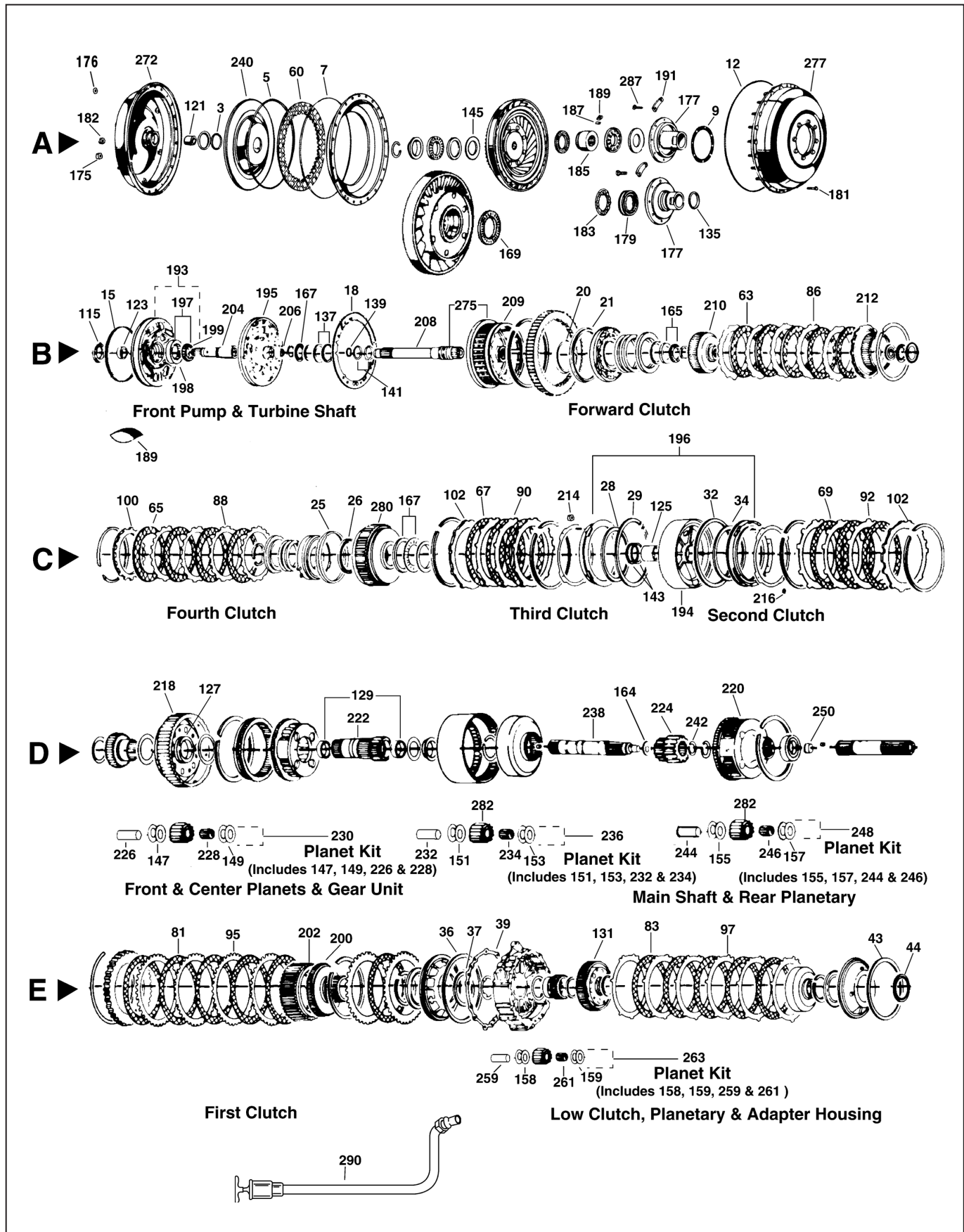


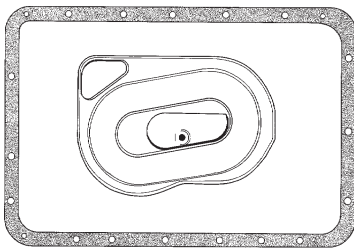
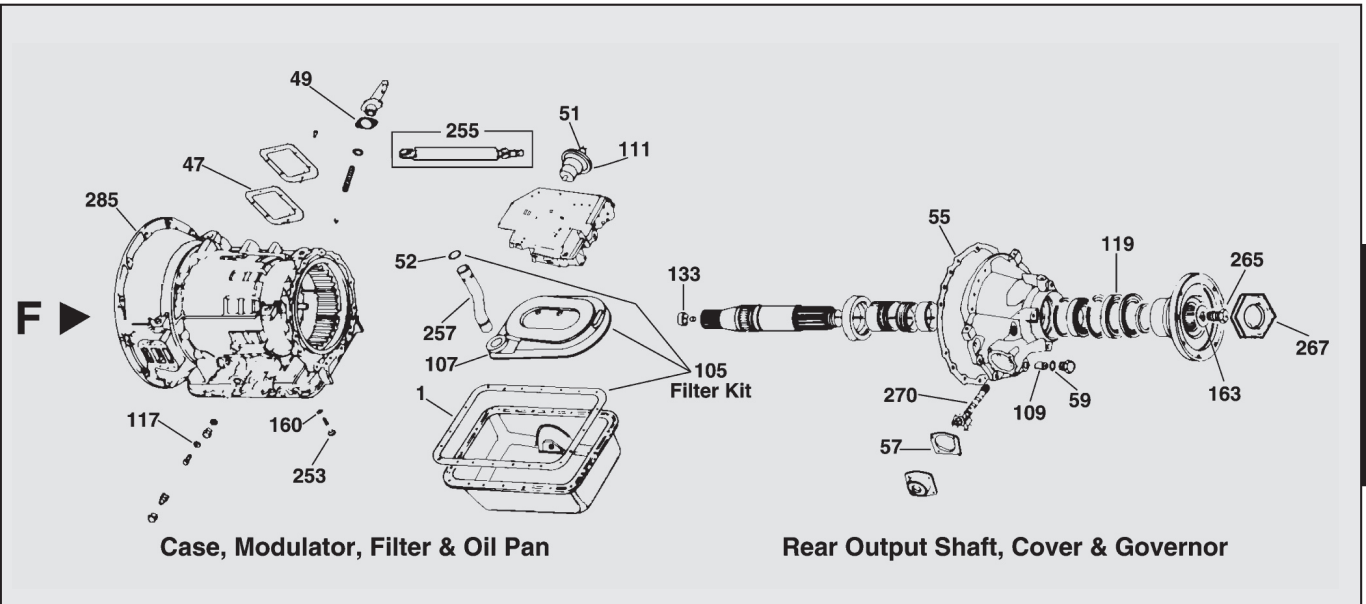
# ALLISON MT/B 640, 643, 644, 647, 650, 653, 654

To Get The Correct Parts, You Must Provide The Assembly Number Found On The Transmission Name Plate.



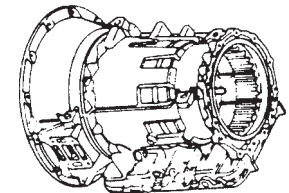
# ALLISON MT/B 640, 643, 644, 647, 650, 653, 654

**To Get The Correct Parts, You Must Provide The Assembly Number Found On The Transmission Name Plate.**



**21 Bolt Pan**

Allison Transmissions  
MT/B 640, 643, 644, 647, 650, 653, 654



## REBUILDER KITS

| DESCRIPTION   | QTY. | YEAR | DELUXE KIT | MASTER O/H KIT | LESS STEELS KIT | OVERHAUL KIT | GASKET & SEAL KIT |
|---|------|------|------------|----------------|-----------------|--------------|-------------------|
| Kits - 640-643 (1)                                      | 1    | -    |            | K2100          | K2100-LS        |              |                   |
| Kits - 650-653 (2)                                      | 1    | -    |            | K2100A         | K2100A-LS       |              |                   |
| Kits - 644 - PH1,2                                      | 1    | -    |            | K2100B         | K2100B-LS       |              |                   |
| Kits - 654 - PH1,2                                      | 1    | -    |            | K2100D         | K2100D-LS       |              |                   |
| Kit - 640-643/650-653 - w/Cork Neo - w/Teflon Seal Kit  | 1    | -    |            |                |                 | K21900       |                   |
| Kit - 640-643/650-653 - w/Victopac - Vespel Ring Kit    | 1    | -    |            |                |                 | K21900FW     |                   |
| Kit - 644/654 - w/Cork/Neo - Standard Ring Kit          | 1    | -    |            |                |                 | K21900B      |                   |
| Kit - 644/654 - w/Victopac - Vespel Ring Kit (29530326) | 1    | -    |            |                |                 | K21900HW     |                   |
| Front Pump Reseal Kit (3)                               | 1    | -    |            |                |                 |              | K21900-2          |
| Kit - w/o Pan Gasket - 640/643/650/653                  | 1    | -    |            |                |                 | K21900NP     |                   |

(1) To replace 29502306 Factory Master Kit, also order K21950 bearing kit and 21800 filter.

(2) To replace 29502307 Factory Master Kit, also order K21950 bearing kit and 21800 filter.

(3) Contains front pump gasket, rubber lathe cut seal, o-ring and pump bolt washers.

# ALLISON MT/B 640, 643, 644, 647, 650, 653, 654

To Get The Correct Parts, You Must Provide The Assembly Number Found On The Transmisson Name Plate.

| ILL.   | DESCRIPTION   | QTY. | YEAR | PART NO.      | REFERENCE NO. |
|--|---|------|------|---------------|---------------|
| <b>MISCELLANEOUS GASKETS &amp; SEALS/PAN GASKETS</b> |   |      |      |               |               |
| 1F   | Gasket - Oil Pan - Cork & Neoprene .....  | 1    | -    | <b>13540X</b> | 29501160      |
| 1F   | Gasket - Oil Pan - Update - Armstrong® .....(23016682)                          | 1    | -    | <b>13540W</b> | 29501160      |
| 3A   | O - Ring - Lockup Clutch - Inner - Polyacrylate - exc. 644,654.....             | 1    | -    | <b>3366PL</b> | 6770820       |
| 3A   | Seal - Lathe Cut - Lockup Clutch - Inner - 644, 654 .....                       | 1    | -    | <b>13176</b>  | 6770492       |
| 5A   | Seal - Lathe Cut - Lockup Clutch - Outer - exc. 644, 654 .....                  | 1    | -    | <b>13159</b>  | 6758036       |
| 5A   | Seal - Lathe Cut - Lockup Clutch - Outer - 644, 654.....                        | 1    | -    | <b>13177</b>  | 6758740       |
| 7A   | Seal - Lathe Cut - Lockup Clutch Backing Plate (Yellow Stripe).....             | 1    | -    | <b>13151</b>  | 23016564      |
| 9A   | Gasket - Converter Pump Hub - 640,650.....                                      | 1    | -    | <b>13150W</b> | 29536726      |
| 9A   | Gasket - Converter Pump Hub - 644, 654.....                                     | 1    | -    | <b>13174</b>  | 6771366       |
| 12A  | Seal - Lathe Cut - Converter Pump Cover - exc. 644, 654 (Yellow Stripe).....    | 1    | -    | <b>13151</b>  | 23016564      |
| 12A  | Seal - Lathe Cut - Converter Pump Cover - 644, 654 (Green Stripe).....          | 1    | -    | <b>13175</b>  | 6880389       |
| 15B  | Seal - Lathe Cut - Front Pump (Green Stripe) .....                              | 1    | -    | <b>13160</b>  | 23016347      |
| N.I.   | Seal - Washer - Front Pump Bolt.....(6834908)                                   | 12   | -    | <b>13161</b>  | 29512113      |
| 18B  | Gasket - Front Pump To Case .....   | 1    | -    | <b>13162</b>  | 23046344      |
| 20B  | Lip Seal - Forward Clutch - Inner .....(8623121)                                | 1    | -    | <b>3284L</b>  | 23015880      |
| 21B  | Lip Seal - Forward Clutch - Outer.....  | 1    | -    | <b>13163</b>  | 6833981       |
| 25C  | Lip Seal - Fourth Clutch - Outer .....  | 1    | -    | <b>13163</b>  | 6833981       |
| 26C  | Lip Seal - Fourth Clutch - Inner.....   | 1    | -    | <b>3284L</b>  | 23015880      |
| 28C  | Lip Seal - Third Clutch - Inner.....  | 1    | -    | <b>13164</b>  | 23011471      |
| 29C  | Lip Seal - Third Clutch - Outer .....   | 1    | -    | <b>13165</b>  | 6883035       |
| N.I.   | O-ring - Center Support (Starting With Serial No. 100432).....                  | 1    | -    | <b>13172</b>  | 6761244       |
| 32C  | Lip Seal - Second Clutch - Outer.....   | 1    | -    | <b>13165</b>  | 6883035       |
| 34C  | Lip Seal - Second Clutch - Inner.....   | 1    | -    | <b>13164</b>  | 23011471      |
| 47F  | Gasket - Power Takeoff Cover - Update - Armstrong® .....(23016683)              | 1    | -    | <b>13158W</b> | 29501161      |
| 49F  | Gasket - Lube Valve Adapter.....  | 1    | -    | <b>13166</b>  | 6884872       |
| 52F  | O-ring - Oil Filter Tube (Polyacrylate) .....                                   | 1    | -    | <b>3435PL</b> | 6762127       |
| 51F  | O-ring - Modulator .....(23017367)  | 1    | -    | <b>3410L</b>  | 8658110       |
| 36E  | Lip Seal - First Clutch - Outer.....  | 1    | -    | <b>13169</b>  | 6883033       |
| 37E  | Lip Seal - First Clutch - Inner.....  | 1    | -    | <b>13170</b>  | 6883031       |
| 39E  | Gasket - Adapter Housing.....(6837442)  | 1    | -    | <b>13171</b>  | 23045099      |
| 43E  | Lip Seal - Low Clutch - Outer.....  | 1    | -    | <b>13165</b>  | 6883035       |
| 44E  | Lip Seal - Low Clutch - Inner.....  | 1    | -    | <b>13170</b>  | 6883031       |
| 55F  | Gasket - Rear Cover .....   | 1    | -    | <b>13171</b>  | 23045099      |
| 57F  | Gasket - Governor Cover - Fibre .....   | 1    | -    | <b>3914D</b>  | 23011670      |
| 57F  | Gasket - Governor Cover - Update - Armstrong® .....(23011670)                   | 1    | -    | <b>3914LW</b> | 23018625      |
| 59F  | O-ring - Governor Filter/Cooler Fitting.....                                    | 1-2  | -    | <b>13173</b>  | 6882689       |
| N.I.   | Washer - Drain Plug -Coated .....   | 1    | -    | <b>11423B</b> | 29507909      |
| N.I.   | Washer - Cover - Coated .....   | 1    | -    | <b>21154</b>  | N.L.          |
| N.I.   | O-Ring - Converter Plug/Cooler Fitting (Brown).....                             | 1    | -    | <b>13180</b>  | N.L.          |
| <b>CLUTCH PLATES</b>                                 |   |      |      |               |               |
| 60A  | Friction - Lockup Clutch - Graphitec - 640, 643,650, 653 - Not In Kits (4)..... | 1    | -    | <b>R21106</b> | 23046108      |
| 60A  | Friction - Lockup Clutch - 644, 654 - Not In Kits (5) .....                     | 1    | -    | <b>W31102</b> | 23048511      |
| 63B  | Friction - Forward Clutch (4) .....   | 5/6  | -    | <b>R21103</b> | 23042200      |
| 63B  | Friction - Forward Clutch (5) .....   | 5/6  | -    | <b>W21103</b> | 23042200      |
| 65C  | Friction - Fourth Clutch (4) .....  | 4/5  | -    | <b>R21103</b> | 23042200      |
| 65C  | Friction - Fourth Clutch (5) .....  | 4/5  | -    | <b>W21103</b> | 23042200      |
| 67C  | Friction - Third Clutch (4) .....   | 3    | -    | <b>R21104</b> | 23042201      |
| 67C  | Friction - Third Clutch (5) .....   | 3    | -    | <b>W21104</b> | 23042201      |
| 69C  | Friction - Second Clutch (4) .....  | 3/4  | -    | <b>R21104</b> | 23042201      |
| 69C  | Friction - Second Clutch (5) .....  | 3/4  | -    | <b>W21104</b> | 23042201      |
| 81E  | Friction - First Clutch (4) .....(23042199)                                     | 6    | -    | <b>R11104</b> | 29529492      |
| 81E  | Friction - First Clutch (5) .....   | 6    | -    | <b>W11104</b> | 23042199      |
|  | <i>(4) Raybestos brand plate. OEM approved heat-treated paper.</i>              |      |      |               |               |
|  | <i>(5) S.K. Wellman plate. OEM approved graphitic.</i>                          |      |      |               |               |

# ALLISON

## MT/B 640, 643, 644, 647, 650, 653, 654

**To Get The Correct Parts, You Must Provide The Assembly Number Found On The Transmisson Name Plate.**

| ILL.                         | DESCRIPTION   | QTY. | YEAR | PART NO.         | REFERENCE NO. |
|------------------------------|---|------|------|------------------|---------------|
| <b>CLUTCH PLATES (Cont.)</b> |   |      |      |                  |               |
| 83E                          | Friction - Low Clutch - 654 Phase 1 & 2 <b>(4)</b> .....                        | 7    | -    | <b>R21101</b>    | 23042210      |
| 83E                          | Friction - Low Clutch - 654 Phase 1 & 2 <b>(5)</b> .....                        | 7    | -    | <b>W21101</b>    | 23042210      |
| 83E                          | Friction - Low Clutch - exc. 654 Phase 1 & 2 <b>(5)</b> .....                   | 5/6  | -    | <b>W21104</b>    | 23042201      |
| 83E                          | Friction - Low Clutch - exc. 654 Phase 1 & 2 <b>(4)</b> .....                   | 5/6  | -    | <b>R21104</b>    | 23042201      |
| 86B                          | Steel - Forward Clutch.....   | 5/6  | -    | <b>21100</b>     | 23016610      |
| 88C                          | Steel - Fourth Clutch .....   | 4/5  | -    | <b>21100</b>     | 23016610      |
| 90C                          | Steel - Third Clutch .....  | 3    | -    | <b>21105</b>     | 29516333      |
| 92C                          | Steel - Second Clutch.....  | 3/4  | -    | <b>21105</b>     | 29516333      |
| 95E                          | Steel - First Clutch.....   | 6    | -    | <b>21107</b>     | 23016606      |
| 97E                          | Steel - Low Clutch (654 Phase 1 & 2) .....                                      | 8    | -    | <b>21102</b>     | 23045054      |
| 97E                          | Steel - Low Clutch (Exc. 654 Phase 1 & 2).....                                  | 6/7  | -    | <b>21105</b>     | 23016608      |
|                              | <i><b>(4) NOTE:</b> Raybestos brand plate. OEM approved heat-treated paper.</i> |      |      |                  |               |
|                              | <i><b>(5) NOTE:</b> S.K. Wellman plate. OEM approved graphitic.</i>             |      |      |                  |               |
| <b>BACKING PLATES</b>        |   |      |      |                  |               |
| 100C                         | Fourth Clutch .....   | 1    | -    | <b>21108</b>     | 29516333      |
| 102C                         | 2-3 Clutch - .463 - .473 .....  | AR   | -    | <b>21718-R</b>   | 23046718      |
| 102C                         | 2-3 Clutch - .476 - .486 .....  | AR   | -    | <b>21745-R</b>   | 23046745      |
| 102C                         | 2-3 Clutch - .450 - .460 .....  | AR   | -    | <b>21746-R</b>   | 23046746      |
| <b>FILTERS/FILTER KITS</b>   |   |      |      |                  |               |
| 105F                         | Filter Kit - Cork & Neoprene .....  | 1    | -    | <b>FK21800</b>   | 23019201      |
| 105F                         | Filter Kit - Armstrong® (Large Hole Grommet) .....                              | 1    | -    | <b>FK21800W</b>  | 29502302      |
| 105F                         | Filter Kit - Armstrong® (Small Hole Grommet) .....                              | 1    | -    | <b>FK21800AW</b> | N.L.          |
| 105F                         | Filter Kit - Stainless Steel Wire Mesh - 5" Pan <b>(6)</b> .....                | 1    | -    | <b>FK21800L</b>  | 29528215      |
| 107F                         | Filter - Paper (Large Hole Grommet) .....                                       | 1    | -    | <b>21800</b>     | 29527373      |
| 107F                         | Filter - Paper (Small Hole Grommet) .....                                       | 1    | -    | <b>21800A</b>    | N.L.          |
| 107F                         | Filter - Stainless Steel Wire Mesh - 5" Pan <b>(6)</b> .....                    | 1    | -    | <b>21800L</b>    | 29532584      |
| N.I.                         | Filter - External Spin on Cartridge .....                                       | 1    | -    | <b>HD-223</b>    | 25010643      |
| N.I.                         | Screen - Center Support.....  | 1    | -    | <b>21713</b>     | 23010654      |
| 109F                         | Screen - Governor - Early - Prior To S/N 58071 .....                            | 1    | -    | <b>11712</b>     | 23045247      |
| 109F                         | Screen - Governor - Late - Start With S/N 58071 .....                           | 1    | -    | <b>21712</b>     | 6882687       |
|                              | <i><b>(6) Use with auxiliary filter only.</b></i>                               |      |      |                  |               |
| <b>VACUUM MODULATORS</b>     |   |      |      |                  |               |
| 111F                         | Modulator w/O-Ring (Large Can).....   | 1    | -    | <b>11820</b>     | 3039092       |
|                              | Modulator w/O-Ring (Small Can).....   | 1    | -    | <b>11820A</b>    | 29501199      |
| <b>METAL CLAD SEALS</b>      |   |      |      |                  |               |
| 115B                         | Front Pump - 3.355" O.D. ....   | 1    | -    | <b>21200</b>     | 6837228       |
| 115B                         | Front Pump - 3.881" O.D. - Update - Brown Viton .....                           | 1    | -    | <b>21200A</b>    | 23016643      |
| 115B                         | Front Pump - 3.380" O.D. - Viton - Shielded.....                                | 1    | -    | <b>21200B</b>    | 23045556      |
| 117F                         | Selector Shaft .....  | 1    | -    | <b>38511</b>     | 23010610      |
| 119F                         | Rear Cover 3.628" O.D. ....   | 1    | -    | <b>11850</b>     | 6778050       |
| 119F                         | Rear Cover 4.751" O.D. ....   | 1    | -    | <b>21850</b>     | 6773311       |
| <b>BUSHINGS</b>              |   |      |      |                  |               |
| N.I.                         | Bushing Kit .....   | 1    | -    | <b>K21902</b>    | N.L.          |
| 121A                         | Converter Cover .....   | 1    | -    | <b>21000</b>     | 6756782       |
| 123B                         | Front Pump Body - MT640, 650, 653 (Not Included In Kit) - 2.530.....            | 1    | -    | <b>21007</b>     | 29527101      |
| 123B                         | Front Pump Body - MT644, 654 (Not Included In Kit) - 2.580.....                 | 1    | -    | <b>21008</b>     | 23046152      |
| 123B                         | Front Pump Body .....   | 1    | -    | <b>21005</b>     | 6881926       |
| 125C                         | Center Support.....   | 1    | -    | <b>21003</b>     | 23011924      |
| 127D                         | Front Planetary Carrier - (I.D. Must Be Finished In Place) .....                | 1    | -    | <b>21001</b>     | 6835385       |
| 129D                         | Center Sun Gear - (I.D. Is Finished, No Further Machining Required) .....       | 2    | -    | <b>21002</b>     | 29516211      |
| 129D                         | Center Sun Gear - (I.D. Must Be Finished In Place).....                         | 2    | -    | <b>21002X</b>    | 6834503       |

AT640

# ALLISON

## MT/B 640, 643, 644, 647, 650, 653, 654

To Get The Correct Parts, You Must Provide The Assembly Number Found On The Transmisson Name Plate.

| ILL.                                  | DESCRIPTION  | QTY. | YEAR | PART NO.       | REFERENCE NO. |
|---------------------------------------|--|------|------|----------------|---------------|
| <b>BUSHINGS (Cont.)</b>               |  |      |      |                |               |
| 131E                                  | Low Planetary Carrier - (I.D. Must Be Finished In Place).....              | 1    | -    | <b>21004</b>   | 6835398       |
| 133F                                  | Rear Output Shaft Bushing (Replaces Bearing 21219 In R. Output Shaft)..... | 1    | -    | <b>21006</b>   | 23016859      |
| <b>SEALING RINGS/RING KITS</b>        |  |      |      |                |               |
| N.I.                                  | Sealing Ring Kit - Complete - 8 Rings.....                                 | 1    | -    | <b>K21901</b>  | N.L.          |
| N.I.                                  | Sealing Ring Kit - Complete - 8 Rings - Vespel.....                        | 1    | -    | <b>K21901V</b> | N.L.          |
| 135A                                  | Converter Pump Hub.....  | 1    | -    | <b>21300</b>   | 6830187       |
| 137B                                  | Pump Support - Front.....  | 2    | -    | <b>21301T</b>  | 23015617      |
| 137B                                  | Pump Support - Front - Vespel.....   | 1    | -    | <b>K21301V</b> | 23014632      |
| 139B                                  | Turbine/Converter.....   | 1    | -    | <b>21302</b>   | 6839163       |
| 139B                                  | Turbine/Converter - Vespel.....  | 1    | -    | <b>21302V</b>  | 23019653      |
| 141B                                  | Front - Turbine Shaft.....   | 2    | -    | <b>21303</b>   | 6833999       |
| 143C                                  | Center Support.....  | 2    | -    | <b>21301T</b>  | 23015617      |
| <b>THRUST WASHERS/NEEDLE BEARINGS</b> |  |      |      |                |               |
| 145A                                  | Spacer - Turbine:  |      |      |                |               |
|                                       | - .015" - Gold - exc. 644, 654.....  | AR   | -    | <b>11403</b>   | 6837429       |
|                                       | - .015" - Gold - 644, 654.....   | AR   | -    | <b>21403</b>   | 6839976       |
|                                       | - .030" - Silver - exc. 644, 654.....                                      | AR   | -    | <b>11403A</b>  | 6837430       |
|                                       | - .030" - Silver - 644, 654.....   | AR   | -    | <b>21403A</b>  | 6839977       |
|                                       | - .042" - Plain - exc. 644, 654.....                                       | AR   | -    | <b>11403B</b>  | 6837431       |
|                                       | - .042" - Plain - 644, 654.....  | AR   | -    | <b>21403B</b>  | 6839978       |
|                                       | - .060" - Black - exc. 644, 654.....                                       | AR   | -    | <b>11403C</b>  | 6837432       |
|                                       | - .060" - Black - 644, 654.....  | AR   | -    | <b>21403C</b>  | 6839979       |
|                                       | - .075" - Copper - exc. 644, 654.....                                      | AR   | -    | <b>11403D</b>  | 6837433       |
|                                       | - .075" - Copper - 644, 654.....   | AR   | -    | <b>21403D</b>  | 6839980       |
|                                       | Washer - Front Planetary:  |      |      |                |               |
| 147D                                  | - Bronze.....  | 12   | -    | <b>11413</b>   | 6839514       |
| 149D                                  | - Steel.....   | 12   | -    | <b>11414</b>   | 6833991       |
|                                       | Washer - Center Planetary:   |      |      |                |               |
| 151D                                  | - Bronze.....  | 8    | -    | <b>21415</b>   | 6839375       |
| 153D                                  | - Steel.....   | 8    | -    | <b>21416</b>   | 23018960      |
|                                       | Washer - Rear Planetary:   |      |      |                |               |
| 155D                                  | - Bronze.....  | 8    | -    | <b>21415</b>   | 6839375       |
| 157D                                  | - Steel.....   | 8    | -    | <b>21416</b>   | 23018960      |
| 160F                                  | Washer - Center Support Bolt.....  | 1    | -    | <b>11422</b>   | 23014094      |
|                                       | Washer - Low Planetary:  |      |      |                |               |
| 158E                                  | - Bronze (Exc. 644, 654).....  | 12   | -    | <b>11416</b>   | 6839376       |
| 159E                                  | - Steel (644, 654).....  | 8    | -    | <b>21424</b>   | 23018961      |
| 163F                                  | Washer - Output Flange.....  | 1    | -    | <b>11421</b>   | 29500739      |
| N.I.                                  | Washer - Drain Plug - Coated.....  | 1    | -    | <b>11423B</b>  | 29507909      |
| 164D                                  | Washer - Rear Sun Gear (Plastic).....                                      | 1    | -    | <b>21418</b>   | 29524362      |
| <b>BEARINGS</b>                       |  |      |      |                |               |
| N.I.                                  | Bearing Kit (Contains 2 Ea - 21782, 21799 & one 11404).....                | 1    | -    | <b>K21950</b>  | N.L.          |
| N.I.                                  | Bearing Kit - Complete - 643.....  | 1    | -    | <b>K21950C</b> | N.L.          |
| N.I.                                  | Bearing Kit - Complete - 653.....  | 1    | -    | <b>K21950D</b> | N.L.          |
| 165B/<br>165C                         | Thrust Bearing Assembly - Forward Clutch.....                              | 2    | -    | <b>21799</b>   | 23015799      |
| 167B                                  | Front & Center Support Bearing.....  | 2    | -    | <b>21782</b>   | 23019782      |
| 169A                                  | Thrust Bearing - Converter Stator.....                                     | 1    | -    | <b>11404</b>   | 23016866      |
| 179A                                  | Bearing - Converter Hub - 640, 650.....                                    | 1    | -    | <b>21883</b>   | 23048030      |
| 287A                                  | Bolt - Torque Converter Hub.....   | 1    | -    | <b>96-178</b>  | 23014542      |

# ALLISON

## MT/B 640, 643, 644, 647, 650, 653, 654

**To Get The Correct Parts, You Must Provide The Assembly Number Found On The Transmisson Name Plate.**

| ILL.   | DESCRIPTION  | BRAND | QTY. | YEAR | PART NO. | REFERENCE NO. |
|--|--|-------|------|------|----------|---------------|
| <b>HARD PARTS</b>  |  |       |      |      |          |               |
| Hard Parts may only require the base number for OEM/Aftermarket New or a "-R" suffix for remanufactured.<br>Exceptions are listed individually.<br>NOTE: A separate column is provided to indicate a primary or specific brand/type. |  |       |      |      |          |               |
| 133F   | Roller Bearing - See 21006 Under Bushings .....                                |       |      |      |          |               |
| 175A   | Nut - Flex Plate.....  |       | 6    | -    | 21214    | 23046154      |
| 176A   | Washer - Flex Plate .....  |       | 6    | -    | 21154    | 23014462      |
| 177A   | Converter Hub:   |       |      |      |          |               |
|  | - 1st Design - 640, 650 - Bushing Style - 8 Bolt.....                          |       | 1    | -    | 21206    | 6837203       |
|  | - 2nd Design - 640, 650 - Bearing Style (w/bearing) 8 Bolt.....                |       | 1    | -    | 21204A   | 23013906      |
|  | - 2nd Design - 640, 650 - Bearing Style (w/o bearing) 8 Bolt .....             |       | 1    | -    | 21204    | 23013906      |
|  | - 3rd Design - .683 Gear - Bushing Style - 8 Bolt .....                        |       | 1    | -    | 21204C   | 29507140      |
|  | - 4th Design - 1.00 Gear - MT644, 647, 654 - Bearing Style - 12 Bolt(23017446) |       | 1    | -    | 21204E   | 23046638      |
|  | - 4th Design - MT644, 647, 654 - Bushing Style - 12 Bolt.....                  |       | 1    | -    | 21204D   | 23016723      |
| 179A   | Bearing - Converter Hub - 640, 650 .....                                       |       | 1    | -    | 21883    | 23048030      |
| 181A   | Converter Cover Stud .....   |       | 6    | -    | 21508    | 6839508       |
| 182A   | Converter Cover Nut.....   |       | 24   | -    | 21139    | 190139        |
| 183A   | Race, Converter Hub Bearing - H.D. - 640, 650 (Bearing Style Hub).....         |       | 1    | -    | 21907    | 23013907      |
| 183A   | Race, Converter Hub Bearing - H.D. - 640, 650 (Bushing Style Hub).....         |       | 1    | -    | 21907A   | 9440257       |
| 185A   | Race, Converter Stator - MT643.....  |       | 1    | -    | 21226    | 6837206       |
| 187A   | Converter Stator Roller .....  |       | 10   | -    | 11211    | 6774968       |
| 189A   | Converter Stator Spring.....   |       | 10   | -    | 11210    | 29513517      |
| 190B   | Locking Key, Converter Cover - Football Key.....                               |       | 1    | -    | 21209    | 6772552       |
| 191A   | Strip Lock - Converter Hub - 644, 654.....                                     |       | 6    | -    | 21212    | 6880899       |
| 191A   | Strip Lock - Converter Hub - exc. 644, 654 .....                               |       | 4    | -    | 11212    | 6769631       |
| 193B   | Pump Body w/Gears:   |       |      |      |          |               |
|  | - .683 Gears - 640, 650 .....  |       | 1    | -    | K21636   | 29527499      |
|  | - .683 Gears - Late 640, 650.....  |       | 1    | -    | K21636A  | 29527490      |
|  | - .818 Gears - MT654 .....   |       | 1    | -    | K21637   | 23046638      |
|  | - 1.00 Gears - Bushing Design - Late MT644, 647, 654.....                      |       | 1    | -    | K21637A  | 23017114      |
| 194C   | Support - Center - w/ bushing.....   | R     | 1    | -    | 21940    | 23018593      |
| 195B   | Pump Support:  |       |      |      |          |               |
|  | - Early - MT643,653.....   | R     | 1    | -    | 21871    | 29515355      |
|  | - Early - MT644,654 - (Mates w/ Ref. #23046638 Body & Gears).....              | R     | 1    | -    | 21872    | 23015872      |
|  | - Late - MT643,653 - (Mates w/1" Pump Body Gear).....                          | R     | 1    | -    | 21751    | 23016751      |
|  | - Late - MT644,654 - (Mates w/1" Pump Body Gear).....                          | R     | 1    | -    | 21763    | 23016763      |
| 196C   | Piston - Center Support - 2nd/3rd Clutch.....                                  | R     | 2    | -    | 21942    | 6834230       |
| 197B   | Kit - Front Pump Gears:  |       |      |      |          |               |
|  | - exc. 644/654 - Standard. O.D. - .6835 - .6845.....                           |       | 1    | -    | K21201   | N.L.          |
|  | - 644/654 - Standard. O.D. - .8185 - .8190 .....                               |       | 1    | -    | K21201C  | N.L.          |
|  | - 647 - Standard. O.D. - 1.00 Gears.....                                       |       | 1    | -    | K21201D  | N.L.          |
| 198B   | Driven Gear Only:  |       |      |      |          |               |
|  | - exc. 644/654 - Standard O.D. - .6835 .....                                   |       | 1    | -    | 21201-2  | N.L.          |
|  | - exc. 644/654 - .060 Oversize O.D. - .6835 .....                              |       | 1    | -    | 21201-4  | N.L.          |
|  | - 644/654 - Standard O.D. - .8185 .....  |       | 1    | -    | 21201-7  | N.L.          |
|  | - 644/654 - .060 Oversize O.D. - .8185 .....                                   |       | 1    | -    | 21201-9  | N.L.          |
|  | - 647 - Standard O.D. - 1.00 .....   |       | 1    | -    | 21201-11 | N.L.          |
|  | - 647 - .060 Oversize O.D. - 1.00 .....  |       | 1    | -    | 21201-13 | N.L.          |
| 199B   | Drive Gear Only:   |       |      |      |          |               |
|  | - exc. 644/654 - Standard O.D. - .6835 .....                                   |       | 1    | -    | 21201-1  | N.L.          |
|  | - exc. 644/654 - .060 Oversize O.D. - .6835 .....                              |       | 1    | -    | 21201-3  | N.L.          |
|  | - 644/654 - Standard O.D. - .8185 .....  |       | 1    | -    | 21201-6  | N.L.          |
|  | - 644/654 - .060 Oversize O.D. - .8185 .....                                   |       | 1    | -    | 21201-8  | N.L.          |
|  | - 647 - Standard O.D. - 1.00 .....   |       | 1    | -    | 21201-10 | N.L.          |
|  | - 647 - .060 Oversize O.D. - 1.00 .....  |       | 1    | -    | 21201-12 | N.L.          |

AT640

# ALLISON

## MT/B 640, 643, 644, 647, 650, 653, 654

To Get The Correct Parts, You Must Provide The Assembly Number Found On The Transmisson Name Plate.

| ILL.                      | DESCRIPTION  | BRAND | QTY. | YEAR | PART NO.       | REFERENCE NO. |
|---------------------------|--|-------|------|------|----------------|---------------|
| <b>HARD PARTS (Cont.)</b> |  |       |      |      |                |               |
| 200E                      | Ring Gear Hub - (Hardened) - MT653.....                              |       | 1    | -    | <b>21325</b>   | 29506325      |
| 202E                      | Ring Gear - 1st Clutch - MT653.....                                  |       | 1    | -    | <b>21568</b>   | 6835568       |
| 204B                      | Ground Sleeve - Finished I.D. Bearing Installed:                     |       |      |      |                |               |
|                           | - 640, 650 Early Style - Silver Single Spline w/o Step.....          |       | 1    | -    | <b>21202</b>   | 23014527      |
|                           | - 640/650 Late Style - Silver Single Spline w/ Step.....             |       | 1    | -    | <b>21202A</b>  | 23040476      |
|                           | - 644, 654 Early Style - Silver Dual Spline w/o Step .....(23014306) |       | 1    | -    | <b>21203</b>   | 29507674      |
|                           | - 644/654 Late Style - Black Dual Spline w/ Step.....                |       | 1    | -    | <b>21203A</b>  | 29507673      |
| 206B                      | Roller Bearing - Front Pump (Ina Brand).....(9438017)                |       | 1    | -    | <b>21223A</b>  | 29503987      |
| 206B                      | Roller Bearing - Front Pump (Torrington Brand).....(9438017)         |       | 1    | -    | <b>21223</b>   | 29503987      |
| 208B                      | Turbine Shaft.....   |       | 1    | -    | <b>21785</b>   | 23012785      |
| 208B                      | Turbine Shaft - 654.....   |       | 1    | -    | <b>21785B</b>  | 23019222      |
| 209B                      | Housing - Forward - w/o Shaft - MT643, 653.....                      | R     | 1    | -    | <b>21172</b>   | 23017172      |
| 210B                      | Hub - Forward Clutch - exc. 644, 654.....                            |       | 1    | -    | <b>21222</b>   | 6834222       |
| 212B                      | Hub - Fourth Clutch Driving - exc. 644, 654.....                     |       | 1    | -    | <b>21221</b>   | 6834221       |
|                           | Hub - Fourth Clutch Driving - 644, 654.....                          |       | 1    | -    | <b>21221B</b>  | 23017267      |
| 214C                      | Lock Nut - Third Clutch Spring Retainer - Push On.....               |       | 4    | -    | <b>11213</b>   | 3909063       |
| 216C                      | Lock Nut - Second Clutch Spring Retainer - Push On.....              |       | 4    | -    | <b>11213</b>   | 3909063       |
| 218D                      | Front Carrier Replacement Housing w/6 Pins.....                      |       | 1    | -    | <b>RH21565</b> | 6882564       |
| 220D                      | Rear Carrier - MT653.....  | R     | 1    | -    | <b>21642</b>   | 6835642       |
| 222D                      | Sun Gear - Center w/Bushings Installed.....                          |       | 1    | -    | <b>21606</b>   | 29516215      |
| 224D                      | Sun Gear - Rear.....   |       | 1    | -    | <b>21901</b>   | 6883901       |
| 226D                      | Pin - Front Planetary.....   |       | 6    | -    | <b>11215</b>   | 6834309       |
| 228D                      | Needle Roller - Front Planetary.....                                 |       | 120  | -    | <b>11919</b>   | 9426919       |
| 230D                      | Kit - Front Planetary Repair.....                                    |       | 1    | -    | <b>K21215</b>  | N.L.          |
| 232D                      | Pin - Center Planetary.....  |       | 4    | -    | <b>21216</b>   | 6835567       |
| 234D                      | Needle Roller - Center Planetary.....                                |       | 72   | -    | <b>21920</b>   | 6834915       |
| 236D                      | Kit - Center Planetary Repair.....                                   |       | 1    | -    | <b>K21216</b>  | N.L.          |
| 238D                      | Main Shaft - 643, 653.....   |       | 1    | -    | <b>21456</b>   | 23013456      |
| 238D                      | Main Shaft - 644/654.....  |       | 1    | -    | <b>21456B</b>  | 23017699      |
| 240A                      | Piston - L/U - 640, 650.....   |       | 1    | -    | <b>21845</b>   | 6770845       |
| 242D                      | Spiral Ring - Rear Sun Gear To Planetary.....                        |       | 1    | -    | <b>21224</b>   | 6834583       |
| 244D                      | Pin - Rear Planetary.....  |       | 4    | -    | <b>21216</b>   | 6835567       |
| 246D                      | Needle Roller - Rear Planetary.....                                  |       | 72   | -    | <b>21920</b>   | 6834915       |
| 248D                      | Kit - Rear Planetary Repair.....                                     |       | 1    | -    | <b>K21216</b>  | N.L.          |
| 250D                      | Roller Bearing - Output Shaft - 640, 643.....                        |       | 1    | -    | <b>21219</b>   | 9418483       |
| 253F                      | Bolt - Case To Center Support - Anchor 2-1/4".....                   |       | 1    | -    | <b>21220</b>   | 23013398      |
| 253F                      | Bolt - Case To Center Support - Anchor 3".....                       |       | 1    | -    | <b>31220</b>   | 23045343      |
| 255F                      | Manual Selector Shaft Kit.....                                       |       | 1    | -    | <b>K11235</b>  | 23017610      |
| 257F                      | Tube - Oil Filter - Updates Prior To S/N 58071.....                  |       | 1    | -    | <b>21225</b>   | 6883045       |
| 259E                      | Pin - Low Planetary - exc. 644, 654.....                             |       | 6    | -    | <b>11216</b>   | 6831679       |
|                           | Pin - Low Planetary - 644, 654.....                                  |       | 4    | -    | <b>21211A</b>  | 6880019       |
| 261E                      | Needle Roller - Low Planetary - exc. 644, 654.....                   |       | 114  | -    | <b>11920</b>   | 9426920       |
|                           | Needle Roller - Low Planetary - 644, 654.....                        |       | 124  | -    | <b>21920</b>   | 6834915       |
| 263E                      | Kit - Low Planetary Repair - exc. 644, 654.....                      |       | 1    | -    | <b>K21217</b>  | N.L.          |
|                           | Kit - Low Planetary Repair - 644, 654.....                           |       | 1    | -    | <b>K21211A</b> | N.L.          |
| 265F                      | Bolt - Output Flange.....(23014159)                                  |       | 1    | -    | <b>11222</b>   | 29510838      |
| 267F                      | Nut - Self-lock Hex - Rear Output Shaft.....                         |       | 1    | -    | <b>21956</b>   | 6771144       |
| 270F                      | Governor:  |       |      |      |                |               |
|                           | - I.D. No. 461.....  |       | 1    | -    | <b>11410A</b>  | 6885570       |
|                           | - I.D. No. 462.....  |       | 1    | -    | <b>11410B</b>  | 6885571       |
|                           | - I.D. No. 463.....  |       | 1    | -    | <b>21410</b>   | 6885572       |
|                           | - I.D. No. 465.....  |       | 1    | -    | <b>21410A</b>  | 6881471       |
|                           | - I.D. No. 738.....  |       | 1    | -    | <b>21410B</b>  | 6882737       |
|                           | - I.D. No. 739.....  |       | 1    | -    | <b>21410C</b>  | 6882736       |

# ALLISON

## MT/B 640, 643, 644, 647, 650, 653, 654

To Get The Correct Parts, You Must Provide The Assembly Number Found On The Transmisson Name Plate.

| ILL.                      | DESCRIPTION  | BRAND | QTY. | YEAR | PART NO.         | REFERENCE NO. |
|---------------------------|--|-------|------|------|------------------|---------------|
| <b>HARD PARTS (Cont.)</b> |  |       |      |      |                  |               |
| 272A                      | Converter Cover..... (23046294)                                    | R     | 1    | -    | <b>21294</b>     | 29524116      |
| 277A                      | Converter/Pump Assembly - (Impeller) - MT643, 653:                 |       |      |      |                  |               |
|                           | - Ratio TC350 .....  | R     | 1    | -    | <b>21596</b>     | 23018596      |
|                           | - Ratio TC360 .....  | R     | 1    | -    | <b>21594</b>     | 23018594      |
|                           | - Ratio TC370 .....  | R     | 1    | -    | <b>21598</b>     | 23018598      |
| 280C                      | Housing - 4th Clutch - MT643, 653 .....                            | R     | 1    | -    | <b>21825</b>     | 23011825      |
| 280C                      | Housing - 4th Clutch - MT644, 654 .....                            | R     | 1    | -    | <b>21257</b>     | 23017257      |
| 282D                      | Gears - Pinion - Center/Rear - MT643, 653 - (4 Per Set) .....      |       | 1    | -    | <b>21804</b>     | 6882804       |
| 285F                      | Main Case.....   |       | 1    | -    | <b>650M-CASE</b> | 23011779      |
| 287A                      | Bolt - Torque Converter Hub .....                                  |       | 1    | -    | <b>96-178</b>    | 23014542      |
| 290E                      | Tube & Dip Stick Assembly - Universal .....                        |       | 1    | -    | <b>11999U</b>    | N.L.          |
| N.I.                      | Carrier Replacement Pins .....                                     |       | 6    | -    | <b>565P</b>      | N.L.          |
| N.I.                      | Drain Plug - Oil Pan .....   |       | 1    | -    | <b>DP-789</b>    | N.L.          |
| N.I.                      | Kit - Governor Gear - Exc. Bronze .....                            |       | 1    | -    | <b>K34411A</b>   | 6883938       |
| N.I.                      | Pan Bolt.....  |       | 21   | -    | <b>96-175A</b>   | 29500738      |
| N.I.                      | Reverse Signal Switch - Backup Light.....                          |       | 1    | -    | <b>11610</b>     | 29503665      |
| N.I.                      | Sleeve - Front Pump - Support - MT640 .....                        |       | 1    | -    | <b>21870</b>     | 23045870      |
| N.I.                      | Support Repair Sleeve - Center - MT643 .....                       |       | 1    | -    | <b>DF593B</b>    | N.L.          |
| N.I.                      | Spring & Roller Kit, Converter Stator - 10 Springs & Rollers ..... |       | 1    | -    | <b>K11250</b>    | 6775657       |

### MISCELLANEOUS PRODUCTS

|      |                                    |  |   |  |            |     |
|------|------------------------------------|--|---|--|------------|-----|
| N.I. | Plug-Cooling Line Ports MT600..... |  | 2 |  | <b>PL3</b> | N.I |
| N.I. | Plug-Oil Pan Fill Tube MT600.....  |  | 1 |  | <b>PL4</b> | N.I |

### NOTES

**TIP** Use this chart to identify front support and charging pump applications for MT600 Series Allison Transmissions:

|                              | <b>MT640, 643,650, 653</b> | <b>MT644, 647, 654</b>     |
|------------------------------|----------------------------|----------------------------|
| Front Support, Early Models: | <b>29515355</b> (23015871) | <b>23015872</b> (23015872) |
| Front Support, Late Models:  | <b>29514491</b> (23016751) | <b>23016763</b> (23016763) |
| Pump Assembly, Early Models: | <b>29527499</b> (23046636) | <b>29527509</b> (23046638) |
| Pump Assembly, Late Models:  | <b>29527490</b> (23016889) | <b>29527481</b> (23017114) |

**NOTE:** To correctly identify which application YOUR transmission requires, the assembly number on each unit must be provided. The old numbers are in parenthesis, the new ones are in bold.

AT640