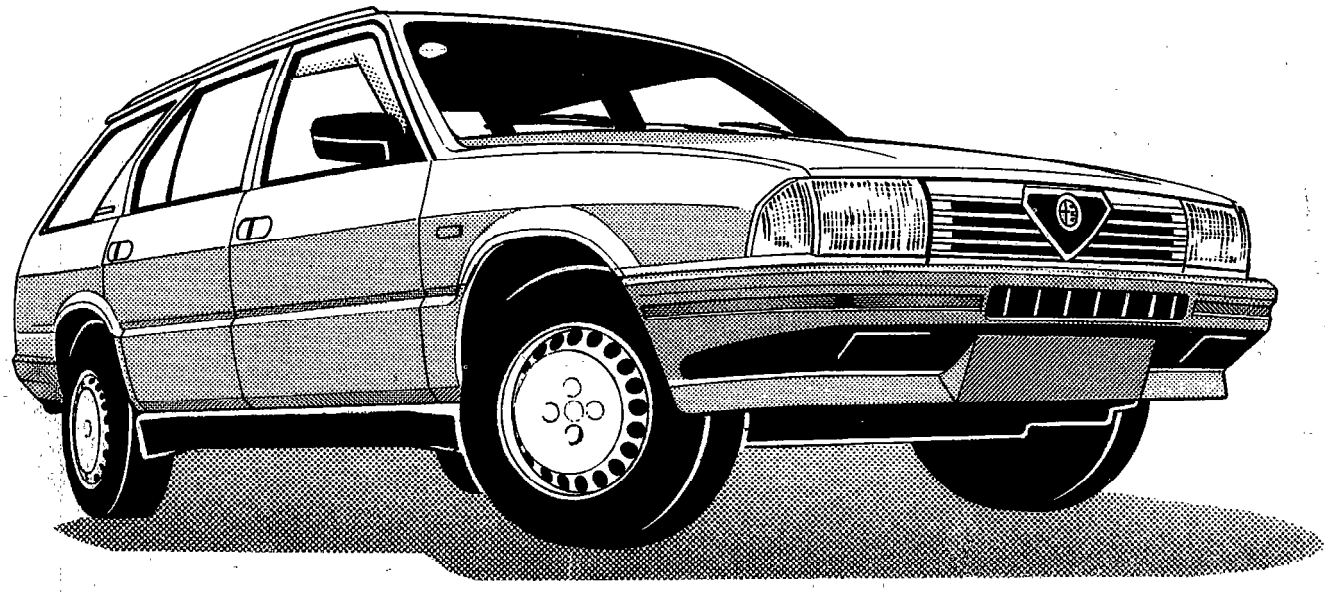
33

WORKSHOP MANUAL

models

Sport Wagon

Alfa 33 MANUAL SUPPLEMENT



DIREZIONE ASSISTENZA TECNICA Alfa Romeo

PA33350000S W00

MARCH 1988

FOREWORD

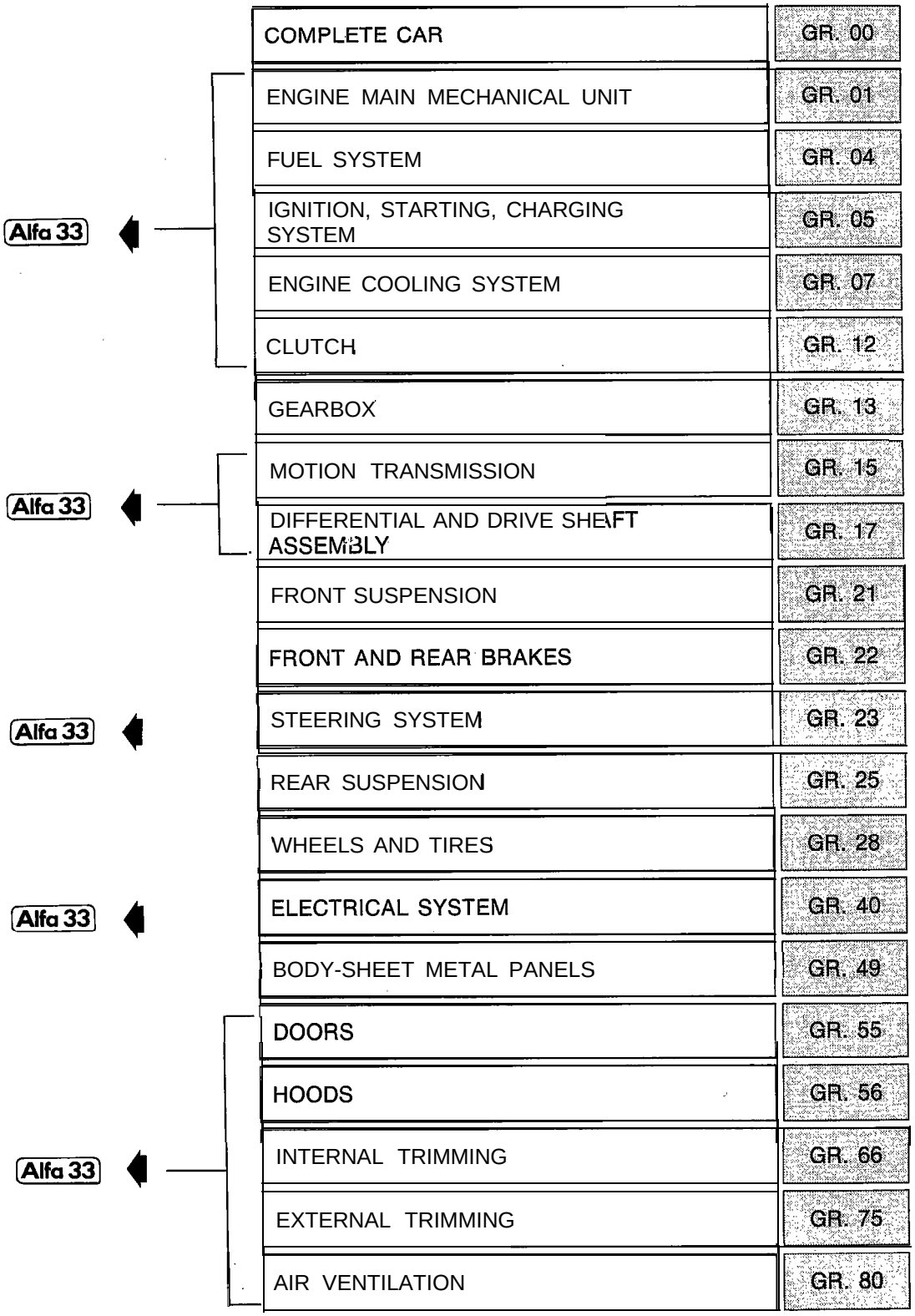
This manual is intended for Sport Wagon models: 33 1.3 S 33 6.7 S 33 a.5 4x4 3 3 1.8 TD It complements the manuals for the models indicated here below:

PA327900000000	*"WORKSHOP MANUAL* Alfa 33 *"*
PA3279000004x4	*"WORKSHOP MANUAL* 4×4 _____ *"*
PA3279000BR4x4	*"WORKSHOP MANUAL* 4×4 giardinetta *"*
PA327900000BRK	*" WORKSHOP MANUAL* Alfa 33 inetta *"*
PA32790000TD00	*"WORKSHOP MANUAL* 33 1.8 TD *"*
PA327900003300	*"WORKSHOP MANUAL* 33 *"*

Key *to symbols:*

fa 33 *means that the corresponding Group in the* ***basic*** *manual* ***should*** *be referred to, for* ***all*** *details not* ***dealt*** *with specifically in this manual.*

QUICK REFERENCE INDEX

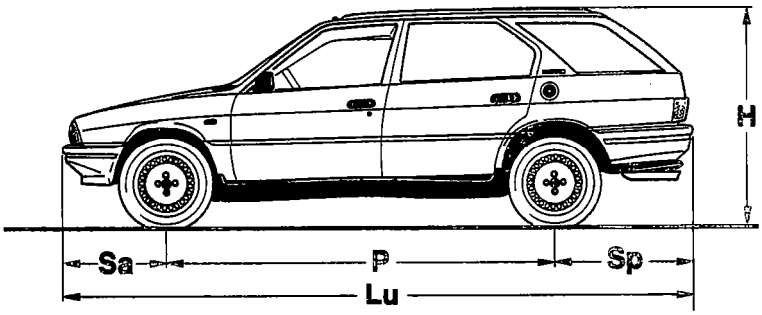


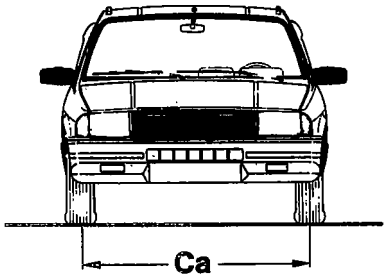
GROUP 00

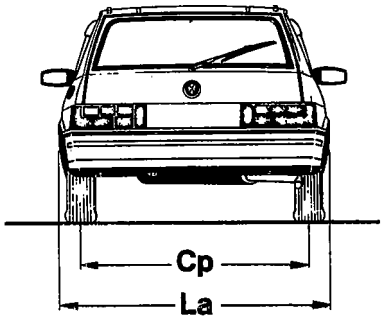
CONTENTS

(*) Refer to: "WORKSHOP MANUAL Alfa 33" VOLUME I and VOLUME II - Group 00

GENERAL VIEWS







DIMENSIONS AND WEIGHTS

Model			33 1.3 S	33 1.7 S	33 1.5 4X4	33 1.8 TD
Identification number			908.60	908.64 908.65	908.80	908.62
Wheelbase	P	mm (in)	2,465 (97.05)			2,455 (96.65)
Track	Front Ca Rear Cp	(mm)	1,367 (53.62) 1,364 (53.70)			1,397 (54.00) 1,364 (53.70)
Overall length	Lu	mm (in)	4,142 (143.07)			4,167 (164.05)
Overhang	Front Sa Rear Sp	(mm)	790 (31.10) 687 (34.92)			625 (32.46) 687 (34.92)
Overall width	La	mm (in)	1,612 (63.46)			
Heights (unladen)	H	(mm)	1,345 (52.95)		1,355 (53.35)	1,345 (52,95)
Ground clearance		mm (in)				
Min. steering radius		mm (in)	5,500 (216.53)			5,250 (206,69)
Kerb weight		kg (lb)	925 (2,039)		990 (2,183)	1,025 (2259)
Max. allowed gross weight		kg (lb)	1,350 (2,795)		1,415 (3,119)	1,450 (3,197)
Payload		kg (lb)	355 (783)			
Max. allowed axle gross weight	Front Rear	kg (lb)	800 (1,764) 900 (1,984)			
Max. towing gross weight		kg (lb)	1,000 (2,205)		1,100 (2,425)	
Seating capacity	Front Rear		2 3			

MODE-L VARIATION

Model			Sport Wagon							
Version			33 1.3 S		33 1.7 ie		33 1.5 4x4		33 1.8 TD	
Body			5 DOOR GIARDINETTA							
Drive			L	R	L	R	L	R	L	R
Identification No.		– on certification label – on identification label	908.600	–	908.640	908.650	908.800	–	908.620	–
Chassis No.	Type approval No.	– on identification label	905A1D		905A3C		905A2S		905A4A	
		– on intermediate blukhead label	905A10		905A30		905A20		905A40	
	Serial No.	– on intermediate blukhead label			–		–		–	
Engine No.	Type and serial No.	– on cylinder block label	30168 from 0000001		30550 from 0000001		30508 from 0000001		VM82A da 0000001	
Tyres dimensions			165/70SR13		185/60R1482H		175/70R1382T			
Rim dimensions			5½Jx13		5½Jx14		5½Jx13			

Label type and location

APPROXIMATE REFILL CAPACITIES

Model		Sport Wagon 33 1.3 s		Sport Wagon 33 1.7 s		Sport Wagon 33 1.5 4x4		Sport Wagon 33 1.8 TD	
Component \ Measurement unit		Kg (lb)	l (imp. gal)	Kg (lb)	l (imp. gal)	Kg (lb)	l (imp. gal)	Kg (lb)	l (imp. gal)
FUEL TANK		–	50 (11)	–	50 (11)	–	53 (11.66)	–	50 (11)
FUELRESERVE		–	6.5 (1.43)	–	6.5 (1.43)	–	6.5 (1.43)	–	6.5 (1.43)
ENGINE OIL SUMP	With filter (*)	3.6 (7.94)	4 (0.88)	3.6 (7.94)	4 (0.88)	3.6 (7.94)	4 (0.88)	4.57 (10.07)	5.25 (1.15)
	Without filter (*)	3.15 (6.94)	3.5 (0.77)	3.15 (6.94)	3.5 (0.77)	3.15 (6.94)	3.5 (0.77)	4.35 (9.59)	5 (1.10)
GEARBOX - DIFFERENTIAL OIL		2.4 (5.29)	2.6 (0.57)	2.4 (5.29)	2.6 (0.57)	2.4 (5.29)	2.6 (0.57)	2.4 (5.29)	2.6 (0.57)
REAR DIFFERENTIAL OIL			–	–	–	0.9 (1.98)	1 (0.22)	–	–
ENGINE COOLING SYSTEM			7.3 (1.61)	–	7.3 (1.61)	–	7.3 (1.61)	–	8
CONCENTRATE ANTIFREEZE ⟶ −15°C (+5°F) QUANTITY DEPENDING ON ⟶ -20°C (-4°F) TEMPERATURE ⟶ −35°C (-31 “F)		– – –	2.2 (0.48) 2,6 (0.57) 3.65 (0.80)	– – –	2.2 (0.48) 2,6 (0.57) 3.65 (0.80)	– – –	2.2 (0.48) 2,6 (0.57) 3.65 (0.80)	– – –	2 (0.44) 2,64 (0.58) 4 (0.88)
ANTIFREEZE QUANTITY READY FOR USE ⟶ -20°C (−4°F)			7.3 (1.61)	–	7.3 (1.61)	–	7.3 (1.61)	–	8 (1.76)

(*) The indicated quantity refers to periodical changes.

Features	Model	Sport Wagon 33 1.3 S	Sport Wagon 33 1.7 ⊕	Sport Wagon 33 1.5 4x4	Sport Wagon 33 1.8 TD
Vehicle static loading arrangement (1)	N (kg : lb)	A + B = 490 + 245 = 735 N (50 + 25 = 75 kg) C = 490 (50); (110)			
Front wheel alignment	mm (in)	$A=-12^{+10}_{-5}$ $(-0.47^{+0.39}_{-0.20})$		$A=3^{+10}_{-5}$ $(-0.12^{+0.39}_{-0.20})$	$A=-2^{+10}_{-5}$ $(-0.47^{+0.39}_{-0.20})$
Rear wheel alignment	mm (in)	$B=27^{+10}_{-5}$ $(1.06^{+0.39}_{-0.20})$		$B=53^{+10}_{-5}$ $(2.09^{+0.39}_{-0.20})$	$B=33^{+10}_{-5}$ $(0.91^{+0.39}_{-0.20})$
Front wheel toe-out (2) (3)	mm (in)	M − H = 4 ± 2 (0.157 ± 0.079)			M−H=2 ± 2 (0.157 ± 0.157)
Front toe-out angle		α = 10'			α = 10'
Wheel rim diameter	mm (in)	340 (13.38)	365 (14.37) (4)	340 (13.38)	
Rear wheel toe-in		α = −20' ±10'			α = 0° ±25'
Front wheel camber (3)		β = −1° ±30'			β = −1°55' ±30'
Rear wheel camber (3)		β = 0° ±25'			
Front wheel caster (3)		γ = 2° ±30'			γ = 1° ±30'
Steering lock (3)	Outer angle	δ_1 = 27°50'			δ_1 = 29°38'
	Inner angle	δ_2 = 33°45'			δ_2 = 35°10'

(1) Load vehicle, move it up and down on suspensions a few times. Checking operations must be performed with vehicle fully set up for driving.
(2) When turning a steering side rod joint 360°, M − H dimension changes by 2 mm (0.079 in).
(3) These values are referred to a vehicle in nominal driving condition, i.e. with static load.
(4) With rim 5½ J×14".

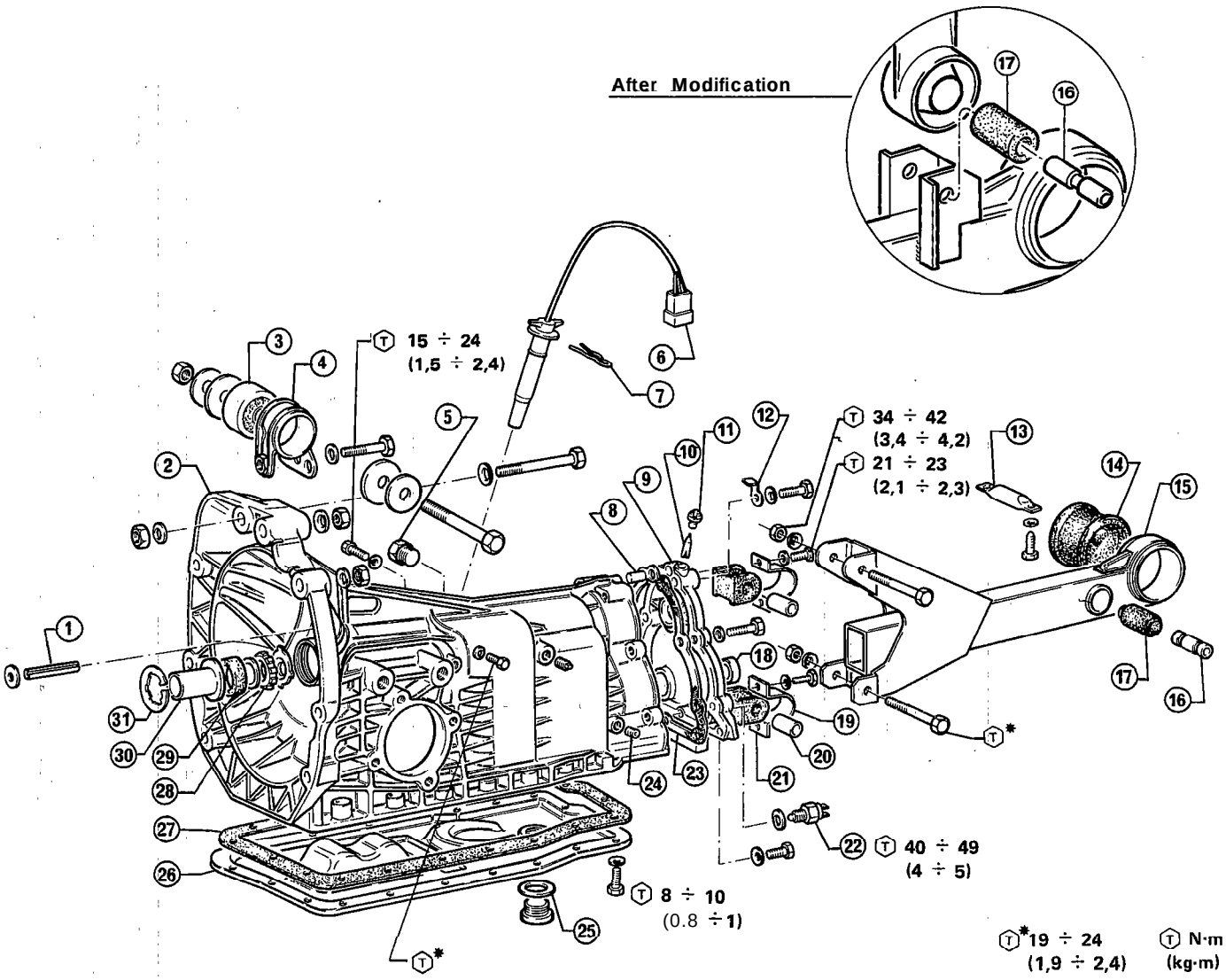
GROUP 13

CONTENTS

(*) Refer to: "WORKSHOP MANUAL. Alfa 33" VOLUMES I and II - Group 13

5-SPEED MANUAL GEARBOX

Gearbox-differential unit and rear support



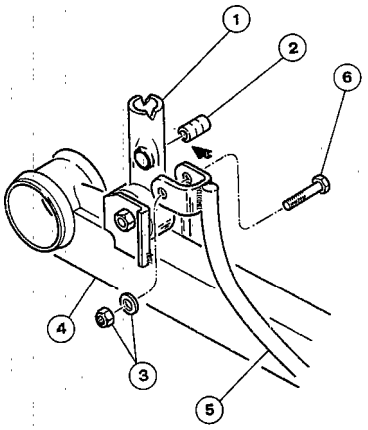
1 Pin
2 Gearbox - differential casing
3 Bushing
4 Central support
5 Oil plug
6 Speedometer sensor
7 Spring ring
8 Dowel
9 Rear cover
10 Valve
11 Plug
12 Plate
13 Pin
14 Flexible support
15 Rear support
16 Spacer
17 Flexible bush
18 Oil seal ring
19 Bracket
20 Bushing
21 Flexible support
22 Reverse gear switch
23 Gasket
24 Plug
25 Drain plug
26 Oil sump
27 Gasket
28 Bushing
29 Oil seal ring
30 support
31 Lock ring

GEARBOX OUTER LINKAGE

DISASSEMBLY

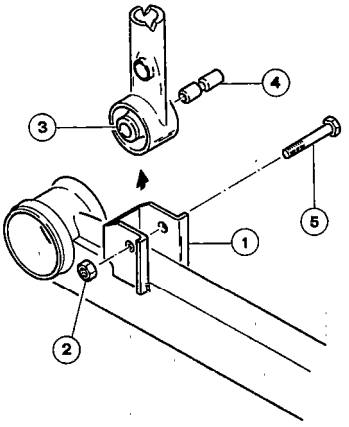
For premodification models

1. Loosen and remove the nut with washer ④ as well as the screw ⑦ securing the main selector rod ⑥ to the gearbox lever ①; then remove the bush ②.



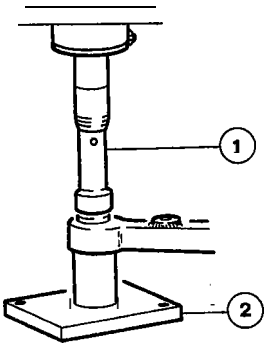
1 Gearbox lever
2 Bushing
3 Nut with washer
4 Rear support
5 Main selector rod
6 Retaining screw

2. Loosen and remove the nut ② and the screw ⑤ securing the gearbox lever to the flexible bushing ③ on the rear support; then remove the spacer ④.



1 Support
2 Nut
3 Flexible bushing
4 Spacer
5 Screw

3. Extract the bushing with a press and plate usin a suitable punch ② and base a1 .



1 Punch
2 Support base

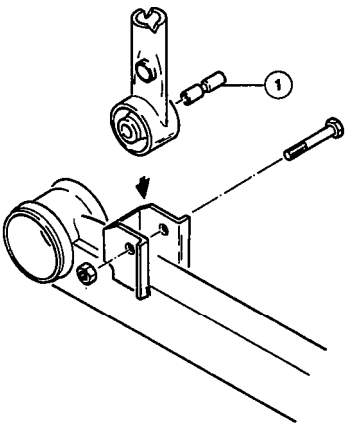
CHECKS A N D INSPECTIONS

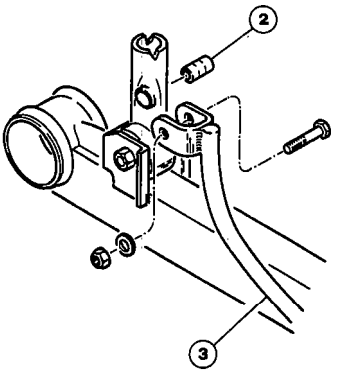
1. Thoroughly clean outer linkage metal parts with solvent and make sure they, are in good condition.
2. Check linkage articulated joints for excess wear.

ASSEMBLY

1. Apply grease (AGIP Grease 15 or SHELL retinax G) to the bushing ① connecting the gearbox lever and the main selector cod ③ and to the spacer ② securing the gearbox: lever fork to the flexible bushing on the rear support.

2. Go on to fit all the gearbox outer linkage 'following the disassembly procedure in reverse sequence.





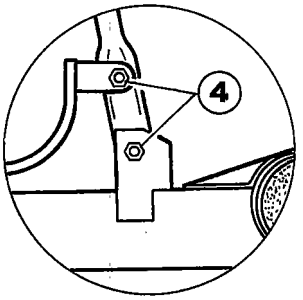
1 Spacer
2 Bushing
3 Main selector rod

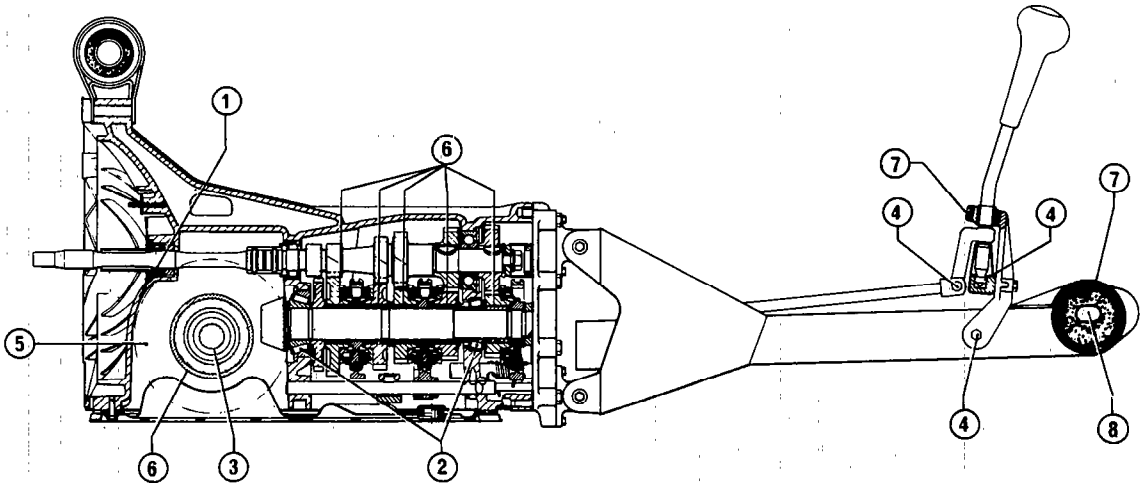
Features: / Model			Sport Wagon 33 1.3 S		Sport Wagon 33 1.7 8		Sport Wagon 33 1.5 4X4		Sport Wagon 33 1.8 TD	
			Crown gear and pinion ratio							
Speed eelector lever position	Gear	Gearbox ratio	9/37		10/37		9/37		11/35	
			Gearbox differential overall ratio	Speed at 1,000 r.p.m. Km/h	Gearbox differential overall ratio	Speed at 1,000 r.p.m. Km/h	Gearbox differential overall ratio	Speed at 1,000 r.p.m. Km/h	Geathox diierential overall ratio	Speed at 1,000 r.p.m. Km/h
13 5 / 2 4 R.G.	1st	1 : 3.143	1 : 12.921	8.010	1 : 11.629	9.081	--		--	
	2nd	1 : 1.864	1 : 7.663	13.506	1 : 6.897	15.311				
	3rd	1 : 1.323	1 : 5.439	19.029	1 : 4.895	21.573				
	4th	1 : 1.027	1 : 4.222	24.514	1 : 3.800	27.790				
	5'"	1 : 0.854	1 : 3.551	29.479	1 : 3.160	33.418				
	R.G.	1 : 3.091	1 : 12.707	8.145	1 : 11.437	9.233				
	1st	1 : 3.750	--		--		1 : 15.416	6.850	1 : 11.932	8.850
	2nd	1 : 2.050					1 : 8.427	12.531	1 : 6.523	16.189
	3rd	1 : 4.387					1 : 5.702	18.520	1 : 4.413	23.930
	4th	1 : 1.027					1 : 4.222	25.012	1 : 3.268	32.313
	5th	1 : 0.825					1 : 3.391	31.141	1 : 2.625	40.228
	R.G.	1 : 3.091					1 : 12.707	8.310	1 : 9.835	10.737

GENERAL SPECIFICATIONS

FLUIDS AND LUBRICANTS

After modification





APP. no.	Application	Type	Name	Q.ty
1	Inner surface of: – Seal ring of main selector rod – Seal ring of primary shaft – Seal ring of differential shaft – Seal lip and work seat on shaft	GREASE	ISECO Molykote BR2 Std. No. 3671-69641	–
	Outer surface of: – Seal rings	OIL	See item 5	–
2	Outer races of differential casing and pinion taper roller bearings	GREASE	AGIP: F1 Grease 33 FD Std. No. 3671-69633	–
3	Mating surfaces of: – Ring nut securing bearing to differential shafl	OIL	See item 5	–

App. no.	Application	Type	Name	Q.ty
4	Outer surface of: – Bushing on main selector rod to speed selector lever connection – Spacer for lever to fork fitting Speed selector lever guide	GREASE	– AGIP: F1 Grease 15 – SHELL: Retinax G Std. No. 3671-69811	5 g (0.76 oz)
5	Fill-up of gearbox-differential casing	OIL	– AGIP: F1 Rotra HP SAE 80W90 – IP: Pontiax HD 80W90 Std. No. 3631-69408	2,300 kg +0,100 kg (5.07 lb+0.22 lb)
6	Outer surface of differential carriers and relevant seats on gearbox casing Bushing for bevel pinion driven gears	OIL	See item 5	–
7	Outer surface of: – Gearbox rear flexible support – Flexible support for speed selector lever upper joint	GREASE	– UNION CARBIDE CHEMICALS COMPANY: Ucon lubricant 50 HB-5100 – MILLIOIL: slipping agent for rubber sections Std. No. 4500-17502	
8	Outer surface of: – Pin for gearbox rear flexible support	GREASE	– SPCA: Spagraph – ISECO: Ergon Rubber Grease n. 3 Std. No. 3871-69816	

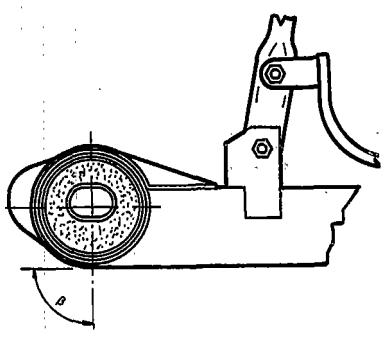
SEALANTS AND SURFACE-FIXING AGENTS

Application	Type	Name	Q.ty
– Lower screws securing differential carriers to gearbox casing	CEMENT	DOW CORNING: Silastic RTV 732 Std. No. 3522-00040	
– Screws securing forks to speed selector rods	CEMENT	Omnifit 150 H – Std. No. 3524-00023	
N.B.: For surface cleaning use:	SURFACE FIXING AGENT	Omnifit – Std. No. 3514-90003	–
– Inner surface of bore for oil plug on Gearbox casing	CEMENT	DIRING: Heldite Std. No. 3522-00015	–

INSPECTION AND ADJUSTMENT

REAR SUPPORT

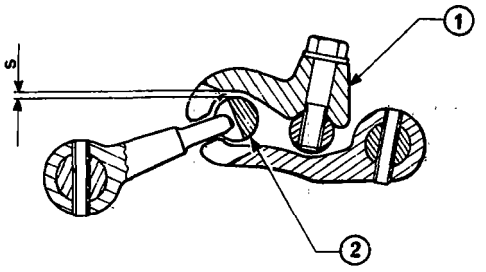
"β" positioning of gearbox rear flexible support



β	degree	90° ± 2°

RODS AND FORKS

1. "S" clearance between 3rd-4th speed rod ② and lst-2nd speed selector lever ①.



S	mm (in)	1,4 ÷ 1,9 ($5.5 \cdot 10^{-2} \div 7.4 \cdot 10^{-2}$)

2. End play between fork and synchronising unit sleeves

Clearance	mm (in)	0.250 4 0.375 (9.8, . $10^{-3} \div 1.5 \cdot 10^{-2}$)

ROLLING TORQUES

Item \ Measuring unit	N . dm	kg . dm	ft . lb
Dummy pinion			
– Original bearings being used again	3 ÷ 6	0.3 ÷ 0.6	0.217 ÷ 0.434
– Replacement bearings (new)	12 ÷ 15	1.2 ÷ 1.5	0.867 ÷ 1.085
Pinion with gear train			
– Original bearings being used again	4 ÷ 7	0.4 ÷ 0.7	0.289 ÷ 0.506
– Replacement bearings (new)	13 ÷ 16	1.3 ÷ 1.6	0.939 ÷ 1.157

GROUP 21

CONTENTS

Refer to Group 00 - Chassis and Body Maintenance for:

- **Checking Suspension Height**
- **Wheel Alignment**

(*) Refer to: "WORKSHOP MANUAL Alfa 33" VOLUME I and VOLUME II - Group 21

SERVICE DATA AND SPECIFICATIONS

TECHNICAL DATA

COIL SPRING, SHOCK ABSORBER AND ANTI-ROLL BAR

Features		Model / Versions	Sport Wagon 33 1.3 S	Sport Wagon 33 1.7 8	Sport Wagon 33 1.5 4x4	Sport Wagon 33 1.8 TD
Coil spring	Alfa Romeo Part No.		131883			133018
	Wire diameter	mm (in)	13.2 (0.520)			13.6 (0.53)
	Coil diameter	mm (in)	160 (8.299)			
	Free length	mm (in)	310 (12.205)			333 (13.11)
	Stiffness	N/mm (kg/mm) (lb/in)	21.6 (2.2) (123.2)			24.5 (2.5)
Shock absorber	Type		SPICA			
			BOGE			
			HYDRAULIC			
	Piston rod diameter	mm (in)	20 (0.787)			
	Stroke	mm (in)	196 (7.716) (1) 187 (7.362) (2)			185 (7.283)
Anti-roll bar	Alfa Romeo Part No.			131635		
	Diameter	mm (in)		18		

(1) For shock absorber SPICA only
(2) For shock absorber BOGE only

INSPECTION AND ADJUSTMENT

DATA OF SHOCK ABSORBER SETTING

Features		Model / Versions	Sport Wagon 33 1.3 S, 33 1.7 8, 33 1.5 4x4				Sport Wagon 33 1.8 TD	
SHOCK ABSORBER			LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Type			SPICA		BOGE		SPICA	
Alfa Romeo Part Number			548191	548190	549123	549122	549301	549300
Low speed	Compression	N (kg) (lb)	260 (26.5) (58.42)		156.9 (16) (35.27)		260 (26.5) (58.42)	
	Expansion	N (kg) (lb)	510 (52) (114.63)		392.3 (40) (98.18)		520 (53) (116.84)	
High speed	Compression	N (kg) (lb)	490 (49.9) (110.01)		529.5 (54) (119.04)		500 (51) (11.02)	
	Expansion	N (kg) (lb)	1280 (130.5) (287.7)		1421.9 (145) (319.67)		1300 (132.5) (292.11)	

NOTE: The shock absorbers are integrated in the strut tubes.

GROUP 22

CONTENTS

(*) Refer to: "WORKSHOP MANUAL Alfa 33" VOLUME I and VOLUME II - Group 22

FRONTBRAKES

Calipers, brake pads and discs

Features \ Model / Version				Sport Wagon 33 1.3 S	Sport Wagon 33 1.7 8	Sport Wagon 33 1.5 4x4	Sport Wagon 33 1.8 TD
Calipers	Type	ATE	part. No.	547168/9	547808/9	547168/9	
		DBA	part. No.	547178/9	–	547178/9	
Brake pedals	Type	ATE	part. No.	795357	720402	795357	
		DBA	part. No.	795356	–	795356	
	Colours			LIGHT BLUE (FRENDO) BLACK (FERODO)			
	Pad nominal tickness "S"		mm (in)	1 5	16,5	1,5	
Discs	External diameter		mm (in)	239			
	Nominal thickness "C"		mm (in)	$12.7^{-0,2}$ ($0.5^{-0.008}$)	$22^{-0,2}$ ($0.5^{-0.008}$)	$12.7^{-0,2}$ ($0.5^{-0.008}$)	

REAR BRAKES

Unit: mm (lb)

Drum nominal diameter:	9"	8"
Part No.	130.695	131.245
Drum nominal internal diameter	228.6+0,2	$203.2^{-0,1}_{+0,2}$
	$(9+7.9 \cdot 10^{-3})$	$(8^{-3.9 \cdot 10^{-3}}_{+7.9 \cdot 10^{-3}})$
Brake lining thickness	5 (0.197)	5 (0.197)

BRAKE MASTER CYLINDER

Type	BENDITALIA	Part. No. 546.657
Diameter		20:64 mm (0.612 in)
Stroke		32 mm (16+16) 1.26 in (0.63+0.63)
Type:	A-I-E	Part. No. 548.682
Diameter		20.64 mm (0.812 in)
Stroke		32 mm (17915) 1.26 in (0.67a0.59)

SERVOBRAKE

TYPE: ATE or BENDITALIA	
Diameter of working cylinder	7 in

BRAKE PRESSURE PROPORTIONING VALVE

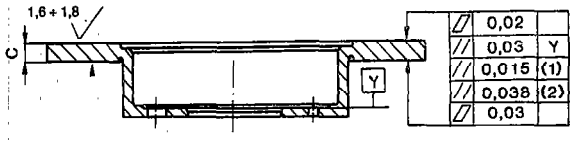
Type: BENDITALIA	Part No. 644.498
RATIO	0.36

INSPECTION AND ADJUSTMENT

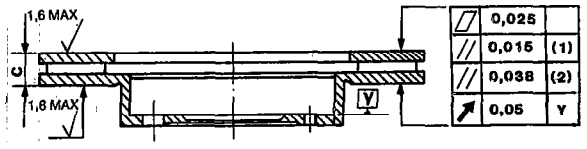
FRONT BRAKES

Dimensions for brake disc grinding (single or ventilated)

single



ventilated

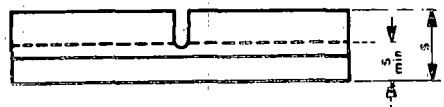


(1) Circumferential
(2) Radial

Brake disc thickness Unit: mm (in)

Brake disc	Single	Ventflated
Thickness:		
C_{min} after machining	10 (0.394)	21 (0.827)
C_{min} serviceability thickness	9 (0.354)	20.2 (.795)
'Max disc banking	0.03 (0.00118)	0.03 (0.00118)

Brake pad thickness



Unit: mm (in)

Brake disc	Single	Ventflated
Thickness:		
S	15.15 (0.596)	16.5 (0.650)
S min. (wear limit or min. serviceability thickness) (*)	7 (0.276)	7 (0.276)

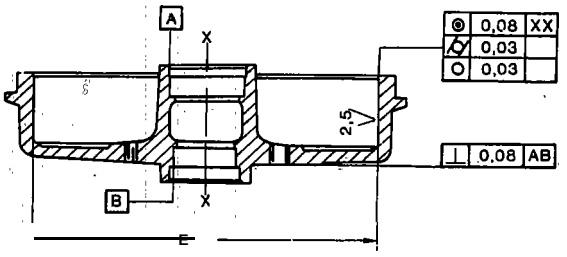
(*) Serviceability limit is determined, anyway, by the lighting up of brake pad wear waming lamp.

REAR BRAKES

Unit: mm

As for Alfa 33 except for:

Dimensions for brake drum turning



Drum nominal diameter	9"	8"
E max after turning	229,1	204
E max serviceability thickness	229,6	204,5
Cylindricity	< 0,03	< 0,03
Concentricity	< 0,08	< 0,08
Minimum thickness of brake linings (limit of wear or serviceability	0,5	

BRAKE PRESSURE PROPORTIONING VALVE

Adjustment

Diametro nominale tamburo	
9"	8"

- Vehicle at nominal height: one passenger and full petrol tank
- Piston of brake pressure propor-tioning valve pushed to the end of its stroke

- Apply a load of 49 N (5 kg) to the equalizer using a suitable hook	- Appli a load of 78,4 N (8 kg) to the equalizer using a suitable hook

ADJUSTMENT OF THE ANDBRAKE TRAVEL

Number of notches free on the toothed part before the wheels lock 1÷3

GENERAL SPECIFICATIONS

FLUIDS AND LUBRICANTS

Application	Type	Name
Refilling of hydraulic brake system	FLUID	Std. No. 3681-69906 AGIP Brake Fluid DOT 4 Std. No. 3681-69906 IP Auto Fluid FR DOT 4 Std. No. 3681-69906

GROUP 25

CONTENTS

Refer to Group 00 - Chassis and Body Maintenance for:

- **Checking Rear Suspension Height**

(*) Refer to: "WORKSHOP MANUAL Alfa 33" VOLUME I and 'VOLUME II - Group 25

SERVICE DATA AND SPECIFICATIONS

TECHNICAL DATA

COIL SPRING, SHOCK ABSORBER AND ANTI-ROLL, BAR

Features		Model / Version	Sport Wagon 33 1.3 S	Sport Wagon 33 1.7 ⊕	Sport Wagon 33 1.5 4x4	Sport Wagon 33 1.8 TD
Coil Spring	Alfa Romeo part No.		131990		131805	133007
	Wire diameter mm (in)		11.8 (0.464)		11.2 (0.440)	11.2 (0.440)
	Coil diameter mm (in)		111 (4.37)			
	Free length mm (in)		313 (12.32)		302 (11.89)	323 (12.72)
	Stiffness N/mm (kg/mm) (lb/in)		23,5 (2,4) (134.4)			
Shock absorber	Type		SPICA			
			BOGE		–	
			HYDRAULIC			
	Piston rod diameter mm (in)		12 (1) (0.472) 11 (2) (0.433)			12 (1) (0.472)
	Stroke mm (in)		180 (1) (7.088) 144 (2) (5.87)			180 (1) (7.088)

(1) For SPICA shock absorbers only
(2) For SOGE shock absorbers only

INSPECTION AND ADJUSTMENT

DATA OF SHOCK ABSORBER SETTING

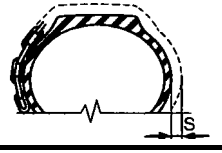
Features		Model / Version	Sport Wagon 33 1.3 S	Sport Wagon 33 1.7 ⊕	Sport Wagon 33 1.5 4x4	Sport Wagon 33 1.8 TD
TYPE			SPICA	BOGE	SPICA	SPICA
Alfa Romeo part. No.			549137	549130	549142	549141
Low speed	Compression	N (kg)	180 (18.4)	117.8 (12)	180 (18.4)	220 (22.4)
	Extension	N (kg)	120 (12.2)	117.8 (12)	200 (20.4)	220 (20.4)
High speed	Compression	N (kg)	520 (53)	481 (47)	520 (53)	520 (53)
	Extension	N (kg)	780 (77.5)	853 (87)	1180 (118.3)	1180 (118.3)

NOTA: The shock absorbers are intagrated in the strut tubes

GROUP 28

CONTENTS

(*) Refer to: "WORKSHOP MANUAL Alfa 33" VOLUME I and VOLUME II - Group *28*

Dimension / Model				Sport Wagon 33 1.3 S		Sport Wagon 33 1.7 8		Sport Wagon 33 1.5 4x4		Sport Wagon 33 1.8 TD	
TIRE	RIM	LOAD	Unit of measurement	INFLATING PRESSURE (1)							
				A	P	A	P	A	P	A	P
165/70 SR13	5 1/2 J x 13"	N V	Kg/cm²	1.8 1.8	1.8 2.2						
175/70 R13 82T	5 1/2 J x 13"	N V		–	–	–	–	1.8 1.8	1.8 2.2	2.2 2.2	1.8 2.2
185/60R14 82H	5 112 J x 14"	N V		–	–	1.8 1.8	1.8 2.2	–	–	–	–
Balance (max. allowed residual balance)			g	8							
Balance weights			g	10 ÷ 40 (at 10 g intervals)							
Snow chains Chain "S" max. dimensions (for tires 165/70 SR13) 			mm	16							

A = Front .
P = Rear
N = With reduced load and touring riding
V = With full load and steady top speed riding

SR rating = Up to 180 Km/h (112 m.p.h.)
T rating = Up to 190 Km/h (118 m.p.h.)
H rating = Up to 210 Km/h (130 m.p.h.)

(1) Inflating pressure measured with cold tires.

In particularly heavy operating conditions (max. load, high temperatures, high speeds, etc...) it is advisable to increase inflating pressures by 0.2 kg/cm² (0.2 bar; 20 kPa; 2.84 p.s.i.).

In the event of rear axle overloading (trailer hauling. (L.P.G. tank, etc...) it is advisable to increase rear tires inflating pressure by 0.6 kg/cm² (0.6 bar; 60 kPa; 8.53 p.s.i.).

Unit of measurement conversion:

2.2 kg/cm² = 2.16 bar = 216 kPa = 31.30 p.s.i.
1.8 kg/cm² = 1.76 bar = 176 kPa = 25.6 p.s.i.
1.6 kg/cm² = 1.57 bar = 157 kPa = 22.76 p.s.i.

GROUP 49

CONTENTS

(*) Refer to: "WORKSHOP MANUAL Alfa 33" VOLUME I and VOLUME II - Group 49'

4

GENERAL INFORMATION

WHEEL ALIGNMENT

CAUTION:
The technicians assigned to the repair and repiacement operations of sheet panels, shall always take into account, content of the remaining part of the "Workshop Manual" in order always to maintain original quality and functioning conditions of car as a whole. As restoration of car correct alignment is of particular importance, in the following part are provided the data relevant to geometry of both front and rear suspensions. For anv further information, refer to the soecific Grouos.

Wheel alignment is measured with car under nominal height (see: Group 00).

1. Front axle and suspension.

Models / features		Sport Wagon 33 1.3 S	Sport Wagon 33 1.7 8	Sport Wagon 33 1.5 4x4	Sport Wagon 33 1.8 TD
Toe-out	mm	M – H = 4±2			M – H = 2±2
Toe-out angle		a= 10'			a= 10'
Fiim diameter	mm	340	365	340	
Camber angle		β = –1° ±30'			β = –1°55' t-30'
Caster angle		γ = 2° ±30'			γ = 1° ±30'
Max steering' angle	External angle	6, = 27° 50'			δ_1 = 29° 33'
	Internal angle	6, = 33° 45'			δ_2 = 35" 10'

2. Rear axle and suspension

Models / Features	Sport Wagon 33 1.3 S	Sport Wagon 33 1.7 8	Sport Wagon 33 1.5 4x4	Sport Wagon 33 1.8 TD
Toe-in angle	a = - 2 0 ' ±10'			a= 0" ±25'
Camber angle	β = 0° ±25'			