

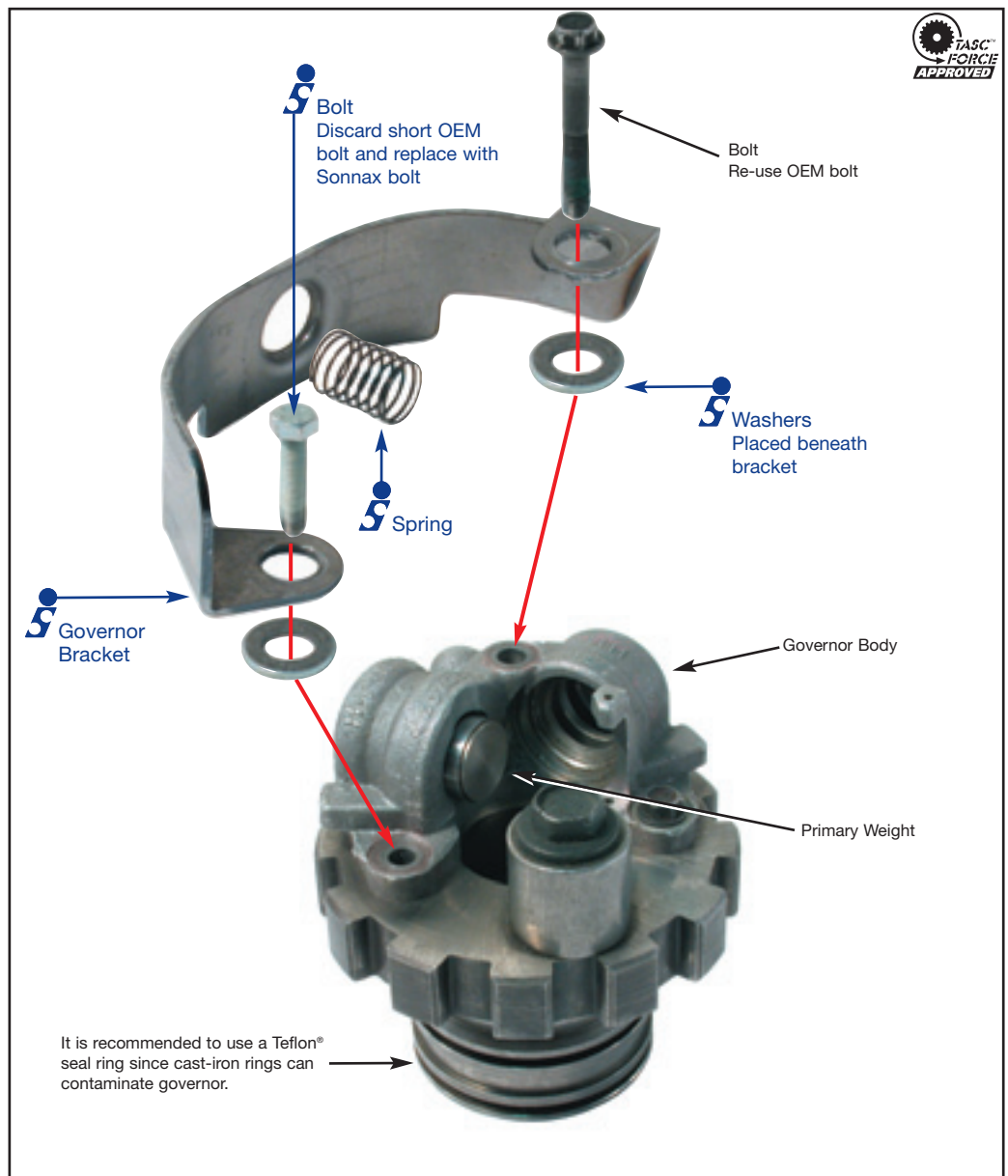
Governor Bracket & Spring Kit

32204-03K

- 1 Governor Bracket
- 1, 9-Coil Light Wire Spring (for 4-Cylinder or Turbo)
- 1, 6-Coil Heavy Wire Spring (for V6)
- 2 Washers
- 1 Bolt

U.S. Patent No. 7,051,750

Note: If weight has a through bore, use the 9-coil light spring, not the heavy spring.



A413, A404, A470, A670

PART NUMBER 32204-03K

**Governor Bracket &
Spring Kit**

MPH Shift Timing vs. Governor Pressure

Note: Chart provided if a change of shift timing is desired.

| Minimum Throttle | 1-2 Upshift | 2-3 Upshift | | |
|-------------------------|-------------------|-----------------------|-------------------|-----------------------|
| 4-Cylinder Applications | Vehicle Speed MPH | Governor Pressure PSI | Vehicle Speed MPH | Governor Pressure PSI |
| OEM (No Spring) | 12-14 | 4-5 | 20-22 | 11-13 |
| 9-Coil Spring | 16-18 | 4-5 | 23-25 | 11-13 |
| *6-Coil Spring | 20-24 | 4-5 | 25-27 | 11-13 |

| Part Throttle | 1-2 Upshift | 2-3 Upshift | | |
|-------------------------|-------------------|-----------------------|-------------------|-----------------------|
| 4-Cylinder Applications | Vehicle Speed MPH | Governor Pressure PSI | Vehicle Speed MPH | Governor Pressure PSI |
| OEM (No Spring) | 15-17 | 9-12 | 24-26 | 13-15 |
| 9-Coil Spring | 20-22 | 9-12 | 26-28 | 13-15 |
| *6-Coil Spring | 26-28 | 9-12 | 32-34 | 15-16 |

| Minimum Throttle | 1-2 Upshift | 2-3 Upshift | | |
|-------------------------|-------------------|-----------------------|-------------------|-----------------------|
| 6-Cylinder Applications | Vehicle Speed MPH | Governor Pressure PSI | Vehicle Speed MPH | Governor Pressure PSI |
| OEM (No Spring) | 8-10 | 4-5 | 16-20 | 11-13 |
| 9-Coil Spring | 10-12 | 4-5 | 18-22 | 11-13 |
| 6-Coil Spring | 12-14 | 4-5 | 20-24 | 11-13 |

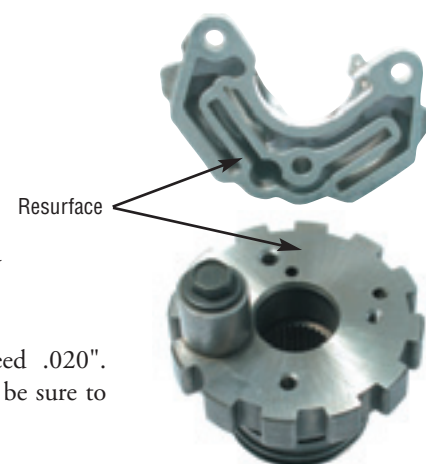
| Part Throttle | 1-2 Upshift | 2-3 Upshift | | |
|-------------------------|-------------------|-----------------------|-------------------|-----------------------|
| 6-Cylinder Applications | Vehicle Speed MPH | Governor Pressure PSI | Vehicle Speed MPH | Governor Pressure PSI |
| OEM (No Spring) | 13-15 | 9-12 | 18-22 | 13-15 |
| 9-Coil Spring | 15-17 | 9-12 | 18-22 | 13-15 |
| 6-Coil Spring | 15-17 | 9-12 | 18-22 | 13-15 |

*6-coil spring is not recommended for standard 4-cylinder applications, but can be used for turbo applications to change shift timing.

1. Averages are affected by engine, governor weight and differential ratios.
2. Throttle pressure adjustments affect above.
3. Governor pressure must drop to -0- at rest and have a minimum of 50 psi over 60 mph.
4. Governor pressure tap above rear pan, lower case.

Pre-Installation Inspection:

1. Resurface the aluminum governor body and the collector with a flat stone or fine paper on a flat surface (see picture at right).
2. Clean the housing, filter and governor components.
3. Inspect the run-out of the sunshell. Run-out on the outer diameter should not exceed .020". If run-out is excessive then the governor bracket may contact the sunshell. After installation, be sure to rotate the differential to ensure bracket does not touch the sunshell or case (see Figure 2).



Pre-Installation Inspection: (continued)

4. Inspect the valve lands; they must be flat and without scoring. Rounded valve lands often cause valve hang-ups.
5. Inspect the body and the weights and replace if worn.

NOTE: If the weight has a through bore, use the 9-coil light wire spring – if not, use the appropriate one depending on engine size. Do not grind flats on the primary weight – this will reduce forward clutch oil and create delayed engagement.

Bench Installation:

1. Use assembly lube to hold the small primary weight in position (see picture on page 1).
2. Place both flat washers on top of the governor body.
3. Place the appropriate Sonnax spring on end of the primary weight (9 coils) 4-cylinder or turbo (6 coils) V6.
4. Place the governor bracket on top of washers.
5. Use Loctite® on the bolt threads.
6. Install the long OEM bolt and finger tighten only.
7. Swing the bracket into position. While holding bracket in position install the Sonnax supplied bolt.
8. Torque the Sonnax bolt first to 60 inch lbs. Then tighten the longer OEM bolt.

Important: After assembly it is extremely important to make sure the spring pocket is centered over the governor weight. Stroke the primary weight away from the shaft, through its complete travel. Verify it does not hang and strokes on center with the hole.

In-Vehicle Installation:

1. Follow steps 1-3 above.
2. Position the bolts through governor body, new bracket and washers. Remember to switch short bolt that goes through bracket with new longer bolt.
3. Use Loctite® on bolt threads.
4. Carefully rotate governor body and bracket into position on governor collector.
5. Torque bolts to 60 inch lbs.
6. **Important:** After assembly, stroke the primary weight away from the shaft, through its complete travel. Verify it does not hang and strokes on center with the hole.

Caution: Do not use sunshells with extreme wear. Run-out at the outer diameter exceeding .020" may cause the governor bracket to contact the shell. Rotate differential to ensure bracket does not touch sunshell or case (see Figure 2).

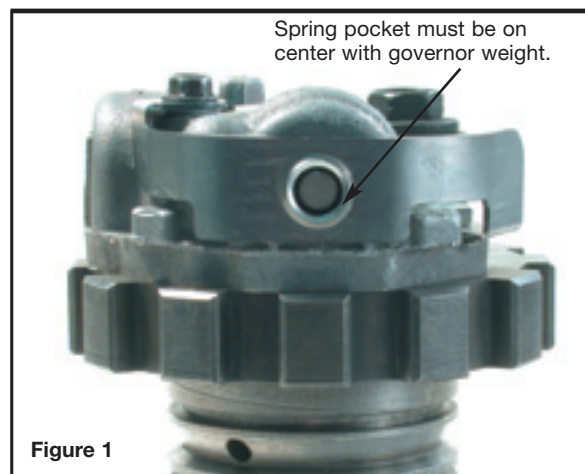


Figure 1

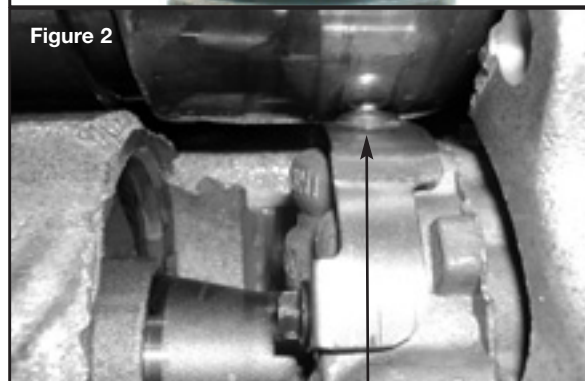


Figure 2
Rotate differential to ensure bracket does not touch sunshell or case at this point.

A413, A404, A470, A670

PART NUMBER 32204-03K

**Governor Bracket &
Spring Kit**

Troubleshooting:

No Upshifts:

- Verify that the governor bracket is centered relative to the governor weight.
- Verify that the governor weight does not hang up throughout its travel.

Late Upshifts:

- Attach pressure gauge to governor pressure tap.
- Compare governor pressure and shift speed to chart on page 2.
- Adjust TV pressure.

Problems related to improper TV adjustment:

- Late upshifts
- Sensitive 2-1/3-2 downshifts
- No forced kickdown
- Shuttle shifting
- Refer to manual for correct TV adjustment