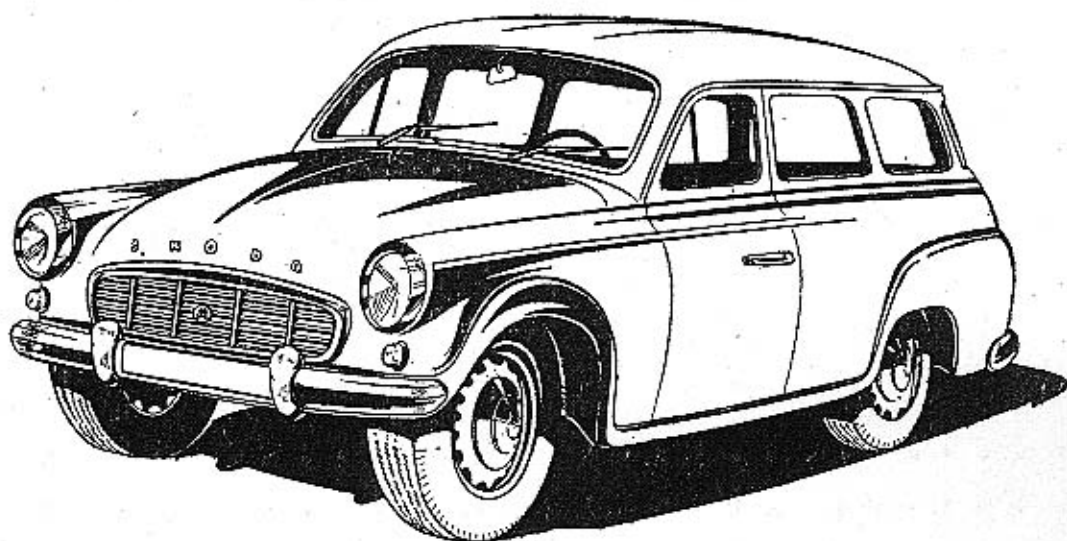


# WORKSHOP MANUAL

# ŠKODA

## 1202



— EDITION 1962 —

AUTOMOBILOVÉ ZÁVODY N. P. ML. BOLESLAV

## FOREWORD

The development system adopted in the manufacture of ŠKODA cars, i. e. of the complete range of models such as Š 440, Š 445, Š 450, Š 1201, OCTAVIA, OCTAVIA Super, Touring Sport, Combi, FELICIA etc. is based on the fact that identical, or possibly slightly modified chassis components are used for the respective alternatives, that identical bodies or again slight body variations are employed, or possibly special purpose bodies, built for the respective model.

The ŠKODA 1202 range is likewise based on this sectional system. Their engine and rear axle are slight modifications of those employed for the ŠKODA OCTAVIA Super, the clutch and gearbox are the same as those of the above model; major differences are in the front axle, suspension and coachwork, which are built so as to comply to the respective purpose.

A special service shop manual has been issued for the ŠKODA OCTAVIA (as well as for the remaining models of the OCTAVIA range, FELICIA, Š 440, Š 445 and Š 450), called **basic manual** further on, to serve as a guide in their maintenance and reconditioning. With regard to the similarity of certain components — as mentioned above — we have issued the service shop manual for the ŠKODA 1202 cars (briefly also Š 1202 cars) in the form of supplementary chapters to the above basic manual.

**Be sure, therefore, to observe the directions given in the basic manual as well as those given in this supplementary manual for the maintenance and reconditioning of the ŠKODA 1202 cars, while employing also the spare parts catalogues issued for the respective models, as well as the Technical Instructions and Bulletins.**

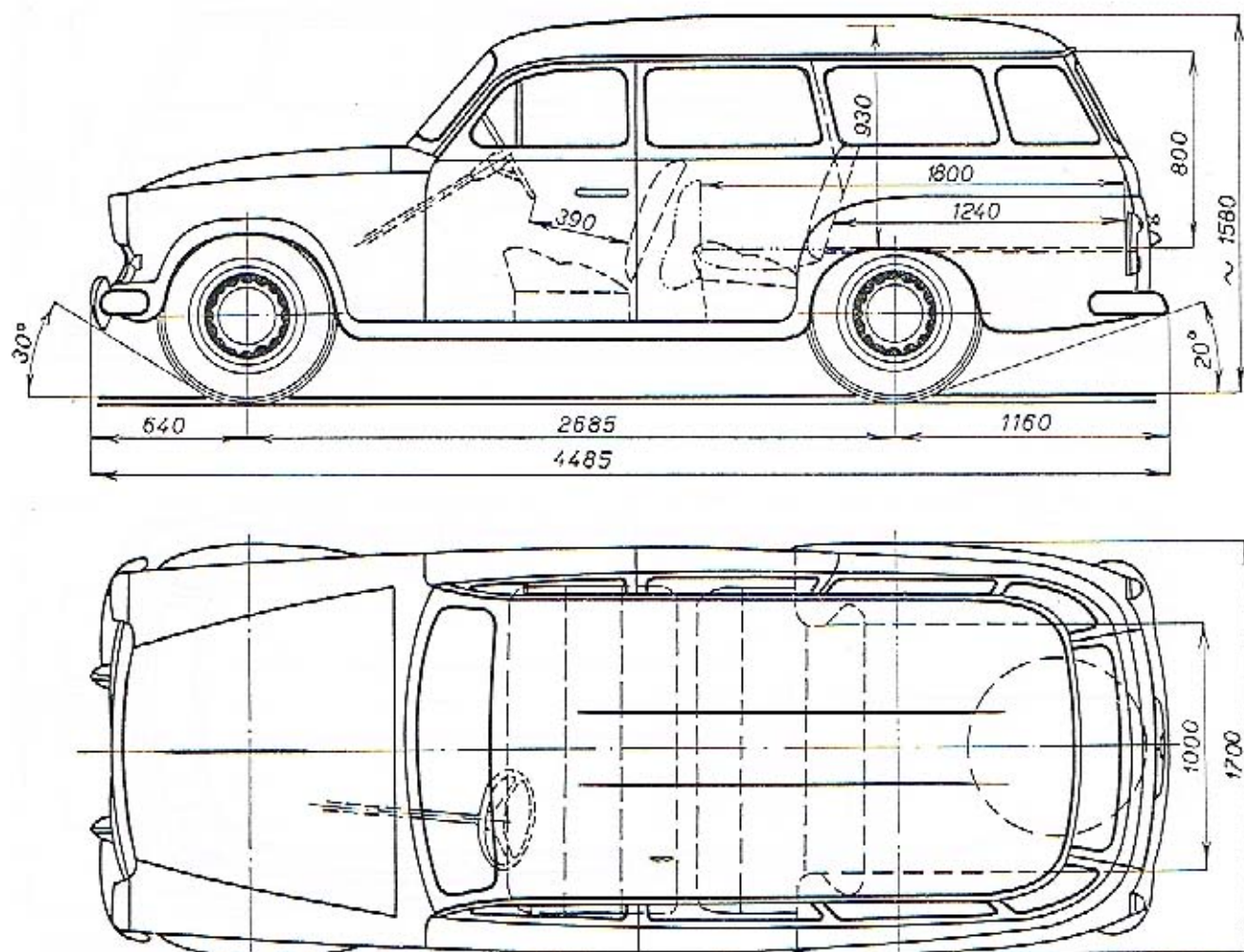
The catalogues or lists of spare parts give a clear survey of the individual assembly groups employed in the respective series; the Technical Instructions and Bulletins bring news regarding various changes occurring in the course of manufacture as well as directions informing how these changes can be taken advantage of with cars in service.

MOTOKOV

# ŠKODA 1202 — TECHNICAL DATA

## A. VEHICLE:

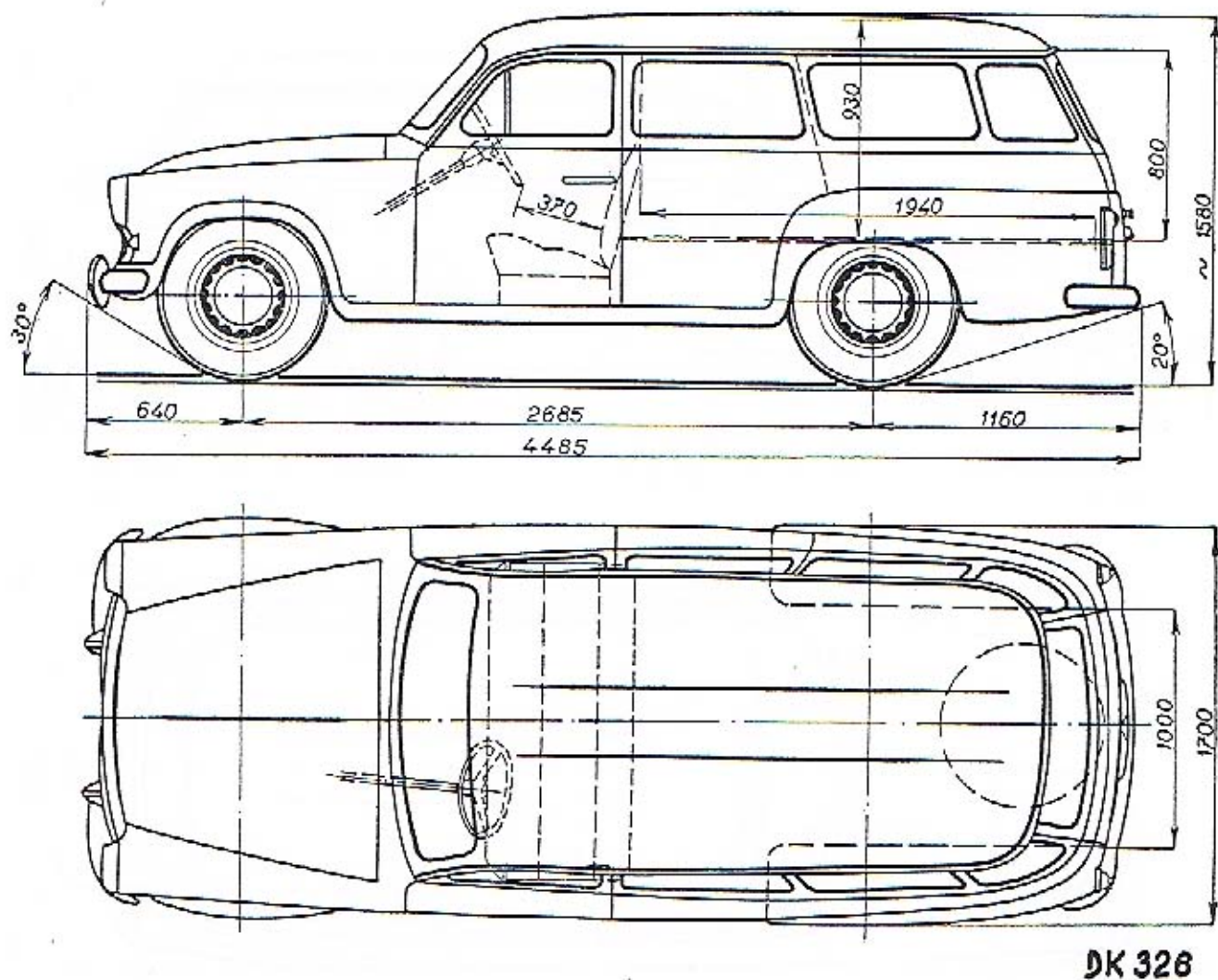
Makers  
Motor Car Works, National Corporation,  
Mladá Boleslav, Czechoslovakia



DK 324

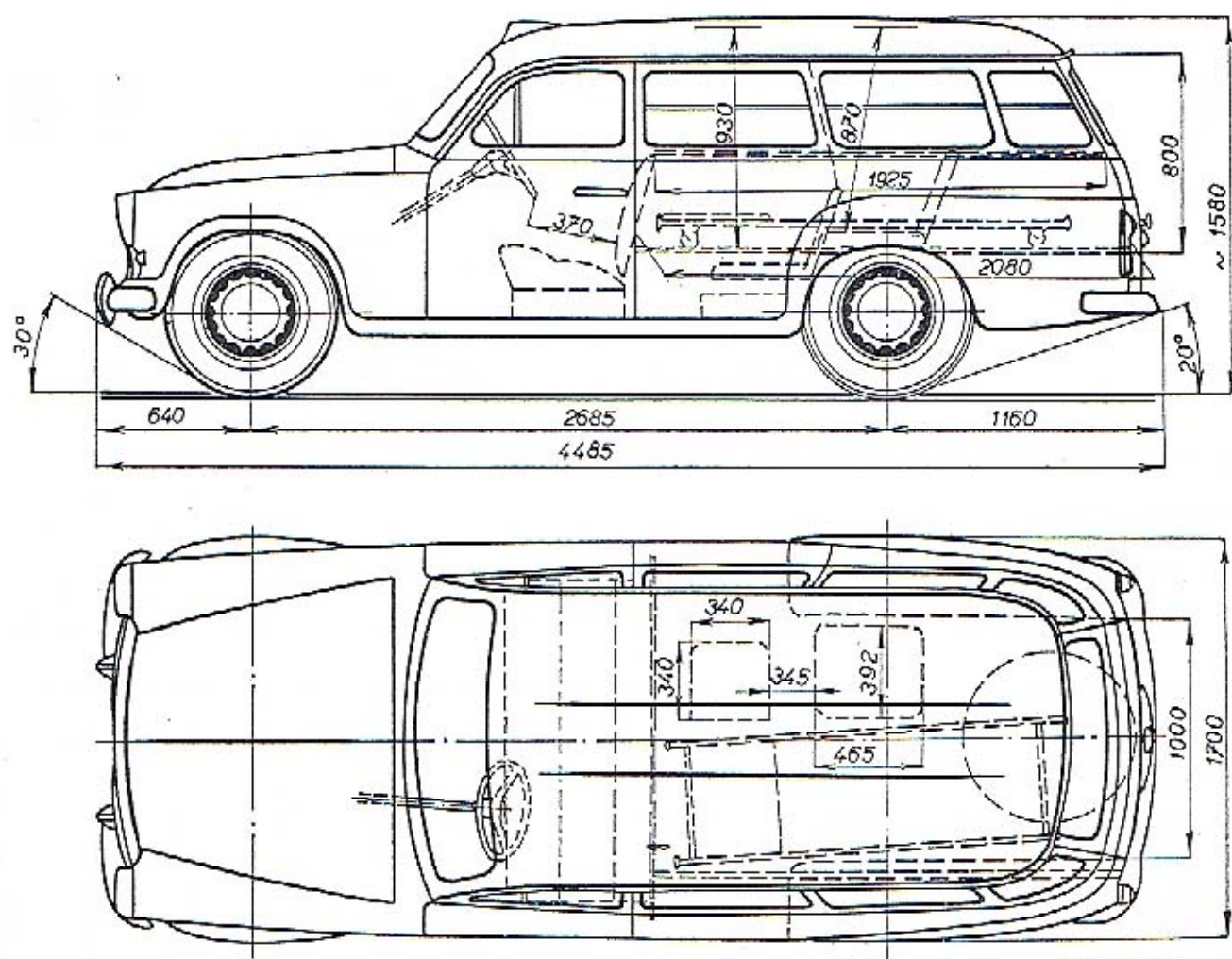
Fig. 1. — ŠKODA STW — Dimensional Drawing





**DK 326**

Fig. 1a. — ŠKODA Delivery Van — Dimensional Drawing



DK 329

Fig. 1b. — ŠKODA Ambulance Car — Dimensional Drawing

Dimensions:	STW			Delivery Van			Ambulance Car		
	mm	ft.	in.	mm	ft.	in.	mm	ft.	in.
Track, front	1250	4	1,2	1250	4	1,2	1250	4	1,2
rear	1320	4	4	1320	4	4	1320	4	4
Wheelbase	2685	8	9,7	2685	8	9,7	2685	8	9,7
Ground clearance	190		7,5	190		7,5	190		7,5
Overall length	4485	14	8,6	4485	14	8,6	4484	14	8,6
Overall width	1700	5	7	1700	5	7	1700	5	7
Overall height	1580	5	2,2	1580	5	2,2	1580	5	2,2

Weights:	kg		lbs		kg		lbs		kg		lbs	
Curb weight	1100		2425		1080		2381		1160		2557	
Dry weight	1062		2341		1040		2293		1120		2469	
Maximum gross weight, full load	1750		3858		1730		3814		1530		3373	

#### Permissible axle pressures:

Front	650	1389	630	1345	600	1323
Rear	1100	2425	1100	2425	930	2050
Payload	650	1433	650	1433	370	816

Performance specifications:	km. p. h.		m. p. h.	
Top speed, level road	100		62,1	
Maximum speed, 1st	25		15,5	
II <sup>nd</sup>	43		26,7	
III <sup>rd</sup>	60		37,3	
IV <sup>th</sup>	100		62,1	
Minimum speed, IV <sup>th</sup>	20		12,4	

#### Speed limits when running — in or after general overhaul:

Mileage:		I.		II.		III.		IV.	
km	m	km	m	km	m	km	m	km	m
up to 700	400	15	9,3	25	15,5	35	21,7	60	37,3
700—1500	400—900	20	12,4	30	18,6	45	28	75	46,6
1500—3000	900—1800	20—23	12,4—14,3	35—40	27,7—25	50—60	31—37,3	80—90	50—56

Fuel consumption, average speed 66 km or 41 m. p. h.	lt/100 km	m. p. l. g.
	9,4	30
Oil consumption, max.	0,1	2820

#### Climbing ability (rear axle ratio 5.25 to 1):

average speed 66 km or				STW & Delivery Van				Ambulance Car		
41 m. p. h.		9,4	30							
Oil consumption, max.		0.1	2820							
Acceleration, full load:		IVth	IIIrd	%	km. p. h.	m. p. h.	%	km. p. h.	m. p. h.	
km. p. h.	m. p. h.	seconds	seconds							
20—50	12.4—31	21 to 23	10 to 11	Ist	27.6	15	9.3	34	15	9.3
35—65	21.7—40.4	42 to 26	12 to 14	IInd	14.6	25	15.5	17.5	25	15.5
50—80	31 —49.7	30 to 34	16 to 19	IIIrd	8.5	35	21.7	10.4	32	19.9
0—80 km p. h. or 50 m. p. h. through gears: 25 to 29 seconds.				IVth	4.2	60	37.3	5.4	50	31

#### B. ENGINE

Type: Water cooled, four stroke, OHV, carburation petrol engine  
Cylinders: 4 in line  
Cooling: Water cooling with pump; temperature control by thermostat and radiator blind.

Water temperature checking by telathermometer  
Swept volume: 1221 c.c. or 73.26 cu. in.  
Bore: 72 mm or 2.83"  
Stroke: 75 mm or 2.95"  
Compression ratio: 7.5 to 1  
Maximum speed: 4500 RPM



SAE power output: 46 to 47 HP at 4500 RPM  
 Power output per 1 litre swept volume: 38 HP  
 Engine dry weight, approx.: 103 kg or 227 lbs  
 Weight per 1 HP output: 2.20 kg/1 HP or 4.85 lbs/HP  
 Maximum torque: 8.7 kgm or 62.92 ft. lb. at 3000 RPM

**Valve timing** (at 0.40 mm or .016" reference valve clearance):

Intake opens	3° before	TDC
Intake closes	45° after	BDC
Exhaust opens	47° before	BDC
Exhaust closes	9° after	TDC

**Service valve clearance, cold:**

	mm	in
Intake	0.15	.006
Exhaust	0.20	.008

Engine lubrication	Force feed, circulation by gear pump
Oil pressure, engine hot	2.5 to 3 kg/cm <sup>2</sup> or 35.6 to 43 psi at 3200 RPM
Oil pressure warning light comes on, whenever oil pressure drops below	1kg/cm <sup>2</sup> ± 0.2 kg/cm <sup>2</sup> or 14.2 ± 2.8 psi
Crankshaft bearings, number and type	3 steel shells lined with white metal
Connecting rod bearings	Thin-wall liners
Carburettor	JKOV 32 SOPc downdraught
Engine starting	By PAL electric starter motor, 90 mm or 3.54" dia., 0.8 HP/12 V
Firing order	1 — 3 — 4 — 2

**C. CLUTCH**

Type	Dry, single — plate, direct release clutch
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**D. GEARBOX**

Type	With helical spur gears
Speeds	4 forward speeds + one reverse; IInd, IIIrd and IVth speed gears provided with synchro-lock
Dry weight of gearbox assy.	18.8 kg or 41 lbs
Gear change	By steering wheel column-mounted gear change lever

**Gear ratios:**

1st speed	4.27 to 1
2nd speed	2.46 to 1
3rd speed	1.59 to 1
4th speed	1 to 1
Reverse	5.61 to 1

**E. REAR AXLE:**

Type	With swinging half-axes; attached to flange of chassis backbone tube
Suspension	By transverse semi-elliptical leaf spring
Shock absorbers	
(suspension dampers)	Lever-type, hydraulic
Differential	Bevel gears
Transmission ratio	5.25 to 1
Constant reduction in rear axle housing	GLEASON-cut bevel gears

**F. FRONT AXLE:**

Type	With trapezoidal half-axes; bottom arms formed by semi-elliptical, transverse leaf spring, top arms of wishbone type serve also as damper arms
Suspension	By semi-elliptical leaf spring
Shock absorbers	Lever-type, hydraulic
(suspension dampers)	

## Front wheel geometry

### Wheel alignment:

Toe-in	3 to 4 mm or .12 to .16"
Camber angle	$1^{\circ}30' \pm 30'$
King pin inclination	$5^{\circ}$
Castor angle	$3^{\circ}30'$

## G. BRAKES

Foot-operated brake	Hydraulic, internal expanding shoe-type four-wheel brake
Hand brake	Mechanically operated, internal expanding shoe-type rear wheel brake; controlled by lever under facia panel

### Brake lining (front and rear wheel brakes):

	mm	in.
Lining with	35	1.38
Lining thickness	4	.157
Brake lining area	674 sq. cm or 104 sq. in.	

## H. STEERING

Type	With worm and nut
Steering worm pitch	15 mm or .591"
Steering wheel diameter	400 mm or 1'3.75"
Steering lock	$38^{\circ}/28^{\circ}$
Number of steering wheel turns at full lock	3.5

## I. WHEELS AND TYRES

Number of wheels	$4 \pm 1$
Wheel rim	4.00 E X 16"
Tyre	6.00 — 16"
Tyre diameter	$725 \pm 6$ mm or 2'4.54" $\pm .236$ "

Tyre width	
Effective radius: statical	$337 \pm 3$ mm or 1'1.27" $\pm .12$ "
dynamic	$340 \pm 3$ mm or 1'1.40" $\pm .12$ "

Tyre casing, weight	12.50 kg or 27.56 lbs
Tyre tube, weight	1.60 kg or 3.53 lbs



## J. FUEL SYSTEM

Petrol tank, capacity	38 lt or 8.4 Imp. gallons
Fuel transfer	By diaphragm petrol pump
Fuel filtration	In carburettor inlet line

## K. CHASSIS LUBRICATION

Centralized; some points fitted with separate grease nipples

## L. ELECTRICAL EQUIPMENT

Voltage	12 V
Ignition system	Battery ignition, stage I interference suppression
Ignition coil	PAL-MAGNETON 02-9215.01
Ignition distributor	PAL-02-9204.306 with vacuum ignition timing device
Distributor drive	By worm gears from camshaft
Contact breaker, point gap	0.3 to 0.4 mm or .012 to .016"
Starter motor	Electromagnetic, PAL 09-9142.02, 0.8 HP
Dynamo (D.C. generator)	PAL-MAGNETON 02-9044.00
Storage battery	Akuma 6 ST 50, 50 Ah/20 h discharge
Ignition switch box	Two-point, ignition-starting
Light switch box	Two-point, headlamps

### Spark plugs

Thread	M 14 X 1.25
Thermal value	195
Type supplied	PAL Super. 14—7
Electrode gap	0.6 to 0.7 mm or .024 to .028

### Lighting set:

#### Headlamps

Two — in front wings — type PAL 170 mm dia., asymmetric, with two-filament asymmetric bulb 12 V—45/40 W for long range beam and dip light. In case of symmetric headlamps: symmetric twin-filament bulb 12 V 45/40 W. Control by push-pull switchbox link; foot-operated dip switch.

#### Parking (traffic) lights

In headlamps; 12 V—1.5 W bulbs. Control from switchbox.

#### Stop lights

In combination tail lamp clusters; bulbs 12 V—20 W.

#### Tail lights

In tail lamp clusters; 5 W filament of twin-filament bulb 12 V—20/5W

Engine compartment light	Bulb 12 V—15 W. Control by push-pull switch, comes on automatically whenever bonnet is opened with lights on.
Reversing lights	In tail lamp clusters — bulbs 12 V—20 W. Control by push-pull switch next to steering box; come on whenever reversing with lights on.
Instrument illumination	Bulbs 12 V—1.5 W (lights on).
Number plate light	Separate lamp with two bulbs 12 V—5 W.
Dome lamp in berth compartment	Combination lamp with two bulbs 12 V—5 W and 15 W.
Ambulance sign lamp	Above windscreen — by bulb 12 V—5 W.
Fog lamp (ambulance)	Bulb 12 V—35 W.
<b>Signal set</b>	
Electric horn	Electromagnetic, diaphragm type, model PAL.
Trafficators (Direction indicators)	Flasher-type, switch control on facia panel
Front trafficators:	Separate bulbs 12 V—20 W.
Rear trafficators:	In tail light cluster; 20 W filament of twin-filament bulb 12 V—20W/5W.
Special attachments	Electric windscreen wiper, tandem layout with single motor. Inspection lamp socket. Battery charge warning lamp (dark ruby). Oil pressure warning lamp (bright crimson). Country beam warning lamp (blue) 12 V—1.5 W. Trafficator warning lamp (amber).

## M. BODYWORK

	STW	Delivery Van	Ambulance Car
Type	Al-metal	All-metal	All-metal
Doors	4	4	4
Seats	2 + 3	2	3 + 1
Stretchers	—	—	1

### Payload compartment:

	mm	ft.	in.	mm	ft.	in.	
Length	1800	5	11	1940	6	4.4	—
or	1240	4	1				
Height	930	3	1½	930	3	1½	—
Width	1350	4	5	1500	4	11	—

Heater unit: Hot water type

## N. FILLING CAPACITIES

Engine oil	2.9 lt	or	2.56 Imp. quarts
Gearbox (oil)	0.7 lt	or	1.232 pt
Rear axle housing	1.5 lt	or	1.32 Imp. quart
Steering box (oil)	0.16 lt	or	0.28 pt.
Brake fluid	0.6 lt	or	1.06 pt
Suspension dampers, front	[0.35 lt	or	0.616 pt each]
Suspension dampers, rear	[0.35 lt	or	0.616 pt each]
One-shot lubrication	0.4 lt	or	0.7 pt
Fuel tank (petrol)	38. lt	or	8.36 Imperial gallons
Cooling water	6.5 lt	or	1.43 Imperial gallons



## ENGINE

With the exception of the centre cross member, the lugs of which for the attachment of the silentbloocks are reverse-bent, the engines of the Š 1202 cars are identical with those of the OCTAVIA Super car from 1961 onwards. In addition, the engine of the Ambulance Car differs from the standard Š 1202 engine by its water pipe line (threeway tap on the cylinder head cover) for heating of the interior by means of two heater units.

## CLUTCH

See basic Service Shop Manual, Chapter OCTAVIA Super CLUTCH.

## GEARBOX

See basic Manual, chapter OCTAVIA Super-model 1961 — GEARBOX.

## PROPELLER SHAFT

The propeller shaft, consisting of two parts, has a centre bearing which is resilient-mounted inside the chassis backbone tube (approximately in the middle) by means of rubber rings. The bearing is fastened by two adjuster bolts and nuts. The shaft joints are fitted with needle rollers. For the individual parts refer to the List of Spare Parts, for the layout of the centre bearing see Fig. 5.

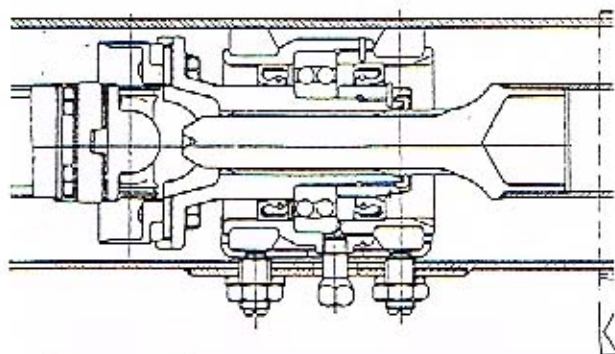


Fig. 5. Propeller Shaft — Centre Bearing

The shaft is set up so that the centre lines of the flanges of the sliding extension on the splines of the front shaft are flush; in this position, the shaft is checked and balanced for round running up to 4500 RPM. Whenever dismantling the gearbox or possibly the entire propeller shaft, be sure to mark the respective position of the sliding hub on the front shaft. The position of the rear shaft on the splines of the centre bearing hub is not so important as to affect the operation of the shaft which can be fitted to the splines in any position.

After approximately 50.000 km or 31.000 miles it is advisable to remove the shaft assembly, dismantle the bearings of the joint spider pins, clean the needle rollers and bearings from old lubricant and repack with ball bearing grease. Attend in a similar manner to the centre bearing. For lubrication of the extension splines use graphite grease. Be sure to lubricate the splines of the sliding hub on the front shaft also whenever dismantling the gearbox.

## REAR AXLE

With certain exceptions, not likely to affect the basic fitting procedure, such as constat reduction gears (bevel pinion and crown wheel), road spring, rear cross member, lever type suspension dampers- the rear axle is identical with that of the Š 440.

Observe the directions given in the respective chapter of the basic Manual for assembly and dismantling.

Tightening torque of the rear spring yoke nut is 12 kgm or 86.8 ft/lb.

### Spring suspension:

In case of fitting a new spring, refer to Fig. 7 for basic suspension of the spring eyes in the mountings.

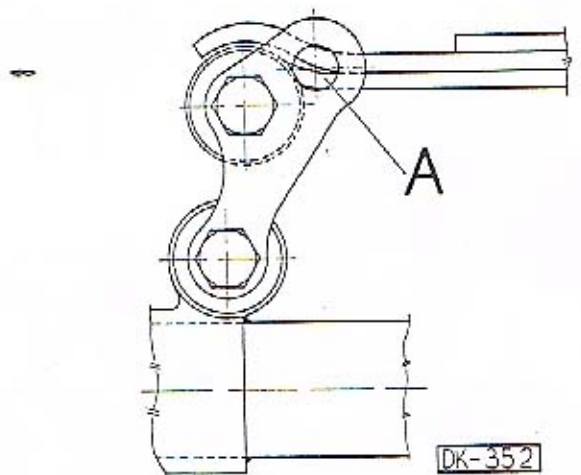


Fig. 7. Rear Spring Suspension



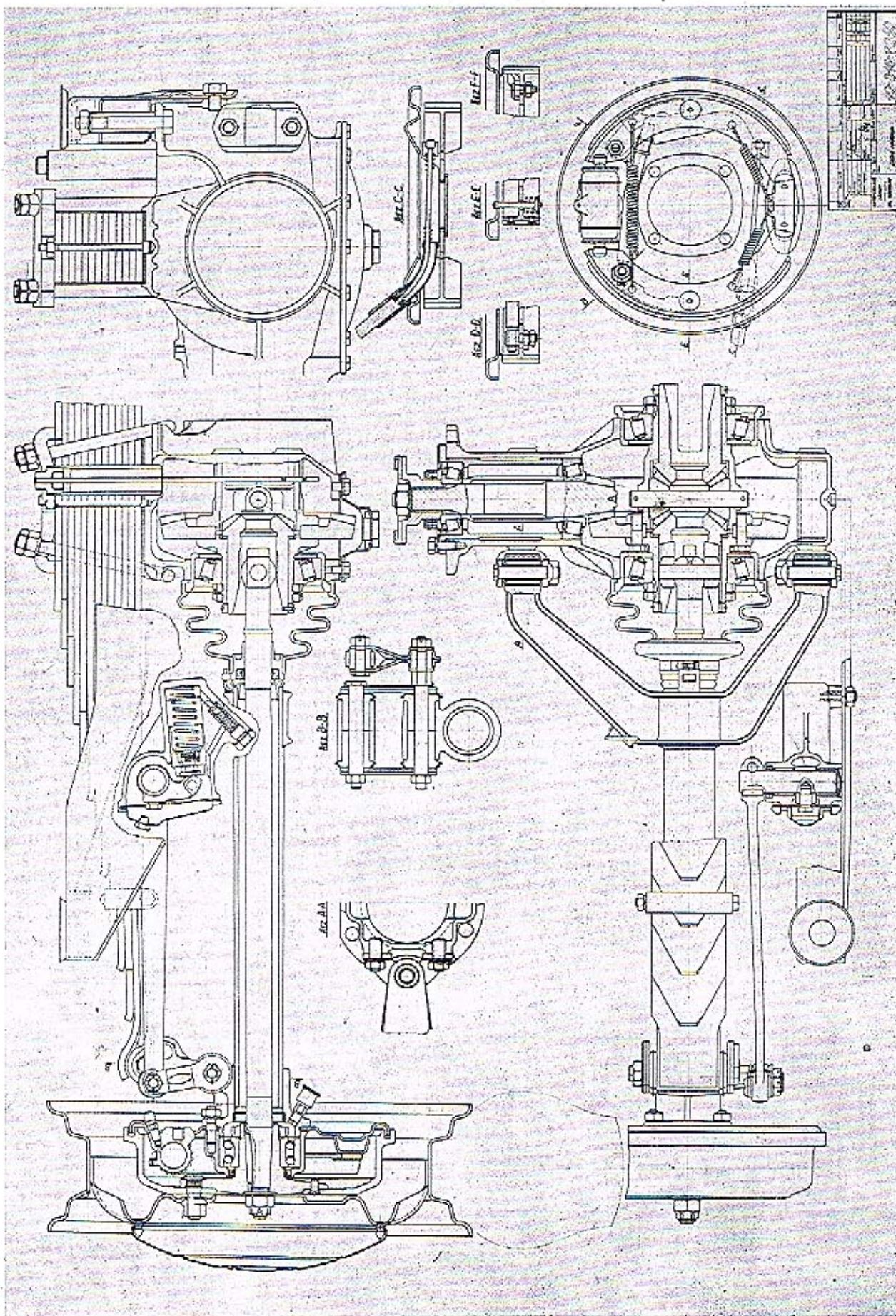


Fig. 6. Rear Axle — Section View



Whenever fatigue of the spring in service occurs, i. e. its deflection is inadequate, so that the road wheels incline towards the centre line of the car when fully loaded, this trouble can be partly eliminated and the service life of the spring prolonged by removing the shackle pin and suspending the spring into the second hole of the shackle, marked with the letter «A» in the picture.

## FRONT AXLE

The front axle has independently sprung wheels; wheel suspension is trapezoidal. The bottom arm is formed by the transverse semielliptical leaf spring, the top arm is formed by the lever of the suspension damper. The arms are mounted in rubber bushes.

The respective set-up can be seen in the Tables of the List of Spare Parts; for particulars regarding fitting and dismantling refer to the basic Manual, chapter FRONT AXLE (§ 440). The front axle is similar to that of the § 440 model by its design.

To remove the wheel hub cap use the MP 6-08 puller (remover), for driving it home, the MP 6-07 drift (installer) as described in case of the OCTAVIA front axle.

### Front wheel geometry, no load:

Toe-in	3 to 4 mm or. 12 to. 16"
Camber angle	1° 30'
Maximum difference in either wheel camber	0° 45'
King pin inclination	5°
Caster angle	3° 30'

To adjust the toe-in rotate the LH steering track rod. Then lock the rod clamp nuts in position by bending the tab of the tab washer.

The camber angle can be adjusted (increased) by installing shims 10-281-5109 (1 mm or .04" thickness) or 10-282-5109 (2 mm or .08" thickness) under the securing flange of the suspension damper. Slacken the bolts of the damper and install as many shims as necessary on the bolts (lip down).

The shape of the adjusting shims can be seen in Fig. 8. A shim of 1 mm or .04" thickness increases the camber angle by 0° 15'.

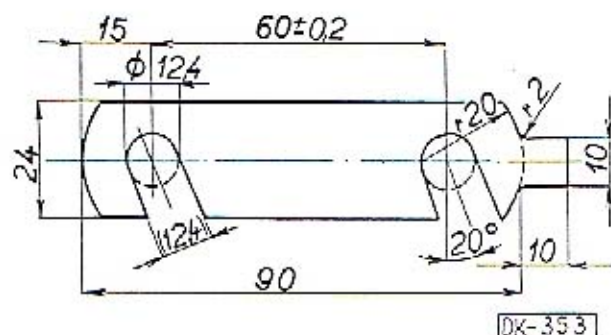


Fig. 8. Shim to Damper for Camber Adjustment.

## STEERING

The steering system is similar to that of the § 440 model, a major difference being the asymmetric layout of the steering linkage. For the respective set-up refer to the Tables of the List of Spare Parts; for directions regarding the fitting and dismantling procedures refer to the basic Manual, chapter STEERING.

For pulling off the steering wheel use the steering wheel puller (remover) of the OCTAVIA model.

## SUSPENSION DAMPERS (SHOCK ABSORBERS)

The hydraulic suspension dampers or shock absorbers are of the single-acting lever type. The rear suspension dampers serve for dampening only, while the front ones form, in addition, also the suspension arm of the half axle by their arm.

The layout of the dampers can be seen in the respective Tables of the List of Spare Parts; for the principal directions regarding adjustment refer to the respective chapter of the basic Service Shop Manual.

Whenever replacing the shaft after the damper has been dismantled, proceed with caution in order not to damage the shaft seal by the sharp edges of the bore taking bolt of the cam depressing the plunger, and, in the case of the front damper, also by the sharp edges of the slot for the arm bolt. It is advisable to manufacture an auxiliary quadrant of thin metal sheet, to be installed into the seal at the point through which the disconnected shaft will be pushed home, and removed after the shaft has been installed in position — or at least to round the edges of the disconnected surfaces.

Use dampers adjusted to the following values as pattern reference dampers:

	Dampening effort		Arm stroke		Strokes per minute
	kg	lbs	mm	in	
Front damper	60 ± 5	132.3 ± 11	190	7.48	68
Rear damper	45 ± 5	99.2 ± 11	190	7.48	68

## BRAKES

The brake system is similar to that of the § 440 model, the master cylinder having a diameter of 22 mm or .866" like the OCTAVIA model. For directions regarding fitting and adjustment procedures refer to the basic Service Shop Manual.

Brake lining width is 35 mm or 1.38", thickness 4 mm or .16". When reconditioning the braking



surface of the drum, the original drum diameter of 230 mm or 9.055" can be increased to 231 mm or 9.094". Be sure to clamp in position the drum for machining with the utmost care. The machined surface may present a maximum out-of-true of  $\pm 0.05$  mm or .002" with regard to the centering bore of the drum of 85 mm or 3.35" dia., and a maximum overall out-of-round of 0.1 mm or .004".

The brake system is filled with SYNTOL No. 1 brake fluid of Czechoslovak make. The fluid is red. Avoid topping up the fluid with other brands of brake fluid. The only exceptions are the BEREVOL fluid of Swedish make, and O-Key or LOCKHEED of British make. Whenever another brand of fluid must be used, be sure to drain completely the original filling, flush the entire brake system with ethylalcohol, and only then refill the fresh fluid.

Slacken all the bleeder screws on the wheel brake cylinders and fit them with hoses so as to let the fluid flow into suitable containers.

Depress the brake pedal repeatedly so as to expel the original fluid, fill the tank with ethylalcohol and flush the entire brake system by depressing the brake pedal repeatedly.

Refill the tank with fresh fluid, leave only one bleeder screw open, expel any remnants of ethylalcohol from the system by depressing the brake pedal repeatedly, and bleed the open brake line branch. Proceed in the same manner with the remaining brake line branches and bleed them.

## WHEELS AND TYRES

For the interchange and servicing of tyres refer to the basic Service Shop Manual.

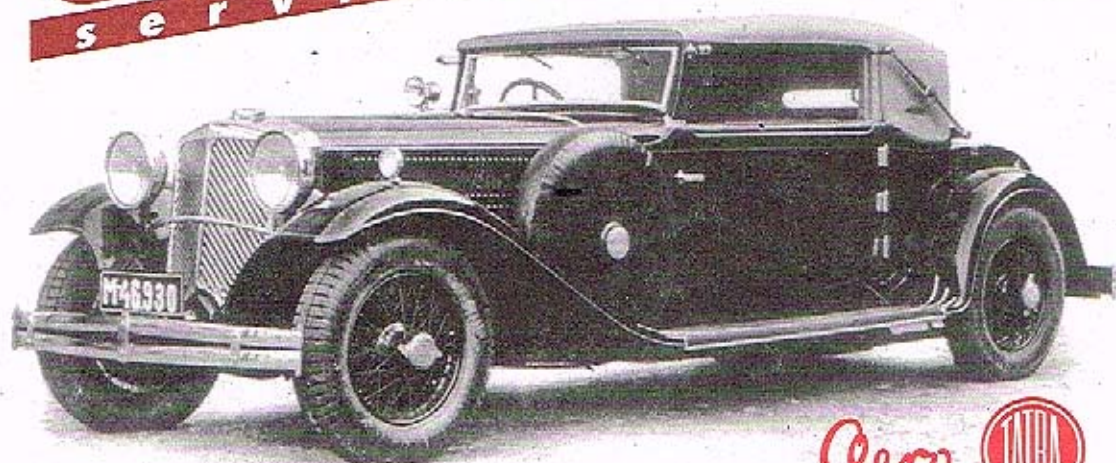
Rim size	4.00 E X 16"
Tyre size	6.00-16"

Inflation pressure, full load:

	kg/cm <sup>2</sup> Front	tyres psi	kg/cm <sup>2</sup> Rear	tyres psi
STW and Delivery Van	1.3	18.5	2.5 to 2.7	35.6 to 38.4
Ambulance Car	1.2	17	1.8 to 2	25.6 to 28.45

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# CHASSIS FRAME

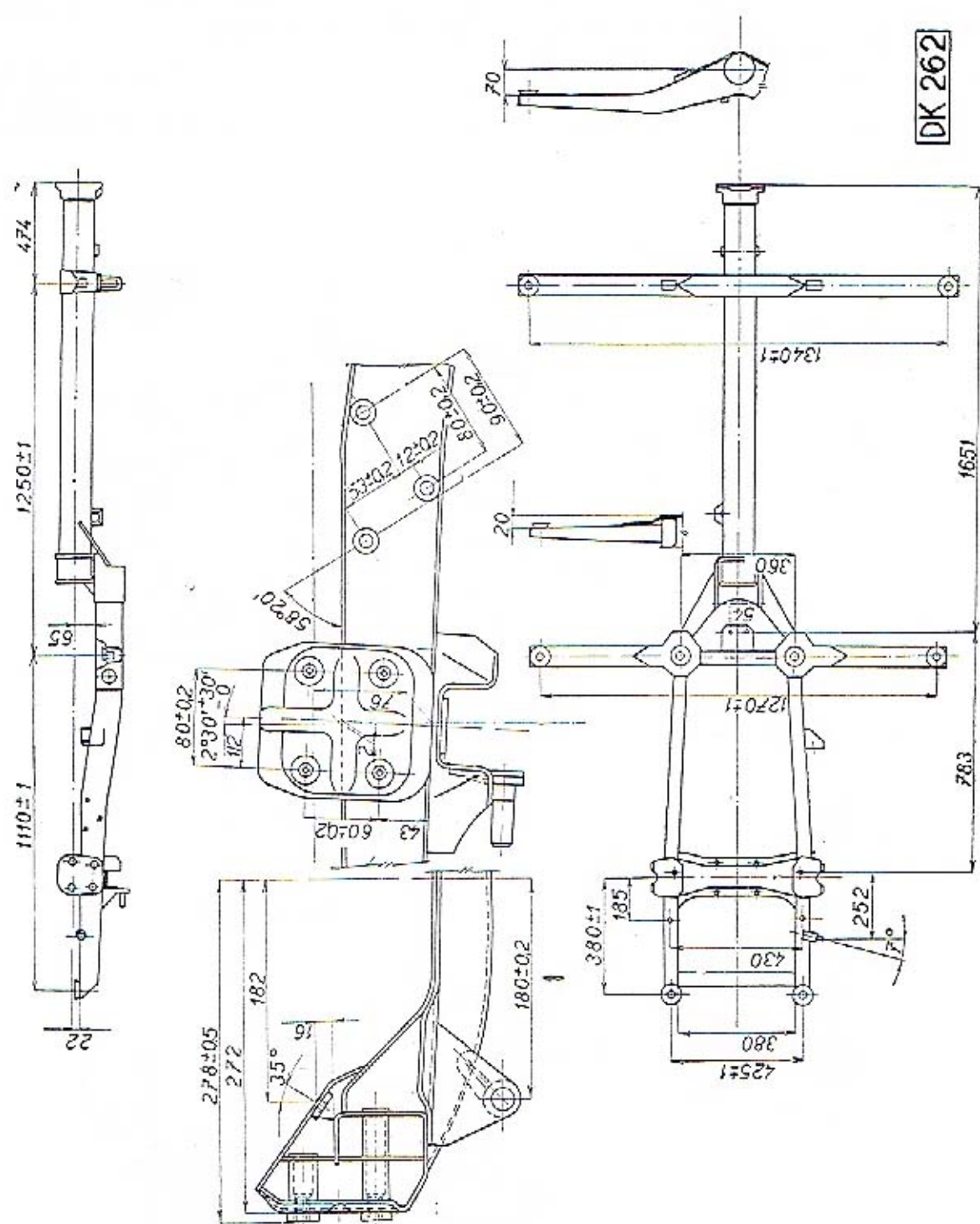


Fig. 9. Chassis-Frame — Main Dimensions

## ELECTRICAL EQUIPMENT

The electrical equipment operates with a voltage of 12 V. It is of the single-lead system (one pole being formed by the car mass) and screened by incorporating interference suppressor resistances into the spark plug cables and HT cables of the ignition coil. The appliances are protected with 15 A fuses. The fuse box is arranged on the bulkhead near the LH corner of the fascia panel, together with the voltage regulator and trafficator circuit breaker.

The dynamo, starter motor, voltage regulator and ignition coil are identical with those of the

remaining car models, the ignition distributor is the same as that of the OCTAVIA model 1961 (Part No. 02 9204.306, with 20° regulation range). For description and data refer to the basic Manual; likewise directions regarding servicing of the storage battery will be found in the Manual. For data regarding the remaining electrical appliances refer to the chapter TECHNICAL DATA, paragraph ELECTRICAL EQUIPMENT.

In case of replacement of the original PAL Super 14-7 spark plug with one of another make, be sure to use a spark plug of 195 thermal value.

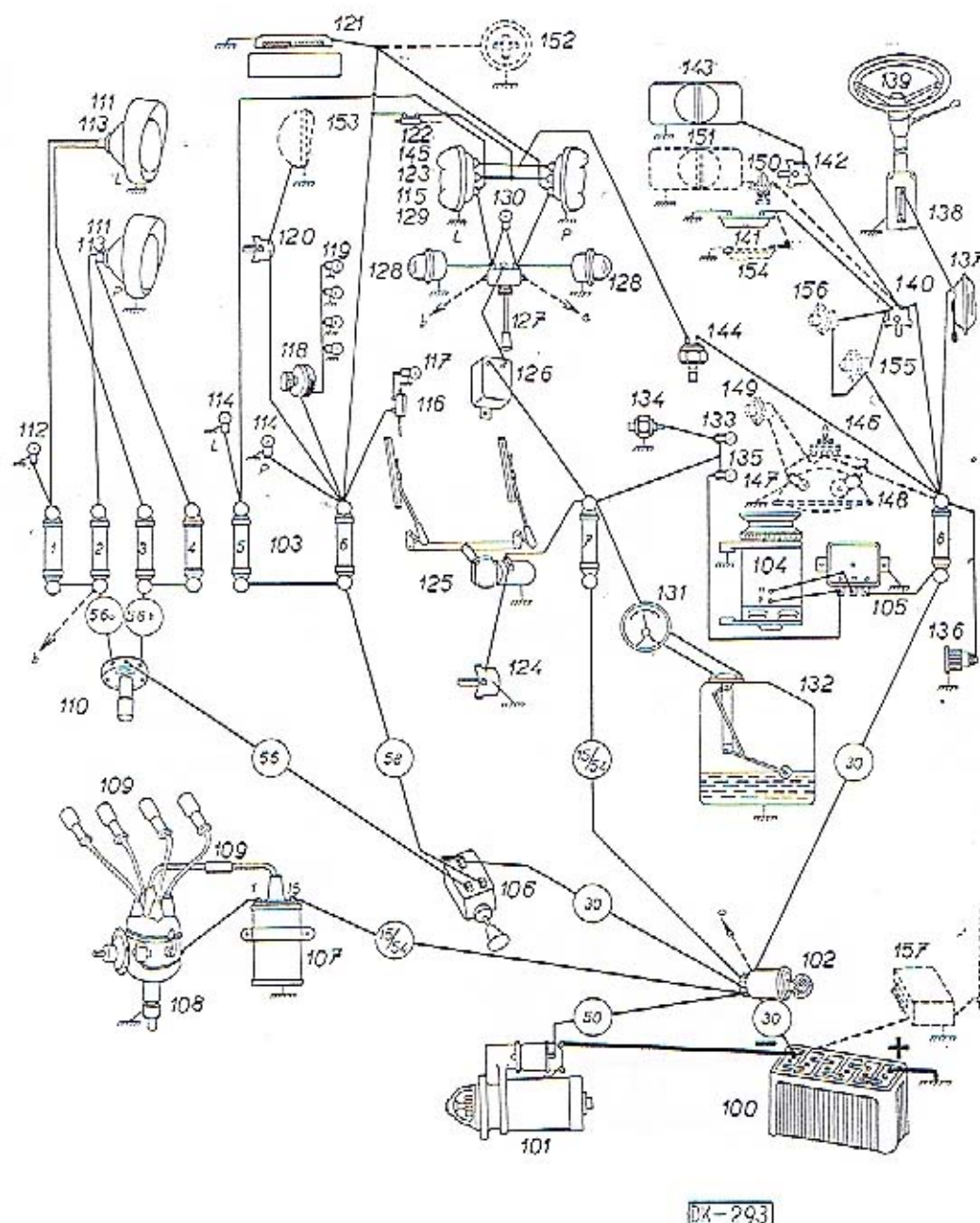


Fig 10. Electric Wiring Diagram



## Key to Wiring Diagram:

- 100 — Storage battery
- 101 — Starter motor
- 102 — Switch box
- 103 — Fuses
- 104 — Dynamo (D. C. generator)
- 105 — Regulator cut-out
- 106 — Junction box
- 107 — Ignition coil
- 108 — Ignition distributor
- 109 — Spark plug interference suppressor resistance
- 110 — Foot-operated dip switch
- 111 — Headlamps — long range beams (fuses 1 and 2)
- 112 — Long range beam warning lamp (blue)
- 113 — Headlamps — dip lights (fuses 3 and 4)
- 114 — Parking (traffic) lights (fuses 5 and 6)
- 115 — Tail lights (5 W filament)
- 116 — Engine compartment light switch
- 117 — Engine compartment light
- 118 — Instrument light rheostat
- 119 — Instrument light
- 120 — Fog lamp switch
- 121 — Number plate light
- 122 — Reversing light switch
- 123 — Reversing light
- 124 — Wiper switch
- 125 — Wiper motor
- 126 — Trafficator circuit breaker
- 127 — Trafficator switch
- 128 — Front trafficators (direction indicators)
- 129 — Rear trafficators (20 W filament)
- 130 — Trafficator warning lamp (amber)
- 131 — Fuel gauge
- 132 — Fuel gauge float
- 133 — Oil pressure warning lamp (bright crimson)
- 134 — Oil pressure switch
- 135 — Battery charge warning lamp (ruby)
- 136 — Inspection lamp socket
- 137 — Horn
- 138 — Horn sliding contact
- 139 — Horn button
- 140 — Dome light switch
- 141 — Dome lamp
- 142 — Car heater switch
- 143 — Car heater
- 144 — Stop light switch
- 145 — Stop light
- 146 — Light dip switch
- 147 — Berth compartment dip light (5 W filament)
- 148 — Berth compartment bright light (15 W filament)
- 149 — Automatic switch for berth compartment dip light
- 150 — Car heater switch
- 151 — Berth compartment heater
- 152 — Ambulance sign light
- 153 — Fog lamp — For ambulance Car
- 154 — Payload compartment dome light (Delivery Van)

- 155 — Automatic dome lamp switch, LH door
- 156 — Automatic dome lamp switch, RH door
- 157 — Car radio

} Optional extra

\*The numbers in rings on the leads in the Wiring Diagram indicate the respective Ref. Nos. of the terminals.

The parking lights (Ref. No. 114) are arranged in the headlamps.

The connections «a, b» at the switch box, trafficator switch and in front of the fuse 2 or 3 indicate wiring for possible hook-up of the flash signal (light horn).

**Warning:** Whenever rectifying defects or carrying out any job on the electrical equipment be sure to disconnect the positive (+) terminal off the battery.

## FUSE BOX

The wiring of the appliances corresponds to the following chart, the Ref. Nos. of the fuses (1 to 8) begin on the LH side and continue to the right:

- 1 — LH long range beam (Long range beam warning lamp)
- 2 — RH long range beam
- 3 — LH dip light
- 4 — RH dip light
- 5 — LH parking (traffic) light, LH tail light
- 6 — RH parking (traffic) light, engine compartment light, instrument illumination, reversing light, number plate light, RH tail light, fog lamp, ambulance sign light
- 7 — Windscreen wipers, fuel gauge, front and rear trafficators, warning lamps: oil pressure, battery charge and trafficator warning lamp
- 8 — Horn, inspection lamp socket, stop lights, dome lamp, car heater, payload compartment dome light, berth compartment dip light and bright light, berth compartment heater.



# List of Bulbs (12 V voltage):

Headlamps — Asymmetric, twin-filament  
 Parking (traffic) lights:  
 Rear trafficators (tail lights; twin-filament)  
 Front trafficators  
 Stop lights  
 Reversing lamp  
 Dome lamp  
 Number plate lamp  
 Engine compartment light  
 Instrument illumination  
 Dome lamp (bright light)  
 Ambulance sign light  
 Fog lamp  
 Symmetric headlamps are fitted with symmetric twin-filament bulbs

45/40 W, socket P 45 t  
 1.5 W, socket Ba 9s  
 20/5 W, socket Ba Y 20d  
 20 W, socket Ba 15s  
 20 W, socket Ba 13s  
 20 W, socket Ba 13s  
 5 W, socket Ba 15s  
 5 W, socket Ba 15s  
 5 W, socket Ba 15s  
 1.5 W, socket Ba 9s  
 15 W, socket Ba 15s } Ambulance  
 5 W, socket Ba 15s } Car  
 35 W, socket Ba 20s } only  
 45/40 W, socket Ba 20d

## Bulb replacement — Access to bulbs

Headlamps — See paragraph **Headlamps**.

Parking lights — See paragraph **Headlamps**.

Fog lamp — Having slackened the lip at the bottom of the headlamp glass screen remove the screen complete with reflector and pry the bulb socket clear of the reflector backside using a fine screwdriver.

Number plate light — After having removed the lamp. The securing bolts are arranged on the bottom edge of the rear door and pass through the full thickness of the door.

Combination tail lamp — After having removed the lamp glass screen, fastened by two screws from outside.

Ambulance sign light — After having removed the lamp glass screen by pulling out its rubber edge.

Front trafficators — After having pried out the glass screen by its metal surround.

Instrument illumination — After having pried the bulb sockets clear of the backside of the facia panel.

Dome lamp, etc. — After having removed the lamp glass screen.

## Headlamps:

The headlamp consists of three main parts — the cowl or housing, the headlamp proper (reflector complete with glass screen and bulbs) and the rim. The housing (1) is attached to the body through a rubber seal (2) by means of three bolts (3) and is practically never removed from the car.

**Bulb replacement** — Press the catch (4) at the bottom of the rim (thus unlocking the rim) and pull the rim off. Slightly press the top part of the headlamp, swing the bracket complete with guides (6) upwards and take the headlamp clear of the adjuster screws (5). Note, in which guide of the bracket (8) the headlamp lip has been installed, prior to removing it.

Pull off the terminal box (7) press down the bulb socket (8) while turning it slightly anticlockwise, and take out the bulb.

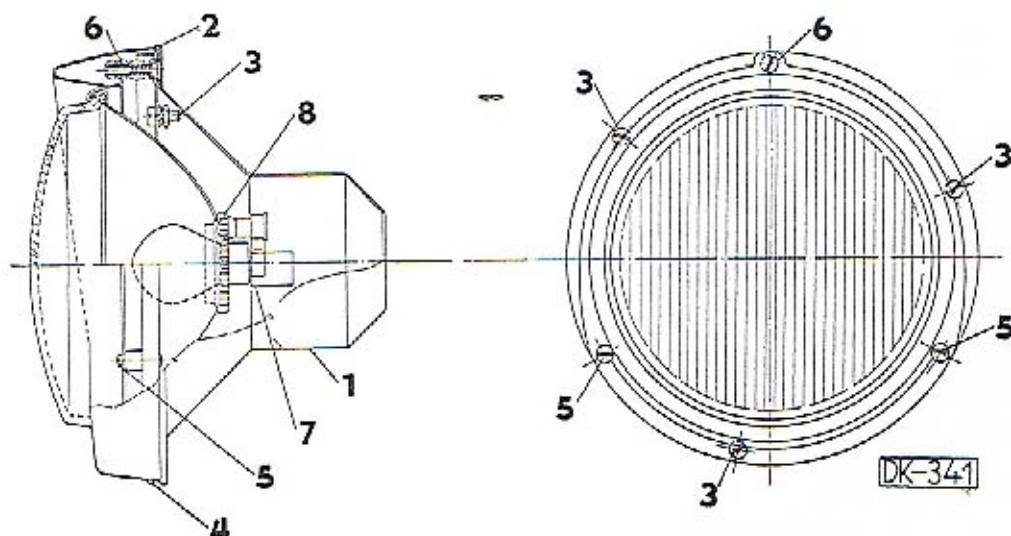


Fig. 11. Headlamps — Fitting and Adjuster Components



The parking light bulb is in the bracket on the terminal box has been pulled off with the headlamp removed. This applies to asymmetric headlamp.

In case of symmetric headlamp press down the terminal box itself, while swinging it slightly (it forms also the bulb cowl and socket bracket) and remove both the twin-filament headlamp bulb and the parking light bulb complete with socket.

On refitting, install the headlamp on the adjuster screws (5), swing out the bracket (6), press the headlamp home into its housing and lock it in position by means of the bracket installed on the headlamp lip. The lip must be placed between the same guides out of which it has been removed. Thus, the headlamp will resume its original position and need not be readjusted, provided it has been properly adjusted before it has been removed.

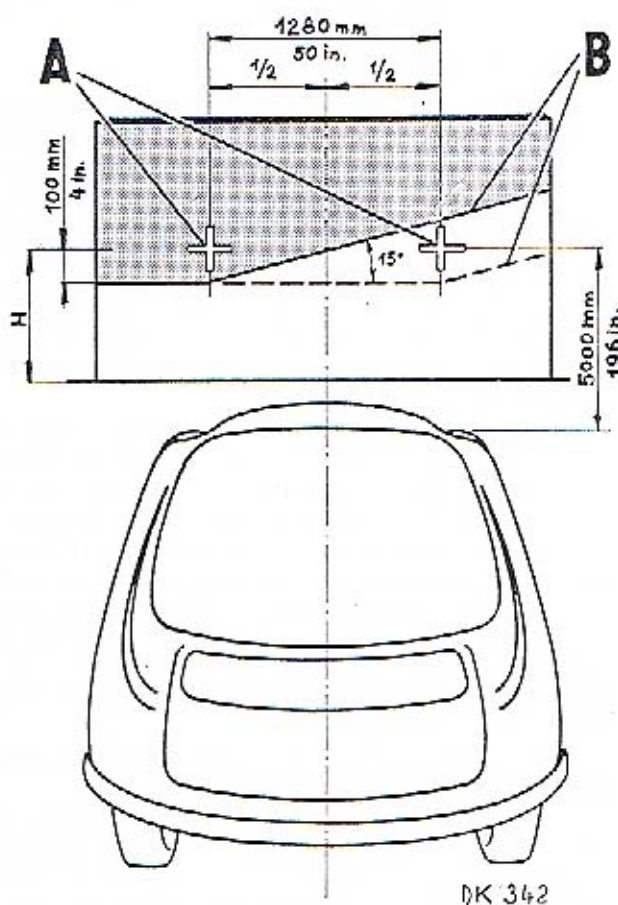


Fig. 12. Adjusting Asymmetric Headlamps — Light Pattern on Test Board

To adjust asymmetric headlamps — proceed according to the pattern of the borderline between the lighted and unlighted areas on the test board with the dip lights on — line «B» as shown in Fig. 12. The light pattern must conform to the pattern drawn in advance on the test board (line «B»).

Then merely check and adjust the direction of the centre shaft of long range beams so as to coincide with the centres on the lines «A».

During the procedure, the car should be loaded with the weight of the driver only. Proceed adjusting each headlamp separately, while screening the other. The height «H» is the distance of the headlamp centres from the ground, and must be measured. The distance between the car and the test board should be 5 metres (5000 mm) or 16 ft 4.85 in.

Adjustment is effected by turning slightly the adjuster screws (5). Rough adjustment for height is effected by resetting the rim lip between the guides in the bracket (6).

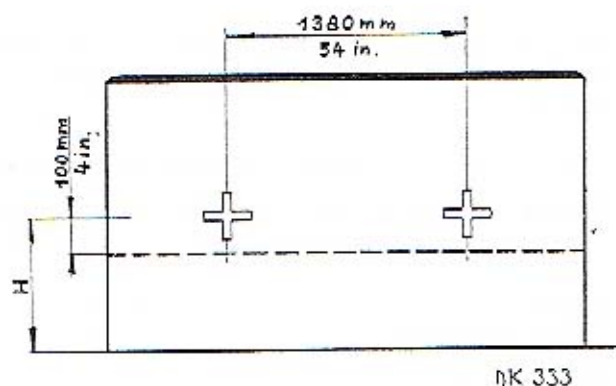


Fig. 13. Adjusting Symmetric Headlamps — Light Pattern on Test Board

To adjust symmetric headlamps — proceed in a similar manner as in the case of asymmetric headlamps. The pattern of the borderline between the lighted and unlighted areas as well as the adjustment of the focus of the long range beams must comply with Fig. 13, while the distance of the car from the test board should be again 5 metres (5000 mm) or 16 ft 4.85 in.

Note: If the headlamps must be adjusted from a shorter distance than the above mentioned 5 metres, reduce the height difference in the distance from the headlamp centre and the top borderline between the lighted and unlighted areas as shown on the test board in Figs. 11 and 12 in direct ratio to the respective distance. For instance in case of a distance of 2.5 metres or 8 ft 2.43 in, i. e. half of the above mentioned value, also the height difference must be one half shorter than that shown in the pictures.

Tail lamp — The bulbs can be replaced with new ones after the optical part (glass screen) of the lamp has been removed. The screen is fastened by two screws from the outside.



## MAINTENANCE

The basic maintenance jobs, excluding washing and cleaning of the bodywork and chassis, include thorough lubrication, adjustment and checking of the respective car units at certain regular, periodically repeated intervals.

Somewhat different is the maintenance of a new car during the running-in period or of a car which after a general overhaul, or of one of the principal assembly groups of which (engine, gearbox rear axle housing, steering) has been reconditioned; special maintenance is also required in case the chassis has been washed with pressure water.

The numbers of the individual paragraphs indicate the respective operations and are identical with the reference numbers given in the Maintenance Schedule and other informative pictures of maintenance jobs.

**Prior to lubrication or filling be sure to remove any traces of foreign matter from the lubrication points:**

### a) Maintenance During Running-in Period

**Engine** — Refill oil after 500, 1500 and 3000 km or 300, 900 and 1800 miles. Flush the engine on the third refill.

**Gearbox** — Refill oil after 500 and 3000 km or 300 and 1800 miles.

**Rear axle housing** — Refill oil after 500 and 3000 km or 300 and 1800 miles.

**Steering box** — Check oil level and top up oil after 500 and 3000 km or 300 and 1800 miles.

For the respective procedures refer to «Routine Maintenance», points 8, 24, 25 and 18.

### b) Maintenance After Chassis Washing with Pressure Water

Be sure to lubricate the chassis by operating the one-shot lubrication pump and to lubricate the pin of the hand brake relay lever immediately after washing, regardless of the respective lubrication interval.

### c) Routine Maintenance

#### Every 100 km or 60 miles

(7) Depress the pedal of the one-shot or centralized lubrication pump, preferably while in motion. Lubricate the steering knuckles, steering ball joints and the clutch and brake pedal bearings.

#### Every 500 km or 300 miles (or daily)

1. Check the engine oil level and top up oil, if necessary. To top up oil, remove the filler cap on the cylinder head cover; for checking oil level serve the marks on the oil stick. Never allow the level to drop below the bottom mark, nor overfill so that it reaches above the top mark.

2. Check the level of brake fluid and top up, if necessary.

— Check the water level in the radiator and top up, if necessary. The level must reach above the radiator tubes; fill approximately 10 to 15 mm or .4 to .6" below the seating face of the filler plug. Overfilling does not matter.

— Check the tyre inflation pressure.

#### Every 1500 km or 900 miles

3. Lubricate slightly the engine water pump shaft by turning the Stauffer grease fitting once. Avoid overlubrication.

4. Using the grease gun, lubricate the pin of the hand brake relay lever (on the underside of the car).

5. Using the oil can, lubricate the bearings of the steering column shaft, both through the lubrication hole under the steering wheel and through that in the bottom part of the shaft (under the bonnet).

6. Check the electrolyte level in the battery. Top up with distilled water.

7. Top up the tank of the one-shot lubrication.

#### Every 3000 km or 1800 miles

8. Refill engine oil, preferably after having finished a drive, while the oil is hot and flows out readily, scavenging particles of foreign matter. The drain plug is arranged on the side of the crankcase oil pan (bottom cover). On every 5th or 6th refill flush the engine with flushing oil. For this purpose fill some 2 litres or 1.76 Imp. quarts of flushing oil and let the engine run (with the gear change lever in neutral position) at increased idling speed for 7 to 10 minutes (the oil pressure warning lamp goes out).

9. Wash the felt oil filter cartridge in benzine, or possibly replace it with a new one. Allow the cartridge to dry thoroughly before refitting. The filter cover is bolted to the RH side of the engine, the cartridge is inside the filter housing. To remove the filter assembly, remove the nut at the bottom of the filter housing cap. If the cartridge cannot be pulled off the inner pipe, wash it complete with pipe. The filter cartridge is most important for proper engine oil pressure, therefore avoid fitting a defective cartridge.

After having refilled the engine with oil, start it and check the oil filter for leakage.

10. Wash the air cleaner element in benzine and, after it has dried, moisten it with a mixture of engine oil and petrol in a 1 to 1 ratio. To remove the filter element slacken the wing nut on the cleaner housing and remove the neck.

11. Lubricate the clutch release bearing by dripping oil into the cup of the lubrication pipe. The pipe is attached either to the last cylinder head bolt or to the engine bulkhead.

12. Check the oil level in the gearbox — for the respective procedure see point 24.

13. Check oil level in the rear axle housing — for the respective procedure see point 25.



14. Lubricate the casing of the hand brake lever link by applying a few drops of oil to the pulled out link.

15. Lubricate the pin of the hand brake roller (under the bonnet next to the steering box) by applying a few drops of oil.

16. Top up damper fluid into both the front and rear suspension dampers or shock absorbers up to the edge of the plug hole.

#### **Every 4000 to 5000 km or 2500 to 3000 miles**

— Check, and, if necessary, adjust the valve clearance (intake 0.15 mm or .006", exhaust 0.2 mm or .008").

— Interchange the tyres (for the respective diagram see chapter WHEELS and TYRES).

— Check and, if necessary, adjust the toe-in of the front wheels (3 to 4 mm or .12 to .16").

— Check, and if necessary, adjust the free travel of both the clutch and brake pedals.

— Check and, if necessary, adjust the brake shoes and the hand brake link.

— Check and, if necessary adjust the gap between the contact breaker points (0.3 to 0.4 mm or .012 to .016").

— Clean the spark plugs, check, and, if necessary, adjust the electrode gap .6 to 0.7 mm or .024 to .028").

— Check the Vee-belts of the dynamo and fan for proper tension. The belt must yield to a slight thumb pressure by 10 to 15 mm or .4 to .6".

— Blow clean the strainer of the fuel line and wash it in benzine. The strainer is arranged under the cap of the fuel pump (take out the centre bolt).

#### **Every 6000 km or 3700 miles**

17. Slightly lubricate the centre bearing of the propeller shaft.

18. Top up oil in the steering box. Fill some 20mm or .8" below the bottom edge of the filler hole.

19. When refilling oil, take out the oil filter cartridge (see point 9) and replace it with a new one. If it cannot be pulled clear of the inner pipe, cut it.

20. Slightly lubricate the front wheel hub bearings. To remove the hub caps, use the respective puller or remover, to refit them, use the respective drift or installer.

21. Lubricate the rear wheel bearings by forcing in 2 or 3 fillings of the Stauffer fitting, and then retighten the cap. After the first 8,000 km or 3700 miles pack in 6 to 7 fillings to fill the bearing cavity.

22. Lubricate the ignition distributor by applying a few drops of oil. Having removed the distributor arm slightly lubricate the felt of the cam pin, the felt lip sliding over the cam, the contact breaker arm and the link pin of the vacuum timing

device. To lubricate the centrifugal speed governor apply a few drops of oil into the holes in the contact breaker base plate. Lubricate the shaft after having unscrewed the plug in the base of the distributor body.

23. Clean the springs and lubricate them from outside with a mixture of oil and paraffin oil in a 1 to 1 ratio. Use a paint brush or a syringe.

— Lubricate the guide channels of the drop windows (with soap or tallow).

— Lubricate the door hinges, lock strikers, bonnet hinges and fasteners and the hinges and fasteners of the luggage boot lid.

#### **Every 10,000 km or 6200 miles**

24. Change oil in the gearbox, preferably after having finished a drive while oil is still hot and ready to scavenge any foreign matter. Access to the filler hole is obtained after having removed the floor pan above the gearbox, the drain hole is in the base of the gearbox housing. Fill up to the bottom edge of the filler hole.

25. Change oil in the rear axle housing, proceeding in a similar manner as in point 24. Access to the filler neck is obtained after the floor pan above the rear axle has been removed. The level should reach up to the top dipstick mark and never drop below the bottom mark. When checking the oil level, do not screw in the dipstick, but merely push it in.

26. Lubricate the hand brake bowden cables. Pull the bowden cables slightly out of the clamp on the backbone tube (or possibly slacken the clip on the cables) and spray oil inside the casing, using an oil can.

27. Lubricate the clutch release bowden after having eased it from its clamp in a similar manner as in point 26.

— Check the cylinder head bolts and those securing the intake and exhaust manifolds for proper tension.

— Remove the carburettor cap and clean the carburettor by flushing it with benzine.

#### **Every 20,000 km or 12,400 miles**

28. Check and, if necessary, repack with grease the dynamo bearings up to 2/3 approximately. Wash out the old grease. For this purpose unscrew the nuts from the clamp bolts of the end plates and, lifting the brushes, drive out the armature complete with drive end plate using a wooden mallet.

29. Having dismantled the starter motor, slightly lubricate its bearing with a few drops of bearing oil.

30. Having relieved the axles and eased the clips of the leaf springs lubricate the individual leaves. Use a spatula for this purpose.

— Having removed the upholstery from the door panel, lubricate slightly the window winders or regulators.



- Replace the spark plugs with new ones.
- Check and, if necessary, renew the contact breaker points.
- Check and, if necessary, adjust the clearance of the front wheel hub bearings.

Every 50,000 km or 30,000 miles

31. Remove the bearings from the universal joints of the propeller shaft, wash them out with benzine and repack with grease.

32. Lubricate with grease the splined extension of the propeller shaft.

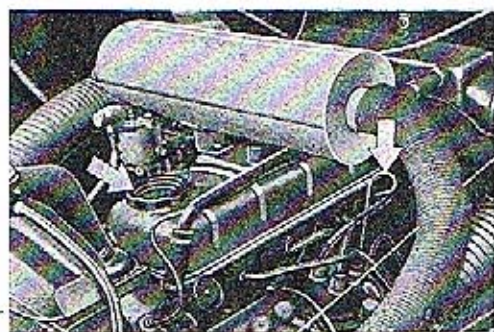


Fig. 14. Checking Engine Oil Level

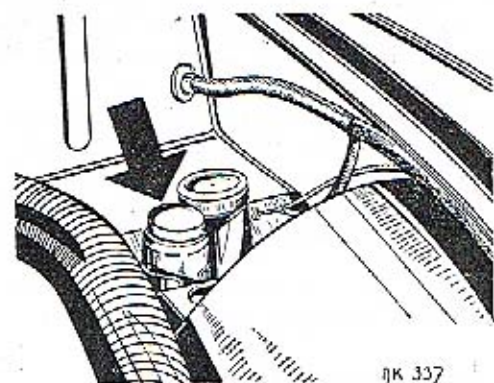


Fig. 15. Topping up Brake Fluid

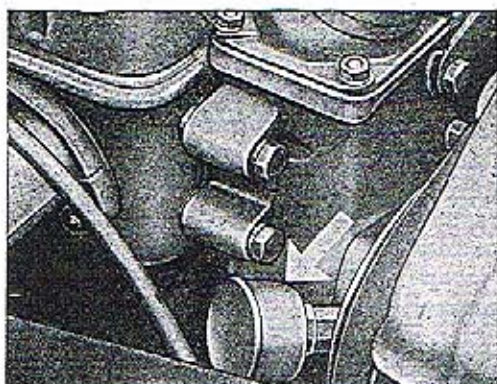


Fig. 16. Water Pump Lubrication

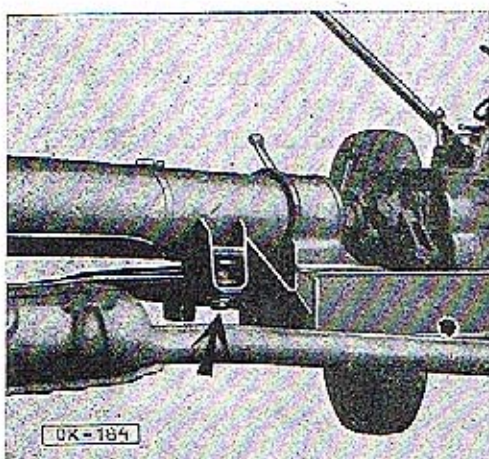


Fig. 17. Lubrication of Hand Brake Relay Lever

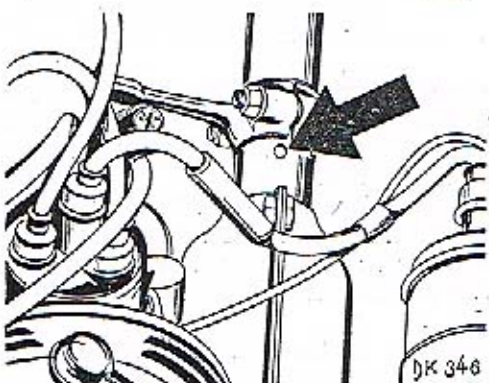
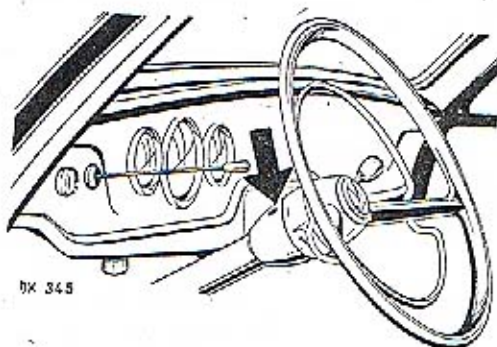


Fig. 18. Lubrication of Steering Column Shaft Bearings



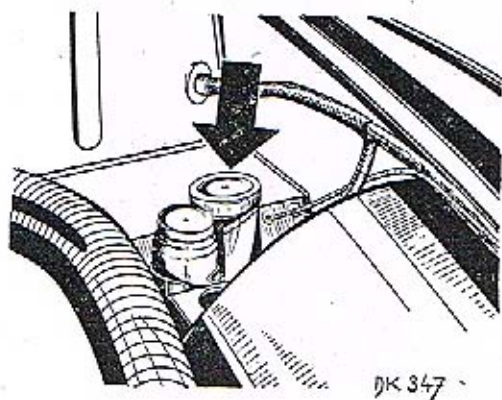


Fig. 19. Topping up One-Shot Lubrication Tank

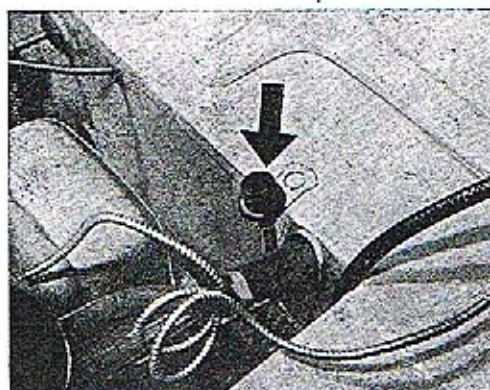


Fig. 22. Lubrication of Clutch Release Bearing



Fig. 20. Removing and Dismantling Oil Filter Cartridge

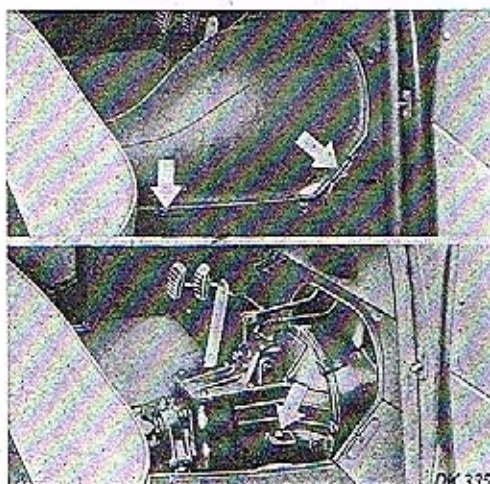


Fig. 23. Checking Oil Level in Gearbox

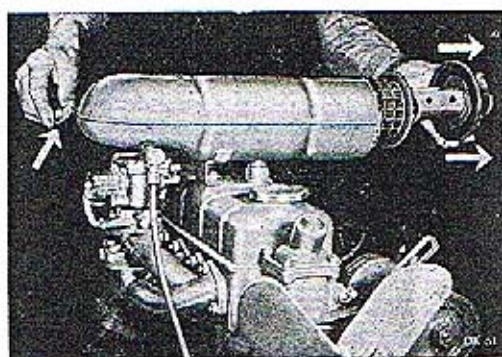
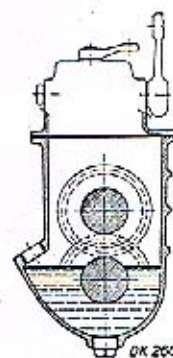


Fig. 21. Removing Air Filter Element

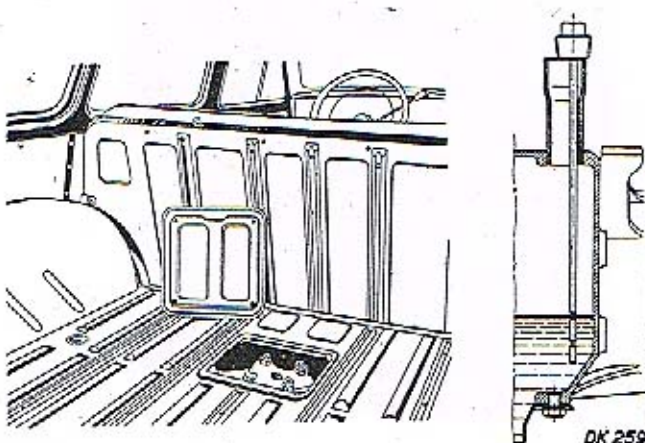


Fig. 24. Checking Oil Level in Rear Axle Housing



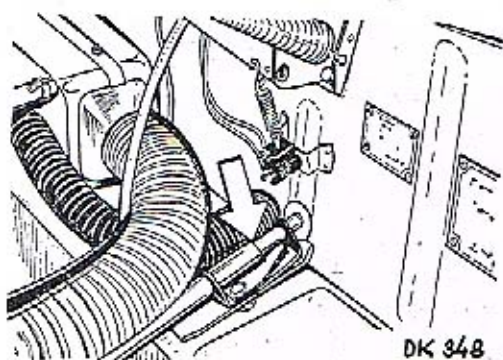


Fig. 25. Lubrication of Hand Brake Link

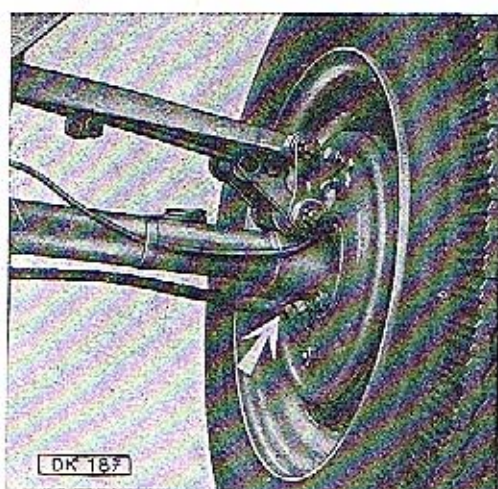


Fig. 28. Lubrication of Rear Wheel Bearings



Fig. 28. Topping up Damper Fluid



Fig. 29. Lubrication of Ignition Distributor

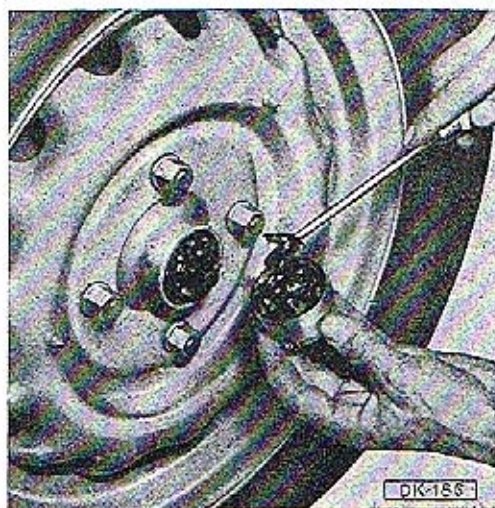


Fig. 27. Lubrication of Front Wheel Hubs



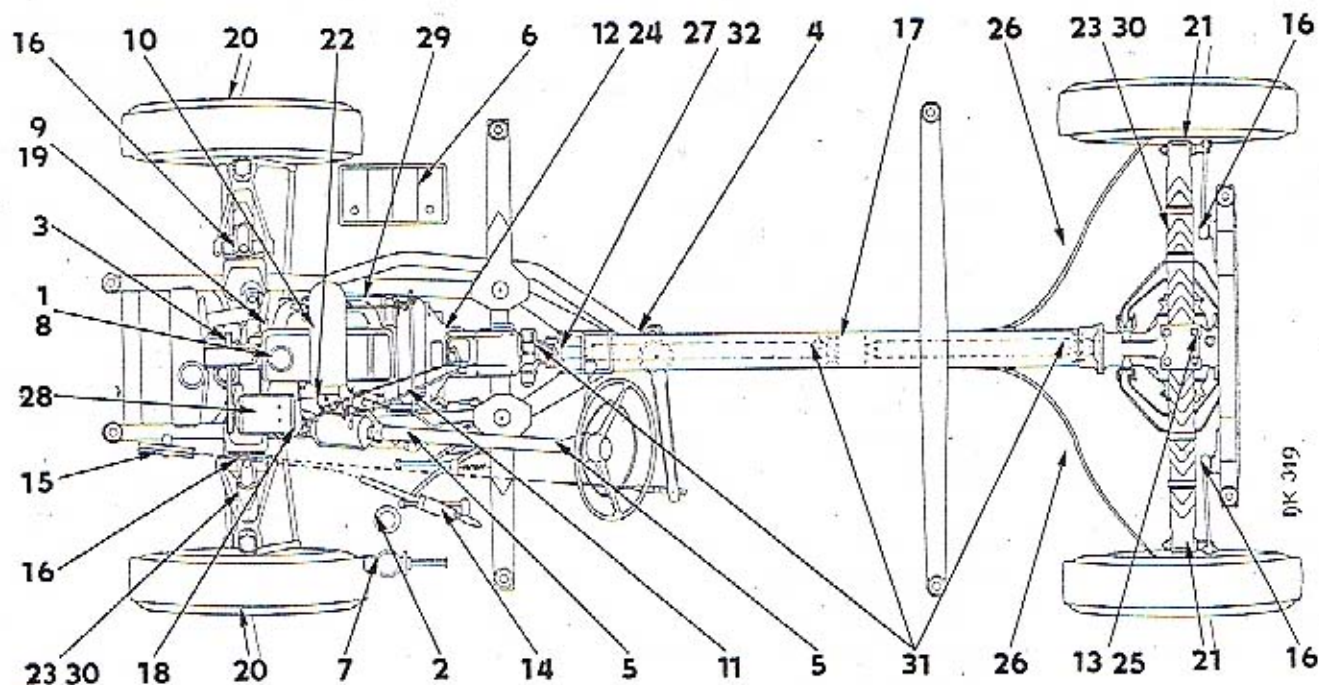


Fig. 30. Maintenance Schedule

### MAINTENANCE CHART

Where two grades of lubricant are quoted, the first designation is summer grade, the other winter grade of lubricant.

	Ref. No. in Schedule	Lubrication or checking point	Lubricant Designation
Every 100 km or 60 miles	—	Depress one-shot lubrication pedal	M 9A M 4A
	1	Check engine oil level and top up, in necessary	M 9A M 4A
	2	Check brake fluid level and top up, if necessary	Syntol
	—	Check tyre inflation pressure	—
Every 1500 km or 900 miles	3	Attend to water pump grease fitting	A4
	4	Lubricate hand brake relay lever pin	AV 2
	5	Lubricate steering column shaft bearings	M 9A M 4A
	6	Check battery electrolyte level	Distilled water
	7	Top up one-shot lubrication tank	M 9A M 4A

Period	Ref. No. in Schedule	Lubrication or checking point	Lubricant Designation
Every 3000 km or 1800 miles	8	Refill engine oil	M 9A M 4A
	9	Clean oil filter cartridge	
	10	Clean and remoisten air filter element	M 9A M 4A
	11	Lubricate clutch release bearing	M 9A M 4A
	12	Check oil level in gearbox and top up, if necessary	PP 44 PP 13
	13	Check oil level in rear axle housing and top up, if necessary	PP 44 PP 13
	14	Lubricate hand brake link	M 9A M 4A
	15	Lubricate hand brake cable roller	M 9A M 4A
	16	Top up damper oil	Damper oil
Every 4000 to 5000 km or 2500 to 3000 miles	—	Check valve clearance	—
	—	Interchange tyres	—
	—	Check toe-in	
	—	Check pedals for free travel	
	—	Adjust brake shoes	—
	—	Check contact breaker point gap	—
	—	Clean spark plugs and check electrode gap	—
	—	Adjust fan and dynamo belt tension	—
	—	Clean fuel line strainers	—
Every 6000 km or 3700 miles	17	Lubricate propeller shaft centre bearing	AV 2
	18	Top up oil in steering box	PP 13
	19	Renew oil filter cartridge	
	20	Lubricate front wheel hubs	AV 2
	21	Lubricate rear wheel bearings	AV 2
	22	Lubricate ignition distributor	M 9A M 4A
	23	Lubricate leaf spring	Oil + paraffin oil
	—	Attend to drop window guide channels	Soap or tallow
	—	Lubricate door hinges, lock strikers, bonnet and luggage boot lid hinges and fasteners	M 9A M 4A
Every 10,000 km or 6,200 miles	24	Refill oil in gearbox	PP 44 PP 13
	25	Refill oil in rear axle housing	
	26	Lubricate hand brake bowdens	M 4A
	—	Lubricate clutch release bowden	
	27	Lubricate splined extension of propeller shaft	M 9A M 4A
	—	Retighten cylinder head bolts, and bolts securing intake and exhaust manifolds	—
	—	Clean carburettor	—
Every 20,000 km or 12,400 miles	28	Lubricate dynamo bearings	AV 2
	29	Lubricate starter motor bearings	M 4A
	30	Lubricate leaf springs	G 3
	—	Renew spark plugs	—
	—	Check contact breaker point gap	—
	—	Check clearance of front wheel hub bearings	—
	—	Lubricate window winders	A 00
Every 50,000 km or 31,100 miles	31	Lubricate universal joints of propeller shaft	AV 2
	32	Lubricate splined extension of propeller shaft	G 3



COMPARISON TABLE OF LUBRICANTS

Czechoslovak lubricants (in table)	SAE	SHELL	MOBIL OIL	CASTROL
M 9A	40 (above 30° C or 86° F) 30 (0°—30° C or 32°—86° F)	X-100 Multigrade 20 W/40 or X-100 40  X-100 Multigrade 10 W/30 20 W/40 or X-100 30	Mobil oil AF or Mobil oil Special  Mobil oil A or Mobil oil Special	Castrol XXL
M 4A	20	X-100 Multigrade 10 W/30 20 W/40 or X-100 20 W X-100 Multigrade 10 W/30 or X-100 10 W	Mobil oil Arctic	Castrolite
PP 44	140 (above 30° C or 86° F) 90 (0°—30° C or 32°—86° F)	Spirax 140 E. P.  Spirax 90 E. P.	Mobilube GX 140  Mobilube GX 90	Castrol Hipress
PP 13	90	Spirax 90 E. P.	Mobilube GX 90	Castrol Hypoy
A 4		Retinax A	Mobil grease No. 5	Castrol ease Water Pump Grease or Castrol ease LM
AV 2		Retinax A	Mobil Grease MP.	Castrol ease WB or Castrol ease LM
A 00		Retinax A	Mobil Grease No. 2	Castrol ease CL or Castrol ease LM
G 3		Donax P	Mobil grease Special	Castrol Penetrating, Oil Castrol ease Graphited
Damper oil		Donax A.1	Mobil Shock Absorber Oil	Castrol Shockol
Syntol		Donax B		Castrol HD Brake Fluid



## BODYWORK

The S 1202 utility cars are fitted with fully enclosed, all-metal, chassis-mounted, flush-sided bodies.

The body is of shell design, welded of stamped coachwork steel sheets of 0.8 to 1 mm or .03 to .04 thickness. The structural crate is of U-section beams pressed of steel plates of 1.5 to 3 mm or .06 to .12" thickness.

The welded design of the bodywork is most

The welded design of the bodywork is most purposeful, particularly in case of a road accident, as the defective spot can be cut out and a new part welded in its place.

The interior of the STW serves for the transport of both passengers and payload, while partitions are fitted in both the Delivery Van and Ambulance Car interior.

The seats and backrests are of the bench type, the front doors and rear side doors have faired hinges at the front. Extreme opening is limited by a stop band. The rear door of the payload compartment is hinged at the top edge.

### Upholstery:

Both the seats and backrests are spring-cushioned and upholstered with rubberized hair pads. The covers of the seats, backrests and door panels are of plastic leather in well selected colour schemes. The floor round the seats, including the floor tunnel for the backbone tube in the case of STW, are provided with rubber rugs. The headroom is of fabric.

The headroom of the Ambulance Car is lined with plastic leather. The sides of the payload compartments are provided with enameled panels, the floor is fitted with slabs.

In the Ambulance Car, the sides of the patient compartment are lined with plastic leather and the floor round the emergency seat with plastic rubber (gumoline).

### Glazing:

All windows are glazed with clear, hardened, siliceous safety glass panes. The windscreen rear door window and corner windows have wrap-around panes, held in position by means of rubber weather strips or channels. Both front doors have full-length drop windows; window flaps serve for ventilation. With the exception of Delivery Van, the rear side doors are provided with sliding windows. The Ambulance Car has a sliding window also on the side opposite to the rear side door. In the case of the STW model, such sliding window is a special extra.

### Sealing (Weather Strips):

The doors are protected against entry of water and dust by two rubber weather strips or channels.

The door drop and sliding windows have rubber guides lined with duvetin, the vent flaps and fixed window panes are mounted in rubber weather strips or channels. The lid of the spare wheel compartment is sealed with a rubber channel.

The gearbox, the headlamps, the passages of pedals, fuel filler neck and electric cables are sealed with rubber channels, grommets or vulcanized in rubber.

### Ventilation:

Draughtless ventilation is effected through the triangular window flaps, front door drop windows, and the air passing through the heater unit (drawn in by the heater fan) while the hot water supply is cut off; in the case of the STW and Ambulance models also through the sliding windows. The payload compartment of the Delivery Van is ventilated through side vent flaps.

### Heating:

A hot water heater unit with fresh air supply is fitted, hot air being also induced to the windscreen for demisting and defrosting purposes. The hot water supply can be cut off by means of a cut-off valve on the engine (under the bonnet).

The Ambulance Car has an additional heater unit, with separate control, in the patient compartment. For control serves a switch above the stretcher, while the three-way tap on the rear part of the cylinder head cover is open. This tap must remain open throughout the cold season. Fig. 31, detail »A« shows the tap in open position, in detail »B«, the tap is shown closed. The marks on the tap cone indicate the direction of the fluid flow.

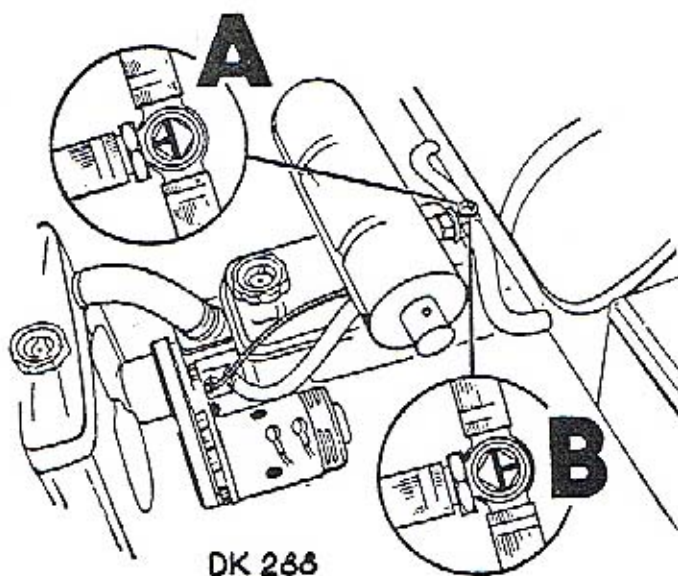


Fig. 31. Three-Way Heater Tap



For draining water from the heater elements serves the drain tap under the front seat.

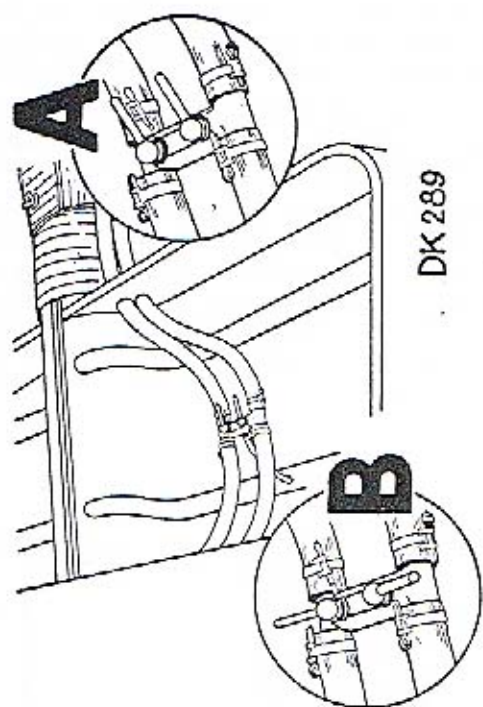


Fig. 32. Heater Drain Tap

Detail «A» in the picture shows the taps open, detail «B» closed.

#### Noise Deadening and Heat Insulation:

The body stampings (pressings) are patterned so as to resist vibrations, and also partly provided with strengthening mouldings and sprayed with noise-deadening compound. The passenger compartment is provided with an additional layer of noise-deadening insulation material. Moreover, the bulkhead is fitted with a cover of plastic leather.

The door posts have rubber guides preventing noisy door rattle. The engine bonnet is supported by noise deadening rubber buffers. All the rubber parts sealing the individual body parts have also noise deadening effect.

#### Finish, Its Maintenance and Reconditioning: To Repair Damaged Finish:

To recondition damaged body finish four coats must be applied in the proper manner after the metal sheet has been de-greased and de-rusted.

#### De-Greasing:

Wipe the respective parts with a rag soaked in trichlorethylene or benzine.

#### De-Rusting:

If mechanical de-rusting by grinding or emery application proves inadequate, use phosphoric acid (usually marketed as REFOBIN).

##### Procedure:

1. Apply to the rusty spot 15 % acid solution approximately 40° C or 104° F warm. When using a colder solution, employ stronger concentration, but never exceed and rub the rusty spot with rather rough emery paper (No. 80 or 100). Then rinse it twice as follows:

2. With luke- warm or cold water, which must be soft or softened with 2 to 2.5 % sodium bicarbonate.

3. Using chromium oxide solution (2 g per 1 litre water) 80° C or 176° F hot (so called passivation rinse).

Allow the de-rusted spot to dry thoroughly.

#### Finish Application Using Czechoslovak Materials:

##### a) Synthetic Finish:

1. Apply primer coat S 2001 using thinner S 6003 and dry at 80° C or 176° F for 28 to 30 minutes.

2. Apply putty O 5004 using thinner O 6000 (turpentine). Be sure to apply an extremely thin layer of putty to the defective spot, preferably using a spatula. Dry at 80° C or 176° F for 28 to 30 minutes. Repeat this procedure as necessary and finally grind the surface using abrasive paper No. 100 to 180.

3. Spray the spot to which putty has been applied with filler S 2002 diluted with thinner S 6003. Dry this coating at 120° C or 248° F for a period not exceeding 30 minutes. Drying finished, grind (rub) the spot with abrasive paper No. 280 or 320.

4. Apply synthetic finish AUTEX S 2016 of the respective shade corresponding to the colour scheme of the car diluted with thinner S 6004 and bake the finish at a temperature of 130 to 135° C or 266 to 275° F for 40 to 42 minutes.

Use water for every grinding operation.

##### b) Nitro-finish:

In case reconditioning with synthetic finish is impossible for technical reasons (neither a baking chamber nor a lamp for local baking of the body are available) use nitro-finish or shop finish obtained by mixing synthetic finish with nitro-finish.

Apply primer coat using air-drying primer S 2000 diluted with thinner O 6000 (turpentine) and let it air-dry.



Apply putty O 5004 diluted with thinner O 8000 (turpentine). In this case likewise be sure to apply a thin layer of putty to the defective spot, preferably using a spatula. After the putty has dried properly (approximately after 8 hours) repeat this procedure as necessary. After the last layer has dried, rub the surface with abrasive paper No. 100 to 180.

For the third coat two types of putty can be employed according to the respective size of the reconditioned spot. For large surfaces use spray oil putty O 5008 with thinner O 6000 (turpentine), for small surfaces repair nitro-putty C 5001 with nitro-thinner C 6000.

After the surface has dried thoroughly (approximately after 24 hours) rub it using abrasive paper No. 280.

In this case also be sure to use water for every grinding or rubbing procedure; but only air-drying is required without any heat-drying or baking.

I. Apply primer coat of nitro-varnish of the required colour diluted with thinner C 6000. After it has dried, rub the reconditioned surface using abrasive paper No. 280 or 320, applying a fine layer of soap to the paper, in order to prevent the rubbed finish from being damaged by the abrasive paper.

II. After the surface has been thoroughly washed and dried, spray top coat using the finish of the previous spraying with a high percentage of thinner (50 to 70 %).

III. After the finish has dried thoroughly, polish the reconditioned spot using polishing compound and then polish the entire car using liquid polish.

1. Mix the AUTEX S 2016 synthetic baking finish with 30 to 40 weight percent of nitro-finish, thus obtaining repair shop finish, marketed in Czechoslovakia under the designation 02-C-58027.

2. After both liquids have been poured together, the resulting precipitate must be thoroughly mixed, until perfectly homogenous.

3. For spraying dilute this mixture with standard nitro thinner C 6000 to obtain the required density. Thus treated, the finish dries on the surface already after 30 minutes, and perfect hardening occurs after 24 hours.

4. Coloured powder, which settles round the reconditioned area, must be carefully rubbed with polishing paste, and the entire car repolished with liquid polish.

It is advisable to recondition so that the entire surface from edge to edge is sprayed, in order to eliminate possible local differentiation due to a slight change of the original colour likely to have occurred under the influence of light.

## To Remove and Refit Side Door Drop Window:

When replacing a side door drop window with a new one, proceed as follows:

- Remove the inner lock handle and the inner handle of the drop window. This can be done after the screws in the handle centre have been slackened and the escutcheons removed.
- Remove the upholstered trim panel by unscrewing the screws at its top and side edges and then withdraw it from its bottom channel.
- Slacken the screws of the window winder or regulator 1, take out the winder, lower the window into bottom position, ease the moulding of the vent window by unscrewing the screw 2, force off the moulding and withdraw the glass pane through the aperture in the centre of the door sheet panel, as shown in Fig. 33.

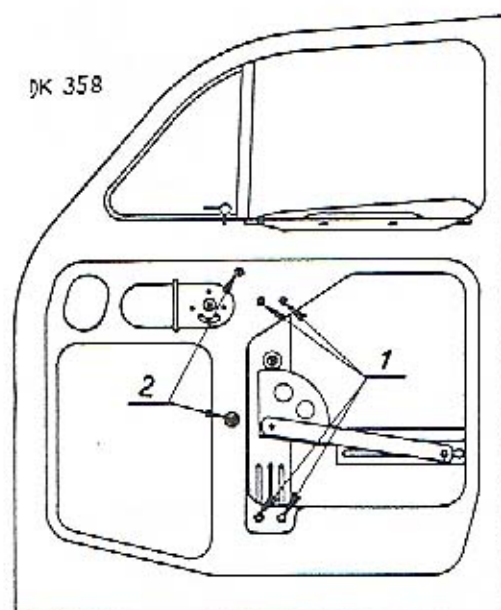


Fig. 33. Removing Drop Window

## To Replace Door Window Flap:

File off the hollow rivet on the side of the window flap. Then swing the flap window through 90° and pull it out. Having removed the vent window assembly case both the top and bottom locking angle pieces and withdraw the glass pane.

## To Remove Outer Door Lock c/w Outer Handle:

1. Remove the upholstered door trim panel and inner handles proceeding in the manner described in the case of the door drop window.



2. Slacken the screw at the hub lock securing the striker link of the outer lock, swing the link downwards in the door and disconnect it by disengaging it from the striker pin of the outer lock.

3. Having disengaged the link slacken the screw securing the handle escutcheon.

4. Slightly pull out the handle as if opening the door and take off the handle plate (escutcheon) by slipping it over the handle.

5. Leave the handle in its slightly pulled out position and slacken the screw securing the lock to the handle bridge.

6. Slacken the four screws countersunk in the door side sheet, thus easing the lock, which can now be withdrawn in the direction towards the door inside.

#### To Remove Rear Door Lock c/w Handle:

Remove the upholstered trim panel first.

- Slacken the nuts 1 on the lock driver lug, thus easing the striker link.
- Move the link to one side so that the striker can be unbolted and removed complete with its pressure spring.
- Slacken the nut 2 and the two screws 3, and withdraw the door handle.
- Having slackened and removed the screws 4 withdraw the lock assembly.

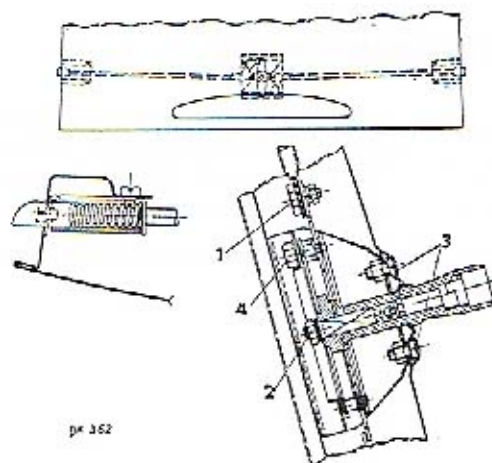


Fig. 34. Rear Door Lock

**Never close the rear door of the payload compartment with the lock locked!**

**This would damage it!**

#### To remove Side Body Door:

Unscrew the three top screws and the three bottom screws 1, or possibly, to ensure readier refitting of the door, drive out the hinge pins 2.

Then ease the door stop band 3 by removing the pin after having withdrawn the cotter pin.

To ensure proper door alignment, slacken the screws 1 adjust the door and retighten the screws.

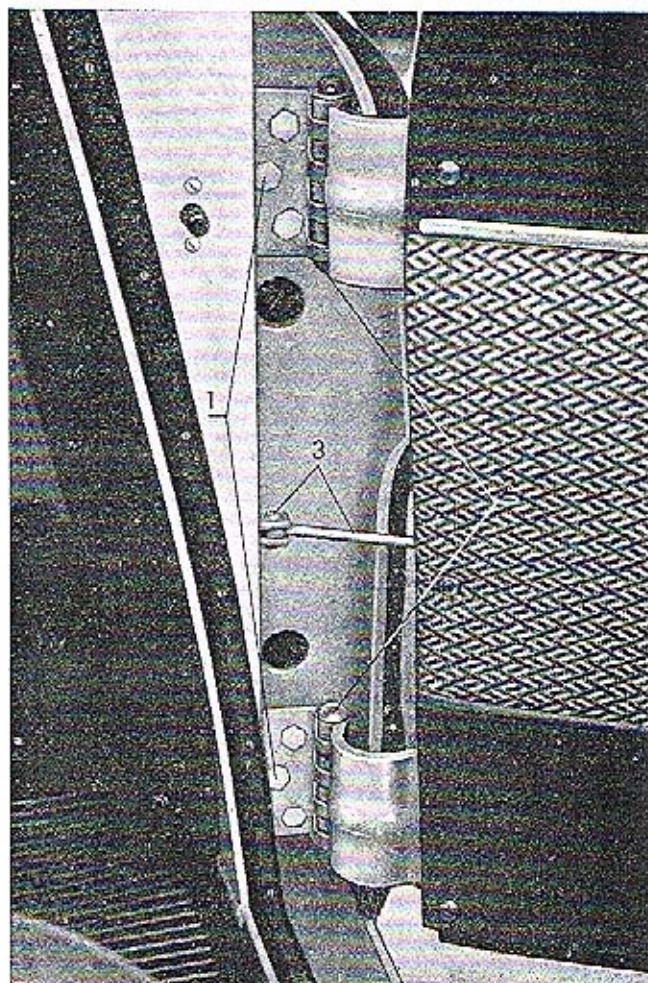


Fig. 35. Front Door Hinges

#### To remove Body Rear Door:

1. Disconnect the current lead to the number plate lamp.

2. After having unlocked the cotter pins in the top hinge of the strut drive out the strut pins.

3. After having unscrewed the screws on the RH and LH side of the door hinge 2, remove the door.

Whenever any major misalignment of the door occurs on refitting, rectify it by slackening the screws 1, resetting the door and retightening the screws. Access to the screws is obtained after the headroom upholstery has been removed.



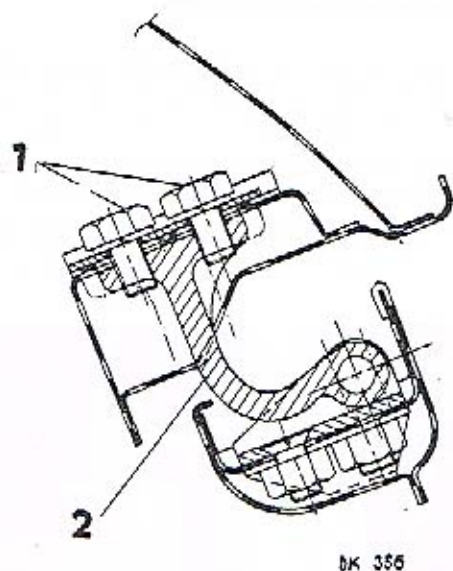


Fig. 36. Rear Door Hinges

#### To Reglaze Fixed Windows:

The procedure is the same as that described in the basic Service Shop Manual, the only exceptions being that the glass panes must be pressed home from inside the body, and the weather strip installed from outside.

#### To Reglaze Sliding Windows:

- Remove the securing clamp of the fastener after having unscrewed the screw 1.
- Screw out the self-tapping screws 2 from the frame 6.
- Applying a slight pressure, force the entire rubber frame assembly 3 complete with glass panes and lock rail 5 inside the car.
- Pull off the rubber frame 3, thus easing the fixed glass pane 4 and the guide rail 5.
- Withdraw the sliding glass pane 7 by slightly stretching the centre part of the frame 6.

On refitting, do not forget to instal the guide rail 5, into which snaps the claw of the locking clamp when the window is closed, between the rubber frame and the rim, prior to installing the frame assembly (complete with glass panes) in position. Seal the window by installing the rubber spacer strip 8. Lock the frame assembly in position by means of the self-tapping screws (which must pass also through the guide rail 5).

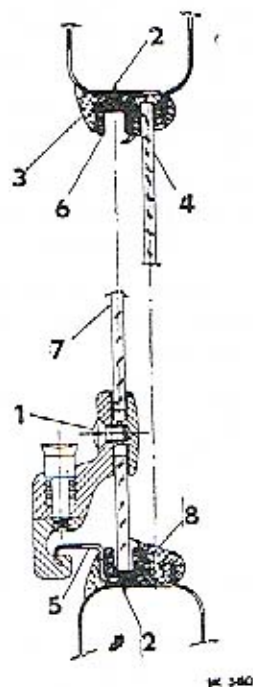


Fig. 37. Glazing Vent Window (Bottom part of the picture shows the sliding, top part the fixed glass pane).

#### Body-to-Chassis Mounting:

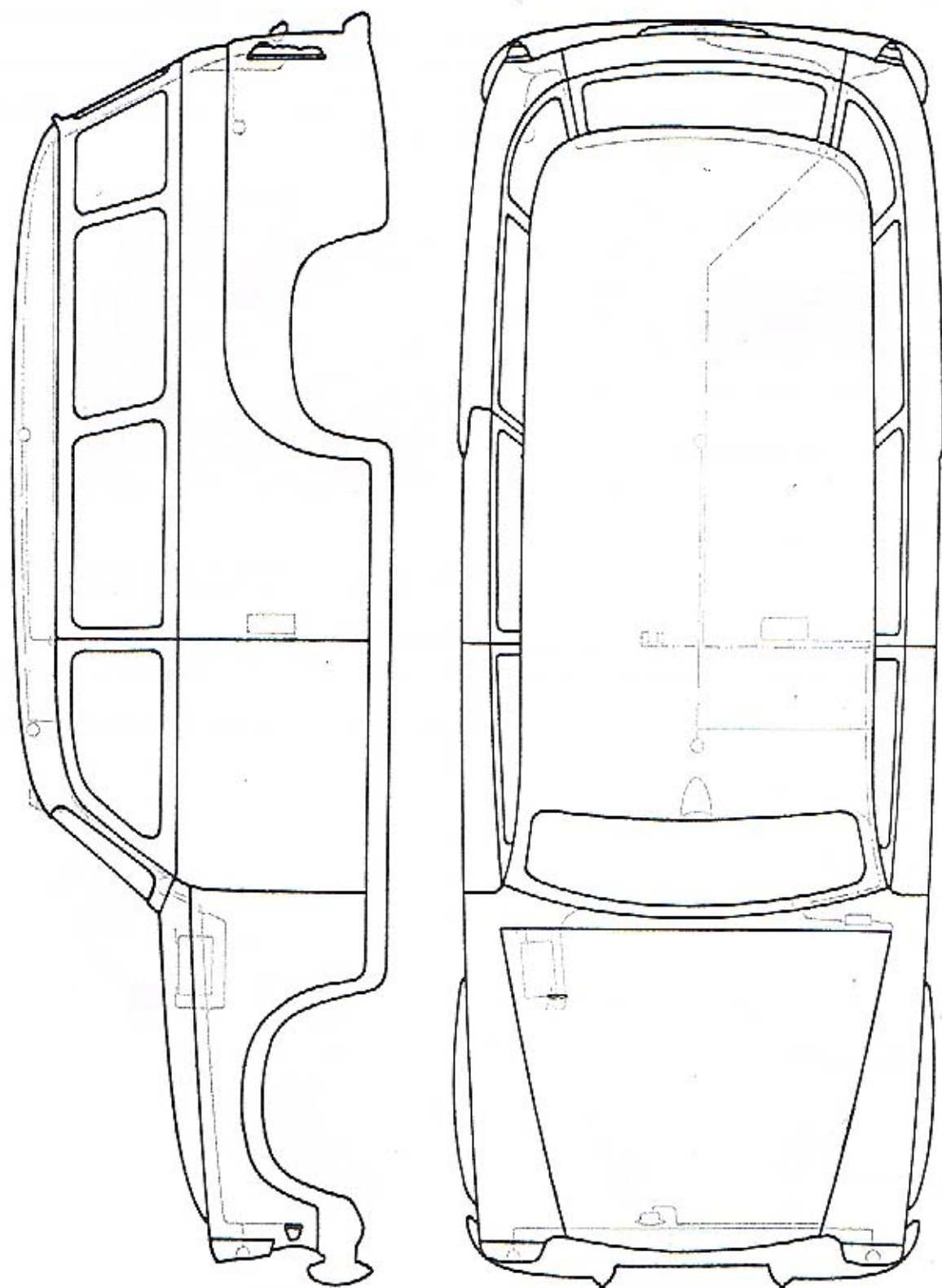
The body is mounted on the chassis frame by means of eight rubber mountings (silentblocks) and fastened with bolts which are insulated both from the frame and bodywork.

For detailed description refer to the List of Spare Parts.

#### Body Wiring Diagram

- Full line: Wiring common for all car versions.
- Single dot-and-dash line: Delivery Van wiring.
- Double dot-and-dash line: Ambulance Car wiring.



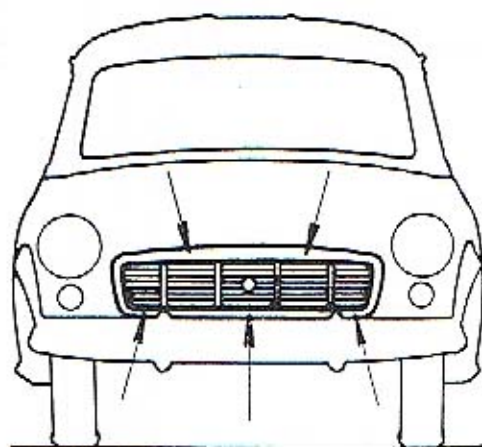


ДК 361

Fig. 38. Body Wiring Diagram

### Radiator Grille:

To remove the radiator grille ease screws at the points shown by arrows in the picture. The trim frame of the grille is removed complete with panel.

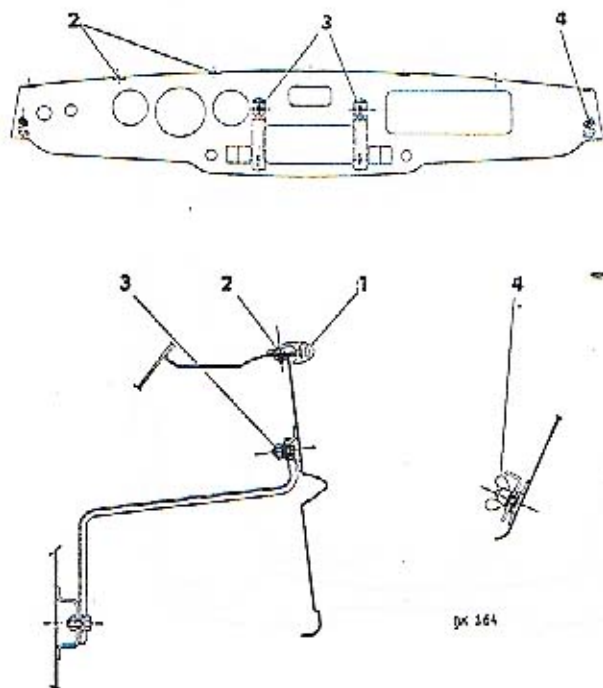


9K 357

Fig. 39. Removing Radiator Grille

### Facia Panel:

To remove the facia panel take off the rubber channel 1 and disconnect the connections 2, 3 and 4.

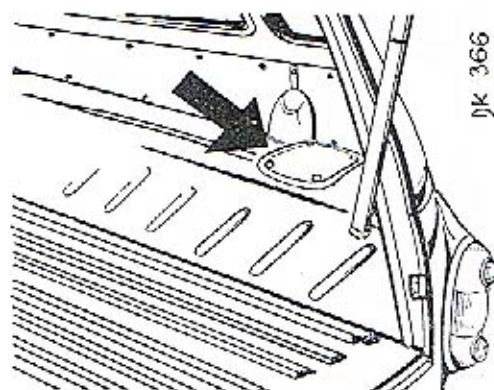


9K 364

Fig. 40. Removing Facia Panel

### To Remove Petrol Tank:

1. Having unscrewed the four screws the remove valance cover as shown in Fig. 41 and disconnect the wiring of the fuel gauge.
2. Disconnect the fuel feed line from the base of the tank and drain the tank.
3. Support the tank, unscrew the three bottom lock nuts and take out the bolts.
4. Finally unscrew the top securing bolt and withdraw the tank.



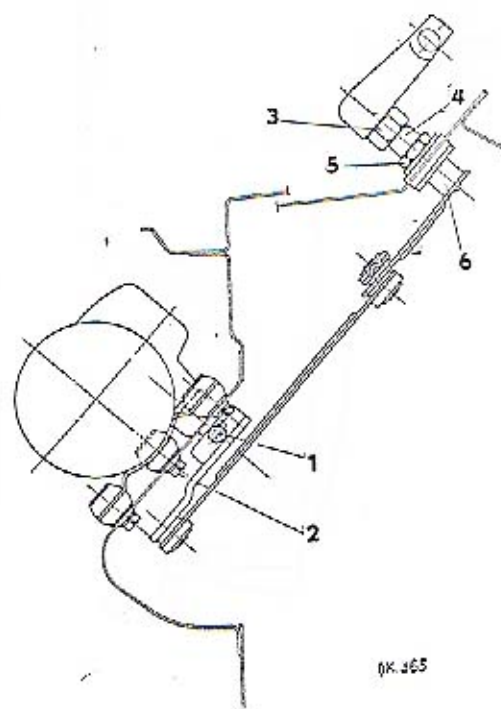
9K 366

Fig. 41. Cover Ensuring Access to Petrol Tank and Fuel Gauge Float for Removal

### Windscreen Wipers:

To remove the windscreen wipers proceed as follows:

- a) Unscrew the lock screw of the linkage assembly 1 under the facia panel.



9K 365

Fig. 42. Windscreen Wipers



- b) Disconnect the electric wiring of the wiper motor.
- c) Unscrew the three screws securing the wiper motor 2. When finally withdrawing the screws, hold the motor in position with the hand from inside the engine compartment, take out the screws and finally withdraw the motor.
- d) To remove the wiper blades slacken the union nut 3 until it starts butting against the cap 4 and pulls the wiper blade complete with taper off the shaft. Then remove the cap, the nut 5 and the rubber pads.
- e) Remove the control linkage assembly 6 from underneath the facia panel.

#### Partition:

To remove the transverse partition from the interior of the Delivery Van or Ambulance Car slacken the bolts as shown in Fig. 43 and then tilt the partition towards the inside of the payload or patient compartment respectively.

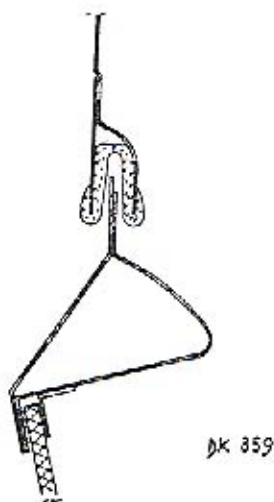
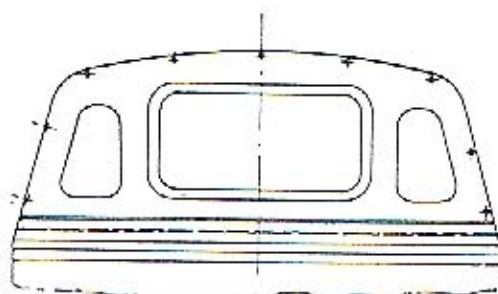


Fig. 43. Removing Partition

#### Lid Catch of Spare Wheel Compartment:

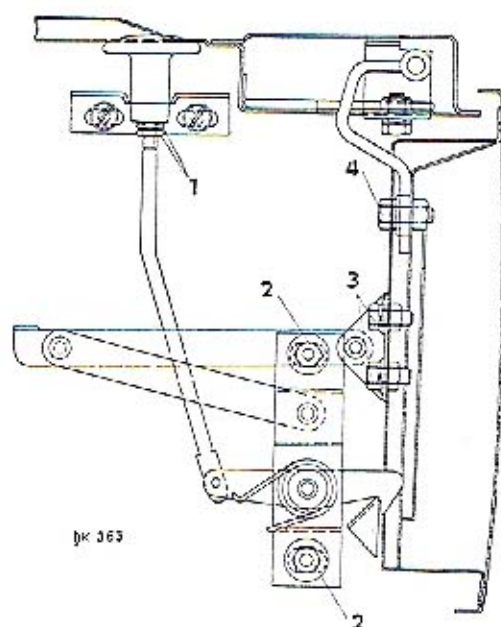


Fig. 44. Adjusting Lid Catch of Spare Wheel Compartment

1. The catch claw can be adjusted for height by means of the nuts 1.
2. The distance between the claw and the catch can be adjusted after having slackened the nuts 2.
3. The lid can be removed after having taken out the bolts 3 and 4.