STREET SMART

Getting a Better Look at the Toyota A340E Valve Body

by Mike Brown

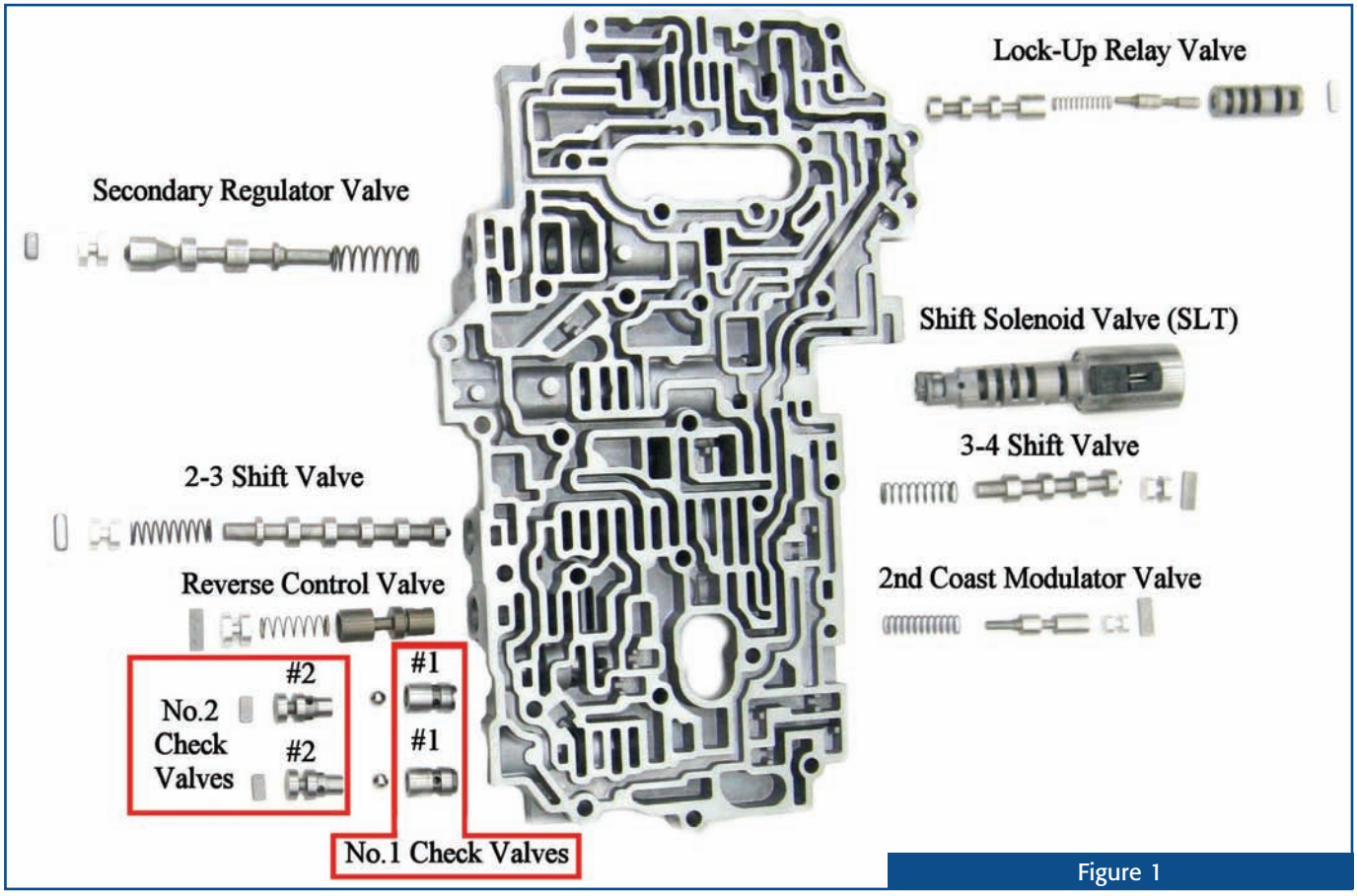

Figure 1

No matter how careful you are, all it takes is one distracting phone call, or even a sudden sneeze: A checkball goes back in the wrong place, or a shift valve gets turned around, and suddenly you find yourself in the middle of a nightmare and you just can't wake up.

What's the big deal? You open your shop manual, and find the correct configuration, right? Only there aren't any repair manuals that offer the exploded view for this valve body. Even the checkball locations can cause you trouble: I've run into five different checkball configurations for this valve body, which we've collected and published in ATRA tech bulletin 870.

Well now it's time to do the same for the valve configuration. In this issue of *Street Smart,* we're going to look at each valve lineup and go over some important do's and don'ts when servicing this valve body.

The major changes to the A340E valve body took place in 2000, with the introduction of Toyota's V8. One of the changes was the use of a pressure control solenoid. The V6 and 4-cylinder models still use a TV cable.

The valve body that we'll look at is from a 2001 Toyota Tundra with a 4.7 engine. We'll identify the valve, and list the order to assemble the valves and springs in the bore.

Upper Valve Body (figure 1)

Starting at the top left and working down:

- Secondary Regulator Valve — spring, valve, end plug, and keeper
- 2-3 Shift Valve — 2-3 shift valve, spring, end plug, and keeper

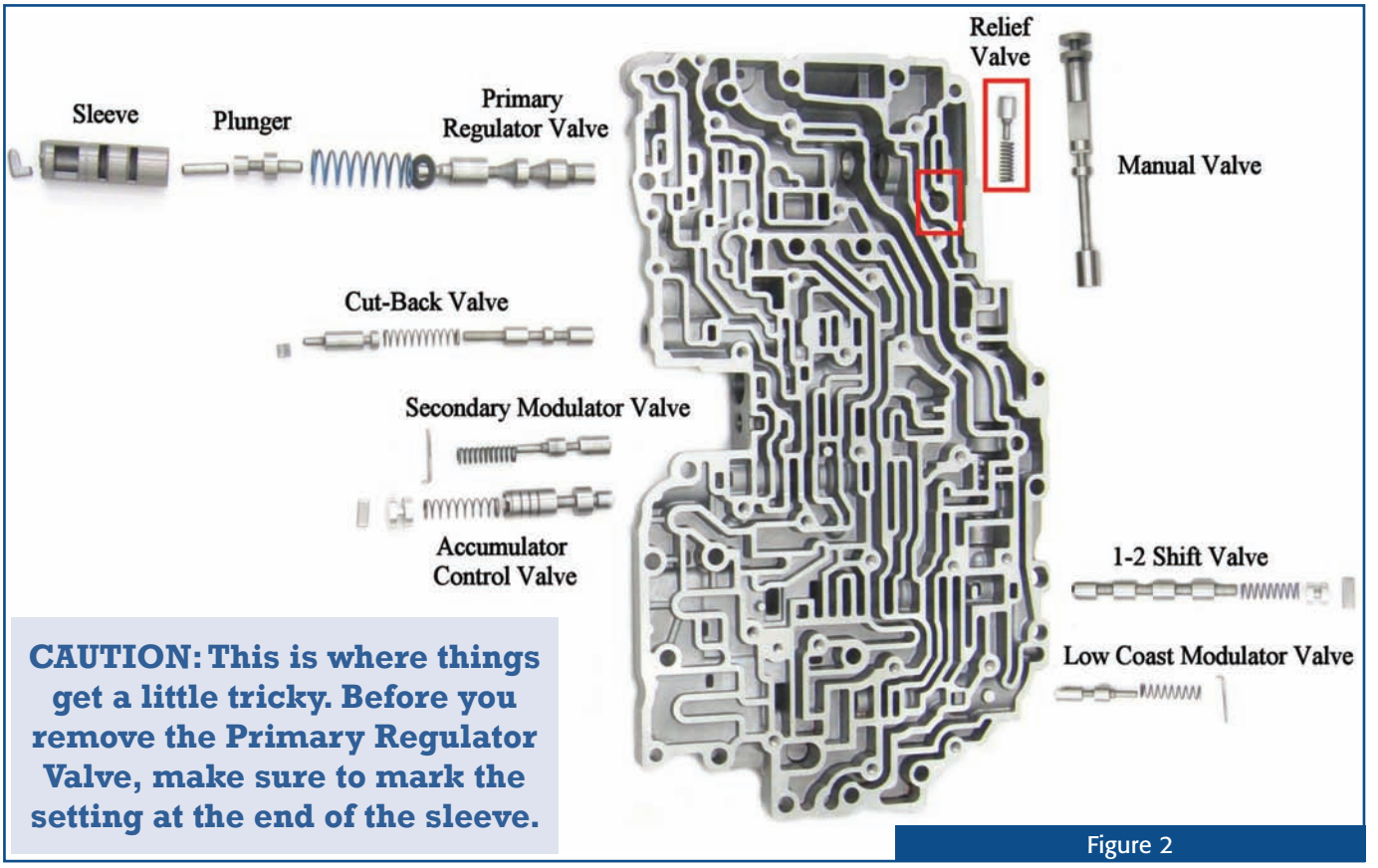

Figure 2

- Reverse Control Valve — reverse control valve, spring, end plug, and keeper
- Check Valves 1 and 2 — check valve 1, ball, check valve 2, and keeper
- Check Valves 1 and 2 — check valve 1, ball, check valve 2, and keeper

Note 1: The ball shuttles back and forth between check valves 1 and 2.

Note 2: Yes, we know numbers 4 and 5 have the same names; we didn't name them.

Now the right side, starting from the top.

- Lockup Relay Valve — lockup relay valve, spring, install the plunger into sleeve and then the sleeve into valve body, and keeper.
- Shift Solenoid Valve (SLT) also known as the pressure control solenoid
- 3-4 Shift Valve — spring, 3-4 shift valve, end plug, and keeper

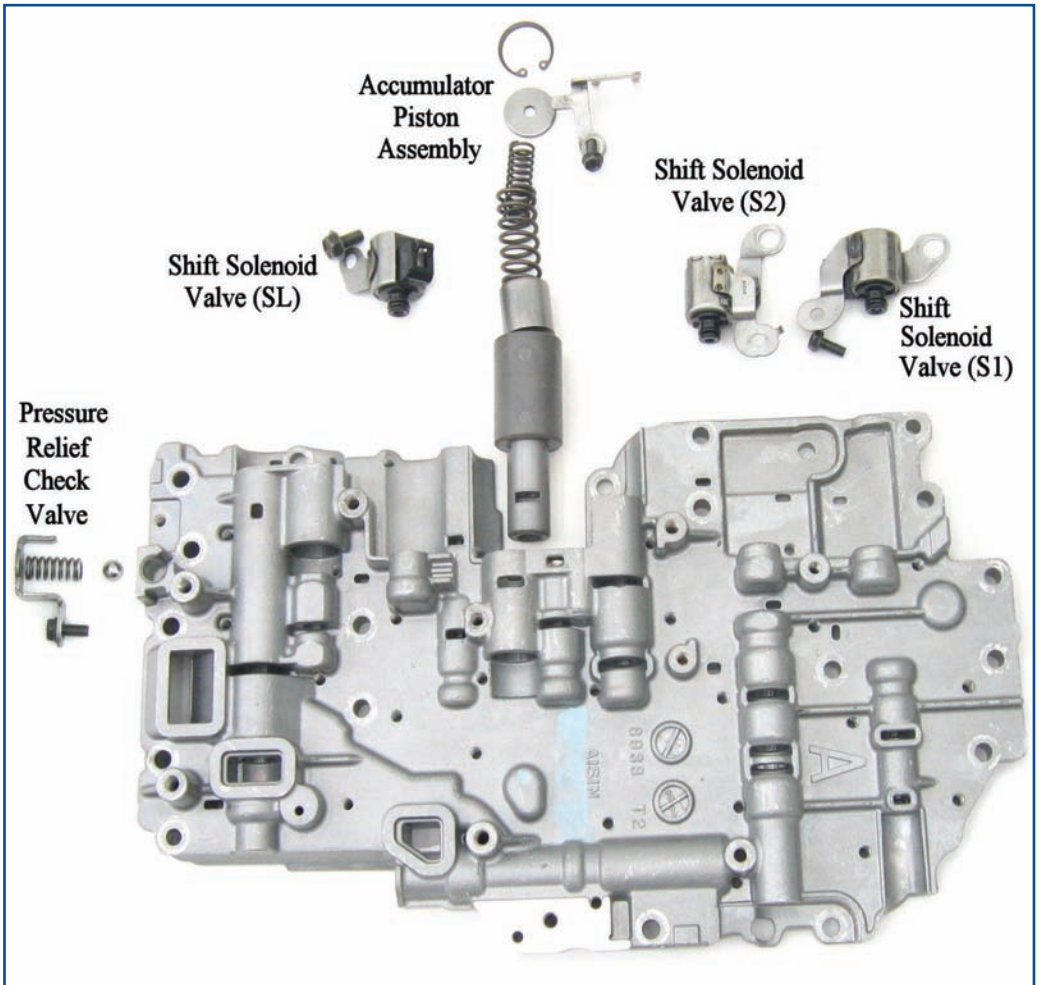

Figure 3

Never install the oil strainers directly into the valve body! During assembly, always install the strainers into the separator plate. The strainers have a lip on one side; this lip should snap into the separator plate.

- 2nd Coast Modulator Valve — spring, 2nd coast modulator valve, end plug, and keeper

Now we're halfway through the valve body. Just by knowing how the springs and valves go makes it a whole lot easier to work with this valve body.

Lower Valve Body (figure 2)

CAUTION: This is where things get a little tricky. Before you remove the Primary Regulator Valve, make sure to mark the setting at the end of the sleeve. There are no factory settings for this valve; it's model-dependent, and will vary from vehicle to vehicle.

Starting at top left and working down:

- Primary Regulator Valve — primary regulator valve, washer, spring, install the two plungers into sleeve and then the sleeve into the valve body, install keeper in place marked.
- Cutback Valve — cutback valve, spring, plug, and keeper
- Secondary Modulator Valve — secondary modulator valve, spring, and keeper
- Accumulator Control Valve — accumulator control valve, spring, plug, and keeper

Now to the right, once again starting at the top:

- Relief Valve and Spring — spring then valve
- 1-2 Shift Valve — 1-2 shift valve, spring, plug and keeper
- Low Coast Modulator Valve — low coast modulator valve, spring, and keeper

Okay that was both halves of the valve body as far as control valves go.

Lower Valve Body Back (figure 3)

Here are the components and installation order for the back of the lower valve body. Going from left to right:

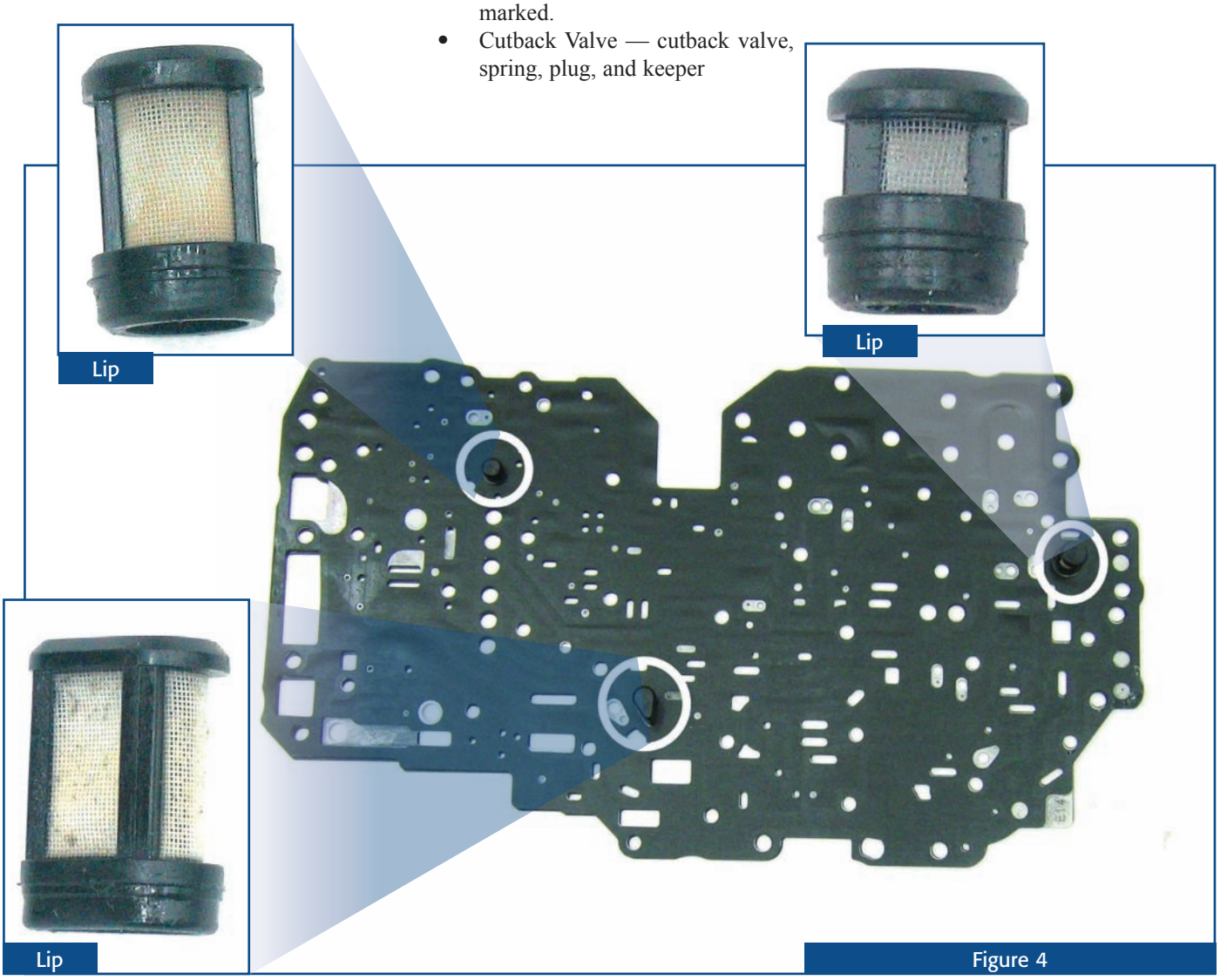

Figure 4

- Pressure Relief Check Valve — ball, spring, and retainer
- Shift Solenoid Valve (SL) / Lockup Solenoid
- Accumulator Piston Assembly — install the accumulator piston into accumulator housing, then the two springs, washer, and snap ring
- Shift Solenoid Valve (S2) / Shift Solenoid 2
- Shift Solenoid Valve (S1) / Shift Solenoid 1

That takes care of identifying all of the solenoids and their locations.

Separator Plate
(figure 4)

The separator plate is where things can go upside-down… literally.

Never install the oil strainers directly into the valve body! During assembly, always install the strainers into the separator plate. The strainers have a lip on one side; this lip should snap into the separator plate.

If you install the strainers upside-down into the valve body channel casting, instead of screening the oil to the solenoids, they'll block off all oil to the solenoids. And you'll end up with no reverse and no upshifts.

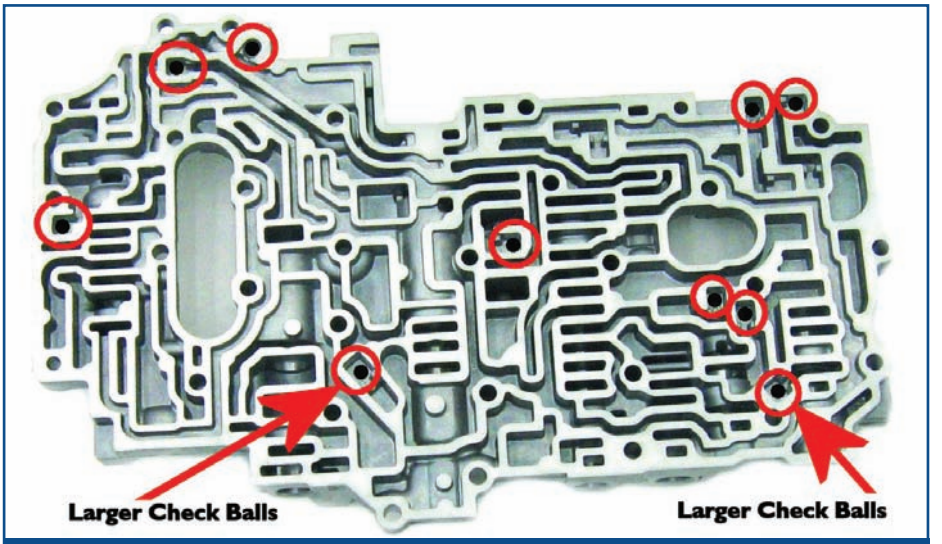

Figure 5

Checkball Locations
(figure 5)

There are two large checkballs in the valve body; they're 6.35 mm (0.250"). The rest of the checkballs are 5.54 mm (0.218").

Refer to ATRA bulletin #870 for more checkball configurations for this transmission.

Once you have the right information, reassembling the valve body is a snap. And that's why having the right information isn't just smart… it's street smart!