

## Idle Speed: By Symptom

Technical Service Bulletin # 91257

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### Engine - Hard Cold Starts/Hesitation/Stalls On Start-Up

Article No.

91-25-7

12/13/91

- ^ HARD COLD START - DURING INITIAL START-UP, IDLE OR DECEL - EFI ENGINES - SLUDGE IN THROTTLE BODY AND/OR IDLE AIR BY-PASS VALVE
- ^ HESITATION/STALLS - DURING INITIAL START-UP, IDLE OR DECEL - EFI ENGINES - SLUDGE IN THROTTLE BODY AND/OR IDLE AIR BY-PASS VALVE

FORD: 1983-87 EXP  
1983-91 ESCORT  
1984-90 MUSTANG, THUNDERBIRD  
1986-90 TAURUS  
1986-91 CROWN VICTORIA  
1988-90 TEMPO

LINCOLN-MERCURY: 1983-85 LN7  
1983-87 LYNX  
1984-88 CAPRI  
1984-90 COUGAR  
1986-90 CONTINENTAL, MARK VII, SABLE  
1986-91 GRAND MARQUIS, TOWN CAR  
1988-90 TOPAZ  
1991 TRACER

LIGHT TRUCK: 1985-90 BRONCO II, BRONCO  
1985-91 ECONOLINE, F-150-350 SERIES  
1985-92 RANGER  
1986-91 AEROSTAR  
1991 EXPLORER

ISSUE: Hard cold starts, hesitation and stalls on initial start-up or during idle or decel may be caused by sludge in the throttle body and/or idle by-pass valve. Sludge deposits or oil film on the throttle body bore and plate or the idle air by-pass valve may cause one or more of the following conditions.

- ^ Hard Cold Start
- ^ Stall On Initial Start-Up
- ^ Stall During Idle
- ^ Stall During Decel
- ^ Rough Idle
- ^ Rolling Idle
- ^ Hesitation During Acceleration

ACTION: A new idle air by-pass service kit (F2PZ-9F939-A) is now available for service use to correct sludge contamination concerns of the throttle bore and plate only. It eliminates the need to clean the majority of past model throttle body applications. Cleaning is not required on sludge tolerant throttle body designs released for 1991 and newer model years.

SERVICE KIT -9F939-		
APPLICATION CHART — EFI PORT FUEL INJECTION ENGINES		
<u>MODEL YEAR</u>	<u>CAR APPLICATION</u>	<u>ENGINE</u>
1983-85	ESCORT GT/LYNX, EXP/LN7	1.6L EFI
1986-87	ESCORT GT/LYNX, EXP	1.9L EFI
1988-90	ESCORT GT	1.9L EFI
1991	ESCORT/TRACER	1.9L EFI
1987-90	MUSTANG	2.3L EFI
1984-88	THUNDERBIRD/COUGAR, MUSTANG/CAPRI	2.3L TC
1988-90	TEMPO/TOPAZ	2.3L HO/HSC
1986-90	TAURUS/SABLE	3.0L EFI
1988-90*	TAURUS/SABLE	3.8L EFI
1988-90	THUNDERBIRD/COUGAR	3.8L EFI/SC
1988-90	CONTINENTAL	3.8L EFI
1986-91	CROWN VICTORIA/GRAND MARQUIS, TOWN CAR	5.0L EFI
1986-88	THUNDERBIRD/COUGAR	5.0L EFI
1986-87	CONTINENTAL, MARK VII	5.0L EFI
1986-90	MARK VII LSC, MUSTANG	5.0L HO
<u>MODEL YEAR</u>	<u>LIGHT TRUCK APPLICATION</u>	<u>ENGINE</u>
1985	BRONCO II	2.3L EFI
1985-90**	RANGER	2.3L EFI
1986-87	AEROSTAR	2.3L EFI
1986-92	RANGER/BRONCO II	2.9L EFI
1986-90	AEROSTAR	3.0L EFI
1990-91***	RANGER, EXPLORER, AEROSTAR	4.0L EFI
1987-90	F-SERIES/BRONCO	4.9L EFI
1987-90	ECONOLINE (WITHOUT REAR HEAT)	4.9L EFI
1985-90	F-SERIES/BRONCO, ECONOLINE	5.0L EFI
1988-90	F-SERIES/BRONCO	5.8L EFI
1987-91****	F-SERIES, ECONOLINE	7.5L EFI
<b>NOT FOR USE ON THE FOLLOWING EFI ENGINE APPLICATIONS:</b>		
1988-90	FESTIVA	1.3L EFI
1988-89	TRACER	1.6L EFI
1985-89	XR4Ti	2.3L TC
1988-89	SCORPIO	2.9L EFI
1989-90	PROBE	2.2L, 2.2L TC AND 3.0L EFI
1989-90	TAURIUS	3.0L SHO
1987-90	ECONOLINE	4.9L EFI (WITH REAR HEAT)
1988-90	ECONOLINE	5.8L EFI
NOT APPLICABLE FOR 1991 MODEL YEAR EXCEPT WHERE LISTED		
NOT APPLICABLE FOR 1992 MODEL YEAR EXCEPT WHERE LISTED		
* CUT OUT HOOD INSULATION PAD, IF NECESSARY, TO AVOID POSSIBLE CONTACT WITH THE IABP SOLENOID.		
** 1990 MODEL YEAR BUILT BEFORE 5/90		
*** 1991 MODEL YEAR BUILT BEFORE 1/91		
**** 1991 MODEL YEAR ALL CALIBRATIONS EXCEPT 1-97A-R00, 1-98A-R00, 1-98B-R00, 1-98C-R00, 1-98E-R00 AND 1-98F-R00.		
<b>TB-2432-A</b>		

Figure 1

Install an idle air by-pass service kit (F2PZ-9F939-A) as applicable to provide a permanent correction for symptoms caused by throttle body sludge deposits. Refer to the instruction sheet included in the kit for installation details. Refer to Figure 1 for a specific application list of EFI (port fuel Injection) engines involved in this TSB article.

The idle air by-pass service kit (F2PZ-9F939-A) includes the following items.

^ One (1) Idle Adjust Spacer

^ Two (2) Gaskets

Two (2) Attaching Bolts

One (1) "Attention" Sticker

One (1) Instruction Sheet

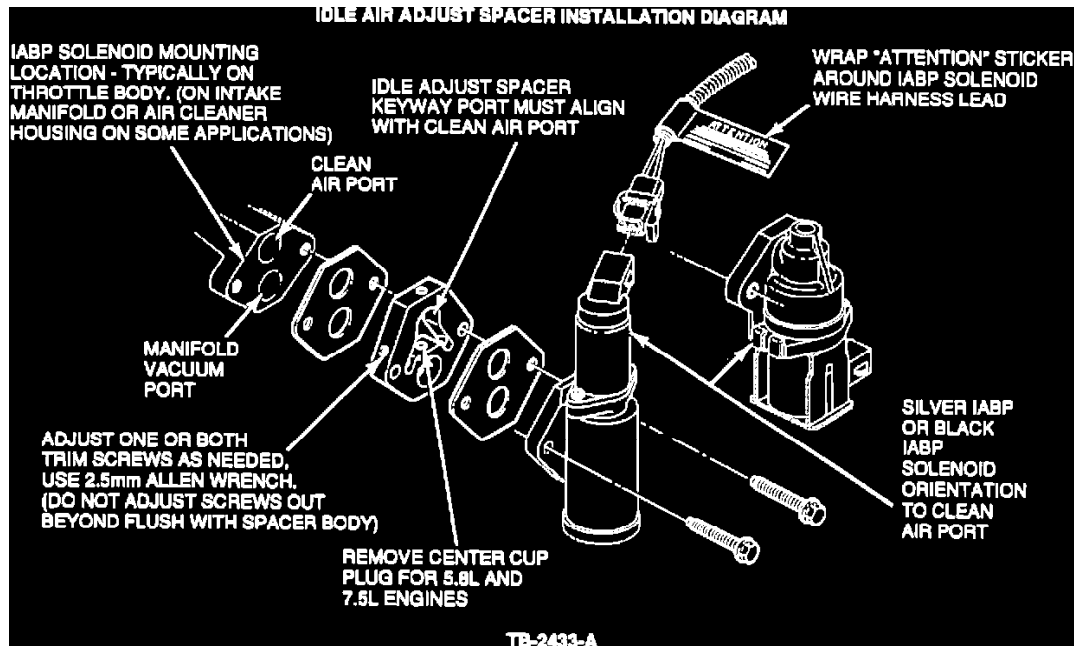


Figure 2

Refer to Figure 2 for a pictorial of the kits components.

NOTE: EFFECTIVE WITH THIS TSB, THROTTLE BODY CLEANING IS NO LONGER COVERED UNDER 5/50 EMISSIONS WARRANTY, UNLESS AS SPECIFIED IN THE FOLLOWING APPLICATION CHARTS. FAILURE TO FOLLOW THE CORRECT PROCEDURE MAY RESULT IN THE CLAIM BEING DISALLOWED.

The idle air adjust spacer incorporates sludge tolerant design features that eliminate throttle body sludge related conditions. Once installed, throttle body cleaning is not allowed and periodic adjustment of the throttle body is not required.

## Procedures, Warranty and Labor

### CHECKS TO MAKE PRIOR TO SERVICE KIT INSTALLATION

Confirm that the following items are not causing the idle quality concern before proceeding with the service kit installation.

Contamination within the idle air by-pass solenoid

Lack of fuel system control (excessively rich or lean)

Ignition timing change

Incorrect or malfunctioning EGR system

Incorrect or malfunctioning cooling system

Vacuum leaks (air intake manifold, vacuum hoses, vacuum reservoirs, power brake booster where applicable)

EEC diagnostics have been performed and vehicle malfunction indicated service output codes have been resolved and cleared.

If any of the areas listed above are found to be at fault, correct them before proceeding with the service kit installation.

## Idle Speed Adjustment

WARNING: BEFORE PROCEEDING WITH THE IDLE SPEED ADJUSTMENT, VERIFY THAT THE FOLLOWING ITEMS ARE TAKEN CARE OF PROPERLY.

- ^ The transmission is in PARK or Neutral.
- ^ The parking brake is applied.
- ^ The wheels are properly blocked.
- ^ The engine is at operating temperature.
- ^ The heater, A/C, cooling fan and other accessories are OFF.

1983-1990 MODEL YEARS — PASSENGER CAR — EFI THROTTLE BODY IDLE SPEED ADJUST PROCEDURES								
	<u>1983-85</u> <u>1.6L EFI</u>	<u>1986-90</u> <u>1.9L HO</u>	<u>1984-88</u> <u>2.3L TC</u>	<u>1987-90</u> <u>2.3L OHC</u>	<u>1988-90</u> <u>2.3L HSC/HO</u>	<u>1986-90</u> <u>3.0L EFI</u>	<u>1988-90</u> <u>3.8L EFI/SC</u>	<u>1986-90</u> <u>5.0L EFI/HO</u>
1. UNPLUG SPOUT LINE AND VERIFY THAT IGNITION TIMING IS BASE $\pm 2^\circ$ BTDC					X	X		
2. REMOVE PCV HOSE AT VALVE AND INSTALL .2" DIAMETER ORIFICE TOOL T86P-9600-A					X	X		
3. DISCONNECT IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X	X	X	X
4. START ENGINE AND RUN AT: RPM/SEC...	2000/60	2000/60	2000/120	1500/30	2500/30	<u>1989-90</u> 2000/30	<u>1988</u> 2500/30	<u>1986-88</u> 1800/30
5. PLACE AUTO TRANS IN... MANUAL IN NEUTRAL	DRIVE	PARK	PARK	PARK	DRIVE	DRIVE	PARK	DRIVE
6. CHECK/ADJUST IDLE RPM: TURN THE SERVICE SPACER TRIM SCREW TO (RPM)	SEE DECAL FOR BASE IDLE	<u>1986-87</u> SEE DECAL	750	<u>1987-88</u> 525	A:1050 M:1575	<u>1986</u> 625	550	500
		<u>1988-90</u> 975		<u>1989-90</u> A:650 M:600		<u>1987</u> 700		
						<u>1988-90</u> 760		
7. SHUT ENGINE OFF AND DISCONNECT BATTERY FOR 5 MIN, RECONNECT						X		X
8. ENGINE OFF, RECONNECT SPOUT LINE					X	X		
9. REMOVE ORIFICE FROM PCV HOSE, RECONNECT TO PCV VALVE					X	X		
10. ENGINE OFF, RECONNECT IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X	X	X	X
11. START ENGINE AND STABILIZE FOR 2 MIN, GOOSE ENGINE AND LET IT RETURN TO IDLE... IF IDLE PROBLEM STILL EXISTS, GO TO SECTION 2 OF H-MANUAL FOR OTHER POSSIBLE CAUSES.	X	X	X	X	X	X	X	X
12. ON AUTOMATIC OVERDRIVE TRANS, CHECK TV ADJUSTMENT						X	X	X

TB-2434-A

Figure 3

1985-1990 MODEL YEARS — LIGHT TRUCK — EFI THROTTLE BODY IDLE SPEED ADJUST PROCEDURES								
	1985-90 2.3L OHC	1986-90 2.9L EFI	1986-90 3.0L EFI	1990 4.0L EFI	1987-90 4.9L EFI	1985-90 5.0L EFI	1986-90 5.8L EFI	1987-90 7.5L EFI
1. INSTALL FEELER GAUGE BETWEEN THROTTLE STOP SCREW & LEVER					1989-90 0.050"	1988-90 A:0.050" M:0.030"	1988-90 0.030"	
2. UNPLUG SPOUT LINE AND VERIFY THAT IGNITION TIMING IS BASE $\pm 2^\circ$ BTDC	1990 X		1986-87 X		1988-90 X	1988-90 X	1986-90 X	
3. REMOVE PCV HOSE AT VALVE AND INSTALL .2" DIAMETER ORIFICE TOOL T86P-9600-A			1986-87 X					
4. DISCONNECT IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X	X	X	X
5. START ENGINE AND RUN AT: RPM/SEC...	1985-87 1500/20	1986-87 2000/120	1988-90 2500/30	2500/30	1987-88 1800/30	1985-88 1800/30	1988 1800/60	2500/30
6. PLACE AUTO TRANS IN... MANUAL IN NEUTRAL	1988-90 2500/30	1988-90 2500/30			1987-88 DRIVE 1988-90 PARK	1985-88 DRIVE 1988-90 PARK	1988 DRIVE 1988-90 PARK	
7. CHECK/ADJUST IDLE RPM: TURN THE SERVICE SPACER TRIM SCREW TO (RPM)	1985-87, 1988-90 575	1988 A:700 M:750	1986 A:850 M:1040	875	1987-88 A:550 M:650	1985-88 A:550 M:650	1988 A:575 M:800	650
	1988 625	1987 A:700 M:650	1987 A:900 M:1050		1988 @850 #750	1988-90 A:675 M:700	1988-90 A:C6 780	
8. SHUT ENGINE OFF AND DISCONNECT BATTERY FOR 5 MIN, RECONNECT		1988-90 725	1988-90 A:825 M:725		1988 A:825 M:700		1988-90 A:E4QD & MAN 730	
9. REMOVE FEELER GAUGE		X	X	X	X	X		
10. ENGINE OFF, RECONNECT SPOUT LINE	1990 X		1986-87 X		1988-90 X	1988-90 X	1988-90 X	
11. REMOVE ORIFICE FROM PCV HOSE, RECONNECT TO PCV VALVE			1986-87 X					
12. ENGINE OFF, RECONNECT IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X	X	X	X
13. START ENGINE AND STABILIZE FOR 2 MIN, GOOSE ENGINE AND LET IT RETURN TO IDLE... IF IDLE PROBLEM STILL EXISTS, GO TO SECTION 2 OF H-MANUAL FOR OTHER POSSIBLE CAUSES.	X	X	X	X	X	X	X	X
14. ON AUTOMATIC OVERDRIVE TRANS, CHECK TV ADJUSTMENT					X	X		

© 1988 MODEL YEAR 4.8L CALIBRATIONS: 7-52ER-, 7-52JR-, 7-52KR-, 7-52MR-, 7-52OR-, 7-52RP-, 7-52ZR-, 7-72JR-  
# 1989 MODEL YEAR 4.9L ALL OTHER CALIBRATIONS

TB-2436-A

Figure 4

1991-1992 MODEL YEARS PASSENGER CAR AND LIGHT TRUCK — EFI THROTTLE BODY IDLE SPEED ADJUST PROCEDURES					
	1991 CAR 1.0L EFI	1991 CAR 5.0L EFI	1991-92 TRUCK 2.9L EFI	1991 TRUCK 4.0L EFI	1991 TRUCK 7.3L EFI
1. ENGINE OFF, DISCONNECT THE NEGATIVE TERMINAL OF THE BATTERY FOR 5 MINUTES, RECONNECT BATTERY	X	X	X	X	X
2. DISCONNECT THE IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X
3. START THE ENGINE AND RUN AT RPM/SEC...	2000/60	1800/30	2500/30	2500/30	2500/30
4. PLACE AUTOMATIC TRANSMISSION IN PARK, MANUAL IN NEUTRAL	X	DRIVE	X	X	X
5. CHECK/ADJUST IDLE RPM, TURN THE SERVICE SPACER TRIM SCREW TO (RPM)...	650	500	700	675	650
6. SHUT ENGINE OFF AND DISCONNECT NEGATIVE TERMINAL OF THE BATTERY FOR 5 MINUTES			X	X	
7. ENGINE OFF, RECONNECT IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X
8. START ENGINE AND STABILIZE FOR 2 MINUTES, GOOSE ENGINE AND LET IT RETURN TO IDLE...IF IDLE PROBLEM STILL EXISTS, GO TO SECTION 2 OF H-MANUAL FOR OTHER POSSIBLE CAUSES.	X	X	X	X	X

TB-2432-A

Figure 5

The EFI throttle body idle speed adjustment procedures for the various model year passenger cars and light trucks are outlined in step-by-step procedures featured in Figures 3, 4 and 5. Select the appropriate procedure for the vehicle involved and adjust the throttle body idle RPM accordingly, after service kit installation.

THROTTLE BODY AND IDLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART				
ENGINE VIN	ENGINE	APPLICATION	SERVICE KIT NOT APPLICABLE	USE SERVICE KIT -9F939-
			USE SERVICE PROCEDURE 1: CLEAN BOTH THROTTLE BODY AND CLEAN IABP SOLENOID	USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY
<b>1983-85 MODEL YEARS</b>				
J	1.6L EFI	1983-85 ESCORT GT/LYNX, EXP/LN7		X
W	2.3L T/C	1984-85 T-BIRD, MUSTANG/CAPRI		X
A	2.3L EFI	1985 RANGER/BRONCO II		X
N	5.0L EFI	1985 F/E-SERIES, BRONCO		X
<b>1986 MODEL YEAR</b>				
J	1.9L EFI	ESCORT GT/LYNX, EXP		X
A	2.3L EFI	RANGER, AEROSTAR		X
W	2.3L T/C	T-BIRD/COUGAR, MUSTANG/CAPRI		X
T	2.9L EFI	RANGER, BRONCO II		X
U	3.0L EFI	TAURUS/SABLE, AEROSTAR		X
F	5.0L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR, T-BIRD/COUGAR CONTINENTAL, MARK VII		X X X
N	5.0L EFI	F/E-SERIES, BRONCO		X
E	5.0L HO	MARK VII LSC, MUSTANG		X
<b>1987 MODEL YEAR</b>				
J	1.9L EFI	ESCORT GT/LYNX, EXP		X
A	2.3L OHC	RANGER, AEROSTAR, MUSTANG		X
W	2.3L T/C	T-BIRD/COUGAR, MUSTANG/CAPRI		X
T	2.9L EFI	RANGER, BRONCO II		X
U	3.0L EFI	TAURUS/SABLE, AEROSTAR		X
Y	4.9L EFI	F-SERIES, BRONCO		X
Y	4.9L EFI	ECONOLINE (WITHOUT REAR HEAT) ECONOLINE (WITH REAR HEAT)	X	X
F	5.0L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR, T-BIRD/COUGAR CONTINENTAL, MARK VII		X X X
N	5.0L EFI	F/E-SERIES, BRONCO		X
E	5.0L HO	MARK VII LSC, MUSTANG		X
G	7.5L EFI	F/E-SERIES		X

TB-2437-A

Figure 6



1988 MODEL YEAR — THROTTLE BODY AND IDLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART			
ENGINE VIN	ENGINE	APPLICATION	
			SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 1: CLEAN BOTH THROTTLE BODY AND CLEAN IABP SOLENOID
			USE SERVICE KIT -0P939- USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY
J	1.9L EFI	ESCORT GT	X
S,X	2.3L HSC	TEMPO/TOPAZ	X
A	2.3L EFI	RANGER, MUSTANG	X
W	2.3L T/C	T-BIRD	X
T	2.9L EFI	RANGER, BRONCO II	X
U	3.0L EFI	TAURUS/SABLE, AEROSTAR	X
4	3.0L EFI	T-BIRD/COUGAR, CONTINENTAL TAURUS/SABLE	X X
C,R	3.0L SC	T-BIRD/COUGAR	X
Y	4.9L EFI	F-SERIES, BRONCO ECONOLINE (WITHOUT REAR HEAT) ECONOLINE (WITH REAR HEAT)	X X X
F	5.0L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR, T-BIRD/COUGAR	X X
N	5.0L EFI	F/E-SERIES, BRONCO	X
E	5.0L HO	MARK VII LSC, MUSTANG	X
H	5.0L EFI	F-SERIES, BRONCO ECONOLINE	X X
G	7.5L EFI	F/E-SERIES	X

TB-2438-A

Figure 7

**1989 MODEL YEAR — THROTTLE BODY AND IDLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART**

ENGINE VIN	ENGINE	APPLICATION	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 1: CLEAN BOTH THROTTLE BODY AND CLEAN IABIP SOLENOID	USE SERVICE KIT #F939- USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABIP SOLENOID ONLY	USE SERVICE KIT #F939- CLEANING PROCEDURES NOT ALLOWED DO NOT CLEAN THROTTLE BODY, DO NOT CLEAN IABIP SOLENOID
J	1.9L EFI	ESCORT GT		X	
S,X	2.3L HSC	TEMPO/TOPAZ		X	
A	2.3L EFI	RANGER, MUSTANG		X	
T	2.9L EFI	RANGER, BRONCO II		X	
U	3.0L EFI	TAURUS/SABLE, AEROSTAR		X	
4	3.8L EFI	T-BIRD/COUGAR, CONTINENTAL TAURUS/SABLE			X X X
C,R	3.8L SC	T-BIRD/COUGAR			
Y	4.9L EFI	F-SERIES, BRONCO ECONOLINE (W/O REAR HEAT) ECONOLINE (WITH REAR HEAT)	X	X X	
F	5.0L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR		X X	
N	5.0L EFI	F/E-SERIES, BRONCO		X	
E	5.0L HO	MARK VII, MUSTANG		X	
H	5.8L EFI	F-SERIES, BRONCO ECONOLINE	X		
G	7.5L EFI	F/E-SERIES			X

Figure 8

**1980 MODEL YEAR — THROTTLE BODY AND DLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART**

ENGINE VIN	ENGINE	APPLICATION	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 1: CLEAN BOTH THROTTLE BODY AND CLEAN IABP SOLENOID	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY	USE SERVICE KIT 49999. USE CLEANING PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY	USE SERVICE KIT 49999. CLEANING PROCEDURES NOT ALLOWED. DO NOT CLEAN THROTTLE BODY, DO NOT CLEAN IABP SOLENOID
J	1.9L EFI	ESCORT GT			X	
S,X	2.3L HSC	TEMPO/TOPAZ			X	
A	2.3L EFI	RANGER MUSTANG		(X) BUILT BEFORE 5/90		
T	2.9L EFI	RANGER, BRONCO II			X	
U	3.0L EFI	TAURUS/SABLE, AEROSTAR PROBE	X			
4	3.8L EFI	T-BIRD/COLGAR, CONTINENTAL TAURUS/SABLE				X
R	3.8L SC	T-BIRD/COLGAR				X
X	4.0L EFI	AEROSTAR, RANGER, BRONCO II			X	
Y	4.9L EFI	F-SERIES, BRONCO ECONOLINE (WITHOUT REAR HEAT) ECONOLINE (WITH REAR HEAT)			X	X
F	5.0L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR			X	X
N	5.0L EFI	F/E-SERIES, BRONCO			X	
E	5.0L HO	MARK VII, MUSTANG			X	
H	5.8L EFI	F-SERIES, BRONCO ECONOLINE	X		X	
G	7.5L EFI	F/E-SERIES			X	

TB-2440-A

Figure 9

**1991 MODEL YEAR — THROTTLE BODY AND IDLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART**

ENGINE VIN	ENGINE	APPLICATION	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY	SERVICE KIT NOT APPLICABLE CLEANING PROCEDURES NOT ALLOWED DO NOT CLEAN THROTTLE BODY, DO NOT CLEAN IABP SOLENOID	USE SERVICE KIT -8F339- USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY
J	1.9L EFI	ESCORT/TRACER			X
SX	2.3L HSC	TEMPO/TOPAZ	X		
AM	2.3L EFI	RANGER, MUSTANG	X		
T	2.9L EFI	RANGER			X
U	3.0L EFI	TAURUS/SABLE, AERORANGER PROBE	X X		
4	3.6L EFI	T-BIRDCOUGAR, CONTINENTAL TAURUS/SABLE		X X	
R	3.8L SC	T-BIRD		X	
X	4.0L EFI	AEROSTAR, RANGER, EXPLORER (X) BUILT 1/81 & LATER			(X) BUILT BEFORE 1/81
W	4.6L EFI	TOWN CAR		X	
Y	4.9L EFI	F/E-SERIES, BRONCO	X		
F	5.0L EFI	CROWN VIC/GRAND MARQUIS			X
N	5.0L EFI	F/E-SERIES, BRONCO	X		
E	5.0L HO	MARK VII, MUSTANG	X		
T	5.0L HO	T-BIRDCOUGAR		X	
H	5.8L EFI	F/E-SERIES, BRONCO	X B/		
J	7.0L EFI	F-SERIES	X		
G	7.5L EFI	F/E-SERIES	X B/		X B/

**NOTE:** A/ SERVICE KIT NOT APPLICABLE. DO NOT CLEAN EITHER THROTTLE BODY OR IABP SOLENOID FOR CALIBRATIONS: 1-64E-R10, 1-64H-R10, 1-64J-R10, 1-64K-R10, 1-64M-R10, 1-64P-R10, 1-64F-R10, 1-75A-R00, 1-76B-R00 AND 1-76C-R00. SERVICE KIT NOT APPLICABLE, USE SERVICE PROCEDURE 2 TO CLEAN IABP SOLENOID ONLY FOR ALL OTHER CALIBRATIONS.

B/ SERVICE KIT NOT APPLICABLE, USE SERVICE PROCEDURE 2 TO CLEAN IABP SOLENOID ONLY FOR CALIBRATIONS: 1-97A-R00, 1-98A-R00, 1-98B-R00, 1-98C-R00, 1-98E-R00 AND 1-99F-R00. USE SERVICE KIT -8F339- AND SERVICE PROCEDURE 2 TO CLEAN IABP SOLENOID ONLY FOR ALL OTHER CALIBRATIONS.

TB-2441-A

Figure 10

**1982 MODEL YEAR — THROTTLE BODY AND IDLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART**

ENGINE VIN	ENGINE	APPLICATION	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY	SERVICE KIT NOT APPLICABLE CLEANING PROCEDURES NOT ALLOWED DO NOT CLEAN THROTTLE BODY, DO NOT CLEAN IABP SOLENOID	USE SERVICE KIT (9R209) USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY
J	1.9L EFI	ESCORT/TRACER		X	
S,X	2.3L I-SC	TEMPO/TOPAZ		X	
A,M	2.3L EFI	RANGER, MUSTANG	X		
T	2.9L EFI	RANGER			
U	3.0L EFI	TAURUS/SABLE, AERORANGER PROBE	X		X
4	3.8L EFI	T-BIRD/COUGAR, CONTINENTAL TAURUS/SABLE		X	
R	3.8L SC	T-BIRD		X	
X	4.0L EFI	AEROSTAR, RANGER, EXPLORER	X		
W	4.6L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR		X	X
Y	4.9L EFI	F/E-SERIES, BRONCO	X		
N	5.0L EFI	F/E-SERIES, BRONCO	X		
E	5.0L HO	MARK VII, MUSTANG	X		
T	5.0L HO	T-BIRD/COUGAR			X
H	5.8L EFI	F/E-SERIES, BRONCO			X
J	7.0L EFI	F-SERIES	X		
G	7.5L EFI	F/E-SERIES	X		

TB-2442-B

Figure 11

**THROTTLE BODY AND IDLE AIR BY-PASS SOLENOID SERVICE PROCEDURE**

Detailed application charts for throttle body and idle air by-pass solenoid service procedures by engine VIN # /engine displacement/vehicle application and model year are shown in Figures 6 through 11. Refer to these charts to see if the service kit is to be installed and which service cleaning procedure, if any, is to be used.

**SERVICE CLEANING PROCEDURES**

The following items should be noted prior to beginning the service cleaning procedure.

^ Confirm that the correct service cleaning procedure is identified in the Application Charts, Figures 6-11, for the vehicle/engine combination being

serviced.

Do not clean throttle bodies identified to accept service kit (F2PZ-9F939-A), IDLE AIR ADJUST SPACER.

Use a 1" (25.4 mm) to 1-1/2" (38.1 mm) wire stemmed horse hair or nylon bottle cleaner type brush.

Use rubber gloves and eye protection.

Do not clean throttle bodies identified with a yellow/black "ATTENTION" label.

Do not clean "Black" plastic air by-pass valves. Refer to TSB 89-13-8 for service details.

Do not run vehicles with air flow meters when the air duct is removed.

Do not use carburetor cleaner as a cleaning solvent. Use Carburetor Tune-up Cleaner (D9AZ-19579-AA).

## Procedure # 1

### THROTTLE BODY AND IDLE AIR BY-PASS VALVE CLEANING

**CAUTION:** DO NOT RUN VEHICLES EQUIPPED WITH AIR FLOW METERS DURING THE CLEANING PROCEDURE. IF THERE IS A YELLOW/BLACK "ATTENTION" LABEL ON THE THROTTLE BODY ADVISING NOT TO CLEAN, OR IF THE VEHICLE IS IDENTIFIED AS ACCEPTING SERVICE KIT (F2PZ-9F939-A), USE PROCEDURE # 2 FOR IDLE AIR BY-PASS VALVE CLEANING ONLY.

1. Plug the actuator into the connector in the Rotunda Cleaner/Tester, Tool 113-00009.
2. Remove the air duct to the throttle body inlet.
3. Disconnect the idle air by-pass valve signal lead.
4. Attach the actuator harness plug to the idle air by-pass valve.
5. Start the actuator and then start the engine. Do not start engines that have air flow meters.
6. Spray just enough Carburetor Tune-up Cleaner (D9AZ-19579-AA) into the throttle bore to wet the bore and throttle plate.
7. Spray the Carburetor Tune-up Cleaner for about five (5) seconds into the idle air by-pass valve inlet passage while the actuator is operating.
8. Stop the engine and actuator. Let everything soak for fifteen (15) minutes.
9. After a fifteen (15) minute soak, saturate the cleaning brush with solvent and scrub between the throttle body bore and plate while holding the throttle wide open.

**NOTE:** IT IS NECESSARY TO APPLY SOME PRESSURE ON THE BRUSH WHILE SCRUBBING.

10. Repeat saturating the brush and scrubbing for one (1) to two (2) minutes, making sure to reach into the corners where the throttle shaft meets the bore wall.
11. Start the actuator and the start the engine. Do not start engines that have air flow meters.
12. Spray Carburetor Tune-up Cleaner into the throttle bore for up to one (1) minute to wash away residue. Do not spray for longer than six (6) continuous seconds on engines that have air flow meters and are not running.
13. Spray Carburetor Tune-up Cleaner into the idle by-pass valve passage leading to the inlet of the valve for up to one (1) minute. Do not spray for longer than six (6) continuous seconds on engines that have air flow meters and are not running.
14. Stop actuator and stop engine, if running.

**NOTE:** MAKE SURE THE THROTTLE PLATES OPERATE FREELY AND CLOSE PROPERLY.

15. Reinstall the air duct.
16. Start and run the engine for about one (1) minute to dry out the solvent residue.

17. Operate the actuator to make sure the solvent is purged from the idle by-pass valve.
18. Disconnect the actuator from the idle air by-pass valve.
19. Reattach the control signal lead to the air by-pass valve.
20. Check engine for normal operation. It may be necessary to reset the idle speed due to a previous adjustment for an idle concern. (Refer to the respective Powertrain/Emissions Diagnosis Service Manual, Throttle Body Section, for idle speed adjust procedure.)

## Procedure # 2 Idle Air By-Pass Valve Cleaning Only

**CAUTION:** THIS CLEANING PROCEDURE MAY BE USED WITH SLUDGE TOLERANT THROTTLE BODIES WHICH ARE IDENTIFIED WITH A YELLOW/BLACK "ATTENTION" LABEL AND THOSE USING SERVICE KIT (F2PZ-9F939-A). NO ATTEMPT SHOULD BE MADE TO CLEAN THROTTLE BODY BORE/PLATE AREA BY DIRECT SPRAYING OR SCRUBBING. DO NOT RUN VEHICLES WITH AIR FLOW METERS DURING CLEANING PROCEDURE.

1. Plug the actuator into the connector in the Rotunda Air By-Pass Valve Adapter 113-00009, or equivalent.
2. Remove the air duct to the throttle body inlet.
3. Disconnect the idle air by-pass valve signal lead.
4. Attach the actuator harness plug to the idle air by-pass valve.
5. Start the actuator and then start the engine.

**NOTE:** DO NOT START ENGINES THAT HAVE AIR FLOW METERS.

6. Spray the Carburetor Tune-up Cleaner for about five (5) seconds into the idle air by-pass valve inlet passage while the actuator is operating.

**CAUTION:** AVOID DIRECT SPRAYING ON THROTTLE PLATE/BORE AREA.

7. Stop the engine and actuator. Let everything soak for fifteen (15) minutes.
8. Start the actuator and the start the engine.

**CAUTION:** DO NOT START ENGINES THAT HAVE AIR FLOW METERS.

9. Spray Carburetor Tune-up Cleaner into the throttle bore for up to one (1) minute.

**CAUTION:** DO NOT SPRAY FOR LONGER THAN SIX (6) CONTINUOUS SECONDS ON ENGINES THAT HAVE AIR FLOW METERS AND ARE NOT RUNNING.

10. Stop actuator and stop engine if running.
11. Reinstall the air duct.
12. Start and run the engine for about one (1) minute to dry out the solvent residue.
13. Operate the actuator to make sure the solvent is purged from the idle by-pass valve.
14. Disconnect the actuator from the idle air by-pass valve.
15. Reattach the control signal lead to the air by-pass valve.
16. Check engine for normal operation.

**NOTE:** IT SHOULD NOT BE NECESSARY TO RESET THE IDLE SPEED SINCE ONLY THE IDLE AIR BY-PASS VALVE WAS SERVICED IN THIS PROCEDURE

## Warranty Coverage

Throttle bodies and idle air by-pass valves on all EFI (Port Fuel Injection) engines through the 1992 model year that can be cleaned (as identified in the application charts) are covered under 5/50 Emissions Warranty Coverage.

For those throttle bodies identified as having sludge tolerant designs or using service kit (F2PZ-9F939-A) where cleaning is not allowed per the application charts, the warranty claims for cleaning will not be reimbursed even within the 12/12 warranty coverage period. Cleaning is not allowed. Service kit installation (single time) is covered under 5/50 emission warranty.

## Labor Standards Operations

The labor operations shown in the following Operation/Description/Time columns are identified by procedure number and vehicle line. Specific engines for various vehicles are identified in the sludge cleaning procedure application charts. The throttle body cleaning operations with combinations and the air by-pass valve cleaning combinations will appear in future Labor Manuals under the following operation numbers.

^ 9926 B - Throttle body and idle air by-pass valve cleaning

^ 9926 B2 - Adjust idle speed

^ 9715 A - Air by-pass valve cleaning only

^ 9715 A1 - Adjust idle speed

PART NUMBER	PART NAME	CLASS
F2PZ-9F939-A	Idle Air By-pass Service Kit	B
D9AZ-19579-AA	Carburstor Tune-Up Cleaner	BG

OTHER APPLICABLE ARTICLES: 89-13-8

SUPERSEDES: 88-24-5, 88-24-6, 89-16-5, 91-10-9, 91-7-4

## Operation Description

WARRANTY STATUS: Eligible Under Warranty  
Coverage As Stated In The  
Text Of This Article

OPERATION	DESCRIPTION	TIME
912507A	Idle Air By-Pass Valve Cleaning - 1983-85 Escort, EXP, LN7, LYNX 1.6L EFI.	0.5 Hr.
912507B	Idle Air By-Pass Valve Cleaning - 1986-91 Escort 1.9L EFI, 1986/87 EXP, Lynx 1.9L EFI, 1991 Tracer 1.9L EFI.	0.5 Hr.
912507C	Idle Air By Pass Valve Cleaning - 1984-87 Mustang 2.3L T/C, 1986/87 Capri, Cougar 2.3L T/C, 1984-88 T-Bird 2.3L T/C, 1987/92 Mustang 2.3L EFI.	0.5 Hr.
912507D	Idle By-Pass Valve Cleaning - 1988-91 Tempo, Topaz 2.3L HSC, 1985-92 Ranger 2.3L EFI.	0.6 Hr.
912507E	Idle Air By-Pass Valve Cleaning - 1986/87 Aerostar 2.3L EFI, 1985 Bronco II 2.3L EFI.	0.7 Hr.
912507F	Idle Air By-Pass Valve Cleaning - 1986-90 Bronco II 2.9L EFI, 1986-92 Ranger 2.9L EFI.	0.7 Hr.
912507G	Idle Air By-Pass Valve Cleaning - 1991/92 Probe 3.0L EFI, 1986-91 Taurus 3.0L EFI, 1987-91 Sable 3.0L EFI.	0.6 Hr.
912507H	Idle Air By-Pass Valve	0.7 Hr.



	Cleaning - 1986-91 Aerostar 3.0L EFI, 1991 Ranger 3.0L EFI.	
912507I	Idle Air By-Pass Valve Cleaning - 1988 Continental, Cougar, Taurus, T-Bird, Sable 3.8L EFI. 1988 Cougar, T-Bird 3.8L S/C.	0.6 Hr.
912507J	Idle Air By-Pass Valve Cleaning - 1990-92 Aerostar 4.0L EFI, 1990 Bronco II 4.0L EFI, 1991/92 Explorer 4.0L EFI, 1990-92 Ranger 4.0L EFI.	0.7 Hr.
912507K	Idle Air By-Pass Valve Cleaning - 1987-92 Bronco 4.9L EFI, 1987-92 F-Series 4.9L EFI, 1987/90 Econoline (Without Rear Heater) 4.9L EFI, 1991/92 Econoline (All) 4.9L EFI.	0.7 Hr.
912507L	Idle Air By-Pass Valve Cleaning - 1986-88 Cougar, T-Bird 5.0L EFI, 1986-87 Continental, Mark VII 5.0L EFI, 1986/91 Crn - Victoria, Grn - Marquis 5.0L EFI, 1986-92 Mark VII 5.0L HO, 1982-92 Mustang 5.0L HO.	0.6 Hr.
912507M	Idle Air By-Pass Valve Cleaning - 1985-92 Bronco, E-Series, F-Series 5.0L EFI.	0.7 Hr.
912507N	Idle Air By-Pass Valve Cleaning - 1988-90 Bronco, F-Series 5.8L. 1991 Econo, F-Series, Bronco 5.8L (Do not Clean Solenoid, Calib; 1-64E-R10, 1-64H-R10, 1-64J-R10, 1-64K-R10, 1-64M-R10, 1-64P-R10, 1-64R-R10, 1-75A-R00, 1-76A-R00, 1-76B-R00, 1-76C-R00.	0.7 Hr.
912507O	Idle Air By-Pass Valve Cleaning - 1991/92 F And B Series, 7.0L EFI.	0.7 Hr.
912507P	Idle Air By-Pass Valve Cleaning - 1987-92 E-Series, F-Series 7.5L EFI.	0.7 Hr.
912507Q	Throttle Body And Idle Air By-Pass Valve Cleaning - 1989/90 Probe 3.0L EFI.	0.9 Hr.
912507R	Throttle Body And Idle Air By-Pass Valve Cleaning - 1987-90 Econoline (With Rear Heat) 4.9L EFI.	0.8 Hr.
912507S	Throttle Body And Idle Air By-Pass Valve Cleaning - 1988-90 Econoline 5.8L EFI.	0.9 Hr.
912507T	Service Kit Install - All Cars And Light Trucks (Except Aerostar And Econoline) - Refer To The Service Procedure Application	1.0 Hr.

Charts, For Vehicle  
Application.

912507U Service Kit Install - 1.2 Hr.  
Aerostar, Econoline -  
Refer To Service Procedure  
Application Charts - For  
Vehicle Application.

## DEALER CODING

BASIC PART NO.	CONDITION CODE
9E926	49

OASIS CODES: 602300, 607000, 607400, 607700, 608400, 611500, 618400

Technical Service Bulletin # **91257**

Date: **911213**

## Engine - Hard Cold Starts/Hesitation/Stalls On Start-Up

Article No.

91-25-7

12/13/91

- ^ HARD COLD START - DURING INITIAL START-UP, IDLE OR DECEL - EFI ENGINES - SLUDGE IN THROTTLE BODY AND/OR IDLE AIR BY-PASS VALVE
- ^ HESITATION/STALLS - DURING INITIAL START-UP, IDLE OR DECEL - EFI ENGINES - SLUDGE IN THROTTLE BODY AND/OR IDLE AIR BY-PASS VALVE

FORD: 1983-87 EXP  
1983-91 ESCORT  
1984-90 MUSTANG, THUNDERBIRD  
1986-90 TAURUS  
1986-91 CROWN VICTORIA  
1988-90 TEMPO

LINCOLN-MERCURY: 1983-85 LN7  
1983-87 LYNX  
1984-88 CAPRI  
1984-90 COUGAR  
1986-90 CONTINENTAL, MARK VII, SABLE  
1986-91 GRAND MARQUIS, TOWN CAR  
1988-90 TOPAZ  
1991 TRACER

LIGHT TRUCK: 1985-90 BRONCO II, BRONCO  
1985-91 ECONOLINE, F-150-350 SERIES  
1985-92 RANGER  
1986-91 AEROSTAR  
1991 EXPLORER

ISSUE: Hard cold starts, hesitation and stalls on initial start-up or during idle or decel may be caused by sludge in the throttle body and/or idle by-pass valve. Sludge deposits or oil film on the throttle body bore and plate or the idle air by-pass valve may cause one or more of the following conditions.

- ^ Hard Cold Start
- ^ Stall On Initial Start-Up
- ^ Stall During Idle
- ^ Stall During Decel
- ^ Rough Idle
- ^ Rolling Idle

^ Hesitation During Acceleration

**ACTION:** A new idle air by-pass service kit (F2PZ-9F939-A) is now available for service use to correct sludge contamination concerns of the throttle bore and plate only. It eliminates the need to clean the majority of past model throttle body applications. Cleaning is not required on sludge tolerant throttle body designs released for 1991 and newer model years.

SERVICE KIT -9F939-		
APPLICATION CHART — EFI PORT FUEL INJECTION ENGINES		
<u>MODEL YEAR</u>	<u>CAR APPLICATION</u>	<u>ENGINE</u>
1983-85	ESCORT GT/LYNX, EXP/LN7	1.6L EFI
1986-87	ESCORT GT/LYNX, EXP	1.9L EFI
1988-90	ESCORT GT	1.9L EFI
1991	ESCORT/TRACER	1.9L EFI
1987-90	MUSTANG	2.3L EFI
1984-88	THUNDERBIRD/COUGAR, MUSTANG/CAPRI	2.3L TC
1986-90	TEMPO/TOPAZ	2.3L HO/HSC
1986-90	TAURUS/SABLE	3.0L EFI
1988-90*	TAURUS/SABLE	3.8L EFI
1988-90	THUNDERBIRD/COUGAR	3.8L EFI/SC
1988-90	CONTINENTAL	3.8L EFI
1986-91	CROWN VICTORIA/GRAND MARQUIS, TOWN CAR	5.0L EFI
1986-88	THUNDERBIRD/COUGAR	5.0L EFI
1986-87	CONTINENTAL, MARK VII	5.0L EFI
1986-90	MARK VII LSC, MUSTANG	5.0L HO
<u>MODEL YEAR</u>	<u>LIGHT TRUCK APPLICATION</u>	<u>ENGINE</u>
1985	BRONCO II	2.3L EFI
1985-90**	RANGER	2.3L EFI
1986-87	AEROSTAR	2.3L EFI
1986-92	RANGER/BRONCO II	2.9L EFI
1986-90	AEROSTAR	3.0L EFI
1990-91***	RANGER, EXPLORER, AEROSTAR	4.0L EFI
1987-90	F-SERIES/BRONCO	4.9L EFI
1987-90	ECONOLINE (WITHOUT REAR HEAT)	4.9L EFI
1985-90	F-SERIES/BRONCO, ECONOLINE	5.0L EFI
1988-90	F-SERIES/BRONCO	5.8L EFI
1987-91****	F-SERIES, ECONOLINE	7.5L EFI
<b>NOT FOR USE ON THE FOLLOWING EFI ENGINE APPLICATIONS:</b>		
1988-90	FESTIVA	1.3L EFI
1988-89	TRACER	1.6L EFI
1985-89	XR4TI	2.3L TC
1988-89	SCORPIO	2.9L EFI
1989-90	PROBE	2.2L, 2.2L TC AND 3.0L EFI
1989-90	TAURUS	3.0L SHO
1987-90	ECONOLINE	4.9L EFI (WITH REAR HEAT)
1988-90	ECONOLINE	5.8L EFI
NOT APPLICABLE FOR 1991 MODEL YEAR EXCEPT WHERE LISTED		
NOT APPLICABLE FOR 1992 MODEL YEAR EXCEPT WHERE LISTED		
* CUT OUT HOOD INSULATION PAD, IF NECESSARY, TO AVOID POSSIBLE CONTACT WITH THE IABP SOLENOID.		
** 1990 MODEL YEAR BUILT BEFORE 5/90		
*** 1991 MODEL YEAR BUILT BEFORE 1/91		
**** 1991 MODEL YEAR ALL CALIBRATIONS EXCEPT 1-97A-R00, 1-98A-R00, 1-98B-R00, 1-98C-R00, 1-98E-R00 AND 1-98F-R00.		

TB-2432-A

Figure 1

Install an idle air by-pass service kit (F2PZ-9F939-A) as applicable to provide a permanent correction for symptoms caused by throttle body sludge deposits. Refer to the instruction sheet included in the kit for installation details. Refer to Figure 1 for a specific application list of EFI (port fuel Injection) engines involved in this TSB article.

The idle air by-pass service kit (F2PZ-9F939-A) includes the following items.

- ^ One (1) Idle Adjust Spacer
- ^ Two (2) Gaskets
- ^ Two (2) Attaching Bolts
- ^ One (1) "Attention" Sticker
- ^ One (1) Instruction Sheet

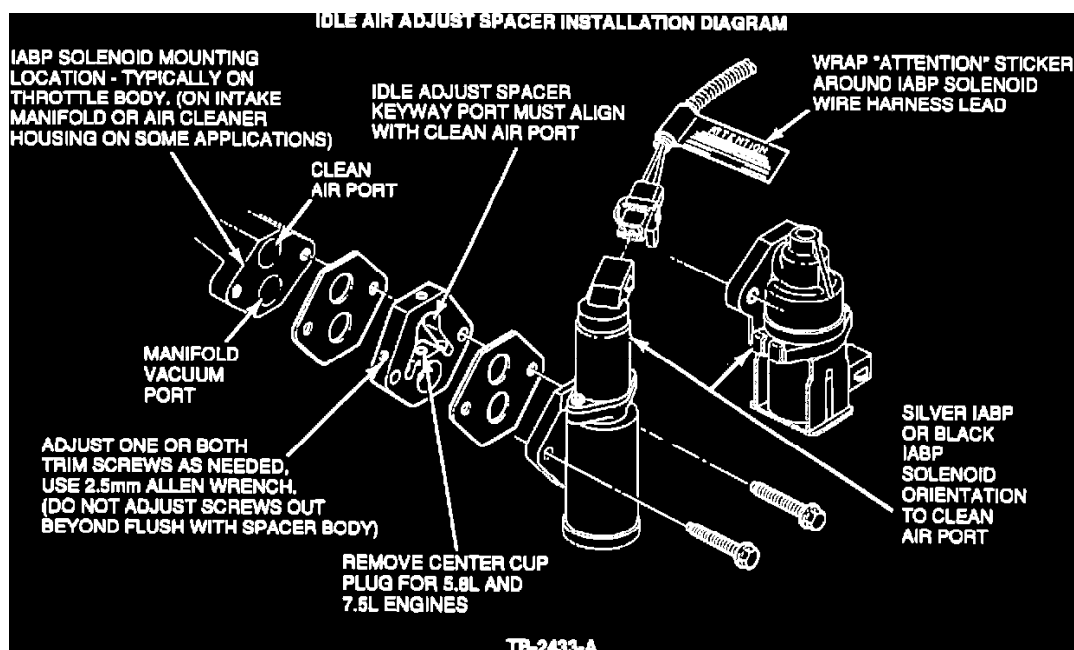


Figure 2

Refer to Figure 2 for a pictorial of the kits components.

**NOTE:** EFFECTIVE WITH THIS TSB, THROTTLE BODY CLEANING IS NO LONGER COVERED UNDER 5/50 EMISSIONS WARRANTY, UNLESS AS SPECIFIED IN THE FOLLOWING APPLICATION CHARTS. FAILURE TO FOLLOW THE CORRECT PROCEDURE MAY RESULT IN THE CLAIM BEING DISALLOWED.

The idle air adjust spacer incorporates sludge tolerant design features that eliminate throttle body sludge related conditions. Once installed, throttle body cleaning is not allowed and periodic adjustment of the throttle body is not required.

## Procedures, Warranty and Labor

### CHECKS TO MAKE PRIOR TO SERVICE KIT INSTALLATION

Confirm that the following items are not causing the idle quality concern before proceeding with the service kit installation.

- ^ Contamination within the idle air by-pass solenoid
- ^ Lack of fuel system control (excessively rich or lean)
- ^ Ignition timing change
- ^ Incorrect or malfunctioning EGR system
- ^ Incorrect or malfunctioning cooling system
- ^ Vacuum leaks (air intake manifold, vacuum hoses, vacuum reservoirs, power brake booster where applicable)
- ^ EEC diagnostics have been performed and vehicle malfunction indicated service output codes have been resolved and cleared.

If any of the areas listed above are found to be at fault, correct them before proceeding with the service kit installation.

## Idle Speed Adjustment

**WARNING: BEFORE PROCEEDING WITH THE IDLE SPEED ADJUSTMENT, VERIFY THAT THE FOLLOWING ITEMS ARE TAKEN CARE OF PROPERLY.**

- ^ The transmission is in PARK or Neutral.
- ^ The parking brake is applied.
- ^ The wheels are properly blocked.
- ^ The engine is at operating temperature.
- ^ The heater, A/C, cooling fan and other accessories are OFF.

1983-1990 MODEL YEARS — PASSENGER CAR — EFI THROTTLE BODY IDLE SPEED ADJUST PROCEDURES								
	<u>1983-85</u> <u>1.6L EFI</u>	<u>1986-90</u> <u>1.9L HO</u>	<u>1984-88</u> <u>2.3L TC</u>	<u>1987-90</u> <u>2.3L OHC</u>	<u>1988-90</u> <u>2.3L HSC/HO</u>	<u>1986-90</u> <u>3.0L EFI</u>	<u>1988-90</u> <u>3.8L EFI/SC</u>	<u>1986-90</u> <u>5.0L EFI/HO</u>
1. UNPLUG SPOUT LINE AND VERIFY THAT IGNITION TIMING IS BASE $\pm 2^\circ$ BTDC					X	X		
2. REMOVE PCV HOSE AT VALVE AND INSTALL .2" DIAMETER ORIFICE TOOL T86P-9600-A					X	X		
3. DISCONNECT IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X	X	X	X
4. START ENGINE AND RUN AT: RPM/SEC...	2000/60	2000/60	2000/120	1500/30	2500/30	<u>1989-90</u> 2000/30	<u>1988</u> 2500/30	<u>1986-88</u> 1800/30
5. PLACE AUTO TRANS IN... MANUAL IN NEUTRAL	DRIVE	PARK	PARK	PARK	DRIVE	DRIVE	PARK	DRIVE
6. CHECK/ADJUST IDLE RPM: TURN THE SERVICE SPACER TRIM SCREW TO (RPM)	SEE DECAL FOR BASE IDLE	<u>1986-87</u> SEE DECAL	750	<u>1987-88</u> 525	A:1050 M:1575	<u>1986</u> 625	550	500
		<u>1988-90</u> 975		<u>1989-90</u> A:650 M:600		<u>1987</u> 700		
						<u>1988-90</u> 760		
7. SHUT ENGINE OFF AND DISCONNECT BATTERY FOR 5 MIN, RECONNECT						X		X
8. ENGINE OFF, RECONNECT SPOUT LINE					X	X		
9. REMOVE ORIFICE FROM PCV HOSE, RECONNECT TO PCV VALVE					X	X		
10. ENGINE OFF, RECONNECT IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X	X	X	X
11. START ENGINE AND STABILIZE FOR 2 MIN, GOOSE ENGINE AND LET IT RETURN TO IDLE... IF IDLE PROBLEM STILL EXISTS, GO TO SECTION 2 OF H-MANUAL FOR OTHER POSSIBLE CAUSES.	X	X	X	X	X	X	X	X
12. ON AUTOMATIC OVERDRIVE TRANS, CHECK TV ADJUSTMENT						X	X	X

TB-2434-A

Figure 3

1985-1990 MODEL YEARS — LIGHT TRUCK — EFI THROTTLE BODY IDLE SPEED ADJUST PROCEDURES								
	1985-90 2.3L OHC	1986-90 2.9L EFI	1986-90 3.0L EFI	1990 4.0L EFI	1987-90 4.9L EFI	1985-90 5.0L EFI	1986-90 5.8L EFI	1987-90 7.5L EFI
1. INSTALL FEELER GAUGE BETWEEN THROTTLE STOP SCREW & LEVER					1989-90 0.050"	1988-90 A:0.050" M:0.030"	1988-90 0.030"	
2. UNPLUG SPOUT LINE AND VERIFY THAT IGNITION TIMING IS BASE $\pm 2^\circ$ BTDC	1990 X		1986-87 X		1988-90 X	1988-90 X	1986-90 X	
3. REMOVE PCV HOSE AT VALVE AND INSTALL .2" DIAMETER ORIFICE TOOL T86P-9600-A			1986-87 X					
4. DISCONNECT IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X	X	X	X
5. START ENGINE AND RUN AT: RPM/SEC...	1985-87 1500/20	1986-87 2000/120	1988-90 2500/30	2500/30	1987-88 1800/30	1985-88 1800/30	1988 1800/60	2500/30
6. PLACE AUTO TRANS IN... MANUAL IN NEUTRAL	1988-90 2500/30	1988-90 2500/30			1987-88 DRIVE 1988-90 PARK	1985-88 DRIVE 1988-90 PARK	1988 DRIVE 1988-90 PARK	
7. CHECK/ADJUST IDLE RPM: TURN THE SERVICE SPACER TRIM SCREW TO (RPM)	1985-87, 1988-90 575	1988 A:700 M:750	1986 A:850 M:1040	875	1987-88 A:550 M:650	1985-88 A:550 M:650	1988 A:575 M:800	650
	1988 625	1987 A:700 M:650	1987 A:900 M:1050		1988 @850 #750	1988-90 A:675 M:700	1988-90 A:C6 780	
		1988-90 725	1988-90 A:825 M:725		1989 A:675 M:700		1988-90 A:E4QD & MAN 730	
8. SHUT ENGINE OFF AND DISCONNECT BATTERY FOR 5 MIN, RECONNECT		X	X	X	X	X		
9. REMOVE FEELER GAUGE					1988-90 X	1988-90 X	1988-90 X	
10. ENGINE OFF, RECONNECT SPOUT LINE	1990 X		1986-87 X		1988-90 X	1988-90 X	1988-90 X	
11. REMOVE ORIFICE FROM PCV HOSE, RECONNECT TO PCV VALVE			1986-87 X					
12. ENGINE OFF, RECONNECT IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X	X	X	X
13. START ENGINE AND STABILIZE FOR 2 MIN, GOOSE ENGINE AND LET IT RETURN TO IDLE... IF IDLE PROBLEM STILL EXISTS, GO TO SECTION 2 OF H-MANUAL FOR OTHER POSSIBLE CAUSES.	X	X	X	X	X	X	X	X
14. ON AUTOMATIC OVERDRIVE TRANS, CHECK TV ADJUSTMENT					X	X		
@ 1988 MODEL YEAR 4.8L CALIBRATIONS: 7-52ER-, 7-52JR-, 7-52KR-, 7-52MR-, 7-52OR-, 7-52RP-, 7-52ZR-, 7-72JR- # 1989 MODEL YEAR 4.9L ALL OTHER CALIBRATIONS								

TB-2436-A

Figure 4

1991-1992 MODEL YEARS PASSENGER CAR AND LIGHT TRUCK — EFI THROTTLE BODY IDLE SPEED ADJUST PROCEDURES					
	1991 CAR 1.0L EFI	1991 CAR 5.0L EFI	1991-92 TRUCK 2.9L EFI	1991 TRUCK 4.0L EFI	1991 TRUCK 7.3L EFI
1. ENGINE OFF, DISCONNECT THE NEGATIVE TERMINAL OF THE BATTERY FOR 5 MINUTES, RECONNECT BATTERY	X	X	X	X	X
2. DISCONNECT THE IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X
3. START THE ENGINE AND RUN AT RPM/SEC...	2000/60	1800/30	2500/30	2500/30	2500/30
4. PLACE AUTOMATIC TRANSMISSION IN PARK, MANUAL IN NEUTRAL	X	DRIVE	X	X	X
5. CHECK/ADJUST IDLE RPM, TURN THE SERVICE SPACER TRIM SCREW TO (RPM)...	650	500	700	675	650
6. SHUT ENGINE OFF AND DISCONNECT NEGATIVE TERMINAL OF THE BATTERY FOR 5 MINUTES			X	X	
7. ENGINE OFF, RECONNECT IDLE AIR BYPASS SOLENOID CONNECTOR	X	X	X	X	X
8. START ENGINE AND STABILIZE FOR 2 MINUTES, GOOSE ENGINE AND LET IT RETURN TO IDLE...IF IDLE PROBLEM STILL EXISTS, GO TO SECTION 2 OF H-MANUAL FOR OTHER POSSIBLE CAUSES.	X	X	X	X	X

TB-2430-A

Figure 5

The EFI throttle body idle speed adjustment procedures for the various model year passenger cars and light trucks are outlined in step-by-step procedures featured in Figures 3, 4 and 5. Select the appropriate procedure for the vehicle involved and adjust the throttle body idle RPM accordingly, after service kit installation.



THROTTLE BODY AND IDLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART			
ENGINE VIN	ENGINE	APPLICATION	
			SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 1: CLEAN BOTH THROTTLE BODY AND CLEAN IABP SOLENOID
			USE SERVICE KIT -9F939- USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY
<b>1983-85 MODEL YEARS</b>			
J	1.6L EFI	1983-85 ESCORT GT/LYNX, EXP/LN7	X
W	2.3L T/C	1984-85 T-BIRD, MUSTANG/CAPRI	X
A	2.3L EFI	1985 RANGER/BRONCO II	X
N	5.0L EFI	1985 F/E-SERIES, BRONCO	X
<b>1986 MODEL YEAR</b>			
J	1.9L EFI	ESCORT GT/LYNX, EXP	X
A	2.3L EFI	RANGER, AEROSTAR	X
W	2.3L T/C	T-BIRD/COUGAR, MUSTANG/CAPRI	X
T	2.9L EFI	RANGER, BRONCO II	X
U	3.0L EFI	TAURUS/SABLE, AEROSTAR	X
F	5.0L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR, T-BIRD/COUGAR CONTINENTAL, MARK VII	X X X
N	5.0L EFI	F/E-SERIES, BRONCO	X
E	5.0L HO	MARK VII LSC, MUSTANG	X
<b>1987 MODEL YEAR</b>			
J	1.9L EFI	ESCORT GT/LYNX, EXP	X
A	2.3L OHC	RANGER, AEROSTAR, MUSTANG	X
W	2.3L T/C	T-BIRD/COUGAR, MUSTANG/CAPRI	X
T	2.9L EFI	RANGER, BRONCO II	X
U	3.0L EFI	TAURUS/SABLE, AEROSTAR	X
Y	4.9L EFI	F-SERIES, BRONCO	X
Y	4.9L EFI	ECONOLINE (WITHOUT REAR HEAT) ECONOLINE (WITH REAR HEAT)	X X
F	5.0L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR, T-BIRD/COUGAR CONTINENTAL, MARK VII	X X X
N	5.0L EFI	F/E-SERIES, BRONCO	X
E	5.0L HO	MARK VII LSC, MUSTANG	X
G	7.5L EFI	F/E-SERIES	X

TB-2437-A

Figure 6

1988 MODEL YEAR — THROTTLE BODY AND IDLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART				
ENGINE VIN	ENGINE	APPLICATION	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 1: CLEAN BOTH THROTTLE BODY AND CLEAN IABP SOLENOID	USE SERVICE KIT -0P939- USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY
J	1.9L EFI	ESCORT GT		X
S,X	2.3L HSC	TEMPO/TOPAZ		X
A	2.3L EFI	RANGER, MUSTANG		X
W	2.3L T/C	T-BIRD		X
T	2.9L EFI	RANGER, BRONCO II		X
U	3.0L EFI	TAURUS/SABLE, AEROSTAR		X
4	3.0L EFI	T-BIRD/COUGAR, CONTINENTAL TAURUS/SABLE		X X
C,R	3.0L SC	T-BIRD/COUGAR		X
Y	4.9L EFI	F-SERIES, BRONCO ECONOLINE (WITHOUT REAR HEAT) ECONOLINE (WITH REAR HEAT)		X X X
F	5.0L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR, T-BIRD/COUGAR	X	X X
N	5.0L EFI	F/E-SERIES, BRONCO		X
E	5.0L HO	MARK VII LSC, MUSTANG		X
H	5.0L EFI	F-SERIES, BRONCO ECONOLINE		X X
G	7.5L EFI	F/E-SERIES	X	X

TB-2438-A

Figure 7

**1989 MODEL YEAR — THROTTLE BODY AND IDLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART**

ENGINE VIN	ENGINE	APPLICATION	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 1: CLEAN BOTH THROTTLE BODY AND CLEAN IABIP SOLENOID	USE SERVICE KIT #F939- USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABIP SOLENOID ONLY	USE SERVICE KIT #F939- CLEANING PROCEDURES NOT ALLOWED DO NOT CLEAN THROTTLE BODY, DO NOT CLEAN IABIP SOLENOID
J	1.9L EFI	ESCORT GT		X	
S,X	2.3L HSC	TEMPO/TOPAZ		X	
A	2.3L EFI	RANGER, MUSTANG		X	
T	2.9L EFI	RANGER, BRONCO II		X	
U	3.0L EFI	TAURUS/SABLE, AEROSTAR		X	
4	3.8L EFI	T-BIRD/COUGAR, CONTINENTAL TAURUS/SABLE			X X X
C,R	3.8L SC	T-BIRD/COUGAR			
Y	4.9L EFI	F-SERIES, BRONCO ECONOLINE (W/O REAR HEAT) ECONOLINE (WITH REAR HEAT)	X	X X	
F	5.0L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR		X X	
N	5.0L EFI	F/E-SERIES, BRONCO		X	
E	5.0L HO	MARK VII, MUSTANG		X	
H	5.8L EFI	F-SERIES, BRONCO ECONOLINE	X		
G	7.5L EFI	F/E-SERIES		X	

TB-2436-A

Figure 8

**1980 MODEL YEAR — THROTTLE BODY AND DLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART**

ENGINE VIN	ENGINE	APPLICATION	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 1: CLEAN BOTH THROTTLE BODY AND CLEAN IABP SOLENOID	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY	USE SERVICE KIT 49999. USE CLEANING PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY	USE SERVICE KIT 49999. CLEANING PROCEDURES NOT ALLOWED DO NOT CLEAN THROTTLE BODY, DO NOT CLEAN IABP SOLENOID
J	1.9L EFI	ESCORT GT			X	
S,X	2.3L HSC	TEMPO/TOPAZ			X	
A	2.3L EFI	RANGER MUSTANG		(X) BUILT BEFORE 5/90		
T	2.9L EFI	RANGER, BRONCO II			X	
U	3.0L EFI	TAURUS/SABLE, AEROSTAR PROBE	X			
4	3.8L EFI	T-BIRD/COUGAR, CONTINENTAL TAURUS/SABLE				X
R	3.8L SC	T-BIRD/COUGAR				X
X	4.0L EFI	AEROSTAR, RANGER, BRONCO II			X	
Y	4.9L EFI	F-SERIES, BRONCO ECONOLINE (WITHOUT REAR HEAT) ECONOLINE (WITH REAR HEAT)			X	X
F	5.0L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR			X	X
N	5.0L EFI	F/E-SERIES, BRONCO			X	
E	5.0L HO	MARK VII, MUSTANG			X	
H	5.8L EFI	F-SERIES, BRONCO ECONOLINE	X		X	
G	7.5L EFI	F/E-SERIES			X	

TB-2440-A

Figure 9

1991 MODEL YEAR — THROTTLE BODY AND IDLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART					
ENGINE VIN	ENGINE	APPLICATION	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY	SERVICE KIT NOT APPLICABLE CLEANING PROCEDURES NOT ALLOWED DO NOT CLEAN THROTTLE BODY, DO NOT CLEAN IABP SOLENOID	USE SERVICE KIT -8F339- USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY
J	1.9L EFI	ESCORT/TRACER			X
SX	2.3L HSC	TEMPO/TOPAZ	X		
AM	2.3L EFI	RANGER, MUSTANG	X		
T	2.9L EFI	RANGER			X
U	3.0L EFI	TAURUS/SABLE, AERORANGER PROBE	X X		
4	3.6L EFI	T-BIRDCOUGAR, CONTINENTAL TAURUS/SABLE		X X	
R	3.8L SC	T-BIRD		X	
X	4.0L EFI	AEROSTAR, RANGER, EXPLORER	(X) BUILT 1/81 & LATER		(X) BUILT BEFORE 1/81
W	4.6L EFI	TOWN CAR		X	
Y	4.9L EFI	F/E-SERIES, BRONCO	X		
F	5.0L EFI	CROWN VIC/GRAND MARQUIS			X
N	5.0L EFI	F/E-SERIES, BRONCO	X		
E	5.0L HO	MARK VII, MUSTANG	X		
T	5.0L HO	T-BIRDCOUGAR		X	
H	5.8L EFI	F/E-SERIES, BRONCO	X B/		
J	7.0L EFI	F-SERIES	X		
G	7.5L EFI	F/E-SERIES	X B/		X B/

**NOTE:** A/ SERVICE KIT NOT APPLICABLE. DO NOT CLEAN EITHER THROTTLE BODY OR IABP SOLENOID FOR CALIBRATIONS: 1-64E-R10, 1-64H-R10, 1-64J-R10, 1-64K-R10, 1-64M-R10, 1-64P-R10, 1-64F-R10, 1-75A-R00, 1-76B-R00 AND 1-76C-R00. SERVICE KIT NOT APPLICABLE, USE SERVICE PROCEDURE 2 TO CLEAN IABP SOLENOID ONLY FOR ALL OTHER CALIBRATIONS.

B/ SERVICE KIT NOT APPLICABLE, USE SERVICE PROCEDURE 2 TO CLEAN IABP SOLENOID ONLY FOR CALIBRATIONS: 1-67A-R00, 1-68A-R00, 1-68B-R00, 1-68C-R00, 1-68E-R00 AND 1-69F-R00. USE SERVICE KIT -8F339- AND SERVICE PROCEDURE 2 TO CLEAN IABP SOLENOID ONLY FOR ALL OTHER CALIBRATIONS.

TR-2441-A

Figure 10

**1982 MODEL YEAR — THROTTLE BODY AND IDLE AIR BYPASS SOLENOID SERVICE PROCEDURE APPLICATION CHART**

ENGINE VIN	ENGINE	APPLICATION	SERVICE KIT NOT APPLICABLE USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY	SERVICE KIT NOT APPLICABLE CLEANING PROCEDURES NOT ALLOWED DO NOT CLEAN THROTTLE BODY, DO NOT CLEAN IABP SOLENOID	USE SERVICE KIT (9R209) USE SERVICE PROCEDURE 2: DO NOT CLEAN THROTTLE BODY, CLEAN IABP SOLENOID ONLY
J	1.9L EFI	ESCORT/TRACER		X	
S,X	2.3L I-SC	TEMPO/TOPAZ		X	
A,M	2.3L EFI	RANGER, MUSTANG	X		
T	2.9L EFI	RANGER			
U	3.0L EFI	TAURUS/SABLE, AERORANGER PROBE	X		X
4	3.8L EFI	T-BIRD/COUGAR, CONTINENTAL TAURUS/SABLE		X	
R	3.8L SC	T-BIRD		X	
X	4.0L EFI	AEROSTAR, RANGER, EXPLORER	X		
W	4.6L EFI	CROWN VIC/GRAND MARQUIS TOWN CAR		X	X
Y	4.9L EFI	F/E-SERIES, BRONCO	X		
N	5.0L EFI	F/E-SERIES, BRONCO	X		
E	5.0L HO	MARK VII, MUSTANG	X		
T	5.0L HO	T-BIRD/COUGAR			X
H	5.8L EFI	F/E-SERIES, BRONCO			X
J	7.0L EFI	F-SERIES	X		
G	7.5L EFI	F/E-SERIES	X		

TB-2442-B

Figure 11

**THROTTLE BODY AND IDLE AIR BY-PASS SOLENOID SERVICE PROCEDURE**

Detailed application charts for throttle body and idle air by-pass solenoid service procedures by engine VIN # /engine displacement/vehicle application and model year are shown in Figures 6 through 11. Refer to these charts to see if the service kit is to be installed and which service cleaning procedure, if any, is to be used.

**SERVICE CLEANING PROCEDURES**

The following items should be noted prior to beginning the service cleaning procedure.

^ Confirm that the correct service cleaning procedure is identified in the Application Charts, Figures 6-11, for the vehicle/engine combination being

serviced.

Do not clean throttle bodies identified to accept service kit (F2PZ-9F939-A), IDLE AIR ADJUST SPACER.

Use a 1" (25.4 mm) to 1-1/2" (38.1 mm) wire stemmed horse hair or nylon bottle cleaner type brush.

Use rubber gloves and eye protection.

Do not clean throttle bodies identified with a yellow/black "ATTENTION" label.

Do not clean "Black" plastic air by-pass valves. Refer to TSB 89-13-8 for service details.

Do not run vehicles with air flow meters when the air duct is removed.

Do not use carburetor cleaner as a cleaning solvent. Use Carburetor Tune-up Cleaner (D9AZ-19579-AA).

## Procedure # 1

### THROTTLE BODY AND IDLE AIR BY-PASS VALVE CLEANING

**CAUTION:** DO NOT RUN VEHICLES EQUIPPED WITH AIR FLOW METERS DURING THE CLEANING PROCEDURE. IF THERE IS A YELLOW/BLACK "ATTENTION" LABEL ON THE THROTTLE BODY ADVISING NOT TO CLEAN, OR IF THE VEHICLE IS IDENTIFIED AS ACCEPTING SERVICE KIT (F2PZ-9F939-A), USE PROCEDURE # 2 FOR IDLE AIR BY-PASS VALVE CLEANING ONLY.

1. Plug the actuator into the connector in the Rotunda Cleaner/Tester, Tool 113-00009.
2. Remove the air duct to the throttle body inlet.
3. Disconnect the idle air by-pass valve signal lead.
4. Attach the actuator harness plug to the idle air by-pass valve.
5. Start the actuator and then start the engine. Do not start engines that have air flow meters.
6. Spray just enough Carburetor Tune-up Cleaner (D9AZ-19579-AA) into the throttle bore to wet the bore and throttle plate.
7. Spray the Carburetor Tune-up Cleaner for about five (5) seconds into the idle air by-pass valve inlet passage while the actuator is operating.
8. Stop the engine and actuator. Let everything soak for fifteen (15) minutes.
9. After a fifteen (15) minute soak, saturate the cleaning brush with solvent and scrub between the throttle body bore and plate while holding the throttle wide open.

**NOTE:** IT IS NECESSARY TO APPLY SOME PRESSURE ON THE BRUSH WHILE SCRUBBING.

10. Repeat saturating the brush and scrubbing for one (1) to two (2) minutes, making sure to reach into the corners where the throttle shaft meets the bore wall.
11. Start the actuator and the start the engine. Do not start engines that have air flow meters.
12. Spray Carburetor Tune-up Cleaner into the throttle bore for up to one (1) minute to wash away residue. Do not spray for longer than six (6) continuous seconds on engines that have air flow meters and are not running.
13. Spray Carburetor Tune-up Cleaner into the idle by-pass valve passage leading to the inlet of the valve for up to one (1) minute. Do not spray for longer than six (6) continuous seconds on engines that have air flow meters and are not running.
14. Stop actuator and stop engine, if running.

**NOTE:** MAKE SURE THE THROTTLE PLATES OPERATE FREELY AND CLOSE PROPERLY.

15. Reinstall the air duct.
16. Start and run the engine for about one (1) minute to dry out the solvent residue.

17. Operate the actuator to make sure the solvent is purged from the idle by-pass valve.
18. Disconnect the actuator from the idle air by-pass valve.
19. Reattach the control signal lead to the air by-pass valve.
20. Check engine for normal operation. It may be necessary to reset the idle speed due to a previous adjustment for an idle concern. (Refer to the respective Powertrain/Emissions Diagnosis Service Manual, Throttle Body Section, for idle speed adjust procedure.)

## Procedure # 2 Idle Air By-Pass Valve Cleaning Only

**CAUTION:** THIS CLEANING PROCEDURE MAY BE USED WITH SLUDGE TOLERANT THROTTLE BODIES WHICH ARE IDENTIFIED WITH A YELLOW/BLACK "ATTENTION" LABEL AND THOSE USING SERVICE KIT (F2PZ-9F939-A). NO ATTEMPT SHOULD BE MADE TO CLEAN THROTTLE BODY BORE/PLATE AREA BY DIRECT SPRAYING OR SCRUBBING. DO NOT RUN VEHICLES WITH AIR FLOW METERS DURING CLEANING PROCEDURE.

1. Plug the actuator into the connector in the Rotunda Air By-Pass Valve Adapter 113-00009, or equivalent.
2. Remove the air duct to the throttle body inlet.
3. Disconnect the idle air by-pass valve signal lead.
4. Attach the actuator harness plug to the idle air by-pass valve.
5. Start the actuator and then start the engine.

**NOTE:** DO NOT START ENGINES THAT HAVE AIR FLOW METERS.

6. Spray the Carburetor Tune-up Cleaner for about five (5) seconds into the idle air by-pass valve inlet passage while the actuator is operating.

**CAUTION:** AVOID DIRECT SPRAYING ON THROTTLE PLATE/BORE AREA.

7. Stop the engine and actuator. Let everything soak for fifteen (15) minutes.
8. Start the actuator and the start the engine.

**CAUTION:** DO NOT START ENGINES THAT HAVE AIR FLOW METERS.

9. Spray Carburetor Tune-up Cleaner into the throttle bore for up to one (1) minute.

**CAUTION:** DO NOT SPRAY FOR LONGER THAN SIX (6) CONTINUOUS SECONDS ON ENGINES THAT HAVE AIR FLOW METERS AND ARE NOT RUNNING.

10. Stop actuator and stop engine if running.
11. Reinstall the air duct.
12. Start and run the engine for about one (1) minute to dry out the solvent residue.
13. Operate the actuator to make sure the solvent is purged from the idle by-pass valve.
14. Disconnect the actuator from the idle air by-pass valve.
15. Reattach the control signal lead to the air by-pass valve.
16. Check engine for normal operation.

**NOTE:** IT SHOULD NOT BE NECESSARY TO RESET THE IDLE SPEED SINCE ONLY THE IDLE AIR BY-PASS VALVE WAS SERVICED IN THIS PROCEDURE

## Warranty Coverage

Throttle bodies and idle air by-pass valves on all EFI (Port Fuel Injection) engines through the 1992 model year that can be cleaned (as identified in the application charts) are covered under 5/50 Emissions Warranty Coverage.



For those throttle bodies identified as having sludge tolerant designs or using service kit (F2PZ-9F939-A) where cleaning is not allowed per the application charts, the warranty claims for cleaning will not be reimbursed even within the 12/12 warranty coverage period. Cleaning is not allowed. Service kit installation (single time) is covered under 5/50 emission warranty.

## Labor Standards Operations

The labor operations shown in the following Operation/Description/Time columns are identified by procedure number and vehicle line. Specific engines for various vehicles are identified in the sludge cleaning procedure application charts. The throttle body cleaning operations with combinations and the air by-pass valve cleaning combinations will appear in future Labor Manuals under the following operation numbers.

^ 9926 B - Throttle body and idle air by-pass valve cleaning

^ 9926 B2 - Adjust idle speed

^ 9715 A - Air by-pass valve cleaning only

^ 9715 A1 - Adjust idle speed

PART NUMBER	PART NAME	CLASS
F2PZ-9F939-A	Idle Air By-pass Service Kit	B
D9AZ-19579-AA	Carburstor Tune-Up Cleaner	BG

OTHER APPLICABLE ARTICLES: 89-13-8

SUPERSEDES: 88-24-5, 88-24-6, 89-16-5, 91-10-9, 91-7-4

## Operation Description

WARRANTY STATUS: Eligible Under Warranty  
Coverage As Stated In The  
Text Of This Article

OPERATION	DESCRIPTION	TIME
912507A	Idle Air By-Pass Valve Cleaning - 1983-85 Escort, EXP, LN7, LYNX 1.6L EFI.	0.5 Hr.
912507B	Idle Air By-Pass Valve Cleaning - 1986-91 Escort 1.9L EFI, 1986/87 EXP, Lynx 1.9L EFI, 1991 Tracer 1.9L EFI.	0.5 Hr.
912507C	Idle Air By Pass Valve Cleaning - 1984-87 Mustang 2.3L T/C, 1986/87 Capri, Cougar 2.3L T/C, 1984-88 T-Bird 2.3L T/C, 1987/92 Mustang 2.3L EFI.	0.5 Hr.
912507D	Idle By-Pass Valve Cleaning - 1988-91 Tempo, Topaz 2.3L HSC, 1985-92 Ranger 2.3L EFI.	0.6 Hr.
912507E	Idle Air By-Pass Valve Cleaning - 1986/87 Aerostar 2.3L EFI, 1985 Bronco II 2.3L EFI.	0.7 Hr.
912507F	Idle Air By-Pass Valve Cleaning - 1986-90 Bronco II 2.9L EFI, 1986-92 Ranger 2.9L EFI.	0.7 Hr.
912507G	Idle Air By-Pass Valve Cleaning - 1991/92 Probe 3.0L EFI, 1986-91 Taurus 3.0L EFI, 1987-91 Sable 3.0L EFI.	0.6 Hr.
912507H	Idle Air By-Pass Valve	0.7 Hr.

	Cleaning - 1986-91 Aerostar 3.0L EFI, 1991 Ranger 3.0L EFI.	
912507I	Idle Air By-Pass Valve Cleaning - 1988 Continental, Cougar, Taurus, T-Bird, Sable 3.8L EFI. 1988 Cougar, T-Bird 3.8L S/C.	0.6 Hr.
912507J	Idle Air By-Pass Valve Cleaning - 1990-92 Aerostar 4.0L EFI, 1990 Bronco II 4.0L EFI, 1991/92 Explorer 4.0L EFI, 1990-92 Ranger 4.0L EFI.	0.7 Hr.
912507K	Idle Air By-Pass Valve Cleaning - 1987-92 Bronco 4.9L EFI, 1987-92 F-Series 4.9L EFI, 1987/90 Econoline (Without Rear Heater) 4.9L EFI, 1991/92 Econoline (All) 4.9L EFI.	0.7 Hr.
912507L	Idle Air By-Pass Valve Cleaning - 1986-88 Cougar, T-Bird 5.0L EFI, 1986-87 Continental, Mark VII 5.0L EFI, 1986/91 Crn - Victoria, Grn - Marquis 5.0L EFI, 1986-92 Mark VII 5.0L HO, 1982-92 Mustang 5.0L HO.	0.6 Hr.
912507M	Idle Air By-Pass Valve Cleaning - 1985-92 Bronco, E-Series, F-Series 5.0L EFI.	0.7 Hr.
912507N	Idle Air By-Pass Valve Cleaning - 1988-90 Bronco, F-Series 5.8L. 1991 Econo, F-Series, Bronco 5.8L (Do not Clean Solenoid, Calib; 1-64E-R10, 1-64H-R10, 1-64J-R10, 1-64K-R10, 1-64M-R10, 1-64P-R10, 1-64R-R10, 1-75A-R00, 1-76A-R00, 1-76B-R00, 1-76C-R00.	0.7 Hr.
912507O	Idle Air By-Pass Valve Cleaning - 1991/92 F And B Series, 7.0L EFI.	0.7 Hr.
912507P	Idle Air By-Pass Valve Cleaning - 1987-92 E-Series, F-Series 7.5L EFI.	0.7 Hr.
912507Q	Throttle Body And Idle Air By-Pass Valve Cleaning - 1989/90 Probe 3.0L EFI.	0.9 Hr.
912507R	Throttle Body And Idle Air By-Pass Valve Cleaning - 1987-90 Econoline (With Rear Heat) 4.9L EFI.	0.8 Hr.
912507S	Throttle Body And Idle Air By-Pass Valve Cleaning - 1988-90 Econoline 5.8L EFI.	0.9 Hr.
912507T	Service Kit Install - All Cars And Light Trucks (Except Aerostar And Econoline) - Refer To The Service Procedure Application	1.0 Hr.

Charts, For Vehicle  
Application.

912507U Service Kit Install - 1.2 Hr.  
Aerostar, Econoline -  
Refer To Service Procedure  
Application Charts - For  
Vehicle Application.

DEALER CODING

BASIC PART NO.	CONDITION CODE
9E926	49

OASIS CODES: 602300, 607000, 607400, 607700, 608400, 611500, 618400