NOTE: Type 4 EPC-style valve body is shown. Parts will fit in the same locations in a throttle cable-style and Type 3 EPC-style valve body except where noted.

CAUTION! Note the location of OE checkballs during disassembly! Usage of checkballs vary greatly!

CAUTION: If replacing an OE sleeve with NO dot or three dots, use Sonnax EPC valve with flat on large spool diameter.

If replacing an OE sleeve with two dots, use Sonnax EPC valve with flat on small spool diameter.

Discard the Sonnax EPC valve that is not used.

NOTE: Detailed instructions are included on page 8 of installation and testing booklet.

In addition to general rebuilding tips and technical information, the technical booklet included in this kit contains vacuum testing and additional repair options for higher mileage units or for repairing specific complaints which are beyond the scope of this kit.
## Kit Contents & Installation Steps

### Step 1 Replace OE End Plugs Secondary Regulator Valve, Reverse Control Valve* *(Type 4 Valve Body Only)*

**Packaging Pocket 1**
- End Plugs, Large (2)
- O-Rings (4) 2 extra

### Step 2 Replace OE End Plugs 1-2, 2-3 & 3-4 Shift Valves

**Packaging Pocket 2**
- End Plugs, Medium (3)
- O-Rings (5) 2 extra

### Step 3 Replace OE End Plug 2nd Coast Modulator Valve

**Packaging Pocket 3**
- End Plug, Small
- O-Rings (2) 1 extra

### Step 4 Replace OE End Plug Accumulator Control Valve

**Packaging Pocket 4**
- End Plug, Extra Large
- O-Rings (2) 1 extra

### Step 5 Replace OE Lockup Assembly

**Packaging Pocket 5**
- Valve
- Sleeve

### Step 6 Select Correct Replacement EPC Boost Valve

- EPC Boost Valve Flat on Large Spool Dia. (for no/three ID dots)
- EPC Boost Valve Flat on Small Spool Dia. (for two ID dots)

**Packaging Pocket 6**
- EPC Boost Valve Flat on Large Spool Dia. (for no/three ID dots)
- EPC Boost Valve Flat on Small Spool Dia. (for two ID dots)

---

### Step 7 Assemble Boost Assembly

Place small reverse valve into sleeve. Place selected EPC boost valve from step 6 into sleeve, smaller diameter first. Place cutback boost valve into sleeve with longer stem facing outboard.

**Packaging Pocket 7**
- Boost Sleeve
- Reverse Boost Valve
- Cutback Boost Valve

### Step 8 Pressure Regulator Valve Shims

Look at the end of OE boost sleeve for the number of identification dots. If replacing an OE sleeve with two or three dots, do NOT add shim. If replacing an OE sleeve with no dots, add both shims. Shims should be added, if used, between the OE washer and pressure regulator valve. (See page 8 of installation and testing booklet for more details.)

**Packaging Pocket 8**
- Shim, .015" thick
- Shim, .032" thick

### Step 9 Replace OE Large Checkballs

See checkball caution notes on page 1.

**Packaging Pocket 9**
- Checkballs, Large .250” dia. (2)

### Step 10 Replace OE Small Checkballs

See checkball caution notes on page 1.

**Packaging Pocket 10**
- Checkballs, Small .218” dia. (9)

---

**NOTE:** These items also are available separately;

- Steps 1, 2, 3 & 4 Part No. 97741-19K
- Steps 6, 7 & 8 Part No. 97741-01K

The parts listed here may be protected by patent number 8,955,533.
Valve Body Identification

This Zip Kit A340-LATE-ZIP is designed for 2000-later, V6 & V8 applications using Type 3 (valve body casting identification #8935) or Type 4 (valve body casting identification #8938) style valve bodies.

Type 3 (Casting ID #8935) Valve Body

V8 applications, EPC style throttle control only.

Type 4 (Casting ID #8938) Valve Body

V6 or V8 applications, EPC (shown) or throttle cable style throttle control.
Bolt Locations & Torque Specifications

<table>
<thead>
<tr>
<th>Torque Specifications</th>
<th>Type 3 Valve Body to Case Bolts</th>
<th>Type 4 Valve Body to Case Bolts</th>
<th>Type 3 &amp; 4 Oil Pan Filter Bolts</th>
<th>Type 3 &amp; 4 Valve Body Disassembly Bolts</th>
</tr>
</thead>
<tbody>
<tr>
<td>89 in-lbs (10 N.m)</td>
<td>1 Red</td>
<td>23mm</td>
<td>1 Purple</td>
<td>23mm</td>
</tr>
<tr>
<td>Oil Pan Bolt</td>
<td>2 Green</td>
<td>28mm</td>
<td>2 White</td>
<td>28mm</td>
</tr>
<tr>
<td>65 in-lbs (7.3 N.m)</td>
<td>3 Blue</td>
<td>36mm</td>
<td>3 Yellow</td>
<td>36mm</td>
</tr>
<tr>
<td>Solenoid-to-Valve</td>
<td>Torque all to 8 ft-lbs</td>
<td>Torque all to 8 ft-lbs</td>
<td>Torque to 7 ft-lbs</td>
<td>Torque to 57 in-lbs</td>
</tr>
<tr>
<td>Body Bolt</td>
<td>89 in-lbs (10 N.m)</td>
<td>89 in-lbs (10 N.m)</td>
<td>89 in-lbs (10 N.m)</td>
<td>89 in-lbs (10 N.m)</td>
</tr>
</tbody>
</table>

Type 3 (Casting ID #8935) Valve Body
V8 applications, EPC style throttle control only.

Type 4 (Casting ID #8938) Valve Body
V6 or V8 applications, EPC (shown) or throttle cable style throttle control.

Type 3, Lower Valve Body, Case Removal - Bolt Locations

Type 4, Lower Valve Body, Case Removal - Bolt Locations

Type 3, Upper Valve Body, Valve Body Disassembly - Bolt Locations

Type 4, Upper Valve Body, Valve Body Disassembly - Bolt Locations
**Clutch & Band Application Chart**

<table>
<thead>
<tr>
<th>Selector Position - Gear</th>
<th>C0</th>
<th>C1</th>
<th>C2</th>
<th>B0</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>F0</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Park</td>
<td>ON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reverse</td>
<td>ON</td>
<td>ON</td>
<td></td>
<td>ON</td>
<td>ON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>ON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-1st Gear</td>
<td>ON</td>
<td>ON</td>
<td></td>
<td>ON</td>
<td>ON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-2nd Gear</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>D-3rd Gear</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>D-Overdrive</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>2-1st Gear</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>2-2nd Gear</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Low-1st Gear</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
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<td>ON</td>
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<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Low-2nd Gear</td>
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<td>ON</td>
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<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
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</tbody>
</table>

**Shift Solenoid Chart**

<table>
<thead>
<tr>
<th>Selector Position - Gear</th>
<th>Shift Solenoid S1</th>
<th>Shift Solenoid S2</th>
</tr>
</thead>
<tbody>
<tr>
<td>D - 1st Gear</td>
<td>ON</td>
<td>Off</td>
</tr>
<tr>
<td>D - 2nd Gear</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>D - 3rd Gear</td>
<td>Off</td>
<td>ON</td>
</tr>
<tr>
<td>D - Overdrive</td>
<td>Off</td>
<td>Off</td>
</tr>
<tr>
<td>2 - 1st Gear</td>
<td>ON</td>
<td>Off</td>
</tr>
<tr>
<td>2 - 2nd Gear</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>2 - 3rd Gear</td>
<td>Off</td>
<td>ON</td>
</tr>
<tr>
<td>Low - 1st Gear</td>
<td>ON</td>
<td>Off</td>
</tr>
<tr>
<td>Low - 2nd Gear</td>
<td>ON</td>
<td>ON</td>
</tr>
</tbody>
</table>

**Solenoid Diagnostic Trouble Chart**

<table>
<thead>
<tr>
<th>DTC</th>
<th>Description</th>
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<tbody>
<tr>
<td>P0750</td>
<td>Shift Solenoid S1 (A)/S2 (B) Malfunction</td>
</tr>
<tr>
<td>P0753</td>
<td>Shift Solenoid S1 (A)/S2 (B) Electrical Malfunction</td>
</tr>
<tr>
<td>P0755</td>
<td>Shift Solenoid S1 (A)/S2 (B) Malfunction</td>
</tr>
<tr>
<td>P0758</td>
<td>Shift Solenoid S1 (A)/S2 (B) Electrical Malfunction</td>
</tr>
<tr>
<td>P0770</td>
<td>Shift Solenoid SL (E) Malfunction</td>
</tr>
<tr>
<td>P0773</td>
<td>Shift Solenoid SL (E) Electrical Malfunction</td>
</tr>
</tbody>
</table>

**Solenoid Malfunctioning Shift Strategies**

To test shift solenoids S1 (A), S2 (B) or SL (E) for sticking, force 71 psi of compressed air into the snout (Figure 13, arrow); it should not leak. Energizing the solenoids should cause them to open and allow air flow. Resistance on these three shift solenoids should be 11–15 ohm at 68°F, and resistance on the SLT solenoid should be 5.0–5.6 ohm at 68°F.

Some valve bodies have an accumulator piston assembly (Figure 14) that can be mistaken for a solenoid. This is actually an accumulator for lockup and should be checked to ensure the piston can move freely.
Critical Wear Areas & Vacuum Test Locations

NOTE: OE valves are shown in rest position and should be tested in rest position unless otherwise indicated. Test locations are pointed to with an arrow. Springs are not shown for visual clarity. Low vacuum reading indicates wear and Sonnax parts noted for replacement.

Upper Valve Body • Type 3, EPC Style Shown Here

1. Primary Regulator Valve
   - Low line pressure
   - High line pressure
   - Poor shift quality
   - Low lube oil flow
   - Burnt clutches
   Replace with Sonnax Part No.
   97741-06K EPC valve spool .428” dia.; replaces OE 2-dot boost sleeve
   97741-10K EPC valve spool .353” dia.; replaces OE 3-dot or no-dot boost sleeve
   97741-06K & 97741-10K: Requires F-97741-TL6 & VB-FIX

2. Boost Assembly
   - Delayed Forward or Reverse
   - Soft shifts
   - Low pressure
   Replace with Sonnax Part No.
   97741-01K*

3. TCC Control Valve & Plunger Assembly
   - TCC apply & release concerns
   - TCC codes
   - Overheated fluid
   - Burnt converter
   Replace with Sonnax Part No.
   19741-01K

4. Secondary Regulator Valve
   - TCC apply & release concerns
   - Burnt TCC apply components
   - Overheated transmission
   - Bushing wear
   Replace with Sonnax Part No.
   97741-18K requires F-39741-TL18 & VB-FIX

5. Lockup Relay Valve & Plunger Assembly
   - TCC apply & release concerns
   - TCC codes
   - RPM fluctuation
   - Inadequate lubrication
   - Bushing failure
   - Overheated fluid
   Replace with Sonnax Part No.
   77741-02K* Lockup Relay Control Valve Kit
   97741-20K Oversized Lockup Relay Valve Kit
   97741-20K: Requires F-97741-TL20 & VB-FIX

6. Secondary Modulator Valve
   - Shift concerns
   - Solenoid codes

Lower Valve Body • Type 3, EPC Style Shown Here

*Part numbers with an asterisk (*) are included in this Zip Kit.
For specific vacuum test information, refer to individual part instructions included in kits and available at www.sonnax.com.

7. Accumulator Control Valve
   • Shift concerns
   • Solenoid codes
   • Loss of throttle/line pressure

8. Cutback Valve
   • No kickdown
   • Loss of throttle pressure

9. Low Coast Modulator Valve
   • Burnt 1st/Reverse brake (B3)
   • Loss of manual low

10. 2nd Coast Modulator Valve
    • Burnt 2nd brake (B2)
    • Loss of manual 2nd

11. 3–4 Shift Valve
    3–4 Concerns

12. 2–3 Shift Valve
    2–3 Concerns

13. 1–2 Shift Valve
    1–2 Concerns

14. Reverse Control Valve
    • Delayed Reverse
    • No Reverse

15. End Plugs
    • Soft shifts
    • Low line rise
    • Slips & flares

Replace with Sonnax Part No. 97741-19K*

NOTE: Several Locations = ★

Upper Valve Body • Type 4, EPC Style Shown Here

Lower Valve Body • Type 4, EPC Style Shown Here
NOTE: Depending upon vehicle application, the OE springs shown may not be present.

Checkball Cautions & Notes

- Care should be taken during disassembly. Note location of checkballs as usage varies greatly!
- When determining when a checkball is required, the circuit orifice in the separator plate over that location will be about .090" dia. When no ball is required, the orifice will be about .150" dia.
- All checkballs are .218" dia. except where noted (.250" dia.).

Upper Valve Body Descriptions

<table>
<thead>
<tr>
<th>I.D. No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Lockup Relay Valve &amp; Plunger Assembly</td>
</tr>
<tr>
<td>102</td>
<td>3–4 Shift Valve</td>
</tr>
<tr>
<td>103</td>
<td>2nd Coast Modulator Valve</td>
</tr>
<tr>
<td>104</td>
<td>Low Coast Modulator Valve</td>
</tr>
<tr>
<td>105</td>
<td>2–3 Shift Valve</td>
</tr>
<tr>
<td>106</td>
<td>Secondary Regulator Valve</td>
</tr>
</tbody>
</table>

Lower Valve Body Descriptions

<table>
<thead>
<tr>
<th>I.D. No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Accumulator Control Valve</td>
</tr>
<tr>
<td>202</td>
<td>Secondary Modulator Valve</td>
</tr>
<tr>
<td>203</td>
<td>Cutback Valve</td>
</tr>
<tr>
<td>204</td>
<td>Primary Regulator Valve &amp; Boost Assembly</td>
</tr>
<tr>
<td>205</td>
<td>Converter Limit Valve</td>
</tr>
<tr>
<td>206</td>
<td>Manual Valve</td>
</tr>
<tr>
<td>207</td>
<td>1–2 Shift Valve</td>
</tr>
</tbody>
</table>
Upper & Lower Valve Body • Type 4, EPC Style Shown Here

NOTES: Depending upon vehicle application, the OE springs shown may not be present. Slight wormtrack difference and valve components will vary in throttle cable style valve bodies.

Upper Valve Body Descriptions

<table>
<thead>
<tr>
<th>I.D. No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Lockup Relay Valve &amp; Plunger Assembly</td>
</tr>
<tr>
<td>102</td>
<td>3–4 Shift Valve</td>
</tr>
<tr>
<td>103</td>
<td>2nd Coast Modulator Valve</td>
</tr>
<tr>
<td>104*</td>
<td>Check Valve</td>
</tr>
<tr>
<td>105*</td>
<td>Check Valve</td>
</tr>
<tr>
<td>106</td>
<td>Reverse Control Valve</td>
</tr>
<tr>
<td>107</td>
<td>2–3 Shift Valve</td>
</tr>
<tr>
<td>108</td>
<td>Secondary Regulator Valve</td>
</tr>
</tbody>
</table>

*Not in throttle cable style.

Please review Cautions & Notes as well as Filter Note on page 6 as they apply to both Type 3 & Type 4 valve bodies.

Lower Valve Body Descriptions

<table>
<thead>
<tr>
<th>I.D. No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Accumulator Control Valve</td>
</tr>
<tr>
<td>202</td>
<td>Secondary Modulator Valve</td>
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<tr>
<td>203</td>
<td>Cutback Valve</td>
</tr>
<tr>
<td>204**</td>
<td>TCC Control Valve &amp; Plunger Assembly</td>
</tr>
<tr>
<td>205</td>
<td>Primary Regulator Valve &amp; Boost Assembly</td>
</tr>
<tr>
<td>206</td>
<td>Converter Limit Valve</td>
</tr>
<tr>
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<td>Manual Valve</td>
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<td>208</td>
<td>1–2 Shift Valve</td>
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<tr>
<td>209</td>
<td>Low Coast Modulator Valve</td>
</tr>
</tbody>
</table>

**Not in all applications
Detailed Instructions for Steps 6 to 8 from Quick Guide

For Replacing a **No–Dot OE Boost Valve Assembly**

- Add 2 Sonnax Shims Under OE Washer
- Choose Sonnax EPC Boost Valve with Flat on Large Diameter

For Replacing a **2–Dot OE Boost Valve Assembly**

- Do NOT add Sonnax Shims Here
- Choose Sonnax EPC Boost Valve with Flat on Small Diameter

For Replacing a **3–Dot OE Boost Valve Assembly**

- Do NOT add Sonnax Shims Here
- Choose Sonnax EPC Boost Valve with Flat on Large Diameter