VOLKSWAGEN/AUDI
O1M TRANSAXLE 1995 - 1997 ONLY
NEUTRALIZES INTO 4TH GEAR OR WHILE IN 4TH.

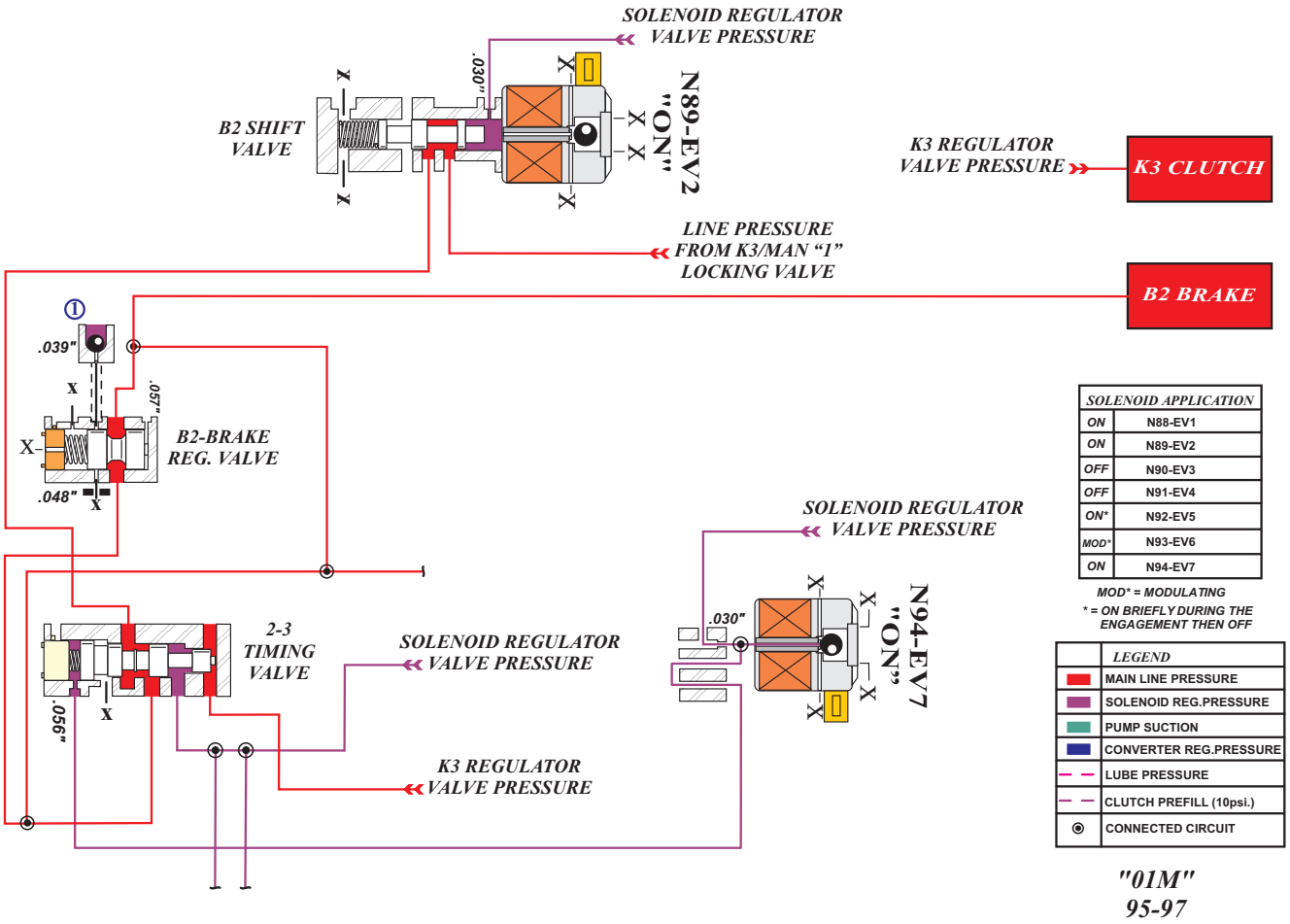
COMPLAINT: A Volkswagen/Audi vehicle with an O1M transaxle exhibits a neutralizing condition either during an upshift into 4th gear, or while driving in 4th gear.

CAUSE: One cause may be a leak at Solenoid Valve EV7, or a cracked or leaking bore plug for the 2-3 Timing Valve. In the Volkswagen/Audi 01M Transaxle model years 1995 through 1997, Solenoid Valve EV7 is energized in both 3rd and 4th gears. The function of Solenoid Valve Ev7 is to control the spring side of the 2-3 Timing Valve. Refer to Figure 1. This illustration shows an intact hydraulic circuit without a leak. Solenoid Regulator Valve pressure is fed to Solenoid Valve EV7. The solenoid is energized and closed by an electrical signal causing pressure to build which is then sent to the spring side of the 2-3 Timing Valve; this assists the spring in keeping the 2-3 Timing Valve in a closed position. Line pressure from the K3/Manual 1 Locking Valve is fed to Solenoid Valve EV2 which is also energized and closed by an electrical signal allowing line pressure to pass through the B2 Shift Valve and be directed to the 2-3 Timing Valve. Once line pressure passes through the 2-3 Timing Valve, it flows to the B2 Regulator Valve and on to apply the B2 Brake.

Refer to Figure 2. This drawing depicts a hydraulic circuit that is leaking either at Solenoid Valve EV7, or the 2-3 Timing Valve bore plug. If the solenoid is open and can't close, or the bore plug is leaking, oil pressure at the spring side of the 2-3Timing Valve won't build up and stop the valve from stroking. If this happens, line pressure from Solenoid Valve EV2 won't be able to pass through the valve and apply the B2 Brake. The resulting condition will be a neutralizing effect because only the K3 clutch will be applied.

CORRECTION: This correction is very simple, and can be done without even removing the valve body. Remove the oil pan and locate the 2-3 Timing Valve. Refer to Figure 3. Twist the plastic bore plug and remove from the valve body, then remove the spring. Make sure the valve isn't sticking and is completely seated in the back of the bore. Find an AXODE checkball and insert the ball into the spring seat of the valve making sure it is inserted all the way. Next cut approximately 1.5 coils off the spring, then reinstall spring and bore plug into the valve body. Put the pan back on, refill with fluid and you're done.

O1M 1995-97 PARTIAL 4TH GEAR HYDRAULIC SCHEMATIC
B2 BRAKE APPLIED

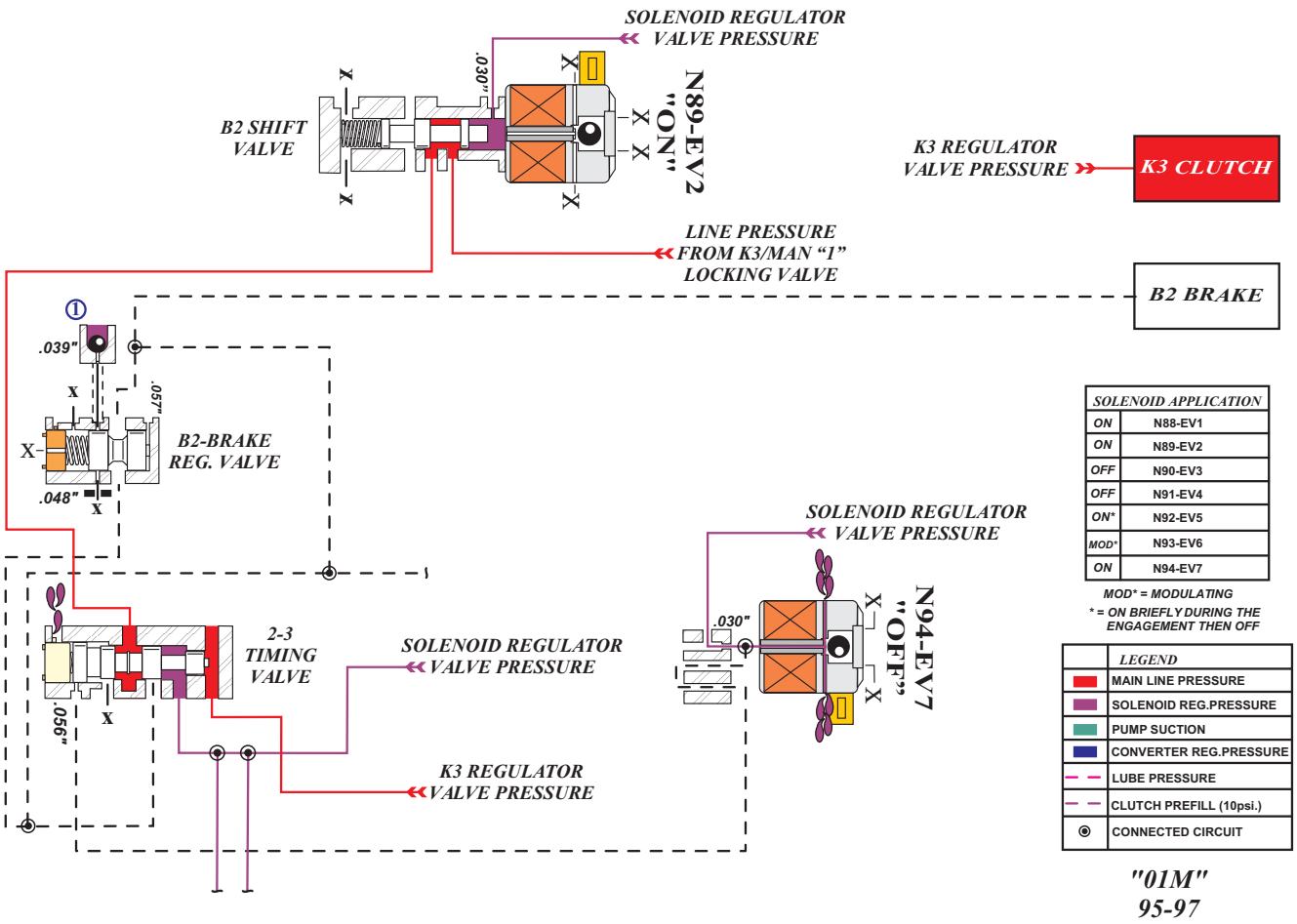


"01M" 95-97

This partial hydraulic schematic shows an intact hydraulic circuit without a leak. Solenoid Regulator Valve pressure is fed to Solenoid Valve EV7. The solenoid is energized and closed by an electrical signal causing pressure to build which is then sent to the spring side of the 2-3 Timing Valve; this assists the spring in keeping the 2-3 timing valve in a closed position. Line pressure from the K3/Manual 1 Locking Valve is fed to Solenoid Valve EV2 which is also energized and closed by an electrical signal allowing line pressure to pass through the valve and then be directed to the 2-3 Timing Valve. Once line pressure passes through the 2-3 Timing Valve, it flows to the B2 Regulator Valve and on to apply the B2 Brake

Figure 1

O1M 1995-97 PARTIAL 4TH GEAR HYDRAULIC SCHEMATIC
B2 BRAKE NOT APPLIED



"01M" 95-97

This partial hydraulic schematic depicts a hydraulic circuit that is leaking either at Solenoid Valve EV7, or the 2-3 Timing Valve bore plug. If the solenoid is open and can't close, or the bore plug is leaking, oil pressure at the spring side of the 2-3 timing valve won't build up and stop the valve from stroking. If this happens, line pressure from Solenoid valve EV2 won't be able to pass through the valve and apply the B2 Brake. The resulting condition will be a neutralizing effect because only the K3 clutch will be applied.

Figure 2

O1M 1995-97 VALVEBODY ILLUSTRATION