



## CHECKBALLBOOK *Import Volume II*

### INDEX

#### ACURA INTEGRA

<i>Model "CA" .....</i>	<i>4</i>
<i>Model "MPRA" .....</i>	<i>8</i>

#### ACURA LEGEND

<i>Model "G4" .....</i>	<i>12</i>
-------------------------	-----------

#### BMW ELECTRONIC

<i>ZF 4HP-22 (4 Solenoid Only) .....</i>	<i>16</i>
<i>ZF 4HP-22 (5 Solenoid Only) .....</i>	<i>20</i>

#### HONDA ACCORD

<i>Model "AS" .....</i>	<i>28</i>
<i>Model "F4" .....</i>	<i>32</i>
<i>Models "PX4B", "APX4", "MPOA", "AYOA", "BOX" .....</i>	<i>36</i>

#### HONDA CIVIC

<i>Model "CA" .....</i>	<i>40</i>
<i>Model "L4", "ML4A" (1988 Model Only) .....</i>	<i>44</i>
<i>Model "L4", "ML4A" (89-90 Model Only) .....</i>	<i>47</i>
<i>Model "M24A" .....</i>	<i>50</i>
<i>Model "A4RA" .....</i>	<i>53</i>

#### HONDA PRELUDE

<i>Model "F4" .....</i>	<i>32</i>
<i>Model "K4" (Early Model Only) .....</i>	<i>56</i>
<i>Model "K4" (Late Model Only) .....</i>	<i>60</i>
<i>Model "PY8A" .....</i>	<i>64</i>

#### HONDA PASSPORT

<i>Model "4L30-E" .....</i>	<i>67</i>
-----------------------------	-----------

AUTOMATIC TRANSMISSION SERVICE GROUP  
18639 SW 107TH AVENUE  
MIAMI, FLORIDA 33157  
(305) 670-4161



*Updated  
April, 2004*

# **INTRODUCTION**

## ***IMPORT CHECKBALL BOOK VOLUME II***

This booklet contains the checkball locations, screen locations, check valve locations, and relief valve locations, for the upper and lower valve bodies, and the accumulator housing if it contains one of the above. We have also covered any updated information and any changes that may have occurred in the many different model years. This booklet contains some of the Imported transmissions that we have seen in North America. Refer to the Index page for exact transmission models covered.

No part of any ATSG publication may be reproduced, stored in any retrieval system or transmitted in any form or by any means, including but not limited to electronic, mechanical, photocopying, recording or otherwise, without *written* permission of Automatic Transmission Service Group. This includes all text illustrations, tables and charts.

**Copyright © ATSG 2004**

**DALE ENGLAND**  
FIELD SERVICE CONSULTANT

**WAYNE COLONNA**  
TECHNICAL SUPERVISOR

**PETER LUBAN**  
TECHNICAL CONSULTANT

**JON GLATSTEIN**  
TECHNICAL CONSULTANT

**ROLAND ALVAREZ**  
TECHNICAL CONSULTANT

**GERALD CAMPBELL**  
TECHNICAL CONSULTANT

**JIM DIAL**  
TECHNICAL CONSULTANT

**ED KRUSE**  
TECHNICAL CONSULTANT

**GREGORY LIPNICK**  
TECHNICAL CONSULTANT

**DAVID CHALKER**  
TECHNICAL CONSULTANT

**JERRY GOTT**  
TECHNICAL CONSULTANT

**MIKE SOUZA**  
TECHNICAL CONSULTANT

**AUTOMATIC TRANSMISSION SERVICE GROUP  
18639 SW 107TH AVENUE  
MIAMI, FLORIDA 33157  
(305) 670-4161**



## CHECKBALLBOOK *Import Volume II*

### INDEX

#### MAZDA

<i>Model F3A</i> .....	70
<i>Model G4A-HL</i> .....	72
<i>Model F4A-EL</i> .....	78
<i>Model G4A-EL</i> .....	80
<i>Model GF4A-EL (7 Solenoid)</i> .....	85
<i>Model N4A-EL</i> .....	90

#### MITSUBISHI

<i>Models KM170, KM171, KM172</i> .....	92
<i>Models KM175, KM176, KM177</i> .....	96

#### SPECTRUM

<i>Model F3A</i> .....	70
------------------------	----

#### SPRINT, SUZUKI, GEO

<i>Model MX17</i> .....	100
-------------------------	-----

#### SAAB

<i>Model ZF 4HP-18</i> .....	102
<i>Model AW50-42LE</i> .....	105

#### VOLKSWAGON PASSAT

<i>Model 096-097</i> .....	108
----------------------------	-----

#### VOLVO

<i>Model AW50-42LE</i> .....	105
------------------------------	-----

#### VW/AUDI

<i>O1M</i> .....	110
------------------	-----

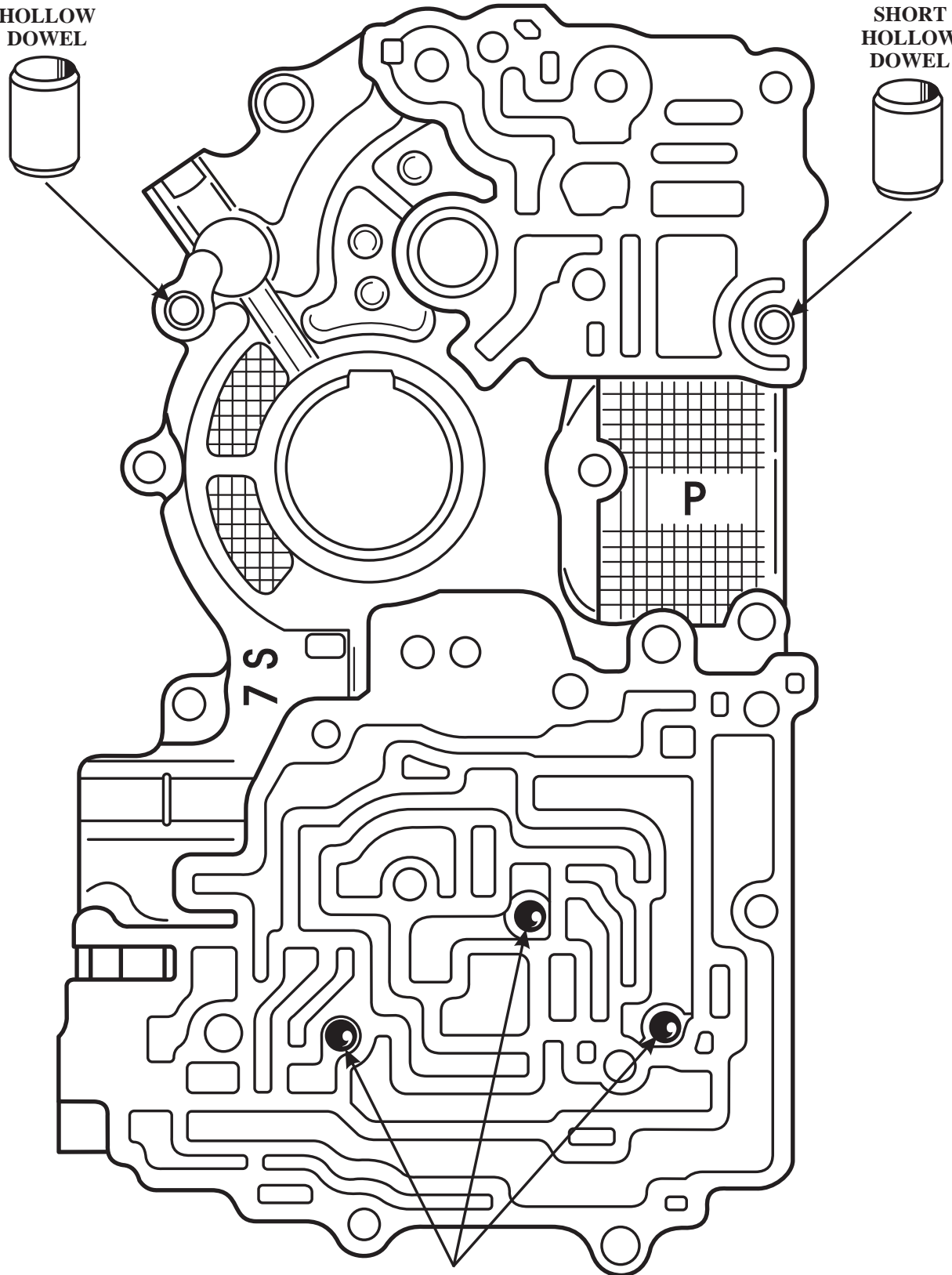
AUTOMATIC TRANSMISSION SERVICE GROUP  
18639 SW 107TH AVENUE  
MIAMI, FLORIDA 33157  
(305) 670-4161

Copyright © ATSG 2004

**ACURA INTEGRA MODEL "CA"  
MAIN VALVE BODY "TOP VIEW"**

SHORT  
HOLLOW  
DOWEL

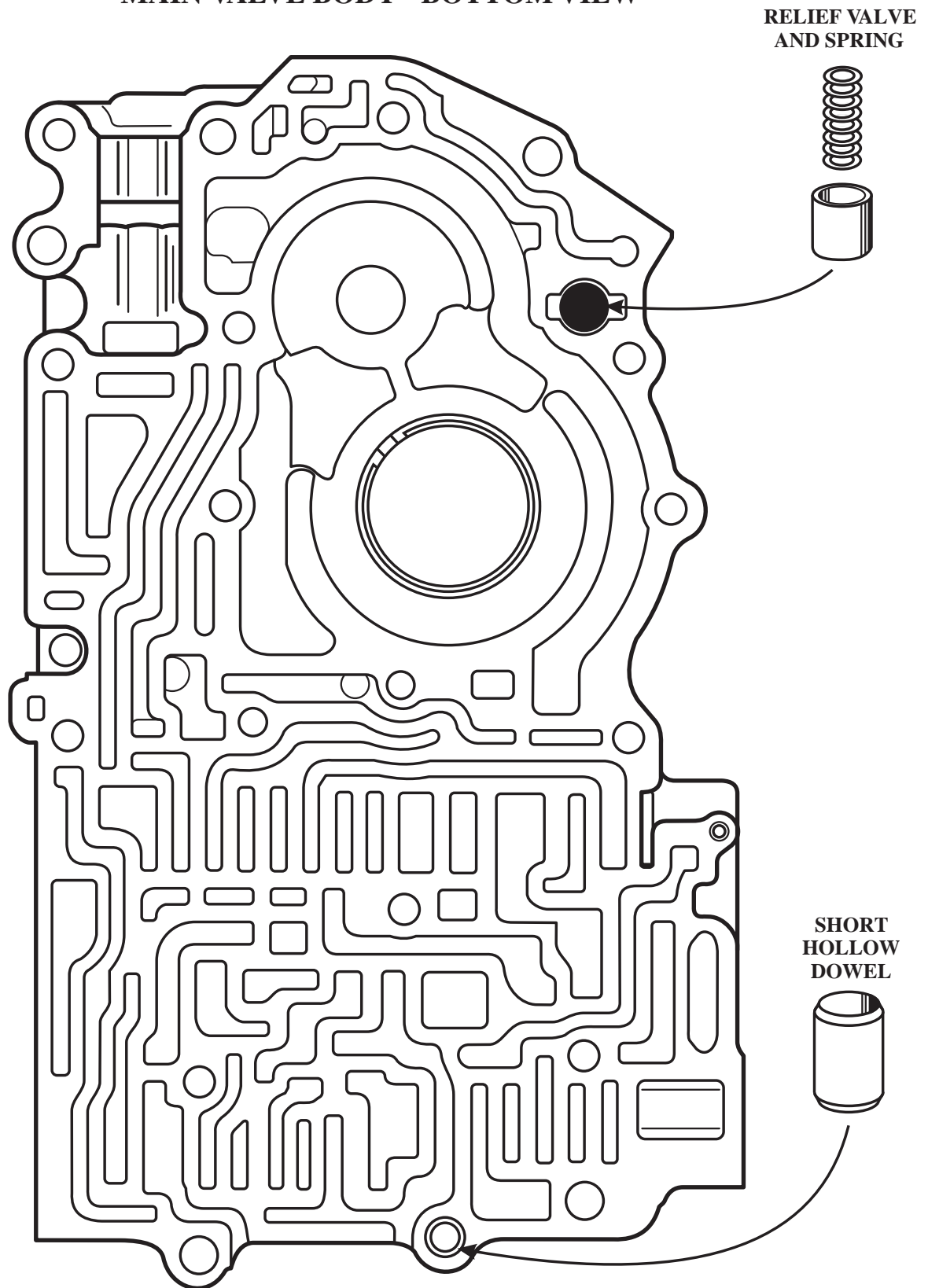
SHORT  
HOLLOW  
DOWEL



5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

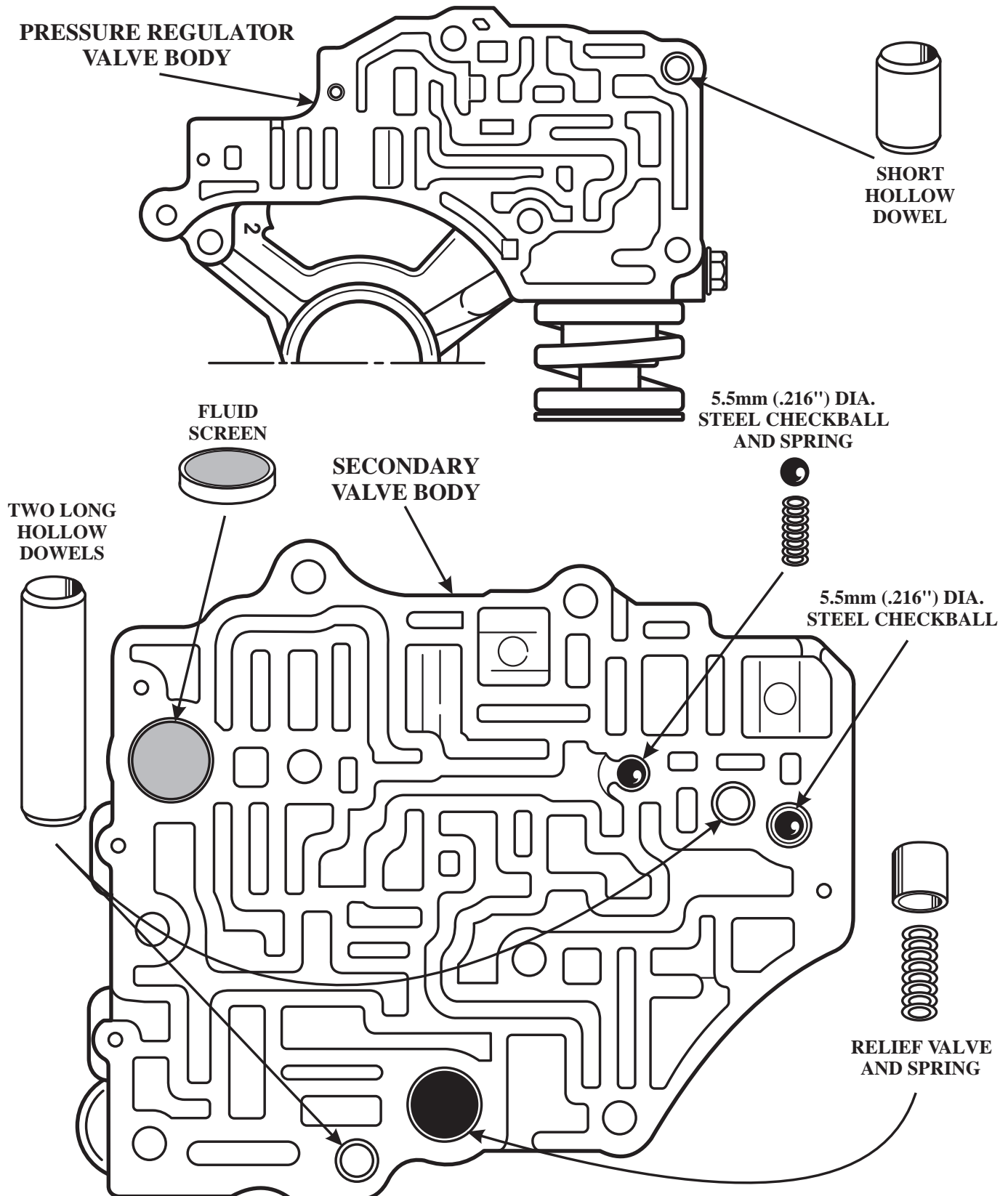
Copyright © 1999 ATSG

### ACURA INTEGRA MODEL "CA" MAIN VALVE BODY "BOTTOM VIEW"



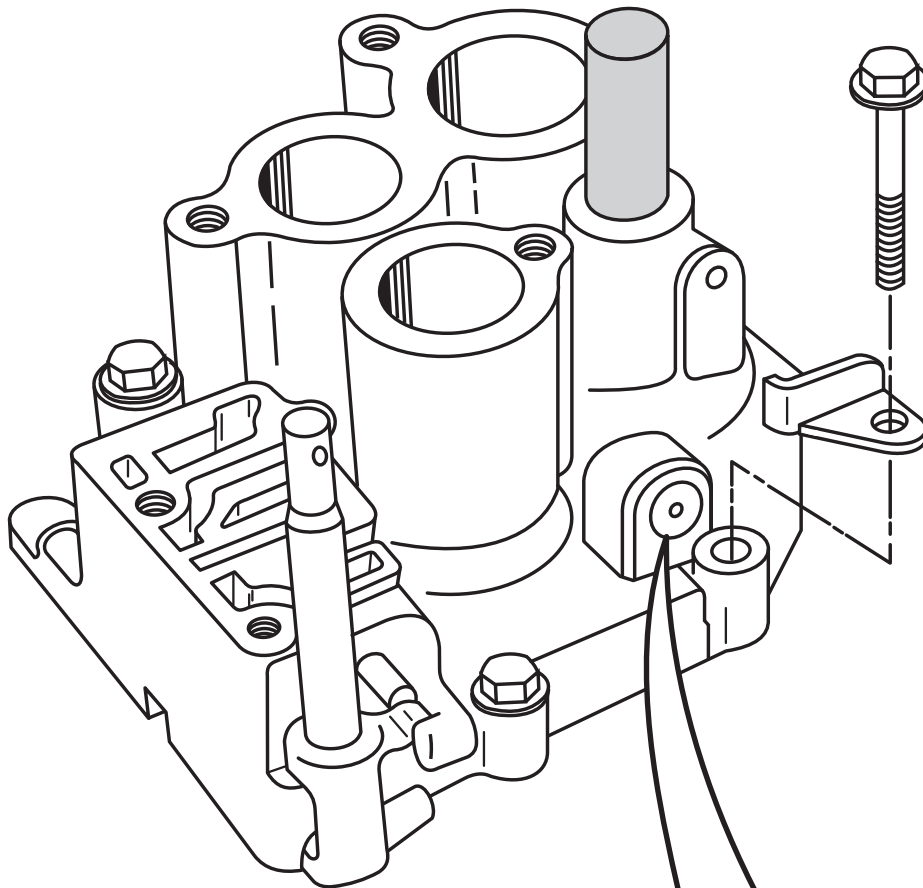
Copyright © 1999 ATSG

### ACURA INTEGRA MODEL "CA" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



Copyright © 1999 ATSG

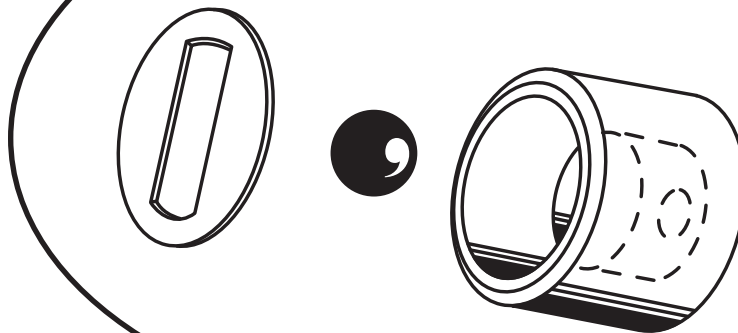
### SERVO VALVE BODY



#### CAUTION:

The Servo Release Check Valve is staked into the servo valve body as shown, but it can fall out or can be blown out during cleaning process.

#### SERVO RELEASE CHECK VALVE



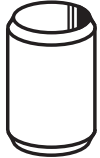
Copyright © 1999 ATSG

**NOTE: MOST SERVO VALVE BODIES WILL HAVE THIS CHECK VALVE.**

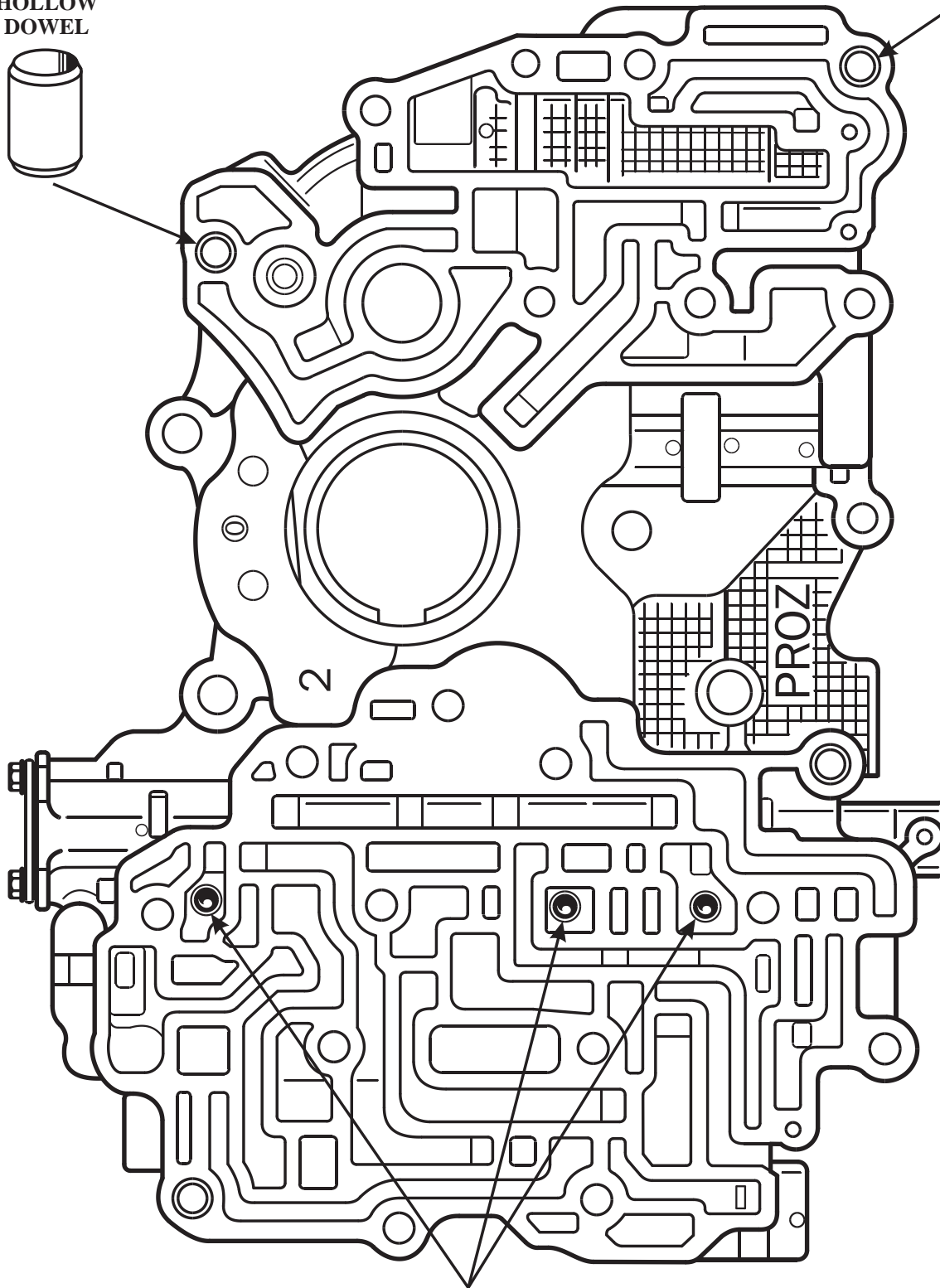


**ACURA INTEGRA MODEL "MPRA"  
MAIN VALVE BODY "TOP VIEW"**

SHORT  
HOLLOW  
DOWEL



SHORT  
HOLLOW  
DOWEL

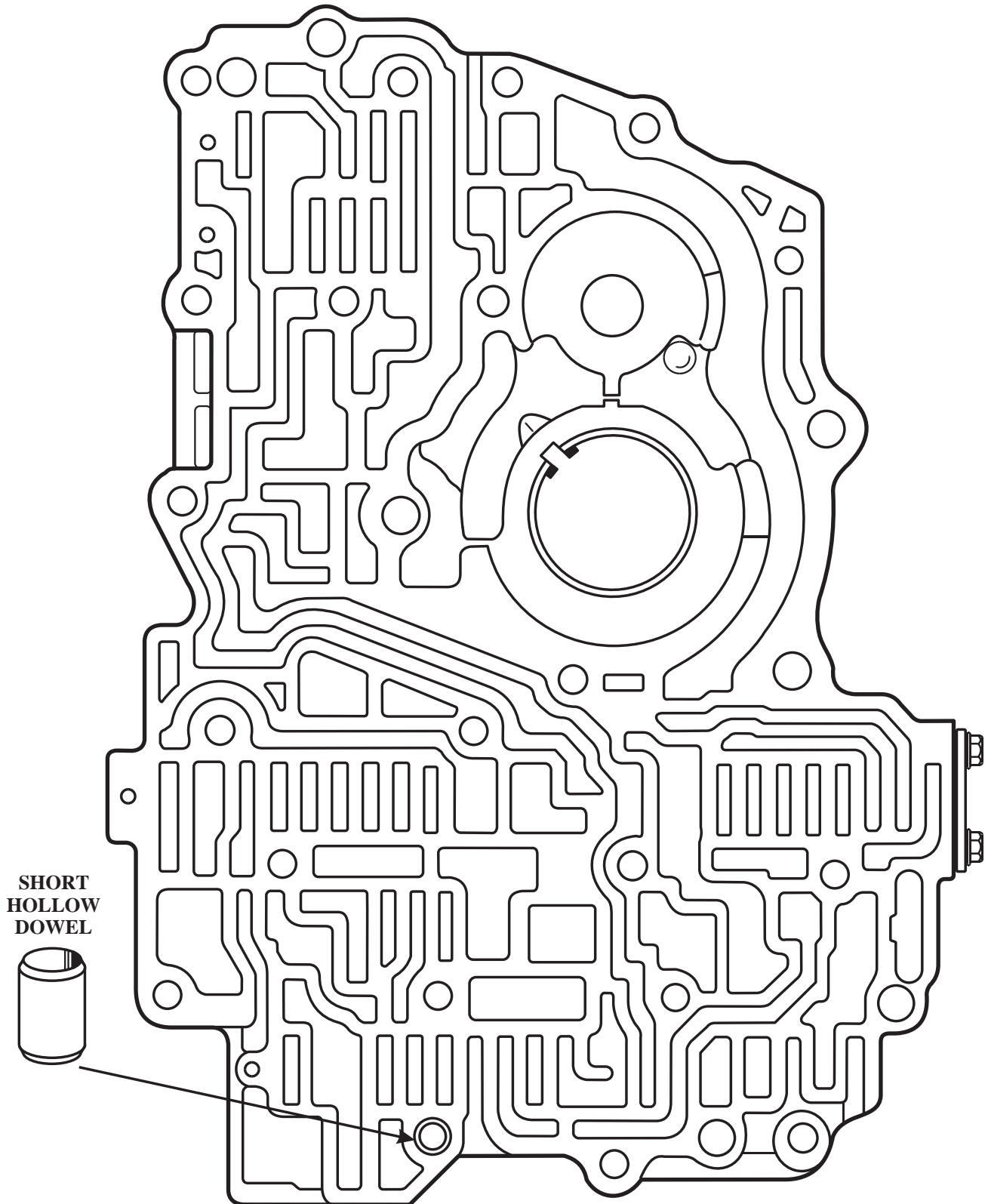


**5.5mm (.216") DIAMETER  
STEEL CHECKBALLS**

Copyright © 1999 ATSG

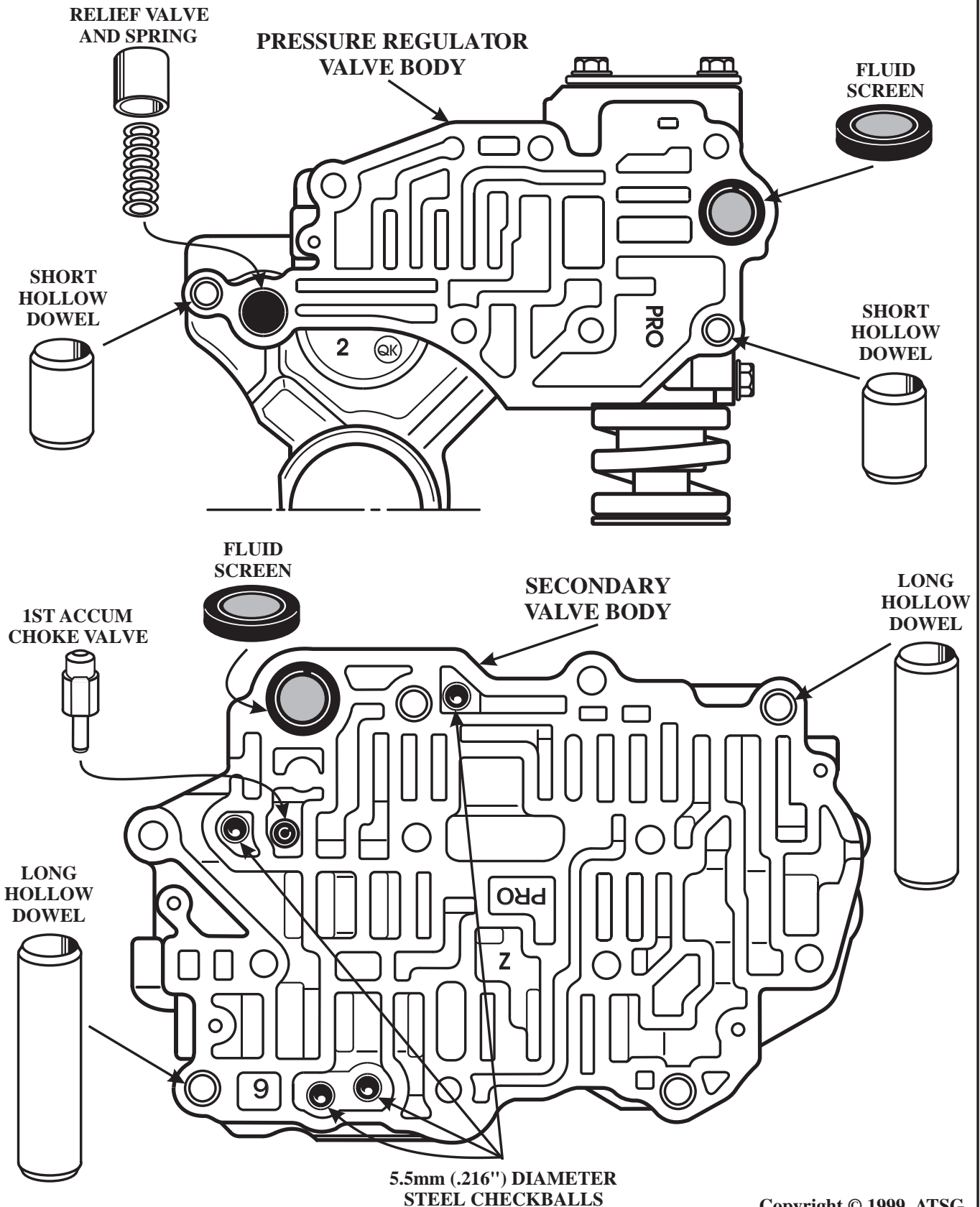


### ACURA INTEGRA MODEL "MPRA" MAIN VALVE BODY "BOTTOM VIEW"



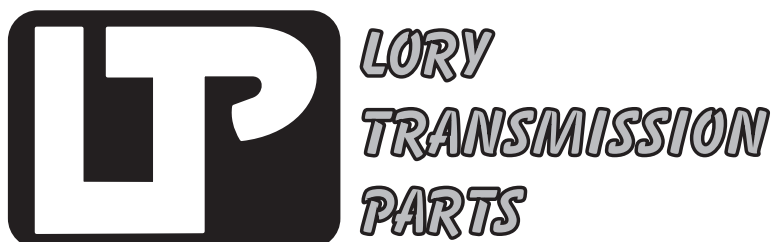
Copyright © 1999 ATSG

### ACURA INTEGRA MODEL "MPRA" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



Copyright © 1999 ATSG

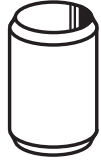
We wish to thank the following for supplying the actual valve bodies that have made these illustrations possible.



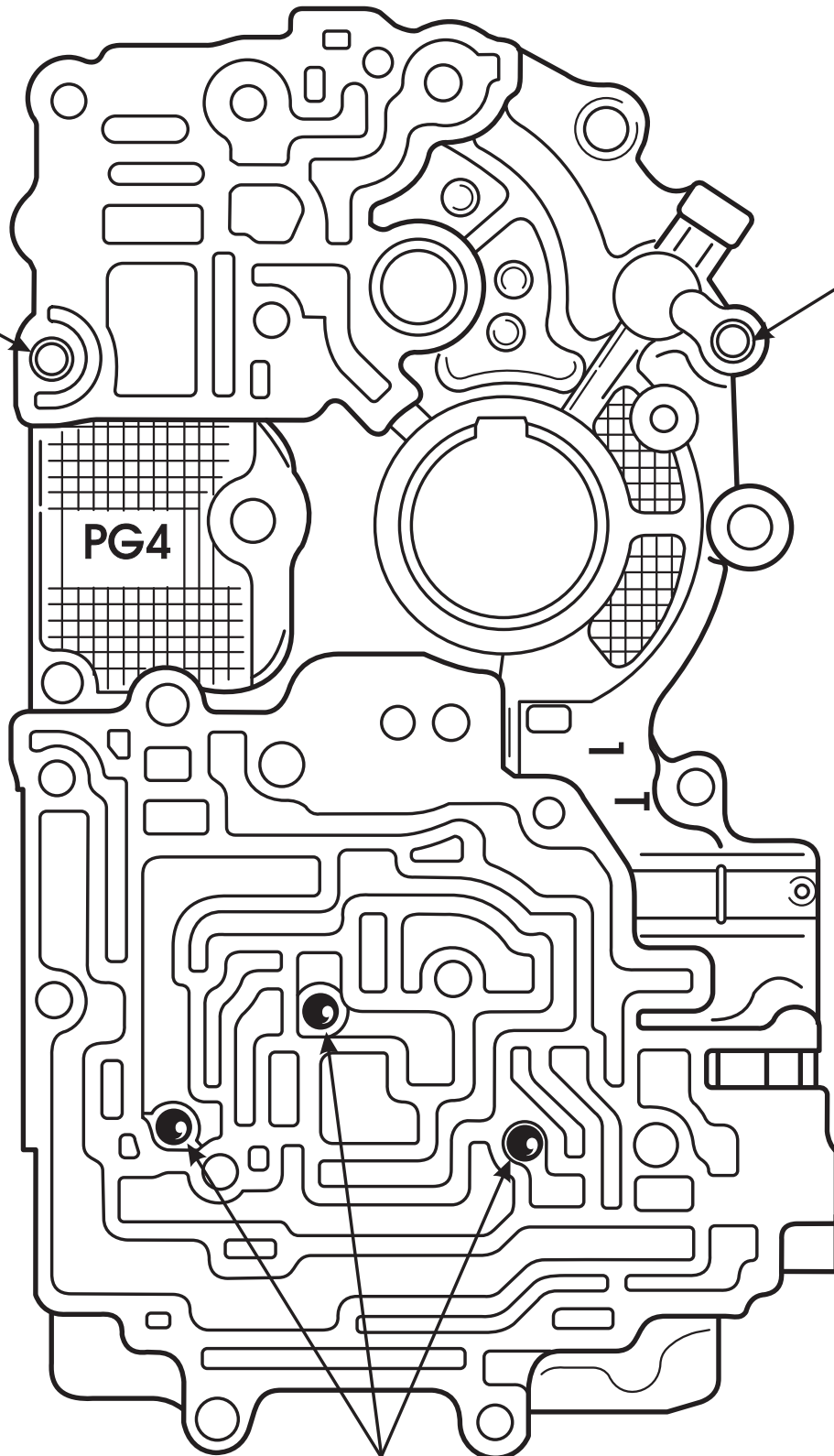
**2414 SW 8TH STREET**  
**MIAMI, FLORIDA 33135**  
**TOLL FREE (800) 966-4621**  
**PHONE (305) 642-4621**  
**FAX (305) 541-1444**

### ACURA LEGEND MODEL "G4" MAIN VALVE BODY "TOP VIEW"

SHORT  
HOLLOW  
DOWEL



SHORT  
HOLLOW  
DOWEL



5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

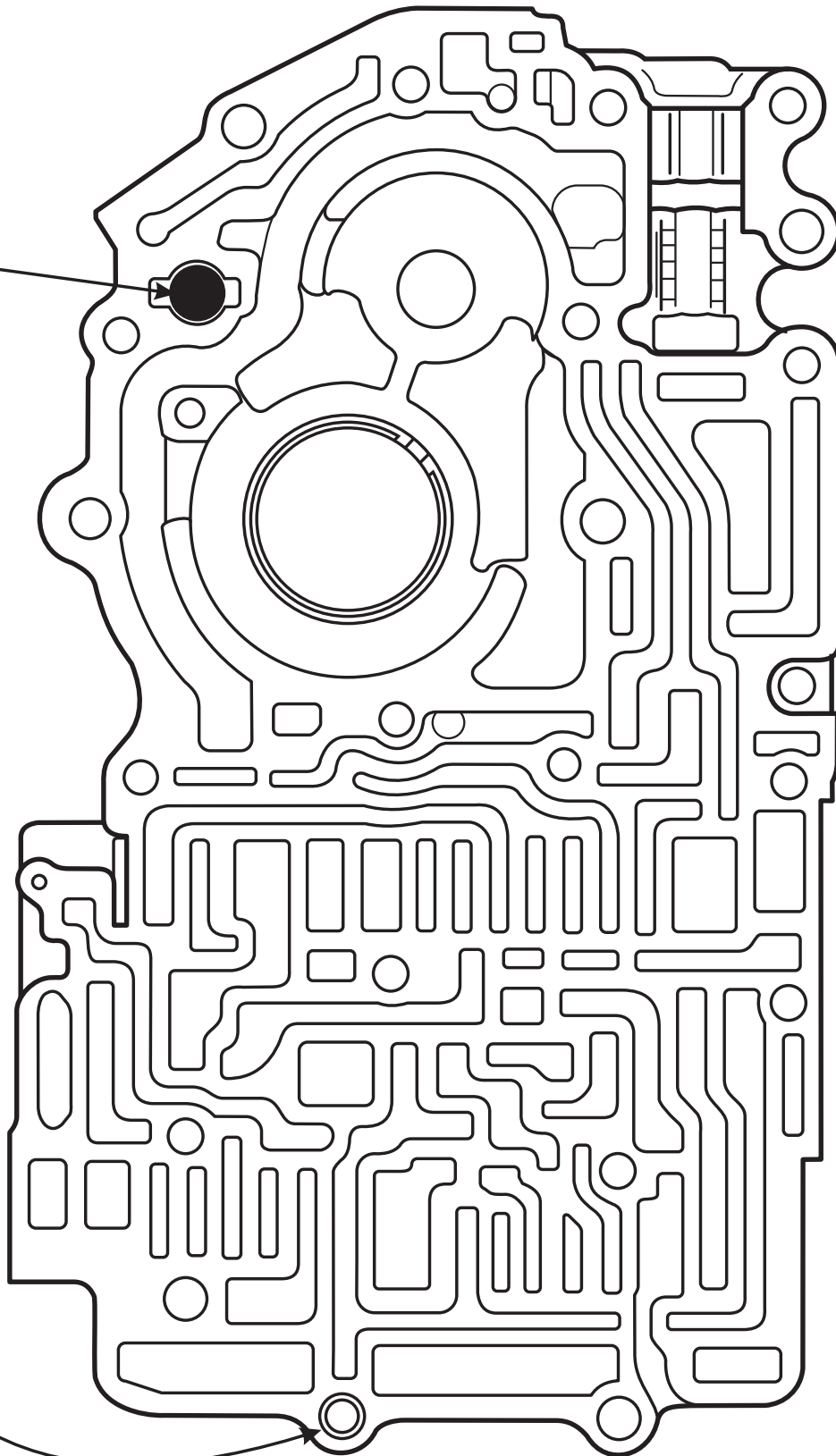
Copyright © 1999 ATSG

### ACURA LEGEND MODEL "G4" MAIN VALVE BODY "BOTTOM VIEW"

RELIEF VALVE  
AND SPRING

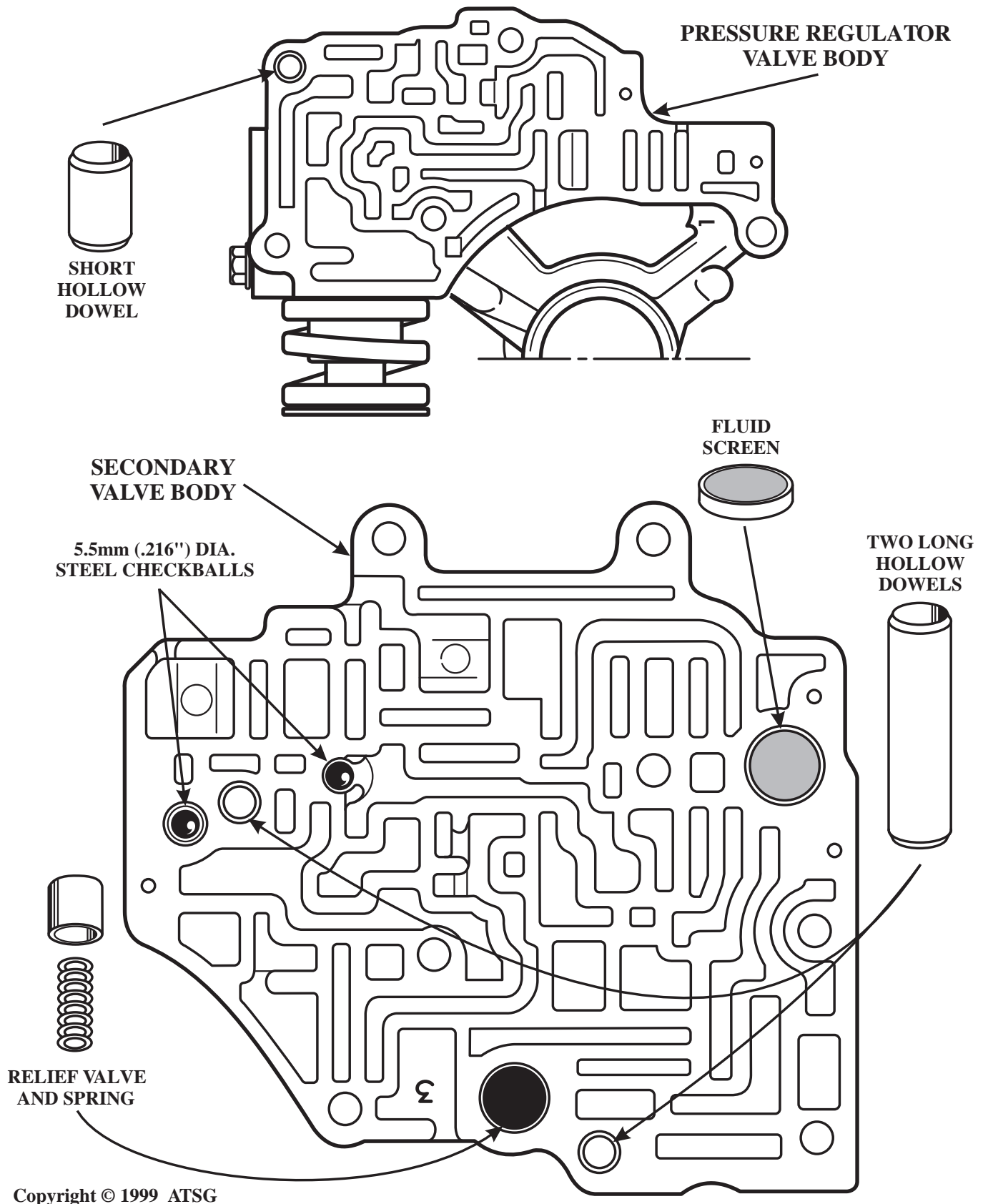


SHORT  
HOLLOW  
DOWEL



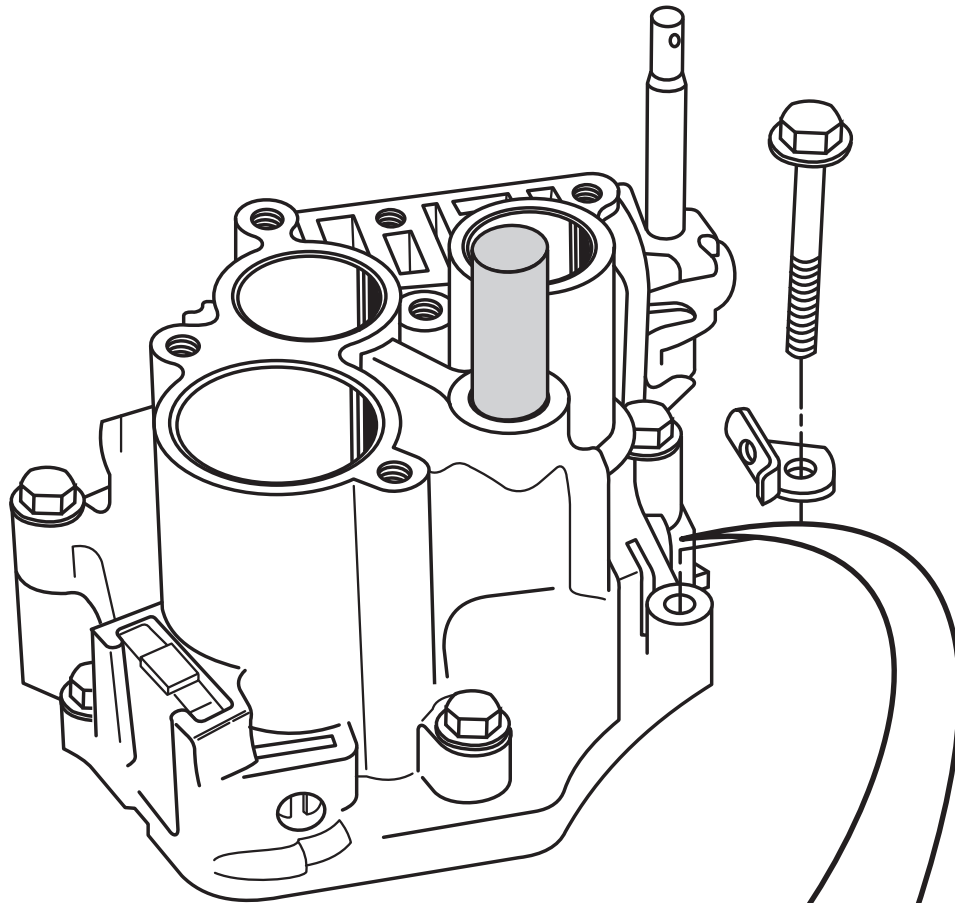
Copyright © 1999 ATSG

### ACURA LEGEND MODEL "G4" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



Copyright © 1999 ATSG

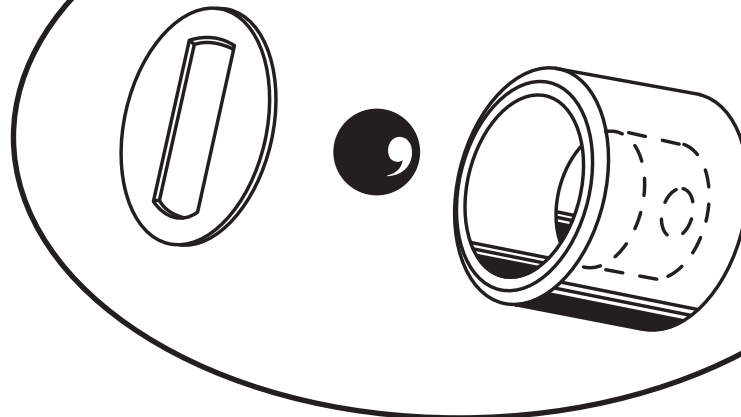
### SERVO VALVE BODY



#### CAUTION:

The Servo Release Check Valve is staked into the servo valve body as shown, but it can fall out or can be blown out during cleaning process.

#### SERVO RELEASE CHECK VALVE

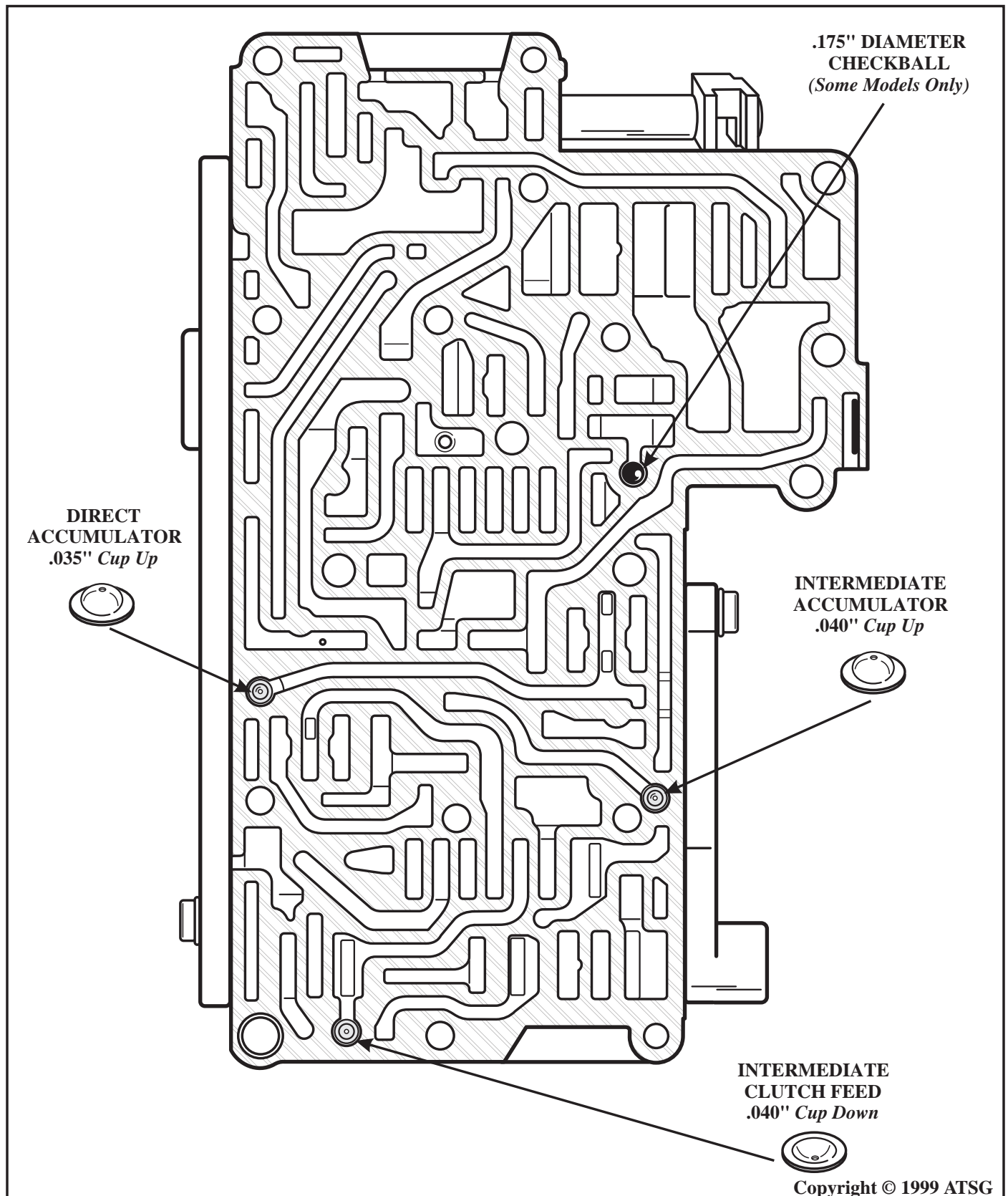


Copyright © 1999 ATSG

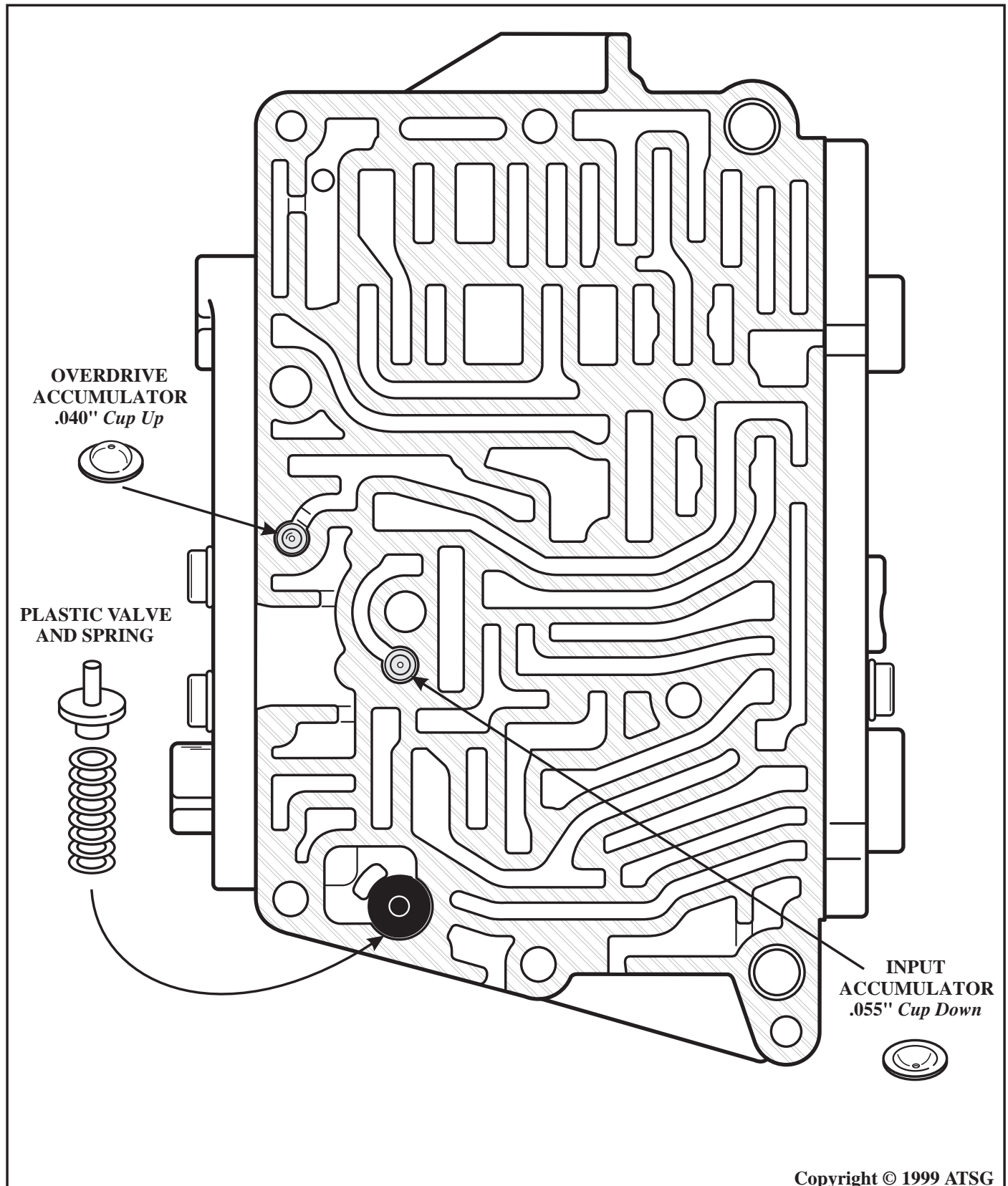
**NOTE: MOST SERVO VALVE BODIES WILL HAVE THIS CHECK VALVE.**



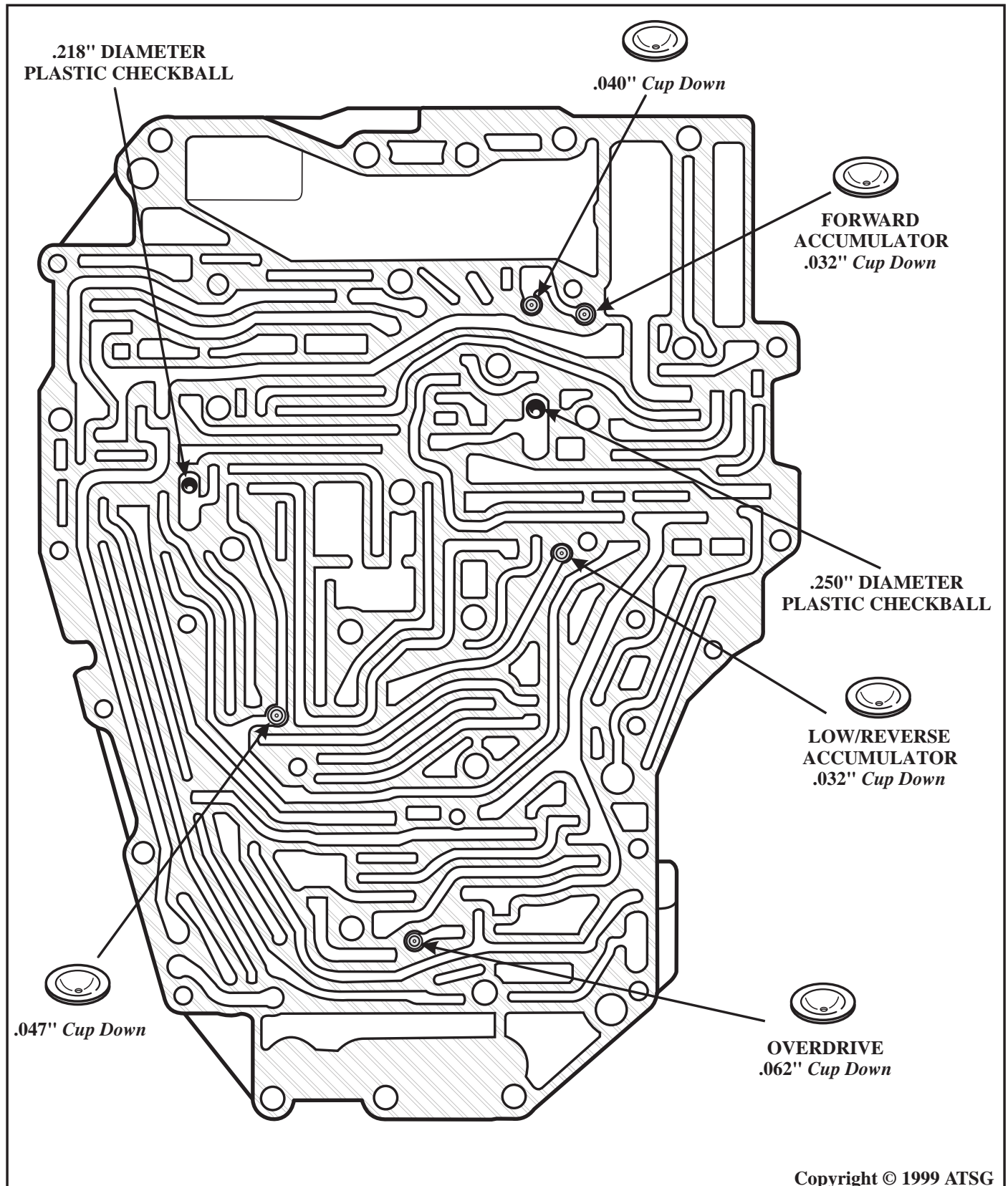
### BMW ELECTRONIC ZF4HP-22 (4 SOLENOID ONLY) "LOWER FRONT" VALVE BODY



### BMW ELECTRONIC ZF4HP-22 (4SOLENOID ONLY) "LOWER REAR" VALVE BODY

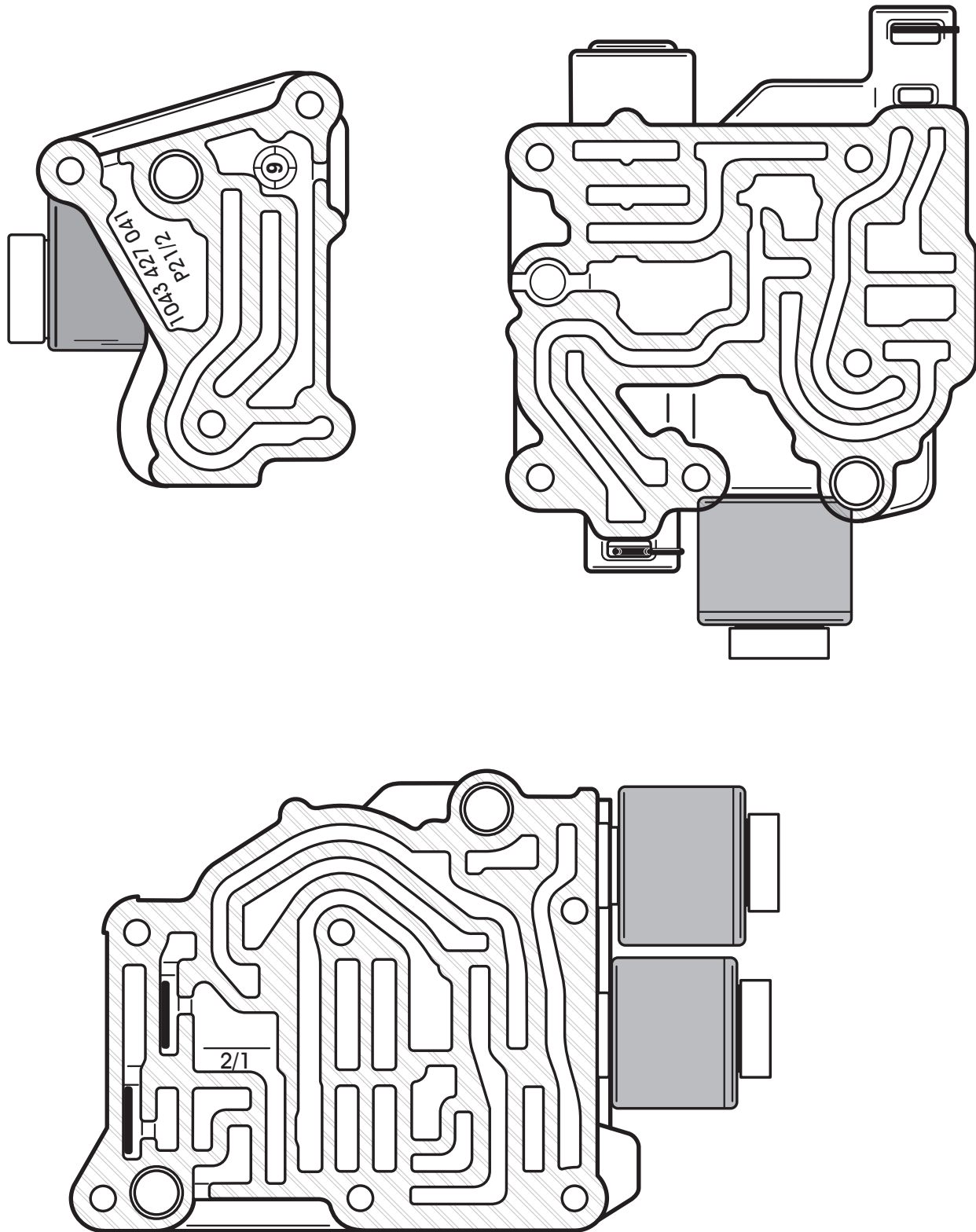


### BMW ELECTRONIC ZF4HP-22 (4 SOLENOID ONLY) CHANNEL PLATE



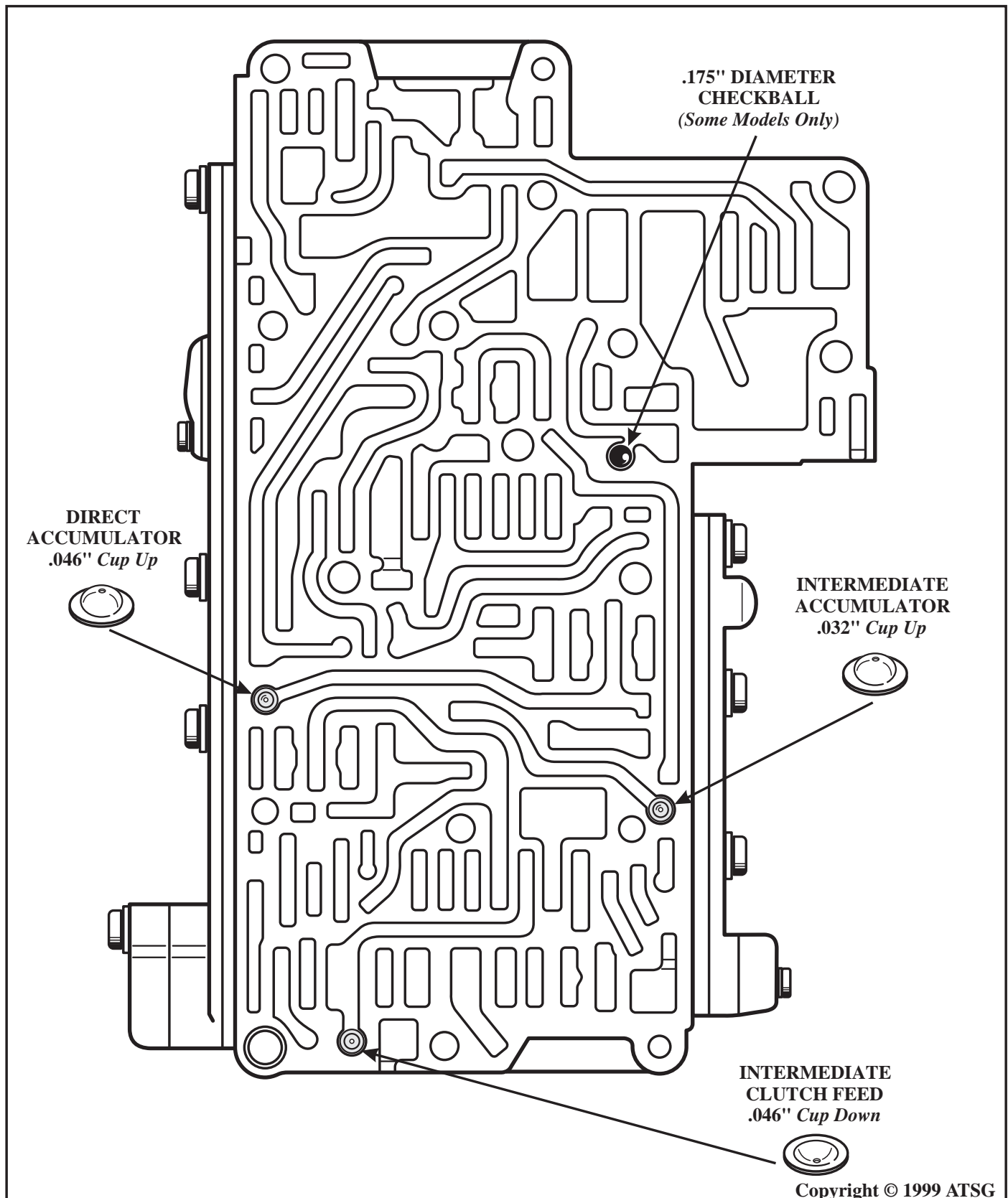
Copyright © 1999 ATSG

### BMW ELECTRONIC ZF4HP-22 (4 SOLENOID ONLY) "UPPER RIGHT" AND "UPPER LEFT" VALVE BODY

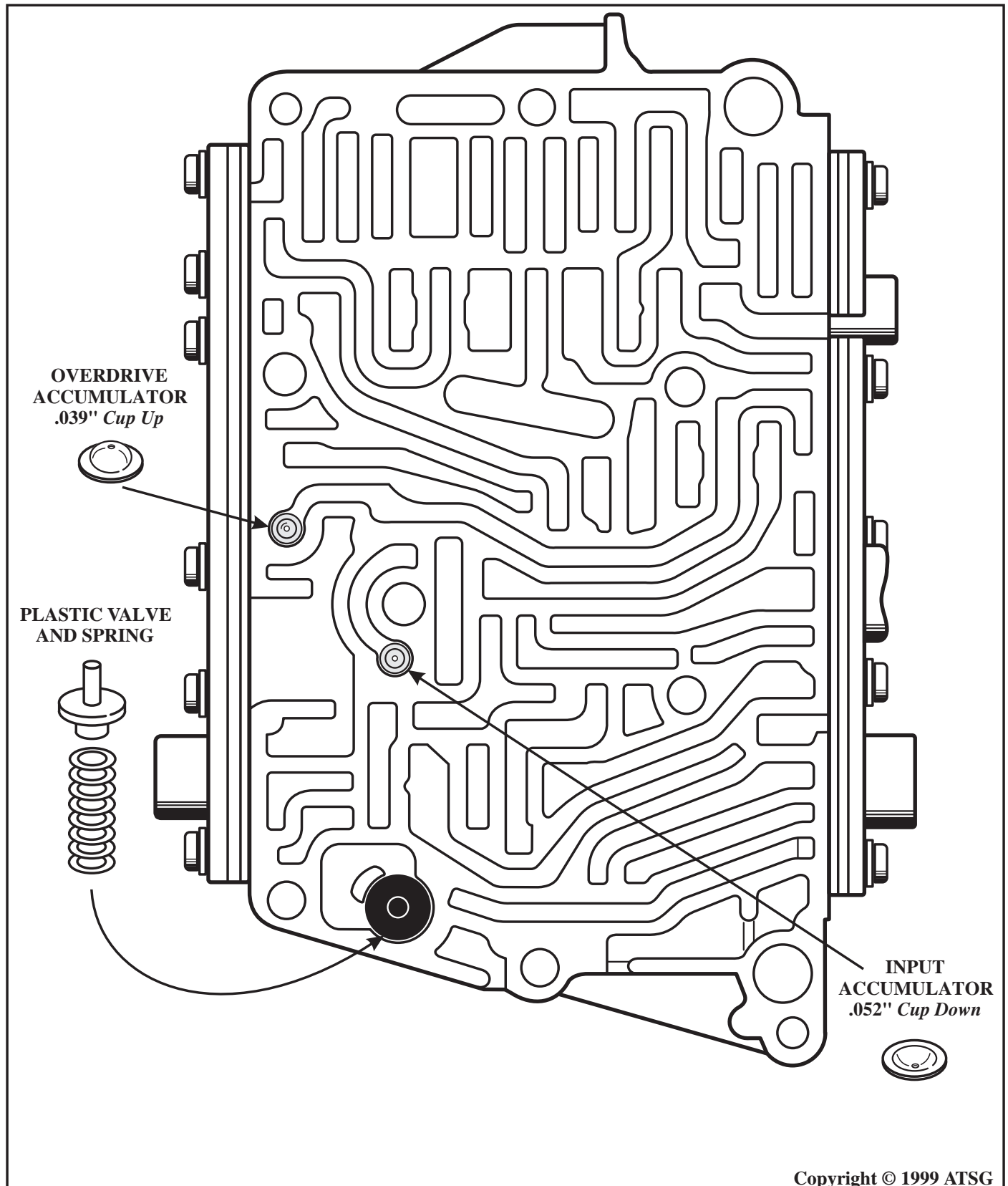


Copyright © 1999 ATSG

### BMW ELECTRONIC ZF4HP-22 (5 SOLENOID ONLY) "LOWER FRONT" VALVE BODY

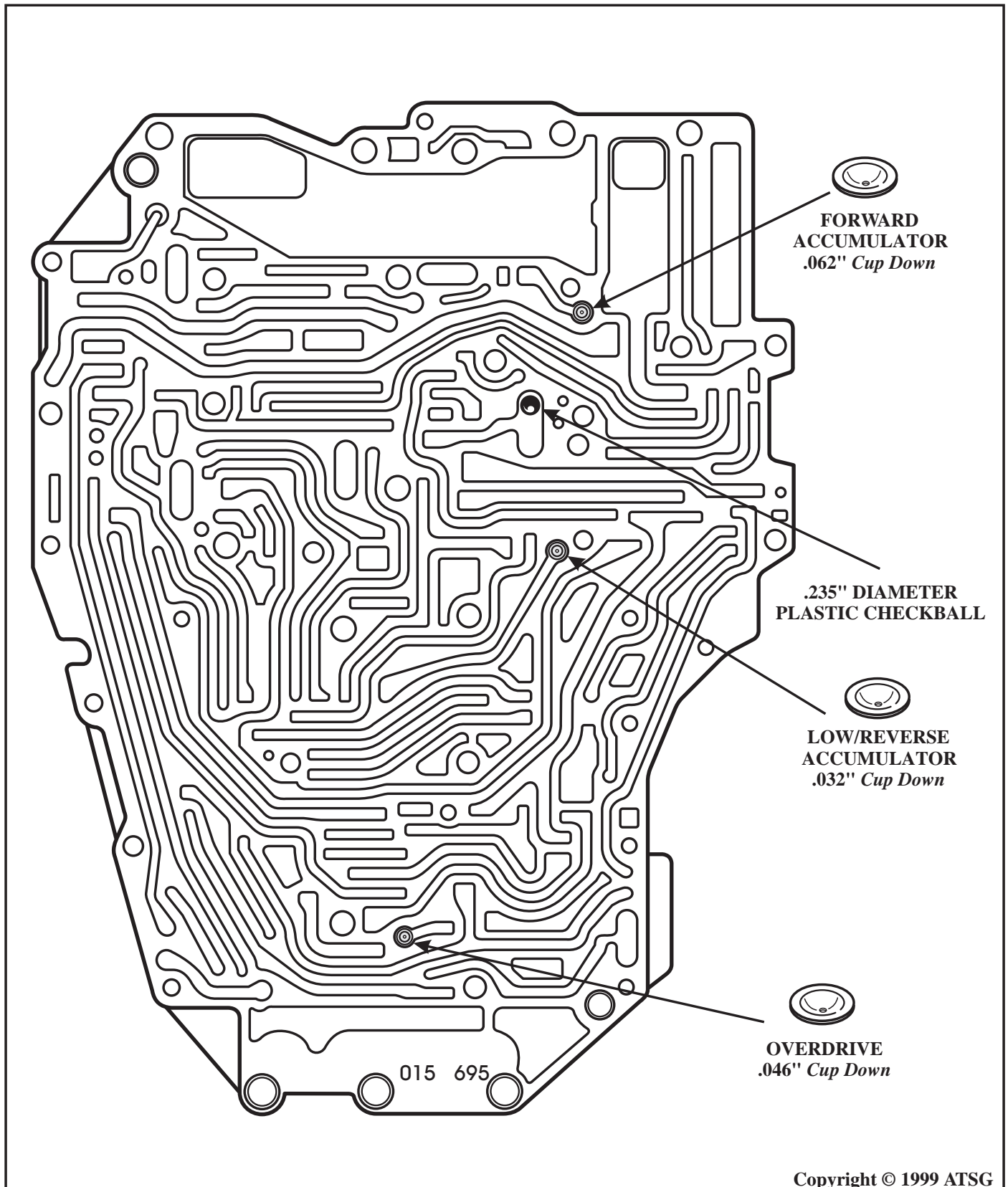


### BMW ELECTRONIC ZF4HP-22 (5 SOLENOID ONLY) "LOWER REAR" VALVE BODY





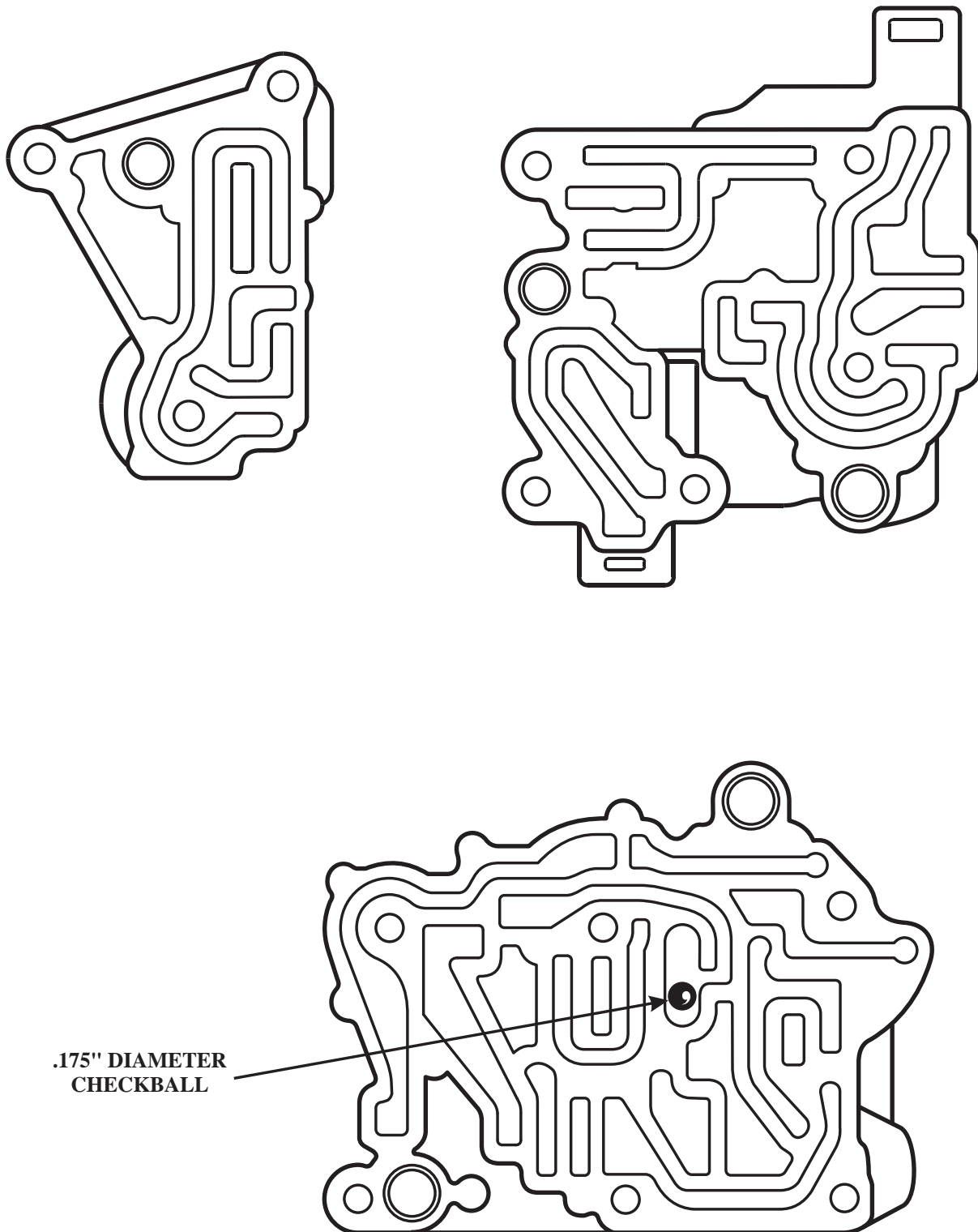
### BMW ELECTRONIC ZF4HP-22 (5 SOLENOID ONLY) CHANNEL PLATE



Copyright © 1999 ATSG

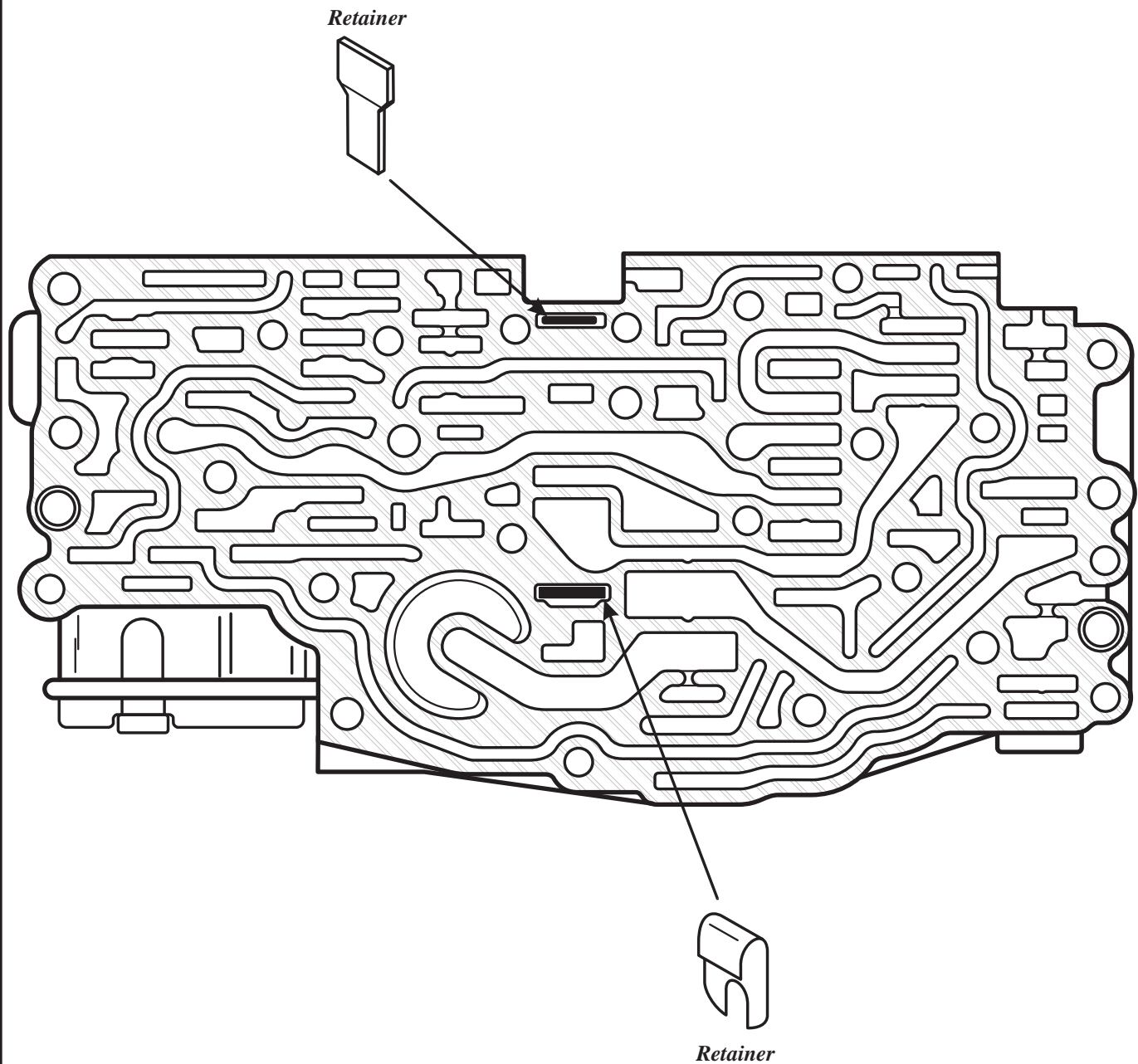


### BMW ELECTRONIC ZF4HP-22 (5 SOLENOID ONLY) "UPPER RIGHT" AND "UPPER LEFT" VALVE BODY



Copyright © 1999 ATSG

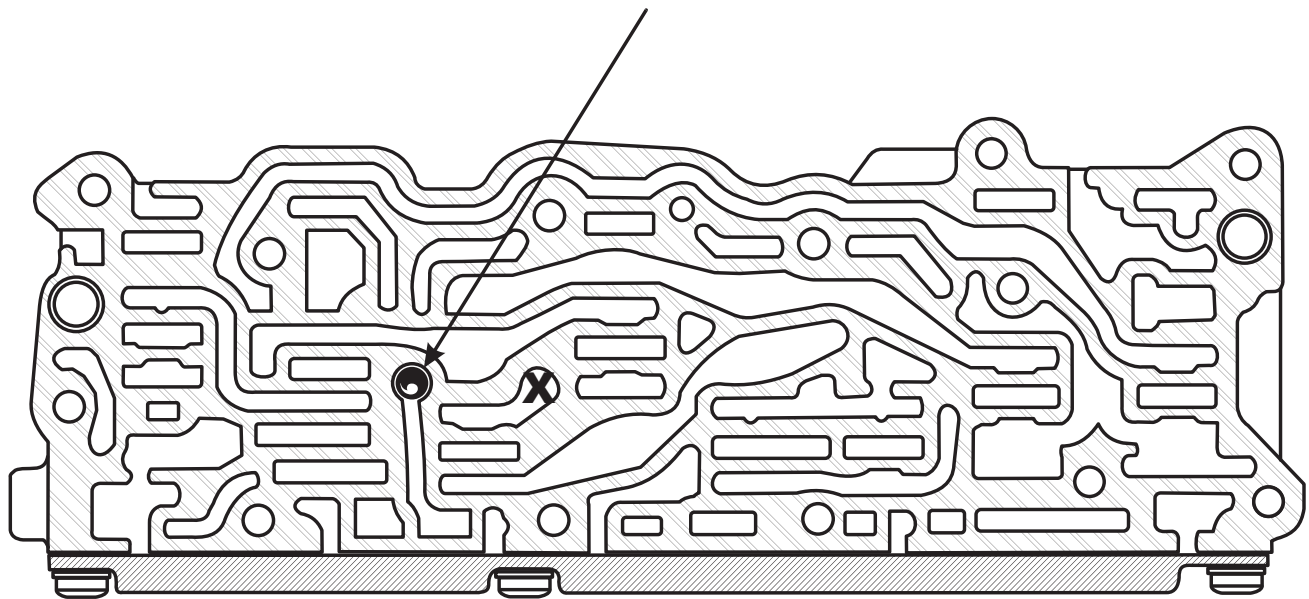
### BMW ELECTRONIC ZF5HP-30 "LOWER FRONT" VALVE BODY



Copyright © 1999 ATSG

### BMW ELECTRONIC ZF5HP-30 "UPPER REAR" VALVE BODY

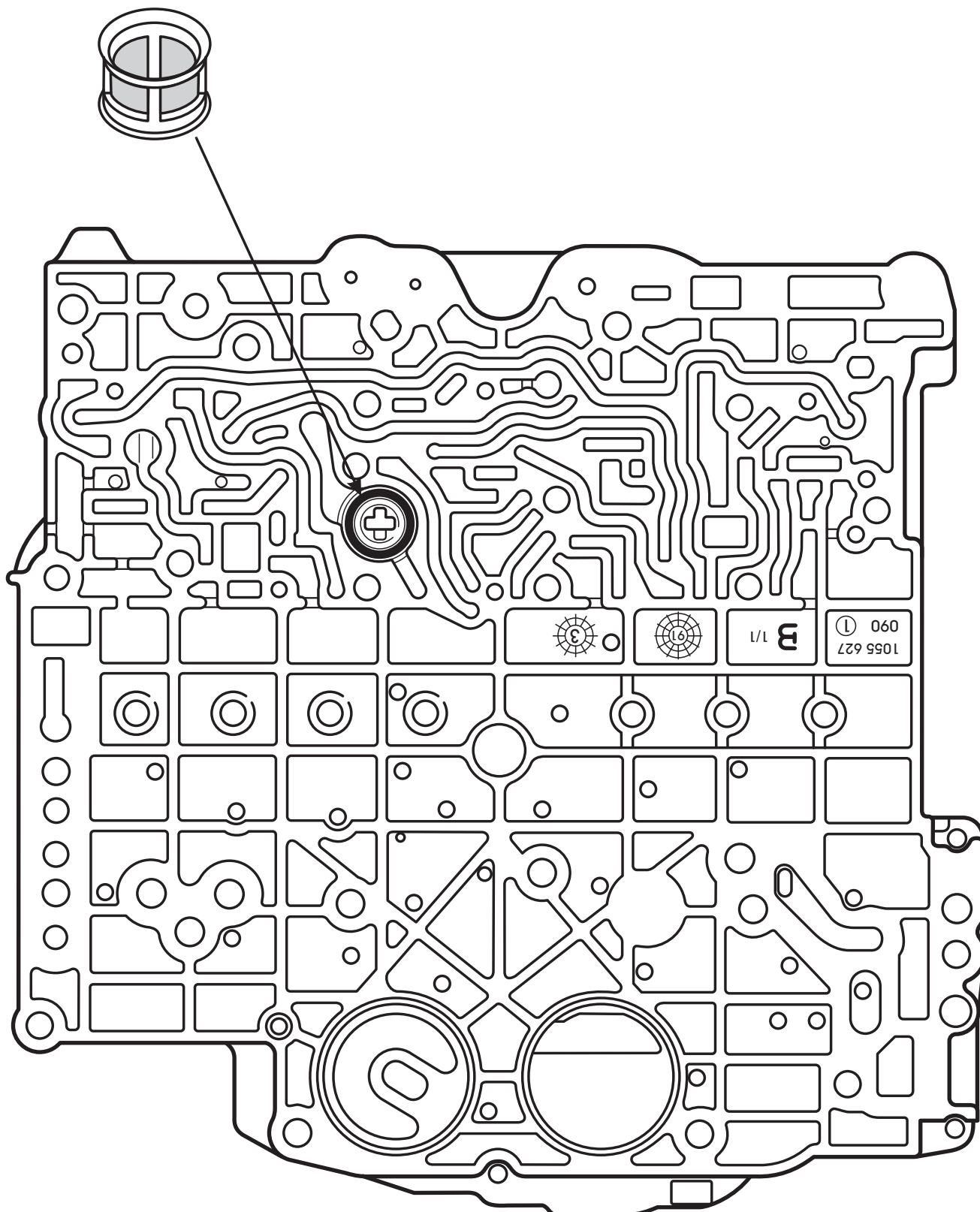
*Only One .250" (6.35mm) ball is located here.  
Do Not install a ball in the pocket marked X.*



Copyright © 1999 ATSG

### BMW ZF-5HP-30 CHANNEL PLATE "UPPER REAR" VALVE BODY SIDE

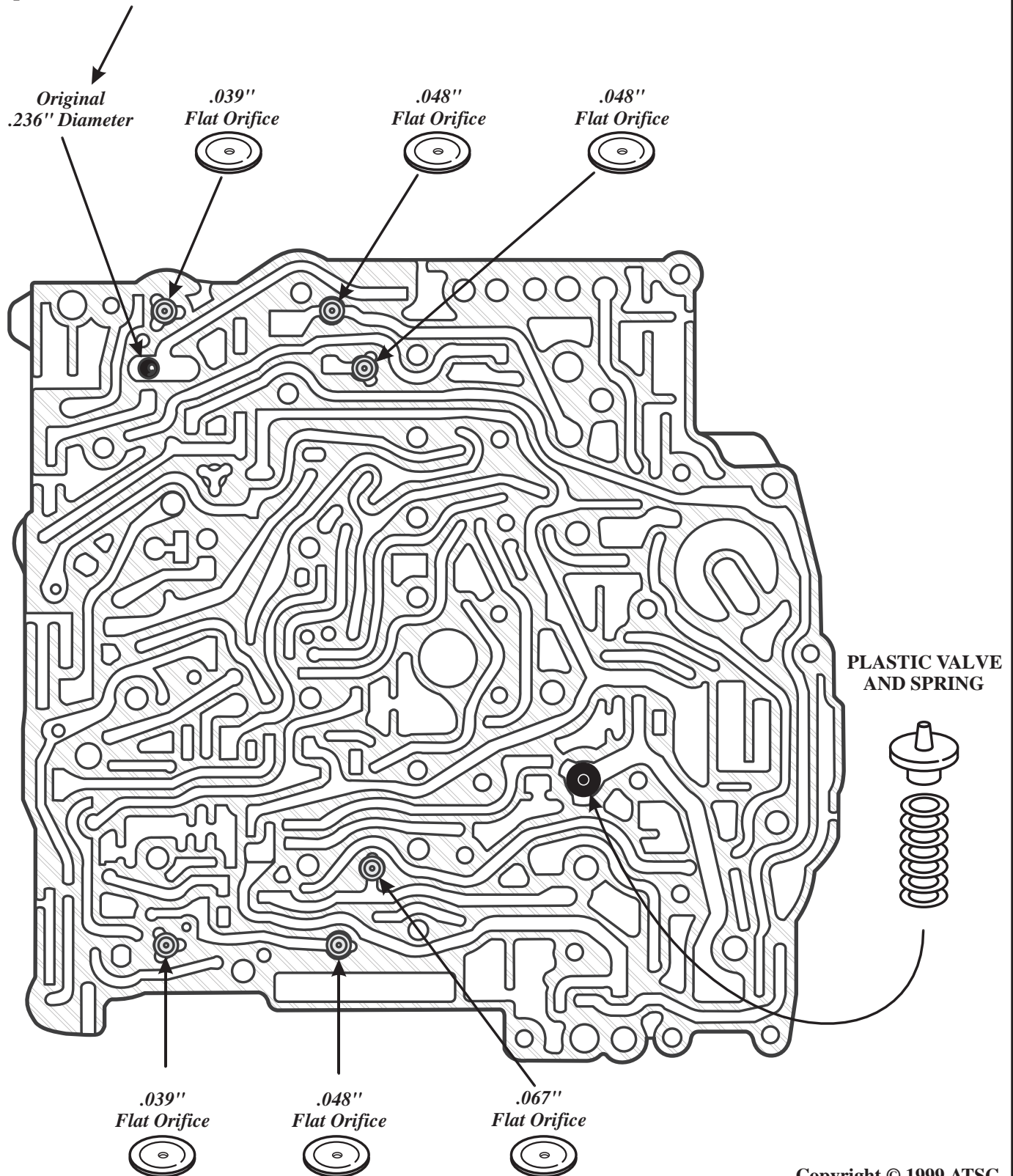
Round Screen



Copyright © 1999 ATSG

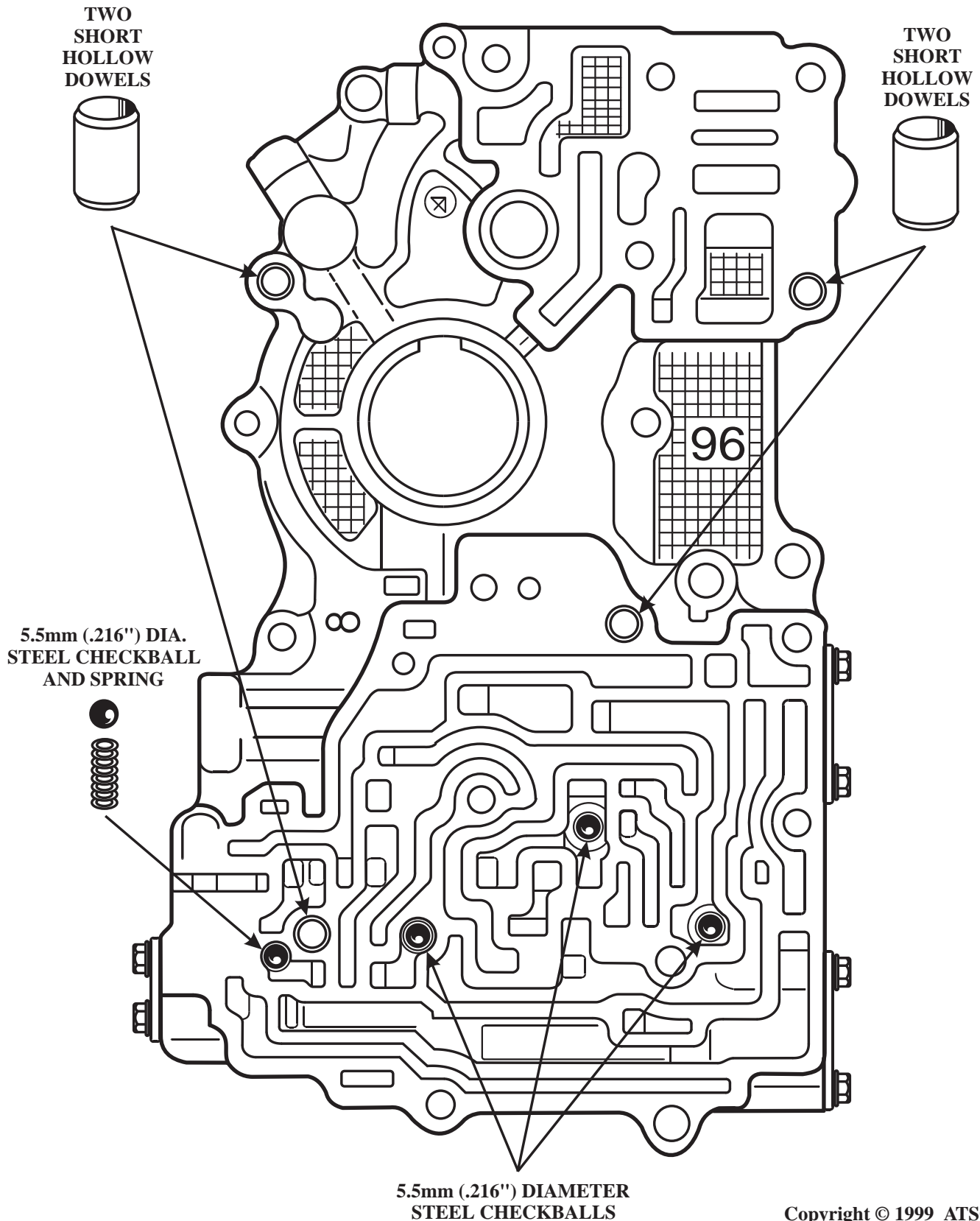
### BMW ZF-5HP-30 CHANNEL PLATE "LOWER" VALVE BODY SIDE

Replace the original ball with  
a plastic .250" (6.35mm) ball.



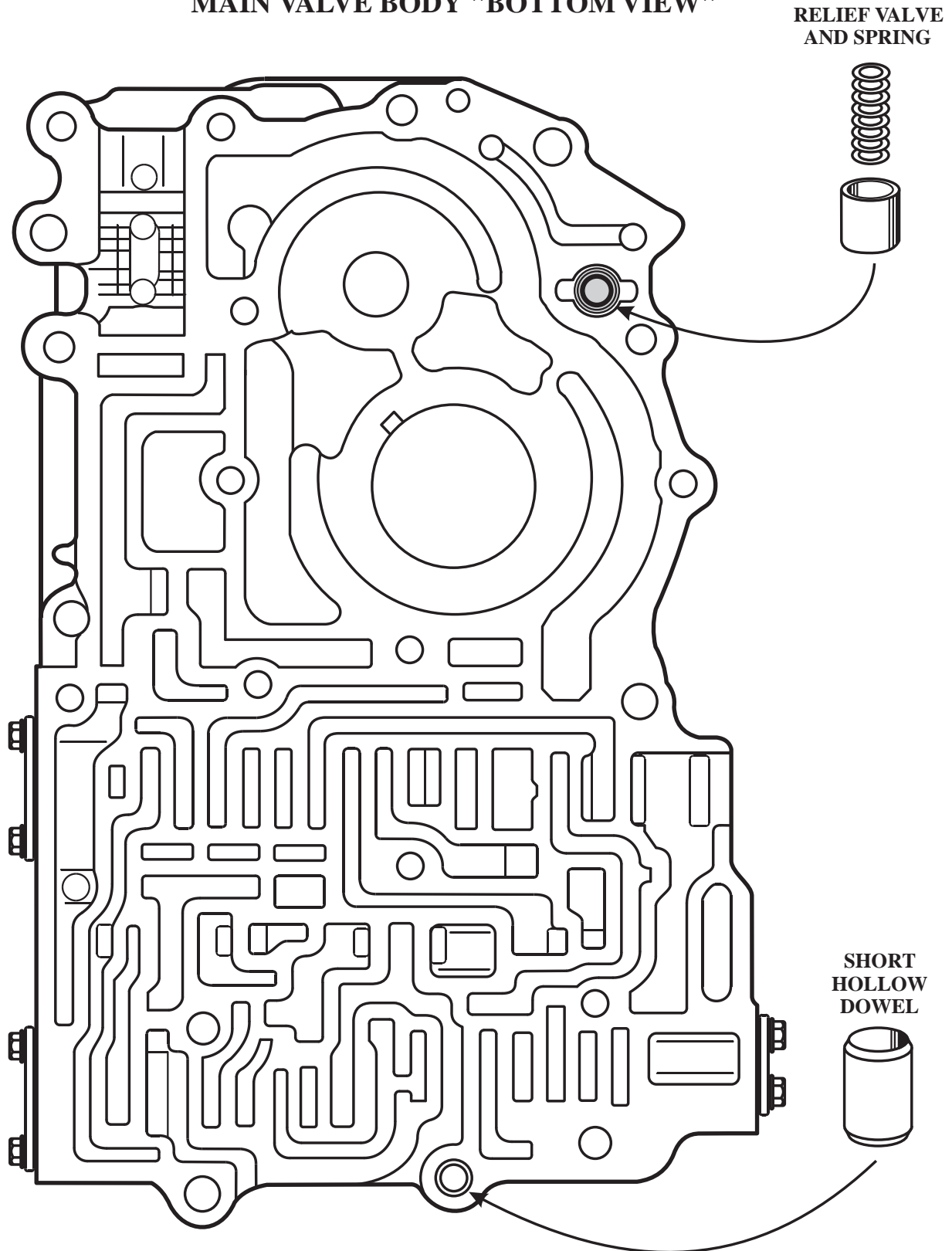
Copyright © 1999 ATSG

### HONDA ACCORD MODEL "AS" CARBURETED MAIN VALVE BODY "TOP VIEW"



Copyright © 1999 ATSG

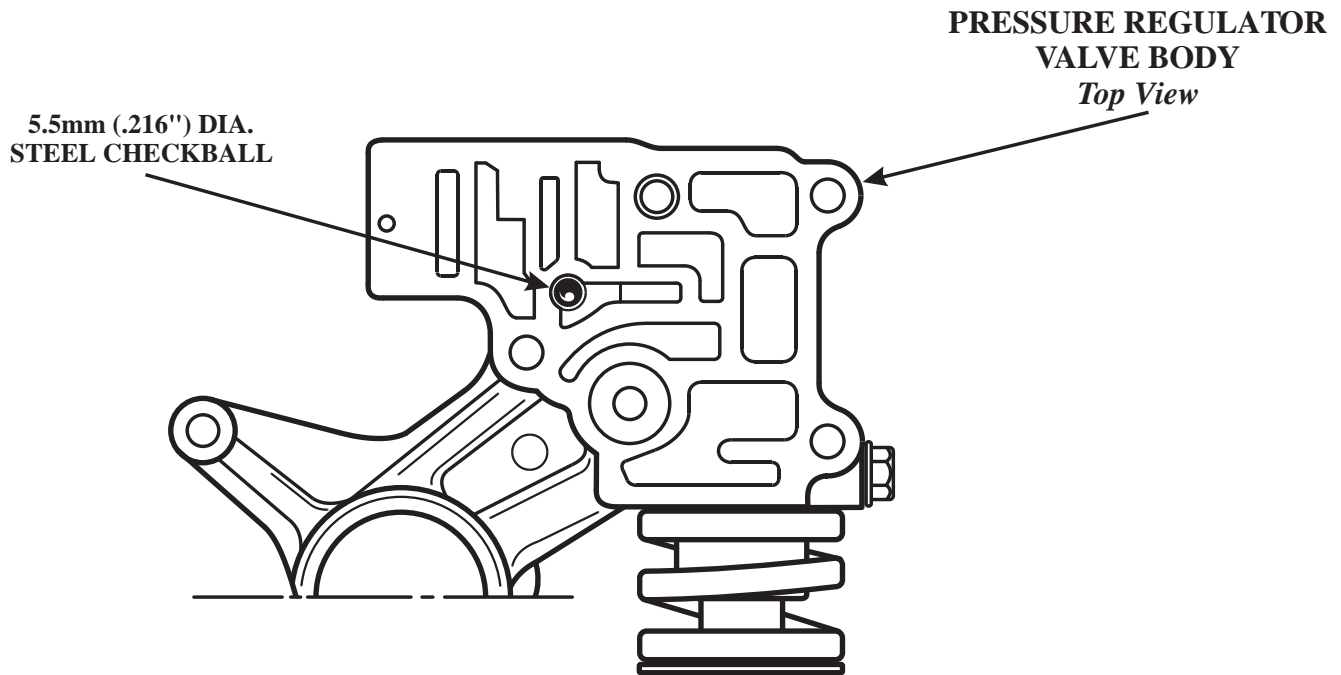
### HONDA ACCORD MODEL "AS" CARBURETED MAIN VALVE BODY "BOTTOM VIEW"



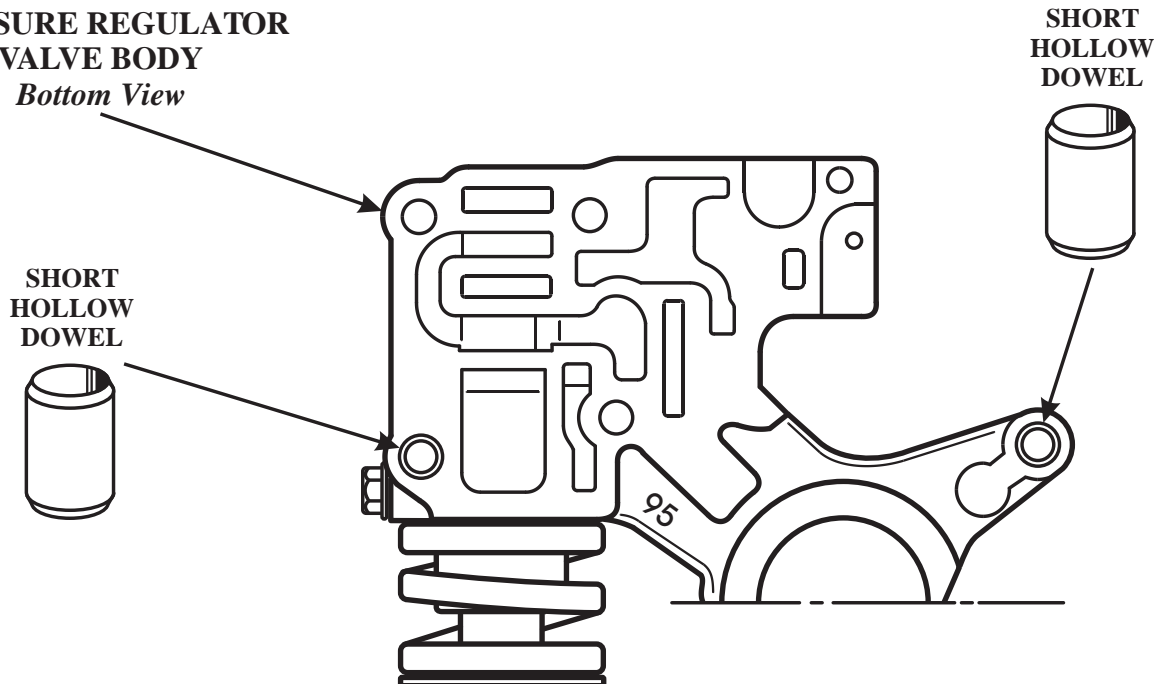
Copyright © 1999 ATSG



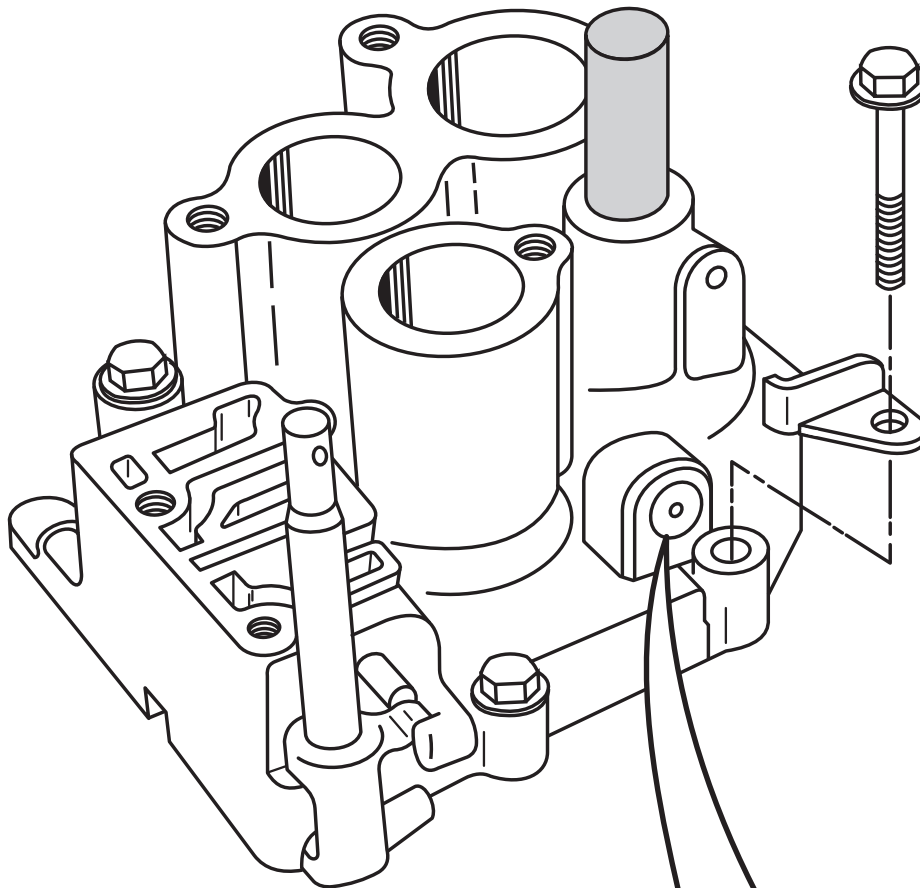
**HONDA ACCORD MODEL "AS" CARBURETED  
"PRESSURE REGULATOR" VALVE BODY**



**PRESSURE REGULATOR  
VALVE BODY**  
*Bottom View*



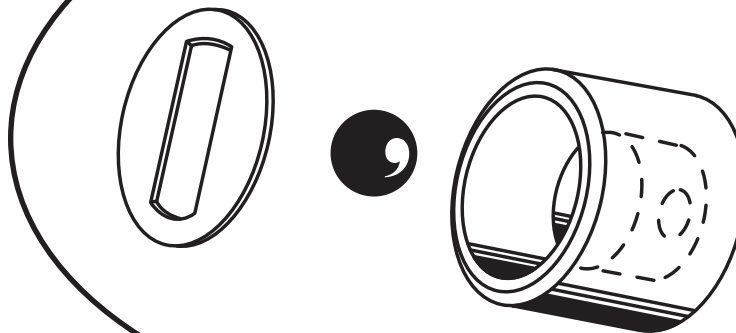
### SERVO VALVE BODY



#### CAUTION:

The Servo Release Check Valve is staked into the servo valve body as shown, but it can fall out or can be blown out during cleaning process.

#### SERVO RELEASE CHECK VALVE



Copyright © 1999 ATSG

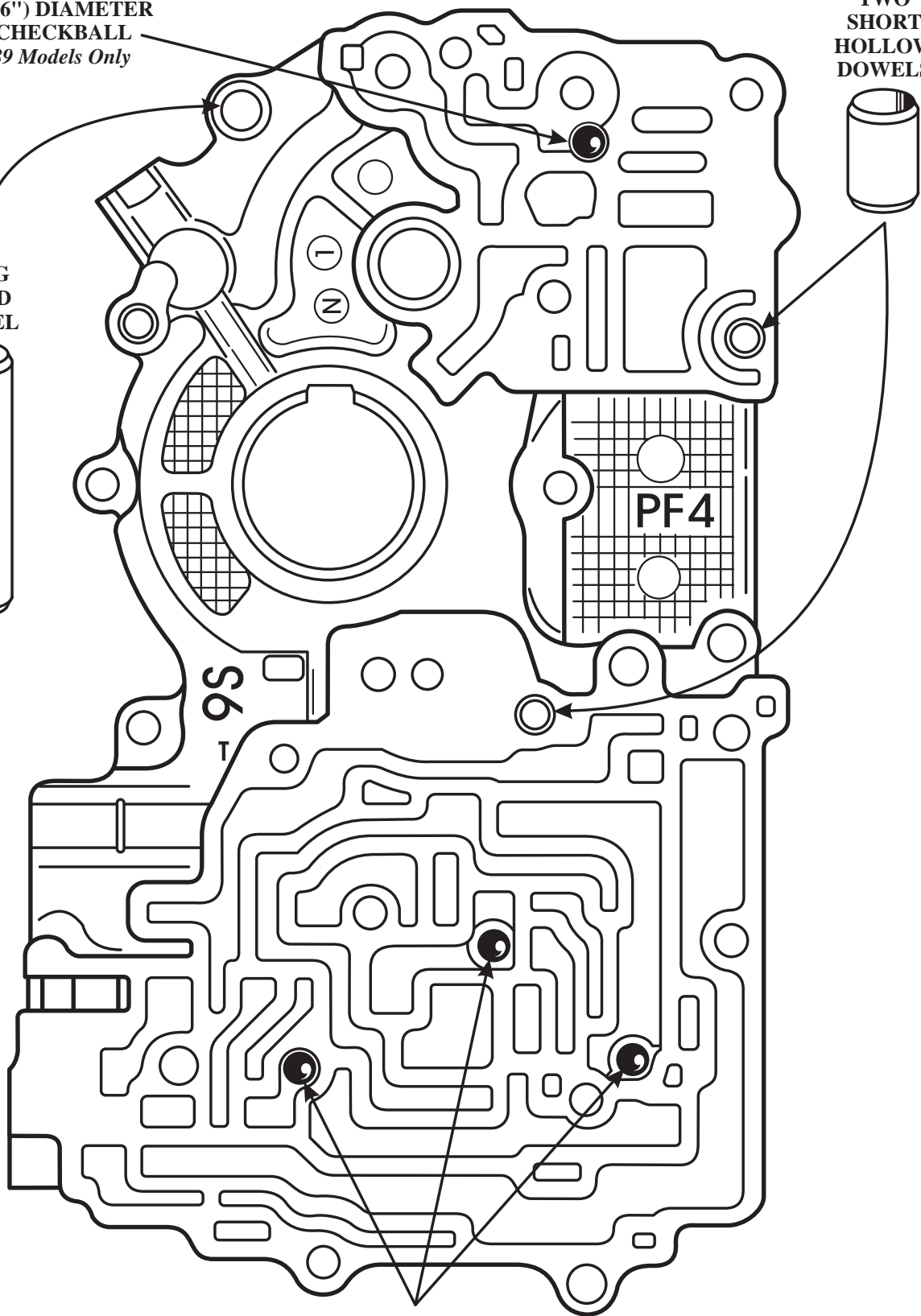
**NOTE: MOST SERVO VALVE BODIES WILL HAVE THIS CHECK VALVE.**

## HONDA PRELUDE AND ACCORD MODEL "F4" MAIN VALVE BODY "TOP VIEW"

5.5mm (.216") DIAMETER  
STEEL CHECKBALL  
1988-1989 Models Only

TWO  
SHORT  
HOLLOW  
DOWELS

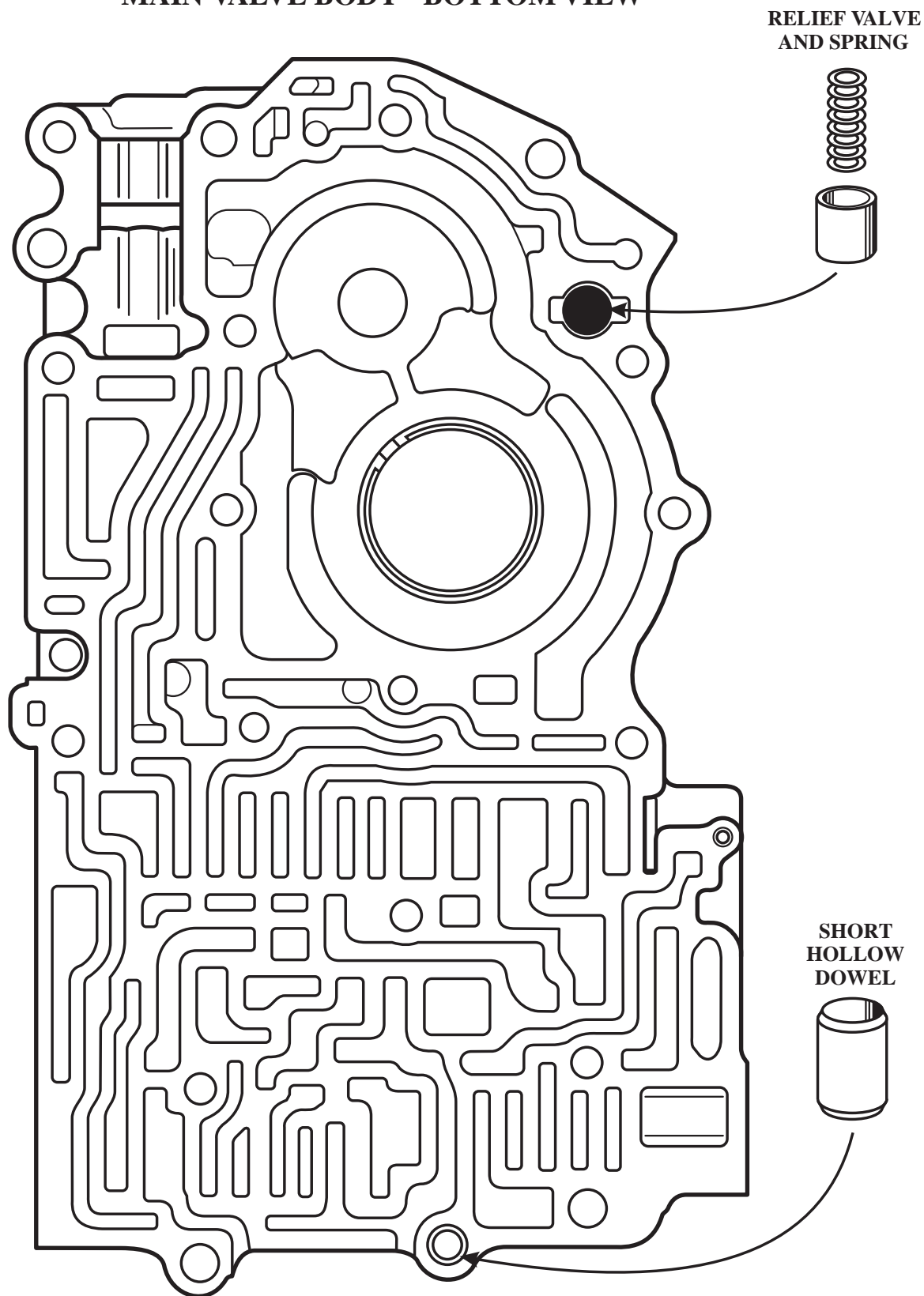
LONG  
SOLID  
DOWEL



5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

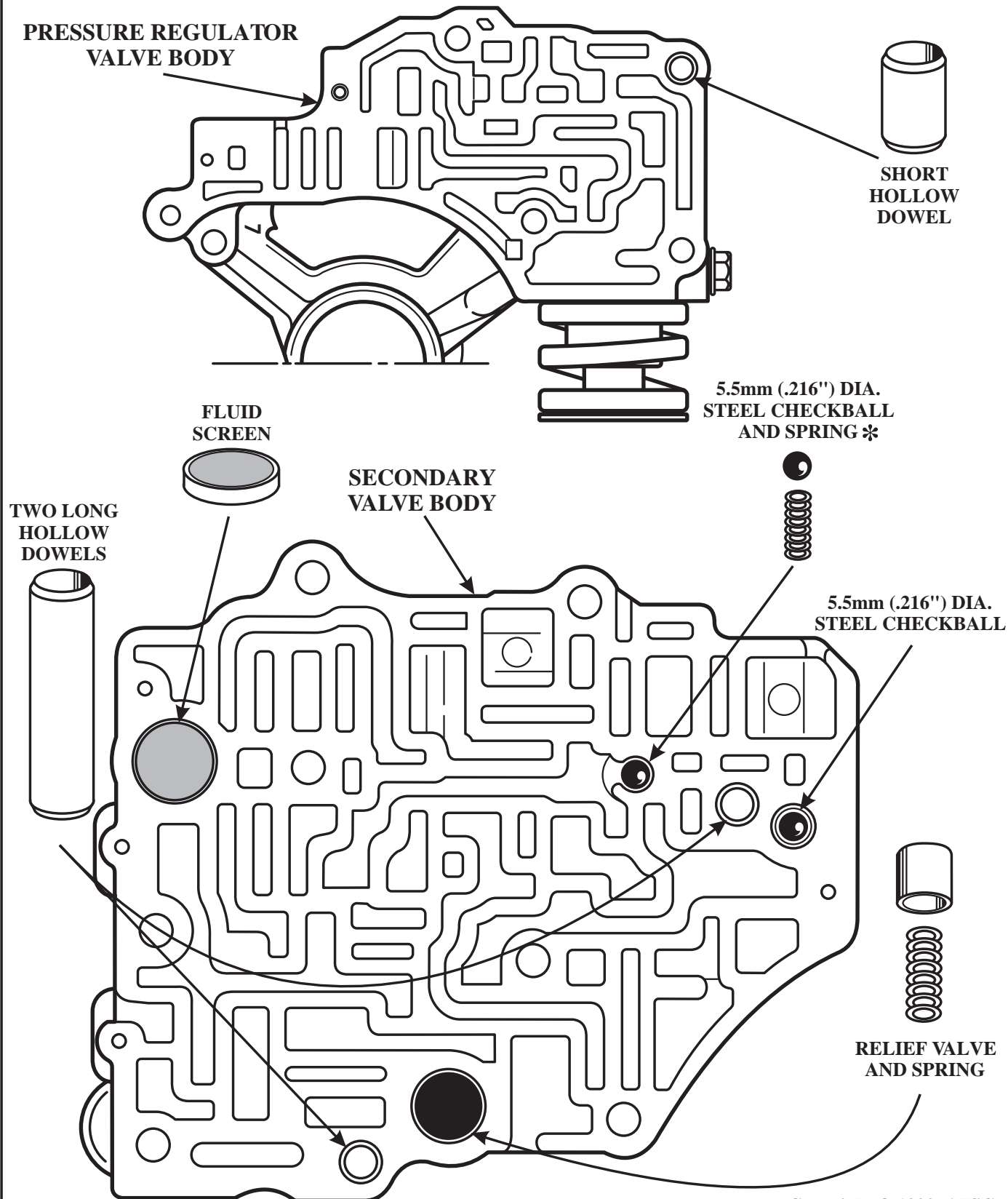
Copyright © 1999 ATSG

## HONDA PRELUDE AND ACCORD MODEL "F4" MAIN VALVE BODY "BOTTOM VIEW"



Copyright © 1999 ATSG

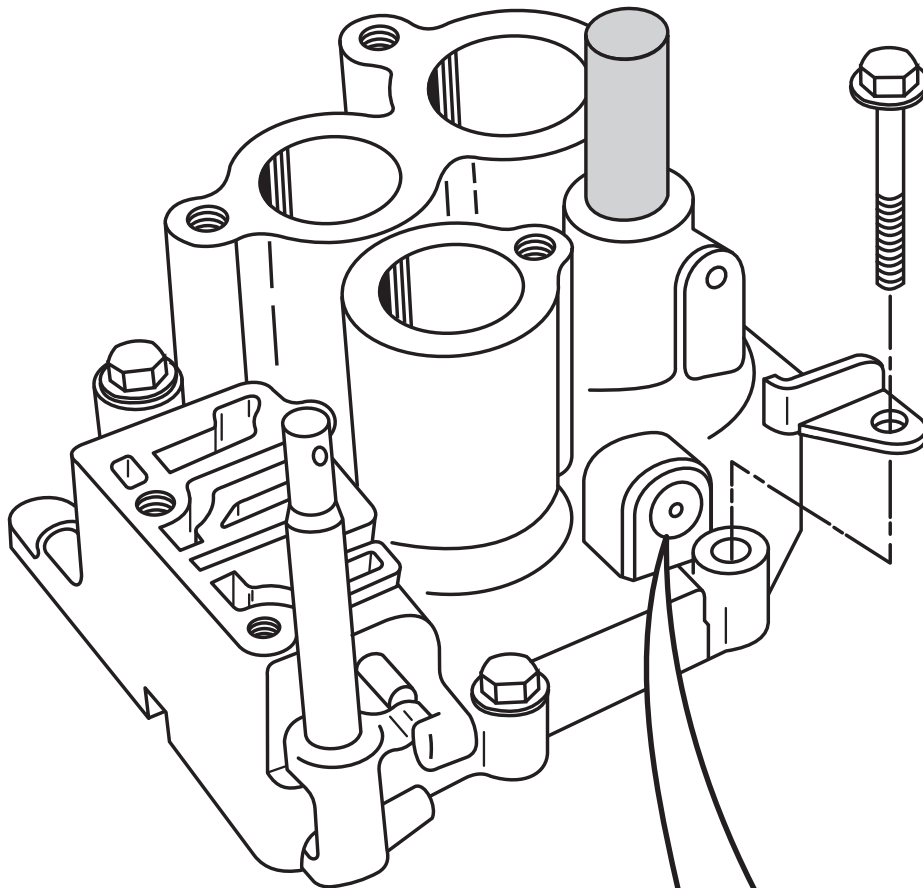
## HONDA PRELUDE AND ACCORD MODEL "F4" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



\* SOME 1989 MODELS MAY NOT USE SPRING.

Copyright © 1999 ATSG

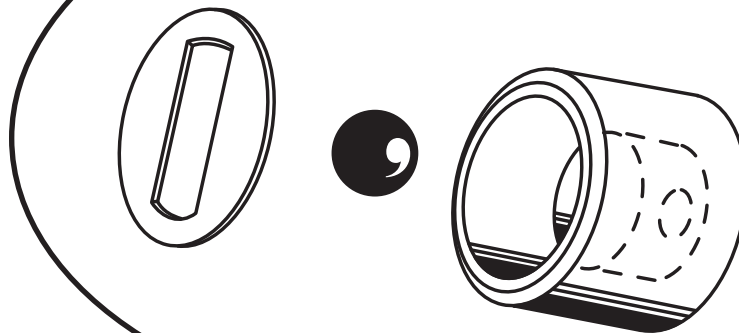
## SERVO VALVE BODY



### CAUTION:

The Servo Release Check Valve is staked into the servo valve body as shown, but it can fall out or can be blown out during cleaning process.

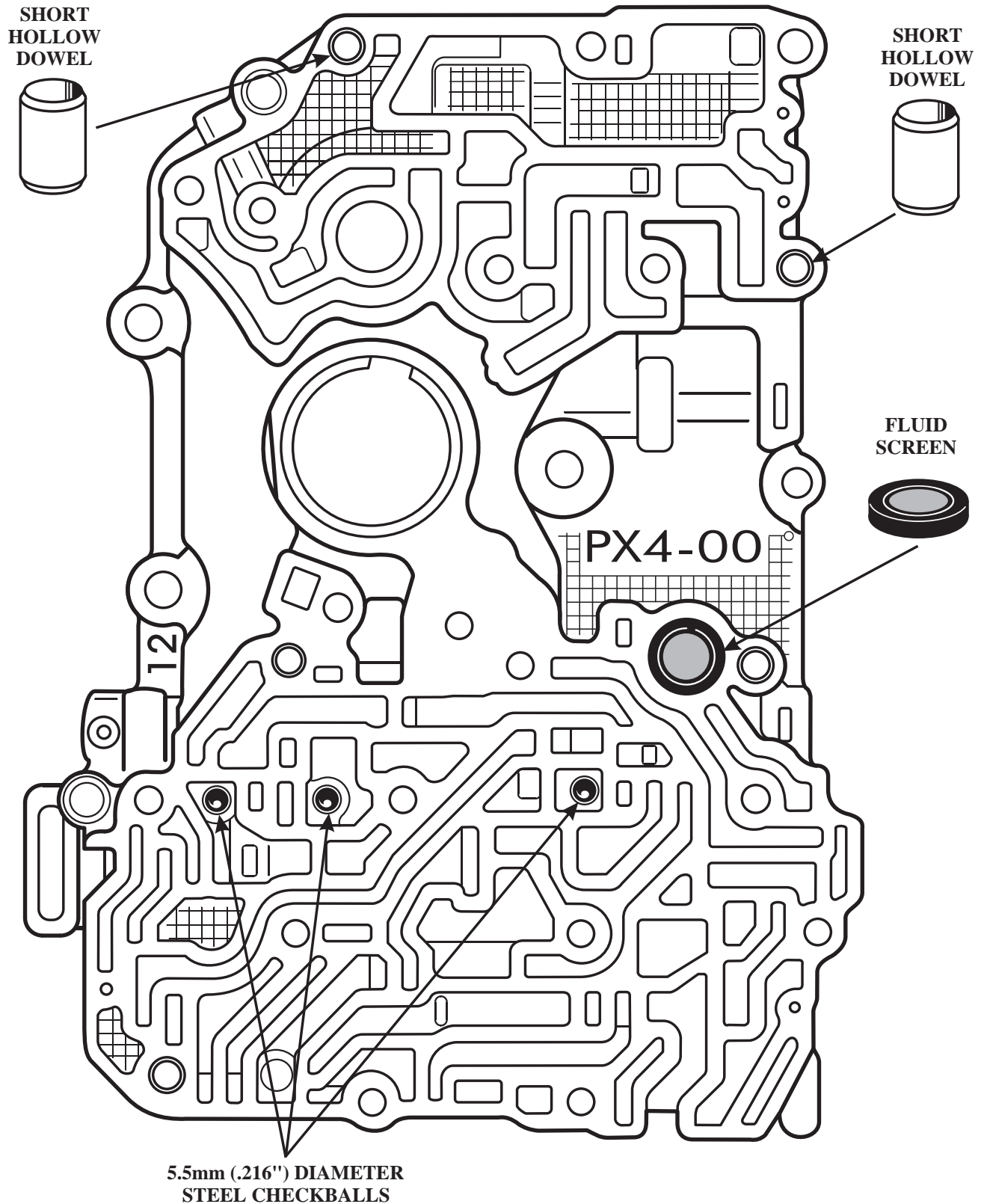
### SERVO RELEASE CHECK VALVE



Copyright © 1999 ATSG

**NOTE: MOST SERVO VALVE BODIES WILL HAVE THIS CHECK VALVE.**

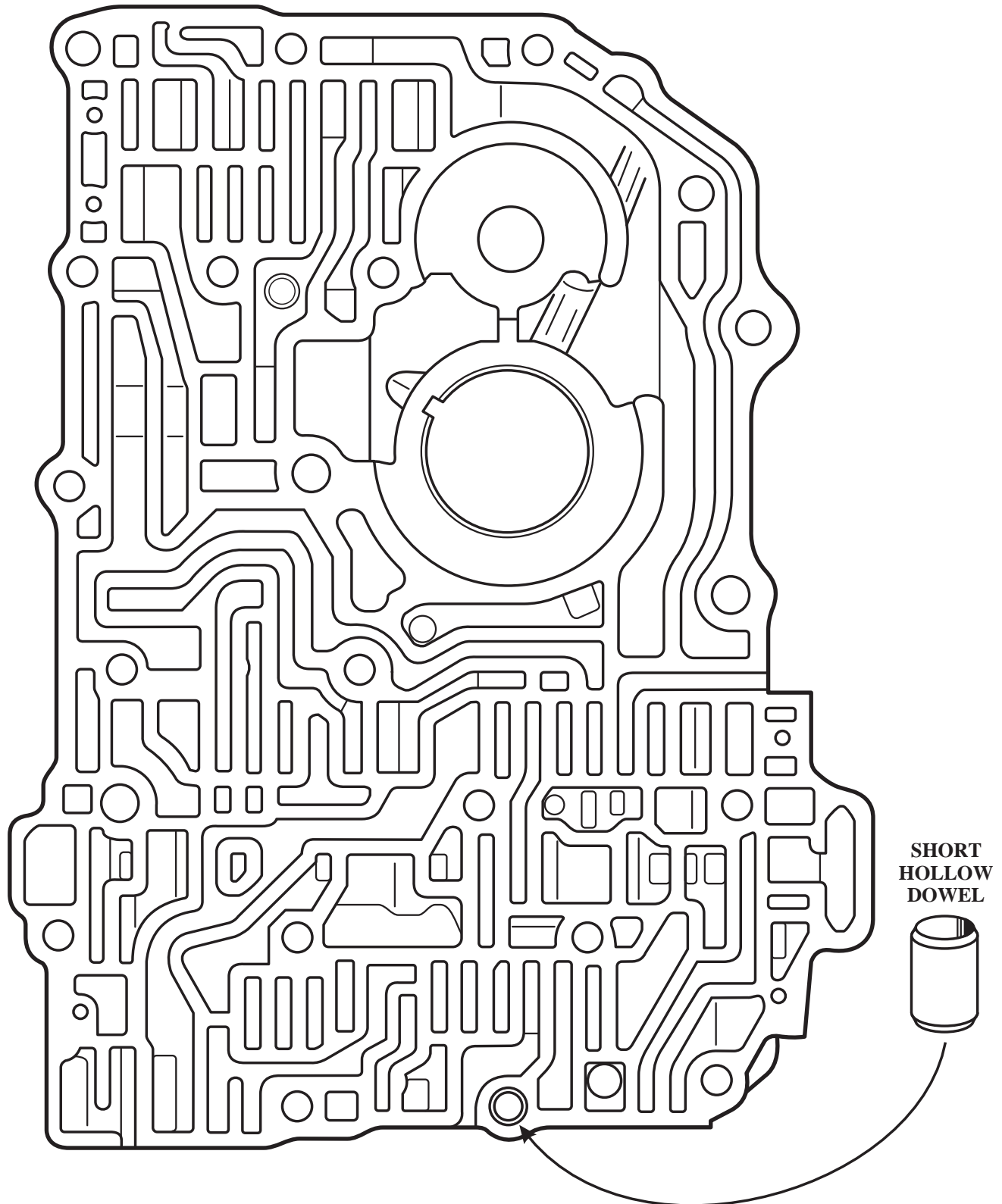
### HONDA ACCORD MODELS "PX4B" "APX4" "MPOA" "AYOA" "BOYA" MAIN VALVE BODY "TOP VIEW"



Copyright © 1999 ATSG

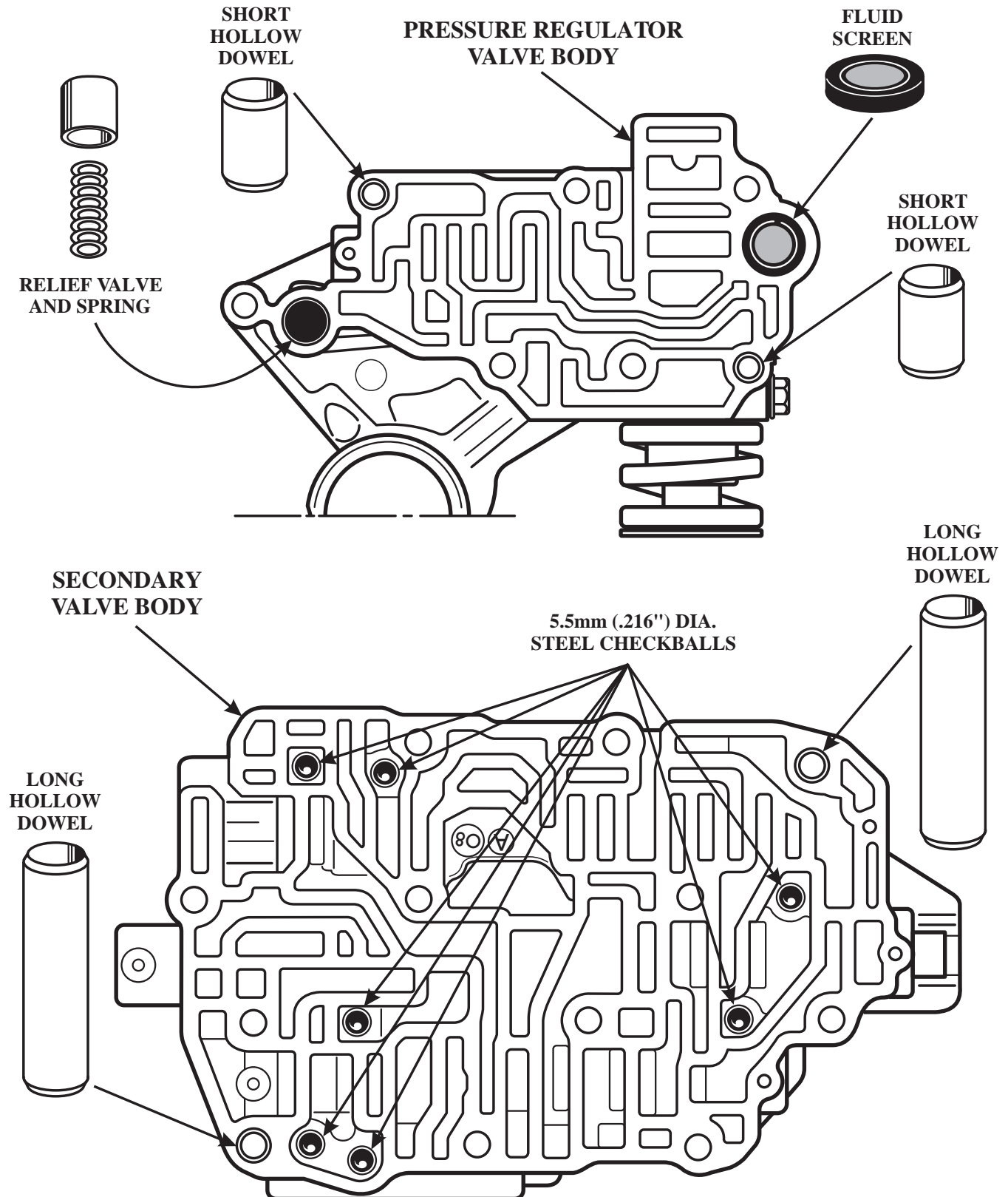


### HONDA ACCORD MODELS "PX4B" "APX4" "MPOA" "AOYA" "BOYA" MAIN VALVE BODY "BOTTOM VIEW"



Copyright © 1999 ATSG

### HONDA ACCORD MODELS "PX4B" "APX4" "MPOA" "AOYA" "BOYA" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



Copyright © 1999 ATSG

### HONDA ACCORD MODELS "PX4B" "APX4" "MPOA" "AOYA" "BOYA" ACCUMULATOR BODY

ACCUMULATOR  
BODY COVER

1ST ACCUMULATOR  
CHOKE VALVE

*Not Necessary  
To Remove*

5.5mm (.216") DIA.  
STEEL BALL

BOTTOM VIEW

SHORT  
HOLLOW  
DOWEL

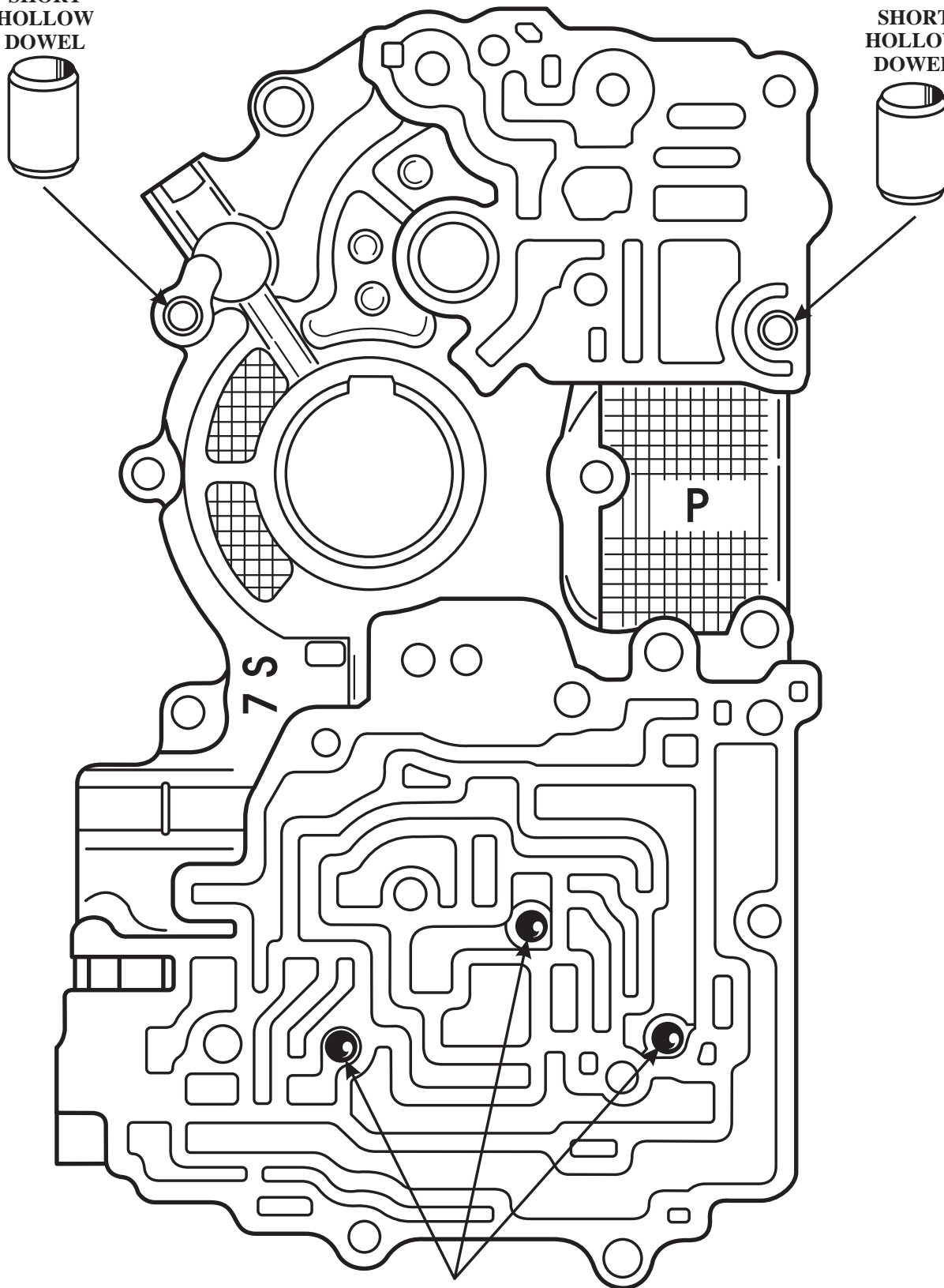
SHORT  
HOLLOW  
DOWEL

Copyright © 1999 ATSG

**HONDA CIVIC MODEL "CA"  
MAIN VALVE BODY "TOP VIEW"**

SHORT  
HOLLOW  
DOWEL

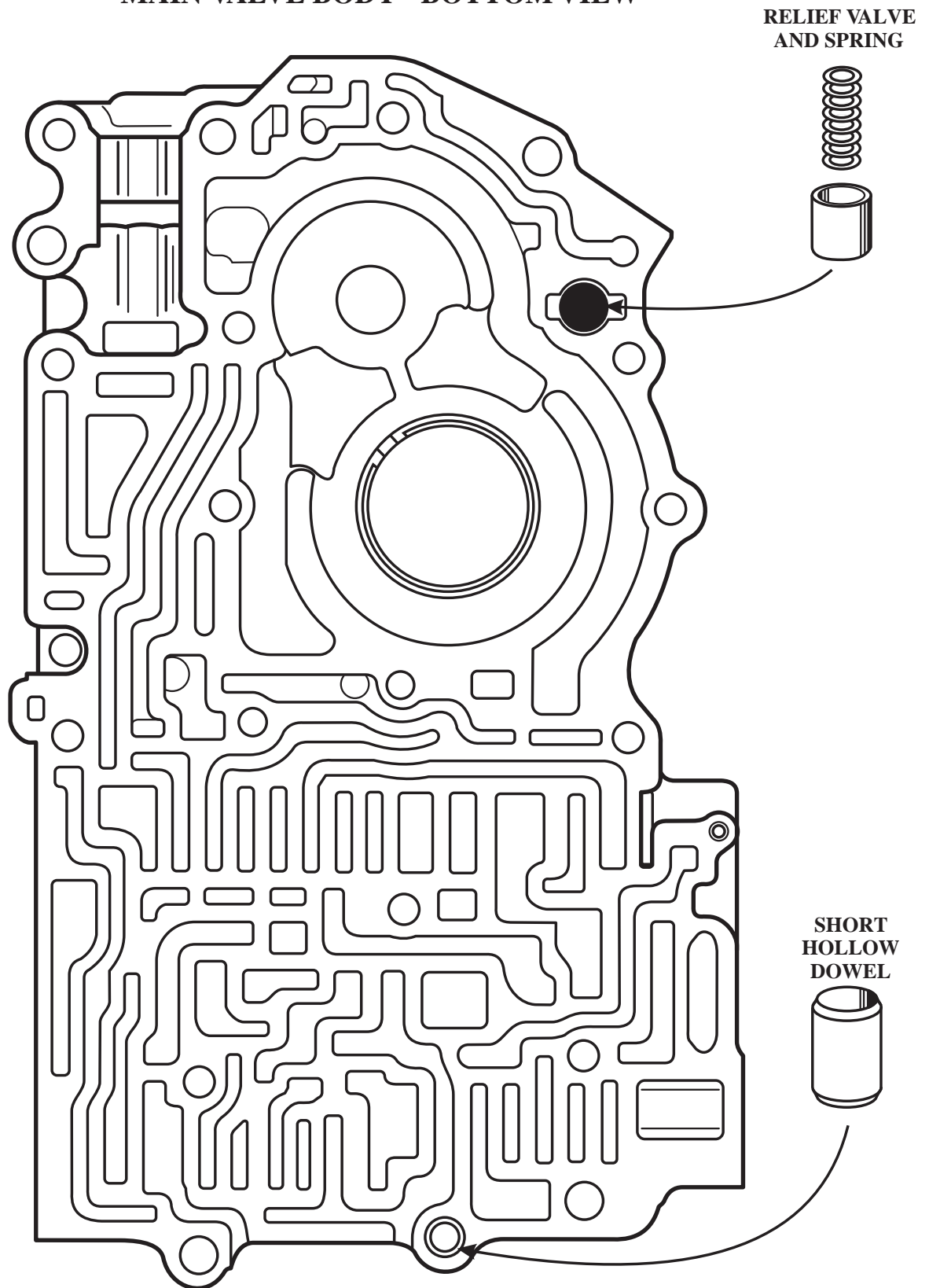
SHORT  
HOLLOW  
DOWEL



5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

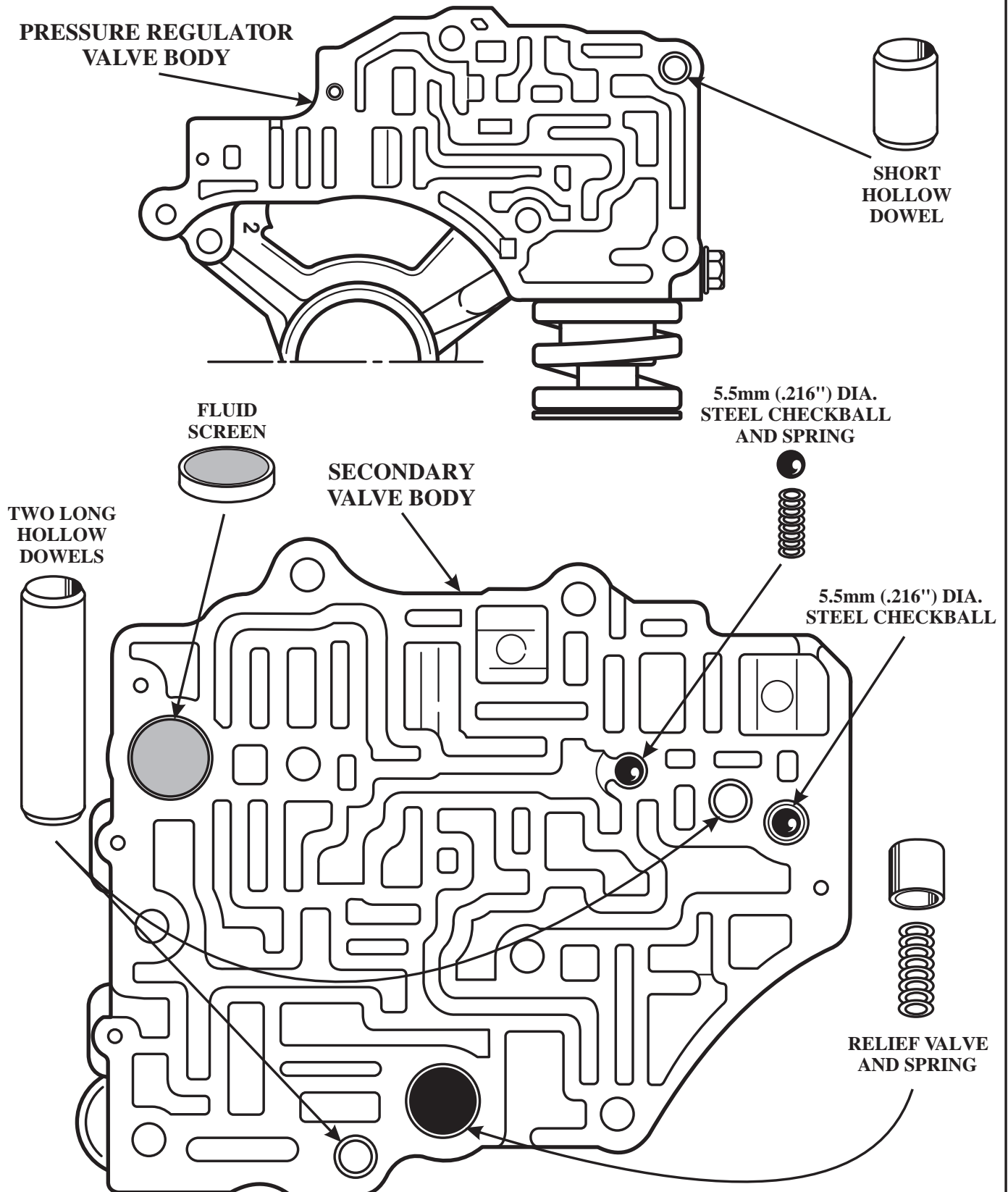
Copyright © 1999 ATSG

### HONDA CIVIC MODEL "CA" MAIN VALVE BODY "BOTTOM VIEW"



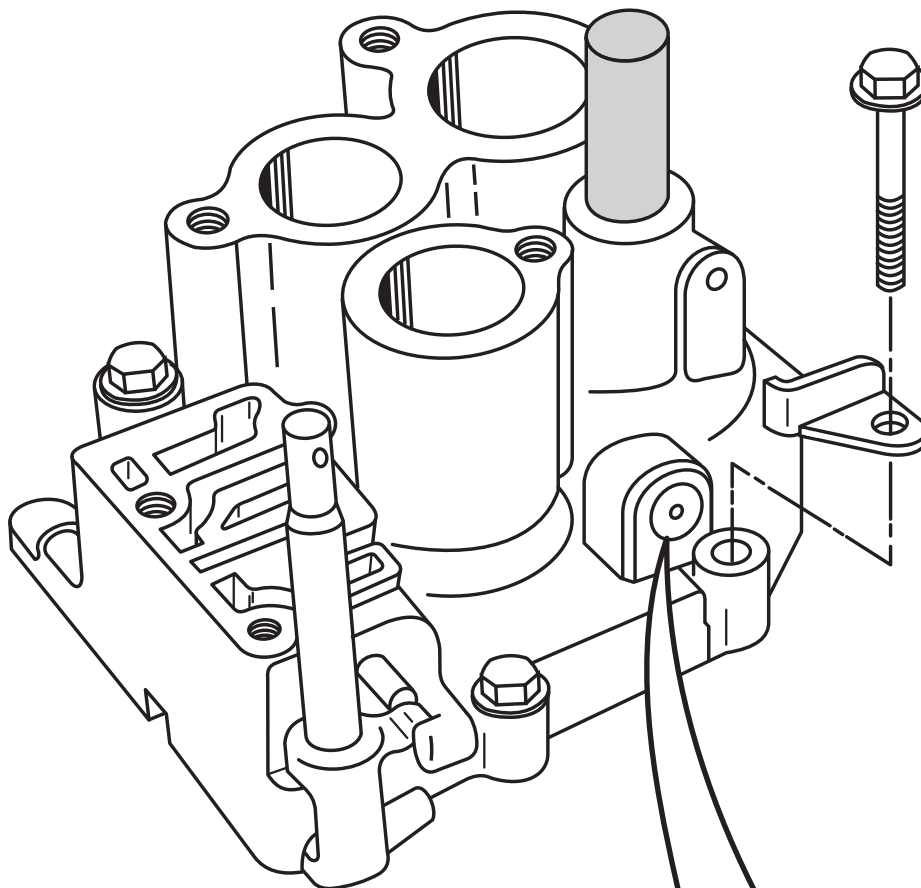
Copyright © 1999 ATSG

### HONDA CIVIC MODEL "CA" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



Copyright © 1999 ATSG

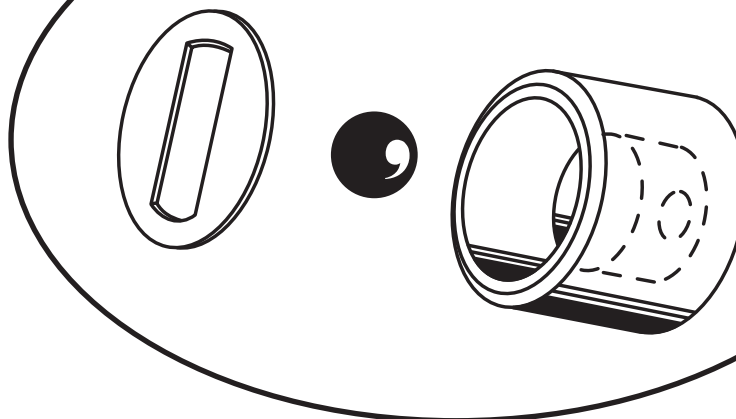
### SERVO VALVE BODY



#### CAUTION:

The Servo Release Check Valve is staked into the servo valve body as shown, but it can fall out or can be blown out during cleaning process.

#### SERVO RELEASE CHECK VALVE



Copyright © 1999 ATSG

**NOTE: MOST SERVO VALVE BODIES WILL HAVE THIS CHECK VALVE.**



### 1988 HONDA CIVIC MODEL "L4", "ML4A" MAIN VALVE BODY "TOP VIEW"

5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

RELIEF VALVE  
AND SPRING

SHORT  
HOLLOW  
DOWEL

SHORT  
HOLLOW  
DOWEL

LONG  
SOLID  
DOWEL

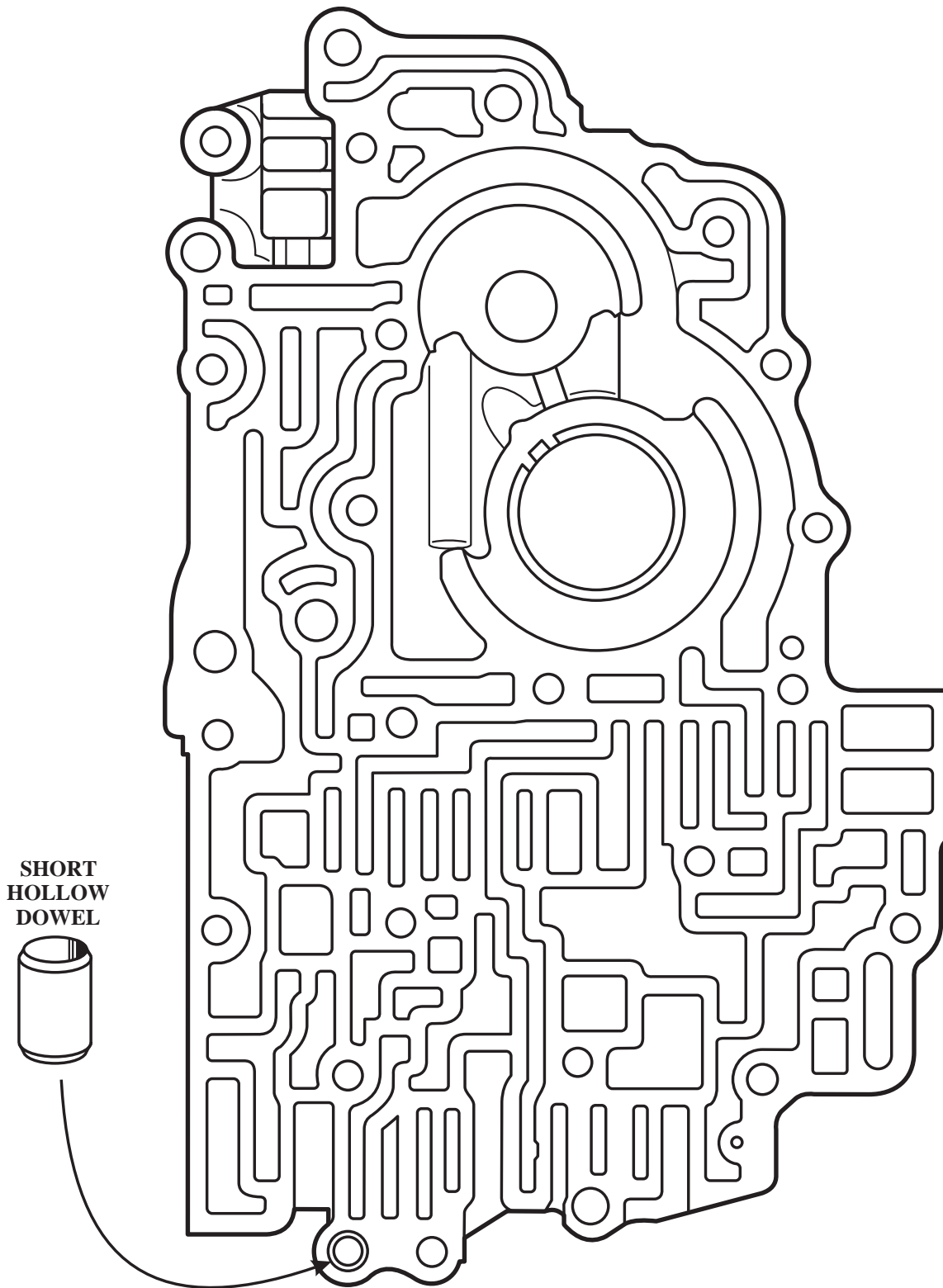
5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

FLUID  
SCREEN

5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

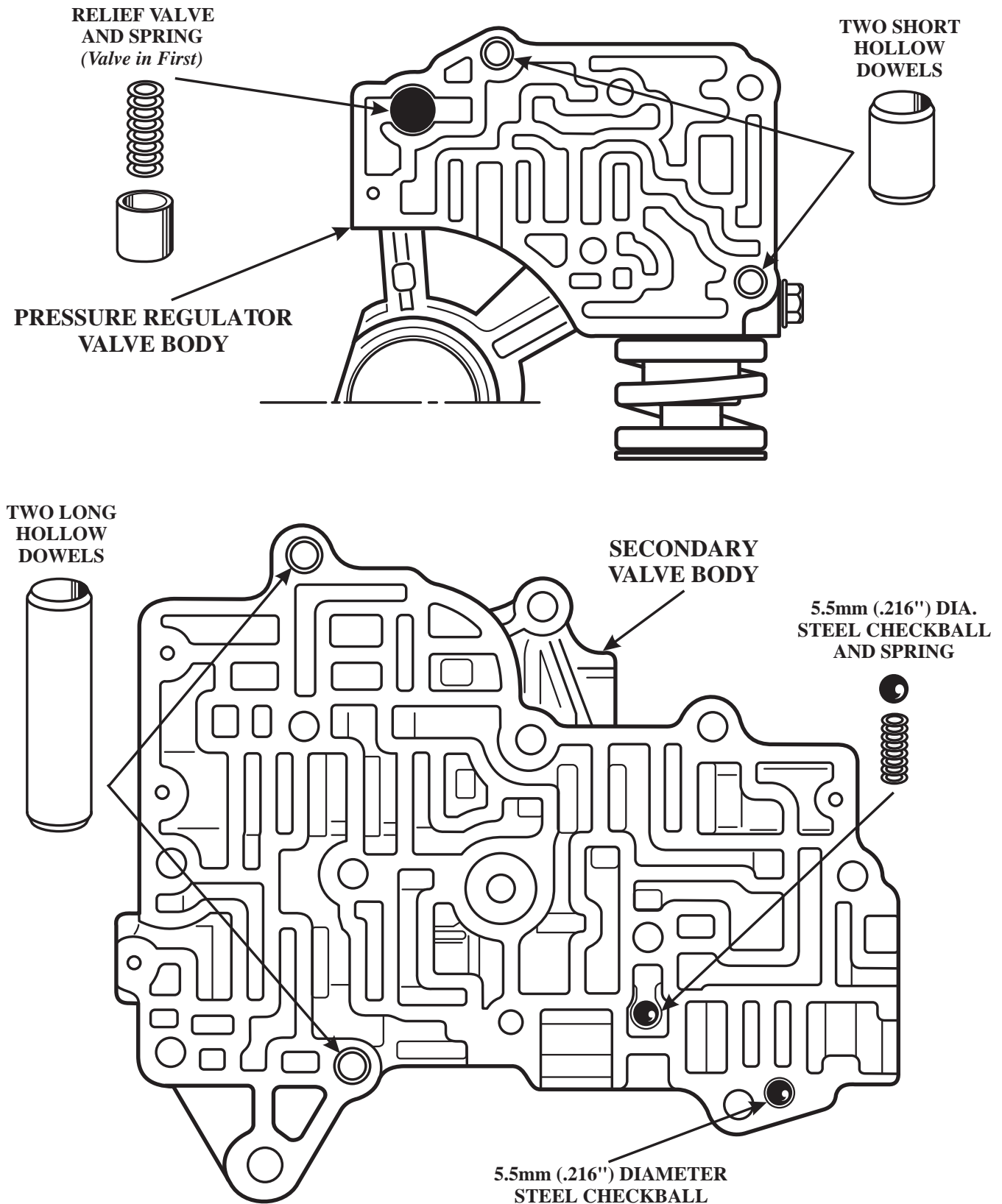
Copyright © 1999 ATSG

1988 HONDA CIVIC MODEL "L4", "ML4A"  
MAIN VALVE BODY "BOTTOM VIEW"



Copyright © 1999 ATSG

### 1988 HONDA CIVIC MODEL "L4", "ML4A" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



Copyright © 1999 ATSG

### 1989-1990 HONDA CIVIC MODEL "L4", "ML4A" MAIN VALVE BODY "TOP VIEW"

5.5mm (.216") DIAMETER  
STEEL CHECKBALL

RELIEF VALVE  
AND SPRING  
*Valve In First*



TWO  
SHORT  
HOLLOW  
DOWELS



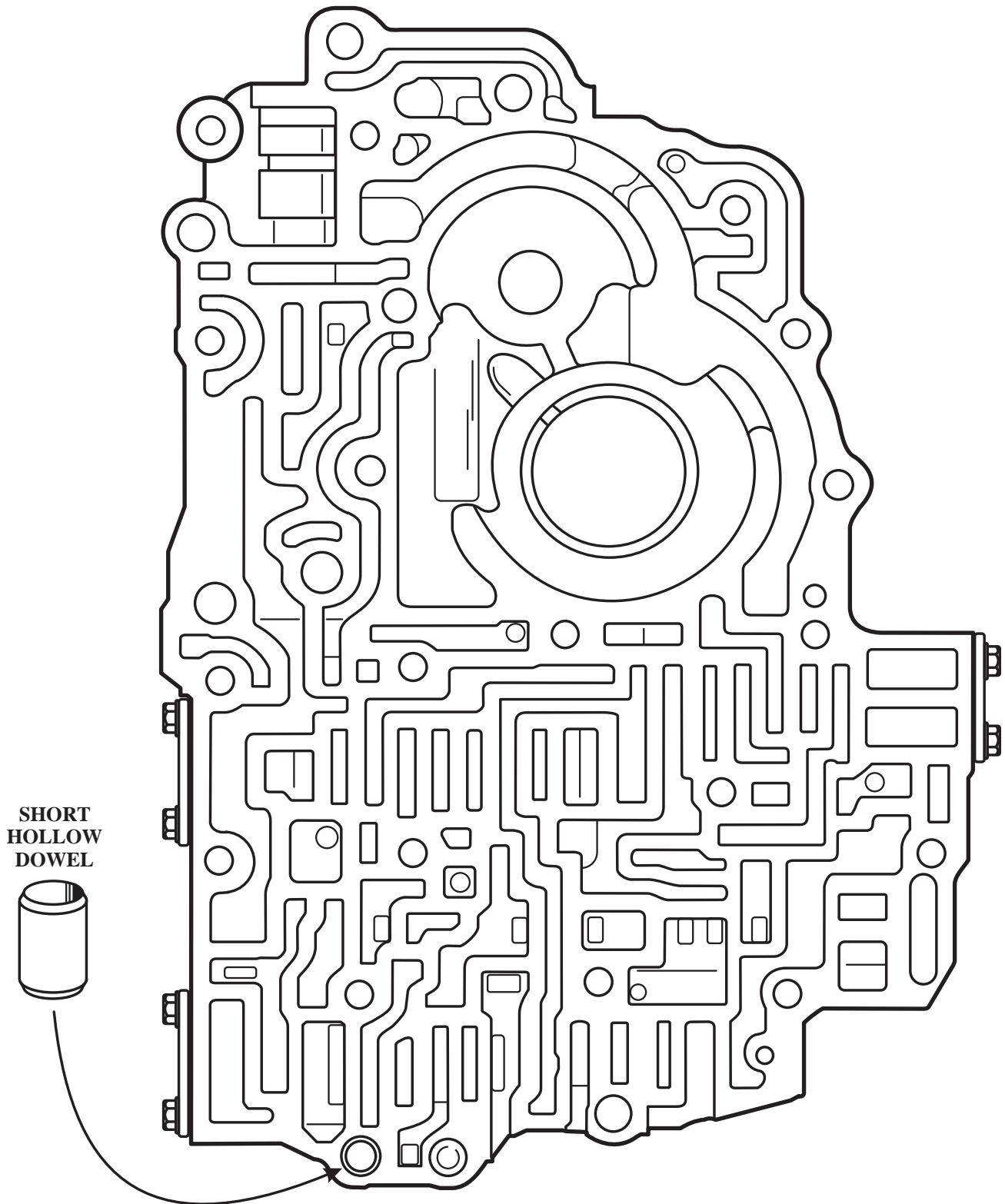
FLUID  
SCREEN



5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

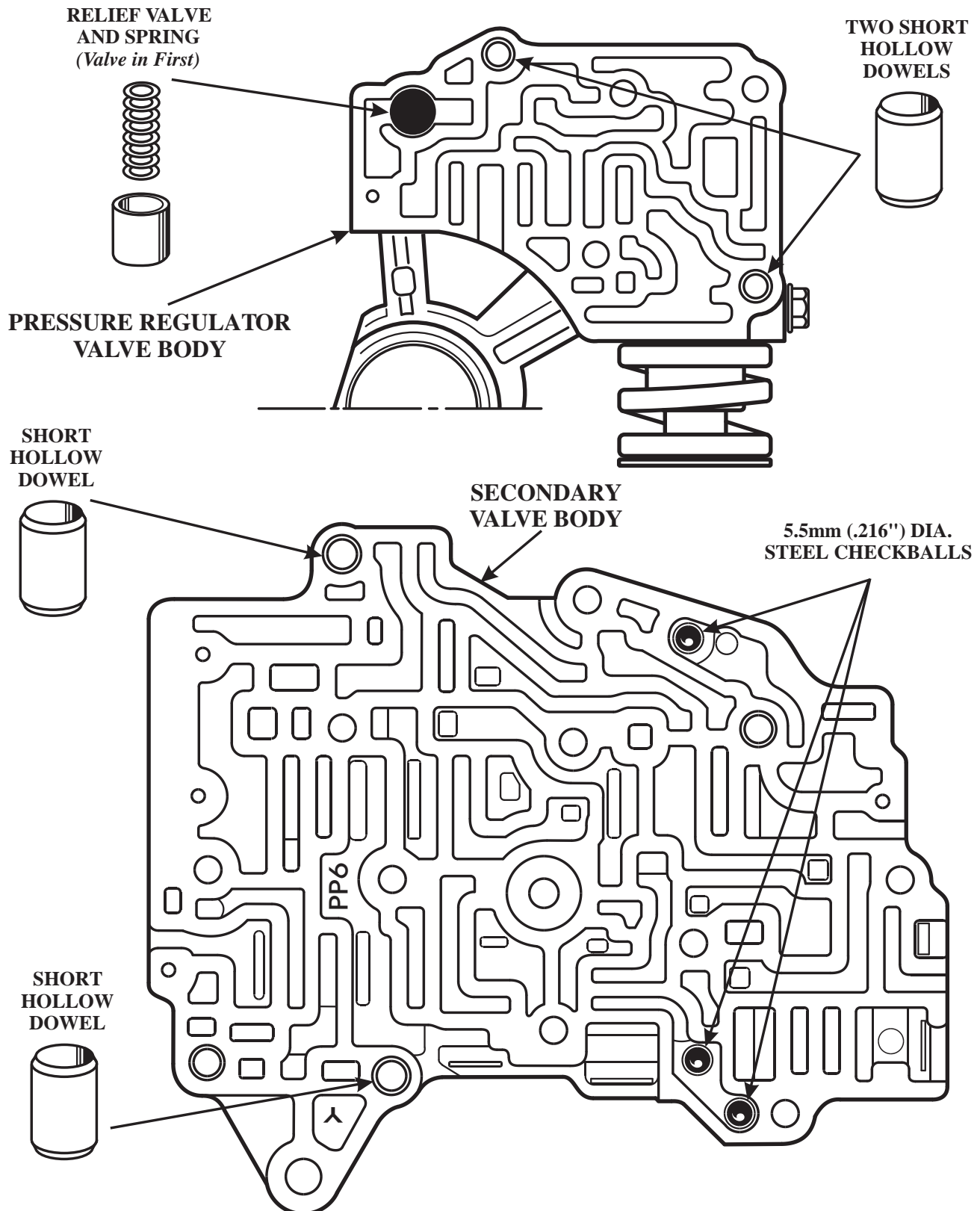
Copyright © 1999 ATSG

### 1989-1990 HONDA CIVIC MODEL "L4", "ML4A" MAIN VALVE BODY "BOTTOM VIEW"



Copyright © 1999 ATSG

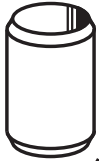
### 1989-1990 HONDA CIVIC MODEL "L4", "ML4A" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



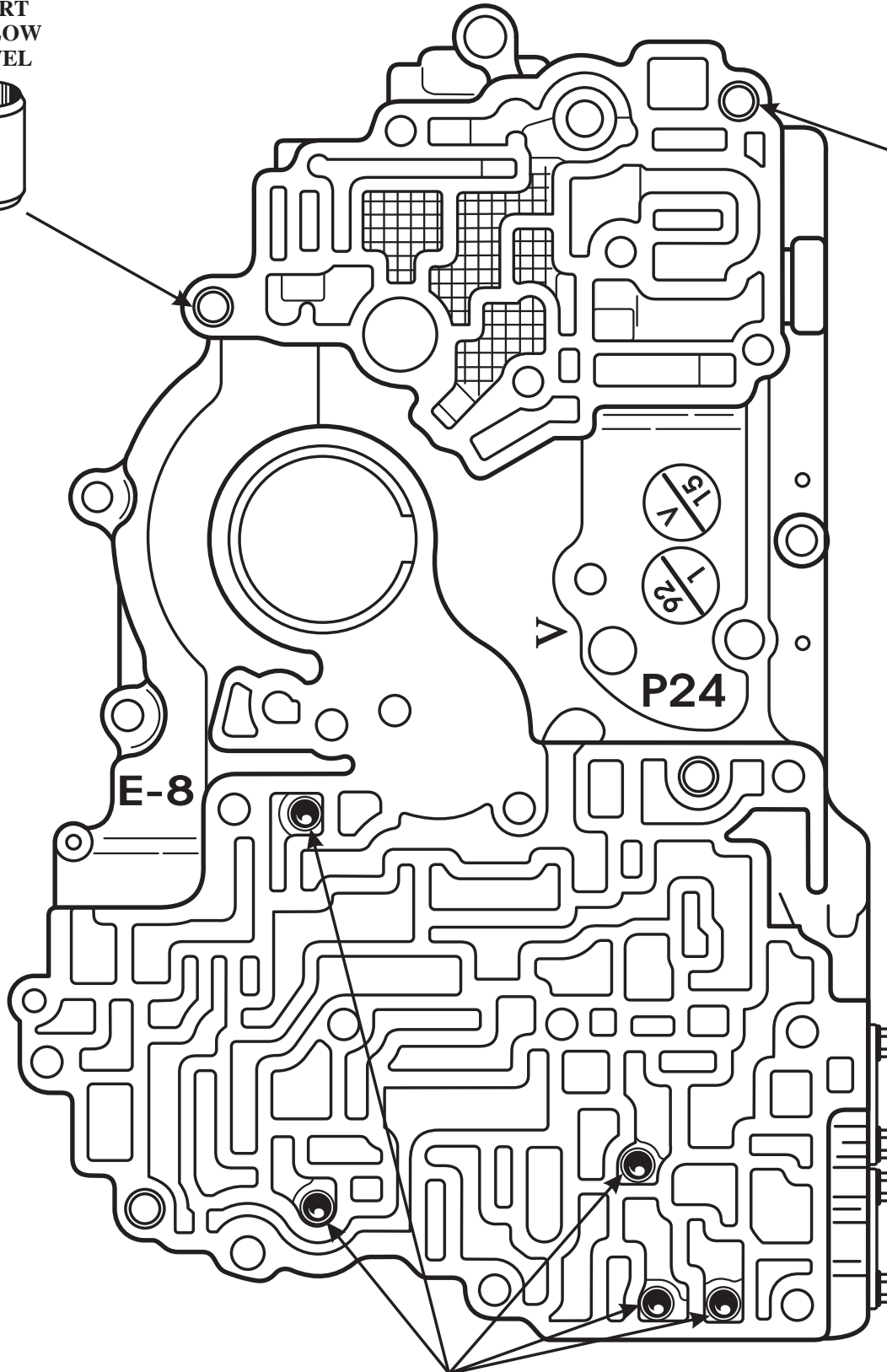
Copyright © 1999 ATSG

### HONDA CIVIC MODEL "M24A" MAIN VALVE BODY "TOP VIEW"

SHORT  
HOLLOW  
DOWEL



SHORT  
HOLLOW  
DOWEL

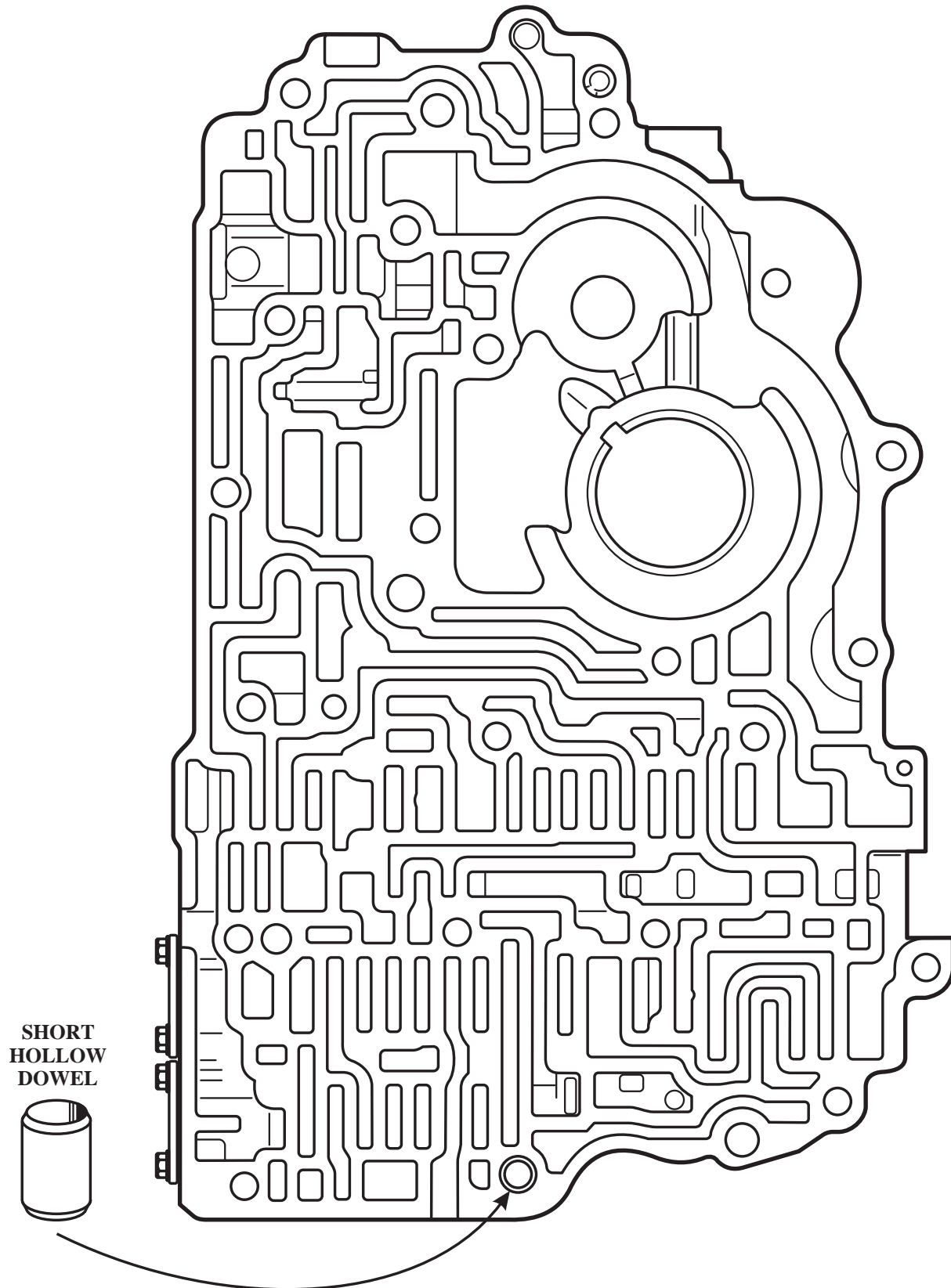


5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

Copyright © 1999 ATSG

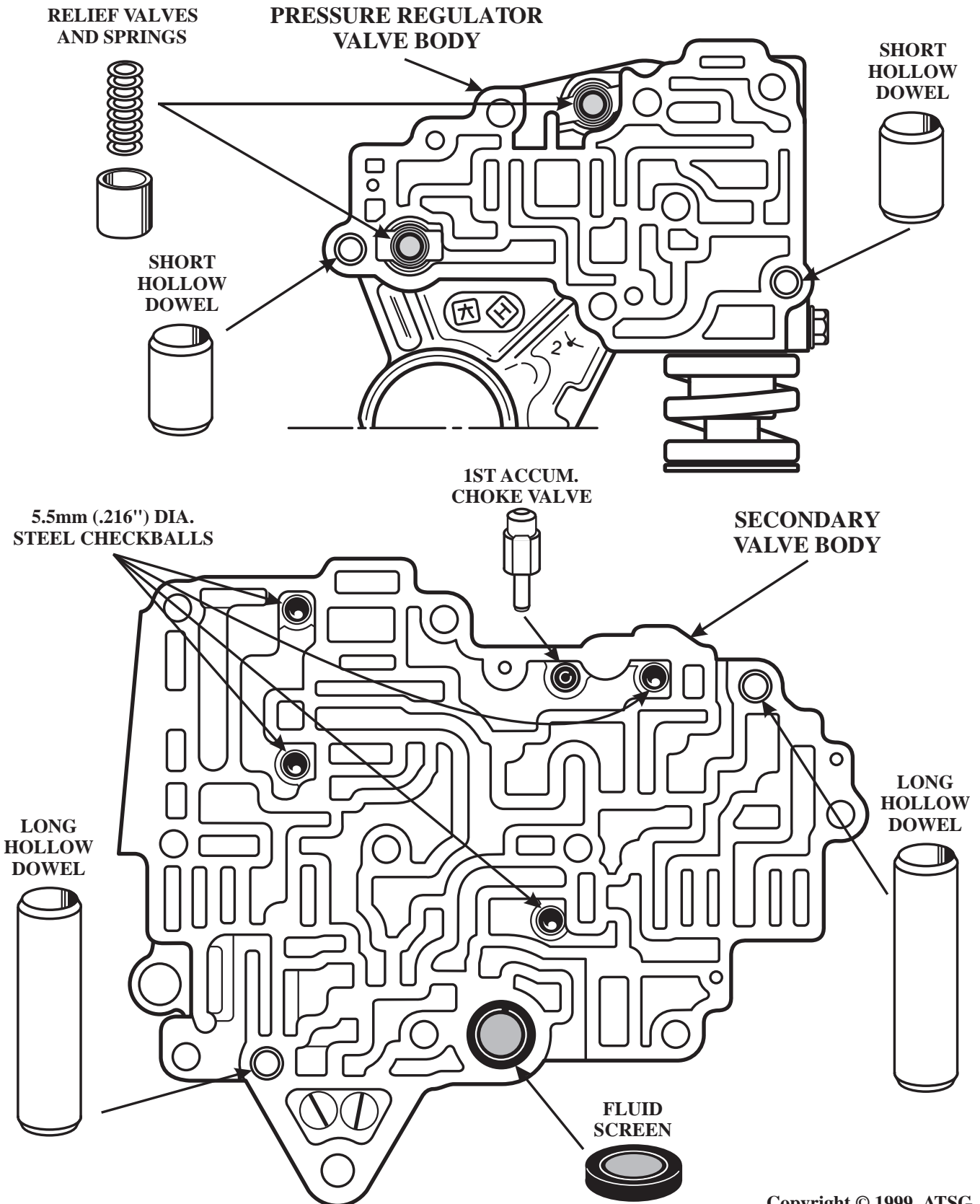


### HONDA CIVIC MODEL "M24A" MAIN VALVE BODY "BOTTOM VIEW"



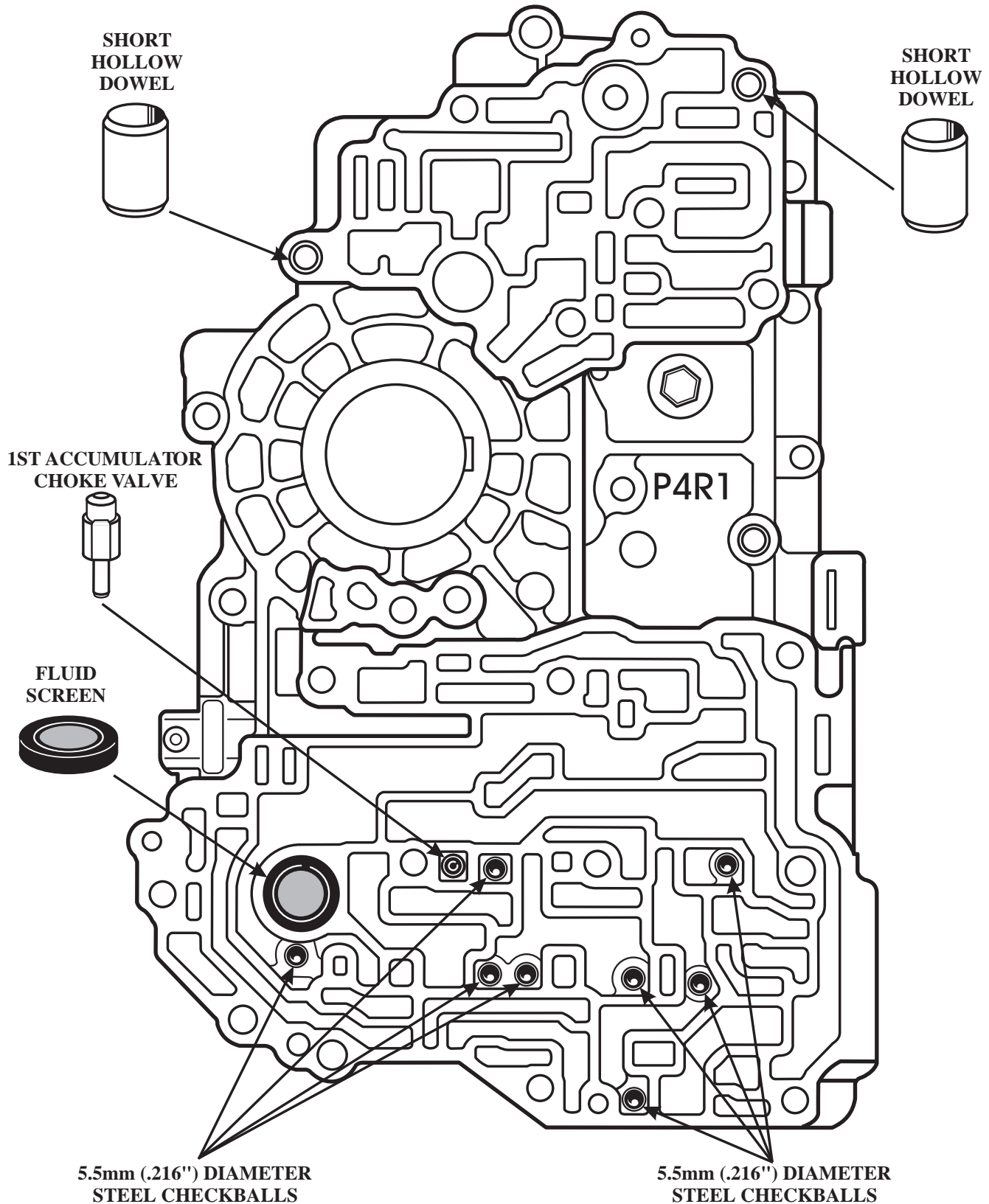
Copyright © 1999 ATSG

### HONDA CIVIC MODEL "M24A" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



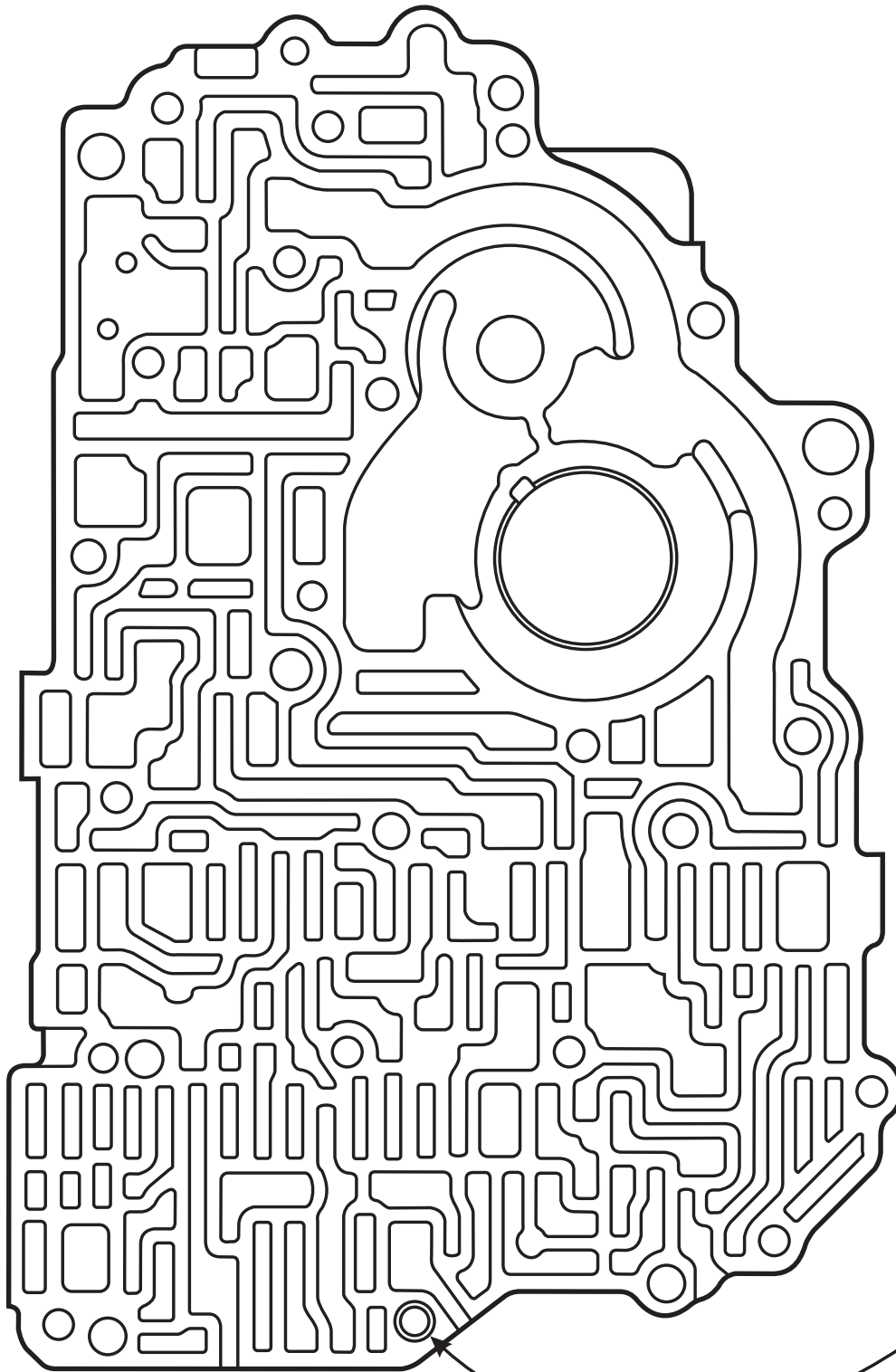
Copyright © 1999 ATSG

### HONDA CIVIC MODEL "A4RA" MAIN VALVE BODY "TOP VIEW"



Copyright © 1999 ATSG

HONDA CIVIC MODEL "A4RA"  
MAIN VALVE BODY "BOTTOM VIEW"



SHORT  
HOLLOW  
DOWEL



Copyright © 1999 ATSG

### HONDA CIVIC MODEL "A4RA"

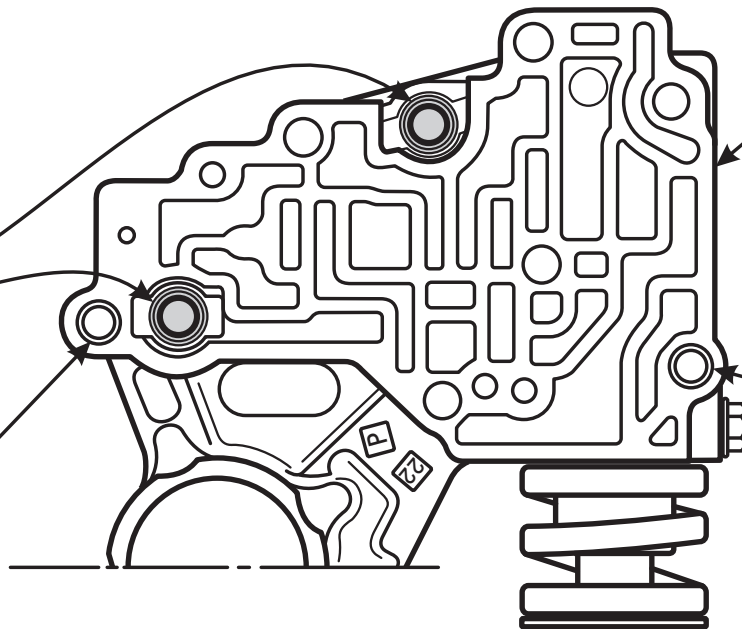
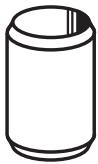
#### "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY

RELIEF VALVES  
AND SPRINGS

PRESSURE REGULATOR  
VALVE BODY



SHORT  
HOLLOW  
DOWEL



SHORT  
HOLLOW  
DOWEL

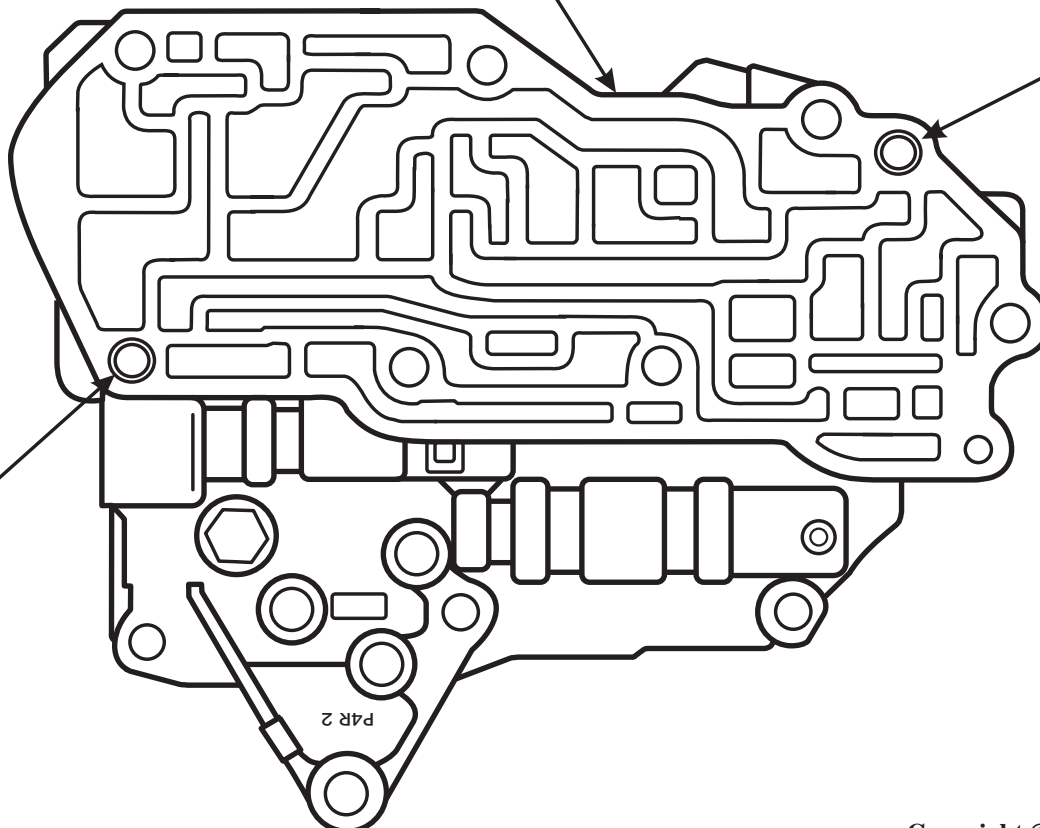
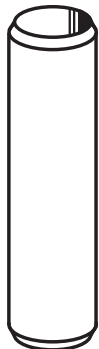


SECONDARY  
VALVE BODY

LONG  
HOLLOW  
DOWEL



LONG  
HOLLOW  
DOWEL



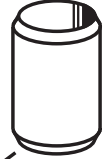
Copyright © 1999 ATSG

### HONDA PRELUDE "Early" MODEL "K4" MAIN VALVE BODY "TOP VIEW"

SHORT  
HOLLOW  
DOWEL



SHORT  
HOLLOW  
DOWEL

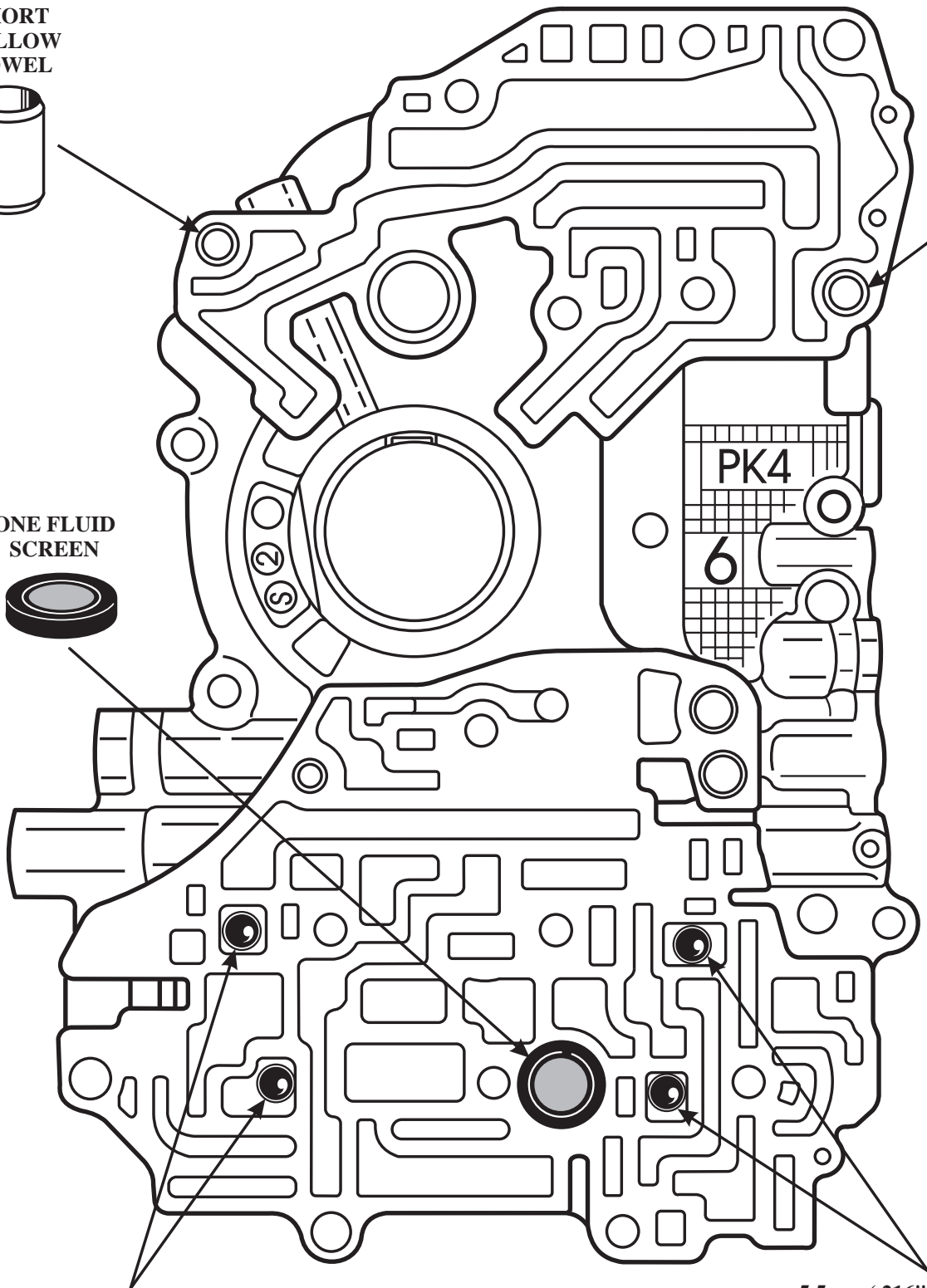


ONE FLUID  
SCREEN



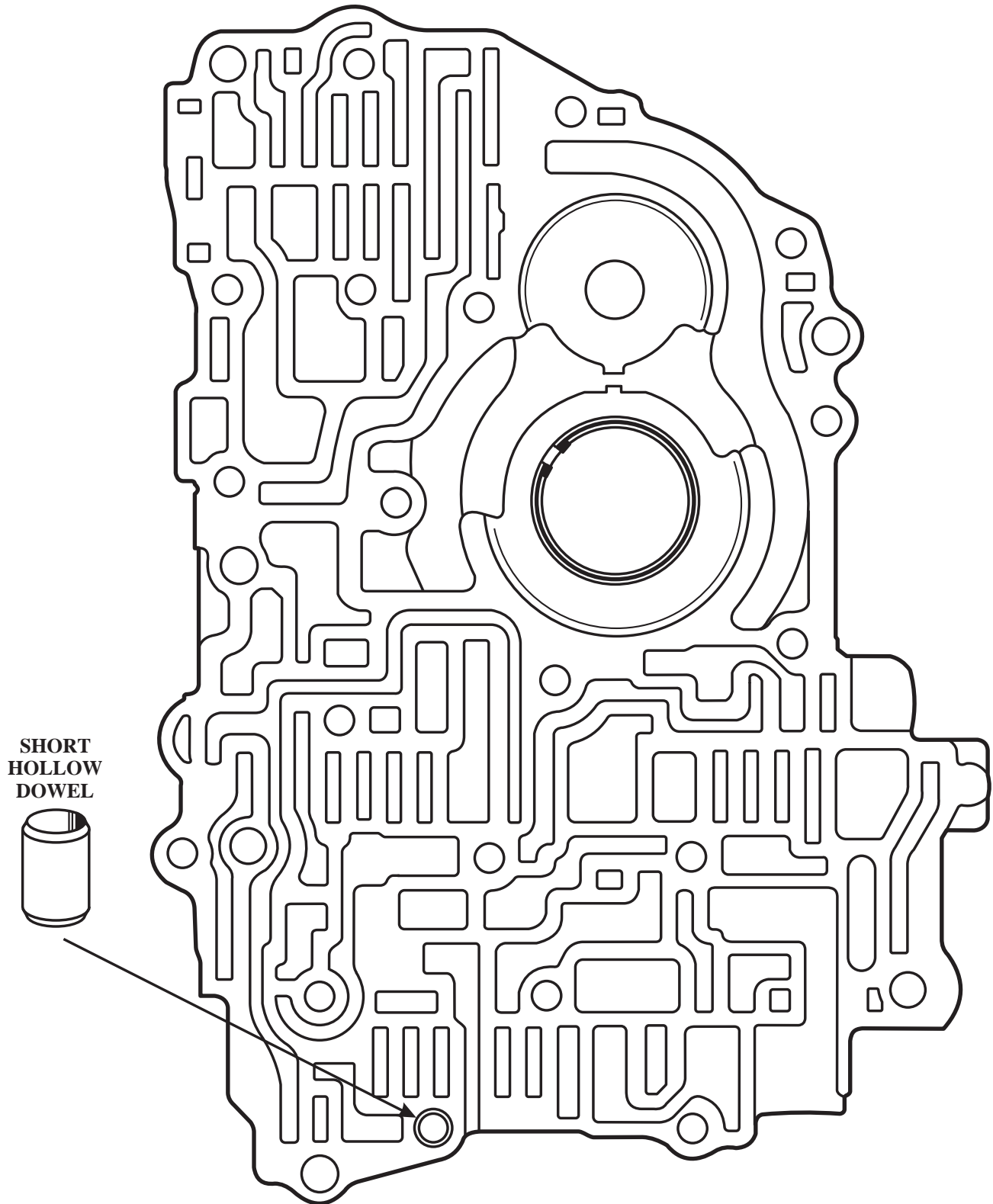
5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

5.5mm (.216") DIAMETER  
STEEL CHECKBALLS



Copyright © 1999 ATSG

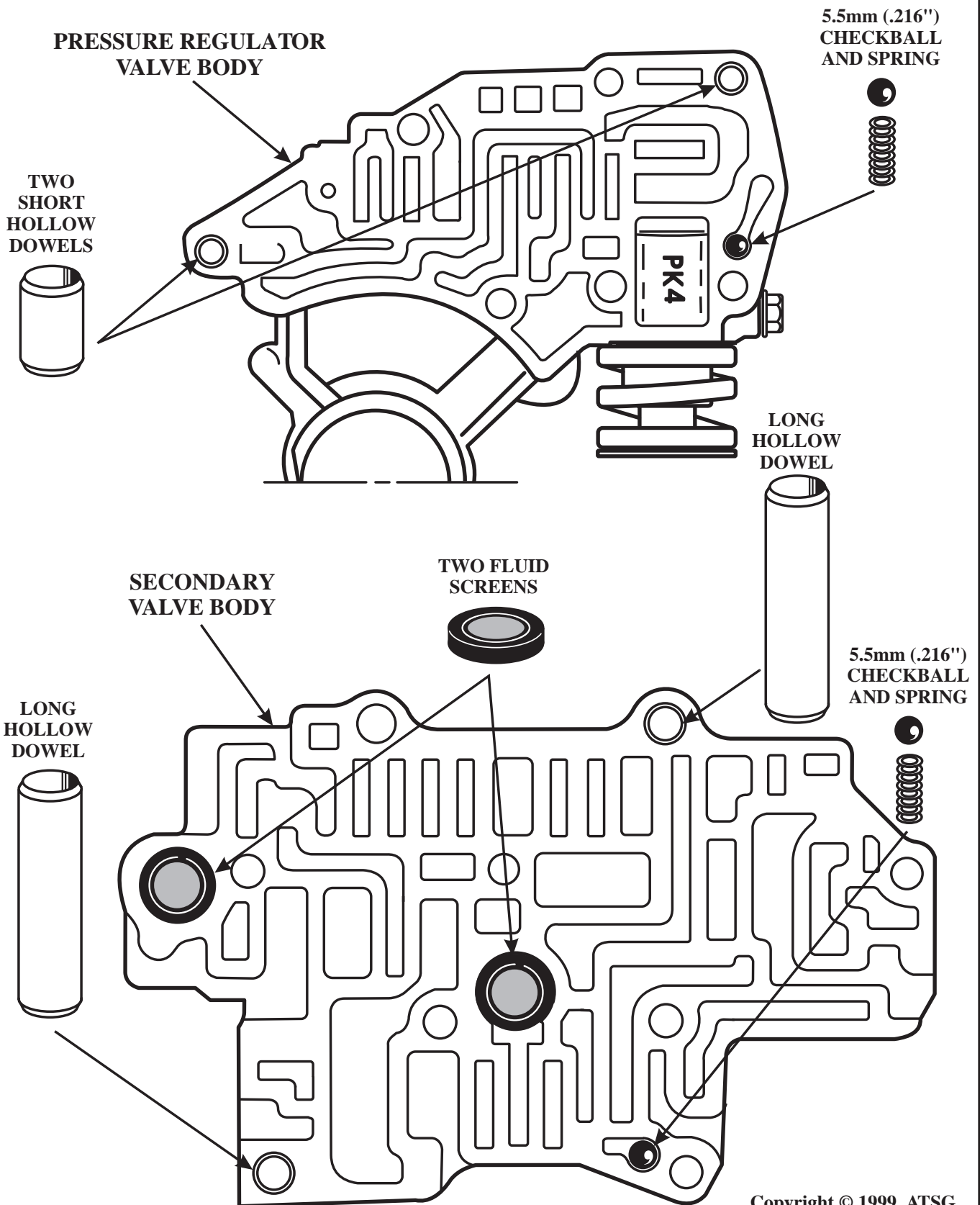
### HONDA PRELUDE "Early" MODEL "K4" MAIN VALVE BODY "BOTTOM VIEW"



Copyright © 1999 ATSG

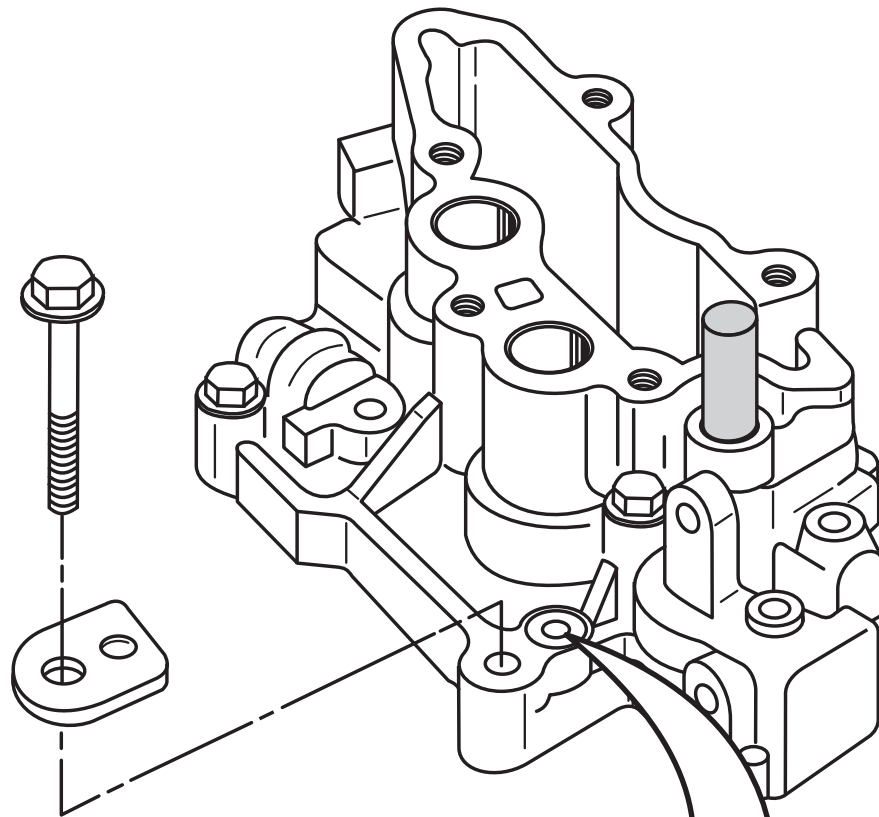


### HONDA PRELUDE "Early" MODEL "K4" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



Copyright © 1999 ATSG

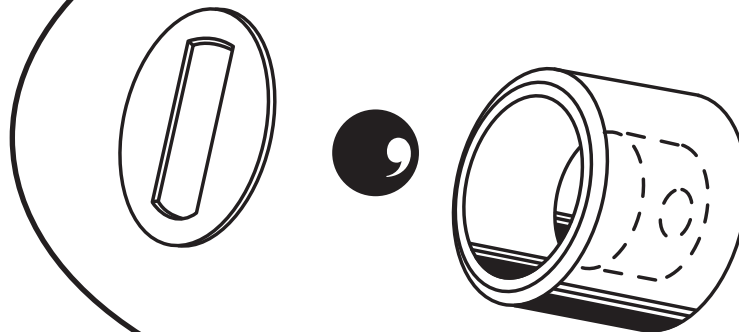
### SERVO VALVE BODY



#### CAUTION:

The Servo Release Check Valve is staked into the servo valve body as shown, but it can fall out or can be blown out during cleaning process.

#### SERVO RELEASE CHECK VALVE

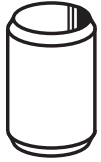


Copyright © 1999 ATSG

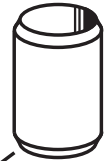
**NOTE: MOST SERVO VALVE BODIES WILL HAVE THIS CHECK VALVE.**

### HONDA PRELUDE "Late" MODEL "K4" MAIN VALVE BODY "TOP VIEW"

SHORT  
HOLLOW  
DOWEL



SHORT  
HOLLOW  
DOWEL

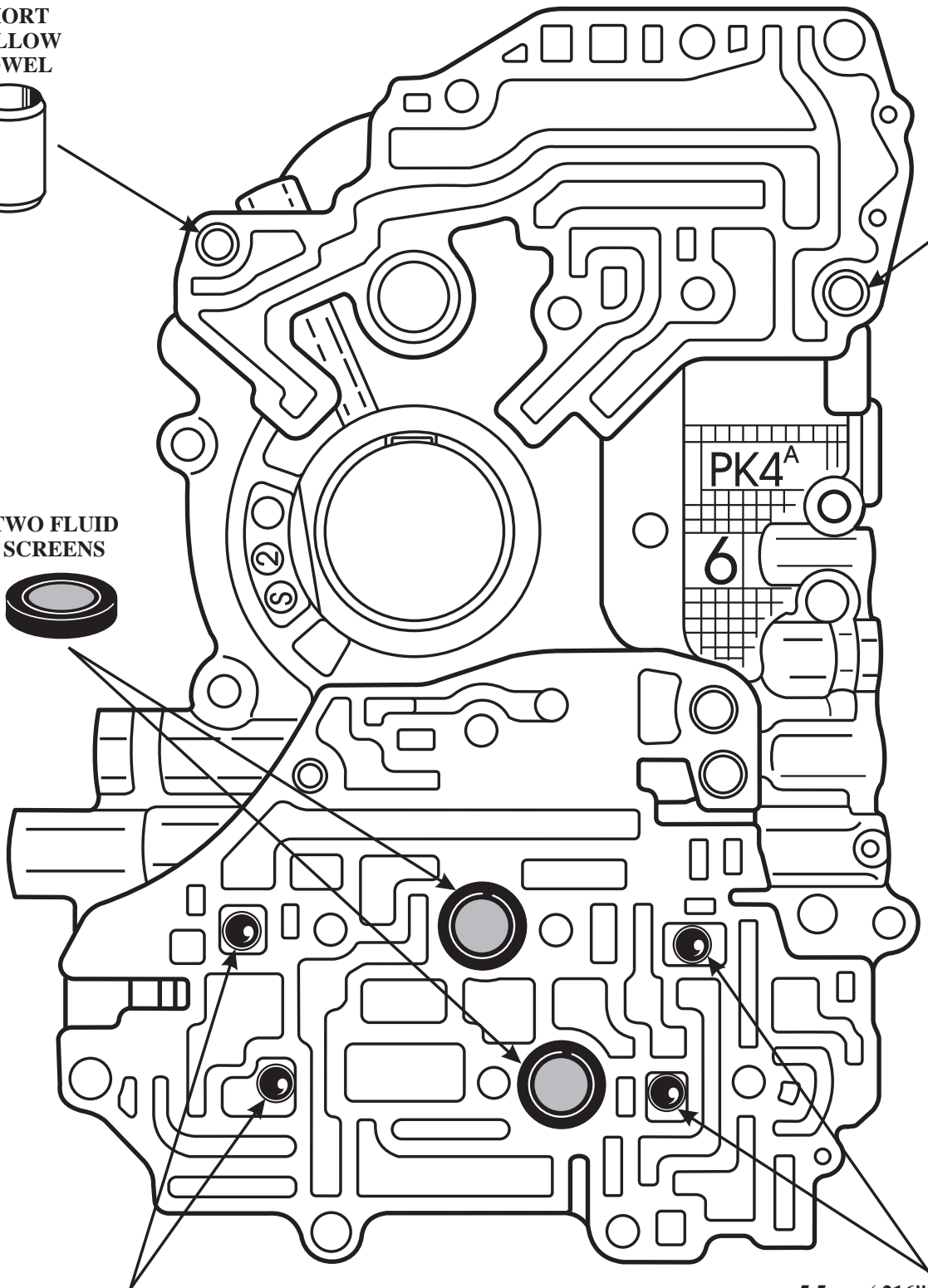


TWO FLUID  
SCREENS



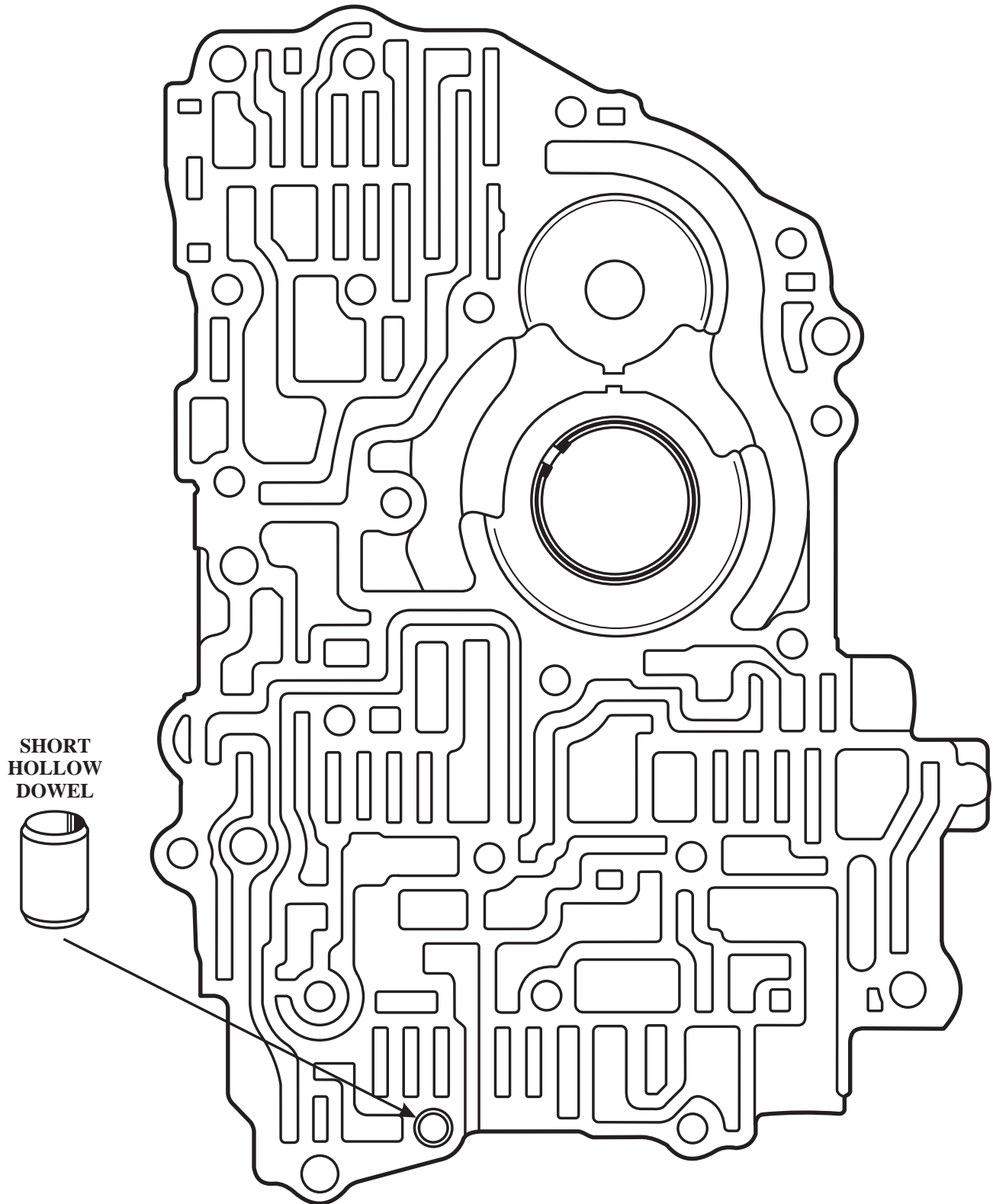
5.5mm (.216") DIAMETER  
STEEL CHECKBALLS

5.5mm (.216") DIAMETER  
STEEL CHECKBALLS



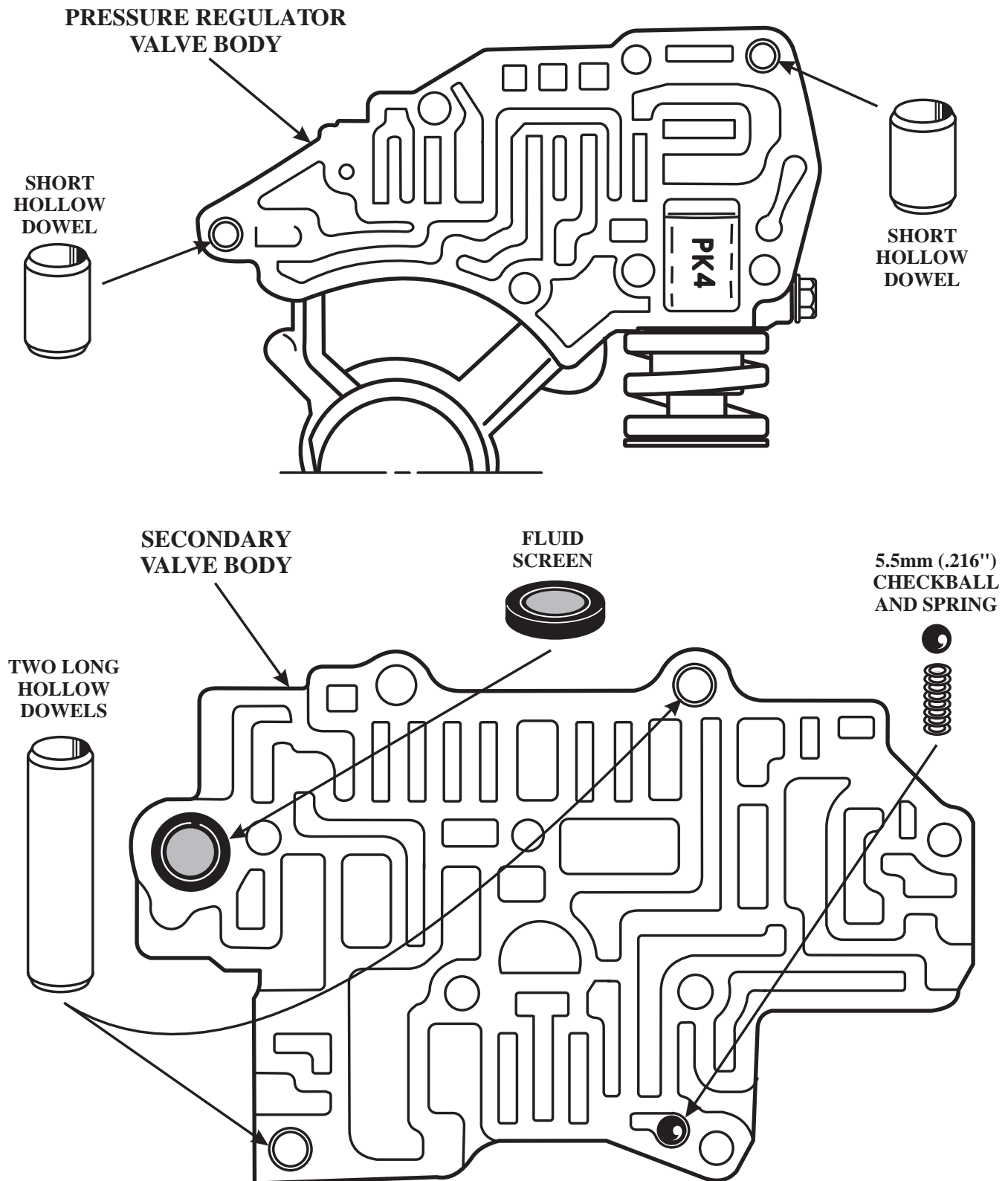
Copyright © 1999 ATSG

### HONDA PRELUDE "Late" MODEL "K4" MAIN VALVE BODY "BOTTOM VIEW"



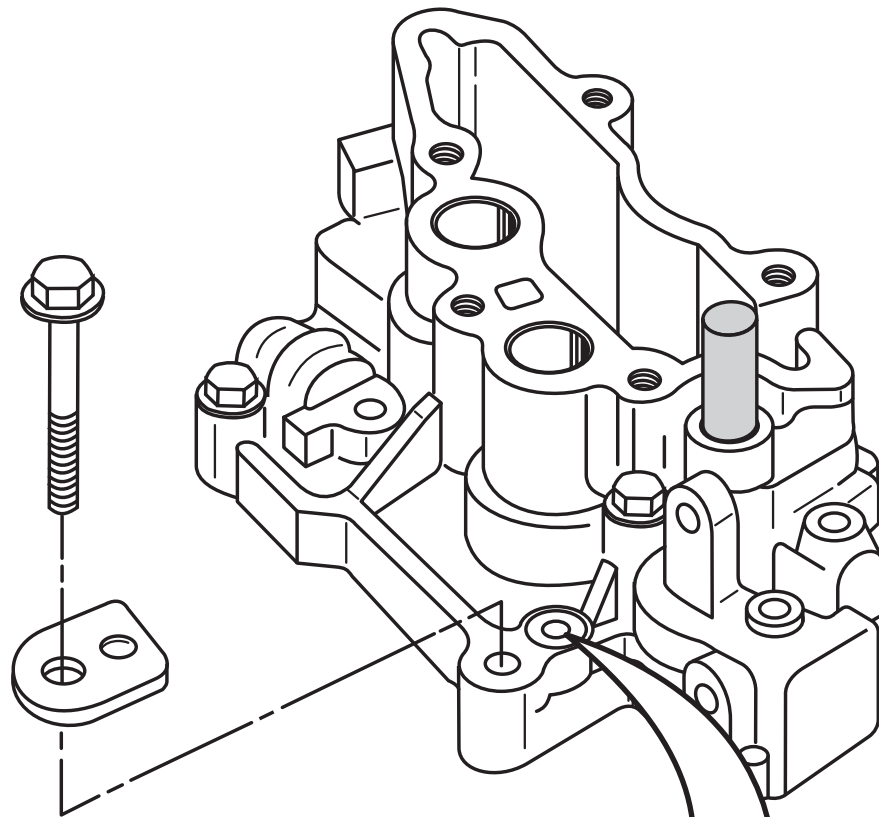
Copyright © 1999 ATSG

### HONDA PRELUDE "Late" MODEL "K4" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



Copyright © 1999 ATSG

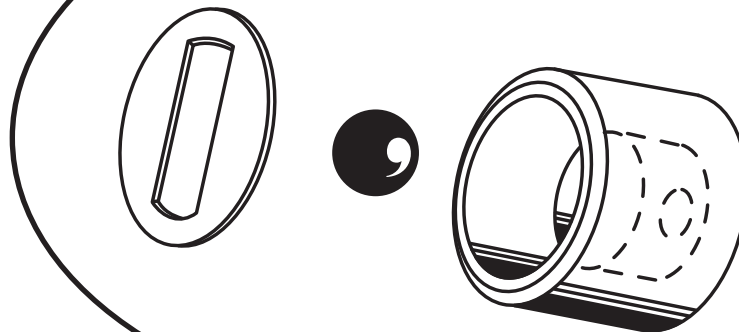
### SERVO VALVE BODY



#### CAUTION:

The Servo Release Check Valve is staked into the servo valve body as shown, but it can fall out or can be blown out during cleaning process.

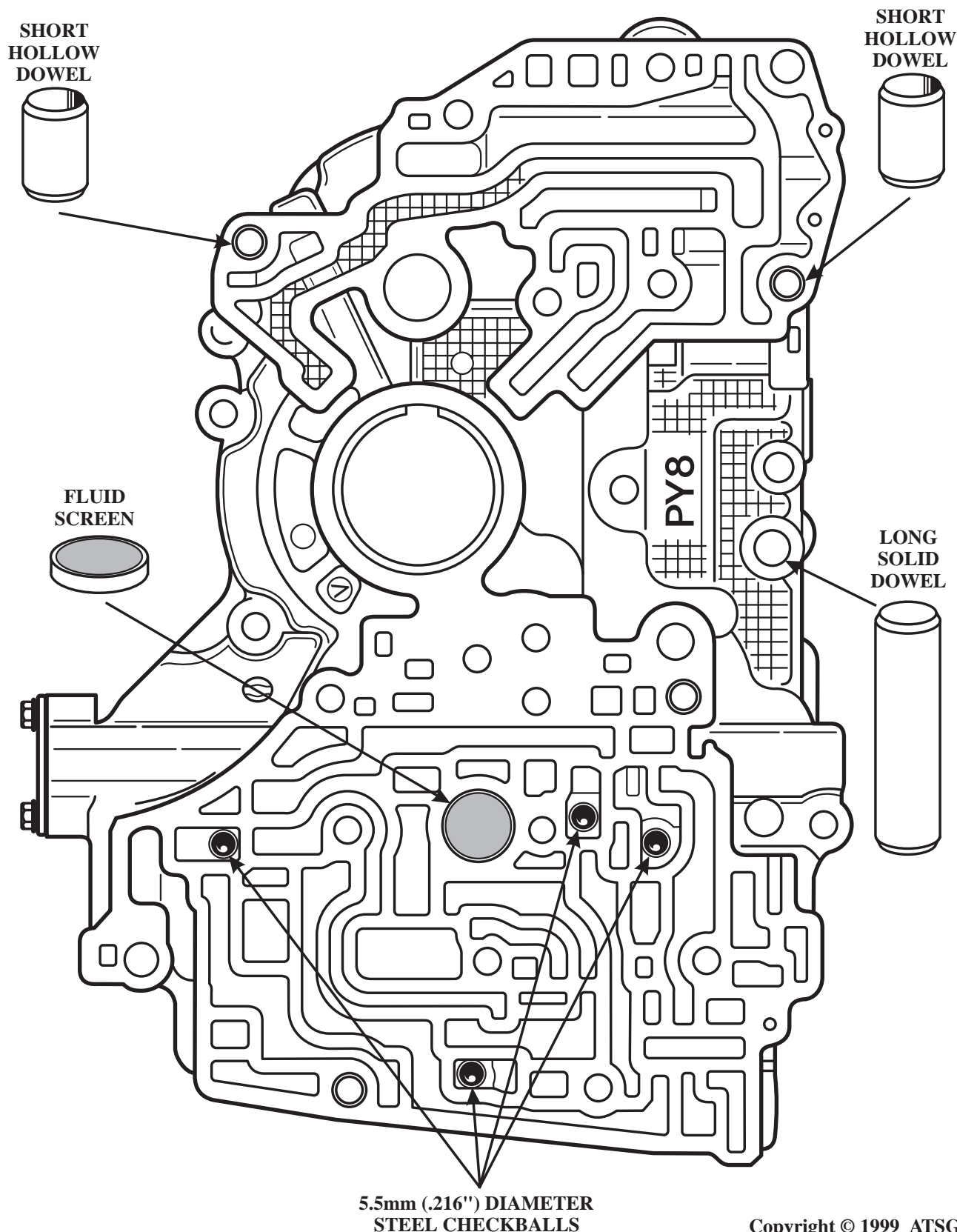
#### SERVO RELEASE CHECK VALVE



Copyright © 1999 ATSG

**NOTE: MOST SERVO VALVE BODIES WILL HAVE THIS CHECK VALVE.**

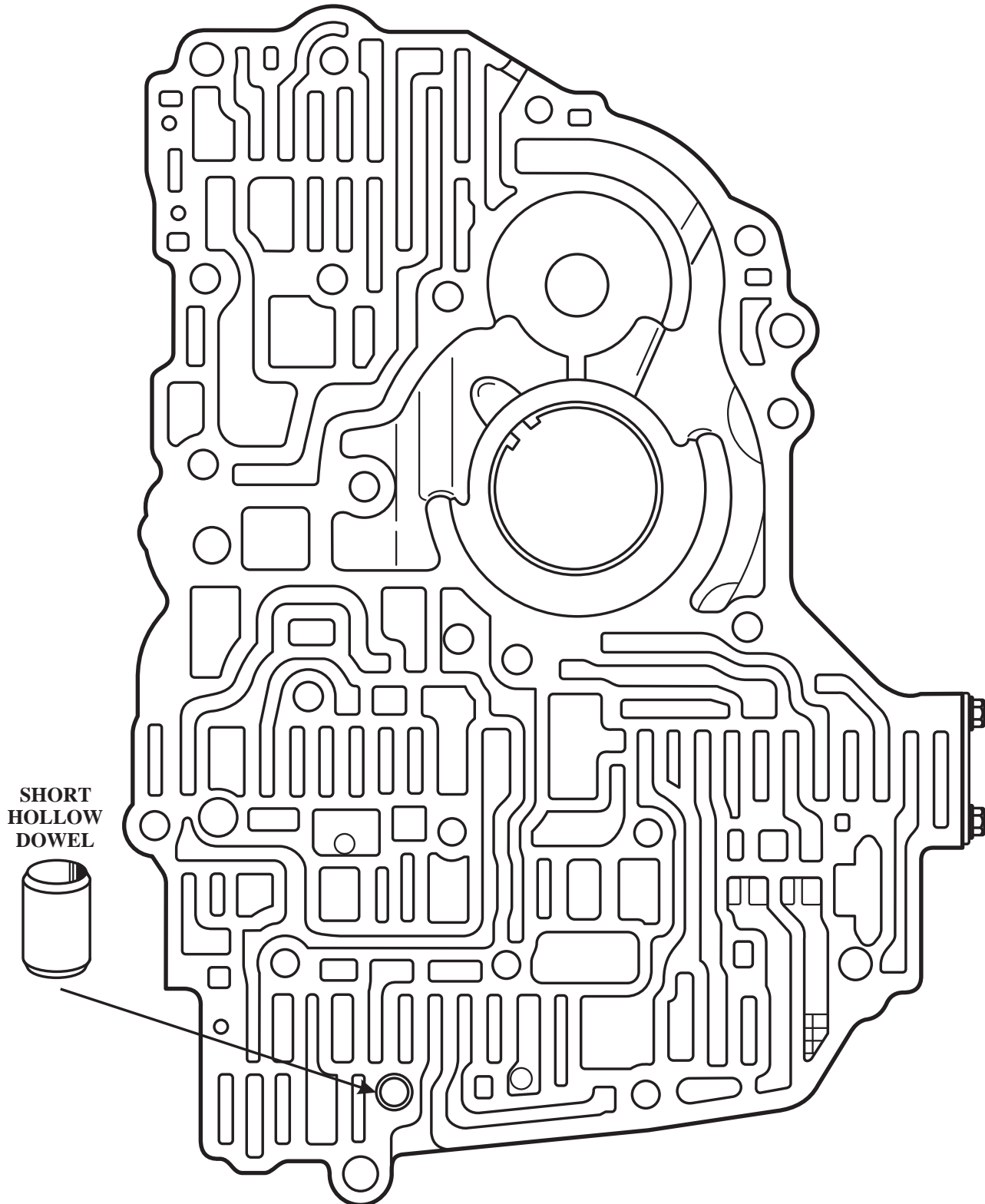
**HONDA PRELUDE MODEL "PY8A"**  
**MAIN VALVE BODY "TOP VIEW"**



Copyright © 1999 ATSG

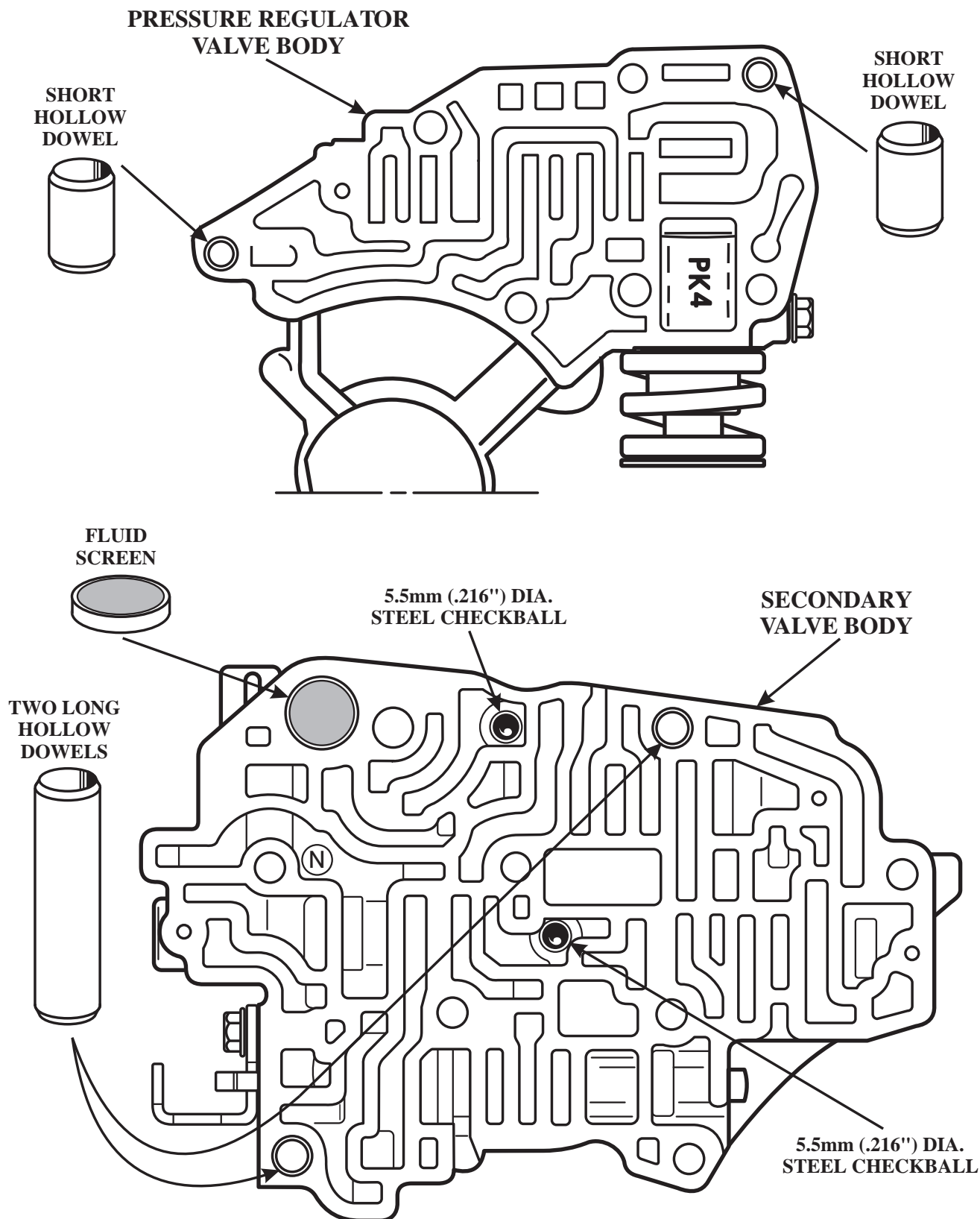


### HONDA PRELUDE MODEL "PY8A" MAIN VALVE BODY "BOTTOM VIEW"



Copyright © 1999 ATSG

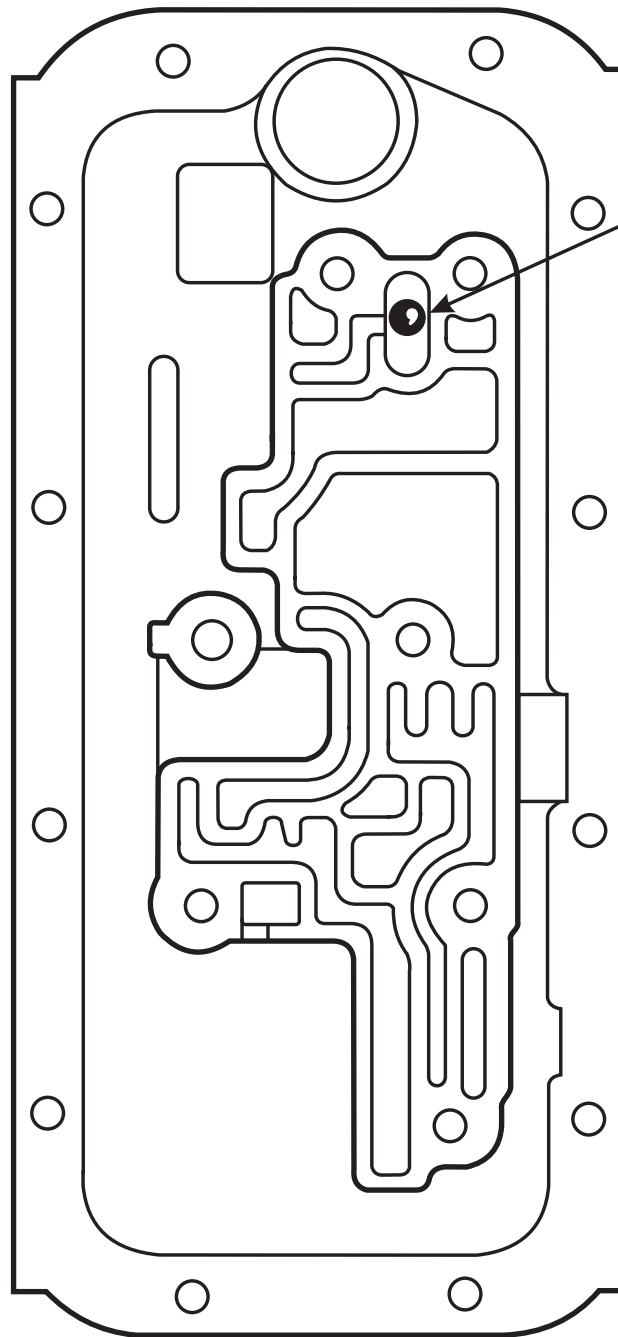
### HONDA PRELUDE MODEL "PY8A" "PRESSURE REGULATOR" AND "SECONDARY" VALVE BODY



Copyright © 1999 ATSG

## HONDA PASSPORT CHECKBALL LOCATIONS

### 4L30-E OVERDRIVE CASE

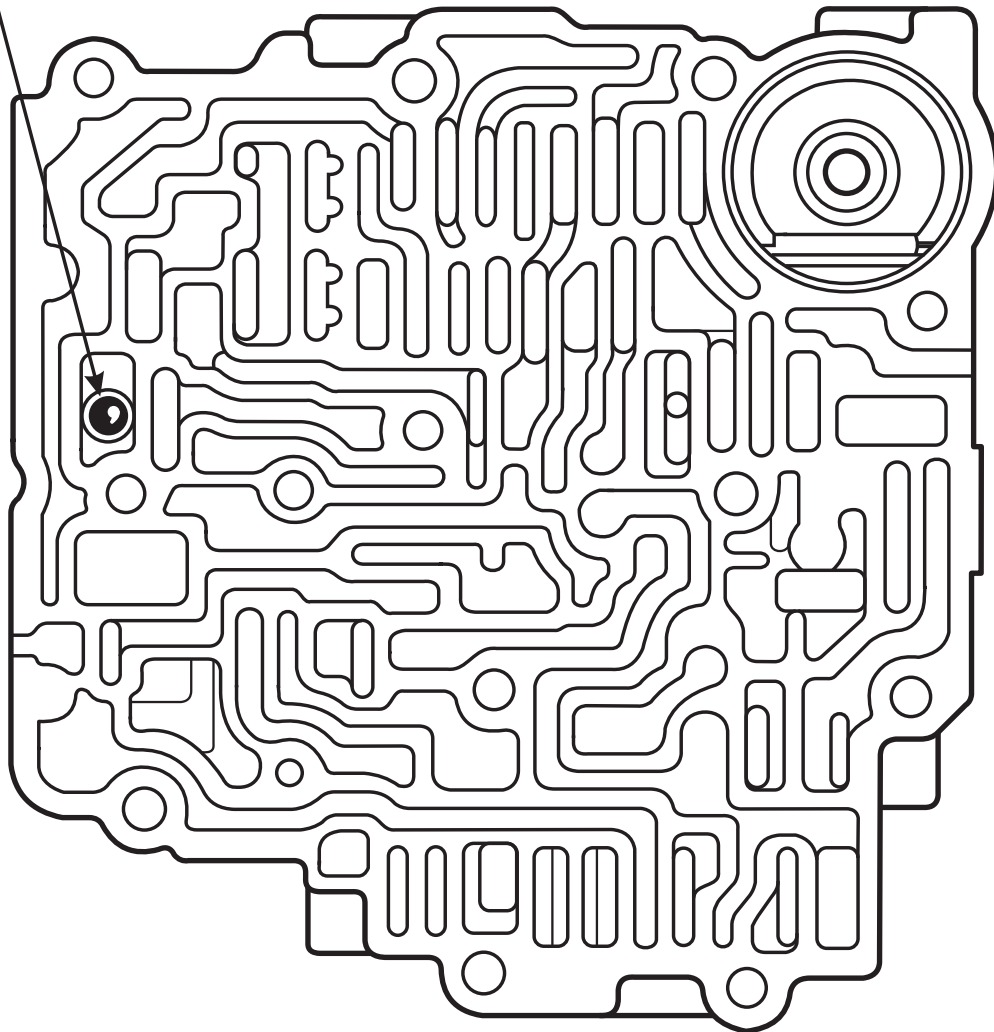


**REVERSE SHUTTLE  
CHECKBALL**  
(Some Models Only)

Copyright © 1999 ATSG

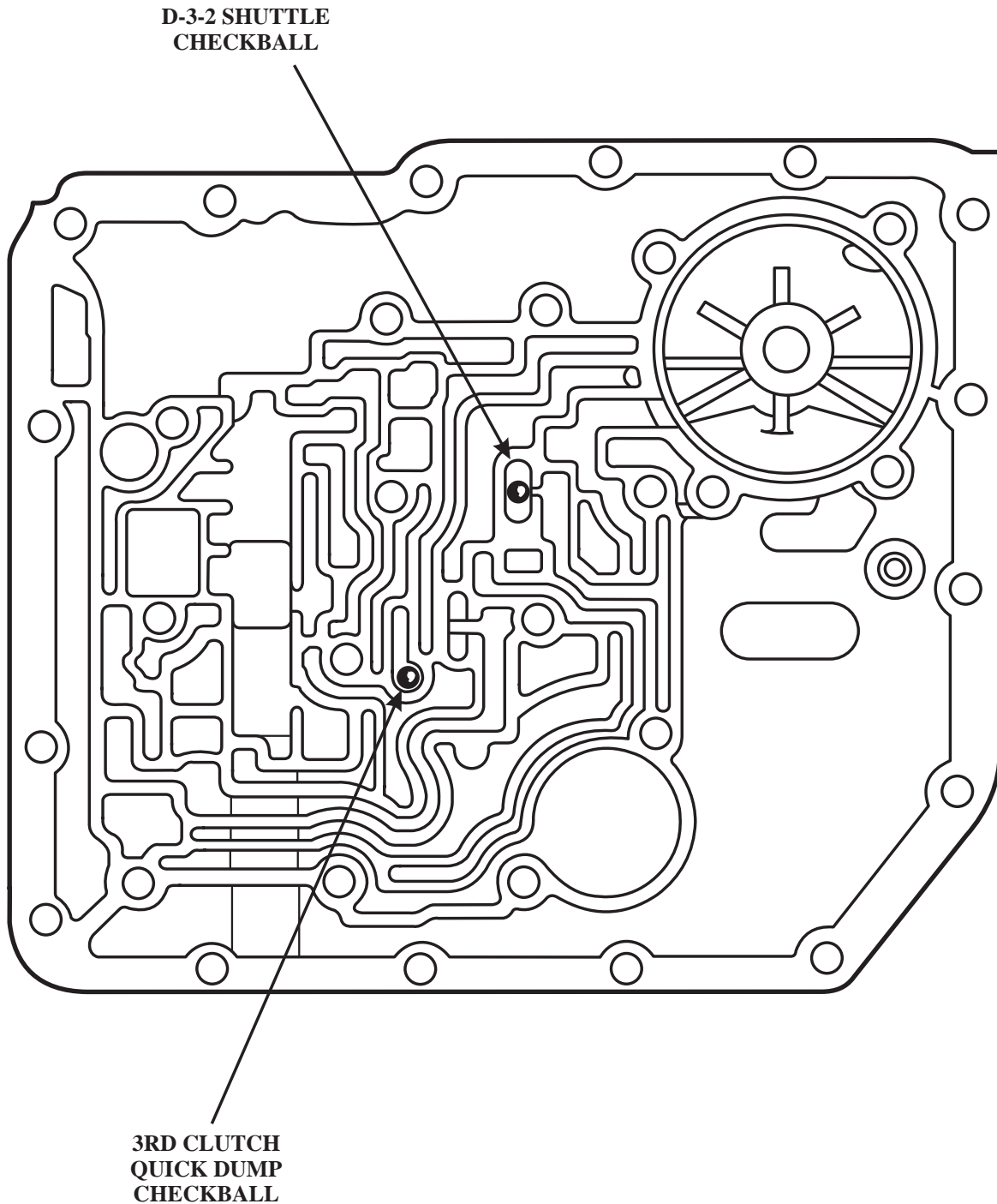
**HONDA PASSPORT CHECKBALL LOCATIONS  
4L30-E MAIN VALVE BODY**

**3RD CLUTCH  
CHECKBALL**



Copyright © 1999 ATSG

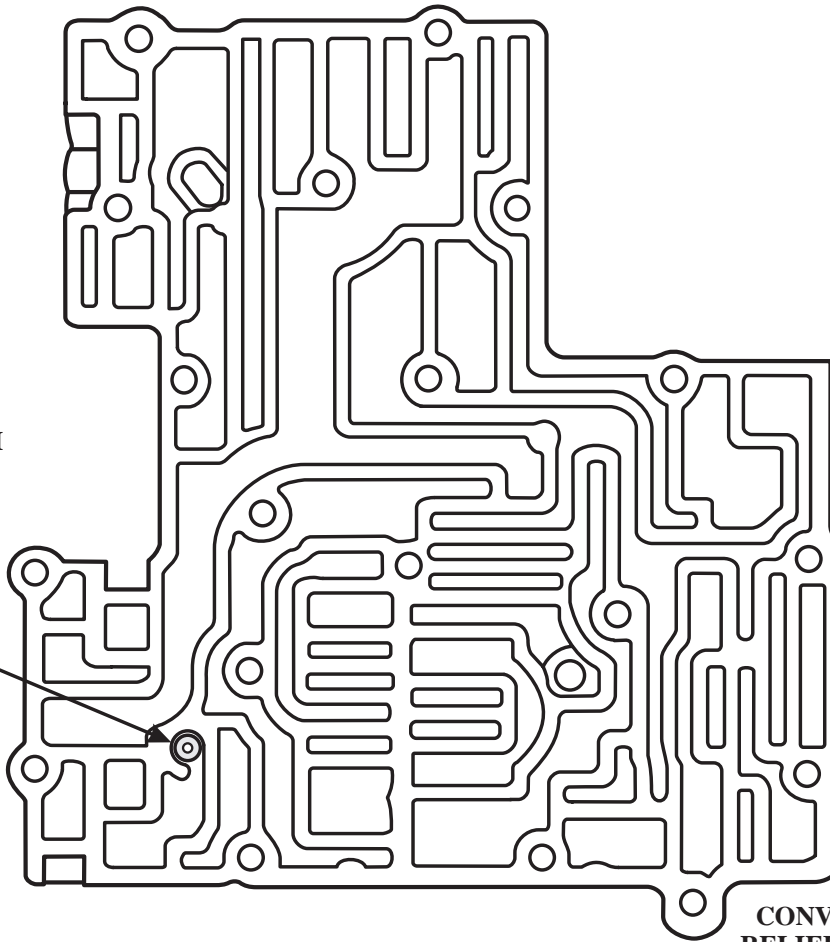
**HONDA PASSPORT CHECKBALL LOCATIONS  
4L30-E MAIN CASE**



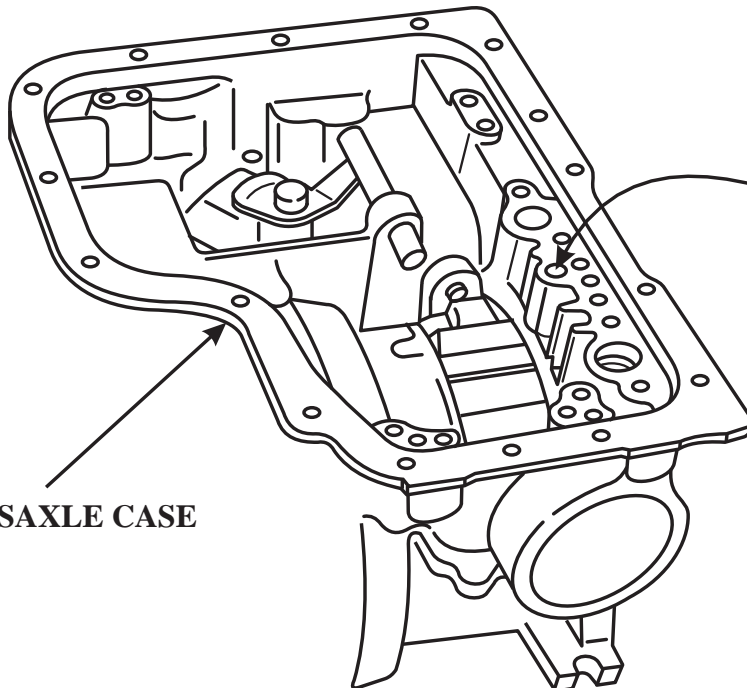
Copyright © 1999 ATSG

### F3A/KF-100 TRANSAXLE "UPPER" VALVE BODY AND CASE

**DIRECT CLUTCH  
FEED ORIFICE,  
REVERSE ONLY**  
(No Spring)



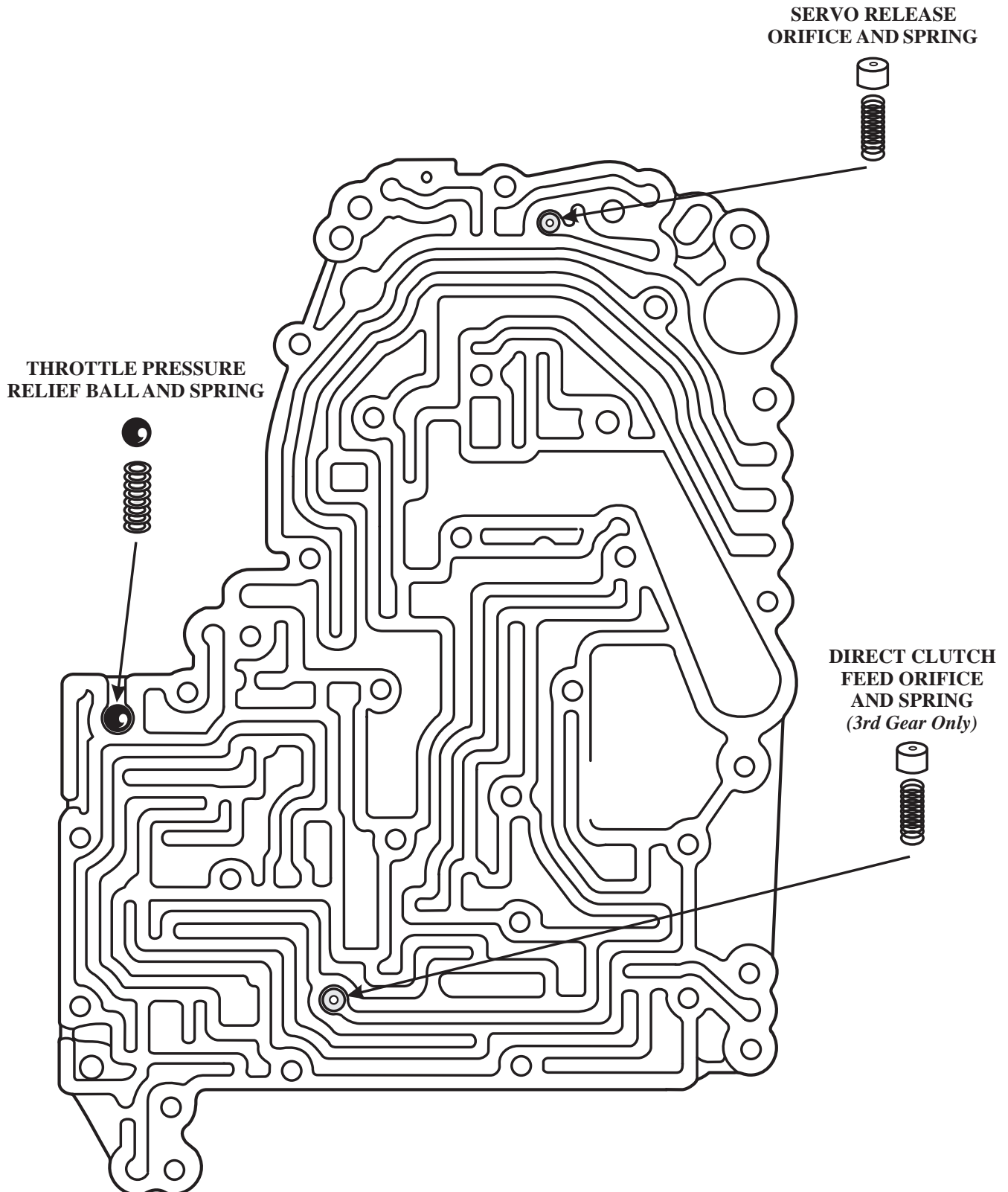
**CONVERTER PRESSURE  
RELIEF BALL AND SPRING**



**TRANSAXLE CASE**

Copyright © 1999 ATSG

### F3A/KF-100 TRANSAXLE "LOWER" VALVE BODY

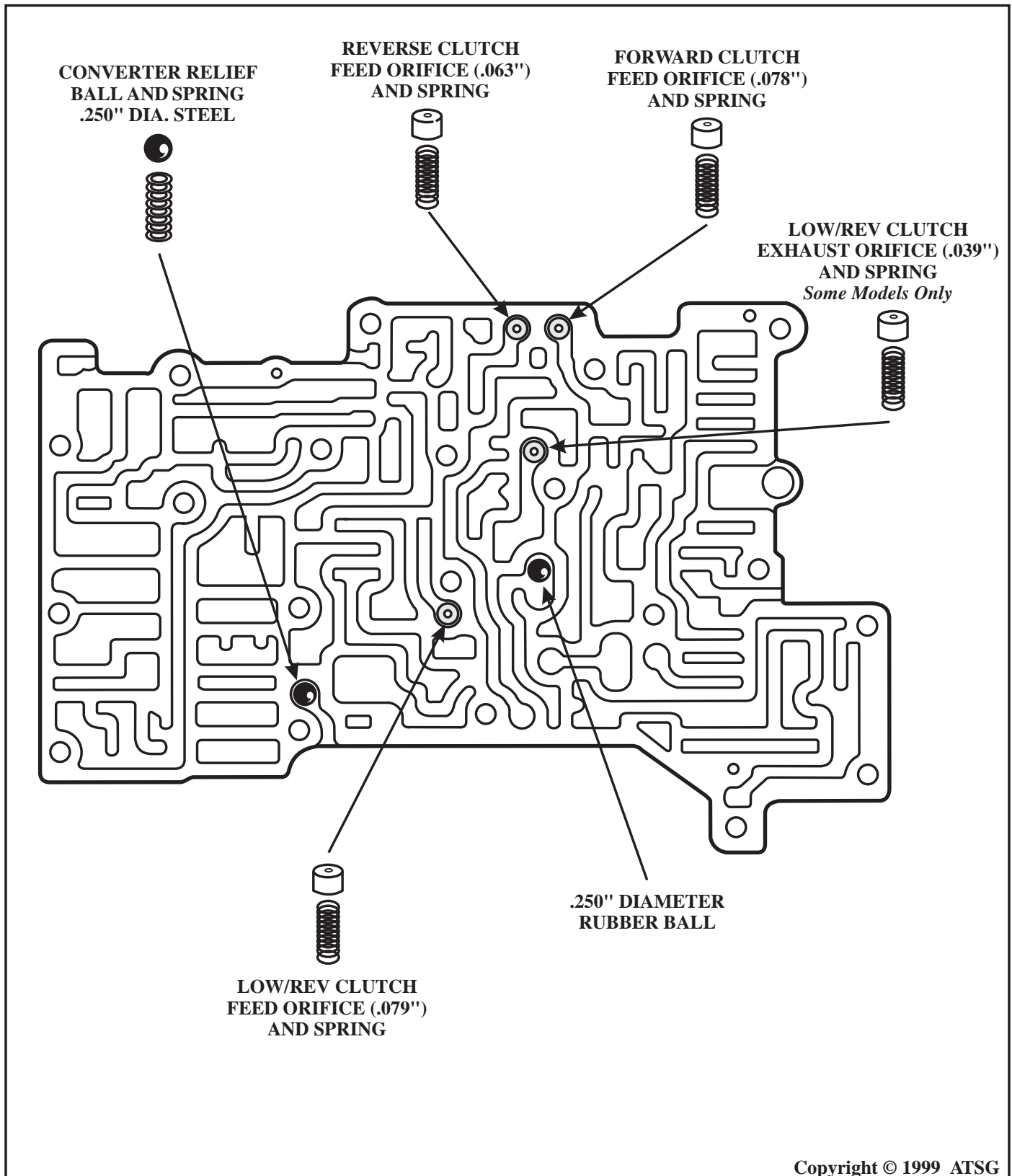


Copyright © 1999 ATSG



### MAZDA G4A-HL

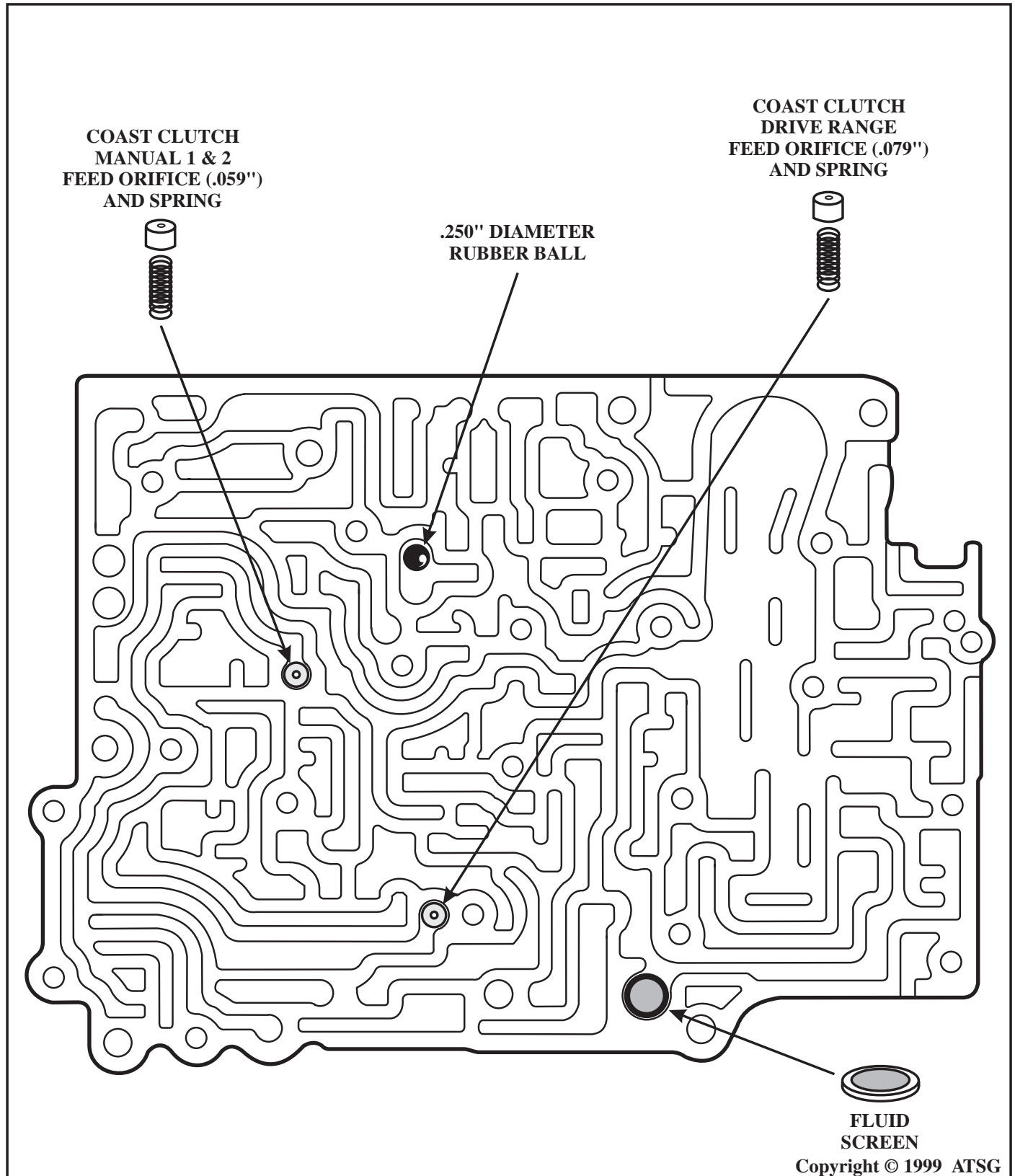
## "REAR" CONTROL VALVE BODY ORIFICE AND CHECKBALL LOCATIONS



Copyright © 1999 ATSG

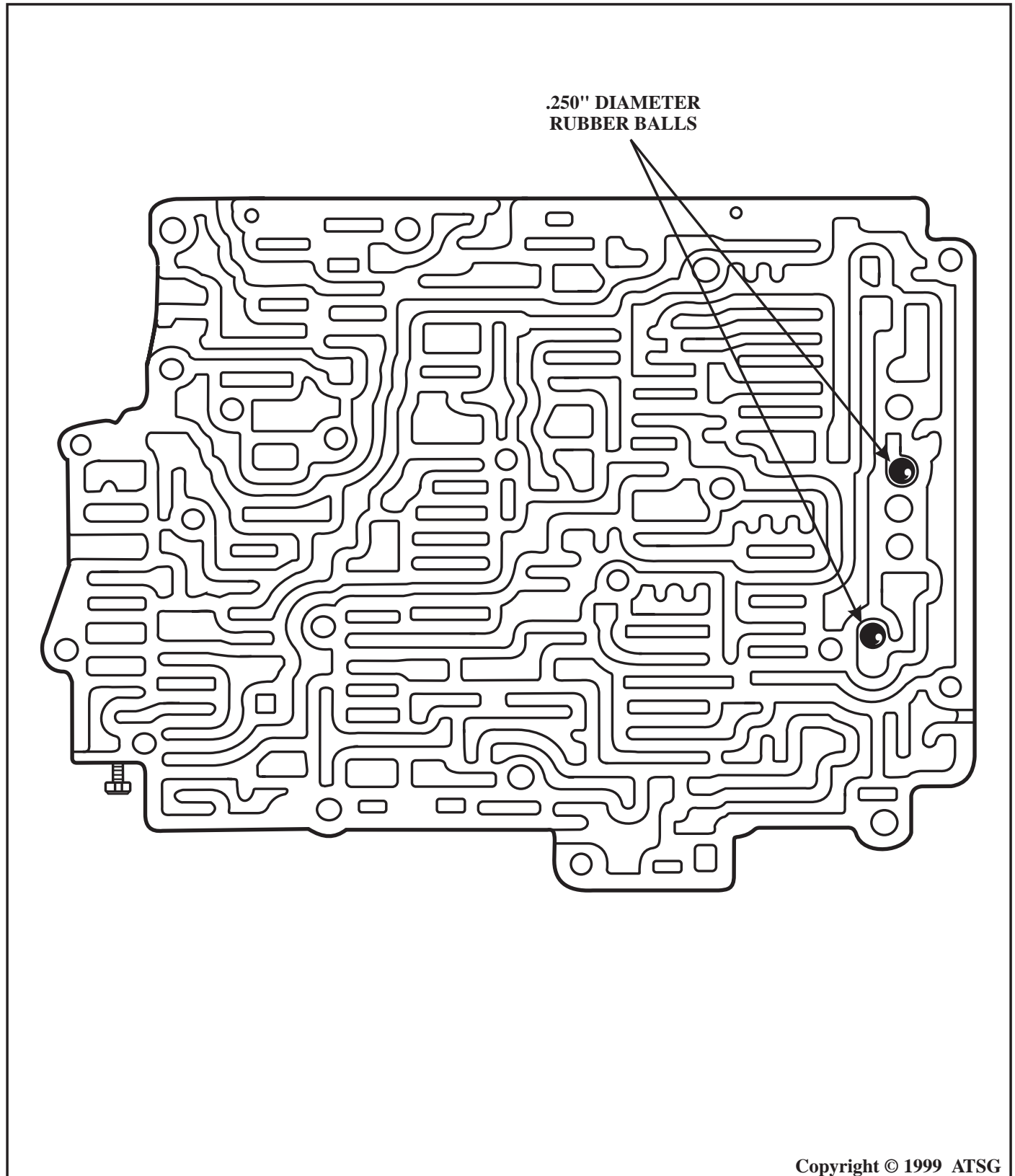
### MAZDA G4A-HL

## "MAIN" CONTROL VALVE BODY, REAR BODY SIDE ORIFICE AND CHECKBALL LOCATIONS



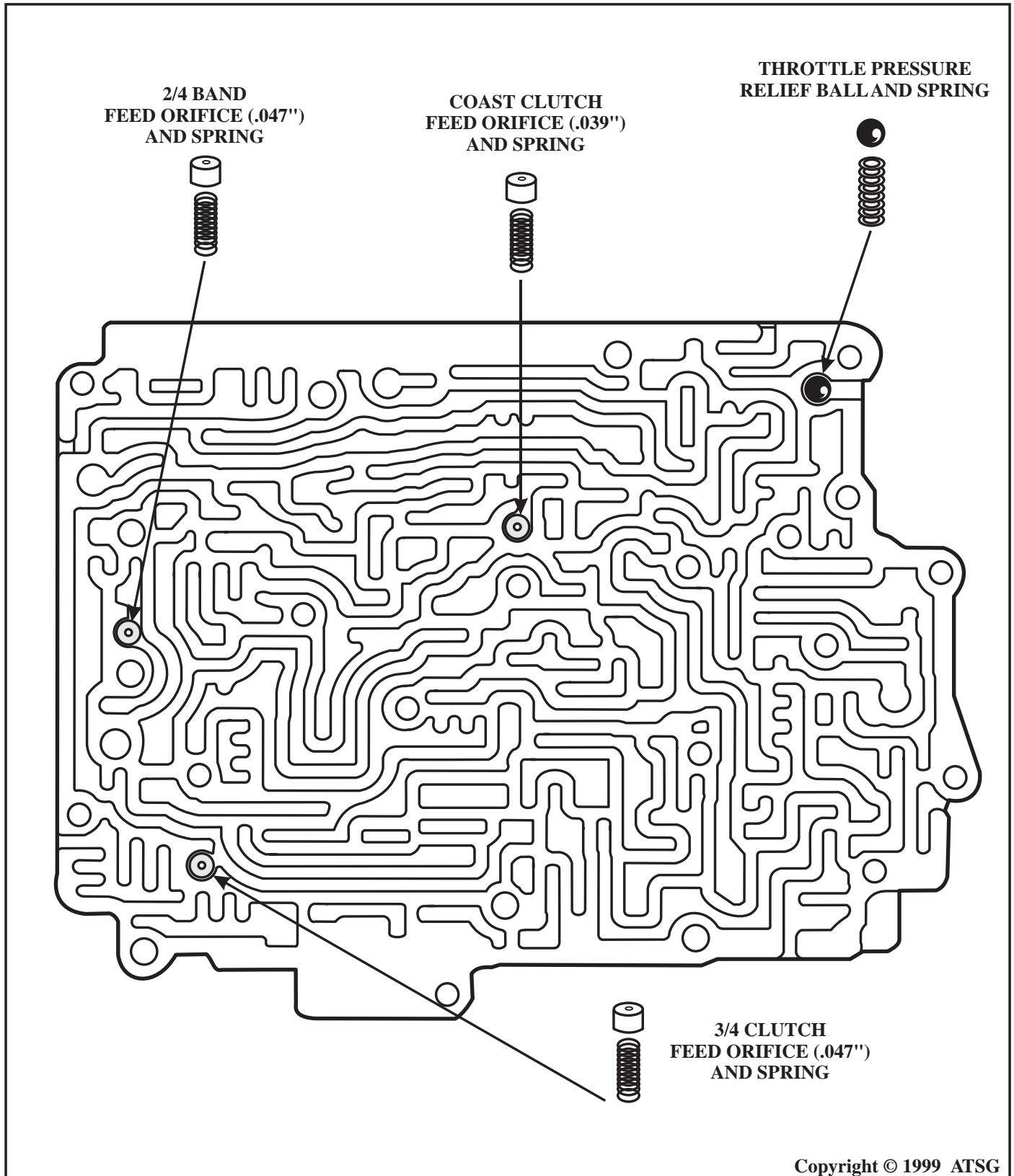
## MAZDA G4A-HL

### "MAIN" CONTROL VALVE BODY, PREMAIN BODY SIDE ORIFICE AND CHECKBALL LOCATIONS



### MAZDA G4A-HL

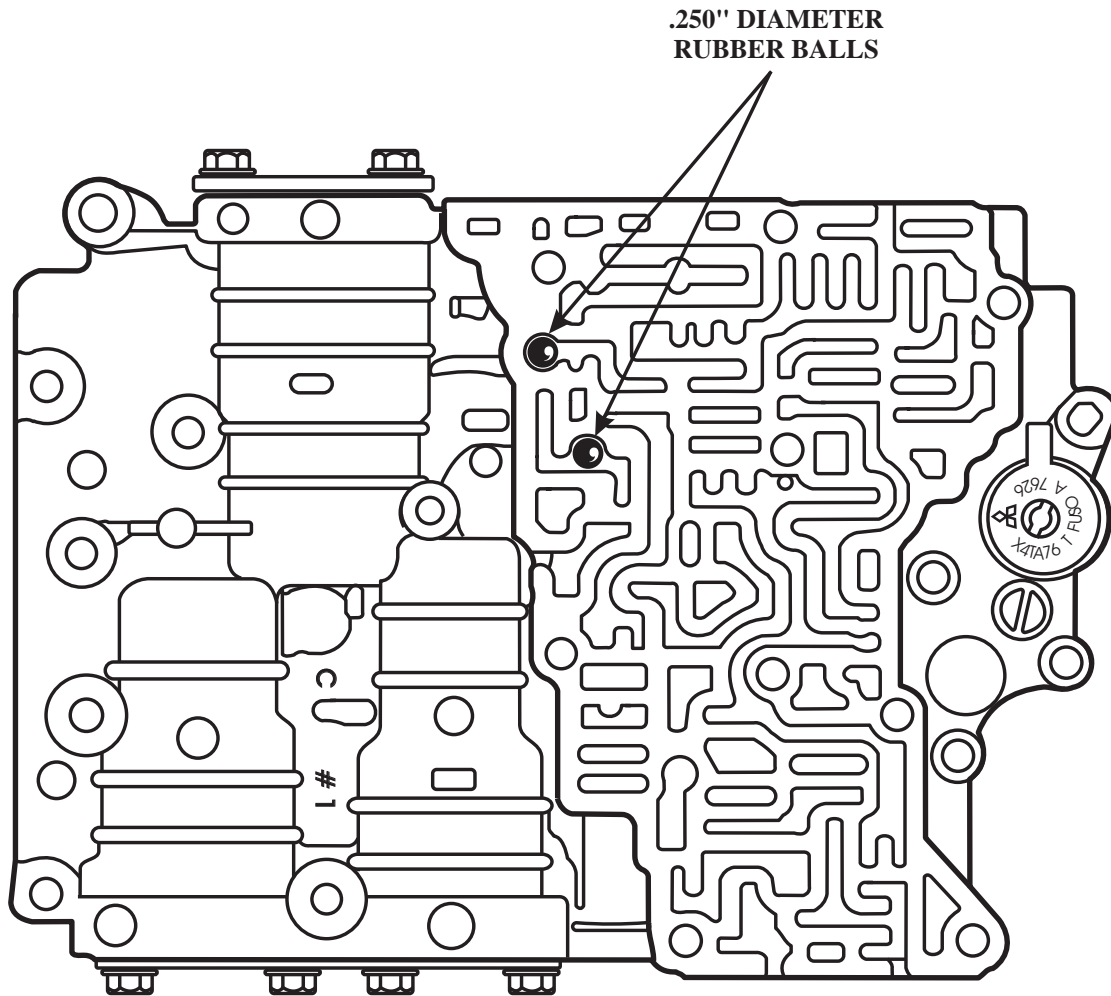
## "PREMAIN" CONTROL VALVE BODY, MAIN BODY SIDE ORIFICE AND CHECKBALL LOCATIONS



Copyright © 1999 ATSG

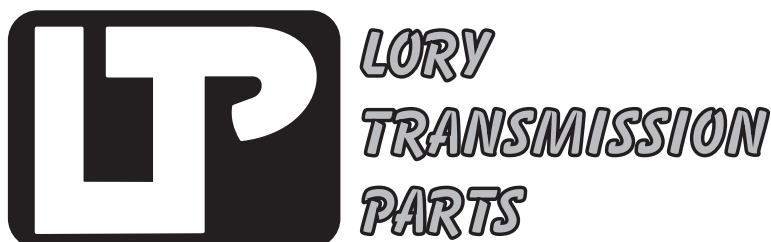
### MAZDA G4A-HL

## "PREMAIN" CONTROL VALVE BODY, FRONT BODY SIDE ORIFICE AND CHECKBALL LOCATIONS



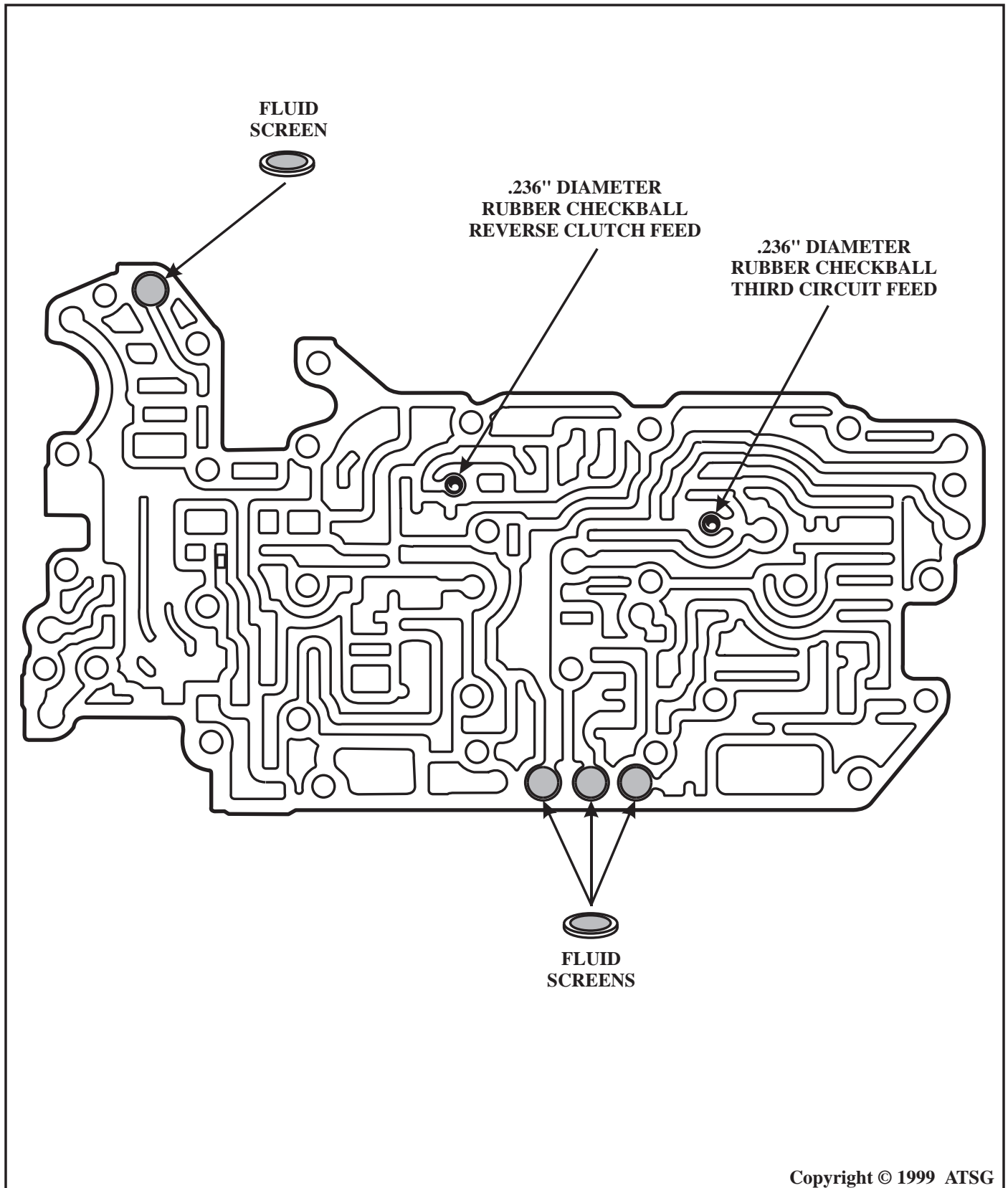
Copyright © 1999 ATSG

We wish to thank the following for supplying the actual valve bodies that have made these illustrations possible.



**2414 SW 8TH STREET**  
**MIAMI, FLORIDA 33135**  
**TOLL FREE (800) 966-4621**  
**PHONE (305) 642-4621**  
**FAX (305) 541-1444**

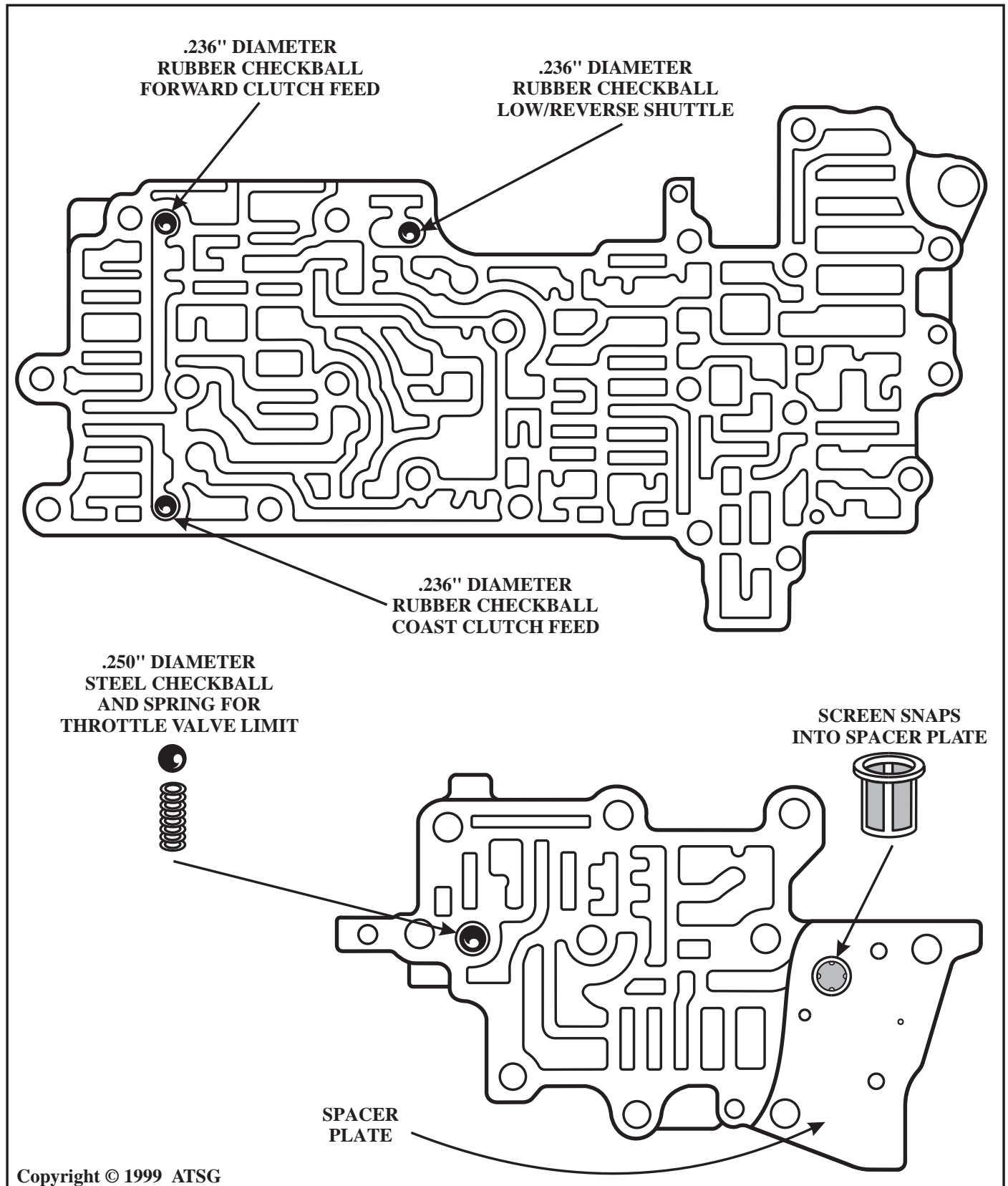
## MAZDA F4A-EL MAIN VALVE BODY



Copyright © 1999 ATSG

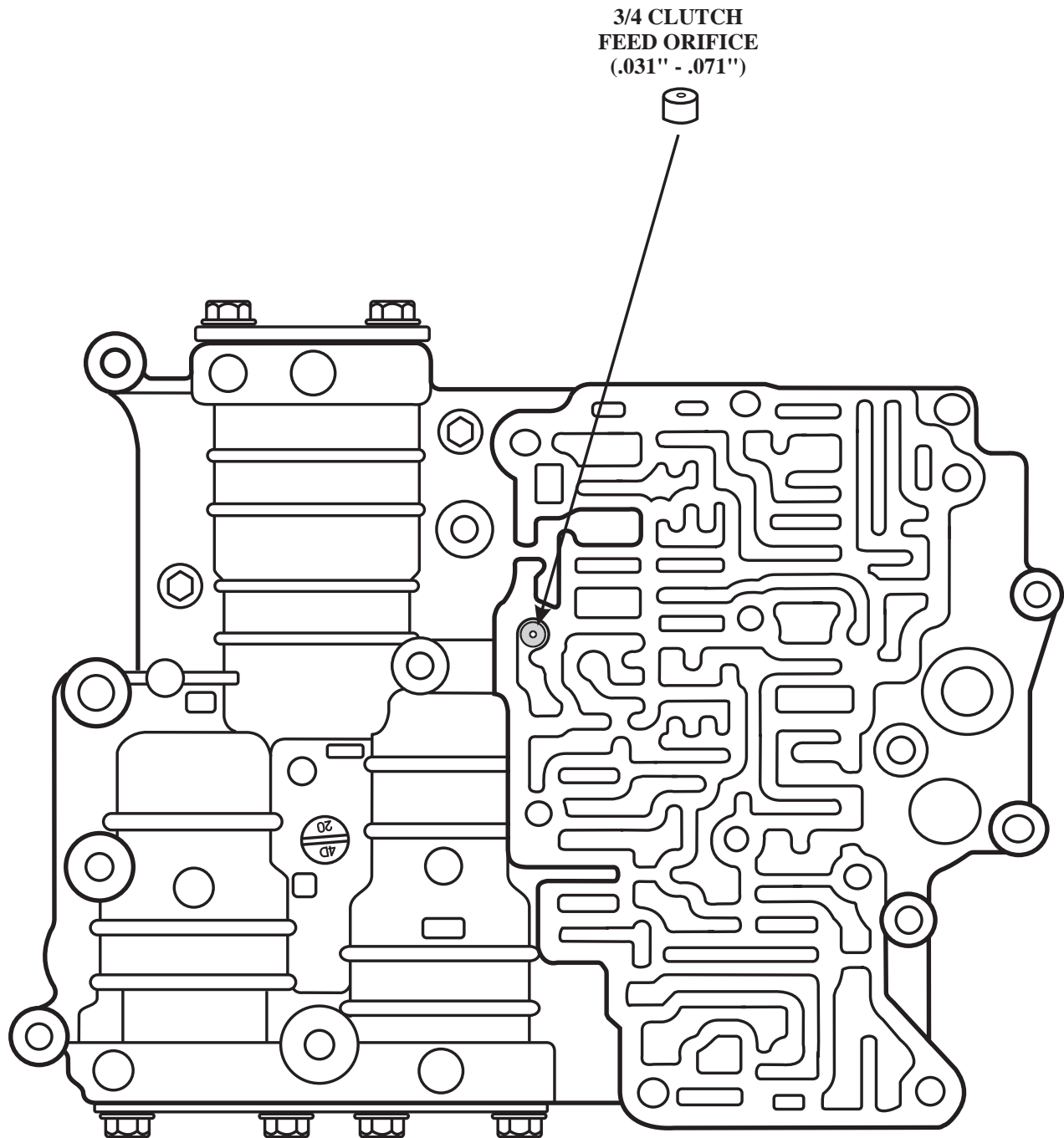


### MAZDA F4A-EL LOWER VALVE BODY AND THROTTLE VALVE BODY



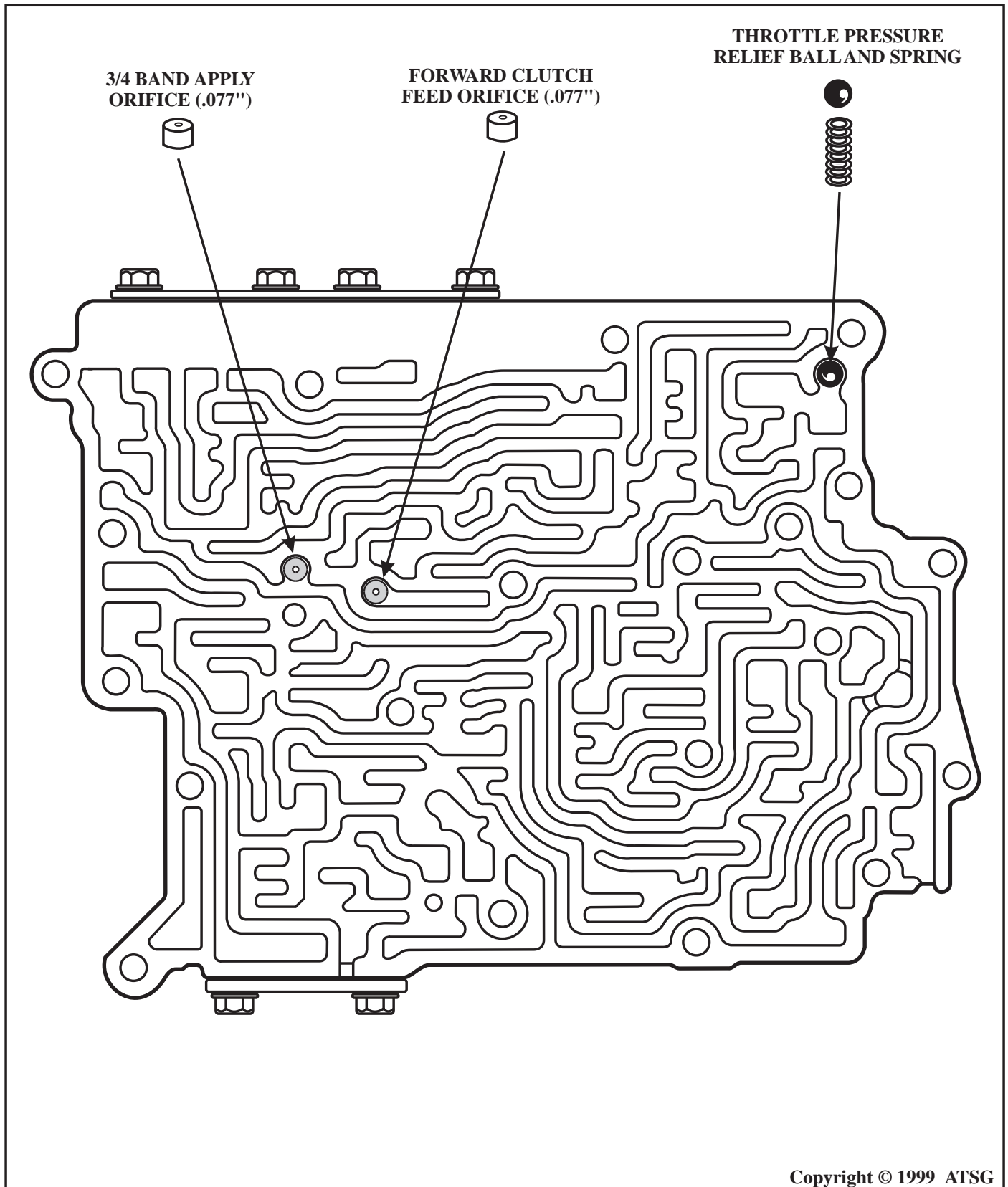
Copyright © 1999 ATSG

### MAZDA G4A-EL PREMAIN VALVE BODY "COVER SIDE"



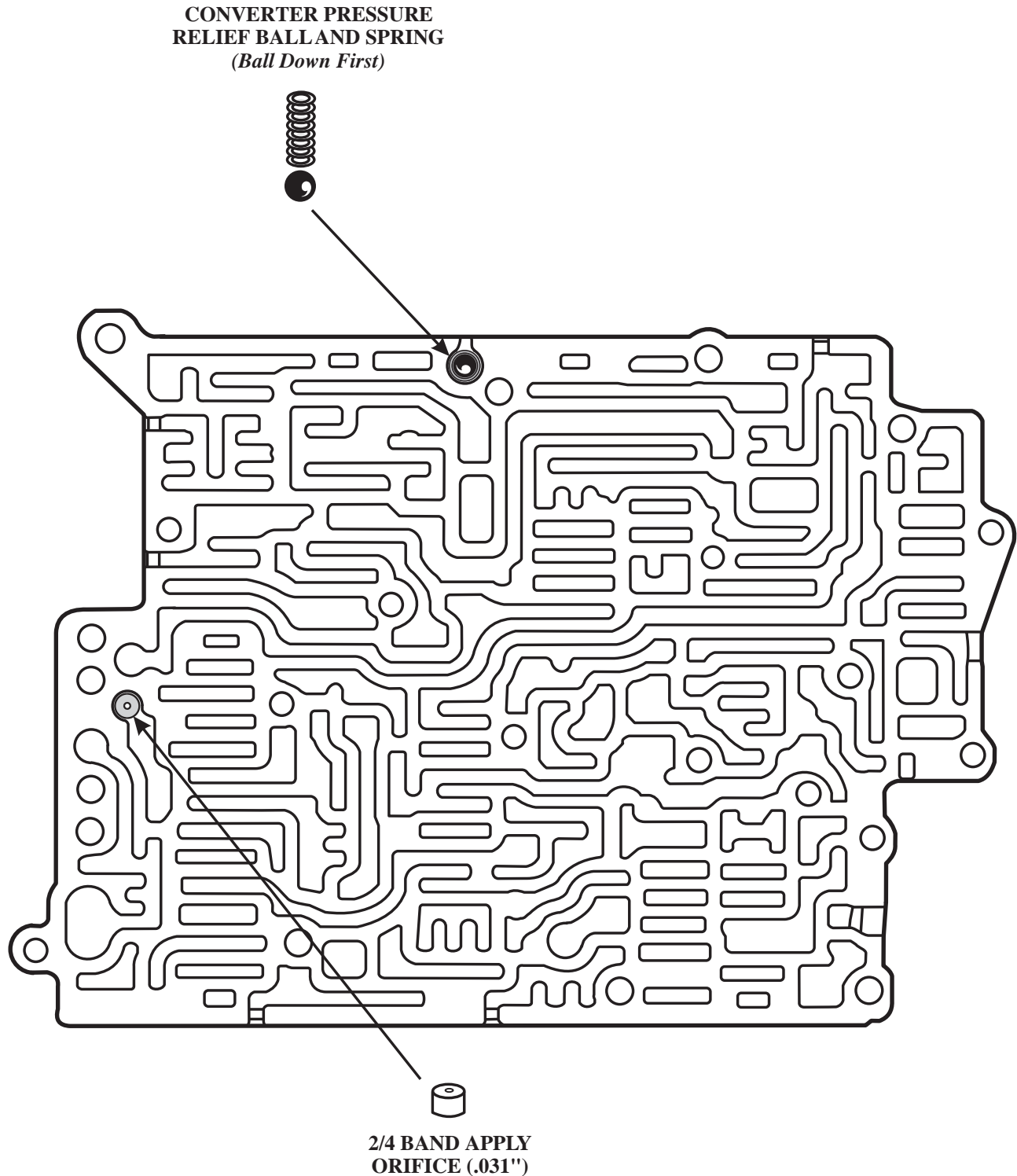
Copyright © 1999 ATSG

## MAZDA G4A-EL PREMAIN VALVE BODY "MAIN BODY SIDE"



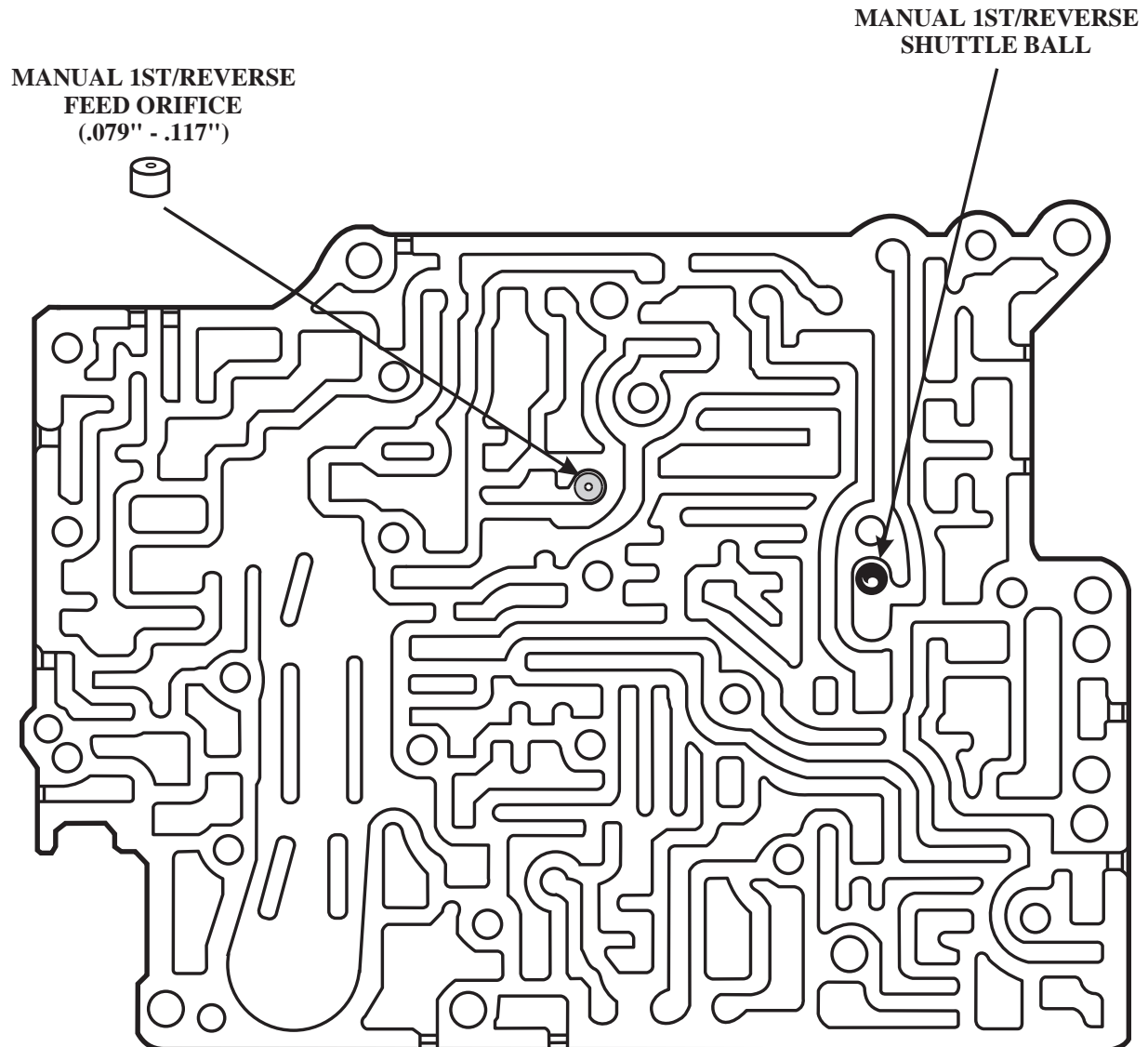
Copyright © 1999 ATSG

### MAZDA G4A-EL MAIN VALVE BODY "PREMAIN BODY SIDE"



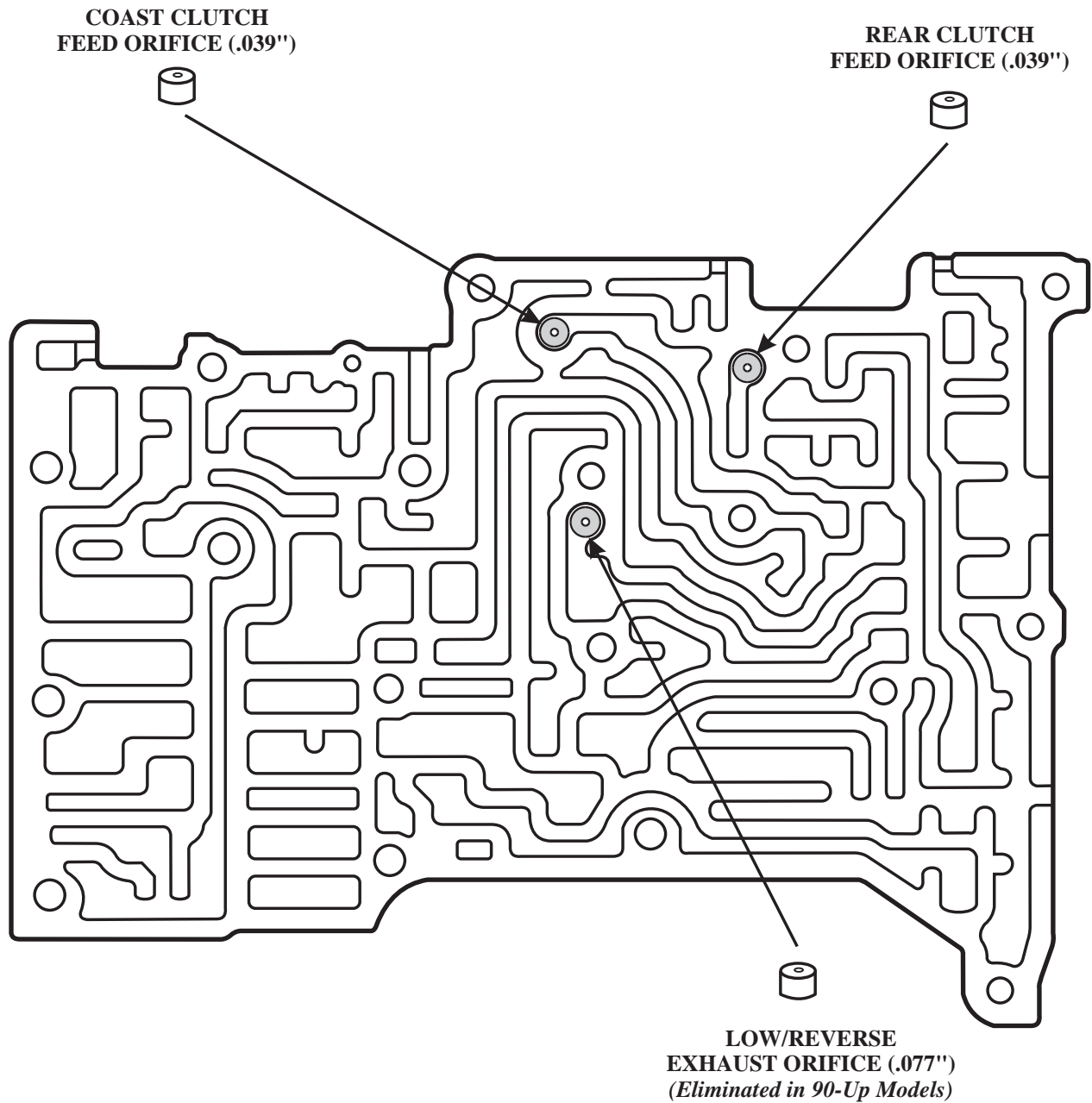
Copyright © 1999 ATSG

**MAZDA G4A-EL  
MAIN VALVE BODY "REAR BODY SIDE"**



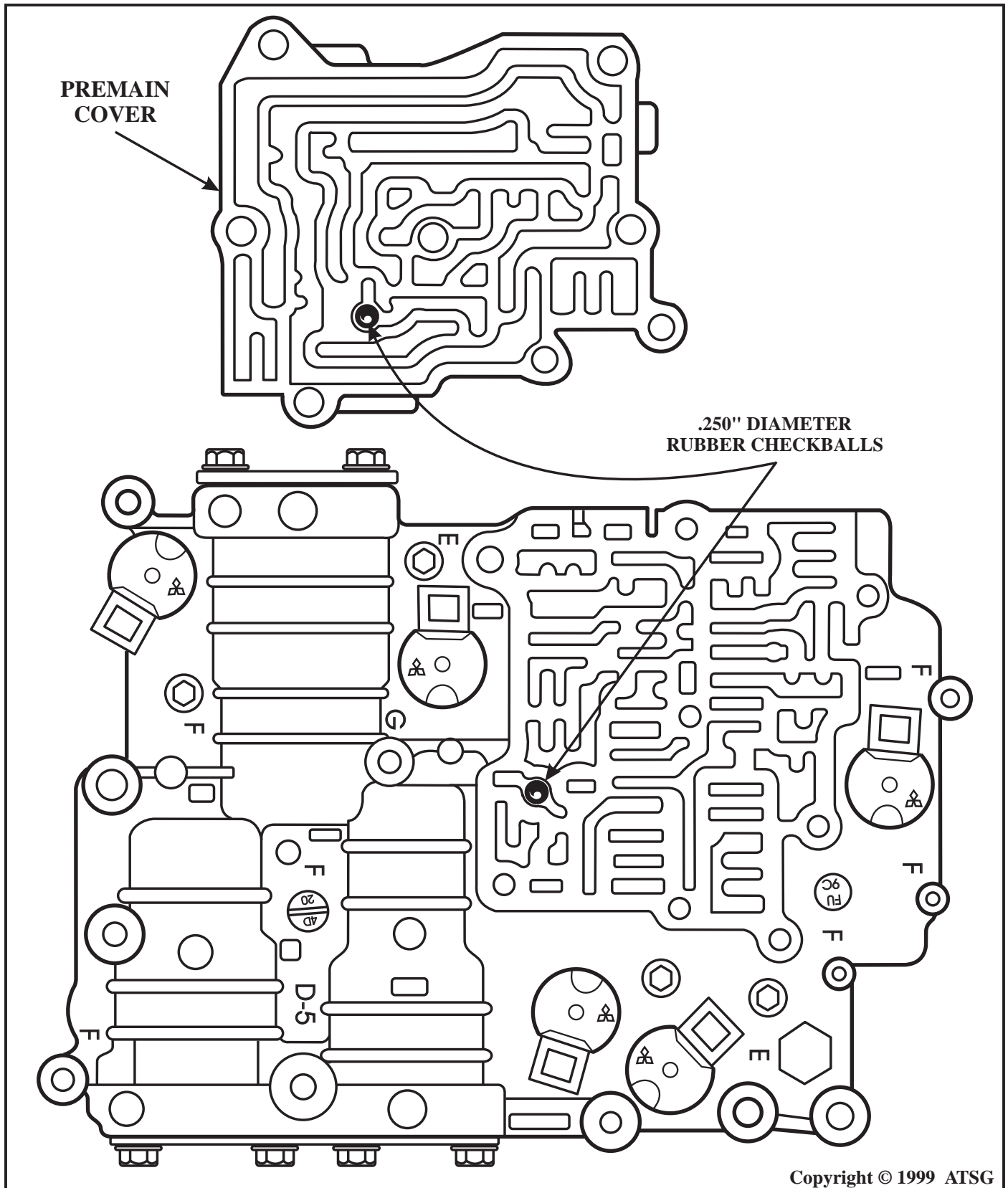
Copyright © 1999 ATSG

## MAZDA G4A-EL REAR VALVE BODY



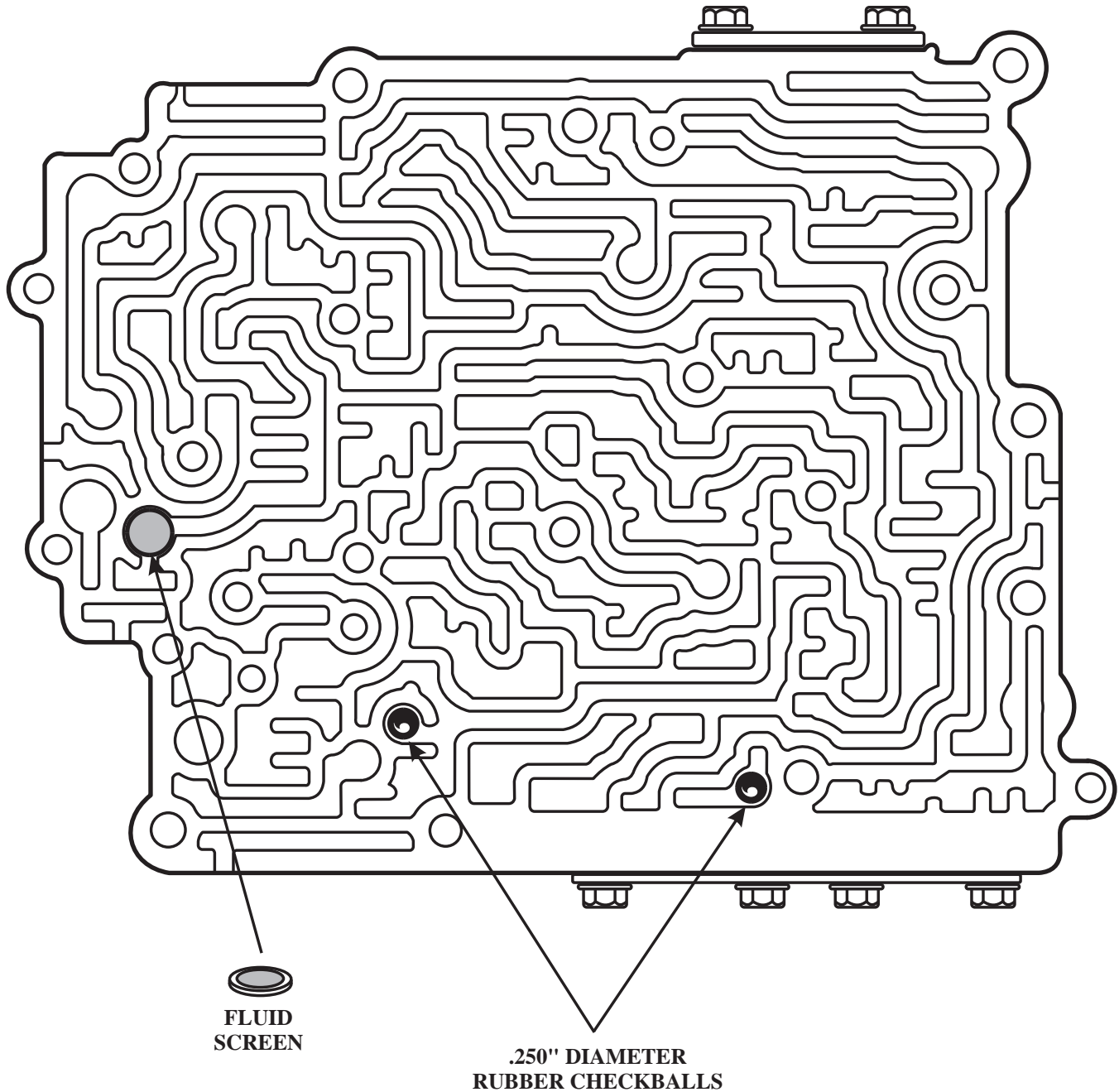
Copyright © 1999 ATSG

### MAZDA GF4A-EL, 7 SOLENOID PREMAIN VALVE BODY "COVER SIDE", AND COVER



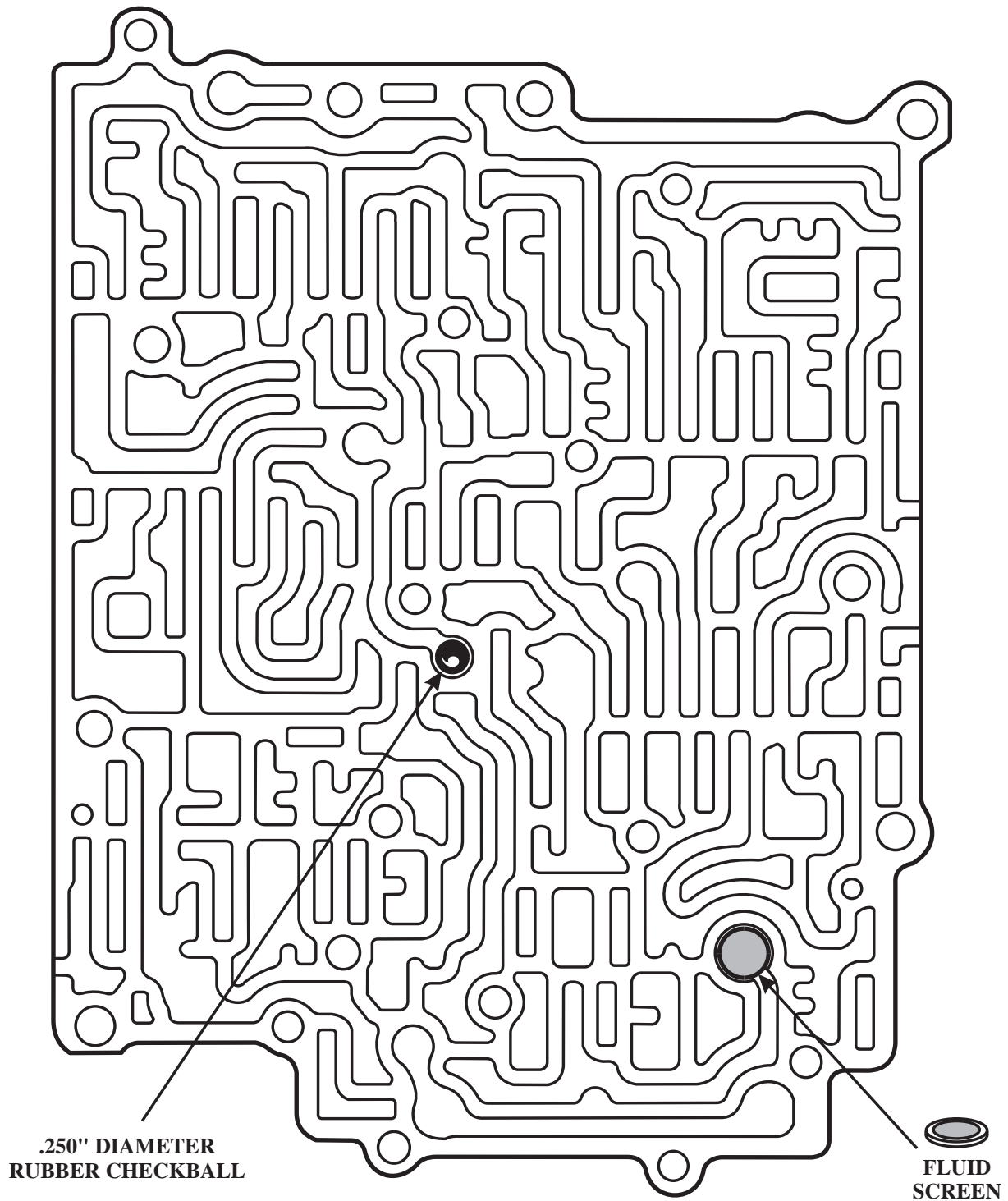


### MAZDA GF4A-EL, 7 SOLENOID PREMAIN VALVE BODY "MAIN BODY SIDE"



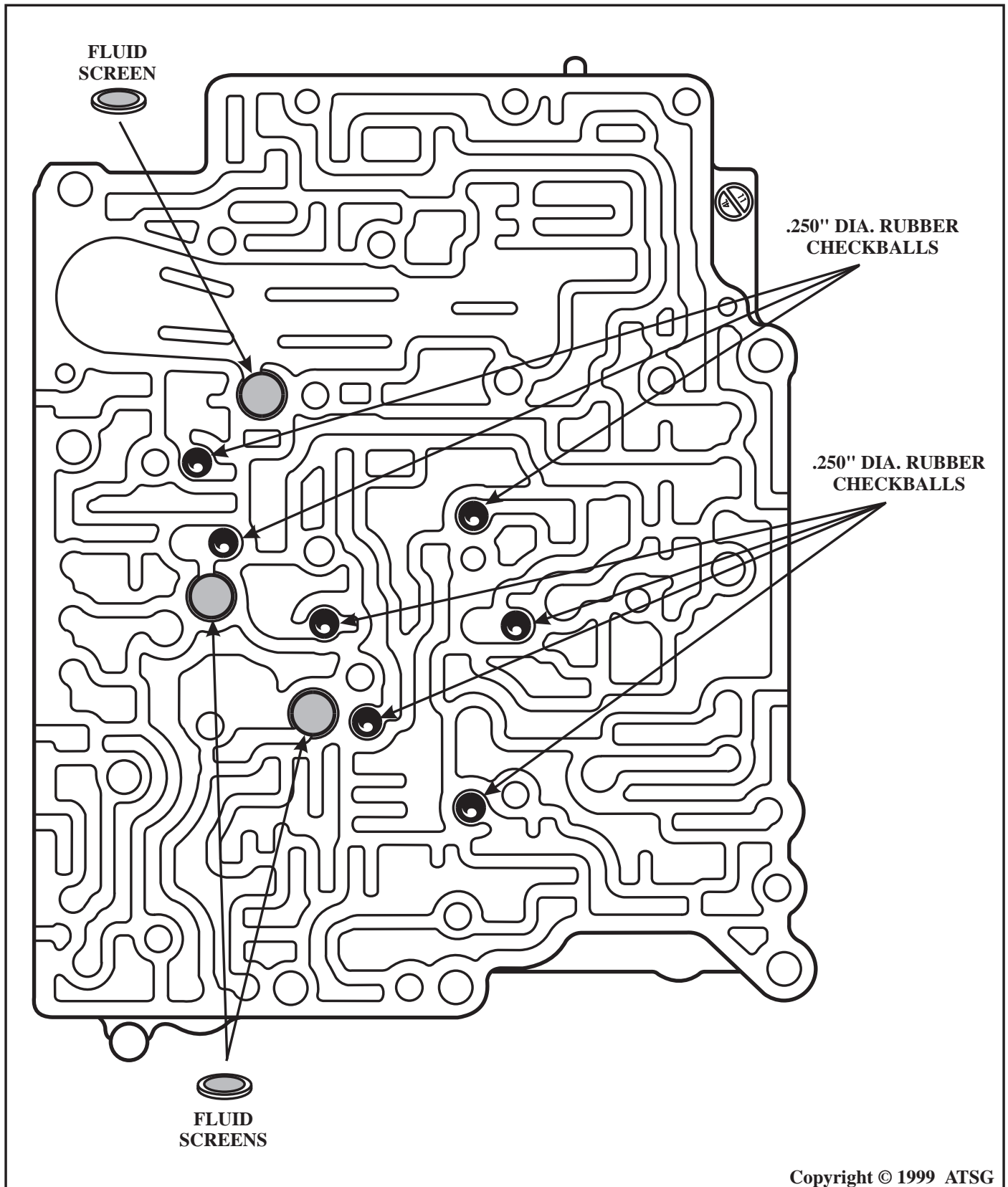
Copyright © 1999 ATSG

### MAZDA GF4A-EL, 7 SOLENOID MAIN VALVE BODY "PREMAIN BODY SIDE"



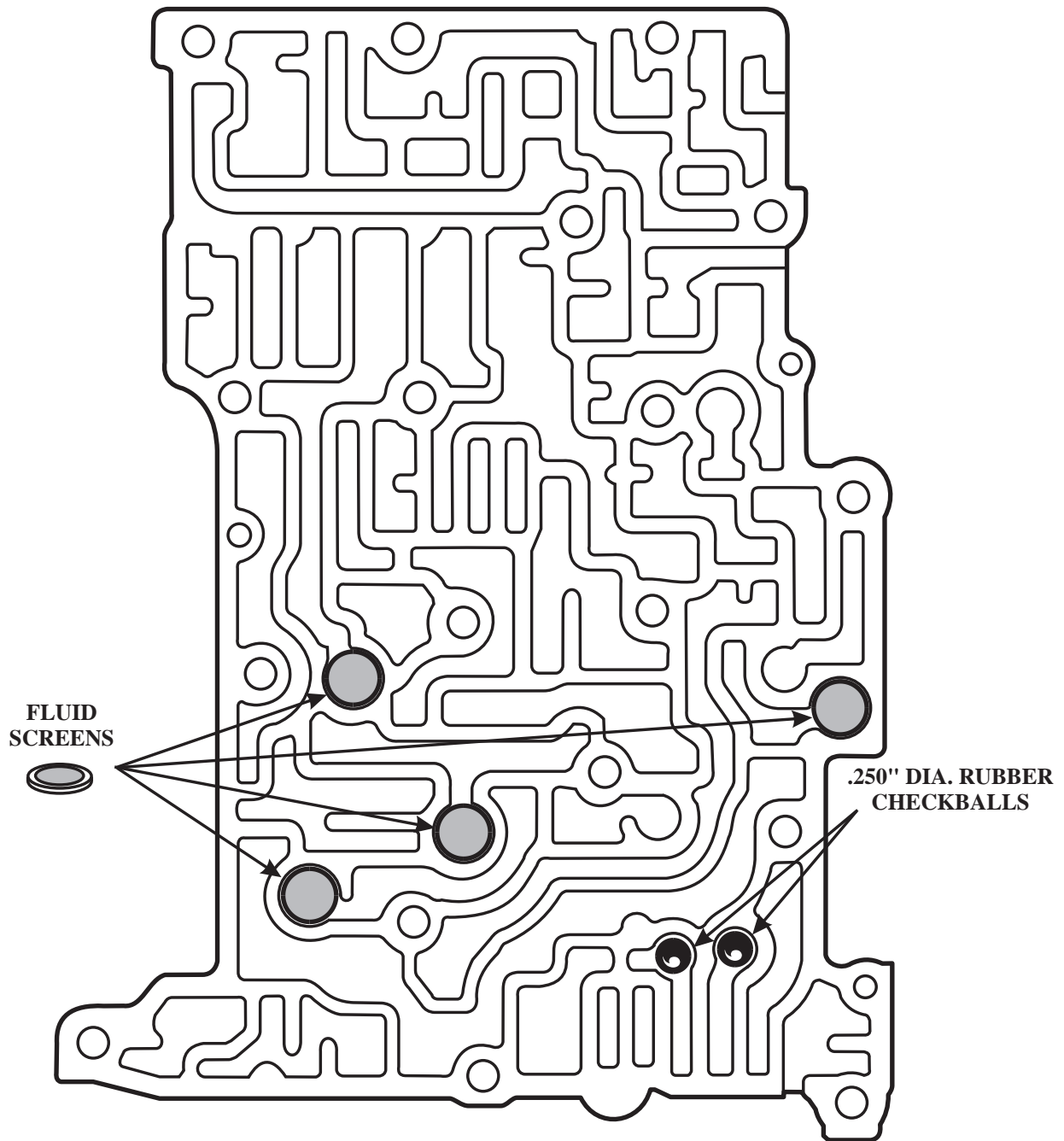
Copyright © 1999 ATSG

### MAZDA GF4A-EL, 7 SOLENOID MAIN VALVE BODY "REAR BODY SIDE"



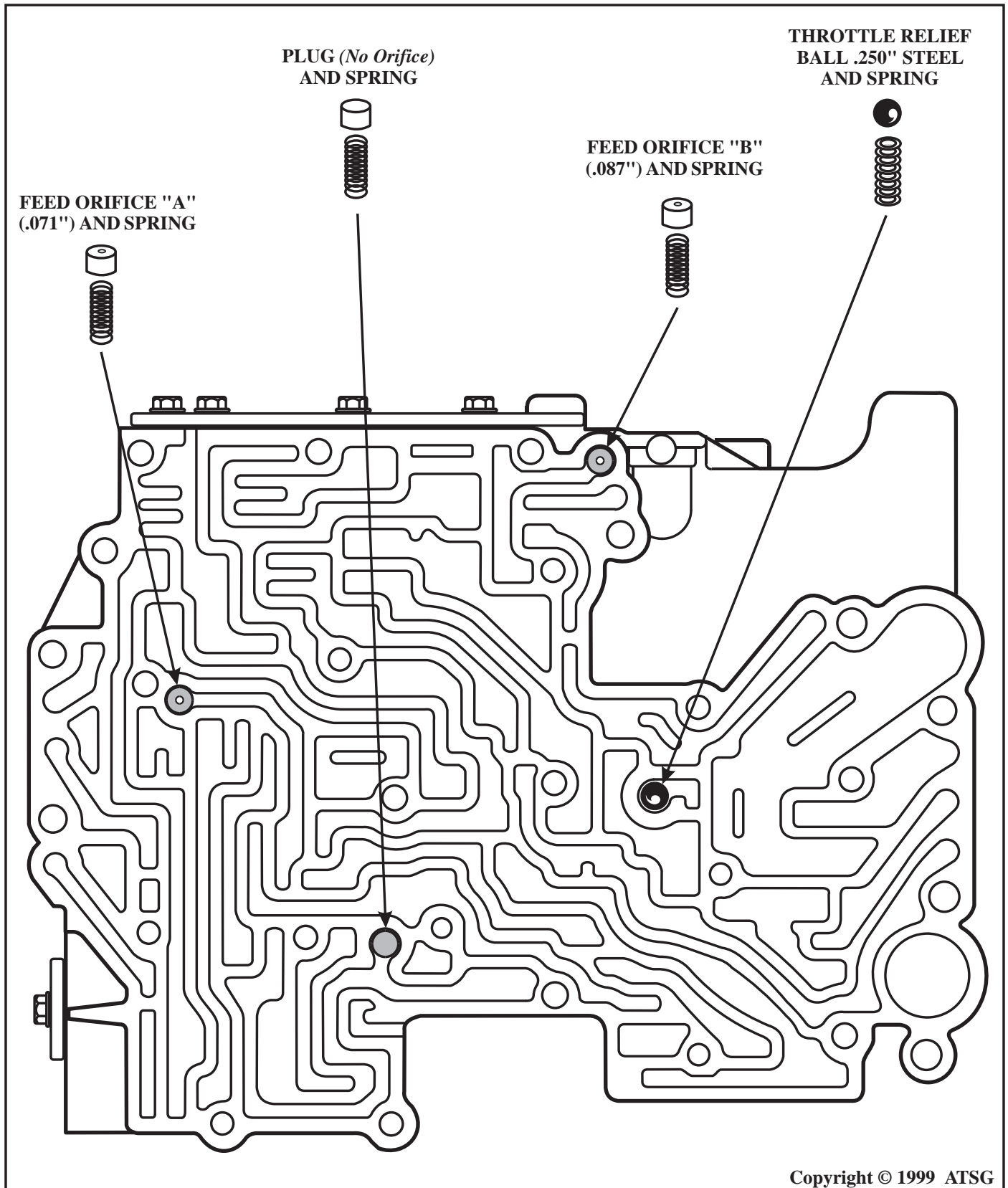
Copyright © 1999 ATSG

### MAZDA GF4A-EL, 7 SOLENOID REAR VALVE BODY "MAIN BODY SIDE"

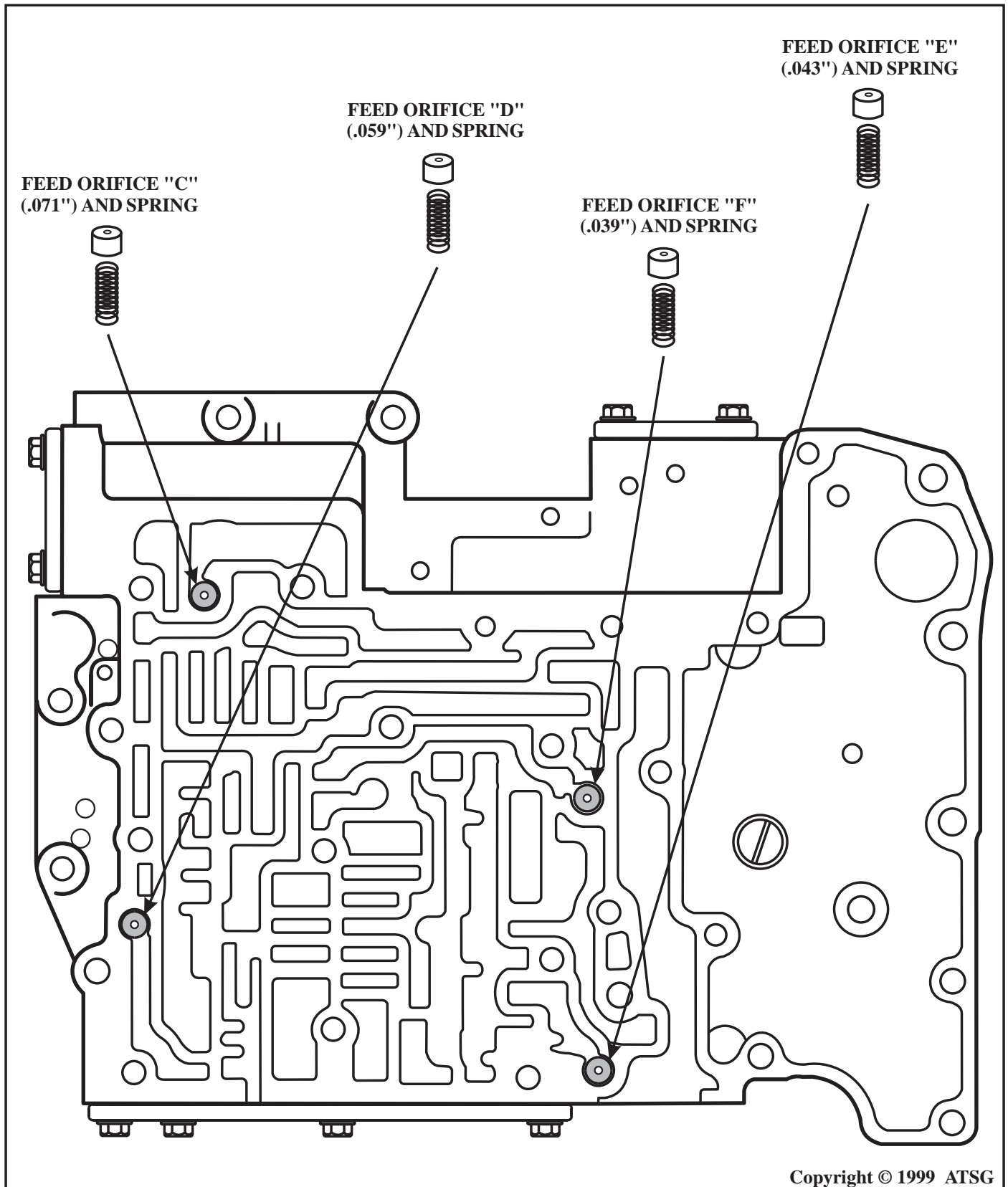


Copyright © 1999 ATSG

### MAZDA N4A-EL LOWER VALVE BODY "UPPER BODY SIDE"



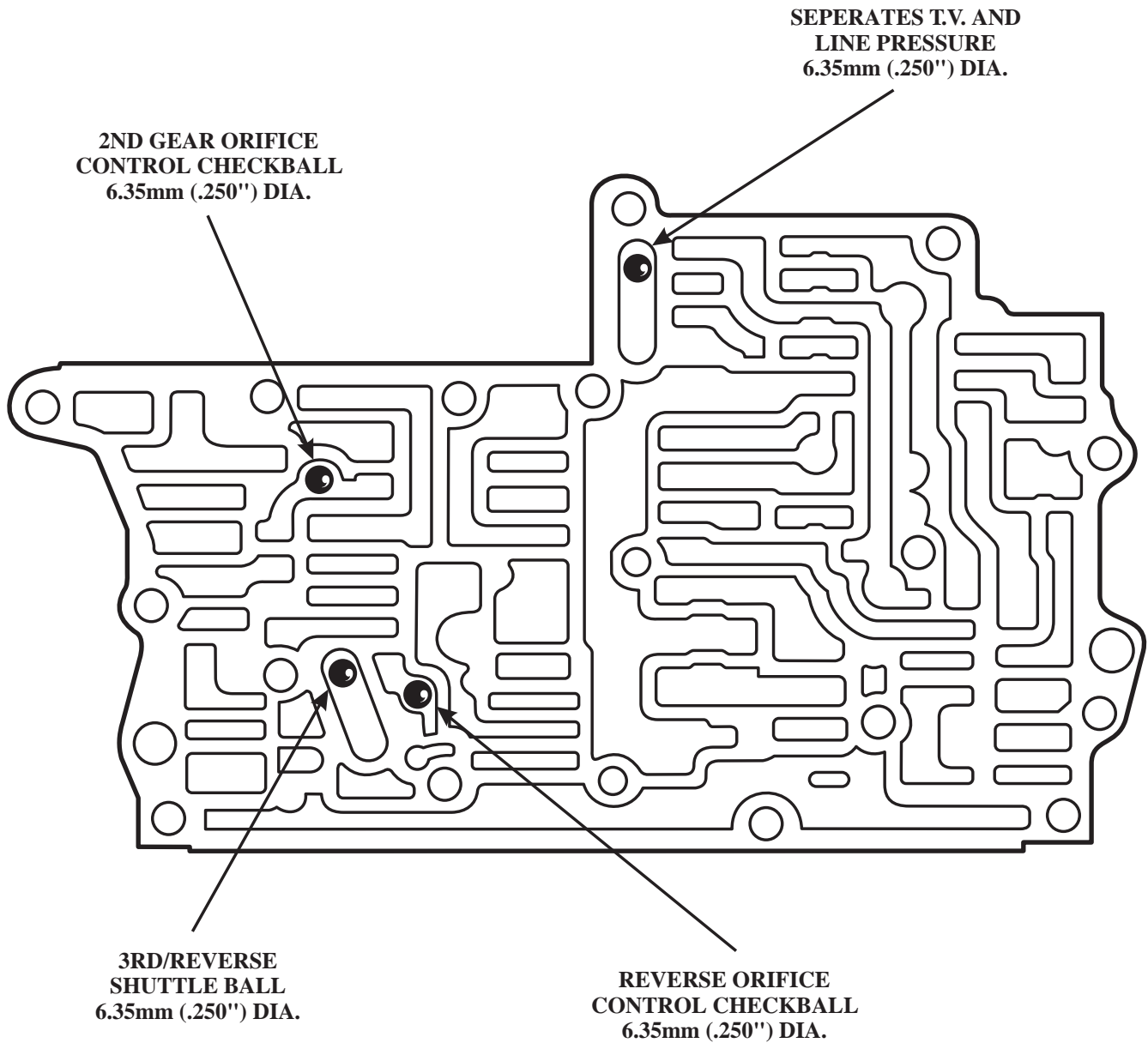
### MAZDA N4A-EL LOWER VALVE BODY "COVER SIDE"



Copyright © 1999 ATSG

## **MITSUBISHI KM171**

### **"UPPER" VALVE BODY CHECKBALL LOCATIONS**

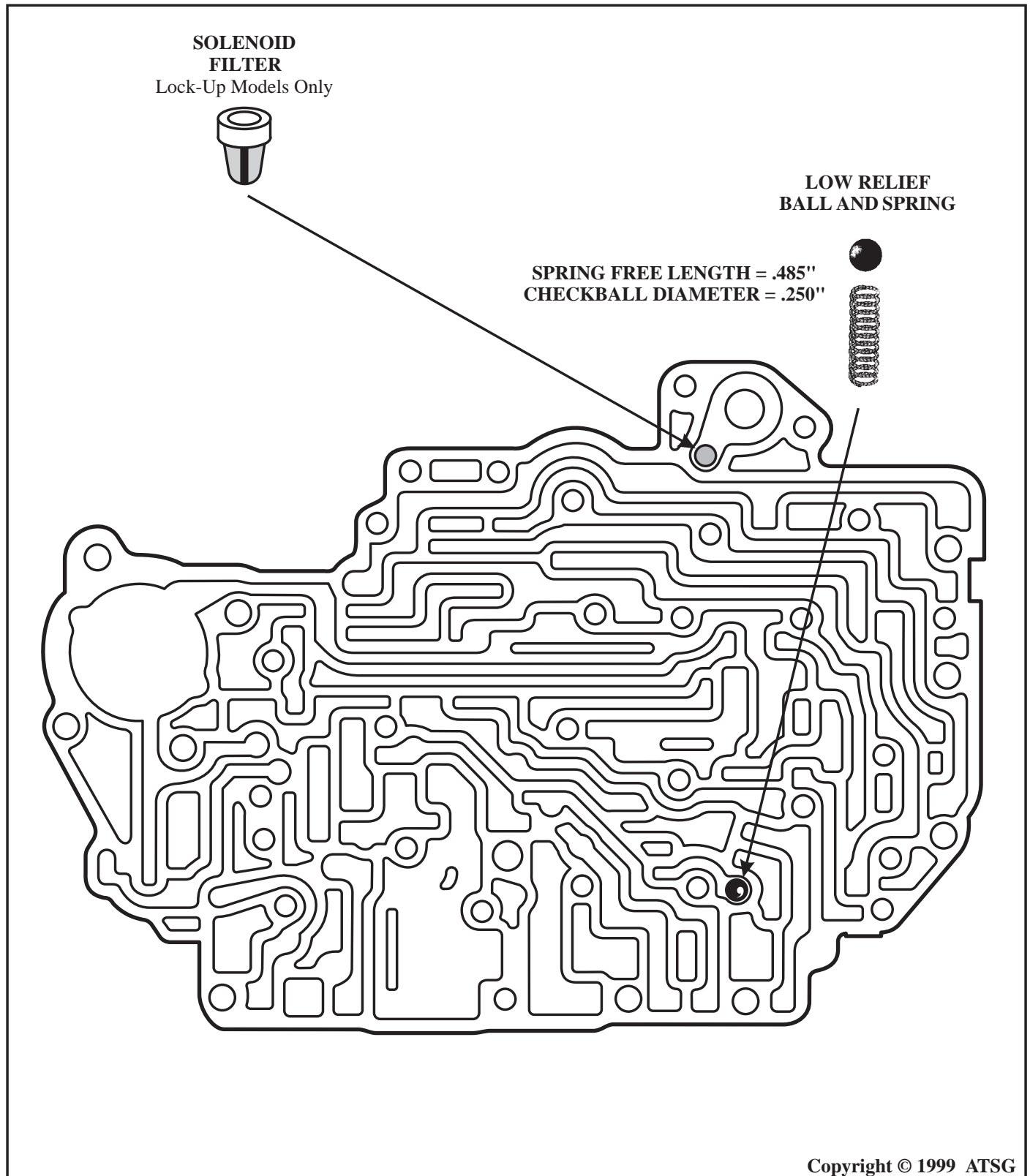


Copyright © 1999 ATSG



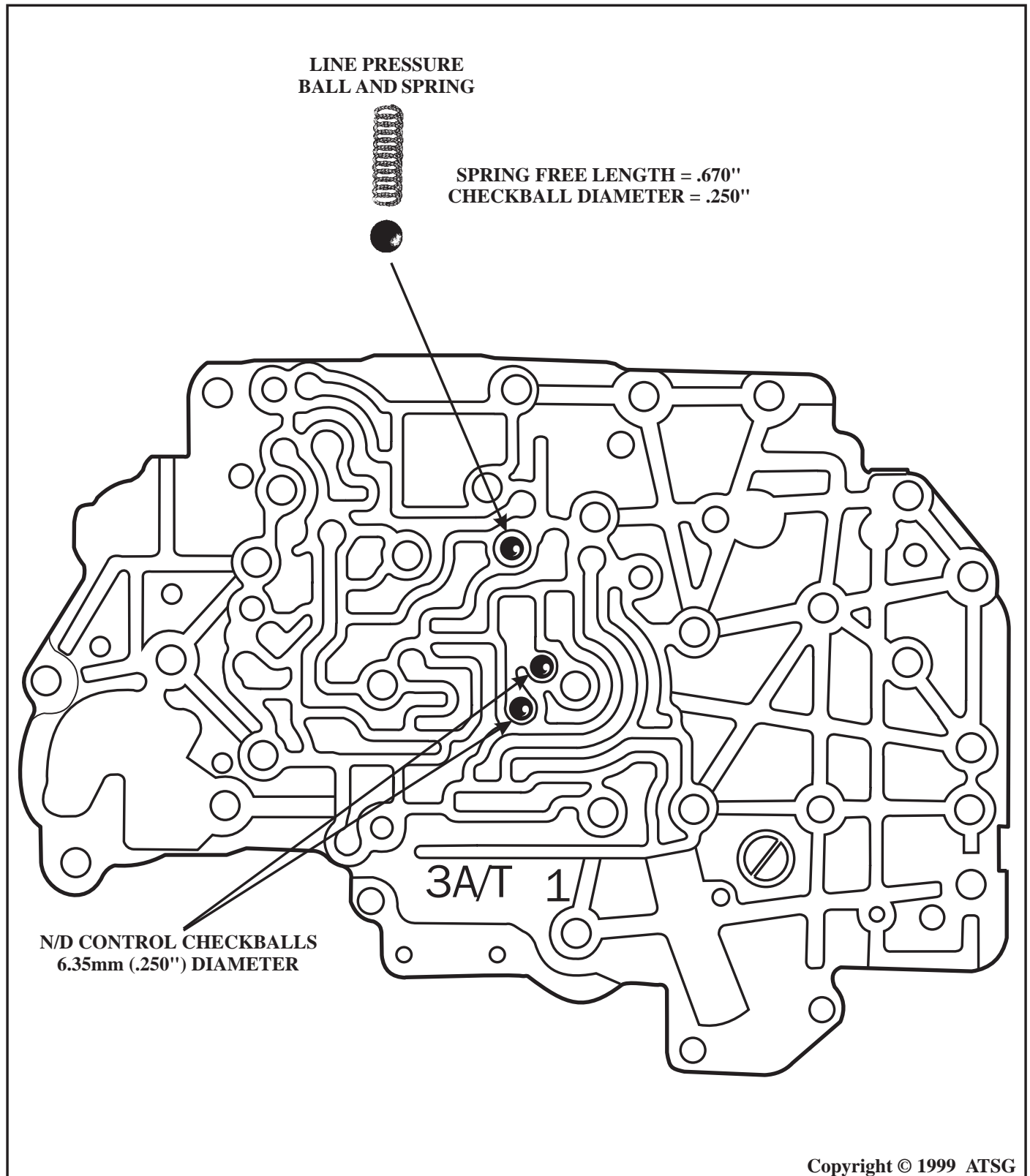
### MITSUBISHI KM171

#### INTERMEDIATE PLATE "UPPER" VALVE BODY SIDE CHECKBALL LOCATIONS

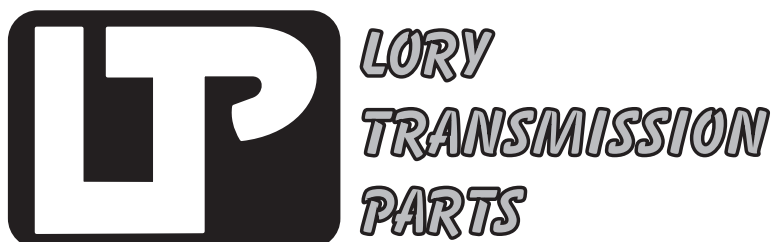


### **MITSUBISHI KM171**

#### **INTERMEDIATE PLATE "LOWER" VALVE BODY SIDE CHECKBALL LOCATIONS**



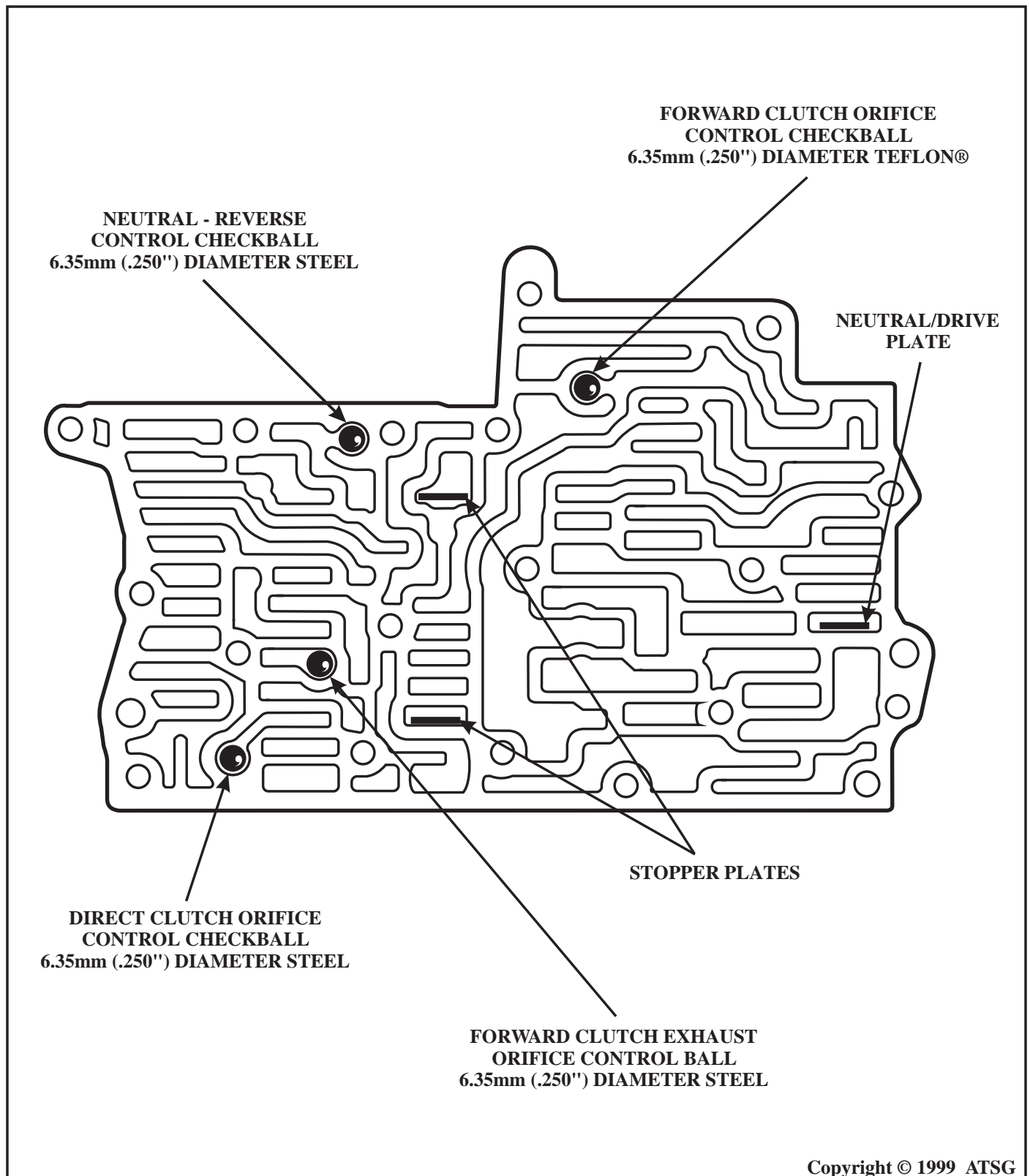
We wish to thank the following for supplying the actual valve bodies that have made these illustrations possible.



**2414 SW 8TH STREET**  
**MIAMI, FLORIDA 33135**  
**TOLL FREE (800) 966-4621**  
**PHONE (305) 642-4621**  
**FAX (305) 541-1444**

### MITSUBISHI KM175, KM176, KM177

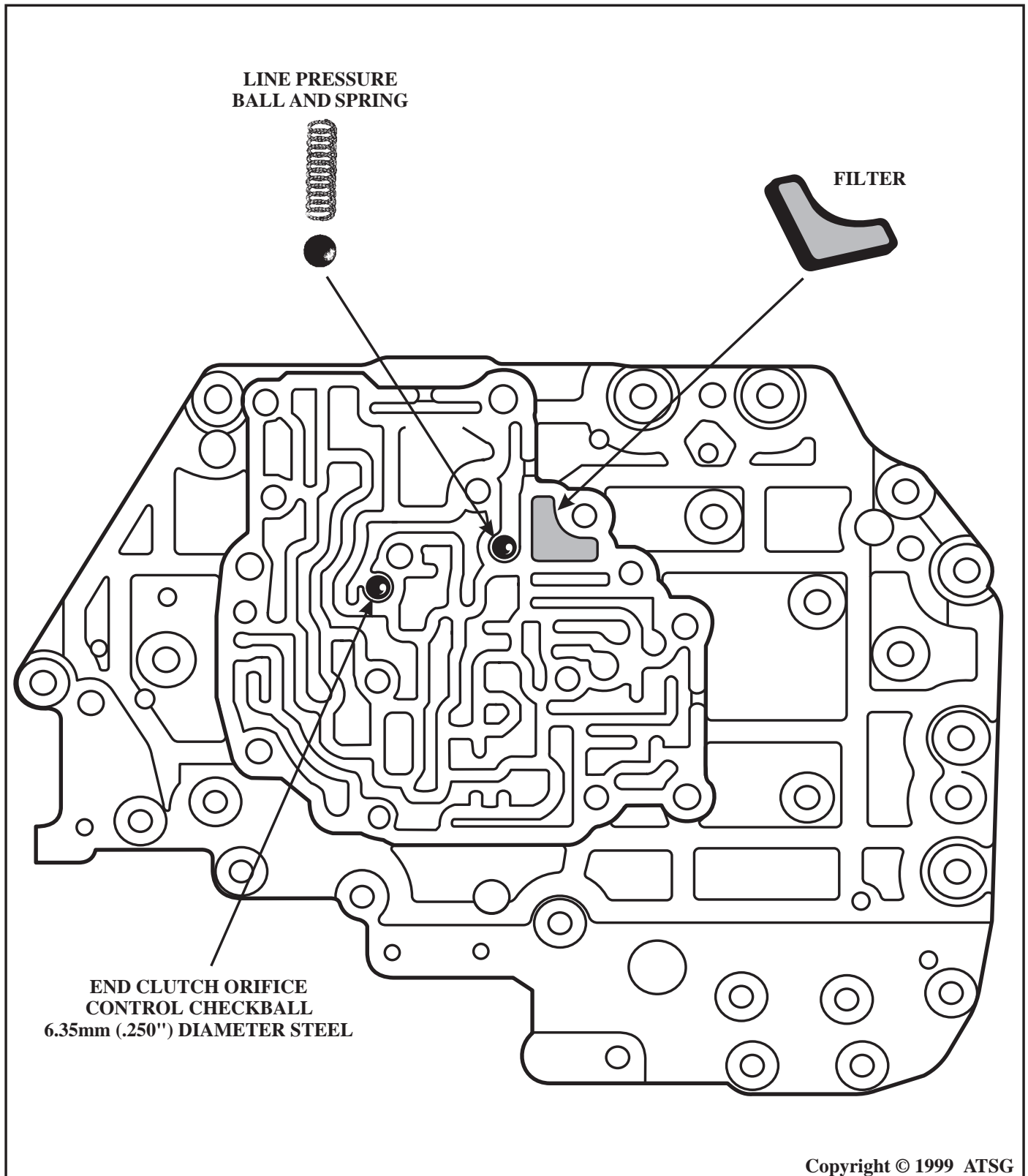
#### "UPPER" VALVE BODY CHECKBALL LOCATIONS



### MITSUBISHI KM175, KM176, KM177

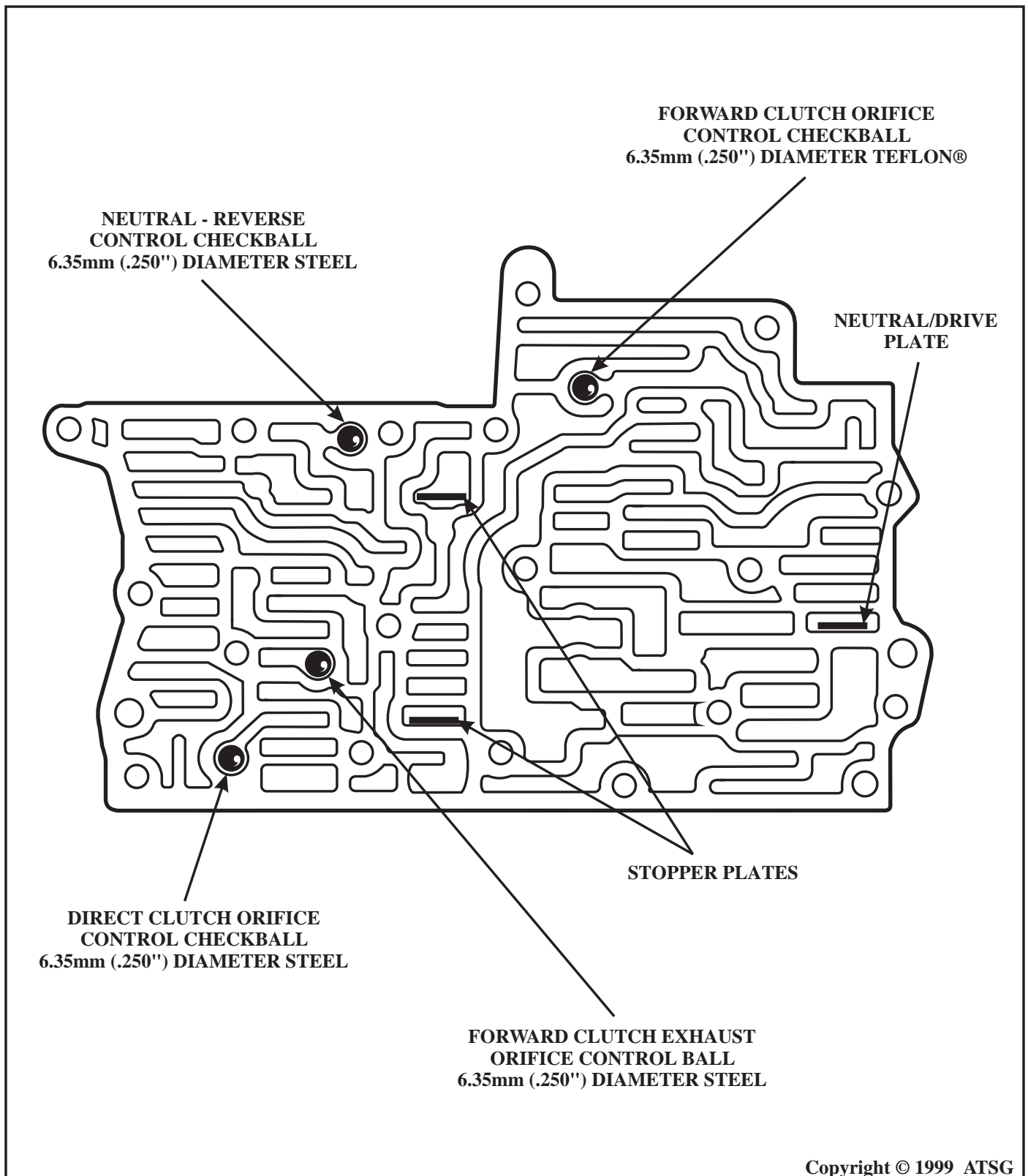
#### INTERMEDIATE PLATE "LOWER" VALVE BODY SIDE

#### CHECKBALL LOCATIONS



### MITSUBISHI F4A3, W4A3

#### "UPPER" VALVE BODY CHECKBALL LOCATIONS

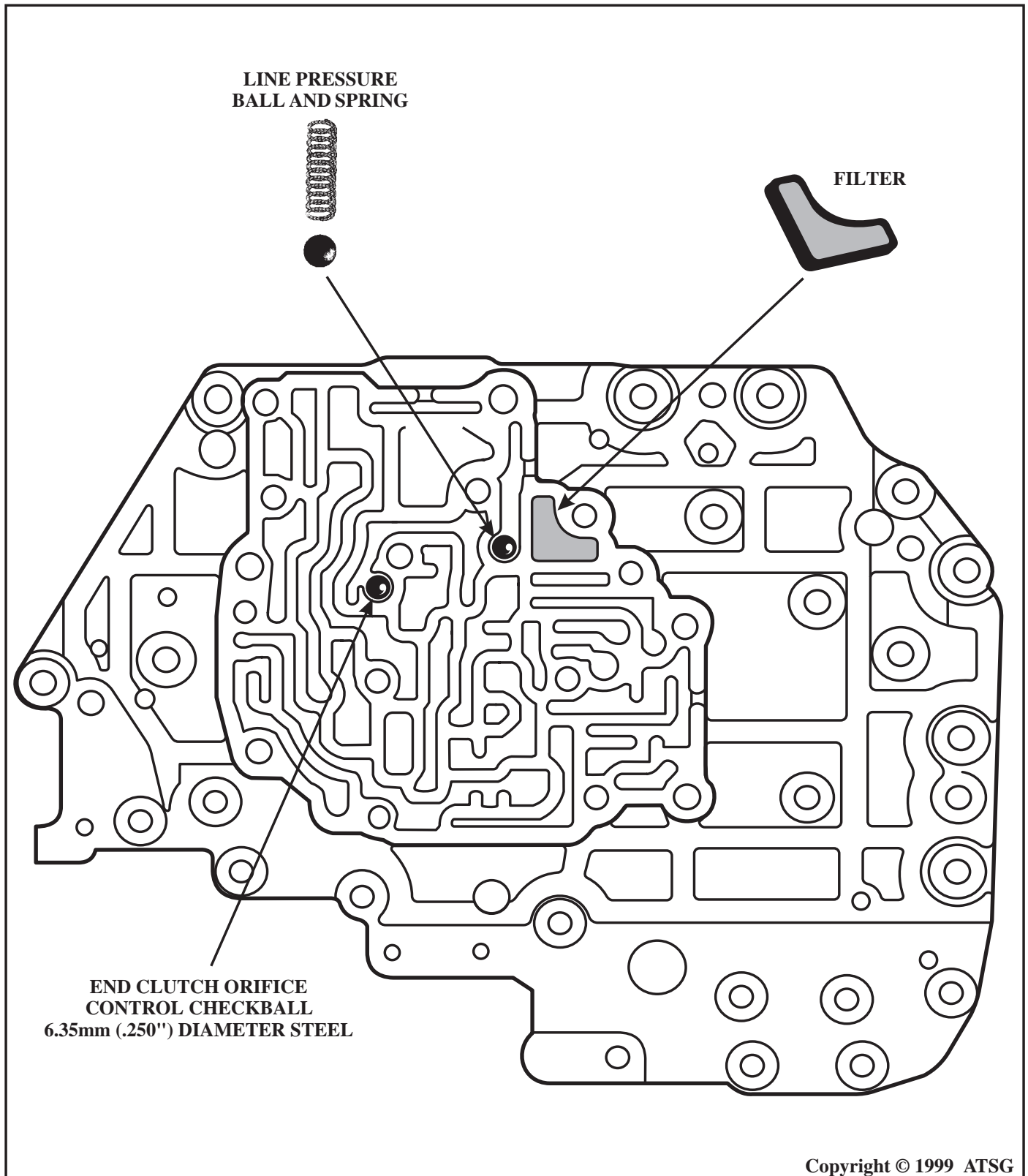


Copyright © 1999 ATSG

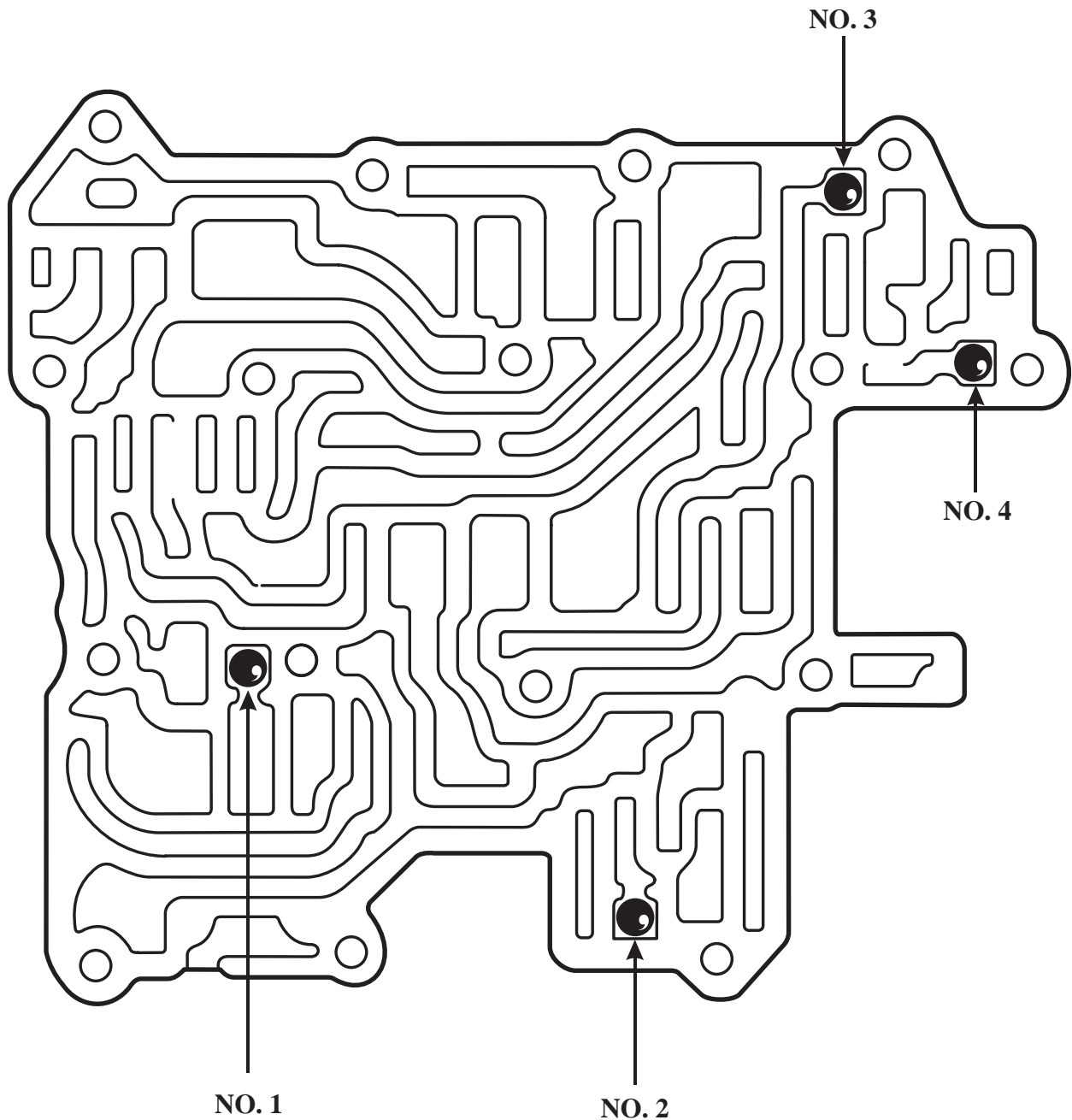
## MITSUBISHI F4A3, W4A3

### INTERMEDIATE PLATE "LOWER" VALVE BODY SIDE

### CHECKBALL LOCATIONS



### MX17 SPRINT, SUZUKI & GEO "UPPER" VALVE BODY CHECKBALL LOCATIONS

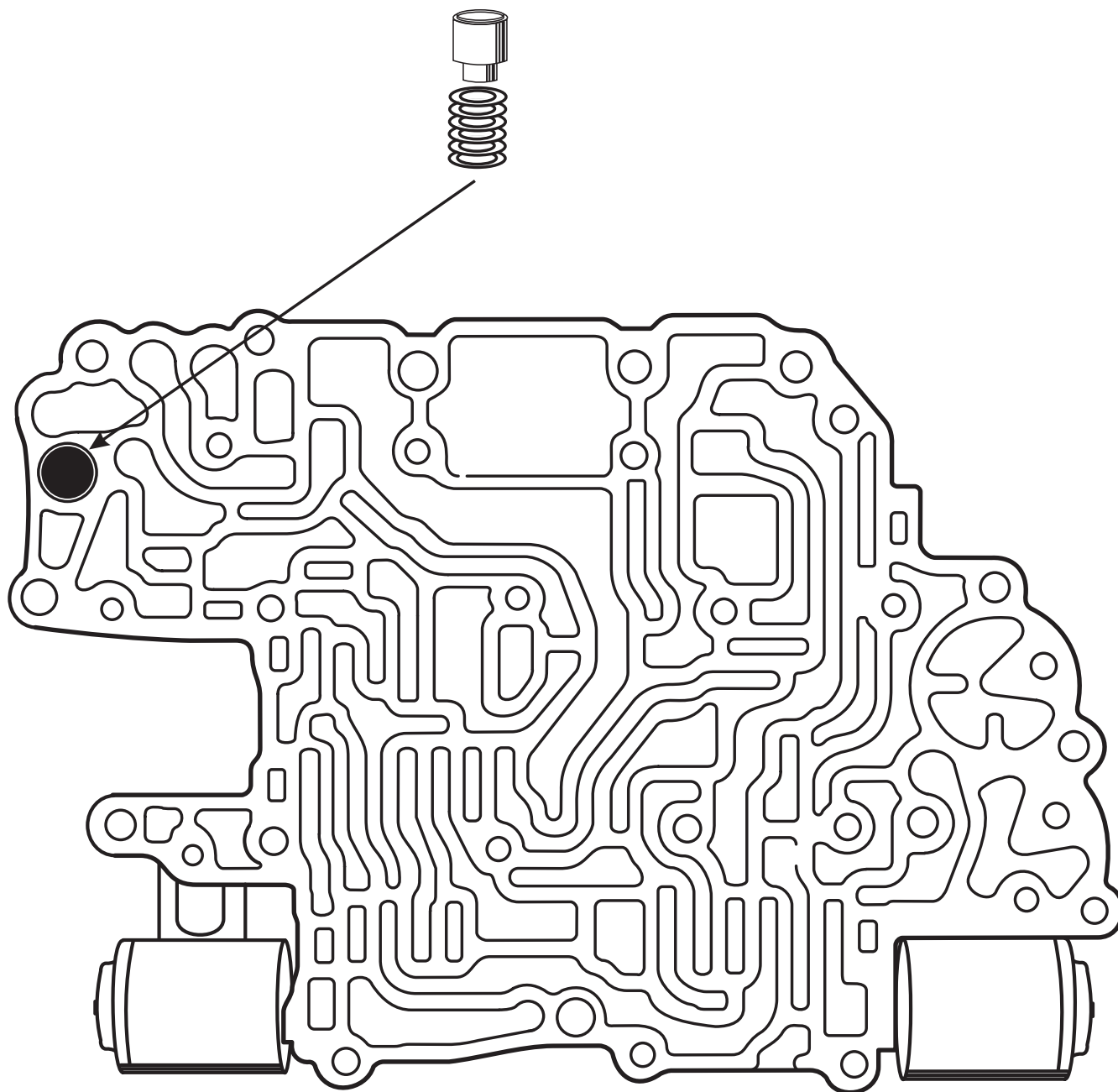


Copyright © 1999 ATSG



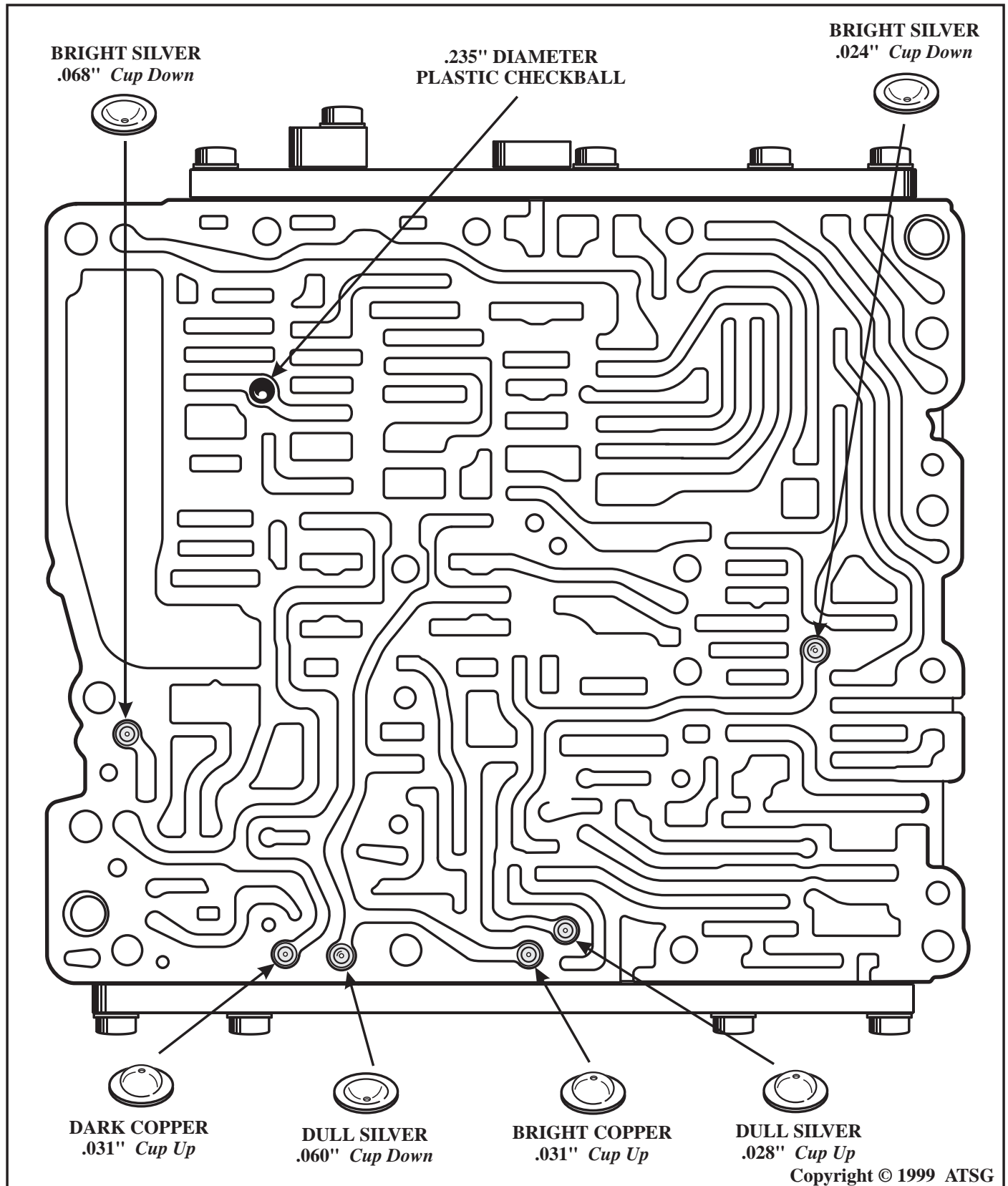
## MX17 SPRINT, SUZUKI & GEO "LOWER" VALVE BODY BY-PASS VALVE LOCATION

COOLER BY-PASS  
VALVE AND SPRING

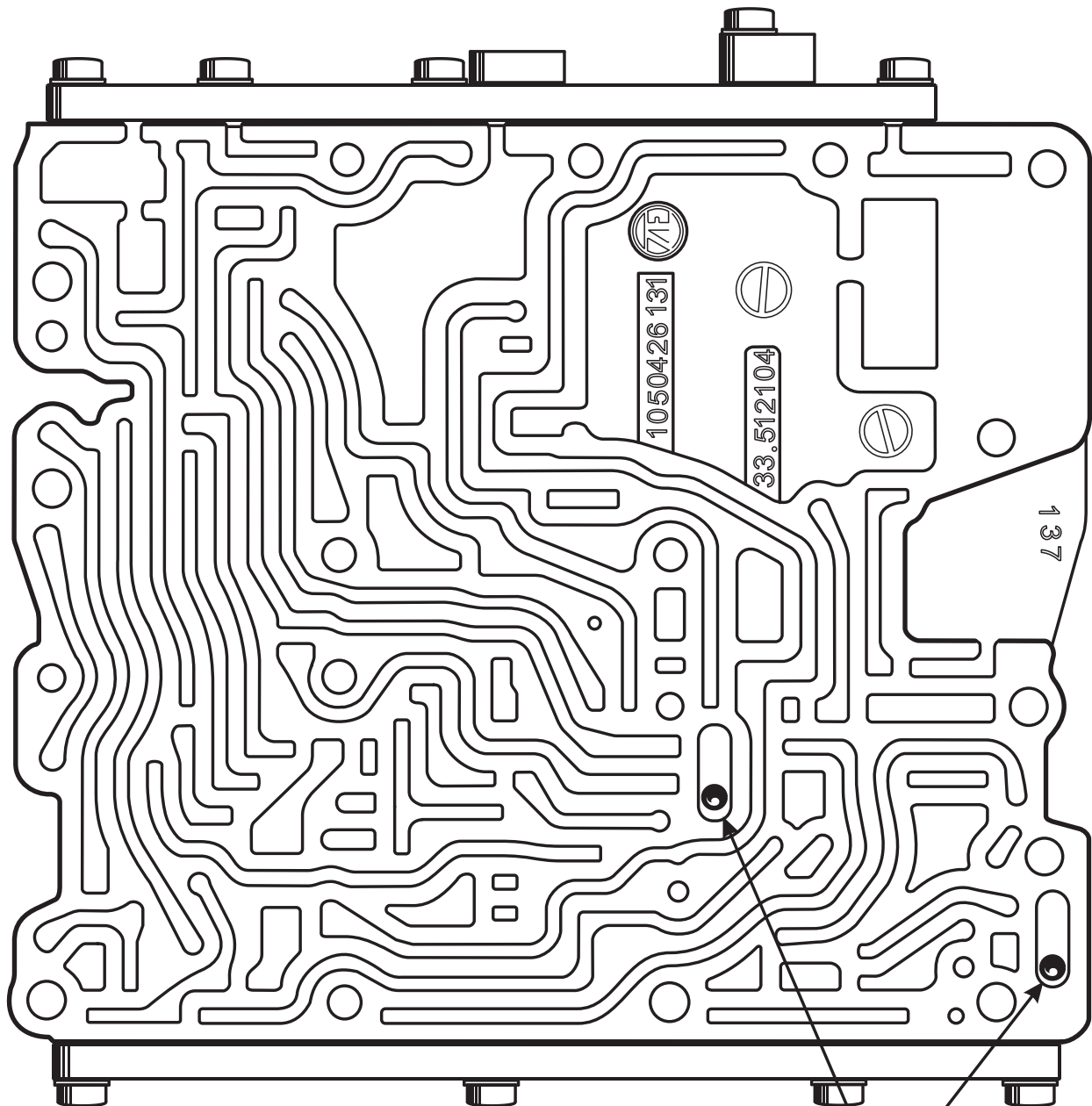


Copyright © 1999 ATSG

### SAAB HYDRAULIC ZF4HP-18 MAIN VALVE BODY "TRANSFER PLATE SIDE"



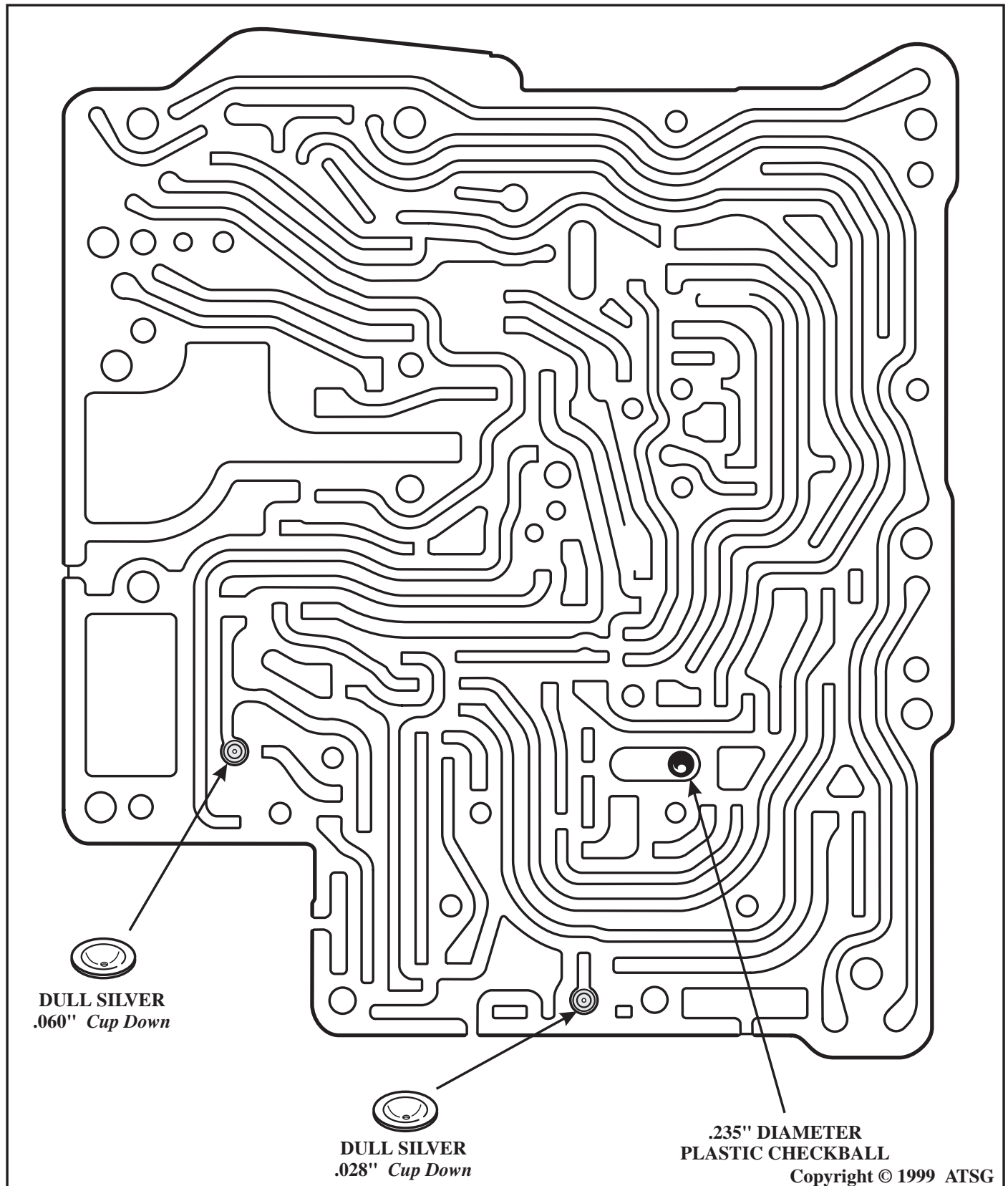
## SAAB HYDRAULIC ZF4HP-18 MAIN VALVE BODY "LOWER BODY SIDE"



**.235" DIAMETER  
PLASTIC CHECKBALLS**

Copyright © 1999 ATSG

### SAAB HYDRAULIC ZF4HP-18 CHANNEL PLATE "MAIN BODY SIDE"

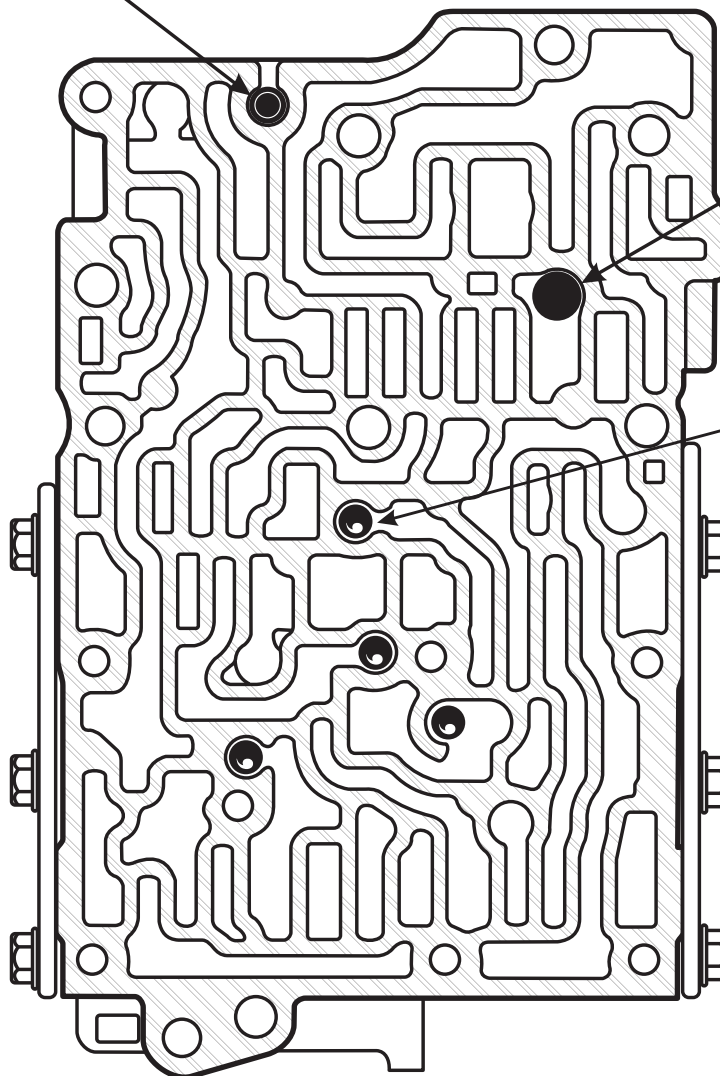


### VOLVO/SAAB AW50-42LE "REAR" VALVE BODY

PRESSURE RELIEF  
VALVE AND SPRING



CHECK VALVE  
AND SPRING

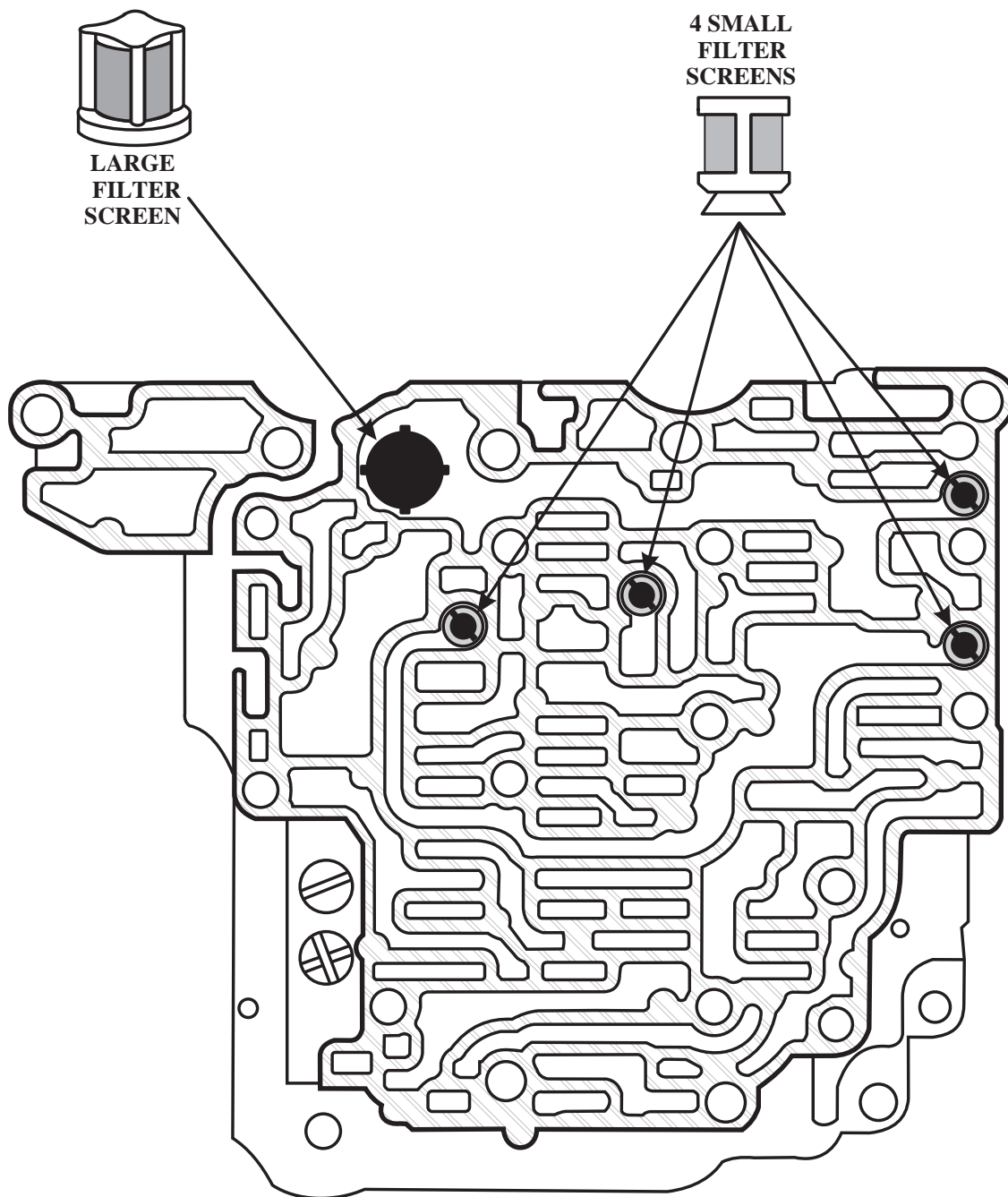


*Not Used In Mid 1995  
And Later Models*

**REQUIRES FOUR RUBBER CHECKBALLS  
5.0mm (.197") IN DIAMETER**

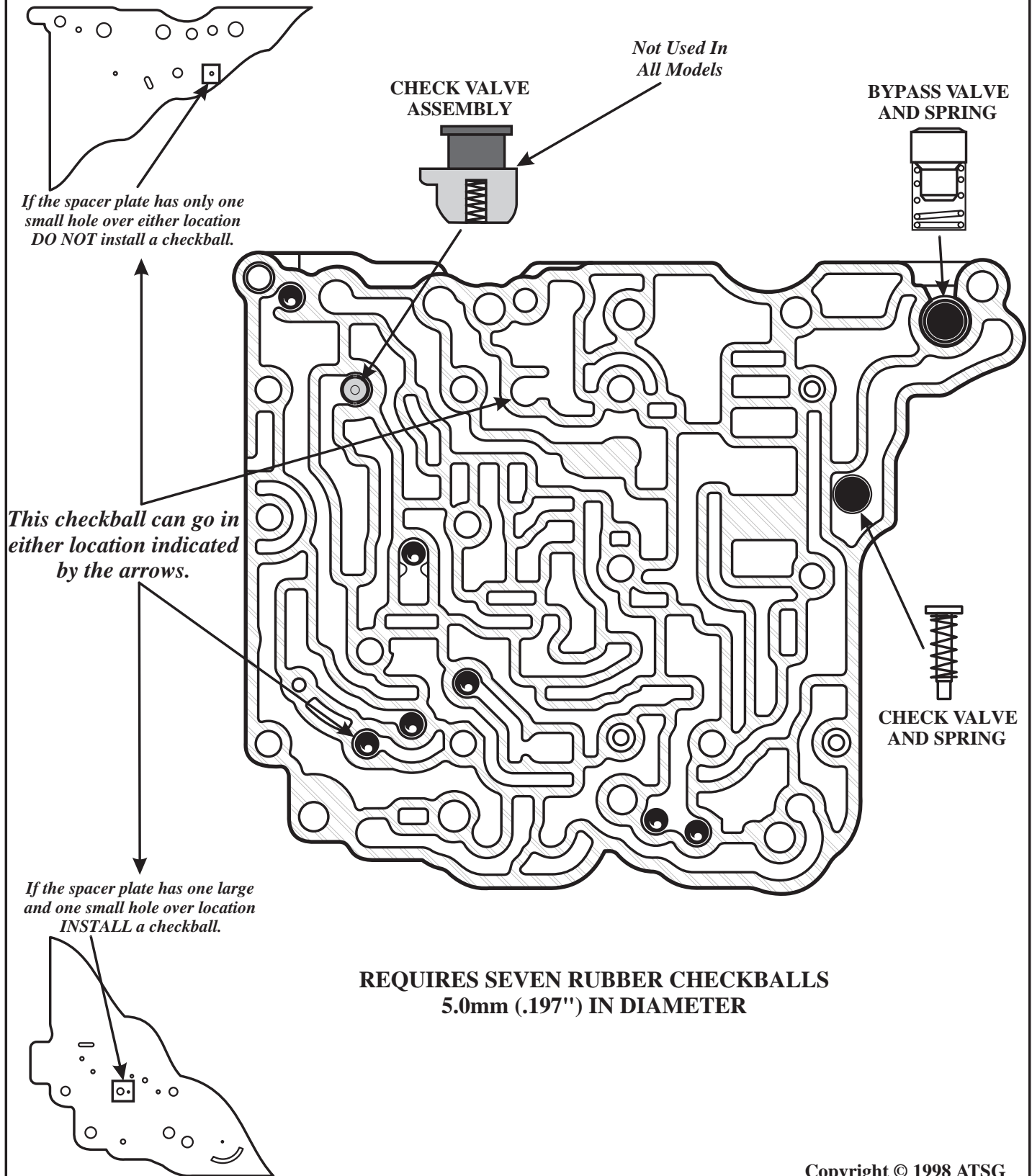
Copyright © 1998 ATSG

**VOLVO/SAAB AW50-42LE**  
**"CENTER" VALVE BODY, "FRONT" SIDE**



Copyright © 1998 ATSG

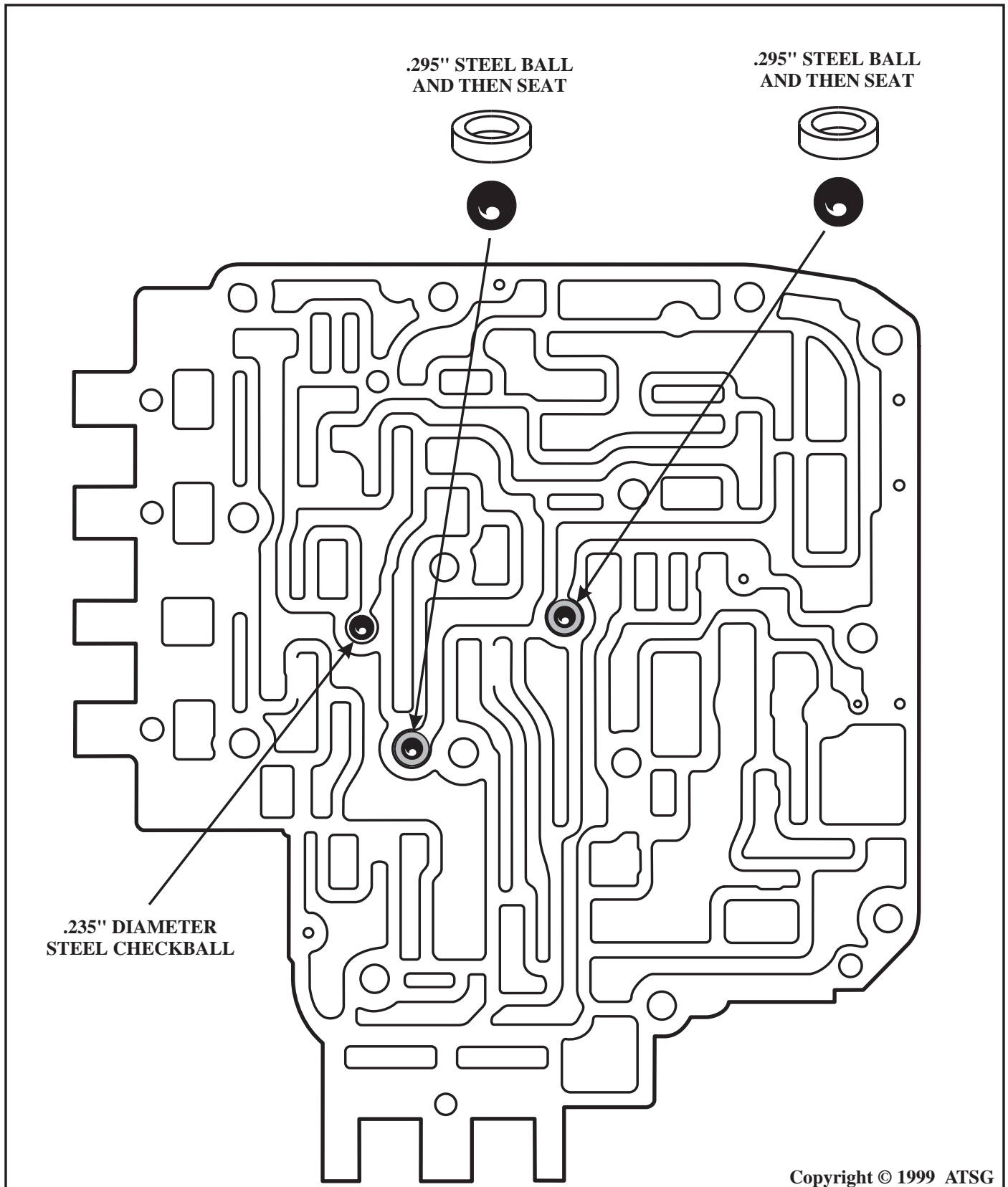
### VOLVO/SAAB AW50-42LE "CENTER" VALVE BODY, "REAR" SIDE



Copyright © 1998 ATSG



### VOLKSWAGON PASSAT 096-097 MAIN VALVE BODY "CASE SIDE"

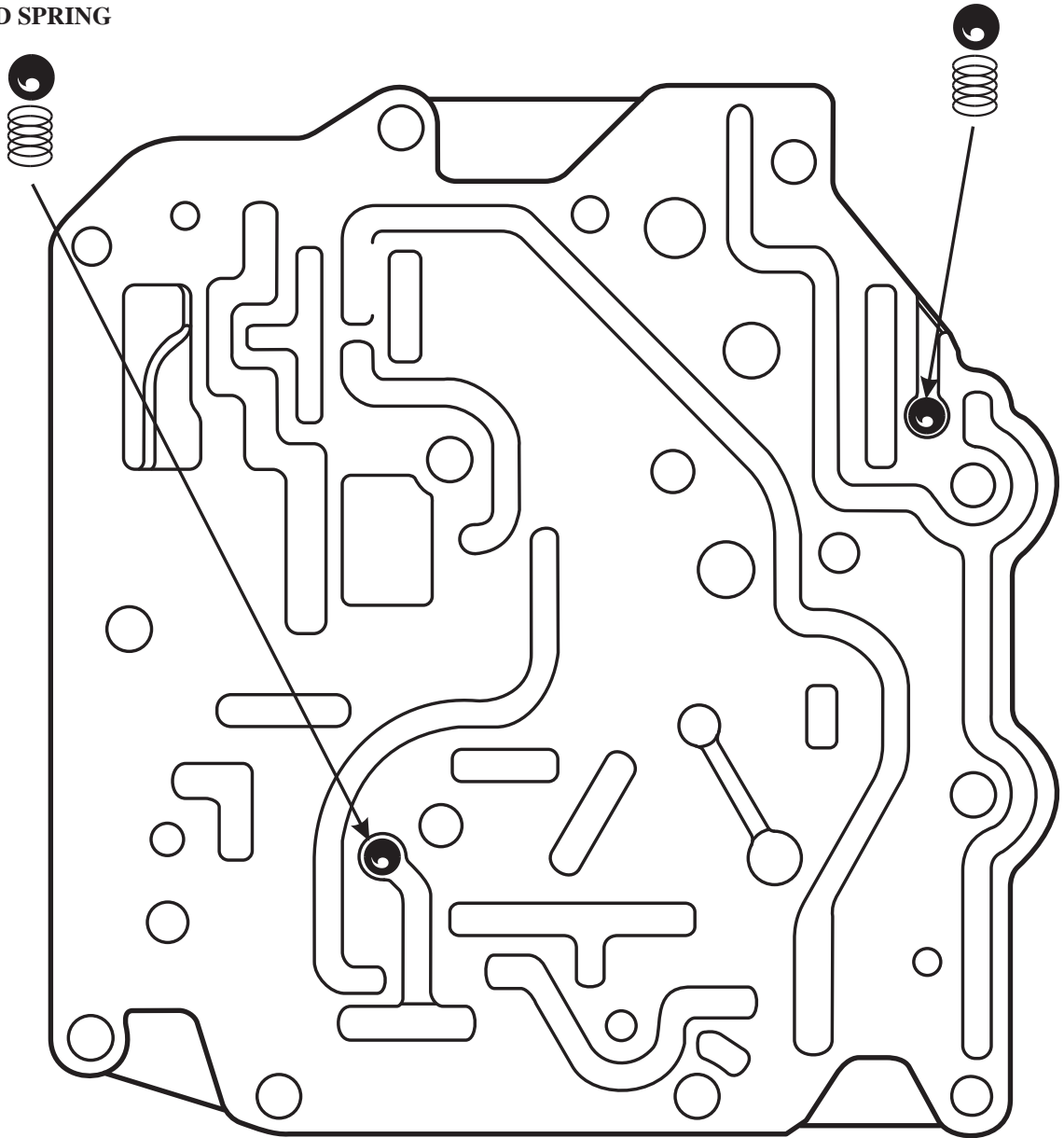




## VOLKSWAGON PASSAT 096-097 MAIN VALVE BODY TRANSFER PLATE

.235" DIAMETER  
RELIEF BALL  
AND SPRING

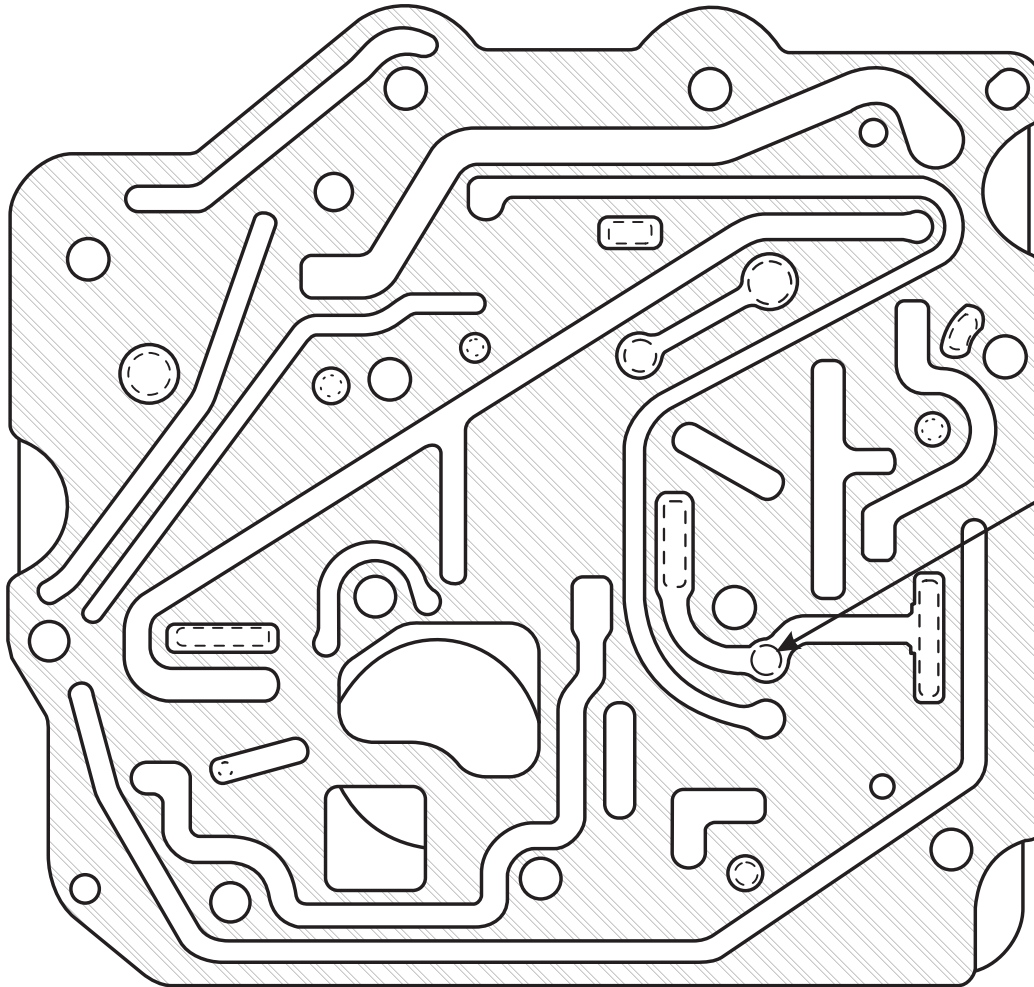
.235" DIAMETER  
RELIEF BALL  
AND SPRING



Copyright © 1999 ATSG

### AUDI/VW "01M" UPPER CHANNEL PLATE

Phase II "All Models"



④  
● 6mm (.236")  
Diameter

FREE LENGTH = .276"  
SPRING DIAMETER = .182"  
WIRE DIAMETER = .008"

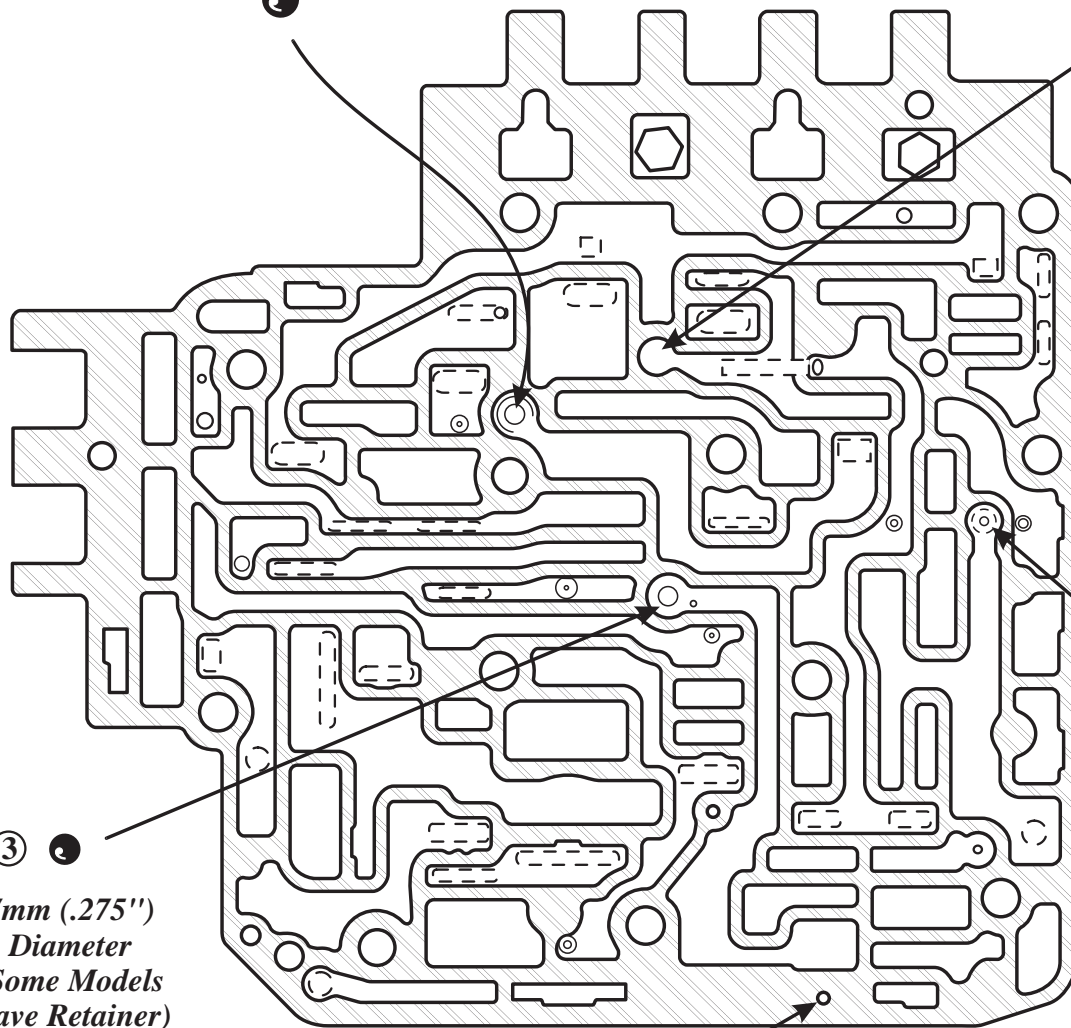
Copyright © 2003 ATSG

### AUDI/VW "01M" VALVE BODY Phase II "Early Only"

7mm (.275")  
Diameter  
With Retainer



6mm (.236")  
Diameter  
Not used in  
all models



6mm (.236")  
Diameter  
Not used in  
all models

①



7mm (.275")  
Diameter  
(Some Models  
Have Retainer)



Retaining Pin  
Length = 1.061"  
Diameter = .085"

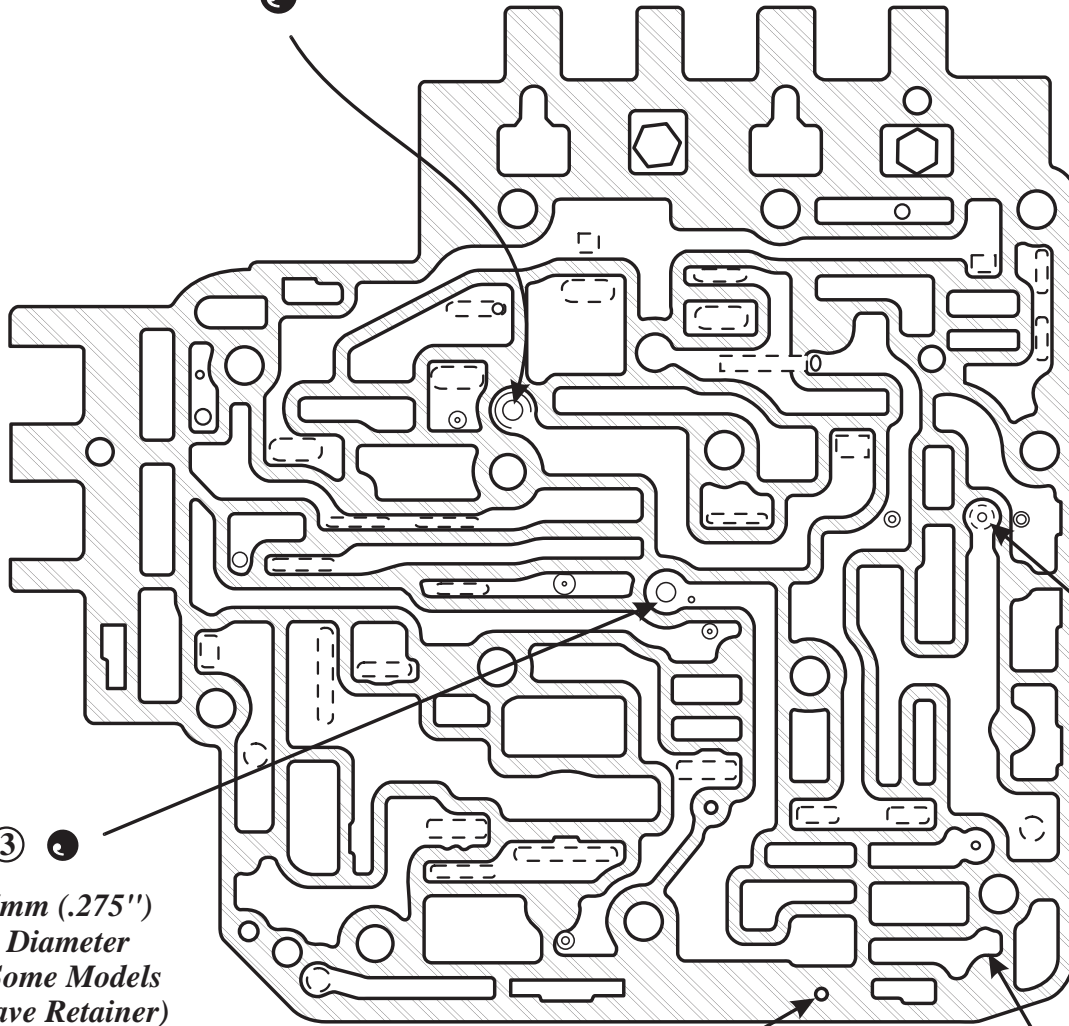


**NOTE:** there should be only One 6mm  
checkball, in one location or the other.

Copyright © 2003 ATSG

### AUDI/VW "01M" VALVE BODY Phase II "Late Only"

7mm (.275")  
Diameter  
With Retainer



①  
6mm (.236")  
Diameter

③  
7mm (.275")  
Diameter  
(Some Models  
Have Retainer)

6mm (.236")  
Diameter

Retaining Pin  
Length = 1.061"  
Diameter = .085"

Copyright © 2003 ATSG