

MANUFACTURERS MOTOR VEHICLE SPECIFICATIONS

METRIC (U.S. Customary)

1990

Manufacturer (See Page 1 for Manufacturing Origin) FORD MOTOR COMPANY	Vehicle Line FESTIVA	
Mailing Address P.O. BOX 2053 DEARBORN, MICHIGAN 48121	Issued NOVEMBER 30, 1988	Revised AUGUST 1, 1989

Direct questions concerning these specifications to the manufacturer listed above.

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Motor Vehicle Manufacturers Association
of the United States, Inc.

Forms Provided by Technical Affairs Division

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line FESTIVA

Model Year 1990 Issued 11/88 Revised (e) 5/15/89

Vehicle Origin

Design & development (company)	Mazda
Where built (country)	Korea
Authorized U.S. sales marketing representative	Ford Motor Company

Vehicle Models

Model Description & Drive (FWD/RWD/4WD/4WD)*	Introduction Date	Make, Vehicle Models, Series, Body Type (Mfr's Model Code)	No. of Designated Seating Positions (Front/Rear)	Max. Trunk/Cargo Load—Kilograms (Pounds)
FESTIVA (FWD)				
(e) (L SERIES)	10/5/89			
2-Door Hatchback		T06	2/2	36.3 (80)
FESTIVA (FWD)				
(e) (L PLUS SERIES)	10/5/89			
2-Door Hatchback		T06	2/2	36.3 (80)
FESTIVA (FWD)				
(e) (LX SERIES)	10/5/89			
2-Door Hatchback		T07	2/2	36.3 (80)

* FWD-Front Wheel Drive RWD-Rear Wheel Drive AWD-All Wheel Drive 4WD-Four Wheel Drive

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Power Teams

SAE J1349 Net bhp (brake horsepower) and net torque corrected to 77°F/25°C and 29.91 in. Hg/100 kPa atmospheric pressure.

		A	B	C	D	
E N G I N E	Engine Code	99H	99H			
	Displacement Liters (in³)	1.3 (80.7)	1.3 (80.7)			
	Induction system (FI, Carb, etc.)	Electronic Port Fuel Injection	Electronic Port Fuel Injection			
	Compression Ratio	9.7	9.7			
	SAE Net at RPM	Power kW (bhp)	47 (63) @ 5000	47 (63) @ 5000		
		Torque N · m (lb. ft.)	99 (73) @ 3000	99 (73) @ 3000		
	Exhaust single, dual	Single	Single			
T R A N S	Transmission/ Transaxle	5-Spd. Manual 5M Transaxle	3-Spd. Auto. A3 Transaxle			
	Axle Ratio (std. first)	3.78	3.23			

[illegible]

MVMA Specifications

Vehicle Line FESTIVAModel Year 1990 Issued 11/88 Revised (e) 6/16/89

METRIC (U.S. Customary)

Engine Description
Engine Code

1.3L

ENGINE — GENERAL

Type & description (inline, V, angle,
flat, location, front, mid, rear,
transverse, longitudinal, sohc, dohc,
ohv, hemi, wedge, pre-chamber, etc.)

Inline, Front Transverse, (SOHC) Single Overhead Camshaft

Manufacturer

Mazda

No. of cylinders

Four

Bore

71 (2.79)

Stroke

83.6 (3.29)

Bore spacing (C/L to C/L)

86 (3.39)

Cylinder block material & mass kg (lbs.) (machined)

Cast Iron

Cylinder block deck height

206.5 (8.13)

Cylinder block length

373.5 (14.7)

Deck clearance (minimum)
(above or below block)

0 (0)

Cylinder head material & mass kg (lbs.)

Cast Aluminum Alloy & 7.5 (16.5)

Cylinder head volume (cm³)

27.8

Cylinder liner material

N/A

Head gasket thickness
(compressed)

1.25 (0.049)

Minimum combustion chamber
total volume (cm³)Cyl. no. system
(front to rear)*

L. Bank

1, 2, 3, 4

R. Bank

N/A

Firing order

1, 3, 4, 2

Intake manifold material & mass [kg (lbs.)]**

Cast Aluminum Alloy & 2.8 (6.17) M/T; 2.2 (4.85) A/T

Exhaust manifold material & mass [kg (lbs.)]**

Cast Iron & 4.3 (9.48)

Fuel required unleaded, diesel, etc.

Unleaded

Fuel antiknock index (R + M) + 2

87 Minimum

Engine
mounts

Quantity

3

Material and type (elastomeric,
hydroelastic, hydraulic damper, etc.)

Rubber & Elastomeric

Added isolation (sub-frame,
crossmember, etc.)

Engine-Mount Member (Body)

Total dressed engine mass (wt) dry***

Engine — Pistons

Material & mass, g
(weight, oz.)-piston only

Cast Aluminum Alloy & 179 (6.31)

Engine — Camshaft

Location

In Cylinder Head

Material & mass kg (weight, lbs.)

Cast Iron & 2.4 (5.29)

Drive type

Chain/belt

Belt

Width/pitch

22.0 (0.87)/8.0 (0.31)

*Rear of engine — drive takeoff. View from drive takeoff end to determine left & right side of engine.

**Finished state.

***Dressed engine mass (weight) includes the following: Front End Dress, All Engine Mounted Components and Flex Plate;
Excludes Starter and Generator.

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Engine Description
Engine Code

1.3L

Engine — Valve System

Hydraulic lifters (std., opt., NA)		N/A
(e) Valves	Number intake/exhaust	4/4
	Head O.D. intake/exhaust	32 (1.26)/28 (1.10)

Engine — Connecting Rods

Material & mass [kg., (weight, lbs.)]*	Carbon Steel, 0.44 (0.97)
Length (axes ϵ to ϵ) mm	136

Engine — Crankshaft

Material & mass [kg., (weight, lbs.)]*		Cast Iron, 9.9 (21.8)
End thrust taken by bearing (no.)		Two
Length & number of main bearings		437.5 (17.2) & 5
Seal (material, one, two piece design, etc.)	Front	
	Rear	

Engine — Lubrication System

Normal oil pressure [kPa (psi) at engine rpm]	78.5 (11.4) @ 800
Type oil intake (floating, stationary)	Stationary
Oil filter system (full flow, part, other)	Full Flow
Capacity of c/case, less filter-refill-L (qt.)	3.4 (3.59)

Engine — Diesel Information (NOT APPLICABLE)

Diesel engine manufacturer		
Glow plug, current drain at 0°F		
Injector nozzle	Type	
	Opening pressure [kPa (psi)]	
Pre-chamber design		
Fuel injection pump	Manufacturer	
	Type	
Fuel injection pump drive (belt, chain, gear)		
Supplementary vacuum source (type)		
Fuel heater (yes/no)		
Water separator, description (std., opt.)		
Turbo manufacturer		
Oil cooler-type (oil to engine coolant; oil to ambient air)		
Oil filter		

Engine — Intake System (NOT APPLICABLE)

Turbo charger - manufacturer		
Super charger - manufacturer		
Intercooler		

*Finished State

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Engine Description
Engine Code

1.3L

Engine — Cooling System

Coolant recovery system (std., opt., n.a.)		Standard
Coolant fill location (rad., bottle)		Radiator
Radiator cap relief valve pressure [kPa (psi)]		90 (13.0)
Circulation thermostat	Type (choke, bypass)	Bypass
	Starts to open at °C(°F)	Sub.: 85° ± 1.5° (185° ± 34.7°); Main: 88° ± 1.5° (190.4° ± 34.7°)
Water Pump	Type (centrifugal, other)	Centrifugal
	GPM 1000 pump rpm	2.1
	Number of pumps	One
	Drive (V-belt, other)	V-Belt
	Bearing type	Ball Bearing
	Impeller material	Steel
	Housing material	Cast Aluminum Alloy
By-pass recirculation [type (inter., ext.)]		External
Cooling system capacity	With heater-L(qt.)	5.0 (5.28)
	With air conditioner-L(qt.)	5.0 (5.28)
	Opt. equipment [specify-L(qt.)]	5.0 (5.28)
Water jackets full length of cyl. (yes, no)		Yes
Water all around cylinder (yes, no)		No
Water jackets open at head face (yes, no)		Yes
Radiator core	Std., A/C, HD	Standard
	Type (cross-flow, etc.)	Down-Flow
	Construction (fin & tube mechanical, braze, etc.)	Fin & Tube
	Material, mass [kg (wgt. lbs.)]	Aluminum, 1.45 (3.2) M/T; 2.4 (5.29) A/T
	Width	381.8 (15.0)
	Height	320 (12.6)
	Thickness	16 (0.63)
Radiator end tank material	Std., elec., opt.	Electric
	Number of blades & type (flex, solid, material)	Four
	Diameter & projected width	300 (11.8)
	Ratio (fan to crankshaft rev.)	N/A
	Fan cutout type	Coolant Sensor & Electric Switch
	Drive type (direct, remote)	Direct
	RPM at idle (elec.)	2180 M/T; 2080 A/T
Fan	Motor rating (wattage) (elec.)	120
	Motor switch (type & location) (elec.)	Thermostatic
	Switch point (temp., pressure) (elec.)	97°C (206.6°F)
(e)	Fan shroud (material)	Iron Plate

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Engine Description
Engine Code

1.3L EFI

Engine — Fuel System (See supplemental page for details of Fuel Injection, Supercharger, Turbocharger, etc. if used)

Induction type: carburetor, fuel injection system, etc.		Fuel injection
(e) Manufacturer		Nippondenso Co. Ltd.
Carburetor no. of barrels		N/A
Idle A/F mix.		14.7
Fuel injection	Point of injection (no.)	Intake Port (4)
	Constant, pulse, flow	Pulse
	Control (electronic, mech.)	Electronic
	System pressure [kPa (psi)]	250 (36.3)
(e) Idle spd.-rpm (spec. neutral or drive and propane if used)	Manual	700 (In Neutral)
	Automatic	850 (In Park or Neutral)
Intake manifold heat control (exhaust or water thermostatic or fixed)		
Air cleaner type		Wet Type
Fuel filter (type/location)		Paper Element
Fuel pump	Type (elec. or mech.)	Electronic
	Location (eng., tank)	In-Tank
	Pressure range [kPa (psi)]	250 (36.27)
	Flow rate at regulated pressure (L (gal)/hr @ kPa (psi))	More Than 80 (21.1) @ 250 (36.27)

Fuel Tank

Capacity [refill L (gallons)]		38 (10) Standard
Location (describe)		In Front of Rear Suspension (Under Rear Seat)
Attachment		4 Bolts
(e) Material & Mass [kg (weight lbs.)]		Steel, 75 (16.5)
Filler pipe	Location & material	Left Rear Quarter Panel
	Connection to tank	Rubber Hoses
Fuel line (material)		Steel
Fuel hose (material)		Rubber
Return line (material)		Steel & Rubber
Vapor line (material)		Steel & Rubber
Extended range tank	Opt., n.a.	N/A
	Capacity [L (gallons)]	—
	Location & material	—
	Attachment	—
Auxiliary tank	Opt., n.a.	N/A
	Capacity [L (gallons)]	—
	Location & material	—
	Attachment	—
	Selector switch or valve	—
Separate fill		—

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Engine Description
Engine Code

1.3L

Vehicle Emission Control

(e)	Exhaust Emission Control	Type (air injection, engine modifications, other)		AI/EGR/Catalyst
		Air Injection	Pump or pulse	Pulse
			Driven by	Reed-Valve
			Air distribution (head, manifold, etc.)	Reed-Valve
			Point of entry	Front Pipe, Catalytic Converter
		Exhaust Gas Recirculation	Type (controlled flow, open orifice, other)	Controlled Flow
			Exhaust source	Exhaust Manifold
			Point of exhaust injection (spacer, carburetor, manifold, other)	Intake Manifold
		Catalytic Converter	Type	Three Way Catalyst (TWC)
			Number of	One (1-Bed)
			Location(s)	Underbody
			Volume [L (in ³)]	1.3 (79.3)
			Substrate type	Monolithic
			Noble metal type	Platinum/Rhodium
			Noble metal Concentration (g/cm ³)	0.0016
	Crankcase Emission Control	Type (ventilates to atmosphere, induction system, other)		Induction System
		Energy source (manifold vacuum, carburetor, other)		Manifold Vacuum
		Discharges (to intake manifold, other)		Intake Manifold
		Air inlet (breather cap, other)		Air Cleaner
	Evapora- tive Emission Control	Vapor vented to (crankcase, canister, other)	Fuel tank	Canister
			Carburetor	Canister
		Vapor storage provision		Canister
	Electronic system	Closed loop (yes/no)		N/A
		Open loop (yes/no)		N/A

Engine — Exhaust System

Type (single, single with cross-over, dual, other)		Single
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass [kg (weight lbs.)]		One, Expansion & 6 (13.2)
Resonator no. & type		N/A
Exhaust pipe	Branch o.d., wall thickness	N/A
	Main o.d., wall thickness	42.7 x 2.0 (1.68 x 0.08)
	Material & Mass [kg (weight lbs.)]	Stainless
Inter- mediate pipe	o.d. & wall thickness	38.1 x 1.6 (1.50 x 0.06)
	Material & Mass [kg (weight lbs.)]	Alcoated Steel & 7 (15.4)
Tail pipe	o.d. & wall thickness	34 x 1.2 (1.34 x 0.05)
	Material & Mass [kg (weight lbs.)]	Alcoated Steel

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Engine Description
Engine Code

ALL MODELS

Transmissions/Transaxle (Std., Opt., N.A.)

Manual 3-speed (manufacturer/country)	N/A
Manual 4-speed (manufacturer/country)	N/A
Manual 5-speed (manufacturer/country)	Standard
Automatic (manufacturer/country)	Optional Exc. L Series
Automatic overdrive (manufacturer/country)	N/A

Manual Transmission/Transaxle

Number of forward speeds		Five (M5)
(e) Gear ratios	1st	3.454
	2nd	1.944
	3rd	1.275
	4th	0.861
	5th	0.692
	Reverse	3.583
Synchronous meshing (specify gears)		All Forward Gears
Shift lever location		Floor
Trans. case mat'l. & mass kg (lbs)*		Aluminum, 27.5 (60.6)
Lubricant	Capacity [L (pt.)]	2.5 (5.3), Common with Transaxle
	Type recommended	ATF M2C 33F

Clutch (Manual Transmission)

Clutch manufacturer		Daikin Seisakusyo
Clutch type (dry, wet; single, multiple disc)		Single Plate, Dry Disc
Linkage (hydraulic, cable, rod, lever, other)		Cable
Max. pedal effort (nom. spring load, new) N (lbs)	Depressed	83.4 (18.7)
	Released	
Assist (spring, power/percent, nominal)		
Type pressure plate springs		Diaphragm
(e) Total spring load (nominal, new) N (lbs)		2942 (661.5)
(e) Clutch facing	Facing mfr. & material coding	Valqua
	Facing material & construction	Semi-Mold
	Rivets per facing	16
	Outside x inside dia. (nominal)	180 x 125 (7.09 x 4.92)
	Total eff. area [cm ² (in. ²)]	131 (20.3)
	Thickness (pressure plate side/fly wheel side)	3.2 (0.126)/3.0 (0.118)
	Rivet depth (pressure plate side/fly wheel side)	1.2 (0.047)/1 (0.039)
	Engagement cushion method	Cushion Spring
Release bearing type & method lub.		Ball Bearing
(e) Torsional damping method, springs, hysteresis		Coil Springs, Torsion Rubbers and Friction Material

*Includes shift linkage, lubricant, and clutch housing. If other specify.

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Engine Description
Engine Code

L PLUS AND LX SERIES MODELS

⑦ Automatic Transmission/Transaxle

Trade name		Transaxle (A3)
Type and special features (describe)		3-Speed w/Torque Converter
Gear Selector	Location (column, floor, other)	Floor
	Ltr./No. designation (e.g. PRND21)	P R N D 2 1
	Shift interlock (yes, no, describe)	
Gear ratios	1st	2.84
	2nd	1.54
	3rd	1.0
	4th	—
	Reverse	2.4
Max. upshift speed - drive range [km/h (mph)]		103 (64)
Max. kickdown speed - drive range [km/h (mph)]		98 (60.9)
Min. overdrive speed [km/h (mph)]		
Torque converter	Number of elements	3
	Max. ratio at stall	2.2:1
	Type of cooling (air, liquid)	Liquid
	Nominal diameter	236 (9.3)
	Capacity factor "K"	263
Lubricant	Capacity [refill L (pt.)]	5.3
	Type Recommended	ATF M-111
Oil cooler (std., opt., NA, internal, external, air, liquid)		Standard, External Air Combined w/Radiator Coolant
Transmission mass kg (lbs) & case material**		

⑦ All Wheel/4 Wheel Drive (NOT APPLICABLE)

Description & type (part-time, full-time, 2/4 shift while moving, mechanical, elect., chain/gear, etc.)		
Transfer case	Manufacturer and model	
	Type and Location	
Low-range gear ratio		
System disconnect (describe)		
Center differential	Type (bevel, planetary, w or w/o viscous bias, torsen, etc.)	
	Torque split (% front/rear)	

*Input speed + $\sqrt{\text{Torque}}$

**Includes torque converter and fluid.

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Engine Description
Engine Code

ALL MODELS
W/MANUAL TRANS.

W/AUTO. TRANS.

⌚ Axle Ratio and Tooth Combinations (See 'Power Teams' for axle ratio usage)

Effective final drive ratio (or overall top gear ratio)			2.61:1	3.23:1
Transfer ratio and method (chain, gear, etc.)			3.78:1	3.23:1
Front drive unit	Ring gear o.d.		184.4 (7.26)	186.5:1
	No. of teeth	Pinion	18	22
		Ring gear	68	71

⌚ Front Drive Unit

Description (integral to trans., etc.)		(M5) 5-Speed	(A3) Automatic
Limited slip differential (type)		N/A	
Drive pinion	Type	N/A	
	Offset	N/A	
No. of different pinions		2	
Pinion/differential	Adjustment (shim, etc.)	N/A	Spacer
	Bearing adjustment	Shim	
Driving wheel bearing (type)		Tapered Roller Bearing	
Lubricant	Capacity [L (pt.)]	2.5 (5.3), Common with Transmission	
	Type recommended	ATF M2C 33F	ATF M-111

⌚ Axle Shafts — Front Wheel Drive

Manufacturer and number used			2
Type (straight, solid bar, tubular, etc.)		Left	Solid Bar
		Right	Solid Bar
(e) Outer diam. x length* x wall thickness	Manual transaxle	Left	20 x 383.5 (0.79 x 15.1)
		Right	20 x 657 (0.79 x 25.9)
	Automatic transaxle	Left	20 x 370 (0.79 x 14.6)
		Right	20 x 655.5 (0.79 x 25.8)
	Optional transaxle	Left	N/A
		Right	N/A
Slip yoke	Type		N/A
	Number of teeth		N/A
	Spline o.d.		N/A
(e) Universal joints	Make and mfg. no.	Inner	NTN
		Outer	NTN
	Number used		4
	Type, size, plunge	Inner	Double Offset Joint
		Outer	Ball Joint
	Attach (u-bolt, clamp, etc.)		
	Bearing	Type (plain, anti-friction)	
		Lubrication (fitting, prepack)	
Drive taken through (torque tube, arms or springs)			
Torque taken through (torque tube, arms or springs)			Engine Mounting System

*Centerline to centerline of universal joints, or to centerline of rear attachment.

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Body Type And/Or
Engine Displacement

ALL MODELS

Suspension — General Including Electronic Controls

Car leveling	Standard/optional/not avail.	N/A
	Manual/automatic control	—
	Type (air/hydraulic)	—
	Primary/assist spring	—
	Rear only/4 wheel leveling	—
	Single/dual rate spring	—
	Single/dual ride heights	—
	Provision for jacking	—
Shock absorber damping controls	Standard/option/not avail.	N/A
	Manual/automatic control	—
	Number of damping rates	—
	Type of actuation (manual/ electric motor/ air, etc.)	—
	s e n s o r s	Lateral acceleration
		Deceleration
		Acceleration
		Road surface
Shock absorber (front & rear)	Type	Strut Type Front and Rear, Direct Double Acting Hydraulic
	Make	Front — Kayaba/Rear — Showa
	Piston diameter	Front 25 (0.98)/Rear 25 (0.98)
	Rod diameter	Front 18 (0.70)/Rear 12.5 (0.49)

Suspension — Front

Type and description		MacPherson Strut — Independent Front Drive with Strut Mounted Coil Springs & Track Control Arm
Travel*	Full jounce	70 (2.76)
	Full rebound	85 (3.35)
(e) Spring	Type (coil, leaf, other) & material	Coil
	Insulators (type & material)	Rubber
	Size (coil design height & i.d.)	Coil 85 (3.35) — Inside Dia.
(e)	Spring rate [N/mm (lb./in.)]	1.88 (9.60)
(e)	Rate at wheel [N/mm (lb./in.)]	1.57 (8.97)
Stabilizer	Type (link, linkless, frameless)	Link
	Material & bar diameter	Steel

Suspension — Rear

Type and description		Torsion Beam Type with Strut Mounted Coil Springs
Travel*	Full jounce	90 (3.54)
	Full rebound	115 (4.53)
(e)	Type (coil, leaf, other) & material	Coil
	Size (length x width, coil design height & i.d.)	Coil 80.9 (3.19) — Inside Dia.
	Spring rate [N/mm (lb./in.)]	1.42 (8.12)
(e) Spring	Rate at wheel [N/mm (lb./in.)]	1.42 (8.12)
(e)	Insulators (type & material)	Rubber
	If leaf	No. of leaves
		Shackle (comp. or tens.)
Stabilizer	Type (link, linkless, frameless)	N/A
	Material & bar diameter	N/A
Track bar (type)		N/A

*Define load condition:

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Body Type And/Or
Engine Displacement

ALL MODELS

Brakes — Service

Description			Four Wheel Hydraulic Actuated System	
Manufacturer and brake type (std., opt., n.a.)		Front (disc or drum)	Disc, Solid	
		Rear (disc or drum)	Drum	
Valving type (proportion, delay, metering, other)			Proportioning	
Power brake (std., opt., n.a.)			Standard	
Booster type (remote, integral, vac., hyd., etc.)			Vacuum	
Vacuum	Source (inline, pump, etc.)		Inline	
	Reservoir (volume in. ³)		N/A	
	Pump-type (elec., gear driven, belt driven)		N/A	
Traction control	Operational speed range		N/A	
	Type engine intervention (electronic, mech.)		N/A	
Anti-lock device	Front/rear (std., opt., n.a.)		N/A	
	Manufacturer		—	
	Type (electronic, mech.)		—	
	Number sensors or circuits		—	
	Number anti-lock hydraulic circuits		—	
	Integral or add-on system		—	
	Yaw control (yes, no)		—	
	Hydraulic power source (elect., vac. mtr., pwr. strg.)		—	
Effective area [cm ² (in. ²)]*(F/R)			30 (4.65)/37 (5.74)	
Gross lining area [cm ² (in. ²)]**(F/R)			30 (4.65)/37 (5.74)	
Swept area [cm ² (in. ²)]*** (F/R)			222.4 (34.48)/133.5 (20.70)	
Rotor	Outerworking diameter	F/R	219 (8.62)/N/A	
	Inner working diameter	F/R	136 (5.3)/N/A	
	Thickness	F/R	13 (0.5)/N/A	
	Material & type (vented/solid)	F/R	Cast Iron, Solid/N/A	
Drum	Diameter & width	F/R	N/A/170 (6.69)	
	Type and material	F/R	N/A/Cast Iron	
Wheel cylinder bore			48.1 (1.89) Front/15.8 (0.62) Rear	
Master cylinder	Bore/stroke	F/R	19 (0.75)/15 (0.59)	
Pedal arc ratio			4.28	
Line pressure at 445 N(100 lb.) pedal load [kPa (psi)]			3432 (1016) w/Pedal @ 981 (142)	
Lining clearance		F/R	0.3 (0.01)/0.35 (0.01) Self-Adjusting	
Brake lining	Front wheel	Bonded or riveted (rivets/seg.)		Bonded
		Rivet size		
		Manufacturer		Nihon Brake Kogyo
		Lining code*****		JB CS FF
		Material		Resin Molded
		****	Primary or out-board	77.6 x 40 x 9.5 (3.05 x 1.57 x 0.37)
		Size	Secondary or in-board	77.6 x 40 x 9.5 (3.05 x 1.57 x 0.37)
		Shoe thickness (no lining)		5 (0.20)
	Rear wheel	Bonded or riveted (rivets/seg.)		Bonded
		Manufacturer		Nihon Brake Kogyo
		Lining Code*****		JB NL60 FF
		Material		Resin Molded
		****	Primary or out-board	148 x 25 x 4 (5.83 x 0.98 x 0.16)
		Size	Secondary or in-board	148 x 25 x 4 (5.83 x 0.98 x 0.16)
		Shoe thickness (no lining)		1.4 (0.06)

*Excludes rivet holes, grooves, chamfers, etc.

**Includes rivet holes, grooves, chamfers, etc.

***Total swept area for four brakes. (Drum brake: Widest lining contact width for each brake x its contact circumference.)

(Disc brake: Square of Outer Working Dia. minus Square of inner Working Dia. multiplied by $\pi/2$ for each brake.)

****Size for drum brakes includes length x width x thickness. *****Manufacturer I.D., catalog or formulation designation and coefficient of friction classification.

MVMA Specifications

Vehicle Line **FESTIVA**Model Year **1990**Issued **11/88**Revised (e) **8/16/89**

METRIC (U.S. Customary)

Body Type And/Or
Engine Displacement

L SERIES MODEL

L PLUS AND
LX SERIES MODELS

Tires And Wheels (Standard)

(e) Tires	Size (load range, ply)		145/SR12	165/70SR12
	Type (bias, radial, steel, nylon, etc.)		Steel Belted Radial	
	Inflation pressure (cold) for recommended max. vehicle load	Front [kPa (psi)]	220 (32)	200 (29)
		Rear [kPa (psi)]	220 (32)	200 (29)
	Rev./mile — at 70 km/h (45 mph)			
(e) Wheels	Type & material		Disc — Semi-Styled Steel	
	Rim (size & flange type)		12" x 4.0" B	12 x 4.5 B
	Wheel offset		40 (1.57)	
	Attachment	Type (bolt or stud)	Bolt	
		Circle diameter	114.3 (4.5)	
Spare	Number & size		Four & M12 x 1.5	
	Tire and wheel		Temporary Tire	
	Storage position & location (describe)		Cargo Area	

Tires And Wheels (Optional)

Tire size (load range, ply)		
Type (bias, radial, steel, nylon, etc.)		
Wheel (type & material)		N/A Cast Aluminum
Rim (size, flange type and offset)		N/A 12" x 4.5" J
Tire size (load range, ply)		
Type (bias, radial, steel, nylon, etc.)		
Wheel (type & material)		
Rim (size, flange type and offset)		
Tire size (load range, ply)		
Type (bias, radial, steel, nylon, etc.)		
Wheel (type & material)		
Rim (size, flange type and offset)		
Tire size (load range, ply)		
Type (bias, radial, steel, nylon, etc.)		
Wheel (type & material)		
Rim (size, flange type and offset)		
Spare tire and wheel size		
(if configuration is different than road tire or wheel, describe optional spare tire and/or wheel location & storage position)		

Brakes — Parking

Type of control		Hand Operated — Manual Release
Location of control		Between Front Seats
Operates on		Rear Service Brakes
If separate from service brakes	Type (internal or external)	N/A
	Drum diameter	N/A
	Lining size (length x width x thickness)	N/A

MVMA Specifications

Vehicle Line **FESTIVA**

Model Year **1990**

Issued **11/88**

Revised (e) **6/16/89**

METRIC (U.S. Customary)

Body Type And/Or
Engine Displacement

L AND L PLUS MODELS

LX SERIES MODEL

Steering

Manual (std., opt., n.a.)				Standard			
(e) Power (std., opt., n.a.)				Optional w/L Plus		Optional	
Adjustable steering wheel / column (tilt, telescope, other)		Type		N/A		Tilt Steering Column	
		Manufacturer		—			
		(Std., opt., n.a.)		N/A		Standard	
Wheel diameter** (W9) SAE J1100		Manual		380 (15)			
		Power		N/A			
Turning diameter m (ft.)	Outside front	Wall to wall (l. & r.)		9.6 (31.5)			
		Curb to curb (l. & r.)		8.8 (28.9)			
	Inside rear	Wall to wall (l. & r.)					
		Curb to curb (l. & r.)					
Scrub Radius*							
(e) Manual	Gear	Type		Rack and Pinion			
		Manufacturer		TSCL			
		Ratios	***	20:1			
			Overall				
			No. wheel turns (stop to stop)		3.60 ~ 3.72		
(e)	Type (coaxial, elec., hyd., etc.)		Hydraulic				
(e)	Manufacturer		TSCC				
(e)	Gear	Type		Rack and Pinion			
(e) Power		Ratios	***	18:1			
			Overall				
			Pump (drive)				
		No. wheel turns (stop to stop)					
Linkage	Type		Integral with Gear				
	Location (front or rear of wheels, other)		Rear				
	Tie rods (one or two)		Two Integral with Gear				
Steering axis	Inclination at camber (deg.)						
	Bearings (type)	Upper					
		Lower					
		Thrust					
Steering spindle / knuckle & joint type							
Wheel spindle / hub	Diameter	Inner bearing					
		Outer bearing					
	Thread (size)						
	Bearing (type)						

*The horizontal distance in the front elevation between wheel centerline and kingpin (ball joint) axis at ground.

**See Page 22.

***Rack Ratio

MVMA Specifications

Vehicle Line **FESTIVA**

Model Year **1990**

Issued **11/88**

Revised (e) **6/16/89**

METRIC (U.S. Customary)

Body Type And/Or
Engine Displacement

L AND L PLUS MODELS

LX SERIES MODEL

Wheel Alignment

(e) Front wheel at curb mass (wt.)	Service checking	Caster (deg.)	1°35' ± 15'
		Camber (deg.)	0°40' ± 55'
		Toe-in [outside track-mm (in.)]	0.5 ~ 6.5 (0.02 ~ 0.26) 3.5 ± 3 (0.14 ± 0.12)
	Service reset*	Caster	N/A
		Camber	+ 30'
		Toe-in	N/A
	Periodic M.V. in- spection	Caster	
		Camber	
		Toe-in	
Rear wheel at curb mass (wt.)	Service checking	Camber (deg.)	0°15' ± 11'
		Toe-in [outside track-mm (in.)]	0 ~ 6 (0 ~ 0.24)
	Service reset*	Camber	
		Toe-in	
	Periodic M.V. in- spection	Camber	
		Toe-in	

*Indicates pre-set, adjustable, trend set or other.

Electrical — Instruments and Equipment

Speed-ometer	Type (analog, digital, std., opt.)	Standard, Analog
	Trip odometer (std., opt., n.a.)	N/A (Standard w/L Plus) Standard
EGR maintenance indicator		N/A
Charge indicator	Type	N/A
	Warning device (light, audible)	Standard, Light
Temperature indicator	Type	Standard, Gauge
	Warning device (light, audible)	N/A
Oil pressure indicator	Type	N/A
	Warning device (light, audible)	Standard, Light
Fuel indicator	Type	Standard, Gauge
	Warning device (light, audible)	Standard, Light
Wind-shield wiper	Type (standard)	Standard, Two-Speed Electric (Intermittent Std. w/LX Only)
	Type (optional)	N/A
	Blade length	450 (17.7)
	Swept area [cm ² (in. ²)]	5360 (831)
Wind-shield washer	Type (standard)	Standard
	Type (optional)	N/A
	Fluid level indicator (light, audible)	N/A
Rear window wiper, wiper/washer (std., opt., n.a.)		Standard
Horn	Type	Standard, Electric
	Number used	One Two
Other		SEE PAGE 15A

MVMA Specifications

Vehicle Line FESTIVA
Model Year 1990 Issued 11/88 Revised (e) 8/1/89

METRIC (U.S. Customary)

SUPPLEMENTAL PAGE

Electrical — Instruments and Equipment: (Cont'd)

- Brake System Warning Light
- Directional Turn Signal Lights
- Emergency Flashers
- Hi-Beam Indicator
- Fasten Seat Belt Warning Light and Buzzer
- Cargo Lamp (Std. LX-Series Only; N/A L and L Plus Series)
- (e) ● Headlamp-On Alert Tone Signal (Std. w/LX and L Plus Series; N/A L Series)

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line FESTIVA

Model Year 1990

Issued 11/88

Revised (e) 8/16/89

Engine Description
Engine Code

1.3L (EFI)
W/MANUAL TRANS.

W/AUTO. TRANS.

Electrical — Supply System

Battery	Manufacturer	
	Model, std., (opt.)	50 D 20L, Standard
	Voltage	12 Volt
	Amps at 0°F cold crank	306
	Minutes-reserve capacity	78
	Amp/hrs. - 20 hr. rate	50
	Location	LH Side of Engine Compartment
(e) Alternator	Manufacturer	Mitsubishi
	Rating (idle/max. rpm)	50 Amp.
	Ratio (alt. crank/rev.)	2.2:1
	Output at idle (rpm, park)	
Regulator	Optional (type & rating)	N/A
	Type	

Electrical — Starting System

Motor	Manufacturer	Mando Machinery Co.	
	Current drain <u>0</u> °F		
	Power rating [kw (hp)]	0.85 (1.14)	
Motor drive	Engagement type	Pre-Engaged, Electromagnetic Push-in Type	
	Pinion engages from (front, rear)	Rear	Front

Electrical — Ignition System

Type	Electronic (std., opt., n.a.)	Standard	
	Other (specify)	N/A	
(e) Coil	Manufacturer	Hanshin	
	Model	SMC-1553	
	Current	Engine stopped — A	
		Engine idling — A	
Spark plug	Manufacturer	Motorcraft	
	Model	AGS-32C	
	Thread (mm)	M14 x 1.25	
	Tightening torque [N-m (lb. ft)]	15 ~ 23 (11.1 ~ 16.96)	
	Gap	1.0 ~ 1.1 (0.03 ~ 0.04)	
	Number per cylinder	One	
Distributor	Manufacturer	Mitsubishi	
	Model	Contact Less	

Electrical — Suppression

Locations & type	Resistance Spark Plugs and Resistance Ignition Wires
------------------	------------------------------------------------------

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line FESTIVA

Model Year 1990

Issued 11/88

Revised (e) _____

Body Type

L AND L PLUS MODELS

LX SERIES MODEL

Body

Structure

Unitized All-Steel Welded Body

Bumper system
front-rear

Front/Rear — 5 MPH Bumper — Ford Requirements

Anti-corrosion treatment

- Major Exterior and Structural Sheet Metal Components — Precoated Steel
- Urethane Base Undercoat Applied to Lower Body Side Areas
- Corrosion Protection Wax on Inner Structural Sheet Metal

Body — Miscellaneous Information

Type of finish (lacquer, enamel, other)		Enamel	
Hood	Material & mass	Steel	
	Hinge location (front, rear)	Rear	
	Type (counterbalance, prop)	Prop	
	Release control (internal, external)	Internal	
Trunk lid	Material & mass	N/A	
	Type (counterbalance, other)		
	Internal release control (elec., mech., n.a.)		
Hatch-back lid	Material & mass	Steel (SPSC) & 10.7 (23.6)	
	Type (counterbalance, other)	Gas Struts	
	Internal release control (elec., mech., n.a.)	N/A	
Tailgate	Material & mass	N/A	
	Type (drop, lift, door)	N/A	
	Internal release control (elec., mech., n.a.)	N/A	
Vent window control (crank, friction, pivot, power)	Front	N/A	
	Rear	N/A	
Window regulator type (cable, tape, flex, drive, etc.)	Front	N/A	
	Rear	N/A	
Seat cushion type (e.g., 60/40, bucket, bench, wire, foam etc.)	Front	Bucket	
	Rear	Bench	
	3rd seat	N/A	
Seat back type (e.g., 60/40, bucket, bench, wire, foam etc.)	Front	High Back Type w/Man. Recliner	Low Back Type w/Man. Recliner
	Rear	Single Folding Type	Split 50/50 Folding Type
	3rd seat	N/A	

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line **FESTIVA**

Model Year **1990**

Issued **11/88**

Revised (e) **5/15/89**

Body Type

ALL MODELS

Restraint System

Seating Position			Left	Center	Right
(e) Active	Type & description (lap & shoulder belt, lap belt, etc.) Standard/optional	First seat	Type 1 & Lap Belt Only, Standard	N/A	Type 1 & Lap Belt Only, Standard
		Second seat	Type 2: 3-Point Lap & Shoulder Belt, Standard	N/A	Type 2: 3-Point Lap & Shoulder Belt, Standard
		Third seat	N/A	N/A	N/A
Passive	Type & description (air bag, motorized-2-point belt, fixed belt, knee bolster, manual-lap belt) Standard/optional	First seat	Motorized — 2-Point Shoulder Belt, Standard	N/A	Motorized — 2-Point Shoulder Belt, Standard
		Second seat	N/A	N/A	N/A
		Third seat	N/A	N/A	N/A

Glass

	SAE Ref.No.	
Windshield glass exposed surface area [cm ² (in. ²)]	S1	7790 (1207)
Side glass exposed surface area [cm ² (in. ²)]-total 2-sides	S2	13530 (2097)
Backlight glass exposed surface area [cm ² (in. ²)]	S3	5300 (822)
Total glass exposed surface area [cm ² (in. ²)]	S4	26620 (4126)
Windshield glass (type)		AS-1 Type (ANS Z26.1)
Side glass (type)		AS-2 Type (ANS Z26.1)
Backlight glass (type)		AS-2 Type (ANS Z26.1)

Headlamps

Description-sealed beam, halogen, replaceable bulb, etc.	Halogen
Shape	Rectangular
Lo-beam type (2A1, 2B1, 2C1, etc.)	N/A
Quantity	Two (Combined Two Headlamp System)
Hi-beam type (1A1, 2A1, 1C1, 2C1, etc.)	N/A
Quantity	Two (Combined Two Headlamp System)

Frame

Type and description (separate frame, unitized frame, partially-unitized frame)	Unitized Construction
---------------------------------------------------------------------------------	-----------------------

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line FESTIVA

Model Year 1990

Issued 11/88

Revised (e) 5/15/89

Body Type

L AND L PLUS MODELS

LX SERIES MODEL

Convenience Equipment (standard, optional, n.a.)

(e) Air conditioning (manual, auto. temp control)		Optional, Manual Temp. Control	
Clock (digital, analog)		Opt. (Std. w/L Plus) (a)	Std., Integ. w/AM/FM Radio
Compass/thermometer		N/A	
Console (floor, overhead)		N/A	Std., Floor Consolette
Defroster, elec. backlight		Optional (Std. w/L Plus)	Standard
Electronic	Diagnostic monitor (integrated, individual)	N/A	
	Instrument cluster (list instruments)	N/A	
	Keyless entry	N/A	
	Tripminder (avg. spd., fuel)	N/A	
	Voice alert (list items)	N/A	
	Other		
Fuel door lock (remote, key, electric)		Standard, Key	
Lamps	Auto head on/off delay, dimming	N/A	
	Cornering	N/A	
	Courtesy (map, reading)	N/A	
	Door lock, ignition	N/A	
	Engine compartment	N/A	
	Fog	N/A	
	Glove compartment	N/A	
	Trunk	N/A	Standard, Cargo Area
	Illuminated entry system (list lamps, activation)	N/A	
	Other	Standard, High-Mount Stop Lamp	
Mirrors	Day/night (auto. man.)	Standard, Manual	
	L.H. (remote, power, heated)	Standard, Manual	Standard, Power
	R.H. (convex, remote, power, heated)	N/A	Standard, Power
	Visor vanity (RH/LH, illuminated)	N/A	
Navigation system (describe)		N/A	
Parking brake-auto release (warning light)		N/A	

(e) (a) Clock integral with AM/FM Electronic Radio.

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line FESTIVA

Model Year 1990

Issued 11/88

Revised (e) 5/15/89

Body Type

L MODEL

L PLUS AND
LX SERIES MODELS

Convenience Equipment (standard, optional, n.a.)

(e)

MVMA Specifications

Vehicle Line **FESTIVA**

Model Year **1990** Issued **11/88** Revised (e) **8/16/89**

METRIC (U.S. Customary)

Vehicle Dimensions See Key Sheets for definitions

All dimensions to ground are for comparative purposes only. Dimensions are to be shown for all base body models of each vehicle line. SAE Ref. no. refers to the definition published in SAE Recommended Practice J1100 "Motor Vehicle Dimensions," unless otherwise specified.

Body Type	SAE Ref. No.	ALL MODELS
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Width

Tread (front)	W101	1400 (55.1)
Tread (rear)	W102	1384 (54.5)
Vehicle width	W103	1605 (63.2)
Body width at SgRP (front)	W117	1580 (62.2)
Vehicle width (front doors open)	W120	3740 (147.2)
Vehicle width (rear doors open)	W121	N/A
Turn-in angle (deg.)	W122	20° 5'
(e) Outside mirror width	W410	1815 (71.5)

Length

Wheelbase	L101	2290 (90.2)
Vehicle length	L103	3567 (140.5)
Overhang (front)	L104	683 (26.9)
Overhang (rear)	L105	594 (23.4)
Upper structure length	L123	2487 (97.9)
Rear wheel C/L "X" coordinate	L127	2290 (90.2)

Height*

Passenger distribution (front/rear)	P01,2,3	2/2
Trunk/cargo load		36.3 (80)
Vehicle height	H101	1405 (55.3)
Cowl point to ground	H114	934 (36.8)
Deck point to ground	H138	924 (36.4)
Rocker panel-front to ground	H112	183 (7.2)
Rocker panel-rear to ground	H111	183 (7.2)
Windshield slope angle	H122	51° 5'
Backlight slope angle	H121	39° 30'

Ground Clearance*

Front bumper to ground	H102	219 (8.6)
Rear bumper to ground	H104	253 (10.0)
Bumper to ground (front at curb mass (wt.))	H103	247 (9.7)
Bumper to ground (rear at curb mass (wt.))	H105	296 (11.7)
Angle of approach (degrees)	H106	22° 30'
Angle of departure (degrees)	H107	32° 6'
Ramp breakover angle (degrees)	H147	15°
Axle differential to ground (front/rear)	H153	N/A
Min. running ground clearance	H156	137 (5.39)
Location of min. run. grd. clear.		Shield Over Catalyst

* All vehicle height and ground clearances are measured at the Manufacturer's Design Load Weight.

Manufacturers Design Load Weight is defined with indicated passenger distribution and trunk/cargo load, unless otherwise specified. All linear dimensions are in millimeters (inches) unless otherwise noted.

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Dimensions See Key Sheets for definitions

Vehicle Line **FESTIVA**

Model Year **1990** Issued **11/88** Revised (e) **6/16/89**

Body Type

L AND L PLUS SERIES MODELS

LX SERIES MODEL

SAE
Ref.
No.

Front Compartment

SgRP front, "X" coordinate	L31	1256 (49.4)	
(e) Effective head room	H81	981 (38.6)	
Max. eff. leg room (accelerator)	L34	1030 (40.6)	
SgRP to heel point	H30	307 (12.1)	
SgRP to heel point	L53	796 (31.3)	
(e) Back angle	L40	26°	
(e) Hip angle	L42	96°24'	
Knee angle	L44	116°30'	
Foot angle	L46	87°	
Design H-point front travel	L17	220 (8.7)	
Normal driving & riding seat track trvl.	L23	220 (8.7)	
Shoulder room	W3	1317 (51.9)	1311 (51.6)
Hip room	W5	1294 (50.9)	
Upper body opening to ground	H50	1136 (44.7)	
(e) Steering wheel maximum diameter*	W9	380 (15.0)	
Steering wheel angle	H18	29°49'	
Accel. heel pt. to steer. whl. cntr	L11	379 (14.9)	
Accel. heel pt. to steer. whl. cntr	H17	684 (26.9)	
Undepressed floor covering thickness	H67	3 (0.1)	

Rear Compartment

SgRP point couple distance	L50	722 (28.4)	
(e) Effective head room	H83	951 (37.4)	
Min. effective leg room	L51	908 (35.7)	
SgRP (second to heel)	H31	357 (14.1)	
(e) Knee clearance	L48	-9 (-0.35)	-49 (-1.9)
Shoulder room	W4	1294 (50.9)	
Hip room	W6	1198 (47.2)	
Upper body opening to ground	H51	N/A	
Back angle	L41	23°30'	
Hip angle	L43	91°30'	
Knee angle	L45	91°40'	
Foot angle	L47	120°	
Depressed floor covering thickness	H73	3 (0.1)	

Luggage Compartment

Usable luggage capacity [L (cu. ft.)]	V1	—
Liftover height	H195	600 (23.6)

Interior Volumes (EPA Classification)

Vehicle class		Subcompact
(e) Interior volume index (cu. ft.)**		97.8
Trunk/cargo index (cu. ft.)		11.7

* See page 14.

** Includes passenger and trunk/cargo index — see General Section for definition.

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Dimensions See Key Sheets for definitions

Vehicle Line FESTIVA

Model Year 1990 Issued 11/88 Revised (e) _____

Body Type

ALL MODELS

Station Wagon—Third Seat (NOT APPLICABLE)

	SAE Ref. No.	
Seat facing direction	SD1	
SgRP couple distance	L85	
Shoulder room	W85	
Hip room	W88	
Effective leg room	L86	
Effective head room	H86	
SgRP to heel point	H87	
Knee clearance	L87	
Back angle	L88	
Hip angle	L89	
Knee angle	L90	
Foot angle	L91	

Station Wagon—Cargo Space (NOT APPLICABLE)

Cargo length (open front)	L200	
Cargo length (open second)	L201	
Cargo length (closed front)	L202	
Cargo length (closed second)	L203	
Cargo length at belt (front)	L204	
Cargo length at belt (second)	L205	
Cargo width (wheelhouse)	W201	
Rear opening width at floor	W203	
Opening width at belt	W204	
Min. rear opening width above belt	W205	
Cargo height	H201	
Rear opening height	H202	
Tailgate to ground height	H250	
Front seatback to load floor height	H197	
Cargo volume index [m ³ (ft. ³)]	V2	
Hidden cargo volume index [m ³ (ft. ³)]	V4	
Cargo volume index-rear of 2-seat	V10	

Hatchback—Cargo Space

Cargo length at front seatback height	L208	1033 (40.7)
Cargo length at floor (front)	L209	1239 (48.8)
Cargo length at second seatback height	L210	313 (12.3)
Cargo length at floor (second)	L211	560 (22.0)
Front seatback to load floor height	H197	508 (20.0)
Second seatback to load floor height	H198	585.5 (23.1)
Cargo volume index [m ³ (ft. ³)]	V3	0.75 (26.5)
Hidden cargo volume index [m ³ (ft. ³)]	V4	0
Cargo volume index-rear of 2-seat	V11	0.33 (11.7)

MVMA Specifications
METRIC (U.S. Customary)

Vehicle Line FESTIVA
 Model Year 1990 Issued 11/88 Revised (e) _____

Body Type

ALL MODELS

Vehicle Fiducial Marks

Fiducial Mark Number*	Define Coordinate Location
Front	Fiducial point is the intersectional point of "OY" plane and centerline of front wheels at design load weight. X = 1000 Y = 0. Z = 100
Rear	
Fiducial Mark Number	
Front	W21* N/A
	L54* N/A
	H81* N/A
	H161* 276 (10.9)
	H163* 248 (9.8)
Rear	W22* N/A
	L55* N/A
	H82* N/A
	H182* 291 (11.5)
	H184* 248 (9.8)

*Reference—SAE Recommended Practice, J182, Motor Vehicle Fiducial Marks.

METRIC (U.S. Customary)

Vehicle Line FESTIVA
Model Year 1990 Issued 11/88 Revised (e) 8/1/89

[illegible]

*Reference — SAE J1100 Motor vehicle dimensions, curb weight definition.

*ETWC — Equivalent Test Weight Class — basis for U.S. Environmental Protection Agency emission certifications. Refer to ETWC code legend below for test weight class.

ETWC LEGEND

A	=	1000	I	=	2000	Q	=	3000	Y	=	4000
B	=	1125	J	=	2125	R	=	3125	Z	=	4250
C	=	1250	K	=	2250	S	=	3250	AA	=	4500
D	=	1375	L	=	2375	T	=	3375	BB	=	4750
E	=	1500	M	=	2500	U	=	3500	CC	=	5000
F	=	1625	N	=	2625	V	=	3625	DD	=	5250
G	=	1750	O	=	2750	W	=	3750	EE	=	5500
H	=	1875	P	=	2875	X	=	3875	FF	=	5750

SHIPPING MASS (weight) Calculation (Kg. (lbs.))

Shipping Mass (weight) = Curb Weight Less:

33 (72)

METRIC (U.S. Customary)

Vehicle Line FESTIVA
Model Year 1990 Issued 11/88 Revised (e) 6/16/89

*Also see Engine - General Section for dressed engine mass (weight).