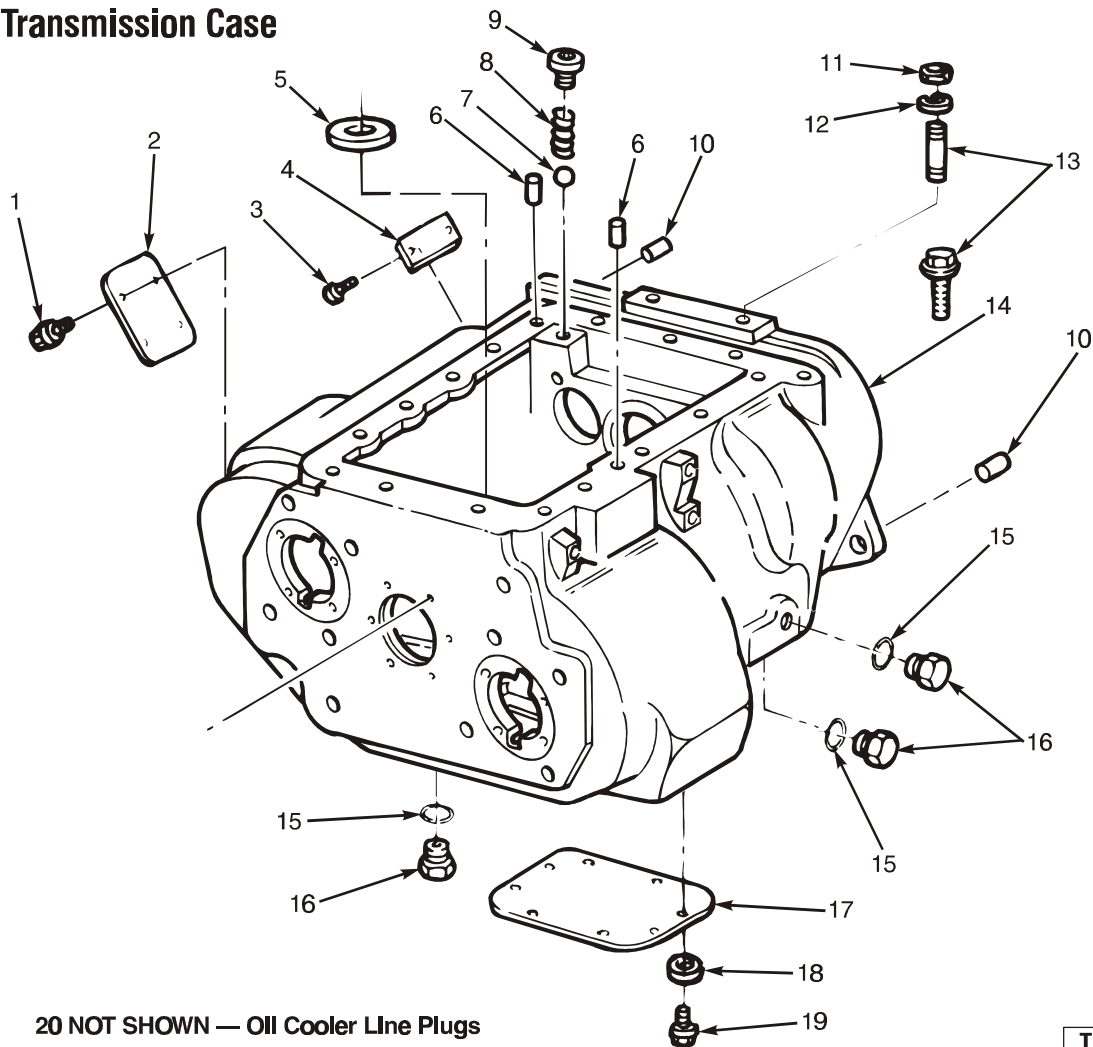


### CAUTION

**All transmissions use Loctite® MasterGasket™ Sealant #00203 or Loctite #5699 Ultra Gray Flange Sealant. Other gasket material can cause leaks. Damage to the transmission may result.**

| Qty. | Part Number | Description                                           |
|------|-------------|-------------------------------------------------------|
| NLA  | 2297-C-5905 | Loctite Master Gasket Sealant #00203, Use 2297-A-7021 |
| 1    | 2297-A-7021 | Loctite #5699 Ultra Grey Flange Sealant               |
| 1    | 2297-B-6112 | Loctite Thread Locker 222                             |

## Transmission Case



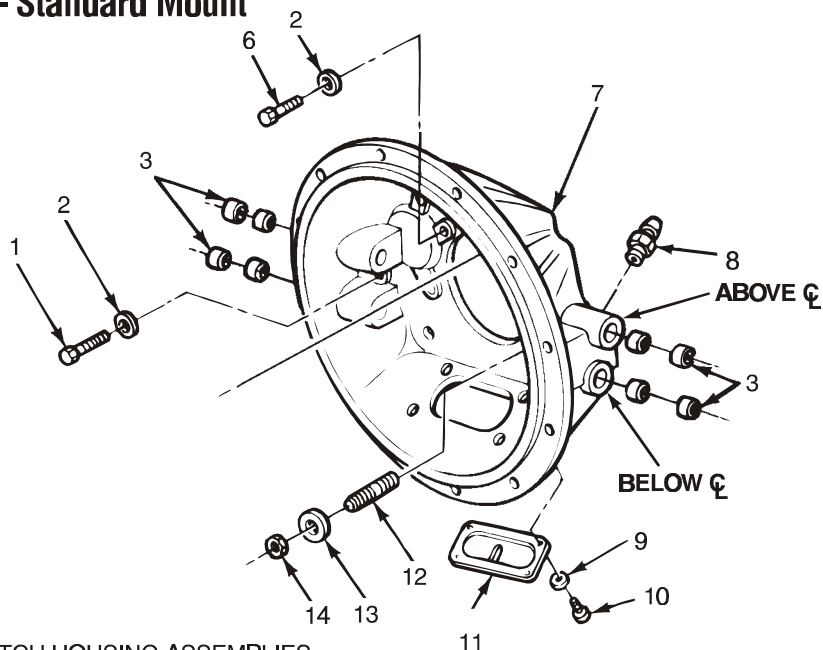
## Transmission Case

| Item | Qty. | Part Number      | Description                                                                                                               | Kit # |
|------|------|------------------|---------------------------------------------------------------------------------------------------------------------------|-------|
| 1    | 6    | 10X-1446         | Special Screw, 3/8"-16 UNC-2A x 1" Flanged (PTO)                                                                          |       |
| 2    | 1    | 3266-B-1120      | Cover (6 Bolt PTO)                                                                                                        |       |
| 3    | 2    | 17X-1030         | Rivet, Pop (Identification Plate)                                                                                         |       |
| 4    | 1    | 2297-B-6554      | Name Plate                                                                                                                |       |
| 5    | 4    | 2297-Y-5849      | Magnet (Transmission Case)                                                                                                |       |
| 6    | 2    | 43X-1193         | Dowel                                                                                                                     |       |
| 7    | 1    | 2297-R-6986      | Ball, Range Shift Detent                                                                                                  |       |
| 8    | 1    | 2258-F-1332      | Spring, Range Shift Detent                                                                                                |       |
| 9    | 1    | 1250-R-1266      | Plug, Range Detent                                                                                                        |       |
| 10   | 2    | 43X-1150         | Dowel (Rear Cover)                                                                                                        |       |
| 11   | OPT  | N-110-1          | Nut, 5/8"-18 (Rear Support Bracket)                                                                                       |       |
| 12   | OPT  | WA-410-1         | Lock Washer (Rear Support Bracket)                                                                                        |       |
| 13   | OPT  | SN-1017-1        | Stud, 5/8" x 2-1/8" (Rear Support Bracket)                                                                                |       |
|      | OPT  | SN-1019-1        | Stud, 5/8" x 2-3/8" (Rear Support Bracket)                                                                                |       |
|      | OPT  | 10X-1510         | Special Screw, 1-1/4" x 5/8"-11 UNC Flanged Capscrew                                                                      |       |
|      | OPT  | 10X-1511         | Special Screw, 1-1/2" x 5/8"-11 UNC Flanged Capscrew                                                                      |       |
|      | OPT  | 10X-1512         | Special Screw, 1-3/4" x 5/8"-11 UNC Flanged Capscrew                                                                      |       |
| 14   | 1    | A-3294-A-1041-S* | Assembly, Transmission Case SureShift (with Internal Oil Pump), includes Magnets, Drain Plugs and PTO Covers.             | 5421  |
|      | 1    | A-3294-B-1042-S* | Assembly, Transmission Case ESS TCU (without Internal Oil Pump), includes Magnets, Drain Plugs and PTO Covers.            | 5418  |
|      | 1    | A-3294-C-1043-S* | Assembly, Transmission Case ESS TCU (with Internal Oil Pump), includes Magnets, Drain Plugs and PTO Covers.               | 5419  |
|      | 1    | A-3294-P-1031-S* | Assembly, Transmission Case Manual and ESS DDC (without Internal Oil Pump), includes Magnets, Drain Plugs and PTO Covers. | 5416  |
|      | 1    | A-3294-P-1056-S† | Assembly, Transmission Case Manual and ESS DDC (with Internal Oil Pump), includes Magnets, Drain Plugs and PTO Covers.    |       |
|      | 1    | A-3294-Q-1032-S* | Assembly, Transmission Case Manual and ESS DDC (with Internal Oil Pump), includes Magnets, Drain Plugs and PTO Covers.    | 5417  |
|      | 1    | A-3294-Q-1057-S† | Assembly, Transmission Case SureShift (with Internal Oil Pump), includes Magnets, Drain Plugs and PTO Covers.             |       |
|      | 1    | A-3294-S-1059-S† | Assembly, Transmission Case ESS TCU (with Internal Oil Pump), includes Magnets, Drain Plugs and PTO Covers.               |       |
| 16   | 3    | 1205-Y-1039      | O-Ring                                                                                                                    |       |
|      | NLA  | A-1250-J-1128    | Plug Assembly (Drain or Fill) with O-Ring 1-1/16"-12 UN-2A, Replaced by A-1250-T-1294                                     |       |
|      | NLA  | A-1250-P-1186    | Plug Assembly, Magnetic (Drain or Fill) with O-Ring 1-1/16"-12 UN-2A, Replaced by A-1250-T-1294                           |       |
|      | 3    | A-1250-T-1294    | Plug Assembly, Lube Identification Tag                                                                                    |       |
| 17   | 1    | 3266-C-1121      | Cover (8 Bolt PTO)                                                                                                        |       |
| 18   | 8    | 1229-E-1513      | Flat Washer                                                                                                               |       |
| 19   | 8    | S-276-A-2        | Cap Screw (PTO), 7/16"-14 UNC-2A x 3/4"                                                                                   |       |
| 20   | 2    | A-1250-H-1126    | Oil Cooler Line Plugs                                                                                                     |       |

† For 1850 input torque and above.

\* For 1650 input torque and below.

## Clutch Housing Assembly — Standard Mount



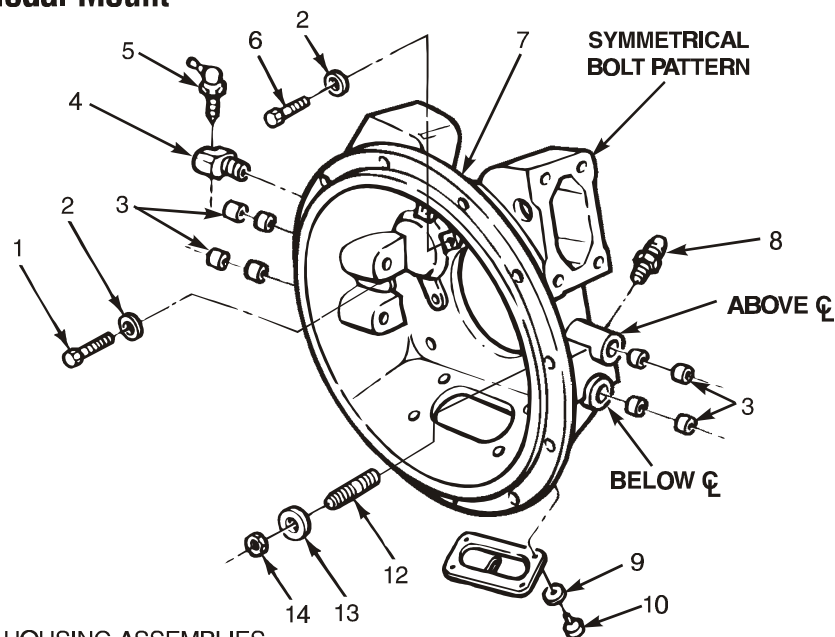
**NOTE:** ALL CLUTCH HOUSING ASSEMBLIES INCLUDE THE BUSHINGS, THE COVER, THE FASTENERS AND THE ZERK FITTINGS.

CHA0001

## Clutch Housing Assembly — Standard Mount

| Item | Qty. | Part Number   | Description                                                      |
|------|------|---------------|------------------------------------------------------------------|
| 1    | 2    | S-2828-A-2    | Bolt/Capscrew, 1/2"-13 UNC-2A x 3-1/2"                           |
| 2    | 4    | 1229-C-1511   | Flat Washer                                                      |
| 3    | 4    | 1225-X-1194   | Bushing                                                          |
| 6    | 2    | S-2812-A-2    | Bolt/Capscrew, 1/2"-13 UNC-2A x 1-1/2", Replaced by 10X-1669     |
| 7    | 1    | A-3282-Z-1040 | Clutch Housing Assembly, SAE#1 (Above Centerline Pull)           |
|      | 1    | A-3282-E-1045 | Clutch Housing Assembly, SAE#1, Iron (Below Centerline Pull)     |
|      | 1    | A-3282-V-1036 | Clutch Housing Assembly, SAE#1, Aluminum (Above Centerline Pull) |
|      | 1    | A-3282-F-1046 | Clutch Housing Assembly, SAE#1, Aluminum (Below Centerline Pull) |
|      | 1    | A-3282-D-1044 | Clutch Housing Assembly, SAE#2, Iron (Above Centerline Pull)     |
|      | 1    | A-3282-P-1082 | Clutch Housing Assembly, Volvo Hydraulic Only                    |
| 8    | 2    | 1199-H-1620   | Oil Fitting, Zerk                                                |
| 9    | 4    | 1229-B-1666   | Flat Washer                                                      |
| 10   | 4    | S-265-A-2     | Bolt/Capscrew, 3/8"-16 UNC-2A x 5/8"                             |
| 11   | 1    | 3266-H-1048   | Cover, Clutch Housing                                            |
| 12   | 6    | 4X-1837       | Stud                                                             |
| 13   | 6    | 1229-U-1503   | Flat Washer, 5/8"                                                |
| 14   | 6    | N-110-1       | Nut, 5/8"-18                                                     |

## Clutch Housing Assembly — Nodal Mount

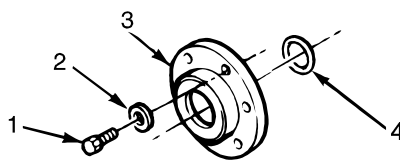


**NOTE:** ALL CLUTCH HOUSING ASSEMBLIES INCLUDE THE BUSHINGS, THE COVER, THE FASTENERS AND THE ZERK FITTINGS.

CHA0002

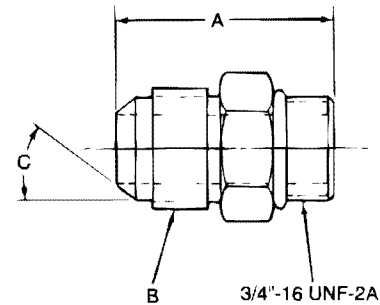
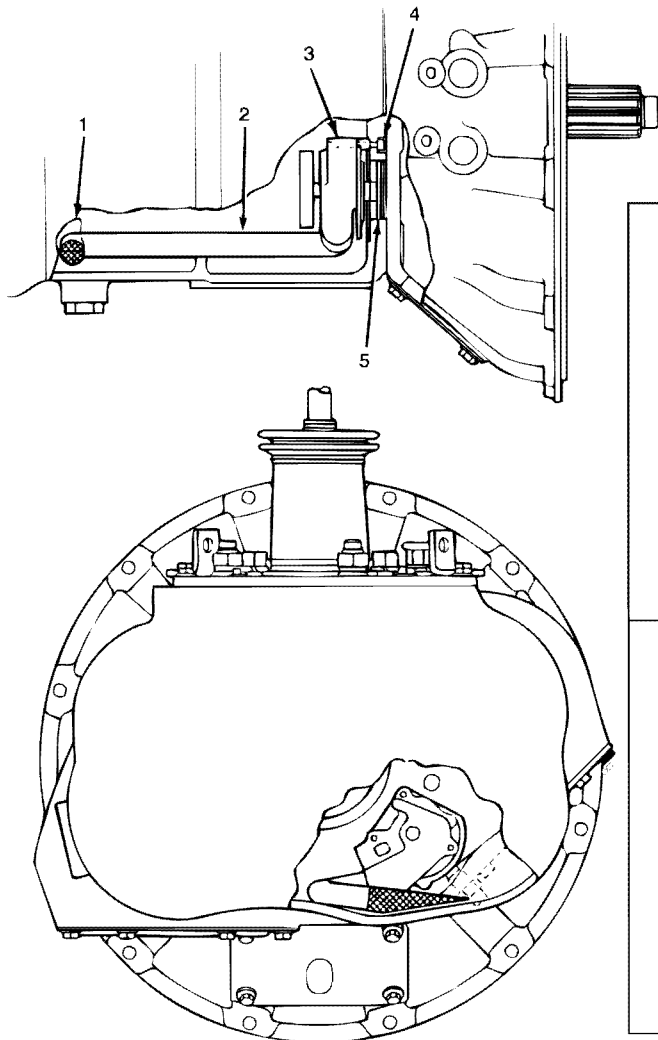
## Clutch Housing Assembly — Nodal Mount

| Item | Qty. | Part Number   | Description                                                      |
|------|------|---------------|------------------------------------------------------------------|
| 1    | 2    | S-2828-A-2    | Bolt/Capscrew, 1/2"-13 UNC-2A x 3-1/2"                           |
| 2    | 4    | 1229-C-1511   | Flat Washer                                                      |
| 3    | 4    | 1225-X-1194   | Bushing                                                          |
| 4    | 1    | 1199-Q-901    | Elbow                                                            |
| 5    | 1    | 1199-B-3226   | Oil Fitting, Zerk                                                |
| 6    | 2    | S-2812-A-2    | Bolt/Capscrew, 1/2"-13 UNC-2A x 1-1/2", Replaced by 10X-1669     |
| 7    | 1    | A-3282-X-1038 | Clutch Housing Assembly, SAE#1, Iron (Above Centerline Pull)     |
|      | 1    | A-3282-G-1047 | Clutch Housing Assembly, SAE#1, Iron (Below Centerline Pull)     |
|      | 1    | A-3282-B-1042 | Clutch Housing Assembly, SAE#1, Aluminum (Above Centerline Pull) |
|      | 1    | A-3282-H-1048 | Clutch Housing Assembly, SAE#1, Aluminum (Below Centerline Pull) |
| 8    | 1    | 1199-H-1620   | Oil Fitting, Zerk                                                |
| 9    | 4    | 1229-B-1666   | Flat Washer                                                      |
| 10   | 4    | S-265-A-2     | Bolt/Capscrew, 3/8"-16 UNC-2A x 5/8"                             |
| 11   | 1    | 3266-H-1048   | Cover, Clutch Housing                                            |
| 12   | 6    | 4X-1837       | Stud                                                             |
| 13   | 6    | 1229-U-1503   | Flat Washer, 5/8"                                                |
| 14   | 6    | N-110-1       | Nut, 5/8"-18                                                     |

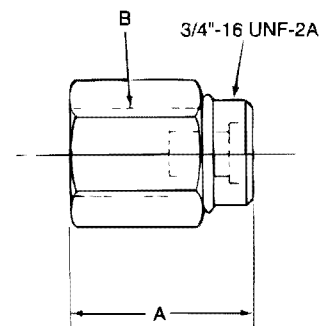
**Input Shaft  
Bearing  
Retainer****SBR0001****Input Shaft Bearing Retainer**

| Item | Qty. | Part Number | Description                                                          |
|------|------|-------------|----------------------------------------------------------------------|
| 1    | 6    | S-2610-A-2  | Bolt/Capscrew, 3/8"-16 UNC x 1-1/4"                                  |
| 2    | 6    | 1229-B-1666 | Flat Washer                                                          |
| 3    | 1    | 3105-K-1155 | Retainer                                                             |
| 4    | NSS  | 1205-T-2308 | Oil Seal (For Shipping Purposes Only. Remove prior to installation.) |

## Oil Pump Assembly — Integral Mounting (Serial No. LB9105150 & Above)



**Figure X**



**Figure Y**

### Kits 5276, 5277, 5278 and 5279 — Oil Pump Fittings for Outlet and Return Ports (Serial No. Above LB9105149 Only — Current Production)

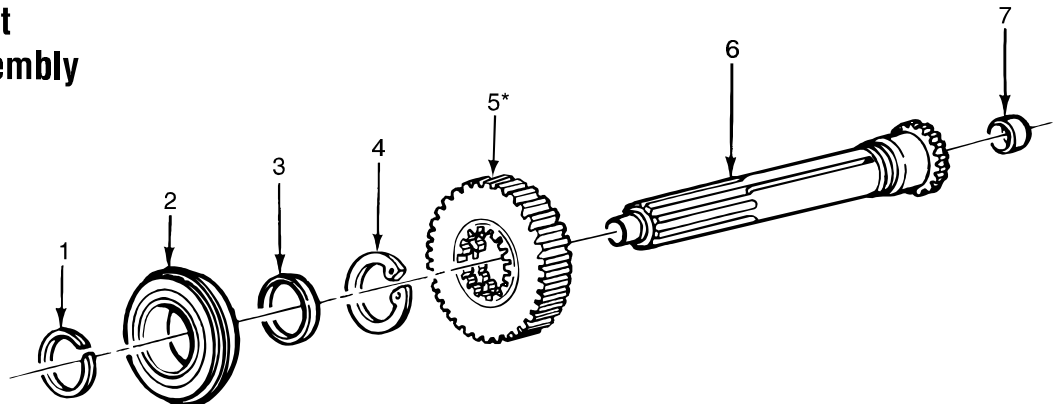
| Kit Number<br>(Qty. 2 ea.) | Meritor Part<br>Number | Dimension A<br>(mm) | Dimension B    | Dimension C | Figure |
|----------------------------|------------------------|---------------------|----------------|-------------|--------|
| 5276                       | A-2206-Z-1040          | 1.48" (37.59)       | 3/4"-16 UNF-2A | 37 Degrees  | Y      |
| 5262/5277                  | A-2206-G-1073          | 1.57" (40.00)       | 1/2"-14 NPTF   | —           | Y      |
| 5278                       | A-2206-K-1077          | 1.69" (42.93)       | 7/8"-14 UNF-2A | 45 Degrees  | X      |
| 5279                       | A-2206-R-1084          | 1.58" (40.13)       | 7/8"-14 UNF-2A | 37 Degrees  | X      |

**OPA0002**

## Oil Pump Assembly — Integral Mounting

| Item | Qty. | Part Number   | Description                                                |
|------|------|---------------|------------------------------------------------------------|
| 1    | 1    | 2255-Z-1118   | Bracket (for Inlet Suction Tube)                           |
|      | NLA  | S-264-A-1     | Bolt/Capscrew, Replaced by S-264-A-2                       |
|      | 1    | S-264-A-2     | Bolt/Capscrew, 3/8"-16 x 1/2" (for Bracket — not pictured) |
| 2    | 1    | A-3196-A-1067 | Tube Assembly (Pipe/Suction with Screen)                   |
|      | 1    | 5X-1157       | O-Ring (Tube — not pictured)                               |
| 3    | 1    | A-3303-N-1028 | Pump Assembly (Includes Drive Gear)                        |
| 4    | 3    | 10X-1532      | Special Screw, 1/4"-20 x 1-1/2" Allen Head                 |
|      | OPT  | A-1250-H-1126 | Plug Assembly (Used in shipping — not pictured)            |
| 5    | 1    | 5X-1156       | O-Ring                                                     |

## Input Shaft Assembly



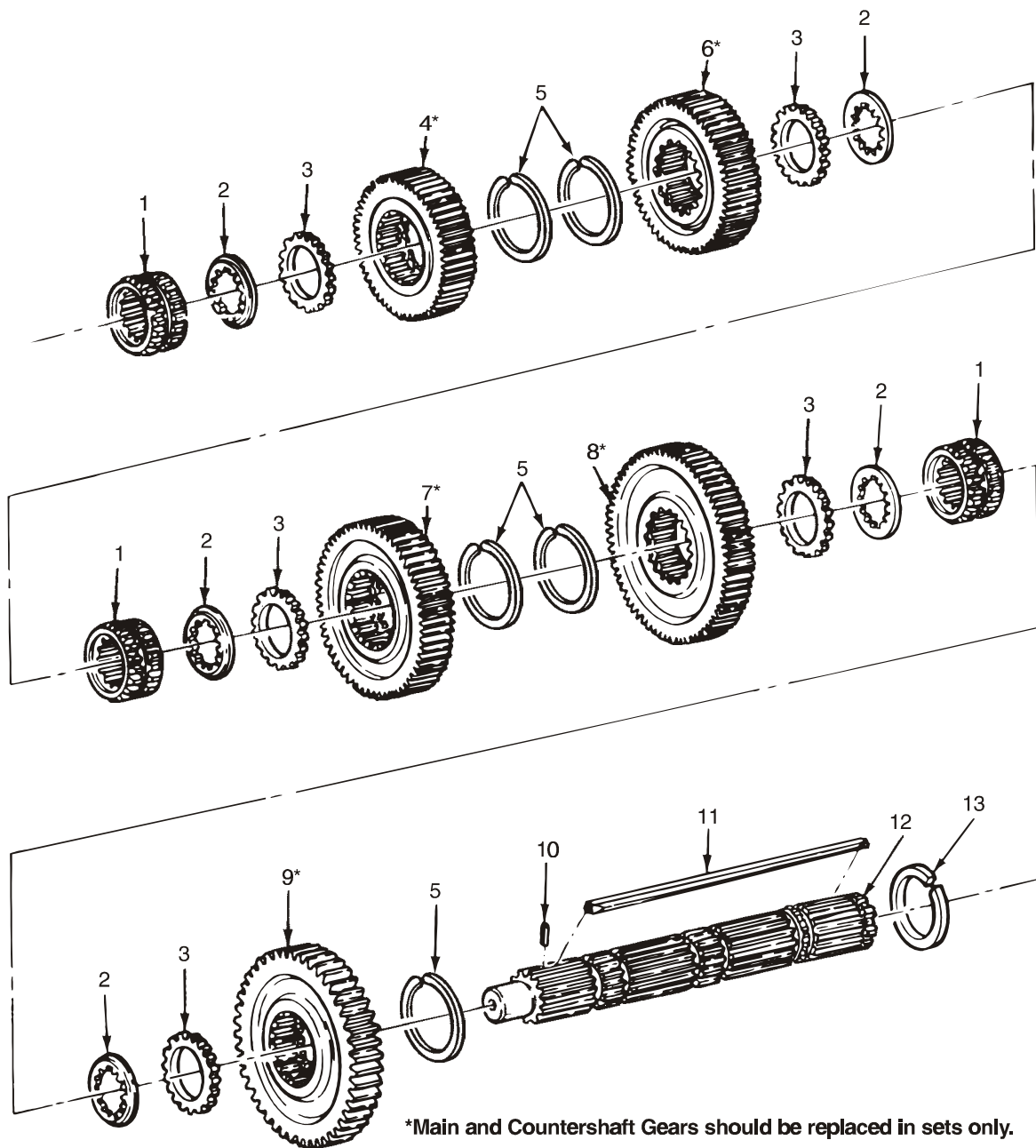
\*Main and Countershaft Gears should be replaced in sets only.

ISA0001

## Input Shaft Assembly

| Item | Qty. | Part Number   | Description                                                       | Kit # |
|------|------|---------------|-------------------------------------------------------------------|-------|
| 1    | 1    | 1229-W-4339   | Snap Ring                                                         | 5367  |
| 2    | 1    | 1228-G-1203   | Ball Bearing                                                      |       |
| 3    | 1    | 1244-J-2194   | Spacer, Use with Shaft A-3297-B-1380                              | 5367  |
| 4    | 1    | 1229-C-4657   | Snap Ring (Main Drive Gear), for Service use 1229-X-4418          | 5367  |
| 5    | 1    | 3892-W-5015   | Main Shaft Gear, Drive (50 Teeth) Direct 10A and 9A               |       |
|      | 1    | 3892-V-5144   | Main Shaft Gear, Drive (54 Teeth) 9                               |       |
|      | 1    | 3892-F-5232   | Main Shaft Gear, Drive (60 Teeth) Overdrive 10A and 9A            |       |
|      | 1    | 3892-M-5473   | Main Shaft Gear, Drive (54 Teeth) 10 Overdrive C ratio            |       |
| 6    | 1    | A-3297-B-1380 | Input Shaft Assembly, 2" Pull Type (includes 1225-A-1171 Bushing) | 5367  |
| 7    | 1    | 1225-A-1171   | Bushing (Main Shaft)                                              |       |

## Main Shaft Assembly



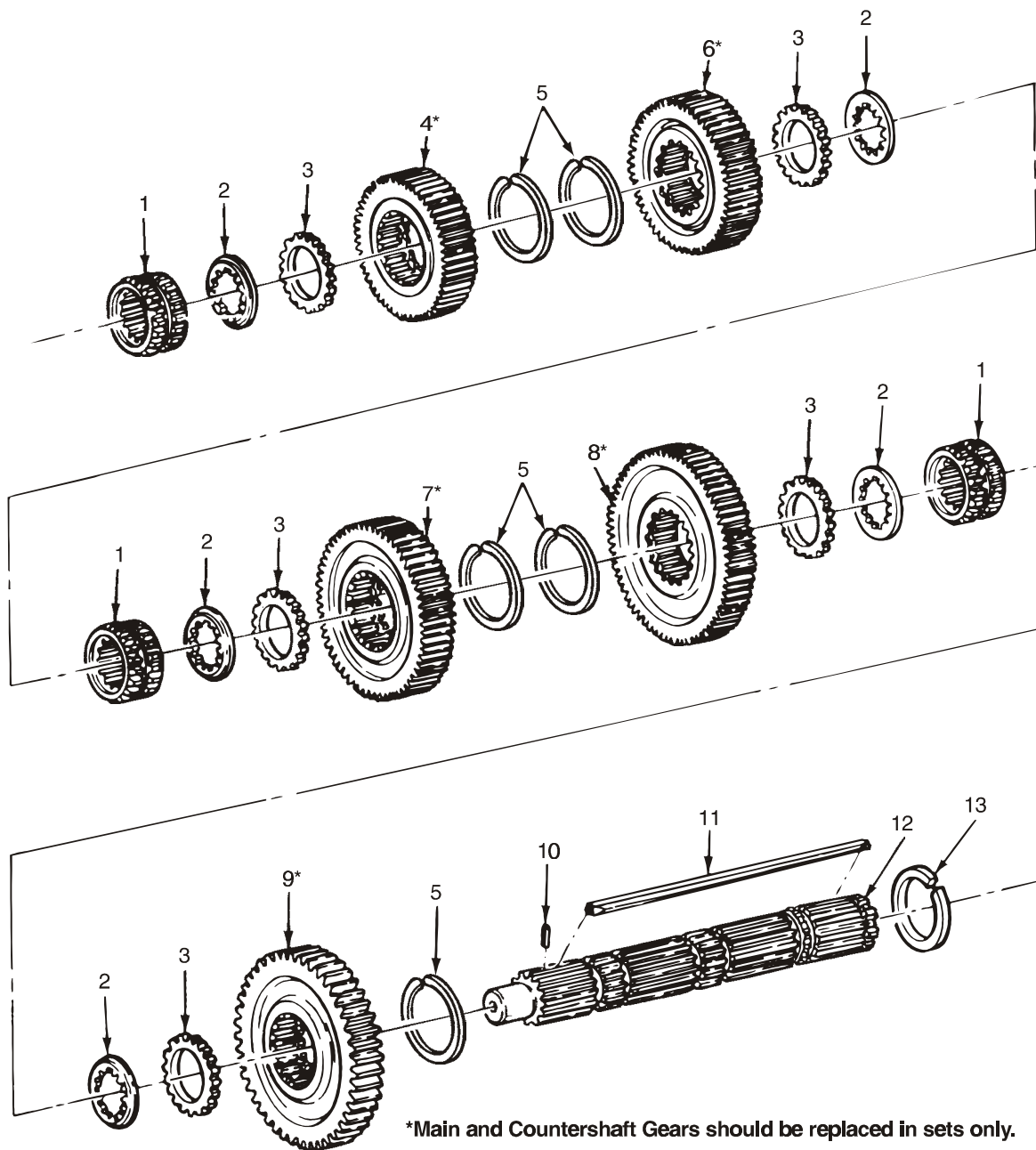
\*Main and Countershaft Gears should be replaced in sets only.

MSA0001

## Main Shaft Assembly — 9-Speed Direct Drive

| Item | Qty. | Part Number | Description                                                            | Kit #         |
|------|------|-------------|------------------------------------------------------------------------|---------------|
| 1    | 3    | 3107-G-1073 | Clutch Collar                                                          |               |
| 2    | AR   | 42X-1457    | Thrust Washer (6.92 mm - Yellow)                                       | 5394,<br>5363 |
|      | AR   | 42X-1458    | Thrust Washer (7.02 mm - White), Required in Reverse Gear              | 5394,<br>5363 |
|      | AR   | 42X-1459    | Thrust Washer (7.11 mm - Red)                                          | 5394,<br>5363 |
| 3    | 5    | 1244-M-2041 | Spacer (Main Shaft Gears)                                              | 5394,<br>5363 |
| 4    | 1    | 3892-F-5232 | Main Shaft Gear, 3rd (60 Teeth)                                        |               |
| 5    | 5    | 1229-W-4625 | Snap Ring (Main Shaft Gears)                                           | 5394,<br>5363 |
| 6    | 1    | 3892-G-5025 | Main Shaft Gear, 2nd (60 Teeth)                                        |               |
| 7    | 1    | 3892-E-5023 | Main Shaft Gear, 1st (64 Teeth)                                        |               |
| 8    | 1    | 3892-C-5021 | Main Shaft Gear, Low (46 Teeth), Requires 3297-K-1259 Countershaft     |               |
| 9    | 1    | 3892-L-5030 | Main Shaft Gear, Reverse (48 Teeth), Requires 3297-K-1259 Countershaft |               |
| 10   | 1    | 43X-1158    | Pin (Roll)                                                             | 5394,<br>5363 |
| 11   | 1    | 16X-1028    | Key (Main Shaft)                                                       | 5394,<br>5363 |
| 12   | 1    | 3297-J-1336 | Main Shaft                                                             | 5363          |
| 13   | 1    | 1229-W-4339 | Snap Ring (Main Shaft Key)                                             | 5394,<br>5363 |

## Main Shaft Assembly



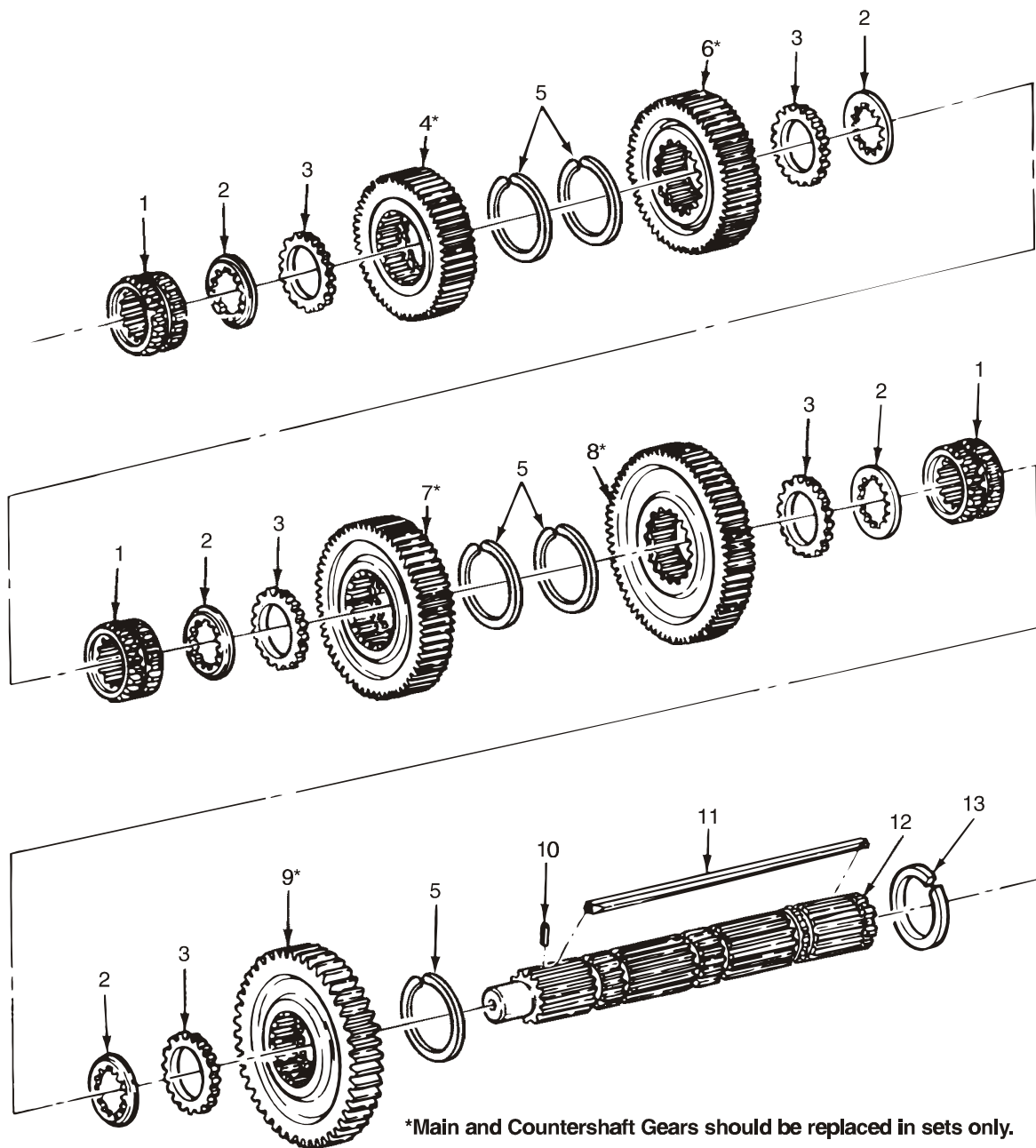
\*Main and Countershaft Gears should be replaced in sets only.

MSA0001

## Main Shaft Assembly — 9-Speed Overdrive “A” Ratio

| Item | Qty. | Part Number | Description                                                            | Kit #         |
|------|------|-------------|------------------------------------------------------------------------|---------------|
| 1    | 3    | 3107-G-1073 | Clutch Collar                                                          |               |
| 2    | AR   | 42X-1457    | Thrust Washer (6.92 mm - Yellow)                                       | 5394,<br>5363 |
|      | AR   | 42X-1458    | Thrust Washer (7.02 mm - White), Required in Reverse Gear              | 5394,<br>5363 |
|      | AR   | 42X-1459    | Thrust Washer (7.11 mm - Red)                                          | 5394,<br>5363 |
| 3    | 5    | 1244-M-2041 | Spacer (Main Shaft Gears)                                              | 5394,<br>5363 |
| 4    | 1    | 3892-W-5015 | Main Shaft Gear, 4th (50 Teeth)                                        |               |
| 5    | 5    | 1229-W-4625 | Snap Ring (Main Shaft Gears)                                           | 5394,<br>5363 |
| 6    | 1    | 3892-G-5025 | Main Shaft Gear, 2nd (60 Teeth)                                        |               |
| 7    | 1    | 3892-E-5023 | Main Shaft Gear, 1st (64 Teeth)                                        |               |
| 8    | 1    | 3892-C-5021 | Main Shaft Gear, Low (46 Teeth), Requires 3297-K-1259 Countershaft     |               |
| 9    | 1    | 3892-L-5030 | Main Shaft Gear, Reverse (48 Teeth), Requires 3297-K-1259 Countershaft |               |
| 10   | 1    | 43X-1158    | Pin (Roll)                                                             | 5394,<br>5363 |
| 11   | 1    | 16X-1028    | Key (Main Shaft)                                                       | 5394,<br>5363 |
| 12   | 1    | 3297-J-1336 | Main Shaft                                                             | 5363          |
| 13   | 1    | 1229-W-4339 | Snap Ring (Main Shaft Key)                                             | 5394,<br>5363 |

## Main Shaft Assembly

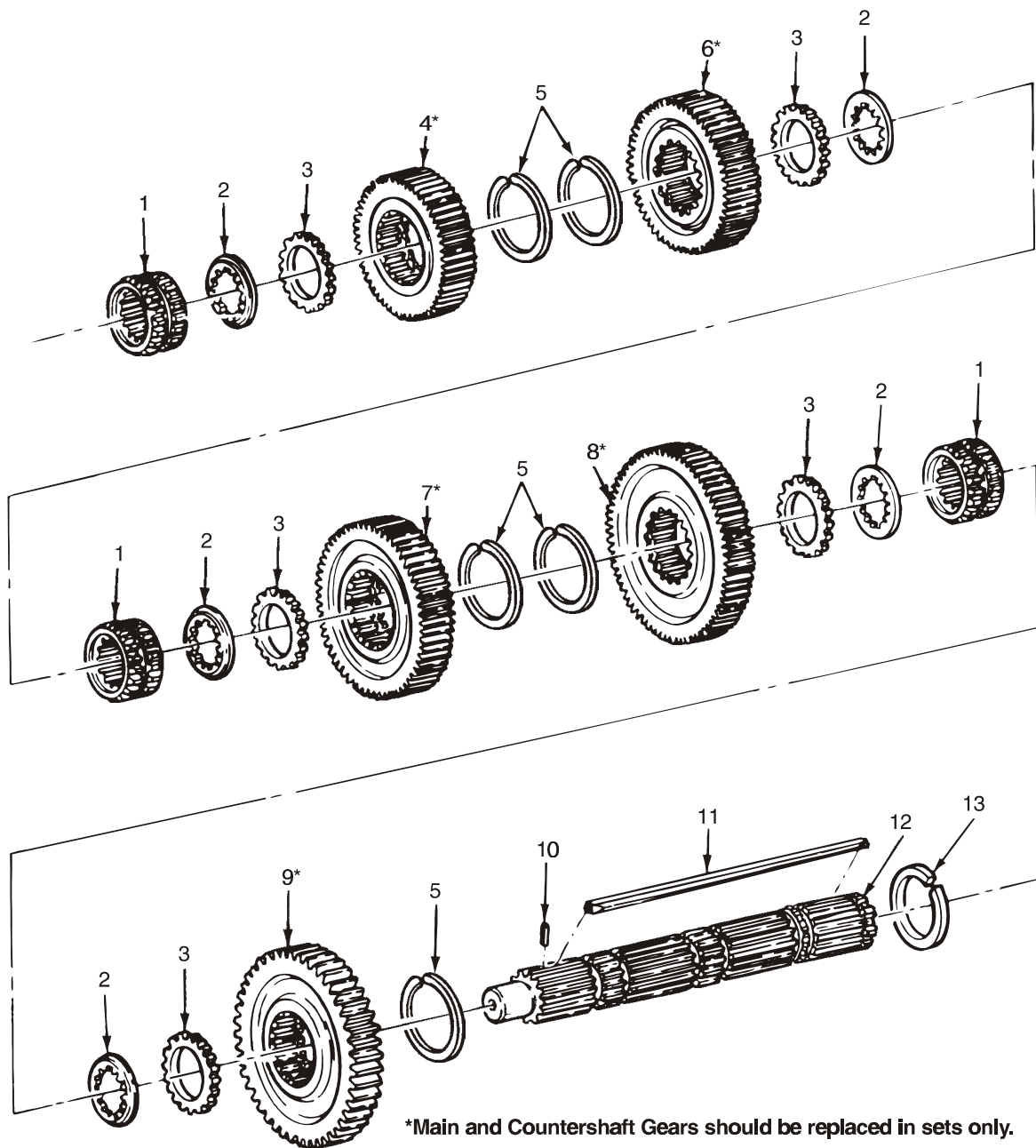


MSA0001

## Main Shaft Assembly — 9-Speed Overdrive “B” Ratio

| Item | Qty. | Part Number | Description                                                            | Kit #         |
|------|------|-------------|------------------------------------------------------------------------|---------------|
| 1    | 3    | 3107-G-1073 | Clutch Collar                                                          |               |
| 2    | AR   | 42X-1457    | Thrust Washer (6.92 mm - Yellow)                                       | 5394,<br>5363 |
|      | AR   | 42X-1458    | Thrust Washer (7.02 mm - White), Required in Reverse Gear              | 5394,<br>5363 |
|      | AR   | 42X-1459    | Thrust Washer (7.11 mm - Red)                                          | 5394,<br>5363 |
| 3    | 5    | 1244-M-2041 | Spacer (Main Shaft Gears)                                              | 5394,<br>5363 |
| 4    | 1    | 3892-B-5150 | Main Shaft Gear, 4th (46 Teeth)                                        |               |
| 5    | 5    | 1229-W-4625 | Snap Ring (Main Shaft Gears)                                           | 5394,<br>5363 |
| 6    | 1    | 3892-Z-5148 | Main Shaft Gear, 2nd (54 Teeth)                                        |               |
| 7    | 1    | 3892-X-5146 | Main Shaft Gear, 1st (62 Teeth)                                        |               |
| 8    | 1    | 3892-C-5021 | Main Shaft Gear, Low (46 Teeth), Requires 3297-K-1259 Countershaft     |               |
| 9    | 1    | 3892-L-5030 | Main Shaft Gear, Reverse (48 Teeth), Requires 3297-K-1259 Countershaft |               |
| 10   | 1    | 43X-1158    | Pin (Roll)                                                             | 5394,<br>5363 |
| 11   | 1    | 16X-1028    | Key (Main Shaft)                                                       | 5394,<br>5363 |
| 12   | 1    | 3297-J-1336 | Main Shaft                                                             | 5363          |
| 13   | 1    | 1229-W-4339 | Snap Ring (Main Shaft Key)                                             | 5394,<br>5363 |

## Main Shaft Assembly



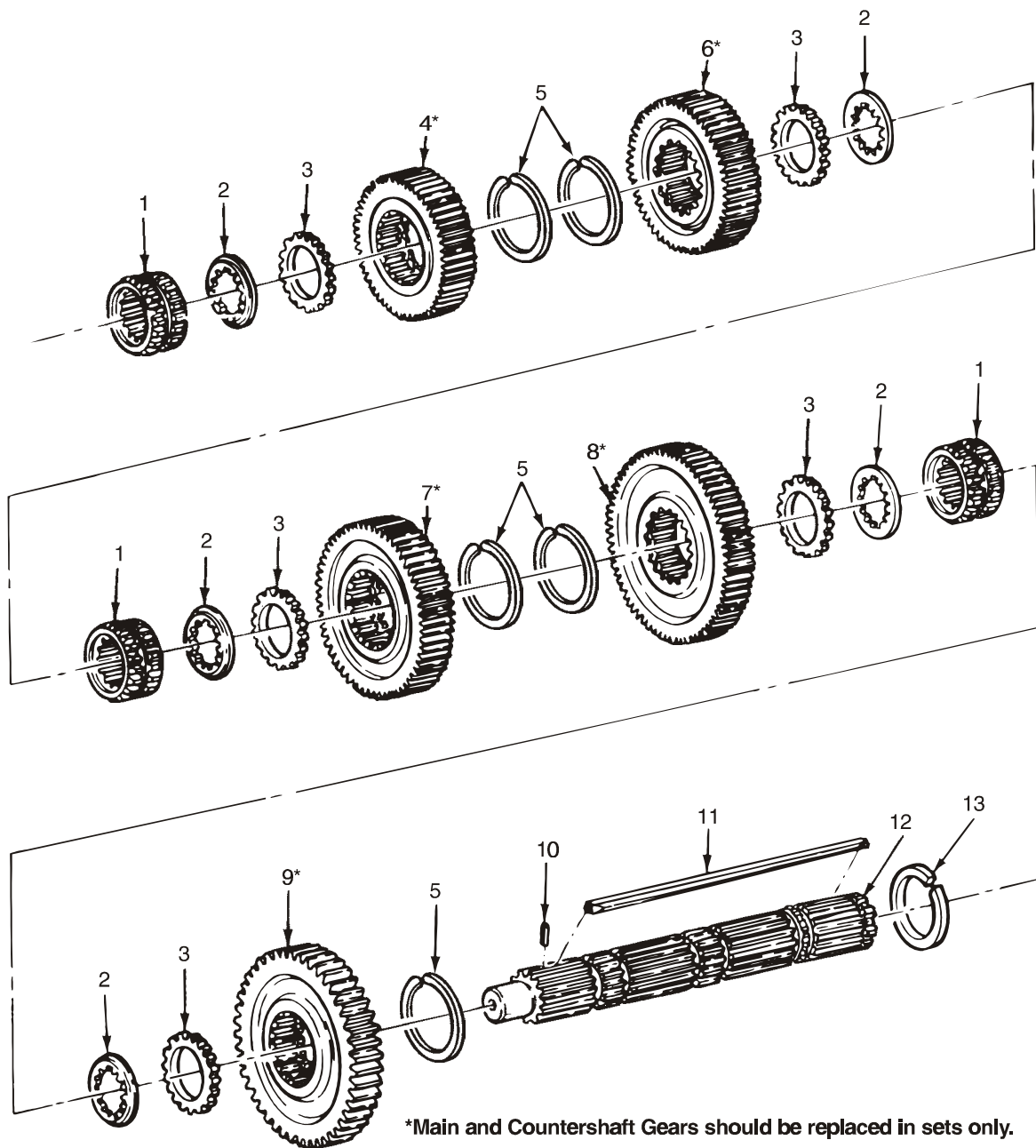
\*Main and Countershaft Gears should be replaced in sets only.

MSA0001

## Main Shaft Assembly — 10-Speed Direct Drive

| Item | Qty. | Part Number | Description                                                            | Kit #         |
|------|------|-------------|------------------------------------------------------------------------|---------------|
| 1    | 3    | 3107-G-1073 | Clutch Collar                                                          |               |
| 2    | AR   | 42X-1457    | Thrust Washer (6.92 mm - Yellow)                                       | 5394,<br>5363 |
|      | AR   | 42X-1458    | Thrust Washer (7.02 mm - White)                                        | 5394,<br>5363 |
|      | AR   | 42X-1459    | Thrust Washer (7.11 mm - Red)                                          | 5394,<br>5363 |
| 3    | 5    | 1244-M-2041 | Spacer (Main Shaft Gears)                                              | 5394,<br>5363 |
| 4    | 1    | 3892-J-5028 | Main Shaft Gear                                                        |               |
| 5    | 5    | 1229-W-4625 | Snap Ring (Main Shaft Gears)                                           | 5394,<br>5363 |
| 6    | 1    | 3892-G-5025 | Main Shaft Gear, 3rd (60 Teeth)                                        |               |
| 7    | 1    | 3892-M-5395 | Main Shaft Gear, 2nd                                                   |               |
| 8    | 1    | 3892-F-5414 | Main Shaft Gear, 1st, Requires 3297-N-1366 Countershaft                |               |
| 9    | 1    | 3892-L-5030 | Main Shaft Gear, Reverse (48 Teeth), Requires 3297-N-1366 Countershaft |               |
| 10   | 1    | 43X-1158    | Pin (Roll)                                                             | 5394,<br>5363 |
| 11   | 1    | 16X-1028    | Key (Main Shaft)                                                       | 5394,<br>5363 |
| 12   | 1    | 3297-J-1336 | Main Shaft                                                             | 5363          |
| 13   | 1    | 1229-W-4339 | Snap Ring (Main Shaft Key)                                             | 5394,<br>5363 |

## Main Shaft Assembly

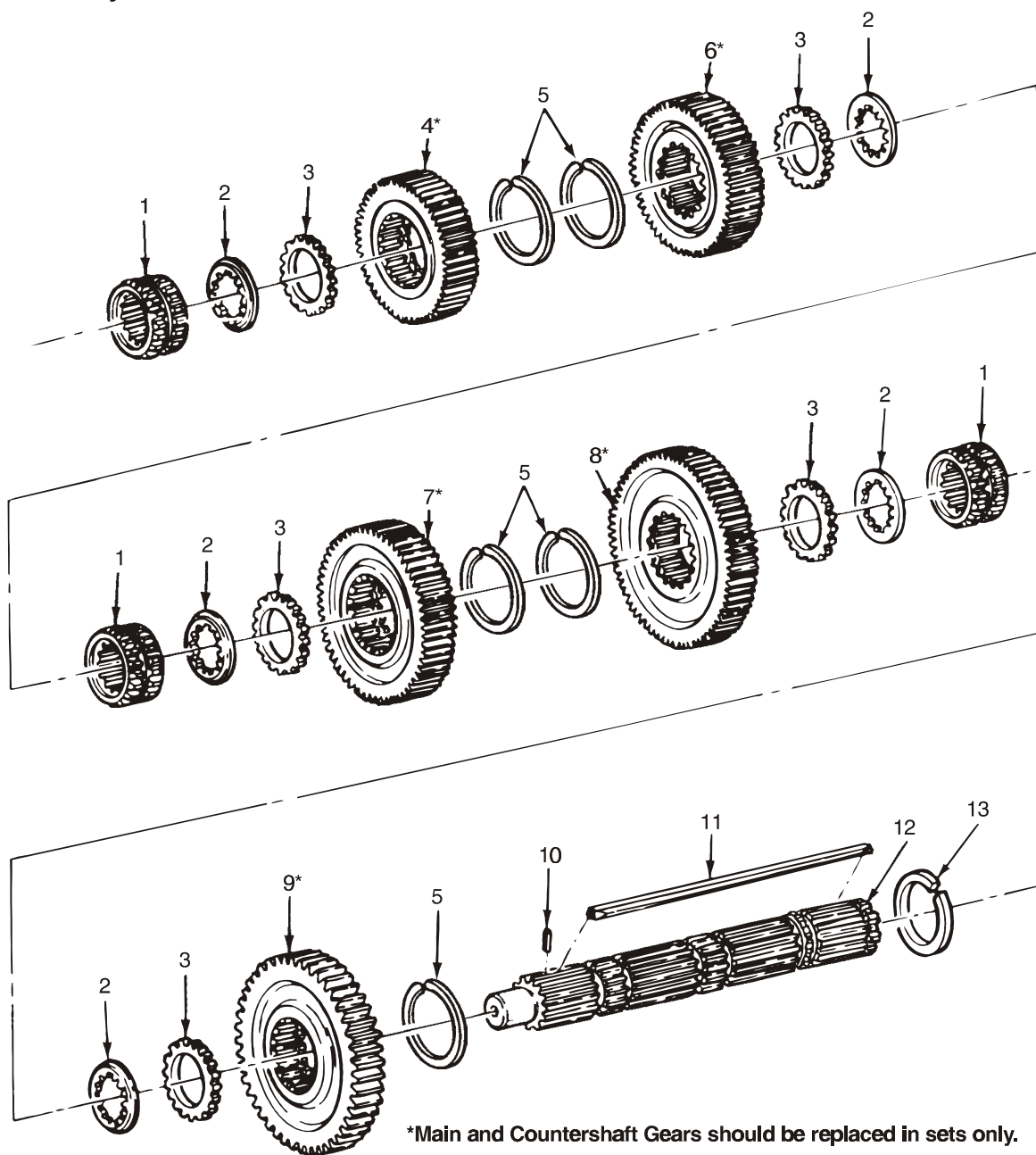


MSA0001

## Main Shaft Assembly — 10-Speed Overdrive “A” Ratio

| Item | Qty. | Part Number | Description                                                            | Kit #         |
|------|------|-------------|------------------------------------------------------------------------|---------------|
| 1    | 3    | 3107-G-1073 | Clutch Collar                                                          |               |
| 2    | AR   | 42X-1457    | Thrust Washer (6.92 mm - Yellow)                                       | 5394,<br>5363 |
|      | AR   | 42X-1458    | Thrust Washer (7.02 mm - White)                                        | 5394,<br>5363 |
|      | AR   | 42X-1459    | Thrust Washer (7.11 mm - Red)                                          | 5394,<br>5363 |
| 3    | 5    | 1244-M-2041 | Spacer (Main Shaft Gears)                                              | 5394,<br>5363 |
| 4    | 1    | 3892-W-5015 | Main Shaft Gear, 5th (50 Teeth)                                        |               |
| 5    | 5    | 1229-W-4625 | Snap Ring (Main Shaft Gears)                                           | 5394,<br>5363 |
| 6    | 1    | 3892-G-5025 | Main Shaft Gear, 3rd (60 Teeth)                                        |               |
| 7    | 1    | 3892-M-5395 | Main Shaft Gear, 2nd (64 Teeth)                                        |               |
| 8    | 1    | 3892-F-5414 | Main Shaft Gear, 1st (66 Teeth), Requires 3297-N-1366 Countershaft     |               |
| 9    | 1    | 3892-L-5030 | Main Shaft Gear, Reverse (48 Teeth), Requires 3297-N-1366 Countershaft |               |
| 10   | 1    | 43X-1158    | Pin (Roll)                                                             | 5394,<br>5363 |
| 11   | 1    | 16X-1028    | Key (Main Shaft)                                                       | 5394,<br>5363 |
| 12   | 1    | 3297-J-1336 | Main Shaft                                                             | 5363          |
| 13   | 1    | 1229-W-4339 | Snap Ring (Main Shaft)                                                 | 5394,<br>5363 |

## Main Shaft Assembly

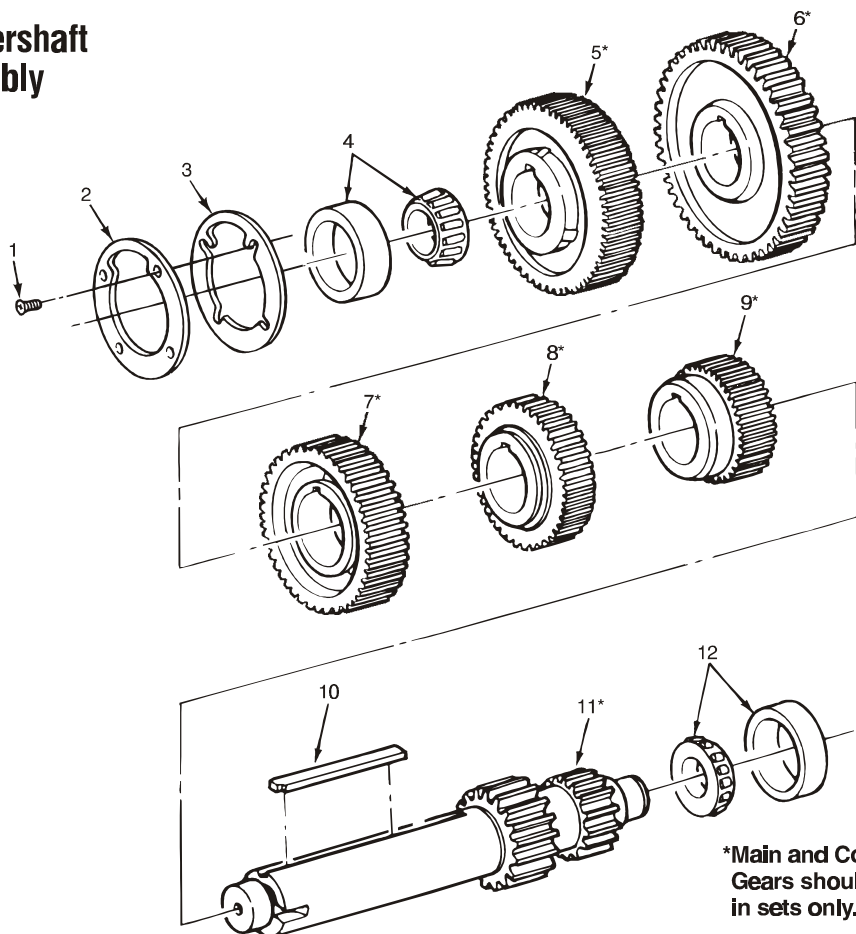


MSA0001

## Main Shaft Assembly — 10-Speed Overdrive “C” Ratio

| Item | Qty. | Part Number | Description                                                            | Kit #         |
|------|------|-------------|------------------------------------------------------------------------|---------------|
| 1    | 3    | 3107-G-1073 | Clutch Collar                                                          |               |
| 2    | AR   | 42X-1457    | Thrust Washer (6.92 mm - Yellow)                                       | 5394,<br>5363 |
|      | AR   | 42X-1458    | Thrust Washer (7.02 mm - White)                                        | 5394,<br>5363 |
|      | AR   | 42X-1459    | Thrust Washer (7.11 mm - Red)                                          | 5394,<br>5363 |
| 3    | 5    | 1244-M-2041 | Spacer (Main Shaft Gears)                                              | 5394,<br>5363 |
| 4    | 1    | 3892-N-5474 | Main Shaft Gear, 5th (52 Teeth)                                        |               |
| 5    | 5    | 1229-W-4625 | Snap Ring (Main Shaft Gears)                                           | 5394,<br>5363 |
| 6    | 1    | 3892-Q-5477 | Main Shaft Gear, 3rd (62 Teeth)                                        |               |
| 7    | 1    | 3892-R-5478 | Main Shaft Gear, 2nd (64 Teeth)                                        |               |
| 8    | 1    | 3892-F-5414 | Main Shaft Gear, 1st (66 Teeth), Requires 3297-N-1366 Countershaft     |               |
| 9    | 1    | 3892-L-5030 | Main Shaft Gear, Reverse (48 Teeth), Requires 3297-N-1366 Countershaft |               |
| 10   | 1    | 43X-1158    | Pin (Roll)                                                             | 5394,<br>5363 |
| 11   | 1    | 16X-1028    | Key (Main Shaft)                                                       | 5394,<br>5363 |
| 12   | 1    | 3297-J-1336 | Main Shaft                                                             | 5363          |
| 13   | 1    | 1229-W-4339 | Snap Ring (Main Shaft Key)                                             | 5394,<br>5363 |

## Main Countershaft Assembly

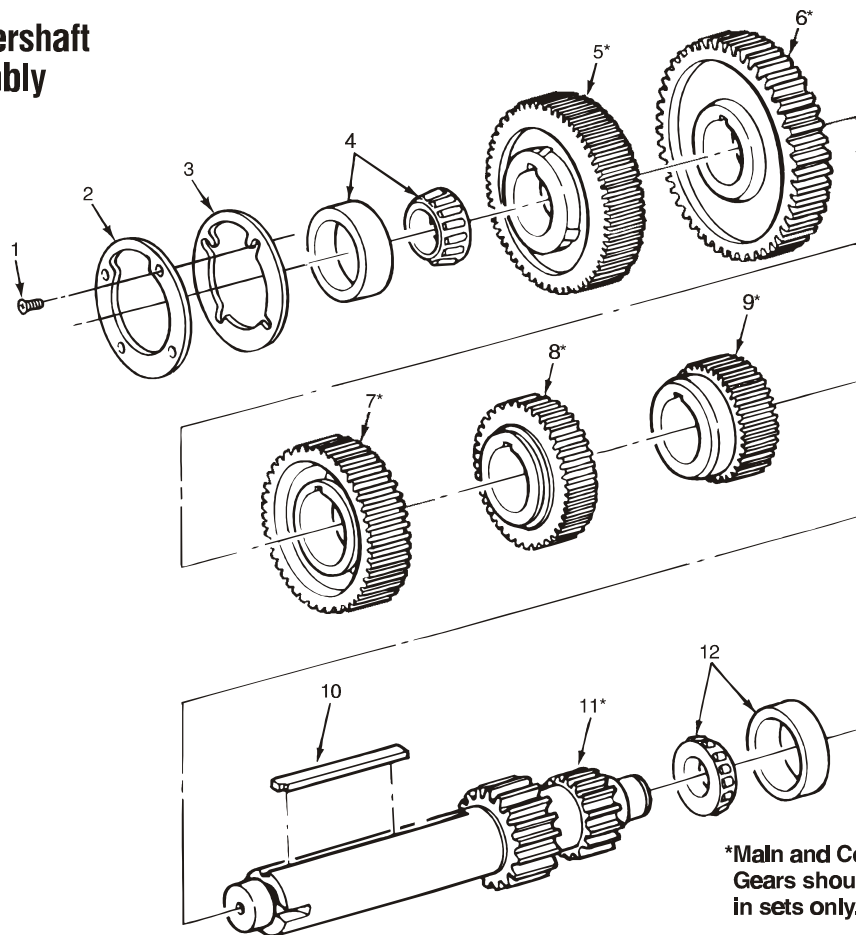


MCA0002

## Main Countershaft Assembly — 9-Speed Direct Drive

| Item | Qty. | Part Number   | Description                                              |
|------|------|---------------|----------------------------------------------------------|
| 1    | 8    | 10X-1537      | Special Screw                                            |
| 2    | 2    | 3105-E-1175   | Retainer, Countershaft Front Bearing                     |
| 3    | AR   | Kit 5364      | Service Kit, Shim Kit, Main Countershaft Front Bearing   |
| 4    | 2    | A-1228-T-1346 | Bearing Assembly, Cup and Cone (Main Countershaft Front) |
| 5    | 2    | 3892-Q-5035   | Countershaft Gear, Drive (66 Teeth)                      |
| 6    | 2    | 3892-U-5013   | Countershaft Gear, PTO (45 Teeth)                        |
| 7    | 2    | 3892-Y-5017   | Countershaft Gear, 3rd (59 Teeth)                        |
| 8    | 2    | 3892-S-5011   | Countershaft Gear, 2nd (43 Teeth)                        |
| 9    | 2    | 3892-A-5019   | Countershaft Gear, 1st (33 Teeth)                        |
| 10   | 2    | 16X-1031      | Key (Countershaft), Replaced by 16X-1040                 |
|      |      | 16X-1040      | Key (Countershaft)                                       |
| 11   | 2    | 3297-K-1259   | Countershaft (16/17 Teeth)                               |
| 12   | 2    | A-1228-S-1345 | Bearing Assembly, Cup and Cone (Main Countershaft Rear)  |

## Main Countershaft Assembly

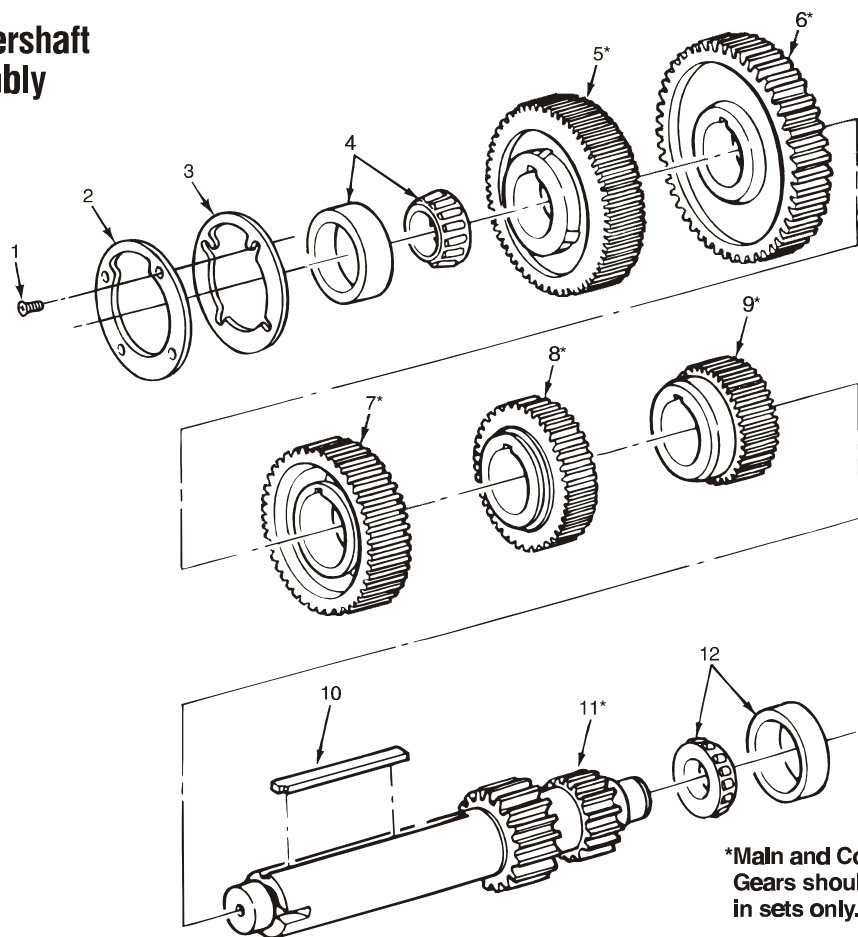


**MCA0002**

### Main Countershaft Assembly — 9-Speed Overdrive "A" Ratio

| Item | Qty. | Part Number   | Description                                              |
|------|------|---------------|----------------------------------------------------------|
| 1    | 8    | 10X-1537      | Special Screw                                            |
| 2    | 2    | 3105-E-1175   | Retainer, Countershaft Front Bearing                     |
| 3    | AR   | Kit 5364      | Service Kit, Shim Kit, Main Countershaft Front Bearing   |
| 4    | 2    | A-1228-T-1346 | Bearing Assembly, Cup and Cone (Main Countershaft Front) |
| 5    | 2    | 3892-K-5159   | Countershaft Gear, Drive (59 Teeth)                      |
| 6    | 2    | 3892-U-5013   | Countershaft Gear, PTO (45 Teeth)                        |
| 7    | 2    | 3892-H-5156   | Countershaft Gear, 4th (66 Teeth)                        |
| 8    | 2    | 3892-S-5011   | Countershaft Gear, 2nd (43 Teeth)                        |
| 9    | 2    | 3892-A-5019   | Countershaft Gear, 1st (33 Teeth)                        |
| 10   | 2    | 16X-1031      | Key (Countershaft), Replaced by 16X-1040                 |
|      |      | 16X-1040      | Key (Countershaft)                                       |
| 11   | 2    | 3297-K-1259   | Countershaft (16/17 Teeth)                               |
| 12   | 2    | A-1228-S-1345 | Bearing Assembly, Cup and Cone (Main Countershaft Rear)  |

## Main Countershaft Assembly

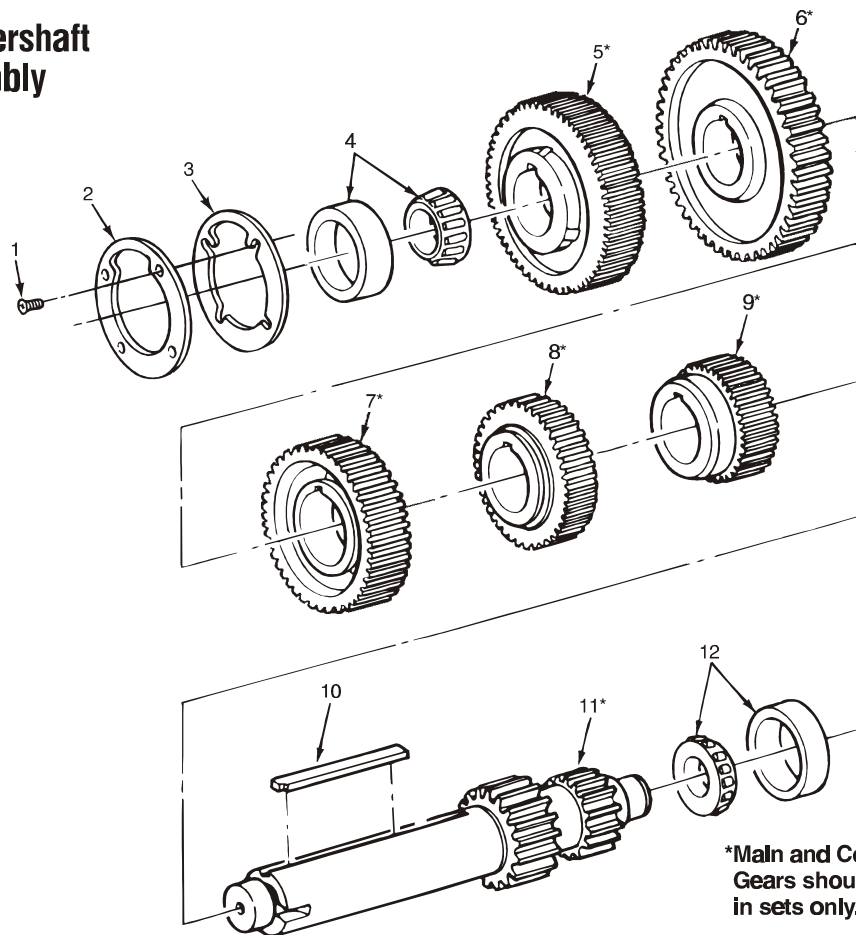


MCA0002

## Main Countershaft Assembly — 9-Speed Overdrive "B" Ratio

| Item | Qty. | Part Number   | Description                                              |
|------|------|---------------|----------------------------------------------------------|
| 1    | 8    | 10X-1537      | Special Screw                                            |
| 2    | 2    | 3105-E-1175   | Retainer, Countershaft Front Bearing                     |
| 3    | AR   | Kit 5364      | Service Kit, Shim Kit, Main Countershaft Front Bearing   |
| 4    | 2    | A-1228-T-1346 | Bearing Assembly, Cup and Cone (Main Countershaft Front) |
| 5    | 2    | 3892-M-5135   | Countershaft Gear, Drive (62 Teeth)                      |
| 6    | 2    | 3892-U-5013   | Countershaft Gear, PTO (45 Teeth)                        |
| 7    | 2    | 3892-T-5142   | Countershaft Gear, 4th (73 Teeth)                        |
| 8    | 2    | 3892-R-5140   | Countershaft Gear, 2nd (44 Teeth)                        |
| 9    | 2    | 3892-P-5138   | Countershaft Gear, 1st (36 Teeth)                        |
| 10   | 2    | 16X-1031      | Key (Countershaft), Replaced by 16X-1040                 |
|      |      | 16X-1040      | Key (Countershaft)                                       |
| 11   | 2    | 3297-K-1259   | Countershaft (16/17 Teeth)                               |
| 12   | 2    | A-1228-S-1345 | Bearing Assembly, Cup and Cone (Main Countershaft Rear)  |

## Main Countershaft Assembly

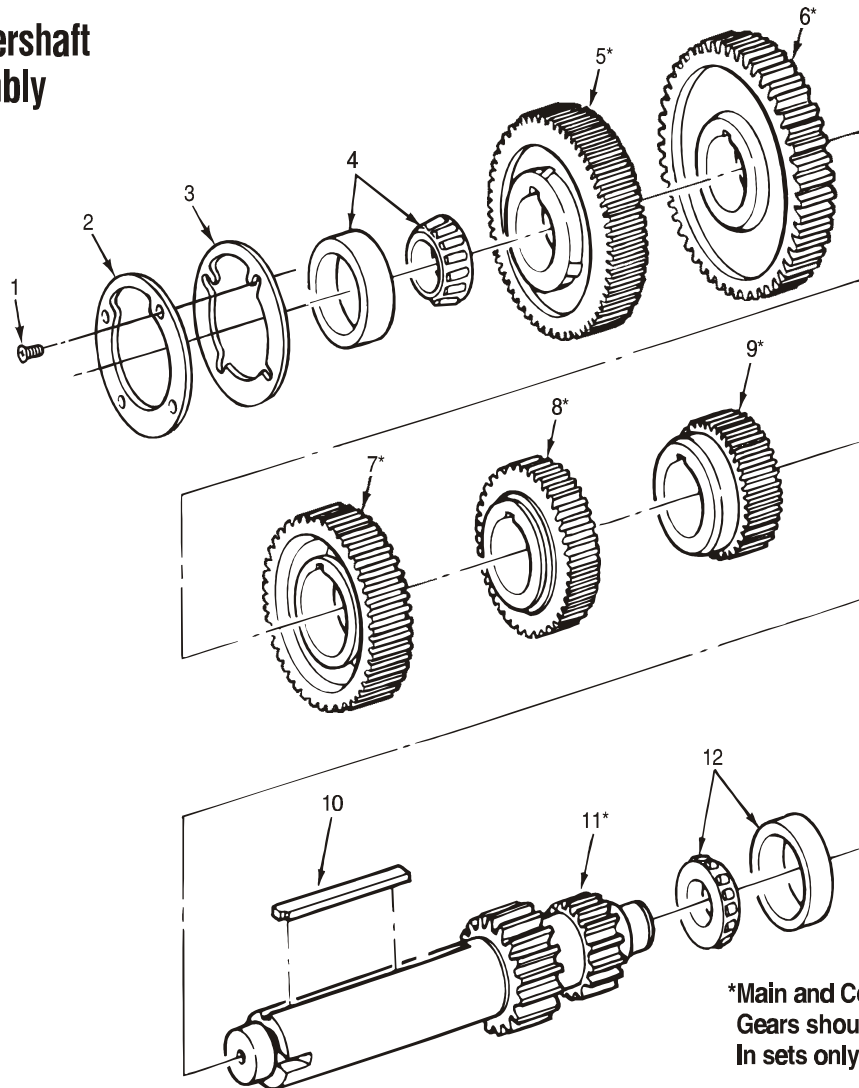


**MCA0002**

### Main Countershaft Assembly — 10-Speed Direct Drive

| Item | Qty. | Part Number   | Description                                              |
|------|------|---------------|----------------------------------------------------------|
| 1    | 8    | 10X-1537      | Special Screw                                            |
| 2    | 2    | 3105-E-1175   | Retainer, Countershaft Front Bearing                     |
| 3    | AR   | Kit 5364      | Service Kit, Shim Kit, Main Countershaft Front Bearing   |
| 4    | 2    | A-1228-T-1346 | Bearing Assembly, Cup and Cone (Main Countershaft Front) |
| 5    | 2    | 3892-Q-5035   | Countershaft Gear, Drive (66 Teeth)                      |
| 6    | 2    | 3892-U-5013   | Countershaft Gear, PTO (45 Teeth)                        |
| 7    | 2    | 3892-Y-5017   | Countershaft Gear, 4th (59 Teeth)                        |
| 8    | 2    | 3892-S-5011   | Countershaft Gear, 3rd (43 Teeth)                        |
| 9    | 2    | 3892-N-5396   | Countershaft Gear, 2nd (34 Teeth)                        |
| 10   | 2    | 16X-1031      | Key (Countershaft), Replaced by 16X-1040                 |
|      |      | 16X-1040      | Key (Countershaft)                                       |
| 11   | 2    | 3297-N-1366   | Countershaft (17/26 Teeth)                               |
| 12   | 2    | A-1228-S-1345 | Bearing Assembly, Cup and Cone (Main Countershaft Rear)  |

## Main Countershaft Assembly

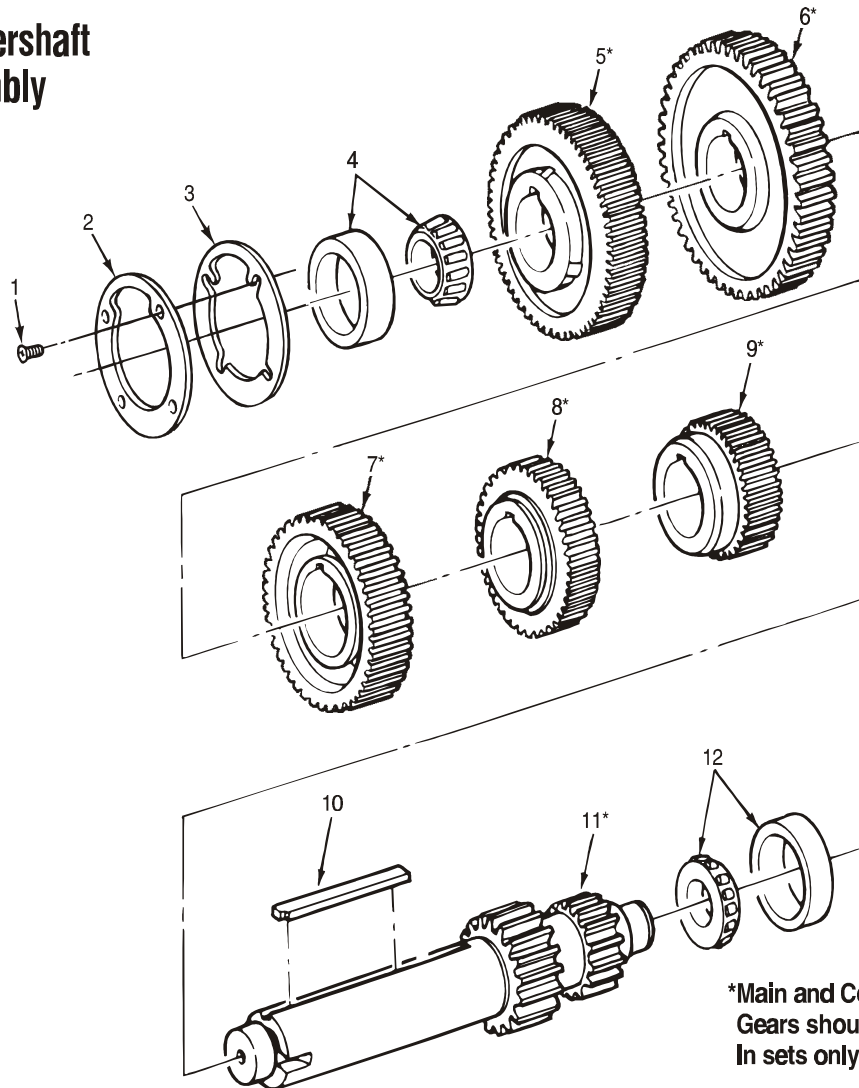


MCA0002

## Main Countershaft Assembly — 10-Speed Overdrive “A” Ratio

| Item | Qty. | Part Number   | Description                                              |
|------|------|---------------|----------------------------------------------------------|
| 1    | 8    | 10X-1537      | Special Screw                                            |
| 2    | 2    | 3105-E-1175   | Retainer, Countershaft Front Bearing                     |
| 3    | AR   | Kit 5364      | Service Kit, Shim Kit, Main Countershaft Front Bearing   |
| 4    | 2    | A-1228-T-1346 | Bearing Assembly, Cup and Cone (Main Countershaft Front) |
| 5    | 2    | 3892-K-5159   | Countershaft Gear, Drive (59 Teeth)                      |
| 6    | 2    | 3892-U-5013   | Countershaft Gear, PTO (45 Teeth)                        |
| 7    | 2    | 3892-H-5156   | Countershaft Gear, 5th (66 Teeth)                        |
| 8    | 2    | 3892-S-5011   | Countershaft Gear, 3rd (43 Teeth)                        |
| 9    | 2    | 3892-N-5396   | Countershaft Gear, 2nd (34 Teeth)                        |
| 10   | 2    | 16X-1031      | Key (Countershaft), Replaced by 16X-1040                 |
|      |      | 16X-1040      | Key (Countershaft)                                       |
| 11   | 2    | 3297-N-1366   | Countershaft (26/17 Teeth)                               |
| 12   | 2    | A-1228-S-1345 | Bearing Assembly, Cup and Cone (Main Countershaft Rear)  |

## Main Countershaft Assembly



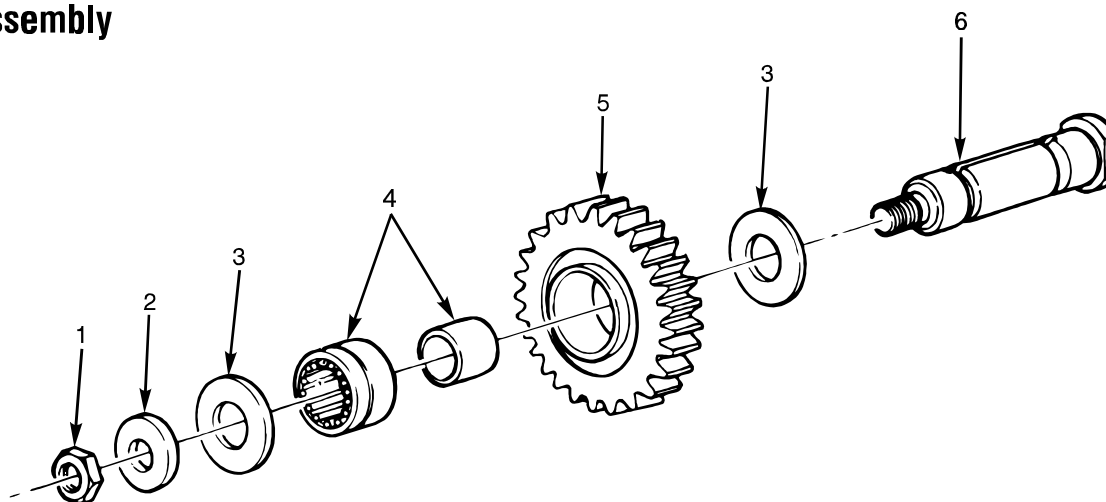
**\*Main and Countershaft  
Gears should be replaced  
In sets only.**

**MCA0002**

## Main Countershaft Assembly — 10-Speed Overdrive “C” Ratio

| Item | Qty. | Part Number   | Description                                                                            |
|------|------|---------------|----------------------------------------------------------------------------------------|
| 1    | 8    | 10X-1537      | Special Screw                                                                          |
| 2    | 2    | 3105-N-1236   | Retainer, Countershaft Front Bearing                                                   |
| 3    | AR   | Kit 5364      | Shim Kit, Main Countershaft — Front Bearing 1650 Input Torque and Under                |
|      | AR   | Kit 5438      | Shim Kit, Main Countershaft — Front Bearing 1850 Input Torque and Above                |
| 4    | 2    | A-1228-T-1346 | Bearing Assembly, Cup and Cone (Main Countershaft — Front) 1650 Input Torque and Below |
|      | 2    | A-1228-B-1484 | Bearing Assembly, Cup and Cone (Main Countershaft — Front) 1850 Input Torque and Above |
| 5    | 2    | 3892-S-5479   | Countershaft Gear, Drive (55 Teeth) 1650 Input Torque and Below                        |
|      | 2    | 3892-J-5678   | Countershaft Gear, Drive (55 Teeth) 1850 Input Torque and Above                        |
| 6    | 2    | 3892-U-5013   | Countershaft Gear, PTO (45 Teeth)                                                      |
| 7    | 2    | 3892-V-5482   | Countershaft Gear, 5th (73 Teeth)                                                      |
| 8    | 2    | 3892-T-5480   | Countershaft Gear, 3rd (46 Teeth)                                                      |
| 9    | 2    | 3892-U-5481   | Countershaft Gear, 2nd (34 Teeth)                                                      |
| 10   | 2    | 16X-1040      | Key (Countershaft)                                                                     |
| 11   | 2    | 3297-W-1453   | Countershaft (26/17 Teeth)                                                             |
| 12   | 2    | A-1228-S-1345 | Bearing Assembly, Cup and Cone (Main Countershaft Rear)                                |

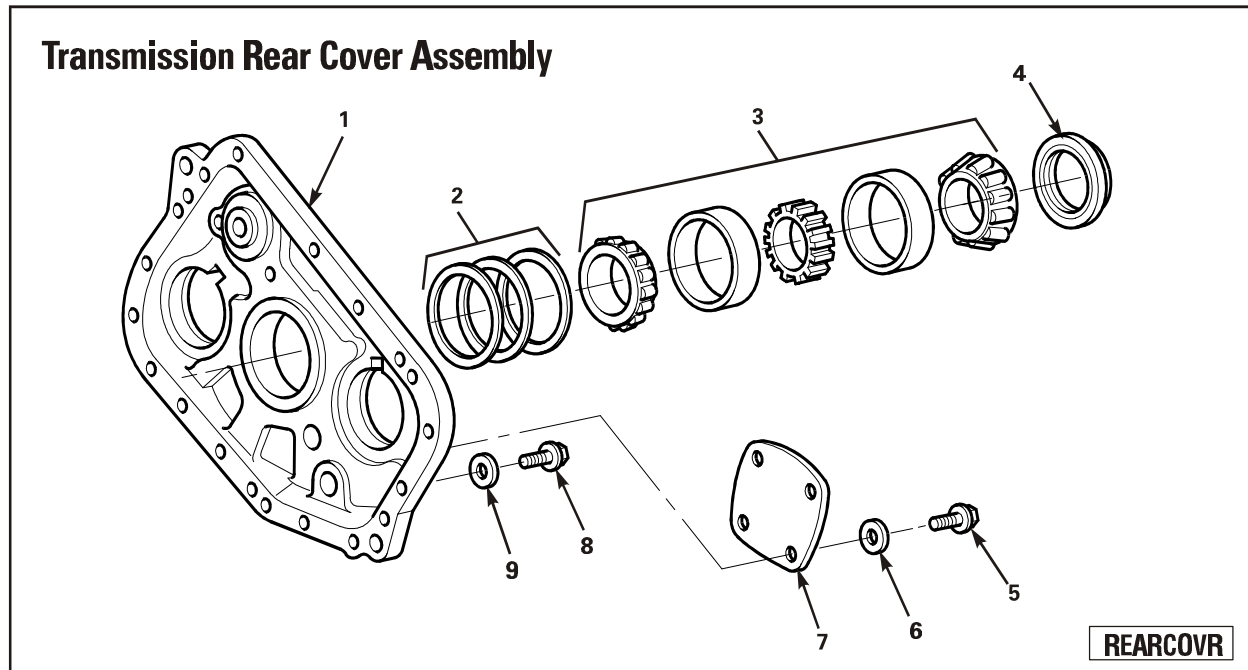
## Reverse Idler Assembly



RIA0001

## Reverse Idler Assembly

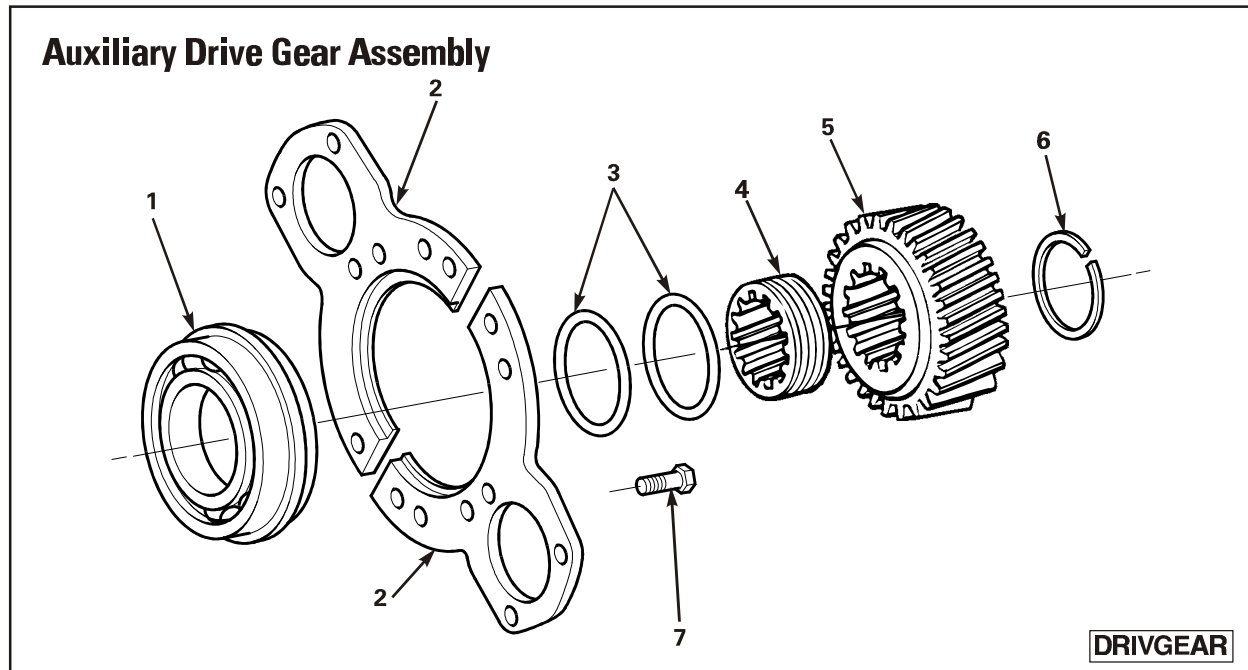
| Item | Qty. | Part Number   | Description                                                                                  |
|------|------|---------------|----------------------------------------------------------------------------------------------|
| 1    | 2    | NL-110-1      | Lock Nut (Reverse Idler Shaft)                                                               |
| 2    | 2    | 1229-N-1626   | Flat Washer                                                                                  |
| 3    | 4    | 42X-1258      | Thrust Washer                                                                                |
| 4    | 2    | A-1228-E-1175 | Bearing Assembly (Includes: 1228-E-1175, Needle Bearing and 2297-S-5765, Inner Bearing Race) |
| 5    | 2    | 3892-N-5032   | Idler Gear, Reverse (28 Teeth)                                                               |
| 6    | 2    | 3198-D-1070   | Idler Shaft (Reverse)                                                                        |



## Transmission Rear Cover Assembly

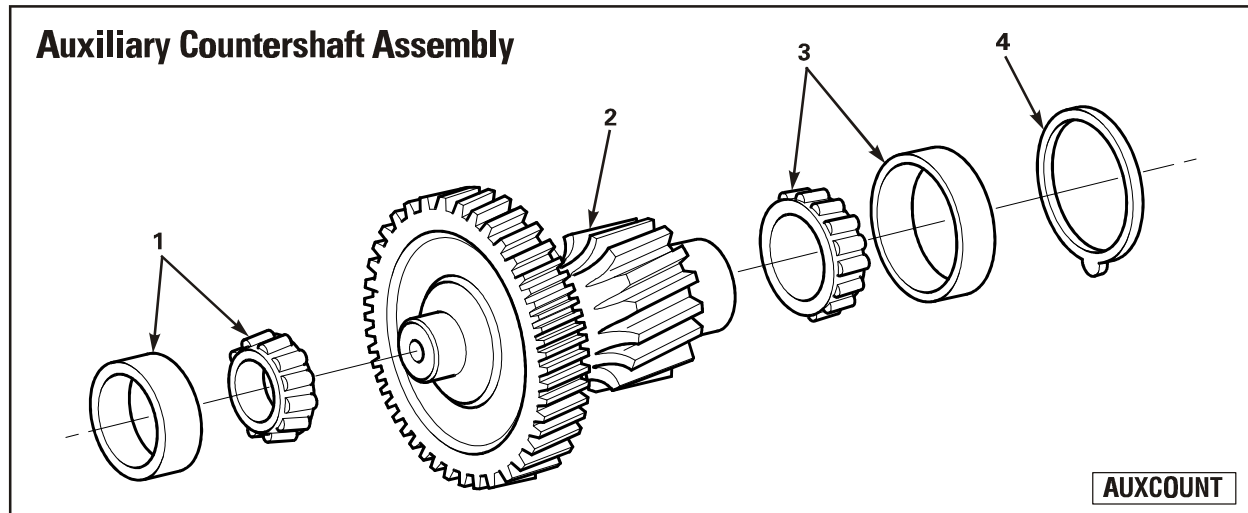
| Item | Qty. | Part Number    | Description                                                                                                                          |
|------|------|----------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1    | 1    | 3293-Q-1109    | Cover, Rear                                                                                                                          |
| 2*   | 1    | Kit 5391       | Output Bearing Selective Spacer (Blue), Used on Serial Numbers LB-00011318 and Below. <b>NOTE:</b> Replace with same color spacer.   |
|      | 1    | Kit 5391       | Output Bearing Selective Spacer (Green), Used on Serial Numbers LB-00011318 and Below. <b>NOTE:</b> Replace with same color spacer.  |
|      | 1    | Kit 5391       | Output Bearing Selective Spacer (Yellow), Used on Serial Numbers LB-00011318 and Below. <b>NOTE:</b> Replace with same color spacer. |
| 3    | 1    | A1-1228-J-1414 | Bearing Assembly, Output (Includes speedo rotor)                                                                                     |
| 4    | 1    | Kit 5389       | Oil Seal Assembly                                                                                                                    |
| 5    | 8    | 10X-1660       | Bolt/Capscrew (Auxiliary Countershaft Bearing Cover)                                                                                 |
| 6    | 8    | 1229-B-1666    | Flat Washer (Bearing Cover)                                                                                                          |
| 7    | 2    | 3266-D-1278    | Cover, Bearing Auxiliary, Countershaft Rear 9 and 10                                                                                 |
| 8    | 18   | 10X-1659       | Bolt/Capscrew, 3/8"-16 UNC-2A x 1-1/2"                                                                                               |
| 9    | 18   | 1229-B-1666    | Flat Washer                                                                                                                          |

\* Not needed with replacement rear covers.



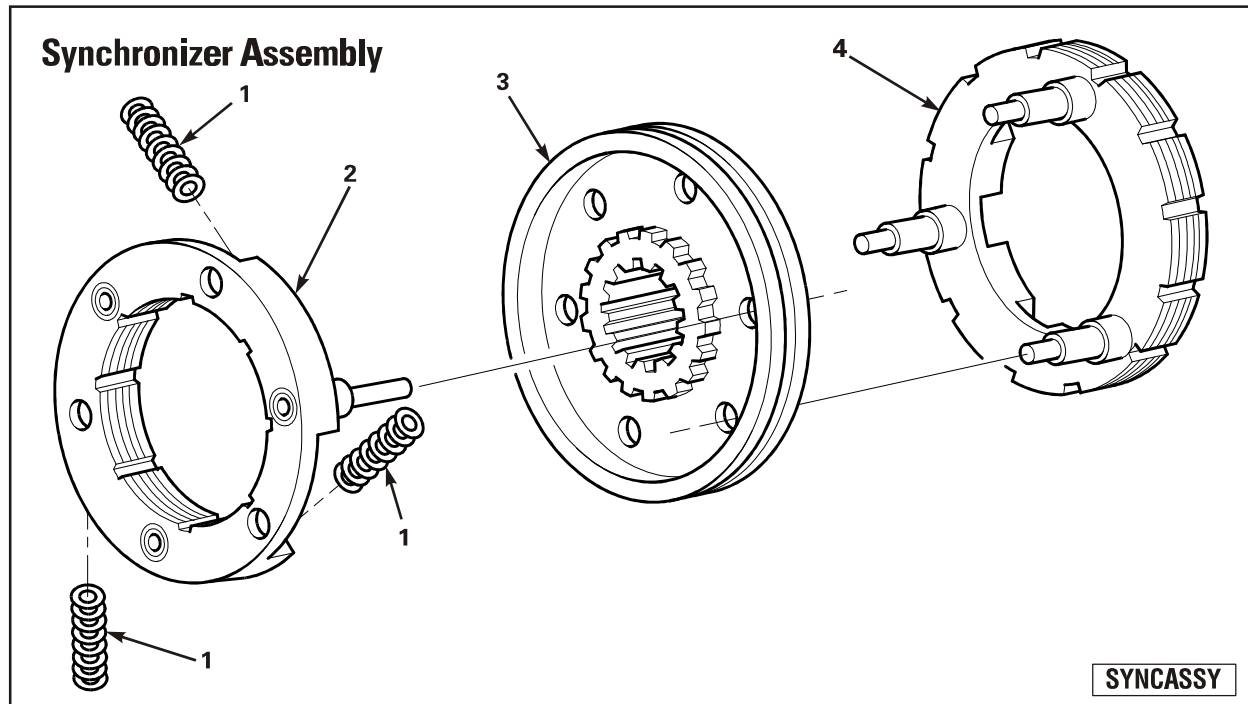
## Auxiliary Drive Gear Assembly

| Item | Qty. | Part Number   | Description                                                              |
|------|------|---------------|--------------------------------------------------------------------------|
| 1    | 1    | A-1228-H-1204 | Bearing Assembly (Ball)                                                  |
| 2    | 2    | 3105-Y-1195   | Retainer, Rear Main Bearing                                              |
| 3    | 2    | 5X-1069       | O-Ring                                                                   |
| 4    | 1    | 2245-W-1219   | Sleeve                                                                   |
| 5    | 1    | 3892-G-5519   | Auxiliary Gear, Drive (38 Teeth) All except 10-Speed Overdrive "C" Ratio |
|      | 1    | 3892-F-5518   | Auxiliary Gear, Drive (42 Teeth) 10-Speed Overdrive "C" Ratio Only       |
| 6    | 1    | 1229-W-4339   | Snap Ring                                                                |
| 7    | 10   | S-268-2       | Bolt/Capscrew, 3/8"-16 UNC-2                                             |



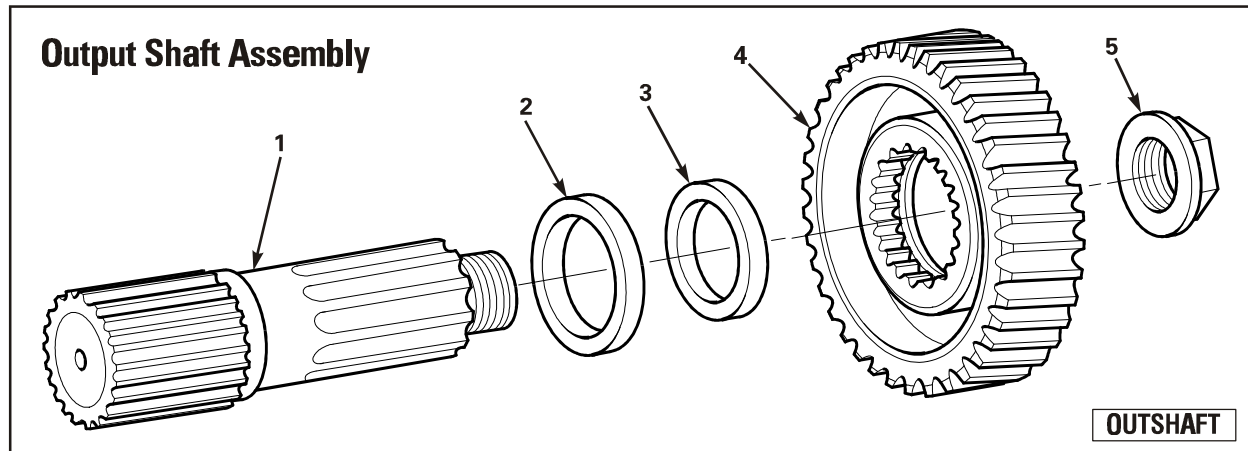
## Auxiliary Countershaft Assembly

| Item | Qty. | Part Number   | Description                                                             | Kit # |
|------|------|---------------|-------------------------------------------------------------------------|-------|
| 1    | 2    | A-1228-S-1345 | Bearing Set                                                             |       |
| 2    | 2    | 3297-K-1415   | Auxiliary Countershaft, 9 Direct and 9 Overdrive "A" Ratio              |       |
|      | 2    | 3297-J-1414   | Auxiliary Countershaft, 9 Overdrive "B" Ratio and Direct                |       |
|      | 2    | 3297-T-1398   | Auxiliary Countershaft, 10 Direct and 10 Overdrive "A" Ratio and Direct |       |
|      | 2    | 3297-S-1397   | Auxiliary Countershaft, 10 Overdrive "C" Ratio                          |       |
| 3    | 2    | A-1228-S-1345 | Bearing Set                                                             |       |
| 4    | AR   | Kit 5404      | Kit — Spacer Washer, Auxiliary Countershaft Selective                   |       |



## Synchronizer Assembly

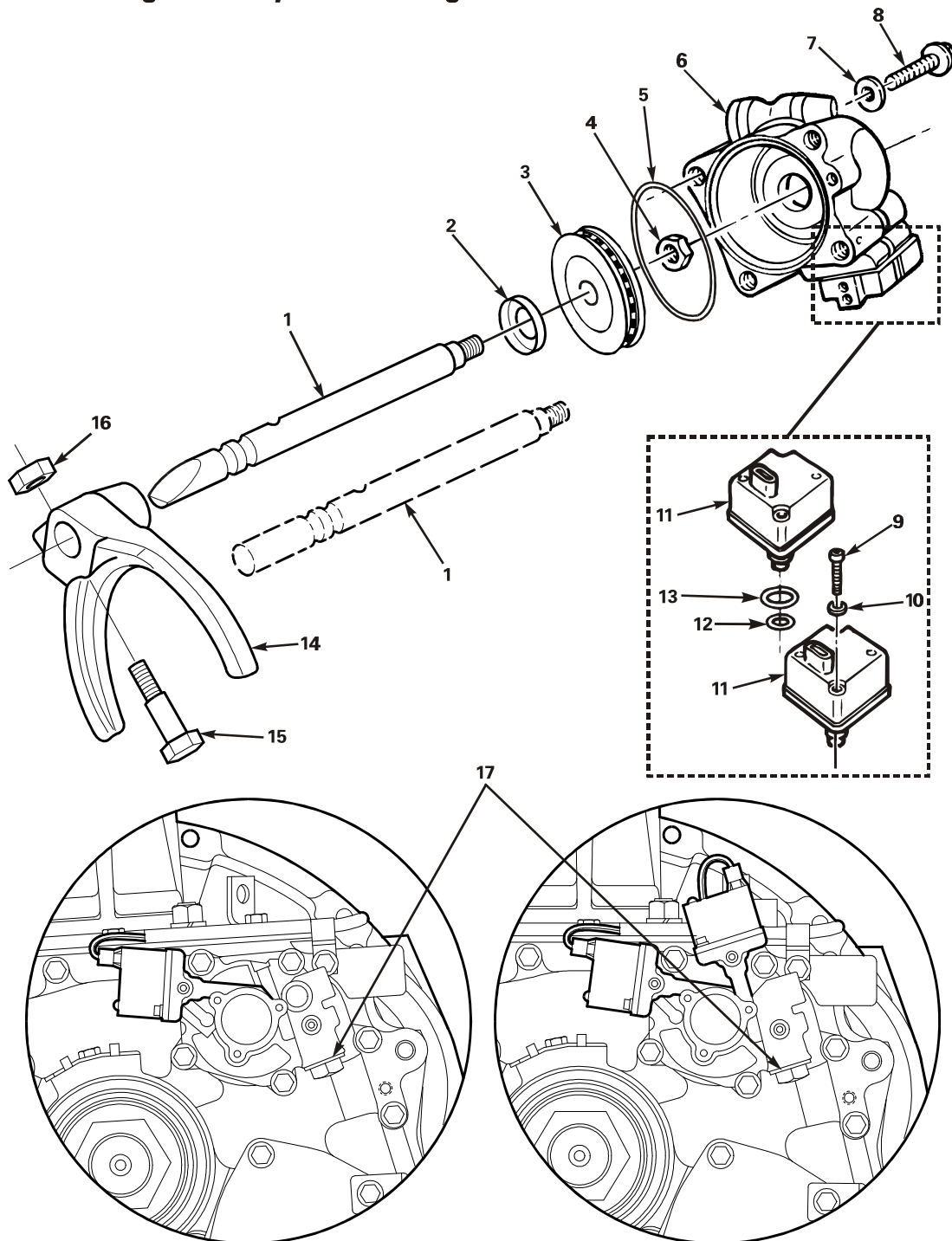
| Item | Qty. | Part Number   | Description                                  | Kit #         |
|------|------|---------------|----------------------------------------------|---------------|
| 1    | 3    | 2258-Z-1144   | Spring                                       | 5289,<br>5270 |
| 2    | 1    | A-3203-Z-1014 | Synchro Assembly (High), Not Sold Separately | 5289,<br>5270 |
| 3    | 1    | 3107-S-1111   | Collar, Not Sold Separately                  | 5289          |
| 4    | 1    | A-3203-R-1006 | Synchro Assembly (Low), Not Sold Separately  | 5289,<br>5270 |



## Output Shaft Assembly

| Item | Qty. | Part Number | Description                                      |
|------|------|-------------|--------------------------------------------------|
| 1    | 1    | 3297-N-1418 | Output Shaft                                     |
| 2    | 1    | 1244-W-2103 | Spacer (Output Shaft)                            |
| 3    | 1    | 1244-X-2104 | Spacer (Output Bearing)                          |
| 4    | 1    | 3892-E-5517 | Auxiliary Low Gear (58T), 10 speed A and C ratio |
|      | 1    | 3892-H-5598 | Auxiliary Low Gear (66T), 9 speed B ratio        |
|      | 1    | 3892-J-5600 | Auxiliary Low Gear (60T), 9 speed A ratio        |
| 5    | 1    | 1227-T-1554 | Nut, Flanged (Yoke)                              |

## Piston Housing Assembly/Air Filter Regulator



INLINE CONFIGURATION

"V" CONFIGURATION

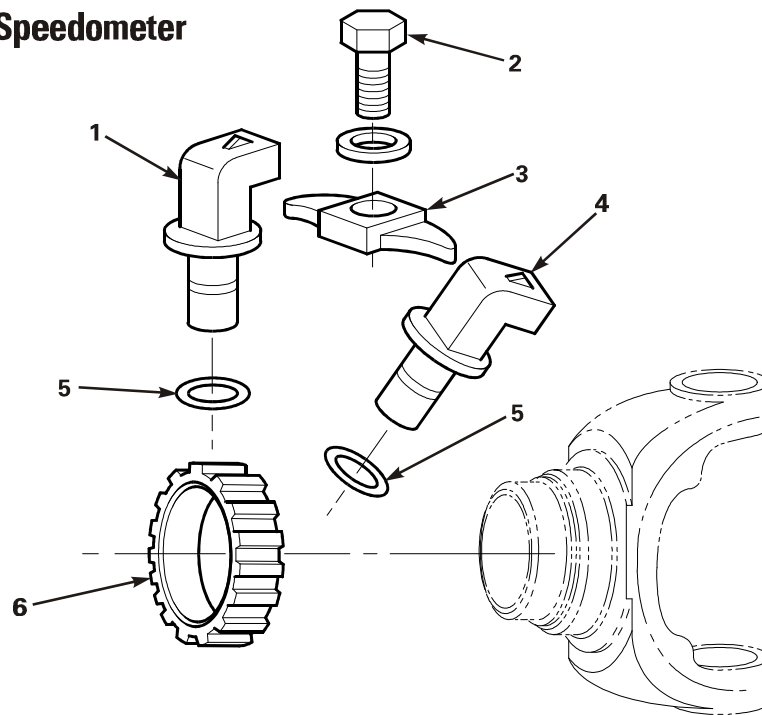
PISTHOUS

## Piston Housing Assembly/Air Filter Regulator

| Item | Qty. | Part Number    | Description                                                       | Kit #                                        |
|------|------|----------------|-------------------------------------------------------------------|----------------------------------------------|
| 1    | 1    | 2244-W-1167    | Range Shaft (Service with 2244-R-1188)                            |                                              |
|      | 1    | 2244-R-1188    | Range Shaft                                                       |                                              |
| 2    | 1    | 1205-G-2607    | Seal, Oil, Shaft (Auxiliary Housing)                              | 5401                                         |
| 3    | 1    | 2230-J-1310    | Piston Assembly                                                   | 5401                                         |
| 4    | 1    | 1227-S-1570    | Nut                                                               | 5401                                         |
| 5    | 1    | 5X-1217        | O-Ring (Range Piston Housing Cover Seal)                          | 5401                                         |
| 6†   | NLA  | A1-3280-H-9602 | Piston Housing with Air Filter Regulator ("V" Configuration), NLA | 5403                                         |
|      |      | A1-3280-R-9716 | Piston Housing with Air Filter Regulator (Inline Configuration)   | 5403 (inc 5400, 5401), 5436 (inc 5400, 5401) |
| 7    | 4    | 1229-B-1666    | Flat Washer                                                       |                                              |
| 8    | 4    | 10X-1670       | Bolt/Capscrew                                                     | 5436 (inc 5401)                              |
| 9    | 4    | 10X-1623       | Screw, Solenoid/Piston Housing Cover                              | 5436 (inc 5401)                              |
| 10   | 4    | WA-43Z         | Flat Washer                                                       | 5436 (inc 5401)                              |
| 11   | 2    | A-3280-F-9392  | Solenoid Assembly (Includes 5X-1207 and 5X-1092 O-Rings)          | 5436 (inc 5401)                              |
| 12   | 4    | 5X-1207        | O-Ring, Solenoid                                                  | 5401                                         |
| 13   | 2    | 5X-1092        | O-Ring, Solenoid                                                  | 5401                                         |
| 14   | 1    | 3296-Q-1161    | Range Shift Fork                                                  |                                              |
| 15   | 1    | 10X-1534       | Bolt                                                              |                                              |
| 16   | 1    | NL-25-1        | Lock Nut                                                          |                                              |
| 17   | 1    | A-3280-G-9610S | Air Filter Regulator                                              | 5400                                         |

† Replace with Kit 5403.

## Electronic Speedometer

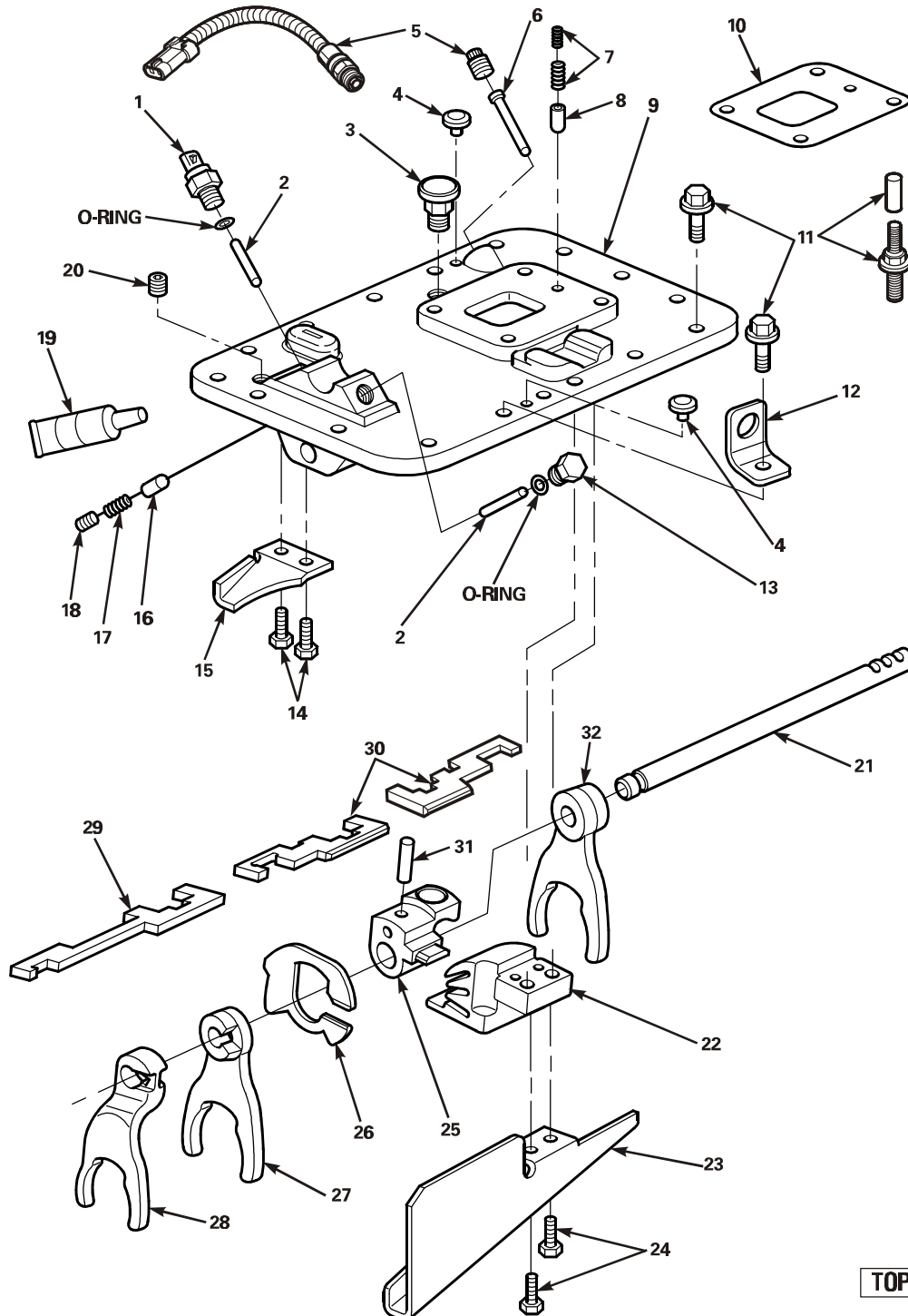


ELCTSPED

### Electronic Speedometer

| Item | Qty. | Part Number   | Description                                   | Kit # |
|------|------|---------------|-----------------------------------------------|-------|
| 1    | 1    | A-3280-G-9575 | Two Lead Speedometer Sensor                   | 5392  |
| 2    | 1    | S-264-1       | Speedometer Sensor Bracket Bolt               |       |
| 3    | 1    | 2255-T-1268   | Speedometer Sensor Tie Down Bracket           |       |
| 4    | 1    | A-3280-H-9576 | Four Lead Speedometer Sensor                  |       |
| 5    | 1    | 5X-1134       | O-Ring                                        |       |
| 6    | NSS  | 2297-X-7278   | Speedometer Rotor, Included in A1-1228-J-1414 |       |

## Top Cover Assembly — Standard Direct (Manual) Electric Over Air



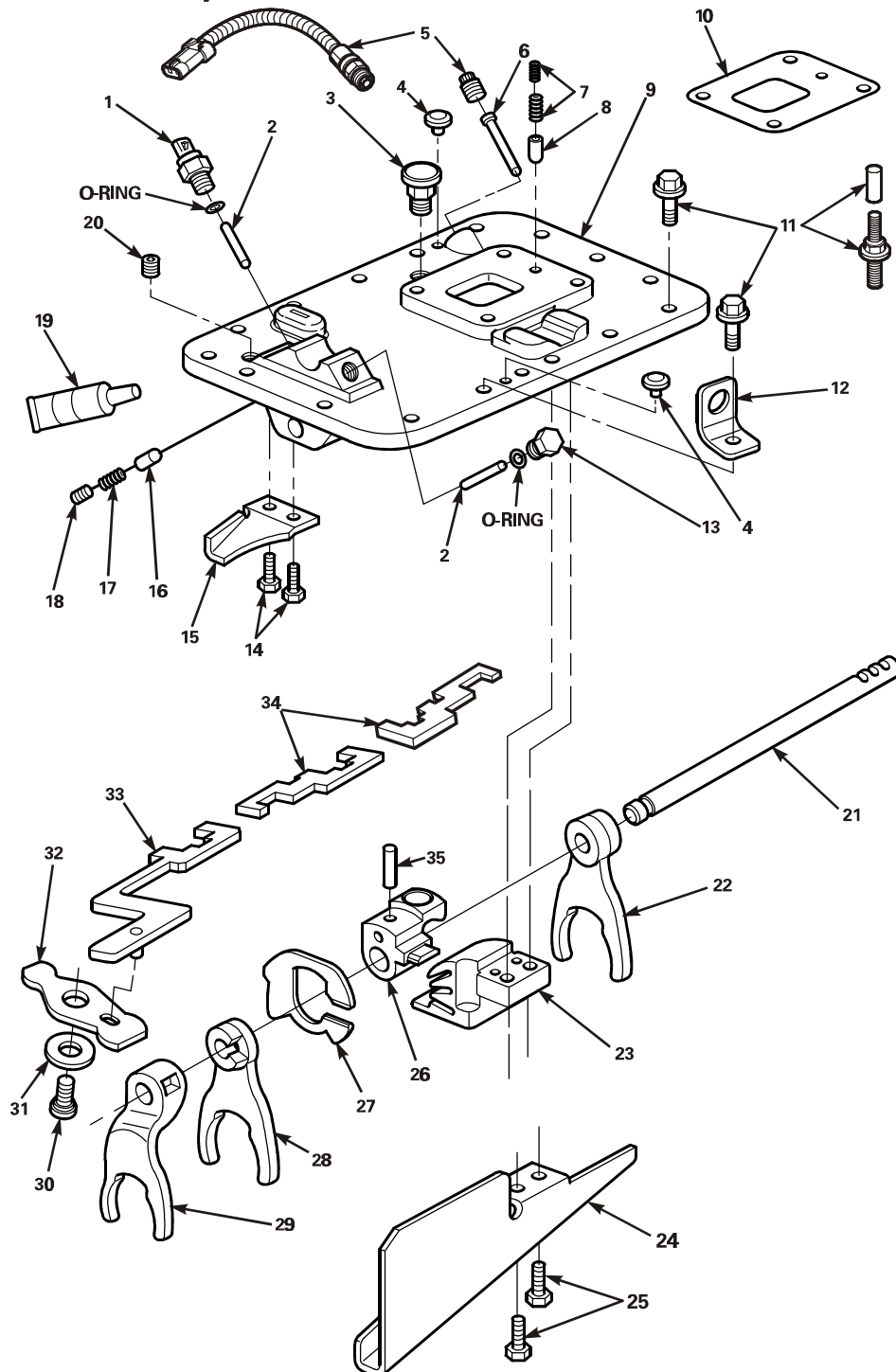
TOPCVRSD

## Top Cover Assembly — Standard Direct (Manual) Electric Over Air

| Item | Qty. | Part Number      | Description                                                                                | Kit # |
|------|------|------------------|--------------------------------------------------------------------------------------------|-------|
| 1    | 1    | A-3280-W-9409    | Switch Assembly, Neutral                                                                   |       |
| 2    | 2    | 43X-1210         | Pin, Neutral Actuator                                                                      |       |
| 3    | 1    | A-1199-P-1394    | Breather Assembly                                                                          |       |
| 4    | 2    | 1250-Q-1265      | Plug, Jack Screw                                                                           |       |
| 5    | 1    | 1250-D-1252      | Plug                                                                                       |       |
|      | 1    | A-2297-Q-8285    | Reverse Switch (Optional), Volvo Only                                                      |       |
| 6    | 1    | 43X-1208         | Pin, Reverse Actuator                                                                      |       |
| 7    | NLA  | 2258-P-1368      | Spring, Rail Detent (Pink), Replaced by 2258-V-1452                                        | 5441  |
|      | NLA  | 2258-T-1424      | Spring, Rail Detent (Argosy Only), Replaced by 2258-B-1458                                 | 5441  |
|      | 1    | 2258-V-1452      | Spring, Rail Detent (Standard) Black                                                       |       |
|      | 1    | 2258-W-1453      | Spring, Rail Detent (Optional Heavy — Volvo and International) (Use with 2258-V-1452) Blue |       |
|      | 1    | 2258-B-1458      | Spring, Rail Detent (Optional Light — Argosy) Purple                                       |       |
| 8    | NLA  | 43X-1207         | Pin, Rail Detent, Replaced by 42X-1247                                                     | 5441  |
|      | 1    | 42X-1247         | Pin, Rail Detent                                                                           |       |
| 9    | NLA  | A1-3293-Y-1117-S | Top Cover Assembly, Replaced by A2-3293-T-1138-S                                           |       |
|      | 1    | A2-3293-T-1138-S | Top Cover Assembly                                                                         |       |
| 10   | 1    | 2208-H-1152      | Gasket, Shift Tower                                                                        |       |
| 11   | 16   | 10X-1657         | Bolt, Top Cover                                                                            |       |
|      | 16   | A-2297-V-8290    | Stud and Protective Cap (Optional)                                                         |       |
| 12   | 2    | 2297-P-5840      | Lifting Hook                                                                               |       |
| 13   | 1    | A-1250-H-1126    | Plug Assembly, Neutral                                                                     |       |
| 14   | 2    | S-244-A-1        | Screw, Hex Socket Head Cap                                                                 |       |
| 15   | 1    | 2205-W-1011      | Scoop, Oil                                                                                 |       |
| 16   | 1    | 43X-1203         | Pin, Reverse Detent                                                                        |       |
| 17   | 1    | 2258-Q-1369      | Spring, Reverse Detent (Grey)                                                              |       |
| 18   | 1    | 26X-1032         | Screw, Reverse Detent Set                                                                  |       |
| 19   | A/R  | 2297-U-6417      | Loctite Sealant                                                                            |       |
| 20   | 1    | P-46             | Plug, Lube Return                                                                          |       |
| 21   | 1    | 2244-F-1176      | Rail, Shift                                                                                |       |
| 22†  | NLA  | A-3280-N-9608    | Shift Housing Assembly                                                                     |       |
|      | 1    | A-3280-G-9809    | Shift Housing Assembly                                                                     |       |
| 23   | 1    | 3221-C-1017      | Scoop, Oil                                                                                 |       |
| 24   | 2    | 10X-1667         | Screw, Hex Socket Head Cap                                                                 |       |
| 25†  | NLA  | 2245-A-1223      | Shift Sleeve                                                                               |       |
|      | 1    | 2245-M-1235      | Shift Sleeve                                                                               |       |
| 26†  | NLA  | 3280-L-9606      | Plate, Interlock                                                                           |       |
|      | 1    | 3280-C-9805      | Plate, Interlock                                                                           |       |
| 27†  | NLA  | 3296-K-1259      | Fork, Mid Shift                                                                            |       |
|      | 1    | 3296-S-1319      | Fork, Mid Shift                                                                            |       |
| 28   | 1    | 3296-M-1261      | Fork, High Shift                                                                           |       |
| 29†  | NLA  | 2244-C-1173      | Bar, High Connecting                                                                       |       |
|      | 1    | 2244-H-1204      | Bar, High Connecting                                                                       |       |
| 30†  | NLA  | 2244-B-1172      | Bar, Low/Mid Connecting                                                                    |       |
|      | 1    | 2244-F-1202      | Bar, Low Connecting                                                                        |       |
|      | 1    | 2244-G-1203      | Bar, Mid Connecting                                                                        |       |
| 31   | 1    | 43X-1214         | Pin                                                                                        |       |
| 32   | 1    | 3296-J-1258      | Fork, Low Shift                                                                            |       |

† Requires new top cover assembly A2-3293-T-1138-S. New components will not interchange on the old top covers.

## Top Cover Assembly — Standard Overdrive (Manual) Electric Over Air



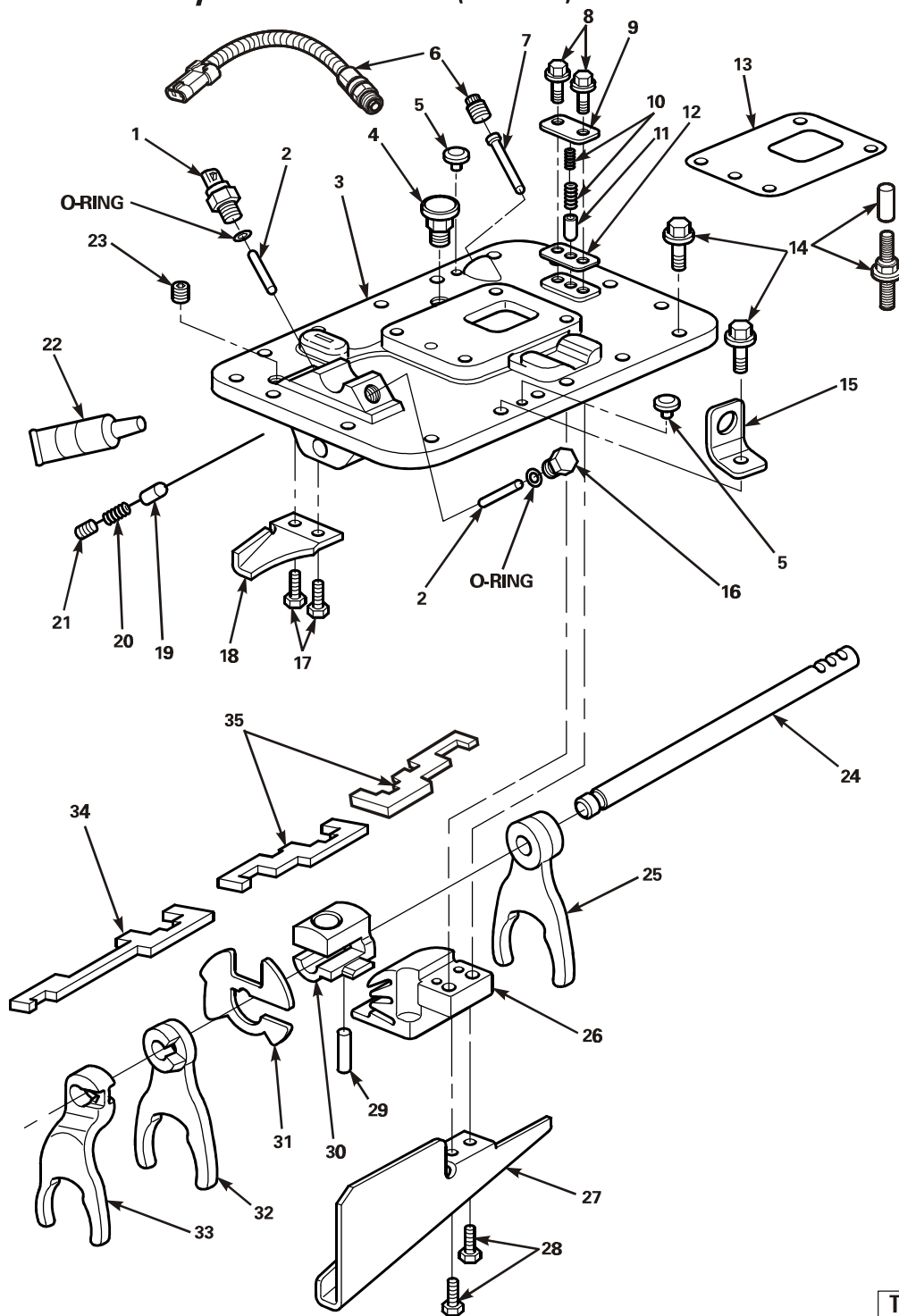
TOPCVRSO

## Top Cover Assembly — Standard Overdrive (Manual) Electric Over Air

| Item | Qty. | Part Number      | Description                                                                                   | Kit # |
|------|------|------------------|-----------------------------------------------------------------------------------------------|-------|
| 1    | 1    | A-3280-W-9409    | Switch Assembly, Neutral-In Gear                                                              |       |
| 2    | 2    | 43X-1210         | Pin, Neutral Actuator                                                                         |       |
| 3    | 1    | A-1199-P-1394    | Breather, Assembly                                                                            |       |
| 4    | 2    | 1250-Q-1265      | Plug, Jack Screw                                                                              |       |
| 5    | 1    | 1250-D-1252      | Plug                                                                                          |       |
|      | 1    | A-2297-A-8285    | Reverse Switch (Optional), Volvo Only                                                         |       |
| 6    | 1    | 43X-1208         | Pin, Reverse Actuator                                                                         |       |
| 7    | NLA  | 2258-P-1368      | Spring, Rail Detent (Pink), Replaced by 2258-V-1452                                           | 5441  |
|      | NLA  | 2258-T-1424      | Spring, Rail Detent (Argosy Only), Replaced by 2258-B-1458                                    | 5441  |
|      | 1    | 2258-V-1452      | Spring, Rail Detent (Standard) Black                                                          |       |
|      | 1    | 2258-W-1453      | Spring, Rail Detent (Optional Heavy — Volvo and International)<br>(Use with 2258-V-1452) Blue |       |
|      | 1    | 2258-B-1458      | Spring, Rail Detent (Optional Light — Argosy) Purple                                          |       |
| 8    | NLA  | 43X-1207         | Pin, Rail Detent, Replaced by 42X-1247                                                        | 5441  |
|      | 1    | 42X-1247         | Pin, Rail Detent                                                                              |       |
| 9    | NLA  | A1-3293-X-1116-S | Top Cover Assembly, Replaced by A3-3293-T-1138S                                               |       |
|      | 1    | A3-3293-T-1138S  | Top Cover Assembly                                                                            |       |
| 10   | 1    | 2208-H-1152      | Gasket, Shift Tower                                                                           |       |
| 11   | 16   | 10X-1657         | Bolt, Top Cover                                                                               |       |
|      | 16   | A-2297-V-8290    | Stud and Protective Cap (Optional)                                                            |       |
| 12   | 2    | 2297-P-5840      | Lifting Hook                                                                                  |       |
| 13   | 1    | A-1250-H-1126    | Plug Assembly, Neutral                                                                        |       |
| 14   | 2    | S-244-A-1        | Screw, Hex Socket Head Cap                                                                    |       |
| 15   | 1    | 2205-W-1011      | Scoop, Oil                                                                                    |       |
| 16   | 1    | 43X-1203         | Pin, Reverse Detent                                                                           |       |
| 17   | 1    | 2258-Q-1369      | Spring, Reverse Detent (Grey)                                                                 |       |
| 18   | 1    | 26X-1032         | Screw, Reverse Detent Set                                                                     |       |
| 19   | A/R  | 2297-U-6417      | Loctite Sealant                                                                               |       |
| 20   | 1    | P-46             | Plug, Lube Return                                                                             |       |
| 21   | 1    | 2244-E-1176      | Rail, Shift                                                                                   |       |
| 22   | 1    | 3296-J-1258      | Fork, Low Shift                                                                               |       |
| 23†  | NLA  | A-3280-N-9608    | Shift Housing Assembly                                                                        |       |
|      | 1    | A-3280-G-9809    | Shift Housing Assembly                                                                        |       |
| 24   | 1    | 3221-C-1017      | Scoop, Oil                                                                                    |       |
| 25   | 2    | 10X-1667         | Screw, Hex Socket Head Cap                                                                    |       |
| 26   | NLA  | 2245-A-1223      | Shift Sleeve, Replaced by 2245-M-1235                                                         |       |
|      | 1    | 2245-M-1235      | Shift Sleeve                                                                                  |       |
| 27†  | NLA  | 3280-L-9606      | Plate, Interlock                                                                              |       |
|      | 1    | 3280-C-9805      | Plate, Interlock                                                                              |       |
| 28†  | NLA  | 3296-K-1259      | Fork, Mid Shift                                                                               |       |
|      | 1    | 3296-S-1319      | Fork, Mid Shift                                                                               |       |
| 29   | 1    | 3296-N-1262      | Fork, High Shift                                                                              |       |
| 30   | 1    | 2244-U-1165      | Screw, Socket Head Shoulder                                                                   |       |
| 31   | 1    | 1229-T-4752      | Spacer, Rocking Lever                                                                         |       |
| 32†  | NLA  | 2247-K-1493      | Lever, Rocking                                                                                |       |
|      | 1    | 2247-Z-1534      | Lever, Rocking                                                                                |       |
| 33†  | NLA  | A-2244-D-1174    | Bar, High Connecting (Includes Pin 43X1197 — Not Sold Separately)                             |       |
|      | 1    | A-2244-J-1206    | Bar, High Connecting (Includes Pin 43X1197 — Not Sold Separately)                             |       |
| 34†  | NLA  | 2244-B-1172      | Bar, Low/Mid Connecting                                                                       |       |
|      | 1    | 2244-F-1202      | Bar, Low Connecting                                                                           |       |
|      | 1    | 2244-G-1203      | Bar, Mid Connecting                                                                           |       |
| 35   | 1    | 43X-1214         | Pin                                                                                           |       |

† Requires new top cover assembly A3-3293-T-1138-S. New components will not interchange on the old top covers.

## Top Cover Assembly — Forward Direct (Manual) Electric Over Air

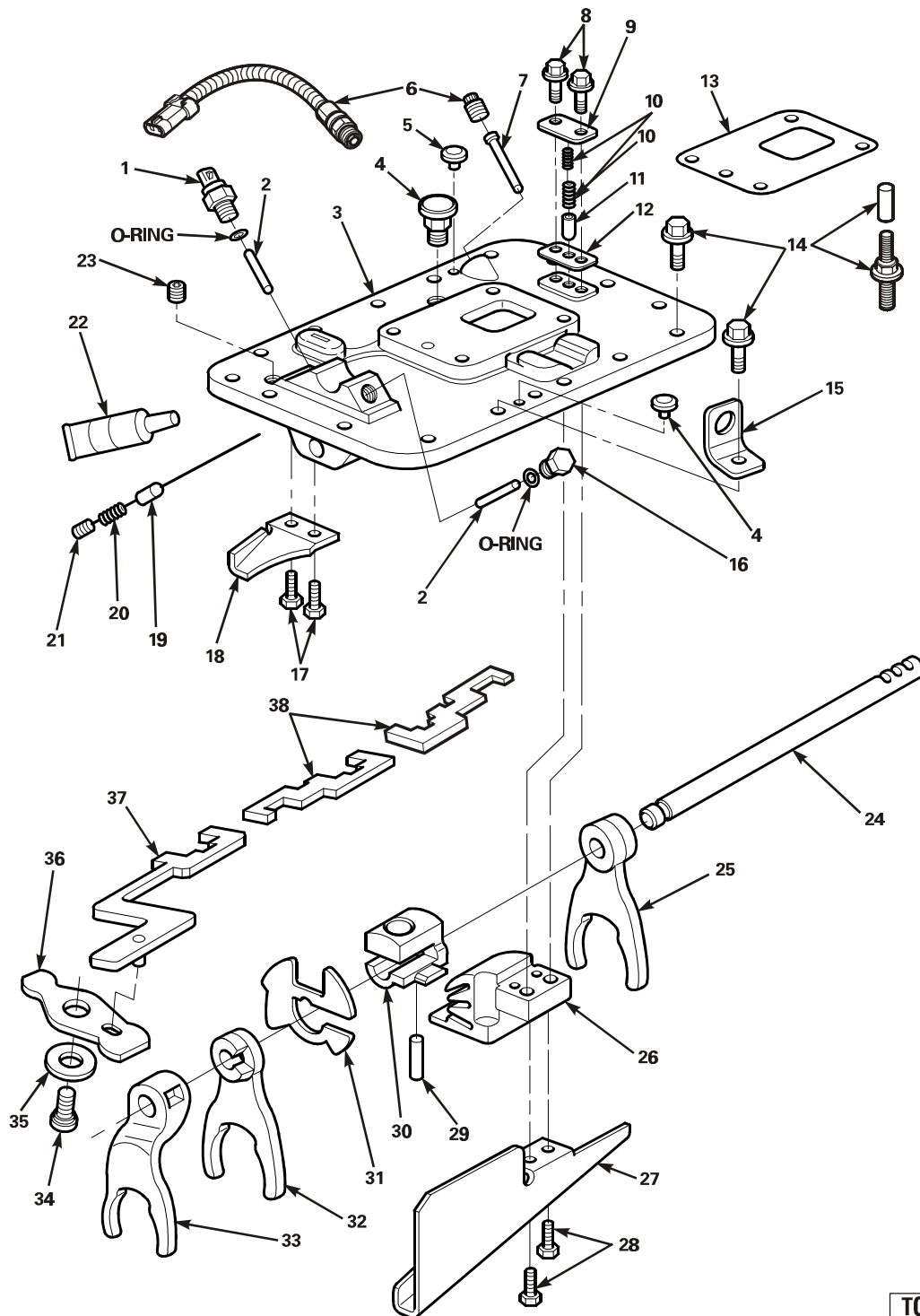


## Top Cover Assembly — Forward Direct (Manual) Electric Over Air

| Item | Qty. | Part Number      | Description                                                                                   | Kit # |
|------|------|------------------|-----------------------------------------------------------------------------------------------|-------|
| 1    | 1    | A-3280-W-9409    | Switch Assembly, Neutral-In Gear                                                              |       |
| 2    | 2    | 43X-1210         | Pin, Neutral Actuator                                                                         |       |
| 3    | NLA  | A1-3293-V-1114-S | Top Cover Assembly, Replaced by A2-3293-R-1136-S                                              |       |
|      | 1    | A2-3293-R-1136-S | Top Cover Assembly                                                                            |       |
| 4    | 1    | A-1199-P-1394    | Breather Assembly                                                                             |       |
| 5    | 2    | 1250-Q-1265      | Plug, Jack Screw                                                                              |       |
| 6    | 1    | 1250-D-1252      | Plug                                                                                          |       |
|      | 1    | A-2297-Q-8285    | Reverse Switch (Optional), Volvo Only                                                         |       |
| 7    | 1    | 43X-1208         | Pin, Reverse Actuator                                                                         |       |
| 8    | 2    | 10X-1446         | Bolt, Rail Detent Strap                                                                       |       |
| 9    | 1    | 2205-H-1126      | Strap                                                                                         |       |
| 10   | NLA  | 2258-P-1368      | Spring, Rail Detent (Pink), Replaced by 2258-V-1452                                           | 5441  |
|      | NLA  | 2258-T-1424      | Spring, Rail Detent (Argosy Only), Replaced by 2258-B-1458                                    | 5441  |
|      | 1    | 2258-V-1452      | Spring, Rail Detent (Standard) Black                                                          |       |
|      | 1    | 2258-W-1453      | Spring, Rail Detent (Optional Heavy — Volvo and International)<br>(Use with 2258-V-1452) Blue |       |
|      | 1    | 2258-B-1458      | Spring, Rail Detent (Optional Light — Argosy) Purple                                          |       |
| 11   | NLA  | 43X-1207         | Pin, Rail Detent, Replaced by 42X-1247                                                        | 5441  |
|      | 1    | 42X-1247         | Pin, Rail Detent                                                                              |       |
| 12   | 1    | 2208-G-1151      | Gasket, Rail Detent                                                                           |       |
| 13   | 1    | 2208-H-1152      | Gasket, Shift Tower                                                                           |       |
| 14   | 16   | 10X-1657         | Bolt, Top Cover                                                                               |       |
|      | 16   | A-2297-V-8290    | Stud and Protective Cap (Optional)                                                            |       |
| 15   | 2    | 2297-P-5840      | Lifting Hook                                                                                  |       |
| 16   | 1    | A-1250-H-1126    | Plug Assembly, Neutral                                                                        |       |
| 17   | 2    | S-244-A-1        | Screw, Hex Socket Head Cap                                                                    |       |
| 18   | 1    | 2205-W-1011      | Scoop, Oil                                                                                    |       |
| 19   | 1    | 43X-1203         | Pin, Reverse Detent                                                                           |       |
| 20   | 1    | 2258-O-1369      | Spring, Reverse Detent (Grey)                                                                 |       |
| 21   | 1    | 26X-1032         | Screw, Reverse Detent Set                                                                     |       |
| 22   | A/R  | 2297-U-6417      | Loctite Sealant                                                                               |       |
| 23   | 1    | P-46             | Plug, Lube Return                                                                             |       |
| 24   | 1    | 2244-E-1175      | Rail, Shift                                                                                   |       |
| 25   | 1    | 3296-J-1258      | Fork, Low Shift                                                                               |       |
| 26†  | NLA  | A-3280-N-9608    | Shift Housing Assembly                                                                        |       |
|      | 1    | A-3280-G-9809    | Shift Housing Assembly                                                                        |       |
| 27   | 1    | 3221-C-1017      | Scoop, Oil                                                                                    |       |
| 28   | 2    | 10X-1667         | Screw, Hex Socket Head Cap                                                                    |       |
| 29   | 1    | 43X-1214         | Pin                                                                                           |       |
| 30†  | NLA  | 2245-Y-1221      | Shift Sleeve                                                                                  |       |
|      | 1    | 2245-N-1236      | Shift Sleeve                                                                                  |       |
| 31†  | NLA  | 3280-K-9605      | Plate, Interlock                                                                              |       |
|      | 1    | 3280-D-9806      | Plate, Interlock                                                                              |       |
| 32†  | NLA  | 3296-K-1259      | Fork, Mid Shift                                                                               |       |
|      | 1    | 3296-S-1319      | Fork, Mid Shift                                                                               |       |
| 33   | 1    | 3296-M-1261      | Fork, High Shift                                                                              |       |
| 34†  | NLA  | 2244-C-1173      | Bar, High Connecting                                                                          |       |
|      | 1    | 2244-H-1204      | Bar, High Connecting                                                                          |       |
| 35†  | NLA  | 2244-B-1172      | Bar, Low/Mid Connecting                                                                       |       |
|      | 1    | 2244-F-1202      | Bar, Low Connecting                                                                           |       |
|      | 1    | 2244-G-1203      | Bar, Mid Connecting                                                                           |       |

† Requires new top cover assembly A2-3293-R-1136-S. New components will not interchange on the old top covers.

## Top Cover Assembly — Forward Overdrive (Manual)



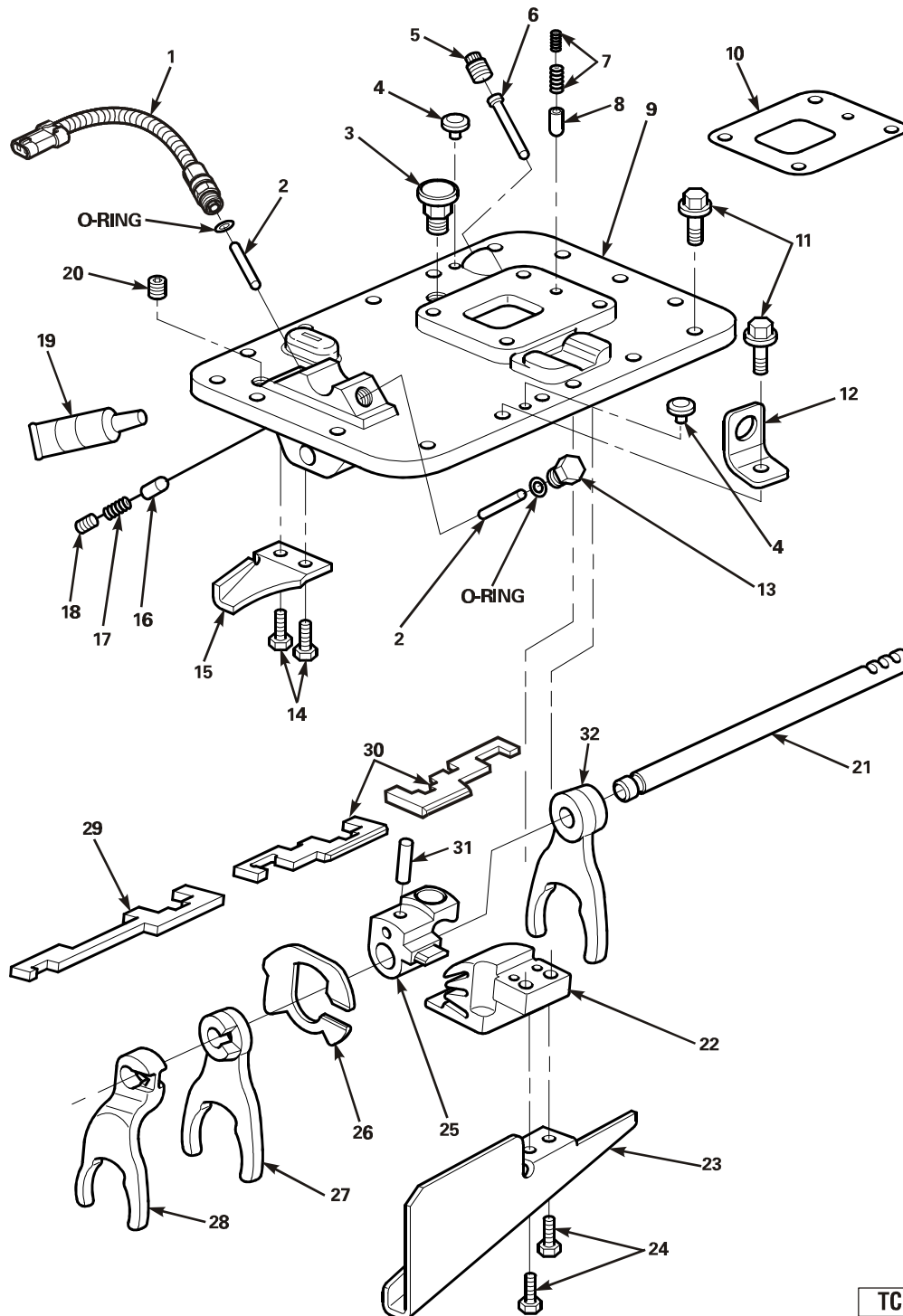
TOPCVRFO

## Top Cover Assembly — Forward Overdrive (Manual) Electric Over Air

| Item | Qty. | Part Number      | Description                                                                                   | Kit # |
|------|------|------------------|-----------------------------------------------------------------------------------------------|-------|
| 1    | 1    | A-3280-W-9409    | Switch Assembly, Neutral-In Gear                                                              |       |
| 2    | 2    | 43X-1210         | Pin, Neutral Actuator                                                                         |       |
| 3    | NLA  | A1-3293-U-1113-S | Top Cover Assembly, Replaced by A3-3293-R-1136S                                               |       |
|      | 1    | A3-3293-R-1136S  | Top Cover Assembly                                                                            |       |
| 4    | 1    | A-1199-P-1394    | Breather Assembly                                                                             |       |
| 5    | 2    | 1250-Q-1265      | Plug, Jack Screw                                                                              |       |
| 6    | 1    | 1250-D-1252      | Plug                                                                                          |       |
|      | 1    | A-2297-Q-8285    | Reverse Switch (Optional), Volvo Only                                                         |       |
| 7    | 1    | 43X-1208         | Pin, Reverse Actuator                                                                         |       |
| 8    | 2    | 10X-1446         | Bolt, Rail Detent Strap                                                                       |       |
| 9    | 1    | 2205-H-1126      | Strap                                                                                         |       |
| 10   | NLA  | 2258-P-1368      | Spring, Rail Detent (Pink), Replaced by 2258-V-1452                                           | 5441  |
|      | NLA  | 2258-T-1424      | Spring, Rail Detent (Argosy Only), Replaced by 2258-B-1458                                    | 5441  |
|      | 1    | 2258-V-1452      | Spring, Rail Detent (Standard) Black                                                          |       |
|      | 1    | 2258-W-1453      | Spring, Rail Detent (Optional Heavy — Volvo and International)<br>(Use with 2258-V-1452) Blue |       |
|      | 1    | 2258-B-1458      | Spring, Rail Detent (Optional Light — Argosy) Purple                                          |       |
| 11   | NLA  | 43X-1207         | Pin, Rail Detent, Replaced by 42X-1247                                                        | 5441  |
|      | 1    | 42X-1247         | Pin, Rail Detent                                                                              |       |
| 12   | 1    | 2208-G-1151      | Gasket, Rail Detent                                                                           |       |
| 13   | 1    | 2208-H-1152      | Gasket, Shift Tower                                                                           |       |
| 14   | 16   | 10X-1657         | Bolt, Top Cover                                                                               |       |
|      | 16   | A-2297-V-8290    | Stud and Protective Cap (Optional)                                                            |       |
| 15   | 2    | 2297-P-5840      | Lifting Hook                                                                                  |       |
| 16   | 1    | A-1250-H-1126    | Plug Assembly, Neutral                                                                        |       |
| 17   | 2    | S-244-A-1        | Screw, Hex Socket Head Cap                                                                    |       |
| 18   | 1    | 2205-W-1011      | Scoop, Oil                                                                                    |       |
| 19   | 1    | 43X-1203         | Pin, Reverse Detent                                                                           |       |
| 20   | 1    | 2258-Q-1369      | Spring, Reverse Detent (Grey)                                                                 |       |
| 21   | 1    | 26X-1032         | Screw, Reverse Detent Set                                                                     |       |
| 22   | A/R  | 2297-U-6417      | Loctite Sealant                                                                               |       |
| 23   | 1    | P-46             | Plug, Lube Return                                                                             |       |
| 24   | 1    | 2244-F-1176      | Rail, Shift                                                                                   |       |
| 25   | 1    | 3296-J-1258      | Fork, Low Shift                                                                               |       |
| 26†  | NLA  | A-3280-N-9608    | Shift Housing Assembly                                                                        |       |
|      | 1    | A-3280-G-9809    | Shift Housing Assembly                                                                        |       |
| 27   | 1    | 3221-C-1017      | Scoop, Oil                                                                                    |       |
| 28   | 2    | 10X-1667         | Screw, Hex Socket Head Cap                                                                    |       |
| 29   | 1    | 43X-1214         | Pin                                                                                           |       |
| 30†  | NLA  | 2245-Y-1221      | Shift Sleeve                                                                                  |       |
|      | 1    | 2245-N-1236      | Shift Sleeve                                                                                  |       |
| 31†  | NLA  | 3280-K-9605      | Plate, Interlock                                                                              |       |
|      | 1    | 3280-K-9806      | Plate, Interlock                                                                              |       |
| 32†  | NLA  | 3296-K-1259      | Fork, Mid Shift                                                                               |       |
|      | 1    | 3296-S-1319      | Fork, Mid Shift                                                                               |       |
| 33   | 1    | 3296-N-1262      | Fork, High Shift                                                                              |       |
| 34   | 1    | 2244-U-1165      | Screw, Socket Head Shoulder                                                                   |       |
| 35   | 1    | 1229-T-4752      | Spacer, Rocking Lever                                                                         |       |
| 36†  | NLA  | 2247-K-1493      | Lever, Rocking                                                                                |       |
|      | 1    | 2247-Z-1534      | Lever, Rocking                                                                                |       |
| 37†  | NLA  | A-2244-D-1174    | Bar, High Connecting (Includes Pin 43X1197 — Not Sold Separately)                             |       |
|      | 1    | A-2244-J-1206    | Bar, High Connecting (Includes Pin 43X1197 — Not Sold Separately)                             |       |
| 38†  | NLA  | 2244-B-1172      | Bar, Low/Mid Connecting                                                                       |       |
|      | 1    | 2244-F-1202      | Bar, Low Connecting                                                                           |       |
|      | 1    | 2244-G-1203      | Bar, Mid Connecting                                                                           |       |

† Requires new top cover assembly A3-3293-R-1136-S. New components will not interchange on the old top covers.

## Top Cover Assembly — Standard Direct (ESS)



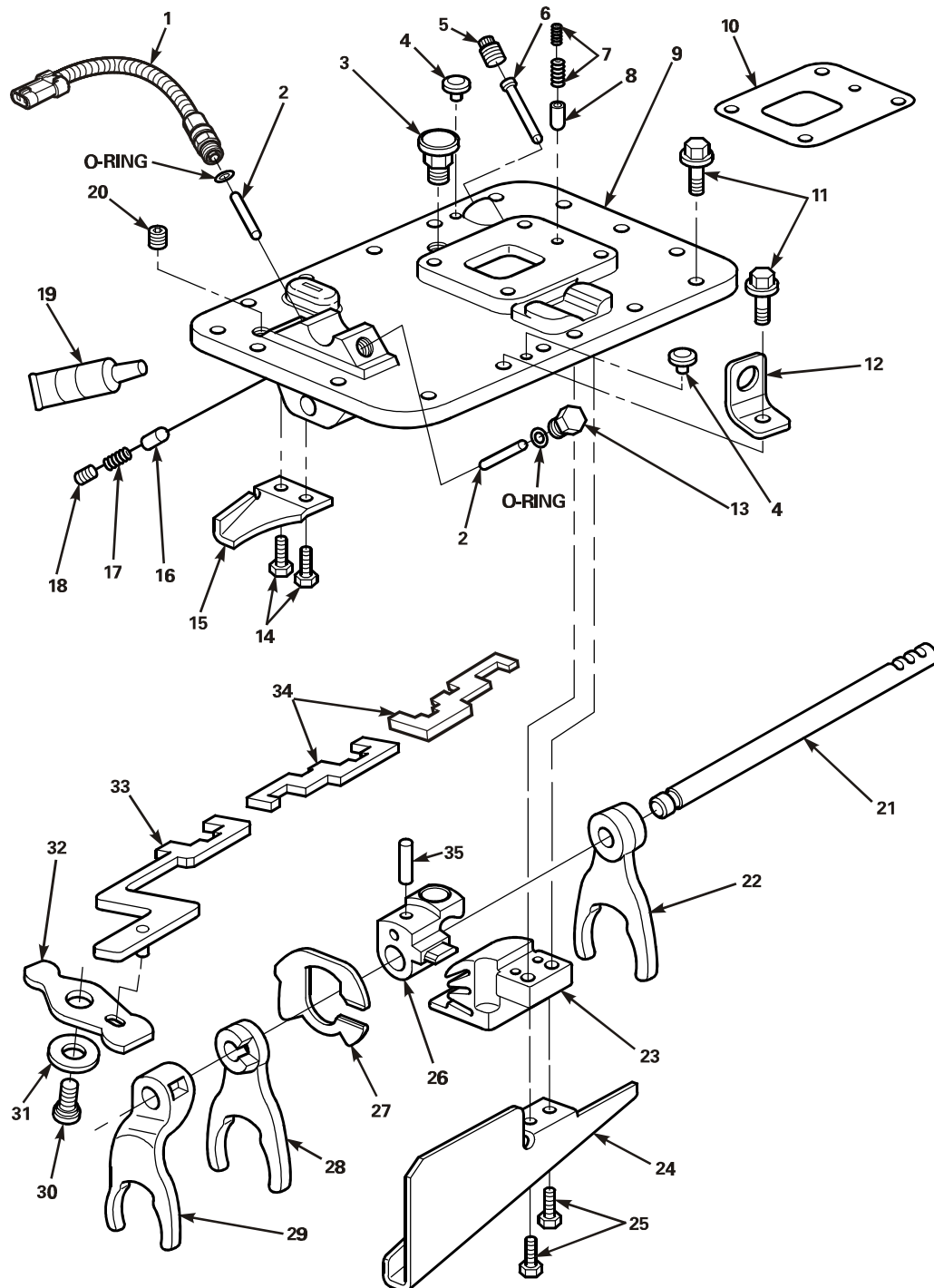
TCSDESS

## Top Cover Assembly — Standard Direct (ESS)

| Item | Qty. | Part Number     | Description                                                                                   | Kit # |
|------|------|-----------------|-----------------------------------------------------------------------------------------------|-------|
| 1    | 1    | A-3280-J-9396   | Switch Assembly, ESS Neutral-In Gear                                                          |       |
| 2    | 2    | 43X-1210        | Pin, Neutral Actuator                                                                         |       |
| 3    | 1    | A-1199-P-1394   | Breather Assembly                                                                             |       |
| 4    | 2    | 1250-Q-1265     | Plug, Jack Screw                                                                              |       |
| 5    | 1    | 1250-D-1252     | Plug                                                                                          |       |
| 6    | 1    | 43X-1208        | Pin, Reverse Actuator                                                                         |       |
| 7    | NLA  | 2258-P-1368     | Spring, Rail Detent (Pink), Replaced by 2258-V-1452                                           | 5441  |
|      | NLA  | 2258-T-1424     | Spring, Rail Detent (Argosy Only), Replaced by 2258-B-1458                                    | 5441  |
|      | 1    | 2258-V-1452     | Spring, Rail Detent (Standard) Black                                                          |       |
|      | 1    | 2258-W-1453     | Spring, Rail Detent (Optional Heavy — Volvo and International)<br>(Use with 2258-V-1452) Blue |       |
|      | 1    | 2258-B-1458     | Spring, Rail Detent (Optional Light — Argosy) Purple                                          |       |
| 8    | NLA  | 43X-1207        | Pin, Rail Detent, Replaced by 42X-1247                                                        | 5441  |
|      | 1    | 42X-1247        | Pin, Rail Detent                                                                              |       |
| 9    | NLA  | A-3293-Y-1117-S | Top Cover Assembly, Replaced by A2-3293-T-1138S                                               | 5429  |
|      | 1    | A-3293-T-1138-S | Top Cover Assembly                                                                            |       |
| 10   | 1    | 2208-H-1152     | Gasket, Shift Tower                                                                           |       |
| 11   | 16   | 10X-1657        | Bolt, Top Cover                                                                               |       |
| 12   | 2    | 2297-P-5840     | Lifting Hook                                                                                  |       |
| 13   | 1    | A-1250-H-1126   | Plug Assembly, Neutral                                                                        |       |
| 14   | 2    | S-244-A-1       | Screw, Hex Socket Head Cap                                                                    |       |
| 15   | 1    | 2205-W-1011     | Scoop, Oil                                                                                    |       |
| 16   | 1    | 43X-1203        | Pin, Reverse Detent                                                                           |       |
| 17   | 1    | 2258-Q-1369     | Spring, Reverse Detent (Grey)                                                                 |       |
| 18   | 1    | 26X-1032        | Screw, Reverse Detent Set                                                                     |       |
| 19   | A/R  | 2297-U-6417     | Loctite Sealant                                                                               |       |
| 20   | 1    | P-46            | Plug, Lube Return                                                                             |       |
| 21   | 1    | 2244-E-1175     | Rail, Shift                                                                                   |       |
| 22†  | NLA  | A-3280-N-9608   | Shift Housing Assembly                                                                        |       |
|      | 1    | A-3280-G-9809   | Shift Housing Assembly                                                                        |       |
| 23   | 1    | 3221-C-1017     | Scoop, Oil                                                                                    |       |
| 24   | 2    | 10X-1667        | Screw, Hex Socket Head Cap                                                                    |       |
| 25†  | NLA  | 2245-A-1223     | Shift Sleeve                                                                                  |       |
|      | 1    | 2245-M-1235     | Shift Sleeve                                                                                  |       |
| 26†  | NLA  | 3280-L-9606     | Plate, Interlock                                                                              |       |
|      | 1    | 3280-L-9606     | Plate, Interlock                                                                              |       |
| 27†  | NLA  | 3296-K-1259     | Fork, Mid Shift                                                                               |       |
|      | 1    | 3296-S-1319     | Fork, Mid Shift                                                                               |       |
| 28   | 1    | 3296-M-1261     | Fork, High Shift                                                                              |       |
| 29†  | NLA  | 2244-C-1173     | Bar, High Connecting                                                                          |       |
|      | 1    | 2244-H-1204     | Bar, High Connecting                                                                          |       |
| 30†  | NLA  | 2244-B-1172     | Bar, Low/Mid Connecting                                                                       |       |
|      | 1    | 2244-F-1202     | Bar, Low Connecting                                                                           |       |
|      | 1    | 2244-G-1203     | Bar, Mid Connecting                                                                           |       |
| 31   | 1    | 43X-1214        | Pin                                                                                           |       |
| 32   | 1    | 243296-J-1258   | Fork, Low Shift                                                                               |       |

† Requires new top cover assembly A2-3293-T-1138-S. New components will not interchange on the old top covers.

## Top Cover Assembly — Standard Overdrive (ESS)



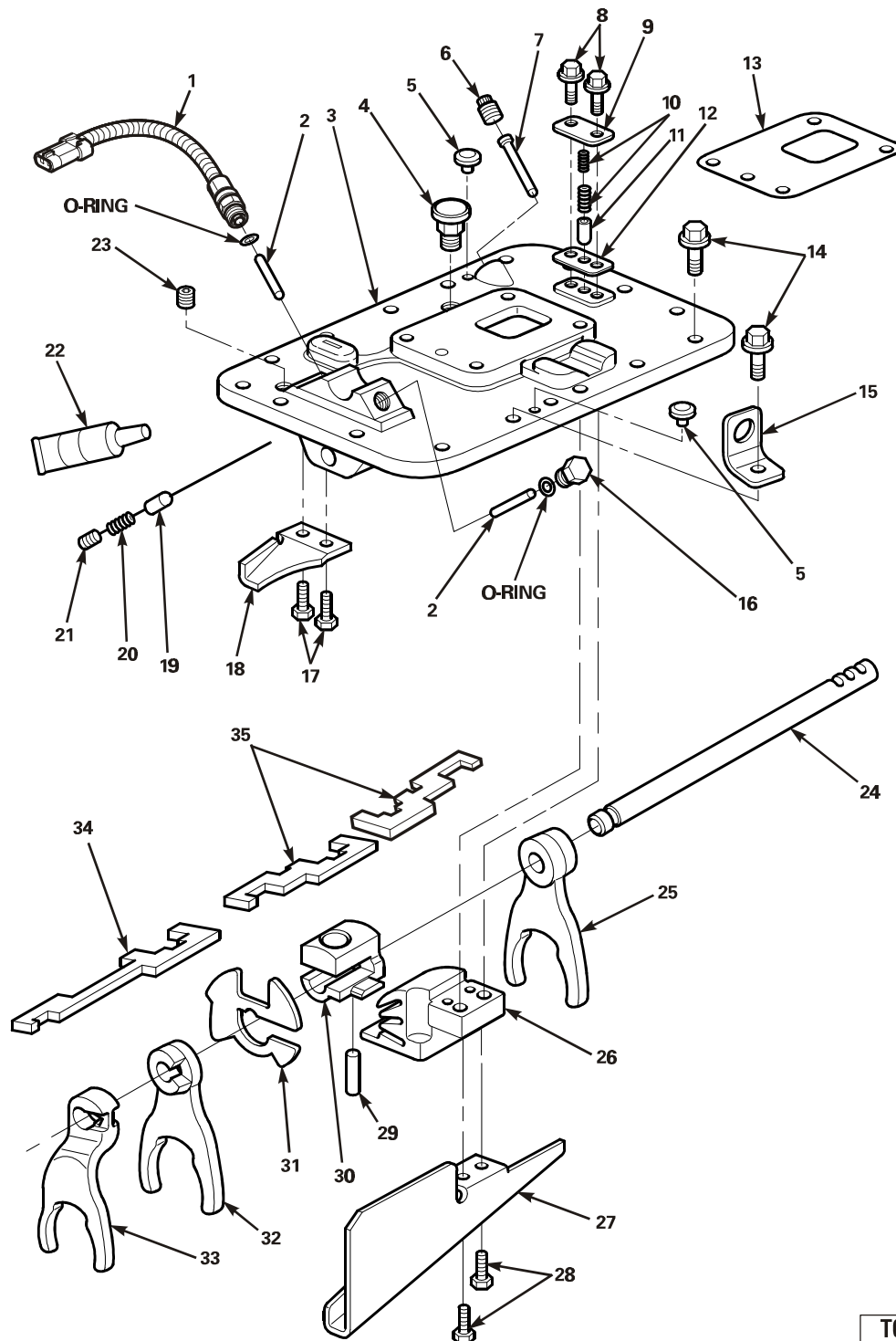
TCSOESS

## Top Cover Assembly — Standard Overdrive (ESS)

| Item | Qty. | Part Number      | Description                                                                                | Kit # |
|------|------|------------------|--------------------------------------------------------------------------------------------|-------|
| 1    | 1    | A-3280-J-9396    | Switch Assembly, ESS Neutral-In Gear                                                       |       |
| 2    | 2    | 43X-1210         | Pin, Neutral Actuator                                                                      |       |
| 3    | 1    | A-1199-P-1394    | Breather, Assembly                                                                         |       |
| 4    | 2    | 1250-Q-1265      | Plug, Jack Screw                                                                           |       |
| 5    | 1    | 1250-D-1252      | Plug                                                                                       |       |
| 6    | 1    | 43X-1208         | Pin, Reverse Actuator                                                                      |       |
| 7    | NLA  | 2258-P-1368      | Spring, Rail Detent (Pink), Replaced by 2258-V-1452                                        | 5441  |
|      | NLA  | 2258-T-1424      | Spring, Rail Detent (Argosy Only), Replaced by 2258-B-1458                                 | 5441  |
|      | 1    | 2258-V-1452      | Spring, Rail Detent (Standard) Black                                                       |       |
|      | 1    | 2258-W-1453      | Spring, Rail Detent (Optional Heavy — Volvo and International) (Use with 2258-V-1452) Blue |       |
|      | 1    | 2258-B-1458      | Spring, Rail Detent (Optional Light — Argosy) Purple                                       |       |
| 8    | NLA  | 43X-1207         | Pin, Rail Detent, Replaced by 42X-1247                                                     | 5441  |
|      | 1    | 42X-1247         | Pin, Rail Detent                                                                           |       |
| 9    | NLA  | A-3293-X-1116-S  | Top Cover Assembly, Replaced by A1-3293-T-1138S                                            |       |
|      | 1    | A1-3293-T-1138-S | Top Cover Assembly                                                                         |       |
| 10   | 1    | 2208-H-1152      | Gasket, Shift Tower                                                                        |       |
| 11   | 16   | 10X-1657         | Bolt, Top Cover                                                                            |       |
| 12   | 2    | 2297-P-5840      | Lifting Hook                                                                               |       |
| 13   | 1    | A-1250-H-1126    | Plug Assembly, Neutral                                                                     |       |
| 14   | 2    | S-244-A-1        | Screw, Hex Socket Head Cap                                                                 |       |
| 15   | 1    | 2205-W-1011      | Scoop, Oil                                                                                 |       |
| 16   | 1    | 43X-1203         | Pin, Reverse Detent                                                                        |       |
| 17   | 1    | 2258-Q-1369      | Spring, Reverse Detent (Grey)                                                              |       |
| 18   | 1    | 26X-1032         | Screw, Reverse Detent Set                                                                  |       |
| 19   | A/R  | 2297-U-6417      | Loctite Sealant                                                                            |       |
| 20   | 1    | P-46             | Plug, Lube Return                                                                          |       |
| 21   | 1    | 2244-E-1175      | Rail, Shift                                                                                |       |
| 22   | 1    | 3296-J-1258      | Fork, Low Shift                                                                            |       |
| 23†  | NLA  | A-3280-N-9608    | Shift Housing Assembly                                                                     |       |
|      | 1    | A-3280-G-9809    | Shift Housing Assembly                                                                     |       |
| 24   | 1    | 3221-C-1017      | Scoop, Oil                                                                                 |       |
| 25   | 2    | 10X-1667         | Screw, Hex Socket Head Cap                                                                 |       |
| 26†  | NLA  | 2245-A-1223      | Shift Sleeve                                                                               |       |
|      | 1    | 2245-M-1235      | Shift Sleeve                                                                               |       |
| 27†  | NLA  | 3280-L-9606      | Plate, Interlock                                                                           |       |
|      | 1    | 3280-C-9805      | Plate, Interlock                                                                           |       |
| 28†  | NLA  | 3296-K-1259      | Fork, Mid Shift                                                                            |       |
|      | 1    | 3296-S-1319      | Fork, Mid Shift                                                                            |       |
| 29   | 1    | 3296-N-1262      | Fork, High Shift                                                                           |       |
| 30   | 1    | 2244-U-1165      | Screw, Socket Head Shoulder                                                                |       |
| 31   | 1    | 1229-T-4752      | Spacer, Rocking Lever                                                                      |       |
| 32†  | NLA  | 2247-K-1493      | Lever, Rocking                                                                             |       |
|      | 1    | 2247-Z-1534      | Lever, Rocking                                                                             |       |
| 33†  | NLA  | A-2244-D-1174    | Bar, High Connecting (Includes Pin 43X1197 — Not Sold Separately)                          |       |
|      | 1    | A-2244-J-1206    | Bar, High Connecting (Includes Pin 43X1197 — Not Sold Separately)                          |       |
| 34†  | NLA  | 2244-B-1172      | Bar, Low/Mid Connecting                                                                    |       |
|      | 1    | 2244-F-1202      | Bar, Low Connecting                                                                        |       |
|      | 1    | 2244-G-1203      | Bar, Mid Connecting                                                                        |       |
| 35   | 1    | 43X-1214         | Pin                                                                                        |       |

† Requires new top cover assembly A1-3293-T-1138-S. New components will not interchange on the old top covers.

## Top Cover Assembly — Forward Direct (ESS)



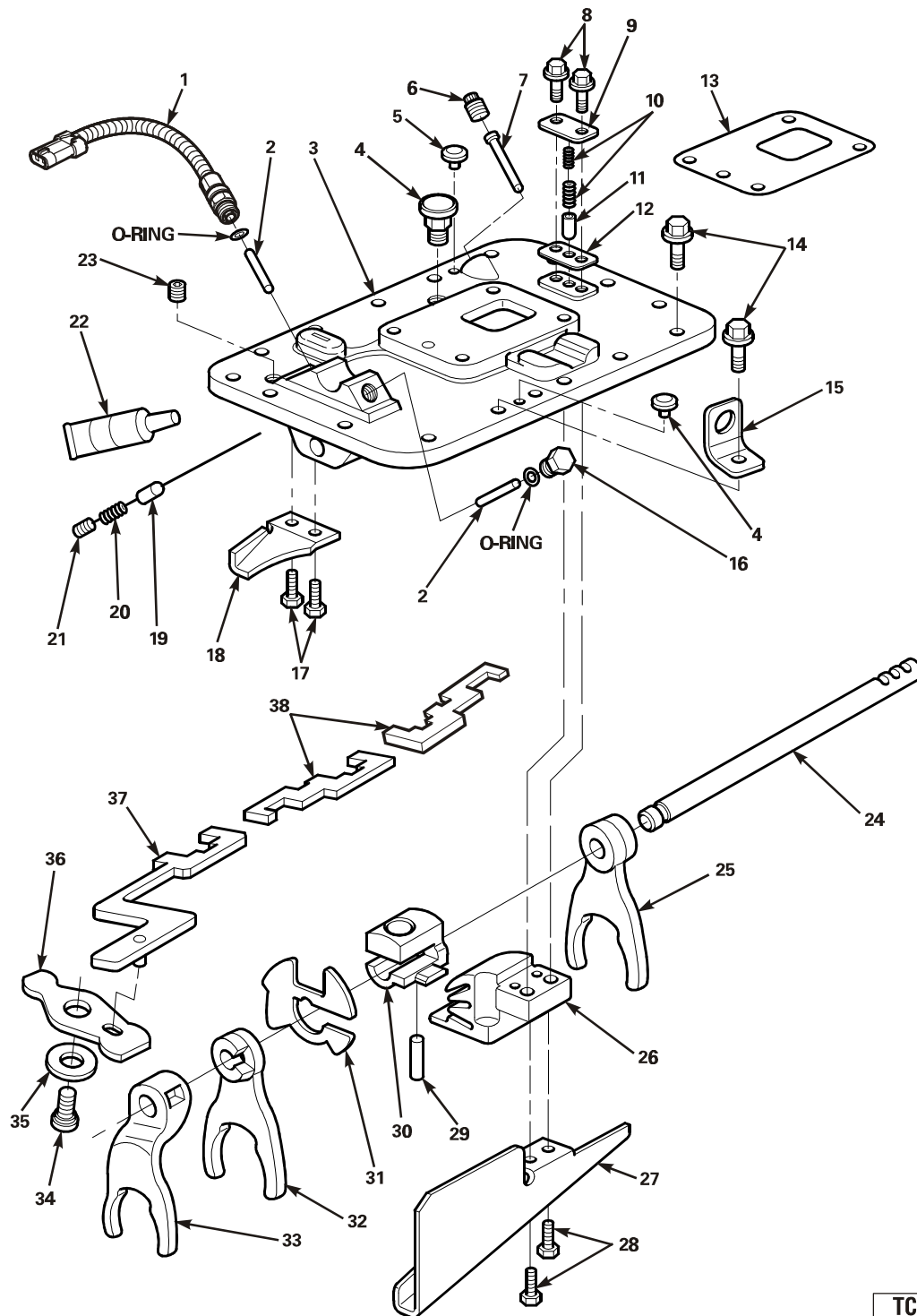
TCFDESS

## Top Cover Assembly — Forward Direct (ESS)

| Item | Qty. | Part Number     | Description                                                                                   | Kit # |
|------|------|-----------------|-----------------------------------------------------------------------------------------------|-------|
| 1    | 1    | A-3280-J-9396   | Switch Assembly, ESS Neutral-In Gear                                                          |       |
| 2    | 2    | 43X-1210        | Pin, Neutral Actuator                                                                         |       |
| 3    | NLA  | A-3293-V-1114-S | Top Cover Assembly, Replaced by A-3293-R-1136S                                                |       |
|      | 1    | A-3293-R-1136-S | Top Cover Assembly                                                                            |       |
| 4    | 1    | A-1199-P-1394   | Breather Assembly                                                                             |       |
| 5    | 2    | 1250-Q-1265     | Plug, Jack Screw                                                                              |       |
| 6    | 1    | 1250-D-1252     | Plug                                                                                          |       |
| 7    | 1    | 43X-1208        | Pin, Reverse Actuator                                                                         |       |
| 8    | 2    | 10X-1446        | Bolt, Rail Detent Strap                                                                       |       |
| 9    | 1    | 2205-H-1126     | Strap                                                                                         |       |
| 10   | NLA  | 2258-P-1368     | Spring, Rail Detent (Pink), Replaced by 2258-V-1452                                           | 5441  |
|      | NLA  | 2258-T-1424     | Spring, Rail Detent (Argosy Only), Replaced by 2258-B-1458                                    | 5441  |
|      | 1    | 2258-V-1452     | Spring, Rail Detent (Standard) Black                                                          |       |
|      | 1    | 2258-W-1453     | Spring, Rail Detent (Optional Heavy — Volvo and International)<br>(Use with 2258-V-1452) Blue |       |
|      | 1    | 2258-B-1458     | Spring, Rail Detent (Optional Light — Argosy) Purple                                          |       |
| 11   | NLA  | 43X-1207        | Pin, Rail Detent, Replaced by 42X-1247                                                        | 5441  |
|      | 1    | 42X-1247        | Pin, Rail Detent                                                                              |       |
| 12   | 1    | 2208-G-1151     | Gasket, Rail Detent                                                                           |       |
| 13   | 1    | 2208-H-1152     | Gasket, Shift Tower                                                                           |       |
| 14   | 16   | 10X-1657        | Bolt, Top Cover                                                                               |       |
| 15   | 2    | 2297-P-5840     | Lifting Hook                                                                                  |       |
| 16   | 1    | A-1250-H-1126   | Plug Assembly, Neutral                                                                        |       |
| 17   | 2    | S-244-A-1       | Screw, Hex Socket Head Cap                                                                    |       |
| 18   | 1    | 2205-W-1011     | Scoop, Oil                                                                                    |       |
| 19   | 1    | 43X-1203        | Pin, Reverse Detent                                                                           |       |
| 20   | 1    | 2258-Q-1369     | Spring, Reverse Detent (Grey)                                                                 |       |
| 21   | 1    | 26X-1032        | Screw, Reverse Detent Set                                                                     |       |
| 22   | A/R  | 2297-U-6417     | Loctite Sealant                                                                               |       |
| 23   | 1    | P-46            | Plug, Lube Return                                                                             |       |
| 24   | 1    | 2244-E-1175     | Rail, Shift                                                                                   |       |
| 25   | 1    | 3296-J-1258     | Fork, Low Shift                                                                               |       |
| 26†  | NLA  | A-3280-N-9608   | Shift Housing Assembly                                                                        |       |
|      | 1    | A-3280-G-9809   | Shift Housing Assembly                                                                        |       |
| 27   | 1    | 3221-C-1017     | Scoop, Oil                                                                                    |       |
| 28   | 2    | 10X-1667        | Screw, Hex Socket Head Cap                                                                    |       |
| 29   | 1    | 43X-1214        | Pin                                                                                           |       |
| 30†  | NLA  | 2245-Y-1221     | Shift Sleeve                                                                                  |       |
|      | 1    | 2245-N-1236     | Shift Sleeve                                                                                  |       |
| 31†  | NLA  | 3280-K-9605     | Plate, Interlock                                                                              |       |
|      | 1    | 3280-D-9806     | Plate, Interlock                                                                              |       |
| 32†  | NLA  | 3296-K-1259     | Fork, Mid Shift                                                                               |       |
|      | 1    | 3296-S-1319     | Fork, Mid Shift                                                                               |       |
| 33   | 1    | 3296-M-1261     | Fork, High Shift                                                                              |       |
| 34†  | NLA  | 2244-C-1173     | Bar, High Connecting                                                                          |       |
|      | 1    | 2244-H-1204     | Bar, High Connecting                                                                          |       |
| 35†  | NLA  | 2244-B-1172     | Bar, Low/Mid Connecting                                                                       |       |
|      | 1    | 2244-F-1202     | Bar, Low Connecting                                                                           |       |
|      | 1    | 2244-G-1203     | Bar, Mid Connecting                                                                           |       |

† Requires new top cover assembly A-3293-R-1136-S. New components will not interchange on the old top covers.

## Top Cover Assembly — Forward Overdrive (ESS)



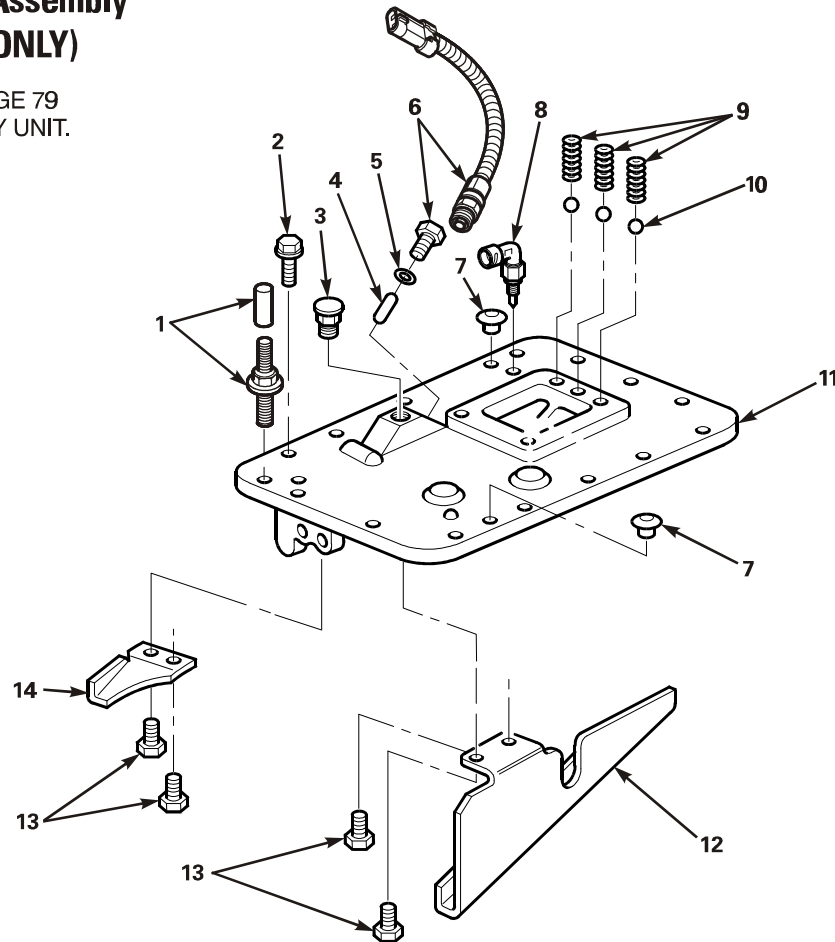
## Top Cover Assembly — Forward Overdrive (ESS)

| Item | Qty. | Part Number      | Description                                                                                   | Kit # |
|------|------|------------------|-----------------------------------------------------------------------------------------------|-------|
| 1    | 1    | A-3280-J-9396    | Switch Assembly, ESS Neutral-In Gear                                                          |       |
| 2    | 2    | 43X-1210         | Pin, Neutral Actuator                                                                         |       |
| 3    | NLA  | A-3293-U-1113-S  | Top Cover Assembly, Replaced by A1-3293-R-1136S                                               |       |
|      | 1    | A1-3293-R-1136-S | Top Cover Assembly                                                                            |       |
| 4    | 1    | A-1199-P-1394    | Breather Assembly                                                                             |       |
| 5    | 2    | 1250-O-1265      | Plug, Jack Screw                                                                              |       |
| 6    | 1    | 1250-D-1252      | Plug                                                                                          |       |
| 7    | 1    | 43X-1208         | Pin, Reverse Actuator                                                                         |       |
| 8    | 2    | 10X-1446         | Bolt, Rail Detent Strap                                                                       |       |
| 9    | 1    | 2205-H-1126      | Strap                                                                                         |       |
| 10   | NLA  | 2258-P-1368      | Spring, Rail Detent (Pink), Replaced by 2258-V-1452                                           | 5441  |
|      | NLA  | 2258-T-1424      | Spring, Rail Detent (Argosy Only), Replaced by 2258-B-1458                                    | 5441  |
|      | 1    | 2258-V-1452      | Spring, Rail Detent (Standard) Black                                                          |       |
|      | 1    | 2258-W-1453      | Spring, Rail Detent (Optional Heavy — Volvo and International)<br>(Use with 2258-V-1452) Blue |       |
|      | 1    | 2258-B-1458      | Spring, Rail Detent (Optional Light — Argosy) Purple                                          |       |
| 11   | NLA  | 43X-1207         | Pin, Rail Detent, Replaced by 42X-1247                                                        | 5441  |
|      | 1    | 42X-1247         | Pin, Rail Detent                                                                              |       |
| 12   | 1    | 2208-G-1151      | Gasket, Rail Detent                                                                           |       |
| 13   | 1    | 2208-H-1152      | Gasket, Shift Tower                                                                           |       |
| 14   | 16   | 10X-1657         | Bolt, Top Cover                                                                               |       |
| 15   | 2    | 2297-P-5840      | Lifting Hook                                                                                  |       |
| 16   | 1    | A-1250-H-1126    | Plug Assembly, Neutral                                                                        |       |
| 17   | 2    | S-244-A-1        | Screw, Hex Socket Head Cap                                                                    |       |
| 18   | 1    | 2205-W-1011      | Scoop, Oil                                                                                    |       |
| 19   | 1    | 43X-1203         | Pin, Reverse Detent                                                                           |       |
| 20   | 1    | 2258-O-1369      | Spring, Reverse Detent (Grey)                                                                 |       |
| 21   | 1    | 26X-1032         | Screw, Reverse Detent Set                                                                     |       |
| 22   | A/R  | 2297-U-6417      | Loctite Sealant                                                                               |       |
| 23   | 1    | P-46             | Plug, Lube Return                                                                             |       |
| 24   | 1    | 2244-E-1175      | Rail, Shift                                                                                   |       |
| 25   | 1    | 3296-J-1258      | Fork, Low Shift                                                                               |       |
| 26†  | NLA  | A-3280-N-9608    | Shift Housing Assembly                                                                        |       |
|      | 1    | A-3280-G-9809    | Shift Housing Assembly                                                                        |       |
| 27   | 1    | 3221-C-1017      | Scoop, Oil                                                                                    |       |
| 28   | 2    | 10X-1667         | Screw, Hex Socket Head Cap                                                                    |       |
| 29   | 1    | 43X-1214         | Pin                                                                                           |       |
| 30†  | NLA  | 2245-Y-1221      | Shift Sleeve                                                                                  |       |
|      | 1    | 2245-N-1236      | Shift Sleeve                                                                                  |       |
| 31†  | NLA  | 3280-K-9605      | Plate, Interlock                                                                              |       |
|      | 1    | 3280-D-9806      | Plate, Interlock                                                                              |       |
| 32†  | NLA  | 3296-K-1259      | Fork, Mid Shift                                                                               |       |
|      | 1    | 3296-S-1319      | Fork, Mid Shift                                                                               |       |
| 33   | 1    | 3296-N-1262      | Fork, High Shift                                                                              |       |
| 34   | 1    | 2244-U-1165      | Screw, Socket Head Shoulder                                                                   |       |
| 35   | 1    | 1229-T-4752      | Spacer, Rocking Lever                                                                         |       |
| 36†  | NLA  | 2247-K-1493      | Lever, Rocking                                                                                |       |
|      | 1    | 2247-Z-1534      | Lever, Rocking                                                                                |       |
| 37†  | NLA  | A-2244-D-1174    | Bar, High Connecting (Includes Pin 43X1197 — Not Sold Separately)                             |       |
|      | 1    | A-2244-J-1206    | Bar, High Connecting                                                                          |       |
| 38†  | NLA  | 2244-B-1172      | Bar, Low/Mid Connecting                                                                       |       |
|      | 1    | 2244-F-1202      | Bar, Low Connecting                                                                           |       |
|      | 1    | 2244-G-1203      | Bar, Mid Connecting                                                                           |       |

† Requires new top cover assembly A1-3293-R-1136-S. New components will not interchange on the old top covers.

## Top Cover Assembly (SureShift ONLY)

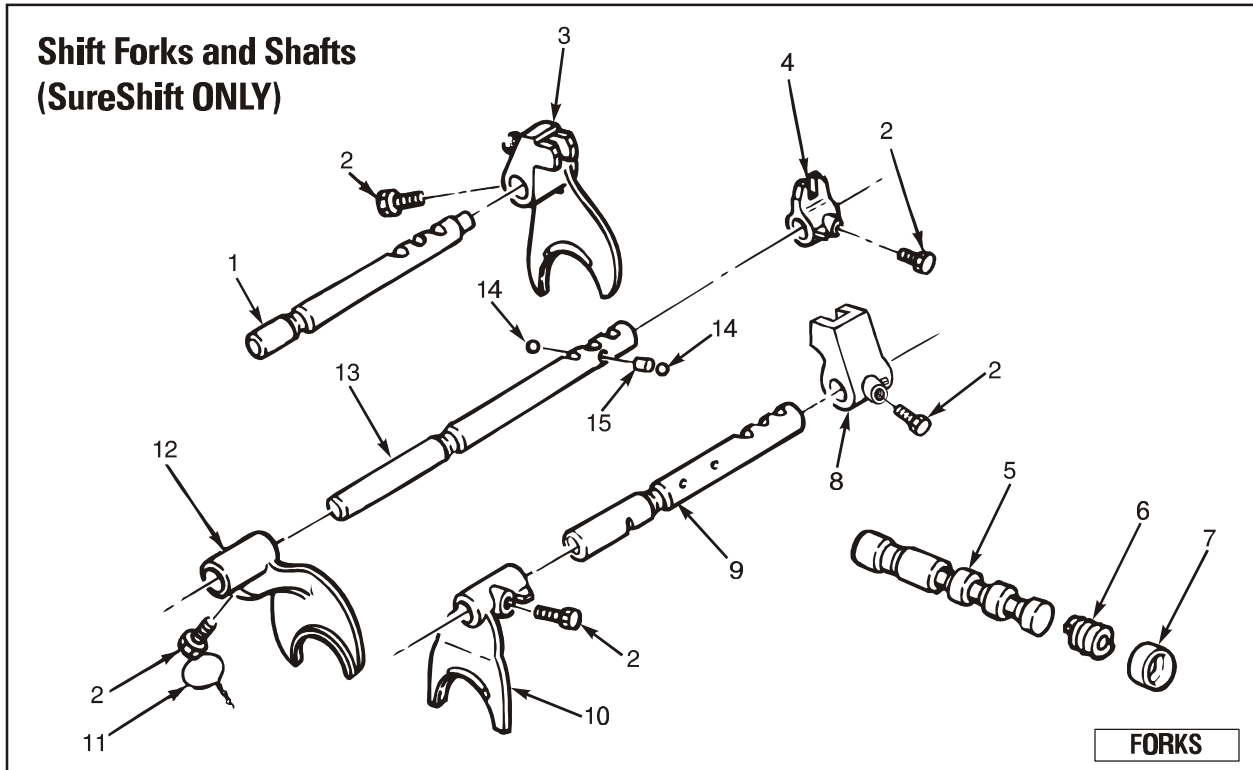
**NOTE:** SEE PAGE 79  
FOR X-Y UNIT.



## Top Cover Assembly (SureShift ONLY)

| Item | Qty. | Part Number   | Description                                                              | Kit # |
|------|------|---------------|--------------------------------------------------------------------------|-------|
| 1    | 11   | A-2297-V-8290 | Stud and Protective Cap (Volvo Only), Also use 5 of Part Number 10X-1657 |       |
| 2    | 16   | 10X-1657      | Screw, Flange Head                                                       |       |
| 3    | 1    | A-1199-P-1394 | Breather Assembly                                                        |       |
| 4    | 2    | 43X-1190      | Pin, Actuator                                                            |       |
| 5    | 2    | 5X-1091       | O-Ring                                                                   |       |
| 6    | 2    | A-1250-H-1126 | Plug Assembly (Includes 5X-1091 O-Ring)                                  |       |
| 7    | 2    | 1250-Q-1625   | Plug (For Jack Screw Holes)                                              |       |
| 8    | 1    | A-2297-R-7298 | Range Position Sensor                                                    |       |
| 9    | 3    | 2258-D-1278   | Spring, Detent                                                           | 5362  |
|      | 1    | 2258-E-1409   | Spring, Rail Detent (Argosy Only)                                        |       |
| 10   | 3    | 2297-R-6986   | Ball, Detent                                                             | 5362  |
| 11   | 1    | A-3293-Z-1092 | Assembly, Top Cover (Standard)                                           |       |
| 12   | 1    | 3221-U-1009   | Oil Scoop                                                                |       |
| 13   | 4    | S-244-A-1     | Bolt/Capscrew, 1/4"-20 UNC-2A x 1/2"                                     |       |
| 14   | 1    | 2205-W-1011   | Oil Scoop                                                                |       |

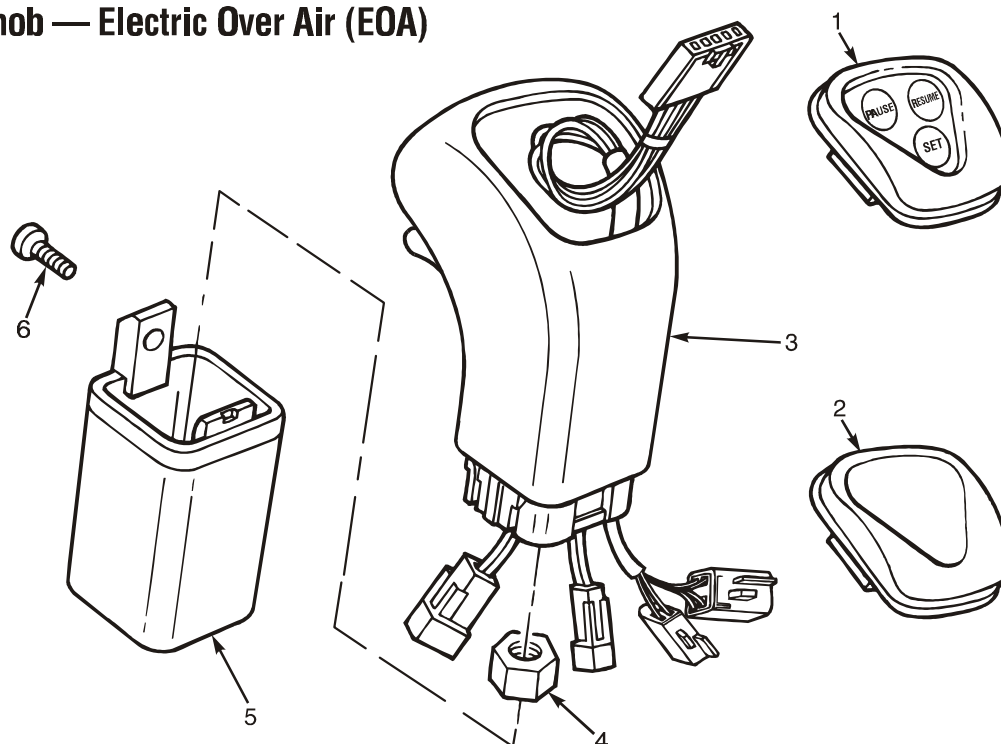
## Shift Forks and Shafts (SureShift ONLY)



## Shift Forks and Shafts (SureShift ONLY)

| Item | Qty. | Part Number | Description                                                                                                                |
|------|------|-------------|----------------------------------------------------------------------------------------------------------------------------|
| 1    | 1    | 2244-J-1128 | Shift Shaft (Low/Reverse)                                                                                                  |
| 2    | 5    | 26X-1011    | Set Screw, <b>NOTE:</b> Requires Loctite® 242 (ZF Meritor Part Number 2297-E-4295, 50 ml tube), or equivalent and lockwire |
| 3    | 1    | 3296-Z-1248 | Shift Fork Assembly (Low/Reverse), Standard Cover                                                                          |
| 4    | 1    | 2245-T-1060 | Sleeve (Mid), Standard Cover                                                                                               |
| 5    | 1    | 2244-K-1155 | Shift Shaft, Neutral Check                                                                                                 |
| 6    | 1    | 2258-D-1330 | Spring, Neutral Checkshaft                                                                                                 |
| 7    | 1    | 1250-W-1271 | Plug, Expansion                                                                                                            |
| 8    | 1    | 2245-P-1134 | Sleeve (High)                                                                                                              |
| 9    | 1    | 2244-L-1130 | Shift Shaft (High)                                                                                                         |
| 10   | 1    | 3296-K-1129 | Shift Fork (High)                                                                                                          |
| 11   | 5    | 1254-P-1030 | Lock Wire                                                                                                                  |
| 12   | 1    | 3296-H-1126 | Shift Fork (Mid)                                                                                                           |
| 13   | 1    | 2244-K-1129 | Shift Shaft (Mid)                                                                                                          |
| 14   | 2    | 2297-R-5764 | Ball (Shift Interlock)                                                                                                     |
| 15   | 1    | 43X-1184    | Pin (Interlocking)                                                                                                         |

## Shift Knob — Electric Over Air (EOA)



**NOTE:** WIRING HARNESS BETWEEN KNOB AND THE TRANSMISSION/ENGINE ECU IS SUPPLIED BY THE OEM.

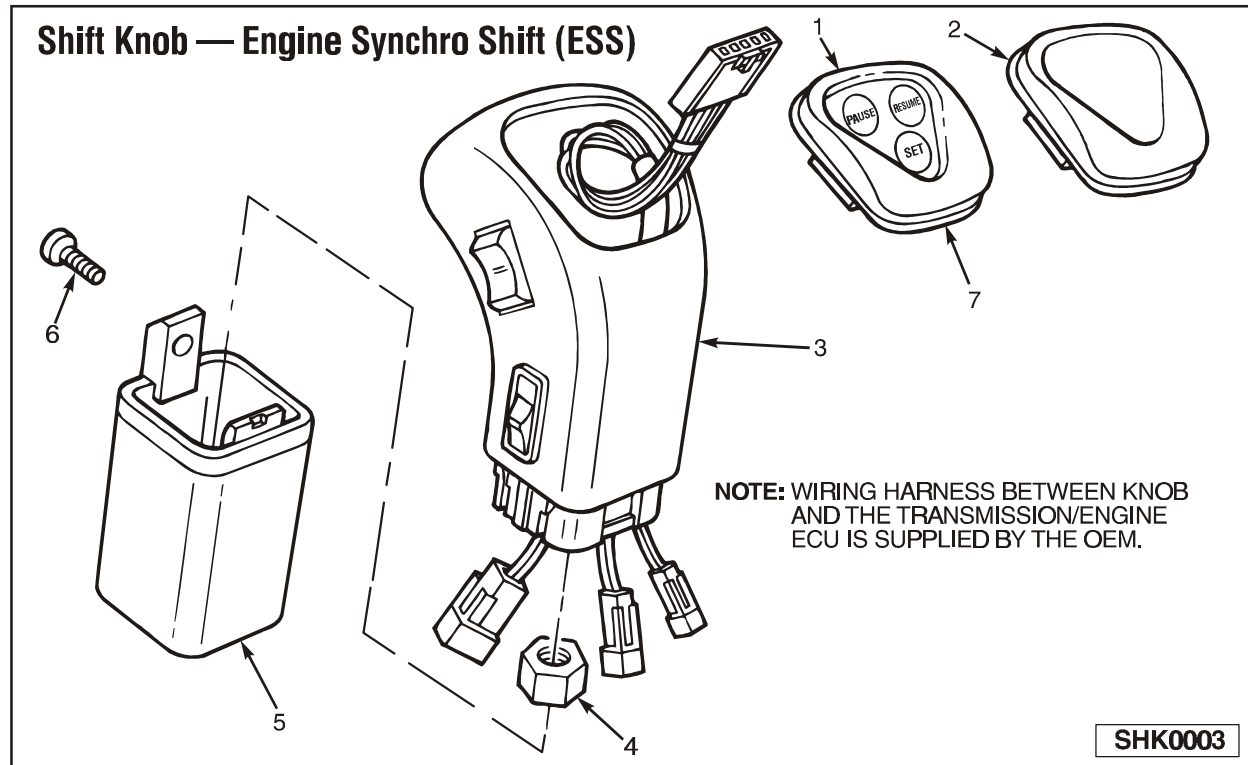
SHK0004

## Shift Knob — Electric Over Air (EOA), available with optional Shift-n-Cruise

| Item | Qty. | Part Number   | Description                                                      |
|------|------|---------------|------------------------------------------------------------------|
| 1†   | 1    | A-2297-L-7058 | Switch Assembly, Shift-n-Cruise (Optional)                       |
|      | 1    | A-2297-C-7413 | Switch Assembly, Shift-n-Cruise (Optional)                       |
| 2*   | 1    | A-2297-W-7609 | Shield, Lens Cap                                                 |
|      | 1    | A-2297-D-7414 | Shield, Lens Cap                                                 |
| 3    | 1    | A-3280-C-9467 | Shift Knob, Assembly                                             |
|      | 1    | A-3280-D-9468 | Shift Knob, Assembly, with Shift-n-Cruise (Optional)             |
|      | 1    | A-3280-E-9469 | Shift Knob, Assembly, Volvo Only                                 |
|      | 1    | A-3280-F-9470 | Shift Knob, Assembly, with Shift-n-Cruise, Volvo Only (Optional) |
| 4    | 1    | N-68-1        | Jam Nut                                                          |
| 5    | 1    | 2245-P-1186   | Shroud, Skirt                                                    |
| 6    | 1    | 10X-1625      | Special Screw                                                    |

† Old Style (part still in use) — There is also a new style A-2297-C-7413.

\* Old Style (part still in use) — There is also a new style A-2297-D-7414.



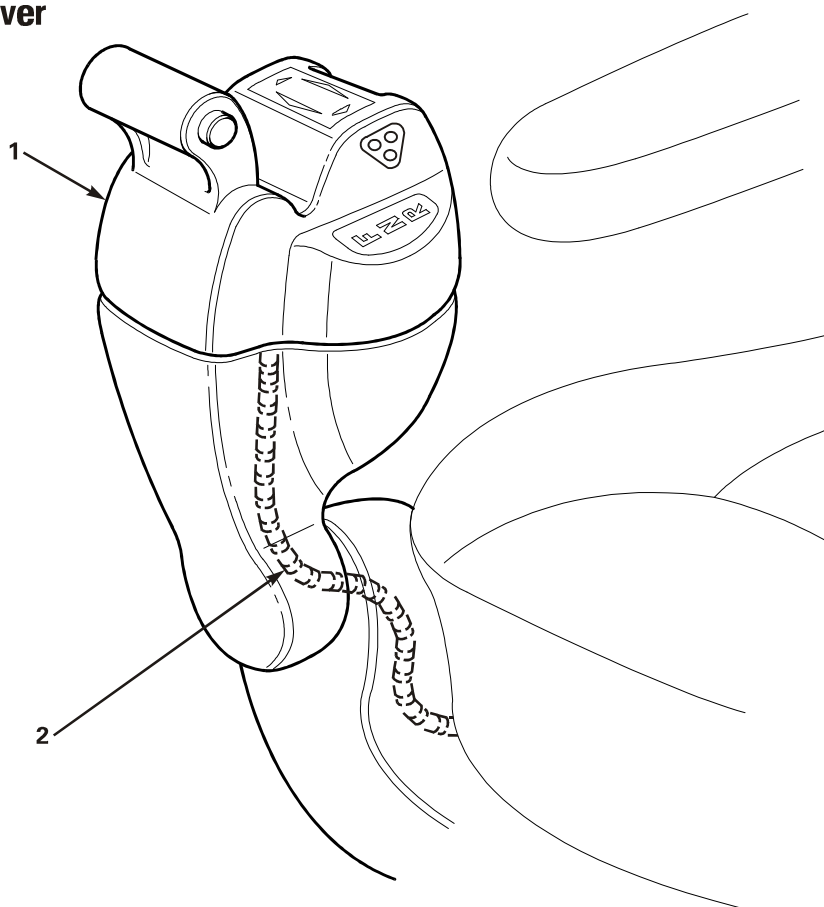
## Shift Knob — Engine Synchro Shift (ESS)

| Item | Qty. | Part Number   | Description                                                                  |
|------|------|---------------|------------------------------------------------------------------------------|
| 1†   | 1    | A-2297-L-7058 | Switch Assembly, Shift-n-Cruise                                              |
|      | 1    | A-2297-C-7413 | Switch Assembly, Shift-n-Cruise                                              |
| 2*   | 1    | A-2297-W-7609 | Shield, Lens Cap                                                             |
|      | 1    | A-2297-D-7414 | Shield, Lens Cap                                                             |
| 3    | 1    | A-3280-K-9397 | Shift Knob, ESS (without Cruise Control), Includes; 2245-P-1186 and 10X-1625 |
|      | 1    | A-3280-L-9398 | Shift Knob, ESS (with Cruise Control), Includes; 2245-P-1186 and 10X-1625    |
| 4    | 1    | N-68-1        | Jam Nut                                                                      |
| 5    | 1    | 2245-P-1186   | Shroud, Skirt                                                                |
| 6    | 1    | 10X-1625      | Special Screw                                                                |

† Old Style (part still in use) — There is also a new style A-2297-C-7413.

\* Old Style (part still in use) — There is also a new style A-2297-D-7414.

## Shift Lever

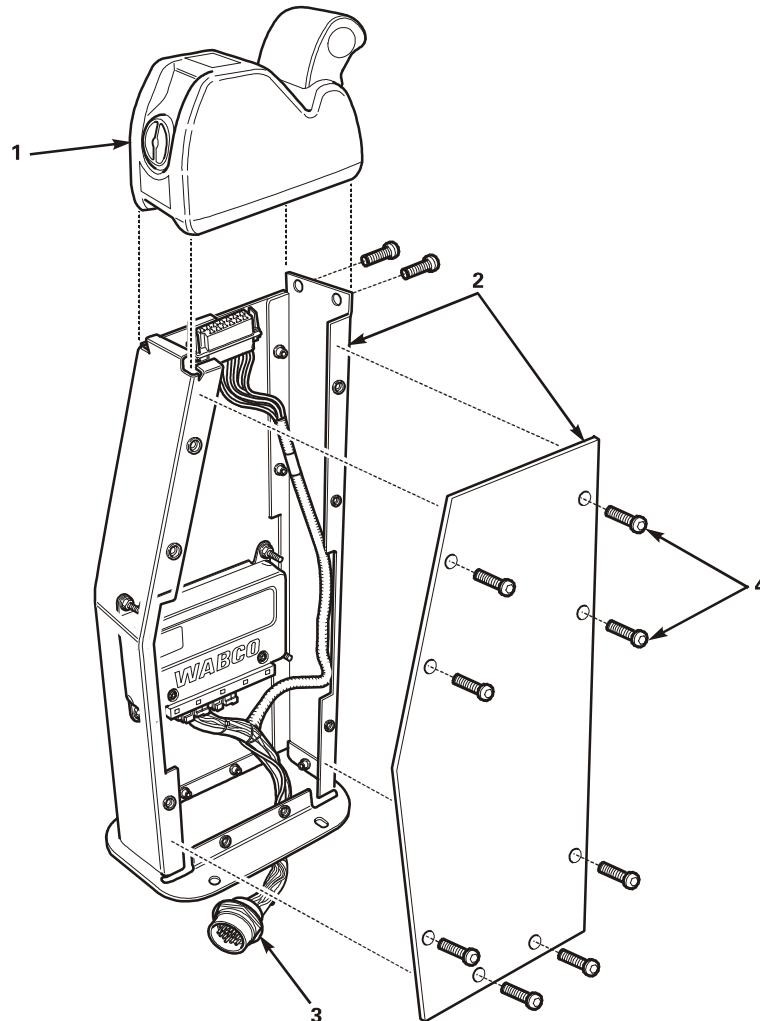


SHIFTER

## Shift Lever

| Item | Qty. | Part Number   | Description                                         |
|------|------|---------------|-----------------------------------------------------|
| 1    | 1    | A-2297-N-7294 | Shift Lever with Shift-n-Cruise Speed Control       |
|      | 1    | A-2297-C-7361 | Shift Lever without Shift-n-Cruise Speed Control    |
| 2    | 1    | A-2297-Y-7383 | Wiring Harness with Shift-n-Cruise Speed Control    |
|      | 1    | A-2297-E-7389 | Wiring Harness without Shift-n-Cruise Speed Control |

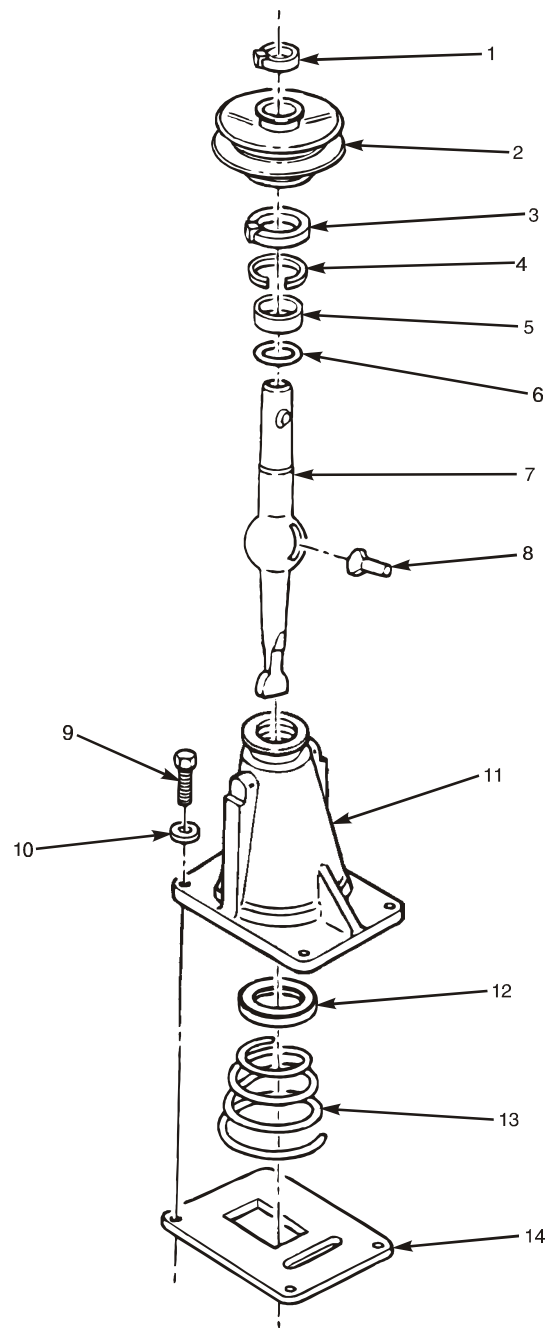
## Pedestal Shifter



## Pedestal Shifter

| Item | Qty. | Part Number   | Description                                    |
|------|------|---------------|------------------------------------------------|
| 1    | 1    | A-2297-N-7294 | Shift Module, with Cruise Control              |
|      | 1    | A-2297-C-7361 | Shift Module, without Cruise Control           |
| 2    | 1    | A-3305-M-1469 | Stamping Assembly                              |
| 3    | 1    | A-2297-J-8278 | Wiring Harness, with Cruise Control            |
|      | 1    | A-2297-K-8279 | Wiring Harness, without Cruise Control         |
| 4    | 18   | 41X-1566      | Screw — Special (Socket Button Head Cap Screw) |

## Cast Iron Shift Tower Assembly

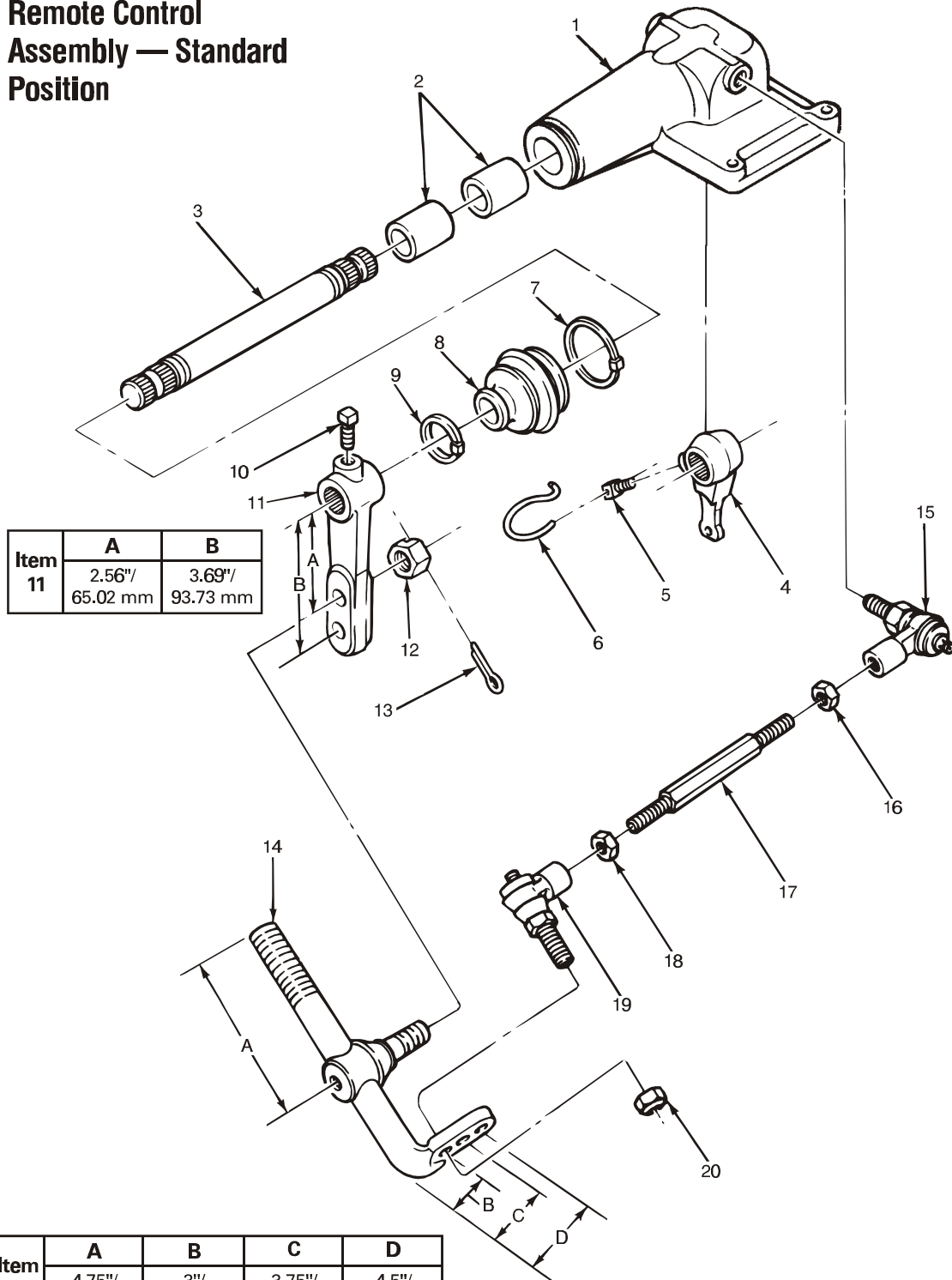


IST0002

**Cast Iron Shift Tower Assembly**

| Item | Qty. | Part Number    | Description                         | Kit # |
|------|------|----------------|-------------------------------------|-------|
| 1    | 1    | 3237-N-66      | Strap                               |       |
| 2    | 1    | 2260-B-1146    | Boot                                |       |
| 3    | 1    | 3237-H-294     | Strap                               |       |
| 4    | 1    | 1229-F-4660    | Ring, Retainer                      |       |
| 5    | 1    | 2214-V-1166    | Ring, Inner                         |       |
| 6    | 1    | 5X-1201        | O-Ring                              |       |
| 7    | 1    | 2247-M-1313    | Lever, Low                          |       |
|      | 1    | 2247-G-1463    | Lever, Mid                          |       |
|      | 1    | 2247-N-1314    | Lever, High                         |       |
| 8    | 1    | 43X-1188       | Pin                                 |       |
| 9    | 1    | S-2610-A-2     | Bolt/Capscrew, 3/8"-16 UNC x 1-1/4" |       |
| 10   | 1    | 1229-B-1666    | Flat Washer                         |       |
| 11   | 1    | A1-3280-J-9318 | Shift Housing Assembly, Low         | 5368  |
|      | 1    | A1-3280-T-9458 | Shift Housing Assembly, Mid         | 5386  |
|      | 1    | A1-3280-L-9320 | Shift Housing Assembly, High        | 5369  |
| 12   | 1    | 3105-B-1198    | Retainer, Spring                    |       |
| 13   | 1    | 2258-B-1328    | Spring                              |       |
| 14   | 1    | 3208-N-1080    | Gasket                              |       |

## Remote Control Assembly — Standard Position

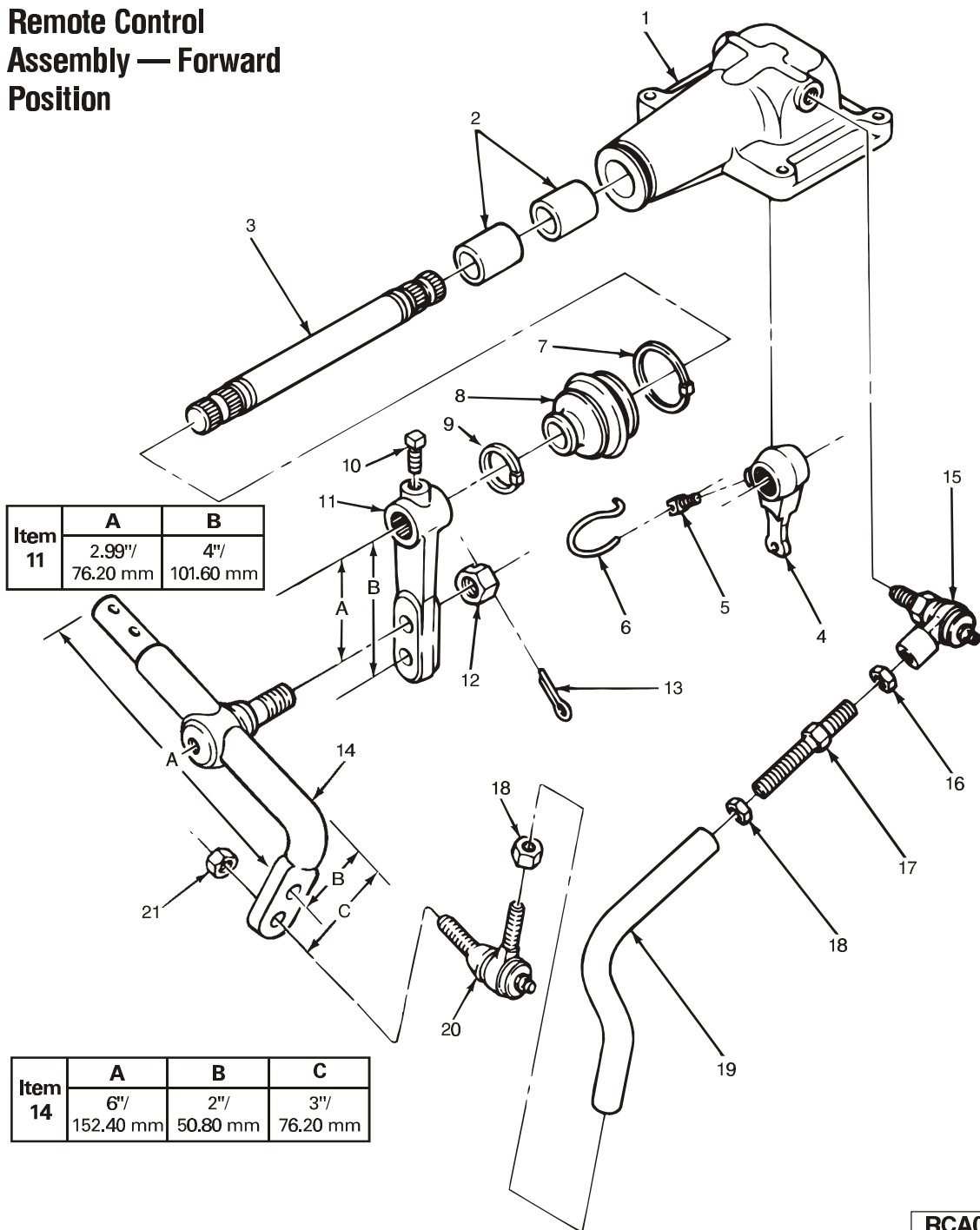


RCA0004

**Remote Control Assembly – Standard Position**

| Item | Qty. | Part Number    | Description                               |
|------|------|----------------|-------------------------------------------|
| 1    | 1    | A1-3280-E-8741 | Remote Control Housing, Standard Position |
| 2    | 2    | 1225-P-1186    | Bushing                                   |
| 3    | 1    | 2244-Y-1065    | Shift Shaft, 11-1/4"                      |
| 4    | 1    | 2247-K-1077    | Inner Shift Lever                         |
| 5    | 1    | 10X-1521       | Set Screw                                 |
| 6    | 1    | LW-1310        | Lock Wire                                 |
| 7    | 1    | 3237-H-294     | Strap                                     |
| 8    | 1    | 2260-R-1032    | Boot                                      |
| 9    | 1    | 3237-N-66      | Strap, Cable Tie                          |
| 10   | 1    | 10X-1522       | Set Screw                                 |
| 11   | 1    | 2247-M-1079    | Outer Shift Lever                         |
| 12   | 1    | N-18-1         | Nut                                       |
| 13   | 1    | K-238          | Pin, Cotter                               |
| 14   | 1    | A-2247-F-1098  | Lever Assembly, Selection                 |
| 15   | 1    | A-2110-M-1001  | Ball Socket, Assembly                     |
| 16   | 1    | 1227-F-1384    | Jam Nut                                   |
| 17   | 1    | 2297-B-6060    | Rod, Adjusting                            |
| 18   | 1    | N-68-1         | Jam Nut                                   |
| 19   | 1    | A-2110-N-1002  | Ball Socket, Assembly                     |
| 20   | 1    | NL-28-1        | Lock Nut                                  |

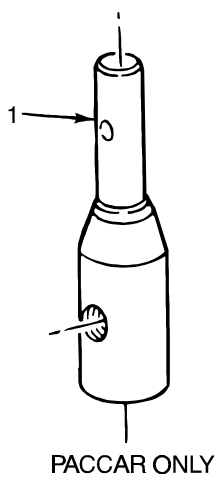
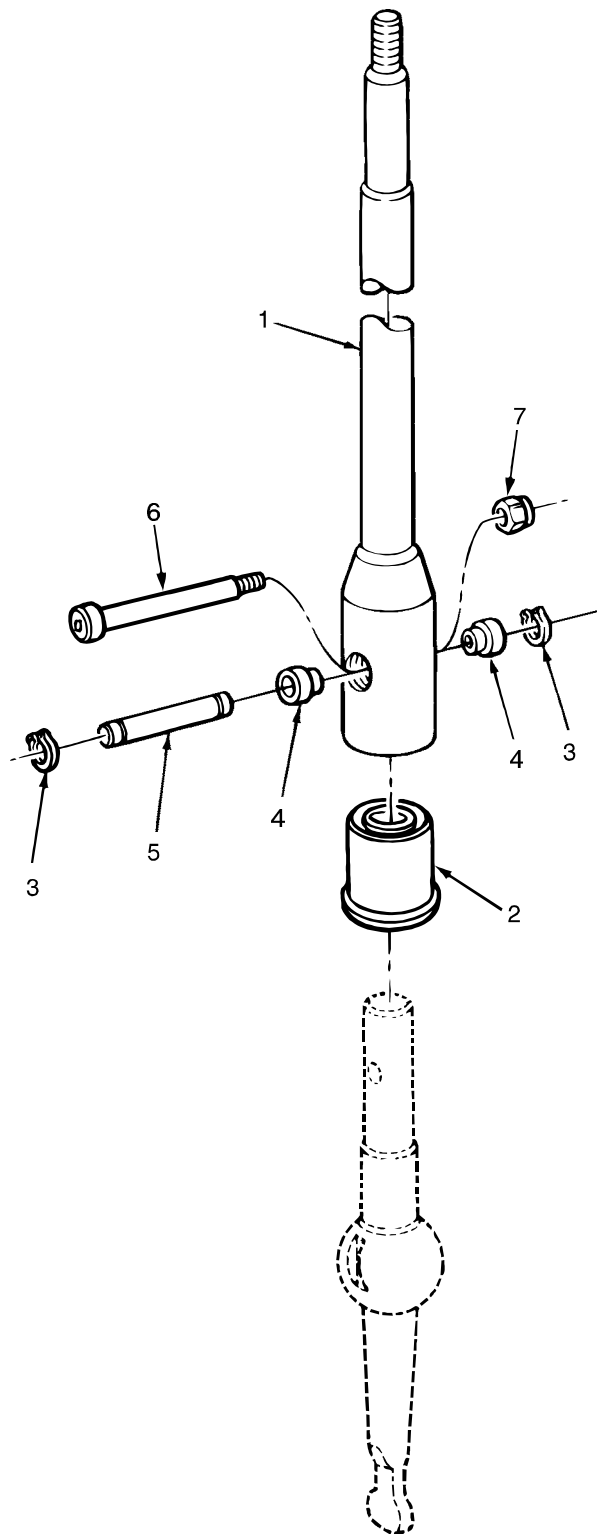
## Remote Control Assembly — Forward Position



## Remote Control Assembly — Forward Position

| Item | Qty. | Part Number   | Description                              |
|------|------|---------------|------------------------------------------|
| 1    | 1    | 3280-G-8743   | Remote Control Housing, Forward Position |
| 2    | 2    | 1225-P-1186   | Bushing                                  |
| 3    | 1    | 2244-K-1077   | Shift Shaft                              |
| 4    | 1    | 2247-K-1077   | Inner Shift Lever                        |
| 5    | 1    | 10X-1521      | Set Screw                                |
| 6    | 1    | LW-1310       | Lock Wire                                |
| 7    | 1    | 3237-H-294    | Strap, Cable Tie                         |
| 8    | 1    | 2260-R-1032   | Boot                                     |
| 9    | 1    | 3237-N-66     | Strap, Cable Tie                         |
| 10   | 1    | 10X-1522      | Set Screw                                |
| 11   | 1    | 2247-N-1080   | Outer Shift Lever                        |
| 12   | 1    | N-18-1        | Nut                                      |
| 13   | 1    | K-238         | Pin, Cotter                              |
| 14   | 1    | A-2247-G-1099 | Lever Assembly, Selection                |
| 15   | 1    | A-2110-M-1001 | Ball Socket, Assembly                    |
| 16   | 1    | 1227-F-1384   | Jam Nut                                  |
| 17   | 1    | 2297-D-6062   | Rod, Adjusting                           |
| 18   | 2    | N-68-1        | Jam Nut                                  |
| 19   | 1    | 2297-E-6063   | Rod, Adjusting                           |
| 20   | 1    | A-2110-P-1004 | Ball Socket, Assembly                    |
| 21   | 1    | NL-28-1       | Lock Nut                                 |

## Isolator Assembly — Straight Lever

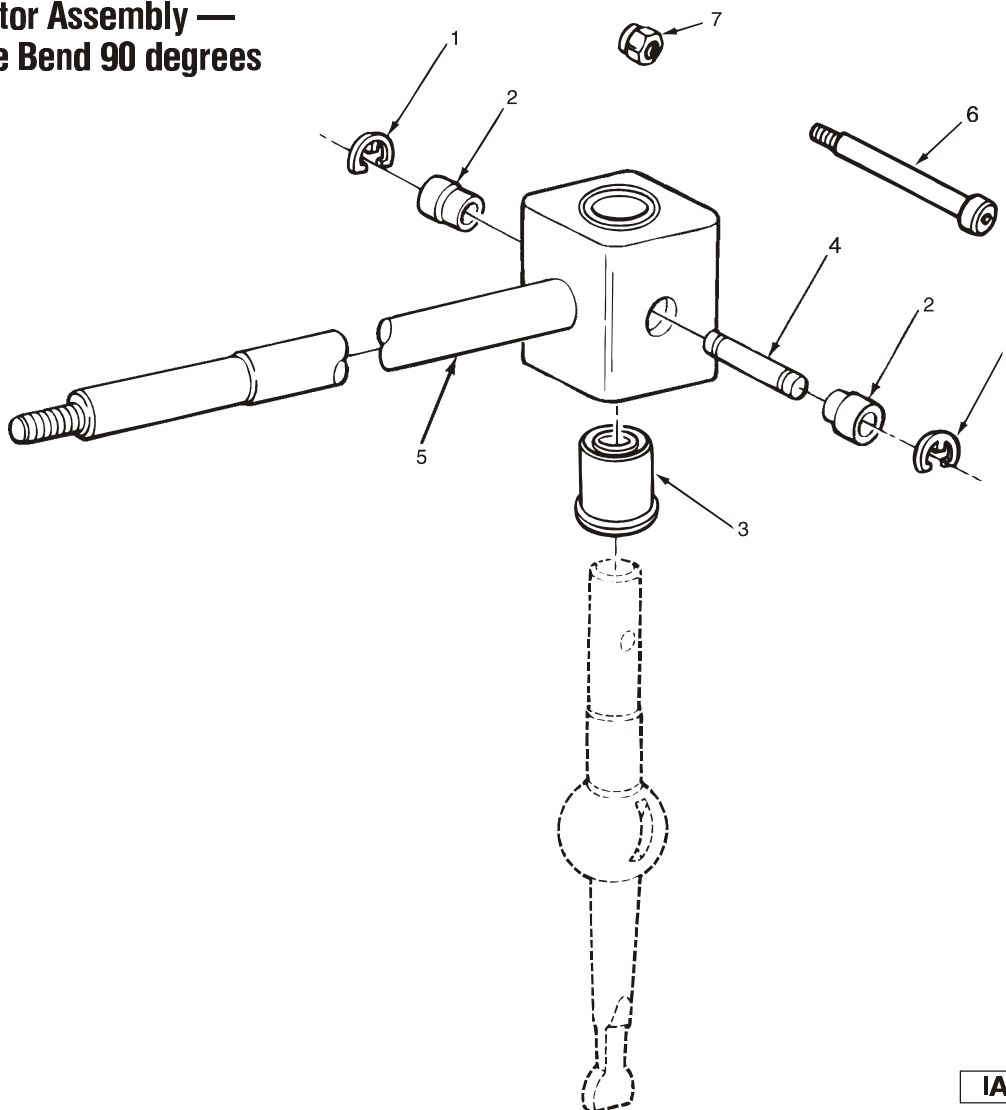


IAS0001

## Isolator Assembly — Straight Lever

| Item | Qty. | Part Number   | Description                                                                                                                                                                                                                                                                         | Kit #                 |
|------|------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1    | 1    | A-2247-X-1142 | Lever Assembly (Isolated), 24"/60.96 cm — Measure Hole Centerline to Top<br><b>NOTE:</b> These are straight shift levers and may need to be bent to match application. For specific lever take part number from level or see Truck Line setting ticket. Includes 2245-J-1076 Sleeve |                       |
|      | 1    | A-2247-T-1190 | Lever Assembly (Isolated), 32"/81.28 cm — Measure Hole Centerline to Top<br><b>NOTE:</b> These are straight shift levers and may need to be bent to match application. For specific lever take part number from lever or see Truck Line setting ticket. Includes 2245-J-1076        |                       |
|      | 1    | A-3268-H-1646 | Adapter Assembly (Isolated), for PACCAR Non-Isolated Hollow Lever. Includes 2245-J-1076                                                                                                                                                                                             |                       |
| 2    | 1    | 2245-J-1076   | Sleeve (Isolator Bushing)                                                                                                                                                                                                                                                           | 5278<br>(inc<br>5237) |
| 3    | 1    | 1229-T-4336   | Snap Ring, Clip                                                                                                                                                                                                                                                                     | 5237                  |
| 4    | 2    | 1225-B-1198   | Bushing                                                                                                                                                                                                                                                                             |                       |
| 5    | 1    | 43X-1174      | Pin                                                                                                                                                                                                                                                                                 | 5237                  |
| 6    | 1    | 10X-1611      | Bolt/Capscrew                                                                                                                                                                                                                                                                       | 5237                  |
| 7    | 1    | 1227-Q-1525   | Nut                                                                                                                                                                                                                                                                                 | 5237                  |

## Isolator Assembly — Close Bend 90 degrees

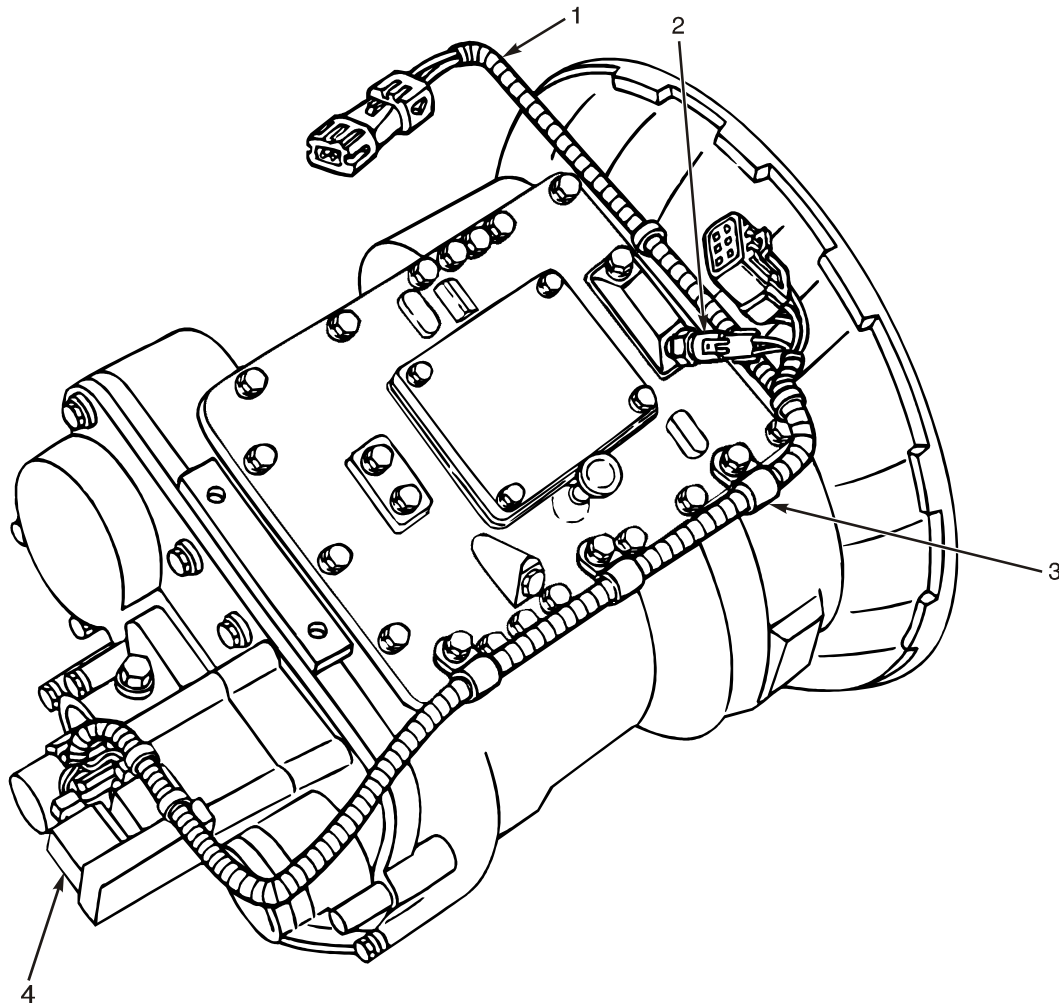


IAC0001

## Isolator Assembly — Close Bend 90 degrees

| Item | Qty. | Part Number   | Description                                                                                                                     | Kit #                 |
|------|------|---------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1    | 2    | 1229-T-4336   | Snap Ring                                                                                                                       | 5237                  |
| 2    | 2    | 1225-B-1198   | Bushing                                                                                                                         |                       |
| 3    | 1    | 2245-J-1076   | Sleeve (Isolator Bushing)                                                                                                       | 5378<br>(inc<br>5237) |
| 4    | 1    | 43X-1174      | Pin                                                                                                                             | 5237                  |
| 5    | 1    | A-2247-Y-1143 | Lever Assembly (Isolated), 30"/76.20 cm — Measure Hole Centerline to End<br><b>NOTE:</b> Requires bending to match application. |                       |
| 6    | 1    | 10X-1611      | Bolt/Capscrew                                                                                                                   | 5237                  |
| 7    | 1    | 1227-Q-1525   | Nut                                                                                                                             | 5237                  |

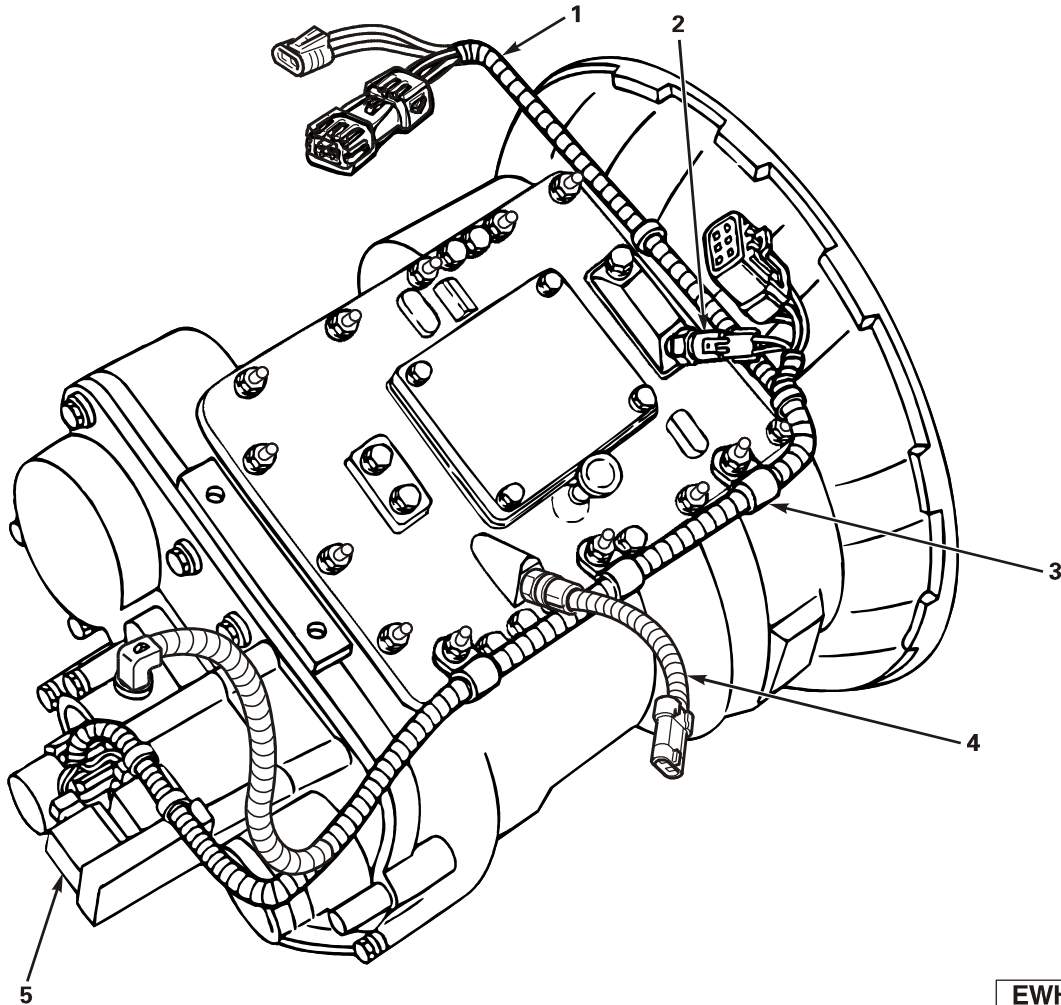
### Wire Harness — Platform “G” (Standard)


**EWH0002**

### Wire Harness — Platform “G” (Standard)

| Item | Qty. | Part Number   | Description                                                      | Kit # |
|------|------|---------------|------------------------------------------------------------------|-------|
| 1    | 1    | A-2297-Q-7219 | Wire Harness, Transmission                                       | 5431  |
| 2    | 1    | A-3280-W-9409 | Switch Assembly, EOA, Neutral Position (Includes 5X-1091 O-Ring) |       |
| 3    | 7    | 2257-G-1229   | Clip, Wiring Harness, Replaced by 2257-Y-1273                    |       |
|      | 6    | 2257-Y-1273   | Clip, Wiring Harness                                             |       |
| 4    | 2    | A-3280-F-9392 | Solenoid Assembly (Includes 5X-1207 and 5X-1092 O-Rings)         | 5436  |

## Wire Harness — Platform “G” (Standard) Volvo Only

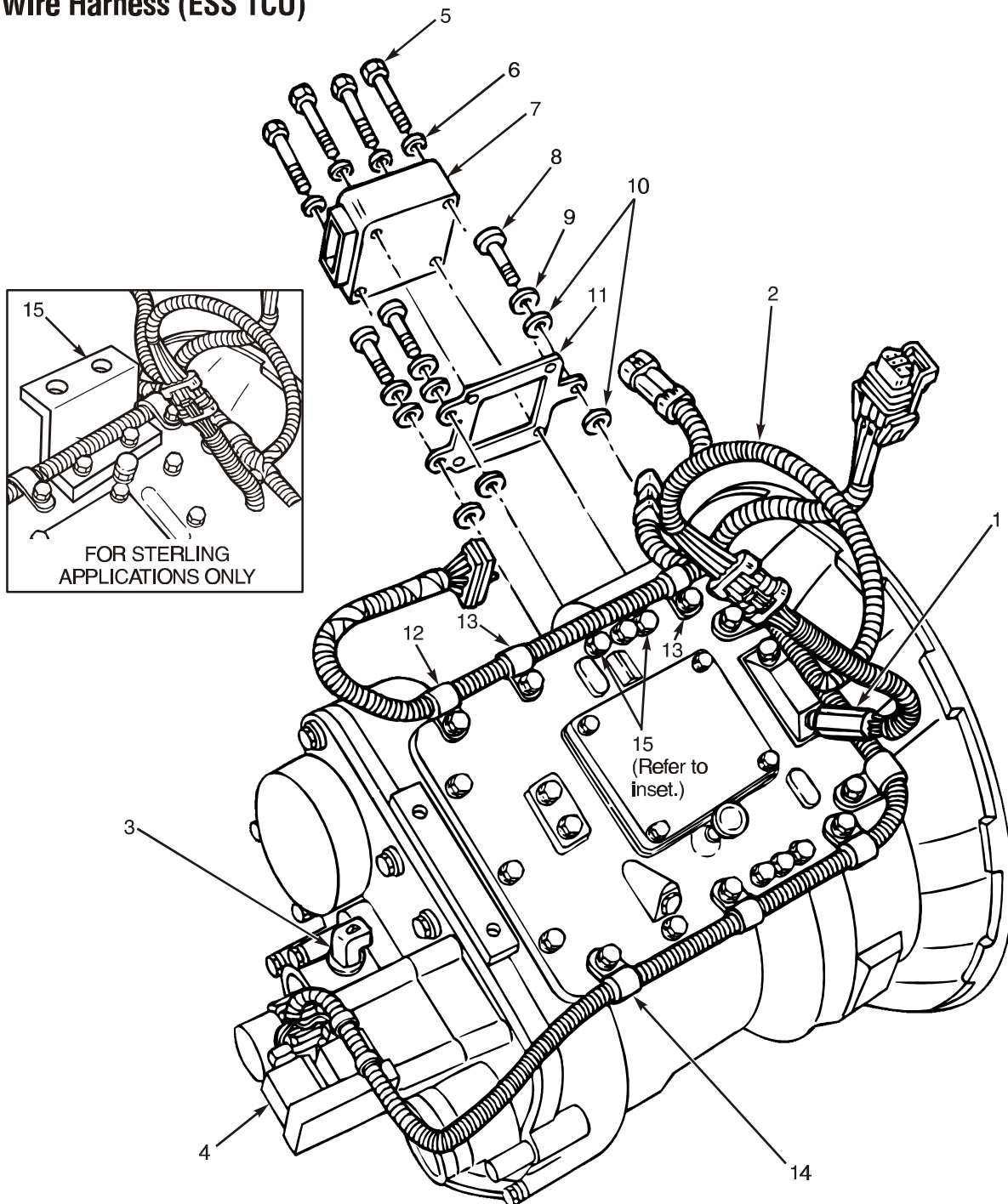


EWH0004

**Wire Harness — Platform “G” (Standard) Volvo Only**

| Item | Qty. | Part Number   | Description                                                      |
|------|------|---------------|------------------------------------------------------------------|
| 1    | 1    | A-2297-R-8286 | Wire Harness, Transmission                                       |
| 2    | 1    | A-3280-W-9409 | Switch Assembly, EOA, Neutral Position (Includes 5X-1091 O-Ring) |
| 3    | 7    | 2257-G-1229   | Clip, Wiring Harness, Replaced by 2257-Y-1273                    |
|      | 6    | 2257-Y-1273   | Clip, Wiring Harness                                             |
| 4    | 1    | A-2297-Q-8285 | Neutral Switch Assembly                                          |
| 5    | 2    | A-3280-F-9392 | Solenoid Assembly (Includes 5X-1207 and 5X-1092 O-Rings)         |

## Wire Harness (ESS TCU)

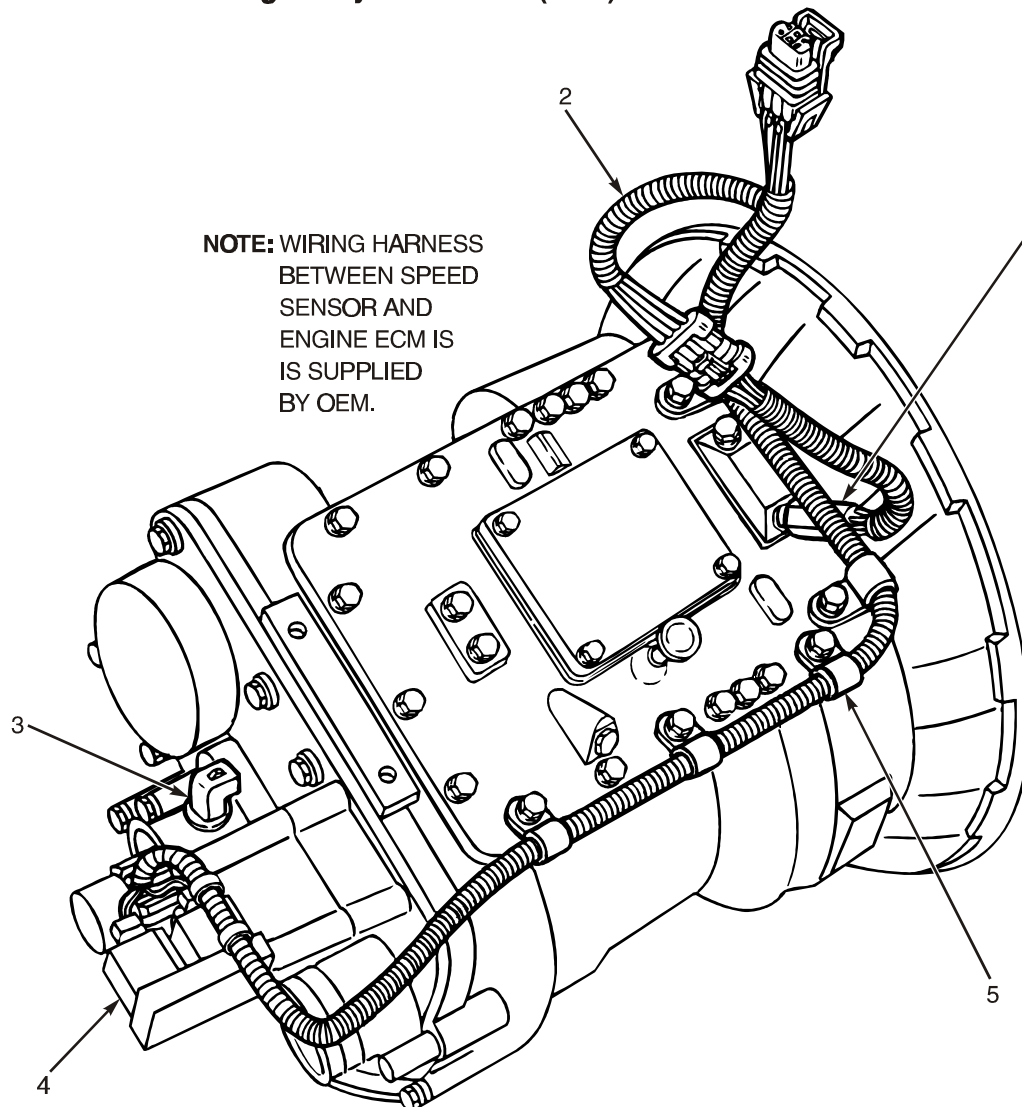


**EWH0003**

**Wire Harness (ESS TCU)**

| Item | Qty. | Part Number     | Description                                                                                        |
|------|------|-----------------|----------------------------------------------------------------------------------------------------|
| 1    | 1    | A-3280-J-9396   | Switch Assembly, ESS (Includes 5X-1091 O-Ring)                                                     |
|      | 1    | 5X-1091         | O-Ring                                                                                             |
| 2    | 1    | A-2297-R-7272   | Assembly, Wiring Harness                                                                           |
| 3    | 1    | A-3280-A-9413   | Sensor, Speedometer (Includes 1205-T-1268 O-Ring)                                                  |
|      | 1    | 1205-T-1268     | O-Ring                                                                                             |
| 4    | 2    | A-3280-F-9392   | Assembly, Solenoid (Includes 5X-1207 and 5X-1092 O-Rings)                                          |
| 5    | 4    | S-2422A-2       | Bolt, 0.250-20 x 2.75-inches                                                                       |
| 6    | 4    | WA-34           | Washer, Flat                                                                                       |
| 7    | 1    | A-2297-M-7423   | Controller, Transmission, 9-Speed Direct — A ratio                                                 |
|      | 1    | A-2297-N-7424   | Controller, Transmission, 9-Speed Overdrive — A ratio                                              |
|      | 1    | A-2297-P-7426   | Controller, Transmission, 9-Speed Overdrive — B ratio                                              |
|      | 1    | A-2297-Q-7427   | Controller, Transmission, 10-Speed Direct — A ratio                                                |
|      | 1    | A-2297-R-7428   | Controller, Transmission, 10-Speed Overdrive — A ratio                                             |
|      | 1    | A-2297-S-7429   | Controller, Transmission, 10-Speed Overdrive — C ratio                                             |
| 8    | 3    | 15X-1812        | Screw, Shoulder                                                                                    |
| 9    | 3    | 1299-B-1666     | Washer, Flat                                                                                       |
| 10   | 6    | 1225-F-1306     | Bushing, Isolater                                                                                  |
| 11   | 1    | 3305-V-1348     | Plate                                                                                              |
| 12   | 1    | 2257-G-1229     | Harness J-Clip, 3/8-inch, Replaced by 2257-Y-1273                                                  |
|      | 6    | 2257-Y-1273     | Clip, Wiring Harness                                                                               |
| 13   | 2    | 2257-Z-1248     | Harness J-Clip, 3/4-inch                                                                           |
| 14   | 7    | 2257-Y-1247     | Harness J-Clip, 1/2-inch                                                                           |
| 15   | 1    | Supplied by OEM | Clutch Return Spring Bracket (Sterling Applications Only. Refer to Sterling for part information.) |

## Wire Harness — Engine Synchro Shift (ESS)

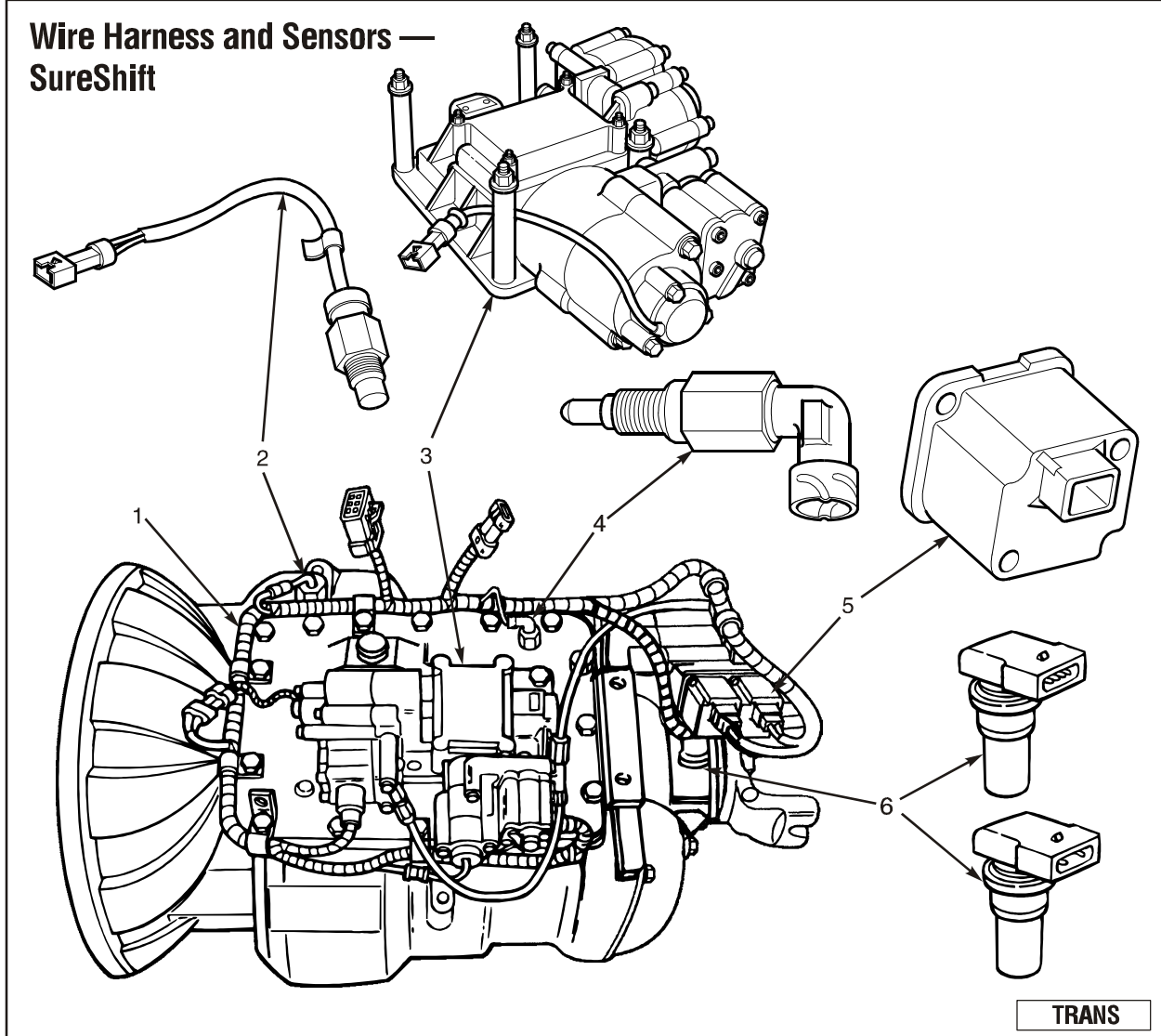


EWH0001

## Wire Harness — Engine Synchro Shift (ESS)

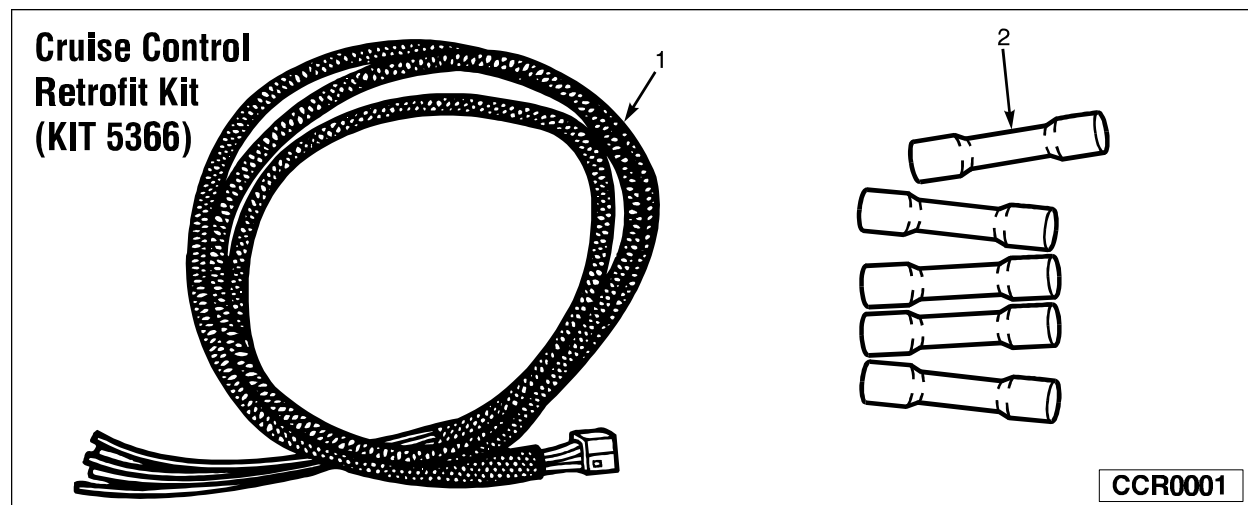
| Item | Qty. | Part Number   | Description                                              | Kit # |
|------|------|---------------|----------------------------------------------------------|-------|
| 1    | 1    | A-3280-J-9396 | Switch Assembly, ESS (Includes 5X-1091 O-Ring)           |       |
|      | 1    | 5X-1091       | O-Ring                                                   |       |
| 2    | 1    | A-2297-U-7197 | Wire Harness, Assembly                                   | 5432  |
| 3    | 1    | A-3280-A-9413 | Speedometer Sensor (Includes 1205-T-1268 O-Ring)         |       |
|      | 1    | 1205-T-1268   | O-Ring                                                   |       |
| 4    | 2    | A-3280-F-9392 | Solenoid Assembly (Includes 5X-1207 and 5X-1092 O-Rings) |       |
| 5    | 6    | 2257-G-1229   | Clip, Wiring Harness, Replaced by 2257-Y-1273            |       |
|      | 6    | 2257-Y-1273   | Clip, Wiring Harness                                     |       |

### Wire Harness and Sensors — SureShift



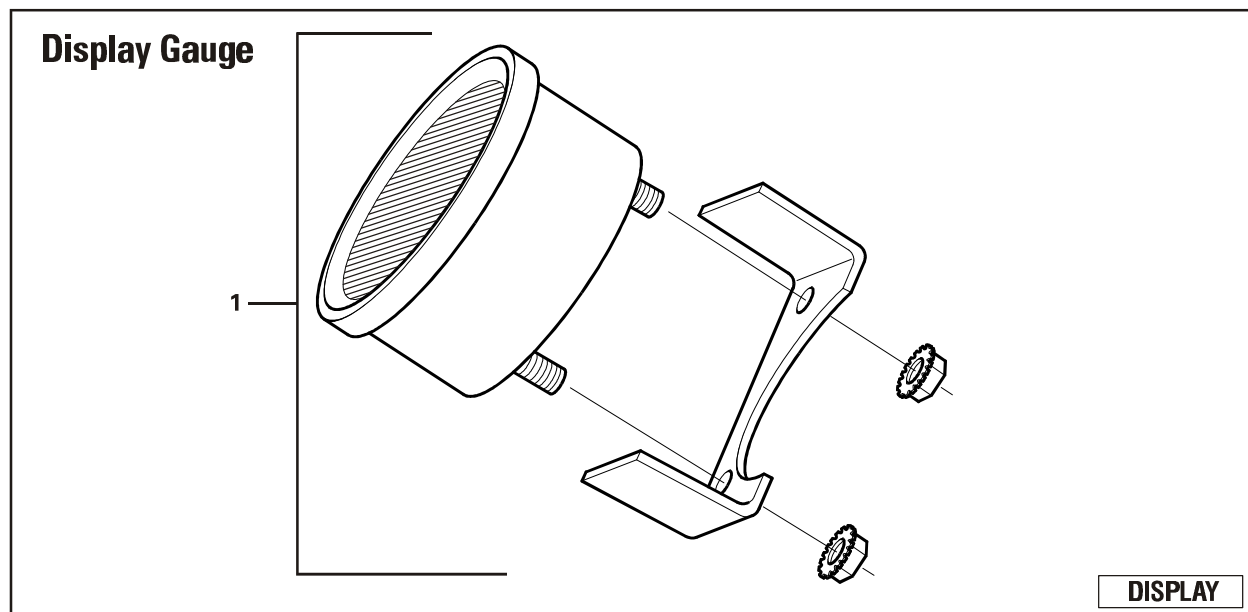
### Wiring Harness and Sensors — SureShift

| Item | Qty. | Part Number   | Description           | Kit #             |
|------|------|---------------|-----------------------|-------------------|
| 1    | 1    | A-2297-J-7498 | Wiring Harness        | 5434              |
| 2    | 1    | A-3280-A-9413 | Speed Sensor          |                   |
| 3    | 1    | A-2297-Q-7297 | X-Y Unit              |                   |
| 4    | 1    | A-2297-R-7298 | Range Sensor          |                   |
| 5    | 2    | A-3280-F-9392 | Range Shift Solenoids |                   |
| 6    | 1    | A-3280-G-9575 | Speed Sensor, 2-Pin   | 5392 for Navistar |
|      | 1    | A-3280-H-9576 | Speed Sensor, 4-Pin   |                   |



**Cruise Control Retrofit Kit (Kit 5366)**

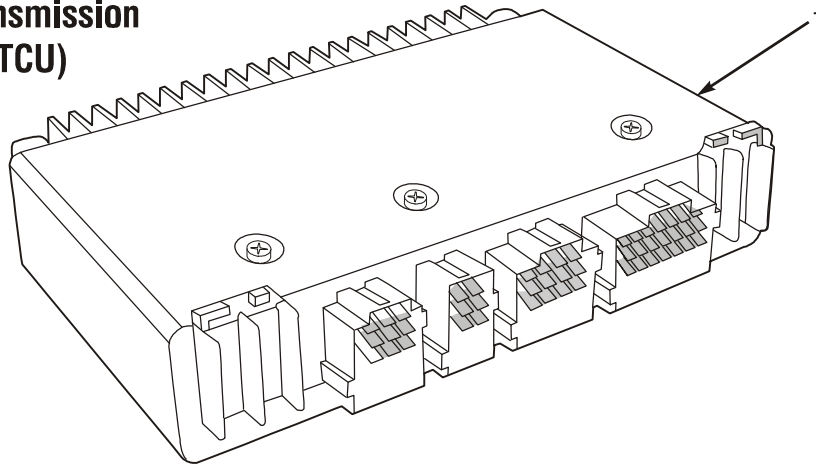
| Item | Qty. | Part Number   | Description                             |
|------|------|---------------|-----------------------------------------|
| 1    | 1    | A-2297-F-7078 | Wiring Harness, Cruise Control Retrofit |
| 2    | 5    | 2297-J-7082   | Connector Tubes, "Butt Splice"          |



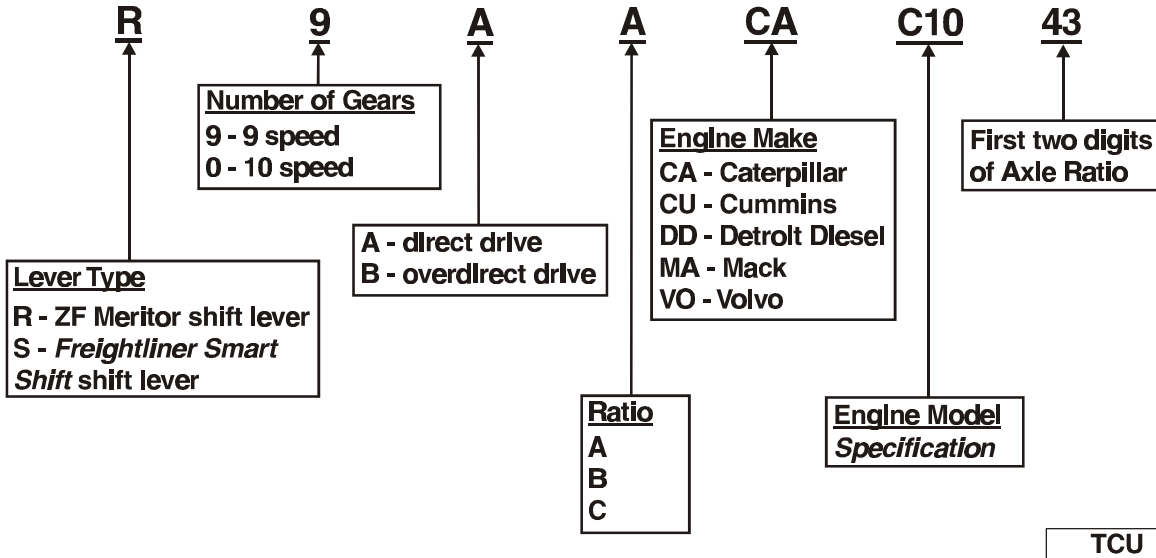
**Display Gauge**

| Item | Qty. | Part Number   | Description              |
|------|------|---------------|--------------------------|
| 1    | 1    | A-6000-Y-1299 | ZF Meritor Display Gauge |

## SureShift Transmission Control Unit (TCU)



### SureShift TCU - Service - Part Numbers

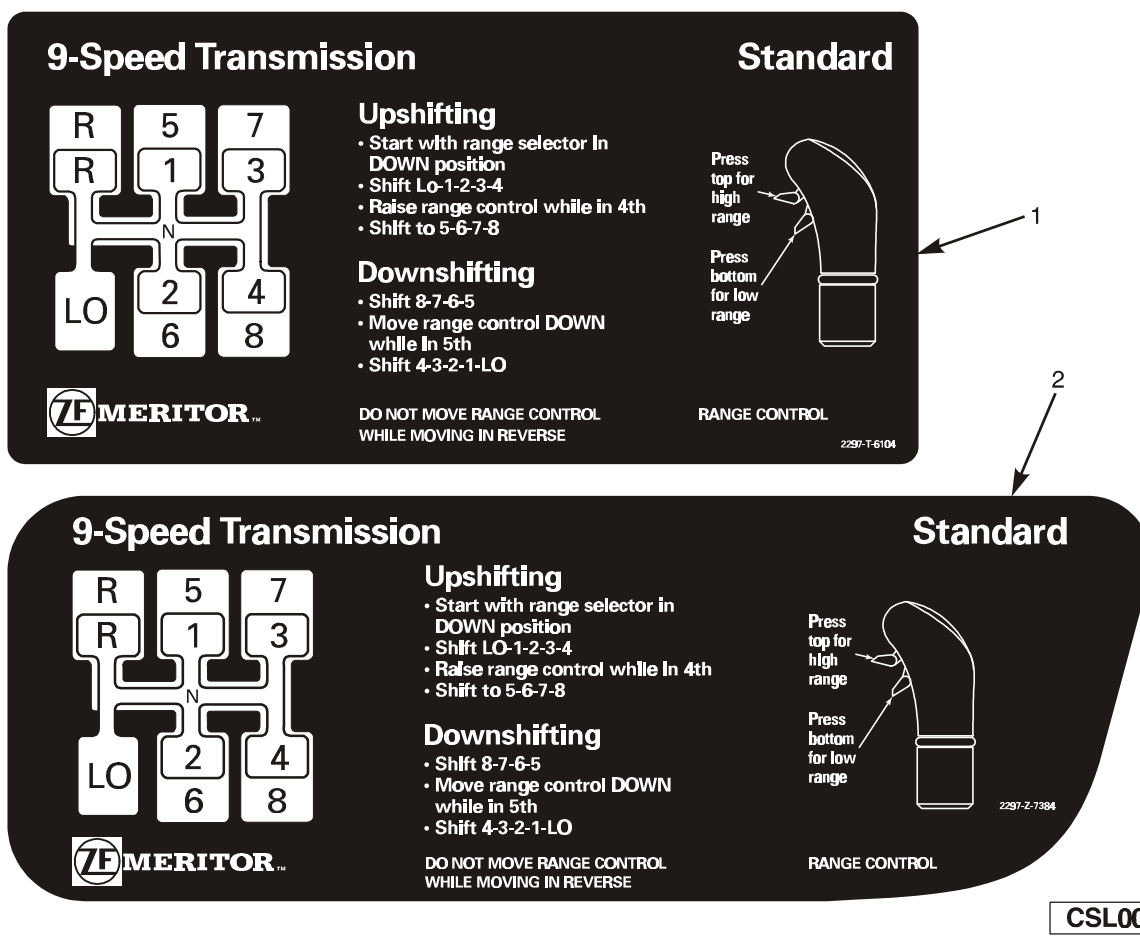


### SureShift Transmission Control Unit (TCU)

| Item | Qty. | Part Number    | Description                               |
|------|------|----------------|-------------------------------------------|
| 1    | 1    | Feature Based* | SureShift Transmission Control Unit (TCU) |

\*Contact ArvinMeritor's Aftermarket Services at 888-725-9355 with engine make, engine model, transmission model, axle ratio and lever type (Freightliner SmartShift or ZF Meritor SureShift lever).

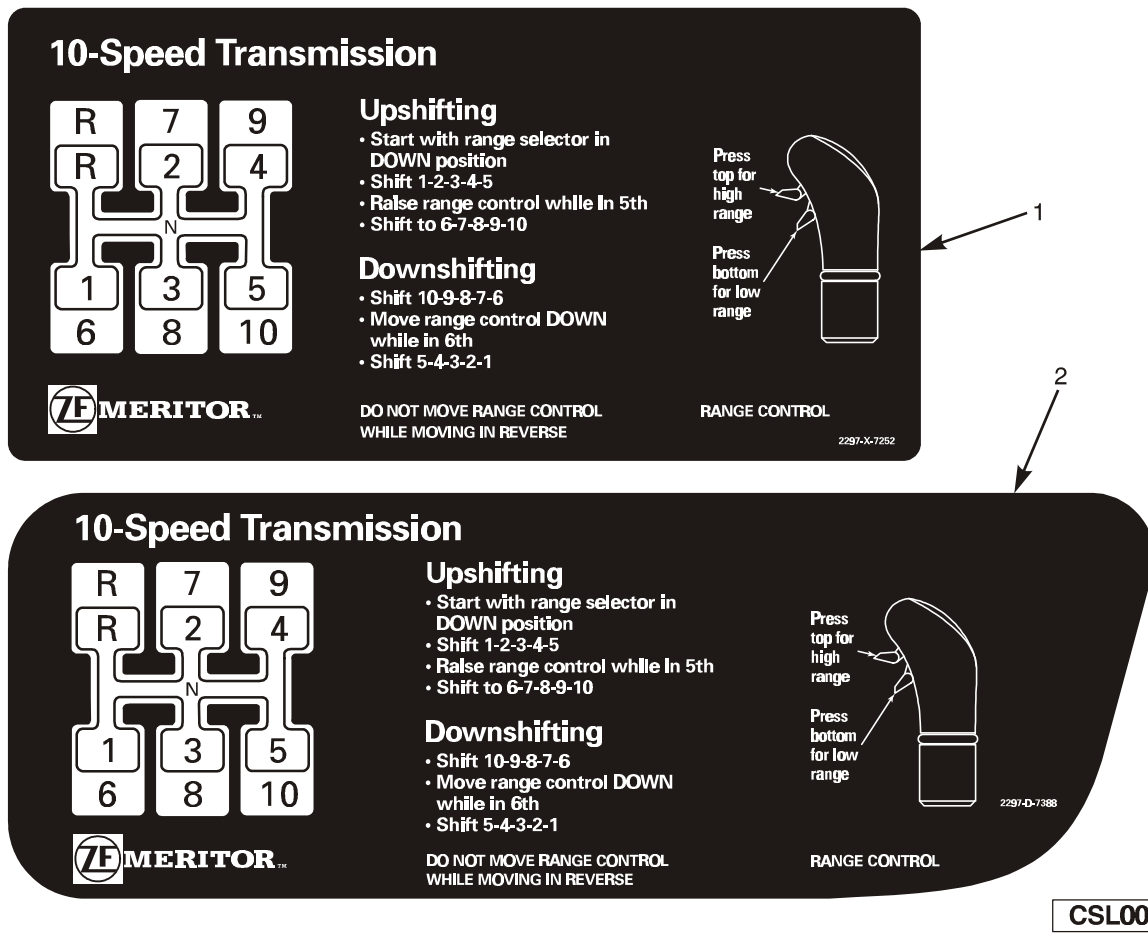
## Cab Shift Labels (Manual) — 9-Speed Transmission



## Cab Shift Labels (Manual) — 9-Speed Transmission

| Item | Qty. | Part Number | Description                     |
|------|------|-------------|---------------------------------|
| 1    | 1    | 2297-T-6104 | Decal, Cab Shift Label (Square) |
| 2    | 1    | 2297-Z-7384 | Decal, Cab Shift Label (Oval)   |

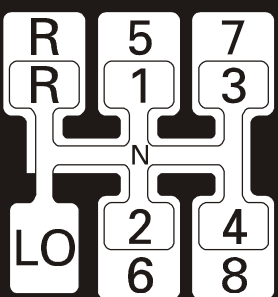
## Cab Shift Labels (Manual) — 10-Speed Transmission



## Cab Shift Labels (Manual) — 10-Speed Transmission

| Item | Qty. | Part Number | Description                     |
|------|------|-------------|---------------------------------|
| 1    | 1    | 2297-X-7252 | Decal, Cab Shift Label (Square) |
| 2    | 1    | 2297-A-7388 | Decal, Cab Shift Label (Oval)   |

## Cab Shift Labels (ESS and ESS TCU) — 9-Speed Transmission

 **MERITOR**™  
**Standard**  
  
**9-Speed Transmission**

### ENGINE SYNCHRO SHIFT

**TO ACTIVATE ESS:**

- Turn system switch **ON**
- Depress clutch pedal
- Select starting gear

**TO UP-SHIFT:**

- Fully depress shift intent switch **UP** and release
- Immediately move lever to **NEUTRAL**
- Let engine synchronize
- Move lever into higher gear 1-2-3-4-5-6-7-8

**TO DOWN-SHIFT:**

- Fully depress shift intent switch **DOWN** and release
- Immediately move lever to **NEUTRAL**
- Let engine synchronize
- Move lever into lower gear 7-6-5-4-3-2-1-LO

**CLUTCH USE:**

- Use clutch only for starting and stopping
- Depressing clutch **disables** engine synchronization
- System **OFF** requires use of clutch for shifting

**SHIFT INTENT SWITCH**

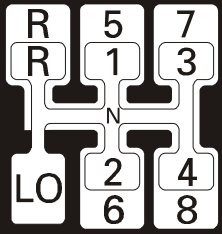
- **UPSHIFT**  
– Fully depress top
- **DOWNSHIFT**  
– Fully depress bottom

**SYSTEM SWITCH**

**NOTE:** System switch **OFF** activates manual control.

- Preselect shift intent switch **DOWN** for low range.
- Preselect shift intent switch **UP** for hi range.
- Do not select range in **NEUTRAL**. Preselect in gear.
- Do not range shift while moving in **REVERSE**.

Refer to TP-95130 for more information

 **MERITOR**™  
**Standard**  
  
**9-Speed Transmission**

### ENGINE SYNCHRO SHIFT

**TO ACTIVATE ESS:**

- Turn system switch to **ON**
- Depress clutch pedal
- Select starting gear

**TO UP-SHIFT:**

- Fully depress shift intent switch **UP** and release
- Immediately move lever to **NEUTRAL**
- Let engine synchronize
- Move lever into higher gear 1-2-3-4-5-6-7-8

**TO DOWN-SHIFT:**

- Fully depress shift intent switch **DOWN** and release
- Immediately move lever to **NEUTRAL**
- Let engine synchronize
- Move lever into lower gear 7-6-5-4-3-2-1-LO

**CLUTCH USE:**

- Use clutch only for starting and stopping
- Depressing clutch **disables** engine synchronization
- System **OFF** requires use of clutch for shifting

**SHIFT INTENT SWITCH**

- **UPSHIFT**  
– Fully depress top
- **DOWNSHIFT**  
– Fully depress bottom

**SYSTEM SWITCH**

**NOTE:** System switch **OFF** activates manual control.

- Preselect shift intent switch **DOWN** for low range.
- Preselect shift intent switch **UP** for hi range.
- Do not select range in **NEUTRAL**. Preselect in gear.
- Do not range shift while moving in **REVERSE**.

Refer to TP-95130 for more information

CSL0013

## Cab Shift Labels (ESS and ESS TCU) — 9-Speed Transmission

| Item | Qty. | Part Number | Description                     |
|------|------|-------------|---------------------------------|
| 1    | 1    | 2297-A-7125 | Decal, Cab Shift Label (Square) |
| 2    | 1    | 2297-Q-7245 | Decal, Cab Shift Label (Oval)   |

## Cab Shift Labels (ESS and ESS TCU) — 10-Speed Transmission

### ENGINE SYNCHRO SHIFT

**10-Speed Transmission**

**TO ACTIVATE ESS:**

- Turn system switch **ON**
- Depress clutch pedal
- Select starting gear

**TO UP-SHIFT:**

- Fully depress shift intent switch **UP** and release
- Immediately move lever to **NEUTRAL**
- Let engine synchronize
- Move lever into higher gear 2-3-4-5-6-7-8-9-10

**TO DOWN-SHIFT:**

- Fully depress shift intent switch **DOWN** and release
- Immediately move lever to **NEUTRAL**
- Let engine synchronize
- Move lever into lower gear 9-8-7-6-5-4-3-2-1

**CLUTCH USE:**

- Use clutch only for starting and stopping
- Depressing clutch **disables** engine synchronization
- System **OFF** requires use of clutch for shifting

**SHIFT INTENT SWITCH**

- **UPSHIFT**  
– Fully depress top
- **DOWNSHIFT**  
– Fully depress bottom

**SYSTEM SWITCH**

**NOTE:** System switch **OFF** activates manual control.

- Preselect shift intent switch **DOWN** for low range.
- Preselect shift intent switch **UP** for hi range.
- Do not select range in **NEUTRAL**. Preslect in gear.
- Do not range shift while moving in **REVERSE**.

2297-B-7126

Refer to TP-95130 for more information

### ENGINE SYNCHRO SHIFT

**10-Speed Transmission**

**TO ACTIVATE ESS:**

- Turn system switch to **ON**
- Depress clutch pedal
- Select starting gear

**TO UP-SHIFT:**

- Fully depress shift intent switch **UP** and release
- Immediately move lever to **NEUTRAL**
- Let engine synchronize
- Move lever into higher gear 2-3-4-5-6-7-8-9-10

**TO DOWN-SHIFT:**

- Fully depress shift intent switch **DOWN** and release
- Immediately move lever to **NEUTRAL**
- Let engine synchronize
- Move lever into lower gear 9-8-7-6-5-4-3-2-1

**CLUTCH USE:**

- Use clutch only for starting and stopping
- Depressing clutch **disables** engine synchronization
- System **OFF** requires use of clutch for shifting

**SHIFT INTENT SWITCH**

- **UPSHIFT**  
– Fully depress top
- **DOWNSHIFT**  
– Fully depress bottom

**SYSTEM SWITCH**

**NOTE:** System switch **OFF** activates manual control.

- Preslect shift intent switch **DOWN** for low range.
- Preslect shift intent switch **UP** for hi range.
- Do not select range in **NEUTRAL**. Preslect in gear.
- Do not range shift while moving in **REVERSE**.

2297-R-7246

Refer to TP-95130 for more information

**CSL0015**

## Cab Shift Labels (ESS and ESS TCU) — 10-Speed Transmission

| Item | Qty. | Part Number | Description                     |
|------|------|-------------|---------------------------------|
| 1    | 1    | 2297-B-7126 | Decal, Cab Shift Label (Square) |
| 2    | 1    | 2297-R-7246 | Decal, Cab Shift Label (Oval)   |

## Cab Shift Labels (SureShift)

### Operating ZF Meritor's SureShift™ Transmission

#### When to Use the Clutch Pedal

- To stop and start
- If the buzzer sounds and the forward/neutral/reverse (FNR) display flashes.

#### Forward Gear Start

- **First Gear Start:** Press the **FUNCTION BUTTON**. Move the shift lever forward. Release the shift lever and the **FUNCTION BUTTON**.
- **Second Gear Start:** Move the shift lever forward, then release it.
- **Third Gear Start:** Move the shift lever forward two times then release it.
- **After Selecting a Gear:** Push the clutch pedal to the end of travel. Slowly release the clutch pedal.

#### Reverse Gear Start

- Press the **FUNCTION BUTTON**. Move the shift lever backward. Release the shift lever and the **FUNCTION BUTTON**.
- **After Selecting a Gear:** Push the clutch pedal to the end of travel. Slowly release the clutch pedal.

#### Upshifting

- Move the shift lever forward, then release it.

#### Downshifting

- Move the shift lever backward, then release it.

#### "Skip Shifting"

- Press and hold the **FUNCTION BUTTON** while shifting.

#### Shifting Into Neutral

- Press the release and **NEUTRAL BUTTON**.



2297-L-7422

1

### Operating ZF Meritor's SureShift™ Transmission

#### When to Use the Clutch Pedal

- To stop and start
- If the buzzer sounds and the forward/neutral/reverse (FNR) display flashes.

#### Forward Gear Start

- **First Gear Start:** Press the **FUNCTION BUTTON**. Move the shift lever forward. Release the shift lever and the **FUNCTION BUTTON**.
- **Second Gear Start:** Move the shift lever forward, then release it.
- **Third Gear Start:** Move the shift lever forward two times, then release it.
- **After Selecting a Gear:** Push the clutch pedal to the end of travel. Slowly release the clutch pedal.

#### Reverse Gear Start

- Press the **FUNCTION BUTTON**. Move the shift lever backward. Release the shift lever and the **FUNCTION BUTTON**.

- **After Selecting a Gear:** Push the clutch pedal to the end of travel. Slowly release the clutch pedal.

#### Upshifting

- Move the shift lever forward, then release it.

#### Downshifting

- Move the shift lever backward, then release it.

#### "Skip Shifting"

- Press and hold the **FUNCTION BUTTON** while shifting.

#### Shifting Into Neutral

- Press and release the **NEUTRAL BUTTON**.



2297-K-7421

2

**LABELS**

## Cab Shift Labels (SureShift)

| Item | Qty. | Part Number | Description                          |
|------|------|-------------|--------------------------------------|
| 1    | 1    | 2297-L-7422 | Cab Shift Label (Oval Shaped)        |
| 2    | 1    | 2297-K-7421 | Cab Shift Label (Rectangular Shaped) |

## Lubricant Label

1 →



**Part No. 2297-N-6904**

**LUBLABEL**

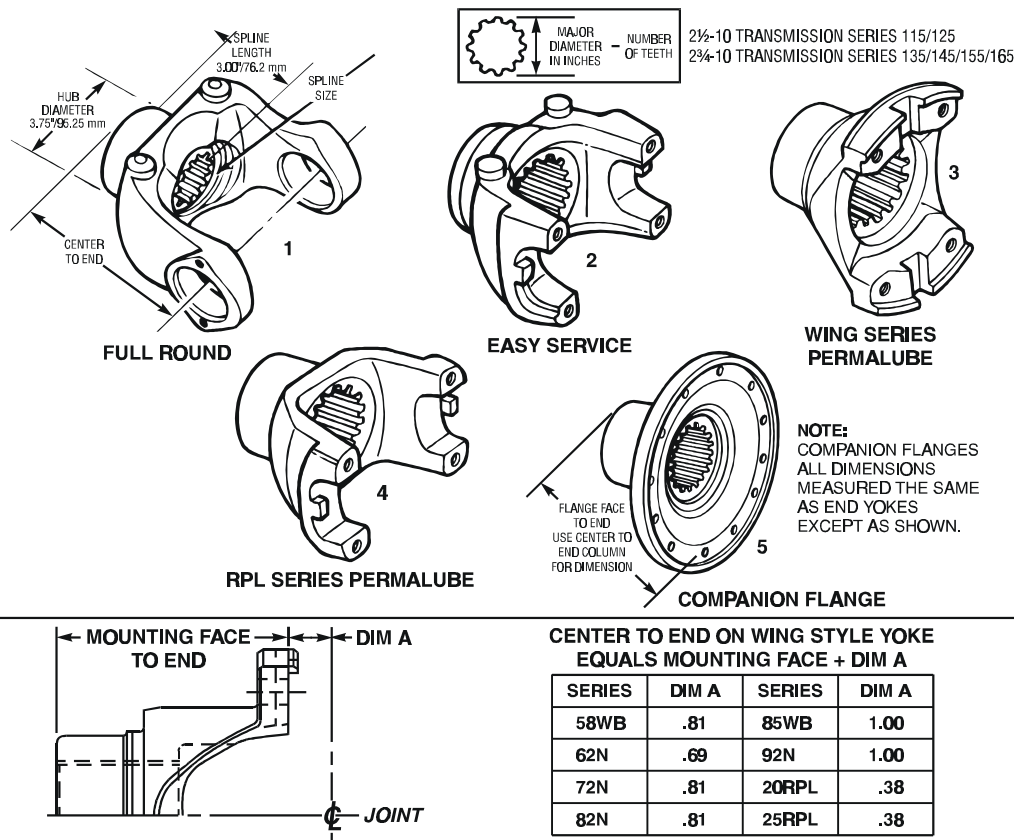
## Lubricant Label

| Item | Qty. | Part Number | Description                              |
|------|------|-------------|------------------------------------------|
| 1    | 1    | 2297-N-6904 | Decal, NOTICE — Extended Drain Lubricant |

# Output Yokes



## Yokes



| ZF Meritor Transmission Series | Spline Size Dia."-Teeth | Spline Length | Hub Dia.       | Center to End    | Engineering Number | Series | Style                      | Item |
|--------------------------------|-------------------------|---------------|----------------|------------------|--------------------|--------|----------------------------|------|
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.62"/142.75 mm  | 17NYS40-125A       | 17N    | 1710 FR with Deflector     | 1    |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 6.03"/153.16 mm  | 176NYS40-14A       | 176N   | 1760 FR with Deflector     |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.88"/149.35 mm  | 18NYS40-4A         | 18N    | 1810 FR with Deflector     |      |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.75"/146.05 mm  | 17N46931X          | 17N    | 1710 FR with Deflector     |      |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.75"/146.05 mm  | 176NYS44-4A        | 176N   | 1760 FR with Deflector     |      |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 6.06"/153.92 mm  | 18NYS44-4A         | 18N    | 1810 FR with Deflector     | 2    |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.62"/142.75 mm  | 17TYS40-144 (F)    | 17T    | 1710 EZ with Deflector     |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 6.03"/153.16 mm  | 176TYS40-14A       | 176T   | 1760 EZ with Deflector     |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.88"/149.35 mm  | 18TYS40-4A         | 18T    | 1810 EZ with Deflector     |      |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.75"/146.05 mm  | 17TYS44-10A (F)    | 17T    | 1710 EZ with Deflector     |      |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.97"/151.64 mm  | 176TYS44-4A        | 176T   | 1760 EZ with Deflector     | 3    |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 6.06"/153.92 mm  | 18TYS44-4A         | 18T    | 1810 EZ with Deflector     |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 4.43"/112.52 mm* | 72NYS40-99A        | 72N    | 72N (Wing) with Deflector  |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 4.75"/120.65 mm* | 82NYS40-28A        | 82N    | 82N (Wing) with Deflector  |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 4.31"/109.47 mm* | 85WBYS40-34A       | 85WB   | 85WB (Wing) with Deflector |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 4.26"/108.20 mm* | 92NYS40-40A        | 92N    | 92N (Wing) with Deflector  | 4    |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 4.50"/114.30 mm* | 85WBYS44-1A        | 85WB   | 85WB (Wing) with Deflector |      |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 4.84"/122.94 mm* | 92NYS44-22A        | 92N    | 92N (Wing) with Deflector  |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.65"/143.51 mm* | 20WYS40-2A         | RPL20  | RPL20 with Deflector       |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.15"/130.81 mm* | 25WYS40-2A         | RPL25  | RPL25 with Deflector       |      |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.09"/129.29 mm* | 20WYS44-2A         | RPL20  | RPL20                      | 5    |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 5.09"/129.29 mm* | 25WYS44-2A         | RPL25  | RPL25                      |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 3.62"/91.95 mm*  | 5WCS40-40A         | 5W     | 8 Hole                     |      |
| 115/125                        | 2-1/2"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 3.62"/91.95 mm*  | 5WCS40-41A         | 5W     | 12 Hole                    |      |
| 135/145                        | 2-3/4"-10               | 3.00"/76.2 mm | 3.75"/95.25 mm | 4.06"/103.12 mm* | 5WCS44-3A          | 5W     | 12 Hole                    |      |

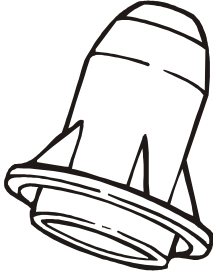
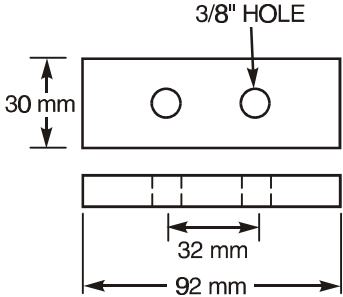
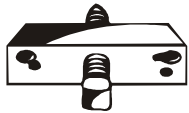
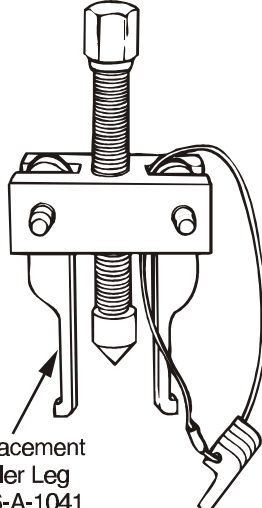
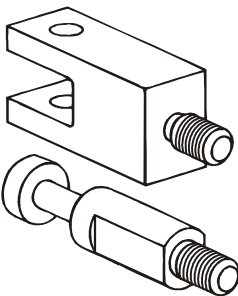
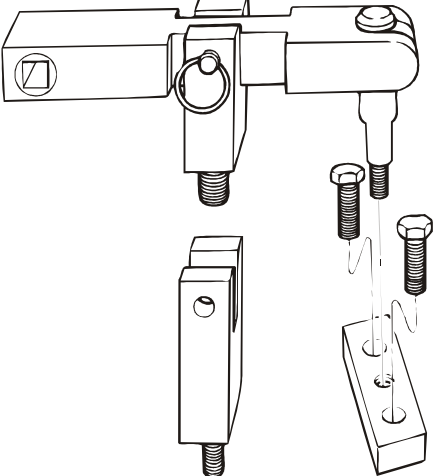
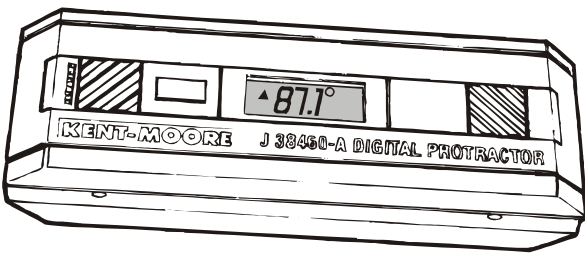
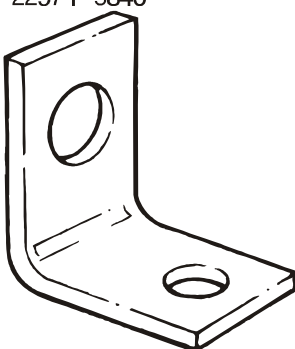
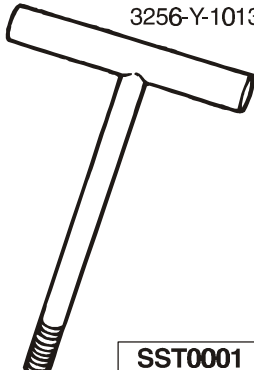
(F) = Forged Version

\*Wing and RPL yokes are face to end. See table for C/E Dims.

OTY0001

## Yokes

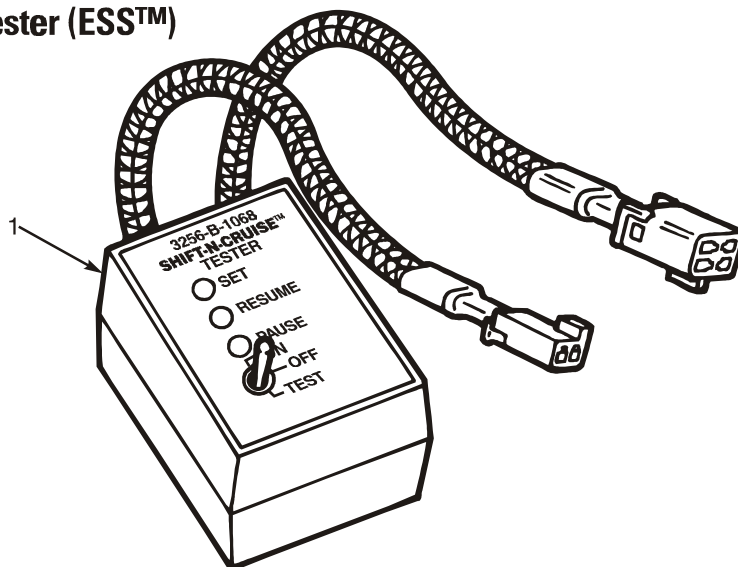
| Item | Qty. | Part Number     | Description                          |
|------|------|-----------------|--------------------------------------|
| 1    | 1    | 17NYS40-125A    | Yoke Assembly, Full Round            |
|      | 1    | 176NYS40-14A    | Yoke Assembly, Full Round            |
|      | 1    | 18NYS40-4A      | Yoke Assembly, Full Round            |
|      | 1    | 17N46931X       | Yoke Assembly, Full Round            |
|      | 1    | 176NYS44-4A     | Yoke Assembly, Full Round            |
|      | 1    | 18NYS44-4A      | Yoke Assembly, Full Round            |
| 2    | 1    | 17TYS40-144 (F) | Yoke Assembly, Easy Service          |
|      | 1    | 176TYS40-14A    | Yoke Assembly, Easy Service          |
|      | 1    | 18TYS40-4A      | Yoke Assembly, Easy Service          |
|      | 1    | 17TYS44-10A (F) | Yoke Assembly, Easy Service          |
|      | 1    | 176TYS44-4A     | Yoke Assembly, Easy Service          |
|      | 1    | 18TYS44-4A      | Yoke Assembly, Easy Service          |
| 3    | 1    | 72NYS40-99A     | Yoke Assembly, Wing Series Permalube |
|      | 1    | 82NYS40-28A     | Yoke Assembly, Wing Series Permalube |
|      | 1    | 85WBYS40-34A    | Yoke Assembly, Wing Series Permalube |
|      | 1    | 92NYS40-40A     | Yoke Assembly, Wing Series Permalube |
|      | 1    | 85WBYS44-1A     | Yoke Assembly, Wing Series Permalube |
|      | 1    | 92NYS44-22A     | Yoke Assembly, Wing Series Permalube |
| 4    | 1    | 20WYS40-2A      | Yoke Assembly, RPL Series Permalube  |
|      | 1    | 25WYS40-2A      | Yoke Assembly, RPL Series Permalube  |
|      | 1    | 20WYS44-2A      | Yoke Assembly, RPL Series Permalube  |
|      | 1    | 25WYS44-2A      | Yoke Assembly, RPL Series Permalube  |
| 5    | 1    | 5WCS40-40A      | Yoke Assembly, Companion Flange      |
|      | 1    | 5WCS40-41A      | Yoke Assembly, Companion Flange      |
|      | 1    | 5WCS44-3A       | Yoke Assembly, Companion Flange      |

|                                                                                                                                                                     |                                                                                                                                            |                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Seal Driver 3256-Z-1014A</p>                                                 | <p>2. Retainer Plate, Holding Cover Tool 3305-W-1141</p>  | <p>3. Countershaft Pusher 3256-D-1044</p>             |
| <p>4. Bearing Puller A-3256-W-1037</p>  <p>Replacement Puller Leg 3256-A-1041</p> | <p>5. 3/8" Countershaft Adaptor 3256-T-1060</p>          | <p>6. End Play Checker A-3256-C-1043</p>              |
| <p>7. Digital Protractor RI EP 1</p>                                             | <p>8. Lifting Bracket 2297-P-5840</p>                  | <p>9. T-Handle Tool 3256-Y-1013</p>  <p>SST0001</p> |

## Special Service Tools (Manual)

| Item | Qty. | Part Number   | Description                        |
|------|------|---------------|------------------------------------|
| 1    | 1    | 3256-Z-1014A  | Seal Driver, Fits all models.      |
| 2    | 1    | 3305-W-1141   | Retainer Plate, Holding Cover Tool |
| 3    | 1    | 3256-D-1044   | Tool, Countershaft Pusher          |
| 4    | 1    | A-3256-W-1037 | Tool, Bearing Puller               |
|      | 1    | 3256-A-1041   | Tool, Puller Leg, Replacement      |
| 5    | 1    | 3256-T-1060   | Tool, 3/8" Countershaft Adaptor    |
| 6    | 1    | A-3256-C-1043 | Tool, End Play Checker Assembly    |
| 7    | 1    | RIEP1         | Tool, Digital Protractor           |
| 8    | 1    | 2297-P-5840   | Hook, Lifting                      |
| 9    | 1    | 3256-Y-1013   | Tool, T-Handle                     |

## Shift-n-Cruise™ Tester (ESS™)

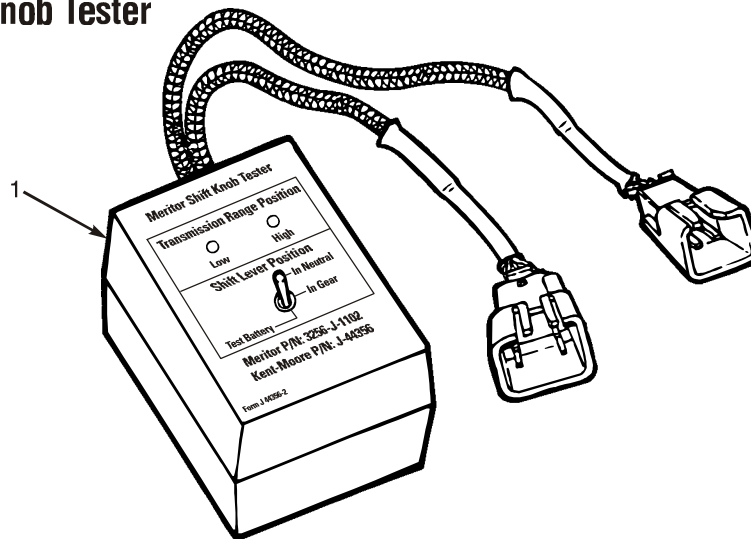


SCT0001

## Shift-n-Cruise™ Tester (ESS™)

| Item | Qty. | Part Number | Description                   |
|------|------|-------------|-------------------------------|
| 1    | 1    | 3256-B-1068 | Tool, Tester, Shift-n-Cruise™ |

## EOA Shift Knob Tester



SKTESTER

## EOA Shift Knob Tester

| Item | Qty. | Part Number | Description               |
|------|------|-------------|---------------------------|
| 1    | 1    | 3256-J-1102 | Meritor Shift Knob Tester |

**Kit 5237**

| Part Number | Qty. | Description     | Replaces |
|-------------|------|-----------------|----------|
| 1225-B-1198 | 2    | Shift Lever Kit |          |
| 10X-1611    | 1    |                 |          |
| 1227-Q-1525 | 1    |                 |          |

**Kit 5270**

| Part Number   | Qty. | Description             | Replaces |
|---------------|------|-------------------------|----------|
| 2258-Z-1144   | 3    | Synchro Kit Less Collar |          |
| A-3203-Z-1014 | 1    |                         |          |
| A-3203-R-1006 | 1    |                         |          |

**Kit 5289**

| Part Number   | Qty. | Description            | Replaces |
|---------------|------|------------------------|----------|
| A-3203-Z-1014 | 1    | Synchro Kit — Complete |          |
| A-3203-R-1006 | 1    |                        |          |
| 2258-Z-1144   | 3    |                        |          |
| 3107-S-1111   | 1    |                        |          |

**Kit 5363**

| Part Number | Qty. | Description | Replaces |
|-------------|------|-------------|----------|
| 1229-W-4625 | 5    | Main Shaft  |          |
| 43X-1158    | 1    |             |          |
| 16X-1028    | 1    |             |          |
| 1229-W-4339 | 1    |             |          |
| 3297-J-1336 | 1    |             |          |
| 42X-1457    | 5    |             |          |
| 42X-1458    | 5    |             |          |
| 42X-1459    | 5    |             |          |
| 1244-M-2041 | 5    |             |          |

**Kit 5364**

| Part Number | Qty. | Description                      | Replaces |
|-------------|------|----------------------------------|----------|
| 2803-R-2826 | 2    | Front Countershaft Bearing Shims | Kit 5330 |
| 2803-S-2827 | 2    |                                  |          |
| 2803-W-2831 | 1    |                                  |          |
| 2803-C-2837 | 1    |                                  |          |

**Kit 5368**

| Part Number    | Qty. | Description             | Replaces |
|----------------|------|-------------------------|----------|
| A1-3280-J-9318 | 1    | Shift Tower Assy. — Low | Kit 5300 |
| Kit 5237       | 1    |                         |          |
| 3208-N-1080    | 1    |                         |          |
| S-2610A-1      | 4    |                         |          |
| 1229-B-1666    | 4    |                         |          |

## Kit 5369

| Part Number    | Qty. | Description              | Replaces |
|----------------|------|--------------------------|----------|
| A1-3280-L-9320 | 1    | Shift Tower Assy. — High | Kit 5299 |
| Kit 5237       | 1    |                          |          |
| 3208-N-1080    | 1    |                          |          |
| S-2610A-1      | 4    |                          |          |
| 1229-B-1666    | 4    |                          |          |

## Kit 5378

| Part Number | Qty. | Description                  | Replaces |
|-------------|------|------------------------------|----------|
| 2245-J-1076 | 1    | Isolator and Shift Lever Kit |          |
| TP 9732     | 0    |                              |          |
| 1225-B-1198 | 2    |                              |          |
| 10X-1611    | 1    |                              |          |
| 1227-Q-1525 | 1    |                              |          |

## Kit 5386

| Part Number    | Qty. | Description             | Replaces |
|----------------|------|-------------------------|----------|
| A1-3280-T-9458 | 1    | Shift Tower Assy. — Mid |          |
| Kit 5237       | 1    |                         |          |
| 3208-N-1080    | 1    |                         |          |
| S-2610A-1      | 4    |                         |          |
| 1229-B-1666    | 4    |                         |          |

## Kit 5389

| Part Number   | Qty. | Description     | Replaces |
|---------------|------|-----------------|----------|
| A-1205-V-2596 | 1    | Rear Seal Assy. | Kit 5365 |
| TP 94108      | 0    |                 |          |

## Kit 5391

| Part Number | Qty. | Description                                                             | Replaces |
|-------------|------|-------------------------------------------------------------------------|----------|
| 2803-D-2968 | 1    | Kit — Output Bearing Spacers<br>For Serial Numbers LB00011318 and Below |          |
| 2803-E-2969 | 1    |                                                                         |          |
| 2803-F-2970 | 1    |                                                                         |          |

## Kit 5392

| Part Number   | Qty. | Description                           | Replaces |
|---------------|------|---------------------------------------|----------|
| A-3280-G-9575 | 1    | Kit — Speedo, Sensor, Shim — Navistar |          |
| 2803-N-3004   | 1    |                                       |          |

**Kit 5394**

| Part Number | Qty. | Description         | Replaces |
|-------------|------|---------------------|----------|
| 42X-1457    | 5    | Main Shaft Hardware |          |
| 42X-1458    | 5    |                     |          |
| 42X-1459    | 5    |                     |          |
| 1244-M-2041 | 5    |                     |          |
| 1229-W-4625 | 5    |                     |          |
| 1229-W-4339 | 1    |                     |          |
| 43X-1158    | 1    |                     |          |
| 16X-1028    | 1    |                     |          |

**Kit 5400**

| Part Number     | Qty. | Description      | Replaces |
|-----------------|------|------------------|----------|
| A-3280-G-9601-S | 1    | Kit — Air Filter |          |

**Kit 5401**

| Part Number | Qty. | Description             | Replaces |
|-------------|------|-------------------------|----------|
| 1205-G-2607 | 1    | Range Cylinder Seal Kit |          |
| 2230-J-1310 | 1    |                         |          |
| 5X-1217     | 1    |                         |          |
| 1227-J-1570 | 1    |                         |          |
| 5X-1207     | 2    |                         |          |
| 5X-1092     | 2    |                         |          |

**Kit 5403**

| Part Number   | Qty. | Description          | Replaces                                  |
|---------------|------|----------------------|-------------------------------------------|
| A-3280-R-9716 | 1    | Kit — Piston Housing | Kit 5402<br>Includes Air Filter Regulator |
| Kit 5401      | 1    |                      |                                           |

**Kit 5404**

| Part Number | Qty. | Description                                     | Replaces |
|-------------|------|-------------------------------------------------|----------|
| 1229-A-4759 | 2    | Kit — Selective Washer (Auxiliary Countershaft) | Kit 5390 |
| 1229-B-4760 | 2    |                                                 |          |
| 1229-C-4761 | 2    |                                                 |          |
| 1229-D-4762 | 2    |                                                 |          |
| 1229-E-4763 | 2    |                                                 |          |
| 1229-F-4764 | 2    |                                                 |          |
| 1229-G-4765 | 2    |                                                 |          |
| 1229-H-4766 | 2    |                                                 |          |
| 1229-J-4768 | 2    |                                                 |          |
| 1229-K-4769 | 2    |                                                 |          |
| 1229-L-4770 | 2    |                                                 |          |

# Kits



## Kit 5405

| Part Number | Qty. | Description                       | Replaces |
|-------------|------|-----------------------------------|----------|
| Kit 5404    | 1    | Kit — Shims and Selective Washers |          |
| Kit 5329    | 1    |                                   |          |
| Kit 5364    | 1    |                                   |          |

## Kit 5406

| Part Number    | Qty. | Description   | Replaces |
|----------------|------|---------------|----------|
| 5X-1134        | 2    | Kit — Rebuild |          |
| 1205-Y-1039    | 3    |               |          |
| 1225-A-1171    | 1    |               |          |
| 1227-T-1554    | 1    |               |          |
| A-1228-E-1175  | 2    |               |          |
| 1228-G-1203    | 1    |               |          |
| 2258-Z-1144    | 3    |               |          |
| 1205-G-2607    | 1    |               |          |
| 2230-J-1310    | 1    |               |          |
| 5X-1217        | 1    |               |          |
| 1227-J-1570    | 1    |               |          |
| 2258-F-1332    | 1    |               |          |
| 2297-R-6986    | 1    |               |          |
| 5X-1069        | 2    |               |          |
| Kit 5389       | 1    |               |          |
| A-1228-H-1204  | 1    |               |          |
| A1-1228-J-1414 | 1    |               |          |
| A-1228-T-1346  | 2    |               |          |
| A-1228-S-1345  | 4    |               |          |
| A-1228-U-1347  | 2    |               |          |
| Kit 5329       | 1    |               |          |
| Kit 5364       | 1    |               |          |
| Kit 5404       | 1    |               |          |
| NL-110-1       | 2    |               |          |
| N-L25-1        | 1    |               |          |

**Kit 5407**

| Part Number    | Qty. | Description    | Replaces |
|----------------|------|----------------|----------|
| 5X-1134        | 2    | Kit — Overhaul |          |
| 1205-Y-1039    | 3    |                |          |
| 1225-A-1171    | 1    |                |          |
| 1227-T-1554    | 1    |                |          |
| A-1228-E-1175  | 2    |                |          |
| 1228-G-1203    | 1    |                |          |
| 2258-Z-1144    | 3    |                |          |
| 1205-G-2607    | 1    |                |          |
| 2230-J-1310    | 1    |                |          |
| 5X-1217        | 1    |                |          |
| 1227-J-1570    | 1    |                |          |
| 2258-F-1332    | 1    |                |          |
| 2297-R-6986    | 1    |                |          |
| 5X-1069        | 2    |                |          |
| Kit 5389       | 1    |                |          |
| A-1228-H-1204  | 1    |                |          |
| A1-1228-J-1414 | 1    |                |          |
| A-1228-T-1346  | 2    |                |          |
| A-1228-S-1345  | 4    |                |          |
| A-1228-U-1347  | 2    |                |          |
| Kit 5329       | 1    |                |          |
| Kit 5364       | 1    |                |          |
| Kit 5404       | 1    |                |          |
| NL-110-1       | 2    |                |          |
| N-L25-1        | 1    |                |          |
| 3107-G-1073    | 1    |                |          |
| Kit 5400       | 1    |                |          |
| Kit 5367       | 1    |                |          |

**Kit 5412**

| Part Number      | Qty. | Description                                                                | Replaces |
|------------------|------|----------------------------------------------------------------------------|----------|
| A4-3293-Q-1109-S | 1    | Kit — Rear Cover Assembly (9 Speed — A Ratio),<br>SureShift and SmartShift |          |
| NP357215         | 2    |                                                                            |          |
| NP449281         | 2    |                                                                            |          |
| 1229-W-4339      | 1    |                                                                            |          |
| 3892-G-5519      | 1    |                                                                            |          |
| 1227-T-1554      | 1    |                                                                            |          |
| 3266-D-1278      | 2    |                                                                            |          |
| 10X-1660         | 8    |                                                                            |          |
| Kit 5404         | 1    |                                                                            |          |

## Kit 5413

| Part Number      | Qty. | Description                                                             | Replaces |
|------------------|------|-------------------------------------------------------------------------|----------|
| A5-3293-Q-1109-S | 1    | Kit — Rear Cover Assembly (9 Speed — B Ratio), SureShift and SmartShift |          |
| NP357215         | 2    |                                                                         |          |
| NP449281         | 2    |                                                                         |          |
| 1229-W-4339      | 1    |                                                                         |          |
| 3892-G-5519      | 1    |                                                                         |          |
| 1227-T-1554      | 1    |                                                                         |          |
| 3266-D-1278      | 2    |                                                                         |          |
| 10X-1660         | 8    |                                                                         |          |
| Kit 5404         | 1    |                                                                         |          |

## Kit 5414

| Part Number      | Qty. | Description                                                              | Replaces |
|------------------|------|--------------------------------------------------------------------------|----------|
| A6-3293-Q-1109-S | 1    | Kit — Rear Cover Assembly (10 Speed — A Ratio), SureShift and SmartShift |          |
| NP357215         | 2    |                                                                          |          |
| NP449281         | 2    |                                                                          |          |
| 1229-W-4339      | 1    |                                                                          |          |
| 3892-G-5519      | 1    |                                                                          |          |
| 1227-T-1554      | 1    |                                                                          |          |
| 3266-D-1278      | 2    |                                                                          |          |
| 10X-1660         | 8    |                                                                          |          |
| Kit 5404         | 1    |                                                                          |          |

## Kit 5415

| Part Number      | Qty. | Description                                                              | Replaces |
|------------------|------|--------------------------------------------------------------------------|----------|
| A7-3293-Q-1109-S | 1    | Kit — Rear Cover Assembly (10 Speed — C Ratio), SureShift and SmartShift |          |
| NP357215         | 2    |                                                                          |          |
| NP449281         | 2    |                                                                          |          |
| 1229-W-4339      | 1    |                                                                          |          |
| 3892-F-5518      | 1    |                                                                          |          |
| 1227-T-1554      | 1    |                                                                          |          |
| 3266-D-1278      | 2    |                                                                          |          |
| 10X-1660         | 8    |                                                                          |          |
| Kit 5404         | 1    |                                                                          |          |

## Kit 5416

| Part Number     | Qty. | Description                                                           | Replaces |
|-----------------|------|-----------------------------------------------------------------------|----------|
| A-3294-Q-1031-S | 1    | Kit — Main Case (Without Pump Machining) (EOA and Detroit Diesel ESS) |          |

## Kit 5417

| Part Number     | Qty. | Description                                                        | Replaces |
|-----------------|------|--------------------------------------------------------------------|----------|
| A-3294-R-1032-S | 1    | Kit — Main Case (With Pump Machining) (EOA and Detroit Diesel ESS) |          |

**Kit 5418**

| Part Number     | Qty. | Description                                                        | Replaces |
|-----------------|------|--------------------------------------------------------------------|----------|
| A-3294-B-1042-S | 1    | Kit — Main Case (Without Pump Machining) (ESS with ZF Meritor TCU) |          |

**Kit 5419**

| Part Number     | Qty. | Description                                                     | Replaces |
|-----------------|------|-----------------------------------------------------------------|----------|
| A-3294-C-1043-S | 1    | Kit — Main Case (With Pump Machining) (ESS with ZF Meritor TCU) |          |

**Kit 5420**

| Part Number     | Qty. | Description                                                         | Replaces |
|-----------------|------|---------------------------------------------------------------------|----------|
| A-3294-Z-1040-S | 1    | Kit — Main Case (Without Pump Machining) (SureShift and SmartShift) |          |

**Kit 5421**

| Part Number     | Qty. | Description                                                      | Replaces |
|-----------------|------|------------------------------------------------------------------|----------|
| A-3294-A-1041-S | 1    | Kit — Main Case (With Pump Machining) (SureShift and SmartShift) |          |

**Kit 5422 — Replaced by A3-3293-R-1136-S**

**Kit 5423 — Replaced by A2-3293-R-1136-S**

**Kit 5424 — Replaced by A3-3293-T-1138-S**

**Kit 5425 — Replaced by A2-3293-T-1138-S**

**Kit 5426 — Replaced by A1-3293-R-1136-S**

**Kit 5427 — Replaced by A-3293-R-1136-S**

**Kit 5428 — Replaced by A1-3293-T-1138-S**

**Kit 5429 — Replaced by A-3293-T-1138-S**

**Kit 5430**

| Part Number   | Qty. | Description                                                | Replaces |
|---------------|------|------------------------------------------------------------|----------|
| A-2297-C-7491 | 1    | Kit — Wiring Harness (7 Pin Connector) (EOA Transmissions) |          |
| 2257-Y-1273   | 5    |                                                            |          |

**Kit 5431**

| Part Number   | Qty. | Description                                                | Replaces |
|---------------|------|------------------------------------------------------------|----------|
| A-2297-Q-7219 | 1    | Kit — Wiring Harness (6 Pin Connector) (EOA Transmissions) |          |
| 2257-Y-1273   | 5    |                                                            |          |

**Kit 5432**

| Part Number   | Qty. | Description                               | Replaces |
|---------------|------|-------------------------------------------|----------|
| A-2297-U-7197 | 1    | Kit — Wiring Harness (ESS Detroit Diesel) |          |
| 2257-Y-1273   | 5    |                                           |          |

# Kits



## Kit 5433

| Part Number   | Qty. | Description                               | Replaces |
|---------------|------|-------------------------------------------|----------|
| A-2297-H-7496 | 1    | Kit — Wiring Harness (ESS ZF Meritor TCU) |          |
| 2257-Y-1273   | 5    |                                           |          |
| 2257-Z-1248   | 2    |                                           |          |

## Kit 5434

| Part Number   | Qty. | Description                                     | Replaces |
|---------------|------|-------------------------------------------------|----------|
| A-2297-J-7498 | 1    | Kit — Wiring Harness (SureShift and SmartShift) |          |
| 2257-Y-1273   | 5    |                                                 |          |
| 2257-Z-1248   | 1    |                                                 |          |

## Kit 5436

| Part Number   | Qty. | Description                                    | Replaces |
|---------------|------|------------------------------------------------|----------|
| A-3280-R-9716 | 1    | Kit — Range Cylinder (Piston Hsg) and Solenoid | Kit 5435 |
| P-42Z-S       | 5    |                                                |          |
| 5X-1217       | 1    |                                                |          |
| 10X-1670      | 4    |                                                |          |
| A-3280-F-9392 | 2    |                                                |          |
| 10X-1623      | 4    |                                                |          |
| WA-43Z        | 4    |                                                |          |
| Kit 5401      | 1    |                                                |          |

## Kit 5441

| Part Number | Qty. | Description                                                                                                 | Replaces |
|-------------|------|-------------------------------------------------------------------------------------------------------------|----------|
| 2258-P-1368 | 1    | Kit — Rail Detent Spring and Pin (Standard and Forward Position — Overdrive and Direct Drive — Single Rail) |          |
| 2258-T-1424 | 1    |                                                                                                             |          |
| 43X-1207    | 1    |                                                                                                             |          |

|             |                                    |
|-------------|------------------------------------|
| 10X-1446    | 5, 47, 49, 55, 57                  |
| 10X-1510    | 5                                  |
| 10X-1511    | 5                                  |
| 10X-1512    | 5                                  |
| 10X-1521    | 67, 69                             |
| 10X-1522    | 67, 69                             |
| 10X-1532    | 10                                 |
| 10X-1534    | 39                                 |
| 10X-1537    | 24, 25, 26, 27, 29, 31             |
| 10X-1611    | 71, 72, 93, 94                     |
| 10X-1623    | 39, 100                            |
| 10X-1625    | 60, 61                             |
| 10X-1657    | 43, 45, 47, 49, 51, 53, 55, 57, 58 |
| 10X-1659    | 33                                 |
| 10X-1660    | 33, 97, 98                         |
| 10X-1667    | 43, 45, 47, 49, 51, 53, 55, 57     |
| 10X-1669    | 6, 7                               |
| 10X-1670    | 39, 100                            |
| 1199-B-3226 | 7                                  |
| 1199-H-1620 | 6, 7                               |
| 1199-Q-901  | 7                                  |
| 1205-G-2607 | 39, 95, 96, 97                     |
| 1205-T-1268 | 77, 78                             |
| 1205-T-2308 | 8                                  |
| 1205-Y-1039 | 5, 96, 97                          |
| 1225-A-1171 | 11, 96, 97                         |
| 1225-B-1198 | 71, 72, 93, 94                     |
| 1225-F-1306 | 77                                 |
| 1225-P-1186 | 67, 69                             |
| 1225-X-1194 | 6, 7                               |
| 1227-F-1384 | 67, 69                             |
| 1227-J-1570 | 95, 96, 97                         |
| 1227-Q-1525 | 71, 72, 93, 94                     |
| 1227-S-1570 | 39                                 |
| 1227-T-1554 | 37, 96, 97, 98                     |
| 1228-E-1175 | 32                                 |
| 1228-G-1203 | 11, 96, 97                         |
| 1229-A-4759 | 95                                 |
| 1229-B-1666 | 6, 7, 8, 33, 39, 65, 93, 94        |
| 1229-B-4760 | 95                                 |
| 1229-C-1511 | 6, 7                               |
| 1229-C-4657 | 11                                 |
| 1229-C-4761 | 95                                 |
| 1229-D-4762 | 95                                 |
| 1229-E-1513 | 5                                  |
| 1229-E-4763 | 95                                 |
| 1229-F-4660 | 65                                 |
| 1229-F-4764 | 95                                 |
| 1229-G-4765 | 95                                 |
| 1229-H-4766 | 95                                 |
| 1229-J-4768 | 95                                 |

|                    |                                                |
|--------------------|------------------------------------------------|
| 1229-K-4769 .....  | 95                                             |
| 1229-L-4770 .....  | 95                                             |
| 1229-N-1626 .....  | 32                                             |
| 1229-T-4336 .....  | 71, 72                                         |
| 1229-T-4752 .....  | 45, 49, 53, 57                                 |
| 1229-U-1503 .....  | 6, 7                                           |
| 1229-W-4339 .....  | 11, 13, 15, 17, 19, 21, 23, 34, 93, 95, 97, 98 |
| 1229-W-4625 .....  | 13, 15, 17, 19, 21, 23, 93, 95                 |
| 1229-X-4418 .....  | 11                                             |
| 1244-J-2194 .....  | 11                                             |
| 1244-M-2041 .....  | 13, 15, 17, 19, 21, 23, 93, 95                 |
| 1244-W-2103 .....  | 37                                             |
| 1244-X-2104 .....  | 37                                             |
| 1250-D-1252 .....  | 43, 45, 47, 49, 51, 53, 55, 57                 |
| 1250-Q-1265 .....  | 43, 45, 47, 49, 51, 53, 55, 57                 |
| 1250-Q-1625 .....  | 58                                             |
| 1250-R-1266 .....  | 5                                              |
| 1250-W-1271 .....  | 59                                             |
| 1254-P-1030 .....  | 59                                             |
| 1299-B-1666 .....  | 77                                             |
| 15X-1812 .....     | 77                                             |
| 16X-1028 .....     | 13, 15, 17, 19, 21, 23, 93, 95                 |
| 16X-1031 .....     | 24, 25, 26, 27, 29                             |
| 16X-1040 .....     | 24, 25, 26, 27, 29, 31                         |
| 176NYS40-14A ..... | 88, 89                                         |
| 176NYS44-4A .....  | 88, 89                                         |
| 176TYS40-14A ..... | 88, 89                                         |
| 176TYS44-4A .....  | 88, 89                                         |
| 17N46931X .....    | 88, 89                                         |
| 17NYS40-125A ..... | 88, 89                                         |
| 17TYS40-144 .....  | 88, 89                                         |
| 17TYS44-10A .....  | 88, 89                                         |
| 17X-1030 .....     | 5                                              |
| 18NYS40-4A .....   | 88, 89                                         |
| 18NYS44-4A .....   | 88, 89                                         |
| 18TYS40-4A .....   | 88, 89                                         |
| 18TYS44-4A .....   | 88, 89                                         |
| 20WYS40-2A .....   | 88, 89                                         |
| 20WYS44-2A .....   | 88, 89                                         |
| 2205-H-1126 .....  | 47, 49, 55, 57                                 |
| 2205-W-1011 .....  | 43, 45, 47, 49, 51, 53, 55, 57, 58             |
| 2208-G-1151 .....  | 47, 49, 55, 57                                 |
| 2208-H-1152 .....  | 43, 45, 47, 49, 51, 53, 55, 57                 |
| 2214-V-1166 .....  | 65                                             |
| 2230-J-1310 .....  | 39, 95, 96, 97                                 |
| 2244-B-1172 .....  | 43, 45, 47, 49, 51, 53, 55, 57                 |
| 2244-C-1173 .....  | 43, 47, 51, 55                                 |
| 2244-E-1175 .....  | 47, 51, 53, 55, 57                             |
| 2244-E-1176 .....  | 45                                             |
| 2244-F-1176 .....  | 43, 49                                         |
| 2244-F-1202 .....  | 43, 45, 47, 49, 51, 53, 55, 57                 |

|                   |                                     |
|-------------------|-------------------------------------|
| 2244-G-1203 ..... | 43, 45, 47, 49, 51, 53, 55, 57      |
| 2244-H-1204 ..... | 43, 47, 51, 55                      |
| 2244-J-1128 ..... | 59                                  |
| 2244-K-1077 ..... | 69                                  |
| 2244-K-1129 ..... | 59                                  |
| 2244-K-1155 ..... | 59                                  |
| 2244-L-1130 ..... | 59                                  |
| 2244-R-1188 ..... | 39                                  |
| 2244-U-1165 ..... | 45, 49, 53, 57                      |
| 2244-W-1167 ..... | 39                                  |
| 2244-Y-1065 ..... | 67                                  |
| 2245-A-1223 ..... | 43, 45, 51, 53                      |
| 2245-J-1076 ..... | 71, 72, 94                          |
| 2245-M-1235 ..... | 43, 45, 51, 53                      |
| 2245-N-1236 ..... | 47, 49, 55, 57                      |
| 2245-P-1134 ..... | 59                                  |
| 2245-P-1186 ..... | 60, 61                              |
| 2245-T-1060 ..... | 59                                  |
| 2245-W-1219 ..... | 34                                  |
| 2245-Y-1221 ..... | 47, 49, 55, 57                      |
| 2247-G-1463 ..... | 65                                  |
| 2247-K-1077 ..... | 67, 69                              |
| 2247-K-1493 ..... | 45, 49, 53, 57                      |
| 2247-M-1079 ..... | 67                                  |
| 2247-M-1313 ..... | 65                                  |
| 2247-N-1080 ..... | 69                                  |
| 2247-N-1314 ..... | 65                                  |
| 2247-Z-1534 ..... | 45, 49, 53, 57                      |
| 2255-T-1268 ..... | 41                                  |
| 2255-Z-1118 ..... | 10                                  |
| 2257-G-1229 ..... | 73, 75, 77, 78                      |
| 2257-Y-1247 ..... | 77                                  |
| 2257-Y-1273 ..... | 73, 75, 77, 78, 99                  |
| 2257-Z-1248 ..... | 77, 99                              |
| 2258-B-1328 ..... | 65                                  |
| 2258-B-1458 ..... | 43, 45, 47, 49, 51, 53, 55, 57      |
| 2258-D-1278 ..... | 58                                  |
| 2258-D-1330 ..... | 59                                  |
| 2258-E-1409 ..... | 58                                  |
| 2258-F-1332 ..... | 5, 96, 97                           |
| 2258-P-1368 ..... | 43, 45, 47, 49, 51, 53, 55, 57, 100 |
| 2258-Q-1369 ..... | 43, 45, 47, 49, 51, 53, 55, 57      |
| 2258-T-1424 ..... | 43, 45, 47, 49, 51, 53, 55, 57, 100 |
| 2258-V-1452 ..... | 43, 45, 47, 49, 51, 53, 55, 57      |
| 2258-W-1453 ..... | 43, 45, 47, 49, 51, 53, 55, 57      |
| 2258-Z-1144 ..... | 36, 93, 96, 97                      |
| 2260-B-1146 ..... | 65                                  |
| 2260-R-1032 ..... | 67, 69                              |
| 2297-A-7021 ..... | 3                                   |
| 2297-A-7125 ..... | 84                                  |
| 2297-A-7388 ..... | 83                                  |

|                   |                                    |
|-------------------|------------------------------------|
| 2297-B-6060 ..... | 67                                 |
| 2297-B-6112 ..... | 3                                  |
| 2297-B-6554 ..... | 5                                  |
| 2297-B-7126 ..... | 85                                 |
| 2297-C-5905 ..... | 3                                  |
| 2297-D-6062 ..... | 69                                 |
| 2297-E-4295 ..... | 59                                 |
| 2297-E-6063 ..... | 69                                 |
| 2297-J-7082 ..... | 80                                 |
| 2297-K-7421 ..... | 86                                 |
| 2297-L-7422 ..... | 86                                 |
| 2297-N-6904 ..... | 87                                 |
| 2297-P-5840 ..... | 43, 45, 47, 49, 51, 53, 55, 57, 91 |
| 2297-Q-7245 ..... | 84                                 |
| 2297-R-5764 ..... | 59                                 |
| 2297-R-6986 ..... | 5, 58, 96, 97                      |
| 2297-R-7246 ..... | 85                                 |
| 2297-S-5765 ..... | 32                                 |
| 2297-T-6104 ..... | 82                                 |
| 2297-U-6417 ..... | 43, 45, 47, 49, 51, 53, 55, 57     |
| 2297-X-7252 ..... | 83                                 |
| 2297-X-7278 ..... | 41                                 |
| 2297-Y-5849 ..... | 5                                  |
| 2297-Z-7384 ..... | 82                                 |
| 25WYS40-2A .....  | 88, 89                             |
| 25WYS44-2A .....  | 88, 89                             |
| 26X-1011 .....    | 59                                 |
| 26X-1032 .....    | 43, 45, 47, 49, 51, 53, 55, 57     |
| 2803-C-2837 ..... | 93                                 |
| 2803-D-2968 ..... | 94                                 |
| 2803-E-2969 ..... | 94                                 |
| 2803-F-2970 ..... | 94                                 |
| 2803-N-3004 ..... | 94                                 |
| 2803-R-2826 ..... | 93                                 |
| 2803-S-2827 ..... | 93                                 |
| 2803-W-2831 ..... | 93                                 |
| 3105-B-1198 ..... | 65                                 |
| 3105-E-1175 ..... | 24, 25, 26, 27, 29                 |
| 3105-K-1155 ..... | 8                                  |
| 3105-N-1236 ..... | 31                                 |
| 3105-Y-1195 ..... | 34                                 |
| 3107-G-1073 ..... | 13, 15, 17, 19, 21, 23, 97         |
| 3107-S-1111 ..... | 36, 93                             |
| 3198-D-1070 ..... | 32                                 |
| 3208-N-1080 ..... | 65, 93, 94                         |
| 3221-C-1017 ..... | 43, 45, 47, 49, 51, 53, 55, 57     |
| 3221-U-1009 ..... | 58                                 |
| 3237-H-294 .....  | 65, 67, 69                         |
| 3237-N-66 .....   | 65, 67, 69                         |
| 3256-A-1041 ..... | 91                                 |
| 3256-B-1068 ..... | 92                                 |

|                    |                                |
|--------------------|--------------------------------|
| 3256-D-1044 .....  | 91                             |
| 3256-J-1102 .....  | 92                             |
| 3256-T-1060 .....  | 91                             |
| 3256-Y-1013 .....  | 91                             |
| 3256-Z-1014A ..... | 91                             |
| 3266-B-1120 .....  | 5                              |
| 3266-C-1121 .....  | 5                              |
| 3266-D-1278 .....  | 33, 97, 98                     |
| 3266-H-1048 .....  | 6, 7                           |
| 3280-C-9805 .....  | 43, 45, 53                     |
| 3280-D-9806 .....  | 47, 55, 57                     |
| 3280-G-8743 .....  | 69                             |
| 3280-K-9605 .....  | 47, 49, 55, 57                 |
| 3280-K-9806 .....  | 49                             |
| 3280-L-9606 .....  | 43, 45, 51, 53                 |
| 3293-Q-1109 .....  | 33                             |
| 3296-H-1126 .....  | 59                             |
| 3296-J-1258 .....  | 43, 45, 47, 49, 51, 53, 55, 57 |
| 3296-K-1129 .....  | 59                             |
| 3296-K-1259 .....  | 43, 45, 47, 49, 51, 53, 55, 57 |
| 3296-M-1261 .....  | 43, 47, 51, 55                 |
| 3296-N-1262 .....  | 45, 49, 53, 57                 |
| 3296-Q-1161 .....  | 39                             |
| 3296-S-1319 .....  | 43, 45, 47, 49, 51, 53, 55, 57 |
| 3296-Z-1248 .....  | 59                             |
| 3297-J-1336 .....  | 13, 15, 17, 19, 21, 23, 93     |
| 3297-J-1414 .....  | 35                             |
| 3297-K-1259 .....  | 24, 25, 26                     |
| 3297-K-1415 .....  | 35                             |
| 3297-N-1366 .....  | 27, 29                         |
| 3297-N-1418 .....  | 37                             |
| 3297-S-1397 .....  | 35                             |
| 3297-T-1398 .....  | 35                             |
| 3297-W-1453 .....  | 31                             |
| 3305-V-1348 .....  | 77                             |
| 3305-W-1141 .....  | 91                             |
| 3892-A-5019 .....  | 24, 25                         |
| 3892-B-5150 .....  | 17                             |
| 3892-C-5021 .....  | 13, 15, 17                     |
| 3892-E-5023 .....  | 13, 15                         |
| 3892-E-5517 .....  | 37                             |
| 3892-F-5232 .....  | 11, 13                         |
| 3892-F-5414 .....  | 19, 21, 23                     |
| 3892-F-5518 .....  | 34, 98                         |
| 3892-G-5025 .....  | 13, 15, 19, 21                 |
| 3892-G-5519 .....  | 34, 97, 98                     |
| 3892-H-5156 .....  | 25, 29                         |
| 3892-H-5598 .....  | 37                             |
| 3892-J-5028 .....  | 19                             |
| 3892-J-5600 .....  | 37                             |
| 3892-J-5678 .....  | 31                             |

|                   |                                     |
|-------------------|-------------------------------------|
| 3892-K-5159 ..... | 25, 29                              |
| 3892-L-5030 ..... | 13, 15, 17, 19, 21, 23              |
| 3892-M-5135 ..... | 26                                  |
| 3892-M-5395 ..... | 19, 21                              |
| 3892-M-5473 ..... | 11                                  |
| 3892-N-5032 ..... | 32                                  |
| 3892-N-5396 ..... | 27, 29                              |
| 3892-N-5474 ..... | 23                                  |
| 3892-P-5138 ..... | 26                                  |
| 3892-Q-5035 ..... | 24, 27                              |
| 3892-Q-5477 ..... | 23                                  |
| 3892-R-5140 ..... | 26                                  |
| 3892-R-5478 ..... | 23                                  |
| 3892-S-5011 ..... | 24, 25, 27, 29                      |
| 3892-S-5479 ..... | 31                                  |
| 3892-T-5142 ..... | 26                                  |
| 3892-T-5480 ..... | 31                                  |
| 3892-U-5013 ..... | 24, 25, 26, 27, 29, 31              |
| 3892-U-5481 ..... | 31                                  |
| 3892-V-5144 ..... | 11                                  |
| 3892-V-5482 ..... | 31                                  |
| 3892-W-5015 ..... | 11, 15, 21                          |
| 3892-X-5146 ..... | 17                                  |
| 3892-Y-5017 ..... | 24, 27                              |
| 3892-Z-5148 ..... | 17                                  |
| 41X-1566 .....    | 63                                  |
| 42X-1247 .....    | 43, 45, 47, 49, 51, 53, 55, 57      |
| 42X-1258 .....    | 32                                  |
| 42X-1457 .....    | 13, 15, 17, 19, 21, 23, 93, 95      |
| 42X-1458 .....    | 13, 15, 17, 19, 21, 23, 93, 95      |
| 42X-1459 .....    | 13, 15, 17, 19, 21, 23, 93, 95      |
| 43X-1150 .....    | 5                                   |
| 43X-1158 .....    | 13, 15, 17, 19, 21, 23, 93, 95      |
| 43X-1174 .....    | 71, 72                              |
| 43X-1184 .....    | 59                                  |
| 43X-1188 .....    | 65                                  |
| 43X-1190 .....    | 58                                  |
| 43X-1193 .....    | 5                                   |
| 43X1197 .....     | 53, 57                              |
| 43X-1203 .....    | 43, 45, 47, 49, 51, 53, 55, 57      |
| 43X-1207 .....    | 43, 45, 47, 49, 51, 53, 55, 57, 100 |
| 43X-1208 .....    | 43, 45, 47, 49, 51, 53, 55, 57      |
| 43X-1210 .....    | 43, 45, 47, 49, 51, 53, 55, 57      |
| 43X-1214 .....    | 43, 45, 47, 49, 51, 53, 55, 57      |
| 4X-1837 .....     | 6, 7                                |
| 5WCS40-40A .....  | 88, 89                              |
| 5WCS40-41A .....  | 88, 89                              |
| 5WCS44-3A .....   | 88, 89                              |
| 5X-1069 .....     | 34, 96, 97                          |
| 5X-1091 .....     | 58, 77, 78                          |
| 5X-1092 .....     | 39, 78, 95                          |

|                        |                                           |
|------------------------|-------------------------------------------|
| 5X-1134 .....          | 41, 96, 97                                |
| 5X-1156 .....          | 10                                        |
| 5X-1157 .....          | 10                                        |
| 5X-1201 .....          | 65                                        |
| 5X-1207 .....          | 39, 78, 95                                |
| 5X-1217 .....          | 39, 95, 96, 97, 100                       |
| 72NYS40 .....          | 89                                        |
| 72NYS40-99A .....      | 88                                        |
| 82NYS40-28A .....      | 88, 89                                    |
| 85WBYS40-34A .....     | 88, 89                                    |
| 85WBYS44-1A .....      | 88, 89                                    |
| 92NYS40-40A .....      | 88, 89                                    |
| 92NYS44-22A .....      | 88, 89                                    |
| A1-1228-J-1414 .....   | 33, 41, 96, 97                            |
| A-1199-P-1394 .....    | 43, 45, 47, 49, 51, 53, 55, 57, 58        |
| A-1205-V-2596 .....    | 94                                        |
| A-1228-B-1484 .....    | 31                                        |
| A-1228-E-1175 .....    | 32, 96, 97                                |
| A-1228-H-1204 .....    | 34, 96, 97                                |
| A-1228-S-1345 .....    | 24, 25, 26, 27, 29, 31, 35, 96, 97        |
| A-1228-T-1346 .....    | 24, 25, 26, 27, 29, 31, 96, 97            |
| A-1228-U-1347 .....    | 96, 97                                    |
| A-1250-H-1126 .....    | 5, 10, 43, 45, 47, 49, 51, 53, 55, 57, 58 |
| A-1250-J-1128 .....    | 5                                         |
| A-1250-P-1186 .....    | 5                                         |
| A-1250-T-1294 .....    | 5                                         |
| A1-3280-E-8741 .....   | 67                                        |
| A1-3280-H-9602 .....   | 39                                        |
| A1-3280-J-9318 .....   | 65, 93                                    |
| A1-3280-L-9320 .....   | 65, 94                                    |
| A1-3280-R-9716 .....   | 39                                        |
| A1-3280-T-9458 .....   | 65, 94                                    |
| A1-3293-R-1136-S ..... | 57, 99                                    |
| A1-3293-T-1138-S ..... | 53, 99                                    |
| A1-3293-U-1113-S ..... | 49                                        |
| A1-3293-V-1114-S ..... | 47                                        |
| A1-3293-X-1116-S ..... | 45                                        |
| A1-3293-Y-1117-S ..... | 43                                        |
| A-2110-M-1001 .....    | 67, 69                                    |
| A-2110-N-1002 .....    | 67                                        |
| A-2110-P-1004 .....    | 69                                        |
| A-2206-G-1073 .....    | 9                                         |
| A-2206-K-1077 .....    | 9                                         |
| A-2206-R-1084 .....    | 9                                         |
| A-2206-Z-1040 .....    | 9                                         |
| A-2244-D-1174 .....    | 45, 49, 53, 57                            |
| A-2244-J-1206 .....    | 45, 49, 53, 57                            |
| A-2247-F-1098 .....    | 67                                        |
| A-2247-G-1099 .....    | 69                                        |
| A-2247-T-1190 .....    | 71                                        |
| A-2247-X-1142 .....    | 71                                        |

|                        |                                |
|------------------------|--------------------------------|
| A-2247-Y-1143 .....    | 72                             |
| A-2297-A-8285 .....    | 45                             |
| A-2297-C-7361 .....    | 62, 63                         |
| A-2297-C-7413 .....    | 60, 61                         |
| A-2297-C-7491 .....    | 99                             |
| A-2297-D-7414 .....    | 60, 61                         |
| A-2297-E-7389 .....    | 62                             |
| A-2297-F-7078 .....    | 80                             |
| A-2297-H-7496 .....    | 99                             |
| A-2297-J-7498 .....    | 79, 99                         |
| A-2297-J-8278 .....    | 63                             |
| A-2297-K-8279 .....    | 63                             |
| A-2297-L-7058 .....    | 60, 61                         |
| A-2297-M-7423 .....    | 77                             |
| A-2297-N-7294 .....    | 62, 63                         |
| A-2297-N-7424 .....    | 77                             |
| A-2297-P-7426 .....    | 77                             |
| A-2297-Q-7219 .....    | 73, 99                         |
| A-2297-Q-7297 .....    | 79                             |
| A-2297-Q-7427 .....    | 77                             |
| A-2297-Q-8285 .....    | 43, 47, 49, 75                 |
| A-2297-R-7272 .....    | 77                             |
| A-2297-R-7298 .....    | 58, 79                         |
| A-2297-R-7428 .....    | 77                             |
| A-2297-R-8286 .....    | 75                             |
| A-2297-S-7429 .....    | 77                             |
| A-2297-U-7197 .....    | 78, 99                         |
| A-2297-V-8290 .....    | 43, 45, 47, 49, 58             |
| A-2297-W-7609 .....    | 60, 61                         |
| A-2297-Y-7383 .....    | 62                             |
| A2-3293-R-1136-S ..... | 47, 99                         |
| A2-3293-T-1138-S ..... | 43, 51, 99                     |
| A-3196-A-1067 .....    | 10                             |
| A-3203-R-1006 .....    | 36, 93                         |
| A-3203-Z-1014 .....    | 36, 93                         |
| A-3256-C-1043 .....    | 91                             |
| A-3256-W-1037 .....    | 91                             |
| A-3268-H-1646 .....    | 71                             |
| A-3280-A-9413 .....    | 77, 78, 79                     |
| A-3280-C-9467 .....    | 60                             |
| A-3280-D-9468 .....    | 60                             |
| A-3280-E-9469 .....    | 60                             |
| A-3280-F-9392 .....    | 39, 73, 75, 77, 78, 79, 100    |
| A-3280-F-9470 .....    | 60                             |
| A-3280-G-9575 .....    | 41, 79, 94                     |
| A-3280-G-9601-S .....  | 95                             |
| A-3280-G-9610S .....   | 39                             |
| A-3280-G-9809 .....    | 43, 45, 47, 49, 51, 53, 55, 57 |
| A-3280-H-9576 .....    | 41, 79                         |
| A-3280-J-9396 .....    | 51, 53, 55, 57, 77, 78         |
| A-3280-K-9397 .....    | 61                             |
| A-3280-L-9398 .....    | 61                             |
| A-3280-N-9608 .....    | 43, 45, 47, 49, 51, 53, 55, 57 |
| A-3280-R-9716 .....    | 95, 100                        |

|                        |                            |
|------------------------|----------------------------|
| A-3280-W-9409 .....    | 43, 45, 47, 49, 73, 75     |
| A-3282-B-1042 .....    | 7                          |
| A-3282-D-1044 .....    | 6                          |
| A-3282-E-1045 .....    | 6                          |
| A-3282-F-1046 .....    | 6                          |
| A-3282-G-1047 .....    | 7                          |
| A-3282-H-1048 .....    | 7                          |
| A-3282-P-1082 .....    | 6                          |
| A-3282-V-1036 .....    | 6                          |
| A-3282-X-1038 .....    | 7                          |
| A-3282-Z-1040 .....    | 6                          |
| A-3293-R-1136-S .....  | 55, 99                     |
| A-3293-T-1138-S .....  | 99                         |
| A-3293-U-1113-S .....  | 57                         |
| A-3293-V-1114-S .....  | 55                         |
| A-3293-X-1116-S .....  | 53                         |
| A-3293-Y-1117-S .....  | 51                         |
| A-3293-Z-1092 .....    | 58                         |
| A-3294-A-1041-S .....  | 5, 99                      |
| A-3294-B-1042-S .....  | 5, 99                      |
| A-3294-C-1043-S .....  | 5, 99                      |
| A-3294-P-1031-S .....  | 5                          |
| A-3294-P-1056-S .....  | 5                          |
| A-3294-Q-1031-S .....  | 98                         |
| A-3294-Q-1032-S .....  | 5                          |
| A-3294-Q-1057-S .....  | 5                          |
| A-3294-R-1032-S .....  | 98                         |
| A-3294-S-1059-S .....  | 5                          |
| A-3294-Z-1040-S .....  | 5, 99                      |
| A-3297-B-1380 .....    | 11                         |
| A-3303-N-1028 .....    | 10                         |
| A-3305-M-1469 .....    | 63                         |
| A3-3293-R-1136-S ..... | 49, 99                     |
| A3-3293-T-1138-S ..... | 45, 99                     |
| A4-3293-Q-1109-S ..... | 97                         |
| A5-3293-Q-1109-S ..... | 98                         |
| A-6000-Y-1299 .....    | 80                         |
| A6-3293-Q-1109-S ..... | 98                         |
| A7-3293-Q-1109-S ..... | 98                         |
| Feature Based .....    | 81                         |
| K-238 .....            | 67, 69                     |
| Kit 5237 .....         | 71, 72, 93, 94, 94         |
| Kit 5262 .....         | 9                          |
| Kit 5270 .....         | 36, 93                     |
| Kit 5276 .....         | 9                          |
| Kit 5277 .....         | 9                          |
| Kit 5278 .....         | 9, 71                      |
| Kit 5279 .....         | 9                          |
| Kit 5289 .....         | 36, 93                     |
| Kit 5300 .....         | 93                         |
| Kit 5329 .....         | 96, 97                     |
| Kit 5330 .....         | 93                         |
| Kit 5362 .....         | 58                         |
| Kit 5363 .....         | 13, 15, 17, 19, 21, 23, 93 |

# Numerical Parts Listing



|                    |                                     |
|--------------------|-------------------------------------|
| Kit 5364 .....     | 24, 25, 26, 27, 29, 31, 93, 96, 97  |
| Kit 5365 .....     | 94                                  |
| Kit 5366 .....     | 80                                  |
| Kit 5367 .....     | 11, 97                              |
| Kit 5368 .....     | 65, 93                              |
| Kit 5369 .....     | 65, 94                              |
| Kit 5378 .....     | 72, 94                              |
| Kit 5389 .....     | 33, 94, 96, 97                      |
| Kit 5390 .....     | 95                                  |
| Kit 5391 .....     | 33, 94                              |
| Kit 5391 .....     | 94                                  |
| Kit 5392 .....     | 41, 79, 94                          |
| Kit 5394 .....     | 13, 15, 17, 19, 21, 23, 95          |
| Kit 5400 .....     | 39, 95, 97                          |
| Kit 5401 .....     | 39, 95, 100                         |
| Kit 5402 .....     | 95                                  |
| Kit 5403 .....     | 39, 95                              |
| Kit 5404 .....     | 35, 95, 96, 97, 98                  |
| Kit 5405 .....     | 96                                  |
| Kit 5406 .....     | 96                                  |
| Kit 5407 .....     | 97                                  |
| Kit 5412 .....     | 97                                  |
| Kit 5413 .....     | 98                                  |
| Kit 5414 .....     | 98                                  |
| Kit 5415 .....     | 98                                  |
| Kit 5416 .....     | 5, 98                               |
| Kit 5417 .....     | 5, 98                               |
| Kit 5418 .....     | 5, 99                               |
| Kit 5419 .....     | 5, 99                               |
| Kit 5420 .....     | 5, 99                               |
| Kit 5421 .....     | 5, 99                               |
| Kit 5422 .....     | 99                                  |
| Kit 5423 .....     | 99                                  |
| Kit 5424 .....     | 99                                  |
| Kit 5425 .....     | 99                                  |
| Kit 5426 .....     | 99                                  |
| Kit 5427 .....     | 99                                  |
| Kit 5428 .....     | 99                                  |
| Kit 5429 .....     | 51, 99                              |
| Kit 5430 .....     | 99                                  |
| Kit 5431 .....     | 99                                  |
| Kit 5432 .....     | 78, 99                              |
| Kit 5433 .....     | 100                                 |
| Kit 5434 .....     | 79, 100                             |
| Kit 5435 .....     | 100                                 |
| Kit 5436 .....     | 39, 73, 100                         |
| Kit 5438 .....     | 31                                  |
| Kit 5441 .....     | 43, 45, 47, 49, 51, 53, 55, 57, 100 |
| LW-1310 .....      | 67, 69                              |
| M-15G10A-D15 ..... | 2                                   |
| M-15G10A-E15 ..... | 2                                   |
| M-15G10A-M15 ..... | 2                                   |
| M-15G10A-S15 ..... | 2                                   |
| M-15G9A-D15 .....  | 2                                   |

|                     |                                    |
|---------------------|------------------------------------|
| M-15G9A-E15 .....   | 2                                  |
| M-15G9A-M15 .....   | 2                                  |
| M-15G9A-S15 .....   | 2                                  |
| MO-14G9A-D14 .....  | 2                                  |
| MO-14G9A-E14 .....  | 2                                  |
| MO-14G9A-M14 .....  | 2                                  |
| MO-14G9A-S14 .....  | 2                                  |
| MO-15G9B-D15 .....  | 2                                  |
| MO-15G9B-E15 .....  | 2                                  |
| MO-15G9B-M15 .....  | 2                                  |
| MO-15G9B-S15 .....  | 2                                  |
| MO-16G10A-D16 ..... | 2                                  |
| MO-16G10A-E16 ..... | 2                                  |
| MO-16G10A-M16 ..... | 2                                  |
| MO-16G10A-S16 ..... | 2                                  |
| MO-16G10C-D18 ..... | 2                                  |
| MO-16G10C-E18 ..... | 2                                  |
| MO-16G10C-M18 ..... | 2                                  |
| MO-16G10C-S18 ..... | 2                                  |
| N-110-1 .....       | 5, 6, 7                            |
| N-18-1 .....        | 67, 69                             |
| N-68-1 .....        | 60, 61, 67, 69                     |
| NL-110-1 .....      | 32, 96, 97                         |
| N-L25-1 .....       | 96, 97                             |
| NL-25-1 .....       | 39                                 |
| NL-28-1 .....       | 67, 69                             |
| NP357215 .....      | 97, 98                             |
| NP449281 .....      | 97, 98                             |
| P-42Z-S .....       | 100                                |
| P-46 .....          | 43, 45, 47, 49, 51, 53, 55, 57     |
| RIEP1 .....         | 91                                 |
| S-2422A-2 .....     | 77                                 |
| S-244-A-1 .....     | 43, 45, 47, 49, 51, 53, 55, 57, 58 |
| S-2610A-1 .....     | 93, 94                             |
| S-2610-A-2 .....    | 8, 65                              |
| S-264-1 .....       | 41                                 |
| S-264-A-1 .....     | 10                                 |
| S-264-A-2 .....     | 10                                 |
| S-265-A-2 .....     | 6, 7                               |
| S-268-2 .....       | 34                                 |
| S-276-A-2 .....     | 5                                  |
| S-2812-A-2 .....    | 6, 7                               |
| S-2828-A-2 .....    | 6, 7                               |
| SN-1017-1 .....     | 5                                  |
| SN-1019-1 .....     | 5                                  |
| TP 94108 .....      | 94                                 |
| TP 9732 .....       | 94                                 |
| WA-34 .....         | 77                                 |
| WA-410-1 .....      | 5                                  |
| WA-43Z .....        | 39, 100                            |