TECHNICAL SPECIFICATIONS
PUBLICATIONS LIST
RECALL CAMPAIGN
SERVICE BULLETIN INDEX

328 / 328
GTB / GTS

Ferrari **Servizio Assistenza Tecnica**

Ferrari

FERRARI NORTH AMERICA

328 / 328 GTB / GTS

U.S. VERSION

TECHNICAL SPECIFICATIONS

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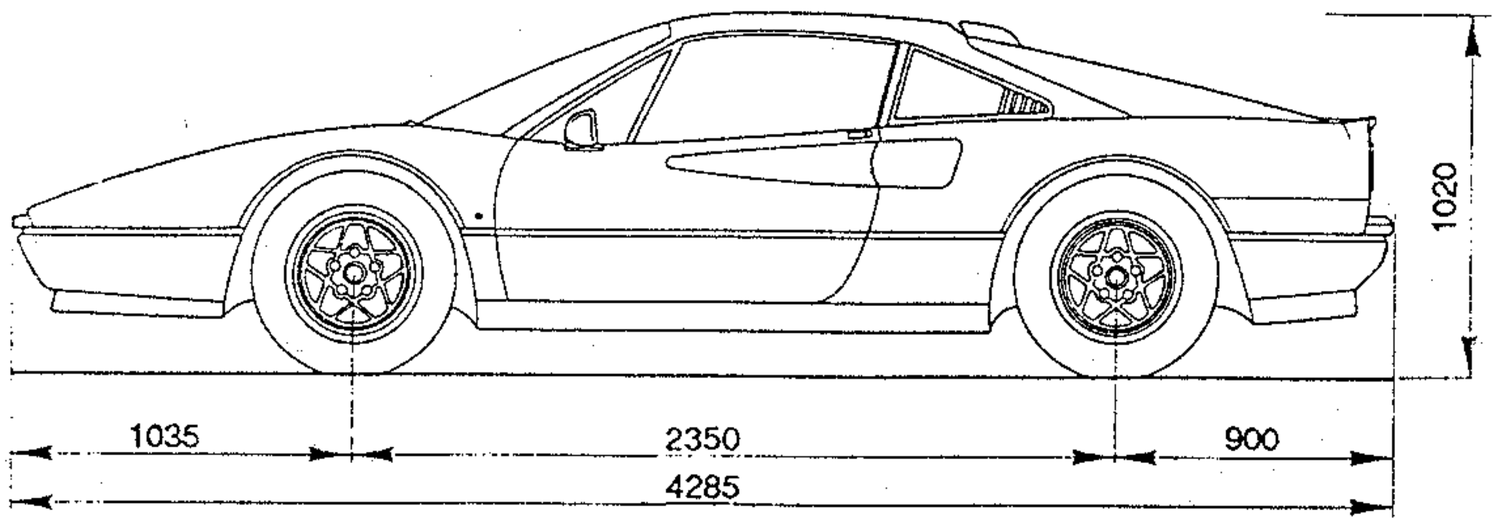
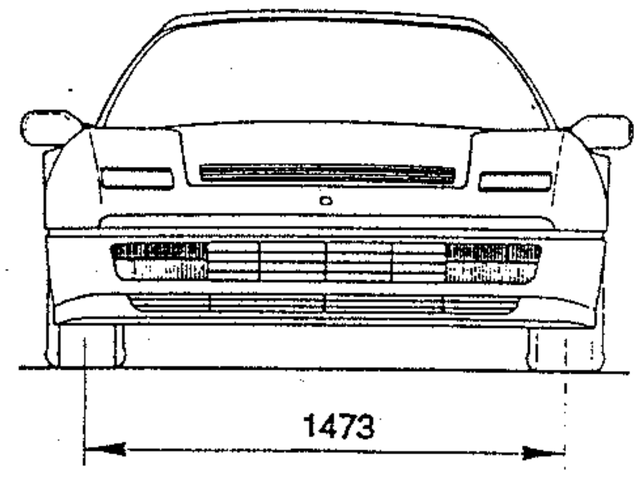
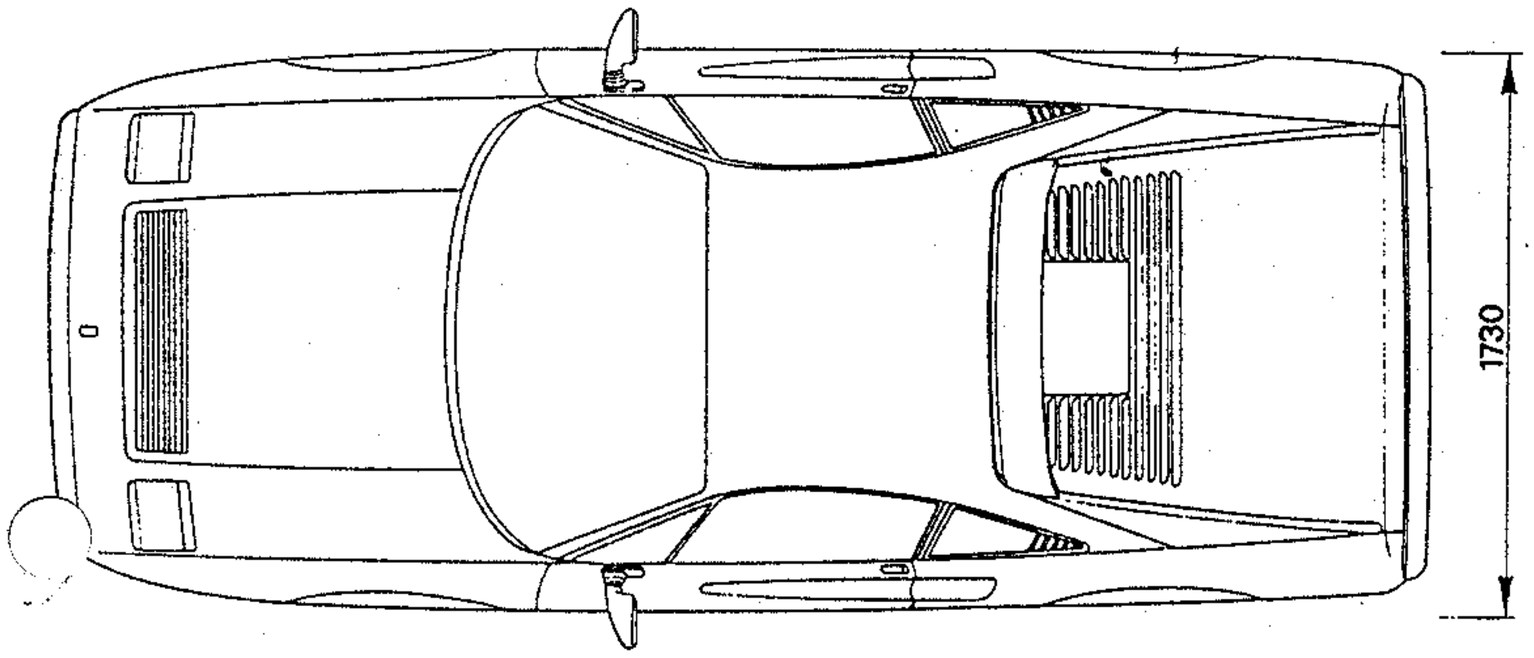
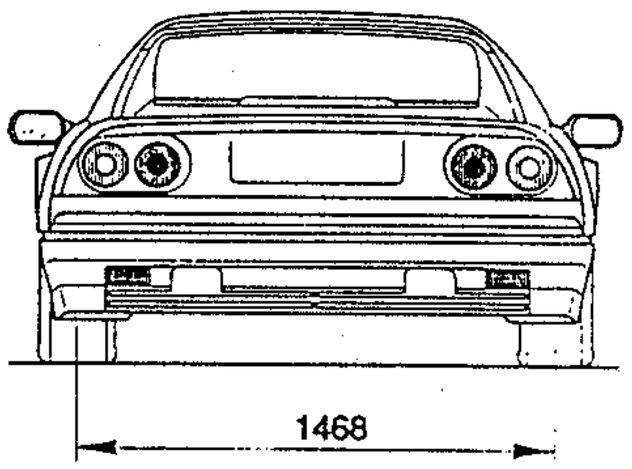
GENERAL INFORMATION

OVERALL DIMENSIONS









Wheel Base	MM	2350
Front Track	MM	1473
Rear Track	MM	1468
Overall Length	MM	4285
Overall Width	MM	1730
Overall Height (unloaded vehicle)	MM	1020
Designated Seating Capacity		2
Curb Weight	KG KG	1422 (GTB) 1435 (GTS)
Gross Weight (fully laden)	KG KG	1620 (GTB) 1635 (GTS)

PERFORMANCES

Attainable speeds at 1000 RPM		
- 1st gear	KM/H	8.6
- 2nd gear	KM/H	12.5
- 3rd gear	KM/H	17.3
- 4th gear	KM/H	24.5
- 5th gear	KM/H	31.9
Maximum Speed	KM/H	250

ACCELERATION

0 - 400 m	SEC	14.6
Standing Kilometer	SEC	26.4

VIN (VEHICLE IDENTIFICATION NUMBER) INTERPRETATION

Digit No.	Designation	Description
1-2-3	ZFF	Manufacturer-Ferrari
4	X	Engine Type-F105 C 040- US Version 3.2 liter-4valve
5	A	Passenger Protection System
6-7	12	Model Designation
8	A	Version-USA
9	-	Check Digit-USA
10	G	Model Year G-1986 H-1987 J-1988
11	0	Manufacturing Plant
12-13-14-15-16-17	-	Chassis Progressive Number

CAPACITIES

Engine Oil	Initial Fill	LTR	10
	Refill (w/filter)	LTR	8
	Cap. on Dipstick (min. to max.)	LTR	2
	Viscosity		SAE 10W-40, 10W-50 15W-40, 15W-50
	API Rating		SF/CD
Gearbox-Differential	Capacity	LTR	4
	Viscosity		75W-90, 80W-90
	API Rating		GL-5
Air Conditioning			
	Refrigerant-R-12	KG	1.0
	Compressor Oil	LTR	.33
	Type		Carrier PP-3636
Brake Circuit			
	Capacity	LTR	0.58
	Type		Super HD Dot 4
Cooling System			
	Capacity	LTR	22
	Antifreeze Mixture (to -30°C)	LTR	11
Fuel System			
	Capacity	LTR	70
	Type		Prem. Unleaded Min. 95 RON or 91 $\frac{R+M}{2}$

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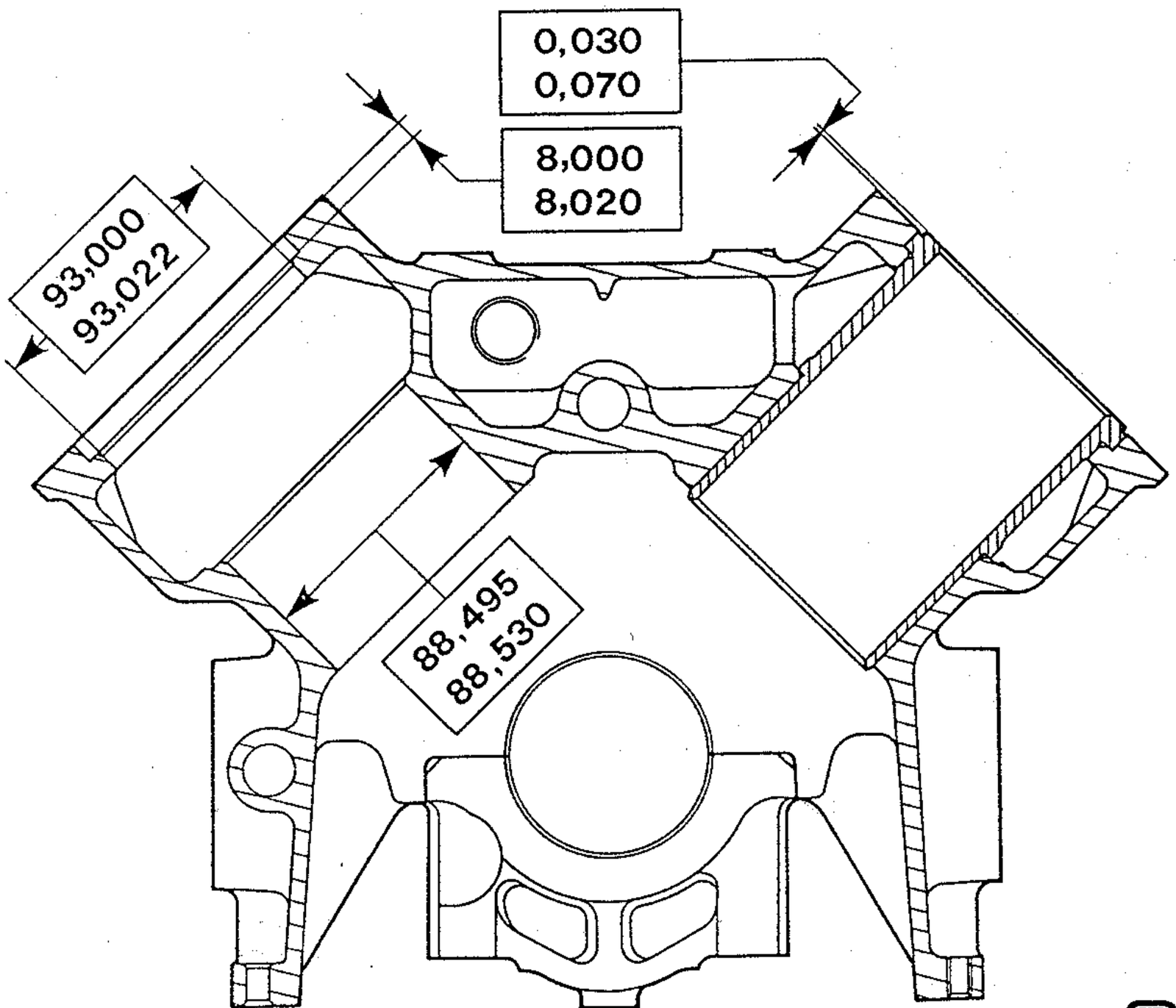
ENGINE

MAIN SPECIFICATIONS

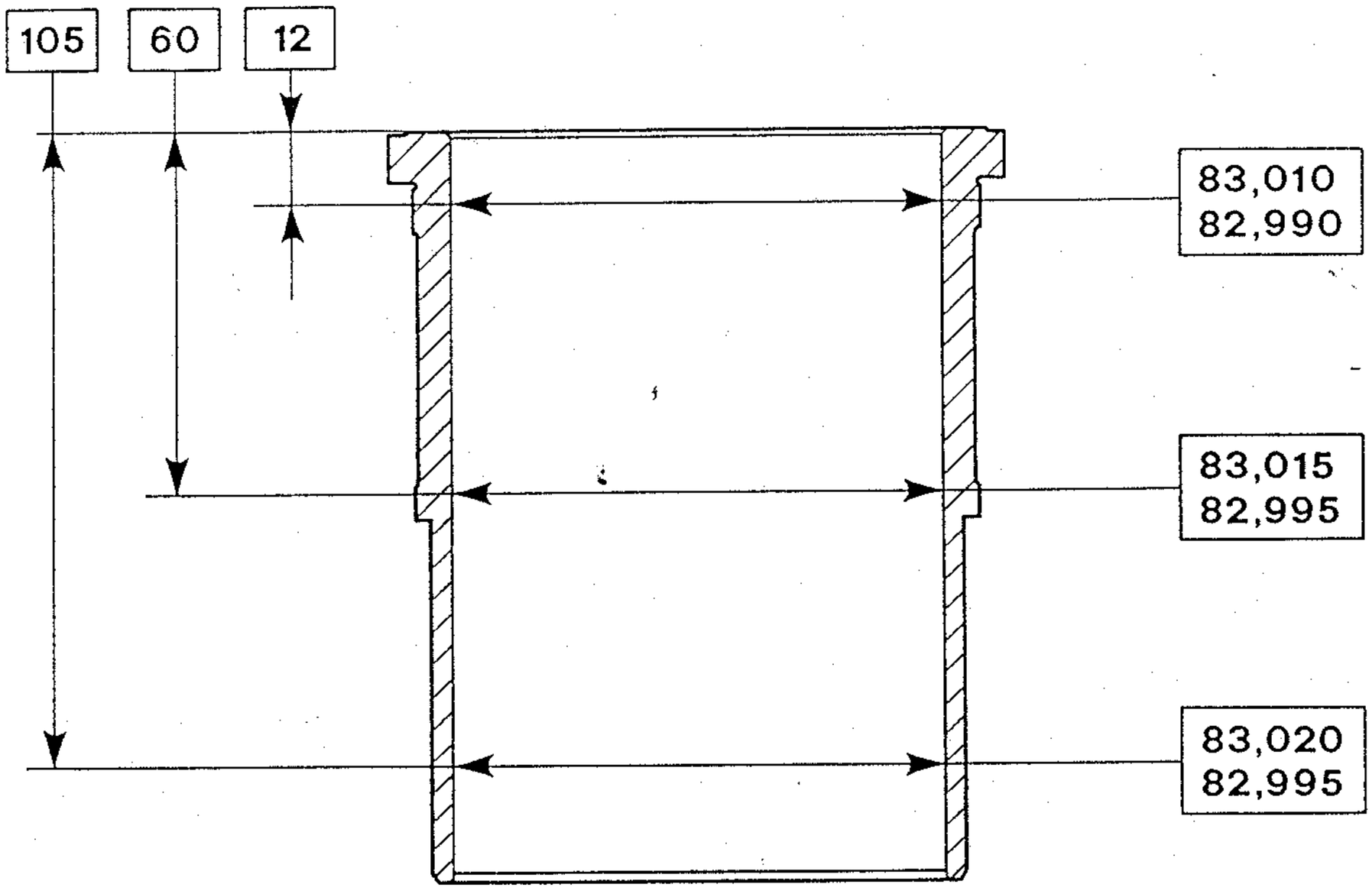
Type (US Version)		F 105C040
Cylinders		8 a V di 90°
Cylinder Bore	MM	83
Piston Stroke	MM	73.6
Piston Displacement	CC	3186
Compression Ratio		9.2:1
Max. Engine Speed	RPM	7700
DIN Max. Power	CV	260
Corresponding Engine Speed	RPM	7000
Maximum Torque	Kgm	29.5
Corresponding Engine Speed	RPM	5500

CRANKCASE AND CYLINDER LINERS



CRANKCASE AND CYLINDER LINERS - CONT.

Max. wear of cylinder liner bore	MM	0.080-0.100
Max. taper	MM	0.010-0.025
Max. ovalization	MM	0.010-0.025
Grinding degree of liner (roughness)	UM	0.6-0.8
Liner Protrusion from crankcase	MM	0.03-0.07

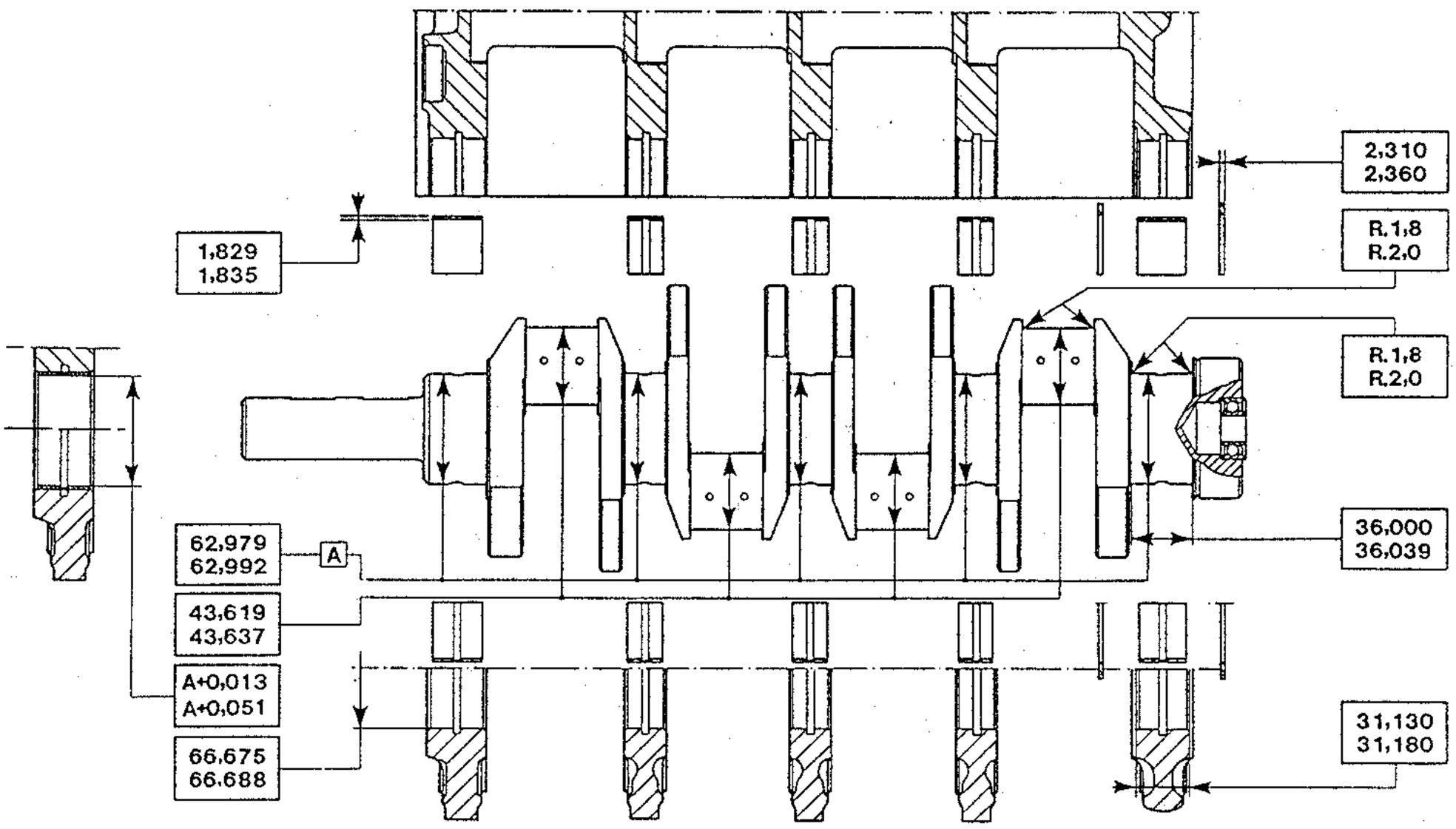


CRANKSHAFT - MAIN BEARINGS

Fit, main bearings/main journals		
Assembling Clearance	MM	0.013-0.051
Limit of Wear	MM	0.15
Crankshaft end float with shims		
Assembling Clearance	MM	0.100-0.240
Limit of Wear	MM	0.30
Max. permitted allowance on main journal alignment	MM	0.02
Max. permitted allowance on the parallelism of crankpins in respect with main journals	MM	0.01

CRANKSHAFT - MAIN BEARINGS - CONT.

Max. ovalization of journals and crankpins after grinding	MM	0.01
Perpendicularity in relation to the rotation axis of the flywheel flange surface at 48mm from the axis. The permitted allowance is:	MM	0.025
Surface hardness of main journals and crankpins	HRC	56
Surface finishing of main journal and crankpins	μ	0.2
Diameter of main journals	MM	62.979-62.992
Diameter of crankpins	MM	43.619-43.637
Inside diameter of main bearing saddle in crankcase	MM	66.675-66.688
Thickness of Main Bearing	MM	1.829-1.835
Main Bearing Preload (minimum)	MM	0.05



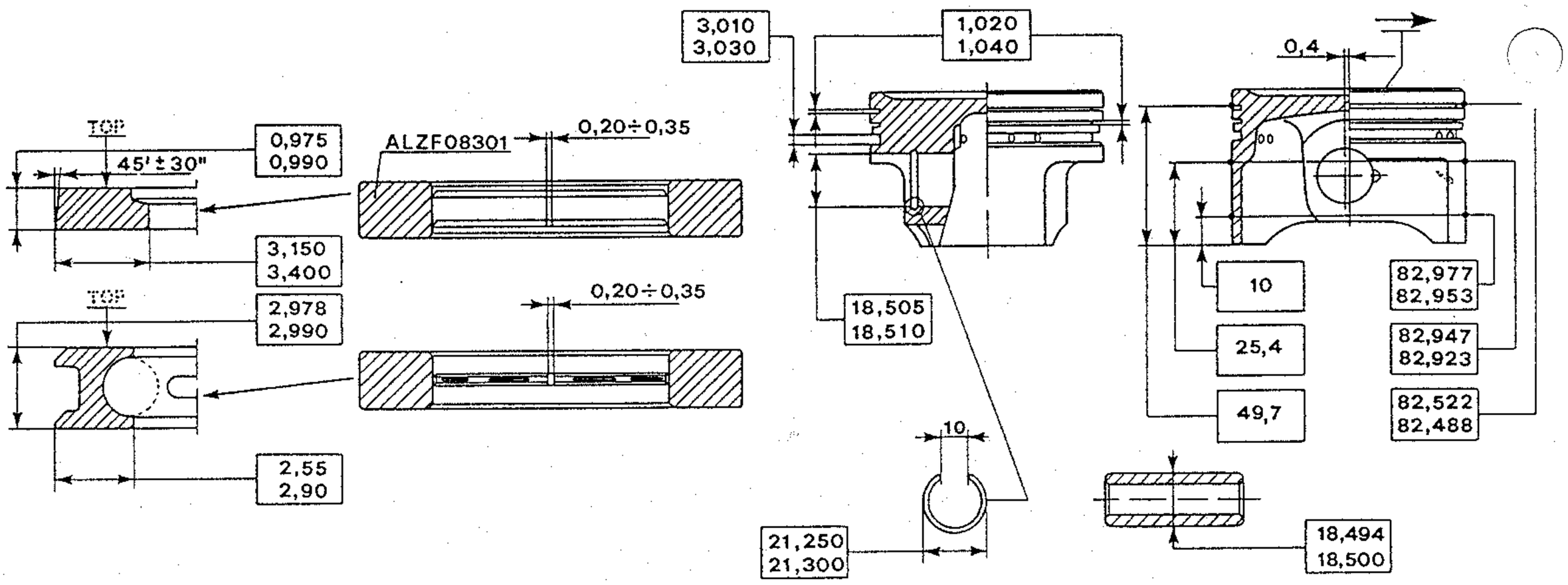
Diameter of Main Journals		
Nominal Diameter	MM	62.979-62.992
1st Undersize (-0.254)	MM	62.725-62.738
2nd Undersize (-0.508)	MM	62.471-62.484

CRANKSHAFT - MAIN BEARINGS - CONT.

Thickness of Main Bearings		
Nominal Diameter	MM	1.829-1.835
1st Oversize (+0.127)	MM	1.956-1.962
2nd Oversize (+0.254)	MM	2.083-2.089
Thickness of Shims (End Float)		
Nominal Diameter	MM	2.310-2.380
1st Oversize (+.025)	MM	2.560-2.610

PISTONS - CONNECTING RODS

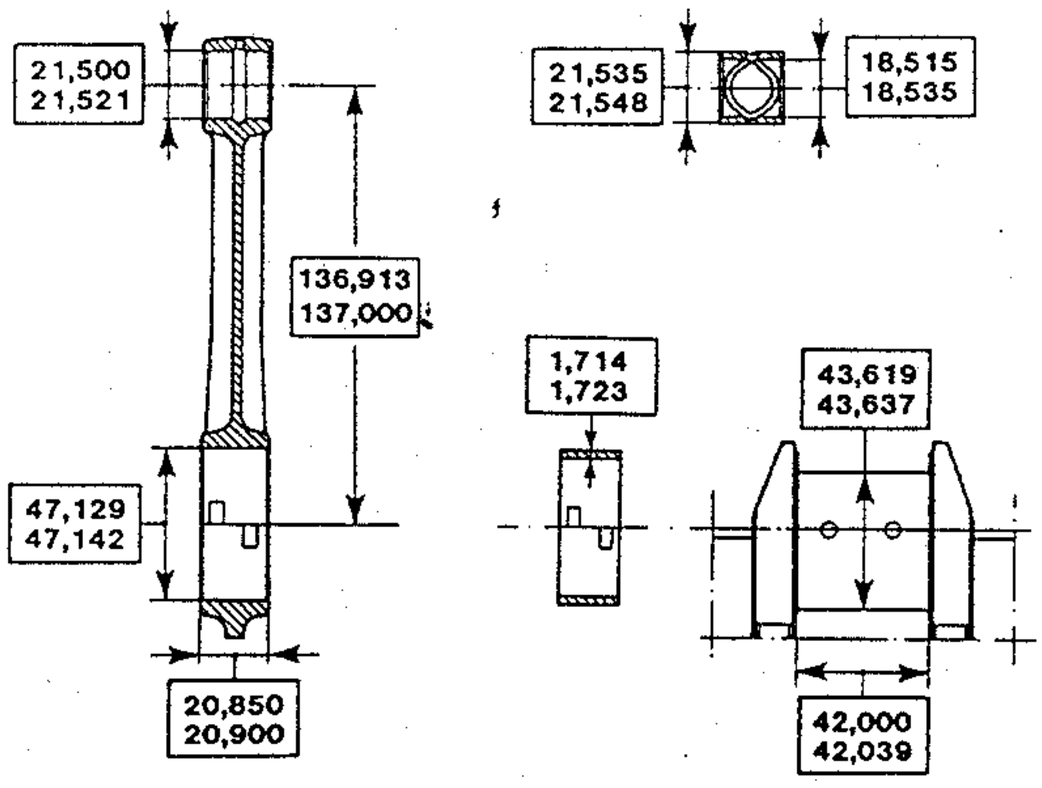
Fit, Piston Skirt/Cylinder Wall (measure 8.5mm from the base)		
-Assembling Clearance	MM	0.020-0.060
-Limit of Wear	MM	0.10
Piston Ring Groove/Piston Ring Clearance		
-1°-2°core shaped piston ring	MM	0.030-0.065
-3° oil scraper ring	MM	0.020-0.052
-Limit of Wear	MM	0.13
Wear Limit of Piston Rings (measured in tool CS 5730)	MM	0.8-1.0



Fit, Piston pin/conn. rod small end	MM	0.015-0.041
-Limit of Wear	MM	0.050
Interference, pin bushing/conn. rod	MM	0.014--.048
Fit, big end bearings/crankpins		
-Assembling Clearance	MM	0.046-0.089
-Limit of Wear	MM	0.012

PISTONS - CONNECTING RODS - CONT.

End Float of coupled conn. rods	MM	0.200-0.339
Diameter of crankpins (crankshaft)		
-Nominal diameter	MM	43.619-43.637
-1st undersize (-.254)	MM	43.365-43.383
-2nd undersize (-.508)	MM	43.111-43.129
Thickness of Big End Bearings		
-Nominal diameter	MM	1.714-1.723
-1st oversize (+0.127)	MM	1.841-1.850
-2nd oversize (+0.254)	MM	1.968-1.977

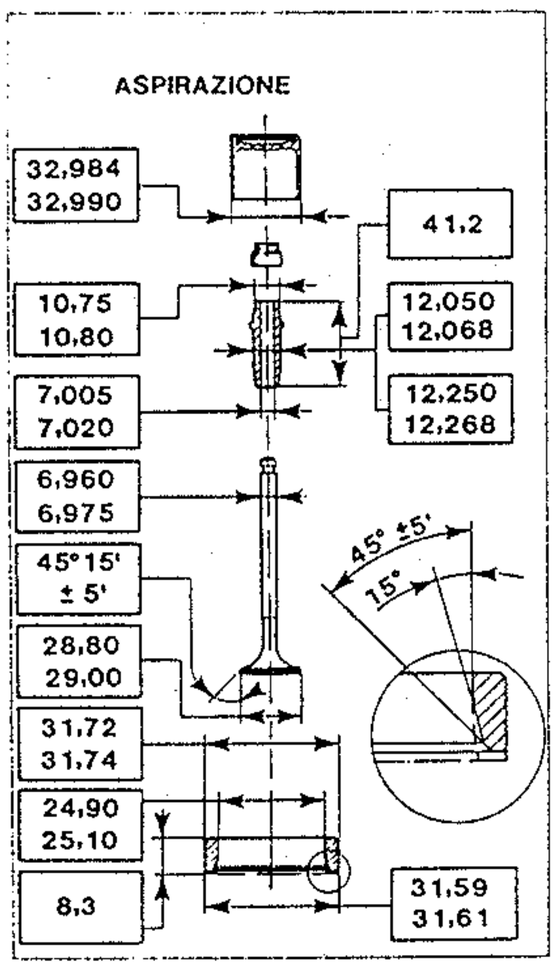


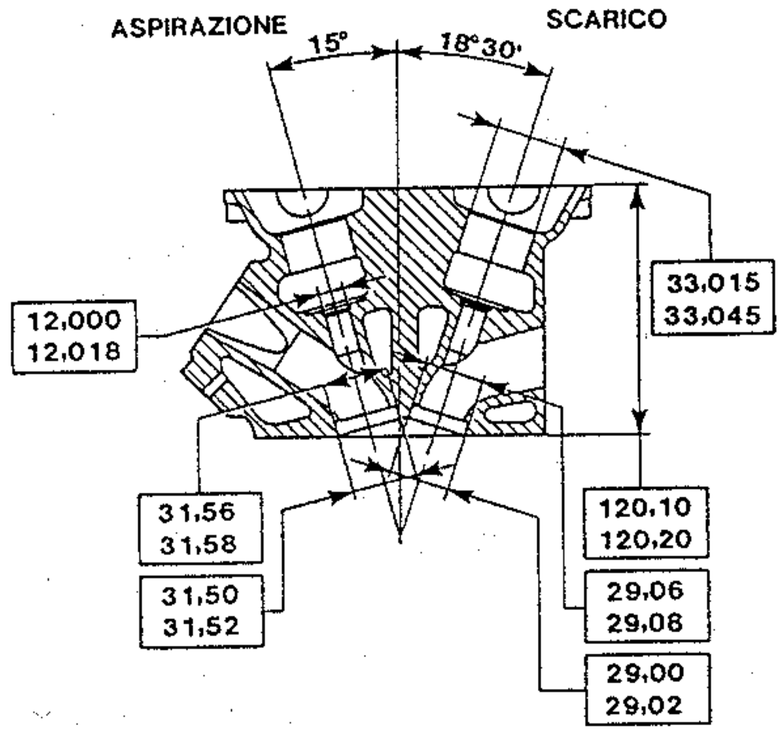
Weight Grading - Connecting Rods

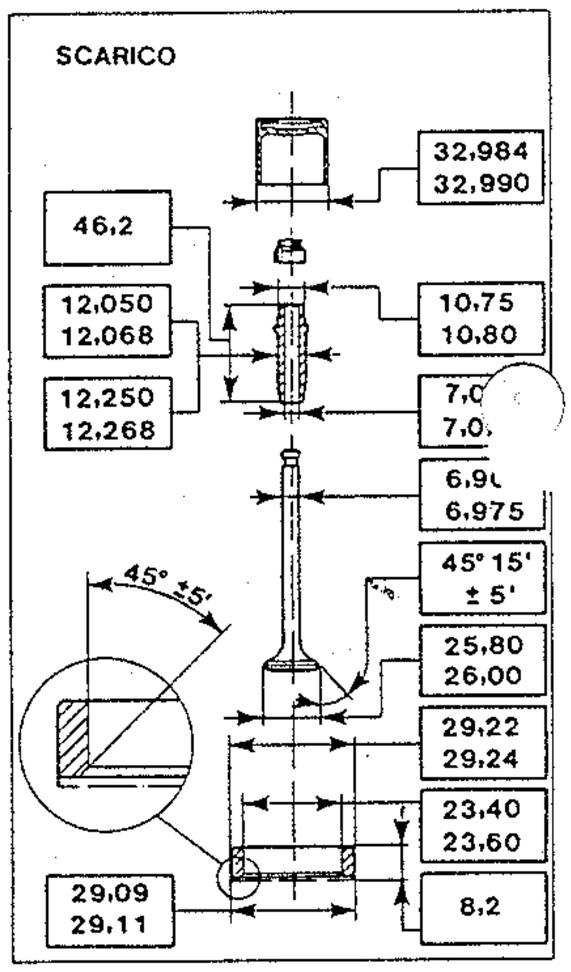
LETTER	CORRESPONDING in gr.
A	520 ÷ 524
B	524 ÷ 528
C	528 ÷ 532
D	532 ÷ 536
E	536 ÷ 540
F	540 ÷ 544
G	544 ÷ 548
H	548 ÷ 552
I	552 ÷ 556
L	556 ÷ 560
M	560 ÷ 564
N	564 ÷ 568
O	568 ÷ 572
P	572 ÷ 576
Q	576 ÷ 580
R	580 ÷ 584
S	584 ÷ 588
T	588 ÷ 592
U	592 ÷ 596
V	596 ÷ 600

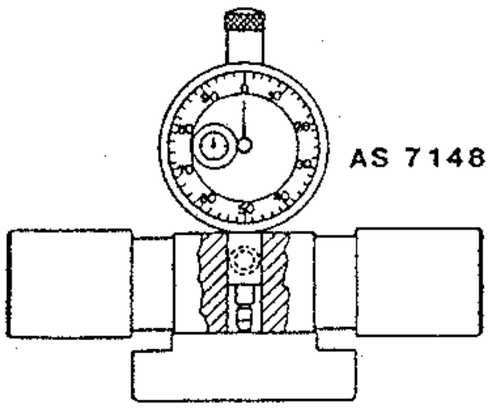
CYLINDER HEADS

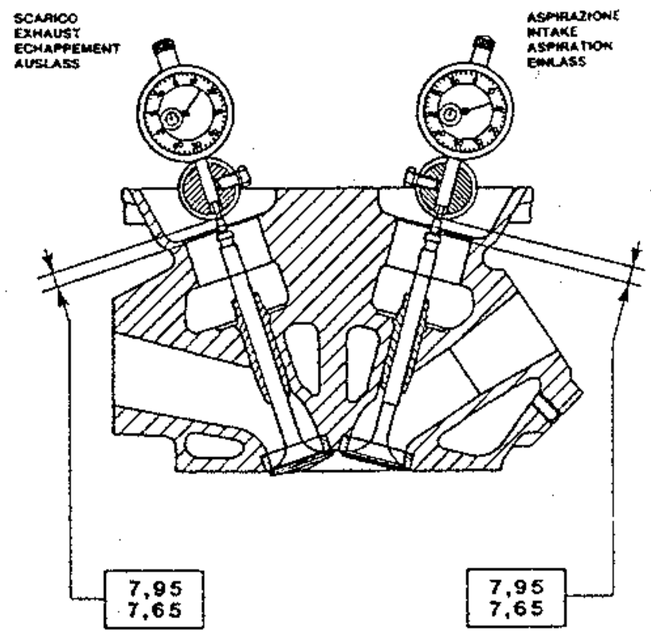
Assembling interface between valve guide and seat in head		MM	0.032-0.068
Interface on seats	Max. Dia.	MM	0.18-0.14
	Min. Dia.	MM	0.11-0.07
Fit, Valve stem/valve guide			
-Assembling Clearance (int. & exh.)		MM	0.025-0.045
-Limit of Wear		MM	0.10
Max. misalignment between valve stem and head (int. & exh.)		MM	0.02
Clearance between thimble and relevant seat			
-Assembling Clearance		MM	0.025-0.061
-Limit of Wear		MM	0.10





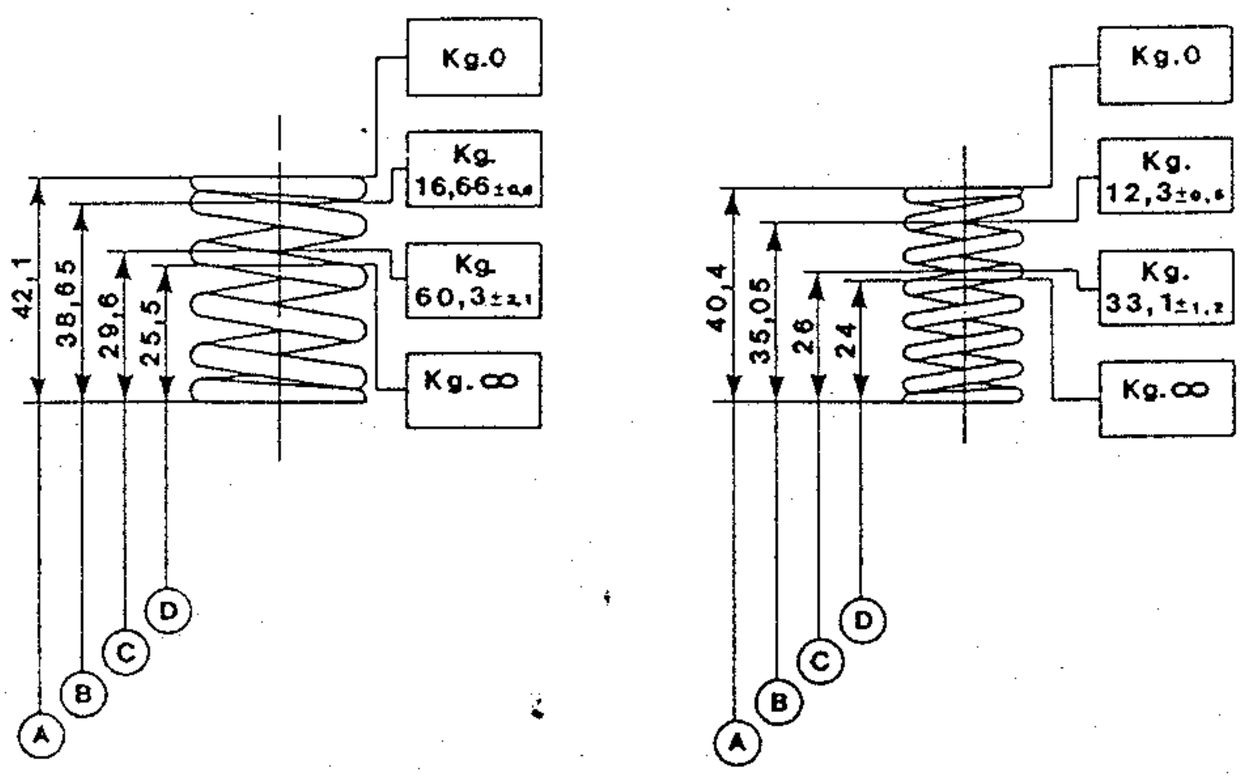






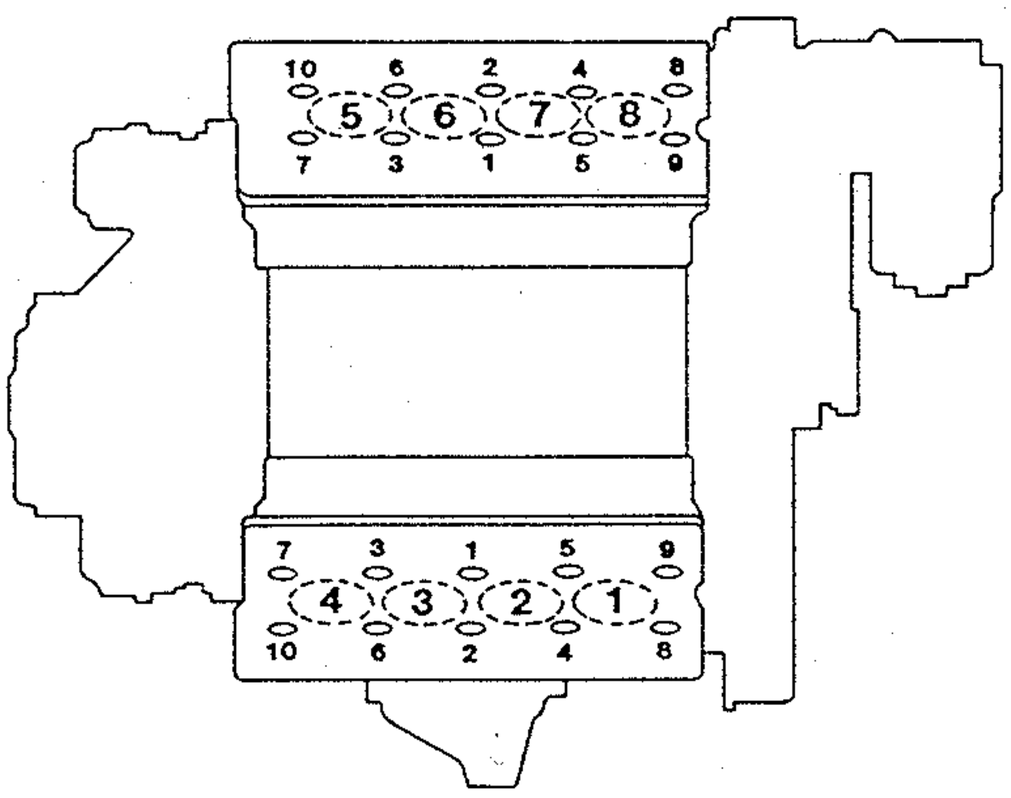
CYLINDER HEADS - CONT.

Valve Spring Data

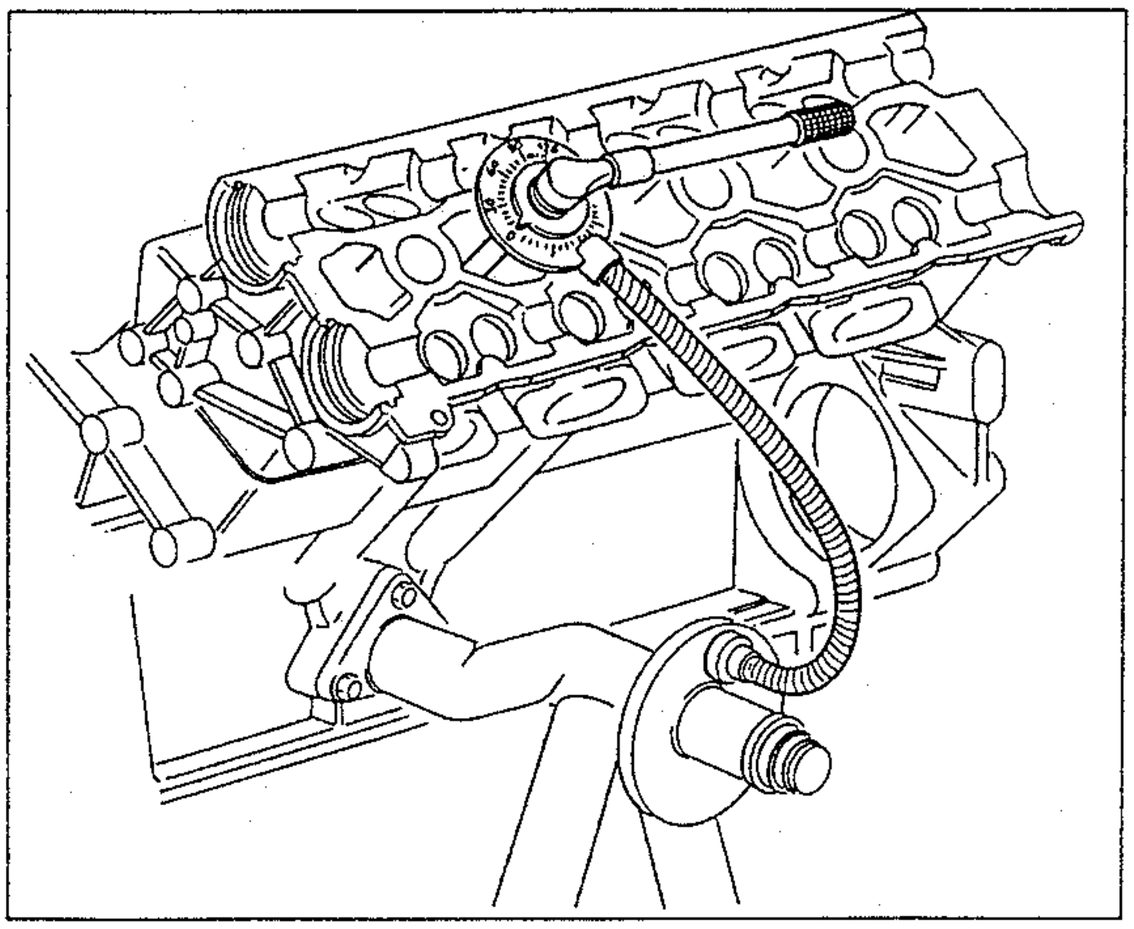


Tightening Information

Tightening Sequence



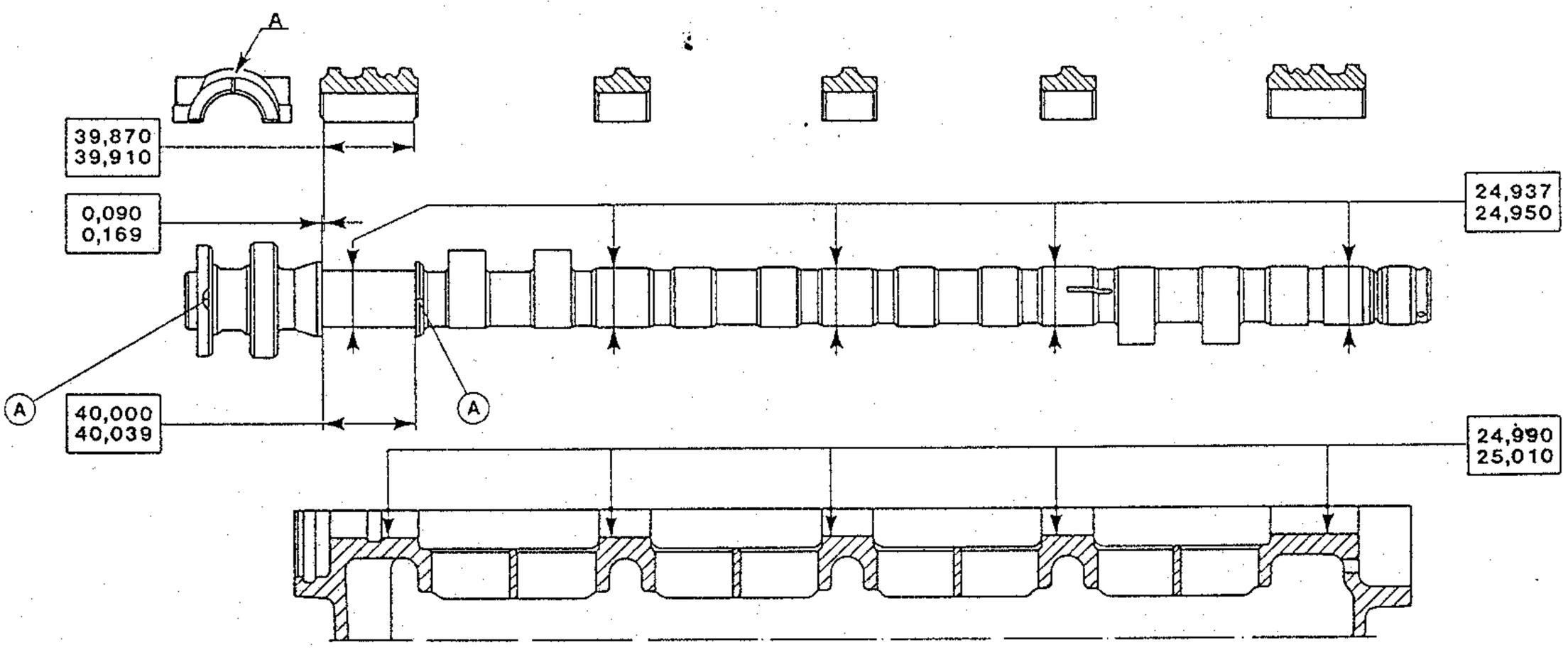
Cylinder head tightening using degree wheel USAG No. 830 ½ and Ferrari socket AV 1393



Procedure: (see Service Bulletin 10-14)
- Initially torque cylinder head to 4.5 Kgm (35 ft. lbs.)
- Then tighten each nut in sequence an additional 120° of rotation of the nut.

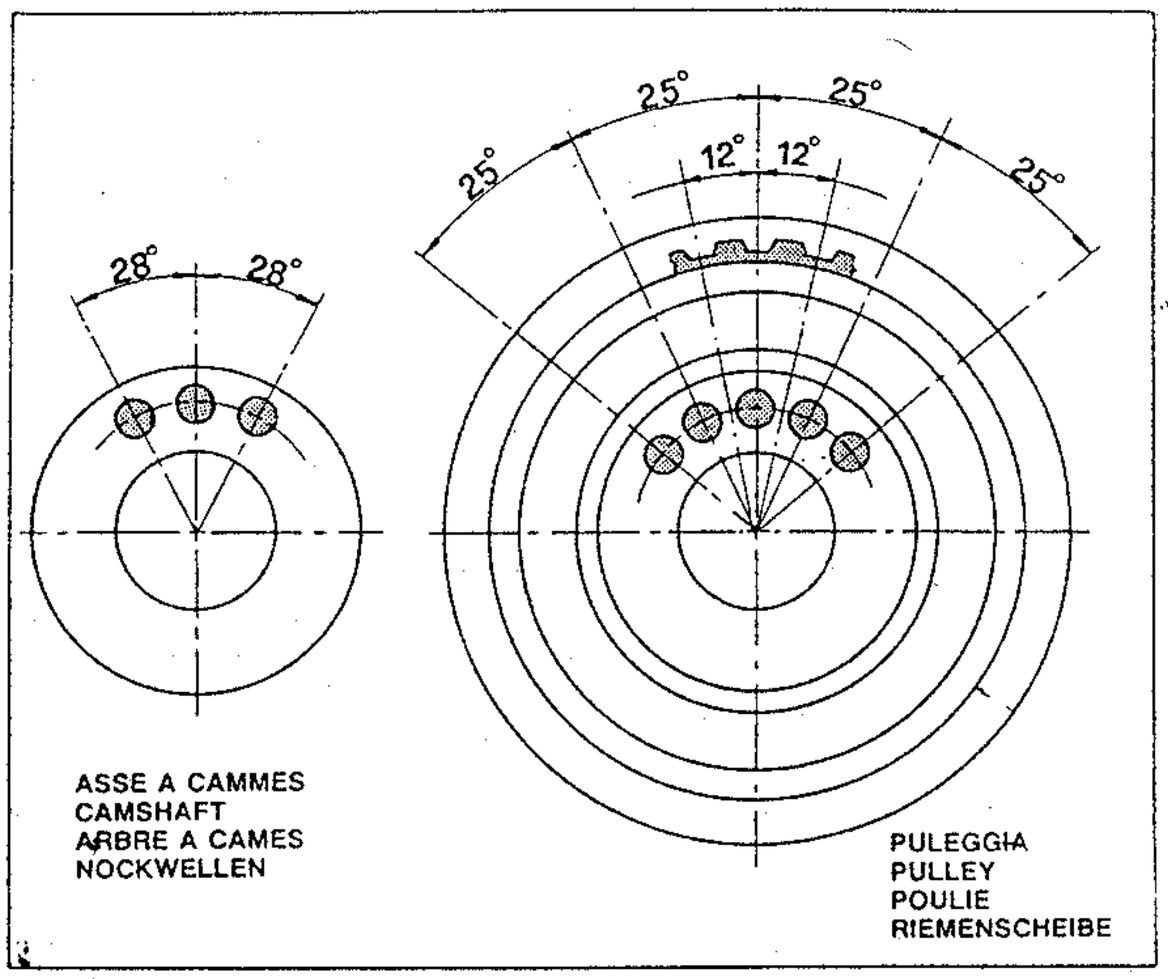
TIMING SYSTEM

Fit, camshaft/camshaft seats		
-Assembling Clearance	MM	0.040-0.073
-Limit of Wear	MM	0.10
End Float	MM	0.050--.169
Maximum Eccentricity	MM	0.044
Shim Thickness	MM	3.25-4.60
-in steps of:	MM	0.05
Operating Clearance		
-intake	MM	0.20-0.25
-exhaust	MM	0.35-0.40



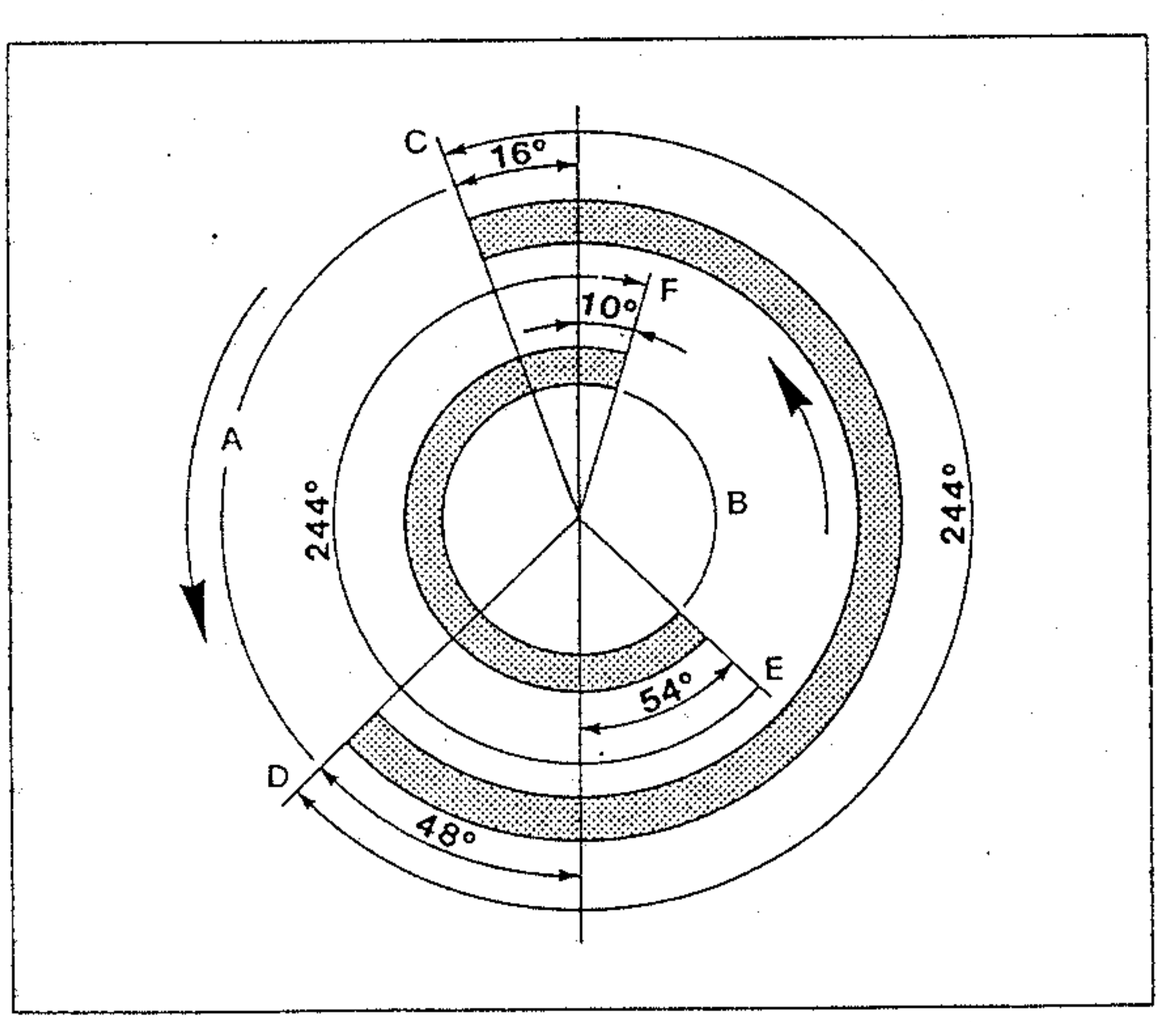
TIMING SYSTEM - CONT.

Drillings of Camshaft & Pulleys



VALVE TIMING

Timing Clearance		
-Intake & Exhaust	MM	0.50
Intake		
-Opens before TDC	°	16
-Closes after BDC	°	48
Exhaust		
-Opens before BDC	°	50
-Closes after TDC	°	10
Tolerance	°	± 1



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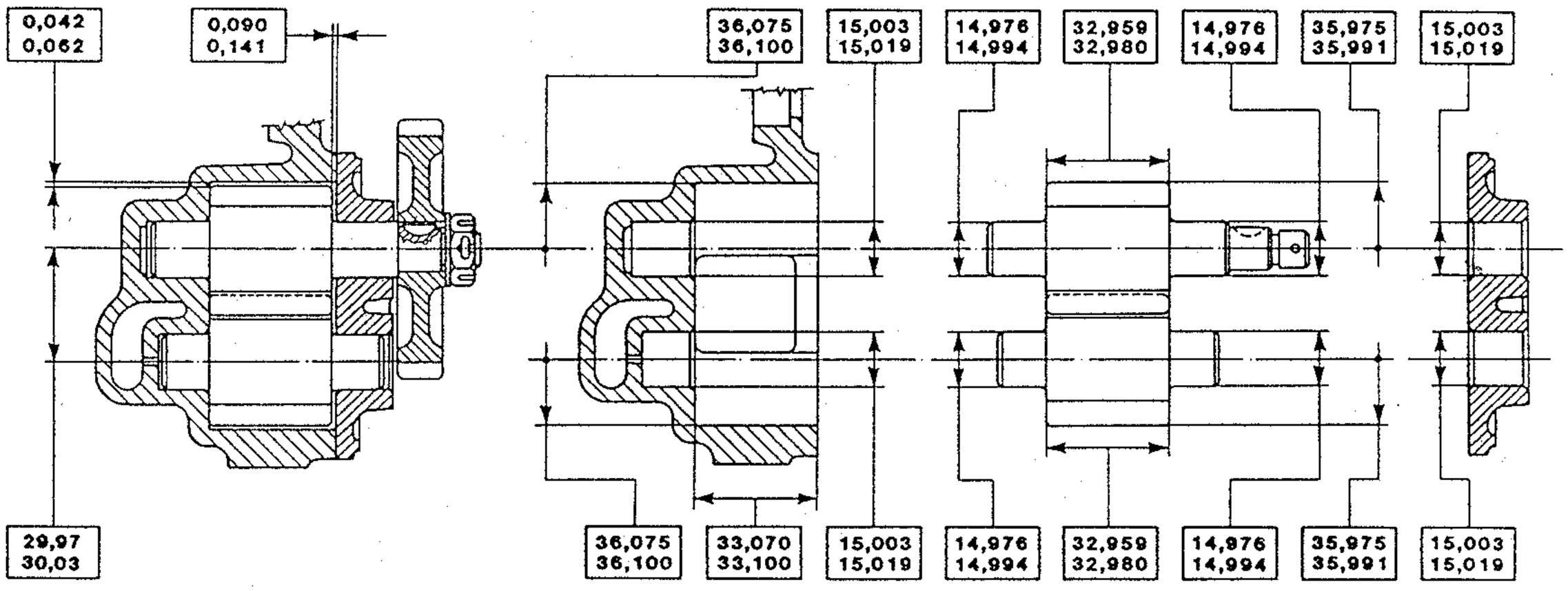
LUBRICATION SYSTEM

MAIN SPECIFICATIONS OF OIL PUMP

Clearance between gear teeth	MM	0.2-0.3
Assembling radial play between pin and support	MM	0.009-0.043
-limit of wear	MM	0.08
Mesh clearance of driving gear on crankshaft	MM	0.04-0.08
End Float-max. limit	MM	0.15

OIL PUMP



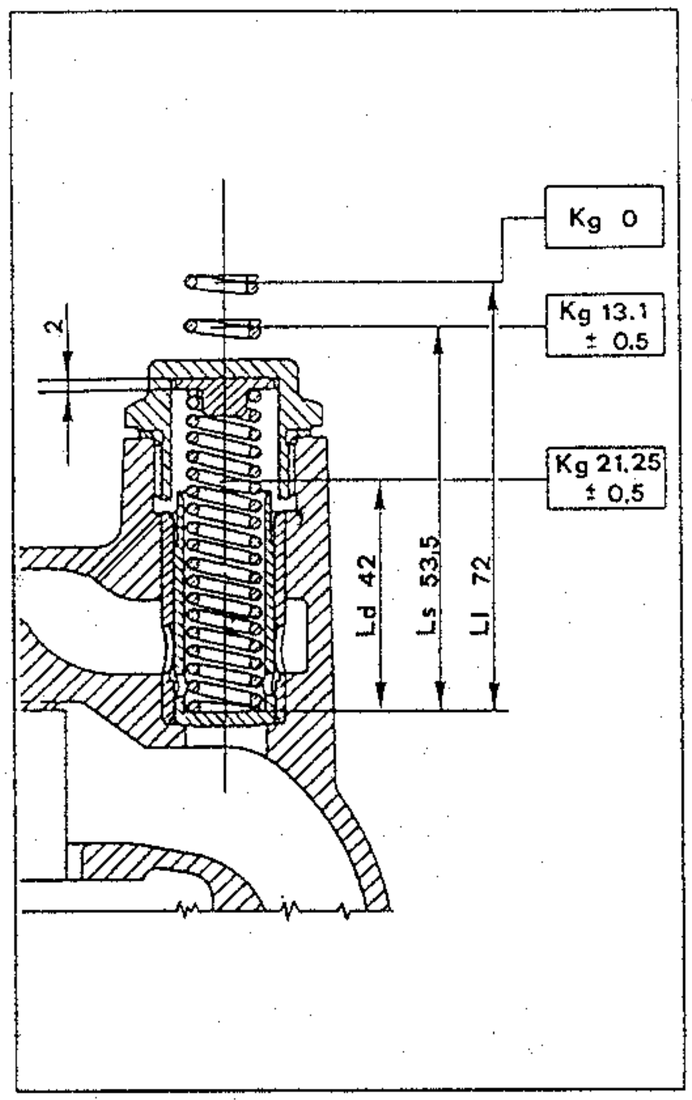
OIL FILTER

Type	
-UFI	41.23.162.20
-Savara	9.28.239

OIL PRESSURE

At 6000° RPM - 100° C Oil temp.	Bar	5.5-6.5

Oil Pressure Relief Valve



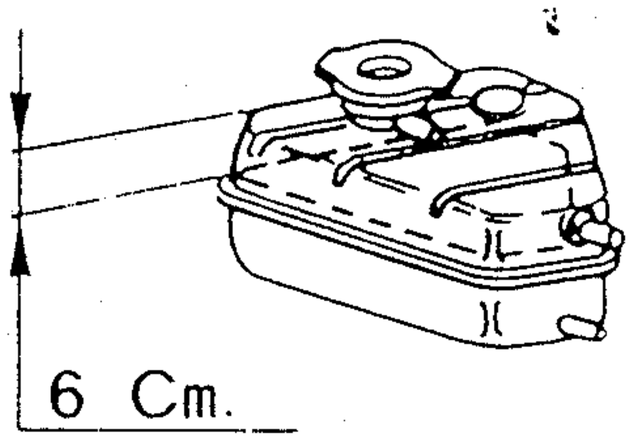
ENGINE OIL

Initial Fill	LTR	10
Refill (w/filter)	LTR	8
Cap. on Dipstick (min. to max.)	LTR	2
Viscosity		SAE 10W-40, 10W-50 15W-40, 15W-50
API Rating		SF/CD

COOLING SYSTEM

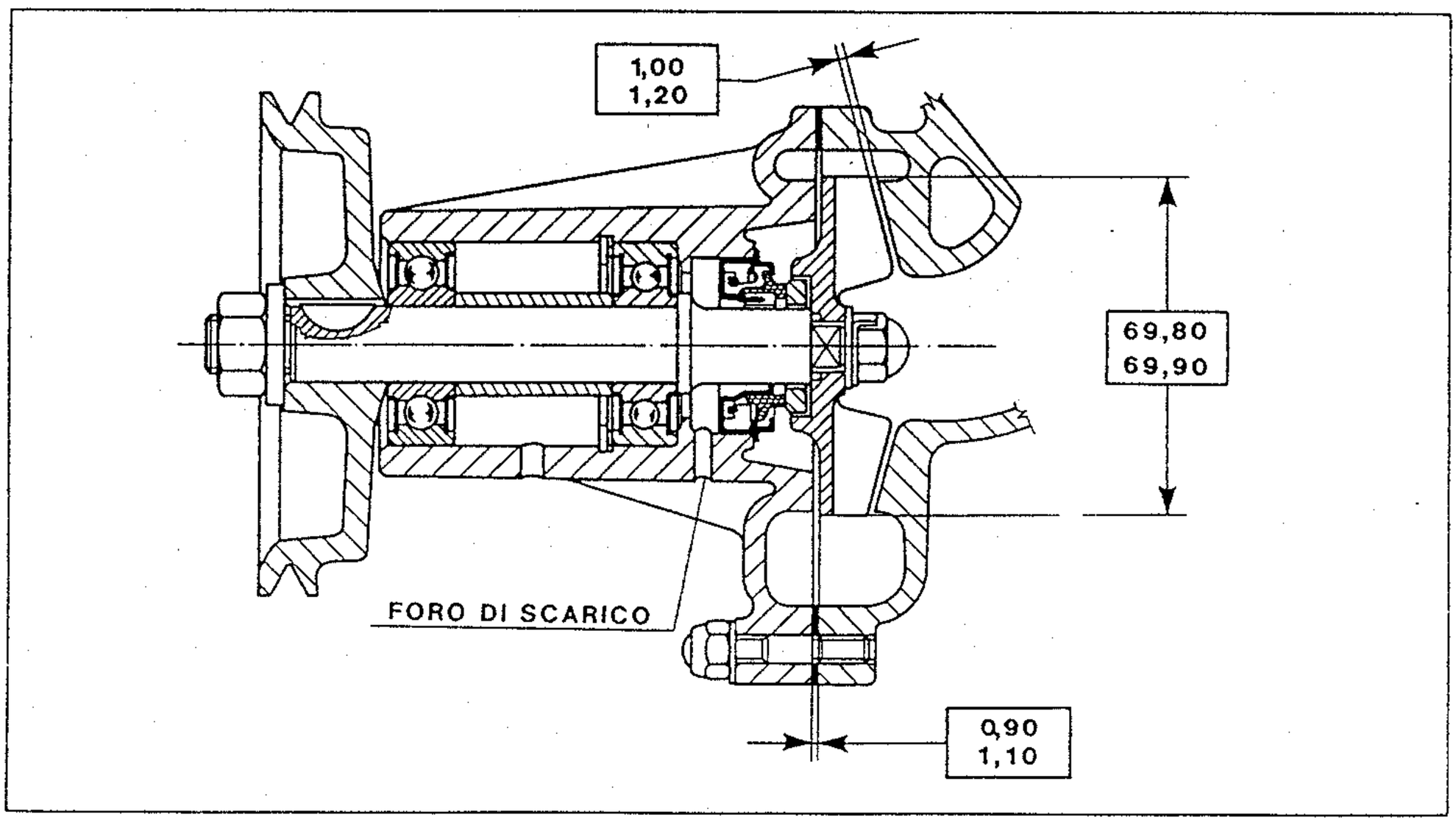
MAIN SPECIFICATIONS

Max. Operating Pressure	Bar	0.9
Max. Operating Temperature	°C	115
Thermostatic Switch		
-Opens	°C	84
-Closes	°C	75
Coolant Capacity		
-50%-50% mixture of antifreeze & water	lit.	22
Coolant Level (Warm Engine)	CM	6



Coolant Level in
Expansion Tank (Warm Engine)

WATER PUMP

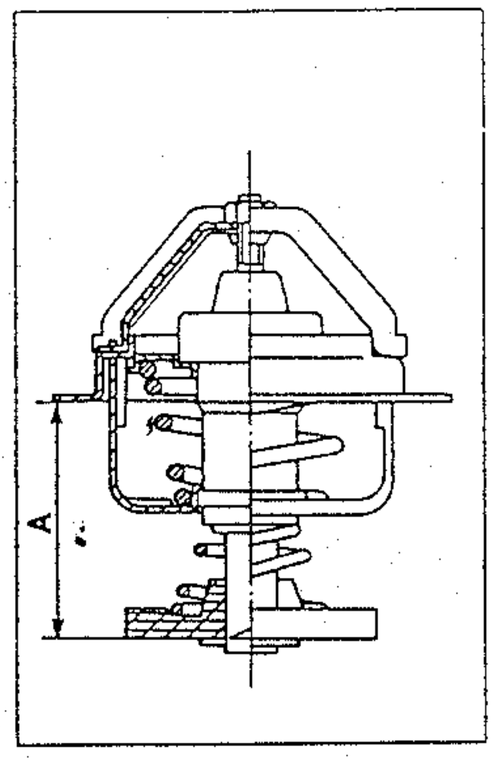


THERMOSTAT OPENING

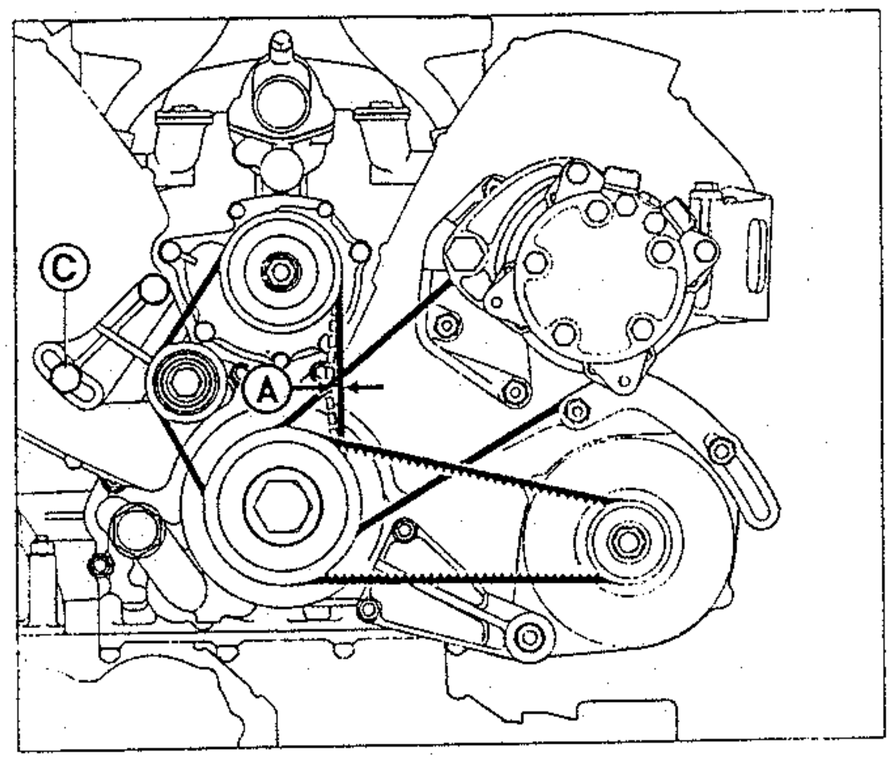
(Dimension A)

20 °C	MM	32.5
75 °C	MM	41
96 °C	MM	44.5

Thermostat Opening (Dimension A)



WATER PUMP BELT TENSION



Manual Tensioning (with 5mm defection)

-new belt	KG	3
-used belt	KG	2.5

With Tensiometer (Gates 150)

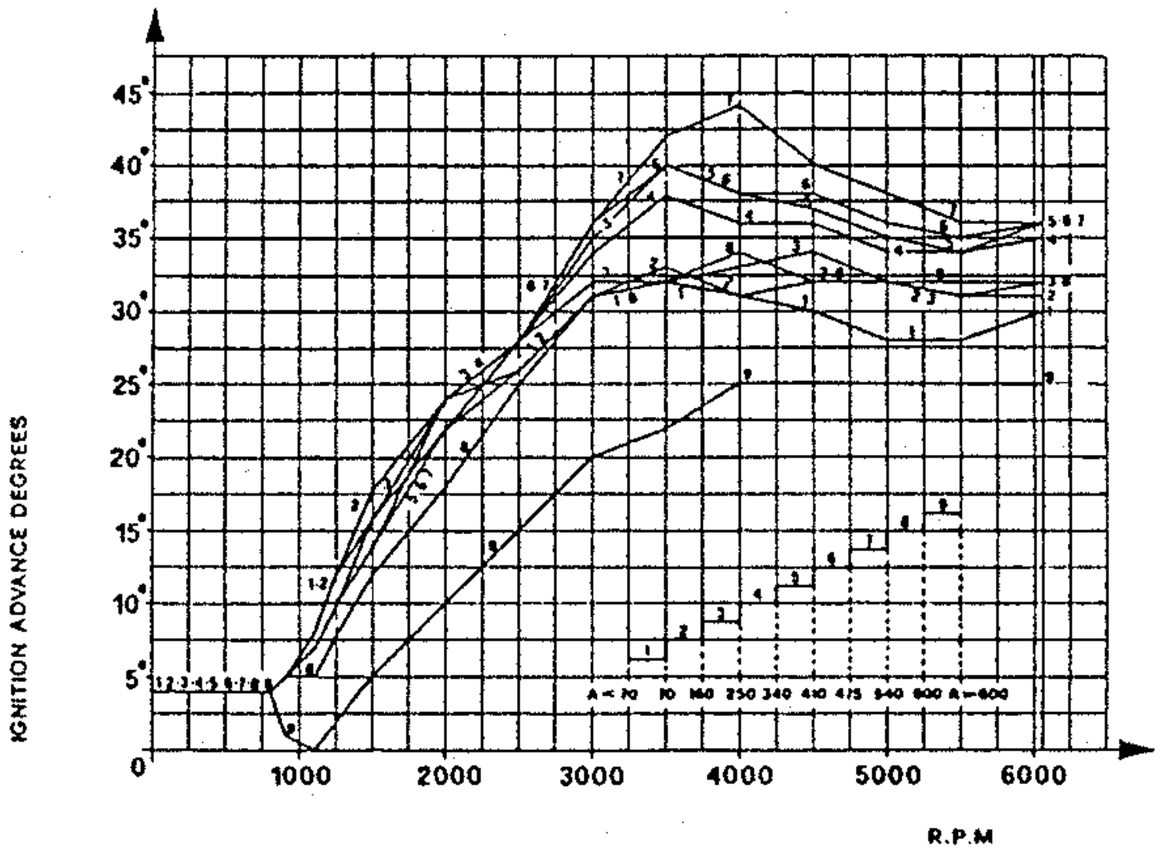
-new belt	KG	38-45
-used belt	KG	31-38

IGNITION SYSTEM

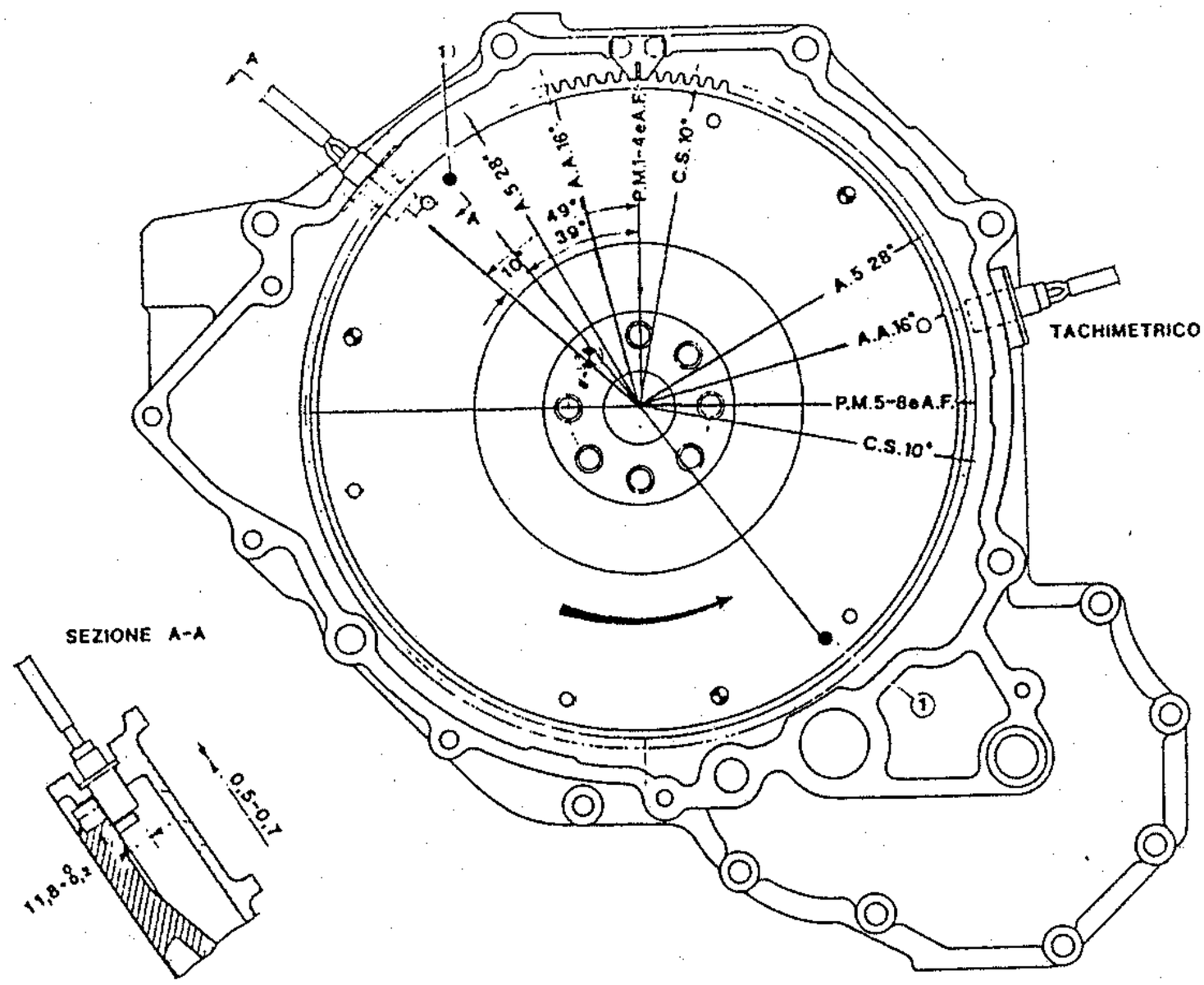
MAIN SPECIFICATIONS

Ignition Control Unit		Marelli Microplex MED806A
-advance at 1000RPM with		0
vacuum hose connected		
-advance at 5000RPM with		28
vacuum hose disconnected		
-no. of memorized curves		9
Ignition Coil W/Power Stage		Marelli AE 1500-C
-firing order		1-3-4-2 5-7-8-6
Spark Plugs		
-type		Champion A6G
-thread		M12 x 1.25
-electrode gap		mm 0.6-0.7
Sensors		
-Top dead center		Sens8F
-Tachimetric		Sens8F
Jofatron Settings		
-Memory Code		27
-TDC pickup offset Angle	1/4	10
	5/8	00
-No. of cylinders		4

IGNITION ADVANCE CURVES



FLYWHEEL MARKINGS



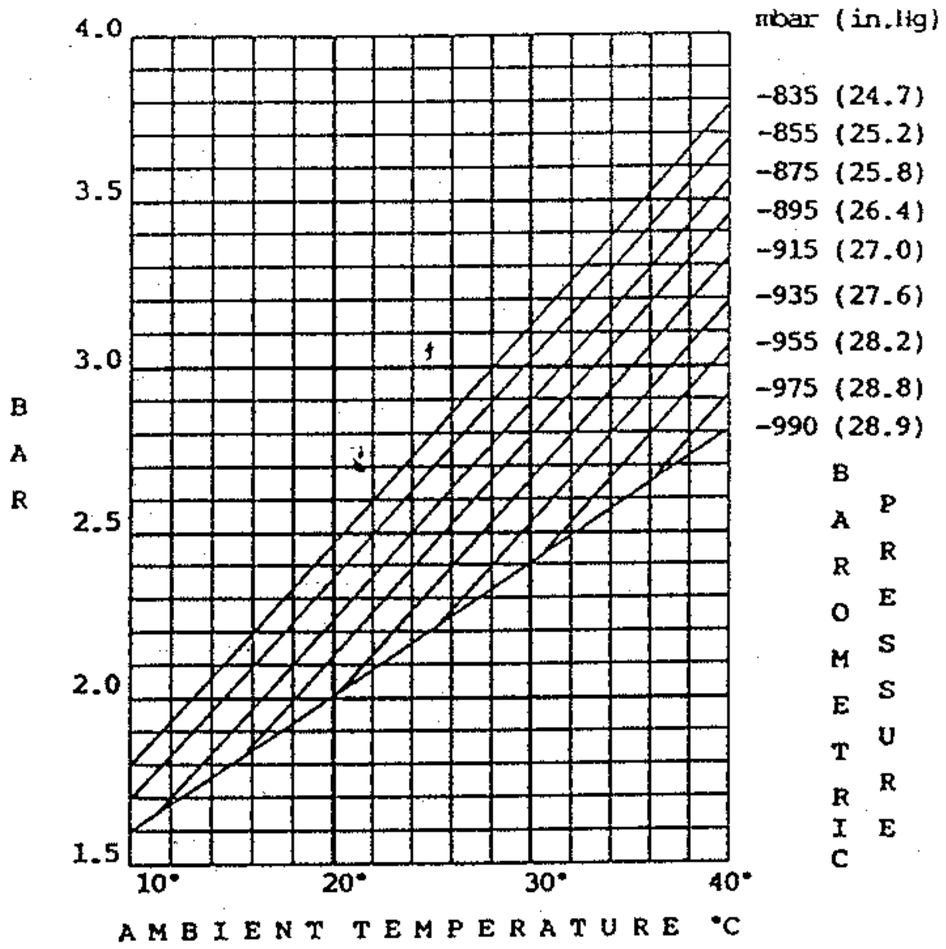
AA - Opening of Intake Valve
PM - Top Dead Center + Advance at 1000 RPM
A-5 - Advance at 5000 RPM
CS - Closing of Exhaust Valve

INJECTION

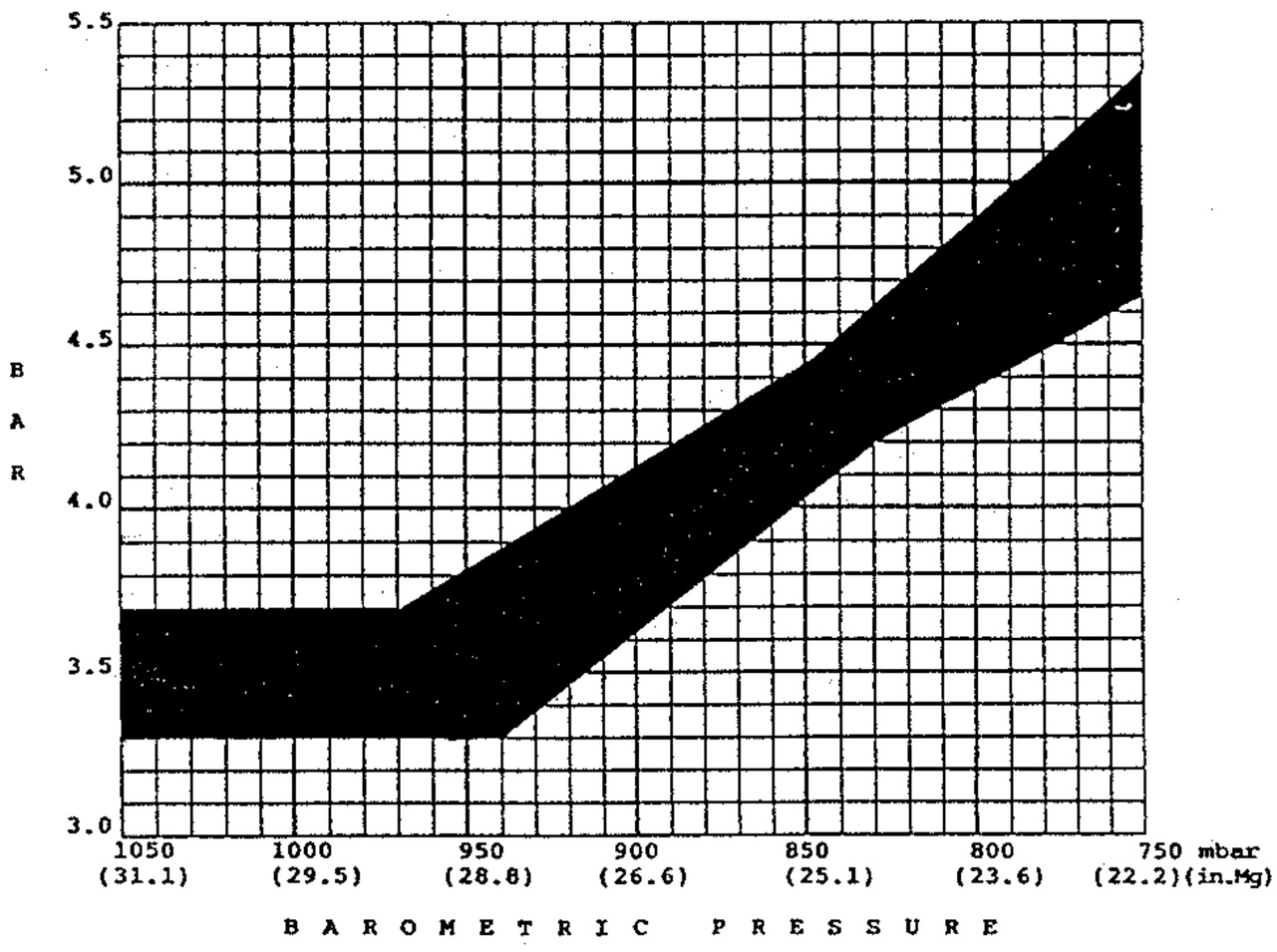
MAIN SPECIFICATIONS

Fuel Pump Delivery	Min cc	1100/30 sec. (Min.)

Cold Control Pressure
use graph below - tolerance of ±0.2 Bar.



Warm Control Pressure
use graph below



MAIN SPECIFICATIONS (CONT.)

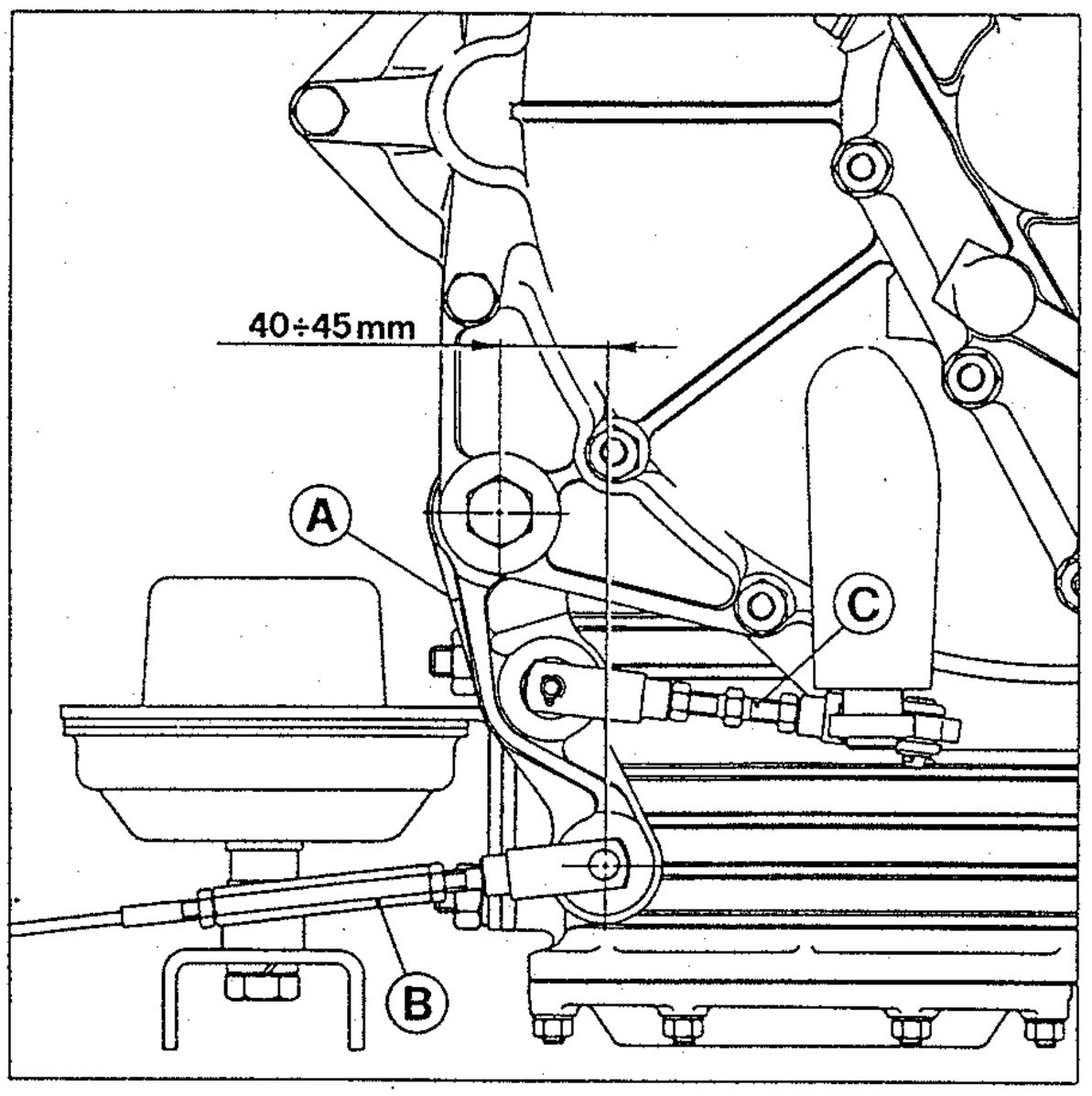
Primary Pressure		Bar		4.7 - 5.4
Residual Pressure		Bar		After 10 Min. 2.7
		Bar		After 20 Min. 2.6
Injector Opening		Bar		3.0 - 4.1
Fuel Delivery Comparison		CC	idle	6.0 - 6.6
			part load	40.0 - 43.0
			full load	136.0 0 150.0
Idle Adjustment Warm Engine		RPM		1000 ±100
	CO	%		.7 ± .2
	HC	PPM		200 max.

CLUTCH

MAIN SPECIFICATIONS

Type		Dry single-plate
Outer diameter of facing	MM	242.06
Inner diameter of facing	MM	161.80
Thickness of driven plate without load	MM	8.76
Thickness of drive plate under load	MM	8.26
Wear limit of driven plate	MM	1.65

Clutch adjustment



REFERENCE S.B. 21-5

FLYWHEEL

Maximum wear in thickness of flywheel	MM	0.8
Surface roughness of flywheel	μ	0.8

GEARBOX

GEARBOX RATIOS

1	40:13	3,076
2	36:17	2,117
3	32:21	1,523
4	28:25	1,120
5	24:29	0,827
R.M.	38:13	2,923

MAIN SPECIFICATIONS

Speeds		5 forward and reverse
Synchronizers on forward speeds		Floating rings
Radial ply between idle gears and bearings		
(For 1st,2nd,3rd speeds & reverse)	MM	0.023÷0.058
(For 4th and 5th speeds)	MM	0.022÷0.054
Axial ply between idle gears and shims	MM	0.27÷0.31
-Limit to wear	MM	0.35
Axial ply of reverse idle gear	MM	0.20÷0.30
Backlash	MM	0.030÷0.05
Clearance between forks & sleeves:		
-Axial ply		
(For 1st,2nd,3rd speeds & reverse)	MM	0.20÷0.60
(For 4th and 5th speeds)	MM	0.40÷0.55
Radial play on diameter		
(For 1st,2nd,3rd speeds & reverse)	MM	1.25÷1.55
(For 4th and 5th speeds)	MM	1.20÷1.60
Clearance between control rods and relevant holes	MM	0.016÷0.061
Shafts disalignment	MM	0.02
Lubrication		Through pump

SYNCHRONIZER

Limit of Wear		
1st 2nd 3rd	MM	0.4
4th 5th	MM	0.4
Synchronizer Clearance		
1st 2nd 3rd	MM	0.5
4th 5th	MM	0.5
Load on Sleeve		
1st 2nd 3rd	Kg	17-25
4th 5th	Kg	25-34

OIL PUMP MAIN SPECIFICATIONS

Number of Teeth		13
Running Clearance	MM	0.048 Min.
	MM	0.093 Max.
End Float	MM	0.075 Min.
	MM	0.140 Max.
Back Lash	MM	0.050 Min.
	MM	0.100 Max.

DIFFERENTIAL

MAIN SPECIFICATIONS

Differential		Limited-slip type
Cylindrical crown and pinion		With helical teeth
Bearings		Taper roller type
Preloading adjustment		By spacing washers
Preloading of new bearings: measured with a pulley diameter 200mm	Kg	P=2,280÷4.030
Backlash	MM	0.03÷0.04
Wear limit	MM	0.12
Limited slip percentage	%	40
Nominal thickness of shim, crown RH side	MM	≃2.65
Nominal thickness of shim, LH side for preloading	MM	≃2.90

STEERING

MAIN SPECIFICATIONS

Cam Gear Steering		Rack & Pinion
Pinion Inclination	o	4.5
Steering wheel lock to lock	Turns	3.25
Minimum turning diameter	M	12
Steering fluid type		B.P. Energrease F.G.L. (G4937)
Fluid capacity	CC	120

SUSPENSION

ALIGNMENT SPECIFICATIONS - UNTIL C.N. 76625

WHEELS	FRONT REAR	7J X 16" 8J X 16"		
TIRES	FRONT	GOODYEAR EAGLE 205/55 VR 16 N.O.	GOODYEAR EAGLE 205/55 VR 16	GOODYEAR NCT 205/55 VR 16
	REAR	GOODYEAR EAGLE 225/50 VR 16 N.O.	GOODYEAR EAGLE 225/50 VR 16	GOODYEAR NCT 225/50 VR 16
FRONT	Camber (*)	- 0° 10' ÷ - 0° 30'		
	Toe - In (*)	ins. .08 ÷ .12 mm. 2 ÷ 3		
	Caster Angle	4° 30'		
	Pressure (cold)	p.s.i. 33 bar 2.3		
REAR	Camber (*)	- 1° 30' ÷ - 1° 50'		
	Toe - In (*)	ins. .12 ÷ .16 mm. 3 ÷ 4		
	Pressure (cold)	p.s.i. 36 bar 2.5	p.s.i. 36 bar 2.5	p.s.i. 33 bar 2.3

(*) Static load car: full tanks, 2 people and 44lbs of luggage

FRONT SUSPENSION DIAGRAM - UNTIL C.N. 76625

REAR SUSPENSION DIAGRAM - UNTIL C.N.76625

ALIGNMENT SPECIFICATIONS - FROM C.N. 76626

WHEELS	FRONT REAR	7J X 16" 8J X 16"		
TIRES	FRONT	GOODYEAR EAGLE 205/55 VR (ZR) 16 N.O.	MICHELIN MXW 205/55 VR 16	PIRELLI P700 205/55 VR 16 (OPT.)
	REAR	GOODYEAR EAGLE 225/50 VR (ZR) 16 N.O.	MICHELIN MXW 225/50 VR 16	PIRELLI P700 225/50 VR 16 (OPT.)
FRONT	Camber (*)	- 0° 35' ÷ - 0° 55'		
	Toe - In (*)	ins. .08 ÷ .12 mm. 2 ÷ 3		
	Caster Angle	5° 50" ÷ 6° 10'		
	Pressure (cold)	p.s.i. 33 bar 2.3	p.s.i. 31 bar 2.1	p.s.i. 37.5 bar 2.6
REAR	Camber (*)	- 1° 50' ÷ - 2° 10'		
	Toe - In (*)	ins. .12 ÷ .16 mm. 3 ÷ 4		
	Pressure (cold)	p.s.i. 36 bar 2.5	p.s.i. 36 bar 2.5	p.s.i. 37.5 bar 2.6

(*) Static load car: full tanks, 2 people and 44lbs of luggage

FRONT SUSPENSION DIAGRAM - FROM C.N. 76626

REAR SUSPENSION DIAGRAM - FROM C.N. 76626

SHOCK ABSORBERS

MAIN SPECIFICATIONS

Type until C.N. 76625	Front	KONI 82 P - 2289
	Rear	KONI 82 P - 2290
Type from C.N. 76626	Front	KONI 82 - 2335
	Rear	KONI 82 - 2236
Shock fluid type		Agip 0S0-32
Fluid capacity	Front	.190 lts.
	Rear	.310 lts.

BRAKES

MAIN SPECIFICATIONS

Brake Fluid Capacity	LTR	0.58
Brake Fluid Type		Agip DOT 4

		FRONT	REAR
DISCS			
Material		self-ventilated cast iron molyb. alloy	self-ventilated cast iron molyb. alloy
Diameter	MM	282	280
Thickness:			
nominal	MM	22	22
min. acceptable after surfacing	MM	20	20
Area of one face	CM^2	388	301
Max. surface roughness	μ	1.6	1.6
Max. oscillation w/mounted disc	MM	0.075	0.075
CALIPERS		ATE floating piston	ATE floating piston
Piston diameter	MM	57	48
PADS			
Material		FERIT I/D 346 GG	FERIT I/D 346 GG
Surface	CM^2	48	36
Automatic clearance take up between disc and pad	MM	0.5	0.5
Braking action regulator:			
operation	BAR	---	42
ratio		---	0.46
HAND BRAKE			
Operation		---	mechanical control
Type		---	drum type

TEVES ABS BRAKE SYSTEM

HYDRAULIC SYSTEM		
Brake Fluid Type		DOT4
Capacity	lit.	1.05
System Operating Pressure	Bar	140-180 ± 10
Accumulator Gas Pressure	Bar	40-80
Hydraulic Pump Safety Valve Setting	Bar	210
Hydraulic Pump Efficiency Test	Sec.	Max 60
Pressure Switch		
a-switch-with pressure increase closed	Bar	135
b-switch-with pressure decrease open	Bar	105
Note-if pressure falls below 105 bar warning light is illuminated		

MECHANICAL

Wheel Movement Sensors		
No. of teeth	Front	96
	Rear	99
Sensor Gap	MM	0.35 - 0.55

ELECTRICAL

Wheel Sensor Resistance	K OHM	0.800 - 1.400
Resistance of Main Valve	OHM	2-5
Resistance of Left Front, Right Front and Rear Delivery Valves	OHM	5-8
Resistance of Left Front, Right Front and Rear Return Valve Solenoids	OHM	3-5
Voltage output from wheel sensor	V-AC	0.10 - 0.60
Resistance of main coil relay	OHM	50-100

WHEELS

MAIN SPECIFICATIONS FOR GOODYEAR NCT TIRES

-Light Alloy Wheels		Front 7Jx16" Rear 8Jx16"
-Tires		Front 205/55 VR16 Rear 225/50 VR16
-Pressure (Cold)	BAR BAR	Front 2.3 (33 psi) Rear 2.3 (33 psi)
-Spare Wheel		3¼" x 18"
tire		Goodyear 105/80 R 18
pressure	BAR	4.2 (60 psi)
max. speed	KM/H	80 (50 mph)

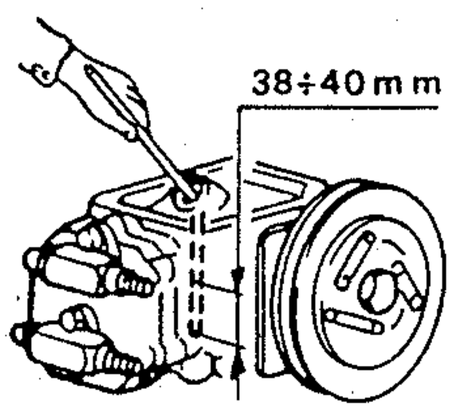
MAIN SPECIFICATIONS FOR GOODYEAR EAGLE TIRES

-Light Alloy Wheels		Front 7Jx16" Rear 8Jx16"
-Tires		Front 205/55 VR16 Rear 225/50 VR16
-Pressure (Cold)	BAR BAR	Front 2.5 (36 psi) Rear 2.3 (33 psi)
-Spare Wheel		3¼" x 18"
tire		Goodyear 105/80 R 18
pressure	BAR	4.2 (60 psi)
max. speed	KM/H	80 (50 mph)

AIR CONDITIONING

MAIN SPECIFICATIONS

Refrigerant Type		R-12
Refrigerant Capacity	KG	1.0 (2.2 lbs.)
Compressor Oil Type		Agip TER 60
Compressor Oil Capacity	LTR	0.33 (11 ft.oz.)
A/C Compressor Belt Type		Gates Polyflex 11m x 925
Tension with Tensiometer (Gates 150 Type)	KG	On 11m scale, tension should be 22.5
With Used Belt	KG,	19.0



A/C Compressor Oil Level

System Pressures

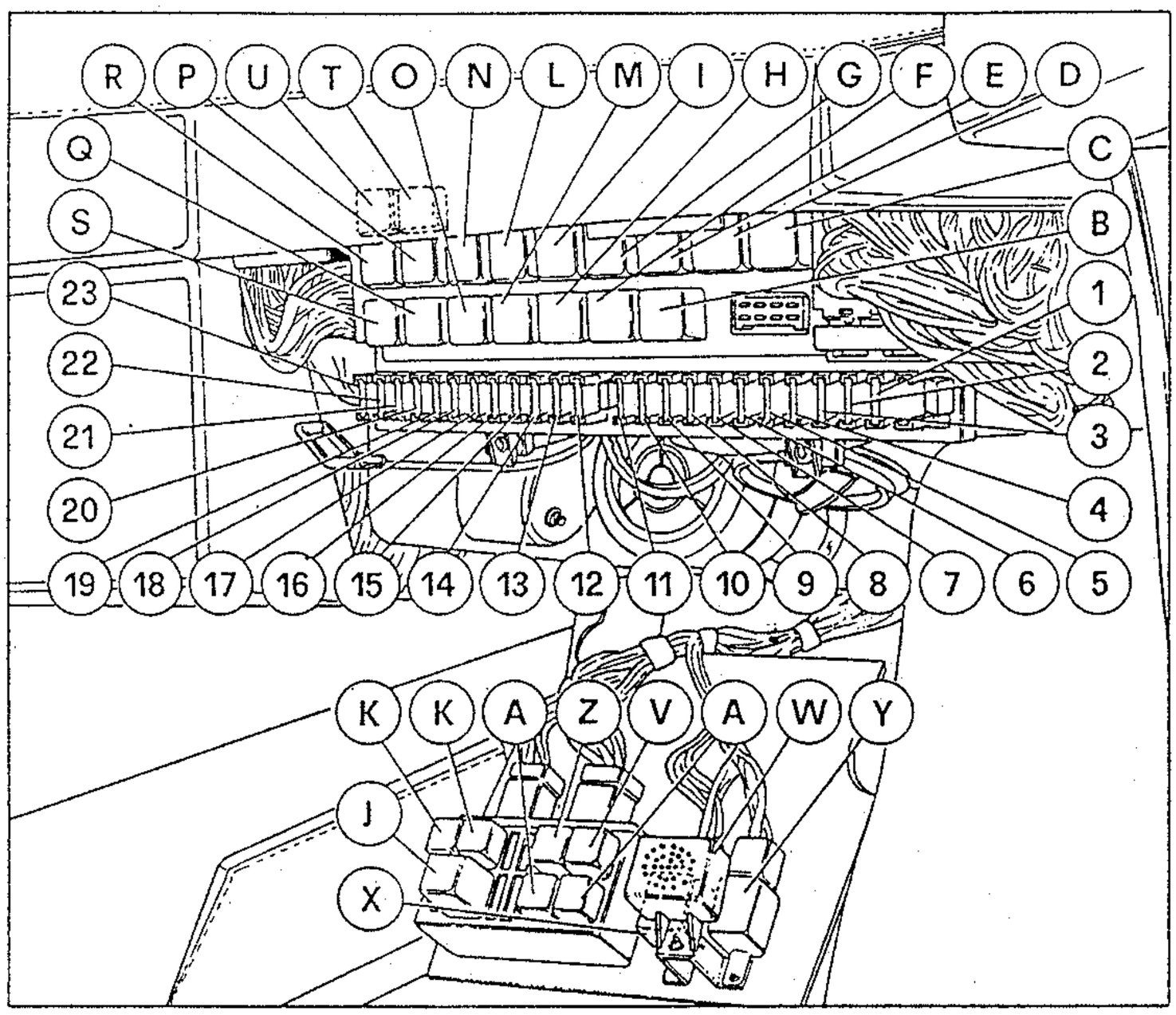
Amb. Temp. °C	Low pr. mbar	High pr. mbar	Temp. air at outlets °C
27°	0 ÷ 1	10 ÷ 12	6 ÷ 8
32°		12 ÷ 14	
35°	1 ÷ 2	13 ÷ 14,5	
38°		15 ÷ 16,5	
40°		16,5 ÷ 18	

Air Discharge Temperature	°C	6-8

328 / 328
GTB / GTS
U.S. VERSION

FUSES AND RELAYS

RELAYS



A - Relay for heater blowers
(BOSCH 0 332 014 113)
B - Relay for RH head-lamp lifting motor
(BOSCH 0 332 204 101)
C - Relay for high/low wiper speed
(BOSCH 0 332 204 101)
D - Relay for head-lamps lifting motor
(BOSCH 0 332 204 101)
E - Relay for LH head-lamps, lifting motor
(BOSCH 0 332 204 101)
F - Relay for electro-fan of AC condenser
(BOSCH 0 332 014 113)
G - Relay for left electro-fan of water radiator
(BOSCH 0 332 014 113)
H - Warning horn relay
(BOSCH 0 332 014 113)
K - Relays for heater blowers
(BOSCH 0 332 014 113)
J - Flasher for direction indicators
I - Relay for right electro-fan of water radiator
(BOSCH 0 332 014 113)
L - Relay for low beams
(BOSCH 0 332 014 113)
M - Relay for high beam headlamps
(BOSCH 0 332 014 113)
N - Relay for flashing
(BOSCH 0 332 014 113)
O - Relay for external lights
(BOSCH 0 332 015 006)
P - Relay for air conditioning operation
(BOSCH 0 332 204 101)
Q - Relay for windows motors
(BOSCH 0 332 014 113)
R - Relay for fuel pump
(BOSCH 0 332 014 113)
S - Fuel injection delivery pump starting-relay
(BOSCH 0 332 204 101)
T - Relay for light lifting motors (with low beams on)
(BOSCH 0 332 014 113)
U - Relay for key controlled services
(BOSCH 0 332 014 113)
V - Relay for air conditioner control
(BOSCH 0 332 014 113)
X - Windshield wiper timing relay
Y - Timer for interior lights
Z - Relay for AC compressor
(BOSCH 0 332 014 113)
W - Seat belts control unit

FUSES

Left box

1 - A25: Electric motorfor high/low beams-RH heater
2 - A25: LH heater
3 - A15: Daylight flashing-Current socket-Door locking-Interior lights
4 - A15: Hazard-Cigar lighter-Aerial-Parking lights
5 - A20: Electro-fan for AC condensor
6 - A20: Left electro-fan for water radiator
7 - A20: Right electro-fan for water radiator
8 - A20: Horns-Clock-Radio
9 - A7,5: Cold start electro-valve
10 - A15: LH main beam and relevant warning light
11 - A15: RH main beam

Right box

12 - A10: LH dipped beam
13 - A10: RH dipped beam
14 - A7,5: Front lights-Rear lights
15 - A7,5: Front lights-Rear lights
16 - A15: Parking lights lamp-Instrument panel lights-Front fog lights
17 - A20: Air conditioning system
18 - A20: LH window motor
19 - A20: RH window motor
20 - A15: Fuel pump
21 - A7,5: Instrument-Displays for heater controls-Ext. rear view mirrors
22 - A15: Windscreen wiper-Windscreen washer-Reverse light
23 - A15: Direction indicator lights - Stop rear lights

BATTERY

MAIN SPECIFICATIONS

Model		Delco
Voltage	V	12
Capacity (20 hr. at 27°C)	AH	66
Cold Start Current DIN-30S-9V 150S 6V at 18°C	AMPS	300
Euro Standard Dimension		L3
US Standard Dimension		Group 42

BATTERY TEST PROCEDURE

- Green ball must be visible in hydrometer

- Apply load of 300 A for 15 sec. to remove surface charge

- Wait 1 minute for battery to regenerate

- Apply load of 200 A for 15 sec. and check voltage is not below specified values

Temperature	Voltage
20°C	9.6
10°C	9.4
0°C	9.1
-10°C	8.8

- If battery is below specified voltage-replace battery

ALTERNATOR

Model		Bosch 0.120.469.641 N1 14V 37/85 Amp
Voltage	V	12
Output (amps)	AMPS	8S
Voltage Regulator Setting	V	14
Cut-in Speed	RPM	1000
Max. Steady Speed	RPM	12000
Armature Resistance	OHM	0.13 r ± 10%
Field Resistance	OHM	4 r ± 10%
Alternator Belt-Type		Continental 10/9.5 x 800
Tension w/Tensiometer (Gates 150 Type)	KG	32.3 0 35.0
-With Used Belt	KG	30.0 - 32.0

STARTER

Model		Bosch 0.001.110.004
Voltage	V	12
Nominal Power	CV	1.4
Direction of Rotation		Right Handed
Pinion Drive		Free-wheel drive
Control		Electro-magnetic
Stall Torque		
Current	AMPS	690-780
Voltage	V	6
Torque Developed	KGM	2.3
No Load Test		
Current	AMPS	50-80 Amps
Voltage	V	11.5
Speed	RPM	7300-9300 RPM

BULBS

Description	Type	Wattage (12 Volt)
Headlamp low / high beam	Sealed Beam	50/60
Auxiliary stop light	Cylindrical	21 cd.
Front fog lights		55
Direction front lights Direction rear lights Reverse lights	Spherical	21 (SAE type 107/32cp)
Parking and stop rear lights	Spherical double filament	5/21 (SAE type 1034-3/32cp)
Parking front lights Number plate lights	Spherical	5 (SAE type 67/4 cp)
Interior lights (in roof)	Cylindrical	5
Open-door marker lights	Tubular	4
Unfastened safety belts warning light	Tubular	3
Front and rear side markers	Tubular	4 (SAE type 158/2 cp)
Instrument lights Fuel reserve warning light Warning light for brake system failure Headlamp main beam warning light Warning light for parking brake engaged Direction lights indicator Parking lights indicator	Tubular	3
Heated rear window warning light Electric fan motors indicator Emergency lights indicator Generator charge indicator Slow/Down warning light	Tubular	1,2

WIRE GAUGE SIZES

Wire Sizes

Metric (mm2)	SAE AWG (gage)	Ohms per 1000 Feet
0.5	20	10.0
0.8	18	6.9
1.0	16	4.7
2.0	14	2.8
3.0	12	1.8
5.0	10	1.1
8.0	8	0.7
13.0	6	0.4
19.0	4	0.3
32.0	2	0.2
40.0	1	0.14
50.0	0	0.11
62.0	00	0.09

TOOLS

TOOL NO.	PART NO.	DESCRIPTION
ENGINE		
AV 476	95970476	Wrench for dampner nut (36mm)
AV 1393	95971393	Box wrench for cylinder head tightening (15mm)
AV 1499	95971499	Tool for removing valve springs
AV 617	95970617	Engine Stand
AV 5897	95975897	Goniometer for checking camshaft timing
AV 815	95970815	Wrench for ring nuts of timing belt drive pulleys (28mm)
AV 816	95970816	Punch for timing drive bearings (12mm x 32mm)
AV 823	95970823	Punch for crankshaft front oil seal (42mm x 59mm)
AV 824	95970824	Punch for timing belt drive oil seal (23mm x 40mm)
AV 857	95970857	Box wrench for conn. rod nuts (14mm)
US 4720	95974720	Reamer for camshaft housings (25mm)
AS 4736	95974736	Main bearing housing checking bar (66.675mm)
AV 240	95970240	Main bearing housing lapping bar (66.665mm)
AS 102178	95972178	Tool for installing valve guides (7mm)
AV 1504	95971504	Tool for removing valve guides (7mm)
TLDF 00713	95970713	Go-no-go gauge for valve guides (7mm)
AS 6236	95976236	Clamping tool for cylinder liners (10 required)
AS 7148	95977148	Tool for measuring valve shim thickness
AS 9560	95979560	Tool for removing valve shims
AS 9560/A	95970003	Thimble spacer for adjusting valves
US 14077	95970010	Reamer for valve guides (7mm)
ALZF 08301	95970033	Gauge for cylinder liner (83mm)
AS 102916	95972916	Gauge for checking cylinder liner protrusion
AV 1639	95971639	Tool for removing cylinder liners
USAG 830	900000830	Protractor for tightening cylinder heads
AV 1629	95971629	Tool for distributor oil seal(34mm x 46mm)
AV 1651	95971651	Driver for water pump seal
AV 1653	95971653	Tool for installing crankshaft seal (rear)
AV 1984	95970029	Lifting cables for engines
91107	900004558	Gates alternator, water pump tension gauge
USAG279MG	900126779	Spark Plug socket 18mm
KDEP1035	95971247	Adjusting wrench for emission
AV1726	95971726	Punch for camshaft extension

TOOL NO.	PART NO.	DESCRIPTION
ENGINE (CONT.)		
AV1629	95971629	Punch for ign. oil seals
AV865/2	95970866	Punch for connecting rod bush
AV1521	95971521	Punch for water pump bearing
AV1623	95971623	Tool for centering oil seal on distributor
AV1654	95971654	Punch for assembling camshaft oil seal
KDEP1040/14	95970006	Guide ring 110mm
	95970012	Guide ring 105mm
CLUTCH-GEARBOX-DIFFERENTIAL		
AS103095	95972666	Clutch alignment tool
AV855	95970855	Wrench for idle gears ring nuts
AV702	95970702	Stand for gearbox
AV9561	95979561	Fork alignment tool
AV630	95970630	Clamping tool for detent springs
AV5067	95975067	Preload pulley 200mm
AV5568	95975568	Wrench for ring nut 56mm
AV5764	95975764	Punch for differential bearing
AS5839	95975839	Punch for differential oil seal
AS6704	95976704	Pulley extension
AV8729	95978729	Punch for outer ring of diff. bearing 76x89mm
AV979	95970979	Puller for clutch housing bear.
AV1156	95971156	Wrench for clutch shaft ring nut
AV1795	95971795	Puller for clutch shaft inner bearing
AS680	95976680	Punch for layshaft bearing
CHASSIS		
AS9016	95979016	Puller for steering wheel hub
AV485	95970485	Wrench for steering wheel ring
AV7394	95977394	Pullers for suspension and steering joints
AS7783	95977783	Wrench for ring nuts of rear hub 44mm
AV1514	95971514	Puller for Amp connector
AS7396	95977396	Punch for steering knuckle lever
AV1658	95971658	Punch for assembling rear wheel hub seal
AV1040 & AV1041	95971041	Tool for suspension bushings

TOOL NO.	PART NO.	DESCRIPTION
DIAGNOSTIC TOOLS		
KDJE7451	95971241	Fuel delivery comparison tester
KDJE7452	95971242	Injector Tester
SVT260	95970011	Vacuum Pump STANT
JOFA K8S	92970005	Jofatron
	95970025	B-storage for Jofatron
KDEP1034/12	95971246	Set of joints
KDJE P100	95971243	Pressure tester
	95970020	25 pin interconnector
	95970024	35 pin interconnector
	95970037	Brake pedal depressor
	95970035	Pressure gauge for main brake pump
	95970036	Pressure gauge for brake calipers
KDJE P600	900004172	Duty cycle meter
	900004173	Duty cycle meter cable

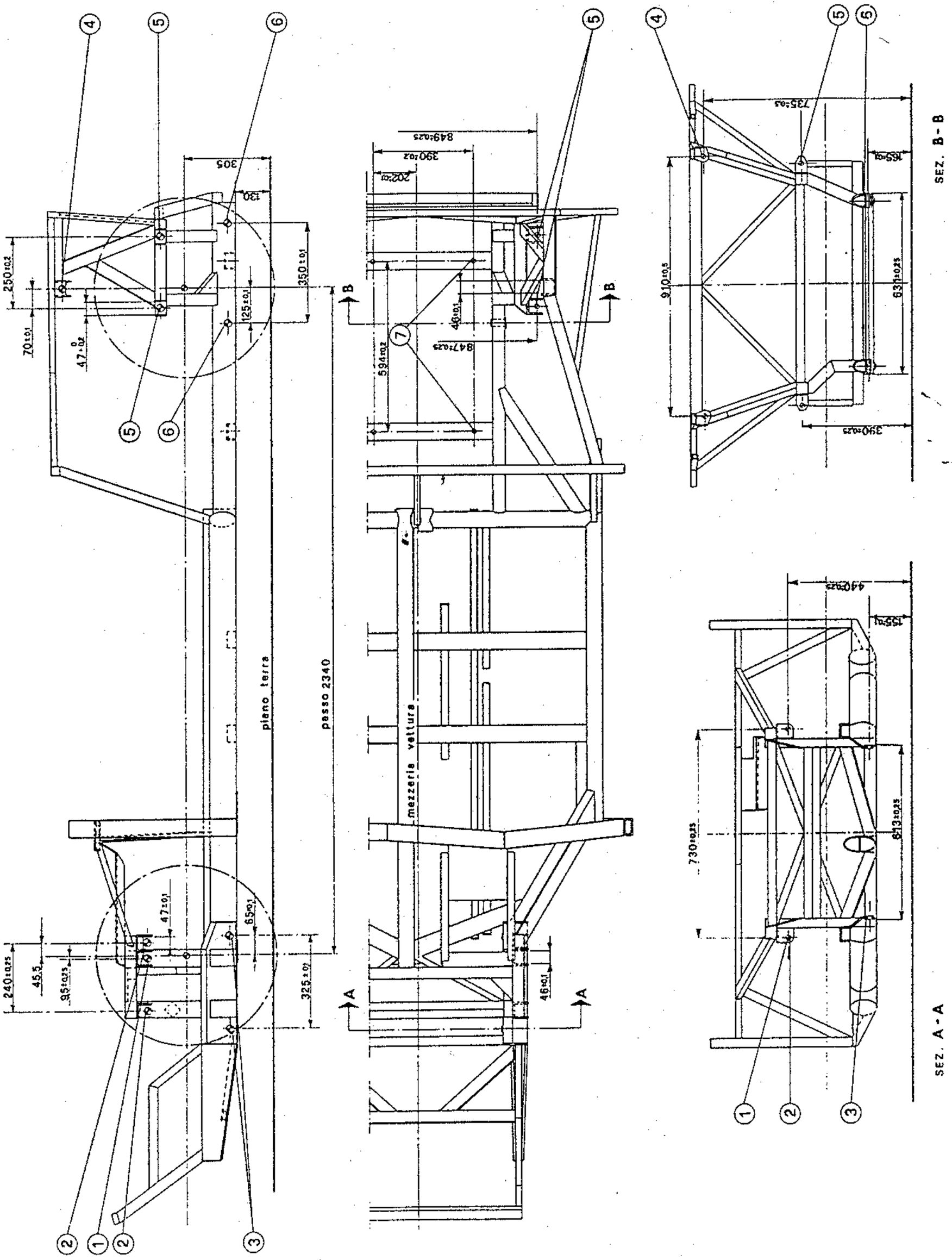
TIGHTENING TORQUE

ENGINE	THREAD	TORQUE Kgm(Ft.Lbs.)
Securing throttle lever	6x1	0.9 (6.5)
Securing camshaft covers	6x1	0.9 (6.5)
Securing camshaft caps	6x1	0.9 (6.5)
Securing throttle to spindle	8x1.25	2 (14.5)
Securing front cover to water pump housing and belt stretcher support	8x1.25	2.5 (18)
Securing clutch pressure plate to flywheel	8x1.25	2.5 (18)
Securing water thermoswitch (only USA)	8x1.25	2.5 (18)
Securing starter motor	8x1.25	2.7 (19.5)
Securing water pump rotor	8x1	2.5 (18)
Securing conn. rod caps	10x1	6.6 (47.5)
Securing oil pump driving gear	10x1	4.5 (32.5)
Securing A/C compressor to support	10x1.25	2 (14.5)
Securing alternator to support	10x1.25	3 (21.5)
Securing timing case	10x1.25	4 (29)
Securing alternator bracket	10x1.25	6 (43.5)
Securing flywheel to crankshaft	10x1.25	8.5 (61.5)
Securing belt stretcher of A/C compressor	12x1.25	4.6 (33.5)
Securing timing belt stretcher	12x1.25	5.6 (40.5)
Securing water pump spindle	12x1.25	6 (43.5)
Securing pulleys to camshafts	12x1.25	10 (72)
Securing main bearing caps	12x1.25	9 (65)

	THREAD	TORQUE Kgm(Ft.Lbs.)
ENGINE (CONT.)		
Securing alternator pulley	14x1	3.5 (26)
Securing cylinder heads	10x1.00	(33) then 120°
Securing spark plugs (328)	12x1.25	1.6 (11.5)
Securing timing belt driving gear	17x1	12 (86.5)
Securing damper to crankshaft	18x1.5	20 (144)
Securing oil radiator unions	30x1.5 (328)	8 (57.5)
INJECTION SYSTEM		
Securing pipings to fuel dist. and start valve	8x1	0.85 (6)
Securing union from fuel dist. to warm up reg.	8x1	1.25 (9)
Securing fuel pipings	10x1	1.5 (11)
Securing union with pivoting nut for return piping fuel dist. to pipe on chassis	12x1.5	2.3 (16.5)
Securing nuts and unions for fuel pipings	12x1.5	2.75 (20)
Securing union with filter on fuel distributor	12x1.5	3.5 (25.5)
Securing fuel pipe unions	12x1.5	2.75 (20)
Securing thermo-time switch	14x1.5	3.05 (22)
ACCELERATOR		
Securing accelerator pedal	8x1.25	1.5 (11)
CLUTCH-GEARBOX AND DIFFERENTIAL		
Securing supports to gearbox, differential cover and clutch, pads, etc.	8x1.25	2.5 (18)
Securing supports to gearbox, differential cover and clutch, pads, etc.	10x1.25	5.5 (39.5)
Securing supports to gearbox, differential cover and clutch housing	10x1.25	5.5 (39.5)
Securing rocker arm pivot	12x1.25	6 (43.5)
Securing differential flange	12x1.25	9 (65)
Securing ring nut to mainshaft (transmission side)	25x1.5	18 (129.5)
Securing ring nut to clutch shaft	30x1.5	20 (144)
Securing front and rear nuts, gearbox shafts	32x1.5	20 (144)
Securing rocker arm pivot on pedal	12x1.5	6 (43.5)
Securing arm pivot ring nut on pedal housing	15x1	11 (79.5)
WHEELS - BRAKES AND SUSPENSIONS		
Securing rear stabilizer bar to link	8x1.25	2.1 (15)
Securing bearing holding flange to hub carrier	8x1.25	2.1 (15)
Securing brake disc to wheel hub	8x1.25	2.5 (18)
Securing ball joints to front suspension levers	10x1.25	7 (50.5)
Securing axle-shaft to flanges	10x1.25	8 (57.5)
Securing brake disc to wheel hub	12x1.25	5 (36)

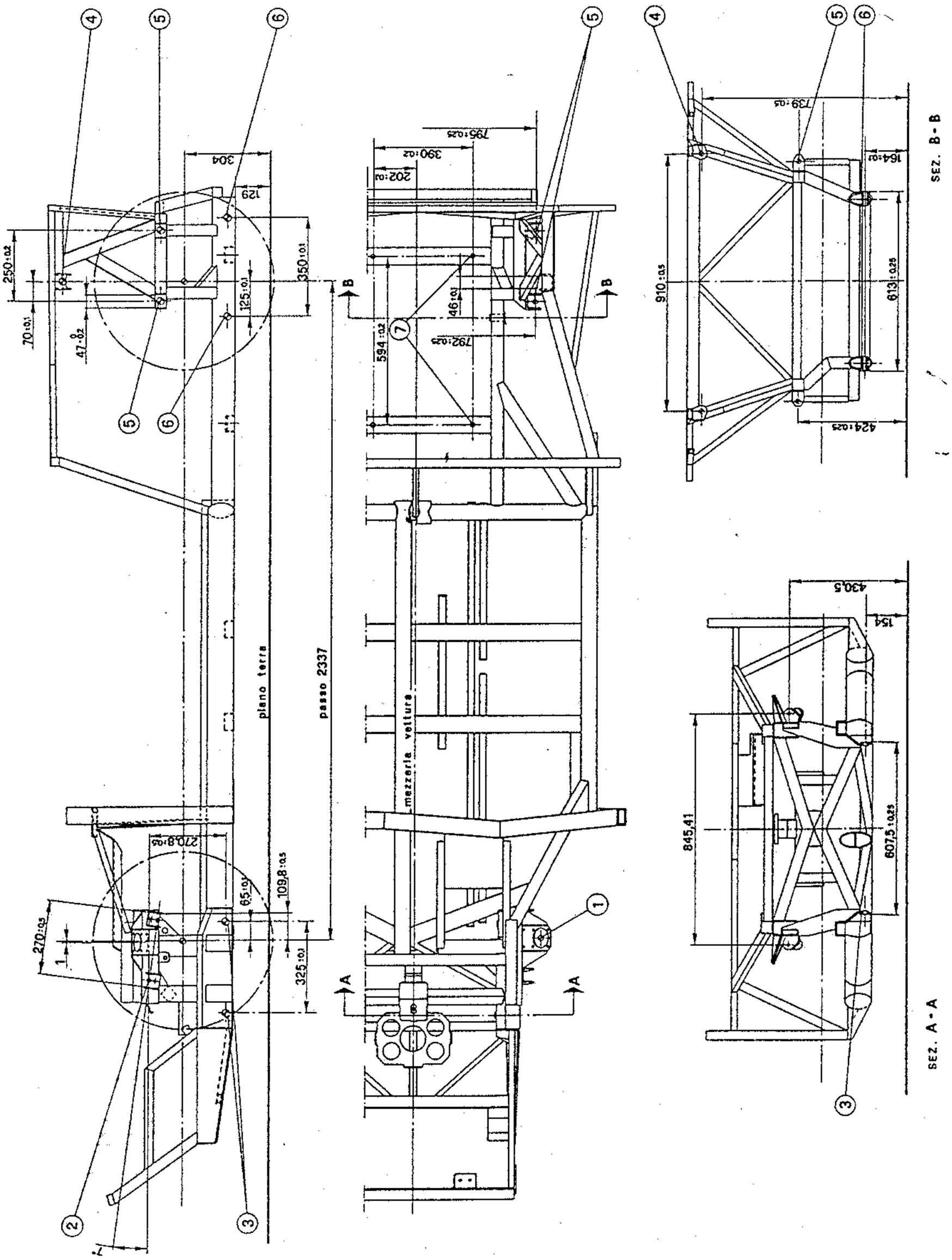
	THREAD	TORQUE Kgm(Ft.Lbs.)
WHEELS - BRAKES AND SUSPENSIONS (CONT.)		
Securing suspension levers to forks	12x1.25	5.6 (40.5)
Securing front link and shock absorber to support	12x1.25	6 (43.5)
Securing upper levers of front suspension to chassis and shock absorber to lower level	12x1.25	7 (50.5)
Securing brake caliper to hub carrier		
-Without Heli-Coil	12x1.25	10 (72)
-With Heli-Coil	10x1.5	4.5 (32.5)
Securing rear shock absorber and levers to hub carrier		
-Cadmium-plated bolts	12x1.25	5.6 (40.5)
-Bonderized bolts		7 (50.5)
Securing caliper to steering knuckle		
-Cadmium-plated bolts	12x1.25	8 (57.5)
-Bonderized bolts		10 (72)
Securing ball joints to steering knuckle	12x1.25	6.4 (46)
Securing suspension forks to chassis	14x1.5	8 (57.5)
Securing wheels to hub	14x1.5	10 (72)
Securing steering knuckle lever	20x1.25	16 (115)
Securing axle shaft flange to wheel shaft	27x1.25	22 (158.5)
STEERING		
Securing steering box ball joint to steering knuckle	3/8"	4.5 (32.4)
Securing support of steering box	8x1.25	2 (14.5)
Securing steering column ring nut	22x1.5	14 (101)
CHASSIS		
Securing nut fuel level gauge sender	4x0.7	0.3 (2)

CHASSIS



CHASSIS DIAGRAM - UNTIL C.N. 76625

1 - Upper connection of front shock absorber
2 - Upper arm connection of front suspension
3 - Lower fork connection for front suspension
4 - Upper connection for rear shock absorber
5 - Upper arm connection of rear suspension
6 - Lower fork connection for rear suspension
7 - Propeller unit mountings



CHASSIS DIAGRAM - FROM C.N. 76626

1 - Upper connection of front shock absorber
2 - Upper arm connection of front suspension
3 - Lower fork connection for front suspension
4 - Upper connection for rear shock absorber
5 - Upper arm connection of rear suspension
6 - Lower fork connection for rear suspension
7 - Propeller unit mountings

328 / 328
GTB / GTS
U.S. VERSION

EMISSION CONTROL

PULSE AIR INJECTION SYSTEM

Operational Period		
Water temp. below	°C	57
Oil temp. above	°C	25
Oil temperature switch		
opens	°C	22-28
closes	°C	12-18
Coolant temperature switch		
opens	°C	54-60
closes	°C	30-36
Cut-off valve (pulse air)		
closed	with vacuum of mm Hg	18.30
open	with vacuum of mm Hg	64.50

EXHAUST SYSTEM OVERTEMPERATURE WARNING DEVICE

System Activated (warning light begins flashing)	°C	900 ± 20
Warning Light Illuminated Steady	°C	940 ± 20

CATALYST

Type		Three-way Conversion
No.		one
Volume	lit.	3.96

Ferrari

FERRARI NORTH AMERICA

328 / 328 GTB / GTS

U.S. VERSION

PUBLICATIONS LIST

DESCRIPTION	FERRARI PART NO.	FACTORY PRINT NO.
328 GTB/GTS Parts Catalog	95990251	374/85
328 GTB/GTS Parts Catalog 1987	95990255	462/87
328 GTB/GTS Parts Catalog 1988	95990259	524/88
328 Service Time Schedule	95990844	404/85
Workshop Manual	95990873	550/89
328 GTB/GTS Owners Manual	95990076	396/85
328 GTB/GTS Owners Manual	95990068	458/86
328 GTB/GTS Owners Manual 1988	95990089	481/87 N900
328 GTB/GTS Owners Manual 1989	95990104	535/88
Wiring Diagram 1986 / 87	95990849	440/86
Wiring Diagram 1989	95990875	559/89
Teves ABS MKII Brake System	95990866	534/88
Recall Book No. 143/144	N/A	N/A
Technical Information Binder	900003700	N/A

RECALL CAMPAIGN

REF. NO. 143
FLEXIBLE OIL LINES

REF. NO. 144
FUEL RETURN RUBBER HOSE

DECEMBER 1986

READ, INITIAL AND PASS ON

Service Manager	Parts Manager	Service Writer	Technician					Warranty Clerk

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Recall Ref. No. 143 - Flexible Oil Lines	3-7
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Recall Claim Form Instructions	13-14
Letters To Customers	15-20

Ferrari

Ferrari North America
777 Terrace Avenue
Hasbrouck Heights, NJ 07604
201-393-4081

December 23, 1986

Dear Ferrari Dealer,

Ferrari Spa, the manufacturer of Ferrari automobiles, has determined that the following defects, which relate to Motor Vehicle Safety, may exist in certain Ferrari 328 GTS/GTB, 3.2 Mondial and 3.2 Mondial Cabriolet vehicles.

A - On certain 328 GTS/GTB, 3.2 Mondial and 3.2 Mondial Cabriolet vehicles, the flexible oil hoses for the engine oil radiator could leak engine oil. This leakage may occur if there is insufficient clamping of the metal connectors at the flexible portion of the oil hose. Should such engine oil leakage occur and should the use of the vehicle be prolonged, severe engine damage may result due to the lack of lubrication. As with any type of oil leakage, the possibility of vehicle engine fire may exist.

The remedy will consist of the replacement of both upper and lower flexible oil hoses with new interchangeable hoses manufactured with an improved procedure. At the same time, the engine oil pressure regulating valve assembly will also be updated by installing components identical to those utilized in present production, in order to better regulate the engine oil pressure.

This repair will be performed free of charge for the vehicle owner and will require approximately 1.6 hours.

B - On certain 328 GTS/GTB vehicles, the flexible rubber hose for the return of fuel to the right side fuel tank may be subject to chafing. This condition can occur if the flexible rubber hose was positioned too close to the metallic discharge connector of the air conditioner compressor.

The remedy will consist of an inspection of the flexible fuel hose, which if necessary will be repositioned and which will also be replaced if it shows any abrasions or damage.

The repair will be performed free of charge for the vehicle owner and will require approximately .6 hours.

We have accordingly set notices to all owners of the potentially affected vehicles advising them of the problems and requesting that they contact any Authorized Ferrari Dealer for the necessary remedies, as per the attached notification letters.

Sincerely,

Ferrari North America

RECALL CAMPAIGN NO. 143

FLEXIBLE OIL LINES FOR
ENGINE OIL RADIATOR

INTRODUCTION

SUBJECT: Recall Campaign No. 143
Flexible Oil Lines

VEHICLES: 1986 328 GTB/GTS, 3.2 Mondial and 3.2 Mondial Cabriolet vehicles with the following serial number ranges:

MODEL	STARTING FROM SERIAL #	UP TO SERIAL #
328 GTB/GTS	60053	63809
3.2 Mondial Coupe	61851	63777
3.2 Mondial Cabriolet	59645	63927

CONDITION: The flexible oil hoses for the engine oil radiator could leak engine oil. This leakage may occur if there is insufficient clamping of the metal connectors to the flexible portion of the oil hose. Should such engine oil leakage occur and should the use of the vehicle be prolonged, severe engine damage may result due to lack of lubrication. As with any type of oil leakage, the possibility of vehicle engine fire may exist.

REMEDY: The remedy will consist of the replacement of both upper and lower flexible oil hoses with new interchangeable hoses manufactured with an improved procedure. At the same time, the engine oil pressure regulating valve assembly will also be updated by installing components identical to those utilized in present production, in order to better regulate the engine oil pressure.

RECALL CAMPAIGN NO. 143

PARTS: The required spare parts necessary to update a vehicle is indicated as follows:

MODEL AND VERSION	KIT P.N.	KIT COMPOSITION
328 GTB/GTS U.S.A.	95240011	No. 1-128238-Hose from block to cooler (GREEN DOT) No. 1-128239-Hose from cooler to filter (GREEN DOT) No. 1-125885-Plunger for control valve (3 HOLES) No. 1-131743-Spacer for valve spring
3.2 Mondial Coupe U.S.A.	95240012	No. 1-126910-Hose from block to cooler (GREEN DOT) No. 1-126911-Hose from cooler to filter (GREEN DOT) No. 1-125885-Plunger for control valve (3 HOLES) No. 1-131743-Spacer for valve spring
3.2 Mondial Cabriolet U.S.A.	95240013	No. 1-128541-Hose from block to cooler (GREEN DOTS) No. 1-128542-Hose from cooler to filter (GREEN DOTS) No. 1-125885-Plunger for control valve (3 HOLES) No. 1-131743-Spacer for valve spring

COST:

A. An initial supply of the above mentioned kits will be shipped to your Dealership. Your Parts Account will be charged accordingly.

B. One kit will be required per vehicle. Additional kits are available through the Ferrari North America Spare Parts Department, Cypress, CA.

LABOR: Operation No. 143, Time 1.6 hours

REIMBURSEMENT: On receipt of the correctly completed Recall Campaign Claim.

INSTRUCTIONS

DESCRIPTION OF MODIFICATION

With the engine cold, place the vehicle on a lift. Under the engine, place a drain tray in order to collect residual escaping oil.

- On 3.2 Mondial Coupe and Cabriolet, remove both right and left rear wheels and the corresponding inner mud guards.

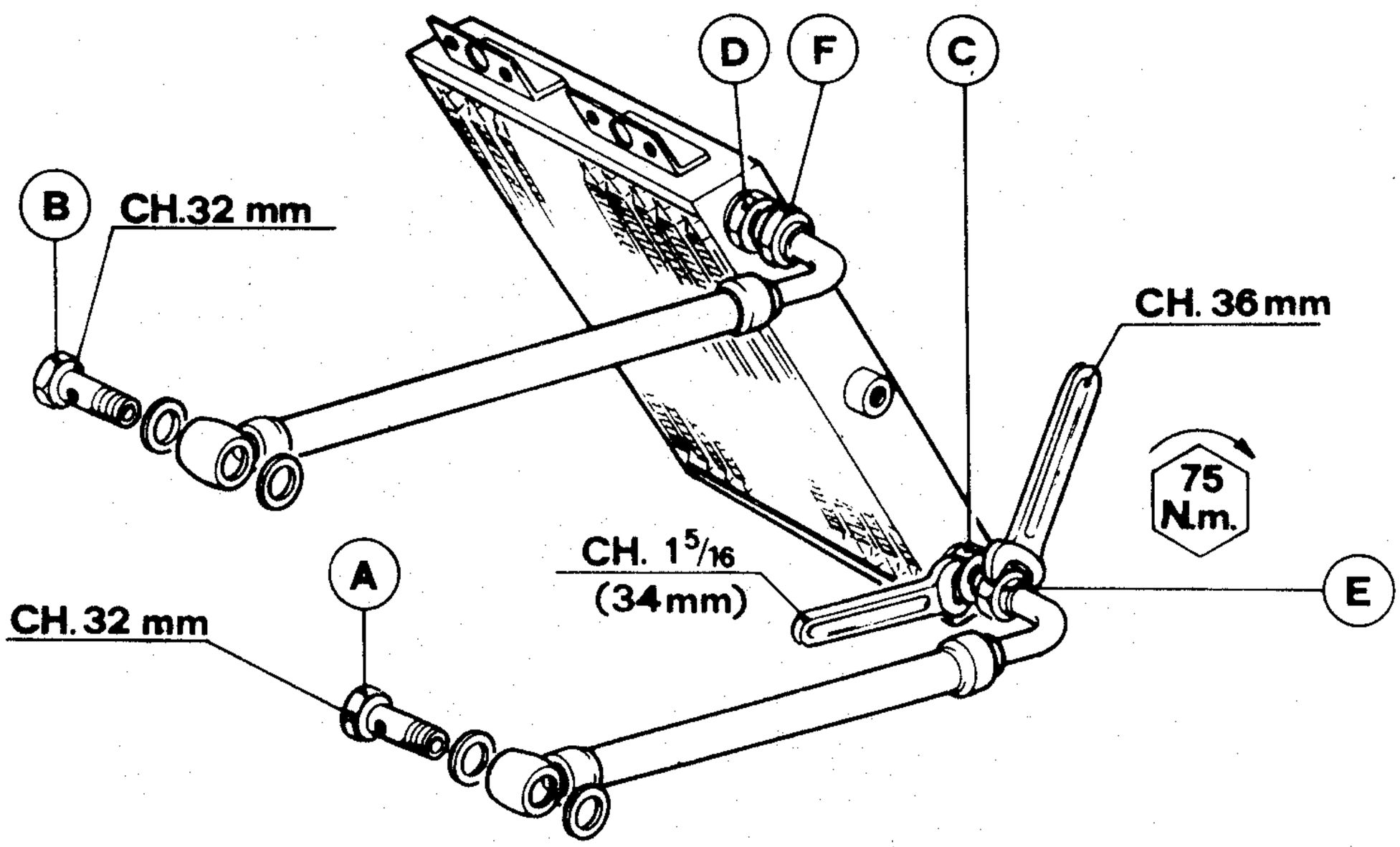
- On 328 GTB/GTS, remove only the right rear wheel and the corresponding mud guard.

I - Replacement of both upper and lower oil hoses for the engine oil cooler (Ref. Fig. 1).

1 - Disconnect from the mountings on the chassis the expansion tank of the cooling system and, without disconnecting the water hoses, move the tank toward the center of the engine compartment.

2 - With a 32mm wrench, loosen and remove the two threaded plugs A and B in order to disconnect the oil hoses from the engine block and filter base.

Fig. 1



3 - With a 1-5/16" (or 34mm) wrench, hold the connectors C and D soldered to the oil cooler and, with a second 36mm wrench, unscrew and remove the connectors E and F.

4 - After removing the oil hoses, install the new hoses, identified with a green painted dot on the connector, and repeat in reverse order the steps mentioned.

The approximate tightening torque for the connectors E and F is 75Nm (=7.6 Kgm or 55 lb. ft.).

II - Updating of the engine oil pressure control valve (Ref. Fig. 2 and 3).

1 - With a 32mm wrench, unscrew and remove the cap 1, Fig.2.

2 - Remove the spring 2, Fig. 2, and remove the existing control plunger 3, Fig. 2.

3 - Remove the spacer 4, Fig. 2 for the spring.

4 - Insert the new control plunger 1, Fig. 3, which has the 3 new lateral holes 3, Fig. 3, and check that it slides freely into the sleeve.

Fig. 2

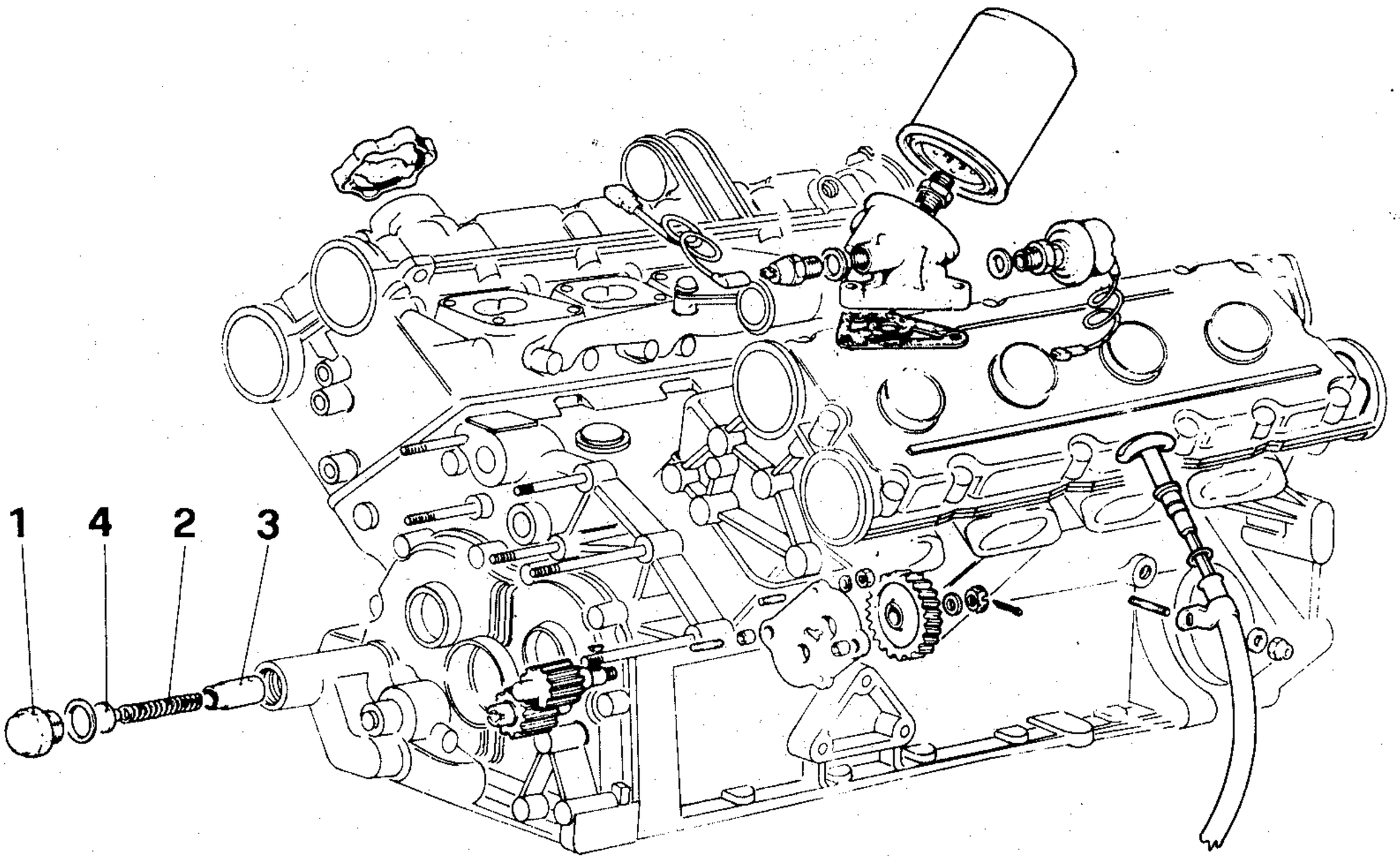
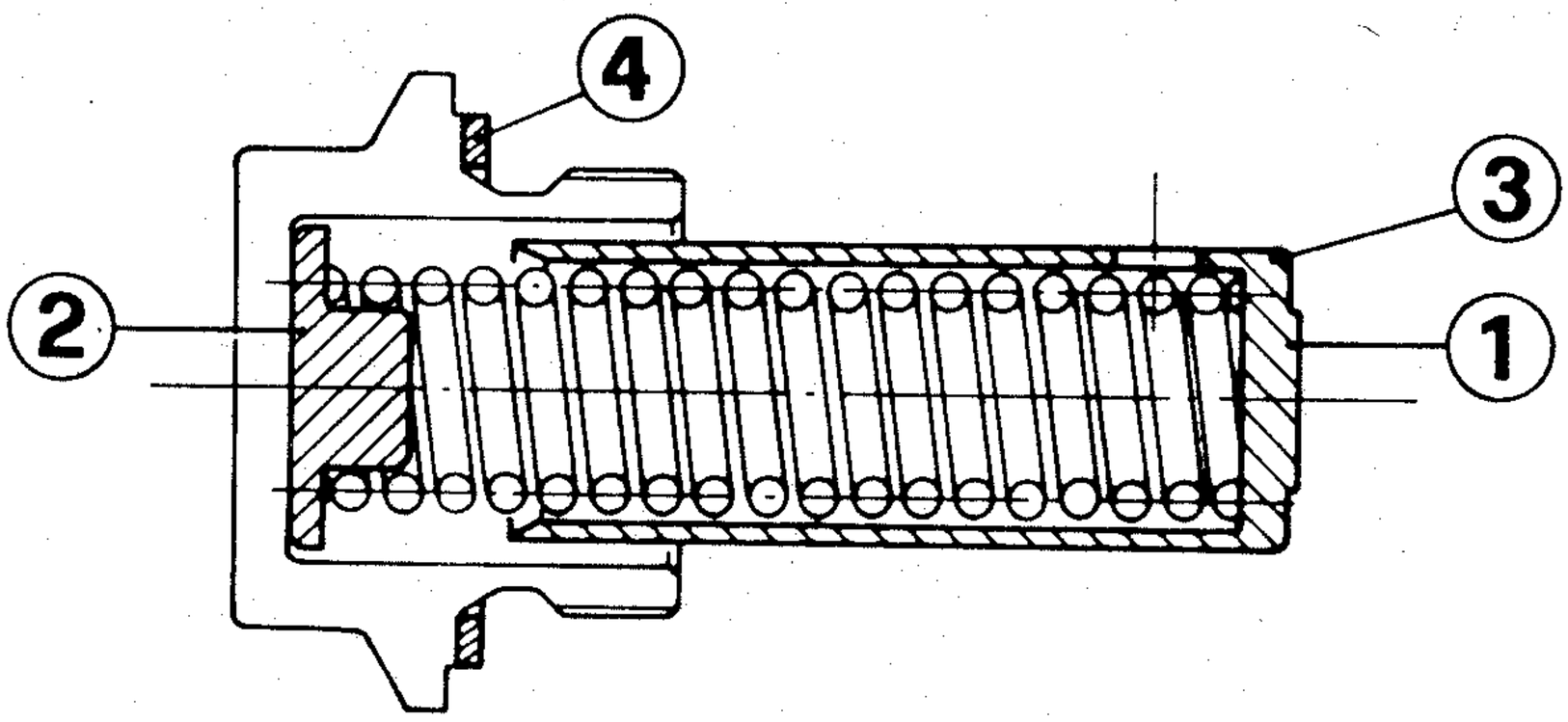


Fig. 3



5 - Insert the new spacer 2, Fig. 3, and verify that the centering portion enters properly the spring as shown in Fig. 3.

6 - Reinstall the cap with the proper gasket.

IMPORTANT: After the updating is performed, please identify the cap with a green painted mark.

Once the operation is completed, start and warm up the engine. Ensure there is no oil leakage.

Finally check the engine oil level, and add oil if necessary.

RECALL CAMPAIGN NO. 144

FLEXIBLE RUBBER HOSE FOR FUEL RETURN

INTRODUCTION

SUBJECT: Recall Campaign No. 144
Flexible rubber hose for return of fuel to right side fuel tank

VEHICLES: 1986 328 GTB/GTS vehicles with the following serial number rages:

MODEL	STARTING FROM SERIAL #	UP TO SERIAL #
1986 328 GTB/GTS	60053	66711

CONDITION: The flexible rubber hose (Ref. A, Fig. 1) for the return of fuel to the right side fuel tank may be subject to chafing. This condition can occur if the flexible rubber hose was positioned too close to the metallic discharge connector (Ref. B, Fig. 1) of the air conditioner compressor.

REMEDY: On all the above mentioned vehicles, this flexible rubber hose must be inspected and, if necessary, must be repositioned. The hose (p.n. 116767) must be replaced if it shows any abrasion or damage.

PARTS: The parts necessary for eventual replacement of the rubber hose are:

Qty. 1 p.n. 116767 - Flexible rubber hose
Qty. 2 p.n. 12179490 - Clamp

LABOR: Operation No. 144 Time 0.6 hours.

REIMBURSEMENT: On receipt of the correctly completed Recall Campaign Claim.

Fig. 1

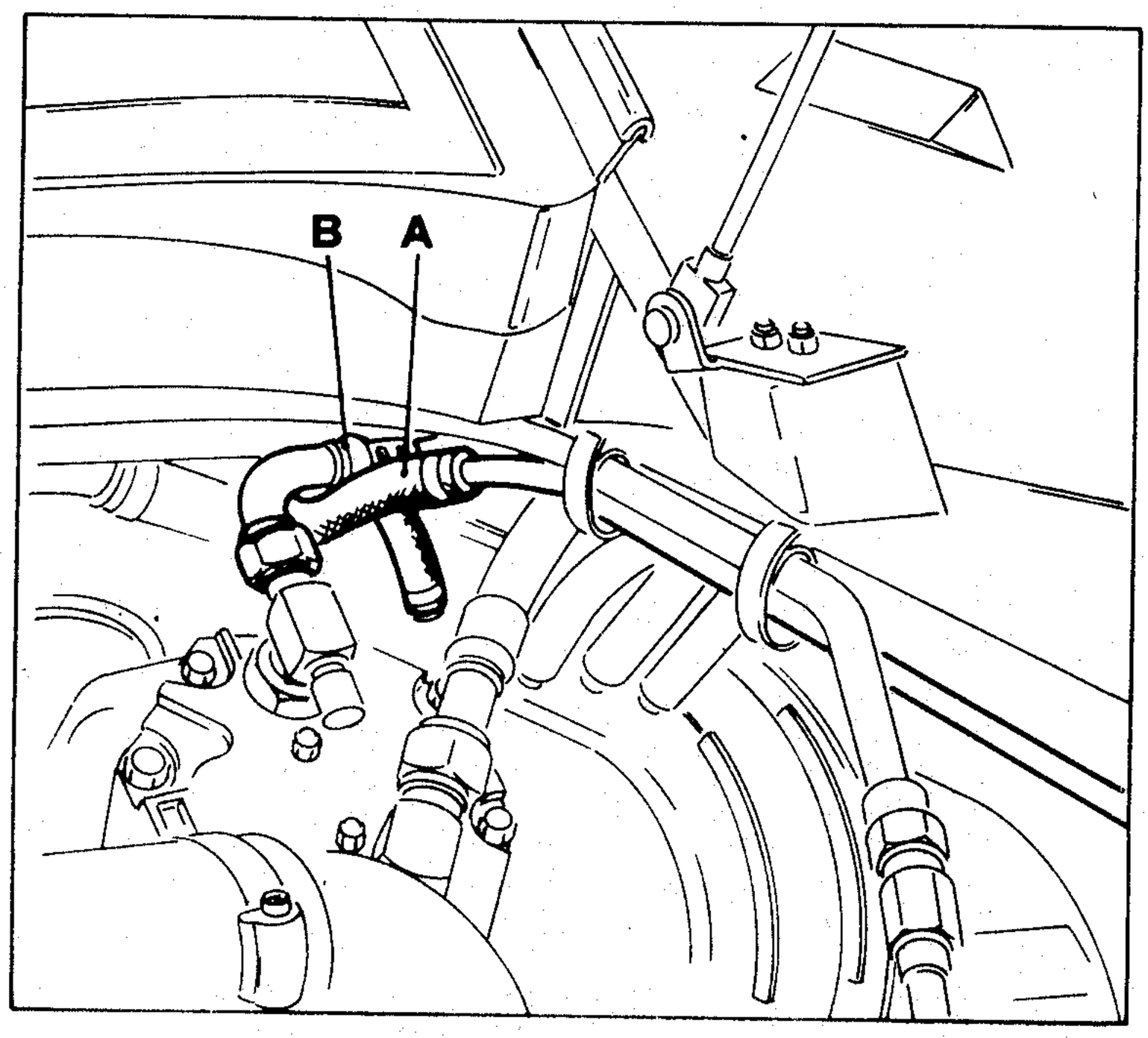
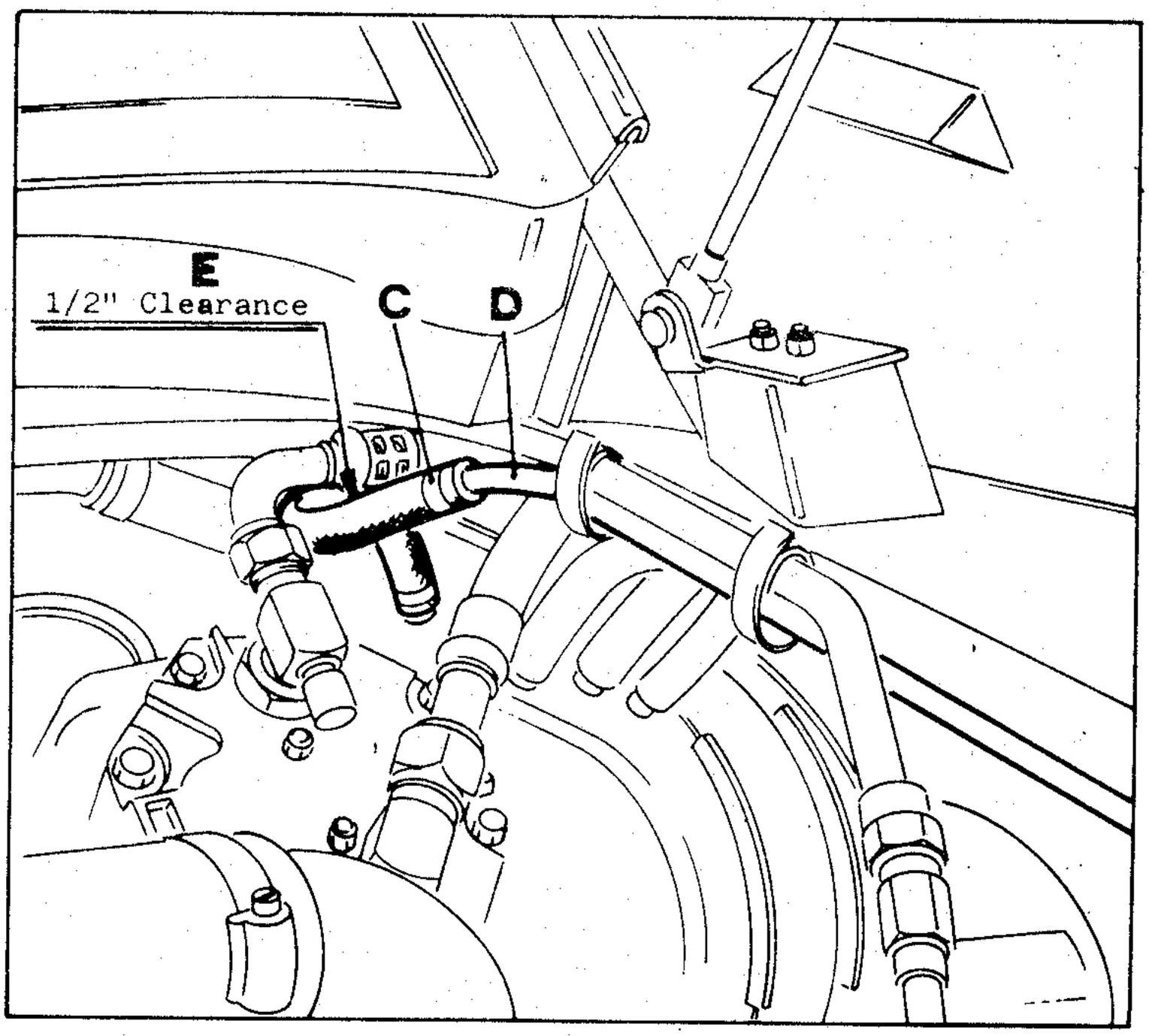


Fig. 2



INSTRUCTIONS

After a visual inspection, in order to properly reposition the hose, perform the following:

1 - Place the vehicle on a lift and remove the right rear wheel and the corresponding mud guard.

2 - Disconnect the air cleaner assembly F, Fig. 3 from the fuel metering unit, and disconnect the blow-by breather pipe from the air cleaner.

3 - Inside the wheel housing, disconnect the air conveyor G, Fig. 3 from the body.

4 - Lift up the conveyor/air cleaner assembly G and F, Fig. 3 in order to have sufficient access to the fuel return line.

5 - Using a round rod as a lever, which must react on the frame member, push downwards on the clamp C, Fig. 2, in order to slightly re-shape the metallic pipe D, Fig. 2, and increase its downward curvature until the clearance E between the rubber hose and the connector of the air conditioner compressor becomes sufficient (approximately 1/2").

6 - Check that clamp C, Fig. 2 has remained properly tight.

7 - If the existing hose shows abrasion or damage, replace it with a new one, which shall be installed with 2 new clamps.

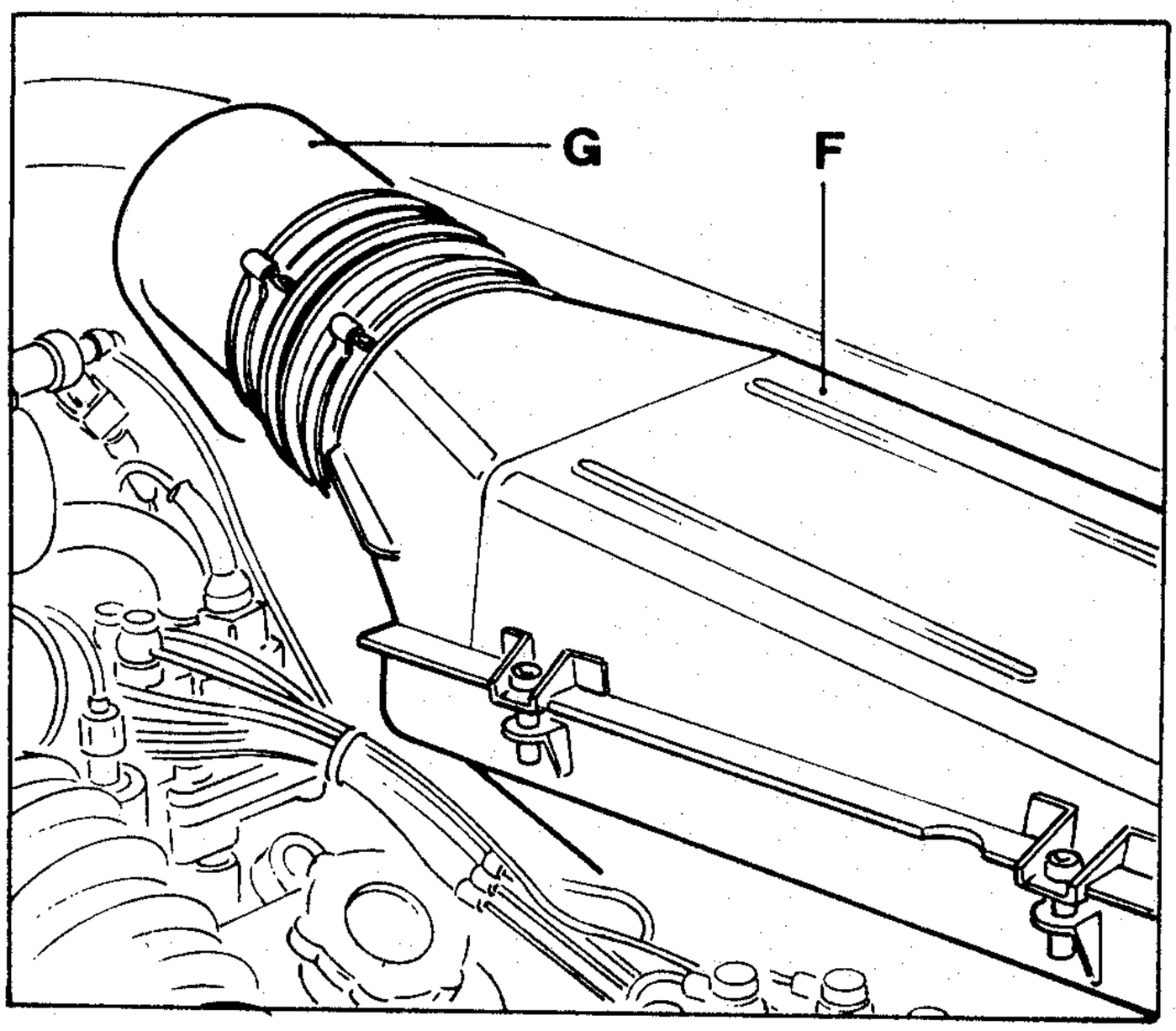
WARNING

NO SMOKING. DISCONNECT THE BATTERY.

HIGHLY FLAMMABLE MATERIAL. KEEP AWAY FROM SPARKS OR OPEN FLAMES. PROVIDE ADEQUATE VENTILATION. FUEL, WHEN SATURATED ON CLOTHING WILL CAUSE SKIN IRRITATION. PROCEED ACCORDINGLY.

8 - Re-assemble the parts previously removed, then start the engine and check for no leakage from the fuel hose.

Fig. 3



RECALL CLAIM FORM INSTRUCTIONS

FOREWORD

The enclosed Recall Claim Form has been numbered in these areas to be completed by your Dealership. The numbered areas indicate the necessary information needed to process the claim and promptly credit your account.

INSTRUCTIONS

Information required to complete the Recall Claim Form.

Area	Instructions
1	Enter your Ferrari 5-digit account number.
2	Enter vehicle mileage at time of repair.
3	Enter date of repair.
4	Enter Dealer claim calculations: Parts Dealer Net (Stock order price) Parts Handling (30%) Total Parts Total Labor (hrs x your approved WLR) Amount Claimed
5	Enter name of authorized servicing Dealer.
6	Signature of Dealer or authorized designee.
7	Signature of vehicle's owner.
8	If VIN number listed in area 8 appears invalid, please show correct VIN in explanation space (9).

REPAIR

No repair order need be attached for the campaign unless an owner has lost or never received a Recall Claim Form. If this occurs, record all pertinent data, as required by the Recall Claim Form, on a repair order. Make sure owner signs the repair order.

The repair order must not be submitted until the Ferrari Representative can provide a blank Recall Claim Form. Transfer pertinent data from repair order to the Recall Claim Form. In OWNER area (7), write "Owner's signature on repair order no. _____." Attach the repair order to the Claim Form and submit for reimbursemet.

MAILING

In a Warranty Claim Form Envelope send Recall Claim Form (and repair order when required) to Ferrari North America Area Office.

COPY #3 PARTS COPY
RETAIN WITH PARTS

COPY #2 DEALER COPY
RETAIN FOR YOUR RECORDS

RETURN COPY #1
TO FACTORY

Ferrari

Division of Fiat Auto U.S.A., Inc.

DOCUMENT NUMBER FOR FACTORY USE ONLY.	SERV. DLR ACCT. NO. (1)	YR. V.I.N. NO. (8)	MALF. CODE	CLASS CODE	CAMPAIGN NO.
	CLAIM NO. 80001	SELL DLR ACCT. NO.	REPAIR DATE MO. / DAY (3) / YR	MILEAGE (2)	ALL RECALL WORK MUST BE ON AN APPROPRIATE RECALL CLAIM FORM. NOT A WARRANTY CLAIM FORM. ATTACH REPAIR ORDER COPY TO BACK

PART DESCRIPTION	PART NUMBER	QTY	DLR. NET	EXPLANATION
				(9)

OWNER:

(7)

OWNER'S SIGNATURE

CLAIMS PAID SUBJECT TO AUDIT AND PARTS INSPECTION

WE CERTIFY THE COMPLETION OF SERVICES REQUIREMENTS UNDER THIS CAMPAIGN ON THIS VEHICLE

(5)

AUTHORIZED SERVICING DEALER

(6)

SIGNATURE

FACTORY COMMENTS

☐ REJECT _____

☐ RETURN _____

LABOR REQUIRED		AUTHORIZATION NO.
OPER. NO.	HOURS	
		DEALER CLAIM CALCULATIONS
		PARTS DEALER NET
		PARTS HANDLING
		TOTAL PARTS
		TOTAL LABOR (4)
		SUBLET
		TOTAL
		AMOUNT CLAIMED

FACTORY COPY

Ferrari

Ferrari North America
777 Terrace Avenue
Hasbrouck Heights, NJ 07604
201-393-4081

December 23, 1986

Dear Ferrari Owner,

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicles Safety Act.

Ferrari Spa, the manufacturer of Ferrari automobiles, has determined that the following defects may exist in certain Ferrari 3.2 Mondial and 3.2 Mondial Cabriolet vehicles.

The flexible oil hoses for the engine oil radiator could leak engine oil. This leakage may occur if there is insufficient clamping of the metal connectors to the flexible portion of the oil hose. Should such engine oil leakage occur and should the use of the vehicle be prolonged, severe engine damage may result due to lack of lubrication. As with any type of oil leakage, the possibility of vehicle engine fire may exist.

The remedy will consist of the replacement of both upper and lower flexible oil hoses for the engine oil radiator with new interchangeable hoses manufactured with an improved procedure. At the same time, the engine oil pressure regulating valve assembly will also be updated by installing components identical to those utilized in present production, in order to better regulate the engine oil pressure.

Since your car is among those potentially affected by the above condition, we ask you to kindly contact any Ferrari Service Dealer immediately in order to arrange for the modification to be performed.

Of course the above modification which will not immobilize your vehicle for longer than half a day, will be performed free-of-charge.

By the time you receive this letter, the authorized Ferrari Dealer will have been supplied with the instructions and parts to perform the repair.

If the Dealer fails or is unable to make the necessary repairs free-of-charge within a reasonable time, you should inform either the National Headquarters Office of Ferrari North America, 777 Terrace Avenue, Hasbrouck Heights, NJ 07604 (201) 393-4080, the Western Area Office, 6780 Katella Avenue, Cypress CA 90630 (714) 895-3388, or the Eastern Area Office, 220 Turner Industrial Way, Aston, PA 19014 (215) 494-1545, whichever is most convenient to your location.

Although we urge you to immediately call one of the numbers indicated above, if the vehicle is not repaired free-of-charge or within a reasonable time, you may also contact the Administrator of the National Traffic Safety Administration in Washington, D.C. 20590 or call the Auto Safety Hotline at 1-800-424-9393.

We urge you to comply with this notice promptly and apologize for any inconvenience this may cause you.

Sincerely,

Ferrari North America

Ferrari

Ferrari North America
777 Terrace Avenue
Hasbrouck Heights, NJ 07604
201-393-4081

December 23, 1986

Dear Ferrari Owner,

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicles Safety Act.

Ferrari Spa, the manufacturer of Ferrari automobiles, has determined that the following defects may exist in certain Ferrari 328 GTB/GTS vehicles.

The flexible rubber hose for return of fuel to the right side fuel tank may be subject to chafing. This condition can occur if the flexible rubber hose was positioned too close to the metallic discharge connector of the air conditioner compressor.

The remedy will consist of an inspection of the flexible fuel hose, which, if necessary will be re-positioned, and which will also be replaced if it shows any abrasion or damage.

Since your car is among those potentially affected by the above condition, we ask you to kindly contact any Ferrari Service Dealer immediately in order to arrange for the modification to be performed.

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Hasbrouck Heights, NJ 07604
201-393-4081

December 23, 1986

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Ferrari Spa, the manufacturer of Ferrari automobiles, has determined that the following defects may exist in certain Ferrari 328 GTB/GTS vehicles.

The flexible oil hoses for the engine oil radiator could leak engine oil. This leakage may occur if there is insufficient clamping of the metal connectors to the flexible portion of the oil hose. Should such engine oil leakage occur and should the use of the vehicle be prolonged, severe engine damage may result due to lack of lubrication. As with any type of oil leakage, the possibility of vehicle engine fire may exist.

The remedy will consist of the replacement of both upper and lower flexible oil hoses for the engine oil radiator with new interchangeable hoses manufactured with an improved procedure. At the same time, the engine oil pressure regulating valve assembly will also be updated by installing components identical to those utilized in present production, in order to better regulate the engine oil pressure.

In addition the flexible rubber hose for return of fuel to the right side fuel tank may be subject to chafing. This condition can occur if the flexible rubber hose was positioned too close to the metallic discharge connector of the air conditioner compressor.

The remedy will consist of an inspection of the flexible fuel hose, which, if necessary will be re-positioned, and which will also be replaced if it shows any abrasion or damage.

Since your car is among those potentially affected by the above condition, we ask you to kindly contact any Ferrari Service Dealer immediately in order to arrange for the modification to be performed.

Of course the above modification which will not immobilize your vehicle for longer than half a day, will be performed free-of-charge.

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Sincerely,

Ferrari North America

Ferrari

FERRARI NORTH AMERICA

328 / 328
GTB / GTS
U.S.VERSION

SERVICE BULLETIN

INDEX

00 - GENERAL INFORMATION - **00**

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NUMBER	DESCRIPTION	DATE
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-24	CHANGE NOTICE - Brake Fluid DOT4 (All Models)	08-10-87
-25	New AGIP SINT 2000 10W40 Engine Oil (All Models)	06-15-88
-32	CHANGE NOTICE - Connolly Leather VM - 4208. (328 - Mondial t)	07-15-89
	SECTION - 10 - ENGINE	
10-14	Cylinder Head Tightening on F105C Engins (3.2 8 Cyl.)	09-08-86
-15	Camshaft Extension for Ignition Rotors (8 & 12 Cyl.)	11-24-86
-16	Oil Sump for F105C Engines (3.2 8 Cyl.)	12-30-86
-18	Oil Seal for Ignition Distributor (Testarossa - 328 - 3.2 Mon. - 412)	04-20-87
-21	CHANGE NOTICE - Engine Dampner Securing Bolt (All Models)	08-10-87
-23	CHANGE NOTICE - Chrome Plated Intake and Exhaust Valves (3.2 8 Cyl.)	06-15-88
-24	CHANGE NOTICE - Valve Seats (3.2 8 Cyl.)	12-15-88
-25	CHANGE NOTICE - Crankshaft oil seal (328 - Turbo - 3.2 Mon.)	07-15-89
	SECTION - 14 - FUEL SYSTEM	
14-9	CHANGE NOTICE - Fastening of Cold Start Injector (8 Cyl. - Testarossa)	10-05-88
	SECTION - 15 - EMISSION CONTROL SYSTEM	
15-3	CHANGE NOTICE - CO / HC Probe (3.2 8 Cyl.)	06-15-88

NUMBER	DESCRIPTION	DATE
	SECTION - 16 - LUBRICATION	
16-2	CHANGE NOTICE - Spring for Oil Press. Relief Valve (3.2 8 Cyl. - Testarossa)	06-05-87
-3	CHANGE NOTICE - Oil cooler Air Duct (328)	06-15-88
	SECTION - 17 - COOLING SYSTEM	
17-4	CHANGE NOTICE - Sealing of Water Radiator Seat (328)	06-15-88
	SECTION - 18 - EXHAUST SYSTEM	
18-3	CHANGE NOTICE - Exhaust Manifold (328 GTB/S - 3.2 Mon. - Cab.)	08-10-87
	SECTION - 21 - CLUTCH	
21-5	Clutch Release System (TURBO - 328 GTB/S)	08-10-87
-8	CHANGE NOTICE - Clutch Disc (8 Cyl.)	10-05-88
	SECION - 30 - TRANSMISSION / REAR AXLE	
30-6	CHANGE NOTICE - Synchron. Blocks (All Models)	08-10-87
-9	CHANGE NOTICE - Center Dowel on Trans. Intermediate Housing (3.2 8 Cyl.)	06-15-88
-10	CHANGE NOTICE - Gear Shift Rocker Arm Support (8 Cyl.)	10-05-88
	SECTION - 40 - BRAKES	
40-3	328 GTB/S Braking System	12-30-86

NUMBER	DESCRIPTION	DATE
	SECTION - 51 - STEERING	
51-1	CHANGE NOTICE - Steering Wheel (328 & TURBO GTB/S)	10-05-88
	SECTION - 60 - SUSPENSION	
60-17	CHANGE NOTICE - Suspension & Wheels (328 & TURBO GTB/S)	10-05-88
	SECTION - 80 - ELECTRICAL	
80-28	Electrical Test Procedure for Microplex Ignition System	04-20-87
-29	Electrical Test Procedure for BOSCH K - Jetronic w/Lambda (M.Y. 84-87 - 8 Cyl.)	04-20-87
-32	CHANGE NOTICE - Rear and Engine Wiring Harnesses (328)	08-10-87
-35	CHANGE NOTICE - Wiring Harness Covering (328 - TURBO GTB/S)	10-05-88
-36	Calibration of Display Indicator (328 - TURBO - 412)	02-13-89
-39	CHANGE NOTICE - Electronic control for ventilation fan speed (328 - F40)	07-15-89
-40	Carbon & spring for distributor cap (All Models)	07-15-89
	SECTION - 90 - BODY	
90-10	CHANGE NOTICE - Front Bonnet (328 - TURBO)	06-15-88
-11	CHANGE NOTICE - Side Grill Grommet (328 GTS)	10-05-88
	SECTION - 96 - HEATING SYSTEM	
96-3	Heater Fan Motors (328 - TURBO)	12-15-88

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 00-23

PRODUCTION CHANGE

DATE: 8/10/87

SUBJECT: GEARBOX OIL - AGIP ROTRA SX
VEHICLES: SEE TABLE BELOW

Starting from:	Model	8 Cyl	8 Cyl	Turbo	412		
	Area	Europe	USA	Italy	All		
	Chassis no.	67437	67465	67499	67463		
	Engine no.						
	Gearbox no.						

Description:

The gearbox is filled with the new gearbox oil AGIP ROTRA SX 75W 90.

NOTE: The oil AGIP ROTRA 80W 90 remains in the Testarossa gearbox and the 412 rear axle.

Reason:

Reducing shifting effort when cold.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description

Spare parts procedures:

Reference spare parts catalogue:

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 00-24

PRODUCTION CHANGE

DATE: 8/10/87

SUBJECT: BRAKE FLUID DOT4 AGIP
VEHICLES: ALL

Starting from:	Model	328	3.2 M	Turbo	TR	412	
	Area	All	All	Italy	All	All	
	Chassis no.	68915	68847	68913	68787	68531	
	Engine no.						
	Gearbox no.						

Description:

Brake and hydraulic clutch release systems are being filled with AGIP Brake Fluid DOT4. This fluid is compatible with the AGIP Brake Fluid Super HD DOT3 previously used. The maintenance schedule specified for each model remains unchanged.

Reason:

The new fluid has a higher boiling point.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description

Spare parts procedures:

Reference spare parts catalogue:

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 00-25

DATE: 6/15/88

SUBJECT: NEW AGIP SINT 2000 10W 40 ENGINE OIL
VEHICLES: ALL

Starting from cars with C.N. 76966, the new **AGIP SINT 2000 10W 40** oil is being used for engine lubrication, replacing the SINT 2000 10W 50 type which Agip no longer produces.

You may use up the Agip Sint 2000 10W 50 oil you have in stock.

The table below provides a list of Agip products used in our vehicles with the corresponding quality levels; it also shows the minimum quality levels required of other products which may be used **only** when Agip lubricants are not available.

AGIP PRODUCTS	AGIP PRODUCT QUALITY LEVELS	MINIMUM CORRISPONDING QUALIATY LEVELS	
		EUROPE	OTHER COUNTRIES
AGIP SINT 2000	SAE 10W/40 API SF/CD CCMC G3-D1-D2-PD3 MIL-L-46152-C LEVEL	SAE 10W/40 API SF/CD CCMC G3-D1	SAE 10W/40 SAE 15W/40 SAE 15W/50 API SF/CC
AGIP ROTRA MP	SAE 80W/90 API GL-5 MIL-L-2105-C	SAE 80W/90 API GL-5 MIL-L-2105-C	SAE 80W/90 API GL-5
AGIP ROTRA SX	SAE 80W/90 API GL-5 MIL-2105-C	SAE 75W/90 API GL-5 MIL-L-2105-L	SAE 75W/90 SAE 80W/90 API GL-5
AGIP DEXTRON II	GM 6137 M ZF 7006 050 157	GM 6137 M ZF 7006 050 157	GM 6137 M
AGIP BRAKE FLUID DOT4	FMVSS DOT-3/DOT-4 SAE J-1703	FMVSS DOT-3/DOT-4 SAE J-1703	FMVSS DOT-4
AGIP TER 60	DIN 51503 KA/KC 68	DIN 51503 KA/KC 68	CARRIER PP-3636
AGIP OSO 32	ISO HM 32 DIN51524 HLP DENISON HF-2	ISO HM 32 DIN 51524 HLP	ISO HM 32 DENISON HF2
AGIP ANTIFREEZE	BS 3151 Type B	BS 3151 Type B	BS 3151 Type B
AGIP ATF DEXTRON	GM 6032 M ZF 7006 050 157	GM 6032 M ZF 7006 050 157	GM 6032 M

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 00-32

PRODUCTION CHANGE

DATE: 7/15/89

SUBJECT: CONNOLLY LEATHER - 4208
VEHICLES: 328 - MONDIAL T

Starting from:	Model	328	MON T				
	Area						
	Chassis no.	79662	79496				
	Engine no.						
	Gearbox no.						

Description:

Beginning with the above listed chassis number, a new Connolly leather VM 4208 has been introduced. This will replace the previously used VM 3218.
Please note there is a difference in color and tone.

Reason:

Production change.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
		Connolly leather VM 3218			Connolly leather VM 4208

Spare parts procedures: If replacement is necessary, order a cover quoting the code number and enclosing a sample.

Reference spare parts catalogue:

REF. SAT T.I. CN 67

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 10-14

DATE: 9/8/86

SUBJECT: Cylinder Head Tightening on F105C Engines (3200-8 cylinder)
VEHICLES: 328 GTB/S, 3.2 Mondial and 3.2 Mondial Cabriolet

INTRODUCTION

The new 3200-8 cylinder engines, installed on 328 GTB/GTS and Mondial 3200/Cabriolet is equipped with new studs (p.n. 126647), washers (p.n. 126648) and nuts (p.n.126646), for fitting and tightening of cylinder heads. They are torqued following a special procedure in order to ensure a uniform and constant load which does not vary in consequence of the settling down of the cylinder head gasket and engine life. There is no longer any need to re-torque during the scheduled maintenance.

INITIAL INSTALLATION AT FACTORY

The original fitting, on the new engine, is performed by Ferrari by means of a special computerized, dynamometric wrench (SPS Technologies, model SENSOR I) performed in two steps:

- 1 : Pre-torque (snug) of each nut up to 55Nm (40 Ftlbs), following the same sequence specified for the 308 engine.

- 2 : Always in sequence, slight unscrewing followed by final tightening up to the "elasticity limit" of each stud. The reached elasticity limit is monitored and warned by the wrench itself, which calculates it as gradient of torque against degree of rotation (system: JCS-TEL).

MAINTENANCE

It is not necessary to re-torque the cylinder heads for the entire engine life. However, for our knowledge and research we ask you to perform a rough checking of the head nuts torque, at least on the first cars, while performing valve clearances checking (every 15,000 miles) in the following way; with a standard torque wrench, ACCURATELY CALIBRATED AT 70 Nm (52 Ftlbs), try to tighten each head nut and CHECK IT DOES NOT ROTATE.

In case one or more nuts prove to be not tight, you shall unscrew and re-tighten following the procedure described in the next section (see ENGINE OVERHAULING).

ENGINE OVERHAULING

In case of engine overhauling, or re-fitting of a cylinder head, for installation it would be theoretically necessary to use the special computerized wrench, type SENSOR I, by SPS Technologies, in order to exactly duplicate the initial tightening performed by the Ferrari Factory.

However, an acceptable result can be achieved with the following tools:

- Standard torque wrench (1/2")
- Ferrari special socket (AV 1393) for 4 valve engine
- Angle check wrench (like, for instance, USAG No. 830 - 1/2" drive)

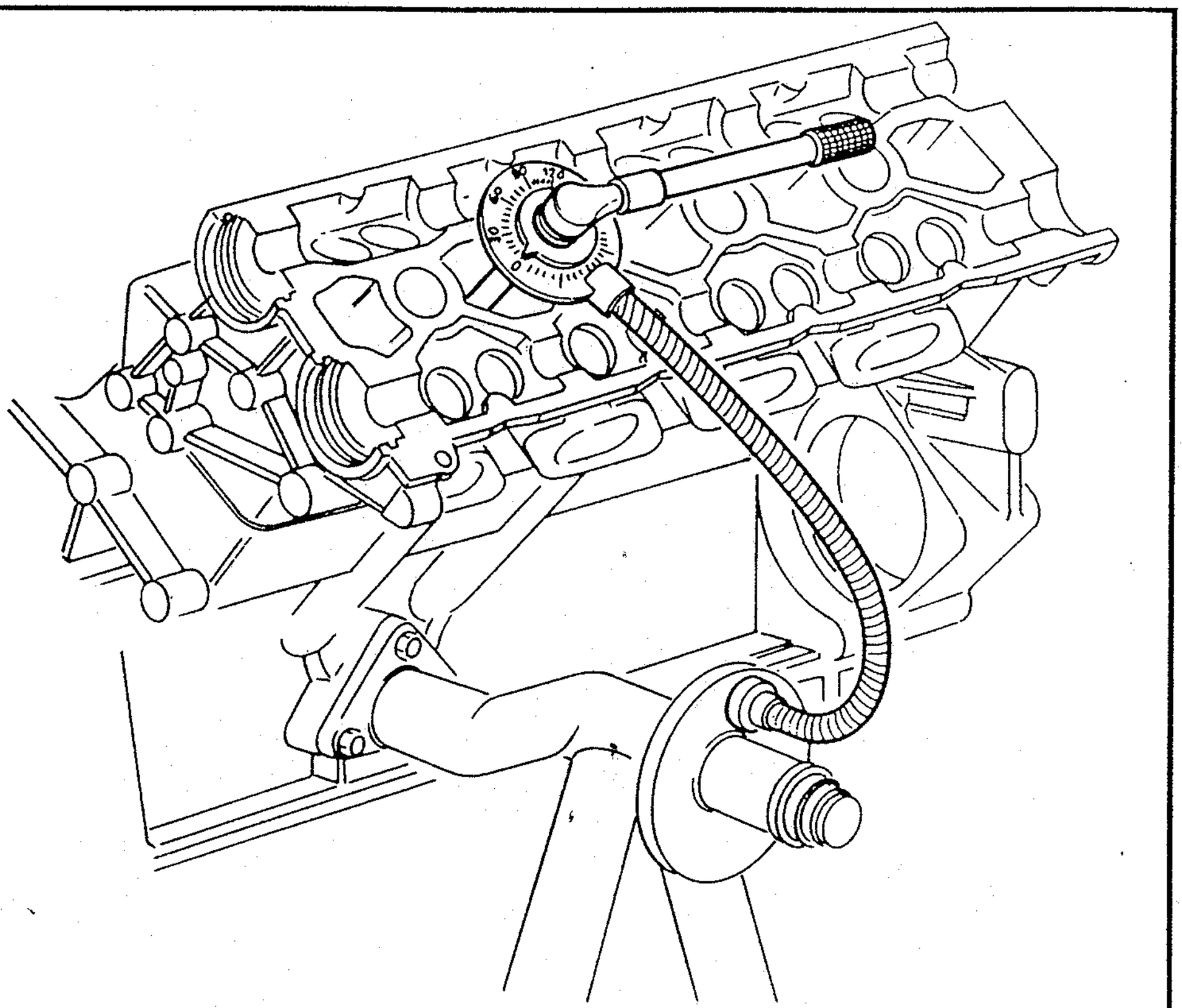
Utilizing the following procedure:

1 - Lubricate with graphite grease the thread of the studs and the contact surfaces of both washers and nuts.
2 - Following the sequence specified by the manual, torque each nut to exactly 45 Nm (33 Ftlbs) paying attention to have the Ferrari special socket AV 1393 at 90° with the handle of the torque wrench.
3 - Then, always in sequence, tighten each nut of additional 120 degrees by using a normal wrench, combined with the angle check wrench and Ferrari special socket AV 1393.

For the above last step, since the position of the nut does not allow a 120° rotation in one operation only, you shall perform the following:

- Connect the angle check wrench (for instance USAG 830 - 1/2") between the Ferrari socket AV 1393 and the handle.
- Connect an iron plate to the engine, in order to locate the magnet on top of it.
- Manually bring to "zero" the dial on the angle check wrench.
- Tighten the nut as far as possible and read the angle you have reached.
- Pull up and reposition the wrench, then manually bring the dial in the position previously reached
- Tighten the nut further and read the new total angle reached.
- Repeat the above operations a few times (3÷4) until a total angle of 120° has been reached.

Note: The USAG angle Check Wrench (Ferrari Part Number 900000830) will be automatically shipped from the Ferrari NA Spare Parts Dept., Cypress, CA to your dealership. Dealer cost - $36.27. Additional units are available through the Ferrari NA Spare Parts Department following normal ordering procedures.



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SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 10-15

DATE: 11/24/86

SUBJECT: Camshaft Extension for Ignition Rotor
VEHICLES: 8 and 12 Cylinder Cars

Preliminary:

We wish to inform you that for the chassis number ranges indicated below, a camshaft extension incorporating a rubber torsional dampner for the ignition rotor arm was utilized.

Model	Version	From C.N.	To C.N.
328 GTB/S	North American	60053	65731
3.2 Mondial	" "	59645	65731
Testarossa	" "	60177	66071

In case you should experience an oil leak from the above "rubber type camshaft extension", we have introduced a "solid type camshaft extension" to be used as replacement.

Spare Parts

Ref.	Description	Part No.	Notes
A	Pin	132355	The old pin P.N. 129120 can be used until exhaustion of present stock
B	Camshaft Extension	1126166 8126166 6126166 7126166	1/4 Cylinder Bank - 8 Cyl. 5/8 Cylinder Bank - 8 Cyl. 1/6 Cylinder Bank - TR 7/12 Cylinder Bank - TR
C	Ignition Rotor	126139	Hazelbrown Color

SERVICE BULLETIN No 10-15

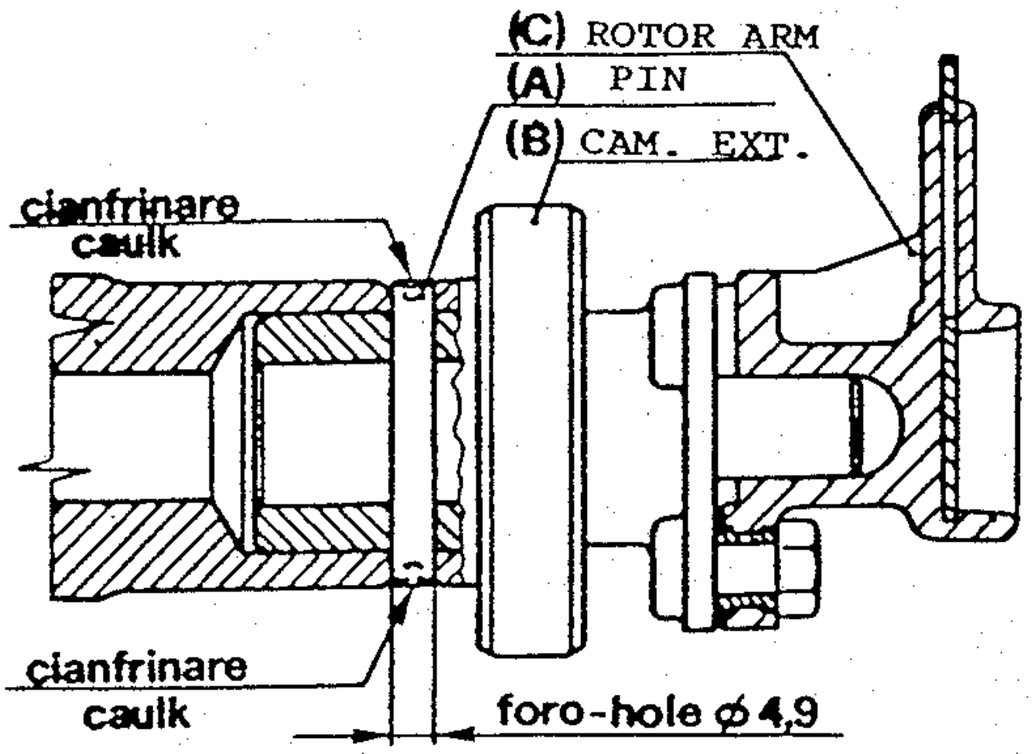
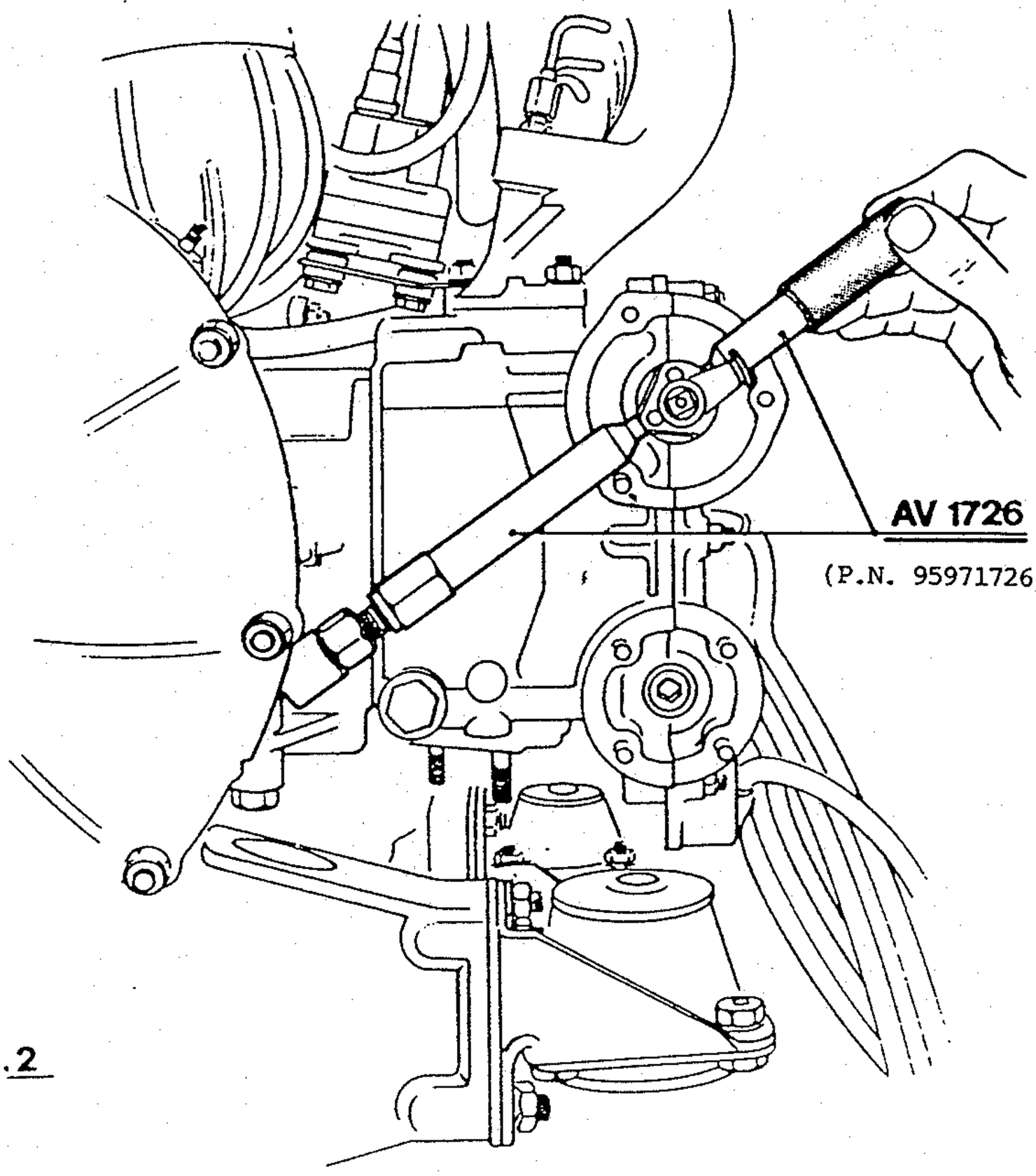


Fig.1



(P.N. 95971726)

Fig.2

REPLACEMENT PROCEDURE

This operation shall be performed only in case of damage or oil leak on the existing extension.

- Remove the ignition distributor cap and its supporting flange with oil sealing ring.
- With a cylindrical punch (3mm dia.) remove the old fixing pin.
- With self-adhesive tape, protect the cylinder head and cover, then, with two levers, pull out the old extension.
- Carefully clean and re-insert the new extension.
- With an aluminum punch, push down the pin, then hold it in position with the special tool AV 1726 and caulk one side with the special punch (Fig. 2). Rotate for 180° the camshaft and repeat the prior operation in order to caulk also the other side of the pin.
- By gently hitting with a punch and hammer, check that the pin is firmly locked.

WARRANTY PROCEDURE

For this updating, when performed under the Ferrari Limited Warranty, please issue a Warranty Claim utilizing the applicable codes and repair times as indicated below:

Vehicle Type	Comp. Code	Prob. Code	Oper No.	Time
328 GTB/S	04.81.38	01	04.81.38.0	2.0
Mondial 3.2 Cabriolet	09.81.38	01	09.81.38.0	2.0
Testarossa	10.81.38	01	10.81.38.0	1.0

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 10-16

DATE: 12/30/86

SUBJECT: OIL SUMP FOR F105C ENGINES (3.2 LITER, 8 CYLINDER)
VEHICLES: 328 GTB/GTS, 3.2 MONDIAL, 3.2 MONDIAL CABRIOLET

Starting with the following identification numbers:

Model	Version	Starting From	
		Engine No.	Chassis No. (*)
328 GTB/GTS 3.2 Mondial and Cabriolet	Europe	1392	≃65001
	U.S.A.	686	≃65101
GTB/GTS Turbo	Italy	54	≃65201

(*) the indicated chassis nos. are for approximate reference only.

A new engine oil sump has been introduced. It incorporates a suction sump for a new suction pipe which extends 18mm lower in comparison with the previous suction pipe (see figures 1 and 2).

PURPOSE OF THE MODIFICATION:

The new assembly helps suction in order to prevent eventual discontinuity of oil pump action due to "cornering effect" when the engine oil level starts decreasing below MINIMUM.

SERVICE INFORMATION:

The replaced oil sump (p.n. 107875) has been used on ALL Ferrari vehicles with 8 cylinder, wet sump, engines (208 - 308 - Mondial - 328). In case of replacements on 8 cylinder vehicles with chassis number lower than those here indicated, it is necessary to follow these instructions:

1 - The new oil sump (p.n. 130919) can only be used in conjunction with the new suction pipe (p.n. 129551): in case the new parts are installed, both the oil sump and the suction pipe must be replaced.

Should the new oil sump be used in conjunction with the old suction pipe, the efficiency of the oil pump would be impaired with the consequence of lack of oil pressure while cornering.

2 - The new suction pipe (p.n. 129551) cannot be used on engines having the old oil sump (p.n. 107875) because it would interfere.

ATTENTION in case of eventual engine replacement, with a new engine to be installed on an old gearbox assembly which would carry the old type oil sump.

In such case, it is also necessary:

- either to replace the oil sump with a new one (solution to be preferred);

- or to install on the new engine the old type suction pipe.

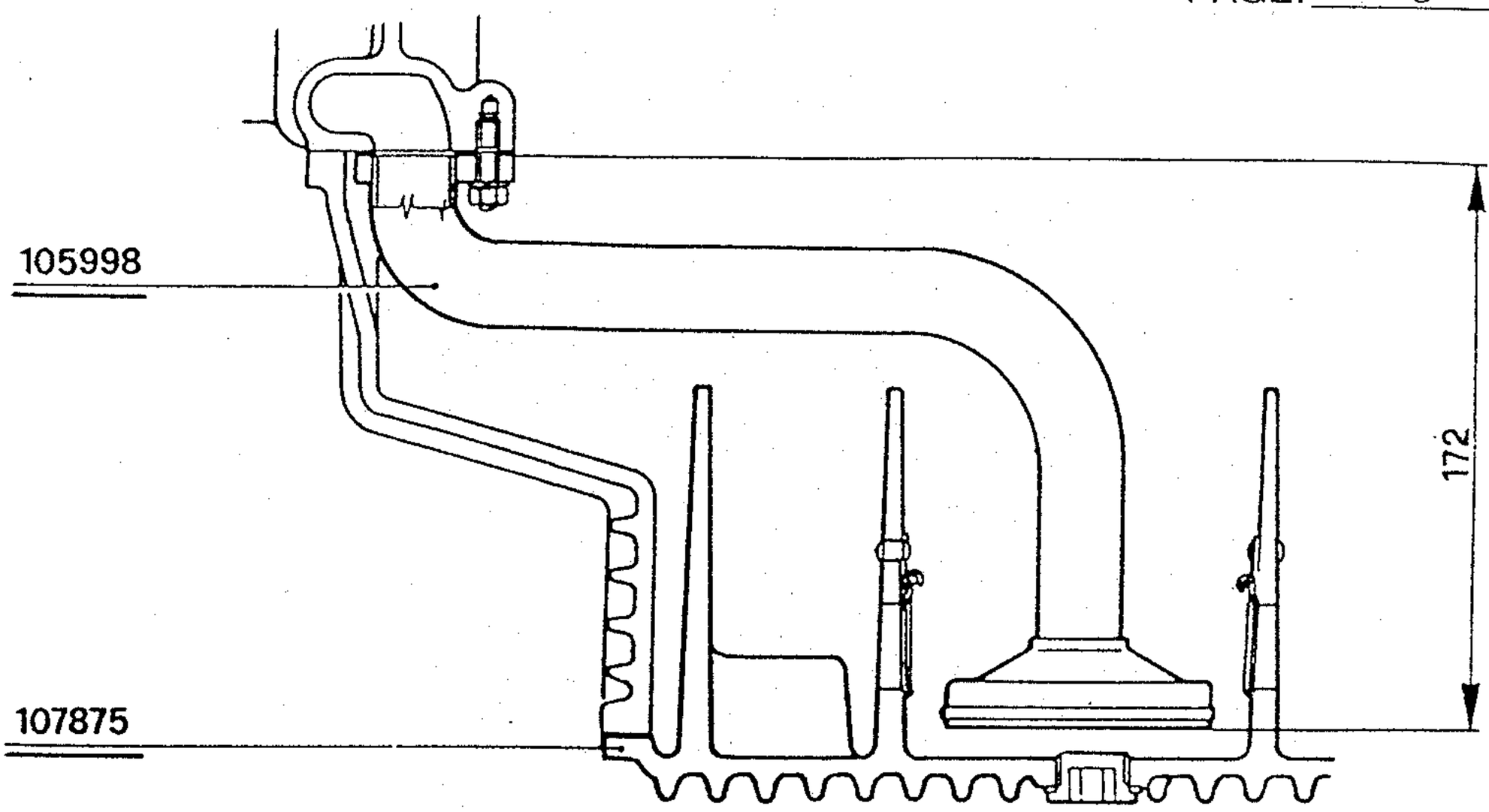


Fig. 1 - Old Type Oil Sump and Suction Pipe

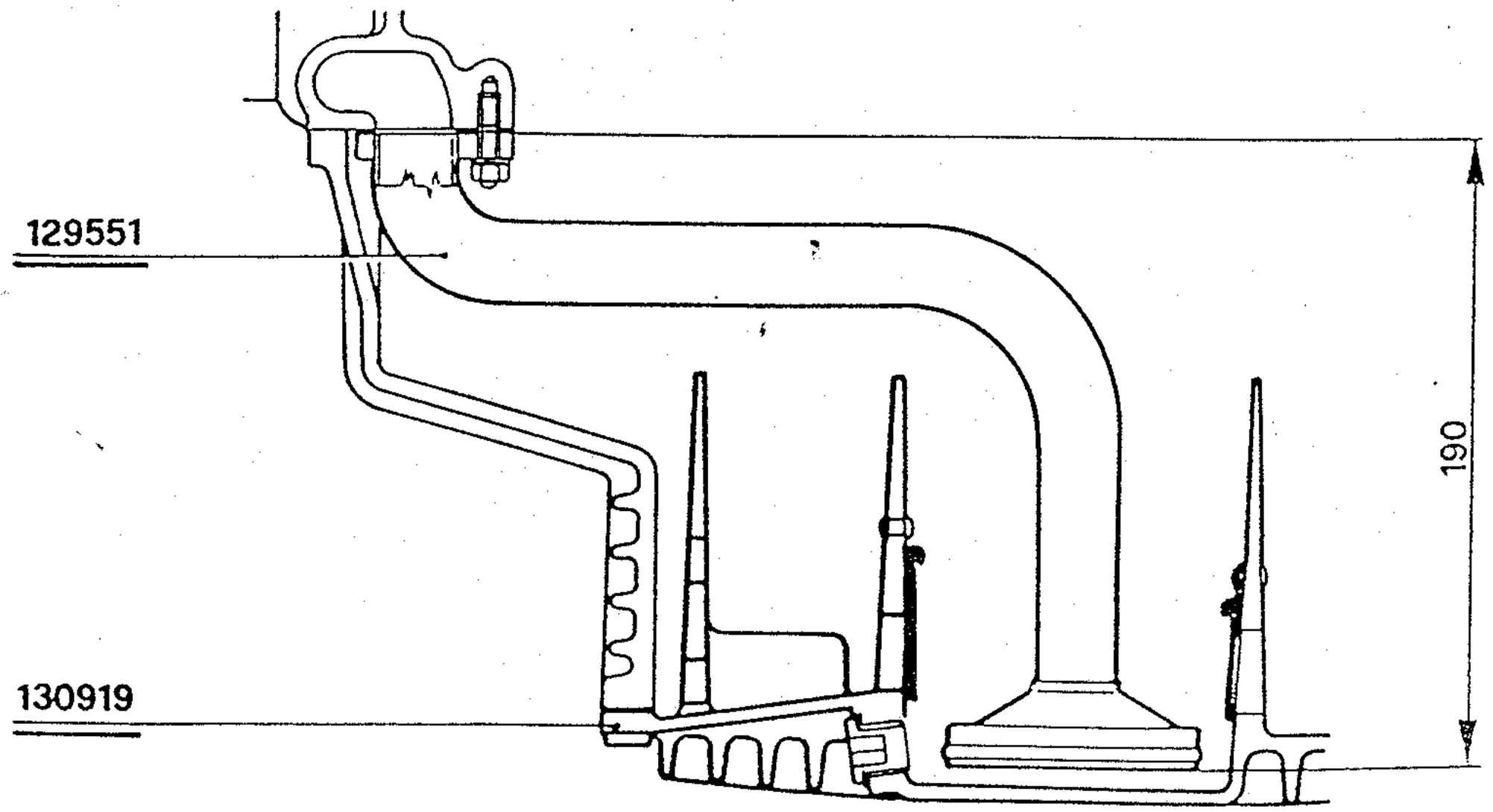


Fig. 2 - New Type Oil Sump and Suction Pipe

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SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 10-18

DATE: 4/20/87

SUBJECT: NEW OIL SEAL FOR IGNITION DISTRIBUTOR
VEHICLES: TESTAROSSA, 328 GTB/S, 3.2 MONDIAL,
3.2 MONDIAL CABRIOLET, & 412

INTRODUCTION:

A new oil seal, with double lip, for ignition distributor (ref. A, Fig. 1) has been studied and introduced into production.

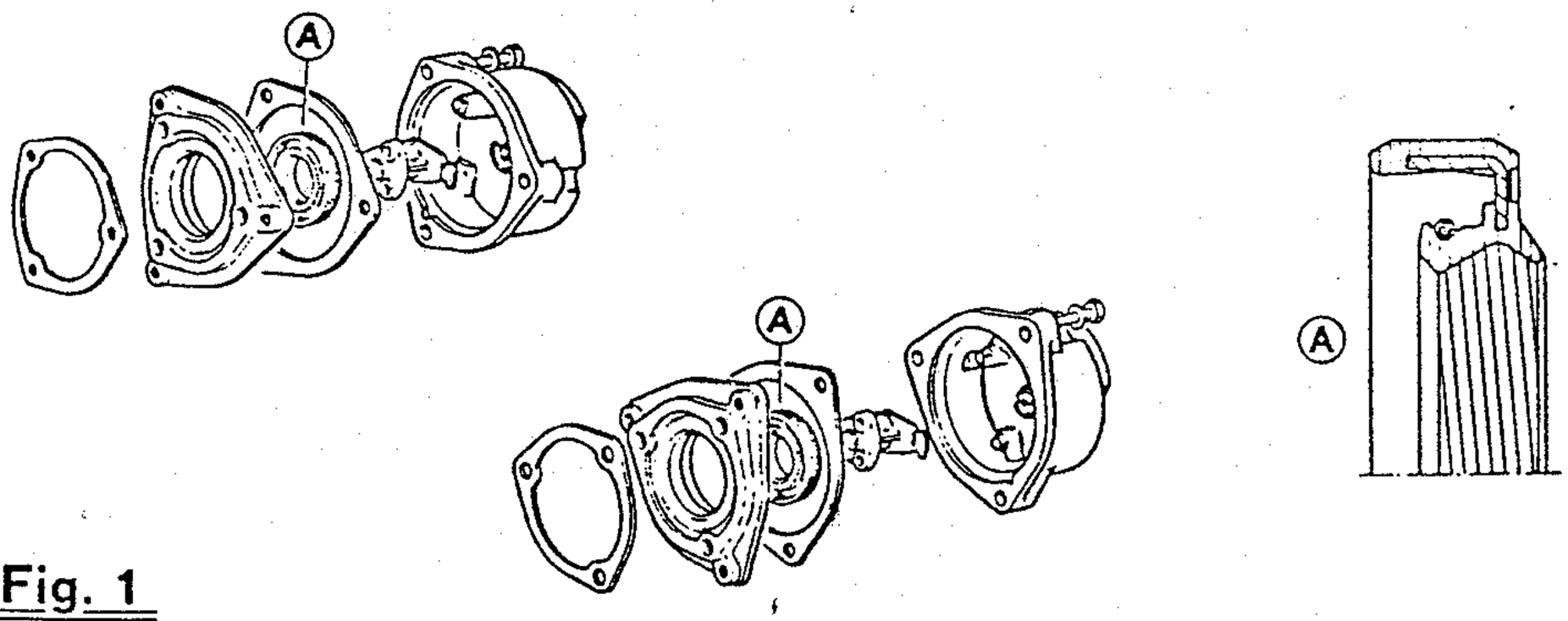


Fig. 1

The new seal is available in 2 versions, each of them being suitable for one specific direction of camshaft rotation, and precisely:

P.N. 132452 (RED COLOR) for Testarossa
P.N. 132453 (BLACK COLOR) for 8 cylinder engines and 412

The references for production change and the Service/Spare Parts policy are explained in the following pages.

IMPORTANT:

The previous oil seal (P.N. 126105) is to be considered obsolete and will no longer be supplied. Any of these seals you may have in your stock (also the ones included in the engine gasket kits) can be returned to the Ferrari North America Spare Parts Department utilizing the normal AFA procedures. This return must be completed by May 31, 1987.

TESTAROSSA

Starting with the following production nos.:

Version	Engine No.	Chassis No.
Europe	289 (KE)	69747
USA	578	69745

NOTE: The parts shown by Fig. 2 have been introduced into production.

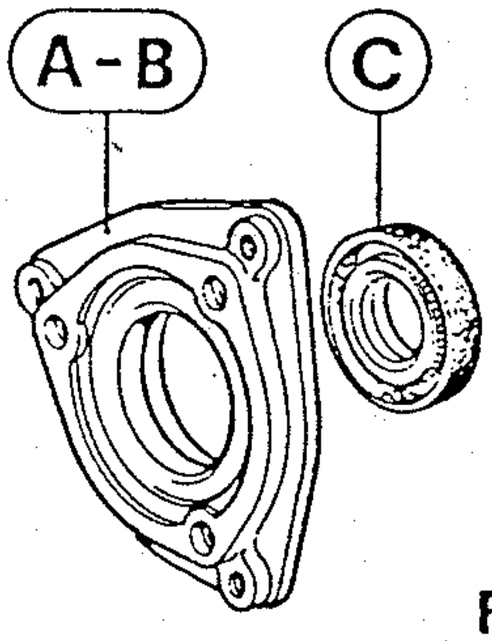


Fig. 2

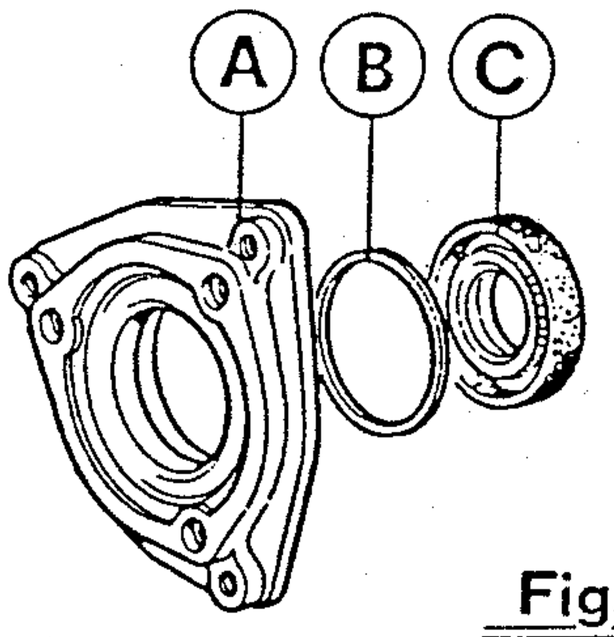
(A) : P.N. 133346; Mounting flange for ignition distributor 1-6

(B) : P.N. 133347; Mounting flange for ignition distributor 7-12

(C) : P.N. 132452; Oil seal

SERVICE AND SPARE PARTS POLICY:

In case of replacement on a previous vehicle, employ the new oil seal p.n. 132452, which can be installed on the previous flange with the addition of the 1.25 mm spacer (as shown by Figure 3), in order to achieve a correct positioning.



(A) : P.N. 126115; Previous mounting flange for ignition distributor (bank 1-6 ÷ 7-12)

(B) : P.N. 133066; Spacer 1.25 mm

(C) : P.N. 132452; Oil seal

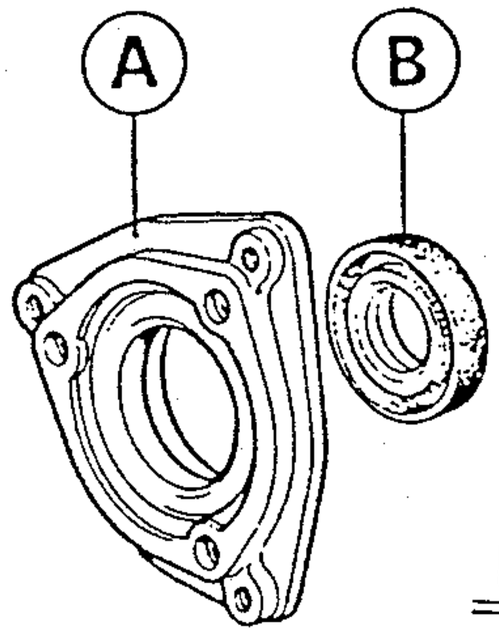
Fig. 3

328 GTB/GTS - 3.2 MONDIAL/CABRIOLET

Starting with the following production nos.:

Type	Version	Engine No.	Chassis No.
328 GTB/GTS	Europe USA	2337 1193	69665 69639
3.2 Mondial/ Cabriolet	Europe USA	2339 1196	69677 69645

NOTE: The parts shown by Figure 4 have been introduced into production.



(A) : P.N. 133100; Mounting flange for ignition distributor (bank 1-4 ÷ 5-8)

(B) : P.N. 132453; Oil seal

Fig. 4

SERVICE AND SPARE PARTS POLICY:

In case of replacement on a previous vehicle, employ the new oil seal p.n. 132453; which can be installed on the previous flange with addition of the 1.25 mm spacer (as shown by Figure 5), in order to achieve a correct positioning.

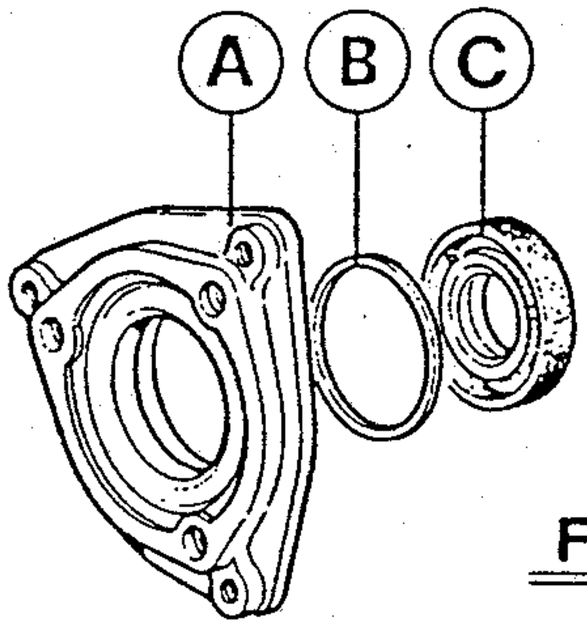


Fig. 5

(A) : P.N. 126115; Previous mounting flange for ignition distributor (bank 1-4 ÷ 5-8)

(B) : P.N. 133066; Spacer 1.25mm

(C) : P.N. 132453; Oil seal

ATTENTION

On some previous 8 cylinder 3.2 liter engines, and precisely:

European Version from no. 1949 up to no. 2336 inclusive
U.S.A. Version from no. 988 up to no. 1192 inclusive

a different oil seal, with 45mm outside diameter (instead of 47mm) has been installed.

This special seal is not available as spare part.

Also in this case, for replacement of the seal originally installed, employ only the new seal p.n. 132453. For this purpose, you shall also install the new mounting flange for ignition distributor (p.n. 133100), as shown by Figure 4 (also the early type flange P.N. 126115 can be utilized with the 1.25mm spacer, P.N. 133066).

412

Starting with the following production nos.:

Engine No. 314 Chassis No. 69601 approximately

the parts shown by Figure 7 have been introduced into production.

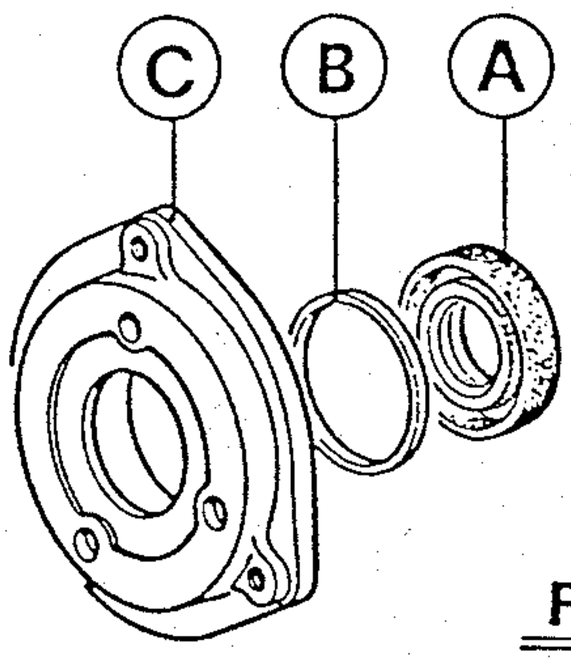


Fig.7

(A) : P.N. 132453; Oil seal

(B) : P.N. 133070; Spacer 2.25mm

(C) : Right and left mounting flange for ignition distributor, unchanged compared with previous engines

SERVICE AND SPARE PARTS POLICY:

In case of replacement on a previous vehicle, employ only the new seal p.n. 132453, which can be installed on the previous engines with the addition of the 2.25mm spacer (as shown by figure 7), in order to achieve a correct positioning.

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SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 10-21

PRODUCTION CHANGE

DATE: 8/10/87

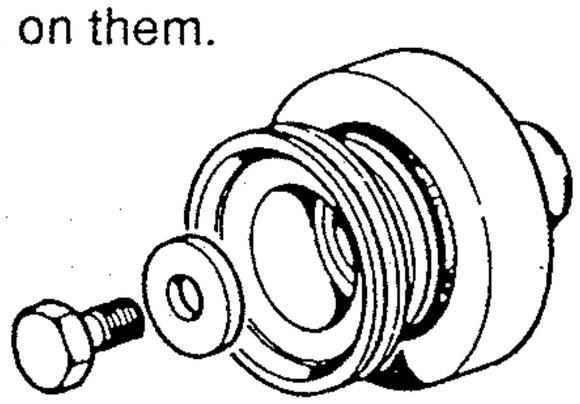
SUBJECT: ENGINE DAMPNER SECURING BOLT
VEHICLES: ALL

Starting from:

Model	328 3.2 M	Turbo	TR	412		
Area	All	Italy	All	All		
Chassis no.	68881	68869	69263	68957		
Engine no.						
Gearbox no.						

Description:

The bolt securing the front dampner is installed with loctite type 242; the torque specification remains unchanged (20 Kgm = 145 ft. lb.). The bolts installed with this new procedure can be recognized from a yellow painted marking on them.



Reason:

Production Improvement

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description

Spare parts procedures:

Reference spare parts catalogue:

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 10-23

PRODUCTION CHANGE

DATE: 6/15/88

SUBJECT: CHROMIUM PLATED INTAKE & EXHAUST VALVES
VEHICLES: 3.2 MONDIAL AND 328

Starting from:

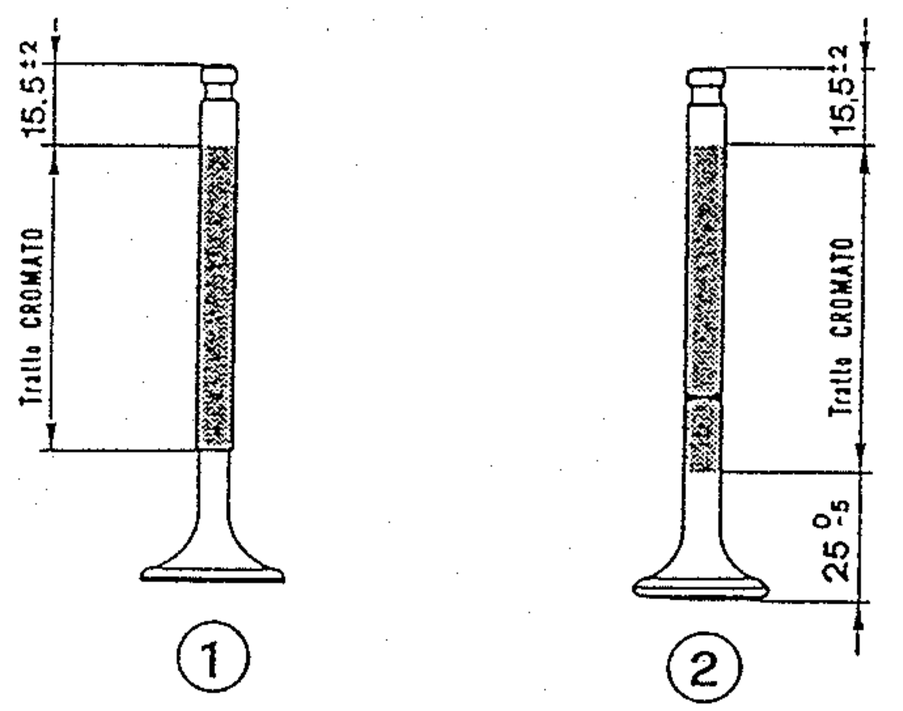
Model	3.2-328	3.2-328	3.2-328			
Area	Europe	USA	CH			
Chassis no.	71381	71401	71411			
Engine no.	2537	1406	88			
Gearbox no.						

Description:

New valves are installed with chromium-plated stem.

Reason:

Better quality.



1 2

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
1	117363	Intake valve	1	131198	Intake valve
2	117364	Exhaust valve	2	131199	Exhaust valve

Spare parts procedures:

The new valves are interchangeable with previous ones.

Reference spare parts catalogue:

3.2 Mondial No. 473/87 - Tav. 7 and 328 No. 462/87 - Tav. 7

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 10-24

PRODUCTION CHANGE

DATE: 12/15/88

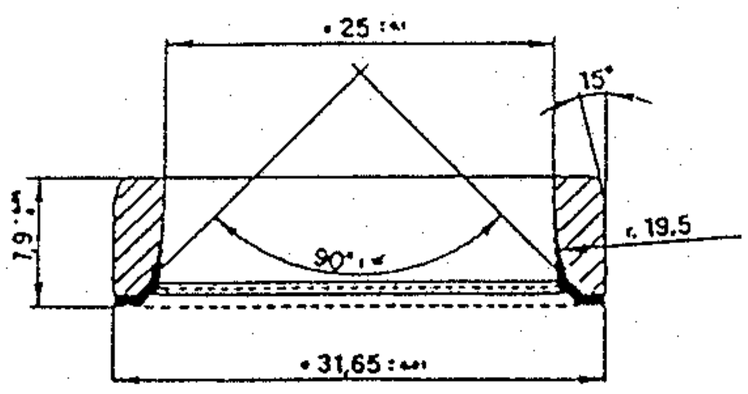
SUBJECT: VALVE SEATS
VEHICLES: 3.2 MONDIAL - 328

Starting from:	Model	Mondial	328				
	Area						
	Chassis no.	76558	76666				
	Engine no.						
	Gearbox no.						

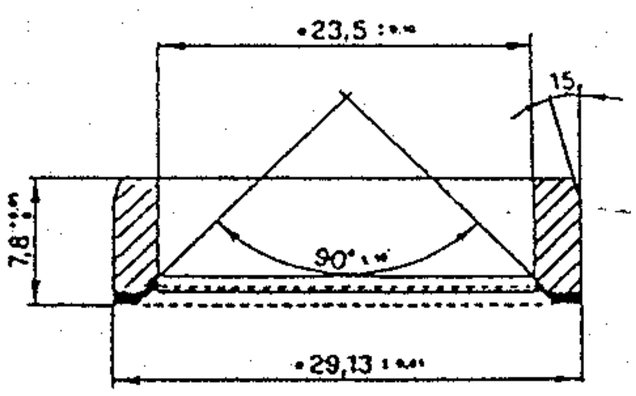
Description:

Starting from the above chassis numbers cylindrical instead of conical valve seats have been installed (see drawing).

Intake valve seat



Exhaust valve seat



REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description

Spare parts procedures:

Reference spare parts catalogue:

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 10-25

PRODUCTION CHANGE

DATE: 7/15/89

SUBJECT: CRANKSHAFT OIL SEAL
VEHICLES: 328 - TURBO - 3.2 MONDIAL

	Model	328 GTS	328 GTS	328 GTB	3.2 MON	3.2 MON	TURBO
	Area		USA	CH		USA	
Starting from:	Chassis no.	78404	78529	78398	78531	78408	78423
	Engine no.	14159	14208	14099	14265	14278	14050
	Gearbox no.						

Description:

A new crankshaft oil seal has been introduced.

Reason:

Improved oil sealing at crankshaft.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
	106244	Crankshaft oil seal		136527	Crankshaft oil seal

Spare parts procedures: Old parts that you might have in stock must be returned to the Ferrari N.A. Parts Department, following normal AFA procedures.

Reference spare parts catalogue:

328 No. 524/88 Tav. 4 - 3.2 Mondial No. 473/87 Tav. 4 - Turbo No. 482/86 Tav. 4

REF. SAT T.I. CN 66

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 14-9

PRODUCTION CHANGE

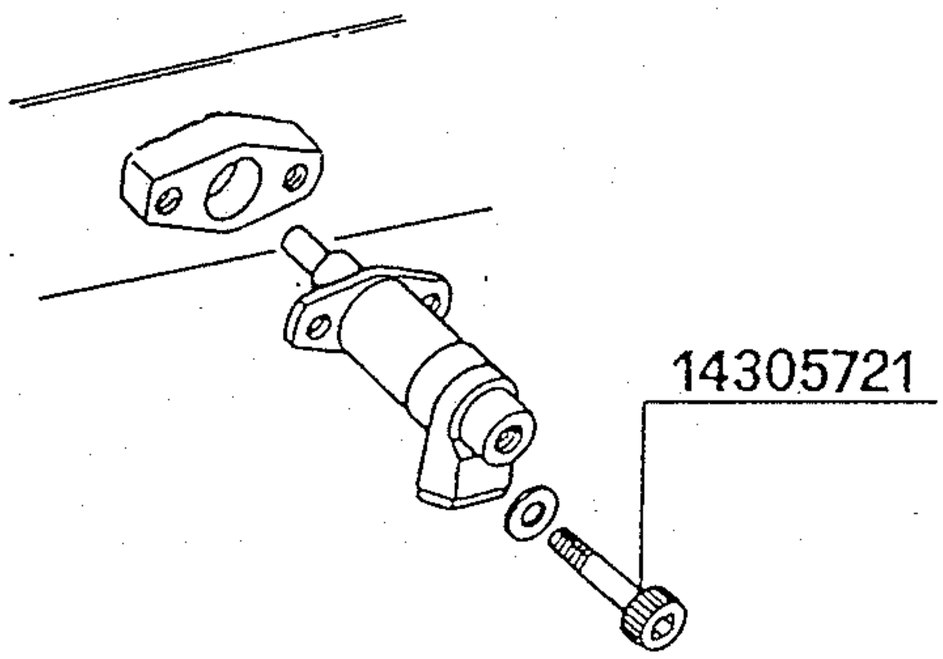
DATE: 10/5/88

SUBJECT: FASTENING OF COLD START INJECTOR
VEHICLES: EIGHT - CYLINDER AND TESTAROSSA

Starting from:	Model	328	Mondial	Cab.	TR		
	Area	All	All	All	All		
	Chassis no.	76347	76331	76453	76199		
	Engine no.						
	Gearbox no.						

Description:

The manner of fastening the cold start injector is no longer accomplished by the use of studs, but rather with socket head cap screws.



Reason:

Production change.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
	13541621	Stud - 8 Cyl.		14305721	Socket Head Cap Screw
	13541521	Stud - Testarossa			
	12574211	Nut			

Spare parts procedures:

Reference spare parts catalogue:

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 15-3

PRODUCTION CHANGE

DATE: 6/15/88

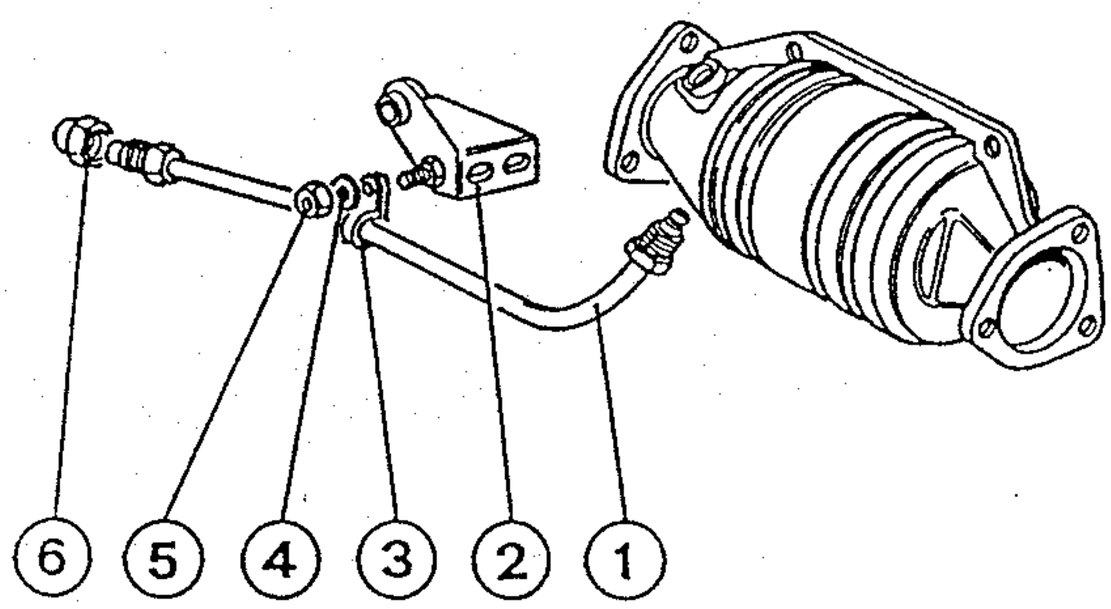
SUBJECT: CO / HC PROBE
VEHICLES: 328 USA / 3.2 MONDIAL USA

Starting from:

Model	328	Mondial				
Area						
Chassis no.	75609	75587				
Engine no.	10516	10194				
Gearbox no.						

Description:

A pipe is installed on the catalytic converter to check CO / HC in order to comply with the new Swiss regulations. The modification is extended on all (8 Cyl.) cars provided with catalytic converters.



REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
-	110860	Plug	1	136747	Probe
-	10298460	Gasket	2	136251	Right bracket
			3	10418101	Clamp
			4	12644601	Washer
			5	116416	Nut
			6	16109642	Plug

Spare parts procedures:

Reference spare parts catalogue:

3.2 Mondial No. 473/87 Tav. 20 and 328 No. 462/87 Tav. 18

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 16-2

PRODUCTION CHANGE

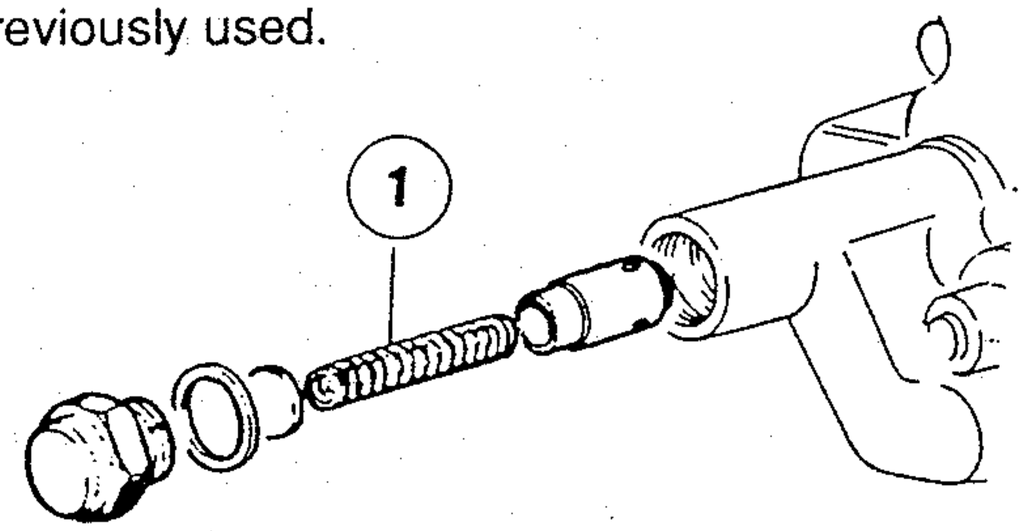
DATE: 6/5/87

SUBJECT: SPRINGS FOR OIL PRESSURE RELIEF VALVE
VEHICLES: SEE TABLE

	Model	3.2 Mon 328	3.2 Mon 328	3.2 Mon 328	TR - KE	TR	
	Area	Europe	USA	Swiss	Except USA	USA	
Starting from:	Chassis no.	69739	69769	69777	69757	69781	
	Engine no.	2353	1203	20	291	579	
	Gearbox no.						

Description:

A new spring for oil pressure relief valve has been introduced; the new spring is more flexible and slightly shorter than the spring previously used.



Reason:

Part supersession

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
1	106900	Spring (76 mm long)	1	133550	Spring (72mm long)

Spare parts procedures:

In case of replacement, use only the new spring.

Reference spare parts catalogue:

328 (Tav. 20, NR 27) - 3.2 Mondial (Tav. 21, NR 27) - Testarossa (Tav. 23, NR 52)

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 16-3

PRODUCTION CHANGE

DATE: 6/15/88

SUBJECT: OIL COOLER AIR DUCT
VEHICLES: 328

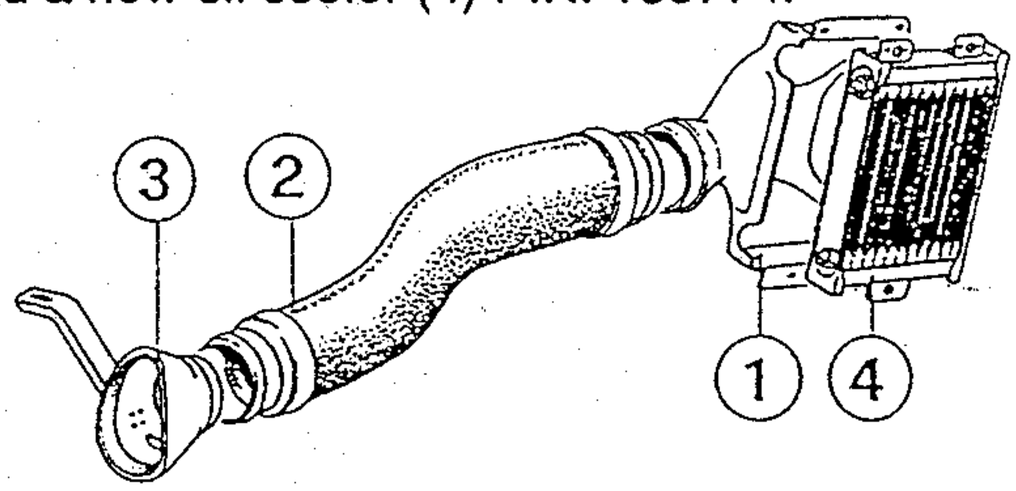
Starting from:

Model	328	328 GTS	328 GTB			
Area	Europe	USA	USA			
Chassis no.	75272	76628	76726			
Engine no.						
Gearbox no.						

Description:

A new oil cooler air duct (3) is fitted to a new flexible tube (2) along with a modified conveyor (1). In addition, there is also installed a new oil cooler (4) P.N. 135774.

The vehicles with C.N. 75596 - 75799 - 75807 - 75810 - 75865 - 75868 - 75876 : are still assembled with a pre-modified oil cooler.



REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
1	127035	Conveyor	1	136035	Conveyor
2	107553	Flexible tube	2	136008	Flexible tube
3	60373602	Air duct	3	62432400	Air duct
4	126917	Oil cooler	4	135774	Oil Cooler

Spare parts procedures: The new oil cooler can be installed on cars with C.N. lower than 75272 but the air conveyor must be slightly adapted.

Reference spare parts catalogue:

328 Cat. 462/87 Tav. 20 and 104

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 17-4

PRODUCTION CHANGE

DATE: 6/15/88

SUBJECT: SEALING OF WATER RADIATOR SEAT
VEHICLES: 328 GTB / GTS AND TURBO

Starting from:

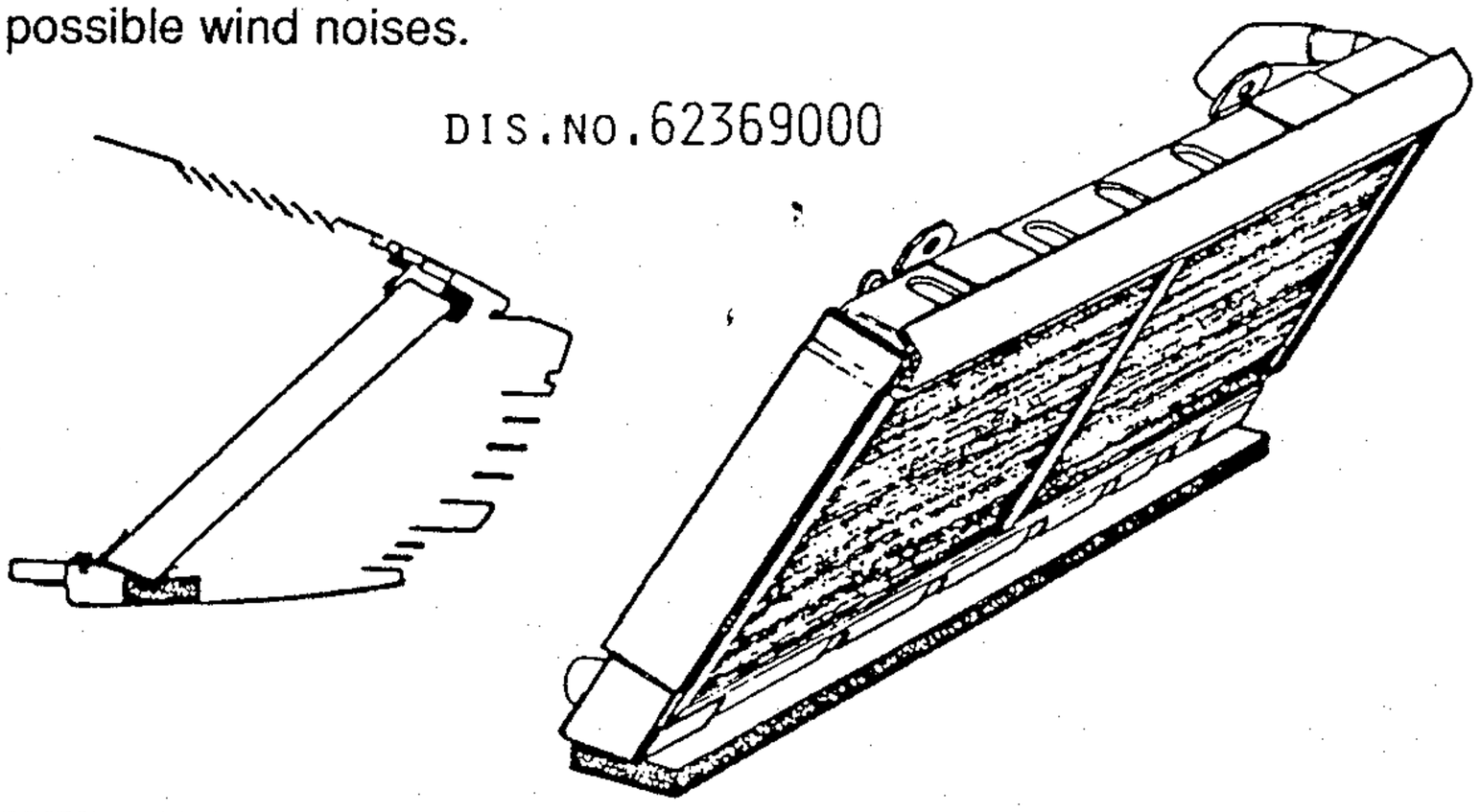
Model	328	Turbo				
Area	All	Italy				
Chassis no.	68731	68739				
Engine no.						
Gearbox no.						

Description:

An additional gasket has been introduced on the upper edge of the water radiator as shown in the drawing.
NOTE: Previously, other gaskets in the lower position and in the lateral edges of the radiator were introduced. For details regarding those gaskets, please refer to 328 GTB / GTS Parts Catalogue (Cat. 462/87) dated March 1987.

Reason:

Eliminate possible wind noises.



Spare parts procedures:

Please verify the availability in your stock of above gasket.

Reference spare parts catalogue:

328 GTB / GTS Cat. 462/87 March 1987 Tav. 21

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 18-3

PRODUCTION CHANGE

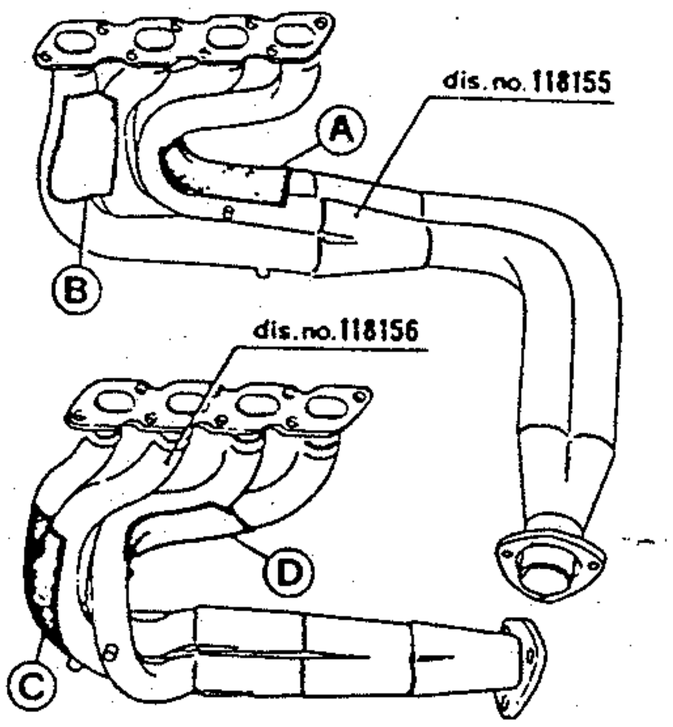
DATE: 8/10/87

SUBJECT: EXHAUST MANIFOLDS
VEHICLES: 3.2 MONDIAL - 328

Starting from:	Model	3.2 M	328				
	Area	Basic Version	Basic Version				
	Chassis no.	69121	68973				
	Engine no.						
	Gearbox no.						

Description:

Modified exhaust manifolds, with additional gusset plates (A-B-C-D) are being used. The modified manifolds keep the same part number of the previous one (118155 - 118156).



Reason:

More efficient dampening of vibrations and noise.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description

Spare parts procedures:

The Ferrari Spare Parts Dept. will supply modified exhaust manifolds only.

Reference spare parts catalogue:

3.2 Mondial Cat. 375/86 - Tav. 18 - Ref. 20-22.

328 Cat. 462/86 - Tav. 17 - Ref. 14-15.

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 21-5

DATE: 8/10/87

SUBJECT: CLUTCH RELEASE SYSTEM
VEHICLES: TURBO & 328 GTS / GTB

You are kindly requested to check and adjust the clutch release system on each Turbo and 328 GTB/GTS car with chassis no. lower than 72891 (vehicles in stock included). According to the following procedure:

1 - On the clutch housing, measure the distance X (Fig. 1) with a straight edge and a ruler, as shown by Fig. 1. The distance X must read between 40 and 45 mm.

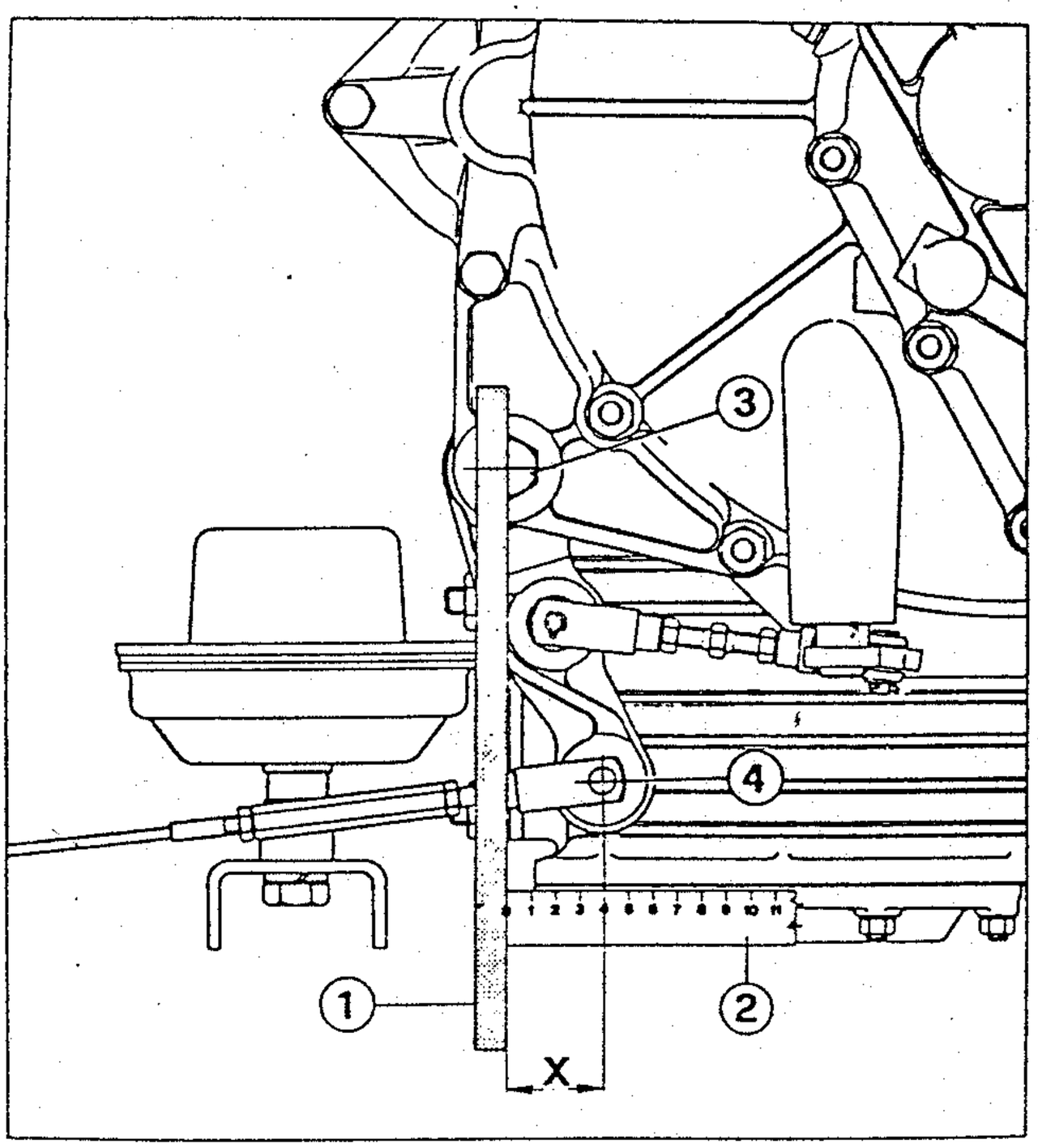


Fig. 1

1 - Straight edge, held vertical and positioned on the center of the bolt (3).

2 - Ruler, to which the center of the pin (4) must be referred, in order to read the distance X (X= 40 to 45 mm).

Should the distance X be found outside of the specified range, you shall:

2 - Adjust the threaded link C until the specified distance of 40 to 45 mm is achieved.

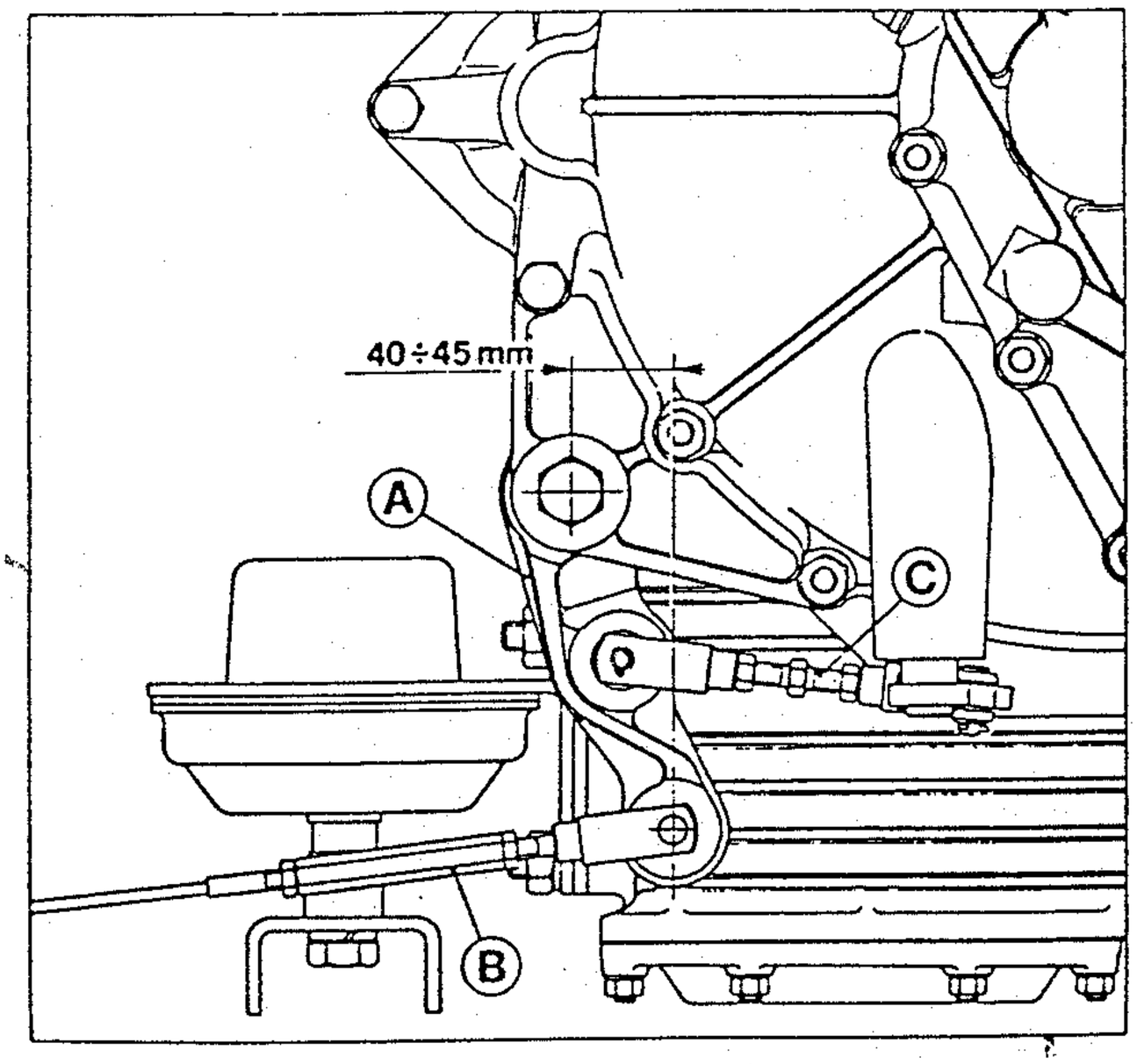


Fig. 2: Clutch Control Linkage on the Clutch Housing.

A - Intermediate Lever

B - Threaded connector for compensation of cables stretching.

C - Threaded link for adjustment of system.

The clutch linkage positioning as shown in Figure 2 allows the release bearing and the related linkage to move backwards as the clutch disc wears normally, without any interference which would cause slipping of the clutch.

Once the distance X is adjusted within 40 to 45 mm, you shall:

3 - Check the alignment of the clutch and brake pedals. If necessary, adjust only the threaded connector B (Fig. 2) in order to achieve the alignment.

WARNING: After the above mentioned checkings and adjustments are per - formed, you shall identify the car with a green painted marking on the threaded connector B.

TIME: The above described operations required 0.4 hours.

COST: To be debited under warranty according to the standard proce - dure, with the following codes:

	328	Turbo
Component Code:	04.21.53	13.21.53
Problem Code:	01	01
Operation Codes:	04.21.53.0 04.21.73.0	13.21.53.0 13.21.73.0

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 21-8

PRODUCTION CHANGE

DATE: 10/5/88

SUBJECT: CLUTCH DISC
VEHICLES: EIGHT - CYLINDER

Starting from:

Model	8 Cyl					
Area	All					
Chassis no.	76824					
Engine no.						
Gearbox no.						

Description:

A clutch disc utilizing asbestos - free linings has been introduced into production.

Reason:

To conform with anti-pollution specifications.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
	120482	Clutch Disc		134996	Clutch Disc

Spare parts procedures: The clutch discs are interchangeable. The previous clutch discs may be used until your stock is exhausted.

Reference spare parts catalogue:

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 30-6

PRODUCTION CHANGE

DATE: 8/10/87

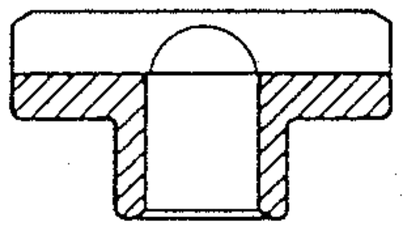
SUBJECT: SYNCHRONIZING BLOCKS
VEHICLES: 3.2 MONDIAL, TURBO, 328, TR, 412

	Model	3.2 M	Turbo	328	TR	412	
	Area	All	Italy	All	All	All	
Starting from:	Chassis no.						
	Engine no.						
	Gearbox no.						

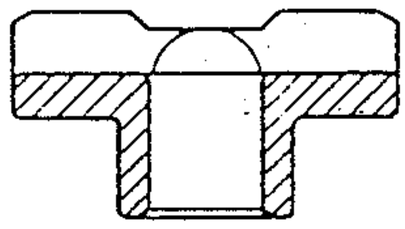
Description:

New synchronizing blocks are being used; they have a visible relief on the top surfase, as shown by the layout. The new blocks keep the same P.N. of the previous ones with which they are interchangeable (P.N. 106042).

previous type



with relief



Reason:

Higher resistance.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description

Spare parts procedures:

Reference spare parts catalogue: Use only the new type synchronizing blocks, previous type blocks, which you might have in stock, shall be returned under warranty.

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 30-9

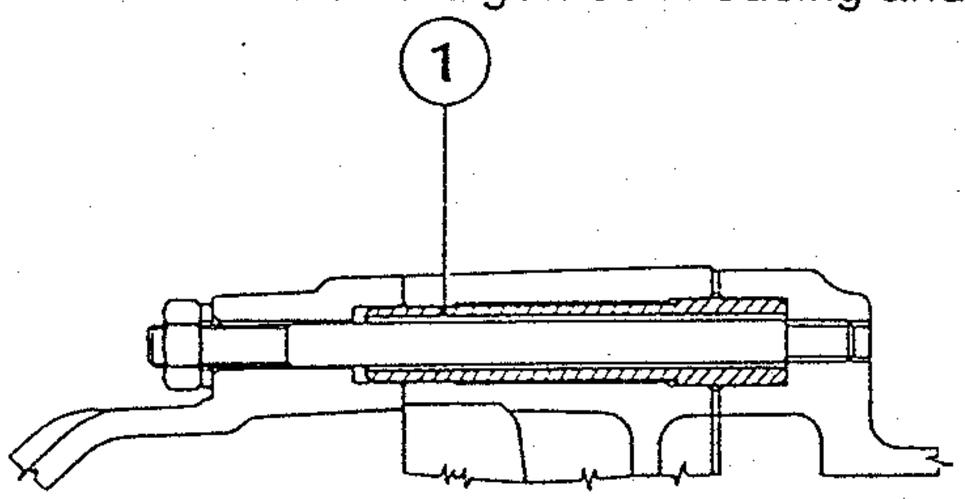
PRODUCTION CHANGE

DATE: 6/15/88

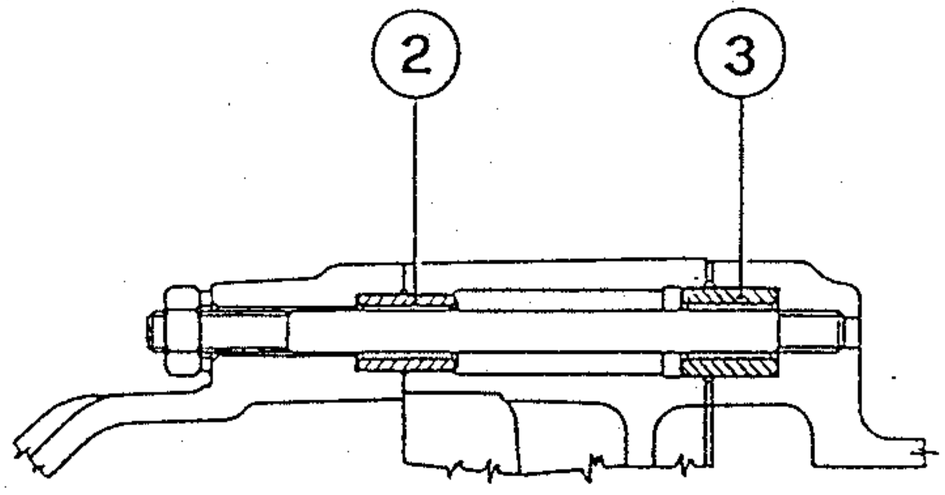
SUBJECT: CENTERING DOWEL ON TRANSMISSION INTERMEDIATE HOUSINGS
VEHICLES: 8 CYLINDER

Starting from:							
	Model	3.2 - 328	3.2 - 328	3.2 - 328			
	Area	Europe	USA	Italy			
	Chassis no.	72125	72509	72291			
	Engine no.	2633	1496	413			
	Gearbox no.						

Description: The intermediate casting is installed by means of 2 centering dowels instead of one on the gearbox housing and the crankcase.



OLD SOLUTION



NEW SOLUTION

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
1	104033	Dowel	2	102692	Centering dowel
			3	134480	Trans. intermediate housing

Spare parts procedures:

The two solutions are interchangeable between themselves.

Reference spare parts catalogue: 328 No. 462/87 Tav. 25 - Turbo GTB/GTS No. 432/87 Tav. 21 - 3.2 Mondial, the modification is already reported in the Parts Catalogue No. 473/87

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 30-10

PRODUCTION CHANGE

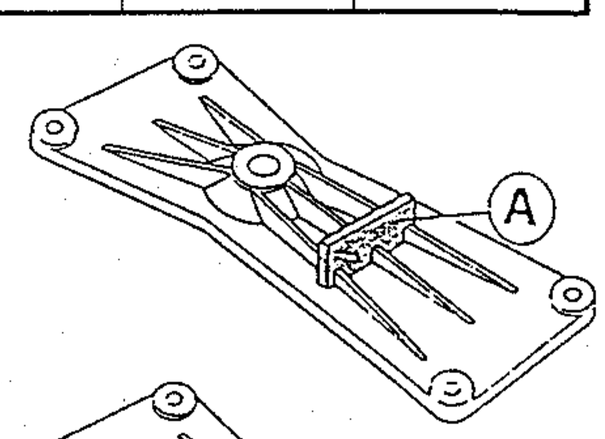
DATE: 10/5/88

SUBJECT: GEAR SHIFT ROCKER ARM SUPPORT
VEHICLES: EIGHT - CYLINDER VEHICLES

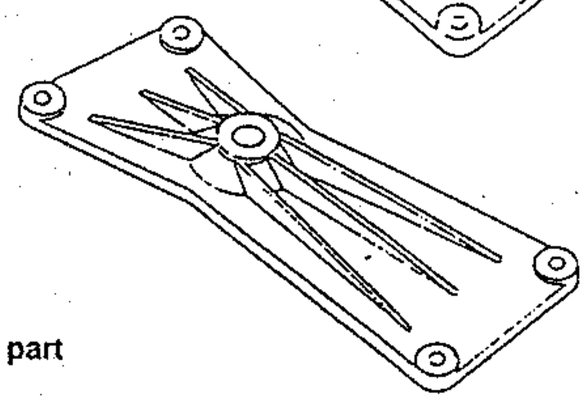
	Model	328	328	8 Cyl.	Mondial	Turbo	
	Area	Exc. USA + CH	CH	USA	Exc. USA + CH	Italy	
Starting from:	Chassis no.	77135	77035	77066	77106	77047	
	Engine no.						
	Gearbox no.	2891	276	2339	860	700	

Description:

The gear shift rocker arm support (P.N. 114864) has been modified with the addition of a shoulder (A) as shown.



new solution



pre-modification part

Reason:

To avoid the disengagement of the gearshift fork (first and reverse gear) during servicing of gearbox.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description

Spare parts procedures: The modified support retains the same part number as the previous support ie. P.N.114864

Reference spare parts catalogue:

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No **40-3**

DATE: 12/30/86

SUBJECT: BRAKE SYSTEM
VEHICLES: 328 GTB / GTS

The components indicated below of the 328 GTB / GTS braking system have been modified for standardization with similar components employed on the GTB / GTS Turbo of present production (Italian Version).

The new parts which are interchangeable with the corresponding previous one, are shown in the following table:

FERRARI PART NO.		DESCRIPTION	IN PROD. STARTING W/ C.N.	REF. TO : SPARE PTS CATALOG 328 GTB / S - Nov. 85
NEW PART	PART REPLACED			
131359	124373	Rear brake pressure regulator	64963	TAV. 32 - NO.17
131008	124514	Brake booster, for L.H. drive	67251	TAV. 31 - NO. 5

Please update your Spare Parts Catalog (328 GTB / GTS) to reflect these part supersessions.

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 51-1

PRODUCTION CHANGE

DATE: 10/5/88

SUBJECT: STEERING WHEEL
VEHICLES: 328 AND TURBO GTB / GTS

Starting from:	Model	328	Turbo				
	Area	All	Italy				
	Chassis no.	77451	77450				
	Engine no.						
	Gearbox no.						

Description:

The steering wheel has been set off center by 10mm.

Reason:

Production Change.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
	119023	Steering wheel w/hub		136549	Steering wheel w/hub .

Spare parts procedures:

The new steering wheel is interchangeable with the previous one.

Reference spare parts catalogue:

328 No. 462/87 Tav. 36 Turbo No. 432/86 Tav. 32

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 60-17

PRODUCTION CHANGE

DATE: 10/5/88

SUBJECT: SUSPENSIONS AND WHEELS
VEHICLES: 328 AND TURBO GTB / GTS

	Model	328 GTB	328 GTS	Turbo GTB	Turbo GTS		
	Area	All	All	All	Italy		
Starting from:	Chassis no.	76626	76627	76679	76939		
	Engine no.						
	Gearbox no.						

Description:

New suspensions and wheels have been introduced as listed on the attached five tables.
The wheel alignment specifications for the new suspension are specified in the attachd table.

Reason:

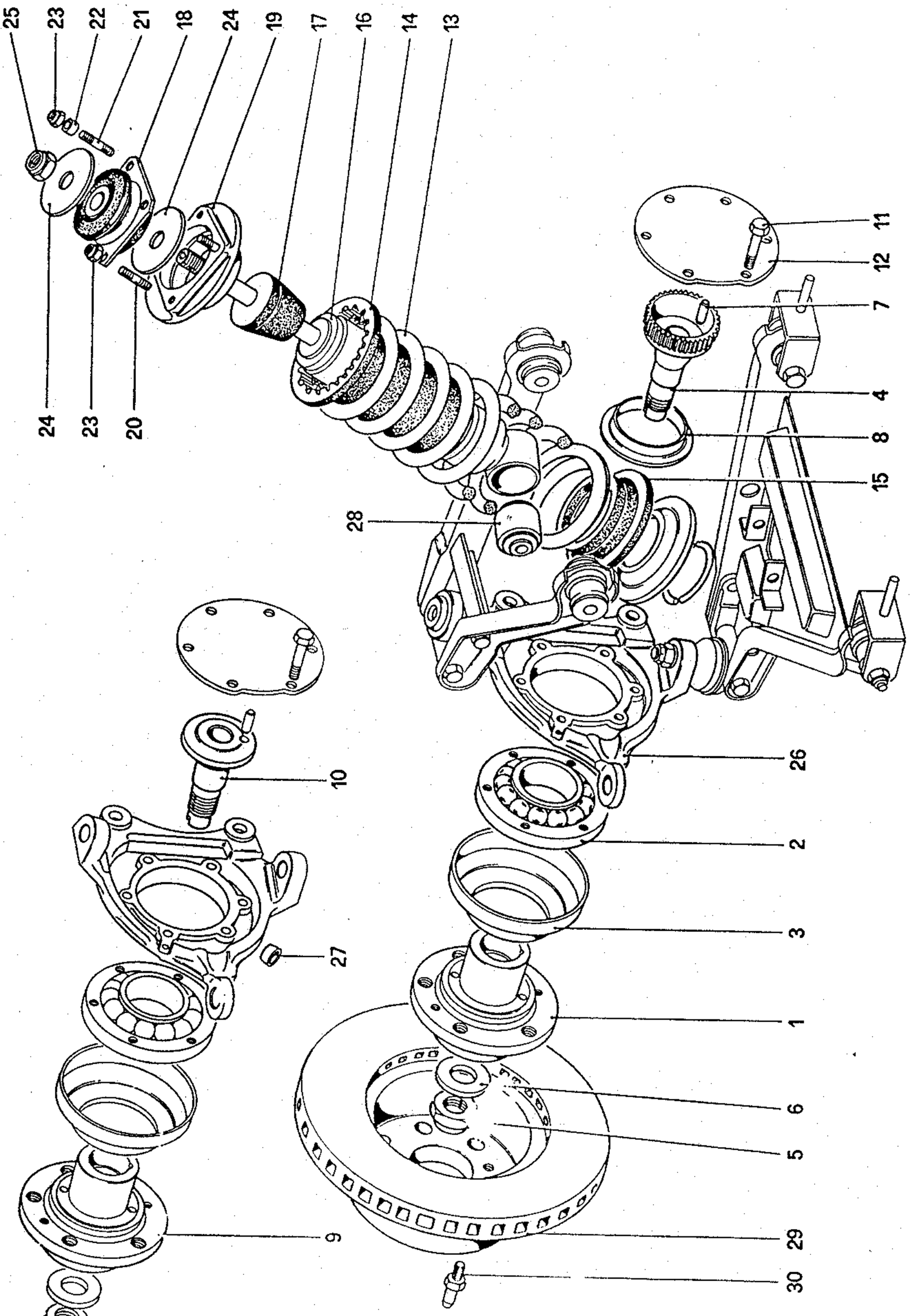
Standardization with the Mondial models.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description

Spare parts procedures:

328 No. 462/87 Turbo No. 432/86

Reference spare parts catalogue:



TAV. 43

DATA: OTTOBRE 88

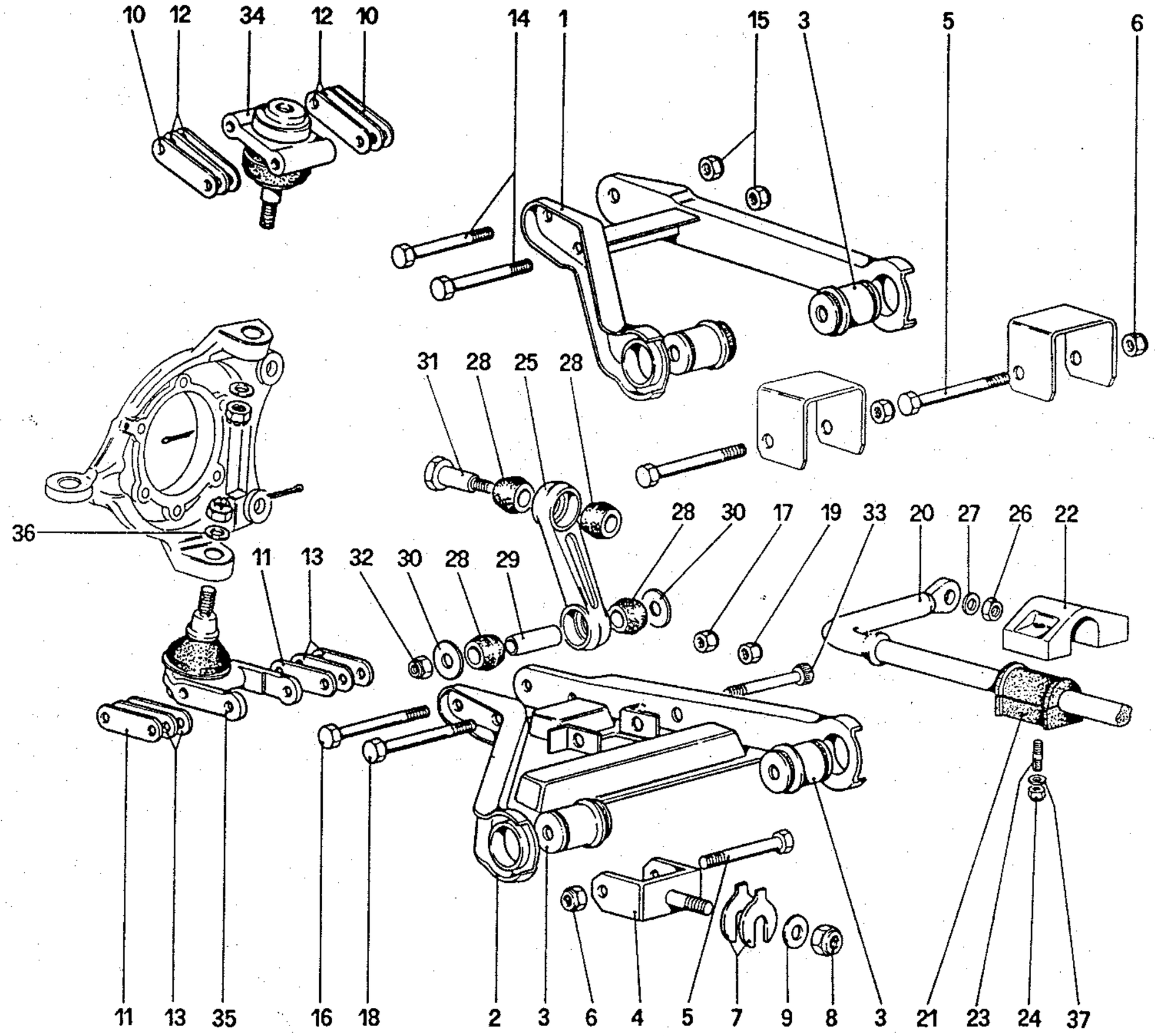
SOSPENSIONE ANTERIORE — AMMORTIZZATORE E DISCO FRENO - Dalla vettura N. 76626

FRONT SUSPENSION — SHOCK ABSORBER AND BRAKE DISC - Starting from car No. 76625

328 / 328
GTB / GTS

Rif.	Dis. No. Part No.	Q.ty	DENOMINAZIONE	DESCRIPTION
1	131738	2	(A) Mozzo ruote	(A) Front wheel hub
2	112799	2	Cuscinetto	Bearing
3	112823	2	Coppetta	Bearing cover
4	138426	2	Perno con ruota fonica	Stay bolt toothed wheel
5	124642	2	Dado	Nut
6	124464	2	Rondella	Washer
7	13909870	2	Spina	Pin
8	131279	2	Anello di protezione	Protection ring
9	124463	2	(B) Mozzo ruote	(B) Front wheel hub
10	124465	2	(B) Perno fissaggio cuscinetto	(B) Stay bolt for bearing
11	14238931	12	Vite	Screw
12	131278	2	Coperchio	Cover
13	133157	2	Molla sospensione	Suspension spring
14	113582	2	Distanziale superiore	Upper spacer
15	113581	2	Distanziale inferiore	Inner spacer
16	136884	2	Ammortizzatore - Fino alla vettura n. 78612	Shock absorber - Up to car no. 78612
16	138263	2	Ammortizzatore - Dalla vettura n. 78613	Shock absorber - Starting from car no. 78613
-	138897	2	Piattello per ammortizzatore Con ammortizzatore n. 138263	Plate for shock absorber With shock absorber no. 138263
-	138898	2	Anello seeger Con ammortizzatore n. 138263	Seeger ring With shock absorber no. 138263

Rif.	Dis. No. Part No	Q.ty	DENOMINAZIONE	DESCRIPTION
17	130936	2	Tampone - Con ammortizzatore n. 136884	Pad - With shock absorber no. 136884
17	138435	2	Tampone - Con ammortizzatore n. 138263	Pad - With shock absorber no. 138263
18	114812	2	Hyperblock	Hyperblock
19	114809	2	Scodellino tenuta molla	Cup, spring retainer
20	13543321	4	Prigioniero	Stud
21	13543821	4	Prigioniero	Stud
22	13606011	4	Distanziale	Spacer
23	16104121	8	Dado	Nut
24	114815	4	Rondella	Washer
25	16105121	2	Dado	Nut
26	130056	1	Fuso a snodo Dx.	Stub axle, right
-	130057	1	Fuso a snodo Sx.	Stub axle, left
27	14328601	2	(B) Tappo	(B) Plug
28	100809	2	Estendblock Per ammortizzatore n. 136884	Estendblock For shock absorber no. 136884
28	130516	2	Estendblock Per ammortizzatore n. 138263	Estendblock For shock absorber no. 138263
29	117185	2	Disco freno	Brake disc
30	104370	4	Vite di centraggio	Centering screw



328 / 328 GTB / GTS

SOSPENSIONE ANTERIORE — AMMORTIZZATORE E DISCO FRENO - Dalla vettura N. 76626

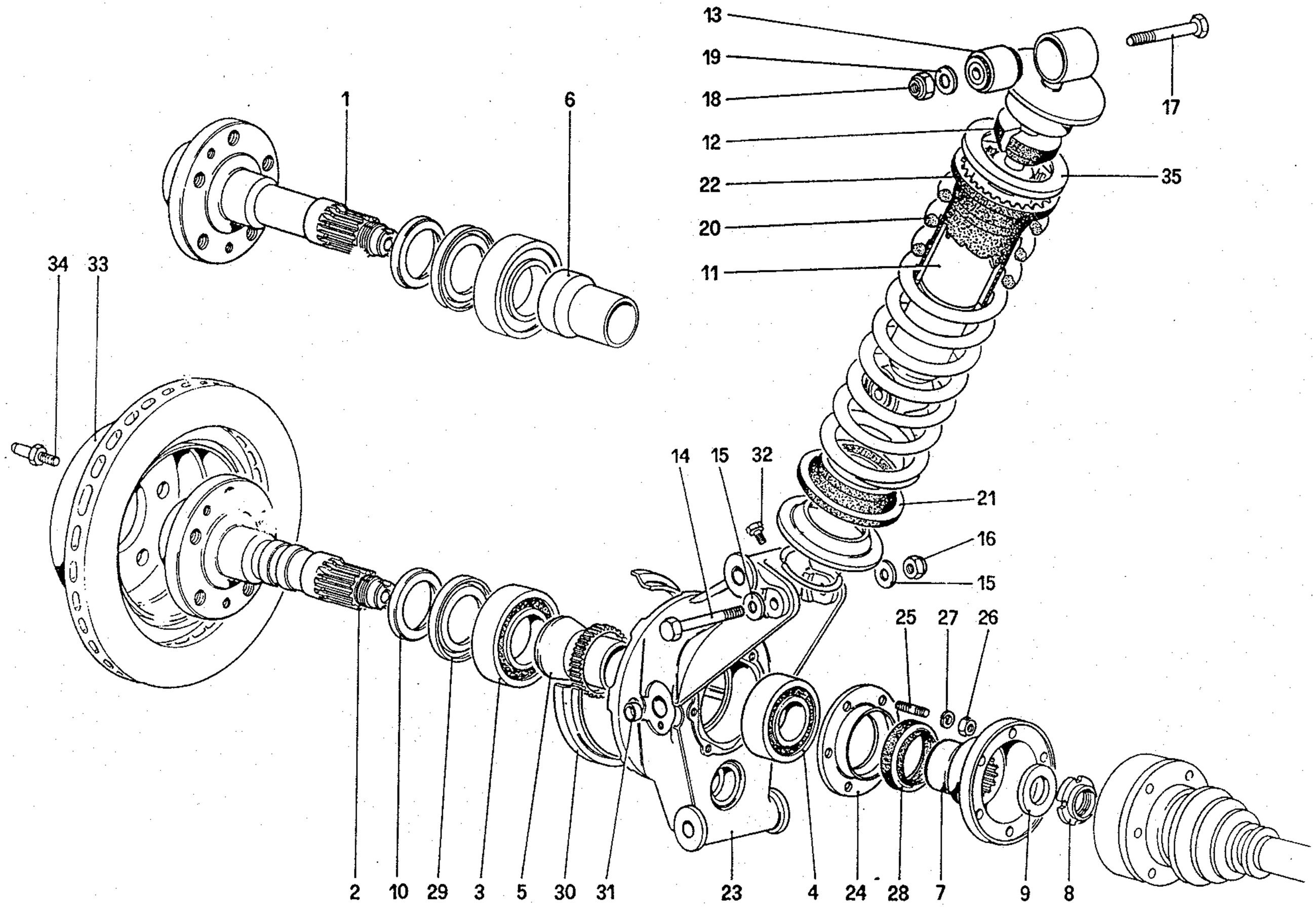
FRONT SUSPENSION — SHOCK ABSORBER AND BRAKE DISC - Starting from car No. 76626

TAV. 45

DATA: OTTOBRE 88

Rif.	Dis. No. Part No.	Q.ty	DENOMINAZIONE	DESCRIPTION
1	131900	1	Leva superiore Dx.	Upper lever, right
-	131901	1	Leva superiore Sx.	Upper lever, left
2	115706	1	Leva inferiore Dx.	Lower lever, right
-	115707	1	Leva inferiore sx.	Lower lever, left
3	104398	8	Flamblok per attacco leve	Flamblock for levers
4	112807	4	Forcella inferiore	Lower fork
5	106419	8	Bullone	Bolt
6	16105121	8	Dado	Nut
7	107025	8	Rondella di rasamento per forcella inferiore - spessore 1 mm. (di eventuale montaggio)	Shim for lower fork, thickness 1 mm. (possible fitting)
-				
-	107418	8	Idem spessore mm. 1,5	Ditto, thickness 1,5 mm.
-	107419	8	Idem spessore mm. 2	Ditto, thickness 2 mm.
-	107420	8	Idem spessore mm. 2,5	Ditto, thickness 2,5 mm.
-	107421	8	Idem spessore mm. 3	Ditto, thickness 3 mm.
-	107422	8	Idem spessore mm. 3,25	Ditto, thickness 3,25 mm.
8	12575821	4	Dado	Nut
9	101041	4	Rondella	Washer
10	115072	-	Piastrina superiore registrazione incidenza (di eventuale montaggio)	Upper adjusting plate for caster angle (possible fitting)
11	115073	-	Piastrina inferiore registrazione incidenza (di eventuale montaggio)	Lower adjusting plate for caster angle (possible fitting)
12	103256	8	Piastrina superiore registrazione chasse	Upper adjusting plate
13	101022	8	Piastrina inferiore registrazione chasse	Lower adjusting plate
14	15971621	4	Bullone	Bolt

Rif.	Dis. No. Part No	Q.ty	DENOMINAZIONE	DESCRIPTION
15	12574521	4	Dado	Nut
16	15971621	2	Bullone	Bolt
17	12574521	2	Dado	Nut
18	15541531	2	Bullone fissaggio ammortizzatori	Bolt
19	16105121	2	Dado	Nut
20	136166	1	Barra stabilizzatrice - No per GD	Stabilizer rod - Not for RHD
20	139547	1	Barra stabilizzatrice - Per GD	Stabilizer rod - For RHD
21	130533	2	Tampone	Pad
22	130532	2	Supporto	Support
23	13516821	4	Prigioniero	Stud
24	16104411	4	Dado	Nut
25	114691	2	Biscottino per barra	Rod link
26	16103621	2	Dado	Nut
27	106854	2	Rondella	Washer
28	100984	8	Gommino per barra	Grommet for rod
29	100985	2	Tubo distanziale	Spacer tube
30	105334	4	Rondella	Washer
31	121679	2	Perno	Pin
32	16105121	2	Dado	Nut
33	116966	2	Vite	Screw
34	116280	2	Giunto sferico superiore	Upper ball joint
35	133944	2	Giunto sferico inferiore	Lower ball joint
36	101445	2	Rondella	Washer
37	102683	4	Rondella	Washer



SERVICE BULLETIN No 60-17

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328 / 328 GTB / GTS

SOSPENSIONE POSTERIORE — AMMORTIZZATORE E DISCO FRENO - Dalla vettura N. 76626

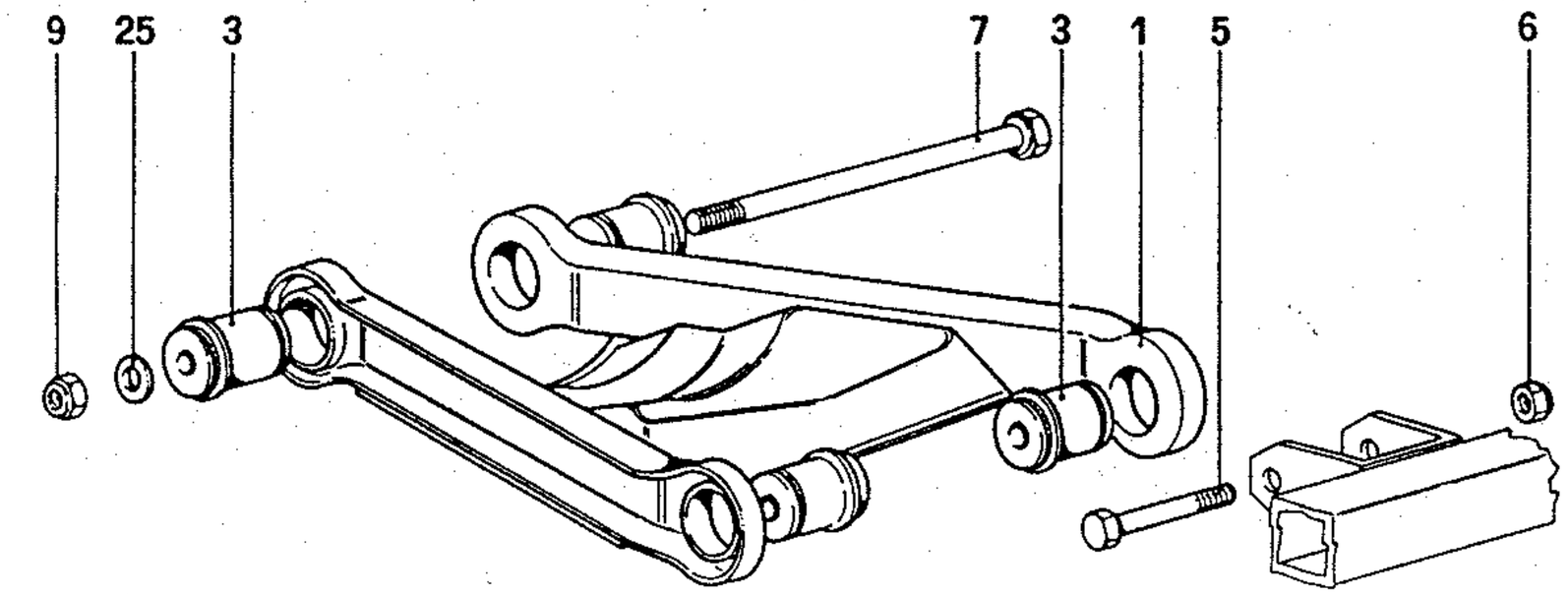
REAR SUSPENSION — SHOCK ABSORBER AND BRAKE DISC - Starting from car No. 76626

TAV. 47

DATA: OTTOBRE 88

Rif.	Dis. No. Part No.	Q.ty	DENOMINAZIONE	DESCRIPTION
1	124964	2	(B) Albero con mozzo post.	(B) Shaft with rear hub
2	132408	2	(A) Albero con mozzo post.	(A) Shaft with rear hub
3	125935	2	Cuscinetto esterno	Outer bearing
4	125934	2	Cuscinetto interno	Inner bearing
5	136308	2	(A) Distanziale con ruota fonica	(A) Spacer with toothed wheel
6	120876	2	(B) Distanziale	(B) Spacer
7	119372	2	Flangia attacco semiassi	Flange connecting axle shafts
8	102289	2	Ghiera	Ring nut
9	105511	2	Rondella	Washer
10	124965	2	Distanziale	Spacer
11	130729	2	Ammortizzatore - Fino alla vettura n. 78612	Shock absorber - Up to car no. 78612
11	138264	2	Ammortizzatore - Dalla vettura n. 78613	hoch absorber - Staring from car no. 78613
-	138897	2	Piattello per ammortizzatore con ammortizzatore n. 138264	Plate for shock absorber with shock absorber no. 138264
-	138898	2	Anello seeger con ammortizzatore n. 138264	Seeger ring with shock absorber no. 138264
12	104442	2	Tampone - Con ammortizzatore n. 130729	Pad - With shock absorber no. 130729
12	138435	2	Tampone - Con ammortizzatore n. 138264	Pad - With shock absorber no. 138264
13	130516	4	Estendblock	Estendblock
14	112441	2	Vite	Screw
15	106616	4	Rondella	Washer

Rif.	Dis. No. Part No	Q.ty	DENOMINAZIONE	DESCRIPTION
16	16105121	2	Dado autobloccante	Selflocking nut
17	106419	2	Vite	Screw
18	16105121	2	Dado autobloccante	Selflocking nutRondella Washer
19	13550521	2	Molla sospensione	Suspension spring
20	113516	2	Distanziale inferiore	Lower spacer
21	103264	2	Distanziale superiore	Upper spacer
22	103263	2	Portamozzo Dx.	Hub holder, (right)
23	130309	2	Portamozzo Sx.	Hub holder, (left)
-	130310	2	Flangia tenuta cuscinetto	Flange for bearing
24	125976	12	Prigioniero	Stud
25	13543321	12	Dado	Nut
26	16100811	12	Rondella	Washer
27	127496	2	Anello di tenuta	Sealing ring
28	115968	2	Anelo centrifugatore	Centrifugal ring
29	124966	2	Coperchietto paraspruzzi	Splash guard
30	103117	2	(B) Tappo	(B) Plug
31	14328601	2	(B) Vite	(B) Screw
32	10979421	2	Disco freno	Brake disc
33	117186	4	Vite di centraggio	Centering screw
34	104370	2	Distanziale - Per USA-CH-SA	Spacer - For US-CH-SA
35	129435			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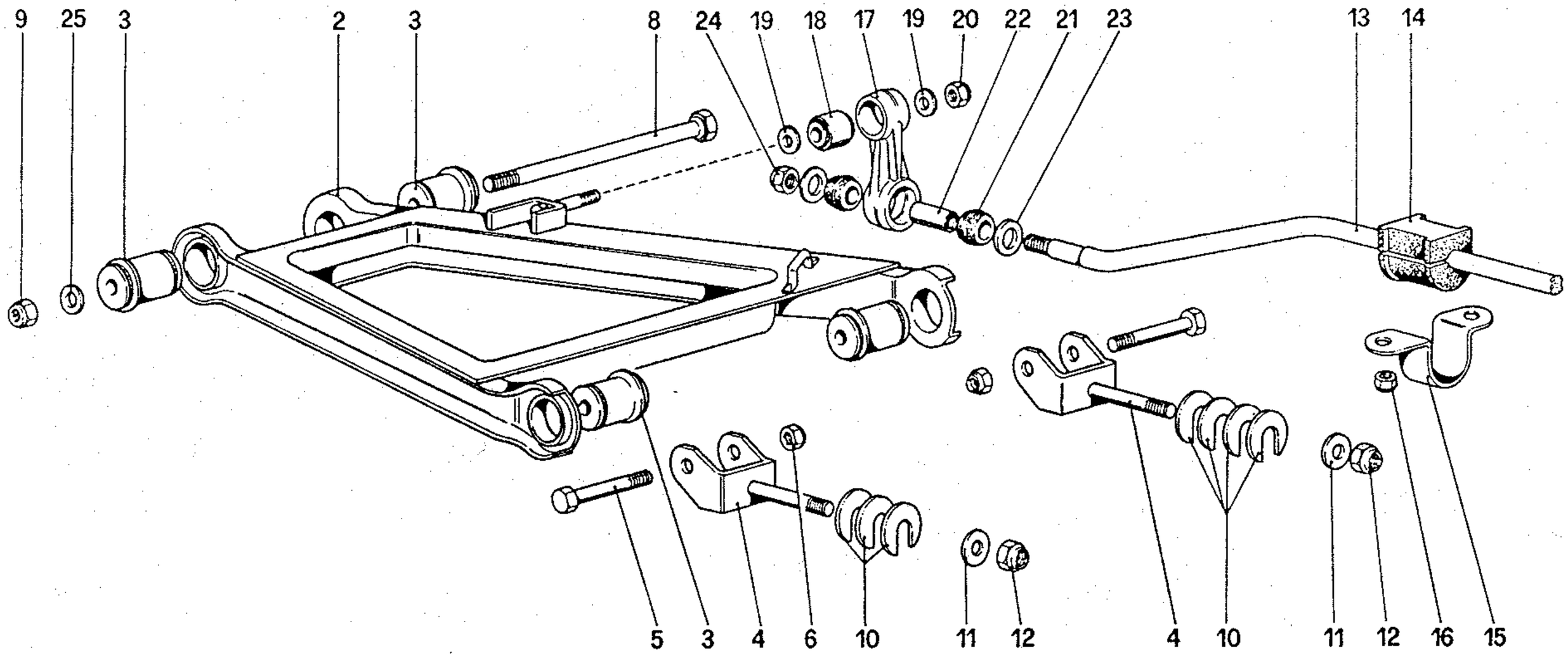
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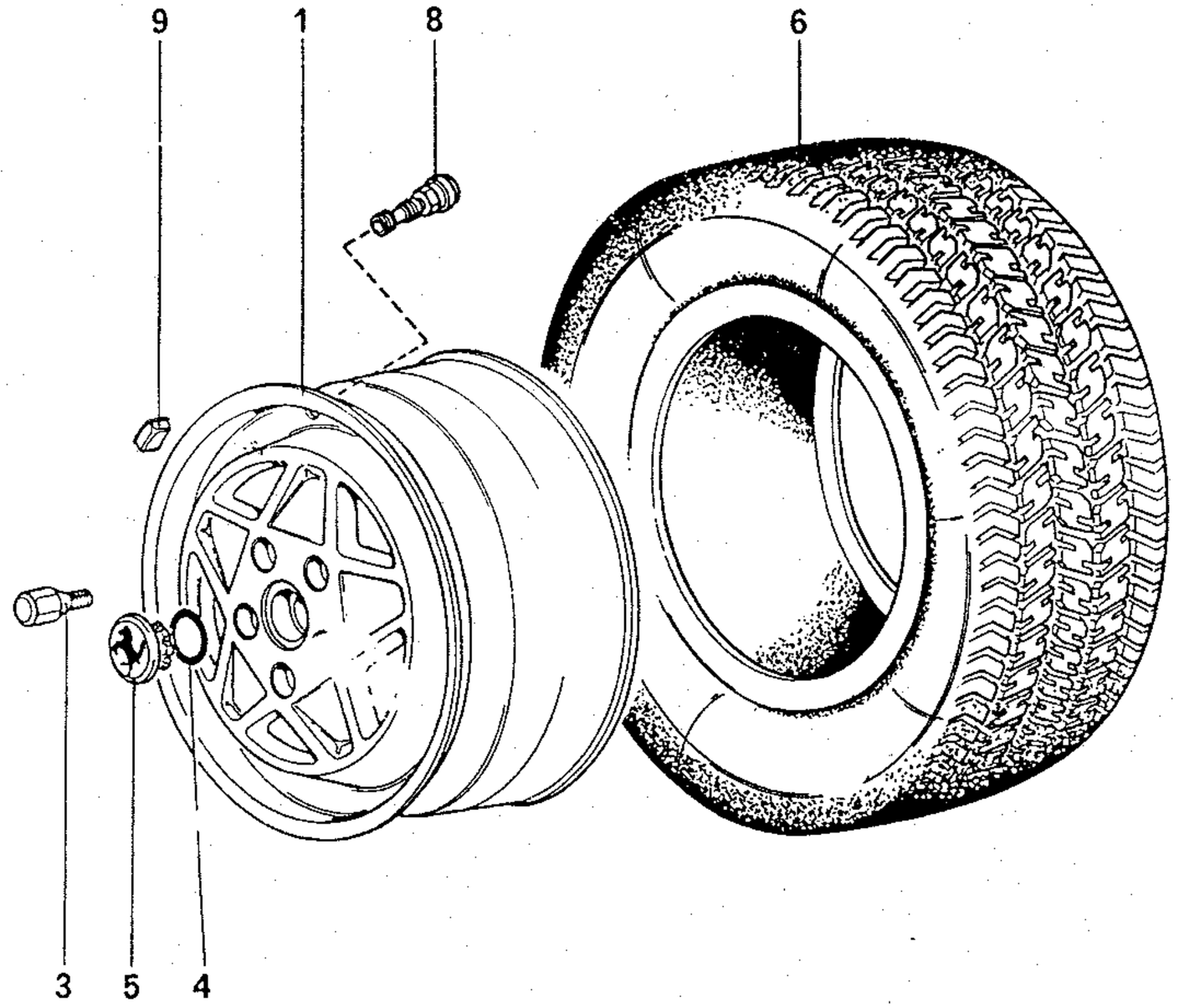
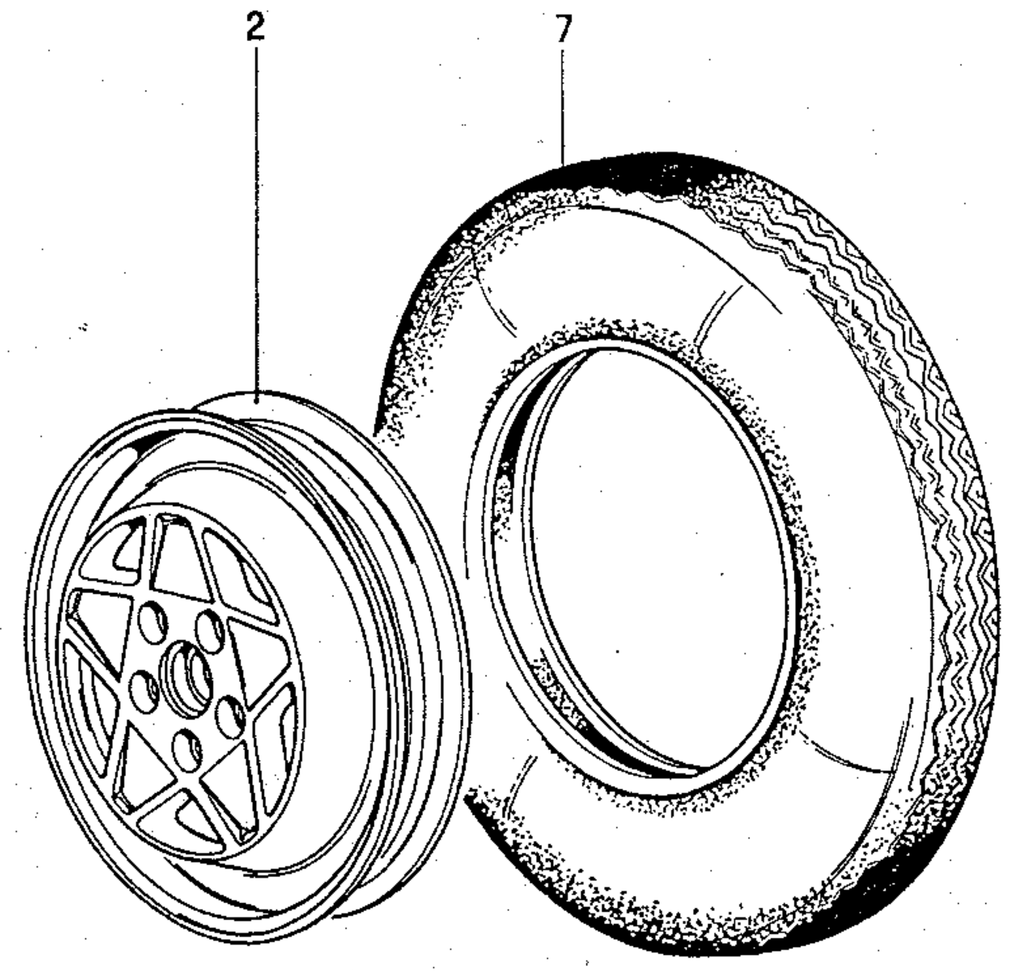
Rif.	Dis. No. Part No.	Q.ty	DENOMINAZIONE	DESCRIPTION
1	115716	1	Leva superiore Dx.	Upper lever, right
-	115715	1	Leva superiore Sx.	Upper lever, left
2	117805	1	Leva inferiore Dx.	Lower lever, right
-	117806	1	Leva inferiore Sx.	Lower lever, left
3	103170	16	Flamblok per attacco leve	Flamblok for levers
4	130752	4	Forcella inferiore	Lower fork
5	121693	8	Bullone	Bolt
6	16105121	8	Dado	Nut
7	112439	2	Bullone	Bolt
8	112440	2	Bullone	Bolt
9	16105121	4	Dado	Nut
10	107340	8	Rondella di rasamento per forcella inferiore-spessore mm. 2,5 (di eventuale montaggio)	Shim for lower fork, thickness 2,5mm possible fitting)
-	101039	8	Idem spessore mm. 1	Ditto, thickness 1 mm.
-	107338	8	Idem spessore mm. 1,5	Ditto, thickness 1,5 mm.
-	107339	8	Idem spessore mm. 2	Ditto, thickness 2 mm.

Rif.	Dis. No. Part No	Q.ty	DENOMINAZIONE	DESCRIPTION
-	107341	8	Idem spessore mm. 3	Ditto, thickness 3 mm.
-	107342	8	Idem spessore mm. 3,25	Ditto, thickness 3,25 mm.
11	101041	4	Rondella	Washer
12	12575821	4	Dado	Nut
13	134226	1	Barra stabilizzatrice	Stabilizer rod
14	109010	2	Tampone	Pad
15	104417	2	Cavallotto tenuta barra	Rod retainer
16	12575621	4	Dado	Nut
17	108432	2	Biscottino per barra	Rod link
18	100773	2	Silentblock per biscottino	Silentblock
19	108913	4	Rondella di rasamento	Shim
20	16105121	2	Dado	Nut
21	107335	4	Gommino	Grommet
22	108294	2	Tubo distanziale	Spacer
23	117285	2	Rondella	Washer
24	16104421	2	Dado	Nut
25	106616	4	Rondella	Washer





328 / 328 GTB / GTS

RUOTE - Dalla vettura N. 76626

WHELLS - Starting from car No. 76626

TAV. 51

DATA: OTTOBRE 88

Rif.	Dis. No. Part No.	Q.ty	DENOMINAZIONE	DESCRIPTION
1	137079	-	Ruota anteriore - 7J x 16"	Front rim - 7J x 16"
-	130905	-	Ruota posteriore - 8J x 16"	Rear rim - 8J x 16"
2	136861	-	Ruota di scorta 3 1/4B x 18" No per **CH-GD-SA**	Spare rim 3 1/4B x 18" Not for **CH-RHD-SA**
3	136226	10	Colonnetta per ruota anteriore	Front wheel stud
-	120503	10	Colonnetta per ruota posteriore	Rear wheel stud
4	120065	4	Anello di tenuta	Sealing ring
5	108947	4	Coppetta per ruota	Wheel cover
6	129866	-	Copertura anteriore - Goodyear EAGLE 205/55 VR16 - No per **CH**	Front tyre - Goodyear EAGLE 205/55 VR16 - Not for **CH**
-	124344	-	Copertura posteriore - Goodyear EAGLE 225/55 VR16 - No per **CH**	Rear tyre - Goodyear EAGLE 225/55 VR16 - Not for **CH**
6	137140	-	Copertura anteriore - MICHELIN MXX 205/55 VR16 - In alternativa al n. 129866 - No per **GD-CH-SA-USA-J**	Front tyre - MICHELIN MXX 205/55 VR16 - In alternative No. 129866 Not for **RHD-CH-SA-US-J**

Rif.	Dis. No. Part No	Q.ty	DENOMINAZIONE	DESCRIPTION
-	136195	-	Copertura posteriore MICHELIN MXX 225 VR16 - In alternativa al n.124344 -No per **GD-CH-SA-USA-J**	Rear tyre- MICHELIN MXX 225/50 VR16 In alternative no. **124344** - Not for RHD-**CH-SA-US-J**
6	136029	-	Copertura anteriore Pirelli P700 (A richiesta) - No per **USA-AUS-J**	Front tyre- Pirelli P700 (Optional) Not for **US-AUS-J**
-	136030	-	Copertura posteriore Pirelli P700 (A richiesta) - No per **USA-AUS-J**	Rear tyre- Pirelli P700 (Optional) Not for **US-AUS-J**
7	133817	1	Copertura per ruota di scorta Goodyear T 105/80 R18 - No per **USA-GD-CH**	Spare wheel tyre Goodyear T 105/80 R18 - Not for US-RHD-CH
-	134123	-	Copertura per ruota di scorta Michelin 115 R18 - No per **USA-GD-CH**	Spare wheel tyre Michelin 115/85 R18 Not for **US-RHD-CH**
8	105069	5	Valvola	Valve
9	108851	-	Contrappeso gr. 10	Counter weight gr. 10

SERVICE BULLETIN No 60-17

WHEEL AND TIRE SETTING DATA

WHEELS	FRONT REAR	7J X 16" 8J X 16"		
TIRES	FRONT	GOODYEAR EAGLE 205/55 VR 16 N.O.	MICHELIN MXW 205/55 VR 16	PIRELLI P700 205/55 VR 16 (OPT.)
	REAR	GOODYEAR EAGLE 225/50 VR 16 N.O.	MICHELIN MXW 225/50 VR 16	PIRELLI P700 225/50 VR 16 (OPT.)
FRONT	Camber (*)	- 0° 35' ÷ - 0° 55'		
	Toe - In (*)	ins. .08 ÷ .12 mm. 2 ÷ 3		
	Caster Angle	5° 50" ÷ 6° 10'		
	Pressure (cold)	p.s.i. 33 bar 2.3	p.s.i. 31 bar 2.1	p.s.i. 37.5 bar 2.6
REAR	Camber (*)	- 1° 50' ÷ - 2° 10'		
	Toe - In (*)	ins. .12 ÷ .16 mm. 3 ÷ 4		
	Pressure (cold)	p.s.i. 36 bar 2.5	p.s.i. 36 bar 2.5	p.s.i. 37.5 bar 2.6
Spare Wheel		3 ¼" X 18"		
Tire		Goodyear 105/80 R 18		
Pressure (cold)		p.s.i. 60 (Max. speed 50 mph) bar 4.2		

(*) Static load car: full tanks, 2 people and 44lbs of luggage

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 80-28

DATE: 4/20/87

SUBJECT: ELECTRICAL TEST PROCEDURE FOR MARELLI MICROPLEX IGNITION SYSTEM

VEHICLES: TESTAROSSA-MICROPLEX MED 120B
328 GTB/GTS, 3.2 MONDIAL AND 3.2 MONDIAL CABRIOLET-MICROPLEX MED 806A

INTRODUCTION:

Attached there are two Electrical Test Procedures that can be utilized when troubleshooting the Marelli Microplex Ignition System. These tests are to be performed using the special interconnector (25 pin-Ferrari P.N. 95970020) connected in series with the Microplex Ignition Control Unit.

<u>There are two seperate test procedures. One for use on Testarossa vehicles and one for 8 cylinder cars with 3.2 engines. Please utilize the appropriate test procedure and follow closely the instructions in sequence listed under "Important Notes".</u>

SERVICE BULLETIN No 80-28

ELECTRICAL TEST PROCEDURE FOR MICROPLEX IGNITION SYSTEM - MED 120B (TR - 12 CYL.)

EQUIPMENT / SPECIAL TOOLING
- Interconnector - Ferrari P.N. 95970020
- Digital Volt / Ohm Meter
  Ex. Alltest Multimeter No. 3510

Important Notes:	Test No.	Meter Setting Pin (-)	Meter Setting Pin (+)	Meter Setting Dial	Correct Theoretical Value	Item Being Checked	Notes
Install Interconnector Microplex Disconnected Electrical Checks Made w/Ignition Off	1	2	1	OHM	600 - 1000 Ω	Resistance of TDC Pick - Up	If 0 Ω or greater than 1500 Ω , replace sensor
"	2	3	16	OHM	600 - 1000 Ω	Resistance of Tachimetric Pick - Up	If 0 Ω or greater than 1500 Ω , replace sensor
"	3	11	17	OHM	0 Ω - Less Than .2 Ω	Ground for Microplex Advance Curve Family Identification	If greater than .2 Ω , check for proper elec. conn. and grd. at ign. coil
"	4	11	18	OHM	∞	Advance Curve Family Identification	
"	5	11	23	OHM	∞	Advance Curve Family Identification	
Turn Ignition Key ON Microplex Disconnected	6	11	13	Volt - DC	11 - 13 V	Voltage Supply to Microplex	If less than 11 - 13 V check cond. of batt. & elec. conn.
Turn Ignition Key OFF Reconnect Microplex Start Engine - IDLE	7	11	19	Volt - DC	12 - 14.5 V 0 V	Voltage Signal to Microplex from Throttle Microswitch (Idle Position) Off Idle Signal to Microplex from Throttle Microswitch	Check the idle position adjustment of micro-switch. Check elec. conn.
"	8	2	1	Volt - AC	>.10 V	Voltage Output of TDC Pick - Up	If less than, check the position of sensor. (.4-.7mm)

SERVICE BULLETIN No 80-28

PAGE: 3

ELECTRICAL TEST PROCEDURE FOR MICROPLEX IGNITION SYSTEM - MED 120B (TR - 12 CYL.) PAGE - 2 -

Important Notes:	Test No.	Meter Setting Pin (-)	Meter Setting Pin (+)	Meter Setting Dial	Correct Theoretical Value	Item Being Checked	Notes
Turn Ignition Key OFF Reconnect Microplex Start Engine - IDLE	9	3	16	Volt - **AC**	> 1.5 V	Voltage Output of Tachimetric Pick - Up	
"	10	10	9	Volt - DC	2.8 - 3.5 V	Microplex Output to Power Module 7/12 Bank	If 0v, replace Microplex ECU.
"	11	15	14	Volt - DC	2.8 - 3.5 V	Microplex Output to Power Module 1/6 Bank	If 0v, replace Microplex ECU.
"	12	11	24	Volt - DC	.20 - .35 V	Output Signal to Tachometer	
Turn Ignition Key OFF Remove Interconnector Reconnect Microplex							

SERVICE BULLETIN No 80-28

PAGE: 4

ELECTRICAL TEST PROCEDURE FOR MICROPLEX IGNITION SYSTEM - MED 806A (3.2 - 8 CYL.)

EQUIPMENT / SPECIAL TOOLING
- Interconnector - Ferrari P.N. 95970020
- Digital Volt / Ohm Meter
  Ex. Alltest Multimeter No. 3510

Important Notes:	Test No.	Meter Setting Pin (-)	Meter Setting Pin (+)	Meter Setting Dial	Correct Theoretical Value	Item Being Checked	Notes
Install Interconnector Microplex Disconnected Electrical Checks Made w/Ignition Off	1	2	1	OHM	600 - 1000 Ω	Resistance of TDC Pick - Up	If 0 Ω or greater than 1500 Ω , replace sensor
"	2	3	16	OHM	600 - 1000 Ω	Resistance of Tachimetric Pick - Up	If 0 Ω or greater than 1500 Ω , replace sensor
"	3	11	17	OHM	Less than .2 Ω	Ground for Microplex Advance Curve Family Identification	If greater than .2 Ω , check for proper elec. conn. and grd. at ign. coil
"	4	11	18	OHM	∞	Advance Curve Family Identification	
"	5	11	23	OHM	∞	Advance Curve Family Identification	
"	6	11	19	OHM	Less than .2 Ω ∞	Idle Signal to Microplex from Throttle Microswitch (Idle Position) OFF Idle Signal to Microplex from Throttle Microswitch	Check the idle position adjustment of micro-switch. Check elec. conn.
Turn Ignition Key ON Microplex Disconnected	7	11	13	Volt - DC	11- 13 V	Voltage Supply to Microplex	

SERVICE BULLETIN No 80-28

PAGE: 5

ELECTRICAL TEST PROCEDURE FOR MICROPLEX IGNITION SYSTEM - MED 806A (3.2 - 8 CYL.) PAGE - 2 -

Important Notes:	Test No.	Meter Setting Pin (-)	Meter Setting Pin (+)	Meter Setting Dial	Correct Theoretical Value	Item Being Checked	Notes
Turn Ignition Key OFF Reconnect Microplex Start Engine - IDLE	8	2	1	Volt - **AC**	> .20 V	Voltage Output of TDC Pick - Up	If less than, check the position of sensor. (.4-.7mm)
"	9	3	16	Volt - **AC**	> 2.0 V	Voltage Output of Tachimetric Pick - Up	
"	10	10	9	Volt - DC	2.8 - 3.5 V	Microplex Output to Power Module 5/8 Bank	If 0v, replace Microplex ECU.
"	11	15	14	Volt - DC	2.8 - 3.5 V	Microplex Output to Power Module 1/4 Bank	If 0v, replace Microplex ECU.
"	12	11	24	Volt - DC	.20 - .35 V	Output Signal to Tachometer	
Turn Ignition Key OFF Remove Interconnector Reconnect Microplex							

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 80-29

DATE: 4/20/87

SUBJECT: ELECTRICAL TEST PROCEDURE FOR FUEL INJECTION SYSTEM-BOSCH K-JETRONIC WITH LAMBDA (8 CYLINDER)

VEHICLES: 1984-1985 308 QV, MONDIAL QV, MONDIAL CABRIOLET
1986-1987 328 GTB/GTS, 3.2 MONDIAL AND 3.2 MONDIAL CABRIOLET

INTRODUCTION:

Attached please find the above Electrical Test Procedure that can be utilized when troubleshooting the Bosch K-Jetronic with Lambda fuel injection system. These tests are to be performed using the special interconnector (35 pin-Ferrari P.N. 95970024) connected in series with the Bosch electronic control unit.

Please follow closely the instructions in sequence listed under "Important Notes".

ELECTRICAL TEST PROCEDURE
BOSCH K - JETRONIC WITH LAMBDA
(F105E040 & F105C040 ENGINES)
PAGE - 2 -

Important Notes:	Test No.	Meter Setting Pin (-)	Meter Setting Pin (+)	Meter Setting Dial	Correct Theoretical Value	Item Being Checked
Turn Ignition Key OFF Reconnect ECU Reconnect Safety Sw. Reconnect Cold Start Diode Start Engine - Let Idle	7	15	8	Volt - **AC**	7.4 V ± .2	60% Duty Cycle (Open Loop) - (F105C040 Engines) Water Temp. < 57° C Oil Temp. < 25° C
					7.6 V ± .2	65% Duty Cycle (Open Loop) - (F105E040 Engines) Water Temp. < 59° C Oil Temp. > 25° C
					6.4 V ± .2	50% Duty Cycle (Open Loop) Water Temp. < 57° C Oil Temp. > 25° C
					5.3 - 6.3 V ± .15	Closed Loop Water Temp. >59° C Oil Temp. > 25° C Catalyst Temp. > 300° C
					7.4 V (F105C040) 7.6 V (F105E040)	WOT Enrichment (Jump Pin #12 & #16 to simulate,with a jumper wire).
"	8	4	2	Volt - DC	.1 V - .8 V	Voltage Signal from Oxygen Sensor.

SERVICE BULLETIN No 80-29

ELECTRICAL TEST PROCEDURE
BOSCH K - JETRONIC WITH LAMBDA
(F105E040 & F105C040 ENGINES)

EQUIPMENT / SPECIAL TOOLING
- Interconnector - Ferrari P.N. 95970024
- Digital Volt / Ohm Meter
  Ex. Alltest Multimeter No. 3510

Important Notes:	Test No.	Meter Setting Pin (-) (+)	Meter Setting Dial	Correct Theoretical Value	Item Being Checked
Ignition Key OFF ECU Disconnected	1	5 7	OHM	Coolant Temperature Switch 0 Ω ∞	Water Temperature Below 54 - 60° C Water Temperature Above 54 - 60° C
"	2	5 6	OHM	0 Ω Idle > 2000 off idle	Remove diode for cold start injector and insert jumper wire. Continuity of idle contact on throttle microswitch.
"	3	5 12	OHM	0 Ω - WOT	Continuity of W.O.T. contact on throttle microswitch. Resistance should be infinite and become zero with throttle opening above 60° from idle. NOTE: If oil temperature is below 15° C, reading will be 0 Ω
"	4	4 2	OHM	>1 million cold 300/1500 warm	Internal resistance of oxygen sensor, which changes greatly with temperature.
"	5	Chassis Ground 5 Chassis Ground 16	OHM	< .2 Ω < .2 Ω	Ground connection for ECU.
ECU Disconnected Ignition Key ON Fuel Dist. Safety Sw. Disconnected	6	5 8	Volt - DC	8 - 13 V	Voltage Supply to ECU from Bosch protection relay.

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SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 80-32

PRODUCTION CHANGE

DATE: 8/10/87

SUBJECT: REAR AND ENGINE WIRING HARNESS
VEHICLES: 328 GTB / GTS

Starting from:

Model	328					
Area						
Chassis no.	71059					
Engine no.						
Gearbox no.						

Description:

A protection sheathing for the wiring harness of the engine auxiliaries and a modified connector for the pick-ups wiring have been introduced.

Reason:

Cable sheathing change.

REPLACED PARTS				NEW PARTS			
ref. fig.	Part Number	Description		ref. fig.	Part Number	Description	
	61803500	Rear Harness	Not for USA		62357800	Rear Harness	Not for USA
	61803900	Engine Harness	Aus. - J - CH		62357700	Engine Harness	Aus. - J - CH
	61808700	Rear Harness	For USA		62359600	Rear Harness	For USA
	61809100	Engine Harness	Aus. - J		62359700	Engine Harness	Aus. - J
	62346800	Rear Harness	For CH - 87		62359800	Rear Harness	For CH - 87
	61931500	Engine Harness	For CH - 87		62359900	Engine Harness	For CH - 87
	61804000	Pick - Ups Harness			62357600	Pick - Ups Harness	

Spare parts procedures:

The individual parts are not interchangeable with the replaced parts.

Reference spare parts catalogue:

328 GTB / S Cat. 462/86 - Tav. 120 - Ref. 11 - 15 - 16.

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SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 80-35

PRODUCTION CHANGE

DATE: 10/5/88

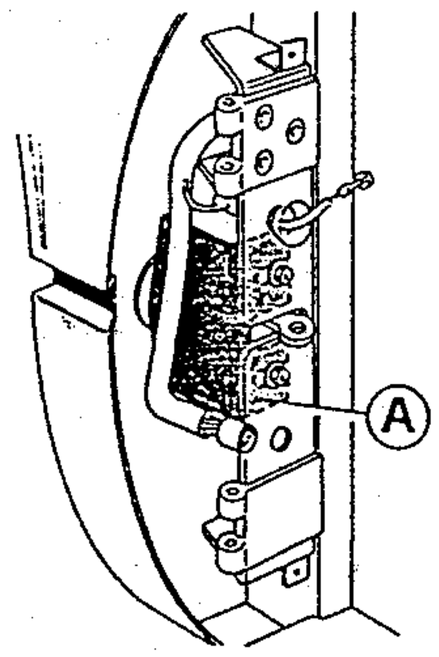
SUBJECT: WIRING HARNESS COVERING
VEHICLES: 328 AND TURBO GTB / GTS.

Starting from:

Model	328 Turbo					
Area	All					
Chassis no.	75586					
Engine no.						
Gearbox no.						

Description:

A covering for the wiring harness has been introduced in the door hinge area.



Reason:

For easier installation of wiring harness in the door hinge area.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
			A	62500100	Covering

Spare parts procedures:

The covering can also be fitted to previous cars.

Reference spare parts catalogue:

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 80-36

DATE: 2/13/89

SUBJECT: Calibration of display indicator
VEHICLES: 328 GTB/S and TURBO (P.N. 61808200 Right, P.N. 61808300 Left)
412 (Pininfarina P.N. 2578089800 Right, P.N. 2578089900 Left)

ATTACHED PLEASE FIND A DESCRIPTION OF THE CALIBRATION PROCEDURE FOR THE ABOVE ITEMS.
IT IS RECOMMENDED THAT AFTER THE CALIBRATION PROCEDURE HAS BEEN CARRIED OUT A DAB OF PAINT BE APPLIED TO THE ADJUSTMENT SCREWS TO PREVENT ANY ALTERATION OF THE SETTING DURING USE.

CALIBRATION PROCEDURE
1. LED Display Indicator with 4 Potentiometers (fig. 1)

1.1 RED LED: Heater Water Valve

1.1.1 Through hole **D** rotate the potentiometer screw in a clockwise direction to the limit of its travel.

1.1.2 Press the end of the rocker switch bar with the red spot for at least 10 seconds.

1.1.3 If the LED's are all light, then through hole **C** gently rotate the potentiometer anti-clockwise until one LED goes out then rotate carefully clockwise without stopping until all LED's are lit. Should one or more LED's not light then rotate the potentiometer in a clockwise direction without stopping, until all LED's are lit.

1.2 YELLOW LED: Air Distribution Flap

1.2.1 Press the end of the rocker switch bar with the orange spot (328) or white spot (412) for at least 10 seconds.

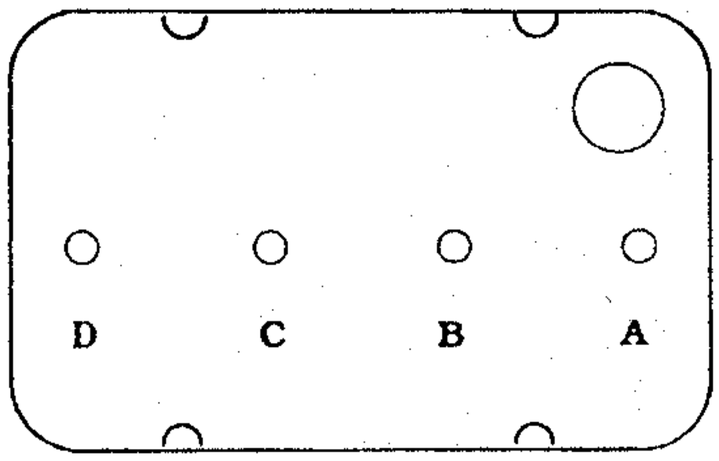
1.2.2 Through hole **B** rotate the potentiometer screw in a clockwise direction until the first LED just lights then rotate the screw in an anti-clockwise direction without stopping until the LED goes out.

1.2.3 Press the demist symbol end of the rocker switch bar for at least 10 seconds.

1.2.4 Through hole **A** rotate the potentiometer in a clockwise direction to the limit of its travel, then rotate it in an anti-clockwise direction without stopping until an LED lights up.

1.2.5 Repeat steps 1.2.1 through 1.2.4 for at least 3 times, after which the calibration may be considered complete.

FIGURE NO. 1



CALIBRATION PROCEDURE
2. LED Display Indicator with 3 Potentiometers (fig.2)

2.1 RED LED: Heater Water Valve

2.1.1 Press the end of the rocker switch with the blue spot for at least 10 seconds to ensure that the valve is closed.

2.1.2 Through hole **C** rotate the potentiometer screw in a clockwise direction to the limit of its travel, and if as a result all the LED's are extinguished leave the screw at the end of its travel: otherwise gently rotate the screw anti-clockwise until the last red LED goes out.

2.1.3 Press the end of the rocker switch bar with the red spot for at least 10 seconds and check that all LED's are lit. Should this not be the case, then through hole **C** adjust the potentiometer screw in an anti-clockwise direction without stopping until the last LED is lit.

2.2 YELLOW LED : Air Distribution Flap

2.2.1 Press the end of the rocker switch bar with the orange spot (328) or white spot (412) for at least 10 seconds.

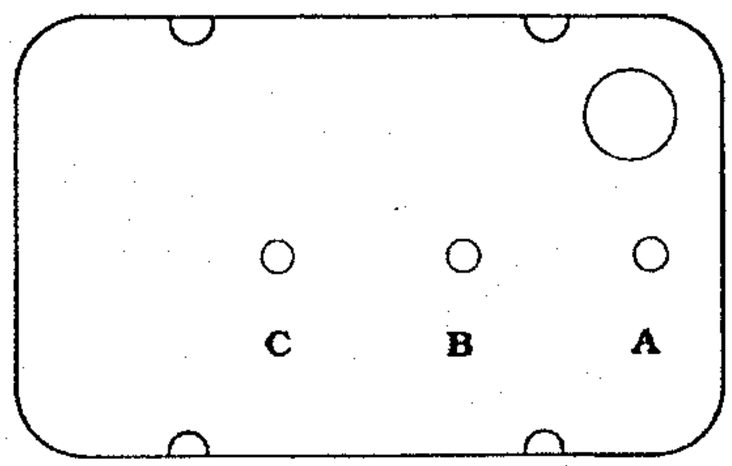
2.2.2 Through hole **A** rotate the potentiometer screw in a clockwise direction until the first LED just lights, the gently rotate in an anti-clockwise direction without stopping until the first LED goes out.

2.2.3 Press the demist symbol end of the rocker switch bar for at least 10 seconds.

2.2.4 Through hole **B** rotate the potentiometer screw in a clockwise direction until the limit of its travel. If all the LED's are lit leave the screw in that position, but if one or more of the LED's are not lit, gently rotate the screw anti-clockwise without stopping until the last LED lights up.

2.2.5 Press the end of the rocker bar switch with the orange spot (328) or white spot (412) for at least 10 seconds to ensure that all LED's extinguish, at which point the calibration is complete. If however one or more of the LED's remain lit gently rotate potentiometer **A** in an anti-clockwise direction without stopping until all the LED's extinguish then repeat the procedure from step 2.2.3.

FIGURE NO.2



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SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 80-39

PRODUCTION CHANGE

DATE: 7/15/89

SUBJECT: ELECTRONIC CONTROL FOR VENTILATION FAN SPEED
VEHICLES: 328 - F40

Starting from:

Model	328 GTB	328 GTS	F40			
Area						
Chassis no.	79600	79752	79763			
Engine no.						
Gearbox no.						

Description:

A new electronic control for ventilation fan speed has been introduced into production.

Reason:

Operational improvement

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description
	62373900	Electronic control		62618000	Electronic control

Spare parts procedures: The new electronic controls replace the old ones. Old parts that you might have in stock must be returned to the Ferrari N.A. Parts Department, following normal AFA procedures.

Reference spare parts catalogue:

REF. SAT T.I. CN 65

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SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No **80-40**

DATE: 7/15/89

SUBJECT: CARBON & SPRING FOR DISTRIBUTOR CAP (P.N. 140567)
VEHICLES: TESTAROSSA - 328 GTB/GTS - GTB/GTS TURBO - 3.2 MONDIAL - 412

The item will now be supplied separately from the complete distributor cap.

The carbon & spring will be supplied by our spare parts department and may be ordered under the single part number **140567**.

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SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 90-10

PRODUCTION CHANGE

DATE: 6/15/88

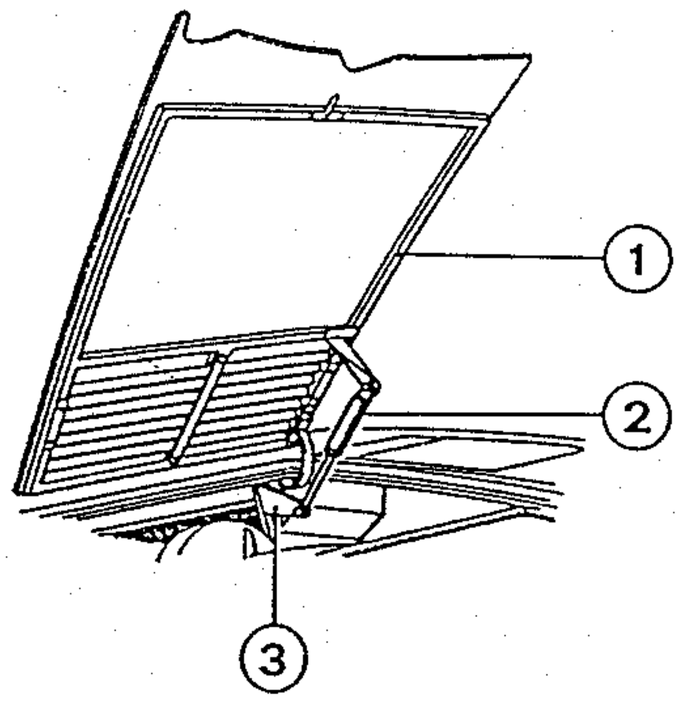
SUBJECT: FRONT BONNET
VEHICLES: 328 & TURBO

Starting from:

Model	328	Turbo				
Area	All	Italy				
Chassis no.	75592	75593				
Engine no.						
Gearbox no.						

Description:

A new bonnet is assembled having a new support located on the right hand side instead of the previous left hand side.



REPLACED PARTS

ref. fig.	Part Number	Description
1	61751500	Front Bonnet
2	60118107	Shock Absorber
3	61748600	Bracket

NEW PARTS

ref. fig.	Part Number	Description
1	62486200	Front Bonnet
2	62380500	Shock Absorber
3	62484300	Bracket

Spare parts procedures:

The new parts are not interchangeable, singularly with pre - modified parts.

Reference spare parts catalogue:

328 Cat. No. 462/87 Tav. 112 Turbo GTB / GTS Cat. No. 432/87 Tav. 105

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SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 90-11

PRODUCTION CHANGE

DATE: 10/5/88

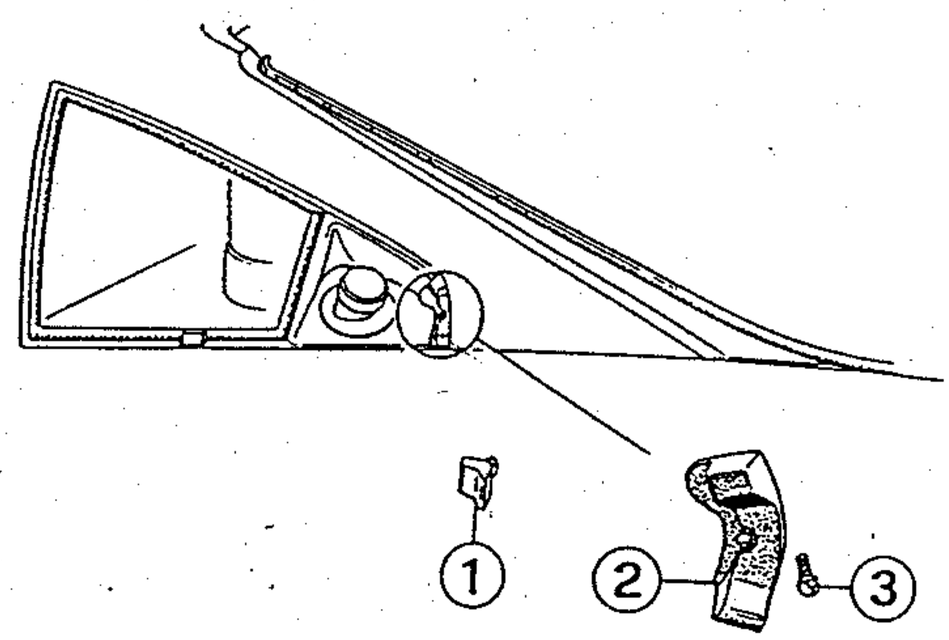
SUBJECT: SIDE GRILL GROMMET
VEHICLES: 328 GTS

Starting from:

Model	328 GTS					
Area	All					
Chassis no.	76681					
Engine no.						
Gearbox no.						

Description:

The left side grill grommet is of a new design.



Reason:

Production change.

REPLACED PARTS

ref. fig.	Part Number	Description
1	61989600	Grommet

NEW PARTS

ref. fig.	Part Number	Description
2	62460200	Grommet
3	10389377	Screw

Spare parts procedures:

Reference spare parts catalogue:

Ferrari

SOCIETA PER AZIONI ESERCIZIO FABBRICHE AUTOMOBILI E CORSE

SERVICE BULLETIN No 96-3

PRODUCTION CHANGE

DATE: 12/15/88

SUBJECT: HEATER FAN MOTORS
VEHICLES: 328 AND TURBO

Starting from:							
	Model	328	Turbo				
	Area						
	Chassis no.	76076	76085				
	Engine no.						
	Gearbox no.						

Description:

New type heater fan motors complete with filters have been introduced.

Reason:

Production change.

REPLACED PARTS			NEW PARTS		
ref. fig.	Part Number	Description	ref. fig.	Part Number	Description

Spare parts procedures: The new heater fan motors are not interchangeable with the previous type. The part numbers for the new parts can be found on the attached drawing.

Reference spare parts catalogue:

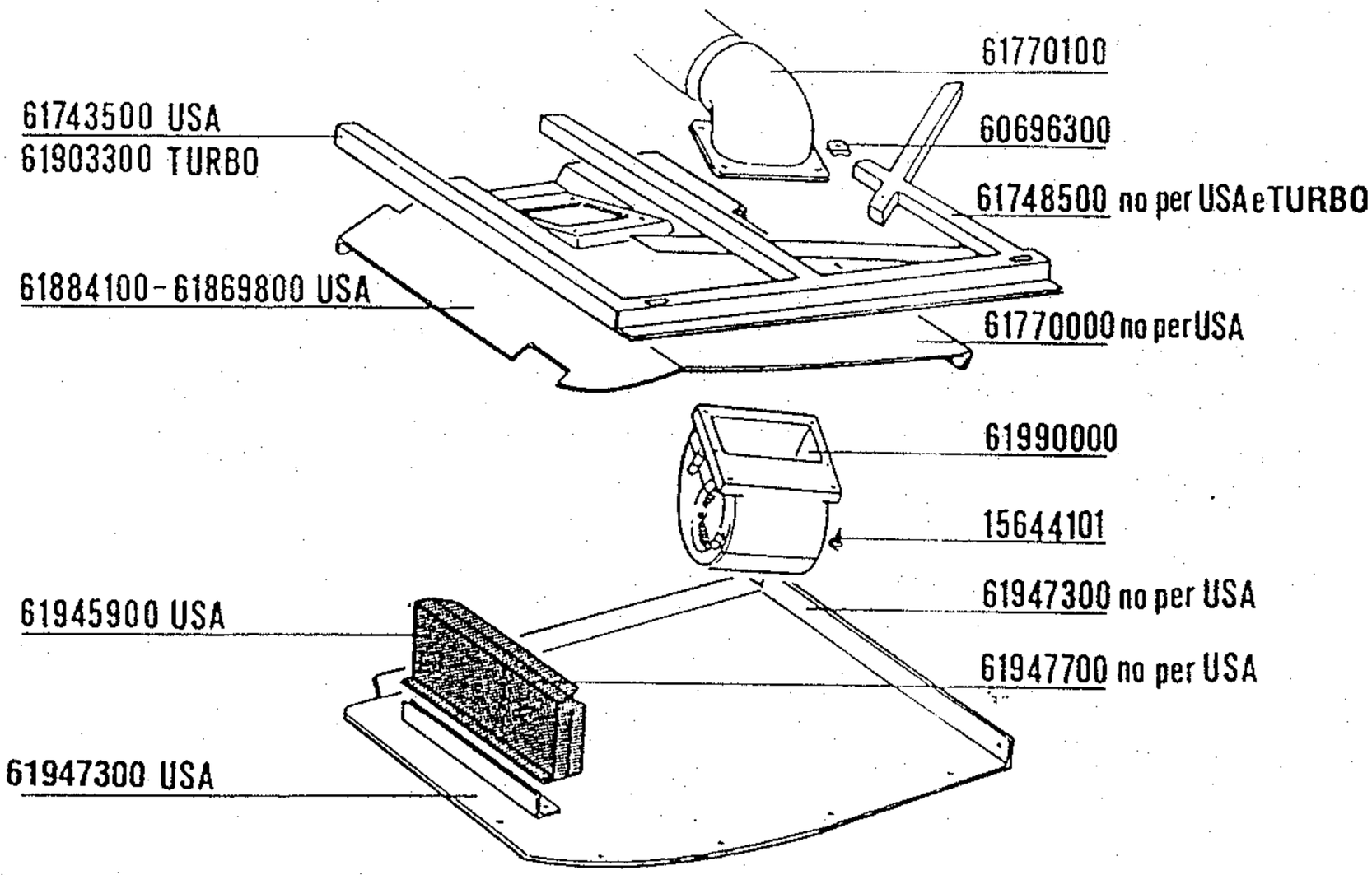
SERVICE BULLETIN No 96-3

SOLUZIONE PREMODIFICA

SOLUTION AVANT MODIFICATION

PREVIOUS TYPE

BAULÖSUNG VOR DER VARIANTE



NUOVA SOLUZIONE

NOUVELLE SOLUTION

NEW TYPE

NEUE LÖSUNG