

# GENERAL SERVICE INFORMATION

## GROUP 00

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## SECTION 00-01 Identification Codes

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### VEHICLE APPLICATION

Taurus / Sable.

### DESCRIPTION

#### Official Vehicle Identification Number

The official Vehicle Identification Number (VIN) for title and registration purposes is stamped on a metal tab that is fastened to the instrument panel close to the windshield on the LH side of the vehicle and is visible from outside.

#### Vehicle Certification Label

The Vehicle Certification Label (V.C. Label) is affixed on the LH front door lock panel or door pillar. The upper half of the label contains the name of manufacturer, month and year of manufacture, Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating (GAWR) and the certification statement.

The V.C. Label also contains a 17 character Vehicle Identification Number. This number is used for warranty identification of the vehicle, and indicates: manufacturer, type of restraint system, line, series, body type, engine, model year and consecutive unit number.

The last six digits of the Vehicle Identification Number indicate the Consecutive Unit Number of each unit built at each assembly plant. The Consecutive Unit Numbers begin as follows:

100 001 thru 600 000: Ford Division Vehicles.

The remaining information on the V.C. Label consists of the following vehicle identification codes: color and body type, vinyl roof, moulding and interior trim. Additional codes indicate vehicles equipped with air conditioning, radio type, sun roof type (if any), as well as axle, transmission, spring, district sales office and special order codes.

1993 Taurus / Sable July, 1992



## DESCRIPTION (Continued)

## Certification Label (Typical)

1FABP43F2PZ100001

VEHICLE IDENTIFICATION NUMBER

MFD. BY FORD MOTOR CO. IN U.S.A.

DATE: 08/91 GWR: 4660LB/2113KG  
 FRONT CWR: 2599LB 1178KG  
 REAR CWR: 2092LB 940KG  
 THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR  
 VEHICLE SAFETY, BURPER, AND THEFT PREVENTION STANDARDS IN  
 EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.  
 VIN: 1FABP50U1KG250710  
 TYPE: PASSENGER

16 F0234 R0143

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

WORLD MANUFACTURER IDENTIFIER

RESTRAINT SYSTEM TYPE

CONSTANT "P"

LINE, SERIES, BODY TYPE

ENGINE TYPE

CHECK DIGIT

MODEL YEAR

ASSEMBLY PLANT

PRODUCTION SEQUENCE NUMBER

VEHICLE TYPE

PAINT

BODY TYPE CODE

VINYL ROOF

BODY SIDE MOULDING

TRIM CODE—(FIRST CODE LETTER =  
 FABRIC AND SEAT TYPE, SECOND  
 CODE = COLOR)

TAPE STRIPE

RADIO

SUN/MOON ROOF

AXLE RATIO

TRANSMISSION

SPRINGS—FRONT L. AND R.  
 REAR L. AND R. (4 CODES)

DISTRICT SALES OFFICE

PTO/SPL ORDER NUMBER

ACCESSORY RESERVE LOAD

UNITED STATES

MFD. BY FORD MOTOR CO. OF CANADA LTD.

DATE: 08/91 GWR: 3682LB/1670KG  
 FRONT CWR: 1999LB 906KG  
 REAR CWR: 1812LB 821KG  
 THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR  
 VEHICLE SAFETY, BURPER, AND THEFT PREVENTION STANDARDS IN  
 EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.  
 VIN: 1FABP35H4KB218512  
 TYPE: PASSENGER

16 F0075 R0095

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

MADE IN CANADA

DECAL APPLIED TO CANADA BUILT UNITS

CANADA

MFD. BY FORD MOTOR CO. IN U.S.A.

DATE: 06/91 GWR: 4900LB/2222KG  
 FRONT CWR: 2557LB 1159KG  
 REAR CWR: 2430LB 1102KG  
 THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR  
 VEHICLE SAFETY, BURPER, AND THEFT PREVENTION STANDARDS IN  
 EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.  
 VIN: 1FABP5944KA253107  
 TYPE: U.S. CERT VOID-EXPORT

16 F0052 R0144

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

UNITED STATES EXPORT LABEL SHOWN  
 (CANADIAN EXPORT LABEL TYPICAL)

NOTE: X'S ON LABELS ARE  
 SHOWN IN PLACE OF ACTUAL  
 NUMBERS TO REPRESENT  
 TYPICAL LABELS ONLY.

Y3054-C

## IDENTIFICATION CODES

**WORLD MANUFACTURER IDENTIFIER  
(VIN POSITIONS 1, 2 AND 3)**
**1FA** BP43M2PX100001

Code	Manufacturer	Make	Type
1FA	Ford Motor Company, USA	Ford	Passenger Car
1FM	Ford Motor Company, USA	Ford	MPV
1FT	Ford Motor Company, USA	Ford	Truck (Complete Vehicle)
1FD	Ford Motor Company, USA	Ford	Incomplete Vehicle
1FC	Ford Motor Company, USA	Ford	Basic (Stripped) Chassis
1FB	Ford Motor Company, USA	Ford	Bus
1FF	Ford Motor Company, USA	Ford	Motor Vehicle Equipment w/o Engine/Powertrain (Glider)
1ME	Ford Motor Company, USA	Mercury	Passenger Car
1MH	Ford Motor Company, USA	Mercury	Incomplete Vehicle
1LN	Ford Motor Company, USA	Lincoln	Passenger Car
1LJ	Ford Motor Company, USA	Lincoln	Incomplete Vehicle
1ZV	Mazda Motor Manufacturing (USA) Corp.	Ford	Passenger Car
2FA	Ford Motor Company of Canada, Ltd.	Ford	Passenger Car
2FM	Ford Motor Company of Canada, Ltd.	Ford	MPV
2FT	Ford Motor Company of Canada, Ltd.	Ford	Truck (Complete Vehicle)
2FD	Ford Motor Company of Canada, Ltd.	Ford	Incomplete Vehicle
2FC	Ford Motor Company of Canada, Ltd.	Ford	Basic (Stripped) Chassis
2FB	Ford Motor Company of Canada, Ltd.	Ford	Bus
2FF	Ford Motor Company of Canada, Ltd.	Ford	Motor Vehicle Equipment w/o Engine/Powertrain (Glider)
2ME	Ford Motor Company of Canada, Ltd.	Mercury	Passenger Car
2MH	Ford Motor Company of Canada, Ltd.	Mercury	Incomplete Vehicle
3FA	Ford Motor Company S. A. de C. V. (Mexico)	Ford	Passenger Car
3FC	Ford Motor Company S. A. de C. V. (Mexico)	Ford	Basic (Stripped) Chassis
3MA	Ford Motor Company S. A. de C. V. (Mexico)	Mercury	Passenger Car
4M2	Ford Motor Company, USA	Mercury	MPV
4M3	Ford Motor Company, USA	Mercury	Incomplete Vehicle
4M4	Ford Motor Company, USA	Mercury	MPV (Complete Vehicle)
6MP	Ford Motor Company of Australia, Ltd.	Mercury	Passenger Car (Imported Capri)
KNJ	Kia Motors Inc., Korea	Ford	Passenger Car (Imported Festiva)

CY2202-M

## IDENTIFICATION CODES (Continued)

## RESTRAINT SYSTEM TYPE

(VIN POSITION 4)

1FA **C** P43F2PZ100001

Description	VIN Code
Active Belts and Air Bags (Front)	C
Active Belts — All Positions/Passenger and Driver	L
Air Bags	

CY2203-M

## VIN POSITION 5

1FAB **P** 43M2PX100001

Code	Vehicle
P	Passenger Car — Ford North American Vehicles
M	Passenger Car — Lincoln/Mercury North American Vehicles
T	Passenger Car — Association Vehicles

CY2204-N

## LINE, SERIES, BODY TYPE FOR PASSENGER CARS

(VIN POSITIONS 6 AND 7)

1FABP **50** F2PZ100001

VIN Code	Line	Series	Additional Optional Exterior Nameplates	Body Type	Body Code
<b>Make — Ford</b>					
50	Taurus	L		4-Dr. Sedan	FC4
52	Taurus	GL		4-Dr. Sedan	FC4
53	Taurus	LX		4-Dr. Sedan	FC4
54	Taurus	SHO		4-Dr. Sedan	FC4
55	Taurus	L		4-Dr. Station Wagon	FFW
57	Taurus	GL		4-Dr. Station Wagon	FFW
58	Taurus	LX		4-Dr. Station Wagon	FFW
<b>Make — Mercury</b>					
50, 53	Sable	GS	LS	4-Dr. Sedan	FC4
55, 58	Sable	GS	LS	4-Dr. Station Wagon	FFW

CY2637-F

## ENGINE TYPE — DISPLACEMENT, CYLINDERS, FUEL TYPE, AND MANUFACTURER

(VIN POSITION 8)

1FABP18 **4** 2PZ100001

VIN Code	Displacement		Cylinders	Fuel	Manufacturer
	Liter	CID			
U	3.0L OHV SFI	182	6	Gasoline	Ford
P	3.2L DOHC SHO	—	6	Gasoline	Yamaha
4	3.8L SFI	232	6	Gasoline	Ford
Y	3.0L DOHC SHO	182	6	Gasoline	Yamaha

CY2642-G

## IDENTIFICATION CODES (Continued)

VIN CHECK DIGIT FOR ALL VEHICLES  
(VIN POSITION 9)1FABP43M **2** PX100001

CY2207-M

VEHICLE MODEL YEAR FOR ALL VEHICLES  
(VIN POSITION 10)1FABP43M2 **P** X100001

VIN Code	Year
P .....	1993
R .....	1994
S .....	1995
T .....	1996
V .....	1997
W .....	1998

CY2208-N

ASSEMBLY PLANT  
(VIN POSITION 11)1FABP43MZP **X** 100001

VIN Code	Plant Location
A	Atlanta
B	Oakville
D	Ohio
F	Dearborn
G	Chicago
H	Lorain
K	Kansas City
T	Edison
W	Wayne
X	St. Thomas
Y	Wixom
R	Hermosillo, Mexico
U	Louisville
V	Jefferson County
8	Broadmeadows, Australia
6	Sohari, South Korea
5	Flat Rock

CY2209-P

PRODUCTION SEQUENCE NUMBER  
(VIN POSITIONS 12 THROUGH 17)1FABP43M2PX **100001**

## Sequence Number

100,001 through 600,000 — Ford Division Vehicles

600,001 through 999,999 — Lincoln/Mercury Division Vehicles

CY2210-N

## IDENTIFICATION CODES (Continued)

## BODY TYPE CODES

2A  
EXTERIOR PAINT COLORS

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
FC4	YB	A	GB	A	2	B	8	TB8BB

F0276  
R0141  
482450  
DSO

VIN Code	Line	Series	Additional Optional Exterior Nameplates	Body Type	Body Code
<b>Make — Ford</b>					
50	Taurus	L		4-Dr. Sedan	FC4
52	Taurus	GL		4-Dr. Sedan	FC4
53	Taurus	LX		4-Dr. Sedan	FC4
54	Taurus	SHO		4-Dr. Sedan	FC4
55	Taurus	L		4-Dr. Station Wagon	FFW
57	Taurus	GL		4-Dr. Station Wagon	FFW
58	Taurus	LX		4-Dr. Station Wagon	FFW
<b>Make — Mercury</b>					
50,53	Sable	GS	LS	4-Dr. Sedan	FC4
55,58	Sable	GS	LS	4-Dr. Station Wagon	FFW

CY2638-E



## IDENTIFICATION CODES (Continued)

## EXTERIOR PAINT COLOR CODES

## EXTERIOR PAINT COLORS

CODE	COLOR	SPEC	REF	CODE	COLOR	SPEC	REF
AB	Sandlewood Spice C/C	AB8CWhA	M6448	MQ	Electric Blue C/C M	—	—
AH	Pastel Alabaster Solid	AHFAXXA	M6392	MS	Smoke M	YHWCXXA	M6598
CD	Woodrose C/C	CEQEWhA	M6421	MW	Bright Regatta Blue M	KCWCXXA	M5979
DA	Cayman C/C	PDYEWhA	M6487	MX	Dark Shadow Blue M	KCZXXA	M6609
DB	Lt. Mocha Solid	DAGAXXA	M6453	MY	Steel Blue Frost C/C M	—	—
DC	Medium Mocha C/C	DATCWhA	M6450	MZ	Stratosphere Blue	—	—
DD	Mocha Frost C/C	DANEWhA	M6465	NA	Dk. Tourmaline C/C	MWYEWhA	M6572
DF	M Aquamarine C/C	MDVEWhA	M6559	NC	Med. Seafoam M C/C	MDWCWhA	M6478
DG	Aquamarine Frost C/C	MDTEWhA	M6560	PA	Deep Jewel Green C/C	PAWEWhA	M6414
DH	Med. Lt. Mocha Solid	DAJAXXA	M6608	PB	Jewel Green M	PAWCXXA	M6456
DJ	Medium Mocha M	DATCXXA	M6520	PC	Reef Blue M	PD9CXXA	M6585
DW	Dark Mocha M	DAZCXXA	M6477	PD	Reef Blue C/C	PD9CWhA	M6565
EA	Cardinal Red	—	—	PG	Marine Blue C/C	—	—
EC	Currant Red Solid	EAQAXXA	M6325	PK	Chesapeake Blue M	KWYCXXA	M6584
EG	Sandlewood Spice C/C	AB8CWhA	M6448	PM	Brt. Calypso C/C	PESCWhA	M6599
EH	Med. Cabernet Solid	7DQAXXA	M6156	PN	Aquamarine Frost C/C	MDREWhA	M6464
EL	Wild Strawberry C/C	7DTEWhA	M6342	PP	Bright Yellow C/C	—	—
EM	Med. Red Solid	7DNAXXA	M6153	RC	Medium Platinum C/C	YBWCWhA	M6454
EN	Medium Scarlet Solid	7DVAXXA	M6236	R4	Black	—	—
EP	Vermilion Solid	EGRAXXA	M6346	SB	Green Mica C/C M	—	—
ER	Dark Cranberry C/C	ERZEWhA	M6445	SE	Aqua Solid	—	—
EW	Lt. Cranberry C/C	ERNCWWhA	M6443	SF	Evergreen Green C/C	—	—
EX	Medium Cranberry C/C	ERYCWhA	M6444	SG	Bright Calypso Green C/C M	—	—
EY	Performance Red Solid	EBVAXXA	M6564	UA	Ebony C/C	UAWAWhA	M6373
E2	Rio Red Tinted C/C	—	—	WB	Performance White	ZGFAXXA	M6547
E4	Vermilion C/C Solid	EGRAXXA	M6470	WC	Medium Opal C/C	YCWWhA	M6501
E5	Hot Red	—	—	WH	Ultra Red Solid C/C	EWVWWhA	M6500
E7	Dk. Ruby Solid	EYYAXXA	M6549	WJ	Opal Frost C/C	YCKEWhA	M6480
GA	Medium Aubergine C/C	GAYEWhA	M6486	WK	Opal Opalescent C/C	YCJGWhA	M6553
GC	Iris C/C	HBWCWhA	M6635	WL	Midnight Opal M C/C	YCZCWhA	M6566
GD	L/Med. Aubergine C/C	GAWEWhA	M6555	WP	Performance White	—	—
GH	Electric Red C/C M	—	—	W3	Dark Charcoal C/C	—	—
KA	Crystal Blue C/C	KAHCWhA	M6327	YA	Polar White	—	—
KB	Medium Amethyst Frost	KNWEWhA	M6446	YB	Platinum C/C	—	—
KE	Lapis Metallic C/C	KVWCWhA	M6563	YC	Black Solid	JASAXXA	M1724
KF	Bright Lapis C/C	KV8EWhA	M6561	YD	Pastel Titanium Solid	YAHAXXA	M6239
KH	Dk. Lapis M	KVZCXXA	M6556	YF	Lt. Titanium C/C	YAHWWhA	M6330
KJ	Bright Lapis C/C M	—	—	YG	Med. Titanium C/C	YAWCWhA	M6442
KL	Bimini Blue C/C M	—	—	YN	Silver C/C	ZJMCWhA	M6505
KP	Newport Blue C/C	KK8CWhA	M6451	YO	Oxford White Solid	WHFAXXA	M5920
K2	Atlantic Blue Solid	KAGAXXA	M6441	YS	Silver	—	—
K3	Bimini Blue M C/C	KAVCWhA	M6485	YU	Deep Titanium C/C M	—	—
LA	Medium Royal Blue C/C	LAYEWhA	M6504	YX	Titanium Frost C/C	YUKEWhA	M6401
MA	Lt. Crystal Blue C/C	MAJEWhA	M6328	YY	White	JW7AXXA	M6210
MC	Lt. Smoke M	YHPLXXA	M6597	YZ	White C/C	4WFAWhA	M6466
MD	Clear Crystal Blue Frost C/C	MAKEWhA	M6415	Y4	Black	—	—
ME	Med. Regatta Blue C/C	5BJCWhA	M6263	Y8	White	—	—
MK	Twilight Blue C/C	8B9EWhA	M6290	ZC	Glacier White Solid	ZBFAXXA	M6406
MM	Ultra Blue C/C	METEWhA	M6383	Ⓢ	Aqua Solid	PBNAXXA	M6483

Note: C/C is Clear Coat M is Metallic  
 Ⓢ Paint code not available at time of publication.

CY3052-E

## IDENTIFICATION CODES (Continued)

## BODY TYPE CODES ORDER

F0276  
R0141  
482450  
DSO

2A  
EXTERIOR PAINT COLORS

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
LX4	YB	A	GB	A	2	B	8	TBBB

LINE (SERIES)	CODE	COLOR (COMPONENTS)	SPEC
Taurus (L)	D	Med. Opal (Bumper B.S. Mldg.)	YCWCXXG/YCWCAXG
Taurus (L)	Z	Med. Gray	ZDNCXXG/ZDNCAXG
Taurus (L)	a	Black (Paint Stripes)	JASAXXX
Taurus (L)	b	Med. Blue	NBMAXXX
Taurus (L)	d	Cranberry	ERWAXXX
Taurus (L)	p	Lt. Charcoal	GPUAXXX
Taurus (L)	w	Mauve	GFOAXXX
Taurus (L)	z	Dk. Mocha	DAWAXXX
Taurus (L)	l	Med. Royal Blue (Rocker Pnl. Mldg.)	LAYEWHA
Taurus (L)	3	Silver Met.	ZJMCWHA
Taurus (L)	9	Med. Aubergine	GAYEWHA
Taurus (L)	A	Ebony	UAWAWHA
Taurus (L)	E	Clr. Cry. Blue Frost	MAKEWHA
Taurus (L)	G	Med. Opal	YCWCWHA
Taurus (L)	H	Mocha Frost	DANEWHA
Taurus (L)	N	Med. Cranberry	ERYCWHA
Taurus (L)	T	Med. Seafoam Met.	MDWCWHA
Taurus (L)	W	Oxford White Solid	4WFAXXA
Taurus (LX), Sable (LS)	1	Med. Royal Blue (Bmpr., Rocker, Cladding)	LAYEWHA, ZDNCXXG
Taurus (LX), Sable (LS)	3	Silver Met.	ZJMCWHA, ERWAXXG
Taurus (LX), Sable (LS)	9	Med. Abergine	GAYEWHA, ZDNCXXG
Taurus (LX), Sable (LS)	A	Ebony	UAWAWHA, ZDNCXXG
Taurus (LX), Sable (LS)	E	Clr. Cry. Blue Frt.	MAKEWHA, KATCXXG
Taurus (LX), Sable (LS)	G	Med. Opal	YCECWHA, ZDNCXXG
Taurus (LX), Sable (LS)	H	Mocha Frost	DANEWHA, GFRCXXG
Taurus (LX), Sable (LS)	N	Med. Cranberry	ERYCWHA, YOYAXXG
Taurus (LX), Sable (LS)	T	Med. Seafoam Met.	MDWCWHA, GFQCXXG
Taurus (LX), Sable (LS)	W	Ox. White	4WFAXXA, ERWAXXG
Taurus (LX), Sable (LS)	a	Black (Paint Stripes)	JASAXXX
Taurus (LX), Sable (LS)	b	Med. Blue	NBMAXXX
Taurus (LX), Sable (LS)	d	Cranberry	ERWAXXX
Taurus (LX), Sable (LS)	p	Lt. Charcoal	GPUAXXX
Taurus (LX), Sable (LS)	w	Mauve	GFOAXXX

CY4235-A

## IDENTIFICATION CODES (Continued)

## BODY TYPE CODES ORDER

F0276  
R0141  
482450  
DSO

2A  
EXTERIOR PAINT COLORS

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
LX4	YB	A	GB	A	2	B	8	TBBBB

LINE (SERIES)	CODE	COLOR (COMPONENTS)	SPEC
Taurus (LX), Sable (LS)	z	Dk. Mocha	DAWAXXX
Taurus (GL), Sable (GS)	1	Med. Royal Blue (Bmpr., B.S. Mldg.)	LAYEWH/A/LAYEAXA, ZDNCXXG
Taurus (GL), Sable (GS)	3	Silver Met.	ZJMCWHAZJMCAXA, ERWAXXG
Taurus (GL), Sable (GS)	9	Med. Aubergine	GAYEWH/A/GAYEAXA, ZDNCXXG
Taurus (GL), Sable (GS)	A	Ebony	UAWAWHA/UAWAAXA, ZDNCXXG
Taurus (GL), Sable (GS)	E	Clr. Cry. Blue Frt.	MAKEWHA/MAKEAXA, KATCXXG
Taurus (GL), Sable (GS)	G	Med. Opal	YCECWHA/YCWCAXA, ZDNCXXG
Taurus (GL), Sable (GS)	H	Mocha Frost	DANEWHA/DANEAXA, GFRCXXG
Taurus (GL), Sable (GS)	N	Med. Cranberry	ERYCWHA/ERYCAXA, YOYAXXG
Taurus (GL), Sable (GS)	T	Med. Seafoam Met.	MDWCWHA/MXWCAXA, GFQCXXG
Taurus (GL), Sable (GS)	W	Ox. White	4WFAXXA/4WFAAXA, ERWAXXG
Taurus (GL), Sable (GS)	a	Black (Paint Stripes)	JASAXXX
Taurus (GL), Sable (GS)	b	Med. Blue	NBMAXXX
Taurus (GL), Sable (GS)	d	Cranberry	ERWAXXX
Taurus (GL), Sable (GS)	p	Lt. Charcoal	GPUAXXX
Taurus (GL), Sable (GS)	w	Mauve	GFQAXXX
Taurus (GL), Sable (GS)	z	Dk. Mocha	DAWAXXX
Taurus (GL), Sable (GS)	2	Clr. Cry. Blue Frt. (Rock Pnl. Mldg.)	MAKEWHA
Taurus (GL), Sable (GS)	4	Oxford White Solid	4WFAXXA
Taurus (GL), Sable (GS)	5	Ebony	UAWAWHA
Taurus (GL), Sable (GS)	6	Med. Royal Blue	LAYEWH/A
Taurus (GL), Sable (GS)	7	Med. Aubergine	GAYEWH/A
Taurus (GL), Sable (GS)	8	Med. Opal	YCWCWHA
Taurus (GL), Sable (GS)	B	Silver Met.	ZJMCWHA
Taurus (GL), Sable (GS)	C	Med. Cranberry	ERYCWHA
Taurus (GL), Sable (GS)	D	Med. Seafoam Met.	MDWCWHA
Taurus (GL), Sable (GS)	S	Mocha Frost	DANEWHA
Taurus (SHO)	1	Med. Royal Blue (Bmpr., Rock., Cladding)	LAYEWH/A
Taurus (SHO)	2	Oxford White	4WFAXXA
Taurus (SHO)	3	Silver	ZJMCWHA
Taurus (SHO)	4	Ultra Red	EWAWAWHA
Taurus (SHO)	5	Dp. Jewel Green	PAWEWHA
Taurus (SHO)	6	Ebony C/C	UAWAWHA

CY2874-A

## IDENTIFICATION CODES (Continued)

## TRIM SCHEME

F0276

R0141

482450

DSO

2A  
EXTERIOR PAINT COLORS

BODY

VR

MLDG.

INT. TRIM

A/C

R

S

AX

TR

LX4

YB

A

D GB

A

2

B

8

T BBBB

Code	Trim Scheme Fabric	Seat Type	Code	Trim Scheme Fabric	Seat Type
<b>Taurus</b>			<b>Sable</b>		
C	Cloth	K-Split Bench	S	Cloth	K-Split Bench
B	Vinyl	K-Split Bench	Y	Vinyl	K-Split Bench
D	Leather	K-Split Bench	U	Leather	K-Split Bench
E	Cloth	B-Individual	V	Cloth	B-Individual
F	Leather 1	B-Individual	X	Leather	B-Individual
L	Cloth	B-Individual			
M	Cloth	B-Individual			
N	Cloth	K-Split Bench			
P	Cloth	K-Split Bench			
Q	Cloth	B-Individual			
R	Cloth	B-Individual			
J	Vinyl 12	K-Split Bench			
G	Cloth/Leather	B-Individual			
H	Leather	B-Individual			

CY2639-G

## IDENTIFICATION CODES (Continued)

## TRIM SCHEME COLOR CODE

2A  
EXTERIOR PAINT COLORS

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
LX4	YB	A	GY	A	2	B	8	TBBBB

F0276  
R0141  
482450  
DSO

Code	Trim Color
H	Mocha
I	Cranberry
J	Ebony
T	Light Titanium
Y	Shadow Blue
B	Crystal Blue
A	Titanium
G	Lt/Dk Titanium
P	Light Sandalwood
D	Scarlet Red
E	Gray
F	Currant
6	Med Opal
U	O Wht/Lt Titanium
Q	O Wht/S Blue
L	O Wht/Titanium
Z	Oxford White
N	O Wht/Scarlet
3	Red
4	O Wht/Cranberry
R	Ruby
V	Lapis
M	Aquamarine
X	O Wht/Med Opal
W	O Wht/Evergreen
K	O Wht/Ruby

CY2844-G

## RADIO TYPE CODES

2A  
EXTERIOR PAINT COLORS

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
LX4	YB	A	GB	A	5	B	8	TBBBB

F0276  
R0141  
482450  
DSO

Codes	
5	Radio Premium AM/FM Stereo Compact Disc
6	Radio AM/FM/MPX, Electronic Premium Cassette
7	Radio AM/FM/MPX, Cassette
8	Radio Premium AM/FM, Clock Cassette
9	Radio AM/FM, Clock Cassette Electronic Tune
F	Radio AM/FM Stereo-Electronic
H	Radio AM/FM Stereo/Cassette, Electronic
Y	Radio Delete

CY2218-N

## SUN ROOF/MOON ROOF CODES

2A  
EXTERIOR PAINT COLORS

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
LX4	YB	A	GB	A	2	B	8	TBBBB

F0276  
R0141  
482450  
DSO

Code	Sun Roof/Moon Roof
B	Sliding
C/D	Removable

CY2219-J



## IDENTIFICATION CODES (Continued)

## AXLE RATIO

2A  
EXTERIOR PAINT COLORS

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
LX4	YB	A	GB	A	2	B	8	TBBB

F0276  
R0141  
482450  
DSO

Code	Transaxle Ratio
0	3.07
A	3.79
D	3.23
B	3.45
D	3.85
E	3.41
J	3.62
K	3.74
L	3.55
M	3.64
S	3.98
T	4.10/4.105
P	3.70
2	3.23
3	3.33
4	4.11
6	3.26
7	3.73
8	2.85
9	3.09
C	3.37
R	3.77
H	3.52
Z	3.19

CY4041-B

## TRANSMISSION

2A  
EXTERIOR PAINT COLORS

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
LX4	YB	A	GB	A	2	B	8	TBBB

F0276  
R0141  
482450  
DSO

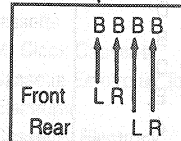
Codes	Manual
A	5-Speed MTX IV
	Automatic
T	AXODE (AX4S)

CY2641-F

## IDENTIFICATION CODES (Continued)

TAURUS/SABLE  
SUSPENSION SPRING CODES  
FRONT L & R, REAR L & RNOTE: SPRING CODES WILL APPEAR DIRECTLY AFTER  
THE TRANSMISSION CODE.F0276  
R0141  
482450  
DSO2A  
EXTERIOR PAINT COLORS

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
LX4	YB	A	GB	A	2	B	8	T BBBB



Coding	Part No.	Catch-Word	Coding	Part No.	Catch-Word
Front Springs "5310" — Left (267), Right (268)			Rear Springs "5560"		
C	E6DC-ACA	CRT	A	E6DC-AA	ARM
D	E6DC-ADA	DAR	B	E6DC-BA	BRM
E	E6DC-ARA	RAF	D	F1DC-DA	ARG
F	E6DC-FA	TRS	E	F1DC-EA	BRN
G	E6DC-GA	SCH	G	E6DC-GA	GRM
H	E6DC-HA	ZZZ	H	F1DC-FA	DUN
J	E6DC-AJA	JIT	J	F1DC-GA	EMT
K	E6DC-AKA	KMO	N	E6DC-ANA	NAD
M	E6DC-ASA	SAF	R	E6DC-ARA	RAL
N	E6DC-ANA	NUZ	T	E6DC-ATA	TAF
T	E6DC-TA	CIA	V	F1DC-AA	VAP
7	E6DC-AGA	GSR	W	F1DC-HA	FLA
8	E6DC-AHA	HEC	X	F1DC-JA	GOV
			Y	F1DC-BA	YOW
			Z	F1DC-CA	ZED
			1	F1DC-KA	HAG
			2	F1DC-LA	JUS
			3	F1DC-MA	KOB
			4	F1DC-NA	LAT
			7	E6DC-HA	HRM
			8	E6DC-JA	JRM

CY2833-F

## IDENTIFICATION CODES (Continued)

## DISTRICT CODES

2A  
EXTERIOR PAINT COLORS

F0276  
R0141  
48 2450  
DSO

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
LX4	YD	A	DD	A	2	B	8	TBBBB

The D.S.O. Space will Show a Two Digit Code Number of the District Sales Office Which Ordered the Unit. This Code will Appear on all Units, Domestic — Special Order — Export — Etc.

Ford Division				L-M Division	
Code	District	Code	District	Code	District
11	Boston Region	52	Dallas Region	36	Northeast Region
13	New York Region	53	Kansas City Region		
16	Philadelphia Region	56	Denver Region	38	Southeast Region
19	North Marketing Area	58	Twin Cities Region		
21	Atlanta Region	59	Central Marketing Area	64	Great Lakes Region
23	Memphis Region	71	Los Angeles Region		
24	Orlando Region	72	San Francisco Region	73	Central Region
27	Washington Region	74	Seattle Region	75	West Region
29	South Marketing Region	79	West Marketing Area	78	Southwest Region
41	Chicago Region	81	Ford Home Office/Mazda	83	Government
44	Pittsburgh Region		Constant Dealer Code	84	Home Office Reserve
47	Cincinnati Region	82	Nissan for 1993	85	American Red Cross
48	Detroit Region			90's	Export
49	Great Lakes Marketing Area	83	Government		
		84	Home Office Reserve		
		85	American Red Cross		
		86	Recreational Vehicle Pool		
		87	Body Company		
		89	Transportation Services		
		90's	Export		

Ford Of Canada							
Code	Mercury Regions	Code	Mercury Regions	Code	Ford Regions	Code	Ford Regions
A1	Central	A6	Western	B1	Central	B6	Western
A2	Eastern	A7	Pacific	B2	Eastern	B7	Pacific
A3	Atlantic	A8	Great Lakes	B3	Atlantic	B8	Great Lakes
A4	Midwestern	I1	Export	B4	Midwestern	11	Export

CY2223-H

## IDENTIFICATION CODES (Continued)

## SPECIAL ORDER

2A  
EXTERIOR PAINT COLORS

BODY	VR	MLDG.	INT. TRIM	TAPE	R	S	AX	TR
LX4	YB	A	GB	A	2	B	8	TB88B

F0276

R0141

48 2450

DSO

IF UNIT IS BUILT ON A D.S.O., F.S.O., P.T.O. (SPECIAL ORDERS), THE COMPLETE ORDER NUMBER IS TO APPEAR AFTER THE DISTRICT CODE.

CY2224-F

Code	Region	Code	Region	Code	Region	Code	Region
01	Northwest Region	02	Northwest Region	03	Northwest Region	04	Northwest Region
05	Northwest Region	06	Northwest Region	07	Northwest Region	08	Northwest Region
09	Northwest Region	10	Northwest Region	11	Northwest Region	12	Northwest Region
13	Northwest Region	14	Northwest Region	15	Northwest Region	16	Northwest Region
17	Northwest Region	18	Northwest Region	19	Northwest Region	20	Northwest Region
21	Northwest Region	22	Northwest Region	23	Northwest Region	24	Northwest Region
25	Northwest Region	26	Northwest Region	27	Northwest Region	28	Northwest Region
29	Northwest Region	30	Northwest Region	31	Northwest Region	32	Northwest Region
33	Northwest Region	34	Northwest Region	35	Northwest Region	36	Northwest Region
37	Northwest Region	38	Northwest Region	39	Northwest Region	40	Northwest Region
41	Northwest Region	42	Northwest Region	43	Northwest Region	44	Northwest Region
45	Northwest Region	46	Northwest Region	47	Northwest Region	48	Northwest Region
49	Northwest Region	50	Northwest Region	51	Northwest Region	52	Northwest Region
53	Northwest Region	54	Northwest Region	55	Northwest Region	56	Northwest Region
57	Northwest Region	58	Northwest Region	59	Northwest Region	60	Northwest Region
61	Northwest Region	62	Northwest Region	63	Northwest Region	64	Northwest Region
65	Northwest Region	66	Northwest Region	67	Northwest Region	68	Northwest Region
69	Northwest Region	70	Northwest Region	71	Northwest Region	72	Northwest Region
73	Northwest Region	74	Northwest Region	75	Northwest Region	76	Northwest Region
77	Northwest Region	78	Northwest Region	79	Northwest Region	80	Northwest Region
81	Northwest Region	82	Northwest Region	83	Northwest Region	84	Northwest Region
85	Northwest Region	86	Northwest Region	87	Northwest Region	88	Northwest Region
89	Northwest Region	90	Northwest Region	91	Northwest Region	92	Northwest Region
93	Northwest Region	94	Northwest Region	95	Northwest Region	96	Northwest Region
97	Northwest Region	98	Northwest Region	99	Northwest Region	00	Northwest Region

## IDENTIFICATION CODES (Continued)

Vehicle	Engine	Transmission								Axle				
		Manual		Automatic						Integral (7.5)	Traction-Lok (7.5)	Integral (8.8)	Traction-Lok (8.8)	Transaxle
		T5OD	MTX	M5R2	AOD	AODE	AODEW	AXODE (AX4S)	A4LD	4EAT	FLC			
Festiva	1.3L OHC MFI		•								•			•
Capri	1.6L DOHC MFI		•							•				•
	1.6L DOHC MFI-TC		•							•				•
Escort/Tracer	1.8L DOHC MFI		•							•				•
	1.9L OHC SFI		•							•				•
Probe	2.0L DOHC MFI		•							•				•
	2.5L DOHC MFI		•							•				•
Tempo/Topaz	2.3L HSC SFI		•								•			•
	3.0L OHV SFI		•								•			•
Taurus/Sable	3.0L OHV SFI							•						•
	3.0L DOHC SFI		•											•
	3.0L SFI-FFV							•						•
	3.2L DOHC SFI							•						•
	3.8L SFI							•						•
Mustang	2.3L OHC MFI	•							•					
	5.0L SFI HO	•			•								•	
Thunderbird/Cougar	3.8L SFI				•						•	•		
	3.8L SFI SC①			•	•						•	•	•	
	5.0L MFI HO				•							•	•	
Mark VIII	4.6L 4V SFI						•						•	
Continental	3.8L SFI							•						•
Town Car Crown Victoria/Grand Marquis	4.6L 2V SFI					•						•	•	

① Thunderbird Only

CY2882-F



# SECTION 00-02 Lifting, Jacking, Spare Tire Stowage and Emergency Towing

SUBJECT	PAGE	SUBJECT	PAGE
<b>HOISTING AND JACKING</b>		<b>TOWING</b>	
Hoist, Drive-On .....	00-02-1	Flatbed Towing.....	00-02-3
Hoist, Frame Contact.....	00-02-2	Front—T-Hook Procedure .....	00-02-3
Hoisting Instructions.....	00-02-1	Preparatory Steps .....	00-02-2
Jack, Floor .....	00-02-1	Rear—T-Hook Procedure .....	00-02-4
<b>TIRE STOWAGE</b>		Towing Slings .....	00-02-2
Spare Tire.....	00-02-4	Towing Speeds.....	00-02-2
		<b>VEHICLE APPLICATION</b> .....	00-02-1

## VEHICLE APPLICATION

Taurus / Sable and Taurus SHO.

## HOISTING AND JACKING

### Jack, Floor

**CAUTION:** The service jack provided with the vehicle is only intended to be used in an emergency for changing a deflated tire. Never use the service jack to hoist the vehicle for any other service. Refer to the Owner Guide when using the jack supplied with the vehicle.

When using a floor jack, raise the front of the vehicle by positioning a floor jack under either the subframe or body side rail behind the engine support bracket. The rear may be lifted by positioning a floor jack under either rear suspension body bracket.

**CAUTION:** Under no circumstances should the vehicle ever be lifted by the front or rear control arms, halfshafts or CV joints. Severe damage to the vehicle could result.

### Hoisting Instructions

For hoisting and lifting locations, refer to the illustration in Hoist, Frame Contact.

**CAUTION:** Do not allow the adapters to contact the CV joints steering linkage, suspension arms, stabilizer bar, or compress the stabilizer bar link insulators. Damage to suspension, exhaust and/or steering linkage components may occur if care is not exercised when positioning the hoist adapters of two-post hoists prior to lifting the vehicle.

If a two-post hoist is used to lift a front-wheel drive vehicle, place adapters under front body rail, behind the suspension arm-to-body bracket.

### Hoist, Drive-On

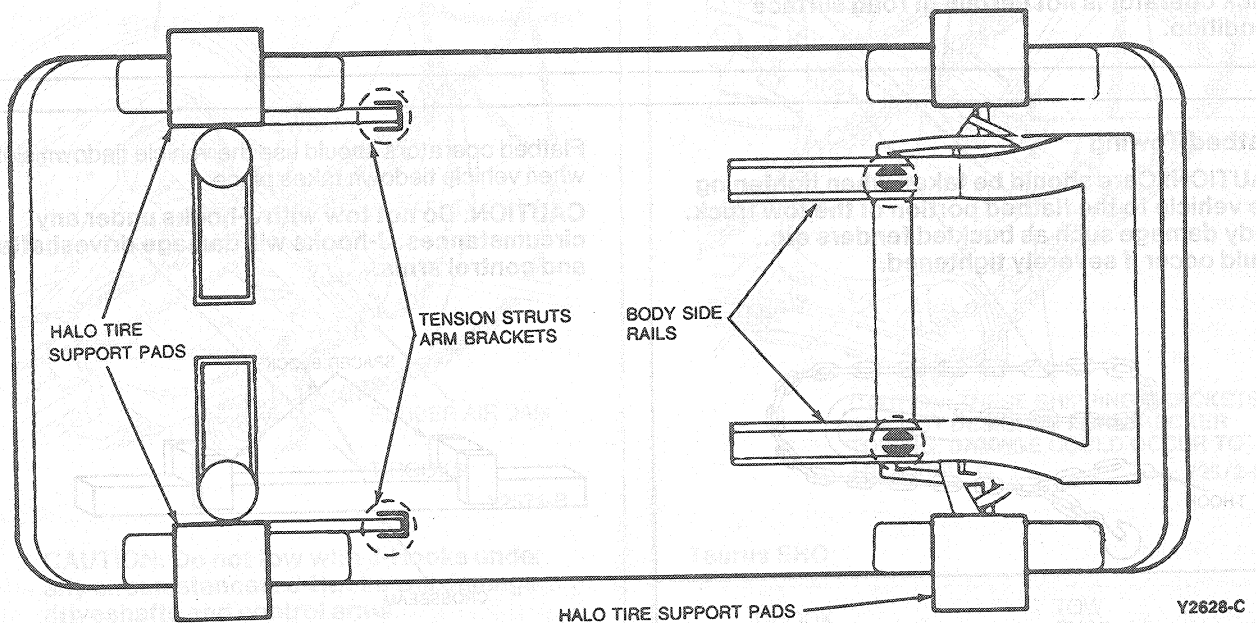
To prevent possible damage to the underbody, do not drive the vehicle onto the drive-on hoist without first checking for possible interference between the upright flanges of the hoist rails and the underbody. Should there be interference, the hoist flanges should be modified as necessary and/or the approach ramps built up to provide the necessary clearance.

## HOISTING AND JACKING (Continued)

### Hoist, Frame Contact

**CAUTION:** All four contact points must contact the adapters.

On frame contact hoists, adapters are necessary to lift the vehicle. The adapters must be placed at four contact points. Position the adapters so they are centered on the adapter contact area.



**NOTE:** Ensure lifting pad clears catalytic converter bracket on passenger side.

On front-wheel drive vehicles, the rear contact points are forward of the tie rod body brackets.

Exercise care when hoisting vehicles equipped with catalytic converter(s). On vehicles so equipped, ensure necessary clearance between hoist and exhaust system components before energizing hoist.

On front-wheel drive vehicles, do not allow the adapters to contact the rear tie rod.

Do not use the vehicle's steering column lock, to lock the wheels in a straight-ahead position when pulled from the rear. If the ignition key is not available, place a dolly underneath the driving wheels of the vehicle and tow with the non-driving wheels raised.

### Towing Slings

**CAUTION:** Hooks, chains, slings or other towing attachments must not be connected to or touch the front suspension tension strut. Suspension damage may occur.

To avoid possible damage to bumper systems or lower body panels, a wide-belt sling should be used to lift and tow all vehicles. When attaching towing slings, take care to avoid damage to license plate and frame, fog lamps and air dam.

The suggested towing hookups are illustrated.

## TOWING

### Preparatory Steps

Release the parking brake, and place transaxle in NEUTRAL. As a general rule, vehicles should be towed with the driving wheels off the ground. If the vehicle is to be towed on its drive wheels, the transaxle and differential must be operable. If not, place the wheels on a dolly.

When a vehicle is towed on its front wheels, the steering wheel must be clamped in the straight-ahead position with a steering wheel clamping device designed for towing service use, such as those provided by towing system manufacturers.

### Towing Speeds

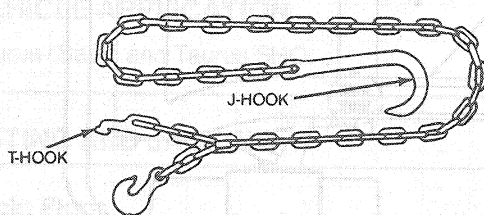
When it is necessary to tow the vehicle with the driving wheels on the ground, do not exceed 56 km/h (35 mph) and / or a distance of 80 km (50 miles) or transaxle damage can result (automatic transaxle).

## TOWING (Continued)

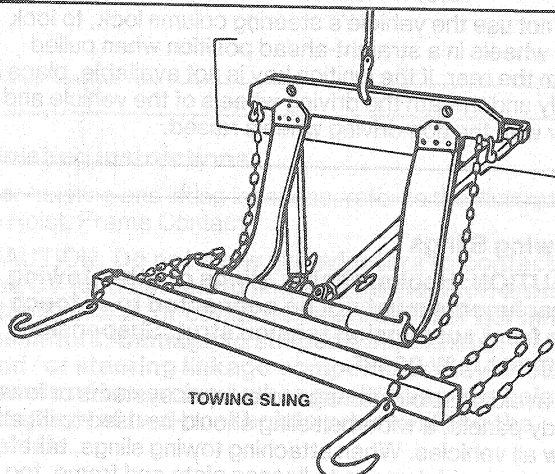
Towing speed is to be limited to 80 km/h (50 mph) with the driving wheels off the ground. On rough pavement, the maximum towing speed is 56 km/h (35 mph). Maximum towing speed of 56 km/h (35 mph) should be used whenever the tow truck operator is not certain of road surface condition.

## Flatbed Towing

**CAUTION:** Care should be taken when tightening the vehicle to the flatbed portion of the tow truck. Body damage such as buckled fenders etc., could occur if severely tightened.



WOOD CROSSBEAM



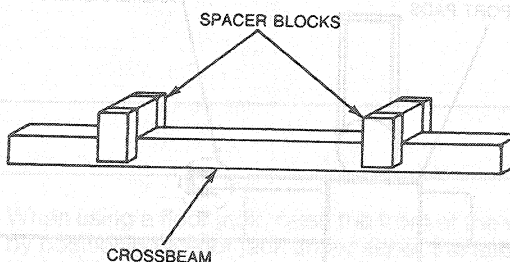
TOWING SLING

MATERIAL CROSSBEAM

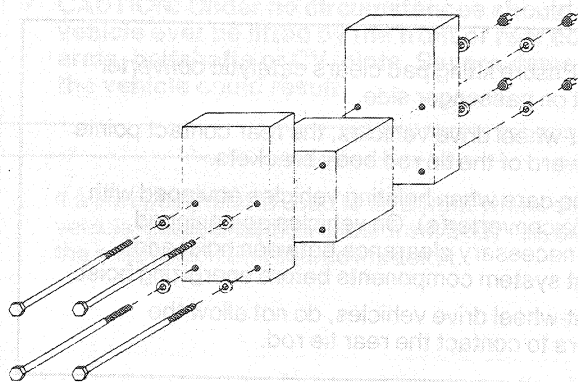
- 1 — 4 X 4 INCHES X 4 FT
- 1 — 4 X 4 INCHES X 5 FT
- 2 X 4 LUMBER ACTUALLY MEASURES 1-1/2 INCHES X 3-1/2 INCHES
- 4 X 4 LUMBER ACTUALLY MEASURES 3-1/2 INCHES X 3-1/2 INCHES

Flatbed operators should use the vehicle tiedown slots when vehicle tiedown takes place.

**CAUTION:** Do not tow with J-hooks under any circumstances. J-hooks will damage drivshafts and control arms.



CROSSBEAM



SPACER BLOCKS

MATERIAL:

4- 2 x 4 x 6" LONG

2- 4 x 4 x 3-1/2" LONG

8- 1/4" x 7" CARRIAGE BOLT

16- 1/4" WASHER

Y2319-F

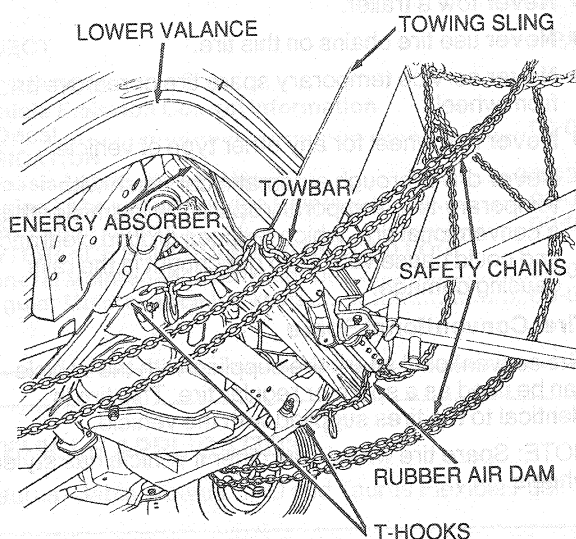
## Front—T-Hook Procedure

**CAUTION:** Use care not to damage fog lamps on vehicles if equipped. It is recommended that wheel lifts or flatbed equipment be used to avoid fog lamp damage.

1. Insert T-hooks in T-hook slots located on bottom of frame rail forward of front wheels.
2. Position a 4-foot 4 X 4 under radiator support, just behind rubber air dam.
3. Position towbar behind lower valance panel but forward of air conditioner condenser brackets.

## TOWING (Continued)

4. Attach safety chains around lower control arms.



Y2571-B

**CAUTION:** Do not tow with J-Hooks under any circumstances. J-Hooks will damage driveshafts and control arms.

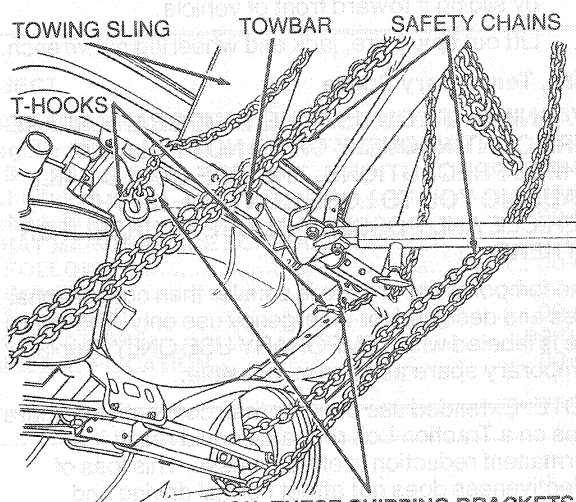
**CAUTION:** Placing towing chains on the transverse suspension arms will result in vehicle damage.

## Rear — T-Hook Procedure

**CAUTION:** It is recommended that these vehicles be towed from the front unless conditions do not allow it.

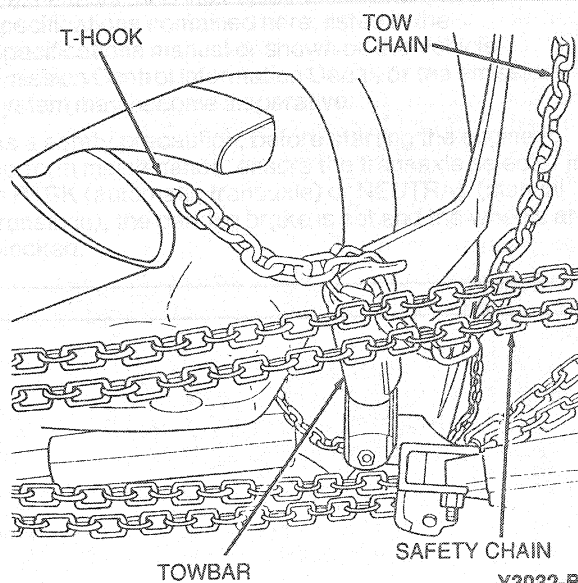
1. Insert T-hooks in T-hook slots on inner part of frame rail, behind rear tires.
2. Position towbar underneath bumper.
3. Attach safety chains around lower rear control arms.

## Taurus/Sable



**CAUTION:** THESE SHIPPING BRACKETS ARE NOT DESIGNED FOR WRECKER TOWING. DAMAGE COULD OCCUR TO THE VEHICLE. Y2572-C

## Taurus SHO



Y3032-B

## TIRE STOWAGE

## Spare Tire

**NOTE:** Spare tire is located in luggage compartment, except station wagon which is located in left rear trim panel for temporary spare tire and located in back of wagon for conventional spare tire.

1. Twist two fasteners 90 degrees into vertical position.
2. Lift handle at bottom of cover to disengage retainers.



## TIRE STOWAGE (Continued)

3. Pull front of cover out slightly and remove cover by sliding it toward front of vehicle.
4. Lift out spare tire, jack and wheel lug nut wrench.

**Tire, Temporary Spare**

**WARNING: IF YOU USE THE TEMPORARY SPARE TIRE CONTINUOUSLY OR DO NOT FOLLOW THESE PRECAUTIONS, THE TIRE COULD FAIL, CAUSING YOU TO LOSE CONTROL OF THE VEHICLE AND POSSIBLY INJURE YOURSELF OR OTHERS.**

The temporary spare tire is smaller than conventional tires and designed for emergency use only. The spare tire is labeled with TEMPORARY USE ONLY. Replace temporary spare as soon as possible.

**NOTE:** Extended use of other than conventional spare tires on a Traction-Lok rear axle could result in a permanent reduction in effectiveness. This loss of effectiveness does not affect normal driving and should not be noticeable to the driver.

When using a temporary spare tire, observe the following precautions:

- **Never** drive faster than 80 km/h (50 mph) under any circumstances.

- **Never** exceed the maximum vehicle load rating listed on tire decal.
- **Never** tow a trailer.
- **Never** use tire chains on this tire.
- **Never** service temporary spare tire or remove it from wheel.
- **Never** use wheel for any other type of vehicle.
- **Never** drive through automatic car wash with temporary tire. Temporary spare tire is smaller than a conventional tire, which reduces ground clearance and could cause vehicle to get caught in the rails causing damage.

**Tire, Conventional Spare**

The conventional spare tire supplied with the vehicle can be used as a spare or regular tire. This tire is identical to the tires supplied with the vehicle.

**NOTE:** Spare tire wheel may differ if vehicle has styled wheels.

(Continued)

CAUTION: Do not tow with 3-hoof under

CAUTION: Do not tow with 3-hoof under

CAUTION: Do not tow with 3-hoof under

CAUTION: Do not tow with 3-hoof under

CAUTION: Do not tow with 3-hoof under

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CAUTION: Do not tow with 3-hoof under



# SECTION 00-03 Maintenance and Lubrication

SUBJECT	PAGE	SUBJECT	PAGE
<b>DESCRIPTION</b>		<b>MAINTENANCE SCHEDULE AND RECORD LOG (Cont'd.)</b>	
Vehicle Emission Control Information		Regular Maintenance Intervals For Schedule	
Decal .....	00-03-1	B .....	00-03-5
<b>LUBRICATION</b>		Schedule A .....	00-03-3
Chassis Lubrication Points .....	00-03-11	Schedule B .....	00-03-5
Engine Lubrication Service Points .....	00-03-7	<b>WHAT MAINTENANCE SCHEDULE DO YOU</b>	
Lubrication Charts .....	00-03-6	<b>FOLLOW?</b> .....	00-03-2
<b>MAINTENANCE SCHEDULE AND RECORD LOG</b>		Schedule A .....	00-03-2
General Maintenance Information .....	00-03-2	Schedule B .....	00-03-3
Regular Maintenance Intervals .....	00-03-3	<b>SPECIFICATIONS</b> .....	00-03-11
		<b>VEHICLE APPLICATION</b> .....	00-03-1

## VEHICLE APPLICATION

Taurus / Sable, Taurus SHO and Taurus Flexible Fuel.

## DESCRIPTION

The Emission Systems Required Maintenance Schedule lists the items required to maintain the vehicle emission systems at levels determined by the Federal Government (Environmental Protection Agency). Also printed is an index to a number of Maintenance Procedures, each of which is related to an item listed on the maintenance schedule. Use these procedures to perform the required emission system maintenance items listed on the maintenance schedules.

Maintenance service adjustments must conform to specifications contained here, listed in the Specifications manual or shown on the Vehicle Emission Control Information Decal, or the emissions system may become inoperative.

As a safety precaution, before starting the engine to perform maintenance, ensure the transaxle selector is in PARK (automatic transaxle) or NEUTRAL (manual transaxle), the parking brake is set and the wheels are blocked.

## Vehicle Emission Control Information Decal

Vacuum hoses on the engine use a color stripe to aid in hose routing checks. The stripe will usually be the same color as on the Vehicle Emission Control Information (VECI) decal, but the correct vacuum hose routing must be verified by using the correct component connections shown on the VECI decal.

**DESCRIPTION (Continued)**

### Typical VECI Decal

	<b>FORD MOTOR COMPANY</b>	
VEHICLE EMISSION      CONTRÔLE DES ÉMISSIONS CONTROL INFORMATION      DU VÉHICULE		

CATALYST CATALYSER

---

THIS VEHICLE IS EQUIPPED WITH ELECTRONIC ENGINE CONTROLS. IDLE MIXTURE, COOLD ENIGNE ILE SPEED, COLD ENGINE FUEL ENRICHMENT AND IGNITION TIMING ARE NOT ADJUSTABLE.

SET PARKING BRAKE AND BLOC K WHEELS. DISCONNECT AUTOMATIC PARKING BRAKE RELEASE. IF SO EQUIPPED, WHEN ENGAGING LOW SPEEDS.

THIS ENGINE IS EQUIPPED WITH AUTOMATIC IDLE SPEED CONTROL. IDLE RPM IS NOT ADJUSTABLE. IT MUST WITHIN SPECIFIED RPM RANGE, WITH ACCESSORIES ON AND COOLING FAI OFF. SEE SHOP MANUAL.

MANUAL TRANS IN NEUTRAL: 700-650 RPM  
AUTO TRAN IN DRIVE: 850-650 RPM

USE SAE 5W-30 OIL - API SERVICE 8C - ENERGY CONSERVING II.

CE VÉHICULE EST ÉQUIPÉ DE COMMANDES ÉLECTRONIQUES. LE MÉLANGE DE RALENTI, LE RÉGIME DE RALENTI MOTEUR FROID, LE DISPOSITIF D'ENRIICHISSEMENT À FROID ET LE CASUE DE L'AALLUMAGE SE SONT PAS RÉGLABLES.

SERRER LE FREIN DE STATIONNEMENT, BLOQUER LES ROUES. LORS DU CONTRÔLE DES RÉGIMES DE RALENTI, DÉBRANCHER, SI IL Y A UN CLY LE DESCARRAGE AUTOMAT. QU FREIN DE STATIONNEMENT.

CE MOTEUR EST Á COMMANDE DE RALENTI AUTOMATIQUE. LE RÉGIME DE RALENTI N'EST PAS RÉGLABLE. SI, ACCESSOIRES ET VENTILATEUR DE REFRIDDISSEMENT HORS CIRCUIT, LE RALENTI N'EST PAS DANS LES LIMITES PRÉSCRITES, CONSULTER LE MANUEL DE RÉPARATION .

R.V.A. AU POINT MORT : 700-650 TR/MIN  
D.V.A. EN POSITION "D": 850-650 TR/MIN

HUILE PRÉCONISEE : SAE 5W-30, CLASSE API « 8C » - « ECONOMIE D'ÉNERGIE II »

A14934-A

## MAINTENANCE SCHEDULE AND RECORD LOG

## General Maintenance Information

The required Scheduled Maintenance Services listed in this chapter are considered essential to the proper operation, safety and performance of your FORD MOTOR COMPANY vehicle. We recommend that you also perform the Owner Maintenance Checks listed. These services are matters of day-to-day care that are also important to the proper operation of your vehicle. The recommended lubricants, fluids and service parts conforming to Ford Specifications are available from your dealer.

## Maintenance: an investment

**An investment which will pay dividends in the form of improved reliability, durability, and resale value.**

**TO ASSURE THE DURABILITY OF YOUR VEHICLE AND ITS EMISSION CONTROL SYSTEMS IT IS NECESSARY THAT SCHEDULED MAINTENANCE BE PERFORMED AT THE DESIGNATED INTERVALS.**

FORD RECOMMENDS THE USE OF GENUINE FORD REPLACEMENT PARTS. YOU MAY, HOWEVER, ELECT TO HAVE MAINTENANCE, REPLACEMENT, OR REPAIR OF THE EMISSIONS CONTROL DEVICES AND SYSTEMS (THE COST OF WHICH IS NOT COVERED BY WARRANTY) PERFORMED BY ANY AUTOMOTIVE REPAIR ESTABLISHMENT OR INDIVIDUAL AND MAY ELECT TO USE OTHER THAN FORD SERVICE PARTS FOR SUCH MAINTENANCE OR REPAIR. IF OTHER THAN FORD OR MOTORCRAFT PARTS OR FORD AUTHORIZED, REMANUFACTURED PARTS ARE USED FOR MAINTENANCE REPLACEMENTS OR FOR THE SERVICE OF COMPONENTS AFFECTING EMISSIONS CONTROL, THE OWNER SHOULD ASSURE HIMSELF THAT SUCH PARTS ARE WARRANTED BY THEIR MANUFACTURER TO BE EQUIVALENT TO GENUINE FORD MOTOR COMPANY PARTS IN PERFORMANCE AND DURABILITY. PLEASE CONSULT YOUR WARRANTY BOOKLET FOR COMPLETE WARRANTY INFORMATION.

## WHAT MAINTENANCE SCHEDULE DO YOU FOLLOW?

**SCHEDULES ARE BASED ON HOW YOU DRIVE YOUR VEHICLE.**

## Schedule A

**Follow Maintenance Schedule A if your driving habits MAINLY include one or more of the following conditions:**

- Short trips of **less than 10 miles (16 km)** when outside temperatures remain below freezing.
- Operating during **hot weather** in stop-and-go “rush hour” traffic.
- Towing a trailer or using a car-top carrier.

## MAINTENANCE SCHEDULE AND RECORD LOG (Continued)

- Operating in severe dust conditions.
- Extensive idling, such as police, taxi or door-to-door delivery service.

### Schedule B

Follow Maintenance Schedule B if, generally, you drive your vehicle on a daily basis for more than 10 miles (16 km) and NONE OF THE CONDITIONS NOTED ABOVE APPLY TO YOUR DRIVING HABITS.

### Schedule A

**SERVICE INTERVALS — PERFORM AT THE DISTANCES OR MONTHS SHOWN, WHICHEVER OCCURS FIRST.**

NOTE: Items for Emission Control Service are shown in this type and style.

FOR ITEMS MARKED WITH A NUMBER IN PARENTHESES SUCH AS (1), SEE FOOTNOTE AT THE END OF THIS SECTION.

NOTE: Schedule A provides maintenance intervals for replacing your air cleaner filter if you drive in severe dust conditions. However, the conditions you drive in may require even more frequent air cleaner replacement intervals than those shown. Check with your Dealer.

#### EVERY 3 MONTHS/3,000 MILES

- Oil and oil filter changes are for ALL engines (3.8L, 3.0L, 3.0L FF, 3.0L SHO and 3.2L SHO).

#### ONCE A YEAR

- Check engine coolant protection, hoses and clamps.

#### EVERY 36 MONTHS

- Replace engine coolant.

**CAUTION: Engine oil, spark plugs and fuel filters for the flexible fuel vehicle (FF) are unique and not to be substituted with gasoline engine components.**

NOTE: Replace FF fuel filters as required.

NOTE: Kilometers intervals are rounded off.

### Regular Maintenance Intervals

#### 3,000 MILES (5 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

#### 6,000 MILES (9 500 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Rotate tires.

#### 9,000 MILES (14 500 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

#### 12,000 MILES (19 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

#### 15,000 MILES (24 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

#### 18,000 MILES (29 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

#### 21,000 MILES (34 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Rotate tires.

#### 24,000 MILES (39 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Check battery fluid level (SHO only) every 24 months.

#### 27,000 MILES (43 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

#### 30,000 MILES (48 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Replace engine coolant every 30,000 miles (48 000 km) or 36 months.
- Replace spark plugs 3.8L V-6, 3.0L FF (except 3.8L California).
- Replace air cleaner filter—(all engines). (1)
- Inspect exhaust heat shields.
- Change automatic transaxle fluid. (2)
- Inspect disc brake pads and rotors (front)—(4-wheel disc, if equipped). (3)
- Inspect brake linings and drums (rear). (3) (4)

#### 33,000 MILES (53 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

#### 36,000 MILES (58 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Rotate tires.

#### 39,000 MILES (63 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.



# **MAINTENANCE SCHEDULE AND RECORD LOG** (Continued)

## **42,000 MILES (67 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **45,000 MILES (72 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **48,000 MILES (77 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Check battery fluid level (SHO) every 24 months.

## **51,000 MILES (82 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Rotate tires.

## **54,000 MILES (87 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **57,000 MILES (92 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **60,000 MILES (96 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Replace engine coolant every 30,000 miles (48 000 km) or 36 months.
- Replace PCV valve—all engines.
- Replace spark plugs—3.8L; 3.0L, 3.0L FF; (3.0L/3.2L SHO platinum plugs).
- Inspect accessory drive belt(s).
- Replace air cleaner filter—3.8L, 3.0L, 3.0L FF, 3.0L SHO/3.2L SHO. (1)
- Replace cam belt and adjust valve lash (3.0L/3.2L SHO only).
- Inspect exhaust heat shields.
- Change automatic transaxle fluid. (2)
- Inspect disc brake pads and rotors (front) (4-wheel disc if equipped). (3)
- Inspect brake linings and drums (rear). (3) (4)

## **63,000 MILES (101 300 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **66,000 MILES (106 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Rotate tires.

## **69,000 MILES (111 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **72,000 MILES (116 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **75,000 MILES (121 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **78,000 MILES (125 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **81,000 MILES (130 300 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Rotate tires.

## **84,000 MILES (135 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **87,000 MILES (140 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **90,000 MILES (145 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 36 months.
- Replace engine coolant every 30,000 miles (48 000 km) or 36 months.
- Replace spark plugs 3.8L V-6, 3.0L FFV (except 3.8L California).
- Inspect accessory drive belt(s).
- Replace air cleaner filter all engines. (1)
- Inspect exhaust heat shields.
- Change automatic transaxle fluid. (2)
- Inspect disc brake pads and rotors (front)—(4-wheel disc, if equipped). (3)
- Inspect brake linings and drums (rear). (3) (4)

## **93,000 MILES (150 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **96,000 MILES (154 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Rotate tires.

## **99,000 MILES (159 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## **102,000 MILES (164 000 Kilometers)**

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

## MAINTENANCE SCHEDULE AND RECORD LOG (Continued)

### 105,000 MILES (169 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

### 108,000 MILES (174 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Check battery fluid level (SHO) every 24 months.

### 111,000 MILES (179 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Rotate tires.

### 114,000 MILES (183 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

### 117,000 MILES (188 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.

### 120,000 MILES (193 000 Kilometers)

- Change engine oil and oil filter every 3,000 miles (5 000 km) or 3 months.
- Replace engine coolant every 30,000 miles (48 000 km) or 36 months.
- Replace PCV valve all engines.
- Replace spark plugs—3.8L; 3.0L, 3.0L FFV; (3.0L / 3.2L SHO platinum plugs).
- Inspect accessory drive belts(s).
- Replace air cleaner filter—3.8L, 3.0L, 3.0L FFV, 3.0L SHO / 3.2L SHO.
- Replace cam belt and adjust valve lash (3.0L / 3.2L SHO only).
- Inspect exhaust heat shields.
- Change automatic transaxle fluid. (2)
- Inspect disc brake pads and rotors (front) (4-wheel disc if equipped). (3)
- Inspect brake linings and drums (rear). (3) (4)

(1) If operating in severe dust, more frequent intervals may be required. Consult your dealer.

(2) Change automatic transaxle fluid if your driving habits frequently include one or more of the following conditions:

- Operation during hot weather (above 90°F, 32°C), carrying heavy loads and in hilly terrain.
- Towing a trailer or using a car-top carrier.
- Police, taxi or door-to-door delivery service.

(3) If your driving includes continuous stop-and-go driving or driving in mountainous areas, more frequent intervals may be required.

(4) Rear disc brake pads and rotors—SHO Taurus.

### Schedule B

**SERVICE INTERVALS — PERFORM AT THE MONTHS OR DISTANCES SHOWN, WHICHEVER OCCURS FIRST.**

NOTE: Items for Emission Control Service are shown in this type style.

FOR ITEMS MARKED WITH NUMBER IN PARENTHESES SUCH AS (1), SEE FOOTNOTE AT THE END OF THIS SECTION.

#### EVERY 3 MONTHS / 3,000 MILES

- Oil and oil filter changes are for all engines (3.8L, 3.0L, 3.0L FF, 3.0L SHO and 3.2L SHO).

#### ONCE A YEAR

- Check engine coolant protection, hoses and clamps.

#### EVERY 36 MONTHS

- Replace engine coolant.

**CAUTION:** Engine oil, spark plugs and fuel filters for the flex fuel vehicle (FF) are unique and are not to be substituted with gasoline engine components.

NOTE: Replace FF fuel filters as required.

NOTE: Kilometer intervals are rounded off.

### Regular Maintenance Intervals For Schedule B

#### 7,500 MILES (12 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.

- Rotate tires.

#### 15,000 MILES (24 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.

#### 22,500 MILES (36 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.

- Check battery fluid level (SHO only) every 24,000 miles or (3).

- Rotate tires.

#### 30,000 MILES (48 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.

- Replace engine coolant every 30,000 miles (48 000 km) or 36 months.

- Replace spark plugs—3.8L V-6, 3.0L FF vehicles (except 3.8L California).

- Replace air cleaner filter—(all engines). (1)

- Inspect disc brake pads and rotors (front) (all four, if equipped). (2)

## MAINTENANCE SCHEDULE AND RECORD LOG (Continued)

- Inspect exhaust heat shields.
- Inspect brake linings and drums (rear). (2) (4)
- Inspect and repack rear wheel bearings.

### 37,500 MILES (60 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.
- Rotate tires.

### 45,000 MILES (72 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.

### 52,500 MILES (84 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.
- Check battery fluid level (SHO only) every 24,000 miles or (3).
- Rotate tires.

### 60,000 MILES (96 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.
- Replace engine coolant every 30,000 miles (48 000 km) or 36 months.
- Replace spark plugs—3.8L V-6; 3.0L V-6, 3.0L FF; 3.0L and 3.2L SHO (platinum plugs).
- Inspect accessory drive belt(s).
- Replace air cleaner filter (all engines). (1)
- Replace cam belt and adjust valve lash (3.0L / 3.2L SHO only).
- Replace PCV valve—all engines.
- Inspect exhaust heat shields.
- Inspect disc brake pads and rotors (all four, if equipped). (2)
- Inspect brake linings and drums (rear). (2) (4)

### 67,500 MILES (109 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.
- Rotate tires.

### 75,000 MILES (121 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.

### 82,500 MILES (133 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.
- Rotate tires.

### 90,000 MILES (145 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.
- Replace engine coolant every 30,000 miles (48 000 km) or 36 months.

- Replace spark plugs—3.8L V-6, 3.0L FF (except 3.8L California).

- Inspect accessory drive belt(s).

- Replace air cleaner filter—all engines. (1)

### 97,500 MILES (157 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.
- Rotate tires.

### 105,000 MILES (169 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.

### 112,500 MILES (181 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.
- Rotate tires.

### 120,000 MILES (193 000 Kilometers)

- Change engine oil and oil filter every 7,500 miles (12 000 km) or 6 months.
  - Replace engine coolant every 30,000 miles (48 000 km) or 36 months.
  - Replace spark plugs—3.8L V-6; 3.0L V-6 3.0L FF 3.0L and 3.2L SHO (platinum plugs).
  - Change automatic transaxle fluid. (3)
  - Inspect accessory drive belt(s).
  - Replace air cleaner filter (all engines). (1)
  - Replace cam belt and adjust valve lash (3.0L / 3.2L SHO only).
  - Replace PCV valve (all engines).
  - Inspect exhaust heat shields.
  - Inspect disc brake pads and rotors (all four, if equipped). (2)
  - Inspect brake linings and drums (rear). (2) (4)
- (1) If operating in severe dust, more frequent intervals may be required. Consult your dealer.
  - (2) If your driving includes continuous stop-and-go driving or driving in mountainous / hilly areas, more frequent intervals may be required.
  - (3) If operating in temperatures above 90°F (32°C), check more often.
  - (4) Rear disc brake pads and rotors—SHO Taurus.

## LUBRICATION

### Lubrication Charts

The illustrations show typical chassis and engine lubrication points. Vehicles with optional or special equipment may have slightly different or additional lubrication points.

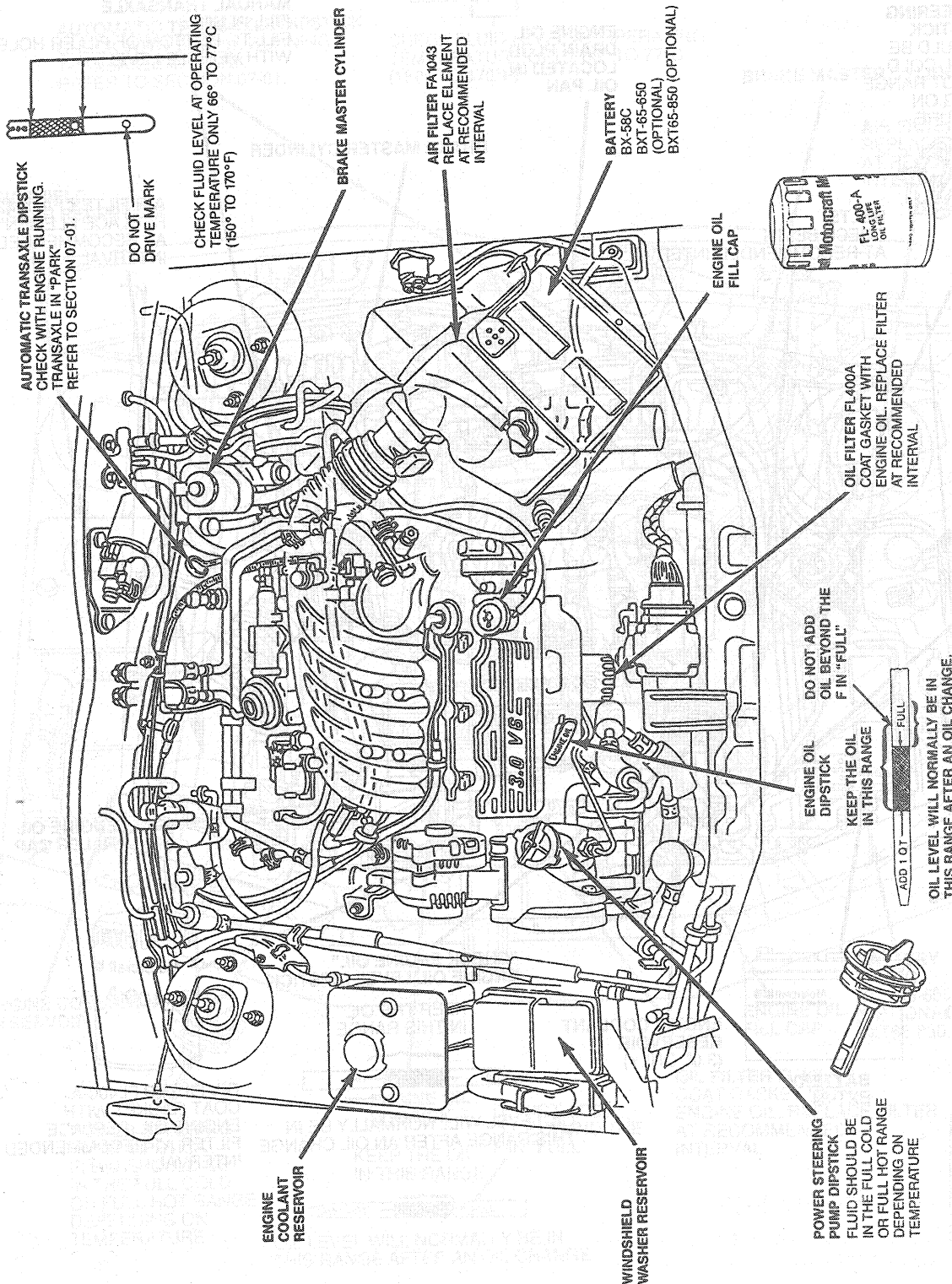
A table of recommended lubricants is included at the end of this Section.



## LUBRICATION (Continued)

## Engine Lubrication Service Points

## 3.0L Base Engine



Y3964-C

## LUBRICATION (Continued)

## 3.0L/3.2L SHO Engines

**POWER STEERING  
PUMP DIPSTICK**  
FLUID SHOULD BE  
IN THE FULL COLD  
OR FULL HOT RANGE  
DEPENDING ON  
TEMPERATURE

**ENGINE OIL  
DRAIN PLUG**  
LOCATED IN  
OIL PAN

**MANUAL TRANSAXLE  
FILL PLUG**  
FILL TO BOTTOM OF FILLER HOLE  
WITH VEHICLE LEVEL

**BELTS**  
CHECK BELTS  
AT RECOMMENDED INTERVAL

**BRAKE MASTER CYLINDER**

**AIR FILTER FA-1042**  
REPLACE ELEMENT  
AT RECOMMENDED  
INTERVAL

**ENGINE  
COOLANT  
RESERVOIR**  
(3.2L ONLY)

**RADIATOR  
CAP**

**ENGINE OIL  
FILLER CAP**

**WINDSHIELD  
WASHER  
RESERVOIR**

**BATTERY**  
BXT-34

**ENGINE COOLANT  
RESERVOIR**  
(3.0L ONLY)

**"CHECK ENGINE OIL"  
ENGINE OIL LEVEL DIPSTICK**

KEEP THE OIL  
IN THIS RANGE

OIL LEVEL WILL NORMALLY BE IN  
THIS RANGE AFTER AN OIL CHANGE

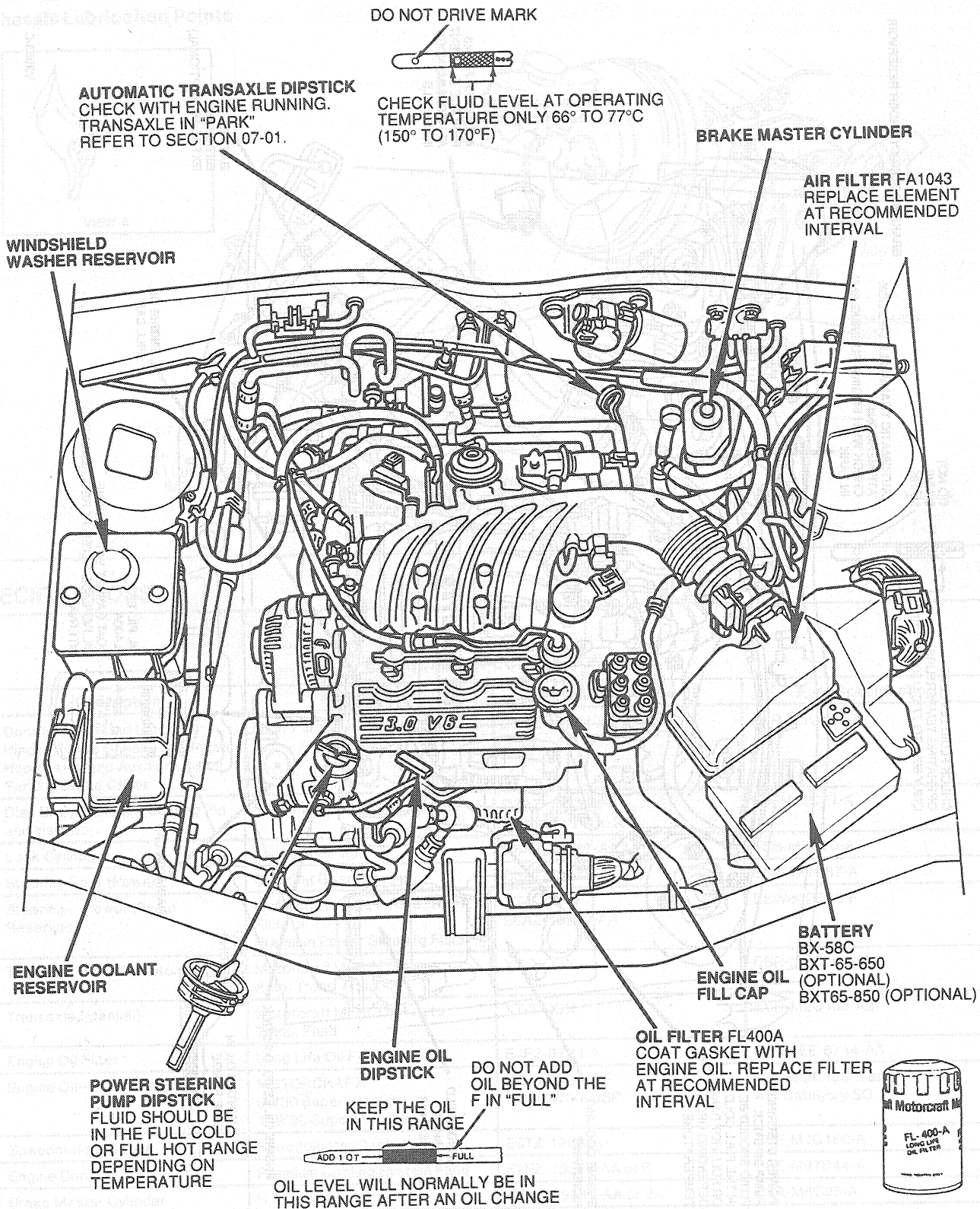


**OIL FILTER FL400-A**  
COAT GASKET WITH  
ENGINE OIL. REPLACE  
FILTER AT RECOMMENDED  
INTERVAL.

Y4243-A

## LUBRICATION (Continued)

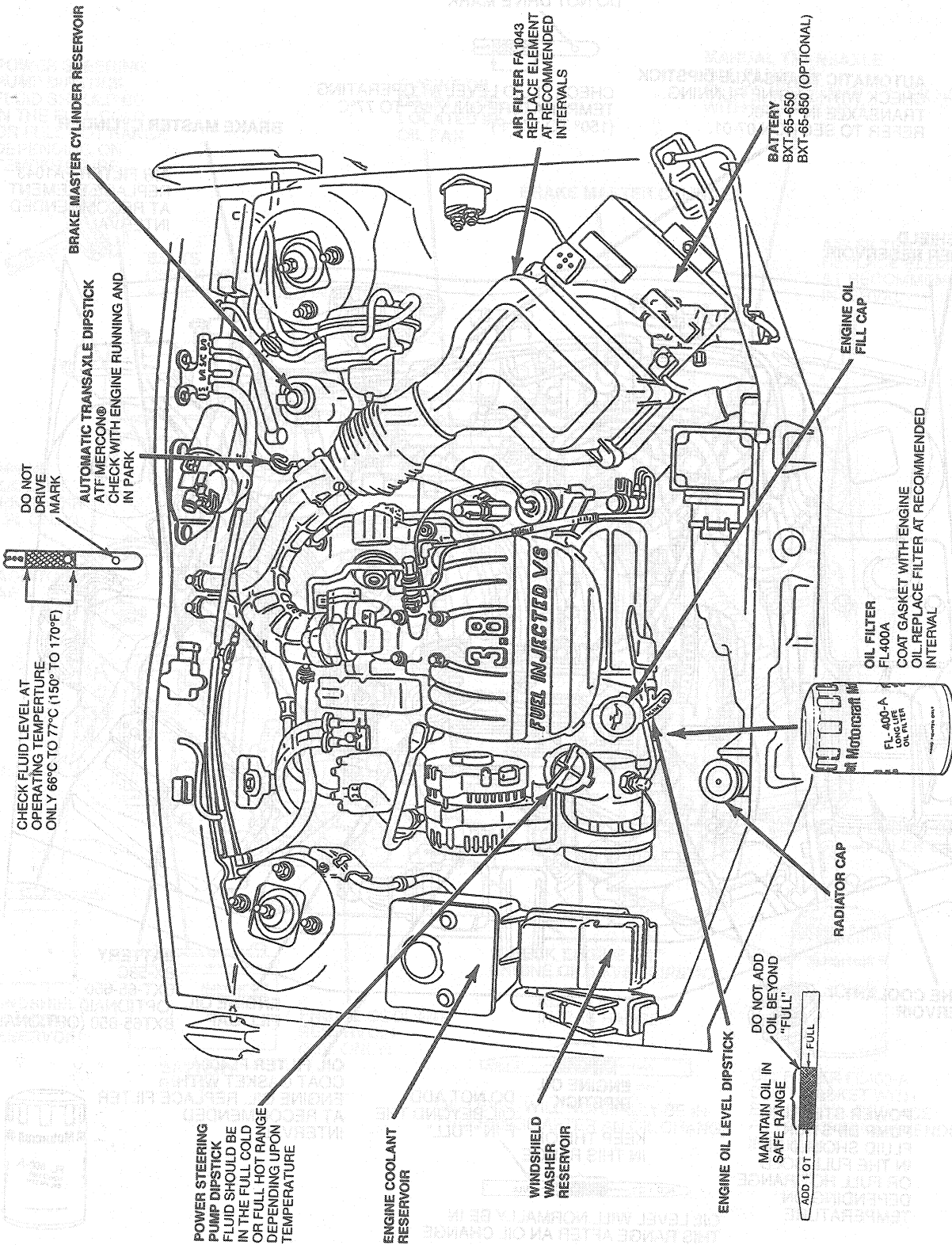
## 3.0L Flexible Fuel (FF) Vehicle



Y4244-A

## LUBRICATION (Continued)

## 3.8L Engine



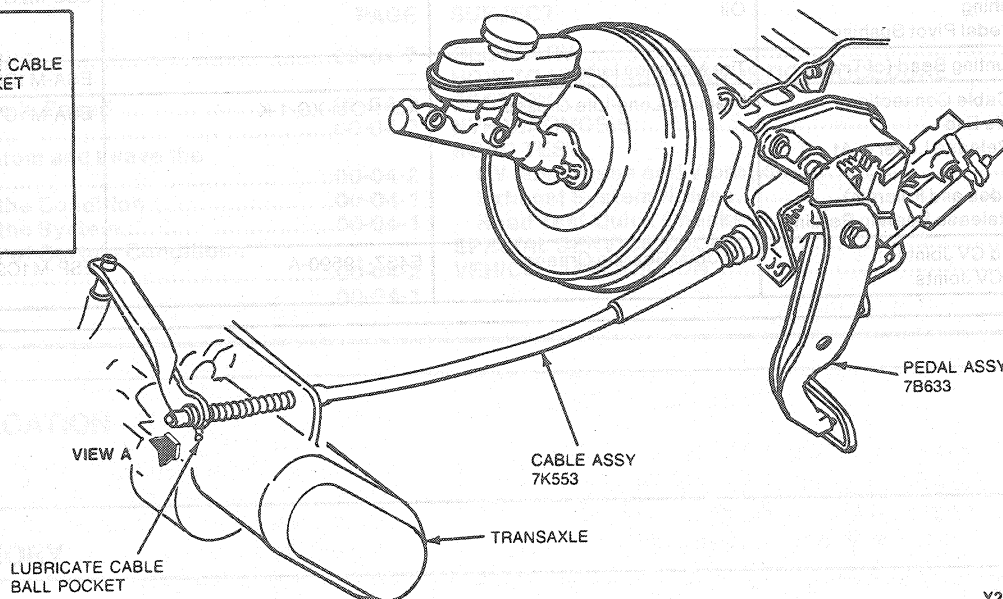
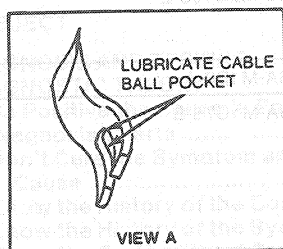
Y3963-C



## LUBRICATION (Continued)

## Chassis Lubrication Points

## Chassis Lubrication Points



Y2574-A

## SPECIFICATIONS

## LUBRICANT SPECIFICATIONS

Description	Part Number	Ford Part Number	Ford Specification
Door and Deck Lid Latches Hinges, Hinge Checks and Pivots Hood Latch and Auxiliary Catch Parking Brake Cable	Multi-Purpose Grease Spray	D7AZ-19584-AA	ESR-M1C159-A
Disc Brake Caliper Locating Pin and Insulator	Silicone Dielectric Compound	D7AZ-19A331-A Motorcraft WA-10	ESE-M1C71-A
Lock Cylinders	Lock Lubricant	D8AZ-19587-AA	ESB-M2C20-A
Steering Gear (Power)	Steering Gear Grease	C3AZ-19578-A	ESW-M1C87-A
Steering—Power (Pump Reservoir)	Motorcraft / Type F Auto. Trans. Fluid or Premium Power Steering Fluid	XT-1-QF or E6AZ-19582-AA	ESW-M2C33-F
Transaxle AXODE (Automatic)	Motorcraft MERCON® Auto. Trans. Fluid	XT-2-QDX	ESR-M2C163-A2
Transaxle (Manual)	Motorcraft MERCON® Auto. Trans. Fluid	XT-2-QDX	ESR-M2C163-A2
Engine Oil Filter	Long Life Oil Filter FL-400A	E4FZ-6731-A	ES-E4EE-6714-AA
Engine Oil—Gasoline Engines	MOTORCRAFT: 5W30 Super Premium 10W30 Super Premium	XO-5W30-QSP XO-10W30-QSP	ESE-M2C153-E and API Category SG
Speedometer Cable	Speedometer Cable Grease	E6TZ-19581-A	ESF-M1C160-A
Engine Coolant	Premium Cooling System Fluid	E2FZ-19549-AA or B	ESE-M97B44-A
Brake Master Cylinder	H.D. Brake Fluid	C6AZ-19542-AA or BA	ESA-M6C25-A
Drum Brake Shoe Ledges	Disc Brake Caliper Slide Grease	D7AZ-19590-A	ESA-M1C172-A

(Continued)

## SPECIFICATIONS (Continued)

## LUBRICANT SPECIFICATIONS (Cont'd)

Description	Part Number	Ford Part Number	Ford Specification
Brake Master Cylinder Push Rod and Bushing Brake Pedal Pivot Bushing	Motorcraft SAE 10W30 Engine Oil	XO-10W30-QSP	ESE-M2C153-E
Tire Mounting Bead (of Tire)	Tire Mounting Lube	—	ESA-M1B6-A
Clutch Cable Connection Transaxle End Clutch Release Lever—At Fingers (Both Sides and Fulcrum) Clutch Release Bearing Retainer	Premium Long-Life Grease	XG-1-C or XG-1-K	ESA-M1C75-B
Outboard CV Joints / Inboard CV Joints	CV Joint Bearing Grease	E43Z-19590-A	ESP-M1C207-A



# SECTION 00-04 Noise, Vibration and Harshness

SUBJECT	PAGE	SUBJECT	PAGE
DIAGNOSIS AND TESTING.....	00-04-7	GLOSSARY .....	00-04-2
DIAGNOSTIC THEORY		HOW TO USE THIS DIAGNOSTIC PROCEDURE	
Be Positive the Cause Is Found .....	00-04-2	SECTION.....	00-04-2
Diagnosis Charts .....	00-04-2	NVH DIAGNOSIS.....	00-04-4
Don't Cure the Symptom and Leave the Cause .....	00-04-2	ROAD TEST	
Know the History of the Condition .....	00-04-1	CV Joint Noise and Vibration.....	00-04-7
Know the History of the System.....	00-04-1	Exhaust System Noises.....	00-04-7
Know the Probability of Certain Conditions		Road Test Quick Checks .....	00-04-7
Developing.....	00-04-2	SPECIAL SERVICE TOOLS .....	00-04-14
Know the System.....	00-04-1	VEHICLE APPLICATION .....	00-04-1

## VEHICLE APPLICATION

Taurus / Sable.

## DIAGNOSTIC THEORY

Diagnosis is more than just following a series of interrelated steps in order to find the solution to a specific condition. It is a way of looking at systems that are not functioning the way they should and finding out why. Also, it is knowing how the system **should** work and whether it is working correctly.

There are basic rules for diagnosis. If these rules are followed, the cause of the condition is usually found the first time through the system.

### Know the System

This means know how the parts go together. Know how the system operates and its limits and what happens when something goes wrong. Sometimes this means checking the system against one that is known to be working properly.

### Know the History of the System

How old or new is the system? What kind of treatment has it had? Has it been serviced in the past in such a manner that might relate to the present condition? What is the service history? A clue in any one of these areas might save time.

### Know the History of the Condition

Did it start suddenly? Or did it appear gradually? Was it related to some other occurrence like an accident or previous part replacement? Know how the condition made itself known; it may be an important clue to the cause.

## DIAGNOSTIC THEORY (Continued)

### Know the Probability of Certain Conditions Developing

It is true that most conditions are caused by simple things rather than by complex ones and they occur in a fairly predictable pattern. Electrical conditions, for instance, usually occur at connections rather than in components. An engine no-start is more likely to be caused by a loose wire or some component out of adjustment than a sheared-off camshaft. Know the difference between **impossible** and **improbable**. Many good technicians have spent hours diagnosing a system thinking certain failures were impossible, only to find out that the failures were just improbable and actually happened. Remember that new parts are just that. It does **not** mean they are **always good** functioning parts.

### Don't Cure the Symptom and Leave the Cause

Lowering the air pressure in a front tire may correct the condition of a vehicle leaning to one side, but it does not correct the original condition.

### Be Positive the Cause Is Found

Double check findings. If a worn component is found or something is out of adjustment, determine what else could be wrong. If one of the engine mounts was loose, could the other one be loose too? What about the transaxle mounts?

### Diagnosis Charts

Charts are simply a way of expressing the relationship between basic logic and a physical system of components. They help corner the cause of a condition in the **shortest possible amount of time**. Diagnosis charts combine many areas of diagnosis into one visual display:

- **Probability** of certain things occurring in a system.
- **Speed** of checking certain components or functions before others.
- **Simplicity** of performing certain tests before others.
- **Elimination** of checking huge portions of a system by performing simple tests.
- **Certainty** of narrowing down the search to a small portion before performing in-depth testing.

The fastest way to find a condition is to work with the tools that are available, which means working with proven diagnosis charts and the proper special equipment for the system.

## HOW TO USE THIS DIAGNOSTIC PROCEDURE SECTION

Noise, vibration and harshness (NVH in engineering shorthand) is becoming more and more important because vehicles are becoming more sensitive to these vibrations. This section is designed to give a working knowledge of the process of diagnosing noise and vibration situations. It is divided into several sections **based on the description of the condition**. If the condition occurs at high speed for instance, the most likely place to start is under High Speed Shake. The Road Test Section will tell how to sort out the conditions into categories and how to tell a **vibration** from a **shake**. It will give a few hints on quick checks to ensure that a cause is either pinpointed or eliminated.

Become familiar with the terms. Use the Glossary Section to find the descriptive name of conditions not encountered before. After naming it, proceed to the Section entitled Identifying the Condition and locate the proper Diagnosis Section. Remember, just by beginning at that point, most other systems in the vehicle have been eliminated. When the proper section is identified, the job is partly done. Follow the steps within the section. Quick Checks are described within the step, while more involved tests and adjustments are found in Service and Adjustment. Always follow each step exactly, and make notes along the way to recall important findings later.

## GLOSSARY

### Acceleration

1. **Light:** Part throttle increase in speed such as 0-97 km/h (0-60 mph) in approximately 30 seconds.
2. **Heavy:** One-half to full throttle increase in speed such as 0-97 km/h (0-60 mph) in approximately 20 seconds.

### Ambient Temperature

Surrounding or prevailing temperature. Normally, the temperature in the service area or outdoors, depending on where testing is taking place.

### Boom

A cycling, rhythmic noise often accompanied by a sensation of pressure on the ear drums.

### Bound Up

Refers to a stressed, rubber-mounted component that transmits any NVH which would normally be absorbed by the mount. Refer to Neutralize.

### Brakes Applied

When vehicle is stationary, service brakes applied with enough force to hold vehicle against acceleration with transaxle in gear.

### Coast/Neutral Coast

Engine/transaxle taken out of gear by placing transmission selector in NEUTRAL or by depressing clutch in manual transaxle.

## GLOSSARY (Continued)

**CPS**

Cycles Per Second (Hz).

**Cruise**

Steady highway speed; neither accelerating nor decelerating; even pressure on accelerator pedal on level ground.

**Deceleration**

Slowing of vehicle by releasing foot from accelerator at cruise and allowing engine to slow vehicle without application of brakes.

**Drivetrain**

Includes all power transmitting components from the rear of the engine to the wheels, including clutch/torque converter and transaxle halfshafts.

**Engine Imbalance**

Some component in the engine which is normally smoothly balanced now causing a perceptible vibration in the vehicle.

**Engine Misfire**

One or more cylinders in the engine fails to fire at the proper time.

**Engine Runup Test**

Operation of engine through normal rpm range while vehicle is sitting still. Used for engine vibration check.

**Gravelly Feel**

A grinding or growl in a component, similar to the feel experienced while driving on gravel.

**Harshness**

A harder than usual behavior of a component, like riding a vehicle with overinflated tires usually associated with road impacts.

**Hz**

Hertz (Cycles Per Second).

**Imbalance**

Out of balance; more weight on one side of a rotating component causing shake or vibration.

**Inboard**

Toward the centerline of the vehicle. Refer to Outboard.

**Isolate**

Separate from the influence of other components.

**NVH**

Noise, Vibration and Harshness.

**Neutralize (Normalize)**

To return to unstressed position. Used to describe mounts. Refer to Bound Up.

**Outboard**

Toward the outside of the vehicle, rather than toward the centerline. Refer to Inboard.

**Pumping Feel**

A very slow vibration that results in a movement of vehicle components similar to pumping the service brakes slightly.

**Radial/Lateral**

Radial is in the plane of rotation, while lateral is at 90 degrees to the fore-and-aft plane on the vehicle.

**Road Test**

Operation of vehicle under conditions designed to recreate the condition.

**Runout**

Out of round or wobble.

**Shake**

Low frequency vibration; usually results in visual movement of components.

**Tip-In Moan**

A light moaning noise is heard when the vehicle is lightly accelerated between 40-64 km/h (25-40 mph).

**Tire Force Vibration**

Tire vibration caused by variations in the construction of the tire, resulting in a vibration when the tire rotates against the pavement. This condition may be present on perfectly round and perfectly balanced tires because of variations in the inner construction.

**Tire Deflection**

Bending of the body of the tire during rotation.

**T.I.R.**

Total indicator runout.

**Tires—Flat Spots**

Commonly caused by letting vehicle stand when tires are warm. Can be cured by operating vehicle until tires are warm. More likely a concern with Bias Belted Nylon reinforced tires than with radial tires.

**Two-Plane Balance**

Radial and lateral balance.

**Vibration**

Regular movement of a component that results in a sound or feel of movement.

Typical vibration frequencies, measured in cycles per second (Hz), are:

1. Engine accessories (up to 200 Hz).
2. Engine (50 Hz); firing (200 Hz).
3. Wheels and tires (13 Hz).
4. Wheel bearings (6 Hz).
5. Tip-in mode (120 Hz).

## NVH DIAGNOSIS

NVH diagnosis should always start with the road test. Noise, vibration and harshness (NVH) usually occur in four areas: tires, engine accessories, suspension and drivetrain. It is important therefore, that an NVH concern is isolated into its specific area as soon as possible. The easiest and quickest way to do this is to perform a road test as outlined.

## NVH Locator Index

ENGINE, MOUNTS, ACCESSORIES,  
AIR CLEANER, TRANSAXLE, BELTS,  
BINDING, LOOSENESS, MISALIGNMENT,  
WEAR OR DAMAGE,  
VIBRATION, NOISE.  
REFER TO ENGINE  
ACCESSORY VIBRATION  
DIAGNOSIS

FRONT SUSPENSION  
WEAR, MISALIGNMENT,  
BINDING.  
NOISE, HARSHNESS.  
REFER TO SECTION 04-01

FRONT WHEEL BEARING  
ROUGHNESS, ROTOR  
FLANGE, PILOT OR  
BOLT CIRCLE RUNOUT  
CV JOINT ROUGHNESS,  
NOISE, VIBRATION.  
REFER TO HIGH SPEED  
SHAKE DIAGNOSIS

EXHAUST SYSTEM  
BINDING, GROUNDING  
TIP-IN MOAN, BOOM.  
REFER TO TIP-IN MOAN  
DIAGNOSIS

REAR SUSPENSION  
MISALIGNMENT, WEAR,  
BINDING.  
NOISE, HARSHNESS.  
REFER TO SECTION 04-00

WHEEL AND TIRE RUNOUT  
IMBALANCE, NON-UNIFORMITY,  
INFLATION, DIAGONAL TIRE  
WEAR.

HIGH SPEED SHAKE,  
HARSHNESS.  
REFER TO HIGH SPEED  
SHAKE DIAGNOSIS

REAR WHEEL BEARING  
ROUGHNESS,  
MISADJUSTMENT,  
DRUM FACE, PILOT AND  
BOLT CIRCLE RUNOUT.  
NOISE AND VIBRATION.  
REFER TO HIGH SPEED  
SHAKE DIAGNOSIS

F6407-C

## ROAD TEST

A gear-driven unit will produce a certain amount of noise. Some noise is acceptable and may be audible at certain speeds or under various driving conditions. The slight noise is in no way detrimental and must be considered normal.

The road test and customer interview (if available) provide information needed to identify the condition and give direction to the correct starting point for diagnosis.

1. Make notes throughout diagnosis routine. Use a Road Test form that includes space for comments. Make sure to write down even the smallest bit of information, it may turn out to be most important.

2. Road test the vehicle and define the condition by reproducing it several times during the road test.
3. Perform the Road Test Quick Checks as soon as the condition is reproduced. This will identify the proper section of the diagnostic procedure. Run through the quick checks, more than once, to ensure they are providing a useable result. Remember, the Road Test Quick Checks may not tell where the concern is, but they will tell where it is not.

- Make a visual inspection as part of the preliminary diagnostic routine, writing down anything that does not look right. Note tire pressures, but do not adjust them yet. Note leaking fluids, loose nuts and /or bolts, or bright spots where components may be rubbing against each other. Check luggage compartment or cargo area for unusual loads.



## ROAD TEST (Continued)

ROAD TEST (Continued)

## ROAD TEST FORM

1. Did condition exist when vehicle was new?

☐ Yes☐ No

How did condition begin?

☐ Gradually occurred

Mileage \_\_\_\_\_

☐ Suddenly occurred

Mileage \_\_\_\_\_

2. NVH between \_\_\_\_\_ MPH and \_\_\_\_\_ MPH and \_\_\_\_\_ gear.

3. Neutral engine run-up vibration?

☐ Yes☐ No

4. What driving conditions affect the NVH?

☐ Light to medium acceleration☐ Hard acceleration☐ Deceleration (foot off accelerator pedal)☐ Constant speed

5. If a vibration, where is the vibration noticed?

☐ Seat☐ Steering Wheel☐ Instrument panel pad☐ Floor☐ Hood and fenders

6. If a noise, define as:

☐ Buzz☐ Clicking☐ Moan☐ Popping☐ Rumble☐ Grinding☐ Hum☐ Other

Describe: \_\_\_\_\_

CF3206-D



## ROAD TEST (Continued)

## Road Test Quick Checks

1. **24-80 km/h (15-50 mph):** With light acceleration, a moaning noise is heard and possibly a vibration is felt in the floorpan. It is usually worse at a particular engine speed and at a particular throttle setting during acceleration at that speed. It may also produce a moaning sound, depending on what component is causing it.

Refer to Tip-In Moan Diagnosis charts.

2. **High Speed:** With slow acceleration and deceleration, a shake is sometimes noticed in the steering wheel/column, seats, floorpan, trim panels or front end sheet metal. It is a low frequency vibration (around 9-15 cycles per second). It may or may not be increased by applying brakes lightly.

Refer to High Speed Shake Diagnosis charts.

3. **High Speed:** A vibration is felt in the floorpan or seats with no visible shake, but with an accompanying sound or rumble, buzz, hum, drone or booming noise. Coast with clutch depressed or automatic transaxle selector in NEUTRAL and engine idling. If vibration is still evident, it may be related to wheels, tires, brake rotors, hubs or bearings.

Refer to High Speed Shake Diagnosis charts.

4. **O-High Speed:** A vibration is felt whenever the engine reaches a particular rpm. It will disappear in neutral coast. The vibration can be duplicated by operating the engine at the problem rpm while the vehicle is sitting still. It can be caused by any component, from the accessory drive belts to the clutch or torque converter which turns at engine speed when the vehicle is stopped.

Refer to Engine Accessory Diagnosis charts.

5. **Noise and Vibration while Turning.** Clicking, popping or grinding noises may be due to the following:

- a. Cut or damaged CV joint boot resulting in inadequate or contaminated lube fill in outboard or inboard CV joints
- b. Loose CV joint boot clamp
- c. Other component contacting halfshaft assembly
- d. Worn, damaged or improperly installed wheel bearing
- e. Worn, contaminated, or dry, inboard or outboard CV joints.

## CV Joint Noise and Vibration

During normal driving conditions the CV joints are subjected to constant changes in angularity. Worn or damaged CV joints can be isolated during the road test by noting changes in steering angle or ride height and the effect that it has on the vibration or shudder condition.

**NOTE:** If a shudder condition is on a new vehicle, check front spring rates and vehicle ride height. Incorrect front springs will cause incorrect ride height and shudder on acceleration.

If the condition becomes noticeably worse during turns the outer CV joint is suspect. However, if the condition only changes with ride heights the inner CV joint is the probable source.

Once you have determined that a CV joint is damaged, refer to Group 05 for complete service instructions.

## Exhaust System Noises

To neutralize exhaust system noise, use the following procedure:

1. Loosen exhaust pipe to manifold fasteners at flanges and at muffler inlet connection.
2. Place a stand to support muffler parallel to vehicle frame with muffler hanger unloaded.
3. Tighten muffler connection.
4. Position exhaust pipes to manifolds and tighten. Ensure catalyst and heat shield do not contact frame rails.
5. With complete exhaust system tight (and cooled), the rear hanger strap should be angled forward, to allow the system to expand rearward when heated during normal running.

## DIAGNOSIS AND TESTING

## Tools Required:

- Rotunda Radial Run-Out Gauge 007-00014
- Belt Tension Gauge T63L-8620-A
- Dial Indicator with Bracketry TOOL-4201-C

These diagnosis charts are designed to take the technician through a step-by-step diagnosis procedure to determine the cause of a condition. It may not always be necessary to follow the chart to its conclusion. Perform only the Steps necessary to correct the condition. Then check the operation of the system to ensure the cause has been found.

It is sometimes necessary to remove various components of vehicle to gain access to component to be tested. Refer to applicable section for removal and installation of components. After verifying the condition has been corrected, ensure all components removed have been installed.

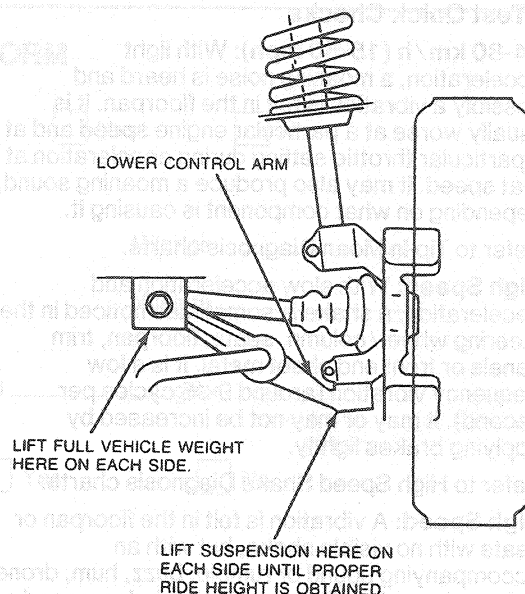
## DIAGNOSIS AND TESTING (Continued)

When performing the High-Speed Shake Diagnosis or Engine Accessory Vibration Diagnosis, observe the following precautions:

**CAUTION:** The suspension should not be allowed to hang free. When the constant velocity joint is run at a very high angle, extra vibrations as well as damage to seals and joints can occur.

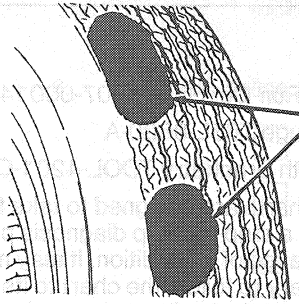
The lower control arm should be supported as far outboard as possible. To bring the vehicle to its proper ride height, the full weight of the vehicle should be supported in front by floor jacks, as shown. Refer to Section 00-02 for jacking instructions.

**WARNING:** IF ONLY ONE DRIVE WHEEL IS ALLOWED TO ROTATE, SPEED MUST BE LIMITED TO 55 KM/H (35 MPH) INDICATED ON THE SPEEDOMETER SINCE ACTUAL WHEEL SPEED WILL BE TWICE THAT INDICATED ON THE SPEEDOMETER. SPEED EXCEEDING 55 KM/H (35 MPH) OR ALLOWING THE DRIVE WHEEL TO HANG UNSUPPORTED COULD RESULT IN TIRE DISINTEGRATION, DIFFERENTIAL FAILURE AND/OR CONSTANT VELOCITY JOINT AND HALF SHAFT FAILURE, WHICH COULD CAUSE SERIOUS PERSONAL INJURY AND EXTENSIVE VEHICLE DAMAGE.



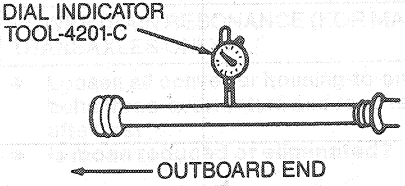
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**PINPOINT TEST A:  
HIGH SPEED SHAKE DIAGNOSIS**

TEST STEP		RESULT	ACTION TO TAKE
A1	ROAD TEST		
	<ul style="list-style-type: none"> <li>Accelerate vehicle to the speed which the customer indicated the shake occurred.</li> <li>Is shake present?</li> </ul>	No Yes	Vehicle OK. GO to A2.
A2	INSPECT TIRES		
	<ul style="list-style-type: none"> <li>Raise vehicle on hoist. Inspect tires for extreme wear or damage, cupping or flat spots.</li> <li>Are tires OK?</li> </ul>	No Yes	GO to A3. CHECK suspension components for misalignment, abnormal wear, or damage that may have contributed to the tire wear. CORRECT suspension concerns and REPLACE damaged tires. PERFORM Road Test.
			
A3	INSPECT WHEEL BEARINGS		
	<ul style="list-style-type: none"> <li>Spin front tires by hand to check for wheel bearing roughness. Check bearing end play.</li> <li>Are bearings OK?</li> </ul>	Yes No	GO to A4. REPLACE bearings as necessary. ROAD TEST vehicle.

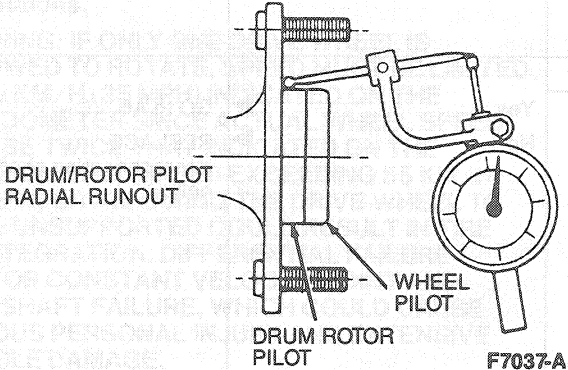
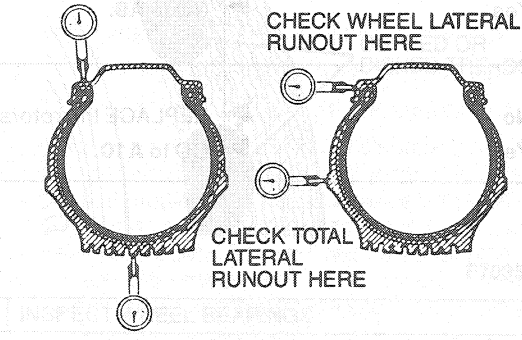
## DIAGNOSIS AND TESTING (Continued)

**PINPOINT TEST A:**  
**HIGH SPEED SHAKE DIAGNOSIS (Continued)**

TEST STEP		RESULT	ACTION TO TAKE
<b>A4</b>	<b>INSPECT CV JOINT BOOTS FOR DAMAGE</b>		
<ul style="list-style-type: none"> <li>Spin front tire by hand. Inspect CV joint boots for evidence of cracks, tears, splits or splattered grease.</li> <li><b>Is there CV joint boot damage?</b></li> </ul> <p>NOTE: The silicone boot used on the 3.0L engine RH inboard CV joint has a vent near the small clamp and may show some grease leakage, which is also acceptable. Do not replace the boot for these conditions.</p>		No	GO to A5.
		Yes	REPLACE damaged boot, or clamp, clean and inspect CV joint for wear or damage. REPLACE CV joint only if necessary.
<b>A5</b>	<b>HALF SHAFT RUNOUT IN VEHICLE</b>		
<ul style="list-style-type: none"> <li>Attach Dial Indicator with Bracketry TOOL-4201-C or equivalent to vehicle underbody.</li> <li>Check the radial runout at the center of shaft. Max. —4.0mm (0.160-inch).</li> </ul>		Yes	GO to A6.
		No	REPLACE interconnecting shaft only.
 <p>DIAL INDICATOR TOOL-4201-C</p> <p>OUTBOARD END</p> <p>F7039-A</p>			
<b>A6</b>	<b>WHEEL TIRE RUNOUT</b>		
<ul style="list-style-type: none"> <li>Spin front wheels at low speed with a wheel balance spinner, observing wheel tire runout.</li> <li><b>Is there visible runout?</b></li> </ul>		No	BALANCE wheels. GO to A7.
		Yes	GO to A10.
<b>A7</b>	<b>DRIVETRAIN</b>		
<ul style="list-style-type: none"> <li>Engage drivetrain and carefully accelerate the drive wheels. Vehicle must be supported at suspension points to avoid damage to halfshafts.</li> <li><b>Is vibration felt?</b></li> </ul>		No	GO to A11.
		Yes	GO to A8.
<b>A8</b>	<b>DRIVE WHEELS</b>		
<ul style="list-style-type: none"> <li>Mark rotor index to hub. Remove front wheels. Secure brake rotor, if so equipped, by installing the lug nuts, reversed. Carefully accelerate the drive wheels.</li> <li><b>Is vibration felt?</b></li> </ul>		No	BALANCE front wheels. ROAD TEST.
		Yes	GO to A9.
<b>A9</b>	<b>FRONT ROTORS</b>		
<ul style="list-style-type: none"> <li>Mark rotor index to hub. Remove the brake rotors. Carefully accelerate the drive wheels.</li> <li><b>Is vibration felt?</b></li> </ul>		No	REPLACE the rotors.
		Yes	GO to A10.

## DIAGNOSIS AND TESTING (Continued)

**PINPOINT TEST A:**  
**HIGH SPEED SHAKE DIAGNOSIS (Continued)**

TEST STEP	RESULT	ACTION TO TAKE
<p><b>A10 HUB RUNOUT</b></p> <ul style="list-style-type: none"> <li>With rotor removed, check axle hub face runout, and drum/rotor pilot radial runout.</li> <li>Hub face runout should be less than 0.08mm (0.003 inch)</li> <li>Drum/rotor pilot radial runout should be less than 0.05mm (0.002 inch).</li> <li><b>Is there excessive runout?</b></li> </ul>  <p align="center"><b>F7037-A</b></p>	<p>No</p> <p>Yes</p>	<p>GO to A11.</p> <p>REPLACE hub.</p>
<p><b>A11 WHEEL RUNOUT</b></p> <ul style="list-style-type: none"> <li>Install wheels and tires in original indexed positions. Check all wheels for total radial and lateral tire runout. Radial Runout—1.14mm (0.045-inch) Lateral Runout—1.14mm (0.045-inch)</li> <li><b>Is there excessive runout?</b></li> </ul>	<p>No</p> <p>Yes</p>	<p>GO to A13.</p> <p>CHECK wheel rim runout, radial and lateral. If either exceeds 1.14mm (0.045-inch), REPLACE the wheel and recheck runout. If new rim is within limits, LOCATE and MARK the low point of rim radial runout. GO to A12.</p>
<p><b>A12 TIRE RUNOUT</b></p> <ul style="list-style-type: none"> <li>Check total lateral and radial runout 1.14mm (0-04.5 inch).</li> </ul>  <p align="center"><b>F7038-A</b></p>	<p>Runout is within specification</p> <p>Lateral runout out of specification</p> <p>Radial runout out of specification</p>	<p>GO to A13.</p> <p>REPLACE tire.</p> <p>MARK the highest point of tire, dismount, reindex and remount the tire with the high point aligned with the low point of the wheel. RECHECK radial tread runout. If still out, REPLACE the tire and RECHECK runouts, reindexing as necessary to bring radial runout within limits. GO to A13.</p>
<p><b>A13 WHEEL BALANCE</b></p> <ul style="list-style-type: none"> <li>Balance all wheels not previously balanced. Road test vehicle.</li> <li><b>Are wheels balanced?</b></li> </ul>	<p>Yes</p> <p>No</p>	<p>Vehicle OK.</p> <p>GO to A14.</p>



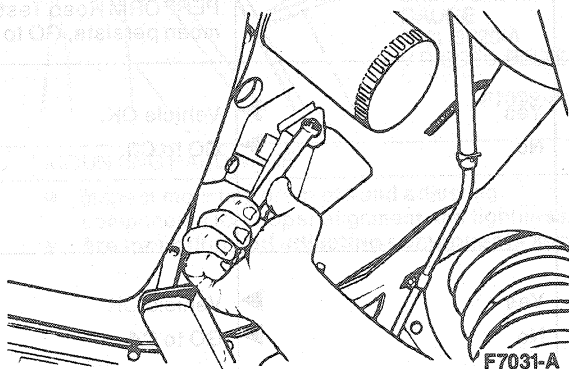
## DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A:  
HIGH SPEED SHAKE DIAGNOSIS (Continued)

TEST STEP		RESULT	ACTION TO TAKE
<b>A14</b>	<b>SUBSTITUTE WHEELS AND TIRES</b>		
	<ul style="list-style-type: none"> <li>Substitute a known good set of wheels and tires.</li> <li>Road test.</li> <li>If vehicle still exhibits shake or vibration, note vehicle speed and/or engine rpm that occurs.</li> <li>Is vibration felt?</li> </ul>	<p>No</p> <p>Yes</p>	<p>REINSTALL the original tire wheel assemblies, one by one, road testing at each step until the damaged tire(s) is identified. REPLACE tire(s) as necessary and retest.</p> <p>GO to A4.</p>

## PINPOINT TEST B: TIP-IN MOAN DIAGNOSIS

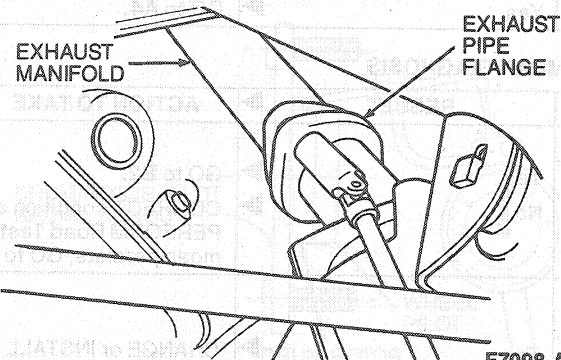
TEST STEP		RESULT	ACTION TO TAKE
<b>B1</b>	<b>AIR CLEANER</b>		
	<ul style="list-style-type: none"> <li>Check air cleaner for proper installation of base gasket, lid element and air inlet duct assembly.</li> <li>Are components properly installed?</li> </ul>	<p>Yes</p> <p>No</p>	<p>GO to B2.</p> <p>CORRECT condition and PERFORM Road Test. If moan persists, GO to B2.</p>
<b>B2</b>	<b>POWERTRAIN RESONANCE (FOR MANUAL TRANSAXLES ONLY)</b>		
	<ul style="list-style-type: none"> <li>Loosen all converter housing-to-engine retaining bolts three-quarter turn and road test. Tighten bolts after test.</li> <li>Is moan reduced or eliminated?</li> </ul>	<p>Yes</p> <p>No</p>	<p>CHANGE or INSTALL damper as indicated and RETEST. If moan still persists, GO to B3.</p> <p>GO to B3.</p>
<b>B3</b>	<b>ENGINE MOUNTS</b>		
	<ul style="list-style-type: none"> <li>Normalize engine mounts by loosening mounts. Jack engine/transaxle assembly and shake. Tighten fasteners. Repeat road test.</li> <li>Is moan reduced or eliminated?</li> </ul>	<p>Yes</p> <p>No</p>	<p>Vehicle OK.</p> <p>GO to B4.</p>





## DIAGNOSIS AND TESTING (Continued)

## PINPOINT TEST B: TIP-IN MOAN DIAGNOSIS (Continued)

TEST STEP		RESULT	ACTION TO TAKE
<b>B4</b>	<b>EXHAUST SYSTEM</b>		
<ul style="list-style-type: none"> <li>Warm up system to normal operating temperature. Loosen all hanger attachments and reposition hangers until they hang free and straight. Then loosen all flange joints and, with engine running, shift transmission from NEUTRAL to DRIVE and back to NEUTRAL (or load engine with clutch). Tighten all hanger clamps and flanges. Road test vehicle.</li> <li>Is moan reduced or eliminated?</li> </ul>		Yes No	<ul style="list-style-type: none"> <li>Vehicle OK.</li> <li>REFER to Engine Accessory Vibration Diagnosis.</li> </ul>
 <p>EXHAUST MANIFOLD</p> <p>EXHAUST PIPE FLANGE</p> <p>F7098-A</p>			

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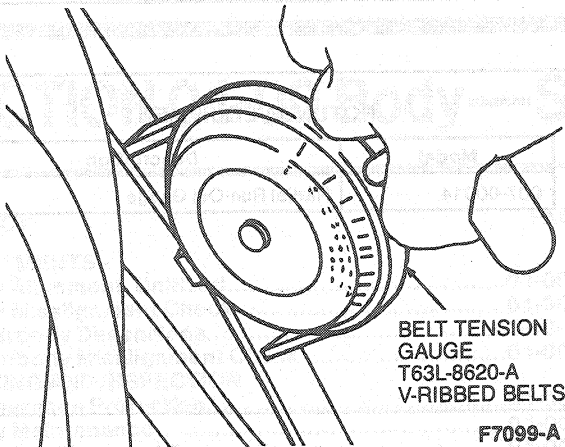
## PINPOINT TEST C: IDLE BOOM/SHAKE/VIBRATION DIAGNOSIS

TEST STEP		RESULT	ACTION TO TAKE
<b>C1</b>	<b>CABLE/HOSES</b>		
<ul style="list-style-type: none"> <li>Check engine compartment for any component that may be grounding between the engine and body or chassis. Example: Control cables, A/C hoses, accelerator cable, etc.</li> <li>Are components OK?</li> </ul>		Yes No	<ul style="list-style-type: none"> <li>GO to C2.</li> <li>CORRECT condition and PERFORM Road Test. If moan persists, GO to C2.</li> </ul>
<b>C2</b>	<b>ENGINE MOUNTS</b>		
<ul style="list-style-type: none"> <li>Normalize engine mounts by loosening the two right side mounts. Jack the engine up under the crankshaft pulley until the engine mount is free of the frame. Set back down until mount just touches the frame. Tighten engine mount nuts.</li> <li>Are mounts OK?</li> </ul>		Yes No	<ul style="list-style-type: none"> <li>Vehicle OK.</li> <li>GO to C3.</li> </ul>
<b>C3</b>	<b>EXHAUST SYSTEM</b>		
<p>NOTE: Disregard this step if already performed in Test Step B2 (Tip-in Moan Diagnosis).</p> <ul style="list-style-type: none"> <li>Warm up system to normal operating temperature. Straighten all hangers to a vertical position. Loosen all flange joints and with engine running, shift transmission from NEUTRAL to DRIVE and back to NEUTRAL. Re-tighten flanges and road test vehicle.</li> <li>Is system OK?</li> </ul>		Yes No	<ul style="list-style-type: none"> <li>Vehicle OK.</li> <li>GO to C4.</li> </ul>
<b>C4</b>	<b>ENGINE IDLING</b>		
<ul style="list-style-type: none"> <li>With engine idling, visually check all accessory drive belts and pulleys for misalignment, runout or irregular motion. Maximum runout is 3mm (1/8-inch).</li> <li>Is system OK?</li> </ul>		Yes No	<ul style="list-style-type: none"> <li>Vehicle OK.</li> <li>REFER to Engine Accessory Vibration Diagnosis.</li> </ul>

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## DIAGNOSIS AND TESTING (Continued)

## PINPOINT TEST D: ENGINE ACCESSORY VIBRATION DIAGNOSIS

TEST STEP		RESULT	ACTION TO TAKE
<b>D1</b>	<b>ENGINE RUN-UP</b>		
<ul style="list-style-type: none"> <li>Run-up to problem rpm observed in road test, with vehicle stationary.</li> <li><b>Does vibration occur?</b></li> </ul>		Yes No	GO to <b>D2</b> . PERFORM stall test in DRIVE with brakes locked (or load engine by slipping clutch in gear with manual transmission). If vibration occurs, GO to Tip-In Moan Diagnosis in this section.
<b>D2</b>	<b>DRIVE BELTS AND PULLEYS</b>		
<ul style="list-style-type: none"> <li>With engine stopped, inspect all engine accessory drive belts and pulleys for wear or damage, and check belt tension, using Belt Tension Gauge T63L-8620-A or equivalent.</li> <li>Automatic Tensioners have belt wear indicator marks. If the indicator mark is not between the min and max marks, the belt is worn or an incorrect belt is installed.</li> <li><b>Are belts or pulleys worn or damaged?</b></li> </ul>		No Yes	GO to <b>D3</b> . REPLACE worn or damaged belts or pulleys. CORRECT belt tension. GO to <b>D3</b> .
			
<b>D3</b>	<b>MOUNTING HARDWARE</b>		
<ul style="list-style-type: none"> <li>Inspect mounting brackets and adjusting components for proper alignment and tightness.</li> <li><b>Are mounting and adjusting components secure?</b></li> </ul>		Yes No	GO to <b>D4</b> . ALIGN and TIGHTEN mounting hardware to specifications. CORRECT belt tension. START UP engine and run-up to problem rpm. If vibration still exists, GO to <b>D4</b> .
<b>D4</b>	<b>ENGINE IDLING</b>		
<ul style="list-style-type: none"> <li>With engine idling, visually check all accessory drive belts and pulleys for misalignment, runout or irregular motion. Maximum runout is 3mm (1/8 inch).</li> <li>Increase engine rpm.</li> </ul>		No misalignment visible Pulley(s) exceeds maximum runout Belt rides up and down on one pulley Belt rides up and down on more than one pulley	GO to <b>D5</b> . REPLACE pulley. REPLACE that pulley. REPLACE belt.

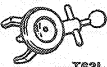
## DIAGNOSIS AND TESTING (Continued)

## PINPOINT TEST D: ENGINE ACCESSORY VIBRATION DIAGNOSIS (Continued)

TEST STEP	RESULT	ACTION TO TAKE
<b>D5</b> ACCESSORY DRIVE BELT NOISE		
<ul style="list-style-type: none"> <li>Check for "chirps" or squeal in a poly-vee belt by spraying a small amount of water on the grooved side of the belt (use a spray bottle or equivalent).</li> <li>Does the noise change?</li> </ul>	<p><b>Yes</b> →</p> <p><b>No</b> →</p>	<p><b>CHECK</b> for misalignment. <b>CHECK</b> tensioner position. <b>CHECK</b> for worn belt. <b>SERVICE/REPLACE</b> as required.</p> <p><b>CHECK</b> accessory bearings. <b>REPLACE</b> as required. <b>GO</b> to D6.</p>
<b>D6</b> ACCESSORIES		
<ul style="list-style-type: none"> <li>Run-up engine to problem rpm and, with stethoscope-type device, check each component.</li> <li>If the source cannot be detected by probing, remove each belt, one at a time, until vibration goes away.</li> <li>Is noisy component located?</li> </ul>	<p><b>Yes</b> →</p> <p><b>No</b> →</p>	<p><b>REPLACE</b> belt. If vibration still exists, <b>SERVICE</b> or <b>REPLACE</b> component.</p> <p>Possible engine component imbalance. This situation is possible, but unlikely.</p>

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## SPECIAL SERVICE TOOLS

Tool Number/ Description	Illustration
T63L-8620-A Belt Tension Gauge	 T63L-8620-A

Tool Number	Description
TOOL-4201-C	Dial Indicator with Bracketry

## ROTUNDA EQUIPMENT

Model	Description
007-00014	Radial Run-Out Gauge