# FORD E4OD

## VALVE BODY, SPACER PLATE, SPACER PLATE GASKETS, CHECKBALL LOCATIONS, AND CASE CHANGES, FOR THE 1996 MODEL YEAR

**CHANGE:** Beginning in mid-l 989 Ford Motor Co. changed the checkball locations in the case, and in 1990 changed the case checkball locations again. Beginning in 1996, both the valve body and case checkball locations change once again. These changes have created confusion in the field.

**REASON:** Pleaseability, Reliability, and Durability concerns.

**PARTS AFFECTED:**

(*(1) VALVE BODY CHECKBALL LOCATIONS* - Have remained the same for 1989 thru 1995 model years, with TWO 5/l 6" rubber checkballs, and their locations are shown in Figure 1. Beginning in the 1996 model year there are FIVE checkballs in the main valve body and their locations are shown in Figure 2. Notice that there are two 5/16" rubber balls and three l/4" rubber balls. The l/4" rubber balls are green in color (See Figure 2).

(2) CASE CHECKBALL LOCATIONS - Have now changed three times since the introduction in 1989, as listed below.
Early 1989 Models - Requires Fourteen 5/16" checkballs in the case, in the locations shown in Figure 3, and uses a l/4" steel ball for the EPC blow-off, and location is shown in Figure 3.

Late 1989 Model - Requires Ten 5/16" rubber checkballs, and One 5/16" diameter steel checkball, for a total of Eleven, in the locations shown in Figure 4, and uses a l/4" steel ball for the EPC blow-off, and the location is shown in Figure 4.

All 1990-1995 Models - Requires Nine S/16" rubber checkballs in the case, in the locations shown in Figure 5, and uses a l/4" steel ball for the EPC blow-off, and the location is shown in Figure 5. Beginning in 1991 there is an added Intermediate Accumulator Regulator Filter Assembly, and the location in the case is shown in Figure 5

All 1996-W Models - Requires Eight 5/16" rubber checkballs in the case, in the locations shown in Figure 6, and uses a l/4" steel ball for the EPC blow-off, and the location is shown in Figure 6.

(3) SPACER PLATE GASKETS - Have changed twice since the introduction in 1989.
1989 Models Only - Require the Spacer Plate Gaskets with solenoid feed hole (Marked X) in the location shown in Figure 8, and the gaskets have N? I.D. stripes on either gasket.
90-95 Models Only - Require the Spacer Plate Gaskets with solenoid feed hole (Marked X) in the location shown in Figure 9, and both gaskets have Yellow I.D. Stripes
96-UP Models Only - Require the Spacer Plate Gaskets with Green I.D. stripes on both gaskets. These gaskets have a multitude of hole location differences, as shown in Figure 10.

**PARTS AFFECTED:**

(4) MAIN VALVE BODY SPACER PLATE- Has changed twice since the introduction in 1989.
1989 Models Only - Requires the Spacer Plate with the solenoid feed hole in the location shown in Figure 11, and has two "Square" notches for identification

90-95 Models only - Requires the Spacer Plate with the solenoid feed hole in the location shown in Figure 12, and has two "Half Moon" notches for identification. Note; Some models have two "V" notches with one "Half Moon" notch between them for identification.

1996-W Models Only - Requires the Spacer Plate with the three "V" notches for identification as shown in Figure 13, and has a multitude of hole location changes.

(5) MAIN VALVE BODY - Has changed twice since the introduction in 1989 as listed below.
1989 Models Only - Can be identified by the differences in the worm track area at the l-2 shift valve, as shown inside the circles in Figure 14. The best, and most accurate method to identify the valve body, is the rough forging number cast into the valve body in the location shown in Figures 1 and 2.

90-95 Models only - Can be identified by the differences in the worm track area at the 1-2 shift valve, as shown inside the circles in Figure 14. The best, and most accurate method to identify the valve body, is the rough forging number cast into the valve body in the location shown in Figures 1 and 2.

1996-UP Models only - Has a multitude of worm track location differences from the previous models, as shown in Figure 15. The best and most accurate method to identify the valve body, is the rough forging number cast into the valve body in the location shown in Figures 1 and 2.

(6) LOWER VALVE BODY SPACER PLATE - Can be identified by the diameter of the feed hole in the location shown in Figure 16. For 1989 models the hole diameter is .3 12", and for 90-95 models the hole diameter is .055".
The 1996-Up models have three small holes in this location, as shown in Figure 16, and a multitude of hole location differences to accommodate the added valve body checkballs.

(7) LOWER VALVE BODY - The engagement control valve retaining clip on 1989 models, was replaced by a bore plug and new design clip on the 90-95 models, which also changed the worm track configuration in that area, as shown inside the circles in Figure 17.

The 1996-Up models have a multitude of worm track location differences than the previous models, to accommodate the added valve body checkballs, as shown in Figure 17. The best, and most accurate method of identification is the rough forging number cast into the lower valve body using the formula in Figures 1 and 2.

**INTERCHANGEABILITY:**

(1) The 1989 Main Spacer Plate MUST be used on 1989 case, with 1989 checkball locations, 1989 valve body gaskets (No Stripe), and 1989 Main Valve Body.

(2) The 1989 Main Valve Body can be used on 90-95 models, but the 90-95 Main Valve Body MUST be used on 90-95 models.

(3) The Lower Valve Body and spacer plates should also be kept together, large (-3 12") hole with 1989 models, and small (.055") hole with 90-95 models.

(4) None of the 1996 design level parts will interchange with previous models.

**SERVICE INFORMATION:**

Main Valve Body Spacer Plate (1989 Models) ..... E9TZ-7A008-A
Main Valve Body Spacer Plate (90-95 Models) ..... F5TZ-7A008-A
Main Valve Body Spacer Plate (1996 Models) ..... F6TZ-7A008-B
Spacer Plate to Case Gasket (1989 Models) ..... E9TZ-7C155-A
Spacer Plate to Case Gasket (90-95 Models) ..... F5TZ-7Cl55-A
Spacer Plate to Case Gasket ( 1996 Models) ..... F6TZ-7C155-A
Valve Body to Spacer Plate Gasket (1989 Models) ..... E9TZ-7D100-A
Valve Body to Spacer Plate Gasket (90-95 Models) ..... F5TZ-7D100-A
Valve Body to Spacer Plate Gasket (1996 Models) ..... F6TZ-7D100-A
Intermediate Accumulator *Regulator Filter* Assembly (91-96 Models) ... FlTZ-7Hl94-A
EPC Blow-Off Spring (All Models) ..... E9TZ-7D017-A

## 1989 - 1995 VALVE BODY CHECKBALL LOCATIONS
## 2 - 5/16 RUBBER BALLS ALL MODELS

TYPICAL ROUGH
FORGING NUMBER
RF-F0TP-7A092-BA

THE TWO DIGITS ABOVE THAT ARE
UNDERLINED INDICATE MODEL YEAR

E9 = 1989
F0 = 1990
F1 = 1991
F2 = 1992
F3 = 1993
F4 = 1994
F5 = 1995
F6 = 1996

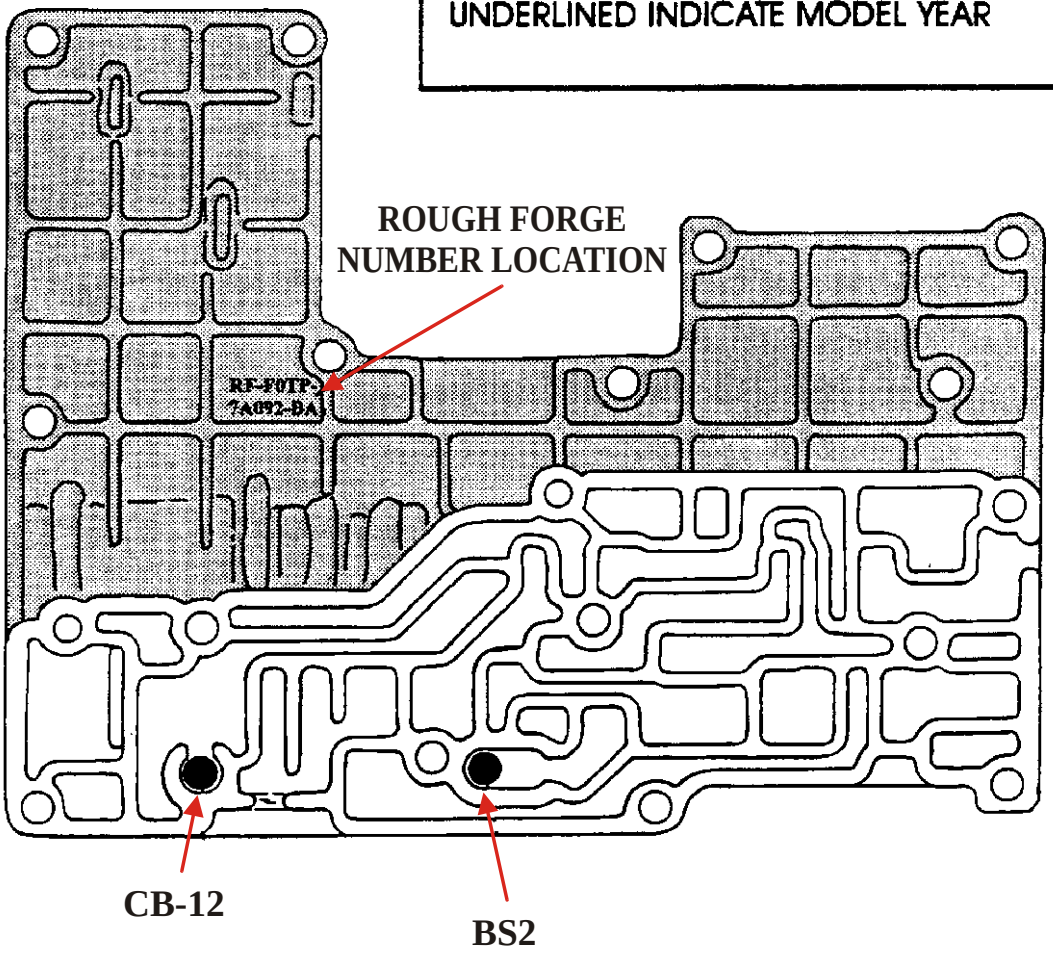



Figure 1

## 1996 VALVE BODY CHECKBALL LOCATIONS
## 2 - 5/16 RUBBER BALLS
## 3 - 1/4 RUBBER BALLS

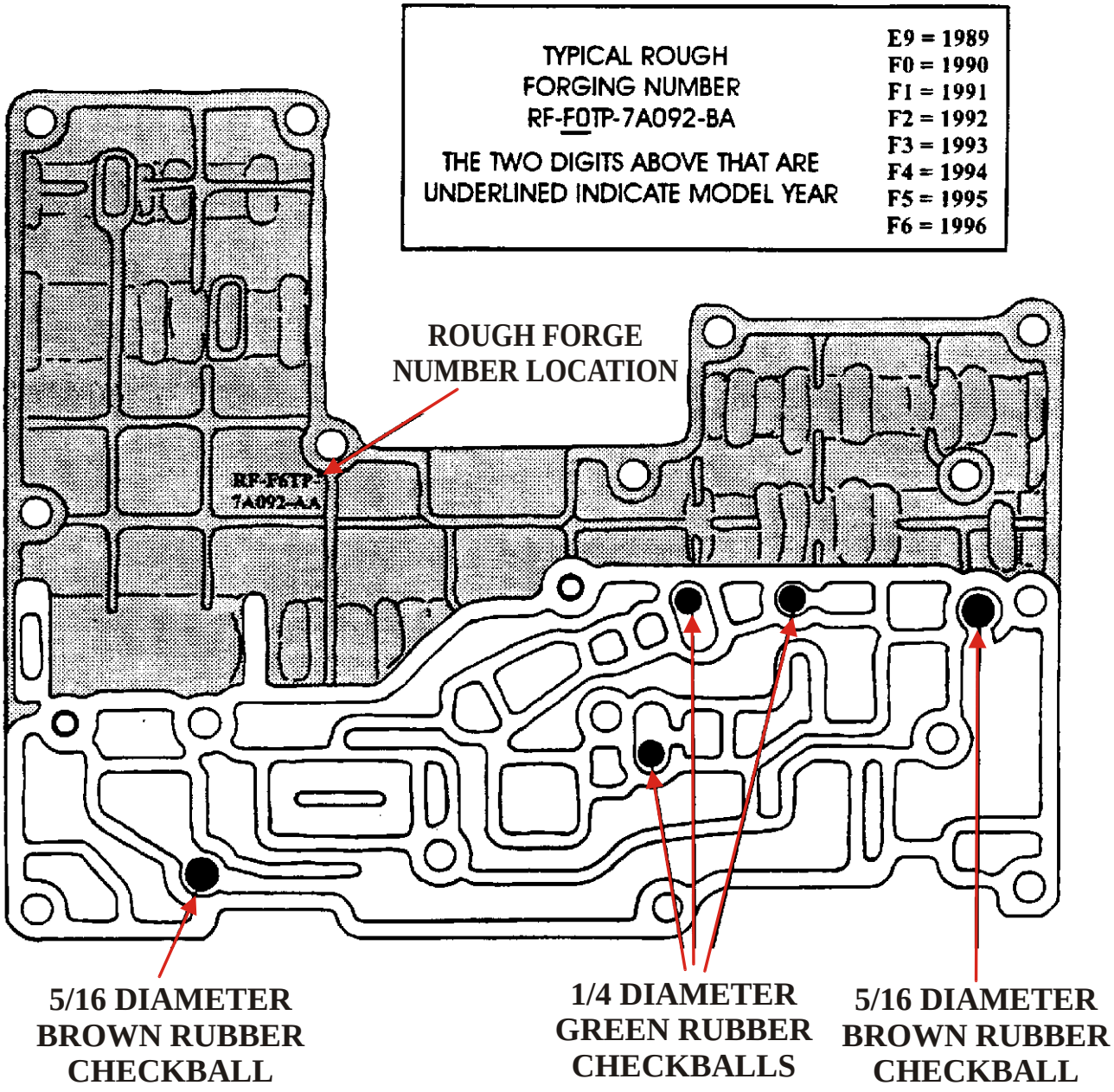



Figure 2

## EARLY 1989 CASE CHECKBALL LOCATIONS
## 14 - 5/16 RUBBER BALLS

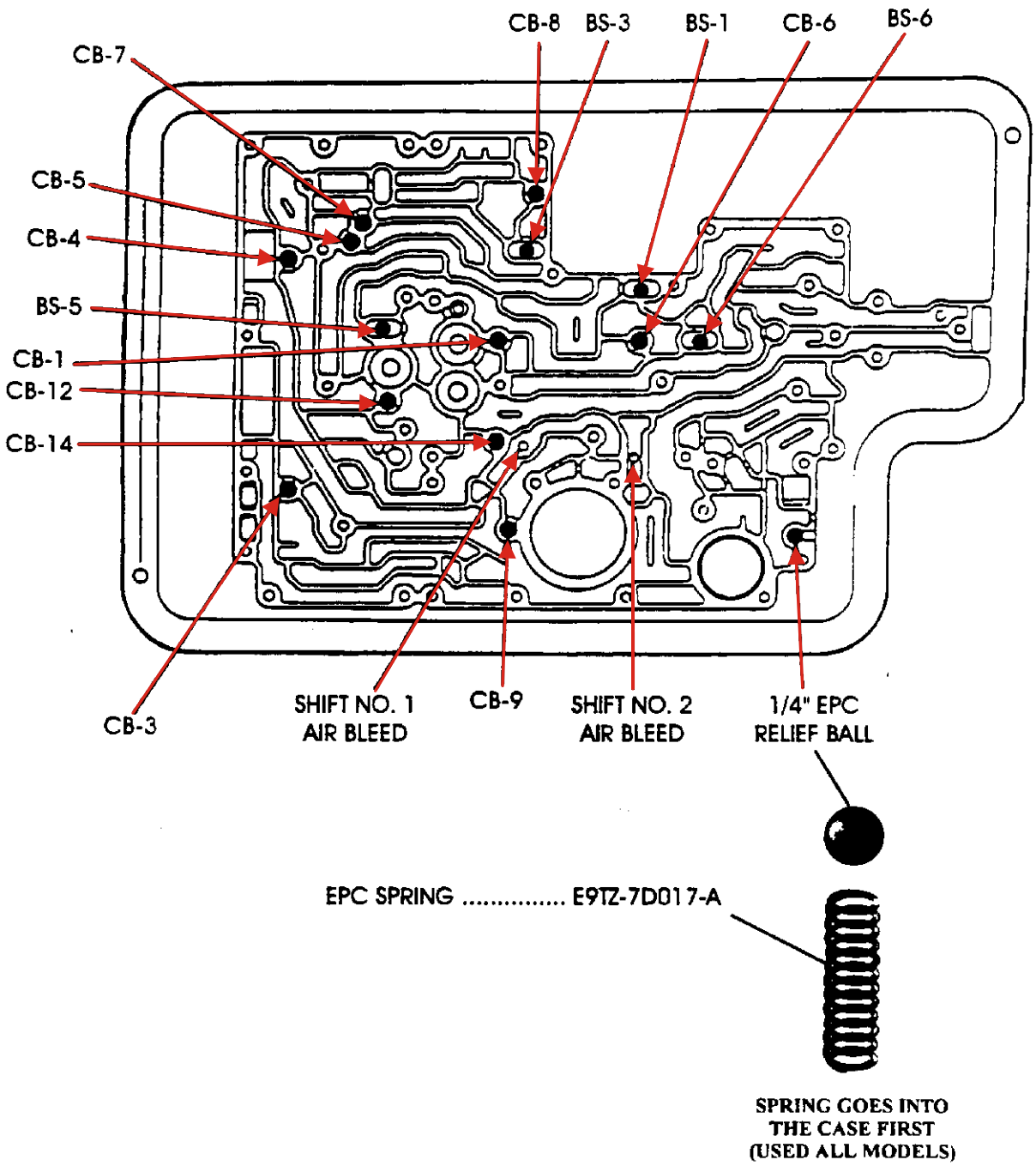



Figure 3

**LATE 1989 CASE CHECKBALL LOCATIONS**
**10 - 5/16 RUBBER BALLS**
**1 - 5/16 STEEL BALL**

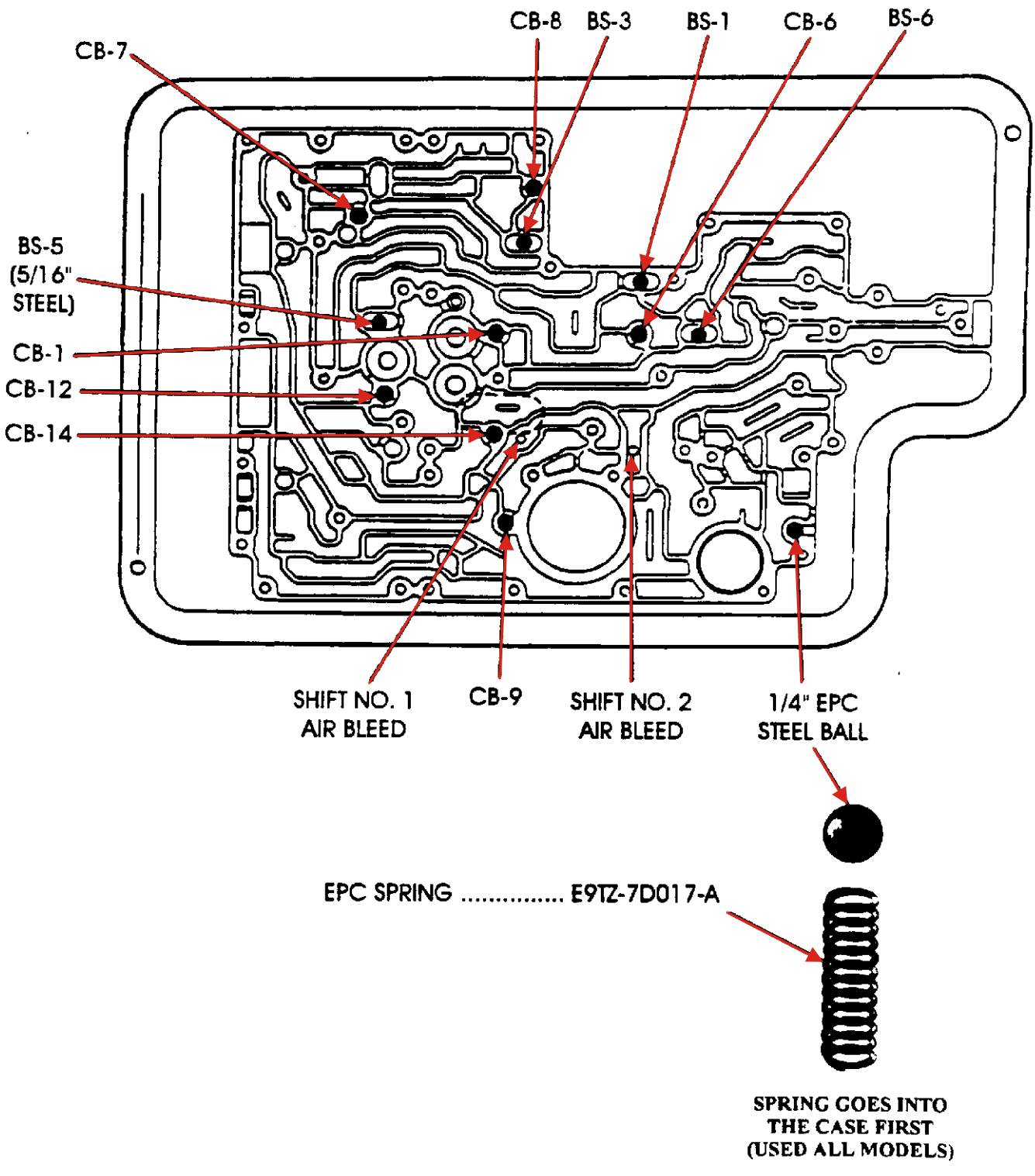



Figure 4

## 1990-1995 CASE CHECKBALL LOCATIONS
## 9 - 5/16 RUBBER BALLS

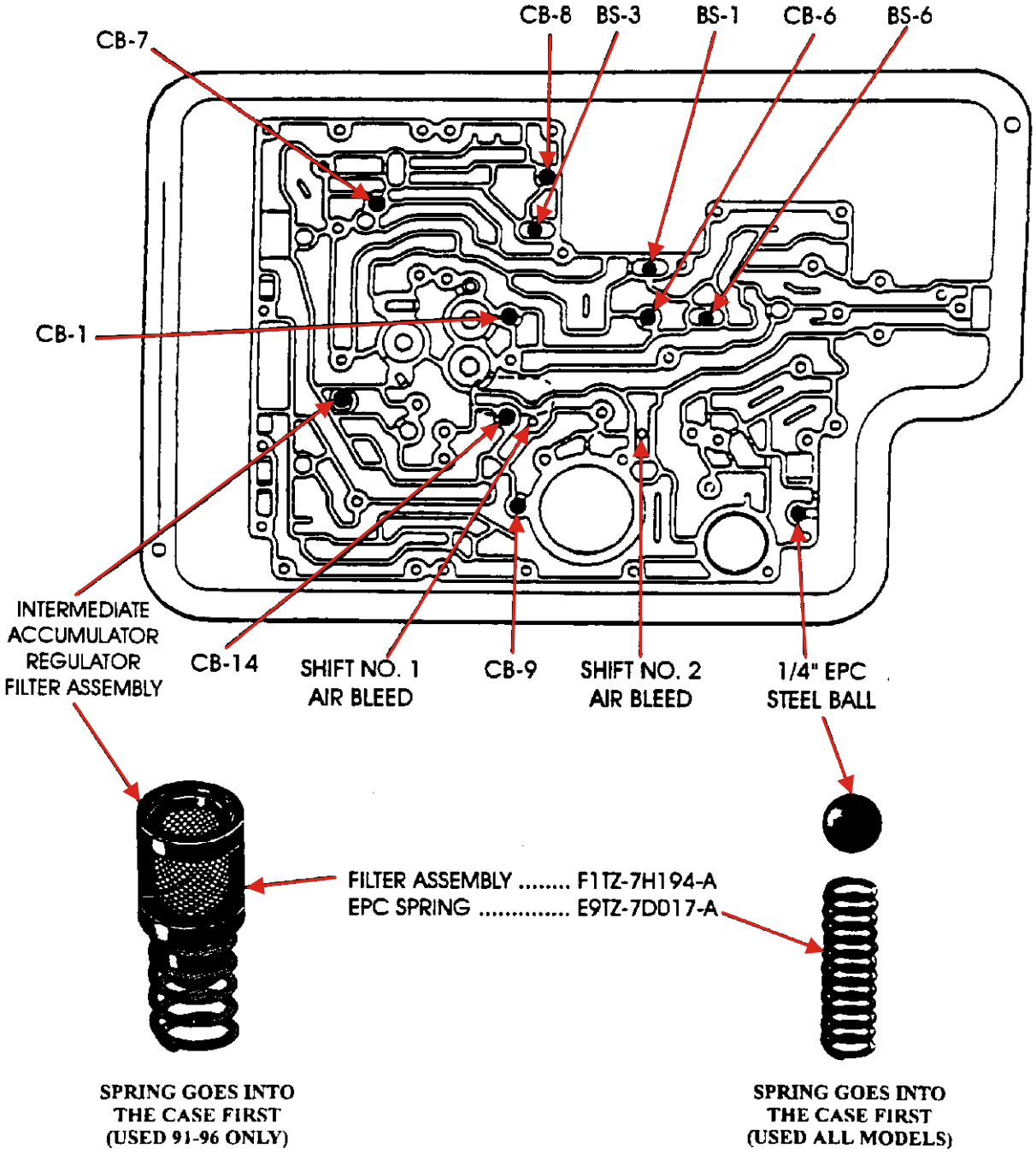



Figure 5

## 1996 CASE CHECKBALL LOCATIONS
## 8 - 5/16 RUBBER BALLS

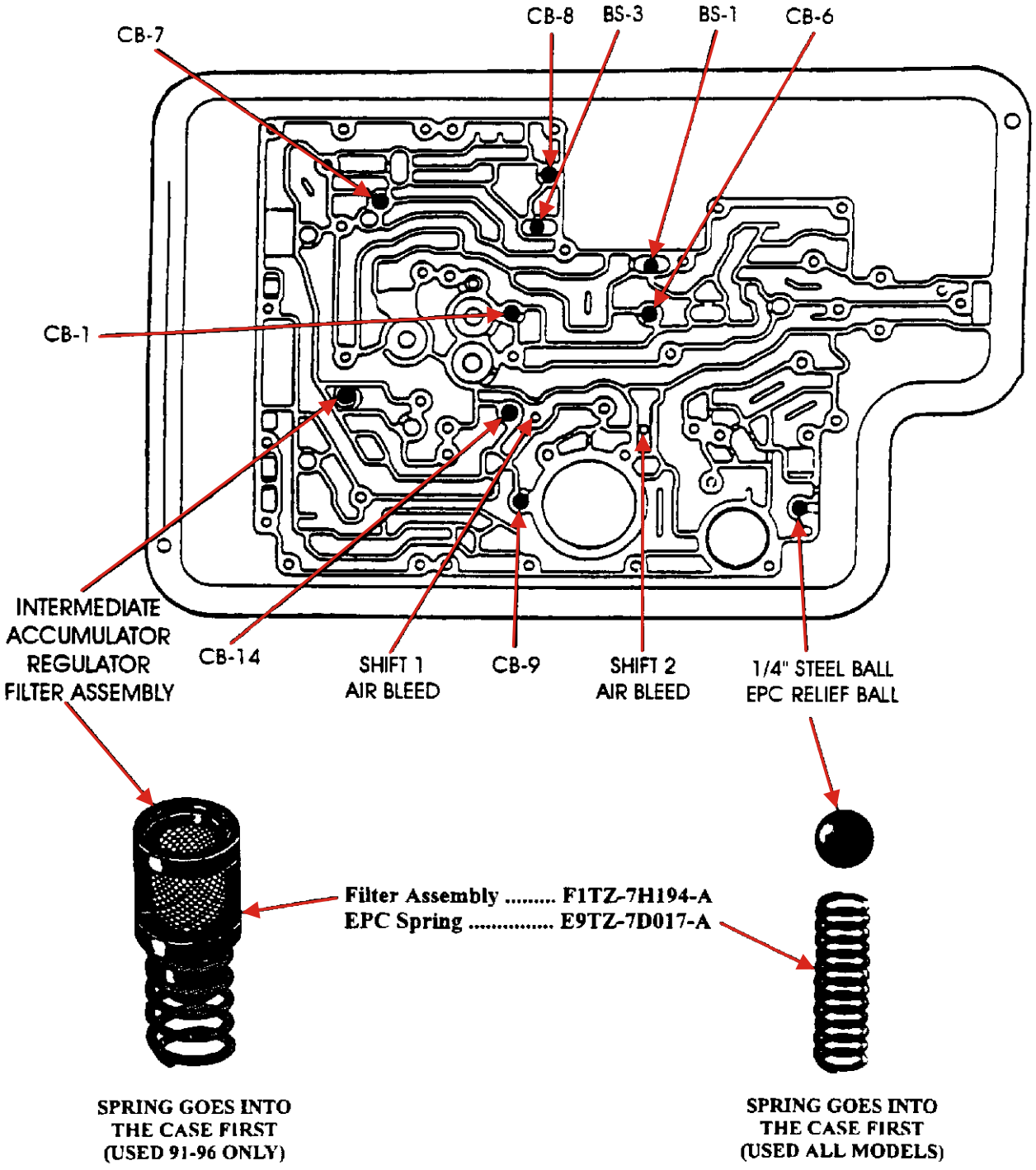



Figure 6

| | USAGE CHART | | |
|---|---|---|---|
| | EARLY 89 | LATE 89 | 90 - 95 |
| CB-1: Feeds reverse flow through 4-3-2 shift timing valve. | X (CASE) | X (CASE) | X (CASE) |
| CB-3: Bypasses intermediate accumulator plunger feed orifice during 2-1. | X (CASE) | | |
| CB-4: Bypasses overdrive accumulator plunger feed orifice during 4-3. | X (CASE) | | |
| CB-5: Bypasses direct accumulator plunger feed orifice during 3-2. | X (CASE) | | |
| CB-6: Forces direct clutch to exhaust through orifice during 3-2 downshift. | X (CASE) | X (CASE) | X (CASE) |
| CB-7: Forces overdrive clutch to exhaust through an orifice during 4-3 downshift. | X (CASE) | X (CASE) | X (CASE) |
| CB-8: Forces coast clutch feed oil thtough orifice for 4-3 downshift and manual 1 or 2 pull-ins while allowing free exhaust. | X (CASE) | X (CASE) | X (CASE) |
| CB-9: Forces band servo apply pressure through an orifice while bypassing the orifice on exhaust. | X (CASE) | X (CASE) | X (CASE) |
| CB-12: Facilitates fast exhaust of direct clutch when coming out of reverse. | X (CASE) | X (CASE) | |
| CB-13: Forces forward engagement pressure through orifice while allowing free exhaust. | X (V.B.) | X (V.B.) | X (V.B.) |
| CB-14: Forces intermediate clutch to exhaust through orifice during 2-1 downshift. | X (CASE) | X (CASE) | X (CASE) |
| BS-1: Seperates manual 2 flow and reverse flow to the 4-3-2 timing valve and the coast clutch shift valve. | X (CASE) | X (CASE) | X (CASE) |
| BS-2: Seperates manual 2 flow and solenoid 2 flow into the 1-2 manual transition valve which supp-lies flow to prevent 1-2 shift valve from shifting. | X (V.B.) | X (V.B.) | X (V.B.) |
| BS-3: Seperates solenoid 4 flow from either the Man. 2 flow or the reverse flow which shifts the coast clutch shift valve. | X (CASE) | X (CASE) | X (CASE) |
| BS-5: Seperates reverse flow and direct accumulator flow into the direct clutch. | X (CASE) | X (CASE) | |
| BS-6: Seperates two and reverse flow at low reverse modulator valve. | X (CASE) | X (CASE) | X (CASE) ELIM. 1996 |

Figure 7

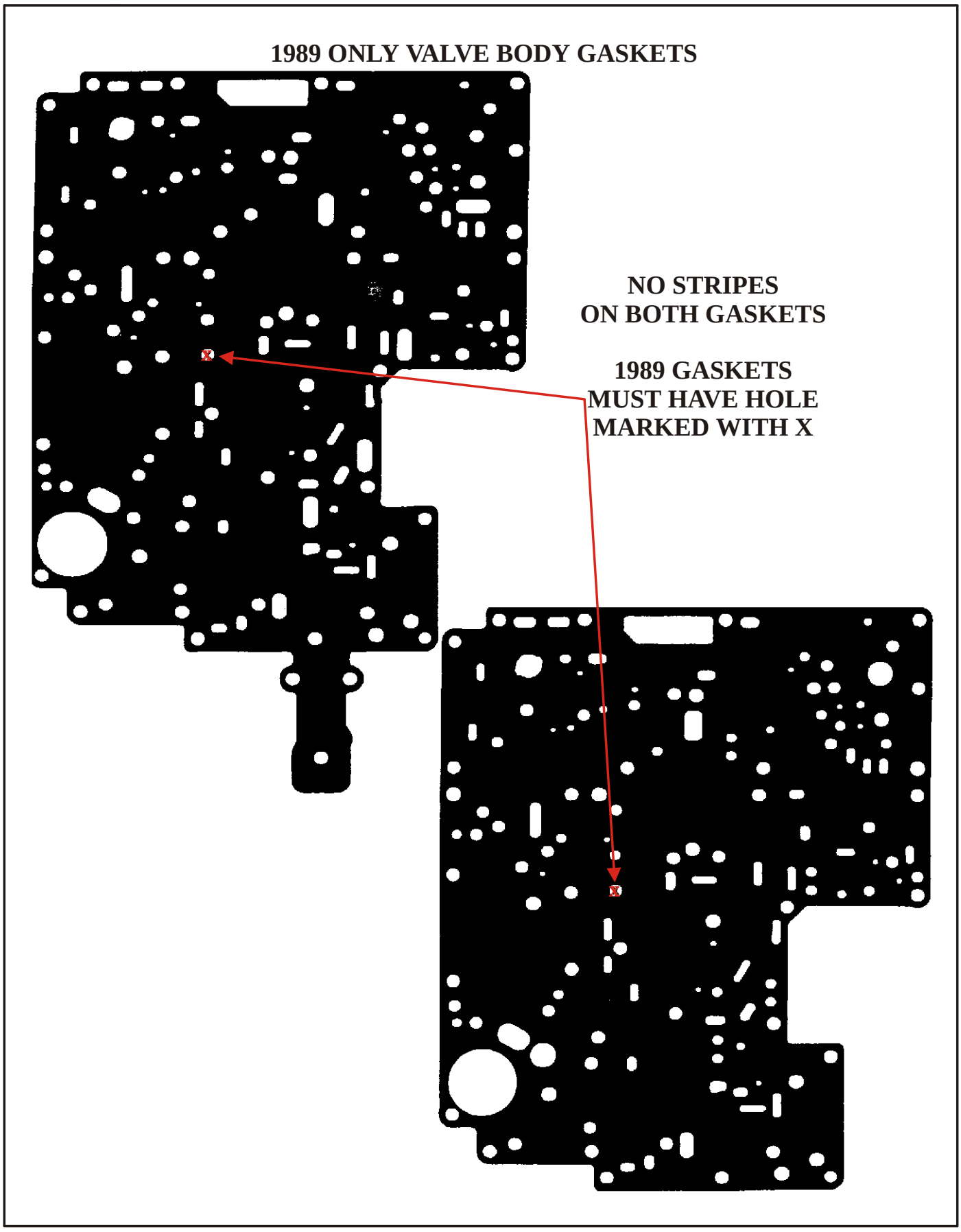

1989 ONLY VALVE BODY GASKETS
NO STRIPES
ON BOTH GASKETS
1989 GASKETS
MUST HAVE HOLE
MARKED WITH X

Figure 8

**1990 - 1995 ONLY VALVE BODY GASKETS**

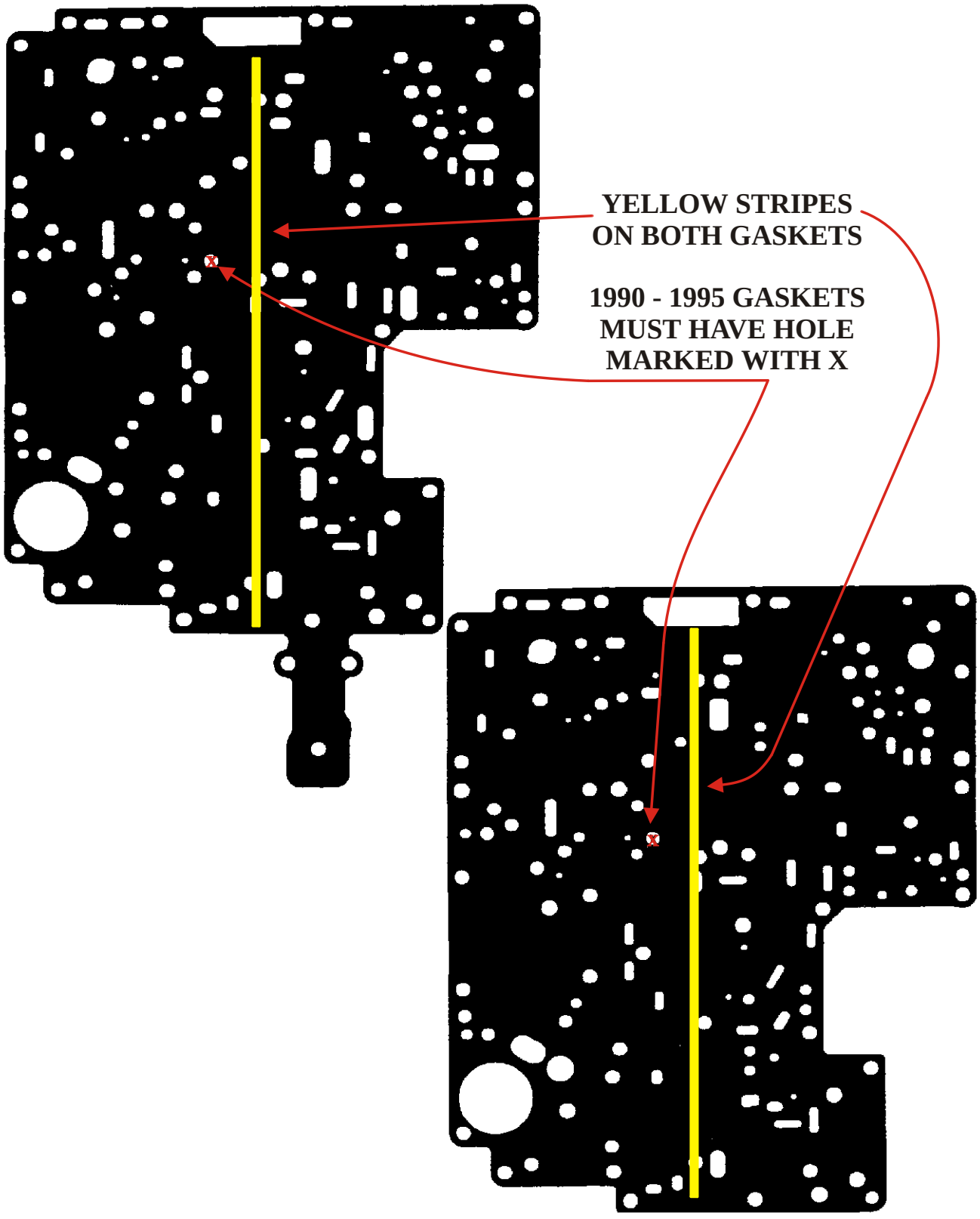



Figure 9

**1996 - UP ONLY VALVE BODY GASKETS**

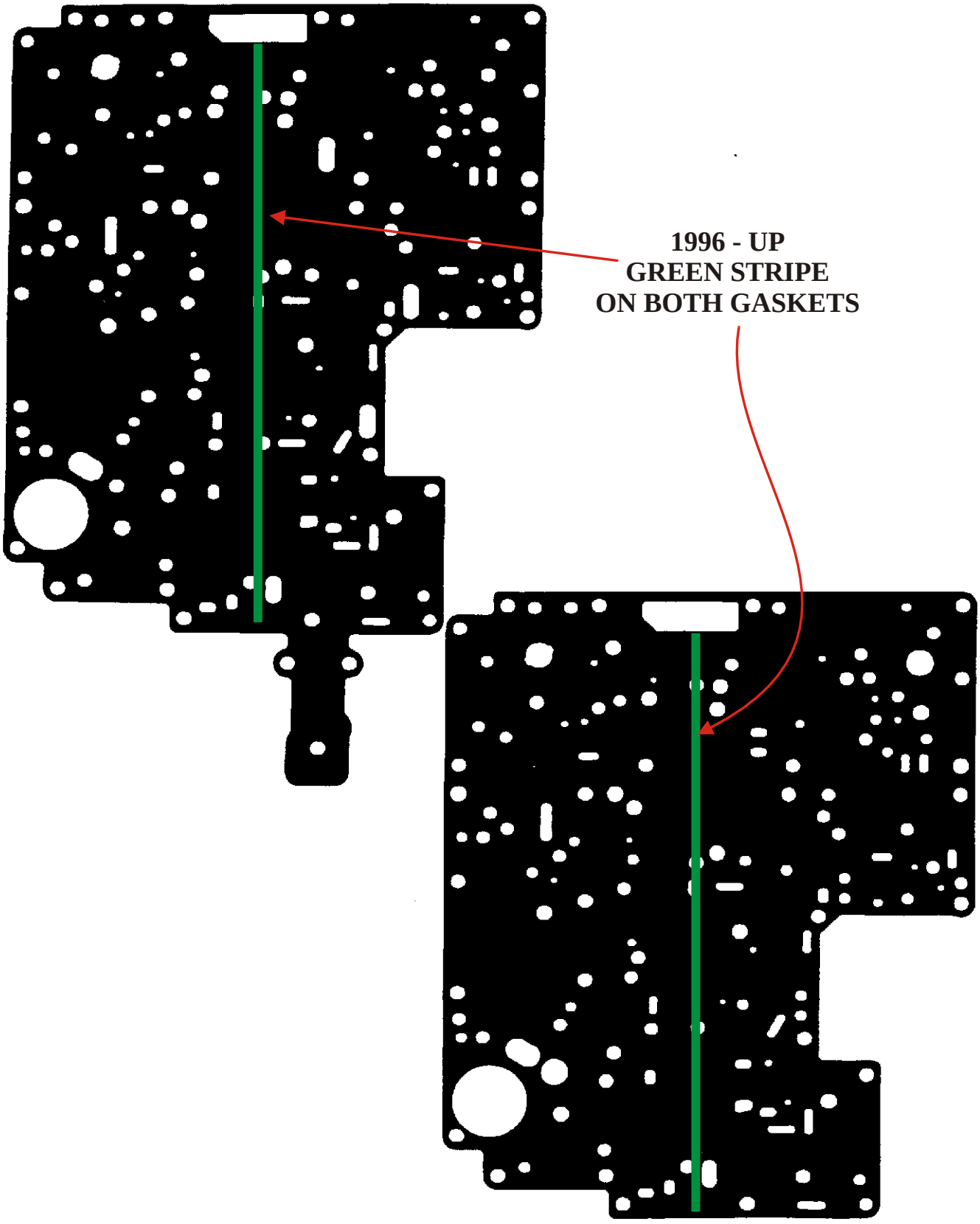



Figure 10

**1989 ONLY SPACER PLATE**
**PART # E9TZ-7A008-A**

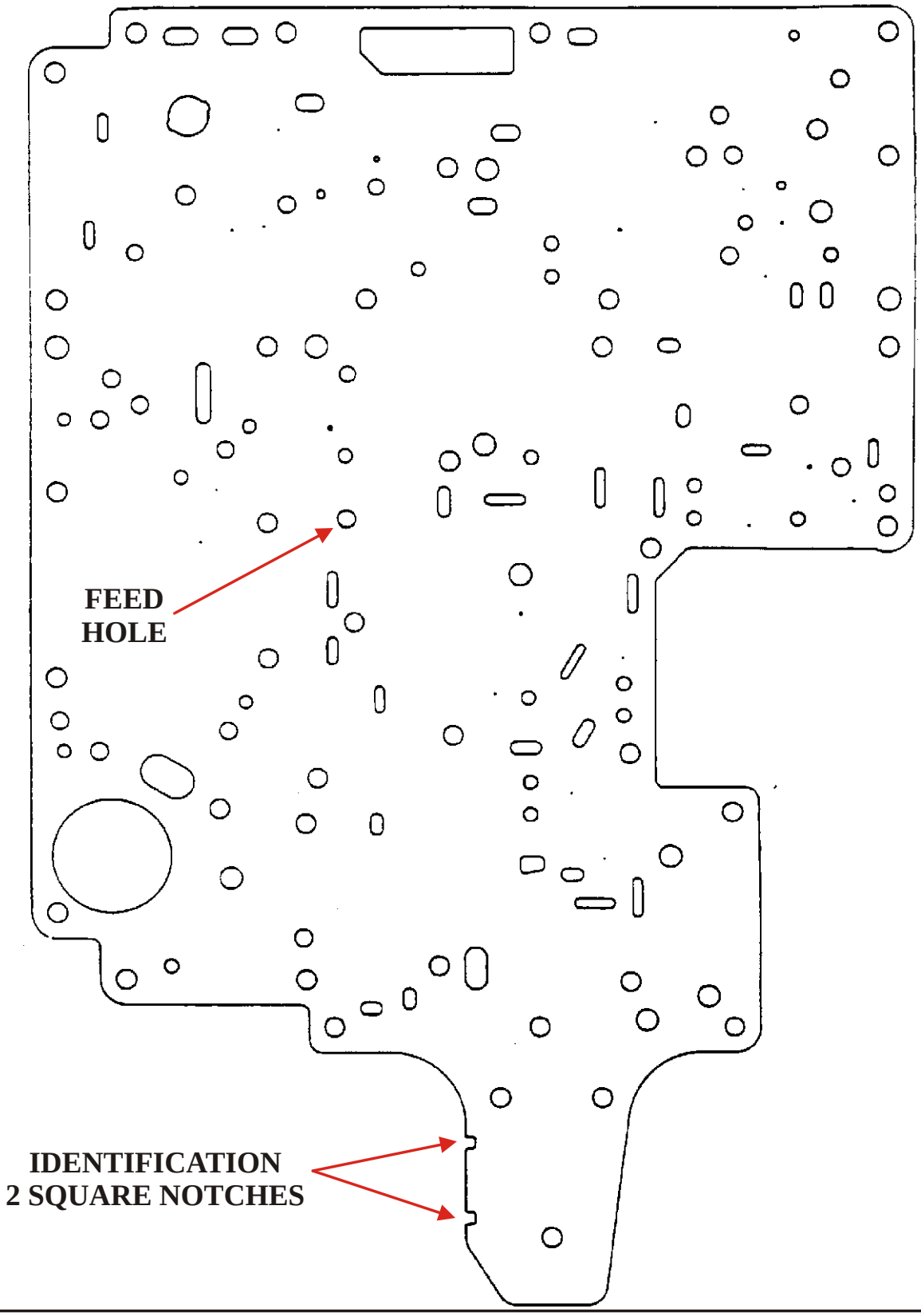



Figure 11

**1990 - 1995 ONLY SPACER PLATE**
**PART # E5TZ-7A008-A**

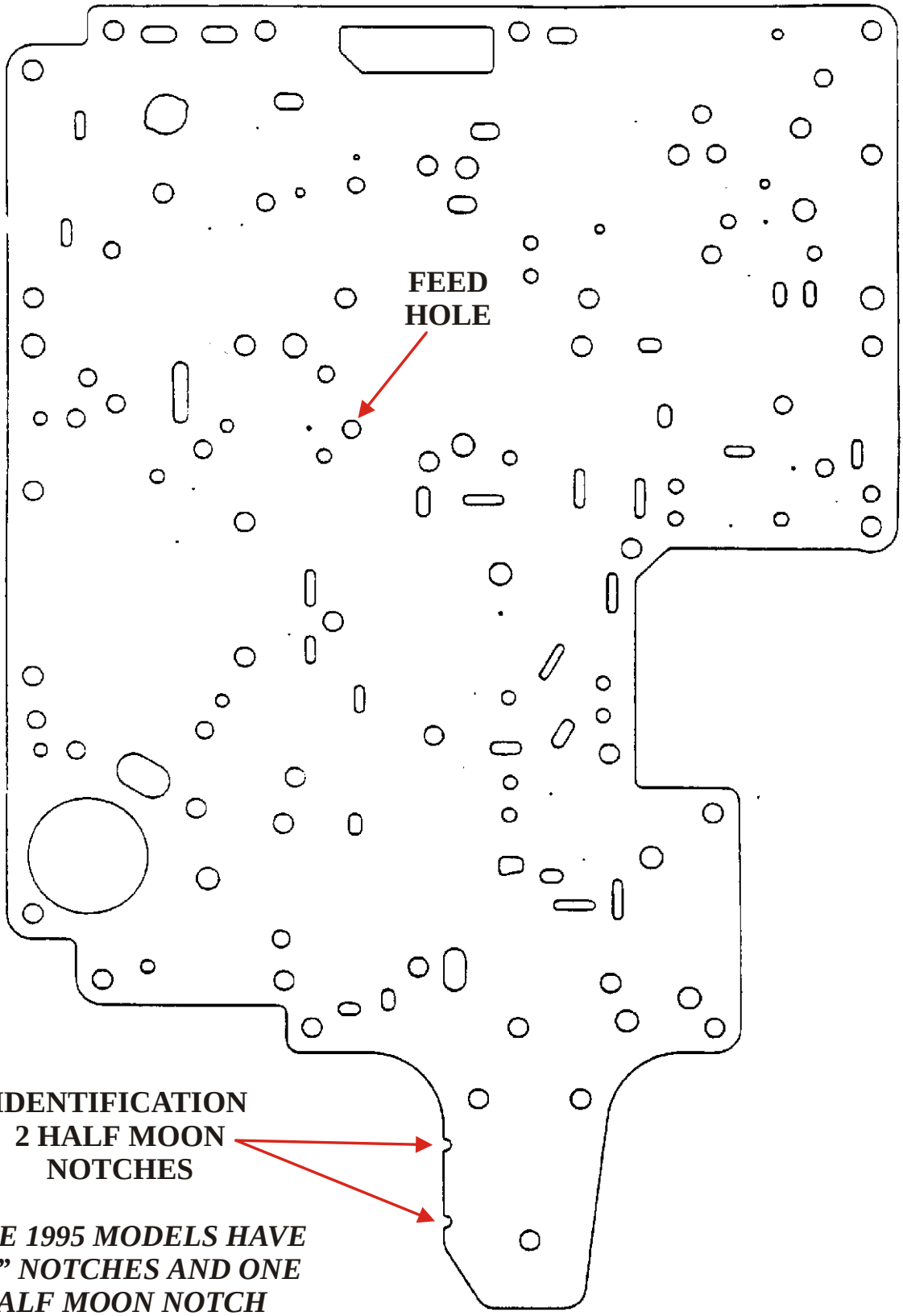



Figure 12

**1996 - UP ONLY SPACER PLATE**
**PART # E6TZ-7A008-A**

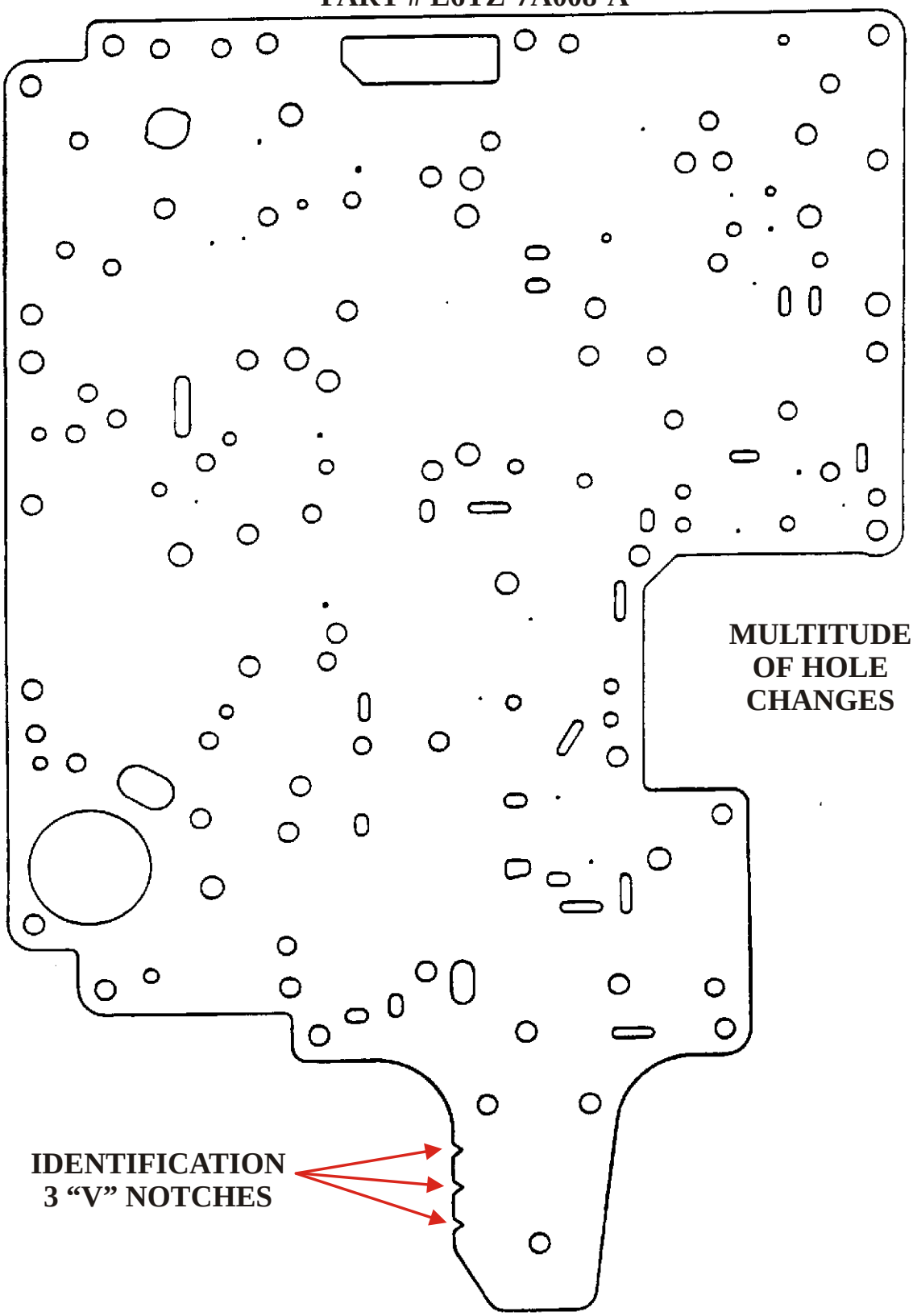
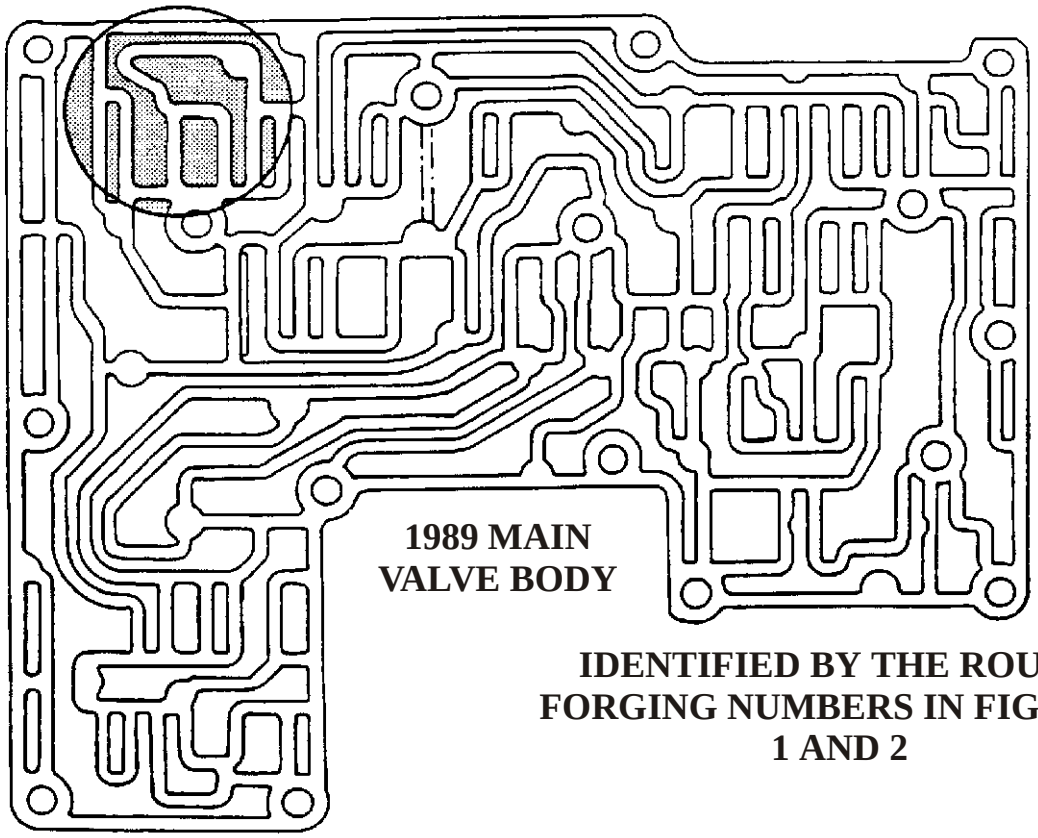
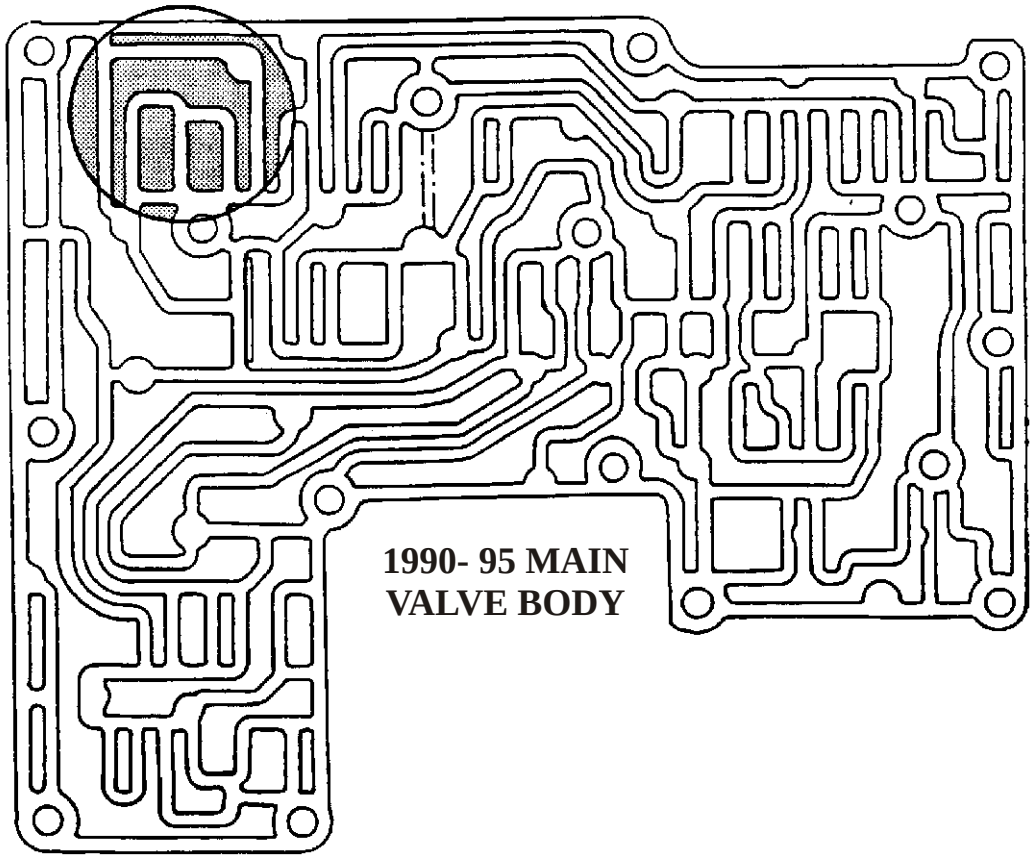



Figure 13



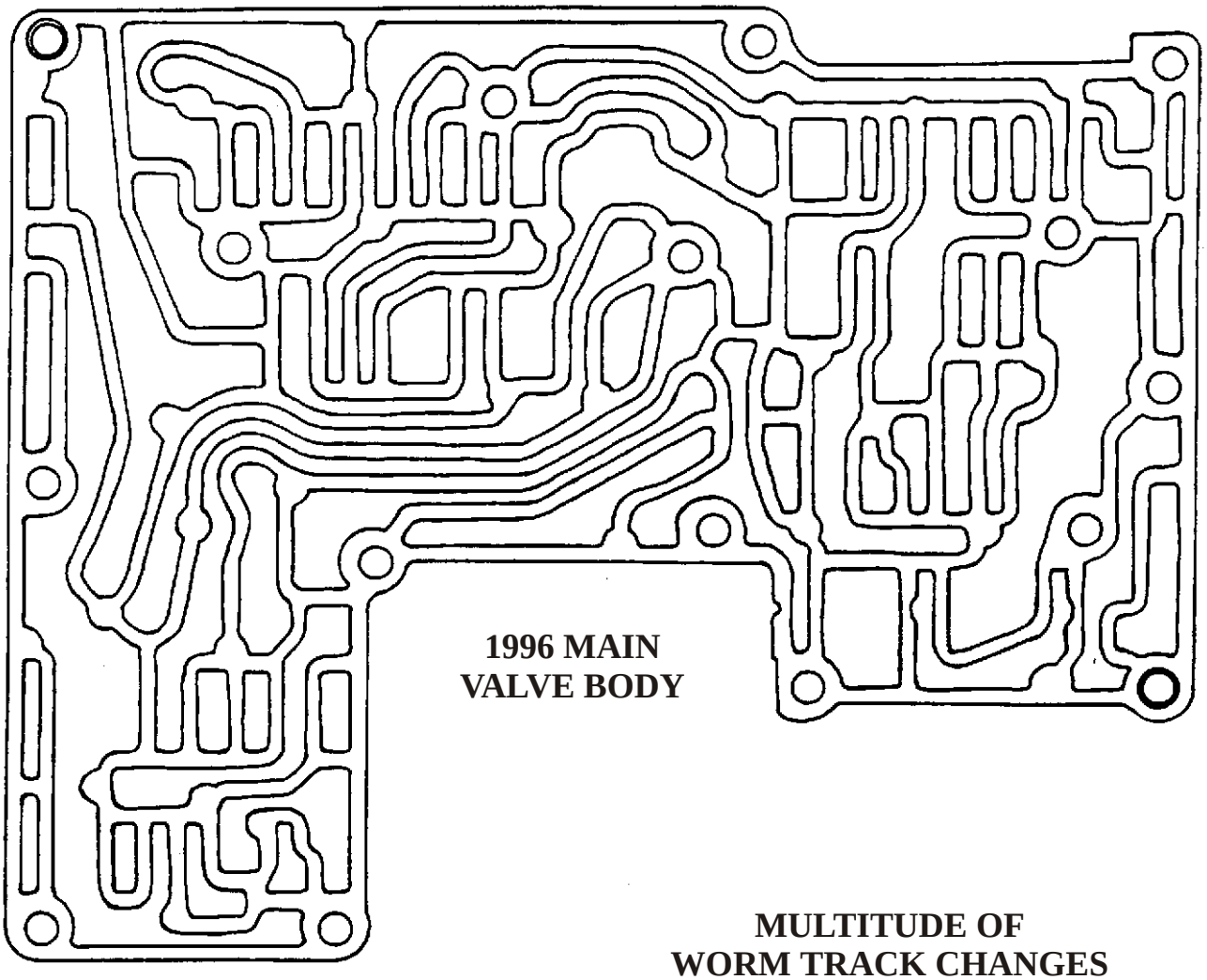
**1989 MAIN VALVE BODY**

**IDENTIFIED BY THE ROUGH FORGING NUMBERS IN FIGURES 1 AND 2**



**1990- 95 MAIN VALVE BODY**

Figure 14



**1996 MAIN**
**VALVE BODY**

**MULTITUDE OF**
**WORM TRACK CHANGES**

**IDENTIFIED BY THE ROUGH**
**FORGING NUMBERS IN FIGURES**
**1 AND 2**

Figure 15

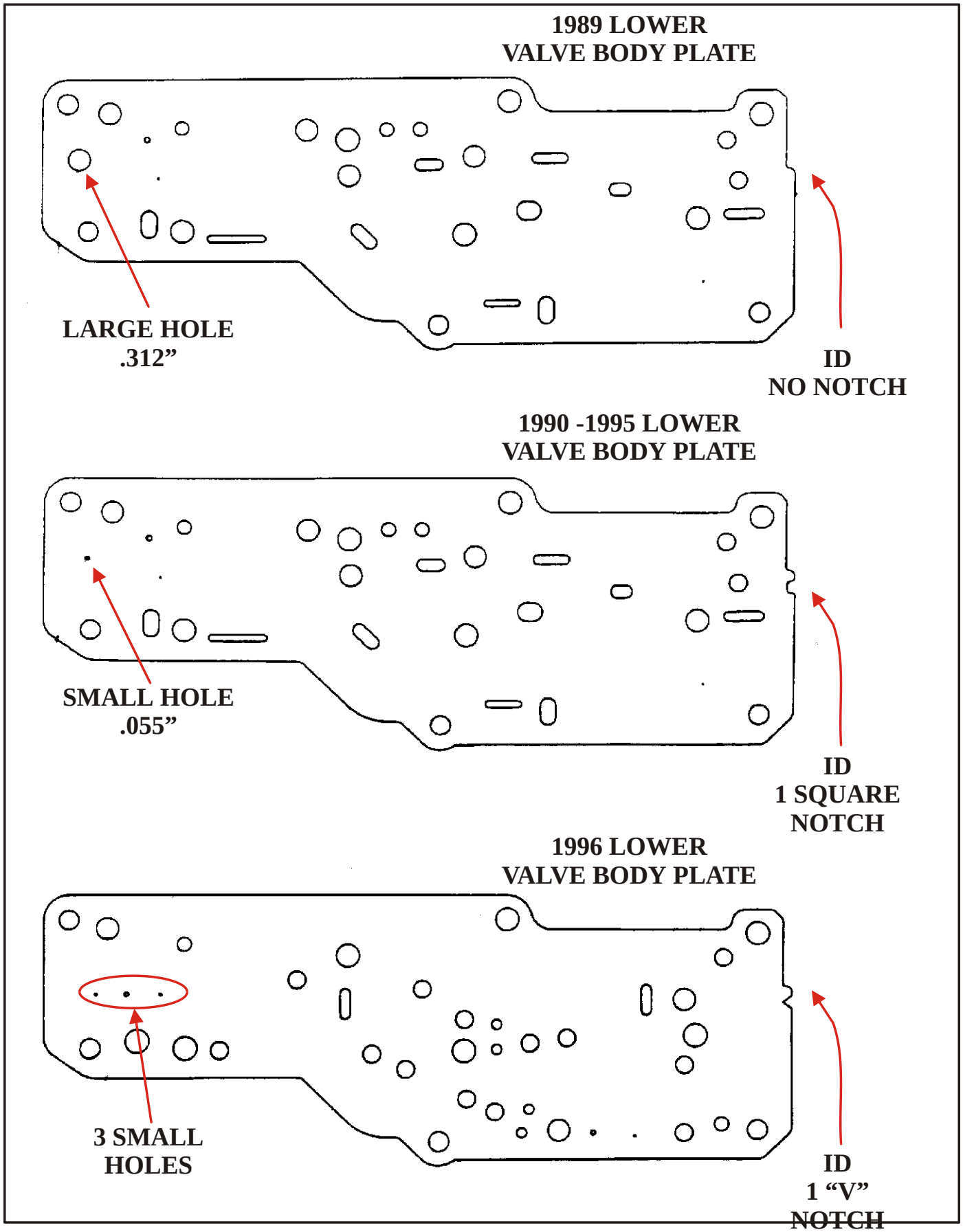
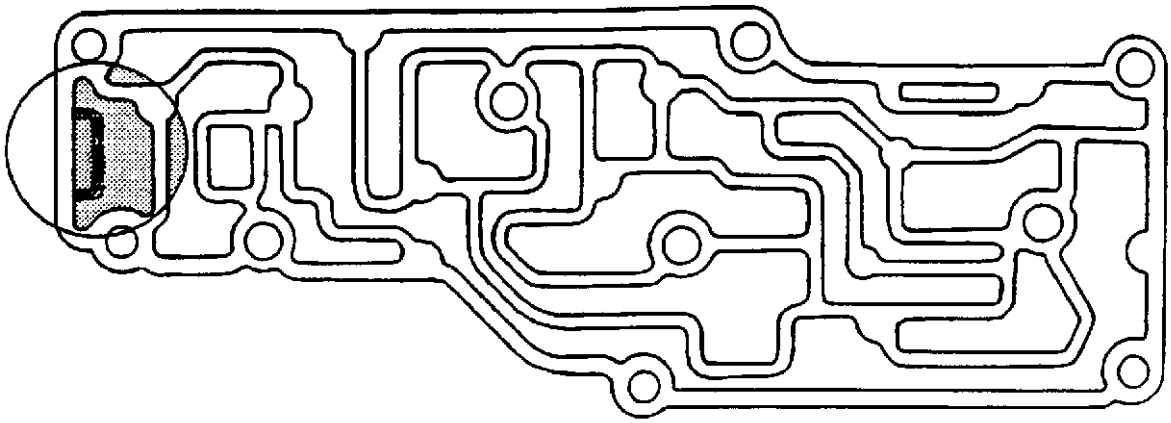

1989 LOWER
VALVE BODY PLATE
LARGE HOLE
.312”
ID
NO NOTCH
1990 -1995 LOWER
VALVE BODY PLATE
SMALL HOLE
.055”
ID
1 SQUARE
NOTCH
1996 LOWER
VALVE BODY PLATE
3 SMALL
HOLES
ID
1 “V”
NOTCH

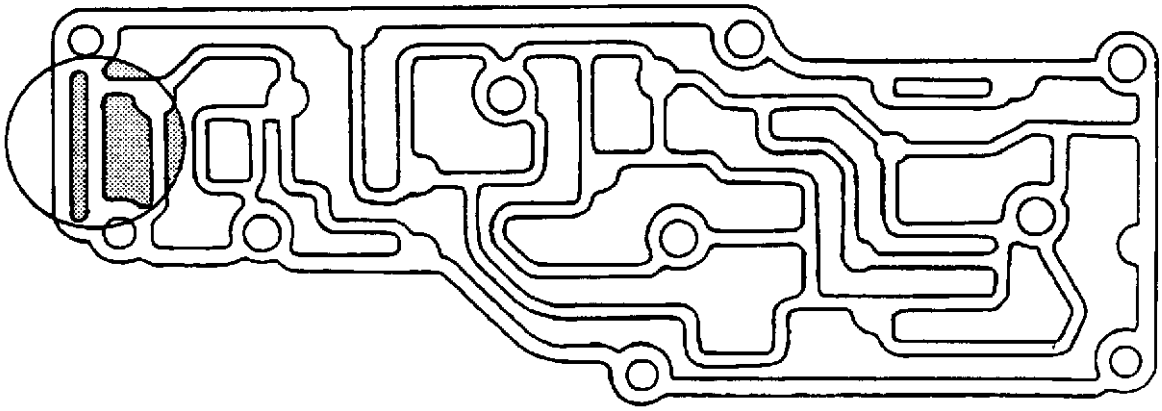
Figure 16

**LOWER VALVE BODIES**

**1989 LOWER VALVE BODY**



**1990 - 1995 LOWER VALVE BODY**



**1996 LOWER VALVE BODY**

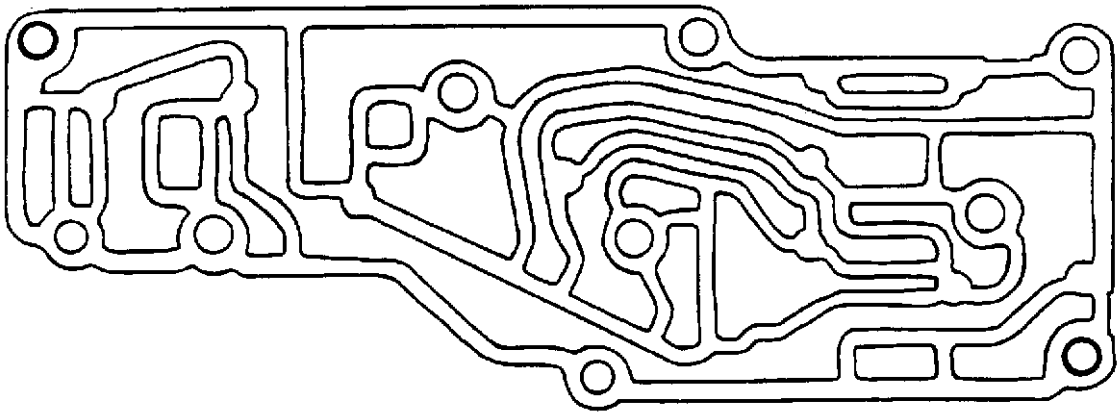


Figure 17