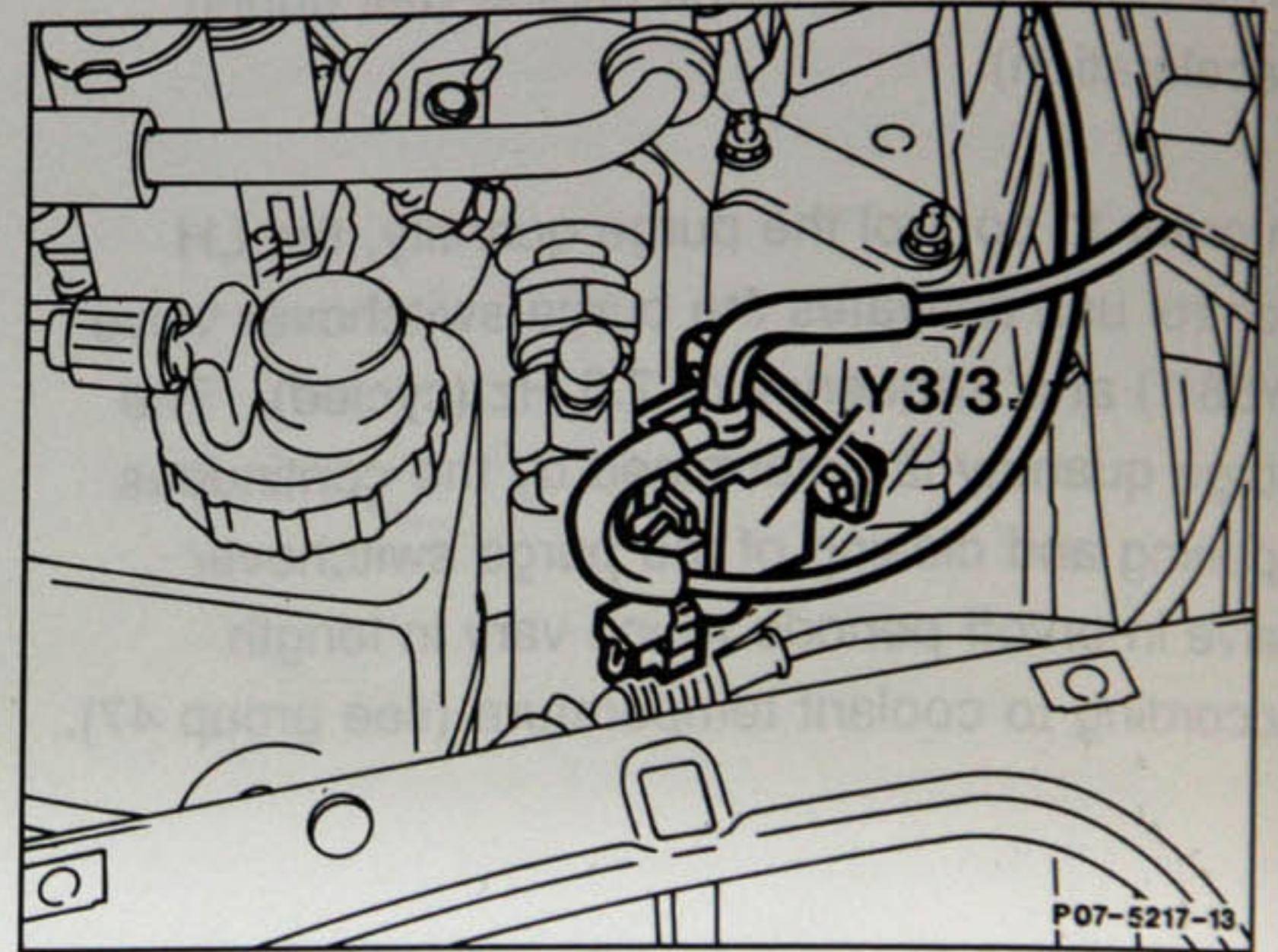


## Transmission 2→3 upshift delay (as known from CIS-E)

In order for the catalyst to reach its operating temperature faster, the no load and partial load 2-3 upshift in the automatic transmission is delayed up to a maximum of 15 seconds after starting the engine at coolant temperatures between 0 °C and 50 °C. Therefore, the upshift takes place at a higher engine rpm. The delayed transmission upshift is controlled by the LH control unit via switchover valve (Y3/3). Vacuum is applied to the control pressure cable vacuum element via upshift delay switchover valve (Y3/3).

For additional information on delayed transmission shift points, refer to Group 27, section: "Upshift delay".



### Modified upshift delay for rapid heating of catalyst (gasoline models only)

The upshift delay previously controlled by a relay (K29) and a solenoid (Y3/2) in the governor pressure circuit has been eliminated. The upshift delay is now actuated pneumatically by means of a switchover valve (Y3/3) and a vacuum element (8) on the control pressure bowden cable. This modifies the bowden cable's influence on the control valve (46) in the valve body.

#### Function

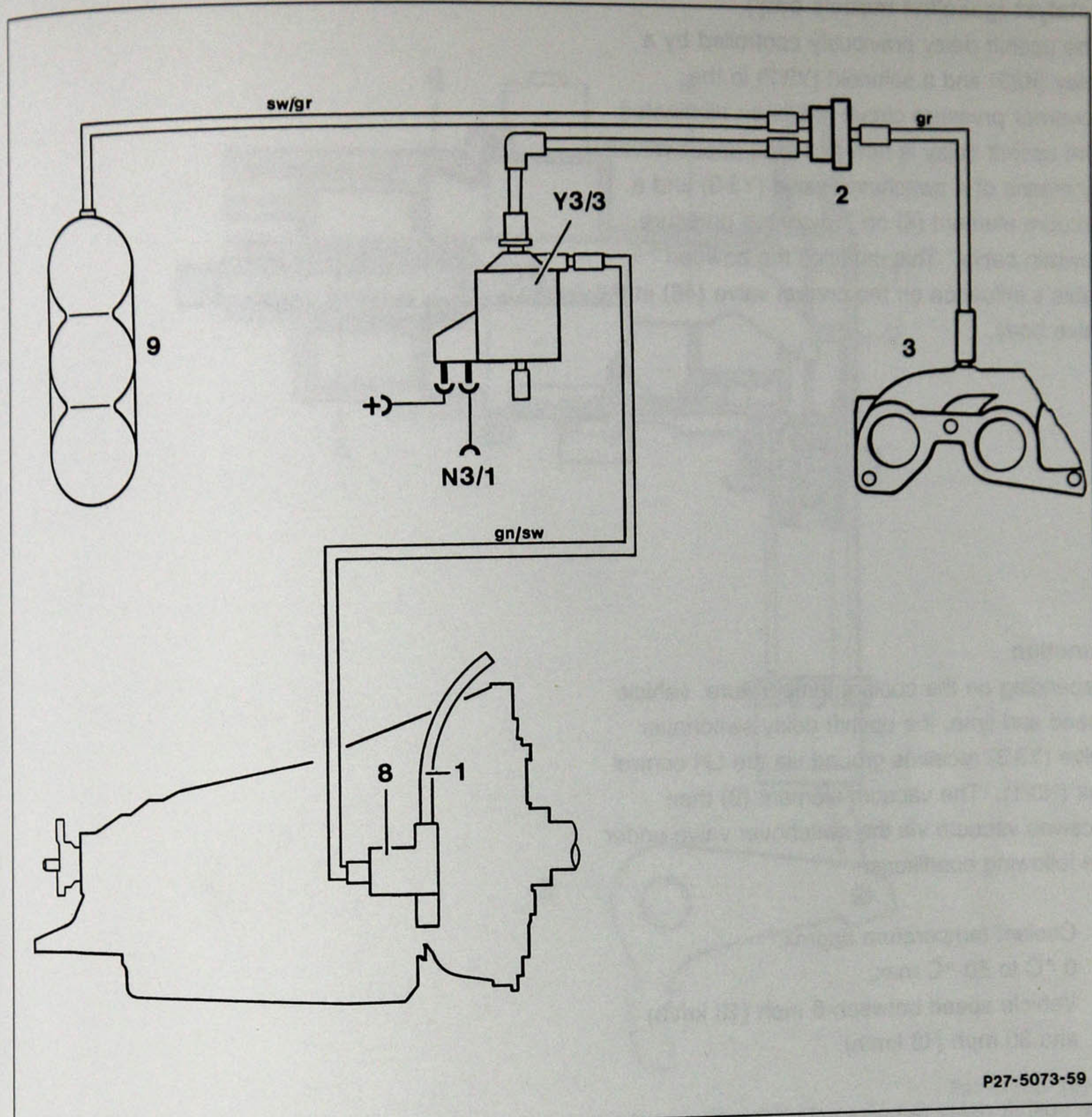
Depending on the coolant temperature, vehicle speed and time, the upshift delay switchover valve (Y3/3) receives ground via the LH control unit (N3/1). The vacuum element (8) then receives vacuum via the switchover valve under the following conditions:

- Coolant temperature approx.  
0 °C to 50 °C max,
- Vehicle speed between 6 mph (10 km/h) and 30 mph (48 km/h).

The upshift delay remains active for maximum of 80 seconds. Under light throttle, the shift point for the 2 – 3 upshift is raised, thereby increasing the engine rpm and the heating the catalyst quicker. The above mentioned values are nominal values and can vary depending on engine version.

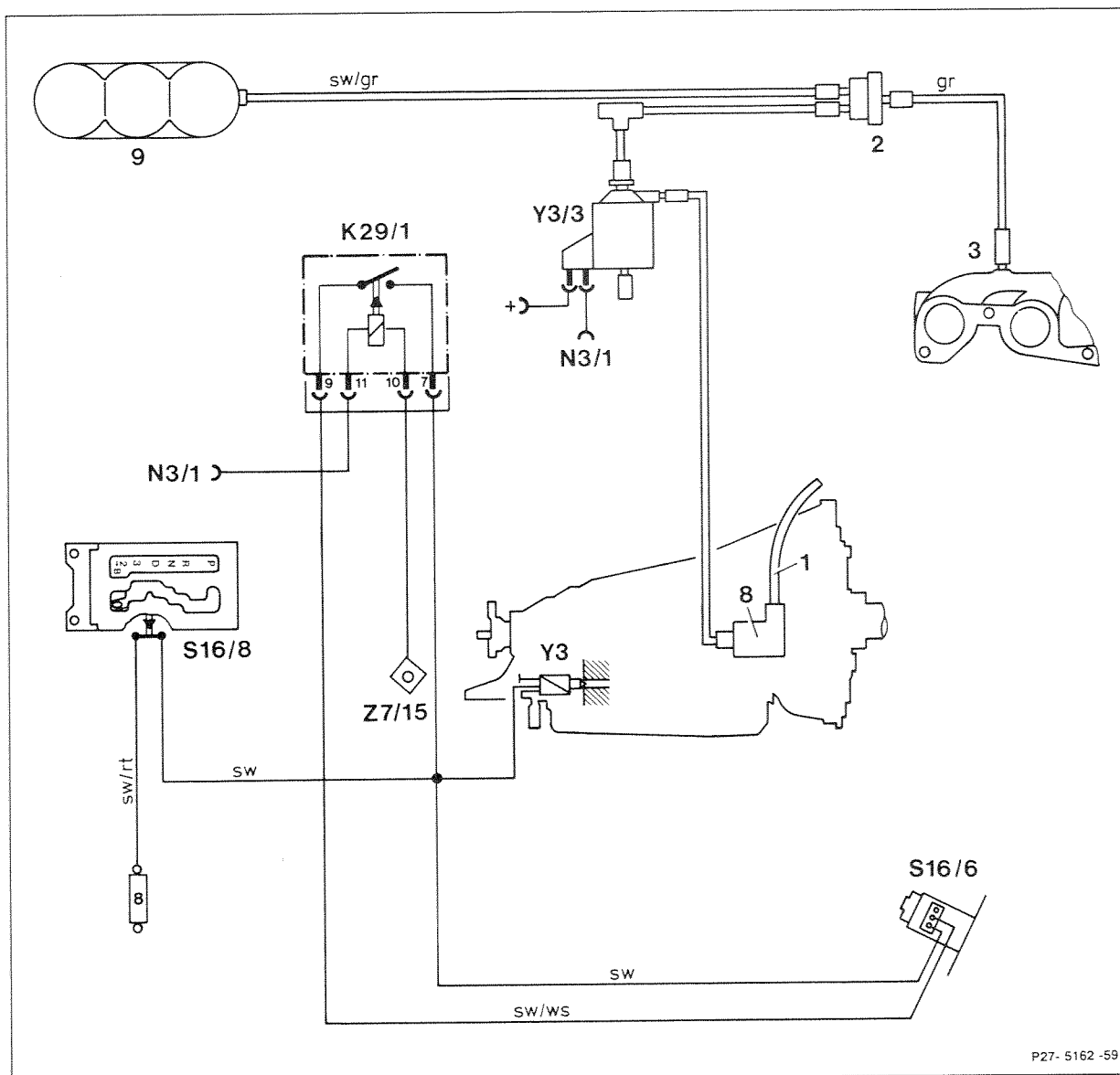
For additional information on the upshift delay, refer to Group 07.4, Engine 119.970/971 of this introduction manual.

## Upshift delay



P27-5073-59

- |   |                              |      |                                |
|---|------------------------------|------|--------------------------------|
| 1 | Control pressure cable       | N3/1 | LH control unit                |
| 2 | Check valve                  | Y3/3 | Upshift delay switchover valve |
| 3 | Intake manifold              |      |                                |
| 8 | Upshift delay vacuum element |      |                                |
| 9 | Vacuum reservoir             |      |                                |



- |   |                              |
|---|------------------------------|
| 1 | Control pressure cable       |
| 2 | Check valve                  |
| 3 | Intake manifold              |
| 8 | Upshift delay vacuum element |
| 9 | Vacuum reservoir             |

- |       |                                    |
|-------|------------------------------------|
| K29/1 | First gear start relay             |
| N3/1  | LH control unit                    |
| S16/6 | Kickdown switch                    |
| S16/8 | "B" engagement switch              |
| Y3    | Kickdown valve                     |
| Y3/3  | Upshift delay switchover valve     |
| Z7/15 | Connector sleeve, terminal 87 (LH) |

sw	black
ws	white
gr	grey

### **Upshift delay for rapid heating of catalyst Model 124.034**

In order to rapidly heat the catalyst after starting the engine, the transmission is equipped with an upshift delay to raise the shift point for the 2 – 3 upshift. Operation of the 2 – 3 upshift delay is described in Group 27 of the Model Year 1992 Introduction Manual for model 140.

In addition, the transmission is equipped with a 1 – 2 upshift delay which is active at coolant temperatures below 40 °C. The 1 – 2 upshift delay occurs:

- After exceeding a vehicle speed of 8 km/h (5 mph) for 8 – 13 seconds up to maximum of 38 km/h (24 mph).

The 1 – 2 upshift delay is controlled by the LH control unit and the first gear start relay (K29/1) which is located in the fuse and relay box, position "E".

#### **Note:**

A malfunction of the 1 – 2 upshift delay is stored as impulse readout "29" in the LH control unit's malfunction memory.



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