

FEDERATION INTERNATIONALE DE L'AUTOMOBILE

8, place de la Concorde, PARIS (8<sup>e</sup>), Tél.: ANJOU 34-70

HOMOLOGATION SHEET:

1289

The model was presented in February 1962

NAME: STEYR-PUCH

MODEL: 650 TR

TYPE: motor car

SPECIFICATION: The model 650 TR is derived from the models 500 Q/CL and 650 T, it differs from these basic models in its technical equipment.

GENERAL DESIGNATION: STEYR-PUCH 650 TR mod. Flat COMMERCIAL DESIGNATION: STEYR-PUCH 650 TR

4 seats provided

BEGIN OF PRODUCTION: March 1st, 1962

Chassis No. starting with: 510,0001

Engine No. starting with: 520,0001

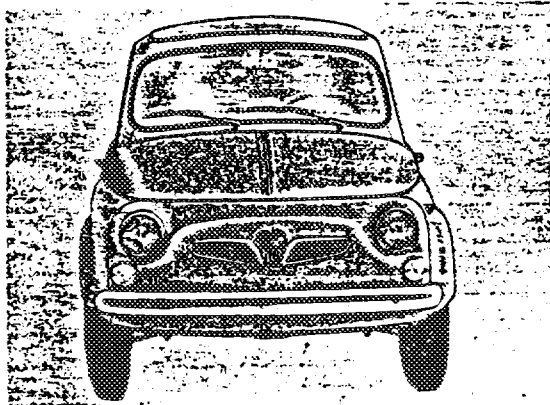
HOMOLOGATION GRANTED IN CATEGORY: TOURING

No.: 1289

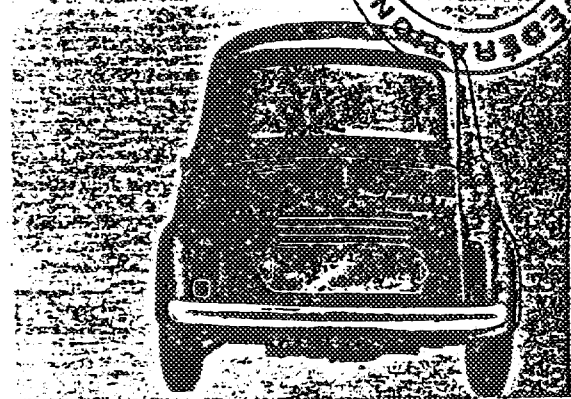
valid from 11 April 1964 list 4 add. to general list 100

Front view of vehicle

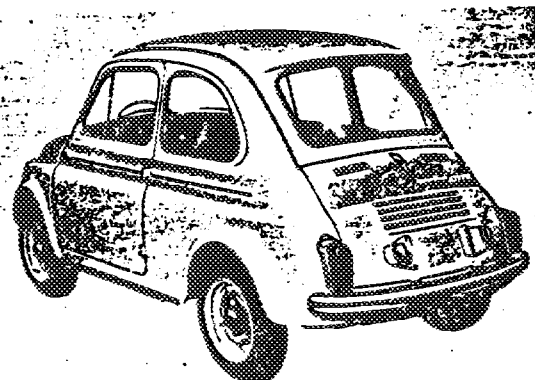
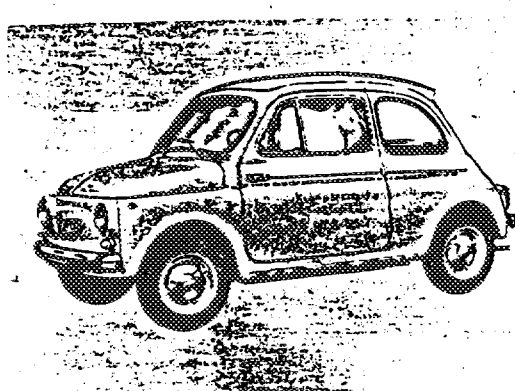
Rear view of vehicle

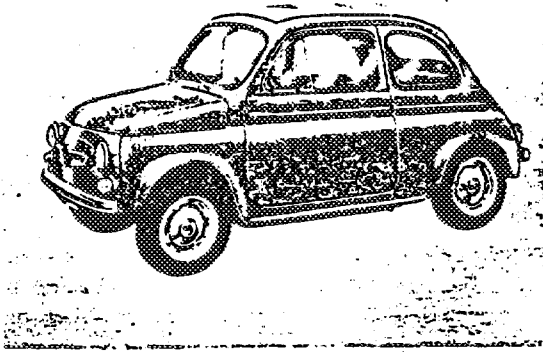


View from front left side

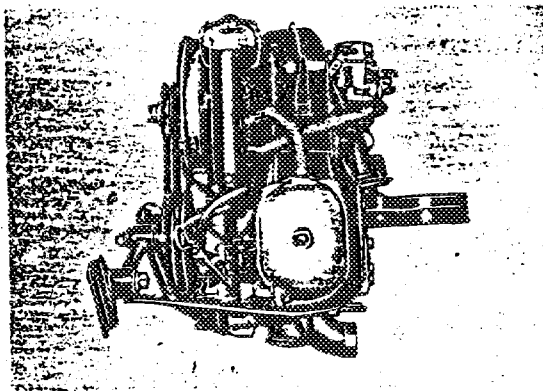


View from rear left side

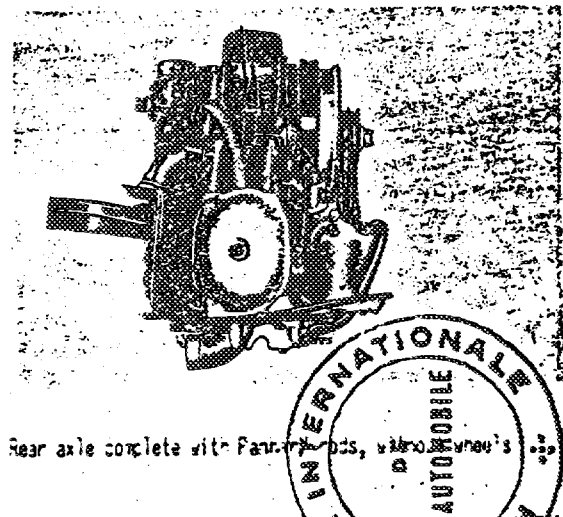




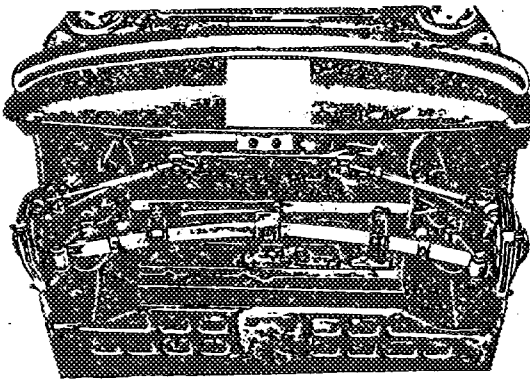
Engine view (right hand side) with Panhard rod



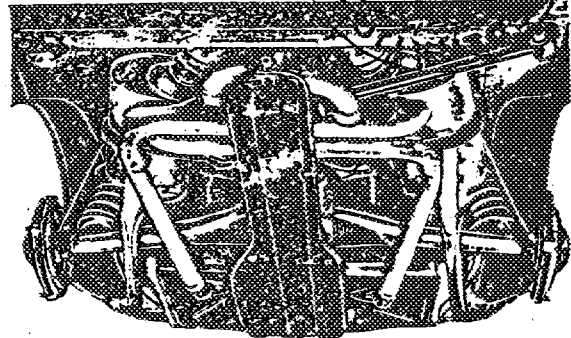
Engine view (left hand side)



Front axle complete with Panhard rod, without wheels



Rear axle complete with Panhard rods, without wheels



Body material: Sheet steel, Additional material: Fabric top for Cabrio-Limousine, Number of seats: 4

OVERALL DIMENSIONS: Width: 1,320 mm Height unladen: 1,355 mm Ground clearance: unladen 158 mm  
Length: 2,695 mm Height laden: 1,322 mm Ground clearance: laden 120 mm

AVERAGE WEIGHT: taken on 5 vehicles, without petrol, without tools, with 1 spare wheel, without driver or passenger and without luggage: Limousine (with steel top): 475 kg Cabrio-Limousine (with fabric top): 455 kg

WHEEL BASE: 1,840 mm

TRACK: 1,120 mm (front) 1,135 mm (rear)

REAR WHEEL DRIVE - REAR ENGINE

TRANSMISSION: Gearbox with 4 forward speeds and 1 reverse speed

TYPE OF STEERING: Worm- and segment

The engine- and gearbox unit is mounted in the body with 3 rubber mountings, lateral movement being checked by 2 Panhard rods, also rubber mounted

The front suspension leaf spring is also laterally checked by a Panhard rod,

An engine undershield is fitted.

ENGINE

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Type: 4 - stroke  
 Fuel: Petrol  
 Position of valves: O.H.V.  
 Maximum power output: 27 DIN hp. / 5.500 r.p.m.  
 Cylinder bore: 81 mm Working tolerance: Tol.group 1: 80,99 - 81,00  
 Stroke: 64 mm Tol.group 2: 81,00 - 81,01  
 Capacity per cylinder: 329,62 cca  
 Total capacity, calculated according to max. tolerances: 659,40 cca  
 Oversizes of cylinders: not provided for in normal production  
 Capacity of combustion chamber: 42,3 cca  
 Height measured in the centre of combustion chamber: 23 mm  
 Total height of engine block without cylinder head and oil sludge: horizontally opposed engine!  
 Height of 1 cylinder: 101,2 mm  
 Height of cylinder head (outer measurement): 40 mm

Engine ventilation: by means of choke poppet valve on the oil filler pipe and 2 pipe lines from the valve covers to oil filler pipe.

WEIGHTS:

Flywheel: 5,22 kg

Crankshaft: 5,15 kg

Connecting rods: 0,41 kg

Pistons for compression ratio 1 : 8,8

without rings: 0,34 kg

with rings: 0,47 kg

CRANKSHAFT BEARINGS:

Number: 3

Type: 2 bearings of lead bronze with emergency layer  
1 bearing of special aluminium alloy layerBIG END BEARING:

3

Type: Bushes of lead bronze with emergency layer

Number: 2

VALVE CLEARANCE WITH COLD ENGINE:

for camshaft P 82

Intake: 0,15 mm

Exhaust: 0,15 mm

for camshaft P 92

Intake: 0,25 mm

Exhaust: 0,25 mm

MAXIMUM VALVE STROKE:

Inlet: 8,55 mm r.cl.

Outlet: 8,55 mm incl. rocker clearance

DIAMETRE OF VALVES:

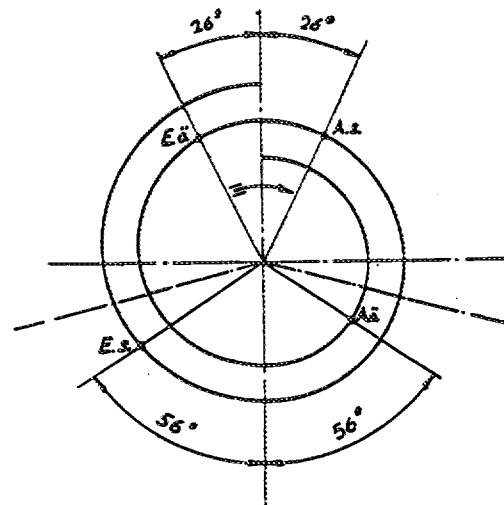
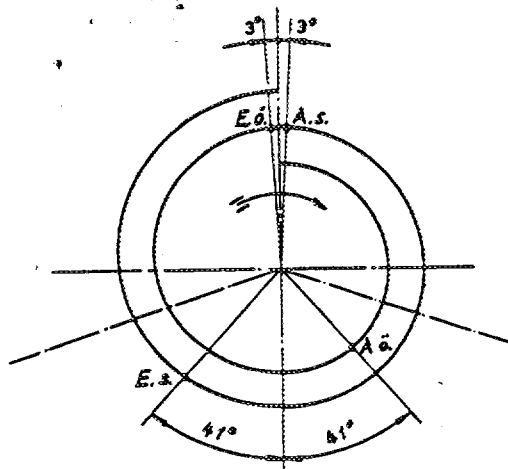
Intake: 38,0 mm

Exhaust: 34,0 mm

Cam followers: with hard chrome or hard metal lining.

VALVE TIMING DIAGRAM: (inspection clearance 1 mm)

for camshaft P 82 (504.1.05.004.2) standard version for camshaft P 92 (503.1.05.013.2) optional equipment



INLET MANIFOLD: Outer diameter: 38,0 mm Internal diameter: 35,0 mm

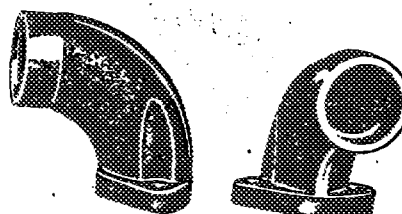
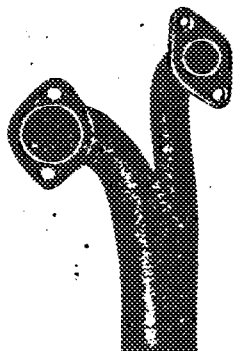
Position: Above the engine block

EXHAUST MANIFOLDS: Internal diameter (engine side) 36,0 mm Internal diameter (outlet side) 38,5 mm

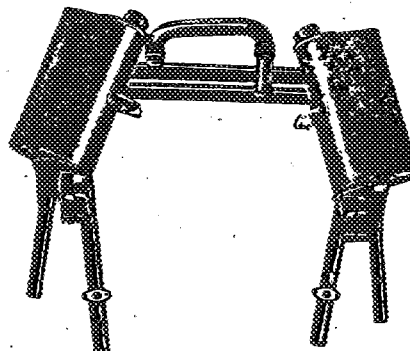
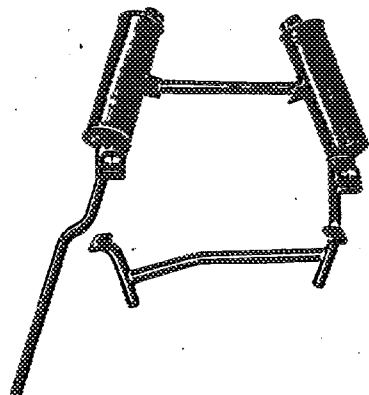
Position: Below the cylinder heads, one for each cylinder

Inlet manifold (detail):

Exhaust manifolds (detail):



EXHAUST SILENCER ARRANGEMENTS: EXPANSION TYPE



Standard Production version

Version available as optional equipment

VALVE SPRINGS: Double Springs

outer spring: length: 38 mm, outer diameter: 31,5 mm, internal diameter: 24 mm, Number of coils: 5,75

inner spring: length: 35 mm, outer diameter: 24 mm, internal diameter: 19 mm, Number of coils: 5,75

CARBURETTOR:

Principle: twin parallel chokes down-draught make: Zenith MDIX Choke diameter: 2 x 32 mm



CLUTCH:

Type: Single dry plate

Diameter of clutch plate: 160 mm

1289

TRANSMISSION :

Make P U C H Synchronash gearbox with 4 forward speeds and 1 reverse speed

GEAR RATIOS :

1st Gear:	37 : 15 1 = 2,47	2nd Gear:	33 : 20 1 = 1,65
	40 : 13 1 = 3,08		34 : 19 1 = 1,79
	41 : 11 1 = 3,73		37 : 17 1 = 2,18

3rd Gear:	29 : 24 1 = 1,21	4th Gear:	25 : 28 1 = 0,89
	30 : 23 1 = 1,30		26 : 27 1 = 0,96
	31 : 23 1 = 1,35		27 : 27 1 = 1,00
	31 : 21 1 = 1,48		28 : 25 1 = 1,12
			29 : 24 1 = 1,21

Reverse Gear:  $\frac{41}{17} \cdot \frac{25}{11} = 5,48$  $\frac{40}{19} \cdot \frac{23}{13} = 3,70$ 

Gear change is affected by floor mounted lever.

 $\frac{37}{21} \cdot \frac{21}{15} = 2,47$ 

AXLE DRIVE:	gear ratios	4,22	4,88	5,74
	number of teeth	38 : 9	39 : 8	36 : 7

Overall reduction ratio to driving wheels: The ratio is dependant of the combination of internal gear and final drive ratios eventually in use.

Wheels: type - disc wheels	make: KROMAG	weight: (without tyres) 2,85 kg
Rims: type - well base rim	dimension: 3,50 x 12	
Tyres: type - lowpressure tyres	dimension: front 125 - 12 or 135 - 12, rear 125 - 12 or 135 - 12	

B R A K E S : foot brake, hydraulic, operating on all 4 wheels.

hand brake, operating on rear wheels

Number of brake cylinders: 1 brake master cylinder  
4 wheel brake cylinders

Internal diameter of brake drum :	180 mm
Outer diameter of brake drum :	235 mm
Length of one brake lining :	164 mm
Width of one brake lining :	30 mm
Type of brake linings :	shape-pressed
Bore of main brake cylinder :	15,87 mm
Bore of wheel brake cylinder front :	17,46 mm
Bore of wheel brake cylinder rear :	15,87 mm



**FUEL CAPACITIES:** fuel tank: 24 l  
 engines: 1,75 l  
 gear box and  
 rear axle 1,5 l

**COOLING SYSTEM:** air-cooling by fan

**TYPE OF WHEEL SUSPENSION:** front: individually suspended with single transverse leaf spring and transverse wishbones  
 rear: individually suspended swinging half-axes with 2 coil springs

**FRONT WHEEL SUSPENSION:** transverse leaf-spring with 5 spring leaves  
 total thickness of spring at the centre: 22,5 mm  
 width of top spring leaf: 45 mm

**REAR WHEEL SUSPENSION:** 2 coil springs  
 outer diameter: 102 mm  
 internal diameter: 78 mm  
 diameter of spring wire: 12 mm  
 number of coils: 9

**SHOCK ABSORBER:** number 2 front 2 rear  
 operation hydraulic

**GENERATOR:** make Bosch-dynastart type: LA/EJ/160/12/3,000 + 1,0 R 1

**VOLTAGE:** Voltage 12 V performance 160 W

**BATTERY:** Voltage 12 V capacity: 28 Ah or 32 Ah

**IGNITION:** type: battery ignition - automatic advance by centrifugal weights mechanism

**SPARK PLUGS:** type BOSCH W 225 T or similar - thread diameter: 14 mm - number per cylinder: 1

**HEAD LAMPS:** normal or asymmetric

**AIR CLEANER:** type: paper-, wire gauze-, or oil-bath filter number: 1

**OIL FILTER:** type: micronic filter, full flow type

**OIL COOLER:** flat tubular radiator situated in the cooling air flow

**OPTIONAL EQUIPMENT:**

Speedometer  
 Revolution counter  
 Oil thermometer  
 Heating system  
 Oil pressure sensor  
 Supplementary fuel tank (capacity: 24 litres)  
 Additional air conduit for the oil cooler for use in tropic climates  
 Reversing lamp  
 Additional head lamps  
 Battery, installed in the front luggage boot  
 Special exhaust manifold with enlarged silencers.



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8, place de la Concorde, PARIS (8<sup>e</sup>), Tél.: ANJOU 34 - 20

1289/A/V

1st Supplements and corrections to the Nomenclature

No.: 1289

STEYR-PUCH mod. FIAT 650 TR

May 1954

Supplements:

Optional Equipment:

Gear set for 3rd speed : 33 : 20  $i = 1,65$



FEDERATION INTERNATIONALE DE L'AUTOMOBILE

8, place de la Concorde, PARIS (8<sup>e</sup>), Tél.: ANJOU 34 - 70

2nd Supplements and corrections to the Homology

No.: 1289

B/V

STEYR-PUCH mod. FIAT 650 TR

June 1965

Supplements:

Optional Equipment:

- 1) On demand rim dimension 4,00 - 12
- 2) Spring leaf stabilizer between swinging half axles.

Valid from 1st October 1965 hist 13/3





FEDERATION INTERNATIONALE DE L' AUTOMOBILE

8, place de la Concorde, PARIS (8<sup>e</sup>), Tel. : ANXU 34-70

3rd Supplements and corrections to the Homology

STEYR-PUCH mod. FIAT 650 TR

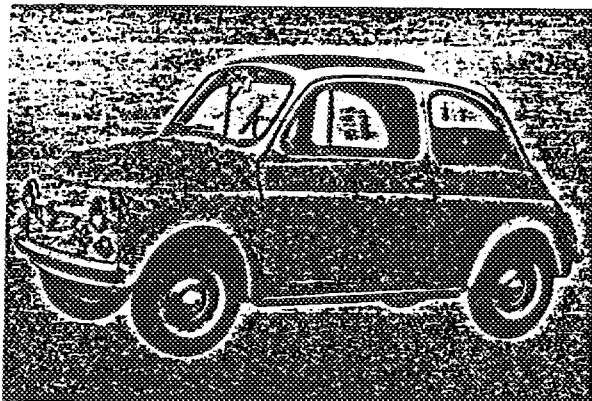
No.: 1289 1/ET

March 1966

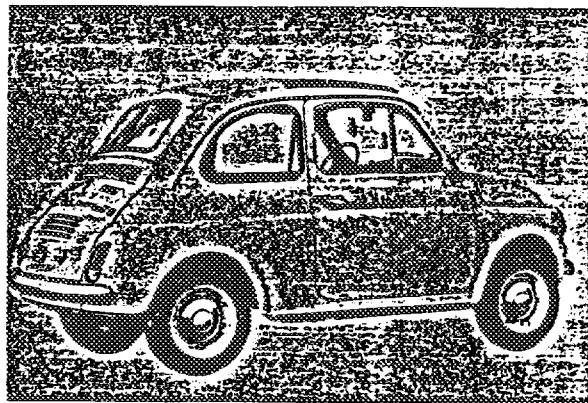
Homologué le 1/5/1966  
liste 14/4

1) Normal development

Beginning from April 1966 and chassis no. 515,0001 front door hinges.



3/4 view of car from front



3/4 view of car from rear



Umbauten an PKW-Typen

Für folgende Umbauten an unseren PKW-Typen kann von seiten STEYR-DAIMLER-PUCH AG. eine Unbedenklichkeitsbescheinigung ausgestellt werden (gilt nicht für PUCH 500 S Motor- und Fahrwerkumbauten I u. II).

I. Motorumbauten

Umbau von 500 D bzw. 500 DL auf 650 T bzw. 650 TR <sup>1)</sup>  
und umgekehrt. Es ergeben sich dabei folgende Motordaten:

500 D	16	PS bei 4600 U/min, 0,493 ccm, Hub 64, Bohrung 70	
500 DL	19	PS bei 4600 U/min, 0,493 ccm, Hub 64, Bohrung 70.	
650 T	19,8	PS bei 4800 U/min, 0,643 ccm, Hub 64, Bohrung 80	
650 TR I	30	PS bei 5500 U/min, 0,660 ccm, Hub 64, Bohrung 81.	
650 TR II	34	PS bei 5800 U/min, 0,600 ccm, Hub 64, Bohrung 81,	<sup>2)</sup>

II. Fahrwerk

- Spurverbreiterung um 25 mm. Nur durch breitere Felgen bzw. Sturzänderung erlaubt, wobei die Anzahl der genehmigten Sitze auf 2 reduziert werden muß, wenn die Spurverbreiterung mehr als 15 mm beträgt.
- Verstärkte Achsschenkel und Bremsen vorne (bei TR Serie)
- Kürzen der hinteren Feder um ca. 20 mm (bei TR Serie).
- Einbau eines Panhardstabes vorne und hinten (bei TR-Serie)
- Verstärkte Vorderfeder (bei TR Serie)
- Verstärkte Stoßdämpfer (bei TR Serie)
- Felgen: vorne und hinten mindestens 3,5", max. 4,5" <sup>3)</sup>  
Mögliche Kombination: vorne und hinten gleich oder hinten größere Dimension
- Reifen: vorne mindestens 125-12, max. 145-12 (bzw. 155/70-12)  
(bei TR mindestens 135-12) 155/60-12  
hinten mindestens 125-12, max. 165-12 (bzw. 165/70-12)  
(bei TR mindestens 135-12). 165/60-12  
10/16-12  
Mögliche Kombination: vorne und hinten gleich oder hinten größere Dimension

III. Karosserie (gilt auch für PUCH 500 S)

- Einbau von Schalensitzen (H-Punkt muß gleich bleiben)
- Lenkrad mind. 28 Ø (nur genehmigte Ausführung)
- Kürzen des Schalthebels um max. 25 mm
- Umbau Faltdach auf Festdach bzw. umgekehrt

<sup>1)</sup> Bei Umbau auf 650 TR sind folgende Punkte abzuändern:  
IIb, c, d, e, f, h. (Spezielle Fahrwerkumbauten nach besonderer Überprüfung möglich)

<sup>2)</sup> 650 TR II 40 PS bei 5800 U/min 0,660 ccm, Hub 64, Bohrung 81  
(Diese Leistung gilt für Monte Carlo-Auspuffanlage. Das Geräusch liegt jedoch dann über 82 dB(A).

<sup>3)</sup> Bei Verwendung breiterer Felgen als 3,5" bzw. breiterer Reifen als 135-12 sind ebenfalls die Punkte IIb, c, d, e, f abzuändern.

Zulässige Reifen für 500 S vorne und hinten mind. 125-12, max. 135-12.