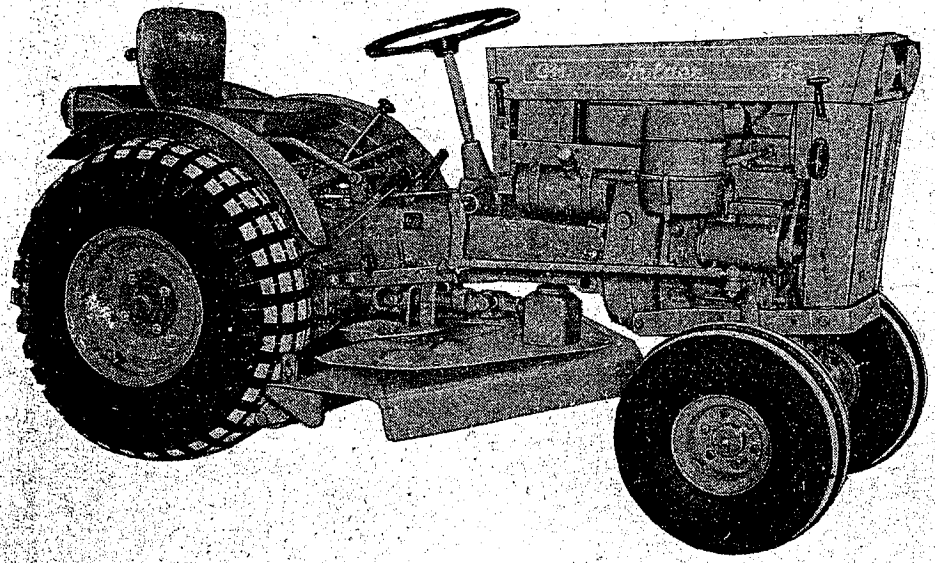
Holder
1888

B 16



Betriebsanleitung
Operating Instructions
Notice d'emploi
Instrucciones de servicio

1972

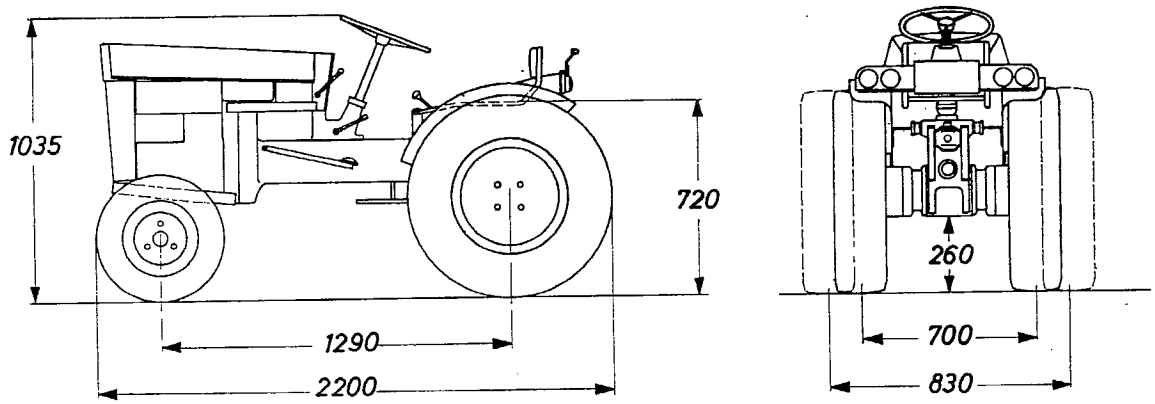
Gebrüder Holder Maschinenfabrik
7418 Metzingen Western Germany
Telefon (07123) 2036* Telex: 07245319

B) Technical data

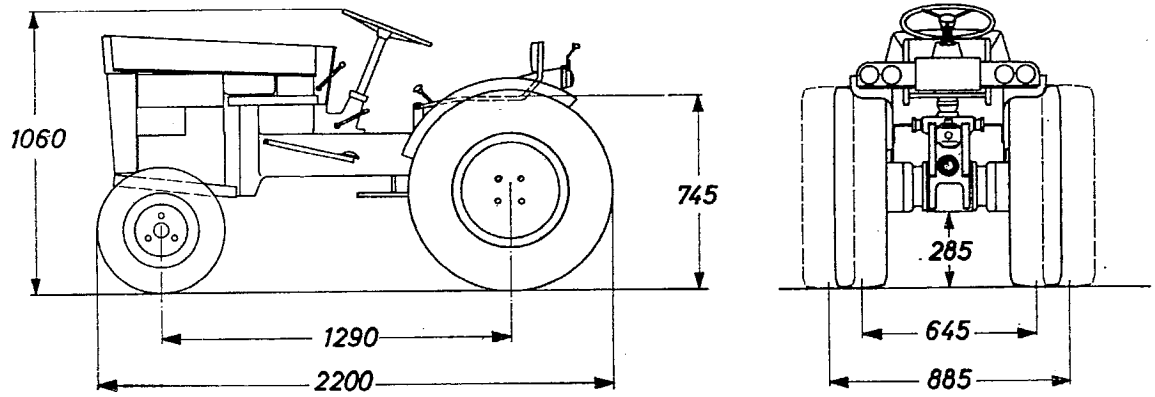
1. Engine

a)	Manufacturers:	Gebrüder Holder Maschinenfabrik, 7418 Metzingen/Württ.
b)	Type:	HD 1
c)	Design:	In-line vertical
d)	Mode of operation:	Two-stroke
e)	Combustion:	Direct fuel injection
f)	Lubrication:	Fresh-oil lubrication
g)	Cooling:	Water-cooling
h)	Cooling water filling:	3,8 ltr. (anti-freeze mixture contained all the year round)
i)	Cylinders:	1
j)	Cylinder bore:	88 mm
k)	Stroke:	90 mm
l)	Cylinder capacity:	550 ccm
m)	Engine capacity:	12 HP at 2600 rpm after DIN 70020 (German specification standards)
n)	Fuel consumption:	200 g/HP/h
o)	Oil supply in oil tank:	1,0 ltr.
p)	Oil filling in regulator housing:	0,75 ltr.
r)	Commencement of delivery of fuel injection pump:	6,6 mm before top dead centre (t.d.c.)
s)	Air filter:	Large size oilbath air filter upon request with cyclone preselector
t)	Fuel tank capacity:	6,5 ltr.

Holder B 16 Municipality Version B 16 K (Ill. 1)
Rubber-tyred wheels: rear 28 x 9.00 – 15 AS
front 18 x 7.00 – 8 AS



Holder B 16 Multi-purpose Tractor B 16 (Ill. 2)
Rubber-tyred wheels: rear 7.00×16 AS
front 4.00×10



2. Transmission

a) Clutch:

Single-plate dry clutch

b) Gearbox:

6 forward (0,5–20 km/h) and 3 reverse gears

c) Speeds:

		Municipality-Version 28 x 9.00 – 15 AS (Ill. 1)	AS-Tyres 7.00×16 (Ill. 2)
forward:	1st speed	1,1 km/h	1,2 km/h
	2nd speed	1,6 km/h	1,9 km/h
	3rd speed	3,2 km/h	3,6 km/h
	4th speed	5,7 km/h	6,5 km/h
	5th speed	8,6 km/h	9,8 km/h
	6th speed	16,7 km/h	19,0 km/h
reverse:	1st speed	1,1 km/h	1,2 km/h
	2nd speed	1,6 km/h	1,9 km/h
	3rd speed	3,2 km/h	3,6 km/h

d) Diff-lock:

Hand-lever operated

e) P.T.O.:

P.T.O. shafts can be controlled independent of each other
Rear: Standard splined shaft with 540 rpm at 2100 engine rpm
Centre: 1530 rpm at 2600 engine rpm
Front: Upon request, 1530 rpm at 2600 engine rpm

f) Steering:

A-steering via robust steering box and steering brakes

g) Brakes:

Two independent braking systems. Foot and hand brake, and in addition single-wheel brakes

h) Trailer hitch:

Revolving and detachable

i) Hydraulic system:

Holder hydraulics with Bosch gear pump
(5,5 ltr./min.). Lifts also with disengaged transmission

Rear: Holder single-cylinder three-point implement lift. Max. lifting capacity 350 kpm or 734 kg at the height of the field bar

Centre: Holder single-cylinder hydraulic lift for inter-axle implements

Front: Front hydraulics on request

i) Hydraulic oil:

approx. 1,6 ltr. (HD-oil for diesel engines SAE 20)

k) Electrical equipment:

Bosch dynamo: Type LJ/GEH 90/12/1800 FR 15
Bosch starter: Type AL 53/43/T 4
Battery: 12 V – 24 Ah
2 headlights (dimming and parking light)
2 front traffic indicators
2 rear traffic indicators
2 rear reflectors
2 brake warning lights with switch
1 licence plate light
1 horn
1 fuse box
1 7-pole plug
1 warning light system

l) Weights:

Total weight:	495 kg
Front axle pressure:	205 kg
Rear axle pressure:	290 kg
Permissible load on rear axle:	600 kg
Permissible load on front axle:	300 kg
Permissible load on trailer hitch:	200 kg

The permissible axle loads are only applicable for driving on roads.

m) Tyres:

1. B 16 K: Holder Municipality Version (Ill. 1):
   rear: 28 x 9.00 – 15 AS
   front: 18 x 7.00 – 8 AS
2. B 16: Holder Multi-purpose Tractor (Ill. 2):
   rear: 7.00×16 AS
   front: 4.00×10

n) Track widths and measurements:

B 16 K – 70 and 83 cm
overall width 93 and 106 cm
B 16 – 65 and 89 cm
overall width 82 and 106 cm
Height on engine bonnet: 97 cm

Height of driver's seat, (occupied):	69 cm
Overall height:	105 cm
Overall length:	212 cm

o) Filling quantities:

Engine oil tank:	1,0 ltr. HD-B-oil SAE (depending on outside temperatures)
Oil bath air filter:	0,6 ltr. HD-B-oil SAE
Hydraulic system:	1,6 ltr. HD-B-oil SAE
Regulator housing:	0,75 ltr. HD-B-oil SAE
Gearbox:	3,2 ltr. SAE 80 gear oil
Axle box:	0,3 ltr. SAE 80 gear oil
Steering box:	0,25 ltr. SAE 80 gear oil
Fuel tank:	6,5 ltr.
Cooling system:	3,8 ltr.

Anti-freeze mixture, safe up to –20° C contained from the works all the year round.

C) Preparations for taking tractor into service

1. Engine

a) Check oil level daily. Open cover of lubrication oil container (33 III. 3), remove dip-rod (86 III. 7) and top-up with HD-B oil for diesel engines almost to container edge. The oil level must never be below MINIMUM mark of diprod.

For temperatures below 0° C	HD-B-oil SAE 10
For temperatures 0° – +30° C	HD-B-oil SAE 20
For temperatures over + 30° C	HD-B-oil SAE 30

The tractors are shipped from the works with HD-B-oil SAE 10 from 1st October till February inclusive, and with HD-B-SAE 20 oil from 1st March till September inclusive. To avoid damage caused through inferior lubrication oils, use only high-grade branded oils of the renowned oil companies (see page 37). Always use the same brand of oil!

b) **Oilbath air filter: (43 III. 8)**
Remove oil basin 43 III. 8 and top-up to mark with the same brand of oil as used in engine.

c) **Cooling water**
If possible, check when engine is cold. Be careful when checking cooling water right after engine has been shut-off. Danger! Steam may escape with excess pressure. Therefore, open radiator cover (35 III. 3) slowly as far as stop to let excess pressure escape. Then open completely.

Attention:

From the works an anti-freeze mixture, (safe up to –20° C) is contained all the year round. Check cooling water concentration before handing tractor over to client, and before frost sets in. Increase cooling concentration depending on the severity of the expected frost.

d) The V-belt (47 III. 7) has the right tension if you can press it in approx. 1 cm between the V-belt pulleys of fan and dynamo. To retighten V-belt slacken dynamo-support, and press dynamo outwards till the V-belt has the right tension. Then retighten screws (44 and 79 III. 7).

e) **Filling fuel tank**
Use only scrupulously clean diesel oil. Dirty fuel causes excessive wear of injection pump and nozzle. Ventilate ("bleed") fuel system. Open screw (74 III. 9) till fuel comes out without bubbles.

f) **Regulator housing**
Oil level sight glass (31 III. 4) 0,75 ltr. SAE 20 engine oil.
If the machine stands on level ground, the oil should be visible at the centre of the sight glass.

Hydraulic oil supply tank: 1,6 ltr. HD-B oil SAE 20 for diesel engines.
Apply lubrication to grease nipples (S 1 – S 7)
(see III. 3, 4, 11). Before applying lubricants remove protective coating of paint from grease nipples.

D) Taking tractor into service

1. Preparations

a) Shift selector lever (1 III. 3) to neutral.
b) Move throttle lever (13 III. 4) to approx. 3/4 revs.
c) Insert key into ignition (14 III. 6) so that red charging lamp (20 III. 6) lights up.
d) Push blue starter knob of injection pump (37 III. 10)
e) Push starter button on dash panel (19 III. 5). Release button as soon as engine springs to life.
f) Move throttle lever back to low revs.

2. Driving

Before using selector lever throttle down to idling speed (13 III. 4)
Depress clutch pedal (12 III. 4). Open hand brake (7 III. 3).
Select desired gear range with preselector lever (2 III. 4). Engage gear (1 III. 4) (see gear shift diagramme III. 14). If the gear proves difficult to engage, depress clutch pedal once more (never use force). Release clutch pedal slowly. Control speed within the selected gear range with throttle lever (13 III. 4).

Be very careful when driving in uneven territory, particularly when turning the tractor on slopes. Check the overturning moment of your tractor with each particular implement in use and under consideration of all safety measures.

Do not let engine run in unventilated space!

3. Braking

The foot brake (8 Ill. 3) is used when the tractor is moving. The hand brake (7 Ill. 3) is released by pushing the button of the handle grip. When parking the tractor on sloping territory use suitable chocks, shut engine off, engage low gear and lower implements.

If the tractor is used with a trailer attached, local safety regulations must be observed.

4. Trailer lighting

Traffic regulations in Germany prescribe that the distance between tractor and outer trailer edge, as measured on the headlight beam of the tractor, must not be more than 400 mm. Also the trailer must be equipped with rear reflectors, traffic indicators and braking lights. The 7-pole socket is commercially available under the number DIN 72567.

Driving with attached trailers, particularly drive axle trailers, or other attached vehicles, is at your own risk!

5. Diff-lock

The diff-lock rigidly locks the two rear wheels preventing either of them from slipping. The diff-lock is operated by pulling the hand lever (11 Ill. 3) upwards. With differential locked, the tractor must be steered straight ahead only.

6. Adjustment of the track width

To alter track width change both pairs of wheels from right to left. ATTENTION! With AS tyres the arrow must always point in the direction of motion. The fenders can be adjusted to the track width.

Check wheel nuts in regular intervals, particularly after changing wheels. Larger tyre sizes are not permitted because:

a) the permissible max. speed would then be exceeded

b) the stress on the transmission would be too high.
The use of wheel extensions is not permitted.

7. Hydraulic lift

The hydraulic lift arms (66 Ill. 3) are actuated by means of lever (15 Ill. 6). The intermediate lever position locks the implement in position. At the bottom of its travel, the lever is held and the implement in its floating position. The control valve provides for a second hydraulic connection (91 Ill. 6) for additional implements.

Attention!

Caution, when parking a tractor unattended, or even during working breaks, the implement must be lowered on the ground (danger of accidents).

8. P.T.O.

The rear standard P.T.O. shaft is controlled with P.T.O. selector lever (3 Ill. 3), and the centre and front P.T.O. shafts with selector lever (4 Ill. 3) – see Ill. 14. Make sure to disconnect the relevant P.T.O. when carrying out any service, or other job, on P.T.O. operated implements.

9. Stopping tractor

Let engine run idle, throttle engine revs, disengage clutch, shift selector lever (1 Ill. 3) to "O" position, put on hand brake (7 Ill. 3).

10. Shutting engine off

Let machine run idle for a little while. Move throttle lever (13 Ill. 4) downward to idle position. Remove ignition key (14 Ill. 6).

E) Service and maintenance

(See Service Chart F)

1. Engine

a) **Change oil in oil tank, rinse oil tank and clean oil filter** (70 Ill. 9) after every 200–250 operation hours. Use only high-grade branded oil for diesel engines (See C 1a).

b) **Ventilation ("Bleeding")**

Attention: After every oil change open ventilation screw of filter (69 Ill. 9) and wait till oil comes out without bubbles. Open hollow screw (84 Ill. 7) of oil pump till suction pipe has been bled as well.

c) After 500 hours remove **oil drip plate (75 Ill. 9) and oil drip strainer (76 Ill. 9)** and wash. The graphite seal (77 Ill. 9) must be fitted in a way that the two slots lie diagonally across the longitudinal axis of the machine. (See Ill. 9). The seal should be replaced. Tighten four hexagon screws uniformly.

d) **Clean exhaust and outlet ports** after every 100 hours of operation. Use an angular stick of wood to decarbonize outlet port (X Ill. 10). Thereby bring piston in a position that outlet port is closed from inside (see Ill. 10). Burn exhaust pipe out and loosen oil carbon deposits by tapping the exhaust pipe from outside.

e) **Oil bath air filter.** Clean according to dirt development, if necessary daily. Remove oil basin (43 Ill. 8) and filter inset (42 Ill. 8) and wash with diesel oil. Let filter inset dry well and fill oil basin with fresh engine oil up to mark.

f) Change oil in **gearbox for auxiliary pumps** after every 1000 operation hours. Drain oil on drain plug (30 Ill. 9) and refill on filler plug (39 Ill. 9) with 0,75 ltr. SAE 20 HD-B-oil to centre of sight glass (31 Ill. 9).

g) **Cooling system**
If frost is expected check cooling water concentration (See C 1c).
Retighten V-belt (See C 1d).

Clean radiator. Remove dirt deposits by blowing from engine side through radiator shutter with compressed air, or with a jet of water.

h) **Replace fuel filter (32 Ill. 3). The fuel filter cannot be cleaned.**
The filter of the fuel tank (32 Ill. 3) must be changed after approx. every 500 operation hours, depending on the degree of dirt development.

i) **Ventilation ("bleeding") of fuel system**
The fuel system must be ventilated ("bled"):
before starting engine for the first time if fuel tank is empty,
when fuel filter is replaced, or if air has entered pipes.
Open ventilation screw (74 Ill. 9) of injection pump.
Tighten ventilation screw only after fuel has come out without bubbles.

j) **Max. revs.** Max. engine revs must not be exceeded. If set screw (73 Ill. 9) has been re-adjusted, any warranty claims must be rejected by the manufacturers!

2. Tractor

a) **Battery maintenance.** Check battery (29 Ill. 3) every 4 weeks, in tropical countries every two weeks. The acid level must be 10–12 mm above upper edge. Use only distilled water. Grease connection terminals lightly with acid-free Vaseline.

b) **Grease all lubrication nipples** (S 1 – S 7) after every 200–250 operation hours (monthly). If molybdenum grease is available, use the same.

c) **Change oil in gearbox** for the first time after approx. 500, thereafter every 2500 operation hours. The gearbox contains 3,2 ltr. of SAE 80 gear oil. If the tractor stands on level ground, the oil should be visible half way up the sight glass (81 Ill. 4). Drain screw (68 – Ill. 11). Filler screw (80 Ill. 4).

d) **Hydraulic oil**
Change for the first time after 500 hours thereafter every 2500 hours. (Approx. 1,6 ltr. HD-B SAE 20 engine oil). Automatic ventilation on ventilation filter (34 Ill. 3) actuated by lowering and lifting hydraulics several times. Clean ventilation filter of hydraulic (34 Ill. 3) after every 500 operation hours with diesel oil.

e) **Brakes, clutch, and lighting system**
Have brakes, clutch and lighting system checked from time to time, at least once a year, through an accredited service station. This should be particularly done if the tractor is frequently used on public roads. All moving parts, such as shaft of the clutch, brake pedal bearings, etc. should be given a few drops of oil every week.

f) **Washing tractor**
Before washing down the machine with water, disconnect battery terminals, or, still better, remove battery entirely. Protect air filter and governor switch from direct contact with water.
Before putting tractor away for any length of time clean it thoroughly and lubricate well.

h) **Transporting persons**
Transporting of persons is not permissible unless a suitable seat has been provided. Pay attention to your local safety regulations.

F) Service Chart

1st Service

A **To be carried out through agent immediately upon receipt of tractor and before taking machine into service.**	B **When handing tractor over to client. If possible give all instructions in the presence of tractor owner or his authorized person.**	C **After every 8–10 operation hours (daily).**	D **After every 100 operation hours**
1. Grease all lubrication nipples (S 1–7). 2. Check oil level in engine and gearbox. a) Engine: optimum oil level upper dip-rod mark. Use only clean branded HD-B-oil for diesel engines. For temperatures below 0° C HD-B-SAE 10, from 0° to + 30° C HD-B-SAE 20, over + 30° C HD-B-SAE 30. b) Oil filling in gearbox for auxiliary pumps (engine) – check on sight glass. c) Gearbox: oil level middle of sight glass SAE 80 gear oil. 3. Retighten all screws, particularly wheel nuts. 4. Check oil level of air filter, if necessary top-up with engine oil. 5. Check cooling water level. If frost is expected check cooling water concentration. 6. Check hydraulic oil (engine oil HD-B-SAE 20). 7. Check tyre pressure. a) **Tyres of municipality version:** rear (28 x 9.00 – 15 AS) – 0,7 atm. front (18 x 7.00 – 8 AS) – 0,8 atm. b) **AS-tyres** rear (7.00–16) In the field: approx. 0,8 atm. In the road: 1,5 atm. front (4.00–10) – 1,5 atm. 8. Trial run engine and check function of tractor and hydraulic system.	1. Check tractor for completeness. Check tools. 2. Give instructions according to operation manual. 3. Before taking tractor into service, in the presence of owner: a) Check engine oil level, explain lubrication system and oil change. b) Explain cooling system. In danger of frost check cooling water concentration. c) Check V-belt tension. d) Explain gearbox, sight glass and oil change. e) Point out to lubrication nipples, oil control plug and lubrication points. f) Explain cleaning of ventilation filter of hydraulic oil supply tank. g) Check oil level in air filter and explain cleaning. i) Explain battery maintenance. j) Explain outlet ports and cleaning of exhaust. 4. Check tyre pressure (see A 7 a+b). 5. Check function of engine, gearbox, diff lock, hydraulics, give practical demonstration of the latter. Point out to correct parking of tractor: discharge of hydraulics, lowering of implements (danger of accidents). 6. Check electrical system. Explain fuse box and battery maintenance. 7. Give practical field demonstration of implements. 8. Explain servicing of implements in accordance with operation manual. 9. Complete service check book and fill in first check. 10. Complete warranty file card and return to Messrs. Gebrüder Holder. 11. Pay attention to the local traffic and safety regulations.	1. Check oil level of engine. Top-up daily to max. mark. For oil quality see column A 2a. 2. Depending on dust development clean air filter and top-up with fresh engine oil. 3. a) Check cooling water level. If frost is expected check anti-freeze mixture, if necessary add. b) If necessary, depending on conditions of operation, check radiator grille, and clean.	1. Check oil level in gearbox for auxiliary pumps (engine) on sight glass, and if necessary top-up with HD-B-SAE 20 engine oil. 2. Check oil level of gearbox on sight glass. 3. Check oil filling in axle housings on control plug.

2nd Service	3rd Service	4th Service
E **After every 200–250 operation hours.** If possible all jobs should be carried out and all explanations given in the presence of the tractor owner or his authorized person.	**F** **After every 450–500 operation hours.** Latest 6 months after handing machine over. If possible all jobs should be carried out and all explanations given in the presence of the tractor owner, or his authorized person.	**G** **After every 2500 operation hours.** We recommend to have the following jobs carried out through an accredited Holder service station:
1. Clean exhaust and outlet ports of engine. **2.** Change engine oil. **a)** Drain oil tank and rinse. Clean oil filter and fill in fresh engine oil (for oil quality see column A). Ventilate – "bleed" filter section of oil filter and oil suction pipe! **b)** If necessary clean oil bath air filter and top-up with fresh oil. **c)** Check V-belt tension. **d)** Clean radiator fins with compressed air if necessary, check cooling water, in danger of frost add anti-freeze mixture. **3.** Grease all lubrication nipples (S 1–7). **4.** Check electrical system and battery. **5.** Check clutch play, if necessary readjust. Clutch pedal play approx. 1–2 cm. **6.** Check brakes, if necessary readjust. **7.** Retighten all screws. **8.** Check tyre pressure. **a) Tyres of municipality version:** front (18 x 7.00 – 8 AS) – 0,8 atm. rear (28 x 9.00 – 15 AS) – 0,7 atm. **b) AS-Tyres:** Rear (7.00–16) In the field: approx. 0,8 atm. In the road: 1,5 atm. Front (4.00–10) – 1,5 atm. **9.** Trial run tractor and if necessary give another practical demonstration of implements. **10.** Fill in 2nd service cheque.	**1.** Engine oil change see column E 1a **a)** Clean oil drip basin and strainer. **b)** Check nozzle holder for tight fit. **2.** Replace fuel filter in tank (do not clean)! Rinse fuel tank. **3.** Hydraulic oil. **a)** Check oil level of hydraulic tank with hydraulic lift lowered. (Remove ventilation filter.) **b)** Change hydraulic oil for the first time, thereafter every 2500 operation hours. (HD-B-SAE 20 engine oil, appr. 1,6 ltr.) **c)** Clean hydraulic ventilation filter in diesel oil. **4.** Change oil in gearbox for the first time, thereafter every 2500 operation hours. 3,2 ltr. SAE 80 gear oil. **5.** Check oil filling of axle housings on control plug. **6.** Check oil filling in gearbox of steering (0,25 ltr. SAE 80 gear oil). **7.** Fill in 3rd cheque.	**1. Engine** **a)** Renew oil filling of gearbox for auxiliary pumps (engine). Oil quantity 0,75 ltr. SAE 20 oil. **b)** Check compression pressure. **c)** Drain engine oil. Refill with HD-B-oil for diesel engines (see column E 1a). **d)** Check delivery of lubrication oil pump. **2.** Check engine clutch. **3.** Have fuel injection pump checked by a Bosch service station. **4.** Change oil in gearbox. 3,2 ltr. SAE 80 gear oil. **5.** Change hydraulic oil (HD-B-SAE 20 engine oil = 1,6 ltr.). **6.** Retighten all screws. **7.** Remove fuel tank and rinse. Replace filter. **8.** Fill in 4th service cheque.

SAE 80 Gear Oil: Gearbox

HD-B-SAE 20 Engine Oil: Hydraulic system, gearbox of auxiliary pumps (engine)

HD-B-SAE 10, HD-B-SAE 20, HD-B-SAE 30 Engine Oil: Depending on outside temperatures.

G) Three-point Linkage

The short link carrier assembly (63 Ill. 11 and 12) is fixed in two different positions, depending on implement. For attachment of the reversible plough the fixing bracket (61 Ill. 12) points downwards (see Ill. 12). For attachment of the rotary hoe a flat iron is fitted in place of the adjustable upper linkage arm. For attachment of the mower the linkage carrier assembly is turned through 180° (see Ill. 11).

Three-point linkage for vertical lift
For all cultivators and similar implements the linkage carrier ass. (62 Ill. 13) with short upper linkage arm (67 Ill. 13) is used.

Trailer hitch:
The trailer hitch type 3050 is not automatic and must only be used for the attachment of single-axle trailers with a permissible weight not exceeding 2000 kg.

H) How to value a tractor?

A motorcar is generally valued according to driven kilometers and age.
A tractor is best valued according to operation hours and age, with the following guiding principles:

1 operation hour	=	75 driven km
10 operation hours	=	750 driven km
250 operation hours	=	18750 driven km
500 operation hours	=	37500 driven km
1000 operation hours	=	75000 driven km
2000 operation hours	=	150000 driven km
2500 operation hours	=	187500 driven km

J) Oil recommendation list

The oils to be used with Holder diesel engines must be in conformity with the American Military Specification

MIL-L-2104 B

The following oils correspond to the above mentioned specification and are recommended by us:

1. **ARAL**
   - ARAL diesel engine oil SAE 10 W = SAE 10 W
   - ARAL diesel engine oil SAE 20 W/20 = SAE 20
   - ARAL diesel engine oil SAE 30 = SAE 30
2. **BP**
   - BP Vanellus-T-SAE 10 = SAE 10 W
   - BP Vanellus-T-SAE 20 = SAE 20
   - BP Vanellus-T-SAE 30 = SAE 30
3. **ESSO**
   - Essolube HDX SAE 10 W = SAE 10 W
   - Essolube HDX SAE 20 = SAE 20
   - Essolube HDX SAE 30 = SAE 30
4. **FINA**
   - Fina Delta Motoroil SAE 10 = SAE 10 W
   - Fina Delta Motoroil SAE 20 = SAE 20
   - Fina Delta Motoroil SAE 30 = SAE 30
5. **GASOLIN**
   - GASOLIN HD SAE 10 W = SAE 10 W
   - GASOLIN HD SAE 20-W-20 = SAE 20
   - GASOLIN HD SAE 30 = SAE 30
6. **MOBIL-OIL**
   - MOBIL Delvac Oil 1210 = SAE 10 W
   - MOBIL Delvac Oil 1220 = SAE 20
   - MOBIL Delvac Oil 1230 = SAE 30
7. **SHELL**
   - SHELL Rotella Oil S SAE 10 W = SAE 10 W
   - SHELL Rotella Oil S SAE 20 W/20 = SAE 20
   - SHELL Rotella Oil S SAE 30 = SAE 30
8. **VALVOLINE**
   - VALVOLINE Super HPO SAE 10 = SAE 10 W
   - VALVOLINE Super HPO SAE 20 = SAE 20
   - VALVOLINE Super HPO SAE 30 = SAE 30
9. **VEEDOL**
   - VEEDOL Engine oil (Heavy duty plus) HD 901 Special = SAE 10 W
   - VEEDOL Engine oil (Heavy duty plus) HD 902 Special = SAE 20
   - VEEDOL Engine oil (Heavy duty plus) HD 903 Special = SAE 30

Our foreign agents are requested to check the oils they have so far recommended, and which are being used by Holder tractor owners, in the light of these instructions. This means, that the relevant mineral oil companies should be asked whether their recommended oils are in conformity with the American Military Specification

MIL-L-2104 B

K) Explanation of Illustrations

1. Gear selector lever
2. Preselection lever
3. P.T.O. Operation lever (rear P.T.O.)
4. P.T.O. Operation lever (centre P.T.O.)
5. Standard P.T.O. shaft (rear)
6. P.T.O. shaft (centre)
7. Hand brake lever
8. Foot brake
9. Single-wheel brake (righthand)
10. Single-wheel brake (lefthand)
11. Diff-lock
12. Clutch pedal
13. Throttle lever
14. Ignition with light switch
15. Hydraulic operation lever
16. Hydraulic pump
17. Hydraulic cylinder
18. Horn button
19. Starter knob
20. Charging pilot lamp
21. Blinker switch
22. Blinker pilot lamp
23. Warning light switch with pilot lamp
24. Fuse box
25. Starter
26. Dynamo
27. Regulator switch
28. Brake light switch
29. Battery
30. Oil drain screw (gearbox for auxiliary pumps – engine)
31. Oil sight glass (gearbox for auxiliary pumps – engine)
32. Fuel filter
33. Engine-lubrication oil cover
34. Filler plug and ventilation filter of hydraulic oil supply tank
35. Radiator cover
36. Radiator cooling water drain plug right and left (engine)
37. Starter knob (blue)
38. Glow plug holder
39. Oil filler screw – gearbox for auxiliary pumps (engine)
40. Injection nozzle
41. Air filter
42. Air filter insert (wire gauze)
43. Oil chamber for air filter
44. Fixing screws for dynamo
45. Tool box
46. Fuel tank cap (diesel)
47. V-belt
48. Engine type plate
49. Front traffic indicator
50. Rear traffic indicator
51. Rear reflector
52. Licence plate light
53. 7-pole plug
54. Plug for mounting bracket and trailer hitch
55. Drawrod (left)
56. Wedge locks

57. Drawrod
58. Upper linkage arm, long
59. Lower linkage arm
60. Adjustable draw rod (right)
61. Mounting bracket
62. Mounting bracket long for vertical implement lift
63. Mounting bracket short for three-point linkage
64. Trailer hitch
65. Pin for trailer hitch
66. Hydraulic lever
67. Upper linkage arm, short
68. Oil drain screw – gearbox
69. Ventilation screw of oil filter
70. Oil filter
71. Oil suction pipe
72. Idling set screw
73. Set screw for max. revs.
74. Ventilation screw for fuel
75. Oil seal (sealing cover)
76. Oil drip strainer
77. Oil drip plate (graphite seal)
78. Engine serial No. (embossed)
79. Hexagon screws for V-belt tension
80. Oil filler plug gearbox
81. Oil sight glass – gearbox
82. Oil suction pipe for oil return pump
83. Oil return flow pipe to oil tank
84. Oil suction pipe for oil pump
85. Oil pressure pipe
86. Oil diprod
87. Oil control plug – axle housing
88. Oil filler plug – steering box
    (200 g SAE 80)
89. Set screw for clutch play
90. Set screw for clutch play of clutch pedal –12 cm
    (adjust stop of clutch plate in a way to allow clutch to disengage entirely)
91. Hydraulic connection for additional implements

S 1–2 Lubrication nipple for hydraulic shaft
S 3 Lubrication nipple for hydraulic cylinder
S 4–5 Lubrication nipple for axle journal
S 6 Lubrication nipple for stub axle carrier bolt
S 7 Lubrication nipple for fan blade

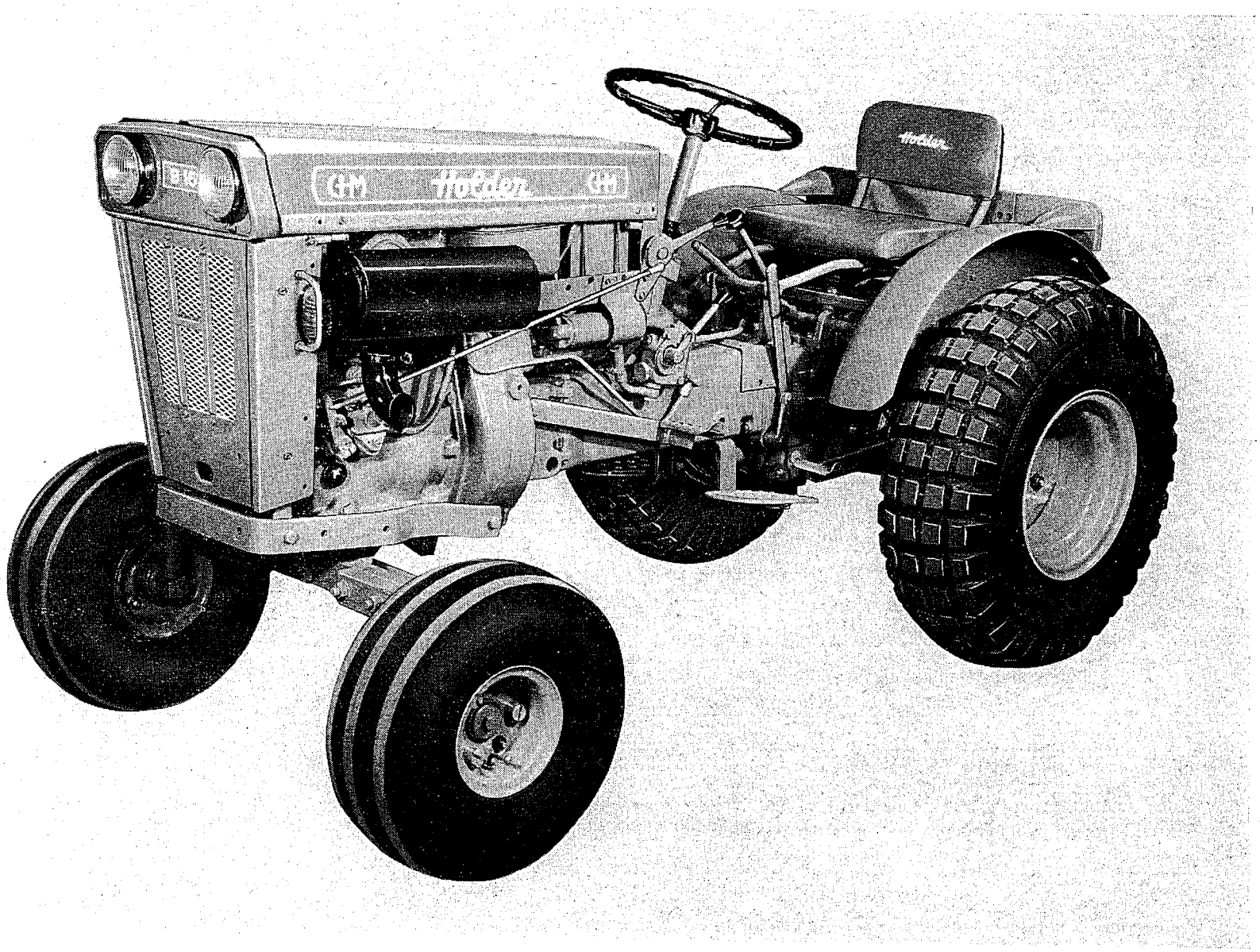
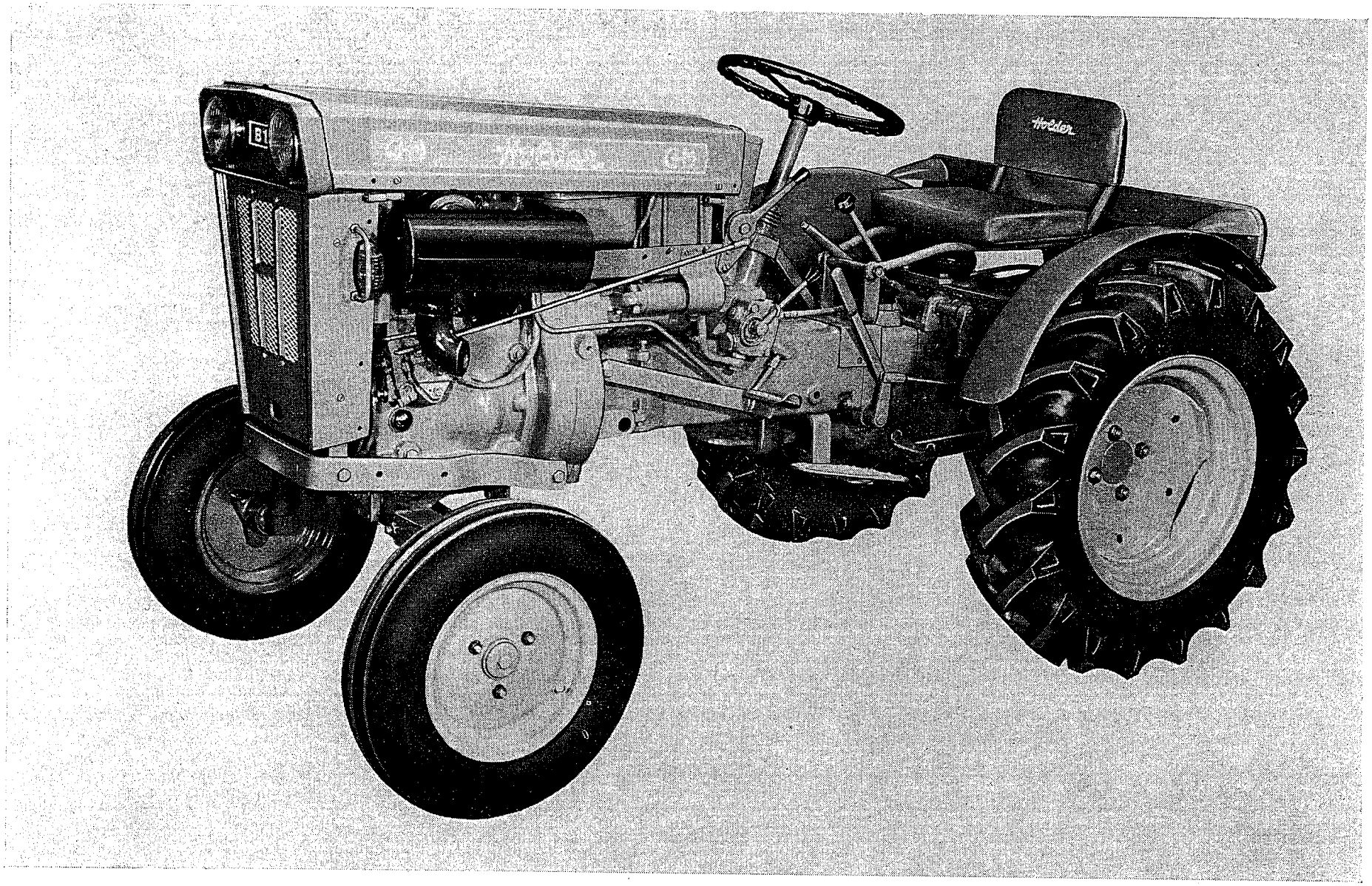


Abb. 1



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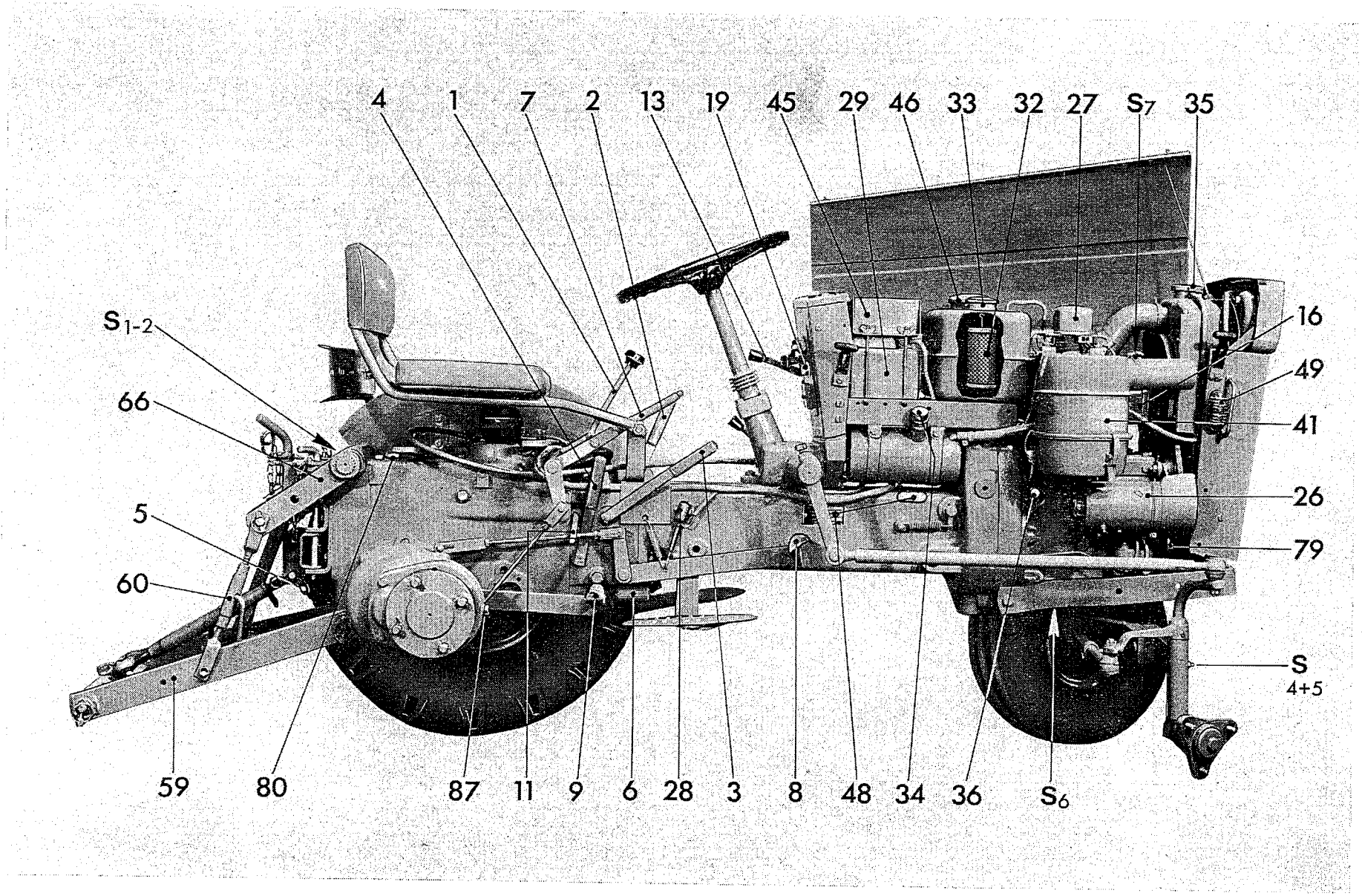

4
1
7
2
13
19
45
29
46
33
32
27
S7
35
S1-2
66
5
60
16
49
41
26
79
S
4+5
59
80
87
11
9
6
28
3
8
48
34
36
S6

Abb. 3

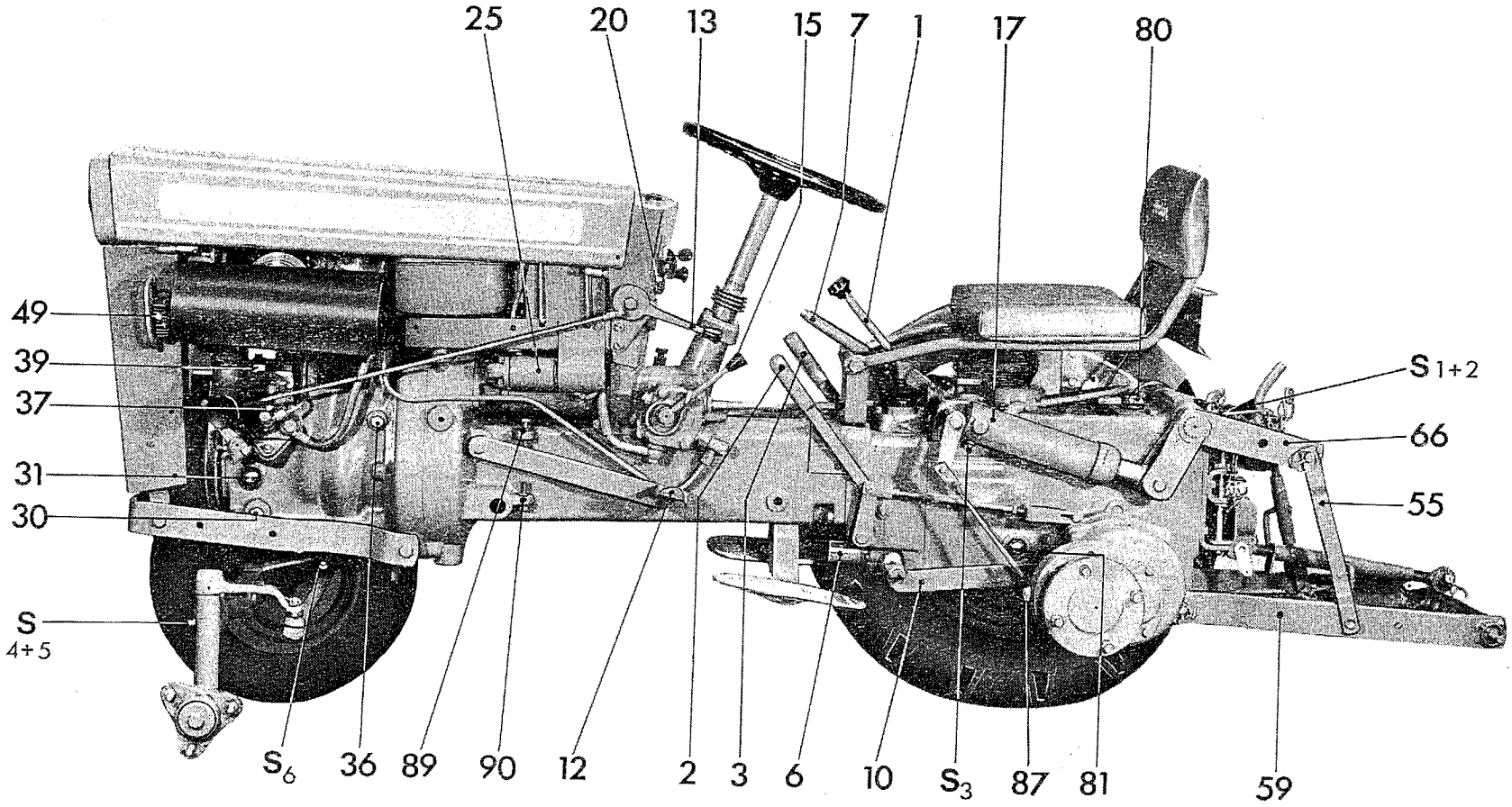
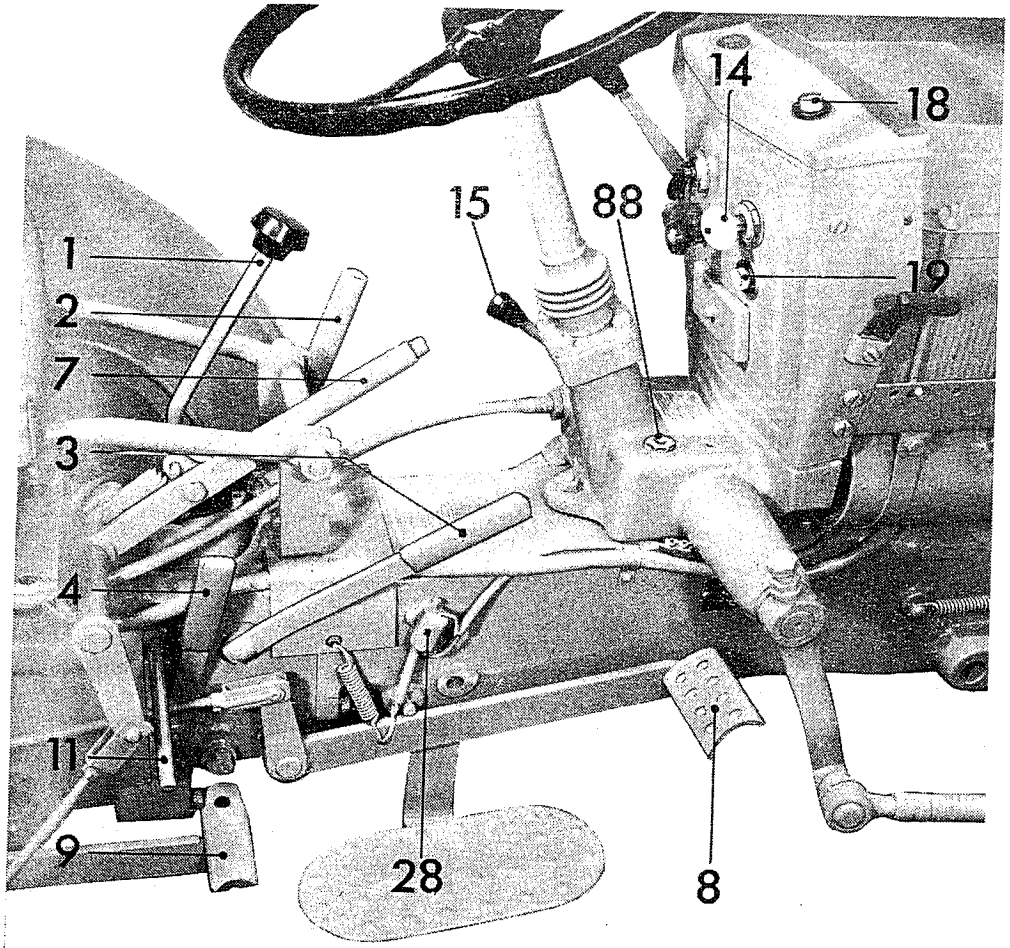

25
20
13
15
7
1
17
80
49
39
37
31
30
S 4+5
S1+2
66
55
S6
36
89
90
12
2
3
6
10
S3
87
81
59

Abb. 4



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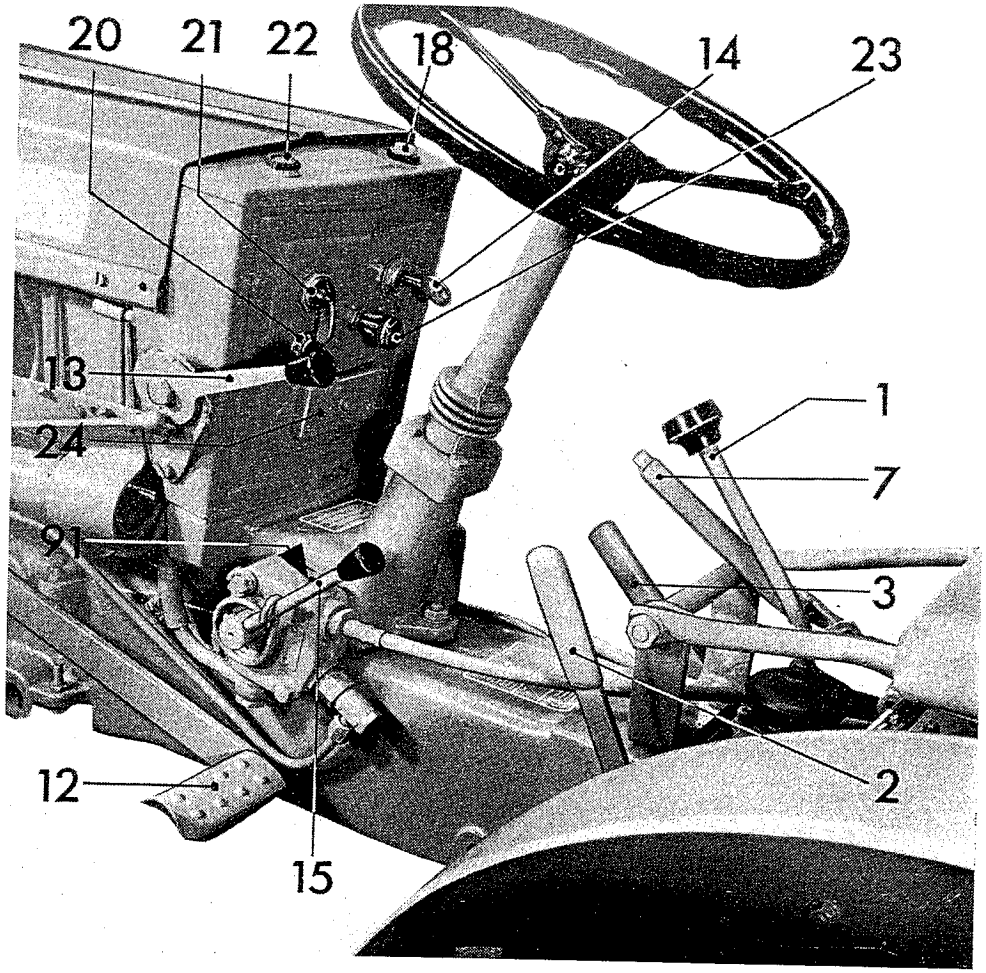

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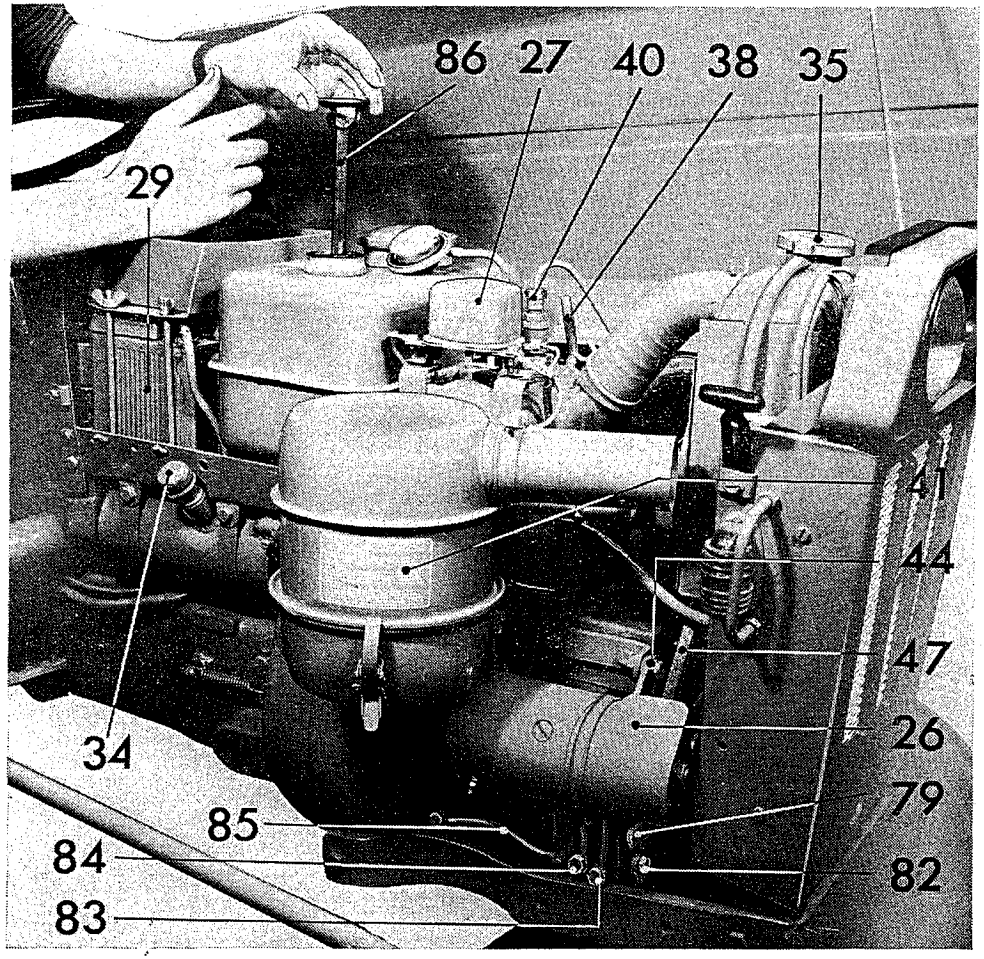

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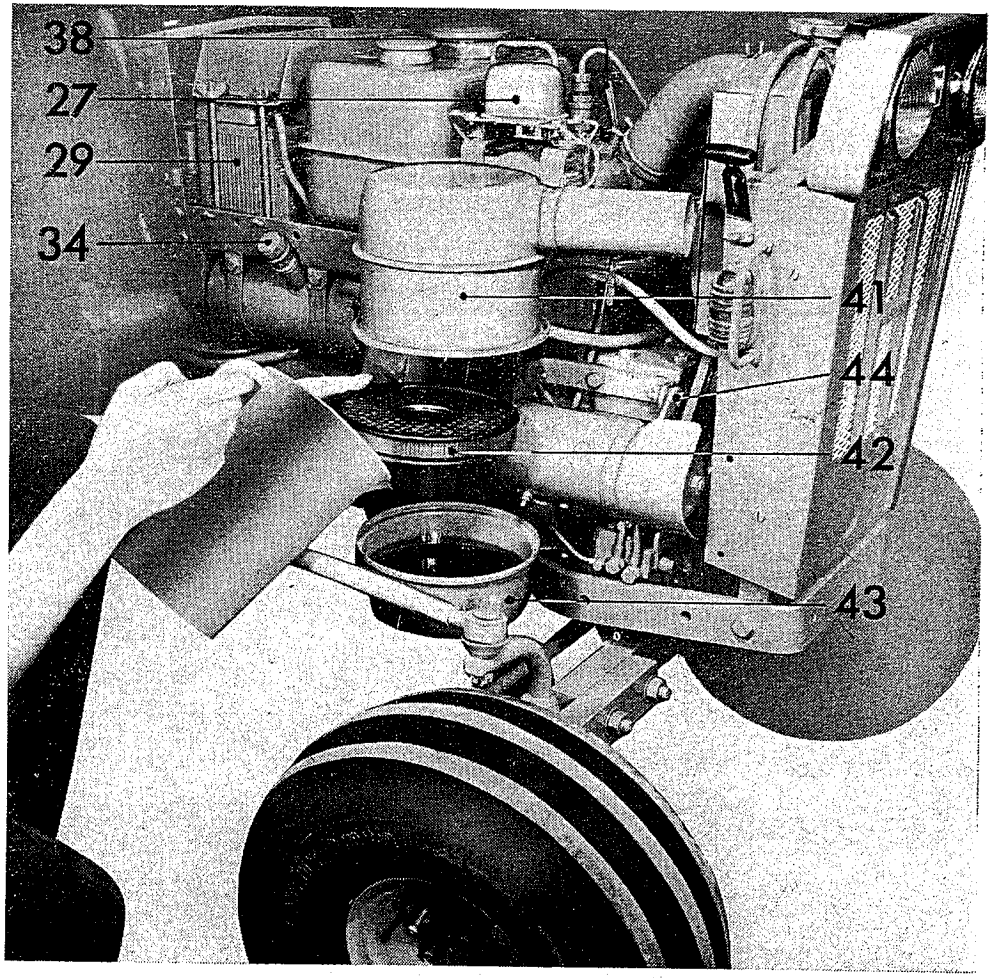

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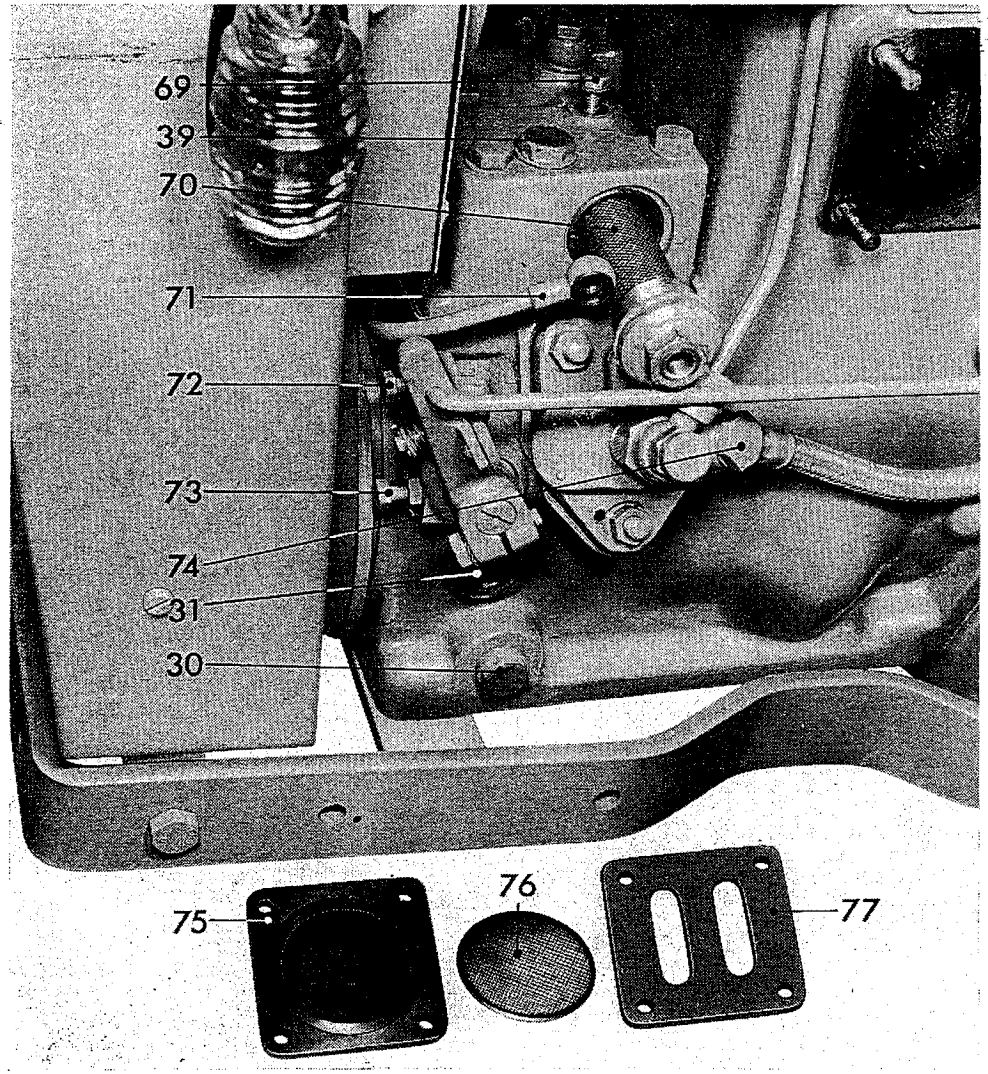

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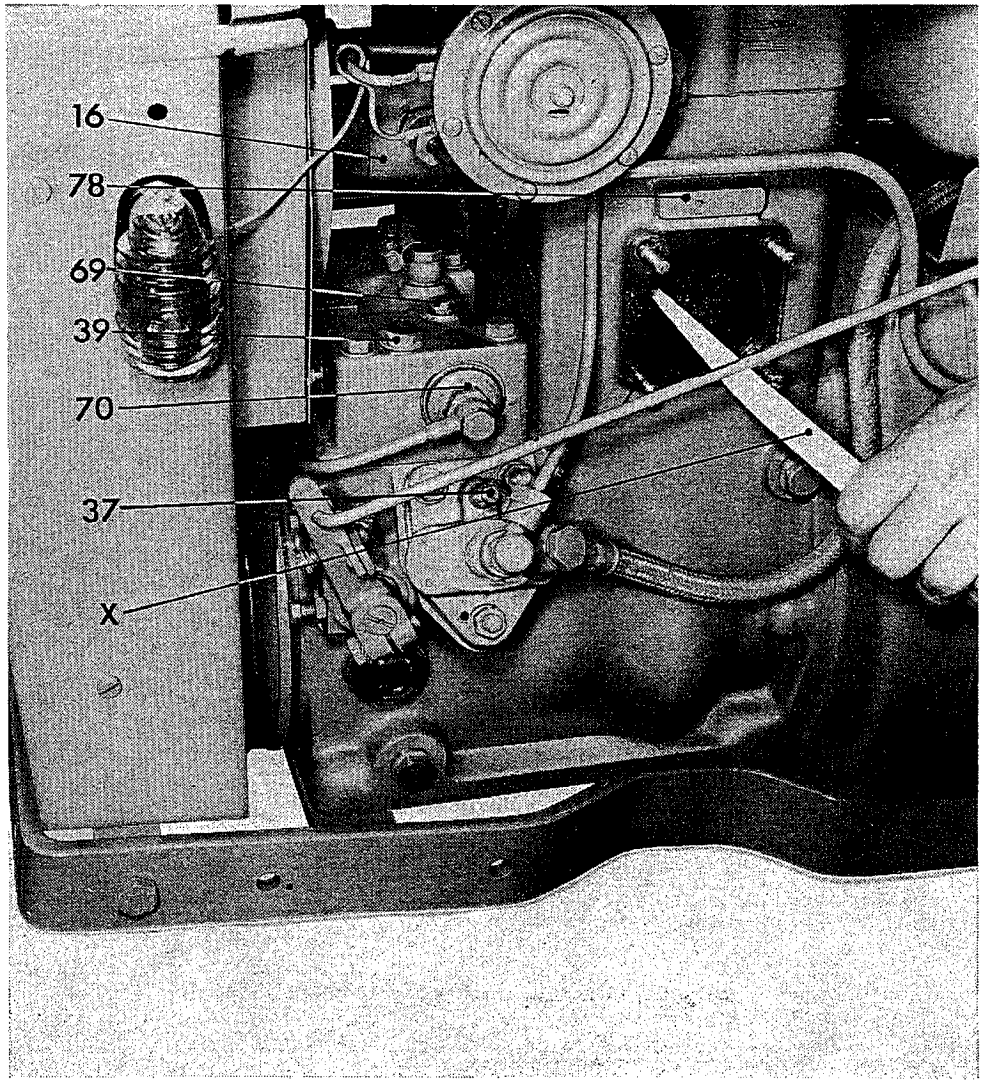

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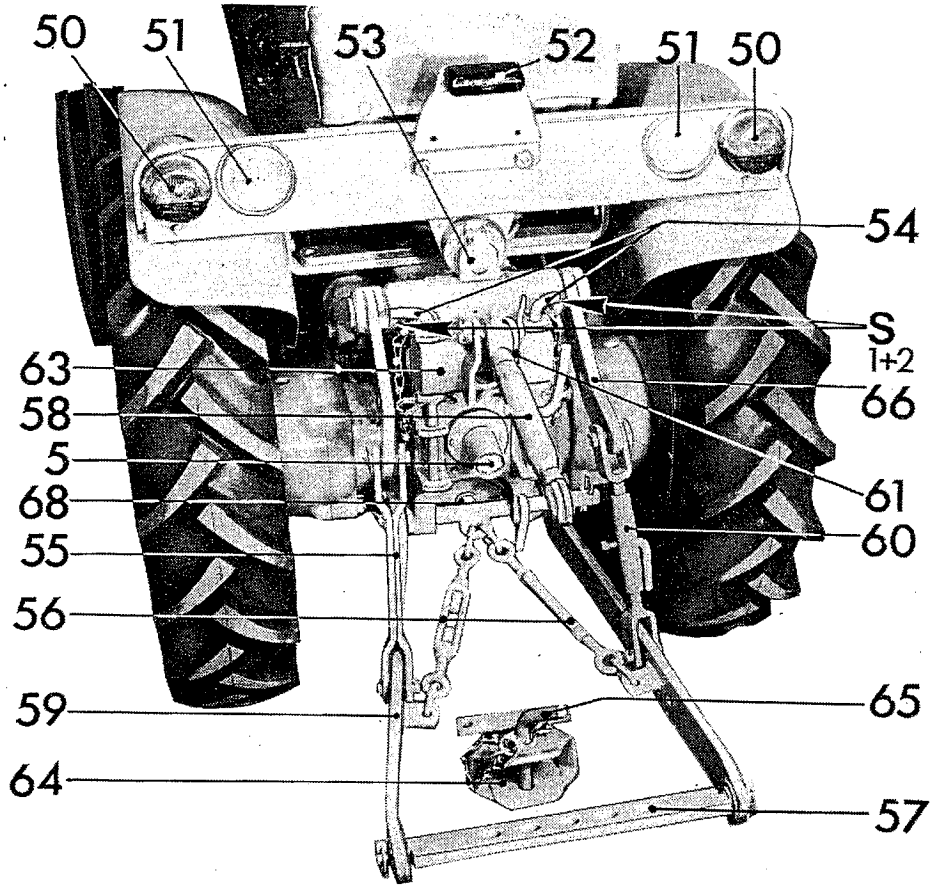

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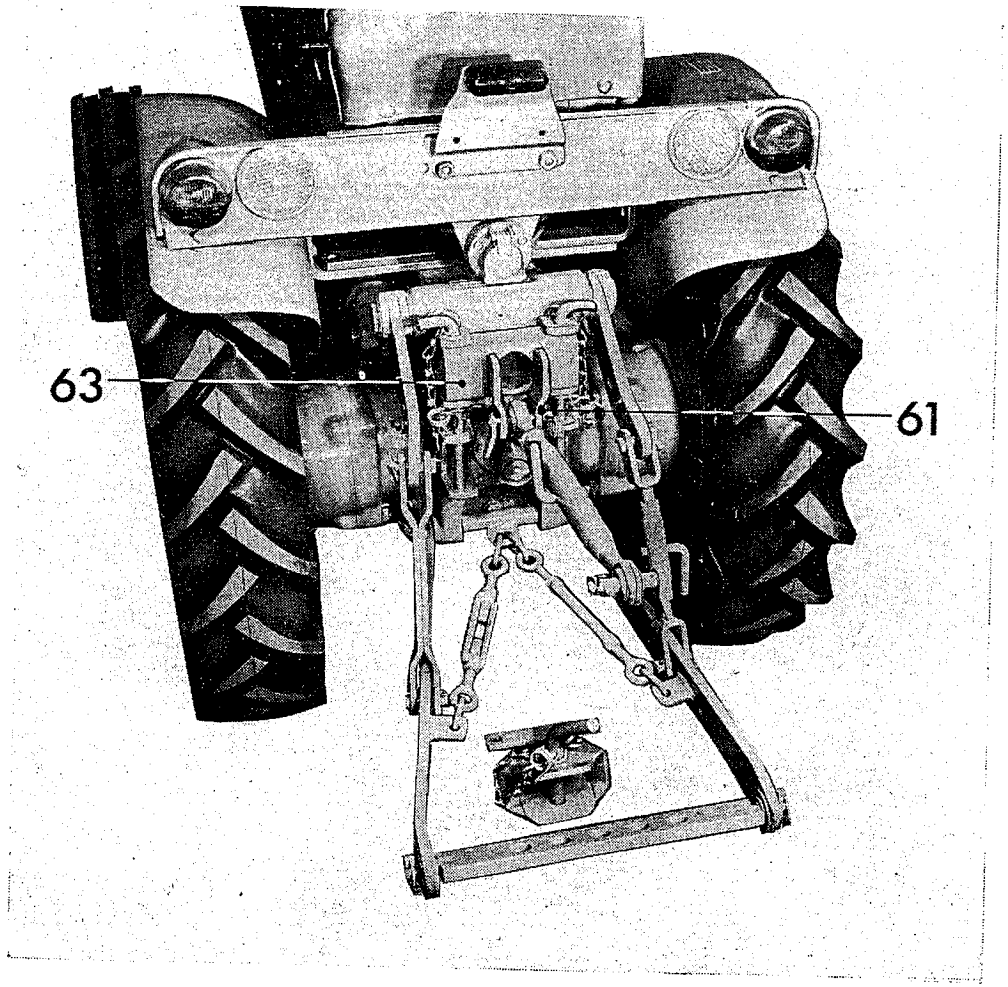

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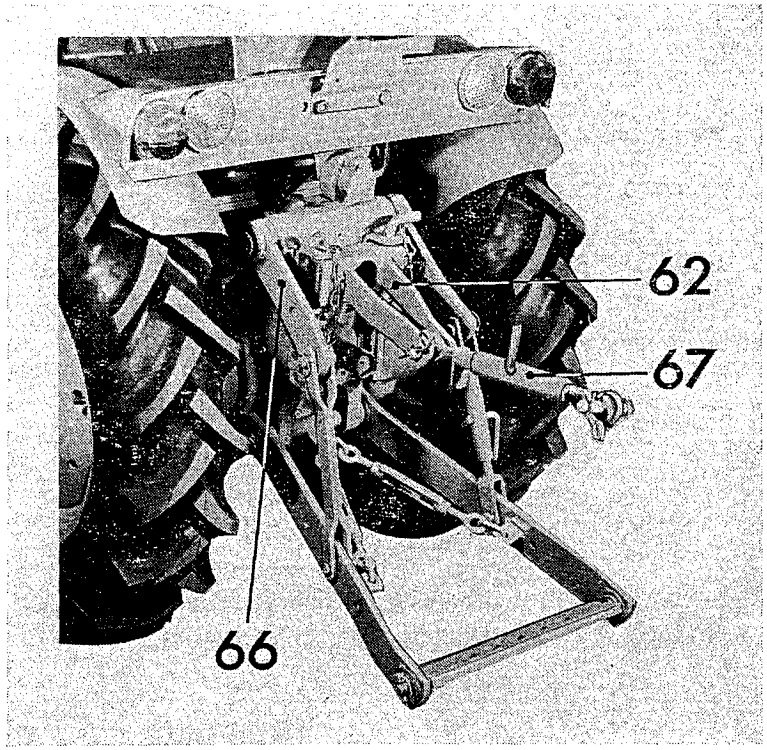
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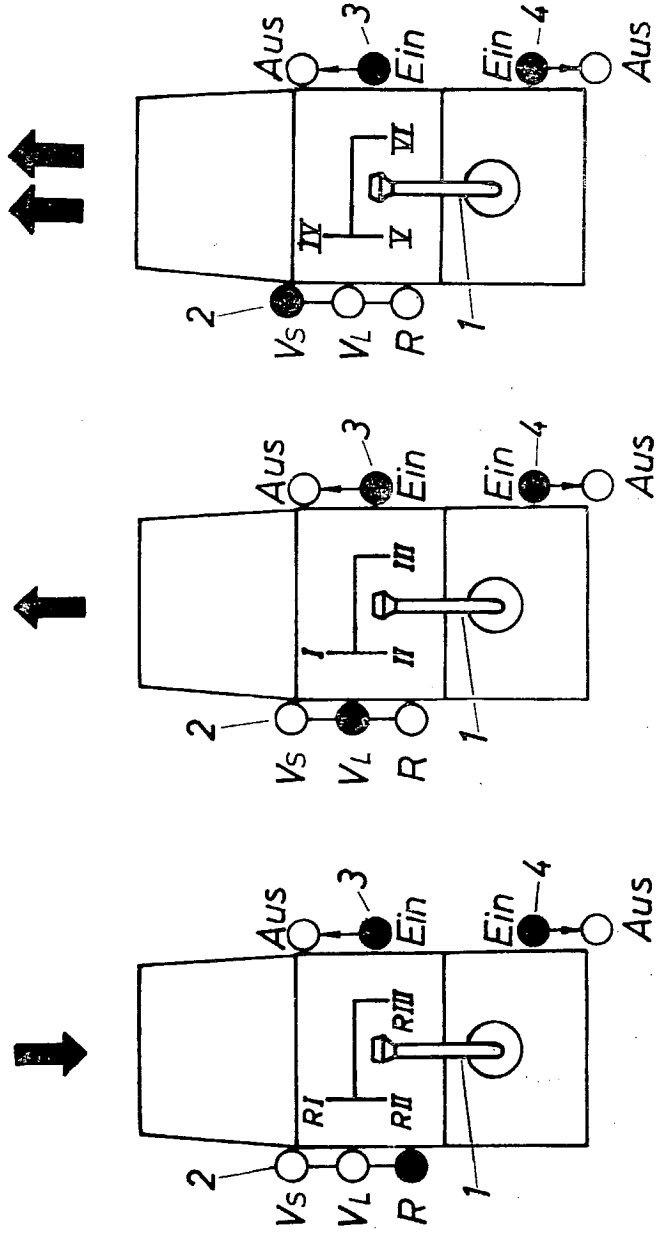
Aus
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Abb. 14

Konvertierung der metrischen Maße
Conversion of Metric Measurements

Conversion des mesures métriques
Conversión de medidas métricas

Die folgenden Konvertierungen beziehen sich auf die metrischen Maße, wie sie in dieser Betriebsanleitung angegeben sind:
The following conversions relate to the metric measurements as stipulated in this manual:
Les facteurs suivants se rapportent aux mesures métriques indiquées dans cette notice d'emploi:
Las siguientes conversiones se refieren a las medidas métricas como indicadas en estas instrucciones de servicio:

Capacity – Liquid Measure:

1 litre – (ltr. or l)

= 33.815 ounces (oz)
= 2.113 pints (pt)
= 1.057 quarts (qt)
= 0.2642 gallon (U. S. gal.)
= 61.025 cubic inches (" in)
= 0.0353 cubic feet ('ft)

16 ounces = 1 pint
2 pints = 1 quart
4 quarts = 1 gallon (U.S.)

Weight:

1 kilogram – (kg):

= 2.2046 pounds (lbs.)

16 ounces = 1 pound

Length:

1 millimeter: – (mm)

= 0.03937 inch (in)
= 0.00328 feet (ft)
= 0.00109 yard (yd)

1 centimeter – (cm)
1 meter – (m)
1 kilometer (km)

= 0.3937 inches (in)
= 39.37 inches (in)
= 39370 inches (in)

12 inches = 1.00 foot
1 foot = 12 inches
36 inches = 1.00 yard
3 feet = 1.00 yard

Pressures:

1 atm. = 14 lb/sq. in.
