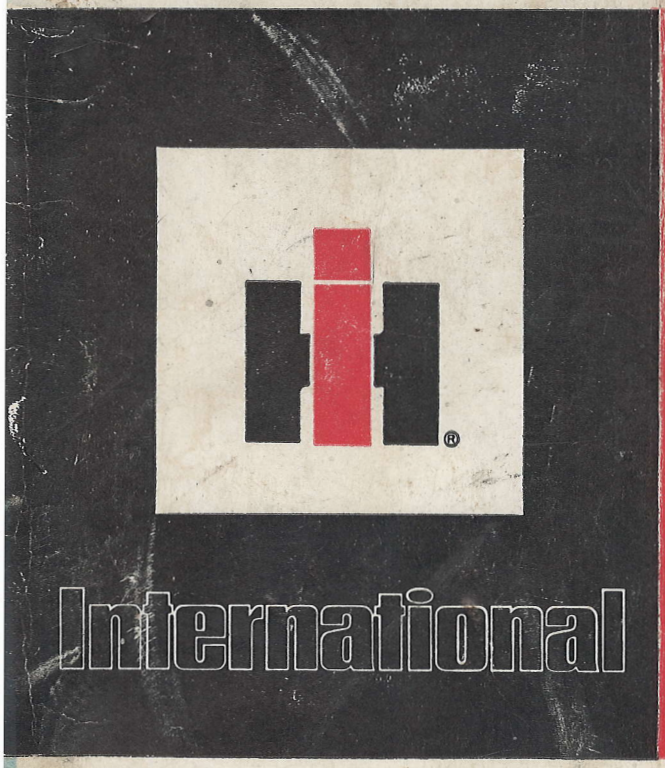
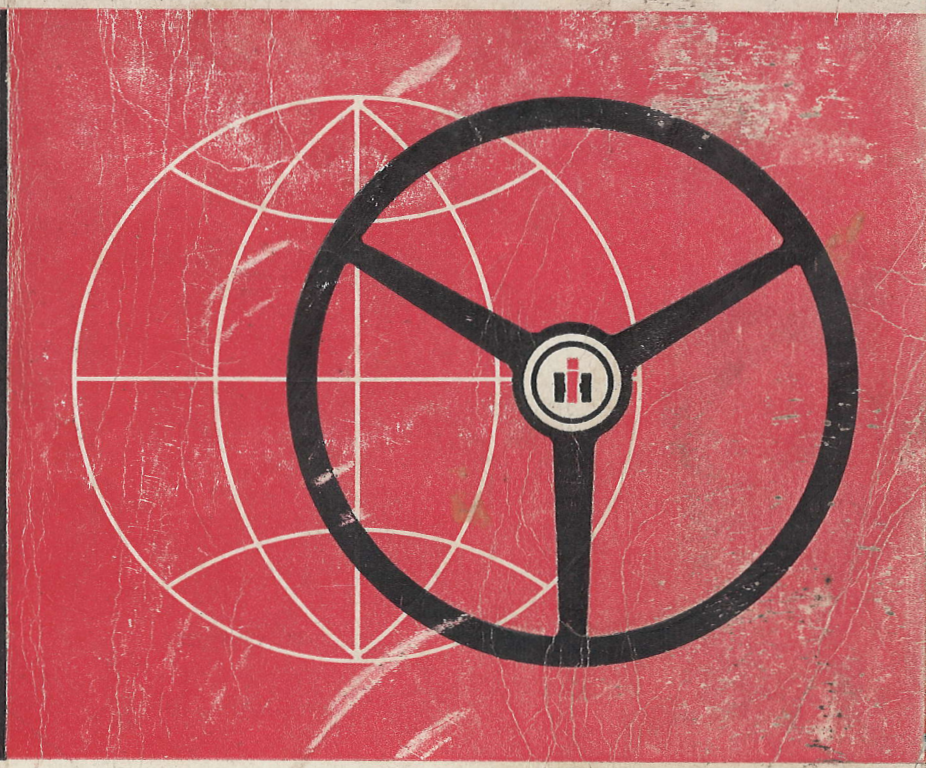




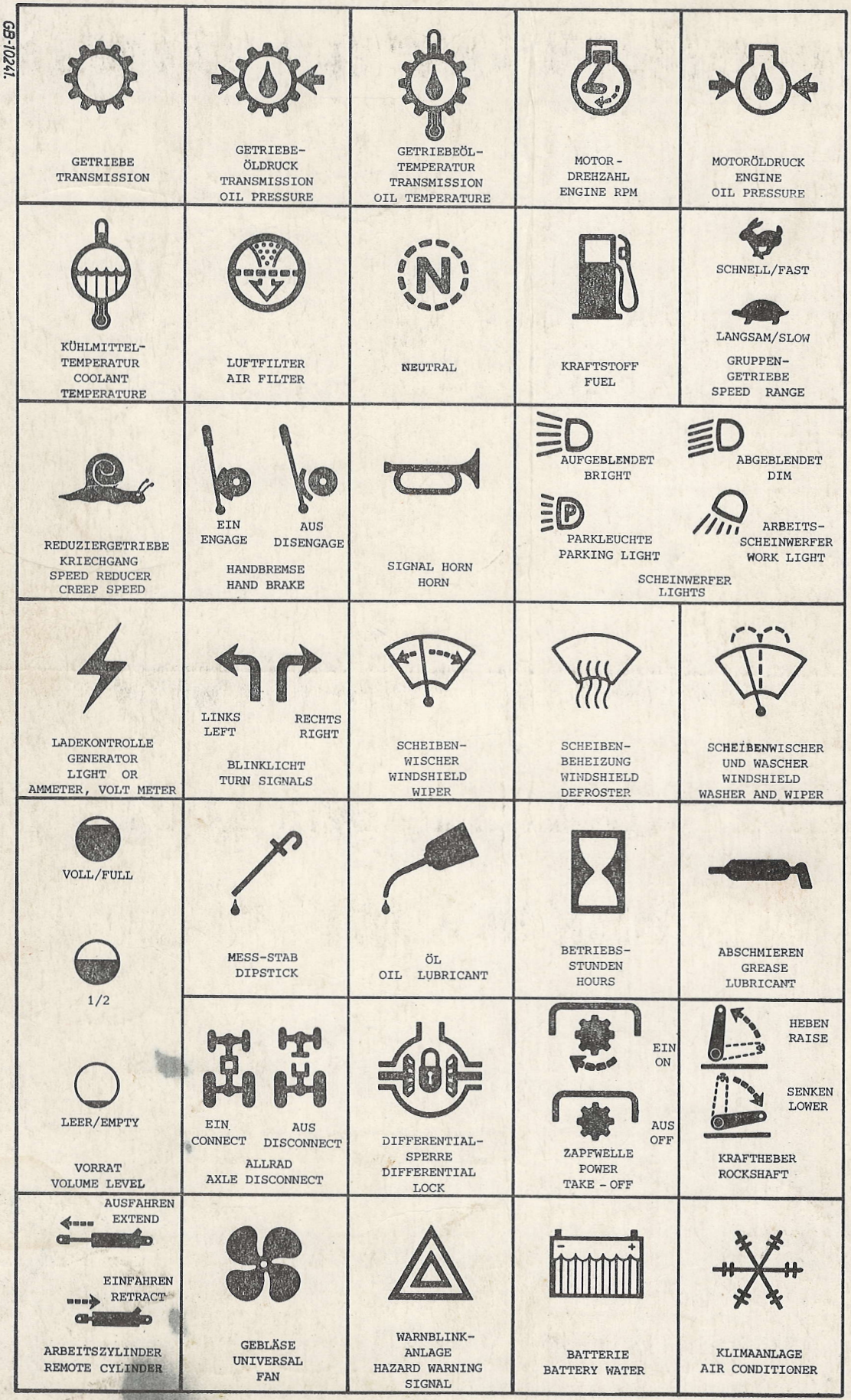
OPERATOR'S MANUAL

DIESEL TRACTORS

955 - 955 XL
1055 - 1055 XL

1 091 788 R2 8. 81

GB-10241.


GETRIEBE
TRANSMISSION
GETRIEBE-
ÖLDRUCK
TRANSMISSION
OIL PRESSURE
GETRIEBEÖL-
TEMPERATUR
TRANSMISSION
OIL TEMPERATURE
MOTOR-
DREHZAHL
ENGINE RPM
MOTORÖLDRUCK
ENGINE
OIL PRESSURE
KÜHLMITTEL-
TEMPERATUR
COOLANT
TEMPERATURE
LUFTFILTER
AIR FILTER
N
NEUTRAL
KRAFTSTOFF
FUEL
SCHNELL/FAST
LANGSAM/SLOW
GRUPPEN-
GETRIEBE
SPEED RANGE
REDUZIERGETRIEBE
KRIECHGANG
SPEED REDUCER
CREEP SPEED
EIN
ENGAGE
AUS
DISENGAGE
HANDBREMSE
HAND BRAKE
SIGNAL HORN
HORN
AUFGEBLENDET
BRIGHT
ABGEBLENDET
DIM
PARKLEUCHTE
PARKING LIGHT
ARBEITS-
SCHEINWERFER
WORK LIGHT
SCHEINWERFER
LIGHTS
LADEKONTROLLE
GENERATOR
LIGHT OR
AMMETER, VOLT METER
LINKS
LEFT
RECHTS
RIGHT
BLINKLICHT
TURN SIGNALS
SCHEIBEN-
WISCHER
WINDSHIELD
WIPER
SCHEIBEN-
BEHEIZUNG
WINDSHIELD
DEFROSTER
SCHEIBENWISCHER
UND WASCHER
WINDSHIELD
WASHER AND WIPER
VOLL/FULL
1/2
LEER/EMPTY
VORRAT
VOLUME LEVEL
MESS-STAB
DIPSTICK
ÖL
OIL LUBRICANT
BETRIEBS-
STUNDEN
HOURS
ABSCHMIEREN
GREASE
LUBRICANT
EIN
CONNECT
AUS
DISCONNECT
ALLRAD
AXLE DISCONNECT
DIFFERENTIAL-
SPERRE
DIFFERENTIAL
LOCK
EIN
ON
AUS
OFF
ZAPFWELLE
POWER
TAKE - OFF
HEBEN
RAISE
SENKEN
LOWER
KRAFTHEBER
ROCKSHAFT
AUSFAHREN
EXTEND
EINFAHREN
RETRACT
ARBEITSZYLINDER
REMOTE CYLINDER
GEBLÄSE
UNIVERSAL
FAN
WARNBLINK-
ANLAGE
HAZARD WARNING
SIGNAL
BATTERIE
BATTERY WATER
KLIMAANLAGE
AIR CONDITIONER

OPERATOR'S MANUAL

International

DIESEL TRACTORS

955 – 955 XL

1055 – 1055 XL

INTERNATIONAL HARVESTER COMPANY M. B. H., NEUSS AND HEIDELBERG

1 091 788 R2 8.81

INTERNATIONAL
Diesel Tractor

XL-Series Tractor shown

ENERGY CONSERVATION

An Energy Conservation Plan is your best insurance against waste. Energy is Money. Don't Waste It!!

Follow these recommendations:

1. Be sure that proper lubrication and maintenance procedures are followed. Review Operator's Manual thoroughly.
2. Take care to match weight equipment (front and rear) and tire pressure to conform to operational requirements, soil conditions, traction, etc.
3. Be sure the equipment is properly adjusted to the task being performed. Review Operator's Manual thoroughly.
4. Match as closely as possible the tractor size (horsepower) to implement size and soil conditions.
5. Be sure the operator is thoroughly trained in the operation of the equipment. Review Operator's Manual thoroughly.
6. Be sure to select the proper speed range and speed gear for the job in hand to allow engine operation at or near rated speed. Avoid lugging conditions.

1 091 788 R2
8.81

TRACTOR DELIVERY REPORT

IH District Office Copy

(please complete in capitals)

Delivered to ..... Address .....
Customer's Name

.... 19.....
Town Rail Station Date

Main purpose :
Total arable acreage .....
Belt work
Road transport
Tractors owned :

Make	Number	Age
.....	.....	.....
.....	.....	.....
.....	.....	.....

International
Model .....
Serial No. Chassis .....
Transm. .....
Draft Control .....
Engine .....
Year of manufacture .....
Tires, front .....rear .....
Front drive axle - Model.....
Serial No. .....

Predelivery Service

Prior to delivery of the above tractor the following items were checked and corrective action taken as necessary:

- ☐ Shortage or damage in shipment
- ☐ Attachments and special equipment as ordered
- ☐ Tire pressure
- ☐ Crankcase oil level
- ☐ Brake oil level
- ☐ Transmission and differential oil level
- ☐ Rear axle oil level
- ☐ Engine oil pressure
- ☐ Engine cooling system (anti-freeze)
- ☐ Electrolyte level and charge condition of battery
- ☐ Air conditioner, refrigerant level *
- ☐ Engine operation
- ☐ Starting motor
- ☐ Alternator
- ☐ Lighting equipment
- ☐ Engine clutch
- ☐ Brakes
- ☐ Torques of front and rear wheel nuts and bolts, and clamping bolts, front axle extensions refer to "Special Torques".
- ☐ Gearshift mechanism Trial run
- ☐ Oil level and operation of hydraulic lift
- ☐ External cleaning

Delivery Service

At the time of delivery the importance of the Operator's Manual was explained and, with it as a guide, instruction was given as indicated by check marks:

- ☐ Precautions with new machine
- ☐ Safety precautions
- ☐ Use of good quality fuels and lubrication oils and storage of same
- ☐ Lubrication of the entire machine according to service guide
- ☐ Checking oil levels
- ☐ Periodical oil changes
- ☐ Care of air cleaner
- ☐ Care of oil filter
- ☐ Starting, stopping and general operation, instruments and controls
- ☐ Purpose of thermostat
- ☐ Purpose of air conditioner warning light*
- ☐ Purpose of oil pressure warning lamp
- ☐ Care of cooling system
- ☐ V-belt tension
- ☐ Care of fuel system
- ☐ Care of hydraulic system
- ☐ Use of engine clutch, gearshift lever and P.T.O. shifter lever
- ☐ Use of differential lock
- ☐ Care of electrical equipment, battery, starter, alternator, charge control, preheater coil, lights and fuses
- ☐ Hitching loads
- ☐ Wheel tread adjustment
- ☐ Brakes
- ☐ Pneumatic tires, care of, pressure, wheel weights
- ☐ Cold weather precautions
- ☐ Storing and housing the tractor
- ☐ Starting engine after storage
- ☐ Retightening nuts and bolts
- ☐ Cleaning the tractor
- ☐ Operation and maintenance of front loader*

1 091 788

* if so equipped

The customer's signature below certifies that the tractor was delivered to him in a satisfactory condition and that he received instructions as to its operation and maintenance together with an Operator's Manual and guarantee certificates for "Bosch" components.

Signed .....
Customer

By .....

Signed .....
Dealer Stamp

By .....

Without Delivery Report no Warranty Claims!

TRACTOR DELIVERY REPORT

(please complete in capitals)

IH District Office Copy

Delivered to ..... Address .....

Customer's Name

.... 19.....

Town Rail Station Date

Main purpose
Total arable acreage .....
Belt work
Road transport
Tractors owned :

Make	Number	Age
.....	.....	.....
.....	.....	.....
.....	.....	.....

International
Model .....
Serial No. Chassis .....
Trans. .....
Draft Control .....
Engine .....
Year of manufacture .....
Tires, front .....rear .....
Front drive axle - Model .....
Serial No .....

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- ☐ Engine cooling system (anti-freeze)
- ☐ Electrolyte level and charge condition of battery
- ☐ Air conditioner, refrigerant level *
- ☐ Engine operation
- ☐ Starting motor
- ☐ Alternator
- ☐ Lighting equipment
- ☐ Engine clutch
- ☐ Brakes
- ☐ Torques of front and rear wheel nuts and bolts, and clamping bolts, front axle extensions refer to "Special Torques".
- ☐ Gearshift mechanism
- ☐ Trial run *
- ☐ Oil level and operation of hydraulic lift
- ☐ External cleaning

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- ☐ Use of engine clutch, gearshift lever and P.T.O. shifter lever
- ☐ Use of differential lock
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- ☐ Hitching loads
- ☐ Wheel tread adjustment
- ☐ Brakes
- ☐ Pneumatic tires, care of, pressure, wheel weights
- ☐ Cold weather precautions
- ☐ Storing and housing the tractor
- ☐ Starting engine after storage
- ☐ Retightening nuts and bolts
- ☐ Cleaning the tractor
- ☐ Operation and maintenance of front loader*

* If so equipped

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Signed ..... Signed .....

Customer Dealer Stamp

By ..... By .....

Without Delivery Report no Warranty Claims!

TRACTOR DELIVERY REPORT

Dealer's Copy

(please complete in capitals)

Delivered to ..... Address .....
Customer's Name

.... 19.....
Town Rail Station Date

Main purpose :
Total arable acreage .....
Belt work
Road transport
Tractors owned :

Make	Number	Age
.....	.....	.....
.....	.....	.....
.....	.....	.....

International
Model .....
Serial No. Chassis .....
Transm. .....
Draft Control .....
Engine .....
Year of manufacture .....
Tires, front .....rear .....
Front drive axle - Model.....
Serial No. .....

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- ☐ Alternator
- ☐ Lighting equipment
- ☐ Engine clutch
- ☐ Brakes
- ☐ Torques of front and rear wheel nuts and bolts, and clamping bolts, front axle extensions refer to "Special Torques".
- ☐ Gearshift mechanism Trial run
- ☐ Oil level and operation of hydraulic lift
- ☐ External cleaning

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- ☐ Wheel tread adjustment
- ☐ Brakes
- ☐ Pneumatic tires, care of, pressure, wheel weights
- ☐ Cold weather precautions
- ☐ Storing and housing the tractor
- ☐ Starting engine after storage
- ☐ Retightening nuts and bolts
- ☐ Cleaning the tractor
- ☐ Operation and maintenance of front loader*

* if so equipped

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Signed ..... Signed .....
Customer Dealer Stamp

By ..... By .....

Without Delivery Report no Warranty Claims!

1 091 788

SERVICE

Careful completion of the Delivery Report provides Customer and Dealer with valuable information for subsequent servicing of the tractor during the entire period of its life.

Contact your local IH Dealer frequently to discuss adjustment, maintenance or any service problem that might crop up.

A close contact with your Dealer can only be beneficial, for the better you are kept informed on latest service procedures and the more you take advantage of your Dealer's experience the higher will be your chances of enjoying the full benefits of your machine.

WARRANTY

Warranty contracts stipulate a strict inspection schedule. Dealers are required to vouch with their signatures that inspections have been carried out in time.

	Dealer		*Customer*	
	Date	*Signature*	*Date*	*Signature*
1. Inspection				
2. Inspection				
3. Inspection				
Further Inspections				

TRACTOR DELIVERY REPORT

Owner's Copy

(please complete in capitals)

Delivered to ..... Address .....
Customer's Name

.... 19.....
Town Rail Station Date

Main purpose :
Total arable acreage .....
Belt work
Road transport
Tractors owned :

Make	Number	Age
.....	.....	.....
.....	.....	.....
.....	.....	.....

International
Model .....
Serial No. Chassis .....
Transm. .....
Draft Control .....
Engine .....
Year of manufacture .....
Tires, front .....rear .....
Front drive axle - Model .....
Serial No. .....

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Prior to delivery of the above tractor the following items were checked and corrective action taken as necessary:

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- ☐ Tire pressure
- ☐ Crankcase oil level
- ☐ Brake oil level
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- ☐ Brakes
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- ☐ Oil level and operation of hydraulic lift
- ☐ External cleaning

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- ☐ Cold weather precautions
- ☐ Storing and housing the tractor
- ☐ Starting engine after storage
- ☐ Retightening nuts and bolts
- ☐ Cleaning the tractor
- ☐ Operation and maintenance of front loader*

* if so equipped

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Signed .....
Customer

By .....

Signed .....
Dealer Stamp

By .....

Without Delivery Report no Warranty Claims!

1 091 788

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	Dealer		*Customer*	
	Date	*Signature*	*Date*	*Signature*
1. Inspection				
2. Inspection				
3. Inspection				
Further Inspections				

MAJOR SECTION CONTENTS

This Operator's Manual consists of the following major sections:

Maintenance operations as described in this manual can, as a rule, be made by the operator himself.

Caution: It is however, strongly recommended to let your dealer's serviceman take care of such operations as repair and adjustments on fuel injection system, brake system, hydraulic system, steering gear, drive shafts, electrical system and mounting of tires.

Use only original IH-service parts. Failures due to use of "will fit" parts are not covered by warranty.

Safety rules are given for your protection. It pays to observe them.

1 091 788 R2
8.81

General Instructions

1. Before starting the tractor, familiarize yourself with its instruments and controls. For your protection you are advised to observe the instructions in this manual. It is good practice to operate all levers on the standing tractor.

2. Avoid subjecting the new tractor to full load. The engine should not be loaded to capacity before at least 20 hours of operation. Never overload the tractor. Overloading will result in premature wear and tear, and forfeiture of any claims under the manufacturer's guarantee.

3. Do not "ride" the clutch or brakes by resting your feet on the pedals as this will cause excessive wear on release ring and linings, respectively. Never operate the tractor with the pto hand clutch latched in disengaged position.

4. Hitch loads only to the drawbar and trailer hitch, never to any other tractor parts.

5. Periodic inspections and preventive maintenance are the surest means of keeping your tractor in proper working order. Prompt detection and correction of minor irregularities, and immediate replacement of worn out or broken parts will prevent failures and avoid expenses. Replace damged graphics.

6. When washing the tractor with a hose be careful that no water enters the injection pump, alternator or starting motor. After washing make trial run and check clutch and brakes for proper functioning.

7. For service jobs and repairs on Bosch components see your Bosch serviceman.

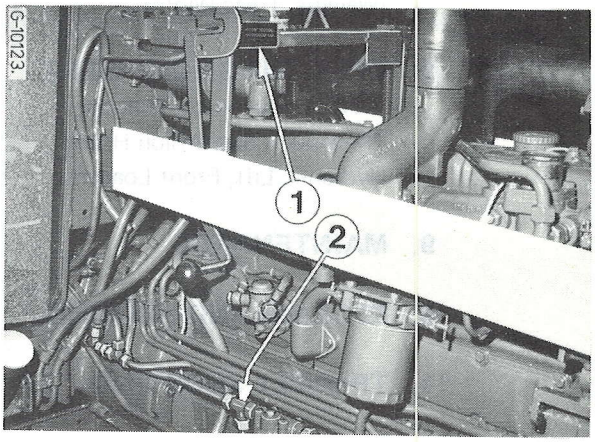
8. In freezing temperatures there is danger of the water freezing in the cooling system (or in the tires if filled with water). Check the instructions for cold weather precautions.

9. In cold weather allow the engine to warm up a few minutes at medium speed, prior to subjecting it to full load.

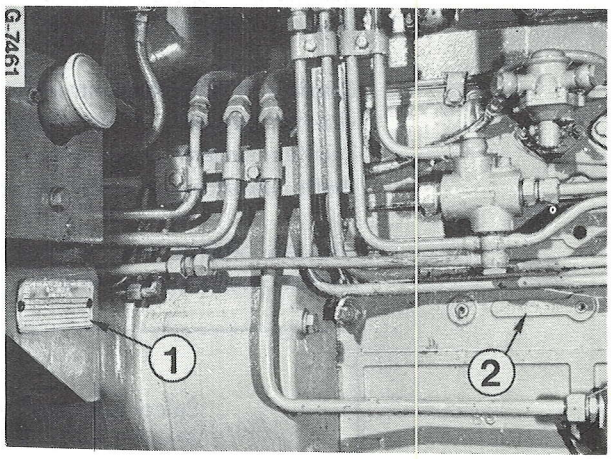
10. Record the serial numbers for service and parts replacement purposes. For ready reference, write these serial numbers in the spaces provided.

Illusts. 1 – 1a

1 – Chassis serial number . . . . . .
2 – Engine serial number . . . . . .
Hydraulic system serial number . . . . . .
(embossed above draft control valve)
Transmission serial number . . . . . .
(embossed on LH side of transmission)



Illust. 1
955 XL – 1055 XL



Illust. 1a
955 – 1055

11. Retighten front wheel bolts and rear wheel nuts after the first ***2 – 5 operating hours.*** Recheck torque load after ***8 – 10 operating hours.*** For special torques refer to "Technical Data".

1 091 788 R2
8.81

Safety Precautions

Designer, Safety Engineer and Safety Council have cooperated to build the highest possible degree of operating safety into this machine. However, their combined efforts can be wiped out by a single careless act of the operator. No power-driven machine, whatsoever, can be safer than the man, who is at the controls. If accidents are to be prevented – and they can be prevented – it will be done by the operators who accept a full measure of their responsibility.

This symbol is used to call your attention to instructions concerning your personal safety. Be sure to observe and follow these instructions.

1. No other than the operator is permitted to start the engine. The operator must be in possession of a valid driving licence.

   The operator is not only responsible for the machine alone, but for any personnel within the machine's operating range!

2. Be sure the speed range-, gearshift- and pto shifter lever are in neutral before starting the engine.

3. Exhaust gases are highly poisonous! Therfore, do not start the engine in closed rooms unless adequate ventilation is ensured, or an exhaust decontamination device is being used.

4. For mounting and dismounting use only the steps provided for this purpose. Never attempt to get on or off while the tractor is in motion!

5. The tractor operator is responsible for the safety of any person operating a pull-behind implement or riding on a trailer hitched to the tractor.

6. Before connecting or disconnecting the power line at the pto be sure pto shifter lever is in neutral.

   Make sure that all power line shielding is in place and in good order. When the pto is not in use, the guard cap must be fitted.

7. Never allow any person to ride on the drawbar or on the rocker arms of the hydraulic lift.

   Be sure, before operating the hydraulic lift, that everybody is well clear of rocker arms and linkage.

8. Never use the steering brakes for making turns on the highway.

   Be extra careful when applying the brakes on slippery roads. Drive slowly.

   Shift into low gear befor going down steep hills.

   Do not exceed maximum permissible traveling speed.

9. Tractors without hitched rear loads should not be operated with a full bank of jerrican-weights.

10. Always see that brakes and lighting are in good working order.

    Trailer must be equipped with brakes and warning lights according to prevailling trafic regulations.

11. Before leaving the tractor always place the transmission gearshift- and pto shift lever in neutral position, apply the parking brake, lower mounted implement to the ground and then stop the engine.

    Never leave the tractor unattended while the engine is running.

12. Never operate the tractor engine when cleaning or lubricating the tractor.

    Never refuel the tractor while the engine is running or hot. Do not smoke or use an open flame when working around inflammable fuels.

    Do not add gasoline or alcohol to diesel fuel. This creates a vapor mixture which is extremely explosive.

    When in-doors or in built-up areas observe prevailing fire regulations for combusion engines.

    Allow the engine to cool off before removing the cap to fill the radiator.

13. When working on the electrical equipment of the tractor, disconnect the battery ground cable first. After repair is done, reconnect this cable last.

    Avoid smoking and open fire in the vicinity of charging or recently charged batteries or near fuel. Battery gases ignite easily!

14. Changing of tires should be done by an authorized workshop only.

Engine: 6-cylinder 4 cycle Diesel with direct injection and pressure feed lubrication		D 358
Low idle speed	1/min	700 – 800
Rated speed	1/min	2200
High idle speed	1/min	2370 – 2430
Piston displacement cm^3		5867
Bore	mm	98.4
Stroke	mm	128.5
Firing order		1 – 5 – 3 – 6 – 2 – 4
Valve clearance (engine hot)	mm	0.30
Compression ratio		16 : 1
Most favourable operating temperature	°C	85 – 95
Injection pump "Bosch"	EP/VA6 *955 + XL*	100H/1100 CR 87/2
	1055 + XL	100H/1100 CR 87/1
Injection nozzles "Bosch"		DLLA 150 S 815
Nozzle holder "Bosch"	KBEL	84 S 4/13
Nozzle opening pressure	MPa	22.5 – 23.3
Injection pump timing (static)	BTDC	14°
Battery		12V 110 Ah or 143 Ah or 165 Ah
Alternator "Bosch"		G1 14V 33A 27 or K1 14V 55A 20
Starting motor "Bosch"	JF	12V

Capacities approx.	Liters
Fuel tank	136
Cooling system, without air conditioning	24.4
with air conditioning	28.6
Engine crankcase	12
Transmission case	
without 4-wheel drive	38.5
with 4-wheel drive	42.5
Hydraulic lift housing (with oil cooling reservoir) *	34
Rear axle each	7.0
Front drive axle differential	
APL 1552	6.0
APL 3052	7.0
Planetary wheel hubs each	1.0
Oil reservoir (brake)	0.17
Air conditioner**	1.8 kg
Compressor, air conditioner**	0.207

PTO–Shaft speed range

540/min at engine speed	1920
1000/min at engine speed	2000

* Max. permissible displacement of oil to additional equipment: on the go = 5 liters
stationary operation: = 10 liters

** If so equipped

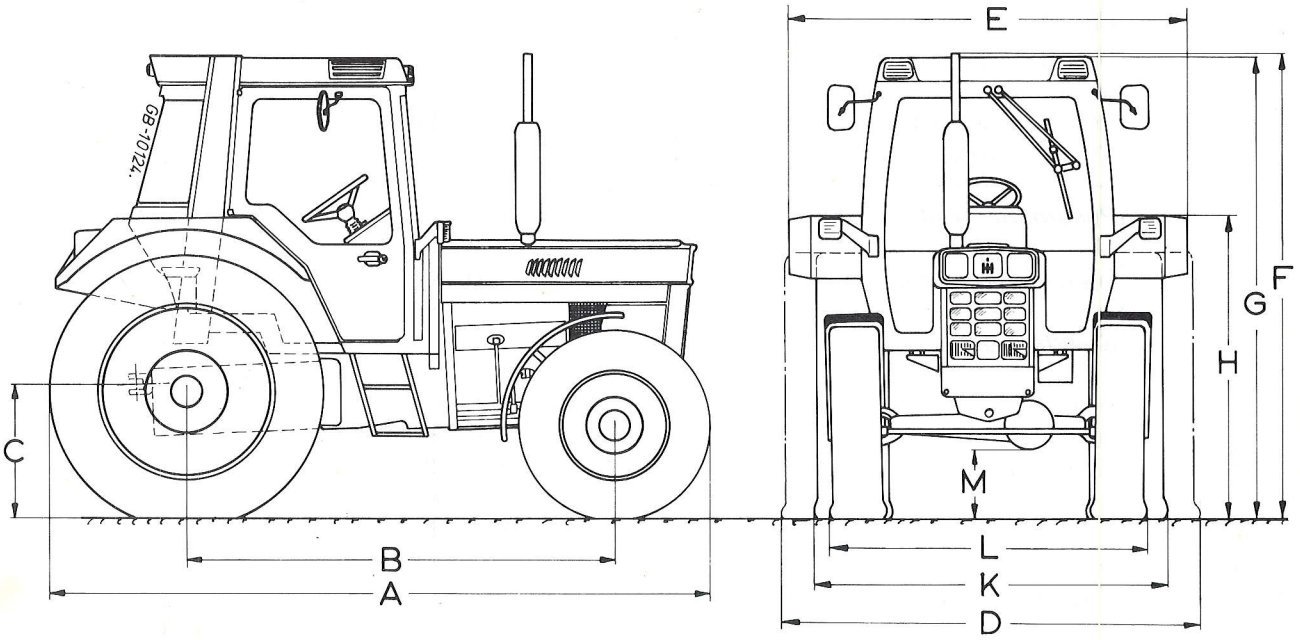
1 091 788 R2
8.81

Clutch Dual plate, dry disk, spring loaded Engine, disk dia mm PTO, disk dia mm	 310 310
Pneumatic Trailer Brake Operating pressure MPa	 0.62 – 0.735
Standard tires Front Rear Four wheel drive	 7.50 – 18 ASF 18.4 – 34 AS 6 PR 11.2 – 28 AS 6 PR with 18.4 – 34 AS 6 PR
Toe-in 2 – WD 4 – WD	2 – 8 mm 0 – 2 mm
Tire pressure Front wheels, road MPa field MPa	 0.2 0.15 – 0.20
Rear wheels	refer to the following chart

Tire size	PR	Tire load limits (kg) at various inflation pressures (MPa)							
		0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17
16.0 – 38 16.9 R 38	8	1840*	1940	2040	2130	2230	2325	2425	2520
18.4 – 34	6		2250*	–	–	–	–	–	–
18.4 R 34	8		2250*	2360	2465	2565	–	–	–
18.4 – 38 18.4 R 38	8		2300*	2500	2615	2715	–	–	–
20.8 – 38 20.8 R 38	8	2670	2810	2950	3090	–	–	–	–
23.1 – 30	8		3040	–	3252	3456	–	–	–
23.1 – 34	8		3225	–	–	–	–	–	–

* For tractors without load. Increase pressure in accordance with load.

Dimensions in m (max.) 955 XL – 1055 XL



Illust. 2

	955 XL		1055 XL	
	2-WD	*4-WD*	*2-WD*	*4-WD*
A	3.96	4.06	3.99	4.12
B	2.63 L 2.66 S	2.59	2.63 L 2.66 S	2.59
C	1.05	1.05	1.07	1.07
D*	2.41	2.41	2.41	2.41
E	2.31	2.31	2.31	2.31
F	2.83	2.83	2.86	2.86
G	2.75	2.75	2.77	2.77
H	1.82	1.82	1.84	1.84
K	2.30	2.30	2.30	2.30
L	See: Adjusting Front Wheel Tread Width			
M	0.51	0.41	0.51	0.41
Turning radius, with steering brake applied	4.40	4.70	4.40	4.70
Turning radius, without steering brake applied	5.05	5.35	5.05	5.35

* For tractors with 25 km/h transmission version only

L – Light duty front axle S – Heavy duty front axle

Dimensions with standard tires in m	**955**		**1055**	
	2–WD	4–WD	2–WD	4–WD
Length overall (with three-point suspension hitch)	4.19	4.22	4.19	4.22
Width overall (to outside edge of rear wheel fenders)	2.30	2.30	2.30	2.30
Height overall (to top of exhaust muffler)	2.74	2.88	2.77	2.91
Wheel base	2.63 L 2.66 S	2.59	2.63 L 2.66 S	2.59
Ground clearance (under front axle)	0.51	0.41	0.51	0.41
(under transmission)	0.40	0.40	0.40	0.40
Turning radius with steering brake applied	4.40	4.70	4.40	4.70
without steering brake applied	5.05	5.35	5.05	5.35

L – Light duty front axle S – Heavy duty front axle

		Range	*Travelling speeds (kmph)*											
			Field				Road				Reverse			
		Speed	1	2	3	4	1	2	3	4	1	2	3	4
30 km/h	18.4 – 34 Tires	O	2.2	3.0	4.6	7.0	8.4	11.5	17.9	27.1	3.2	4.4	6.8	10.3
		A	1.8	2.4	3.8	5.7	6.9	9.4	14.6	22.1	2.6	3.6	5.6	8.5
		B	0.7*	0.9*	1.4	2.2	2.6	3.6	5.6	8.5	1.0	1.4	2.1	3.2
25 km/h	18.4 – 34 Tires	O	2.2	3.0	4.6	6.3	7.9	10.8	16.8	22.9	3.2	4.4	6.8	9.3
		A	1.8	2.4	3.8	5.1	6.5	8.9	13.8	18.7	2.6	3.6	5.6	7.6
		B	0.7*	0.9*	1.4	2.0	2.5	3.4	5.3	7.2	1.0	1.4	2.1	2.9

O – Without Speed reducer
A – Engaged speed reducer transmission with a reduction ratio of approximately 20% in all gears.
B – Engaged speed reducer transmission with a reduction ratio of approximately 70% in all gears.
* – Creep speeds

Special Torques

	daNm
Front wheel bolts (S)	30 – 5
Front wheel bolts (L)	16 + 2
Front wheel nuts (4–WD)	30 + 5
Rim nuts, front wheel (4–WD)	30 + 5
Rear wheel nuts	35 + 5
Rim nuts, rear wheel	35 + 5
Front axle and linkage bolts see (4) Illust. 46 and Illust. 55 – 60	
Cylinder head bolts	14 to 15
Hydraulic pump bolts	4.5
Mounting bolts, hydraulic lift housing	12
Transmission drain and oil level plugs	10

Platform and cab see Illust. 44 – 45
Fuel filter see corresponding section

L = Light duty front axle
S = Heavy duty front axle

SI Measurements

A standard of measurement known as International System of Units (SI) has been adopted for world-wide use. These units are used throughout this manual.

Si Unit		*English Equivalent*
mm	– millimeter	0.039 inches
cm	– centimeter	0.39 inches
m	– meter	3.28 feet
cm^3	– cubic centimeter	0.06 cubic inches
m^3	– cubic meter	35.31 cubic feet
l	– liter	1.057 quarts
kg	– kilogram	2.205 pounds weight
kPa	– kilopascal	0.145 psi
MPa	– Megapascal	145 psi
N	– Newton	0.225 pounds force
daN	– dekanewton	2.25 pounds force
Nm	– Newton meter	0.738 foot pounds force
daNm	– dekanewton meter	7.38 foot pounds force
°C	– degrees-Celsius	°Fahrenheit = 1.8 x °C + 32
kW	– kilowatt	1.34 horsepower
l/min	– liter/minute	0.219 gallons per minute
km/h	– kilometer/hour	0.621 miles per hour
1/min		rpm

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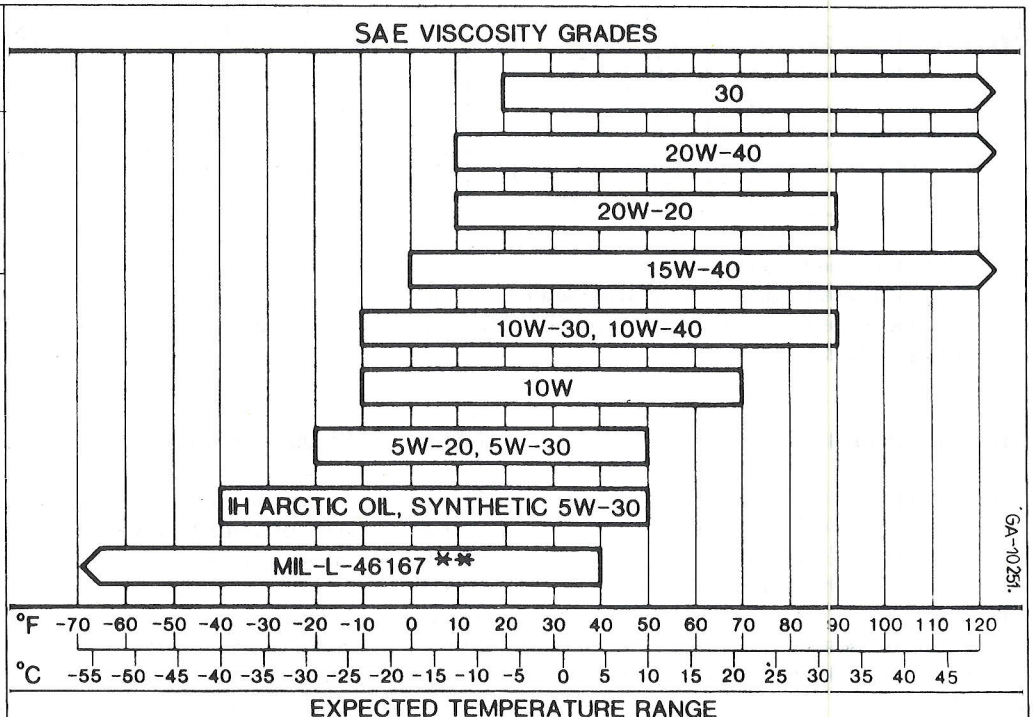
Recommended Lubricants

Engine: HD-Engine oil I. Preferred quality: oils meeting API CD or CD/SC or MIL–L–2104C. II. Acceptable quality: so called "universal" oils meeting API CD/SF or CD/SE		
Transmission and Rear Axle:	IH-Transmission oil	below –10°C SAE 90 or 80W–90 above –10°C SAE 80W–90 or 80 according API GL–4 or MIL–L–2105
Front Drive Axle:	IH-Transmission oil	SAE 90 according to API GL–4, GL–5, MIL–L–2105 or MIL–L–2105B
Air Conditioner:	Refrigerant R12	according to IH-Spec B 41
Refrigerant Compressor	Special Oil	Suniso 5GS, Texaco Capella E or equivalent oils compatible with Refrigerant R12
Hydraulic System:	IH-Hy-Tran Fluid	according to IH-Spec. B6 or IH-Hydraulic Oil
Grease fittings, Front Axle Bearing (nondriven):	Multipurpose Grease	Lithium base acc. to IH-Spec. B 27 Grade 251 HEP or Lithium base cosistency No. 2 ot NLGI Grease Grade 2
Brake System: *	IH-Hy-Tran Fluid	according to IH-Spec. B6
Cooling System:	Coolant plus IH-Antifreeze plus Conditioner	according to IH-Spec. B1, observe mixture chart, min. concentration 33% i.e. down to –20°C

*) *Caution: Do not use commercial brake fluid or any other mineral oil.*

**) When using this oil quality, reduce the normal engine oil-change interval by 50 percent.

The lubricating instructions in this book refer to the above recommended grade specifications. Damaged caused by using lubricants other than specified are not covered by the manufacturer's gurantee.

Specifications subject to change without notice!

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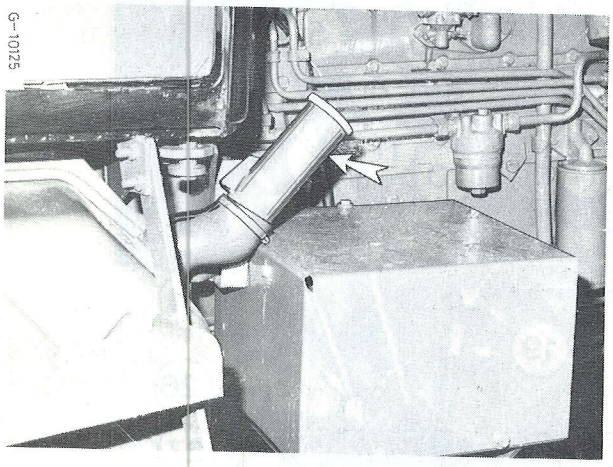
Make visual inspection in the morning to detect leakages, loose bolts etc. Be sure to correct defects without delay.

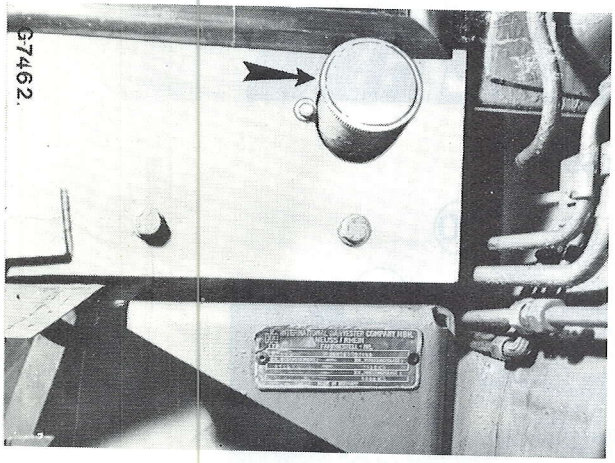
Wheels

Check for proper mounting, tire pressure and tire condition.

Fuel



Illust. 3
955 XL – 1055 XL
Filler neck for Diesel fuel

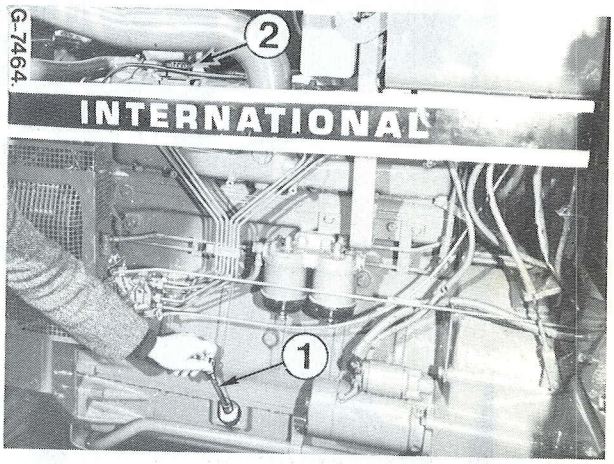


Illust. 3a
955 – 1055
Filler neck for Diesel fuel

Never remove the fuel tank cap Illust. 3, 3a fill the fuel tank, when the engine is running, or, when near an open flame. Do not smoke or use an oil lantern, when working around inflammable fuels.

Be sure fuel tank is full. Fill the tank at the end of each day's operation to reduce condensation of moisture.

Crankcase Oil



Illust. 4
Checking crankcase oil level

1 – Oil level gauge
2 – Oil filler neck

When checking oil level be sure the engine is stopped and the machine is standing on level ground.

Remove the gauge and wipe it clean. Insert gauge fully to the stop. Remove gauge, check the oil level and, if necessary, add oil through the filler neck (2) Illust. 4 to bring the level up to the upper mark on the gauge. Reinstall and tighten the gauge.

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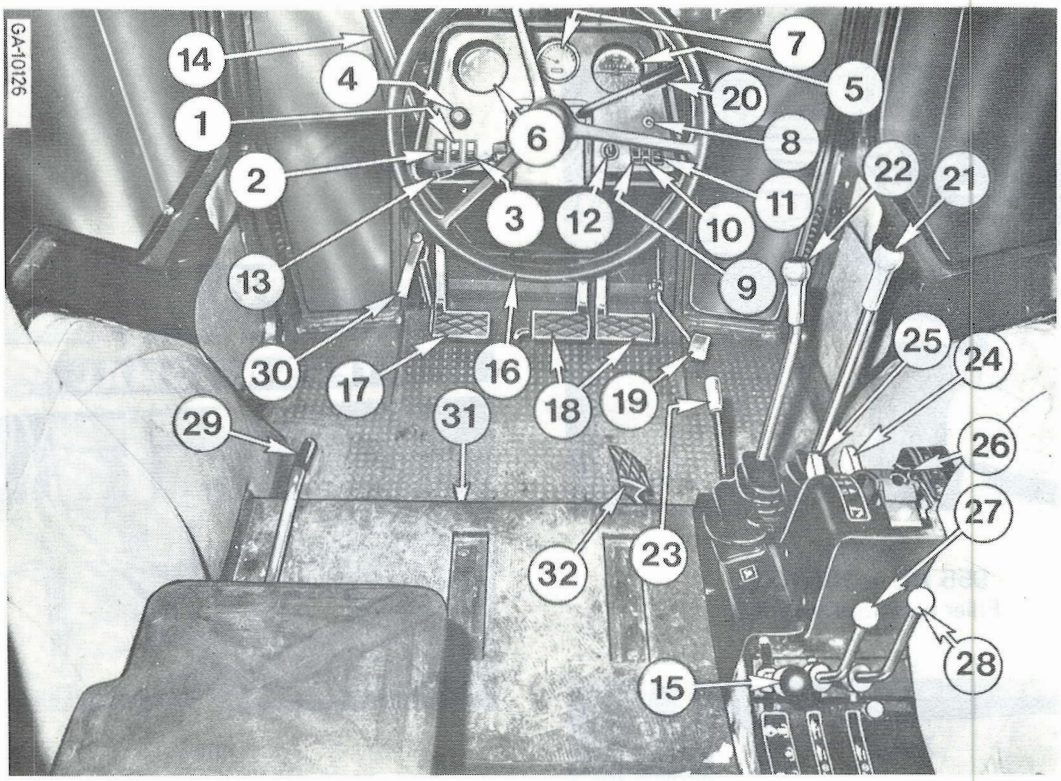
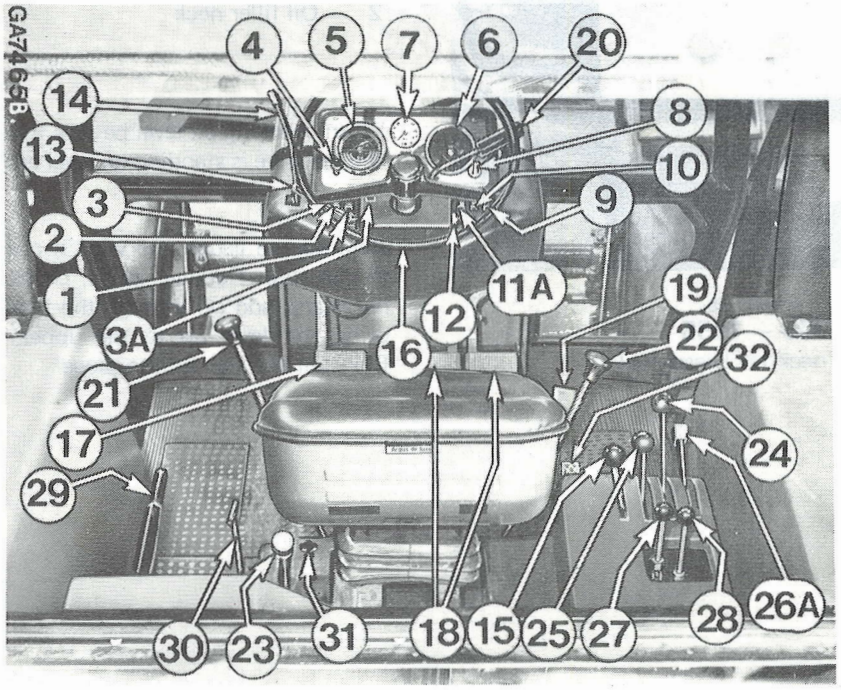
Regardless of previous experience as a tractor operator, you must be thoroughly familiar with the location and use of all instruments and controls before operating this tractor. Check all instruments, immediately after starting, again upon reaching operating temperatures and at frequent intervals during operation to assure proper care through prompt detection of irregularities. If any of the instruments do not register properly, stop the engine; locate and correct the cause immediately.

Be careful! Any attempt to operate the machine without sufficient knowledge may be a hazardous venture.



Illust. 5
955 XL – 1055 XL



Illust. 5a
955 – 1055

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Legend for Illusts. 5 and 5a

1 – Hazard warning light switch
2 – Light switch
3 – Windshield wiper and washer switch
3A – Parking brake warning light, 955 – 1055
4 – Starting and shut-off control
5 – Tractormeter
6 – Instrument cluster
7 – Air pressure gauge *
8 – Plug socket
9/10 – Working light switch front and rear *
11 – Beacon warning light switch *
11A – Differential lock control lamp *, 955 – 1055
12 – Master switch
13 – Directional signal light and dimmer switch with horn button
14 – Pto clutch hand lever
15 – Pto shifter lever
16 – Steering wheel
17 – Clutch pedal
18 – Brake pedals
19 – Accelerator pedal
20 – Hand throttle
21 – Speed range lever
22 – Gearshift lever
23 – Speed reducer lever *
24 – Draft control lever
25 – Position control lever
26 – Marker knob
26A – Marker lever
27 – Auxiliary valve control lever (double action) *
28 – Auxiliary valve control lever (single action) *
29 – Front wheel drive lever *
30 – Parking brake handle
31 – Lowering speed control
32 – Differential lock pedal

* if so equipped

Instruments, Illust. 5 / 5a

1 – Hazard Warning Light Switch

When parking the tractor on public roads especially after dark this equipment may be used to warn oncoming traffic. Observe highway code.

2 – Light Switch

Position 1: Position lamps, tail light, number plate and instrument lamps are on.

Position 2: Includes position 1 plus main beam headlights.

3 – Windshield Wiper and Washer Switch

Position 1: Windshield wiper, Position 2: Includes position 1 plus windshield washer.

3A – Parking Brake Warning Light

Do not drive the tractor when the light is on. Release parking brake.

4 – Starting and Shut-off Control

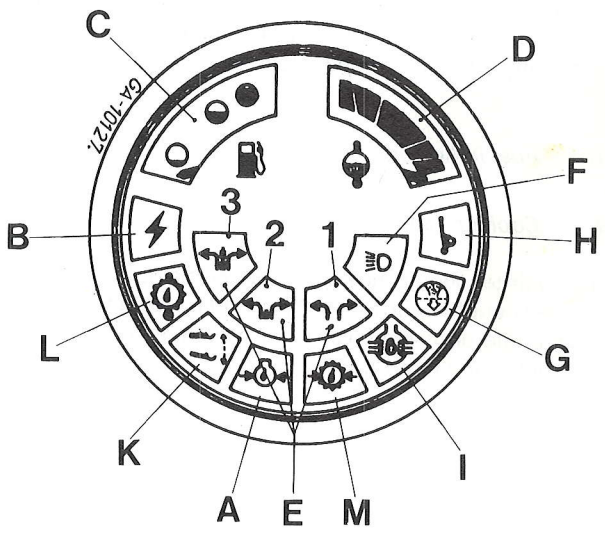
Refer to "Starting the Engine", Illust. 16.

5 – Tractormeter

The tractormeter combines hourmeter, revolution counter and travelling speed indicator in one instrument.

To correctly observe the maintenance intervals it is good practice to keep a separate record of hourmeter readings.

6 – Instrument Cluster 955 XL – 1055 XL



Illust. 6

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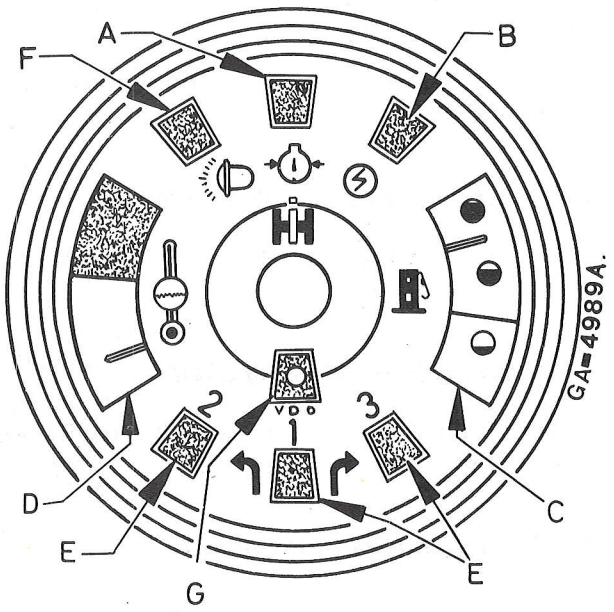
6– *Instrument Cluster* 955 – 1055



Illust. 6a

A – Engine Oil Pressure Warning Lamp, Red

As soon as the engine is started and picks up speed, the warning lamp must go out. If the lamp continues to glow or lights up during operation, stop the engine immediately. Check crankcase oil level. Also refer to "Trouble Shooting", and eliminate the fault.

B – Charge Control Lamp, Red

As soon as the engine is started and picks up speed, the charge control lamp must go out to indicate proper charging of the battery. If the lamp continues to glow or lights up intermittently, check the electrical system, especially alternator connections.

C – Fuel indicator

D – Coolant Temperature

The pointer should not be in the red field. If the temperature should rise into the danger area (red field), let the engine idle until the engine has cooled down, find cause of trouble and rectify.

E – Directional Signal Light Control, Green

All three control lamps indicate that the directional signal lights are working when towing two trailers. When towing one trailer, only two of the lamps flash to show proper directional indication. When operating the tractor by itself lamp (E1) shows that signal lights are working. In any case an inital flash-up of all three control lamps is common, thereafter lamps indicate as described above.

F – Headlight Control Lamp, Blue

Main beam of headlights is indicated by glowing of control lamp (F).

G – Air Cleaner Service Indicator Lamp, Red

When this lamp is glowing while the engine is running, air cleaner element restriction has reached its permissible limit and the element must be served. Refer to section "Air Cleaner".

Note: It is acceptable to operate the tractor to the end of the working shift without danger to engine components. However loss of power and a slight increase in exhaust smoke are to be expected.

H – Parking Brake Warning Light **955 XL – 1055 XL**

Do not drive the tractor when the light is on. Release parking brake.

I – Differential Lock Control Light **955 XL – 1055 XL**

This light flashes to show that the differential lock is engaged.

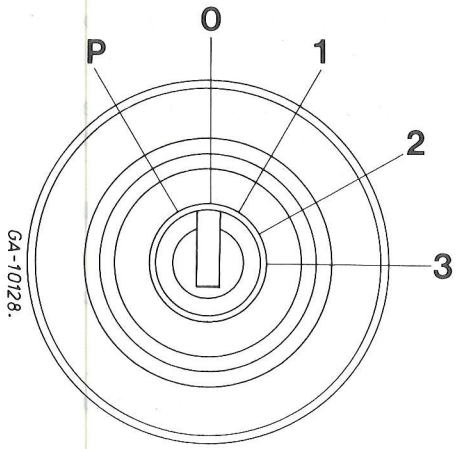
K, L, M – Not used

7 – Air Pressure Gauge

(if so equipped)

When hitching trailers with pneumatic brake system, pressure gauge must show minimum operating pressure (see "Technical Data") before moving the tractor.

12 – Master Switch



Illust. 7
Switch key positions

P – Parking position after dark: Hazard warning light on the circuit. Tail light, position lamps, number plate and instrument lamps are on.
O – Off position
Hazard warning light on the circuit.

1 – Operating position; all instruments, horn, headlights, directional signal lights, plug socket, brake lights and starting motor are on the circuit.
2 – Pre-heating position
3 – Starting position

13 – Directional Signal Light and Dimmer Switch

The directional signal switch controls the flascher unit. Front position is for the right-hand signal, rear position for the left-hand signal.

When liftet it acts as dimmer switch.

When the lever is liftet briefly with headlights switched off, a bright beam will flash on as a hazard warning light. The signal horn button is located at the end of the lever.

14 – PTO Clutch Lever

For engaging or disengaging the pto drive operate the pto clutch.

15 – PTO Shifter Lever

For operating instructions of this lever refer to „Power Take-Off", Illust. 27.

16 – Hydrostatic Power Steering

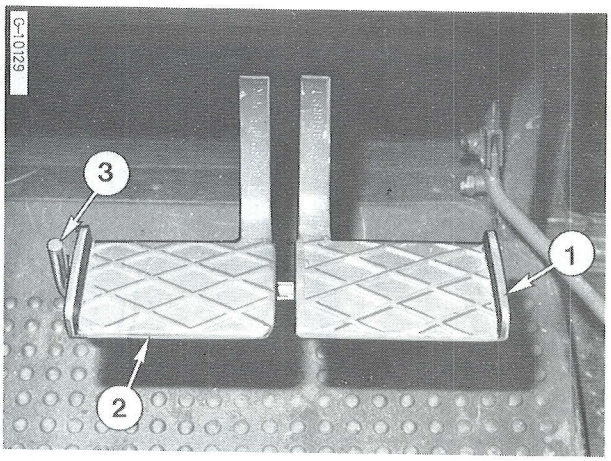
Before operating the tractor check the hydrostatic steering system by turning the steering wheel alternately to full lock in both directions.

When towing the tractor without engine power the manual pump is sufficient to provide the necessary pressure for closed circuit steering.

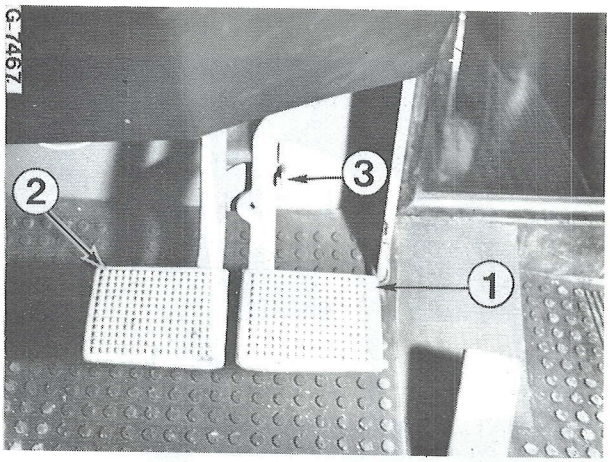
Caution: Power assistance for steering does not operate when the tractor is towed or coasted without the engine running and extreme care must taken particularly in cold weather.

18 – Service Brake Pedals

Before starting the daily work apply the brakes a few times on the go to check efficiency.



Illust. 8
955 XL – 1055 XL
Brake pedals latched together



Illust. 8a
955 – 1055
Brake pedals latched together

1 – Brake pedal RH
2 – Brake pedal LH
3 – Brake pedal latch

Always latch the brake pedals together, when driving the tractor in high gear. Be sure to latch brake pedals for highway operation.

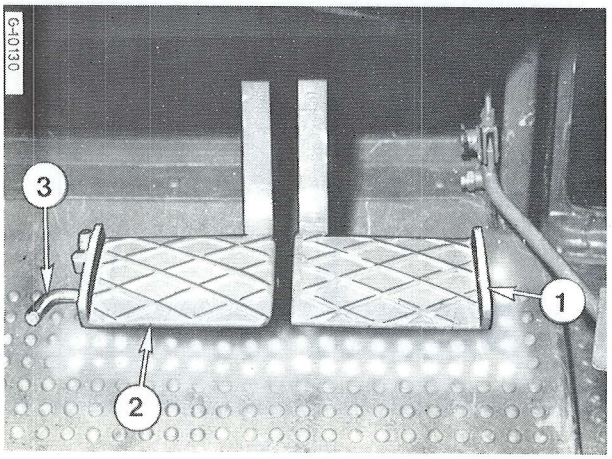
The service brakes are of the piston operated lined disk type and mounted in the rear axle.

An integrated hydraulic brake booster reduces pedal effort.

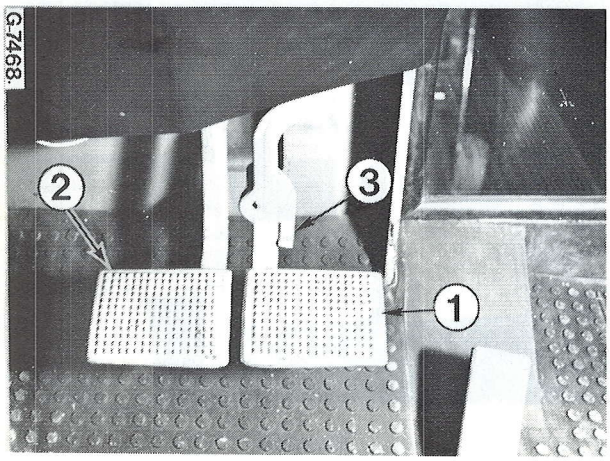
The brake pedals Illust. 8 / 8a are used to stop the tractor, or to assist in making sharp turns.

The brake pedal latch (3) is used to latch both brake pedals together, causing the brakes to operate simultaneously.

To stop the tractor, depress both pedals at the same time.



Illust. 9
955 XL – 1055 XL
Brake pedals unlatched



Illust. 9a
955 – 1055
Brake pedals unlatched

1 – Brake pedal RH
2 – Brake pedal LH
3 – Brake pedal latch

To assist in making a sharp turn, operate the pedals individually, depressing the pedal on the side toward which the turn is to be made.

It is of vital importance that brakes are in good working order, especially when pulling heavy trailers. Before going downhill be sure to change into first or second gear, according to the laod.

If the weight of the loaded trailer exceeds the weight of the tractor, or if the trailer has more than one axle, the trailer must be equipped with brakes.

Important: Be sure to latch brake pedals when pulling trailers.

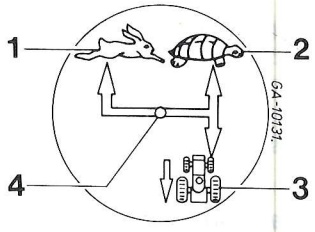
The engine can also be utilized to act as a brake by retarding the throttle.

19 and 20 – Engine Speed Control

With the hand throttle (20) a constant engine speed can be set as required for any particular job.

The accelerator pedal (19) is provided for varying engine speed when driving on roads. To do this, shift the hand throttle to low idle position.

21 – Speed Range Lever



Illust. 10
Speed range shift diagram

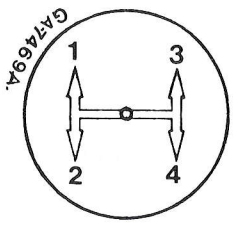
1 – fast = Road range
2 – slow = Field range
3 – reverse = Reverse range
4 – neutral postion

The different speed ranges can be selected with the speed range lever shown by the symbols Illust. 10.

When operating the speed range lever depress the clutch pedal fully and stop the tractor.

Four speed gears are available in each speed range.

22 – Gearshift Lever



Illust. 11
Gearshift diagram

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The gearshift transmission is of the fully synchronized constant mesh type which greatly facilitates gear shifting on the go.

To shift gears disengage the foot clutch completely and operate the gearshift lever steadily but not too slowly. Up and down shifting is possible, as usual, in each speed range.

23 – Speed Reducer Lever **955 XL – 1055 XL**

With Synchronization

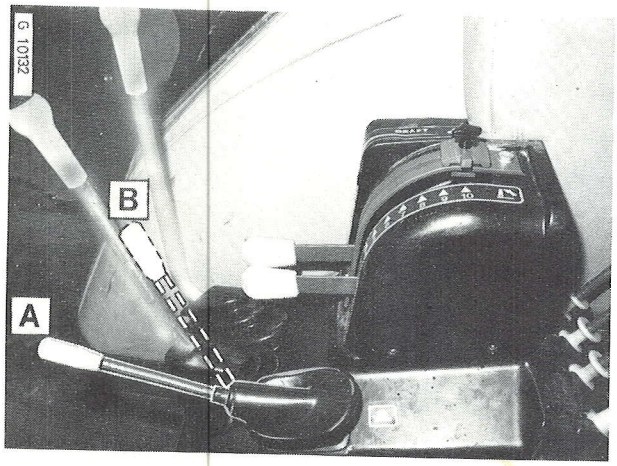
Change gears as during normal gear shifting. Lever positions see Illust. 12:

A – Speed reducer engaged
B – Speed reducer disengaged

Without Synchronization

To engange or disengage the speed reducer operate the engine clutch and stop the tractor. Lever positions see Illust. 12:

A – Speed reducer disengaged
B – Speed reducer engaged



Illust. 12
Speed reducer, lever positions

This speed reducer transmission is designed to allow very low operating speeds for certain special applications. Do not attempt continous speed reducer operation under heavy loads such as plowing in 3rd or 4th gear road range.

These jobs should be done in field range of regular transmission.

23 – Speed Reducer Lever **955 – 1055**

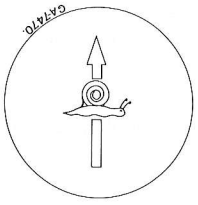


Bild 12a
Speed reducer shift diagram

With Synchronization

Change gears as during normal gear shifting.

Without Synchronization

To engage or disengage the speed reducer operate the engine clutch and stop the tractor.

This speed reducer transmission is designed to allow very low operating speeds for certain special applications. Do not attempt continuous speed reducer operation under heavy loads such as plowing in 3rd or 4th gear road range.

These jobs should be done in field range of regular transmission.

24 – 26 – Draft- and Position Control Levers

These levers are used to operate the hydraulic lift. For operating instructions refer to "Draft- and Position Control".

27 and 28 – Auxiliary Valve Control Levers

Special attachments such as front loaders or hitched implements etc. are controlled hydraulically by auxiliary control valves.

For details see section "Auxiliary Control Valve".

29 – Front Wheel Drive Lever
(if so equipped)

The front-wheel drive is designed to assist the rear axle drive under adverse conditions, such as soft slippery terrain, on construction sites, in forestry, etc.

On roads and on hard surfaces where wheel spin is no problem, the front-wheel drive should not be used.

The front-wheel drive can be engaged or disengaged by means of lever (29) without using the engine clutch.

The tractor is started in motion in the same manner as one without all-wheel drive.

To avoid excessive tire wear it is advisable to disengage the all-wheel drive when operating in the top gears of the road range.

To prevent the front-wheel drive clutch from overheating, do not allow the clutch to slip.

Take care that lever is always in fully engaged or disengaged position.

Note: When operating in restricted areas take care not to foul the propeller shaft. Any interference with this tubular shaft may cause imbalance, resulting in vibrations at high speeds.

See your IH dealer to prevent further damage.

30 – Parking Brake Lever

Before leaving the tractor apply the parking brake.

32 – Differential Lock

The differential lock is used to connect the driving wheels as though mounted on a common shaft. It is applied to increase the tractor pull in the field when the slippage at one wheel is greater than at the other one.

Caution: Engage the differential lock only at tractor stand-still or at low speed when there is no differential action.

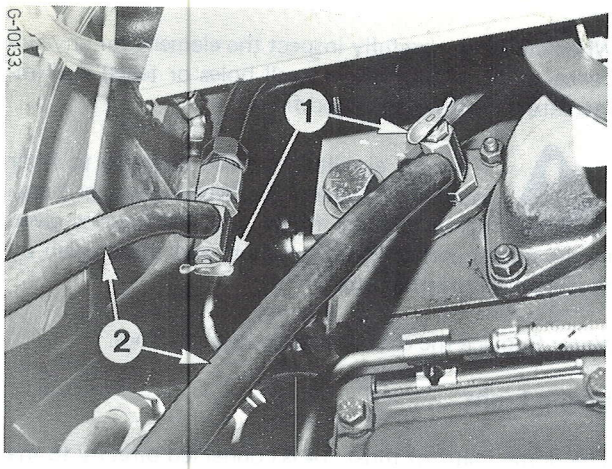
To engage the differential lock depress the pedal all the way and hold it in this position.

Never use steering brake with differential lock engaged. Do not use differential lock while making a turn.

On releasing the pedal the differential is automatically unlocked. In necessary operate the clutch briefly to facilitate disengagement.

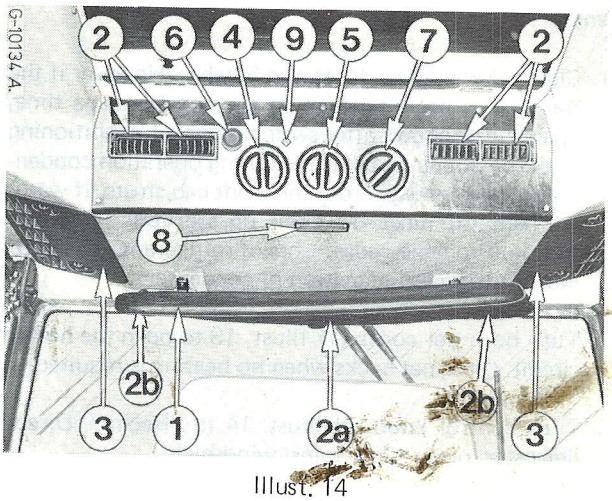
1 091 788 R2
8.81

Heating and Air Conditioning



Illust. 13

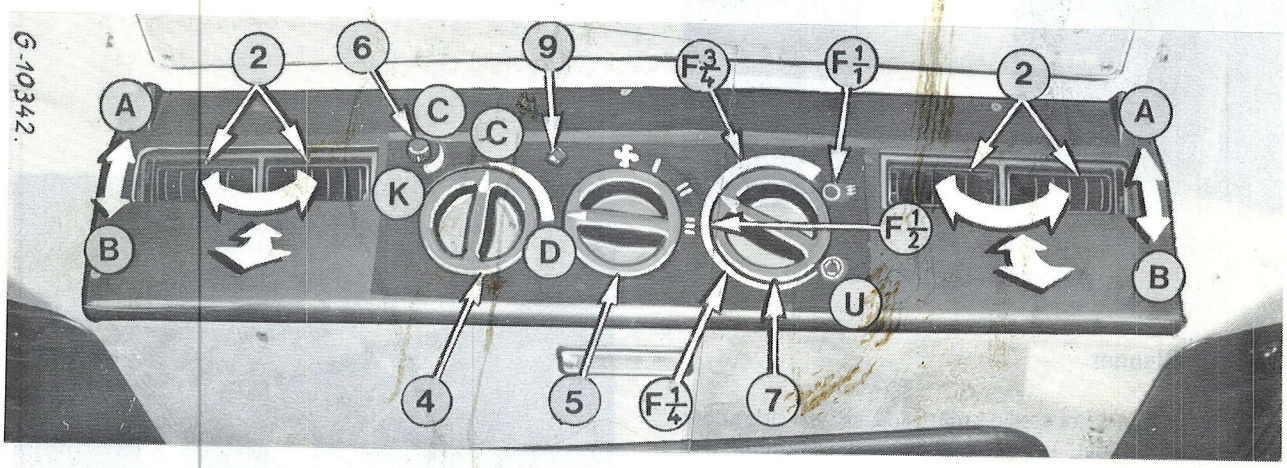
1 – Heater circuit pet cocks
2 – Lines to cab



Illust. 14

1 – Sun blind
2 – Air flow louvers adjustable
2a– Defroster louver windshield
2b– Defroster louvers side windows not adjustable
3 – Air cleaner covers
4 – Heater control
5 – Blower control
6 – Air conditioner control*
7 – Fresh air / recirculation control
8 – Dome light
9 – Warning light, air conditioning*

Control Positions



Illust. 14a

A – Open
B – Closed
C – off
D – Maximum heat
F 1/4 – F 1/1 – Fresh air portion
K – Max. cooling
U – Recirculation

Comfort Condition	Blower Control (5)	Heater Control (4)	Air Conditioner Control (6)*	Air Flow Louvers (2)	Fresh Air/Recirc. Control (7)	Notes
Pressurize	III	as required	as required	A	F 1/1	
Cool	III	C	K	A	F 1/4	1)
Heat	I – II	D	C	A	F 1/4	2)
Defrost	III	D	C	B	U	3)
Dehumidify	I	as required	K	A	F 1/4	
Recirculation	as required	as required	as required	A	U	4)

* if so equipped

1 091 788 R2
8.81

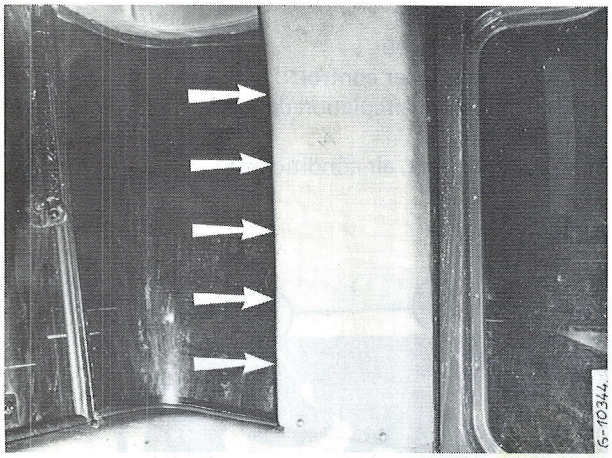
Notes:

1. Close all windows, doors and hatches. However if the tractor has been exposed to the sun for some time, open the windows after switching on air conditioning until the hot air is expelled. During operation condensation may emerge from the front cab struts. If warning light (9) Illust. 14 lights up see your IH-service station. Probable cause: Loss of refrigerant, ingress of moisture, or contamination of condenser.

2. Turn both pet cocks (1) Illust. 13 to open the heater circuit. Close pet cocks when no heating is required.

3. Turn control knob (7) Illust. 14 to "Recirc." Direct defroster louver (2a) against windshield.

4. Control (7) should only be switched fully to recirculation if outside air is polluted by smoke, fumes, insecticide etc. Otherwise a regular proportion of fresh air is of advantage.



Illust. 15
Automatic cab breather

Cab Air Cleaner

The two air filters (located on right side and left side above the covers (3) Illust. 14) must be cleaned as required due to operating conditions to maintain a full flow of fresh air.

Conditions of high humidity and extreme dust require the most frequent cleaning of the filter.

Remove covers (3) by loosening the fastener knobs.

Note: The paper element must be handled with care. It will not stand the abuse of rapping on a tire or hard surface.

After removing the filters, they may be cleaned by directing clean dry compressed air up and down the pleats on the "Dirty Side" of the element. Continue this until the element ist clean.

Note: Air pressure at the nozzle must not exceed 0.5 MPa.

When cleaning, carefully inspect the element for any evidence of damage (such as small holes or tears) and immediately replace a damaged filter.

The cab air filters are not designed to filter out harmful chemicals. When using agricultural chemicals, follow the instructions given in the implement operator's manual and those given by the chemical manufacturer.

Note: Replace the elements after five cleanings.

Dome Light

The dome light (8) Illust. 14 is connected directly to the battery. The light is switched on by tilting.

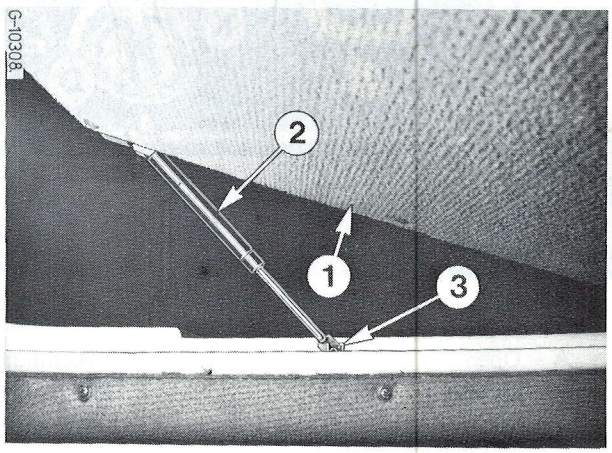
Note: Turn the light off when leaving the tractor to conserve the battery.

Working Lights

Working lights are adjustable from the inside with a handle which can be locked in any desired position to give a spot light effect. The handle can be transferred.

Note: Never switch on working lights on public roads.

Hatch

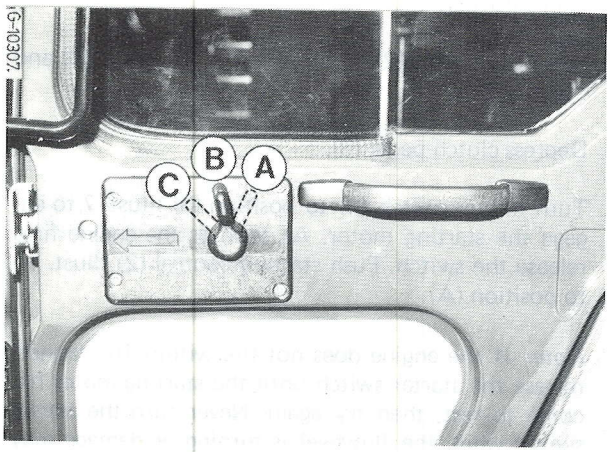


Illust. 15a
Roof hatch

1 – Hatch (emergency exit)
2 – Pneumatic cylinder (both sides)
3 – Clamp (both sides)

In case of emergency push pneumatic cylinders (2) Illust. 15a out of clamps (3) and open the hatch fully.

Doors



Illust. 15b

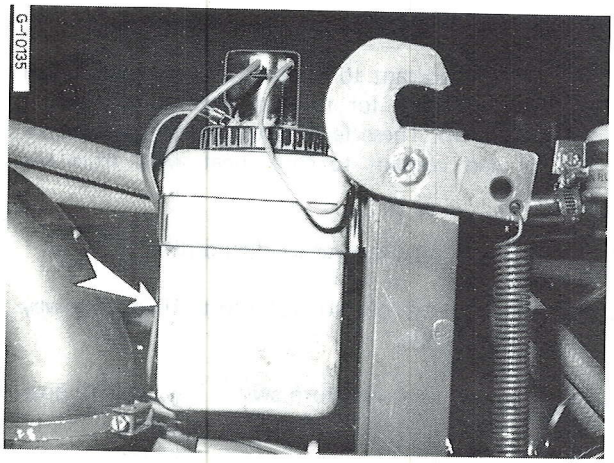
A – Lock position (RH door only)
B – Neutral
C – Operating position

Note: Only the left door can be locked from the outside.

Note: When cleaning the cab externally with a water hose turn control (7) Illust. 14 to recirculating position.

No repairs to structural members of the cab! If damaged replace the complete cab body.

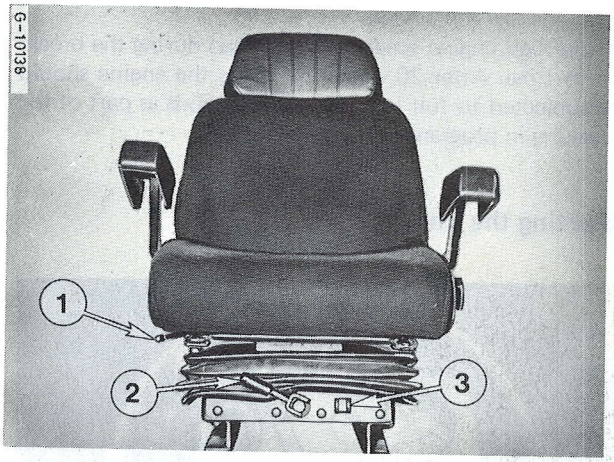
Windshield Washer



Illust. 15c

The switch (3) Illust. 5 actuates windshield washer and wipers. Refill the water container Illust. 15c regularly adding a suitable detergent. During the cold season, add a commercial anti-freeze to keep the washer system operable.

Operator's Seat



Illust. 15d

1 – Lever for forward adjustment
2 – Lever for spring adjustment
3 – Weight scale

The driver seat can be adjusted fore and aft, up and down to the most comfortable position for the operator. Illust. 15d shows a typical seat.

Upward Adjustment

Lift seat to first or second click-stop.

Downward Adjustment

First lift seat to highest position. Seat can then be lowered to lowest position.

Breaking-in Period

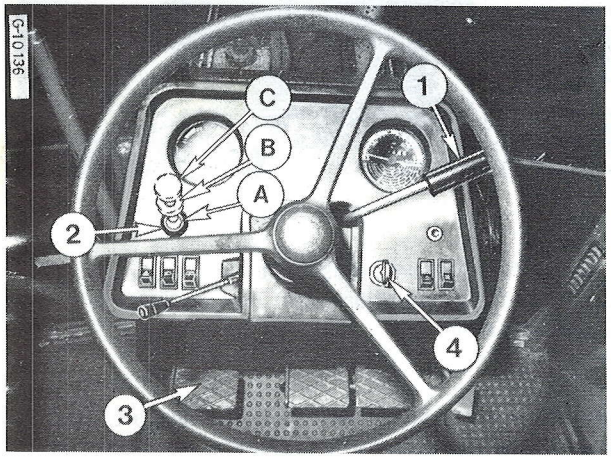
In order to obtain best "breaking-in" results tractor and engine must not be subjected to full load or speed, during the critical first 20 hours of operation. Experience has shown that gradually increasing the load with alternating engine speeds is the best way of introducing a new tractor to a long and statisfactory service life.

Following schedule should be adopted:

1st – 4th operating hour 1700/min on a light (1/4) load.
5th – 20th operating hour full rated speed and medium load.

Avoid high engine speeds without load during the breaking-in time. After 20 operating hours the engine should be subjected to full load for short periods as part of the breaking-in program.

Starting the Engine



Illust. 16

1 – Hand throttle
2 – Starting and shut off control
A = Operating position
B = Starting position (excess fuel)
C = Shut-down position
3 – Clutch pedal
4 – Master switch

Be sure gearshift and pto shifter lever are in neutral.

Note **(955 XL – 1055 XL only)**: The starting motor will not operate unless the clutch pedal is fully depressed.

Note **(955 – 1055 only)**: If the tractor is equipped with safety starting switches, the starting motor will not operate unless the gearshift lever is in neutral.

1. Place hand throttle (1) Illust. 16 in high idle position (full throttle).

2. Pull out control (2) to its first, stop position (B) and hold it there.

3. Depress clutch pedal (3).

4. Turn master switch (4) to position (3) Illust. 7 to engage the starting motor. As soon as the engine fires release the switch. Push starting control (2) Illust. 16 to position (A).

   Note: If the engine does not fire within 10 seconds, release the starter switch until the starting motor has come to rest, then try again. Never turn the starter switch while the flywheel is turning or damage may occur to the starting motor or flywheel ring gear.

5. Operate hand throttle and allow the engine to warm up at medium speed.

Starting in Cold Weather

When starting in cold weather (0°C and below) turn the master switch (4) Illust. 16 to position (2) Illust. 7 and hold it there for 60 seconds. Then turn to starting position (3). If the engine does not fire within 20 sec., preheat again for 30 sec. and start once more. If engine still does not fire see "Trouble Shooting Chart".

Hold starting control (2) Illust. 16 for about 20 seconds in position (B). Then push to operating position (A).

Stopping the Engine

1. It is very important to operate a hot engine at half throttle (no load) for three to five minutes before shutting down. These few minutes allow the lubricating oil and coolant to carry heat away from the engine.

2. Return hand throttle lever to idle position.

3. Pull out shut-off control (2) Illust. 16 all the way to stop the engine.

4. When engine is at rest turn switch key to "O" position.

5. Push shut-off control (2) to position (A).

Operating the Tractor

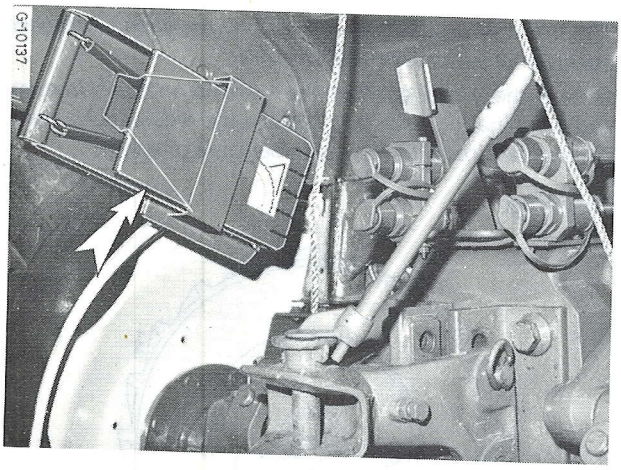
Before operating the tractor check proper function of brakes, lights and instruments.

When operating a tractor equipped with pneumatic trailer brake system make sure, pressure gauge (7) Illust. 5 / 5a shows operating pressure.

To shift gears the clutch pedal must be depressed all the way. To start the tractor in motion the clutch pedal is slowly released. Care should be taken to release the clutch pedal neither too slowly nor too suddenly. A sudden release of the clutch pedal will start the tractor with a jerk, while releasing the pedal too slowly causes excessive wear on the clutch linings.

Never rest your foot on the clutch pedal as this will wear out the clutch release bearing.

Do not put the tractor out of gear when going downhill.



Illust. 17
Collapsible Wedge

Place wedge Illust. 17 under rear wheel when parking the tractor on a down grade.

Towing the Tractor

When towing observe the following:

– Do not exceed a towing speed of 20 km/h
– If the power train is damaged, DO NOT tow; the tractor must be transportet on a carrier to avoid further damage.

In order to ensure sufficient lubrication of transmission units when towing proceed as follows:

Disengage clutch and block clutch pedal in depressed position.

Engage 4th speed and road range. Disengage speed reducer.

Caution: Power assistance for steering does not operate when the tractor is towed or coasted without the engine running and extreme care must be taken particularly in cold weather.

With the engine not running, the brake booster is without power. Pedals must therefore be operated with more force.

Operating in Severe Frost

Engine and transmission oils tend to become heavy under temperatures below freezing point, making for hard starting.

Be sure to keep the battery well charged and maintain terminal clamps and posts bright to ensure positive starting. Operate the pre-glow system long enough.

The air conditioner (if equipped) should be operated for at least 10 minutes every month to keep compressor seal from drying out.

Jerrican-Weights

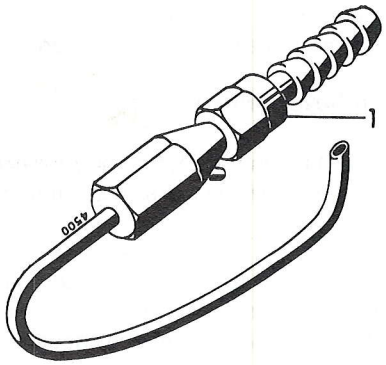
The tractor has been designed with a view to balanced weight distribution for maximum traction and good steerability.

Steering can be affected, however, by excessive down-loads carried on the drawbar, such as heavy mounted implements. – In this case jerrican-weights on the tractor front end will restore good weight distribution.

However, the tractor should not be operated with a full bank of jerrican-weights unless there is a sufficient down-load on the drawbar, otherwise braking and traction may be affected.

When, for example, additional front weights are fitted, rear times should also be water ballasted for even weight distribution.

Liquid Weight



Illust. 18
Combination Valve

The combination valve Illust. 18 is recommended to simplify liquid weight filling and draining procedures. It can be obtained through regular IH service parts channels.

Filling

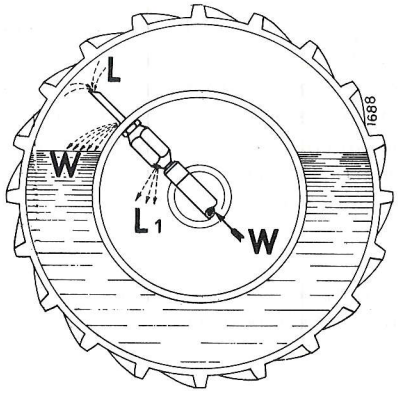
Jack up the tractor rear. Remove the valve cone and allow the tire to deflate, then screw on the combination valve.

Turn the tire in position as shown in Illust. 19.

Attach a water hose to the combination valve and open the tap.

The pressure in the water line is generally sufficient to fill water into the tube.

Close the tap as soon as water starts flowing out at the bleeder, L1 Illust. 19.

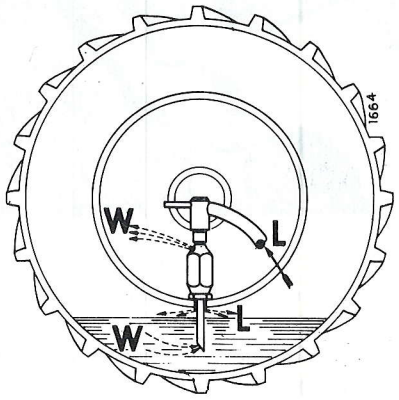


Illust. 19
Water Filling with Combination Valve
W = Water
L = Air

The tube is now filled 3/4 full with water. A higher quantity of water is not permissible.

Rotate the wheel so that the valve is on top. Unscrew the combination valve and replace the regular valve core. Inflate the tire to the correct operating pressure.

Draining



Illust. 20
Draining Liquid Weight
W = Water
L = Air

Air escaping at the bleeder indicates that the draining process is completed.

Antifreeze Solution

When the tractor is operated in freezing temperatures a magnesium chloride solution is recommended.

First drain the water from the tire, Illust. 20. Then pump a solution of magnesium chloride and water into the tire. Use a suitable hand pump or place the solution high enough to obtain a positive gradient flow.

Tire manufacturers have prepared comprehensive scales to ensure correct mixture and adequate protection.

Never attempt to use this solution to protect the radiator.

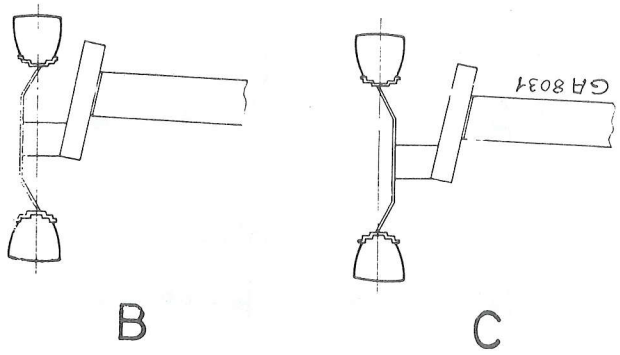
Adjusting Front Wheel Tread Width (2-WD)

On tractors equipped with adjustable front axle, front wheels can be set in different tread positions by moving the axle extensions in or out, as required.

Light Duty Axle With Horizontal Adjusting Ledge (4) Illust. 22

The table below shows the various possible tread positions.

Figures Illust. 20a	Tires	Tread width (mm)				Non adjustable front axle
		Adjustable front axle				
		1	2	3	4	
B	7.50–18	1530*	1630	1730	1830	1564*
	7.50–20	1527*	1627	1727	1827	1561*
C	7.50–18	1610	1710	1810	1910	1644
	7.50–20	1607	1707	1807	1907	1641
	11.00–16	1627*	1727	1827	1927	1661*
* factory setting	10.00–16	1627*	1727	1827	1927	–



Illust. 20a

After turning front wheels tighten bolts to recommended torque.

To adjust wheel tread proceed as follows:

Jack up tractor under front axle. Remove clamping bolts (1) Illust. 21 and pull out spring clip (4). Loosen clamps (3) on tie rod.

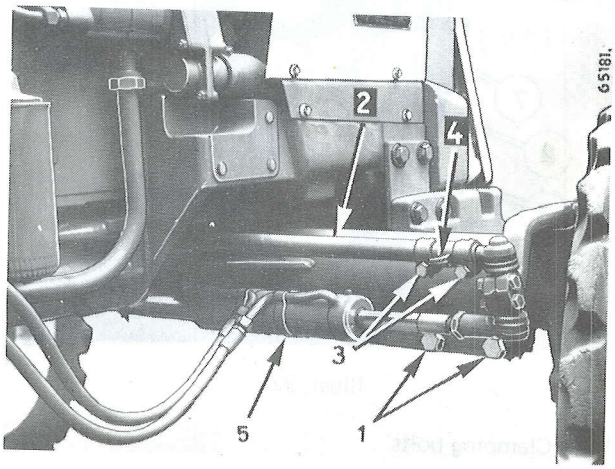
Remove balljoint (3) Illust. 22.

Now pull out front axle extensions an equal distance on both sides to the desired tread position. Line up locating notches. Insert bolts (1) and tighten to recommended torque.

Replace spring clip (4) Illust. 21, tighten tie rod clamps (3). Relocate the inner ball joint (3) Illust. 22 of the steering cylinder in the respective hole of the adjusting ledge (4).

Note: The spacing of holes in tie rod (2) Illust. 21 and adjusting ledge (4) Illust. 22 correspond with the locating notches in axle extensions.
After each tread width adjustment, front wheel toe-in must be readjusted.

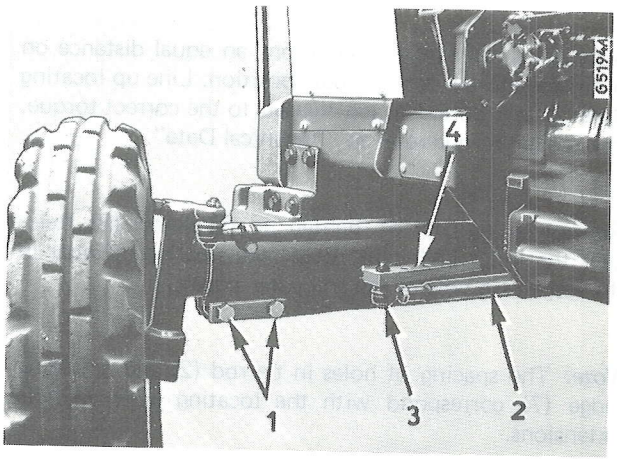
Note: Recheck torque of clamping bolts (1) after 20 operating hours.



Illust. 21

1 – Clamping bolts
2 – Tie rod
3 – Tie rod clamps
4 – Spring clip
5 – Steering cylinder

Adjust in tie rod to conform with the tread width.



Illust. 22

1 – Clamping bolts
2 – Steering cylinder
3 – Ball joint
4 – Adjusting ledge

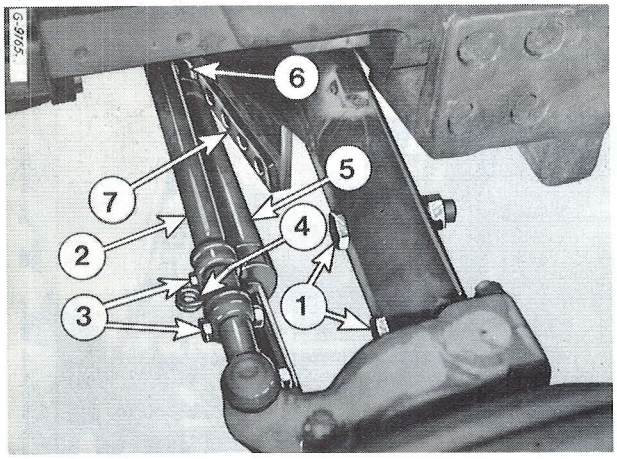
Heavy Duty Axle With Vertical Adjusting Ledge (7) Illust. 22a

The axle extensions are provided with locating holes and are held in place by clamping bolts (1) Illust. 22a. The tread witdth can be adjusted from 1700 – 2100 mm in increments of approx. 100 mm.

To adjust wheel tread proceed as follows:

Jack up tractor under front axle. Remove clamping bolts (1) Illust. 22a and pull out spring clip (4). Loosen clamps (3) on tie rod.

Remove steering cylinder ball joint (6).



Illust. 22a

1 – Clamping bolts
2 – Tie rod
3 – Tie rod clamps
4 – Spring clip
5 – Steering cylinder
6 – Ball joint
7 – Adjusting ledge

Now adjust front axle extensions an equal distance on both sides to the desired tread position. Line up locating holes. Insert bolts (1) and tighten to the correct torque. For special torque refer to "Technical Data".

Replace spring clip (4), tighten tie rod clamps (3). Relocate the inner ball joint (6) of the steering cylinder in the respective hole of the adjusting ledge (7).

Note: The spacing of holes in tie rod (2) and adjusting ledge (7) correspond with the locating holes in axle extensions.

After each tread width adjustment, front wheel toe-in must be readjusted.

Note: Recheck torque of clamping bolts (1) after 10 operating hours.

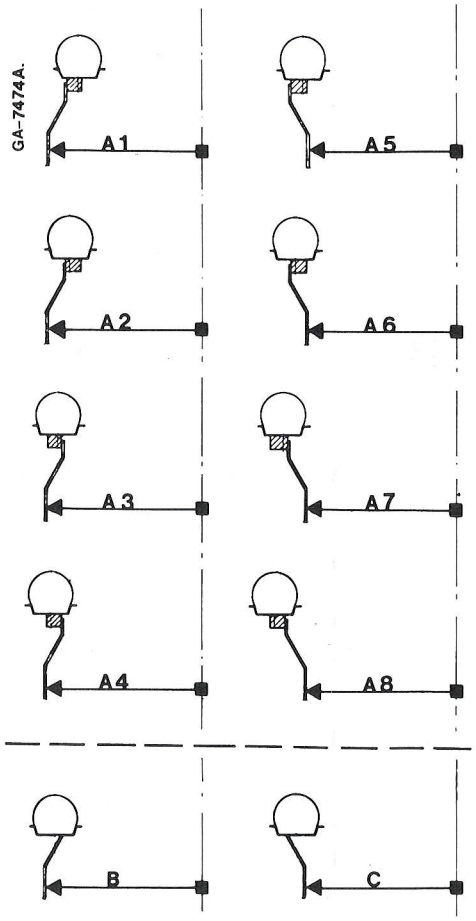
Adjust the tie rod to conform with the tread width.

Note: Do not attempt to change wheel tread of disk type wheels. Concave side of wheel disks must always face outwards, see (C) Illust. 20a.

Tread Width Adjustment of Front Wheels (4-WD) And Rear Wheels

The tractor can be equipped with conventional disk wheels or with adjustable lug type wheels.

The possible tread width settings are shown in table below Illust. 23.



Illust. 23
Possible tread witdh settings

A – Adjustable type wheels B and C – Disk wheels
B – Not permissible with 4-WD front wheels

Note: When wheels are reversed, take care that the tread of the tires point in the direction of the rotation as shown by arrow on tire.

Front Wheels (4-WD)

Tighten front wheel nuts to recommended torque.

Illust. 23	Tread width in mm with tires:			
	11.2–34	14.9–24	11.2–28	12.4–28/ 13.6–28
A1**	–	–	–	–
A2**	–	–	–	–
A3**	–	–	–	–
A4	1645	–	1620	–
A5**	–	–	–	–
A6	1705	1704	1820	1820
A7*	1709	1708	1720	1720
A8	1813	1812	1920	1920
C*	1720	1740	1720	1740

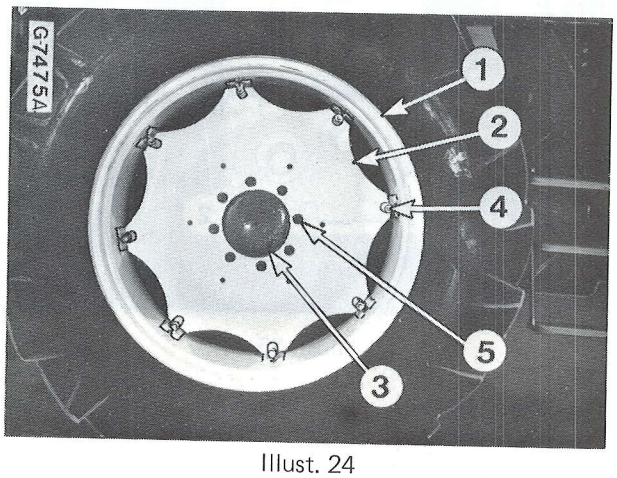
Note: Do not attempt to change wheel tread of disk type wheels. Concave side of wheel disks must always face outwards, see (C) Illust. 23.

Rear Wheels

The tractor can be equipped with adjustable type rear wheels (A) Illust. 23 or with wheel disks (B and C). Possible tread positions or shown in the table below.

Illust. 23		Tread width (mm)
A1**		–
A2**		–
A3	16.9–38 only	1704
A4	not for 23.1–30 and 23.1–34	1804*
A5		1900***
A6		2000
A7		2104
A8		2204
B, not for 23.1–30, 23.1–34		1800*
C		1904***

Illust. 23 shows symmetrical adjustments. Intermediate adjustments can be obtained by mounting the wheels and rims in unsymmetrical positions, which should be used in the field only to coorespond with row-crop spacings.



Illust. 24
Rear wheel

1 – Rim
2 – Disk
3 – Axle flange
4 – Rim nuts
5 – Wheel nuts

When wheels are reversed, take care that the tread of the tires point in the direction of forward rotation as shown by arrow on tire.

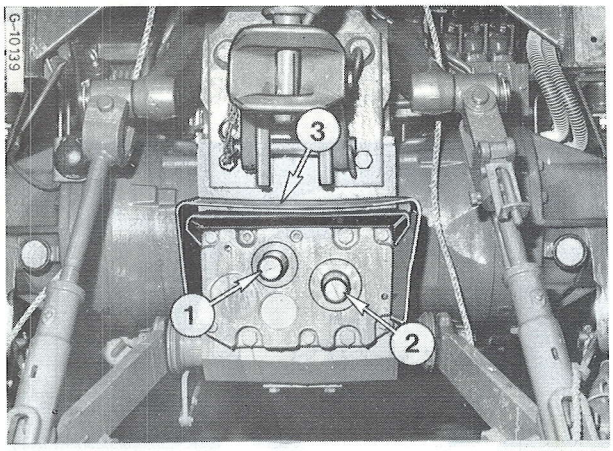
After making wheel tread adjustments, be sure that all rim nuts (4) Illust. 24 are securely tightened to recommended torque.

Torque wheel nuts (5) to recommended torque.

Note: It is imperative to check rim nuts and wheel nuts after 2 – 5 and finally 8 – 10 operating hours and re-torque if necessary.

* factory setting
** not permissible
*** factory setting for 23.1–30 and 23.1–34 only

Power Take-Off



Illust. 25

1 – Pto 1000/min
2 – Pto 540/min
3 – Pto shield

To meet a wide range of operating requirements, the tractor can be equipped with various pto versions.

If a ground speed pto is fitted it can be engaged alternately with the independent power take-off as shown in Illust. 27/28. The 1000/min pto shaft can either be serrated or splined. The 540/min pto shaft is splined only.

Before connecting or disconnecting the power line at the pto be sure pto shifter lever is in neutral (N) Illust. 27/28.

Caution: When connecting the power line to the upper pto shaft (1) Illust. 25 (1000/min), be sure the implement or machine is designed to operate at such a speed. If implements designed for 540/min are connected to the upper pto shaft (1000/min), there is danger of damage due to overspeeding.

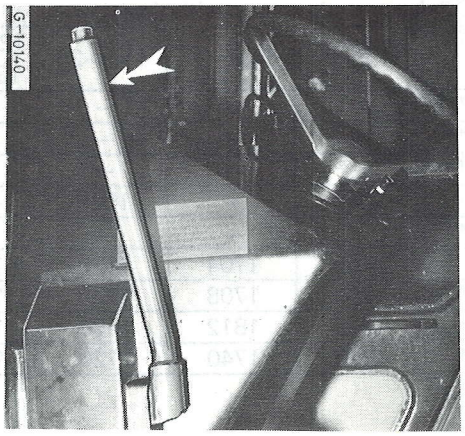
For your protection make sure power line shielding is in place.

When not in use, be sure to cover the exposed pto shafts with the pto guard cap (1 and 2) Illust. 25 provided for this purpose.

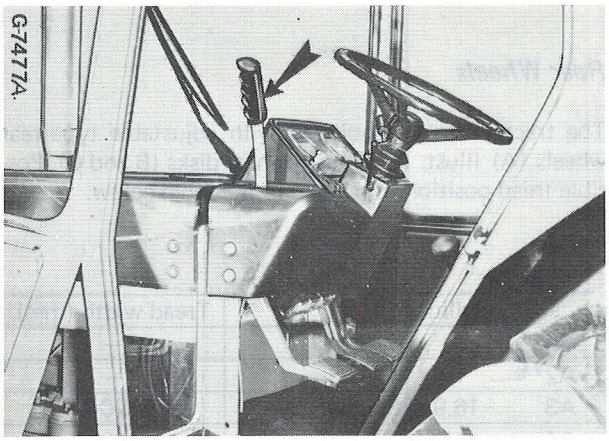
Where shock loads are an inherent factor, pto-driven implements must be equipped with a slip clutch to protect the pto power line. When operating such implements, be sure the slip clutch is in good working order. After long periods of storage the slip clutch may become blocked by rust and corrosion. Force the clutch to slip a few times and check the torque load. Maximum permissible torque:

540/min pto 175 daNm
1000/min pto 95 daNm

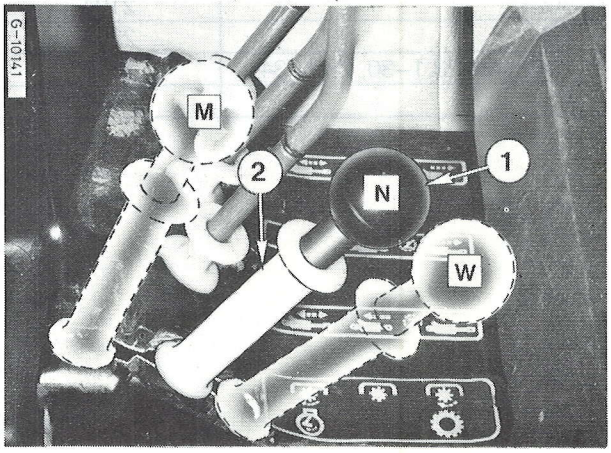
Engine pto



Illust. 26
955 XL – 1055 XL
Pto clutch Lever

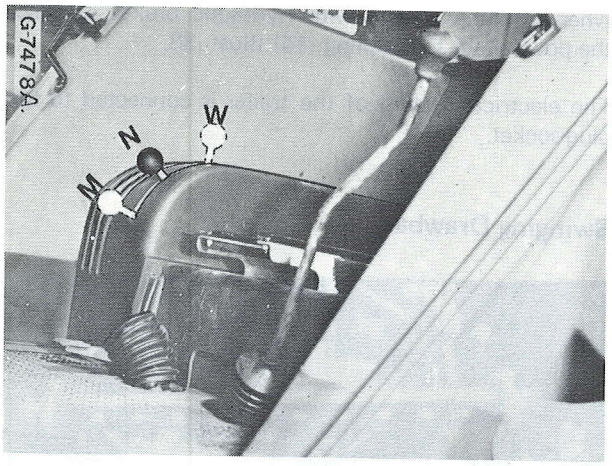


Illust. 26a
955 – 1055
Pto clutch Lever



Illust. 27
955 XL – 1055 XL

1 – Pto shifter lever
2 – Lock bushing
N – Neutral position
M – Engine pto
W – Ground speed pto. (on tractors without ground speed pto equipment this position is also neutral, same as position (N)



Illust. 28
955 – 1055
Pto shifter lever

N – Neutral position
M – Engine pto
W – Ground speed pto. (On tractors without ground speed pto equipment this position is also neutral, same as position (N)

The dual clutch provides independent control of the pto, which is especially useful for units, where shifts have to be made on the go.

To engage the engine pto disengage the hand clutch Illust. 26/26a lift lock bushing (2) Illust. 27 (955 XL – 1055 XL) or lift pto shifter lever Illust. 28 (955 – 1055) to disengage and shift to position (M). Then slowly engage the hand clutch at medium engine speed. To disengage the pto, operate the hand clutch and shift pto lever to position (N).

The manually operated pto clutch makes the power take-off completely independent from transmission and engine clutch.

It is thus possible to stop the tractor with the engine clutch while the pto shaft continues to operate to clear chocked or overloaded power driven equipment.

Caution! Never operate the tractor with the clutch lever latched in disengaged position as this would wear out the thrust bearing.

Ground Speed PTO

The ground speed pto is driven by the transmission spline shaft just in front of the differential and revolves therefore in direct relation to the travelling speed of the tractor. This is especially useful for pto powered trailers, having their own driving axles or similar equipment.

To engage the ground speed pto depress the foot clutch, and shift the lever to position (W), Illust. 27/28.

When the road range is engaged the ground speed pto is automatically immobilized by a throw-out linkage. With the road range engaged the ground speed pto therefore blocked out and cannot be operated.

Note: Never engage the ground speed pto in the reverse range to prevent damage to drive line components.

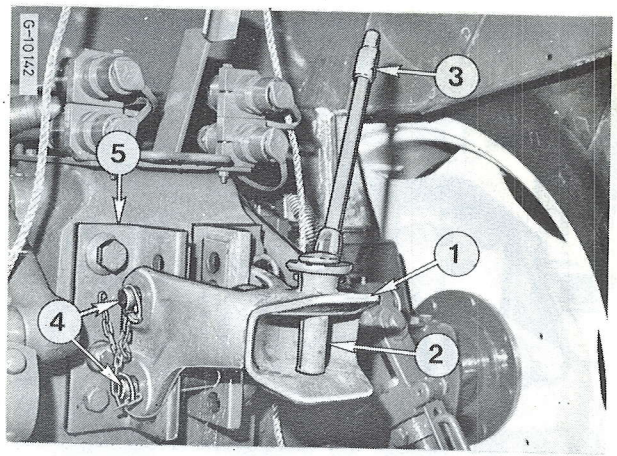
Hitching Draw Clevis, Front

The front draw clevis is very useful especially when manoeuvering trailers.

Note: Always use the special pin available through IH servie parts channels. Secure this pin with the spring clip provided.

Trailer Hitch, Rear

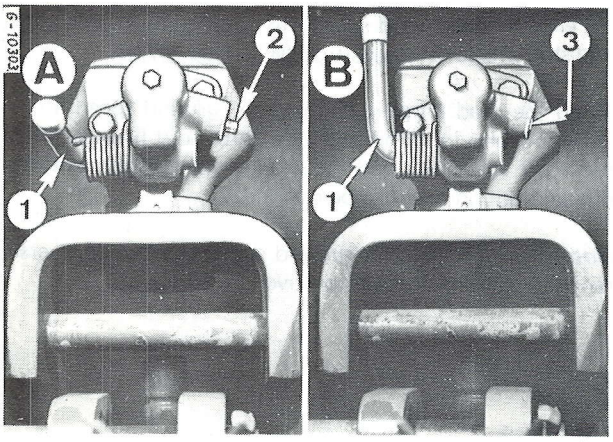
The trailer hitch (1) Illust. 29 can be adjusted in its height. To do this, remove the cross pins (4) and offset the hitch (1) in the mounting bracket bearing eyes as desired, replace pins (4) and secure.



Illust. 29
1 – Trailer hitch, rear
2 – Trailer hitch pin
3 – Latch sleeve
4 – Cross pins
5 – Bracket

The trailer hitch pin (2) is secured in place by a spring loaded latch. To remove the pin, pull latch sleeve (3) upward. Whe inserting the pin (2) make sure the latch is fully engaged.

Note: An automatic rear trailer hitch available on special order greatly facilitates hitching.



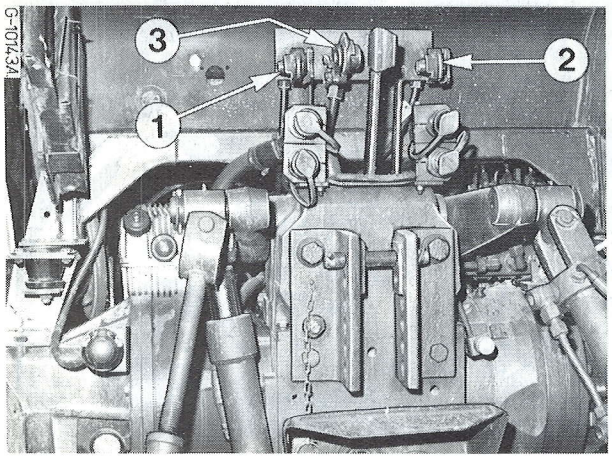
Illust. 29a
Automatic trailer hitch

A – Disengaged position
B – Engaged position
1 – Operating lever
2 – Indicator pin, protruding
3 – Indicator pin, fully retracted

Never touch inside of hitch when release mechanism is under tension.

Important: When hitching trailers be sure indicator pin is fully retracted, (3) Illust. 29a.

Trailer Brake, (if equipped)



Illust. 30
Pneumatic trailer brake couplings

1 – Coupling control (yellow)
2 – Couping, supply (red)
3 – Coupling, one-line system

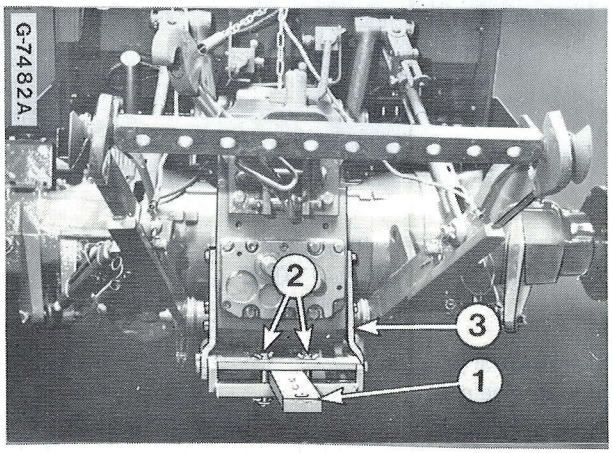
For trailers with pneumatic brakes (air pressure) connect lines to couplings, Illust. 30.

Use couplings (1 and 2) for two-line system and coupling (3) for one-line system. Take care that trailer and tractor lines are not mixed up. Observe color code.

When hitching trailers with hydraulic brakes, connect the power lines to coupling (14) Illust. 33.

The electrical system of the trailer is connected to the plug socket.

Swinging Drawbar

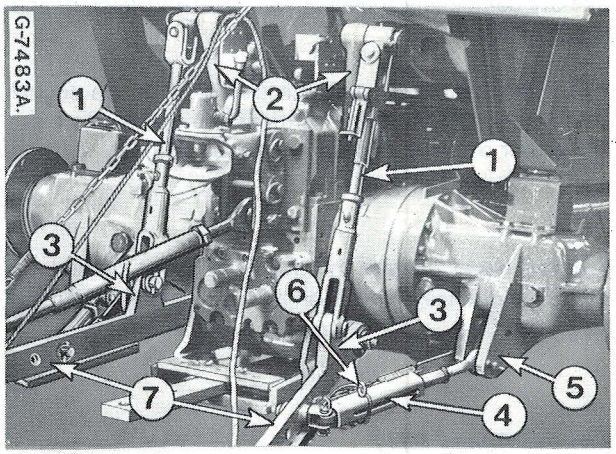


Illust. 31

1 – Swinging drawbar
2 – Locating pins
3 – Drawbar

Note: Load carrying capacity is limited to a vertical load of 1200 kg. If the load on the drawbar (1) Illust. 31 exceeds the above limit additional reinforcement is necessary. When hitching heavy trailers be sure the steering ability of the tractor is not impaired. Observe the highway code and safety precautions.

Drawbar



Illust. 32

1 – Lifting rods
2 – Rocker arms
3 – Extensions for rigid suspension
4 – Stabilizer
5 – Side bracket
6 – Locking pin
7 – Lower link

When hitching machines or trailers to the three point suspension hitch drawbar observe the following precautions:

a) Lock vertically ba fitting both lifting rods (1) Illust. 32 in extensions (3). With draft control lever raise the three-point linkage up all the way and close lowering control.

b) Lock horizontally by fitting stabilizers (4) in the lower holes of side brackets (5). Turn stabilizers by hand to center the drawbar on the rear of tractor i.e. there must be uniform clearance on both sides of lower links (7) to tires.

Be sure locking pins (6) are fitted in both stabilizers (4).

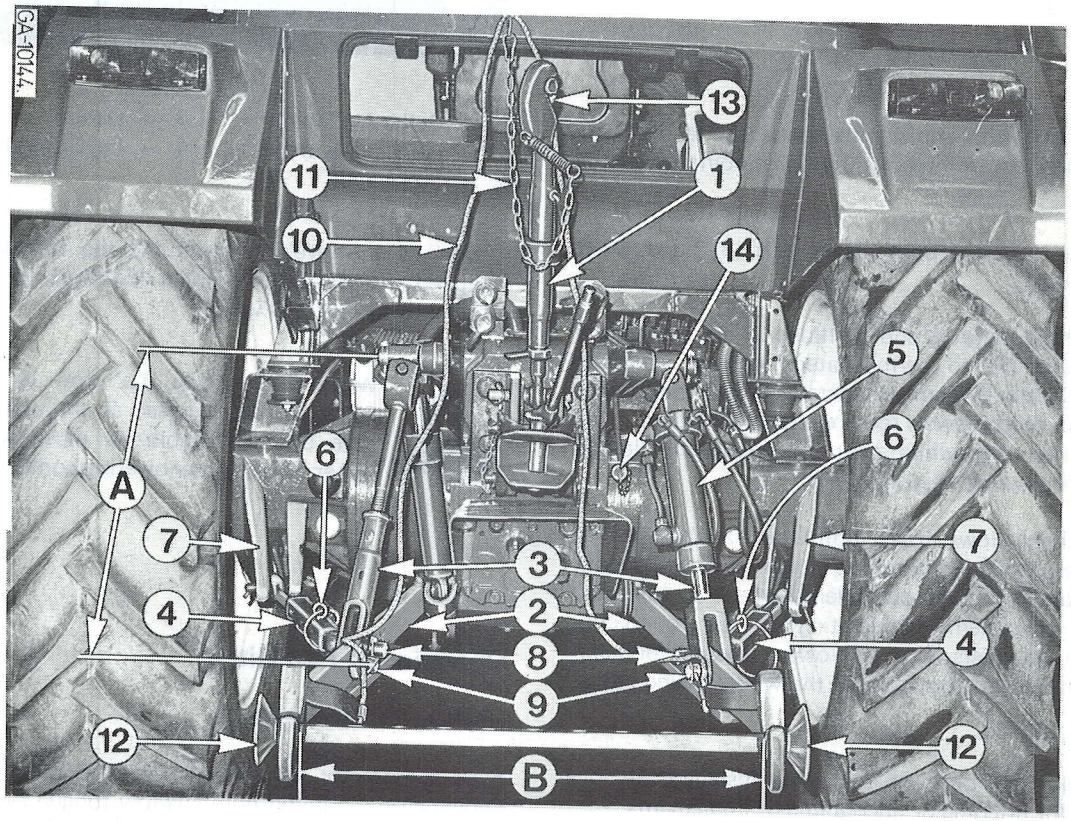
Three-Point Suspension Hitch

The three-point linkage is available in two versions:

1. with conventional ball type connections on lower links.

2. with fast hitch type connections.

If not stated otherwise the following procedure applies to both versions.

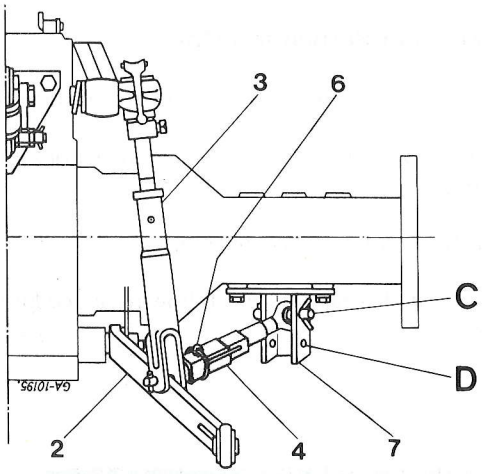


Illust. 33

A – Lifting rod length, basic adjustment = 670 mm
B – Lower link distance = 825 mm

1 – Upper link
2 – Lower links
3 – Lifting rods
4 – Stabilizers
5 – Levelling cylinder **
6 – Locking pins
7 – Side brackets
8 – Pivot pins for stabilizers
9 – Pivot pins for lifting rods
10 – Control cable for fast hitch latch *
11 – Control chain for upper link *
12 – Bevel disks *
13 – Link hook
14 – Coupling for hydraulic trailer brake
* – Only with fast hitch type connections
** – If so equipped

Working Adjustment of the Three-Point Linkage



Illust. 34

When working with implements connected to the draft- and position control adjust the three-point linkage as follows:

Adjust the length of both lifting rods (3) Illust. 33 to dimension (A).

Two attaching holes (C and D) Illust. 34 are provided in side brackets (7) to permit lateral control of lower links (2). Certain implements operating above the ground, such as mounted mowers require lateral control over the whole lifting range while a certain amount of "lateral swing" is necessary for plowing etc.

When hitching plows attach both stabilizers (4) to the upper holes (C). This ensures the required swing in operating position and locks out sidemovement in transport position. For implements operating without ground control attach stabilizers (4) to the lower holes (D) for maximum lateral swing control over the whole lifting range.

Note: Make sure pins (6) are always installed. Remove pins only for hitching or uncoupling of implements.

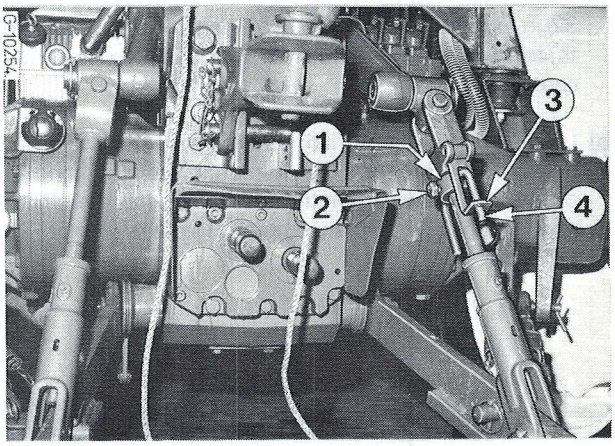
With the plow mounted to the three-point linkage adjust the upper link (1) Illust. 33 so that the front and rear plow bottoms are operating at the same depth.

This adjustment is maintained even though plowing depth may be varied. Only in extreme cases, i.e. when changing to skim plowing etc. a slight readjustment may be necessary.

With the three-point linkage under load, screw the lock nut tight against the upper link turn buckle to secure the length adjustment.

When disk implements are operated, the upper and lower links should be as nearly parallel as possible.

Note: When hitching implements with lateral gauge wheels be sure to adjust collar (1) Illust. 34a as required to allow for lateral swing.



Illust. 34a

1 – Collar for lateral swing adjustment
2 – Stopscrew
3 – Detent
4 – Levelling crank

Instead of the levelling crank (4) the tractor can be equipped with a power cylinder (5) Illust. 33 actuated by an auxiliary control valve.

When transporting the plow be sure, the hydraulic lift is raised all the way to eleminate bounce. Stabilizers must be in their upper holes. Close lowering control.

Operation of Fast Hitch

Hitching of Implements

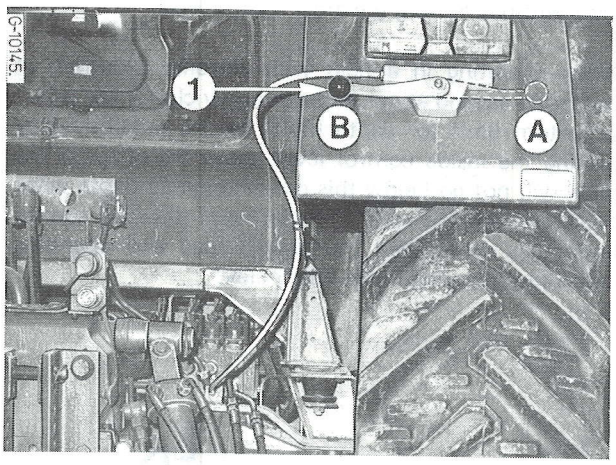
Back the tractor far enough below coupling points of implements (coupling points below tongue ramps). Pull control cable to spread links as required. Operate the hydraulik system to lift links until latches are fully engaged.

Then lower system. Place hook of upper link on the upper hitch point and lift the implement. The hook of the upper link will engage automatically.

Uncoupling of Implements.

Lift the implement. Engage upper link chain in such a way that the latch pin of the upper link hook (13) Illust. 33 will disengage, while lowering the implement. Usually this disengages the upper link from the implement. Pull the control cable and lower the system. If necessary back the tractor slightly to fully disengage the implement. If possible place the implement at a higher level at its rear end.

External Position Control Lever (if so equipped)

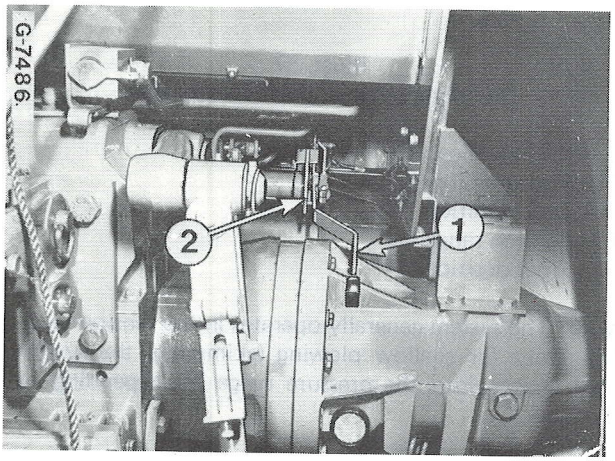


Illust. 35
955 XL – 1055 XL

1 – Postition Control lever
A – Lifting
B – Lowering

To facilitate hitching or uncoupling of implements from behind the tractor, height of three-point linkage can be adjusted with lever (1) Illust. 35.

Be careful: Keep out of implement danger area:



Illust. 35a
955 – 1055

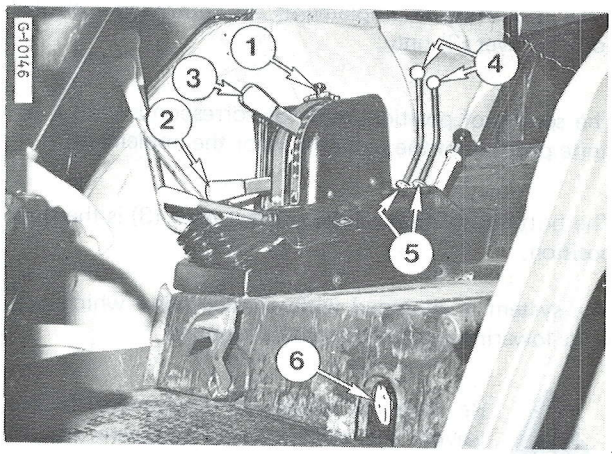
1 – Adjusting lever
2 – Segment

To facilitate hitching or uncoupling of implements from behind the tractor, height of three-point linkage can be adjusted with lever (1) Illust. 35a. Adjustment can be made in increments of 10 cm max.

Be careful: Keep out of implement danger area.

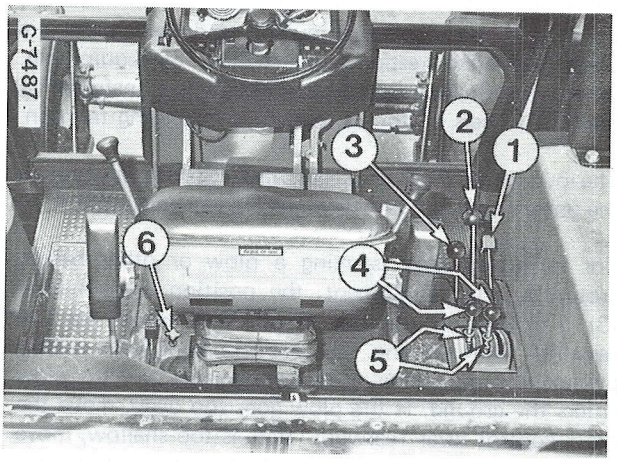
Draft and Position Control

Before operating the hydraulic lift make sure that no person is within the operating range of implement or linkage.



Illust. 36
955 XL – 1055 XL
Operating controls

1 – Marker knob
2 – Draft control lever
3 – Position control lever
4 – Auxiliary control valve levers
5 – Lock bushings
6 – Lowering speed control



Illust. 36a
955 – 1055
Operating controls

1 – Marker lever
2 – Draft control lever
3 – Position control lever
4 – Auxiliary control valve levers
5 – Lock bushings
6 – Lowering speed control

Position Control

The position control is mainly used for out-of-ground implements requiring no depth control.

Push draft lever (2) Illust. 36/36a down all the way to make it ineffective. Implements are controlled with the position lever (3) only.

The setting of position lever (3) corresponds with a definite position of the rocker arms or the implement.

The bottom position of the control lever (3) is the float position.

The system is equipped with a block valve which prevents lowering when the engine is stopped.

Be sure to lower all equipment before leaving the tractor seat. Take care, not to operate the position control lever (3) once the engine is stopped. The implement, not being able to follow while the engine is stopped, will be raised or lowered inadvertently once the engine is started. Be sure, therefore, to lower the raised implement or load before stopping the engine.

Draft Control

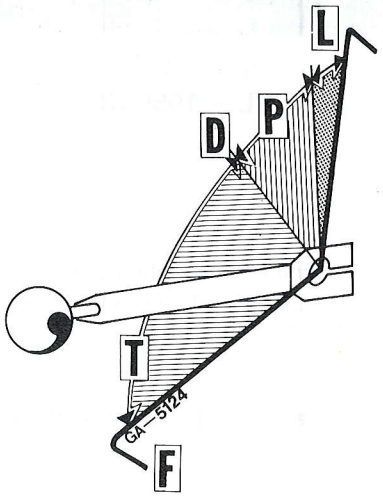
Draft control is the ability of the hitch to quickly respond to variations in load (or draft) so as to maintain a virtually constant load on the tractor. As the load on the hitch increases, due to pulling equipment such as a plow, the hitch responds to shallow the equipment. During the shallowing process, weight is transferred to the rear wheels of the tractor, thus increasing traction.

The outside control lever (2) Illust. 36/36a established the operating depth of below-ground-working tools.

For example, when starting a plow or other below-ground-working equipment, the position control lever (3) is placed all the way down. This results on fast response draft sensing. The draft control lever is then placed near the center of operating range and the plow enters the ground. If the plow goes too deep, move the draft control lever rearward. If it is too shallow, move the lever forward. After the desired depth has been established, it will not be necessary to change this setting, except when encountering extreme soil or terrain conditions. Then it may be necessary momentarily to move the draft control lever a slight amount, either forward or rearward, for maintaining even furrow depth.

The hitch ist now operating under draft control and will automatically raise or lower to maintain a constant draft load when changes in soil texture or uneven terrain are encountered. The equipment is raised at the end of the field and lowered again by operating the inside control lever without moving the draft control lever.

When operating in a field with extreme variations in soil, such as sand at one end and heavy clay at the other, a bottom limit (or depth limit) can be established by placing the inside control lever above the offset so the plow will not go below this pre-determined depth when going through the sand. The placing of the draft control lever then established the desired load and operating depth for operating in the heavy clay.



Illust. 37
Operating range or draft control lever

L – Lifting range
P – Pressure range
D – Dead position
T – Tension range
F – Float position

Note: The system generally operates in the tension range (T). Only for shallow plowing (skimming) the system may change into the pressure range (P) depending on the plow.

With plows operating in the tension range, max. operating resistance is reached before float position (F). If the draft control lever is pushed down to position (F) the system will operate in float position, i. e. the draft control system is rendered ineffective.

In the pressure range, max. operating resistance is reached with the draft control lever in the lower section of pressure range (P).

Never operate with the draft control lever in the dead position (D), because in this bordering range between pressure and tension range the system cannot perform satisfactorily.

1. *Adjustments from "D" Illust. 37 towards the tension range "T":*

   a) Fit or increase pressure on gauge wheel or spring loaded heel (decreasing plow weight on the three point linkage).
   b) Plow deeper.
   c) Take a wider cut.
   d) Increase operating speed.
   e) Adjust plow hitch ponts for lower links towards top rear position.

2. *Adjustments from "D" Illust. 37 towards the pressure range "P":*

   a) Relieving or removing gauge wheel or spring loaded heel (more plow weight on the three point linkage) or add auxiliary weights on the plow frame.
   b) Take a smaller cut.
   c) Plow shallower.
   d) Reduce operating speed.

3. *Adjustment from "L" Illust. 37 towards the pressure range "P":*

   If the system operates to close to the lifting range i.e. the plow does not operate shallow enough for skimming and starts to lift out if the lever is raised, take corrective action as described under "1".

Float Position

With both control levers (2 and 3) Illust. 36/36a down all the way the system is in float position and the draft control system is rendered ineffective.

Lowering Speed

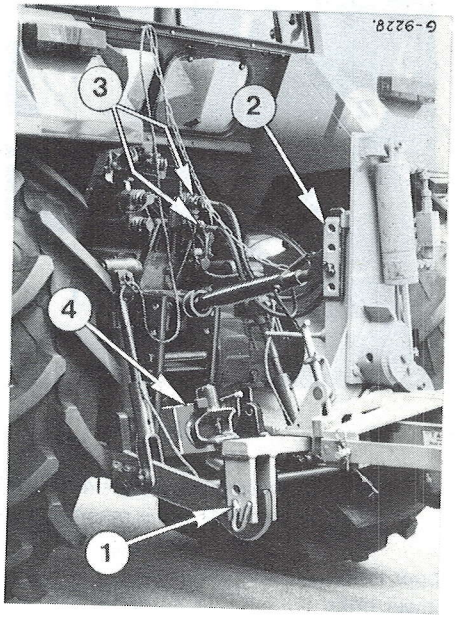
Lowering speed can be controlled as required at the control wheel (6) Illust. 36/36a. Turning the wheel to the left will slow down lowering speed progressively.

Should the system react too sensitive to changing ground conditions especially when plowing shallow (skimming) it is advisable to turn the lowering speed control wheel (6) slightly to the left (counter clockwise).

For road transport it is advisable to close the lowering throttle to prevent inadvertent dropping of hitched implement.

Hitching Plows

The plow must be suited for draft control operation and local soil conditions. If difficulties arise contact your IH dealer or the plow manufacturer's service-man.



Illust. 38
Suitable plow for draft control with adjustable hitch points

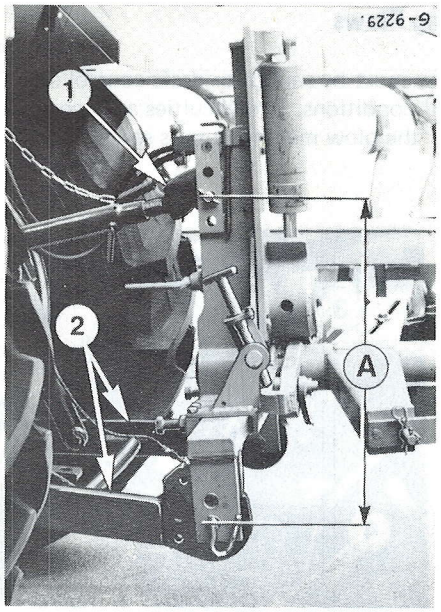
1 – Hitch point for lower link
2 – Adjusting ledge for upper link
3 – Break-away couplings for hydraulic lines
4 – Trailer hitch, remove if necessary

Note: During plowing operation lower links should take a level or slightly slanting down position toward the plow i.e. links should be in line with the center of plowing resistance.

The stabilizers (4) Illust. 33 should be connected to the upper holes of side brackets.

Note: For statisfactory plowing operation, the plow must operate with a certain amount of lateral play.

Normally this is taken care of by hitching the plow centrally behind the tractor. However it is good practice to check whether stabilizer pins are free to move during operation otherwise draft control mechanism may be affected.

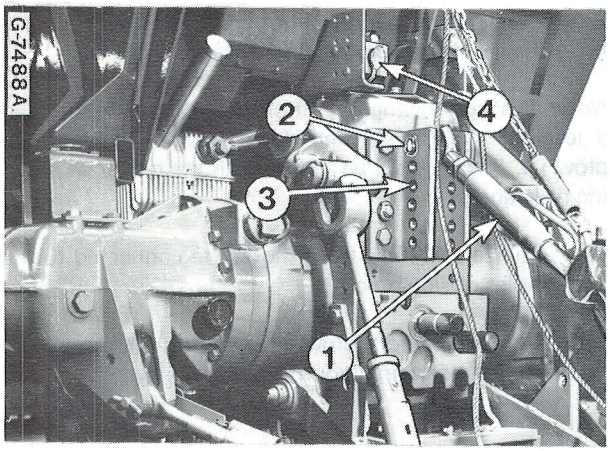


Illust. 39

A – Hitch point height on plow = 460 – 610 mm (a height of 560 mm is recommended)

1 – Upper link
2 – Lower links

Connect upper link (1) Illust. 40 to hole (2 or 3) as necessary.

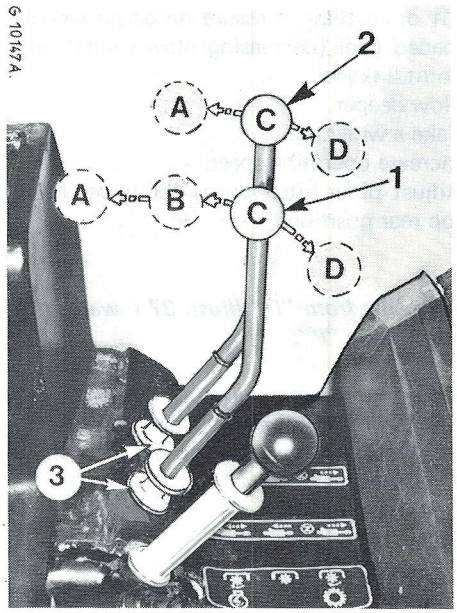


Illust. 40

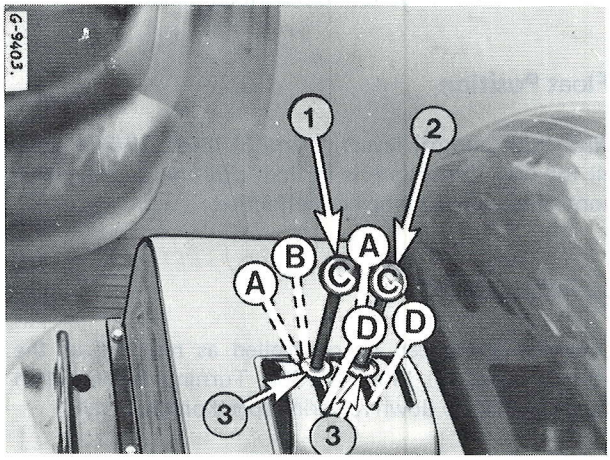
1 – Upper link
2 – Upper link pin, located in the hole for upper hitch point
3 – Hole for lower hitch point
4 – Break-away coupling

Note: For lifting purposes the lever ratio of the upper link is more favourable with the tractor end high and the implement end low.

Auxiliary Control Valve and Break-Away Couplings



Illust. 41
955 XL – 1055 XL
Auxiliary control valve levers



Illust. 41a
955 – 1055
Auxiliary control valve levers

1 – Double acting control valve lever with 4 positions for (1) Illust. 42
A = Float position (lowering without pressure)
B = Ram retracting (lowering with pressure) = blue
C = Neutral (hold)
D = Ram extending (lifting) = green
2 – Single acting control valve lever for (2) Illust. 42
A = Float position (lowering without pressure)
C = Neutral (hold)
D = Ram extending (lifting) = grey
3 – Lock bushings

Immobilize control valve levers by depressing lock bushing (3) when respective implements are not used. This will lock out valves completely and prevent inadvertent operation of any of the levers.

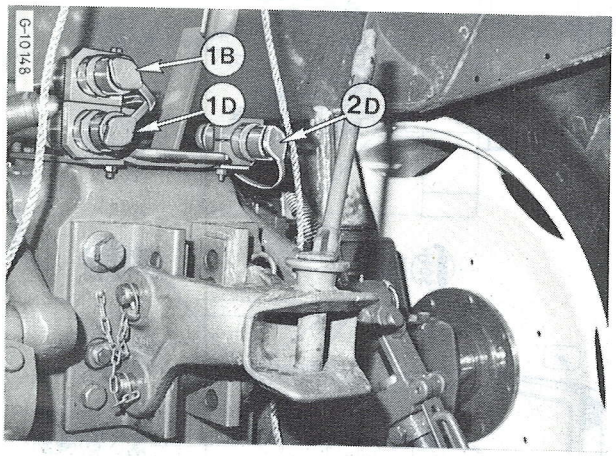
Note: Make sure when hitching additional remote control hydraulic equipment that the oil filling of this equipment corresponds with the oil in the hydraulic system of the tractor. Most oils do not permit mixing without adverse effects on the hydraulic system.

Max. permissible displacement of oil to additional equipment:

Stationary operation = 10 liters, on the go = 5 liters.

If necessary install additional oil reservoir.

Note (955 XL – 1055 XL only): When an overload condition occurs, as for example when reaching the end of stroke the detend relief valve opens and the control valve lever automatically returns to neutral position.



Illust. 42
Break-away couplings

1B = Ram retracting (lowering) = blue
1D = Ram extending (lifting) = green
2D = Ram extending (lifting) = grey

Note: If break-away couplings (1 and 2) Illust. 42 are not used cover openings with plugs provided.

Important: Single acting power cylinders can be connected to singel acting- or double acting control valves (with 4 operating positions only).

If connected to a double acting control valve (4 operating positions) be sure to use coupling connection (1D) Illust. 42. Use float position (1A) Illust. 41 for lowering to avoid overheating the system.

After connecting coupling lines be sure to actuate respective control levers briefly to lifting and lowering to open the pressure valve.

Front Loader

(For tractors with 4-WD or HD-front axles only)

When installing a front loader observe the manufacturer's instructions with regard to ballast, operation and maintenance.

Adjust tread width to factory setting. Increase tire pressure to max. 0.3 MPa.

When working with the front loader observe the following:

1. Move the bucket or scoop at right angles into the stock pile and make sure the load is evenly distributed.

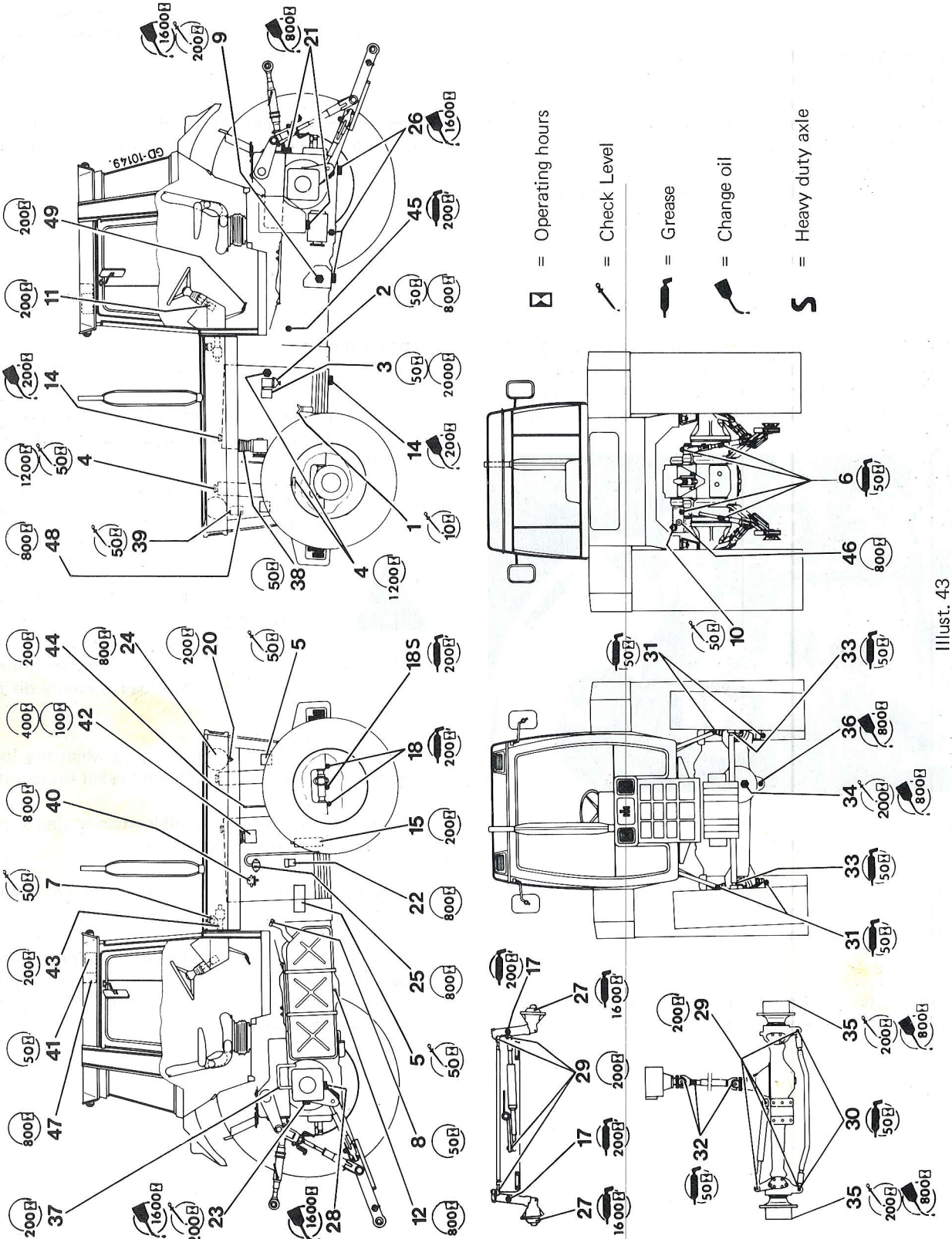
2. Avoid sudden braking or reversing when the loader is raised to maximum height and loaded to capacity.

3. Lower the load as far as possible when driving on steep grades or when making sharp turns.

4. With the loaded bucket do not exceed 5 km/h tractor speed.

5. When driving without load raise the lifting frame to permit unobstructed view. When driving on public roads make allowance for head clearance under bridges, overhead lines etc.

Service Guide



Illust. 43

Periodic Servicing Schedule				Inspections		
Service Intervals (in hours of operation)	*No on chart*	*Point of Service*	*Service*	*first 20 h*	*second 200 h*	*third and all further 800 h*
Every 10 h	1	Engine	Check oil level			
Every 50 h or once a week	2	Primary fuel filter	Drain water	X	X	
	3	Final fuel filter	Drain water	X	X	X
	4	Radiator	Check coolant level	X	X	X
	5	Battery	Check electrolyte level	X	X	X
	6	Lift rods, RH and LH	Grease	X	X	X
	7	Master brake cylinder	Check oil level	X	X	X
	8	Filler neck	Check and clean	X	X	X
		Fuel system	Check for leakage	X	X	X
	10	Hydraulic system	Check oil level	X	X	X
	30*	Tie rod	Grease	X	X	X
	31*	Steering knuckle, upper and lower	Grease	X	X	X
	32*	Drive shaft	Grease	X	X	X
	33*	Universal joints (both sides)	Grease	X	X	X
	38	Compressor (pneum. trailer brake)	Check lubricating system for leakage	X	X	X
	39	Refrigerant reservoir, air conditioner	Check refrigerant level	X	X	X
	41	Blower, heater, ventilation	Check function	X	X	X
*After the first 100 h***	42**	Filter, engine coolant	Change cartridge			
Every 200 h	9	Transmission	Check oil level	X	X	X
	11	Manual steering pump	Check for leakage	X	X	X
	14	Engine	Change oil		X	X
	15	Engine oil filter	Change cartridge		X	X
		Parking brake	Check adjustment	X	X	X
	17	Steering knuckle, RH and LH	Grease	X	X	X
	18	Front axle pivot (2 fittings)	Grease	X	X	X
	18 S)	Front axle pivot (1 fittings)	Grease	X	X	X
	20	Air cleaner	Check dust unloader valve	X	X	X
	23	Rear axle, RH and LH	Check oil level	X		X
	29	Rubber protection of ball joint	Check for leakage (if protection is damaged, replace cpl. ball joint)	X	X	X
	34*	Differential	Check oil level	X	X	X
	35*	Planetaries	Check oil level	X	X	X
	37	Axle breather pipe	Clean		X	X
	43	Master brake cylinder	Check operating rod play	X	X	X
	44	V-belts	Check tension	X	X	X
	45	Clutch release bearing	Grease	X	X	X
	49	Clutch	Check adjustment	X	X	X
Every 400 h	42	Coolant filter	Change element			X

* on 4 WD-tractors only

** For second change refer to section "Coolant Filter"

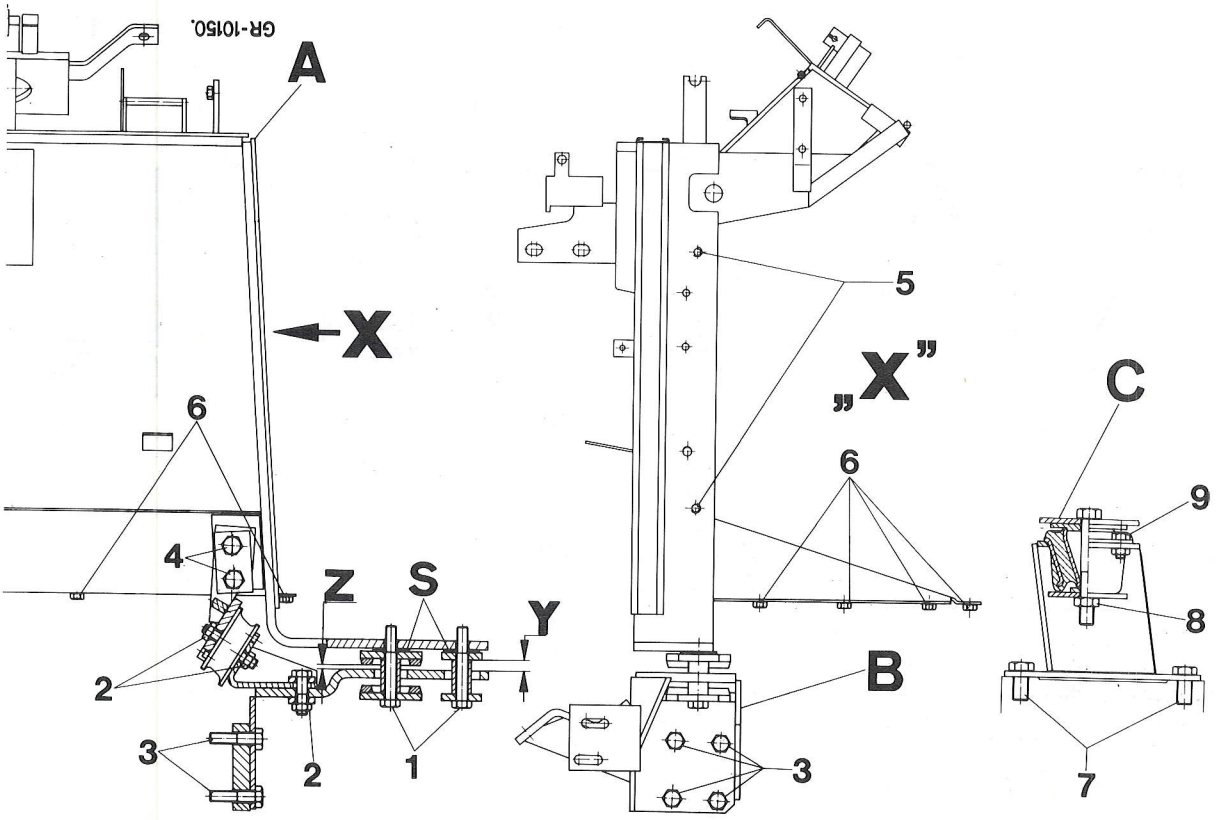
(Continued on next page)

Periodic Servicing Schedule				Inspections		
Service Intervals (in hours of operation)	*No on chart*	*Point of Service*	*Service*	*first 20 h*	*second 200 h*	*third and all further 800 h*
Every 800 h	2	Primary fuel filter	Change element			X
	12	Fuel tank	Drain water			X
	21	Hydraulic system	Change oil		X	X
	22	Pressure filter, hydraulic system	Change element	X	X	X
	24	Dry-type air cleaner	Change element			X
	25	Engine breather filter	Clean element			X
	34, 36*	Differential	Change oil	X		X
	35*	Planetaries	Change oil	X		X
	40	Fuel feed pump	Clean filter screen	X	X	X
	46	Hydraulic system, breather filter	Change element			X
	47	Air cleaner, cab RH and LH	Change elements			X
	48***	Refrigerant dryer cartridge	Change cartridge and refrigerant			X
Every 1200 h or every two years	4	Cooling system	Clean, change coolant			
Every 1600 h		Injection nozzles	Check and readjust		X	
	9, 26	Transmission	Change oil			
	27	Front wheel bearing, RH and LH	Grease and readjust			
	23, 28	Rear axle, RH and LH	Change oil			
Every 2000 h	3	Final fuel filter	Change element			

* on 4 WD-tractors only
** For second change refer to section "Coolant Filter"
*** Also check oil level of refrigerant compressor

Additional points for Inspection only			
Check toe-in	X	X	X
Front axle and linkage, retighten nuts and bolts (4) Illust. 46 and Illusts. 55 – 60	X	X	X
Front and rear wheels, retighten nuts or bolts 1)	X	X	X
Cooling system, check fo leakage	X	X	X
Check torque load of hydraulic pump bolts 1)	X	X	X
Hydraulic lift housing, retighten mounting bolts 1)		X	X
Check thermostat		X	X
Check torque load of manifold bolts	X		X
Check function of attachments (three point linkage, mower frontloader)	X	X	X
Check air cleaner hose connections	X	X	X
Engine, check for leakage	X	X	X
Check valve clearance on warm engine. Readjust if necessary			X
Electrical system, check connections, starting motor, cold starting aid and alternator			X
Check fan hub and belt pulley			X

1) See "Technical Data" for special torques.



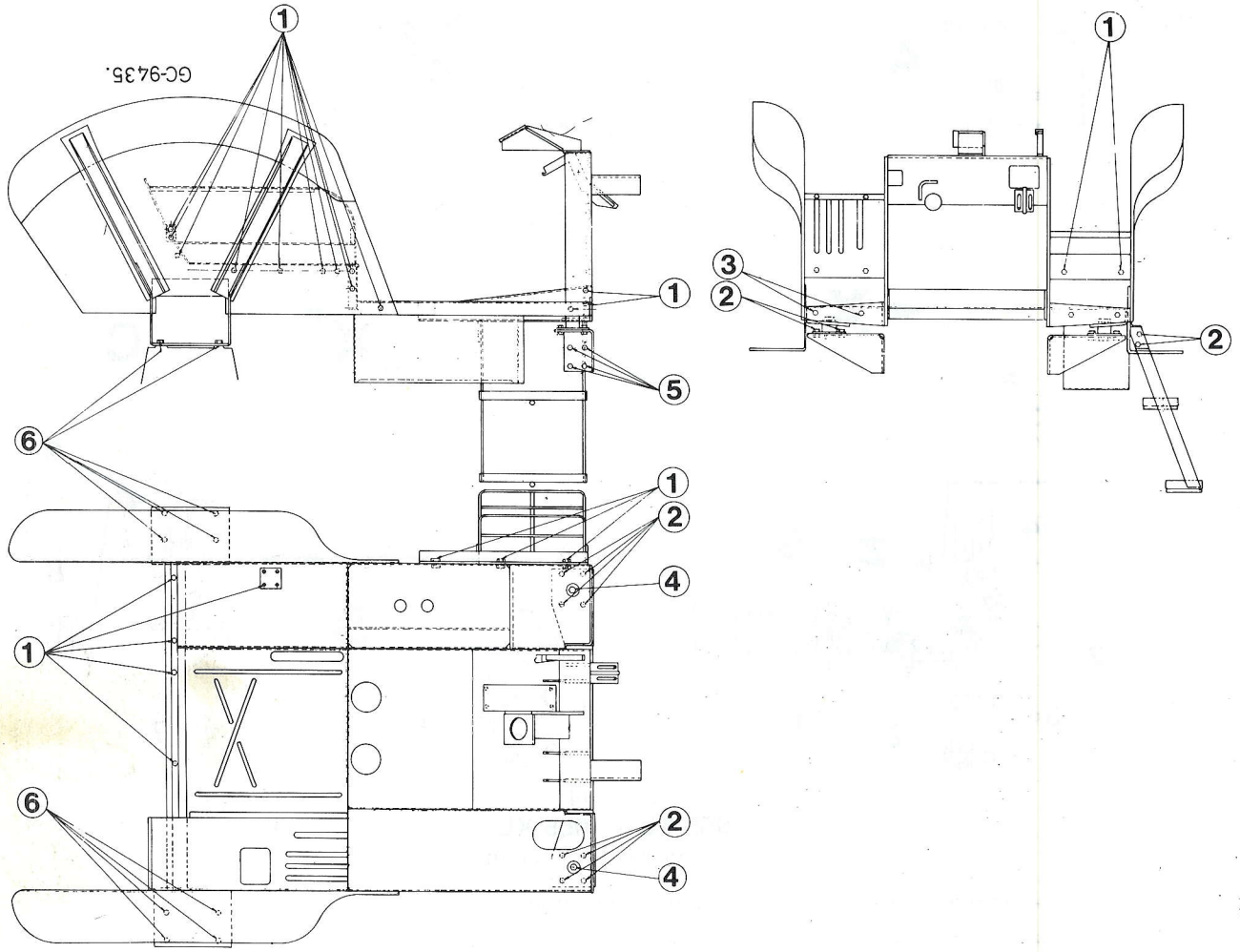
Illust. 44

955 XL – 1055 XL

Platform and cab mounting

A – Steering bracket B – Cab support, front C – Cab support, rear

Inspection after 200 operating hours		
Reference of Illust. 44	Check torque load and retighten if necessary daNm	Number of bolts or nuts
1	8.0	4
2	self locking nuts	8
3	10.0	8
4	12.0	4
5	4.6	4
6	2.3	10
7	24.0	8
8	19.5	2
9	4.0	8
	Check clearance (Y and Z) and adjust if necessary, using washers (S)	
Y	13 – 15 mm	
Z	5 – 7 mm	



Illust. 45
955 – 1055
Platform

Inspection only		
Reference No. of Illust. 45	Check torque load after 200 operating hours and retighten if necessary daNm	Number of bolts
1	2.2	50
2	4.4	12
3	7.6	4
4	18.5	2
5	8.5	8
6	17.0	8

Never operate the tractor engine when cleaning or lubricating the tractor.

Apart from scheduled maintenance as below it pays to check the machine periodically as to the following:

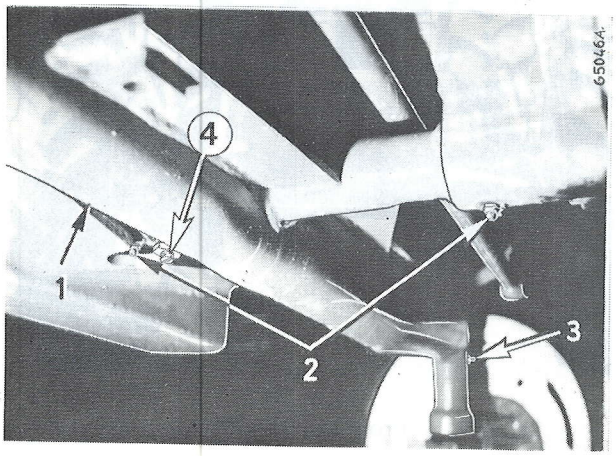
Tight bolts and wheel nuts.

Leakproof connections of hydraulic lines, brake lines, air cleaner lines, fuel lines etc.

Positive contact of electrical terminals and connections.

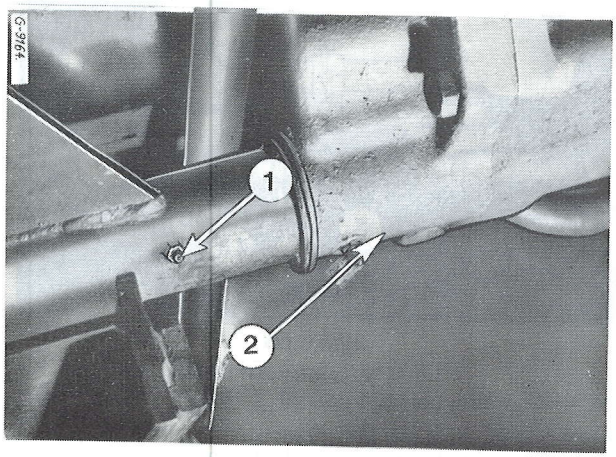
Lubrication Points

Wipe grease fittings before applying the gun.
Be sure that grease fittings are not clogged.
Replace damaged fittings.



Illust. 46

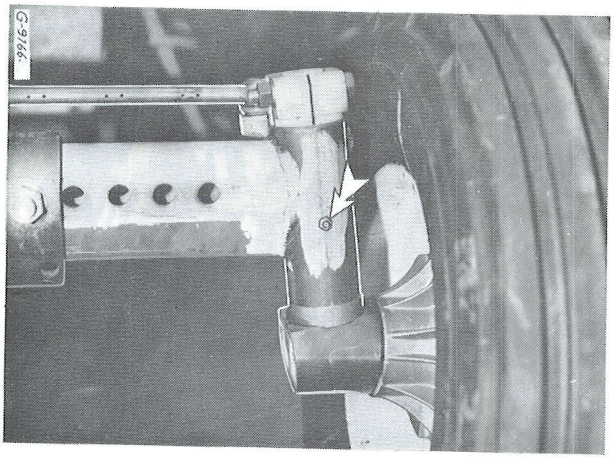
1 – Front axle
2 – Fittings on axle carrier (LD-axle)
3 – Fitting on steering knuckle (RH and LH)
4 – Set screw and lock nut for pivot pin (15 daNm)



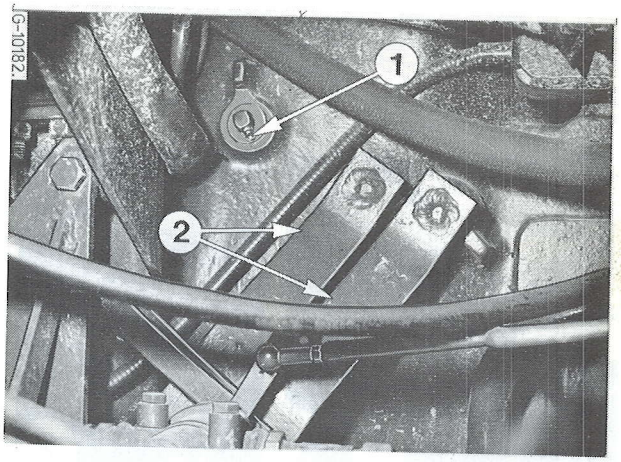
Illust. 47
Pivot bearing (HD-axle)

1 – Fitting

2 – Bolster

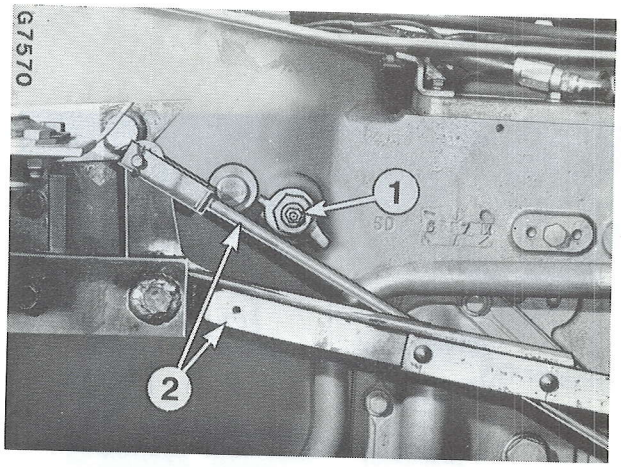


Illust. 48
Steering knuckles (HD-axle) fittings RH and LH



Illust. 49
955 XL – 1055 XL

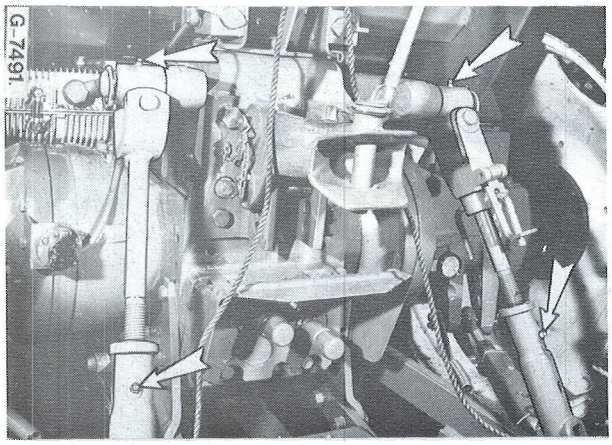
1 – Clutch release bearing (1 – 2 strokes)
2 – Clutch release levers (maintenance free)



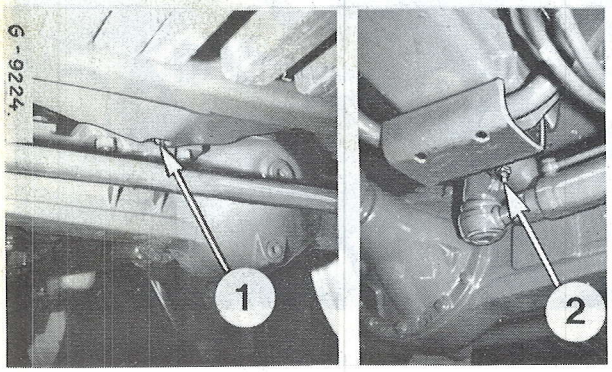
Illust. 49a
955 – 1055

1 – Clutch release bearing (1 – 2 strokes)
2 – Parking brake linkage (maintenance free)

1 091 788 R2
8.81

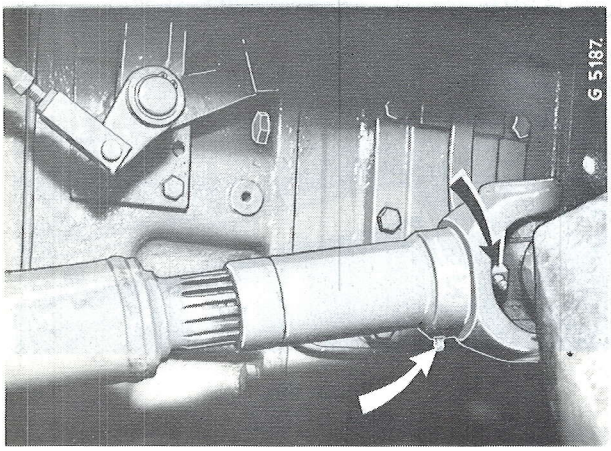


Illust. 50
Three point linkage (four fittings)
Grease also the lower link balls and stabilizers

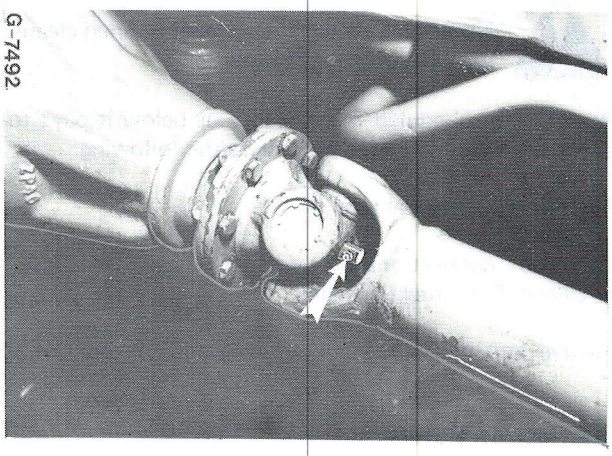


Illust. 51
Pivot bearing (4-WD axle)

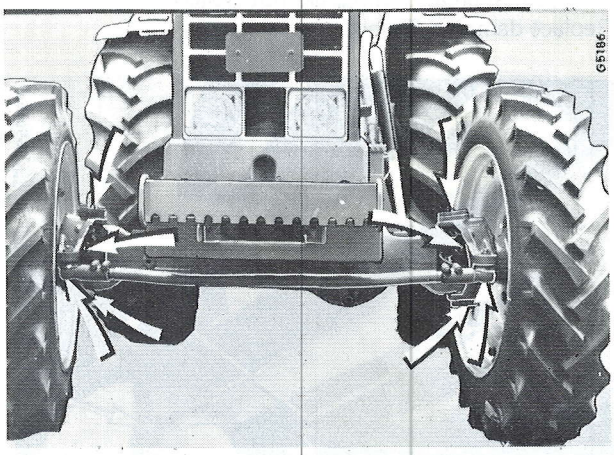
1 – Grease fitting, bolster front
2 – Grease fitting, bolster rear



Illust. 52
Propeller shaft, rear end (4-WD)

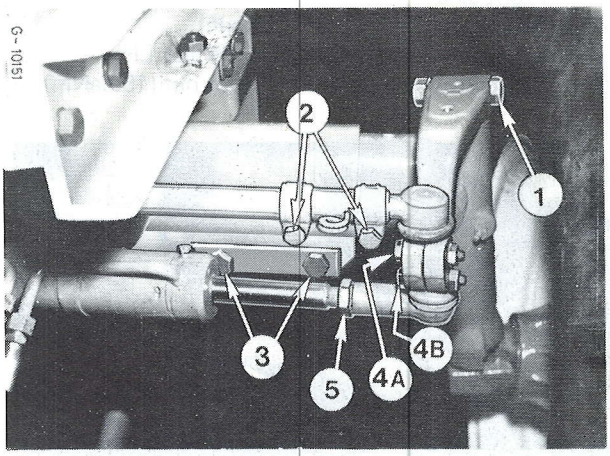


Illust. 53
Propeller shaft, front end (4-WD)



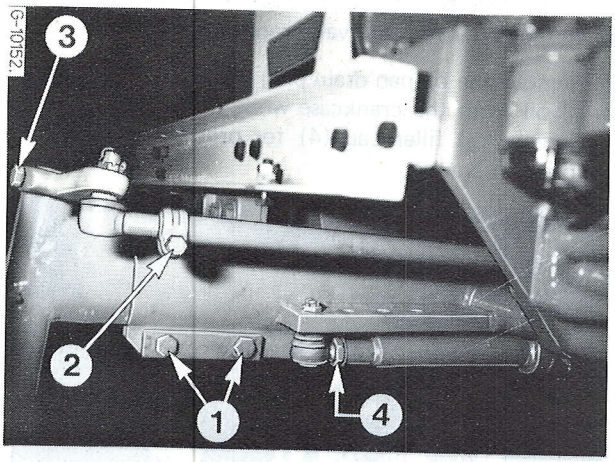
Illust. 54
Front axle (4-WD)

Retighten the following bolt connections according to the Inspection Time-Table



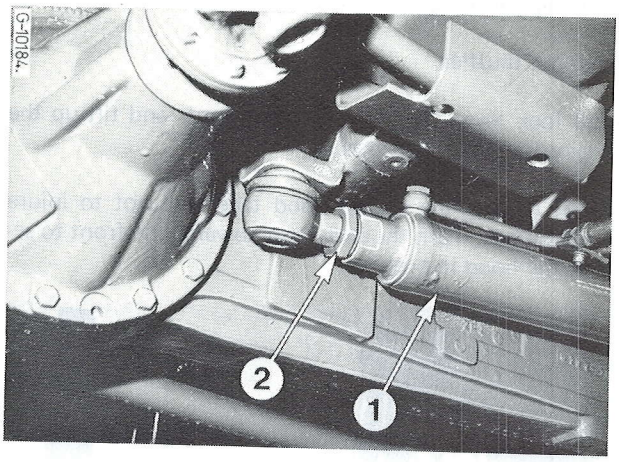
Illust. 55
Light duty axle, RH-side

1 – Clamping bolt (24 daNm)
2 – Clamping bolts, tie rod
3 – Clamping bolts, front axle extensions (20 – 22 daNm)
4A,4B – Clamping bolts (7daNm) retighten in sequence (A,B)
5 – Lock nut steering cylinder (19 daNm)



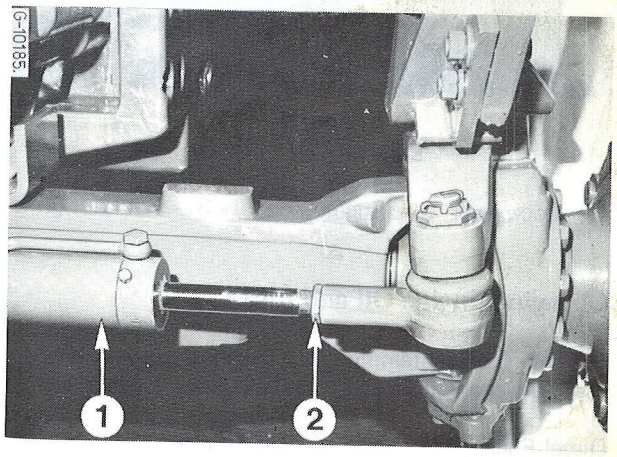
Illust. 56
Light duty axle, LH-side

1 – Clamping bolts, front axle extension (20–22 daNm)
2 – Clamping bolt, tie rod
3 – Clamping bolt (24 daNm)
4 – Lock nut steering cylinder (22 daNm)



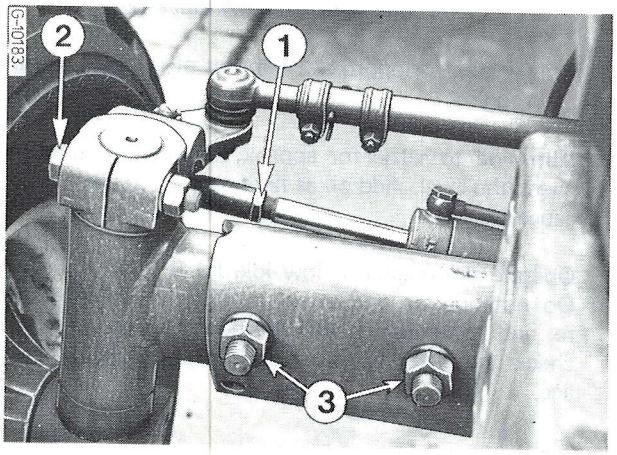
Illust. 58
4-WD-axle

1 – Steering cylinder
2 – Lock nut (28 daNm)



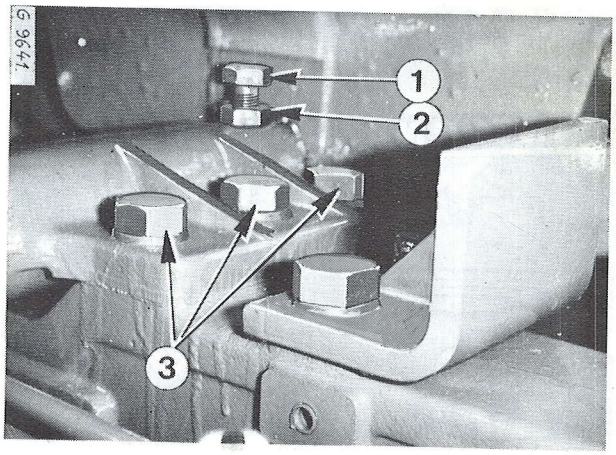
Illust. 59
4-WD-axle

1 – Steering cylinder
2 – Lock nut (23 daNm)



Illust. 57
Heavy duty axle

1 – Lock nut, steering cylinder (20 daNm)
2 – Clamping bolt RH and LH side (30 daNm)
3 – Nuts, RH and LH side (20 – 22 daNm)



Illust. 60
4-WD-axle

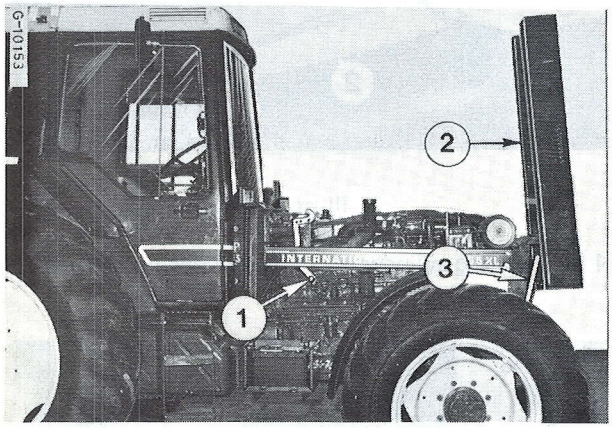
1 – Set screw (15 daNm)
2 – Lock nut (15 daNm)
3 – Mounting bolts, six (36 daNm)

Tilting the Engine Hood

Remove muffler.

Pull lock lever (1) Illust. 61 rear-wards and tilt up the engine hood as illustrated.

When closing the engine hood take care not to injure your fingers. Turn the lock lever towards the front to secure the hood in position.



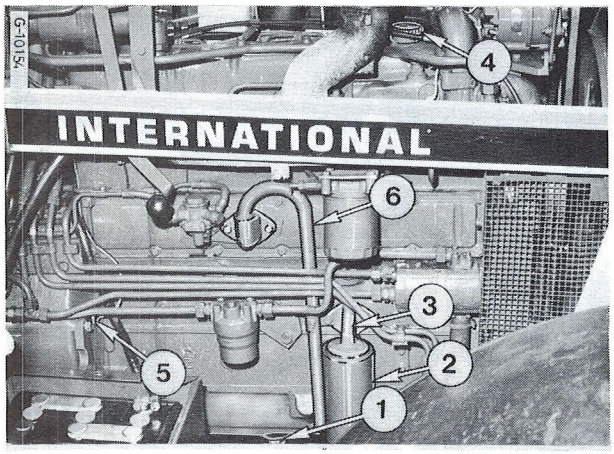
Illust. 61
Engine hood tilted up

1 – Lock lever 2 – Engine hood 3 – Radiator grille

Changing Engine Oil and Filter

Note: If fuel containing more than 0.5 percent sulfur is used, the change interval must be reduced as follows:

Diesel Fuel Sulfur Content Mass Percent	Oil Change Interval
0.5 to 1.0	1/2 Normal
over 1.0	1/4 Normal

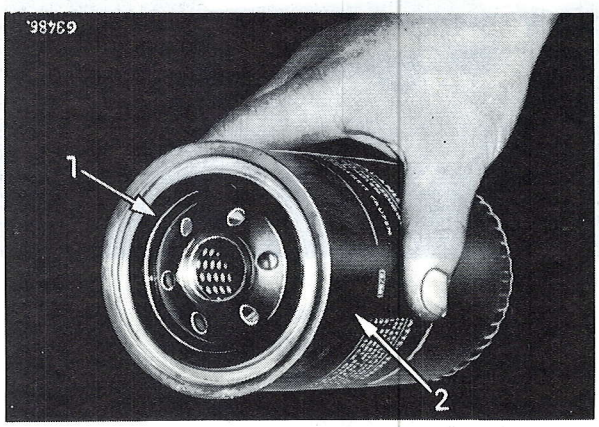


Illust. 62

1 – Oil drain plug
2 – Oil filter
3 – Oil filter socket
4 – Oil filler cap
5 – Oil pressure switch
6 – Engine breather filter

It is not necessary to reduce the filter change interval when the oil change interval is reduced.

1. Remove the oil pan drain plug (1) Illust. 62 and drain all oil from the crankcase while the engine is warm. Remove oil filler cap (4) for proper ventilation to speed up draining.



Illust. 63
Engine oil filter
1 – Seal 2 – Element

2. When the old oil is completely drained replace the drain plug (1), using a new packing ring.

3. Clean the outside of the filter (2) to prevent dirt from entering system while servicing.

4. Remove the spin-on filter by turning it counter-clockwise. Discard the filter.

5. Install the new filter. Apply a little engine oil to the seal (1) Illust. 63 and thread the filter on by hand. Do not use tools.

6. Fill up fresh engine oil to the "max." mark on the level gauge through filler neck (4) Illust. 62.

7. Run engine for approx. 2 minutes at medium speed. Stop engine.

8. Allow oil to settle for approx. 10 minutes, then recheck the level. Add oil as necessary up to the "max." gauge mark.

   Operate the engine at low idle for 5 to 10 minutes. Do not operate under load until normal oil pressure and temperature are reached. During warm-up check the filter and crankcase drain plug for leakage.

Engine Breather Filter

Clean the breather filter in accordance with "Servicing Schedule". Remove breather pipe (6) Illust. 62 and take out element. Wash in clean Diesel fuel and dry with compressed air.
Replace all parts using a new gasket.

Two-Stage Air Cleaner with Safety Element

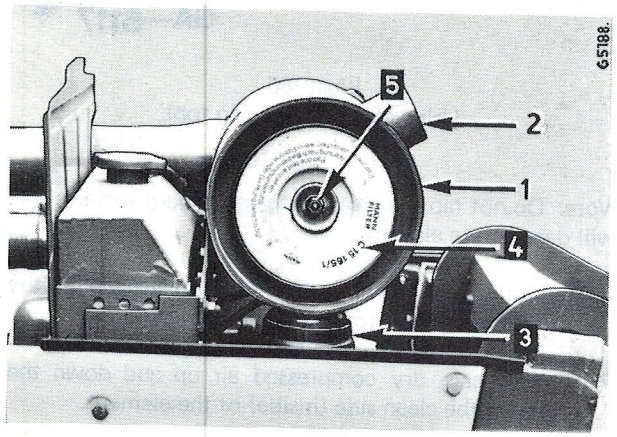
Precautions

As a precaution against dirt entering the engine:

All gaskets and rubber hoses between the air cleaner and intake manifold, and between the manifold and cylinder head must be in good condition, and the joints or connections must be tight.

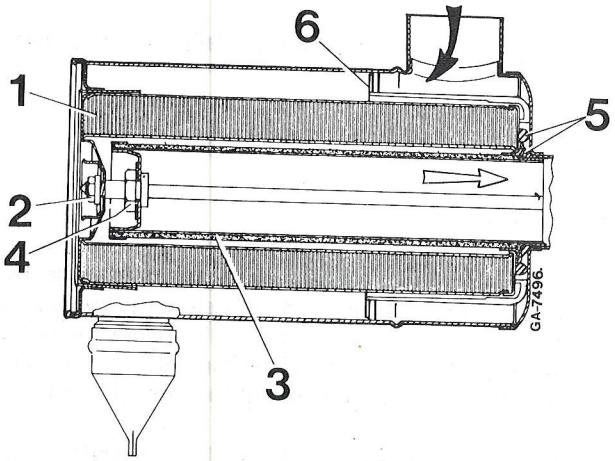
Never operate the engine unless a filter element is in place.

Never remove the element from the air cleaner while the engine is running.



Illust. 64

1 – Body, air cleaner
2 – Neck, air intake
3 – Valve, dust unloader
4 – Element
5 – Nut



Illust. 65
Sectional view of two-stage air cleaner

1 – Main element
2 – Nut
3 – Safety element
4 – Nut
5 – Seals
6 – Finned sleeve

Filter Element Service

The main filter element (1) Illust. 65 must be serviced whenever indicator lamp (G) Illust. 6 is glowing.

Note: To reduce risks it is recommended to use a new element.

Under severe conditions (extremely high dust concentration in the intake air) it is permissible to clean the element. However, this cleaning is restricted to a maximum of five times.

Replacing the Main Element (1):

1. When the element or seal is damaged;
2. after five cleanings;
3. after 800 operating hours; or
4. after two years,

whichever comes first.

After every main element replacement check service indicator lamp of instrument cluster as follows:

Restrict air intake neck (2) Illust. 64 in a suitable manner. The vacuum pressure switch must respond and the indicator lamp must go on. Replace defective parts if necessary.

The safety element (3) Illust 65 must be replaced:

1. after servicing main element five times;
2. when the main element was damaged;
3. when indicator lamp (G) Illust. 6 shows still red, after servicing the main element; or
4. after two years.

Main Filter Element (1) Illust. 65

The element can be cleaned by either of two methods: washing or compressed air.

Washing is the preferred method as it removes more dust and soot and restores the element to an almost new condition. The result being better performance and longer intervals between required element service. It is suggested that a spare element be availabel for use while the serviced element is drying. This will reduce unit down-time to only a few minutes and will allow sufficinet time to properly service the restricted element.

Cleaning the element with compressed air is not considered an entirely satisfactory method. Some dust and soot will remain in the element causing more frequent servicing of the element. Use this method only as a temporary measure until sufficient time is available to clean the element by washing.

Note: After cleaning, if an element is to be stored for later use, place it in a plastic bag and store in an element shipping container to protect against dirt and damage.

Removal

1. Stop the engine. Tilt up the engine hood. Remove all dust from the element removal end of the air cleaner body.
2. Remove nut (2) Illust. 65.
3. Remove the main element (1). Be careful not to dislodge dust from the dirty element onto the element (3).
4. Check the condition of the seal (5) on the end of the element. If the seal is damaged or missing, replace the element. Also check seal on nut (2) and replace if necessary.

Note: A label with the numbers 1 to 5 is located on the front end of the safety element (3). On each main element service mark the corresponding number on the label to record the service operation.

At the fifth main element service the safety element must be replaced.

Washing

Note: Never wash elements in fuel oil, gas or solvent. DO NOT OIL ELEMENTS. Do not attempt to take elements apart. Do not tap the element against a hard surface; this will damage the element.

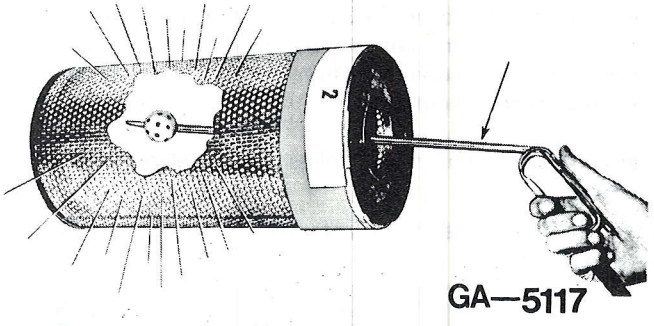
1. Tap the side or end of the element against the palm of your hand to remove loose dust.
2. Wash the element in clean, warm water (20° to 40° C). A small amount of non-sudsing detergent added to the water will remove ths soot.
3. Rinse the elemnt in clean water (if a hose is used, do not exceed 0.28 MPa). Shake the element carefully to remove excess water.

Note: Do not use compressed air to speed the drying of the element; the air pressure will rupture the wet element.

4. Lay the element on its side and allow it to air dry before reinstalling. Overnight drying is usually sufficient. When drying the element protect it from dirt and/or freezing.
5. Inspect for damage. Refer to "Inspection" of this section.

Compressed Air

An element cleaning tool (IH Part No. 407 073 R1, Illust. 66) for use with compressed air, is available from your authorized International distributos or dealer.



Illust. 66
Using element cleaning tool

Note: Do not tap the element against a hard surface; this will damage the element.

1. Carefully tap side or end of the element against the palm of your hand to remove loose dust.
2. Direct clean, dry compressed air up and down the pleats on the clean side (inside) of the element.

Note: Air pressure at the nozzle must not exceed 0.5 MPa. Keep a reasonable distance between the air nozzle and the element.

3. Inspect the element for damage. Refer to text "Inspection" which follows:

Inspection

1. Inspect the filter element for leaks or damage by placing a bright light inside the element. Inspection of the element on the outside will disclose any holes where concentrated light shines through. The slightest rupture requires replacement of the filter element.
2. Inspect the contact surfaces of the air cleaner body. If faulty or damaged surfaces are noted, correct these conditions immediately.

Installation

1. Install the open end of the element (1) Illust. 65 into body over the element (3). Secure element with nut (2).

2. Inspect and tighten all air cleaner connections before resuming operation.

3. Start the engine. If the air cleaner service indicator shows air flow restriction, stop the engine; replace the main and safety filter elements. Refer to "Safety Filter Element Service" in this section.

Safety Filter Element (3) Illust. 65

Note: Do not clean the safety element; it must be replaced.

Removal

1. Remove the nut (2) and the main element (1).
2. Remove the nut (4) and safety element (3).
3. Clean the inside of the body with a damp cloth.

Installation

1. Install a new safety element (3) in body and secure with nut (4).

2. Install a new main element (1) over inner element (3) and secure with nut (2).

Automatic Dust Unloader

The dust unloader (3) Illust. 64 automatically discharges the accumulated dirt from the air cleaner body.

Check dust unloader in accordance with "Servicing Schedule". Be sure the valve is not plugged.

High seasonal contamination of the intake air (such as a concentration of light seeds) may require a weekly removal and cleaning of the unloader valve. When refitting the valve be sure it seats properly on its bead.

Fuel

Buy only good quality fuel and keep it clean. Do not leave containers open. Never store fuel in galvanized containers.

Note: Use summer- or winter fuel in accordance with season and temperature.

Grade 2-D diesel fuel conforming to ASTM D-975 specification must be used for proper operation of these tractors. Grade 1-D diesel fuel may be used at temperatures below −12°C or for operations entailing considerable idling. Use only winter grade fuel for ease of starting. Winter grade diesel fuel must have a cloud point of at least 5°C below the lowest anticipated temperature to avoid plugging of the fuel circulation system, especially the fuel filters.

Note: If no winter grade fuel is available or if extremely low temperatures occur viscosity of fuel can be improved by adding kerosene in accordance with the following tabulation.

Ambient Air Temperatures °C	Mixing Ratio in Volume Percentage			
	Summerfuel Kerosene (Grade 2-D)		Winterfuel Kerosene (Grade 1-D)	
± 0 to −10	70	30	100	–
− 10 to −15	50	50	100	–
− 15 to −20	–	–	80	20
− 20 to −25	–	–	70	30
− 25 to −30	–	–	50	50

Note: Mixing ratios in the above tabulation apply to Central Europe. In other localities ratios may change slightly in accordance with recommendations of the fuel industry.

Important:

1. It is good practice to add kerosene before the onset of the cold season.

2. Fill in kerosene first then add diesel fuel to ensure proper mixing.

3. Use only as much kerosene as necessary to ensure proper starting.

Never use gasoline.

Fuel Additive

For severe operating conditions Diesel fuel may be doped with an additive known by the trade name "IH-Desolite". The purpose of this additive is to protect the fuel injection system and valves from harmful deposits and other adverse effects of fuel combustion.

An addition of 0.5% is recommended for continuous operation under severe conditions.

During the last operating hours before storage 1% of "IH-Desolite" must be added to conserve the fuel system.

Fuel Tank

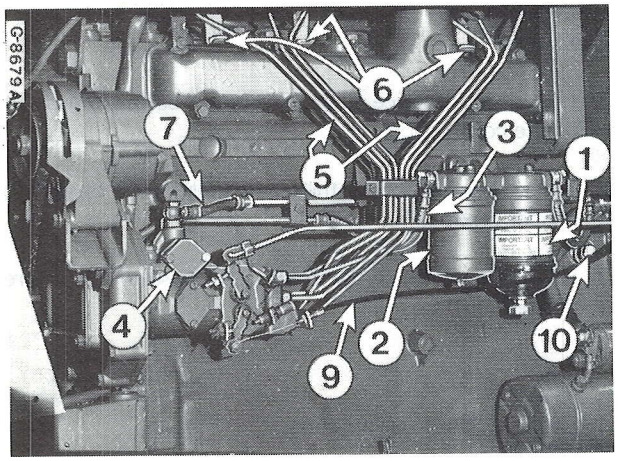
To prevent excessive condensation in the fuel tank it is good practice to fill the fuel tank at the end of the daily run. Whenever the fuel filters are serviced, remove drain plug from the fuel tank and drain off any water accumulation and sediment. When a stream of clean fuel is coming out, reinstall the drain plug.

Fuel Injection Pump

The engine is equipped with a distributor type injection pump of "Bosch" design.

The injection pump is correctly set at the factory and should require no adjustment. Whenever adjustments or repairs become necessary, consult your "Bosch" serviceman. Do not tamper with any of the pump units.

Apart from periodical external cleaning, the injection pump in maintanance-free because all pump components are lubricated by Diesel fuel under light pressure. Even a very short time of running dry would cause serious damage to the injection pump. ***Make sure, before starting the engine, that fuel supply to the injection pump is not cut off.***



Illust. 67
Fuel system

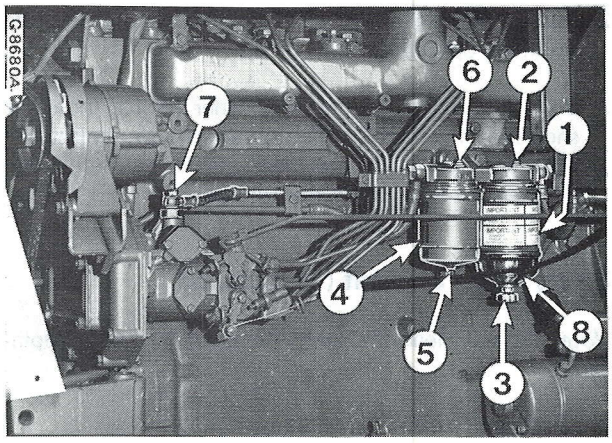
1 – Primary filter
2 – Final filter
3 – Fuel line to injection pump
4 – Injection pump
5 – Injection pipes
6 – Nozzle holder
7 – Overflow lines
9 – Bowden cable, run, starting and shut-off
10 – Drain plug

Fuel Filters

The tractor is equipped with a two-stage filter.

Draining Condensation

Any possible condensation in the fuel system will be trapped in the filter bottom. Drain the condensation in accordance with "Servicing Schedule".



Illust. 68

1 – Primary filter
2 – Bleeder screw, primary filter
3 – Drain screw
4 – Final filter
5 – Drain screw
6 – Bleeder screw, final filter
7 – Bleeder screw, injection pump
8 – Transparent bowl

Note: Under unfavorable climatic conditions it may be necessary to drain condensation daily.

Loosen the drain screw (3) Illust. 68 and bleeder screw (2) before starting the engine. Retighten the screw as soon as all the water is drained and fuel starts running out. If the water level has been allowed to accumulate above the top of the transparent bowl (8), it is necessary to drain the final filter (4) too. To do this loosen the screw (5) and bleeder screw (6) until fuel starts running out.

Changing the Fuel Filters

Change the primary filter (1) Illust. 68 in accordance with "Servicing Schedule", or earlier if loss of engine power under load is experienced, and the final filter after every 2000 hours of operation.

Note: To ensure proper filtering action do not replace both filter elements at the same time. Leave an interval of at least 100 operating hours between the replacement of primary and final filter.

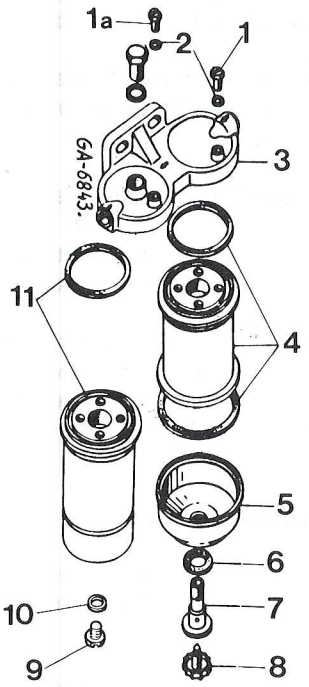
The tractor is equipped with a two-stage filter either of Bosch spin-on type or CAV center bolt design.

Note: When servicing the fuel system observe strict cleanliness. Remove new filter elements from their wrappings only immediately before installation.

Primary Filter (Bosch)

The filter element (4) Illust. 69 is supplied as a package complete with seal rings.

Unscrew the filter from the header.



Illust. 69

1 – Bleeder screw
1a– Bleeder screw
2 – Seal ring
3 – Filter header
4 – Primary filter (Recommended torque 1.0-1.5 daNm)
5 – Transparent bowl
6 – Seal ring
7 – Hollow screw (Recommended torque 1.0-1.5 daNm)
8 – Drain screw
9 – Drain screw
10 – Seal ring
11 – Final filter (Recommended torque 1.0-1.5 daNm)

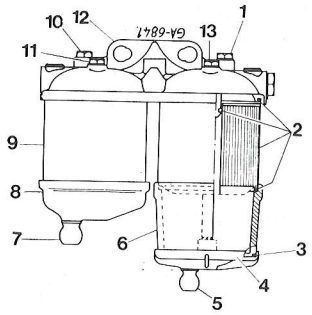
If parts of the fuel system have been disconnected (filter replacement etc.) it will be necessary to vent the fuel system, refer to "Venting the Fuel System". Start the engine and check filter connections for leakage. Retighten slightly, if necessary.

Final Filter (Bosch)

To replace the final element (11) Illust. 69, proceed as described under "Primary Filter".

Primary Filter (CAV)

The filter element (2) Illust. 70 is supplied as a package complete with seal rings.



Illust. 70

1–Bleeder screw (Recommended torque 2.0 daNm max.)
2–Primary filter with seal rings
3–Seal ring
4–Filter bottom
5–Drain screw
6–Transparent bowl
7–Drain screw
8–Water trap
9–Final filter with seal rings
10–Bleeder screw (Recommended torque 2.0 daNm max.)
11–Screw (Recommended torque 0.8-1.1 daNm)
12– Filter header
13–Screw (Recommended torque 0.8-1.1 daNm)

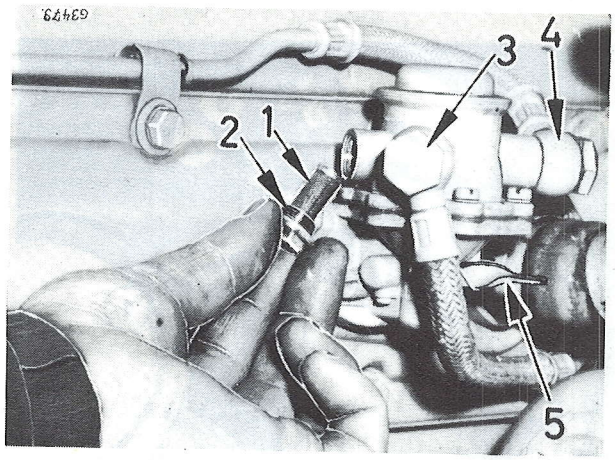
If parts of the fuel system have been disconnected (filter replacement etc.) it will be necessary to vent the fuel system, refer to "Venting the Fuel System". Start the engine and check filter connections for leakage. Retighten slightly, if necessary.

Final Filter (CAV)

To replace the final filter element (9) Illust. 70, proceed as described under "Primary Filter".

The filter element is supplied as a package complete with seal rings.

Feed Pump



Illust. 71

1 – Filter screen
2 – Plug
3 – Fuel line from tank
4 – Fuel line to filters, hollow screw
5 – Hand lever

The feed pump is maintenance free except for cleaning of the filter screen (1) Illust. 71. Remove and clean this filter screen in accordance with "Servicing Schedule". A shorter service interval may be advisable depending on fuel conditions. Wash the screen in Diesel fuel or kerosene and replace with a new packing ring.

Venting the Fuel System

The injection pump is designed to dispose automatically of limited quantities of air in the fuel system. Air may enter the system when fuel filters are drained. To assist this automatic venting it is good practice to let the engine idle for a few minutes before it is loaded.

If parts of the fuel system have been disconnected or the fuel tank has been allowed to run empty, it will be necessary to vent the fuel system. Proceed as follows:

Loosen vent screws (4) Illust. 71 and (2, 6) Illust. 68 in that order and retighten when fuel flows out free from air bubbles. During the venting procedure keep operating hand lever (5) Illust. 71 and do not stop to do so before the respective vent screw is retightened.

Note: If the fuel tank has been allowed to run empty vent the injection pump. Loosen bleeder screw (7) Illust. 68 and retighten when fuel flows out free from air bubbles.

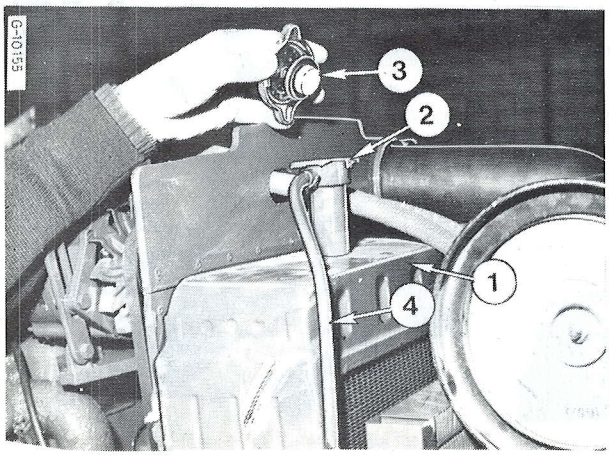
Injection Nozzles

The injection pressure of nozzles must be checked in accordance with "Servicing Schedule" by a workshop specially equipped for this purpose.

Checking Coolant Level

Check level of coolant in radiator in accordance with the "Periodic Servicing Schedule".

Note: Never use rainwater, brackish water, sewage, sea water, too hard or too soft water.



Illust. 72

1 – Radiator
2 – Filler neck
3 – Radiator cap
4 – Overflow pipe

If the coolant in the system is hot and the level is low, observe the following:

Turn the radiator cap (3) Illust. 72 slowly counterclockwise to the safety stop to allow the pressure or any steam to escape, then press down on the cap and continue to turn until the cap is free to be removed.

If necessary, fill the radiator with clean coolant up to a level about 1 – 2 cm below the bottom of the filler neck, observe mixture chart.

Fill the radiator slowly (which allows air to escape).

After the system has been brought up to operating temperature and stabilized, check the coolant level.

If the engine is hot and a low coolant level is noted in the system, on no account fill up with cold coolant. Stop the engine and allow to cool down before adding coolant to the system or use hot coolant.

Cold-Weather Precautions

Machines are shipped with IH Anti-freeze in the cooling system at a mixing ratio offering protection down to –20 °C.

Be sure the Anti-freeze concentration is at least 33% i.e. down to –20 °C to assure adequate protection.

IH Anti-freeze not only protect the cooling system against freezing but against corrosion too. Therefore it should be left in the cooling system all year round without allowing the concentration to deplete. Use IH Anti-freeze only.

Caution: IH Anti-freeze is tested for compatibility with engine components such as gaskets, hoses etc. Damage caused by using other Anti-freeze brands will result in forfeiture of the manufacturers warranty.

Changing Coolant

Change coolant in accordance with the "Periodic Servicing Schedule" or every two years, whichever comes first.

If water quality is poor, an annual change of coolant is recommended. Proceed as follows:

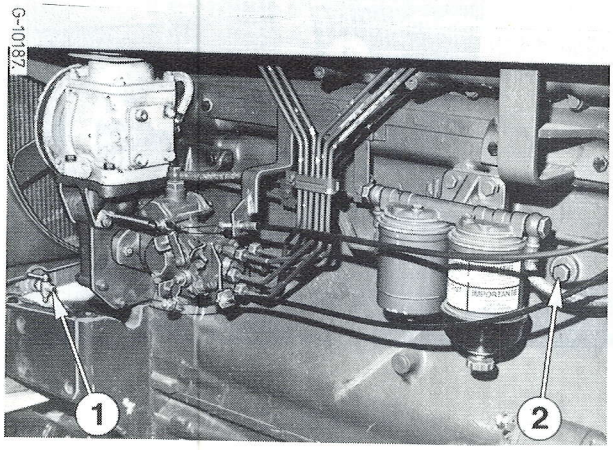
1. With engine at operating temperature remove radiator cap (3) Illust. 72 carefully, refer to "Checking Coolant Level".

2. Remove crankcase drain plug (2) Illust. 73.

3. Open radiator drain (1).

   Note: If the machine is equipped with a heater unit, open pet cocks Illust. 13.

4. Allow the system to drain completely. Be sure drain outlets do not plug up during draining.



Illust. 73

1 – Radiator drain 2 – Crankcase drain plug

5. Install drain plug (2) Illust. 73 and close drain (1).

6. Fill the system with clean water. Add IH Cooling System Cleaner. Flush the system in accordance with the instructions furnished with the compound.

7. After flushing, rinsing, and completely draining the system, install a new coolant filter and open the coolant filter shut-off valves. Refill the system with coolant according to mixture chart.

Mixture chart (Liters)			
Total Capacity	Water*	IH-Anti-freeze (down to –20oC)	IH-Coolant Conditioner
24	16	7.5	0.5
28	18	9	1
29	19	9	1
Refilling Capacity			
5	3.14	1.7	0.16

* Never use rainwater, brackish water, sewage, sea water, too hard or too soft water.

Use water with a low lime content (normal drinking water).

8. Fill the cooling system slowly. This allows more air to escape and the system to be filled to maximum capacity.

Be sure the Anti-freeze concentration is at least 33% i.e. down to –20 °C.

9. Start the engine and run until normal operating temperature is reached; adding coolant if necessary to keep proper level.

After all air is purged and level remains constant install the radiator cap.

Note: Under no circumstances should the tractor be left with the cooling system drained.

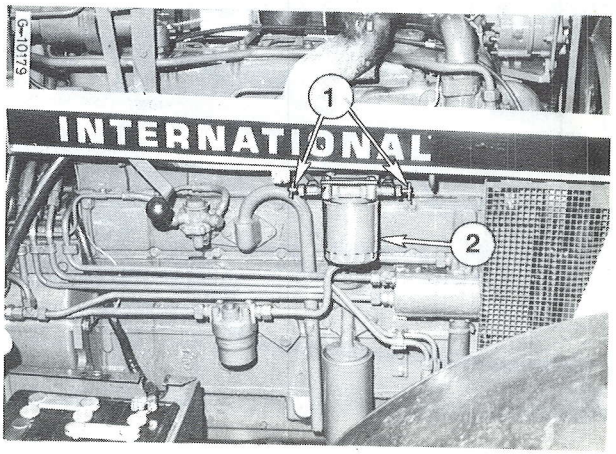
Coolant Filter

After the initial 100 hours of operation change the coolant filter (2) Illust. 74. After another 300 hours of operation, change the coolant filter again. Therafter service the filter at regular scheduled intervals of 400 hours of operation as specified in the "Periodic Servicing Schedule".

Close both shut-off valves (1) and unscrew the coolant filter from the header. Discard the old filter.

Lubricate the filter gasket with clean engine oil. Install filter by hand turning it clockwise until filter gasket contacts header. Tighten 1/2 to 3/4 turn after gasket contact. Do not overtighten.

Open both shut-off valves. Vent the cooling system in accordance with para (9) above.



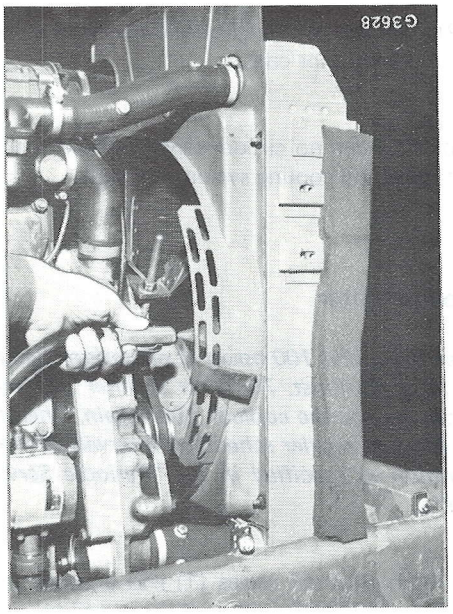
Illust. 74

1 – Shut-off valves 2 – Coolant filter

Radiator

The cooling system must be kept clean inside and out. If spaces between the radiator fins become clogged clean them with an air or water hose, Illust. 75.

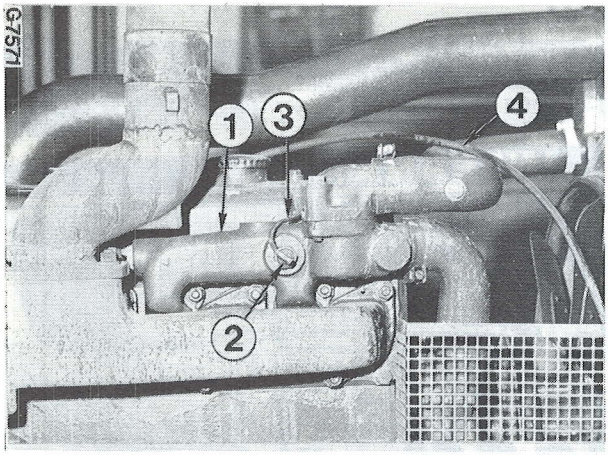
Be sure to apply the hose from behind the radiator as only in this way dirt can be lossened effectively.



Illust. 75
External radiator cleaning

Sender Unit for Heat Indicator

A sender unit (2) Illust. 76 transmits coolant temperature to the heat indicator on the instrument panel. Should the instrument fail to register, first check the wiring (3) for proper connection or damaged insulation. Replace sender unit (2) if defective.



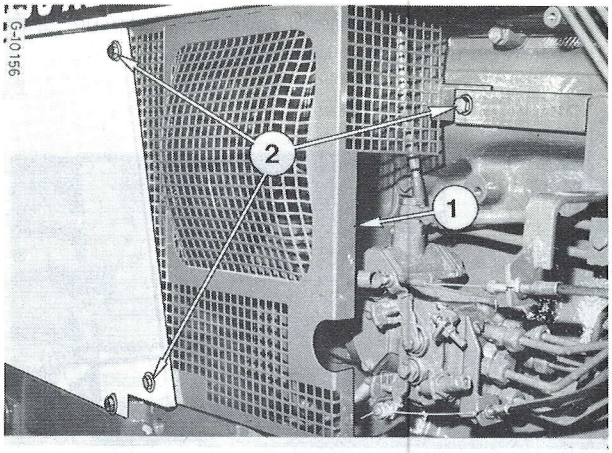
Illust. 76
Coolant manifold and sender unit

1 – Coolant manifold
2 – Sender unit
3 – Heat indicator cable
4 – Tractormeter drive shaft

Protection Screen (if so equipped)

For various maintenance jobs the protection screens (1) Illust. 77 must be removed. To do this loosen retainer screws (2).

When replacing the screens, be sure to install the nylon washers under screws (2).



Illust. 77

1 – Protection screen
2 – Retainer screws

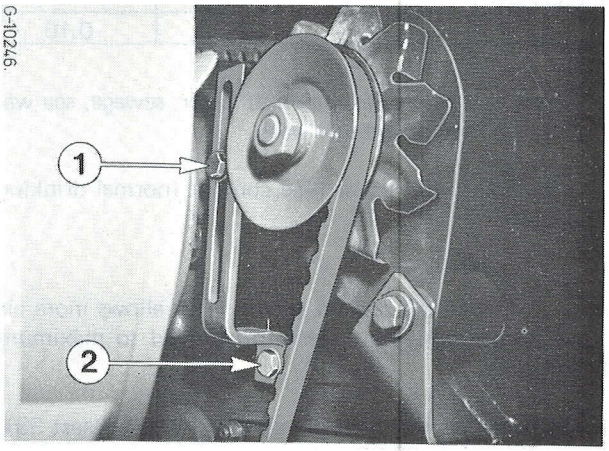
V-Belts

Check fan belt tension in accordance with "Servicing Schedule". The tension is correct if the belt can be depressed without effort by your thumb approximately 15 mm midway between the belt pulleys.

Excessive belt tension causes undue wear on the bearings. After a new belt has been in use for approximately 20 hours, check the tension and adjust again if necessary.

Fan and Alternator V-Belt

The tension of the fan belt can be adjusted by tilting the alternator after loosening the mounting bolt (2) Illust. 78 and adjusting bolt (1). Retighten adjusting bolt (1) and mounting bolt (2) in this sequence.

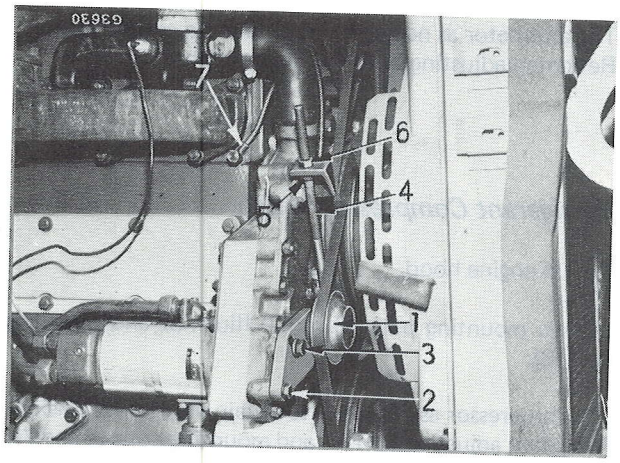


Illust. 78

1 – Adjusting bolt
2 – Mounting bolt

Fan, Alternator and Air Compressor V-Belt
(on tractors equipped with pneumatic trailer brake)

Fan V-Belt (1) Illust. 80

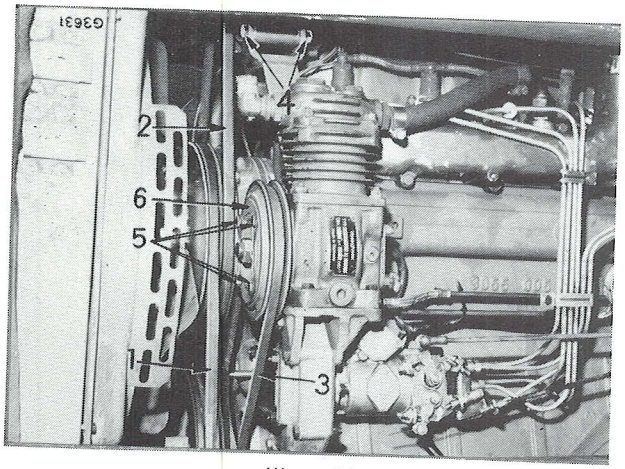


Illust. 79
Adjusting device for fan belt tension

1 – Idler pulley
2 – Mounting bolt
3 – Clamping bolt
4 – Adjusting rod
5 – Lock nut
6 – Adjusting nut
7 – Lubricating oil line for compressor

Adjust the fan belt tension as follows:

Loosen mounting bolt (2) Illust. 79 and clamping bolt (3). Loosen lock nut (5). Turn nut (6) up or down on the rod (4) until the correct tension is obtained. Retighten lock nut (5), clamping bolt (3) and mounting bolt (2) in this sequence.



Illust. 80

1 – Fan belt
2 – Alternator belt
3 – Compressor belt
4 – Alternator mounting bolt
5 – Compressor belt pulley retainer bolts
6 – Adjusting shims

Alternator V-Belt (2) Illust. 80

Tilt up engine hood.

Loosen mounting bolt and adjusting bolt on the adjusting brace.

Tilt alternator as necessary to obtain the correct tension. Retighten adjusting bolt and mounting bolt in this sequence.

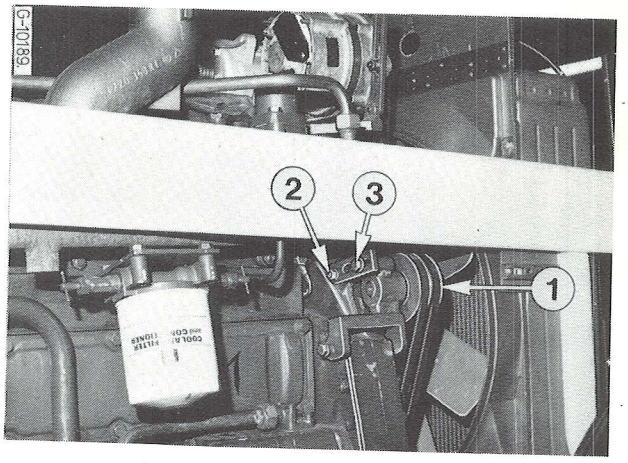
Air Compressor V-Belt (3) Illust. 80

The tension of the air compressor belt is adjusted by shims placed between the belt pulley halves. Removing of shims will increase belt tension, adding of shims will reduce it. Attach removed shims (6) to the outside of the belt pulley so as not to lose them. Secure retainer bolts (5) with lock wire.

Fan, Alternator and Refrigerant Compressor V-Belts

(on tractors equipped with air conditioner)

Fan V-Belt



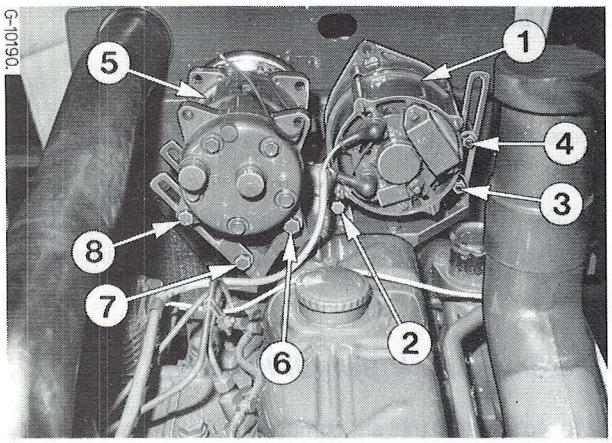
Illust. 81

1 – Idler pulley
2 – Mounting bolt
3 – Clamping bolt

Adjust fan belt tension as follows:

Loosen mounting bolt (2) and clamping bolt (3) Illust. 81.

Move idler pulley (1) until correct tension is obtained. Retighten clamping bolt (3) and mounting bolt (2) in this sequence.



Illust. 82

1 – Alternator
2,3 – Mounting bolts
4 – Adjusting bolt
5 – Refrigerant compressor
6,7 – Mouting bolt
8 – Adjusting bolt

Alternator V-Belt

Tilt up engine hood.

Loosen mounting bolts (2 and 3) Illust. 82 and adjusting bolt (4).

Tilt alternator as necessary to obtain the correct tension. Retighten adjusting bolt and mounting bolts.

Refrigerant Compressor V-Belt

Tilt up engine hood.

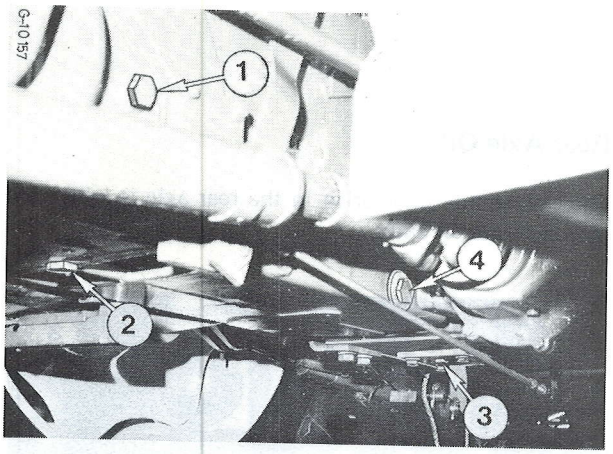
Loosen mounting bolts (6 and 7) Illust. 82 and adjusting bolt (8).

Tilt compressor as necessary to obtain the correct tension. Retighten adjusting bolt (8) and mounting bolts (6 and 7).

Checking the Transmission Oil Level

Check oil level with the tractor standing on level ground. Remove level plug (1) Illust. 83.

If necessary add lubricant to bring the level up to the plug opening (1). Reinstall plug (1) using new packing ring and tighten to recommended torque.



Illust. 83

1 – Oil level plug
2 – Drain plug, front
3 – Drain plug, rear
4 – Drainplug, LH-side

Changing the Transmission Oil

Remove plugs (1 to 4) Illust. 83 while the oil is still warm and drain into suitable containers.

Clean plugs and reinstall plugs (2 –4) using new packing rings and tighten to recommended torque.

Refill the transmission case with the specified transmission oil through opening (1) until it starts to flow out at level plug opening (1), Reinstall plug (1) using new packing ring and tighten to recommended torque.

Checking the Hydraulic Oil Level

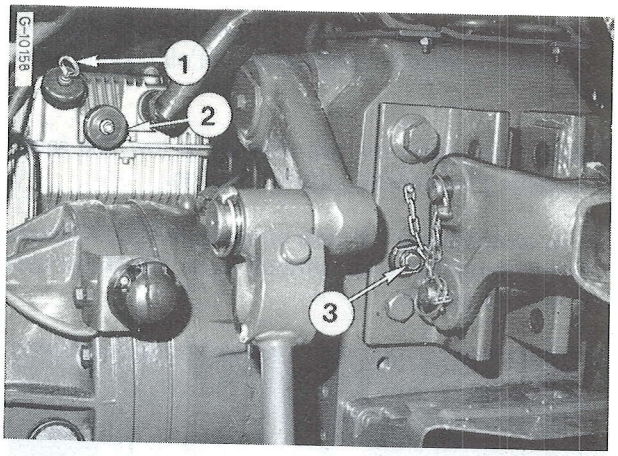
Stop the engine and lower the hydraulic equipment all the way and check oil level.

If the tractor has been operated, it is important to wait at least three minutes to permit return flow. After the oil level has settled read the gauge.

Remove gauge (1) Illust. 84 and wipe clean. Insert the gauge completely.

Remove the gauge and check the oil level. If necessary, add oil to bring the level up to the upper mark on the gauge. Reinstall the gauge.

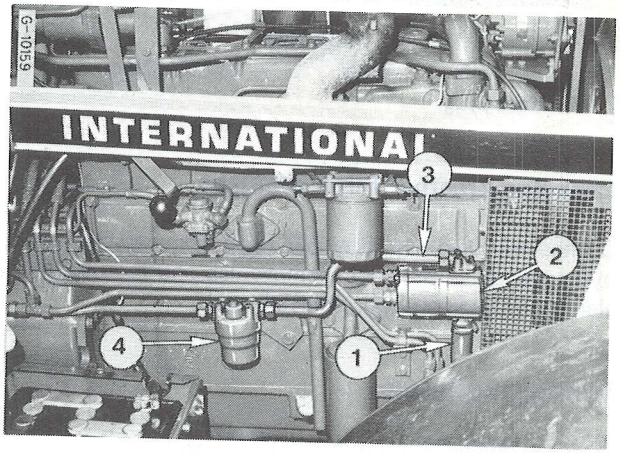
Note: Never operate the tractor if the oil level is below the lower mark on the gauge.



Illust. 84

1 – Oil level gauge
2 – Breather filter
3 – Drain plug

Changing Pressure Oil Filter Element



Illust. 85

1 – Suction line
2 – Hydraulic pump
3 – Pressure line
4 – Pressure oil filter

Remove cup of oil filter (4) Illust. 85 and discard old element. Clean filter housing and cup with Diesel fuel. Insert new element open end up and replace cup using a new seal-ring and spacer. Element seal-ring and spacer must always be replaced as a unit and are available as a service package.

Refill the hydraulic lift case as described under Illust. 84. Vent the hydraulic system. Refer to "Venting the System" in this section.

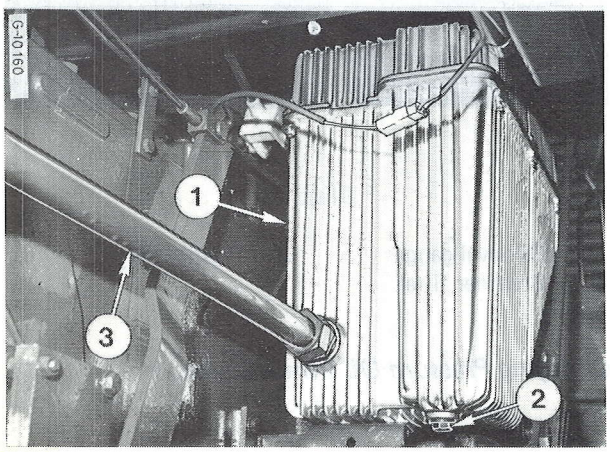
Changing the Hydraulic Oil

Lower rocker arms and front loader all the way. Remove drain plug (3) and gauge (1) Illust. 84 and drain plug (2) Illust. 86. Drain the oil into a receptacle using a chute.

Replace drain plugs. Tighten all connections securely. Fill hydraulic fluid to the level of the oil cooling reservoir (1).

Operate the engine for two minutes at low idle speed to equalize the oil level in the lift housing.

Fill in an additional 14 liters of hydraulic fluid. Operate the engine briefly to equalize oil levels. Check oil level and vent the system.



Illust. 86

1 – Oil cooling reservoir
2 – Drain plug
3 – Suction line

Changing Breather Filter Element

Change the breather filter (2) Illust. 84 every time the hydraulic oil is changed. Remove cap and replace filter element with a new one. Reinstall cap.

Venting the System

Start the engine and run at 1200/min, while operating the position lever (3) Illust. 36 over its full range a few times. Operate the steering wheel several times from lock to lock.

After a short operating period check for leaks. With position lever and rocker arms in their lowest position stop engine and allow oil to settle.

Check oil level and top up to the upper oil level mark if necessary. Replace oil level gauge. When filling or adding oil to the system great care must be taken to prevent water, dirt or other foreign matter from entering the lift housing.

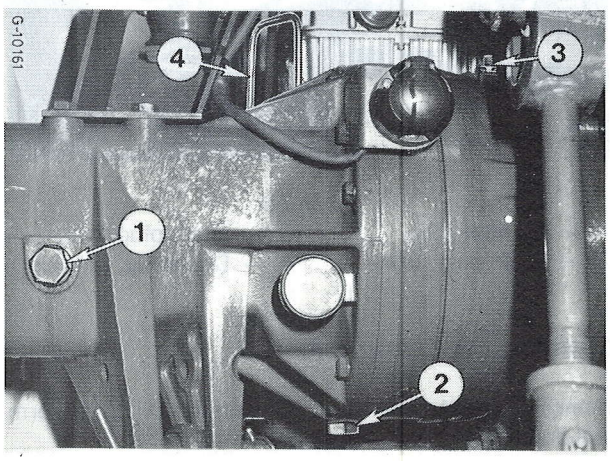
Auxiliary Cylinder for Hydraulic Lift (Special Equipment)

After every oil change bleed the cylinder as follows:

1. Run engine at low idle speed.
2. Loosen bleeder screw on the cylinder.
3. Shift control lever (3) Illust. 36 in "slow lifting" position until outflowing oil is free of air bubbles. Retighten the bleeder screw. If necessary repeat the procedure until the outflowing oil is free of air bubbles. Be sure the bleeder screw is closed before lowering hydraulic lift.
4. Check oil level.

Rear Axle Oil

Each planetary final drive in the rear axle is lubricated by a separate oil bath.



Illust. 87
Rear axle

1 – Oil level- and filler plug
2 – Drain plug
3 – Bleederscrew(brake)
4 – Breather tube

To check the oil level, remove plug (1) Illust. 87. If necessary add lubricant to bring oil level up to the plug opening (1).

To change the oil remove drain plug (2) and filler plug (1) drain the oil while it is warm.

Clean drain plug (2) and replace. Fill in new fluid up to filler opening (1). Replace the filler plug.

Check breather tube (4) for dirt accumulation. Clean if necessary.

All-Wheel Drive Version

Oil Level and Oil Change

Check oil level in differential Illust. 88 and planetary drives Illusts. 89 and 90, with the tractor standing on level ground.

Turn the wheel in such a way that the mark "ÖLSTAND" (2) is horizontal.

Remove plugs (1) Illust. 88 and 89 or (1 and 3) Illust. 90. If necessary, add oil up to the level openings. Reinstall the plugs.

Change the oil immediately after operation when the lubricant is still warm.

Turn each front wheel in such a way that the plugs (1) Illust. 89 or (3) Illust. 90 are in their bottommost position.

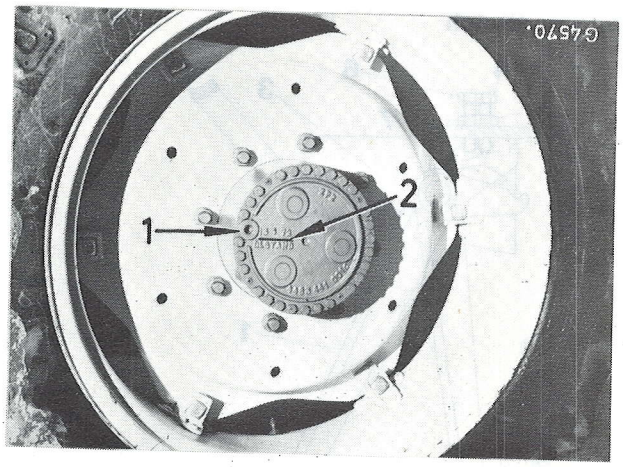
Remove plugs (1 and 2) Illust. 88 and plugs (1) Illust. 89.

Clean the plugs and after the oil is drained reinstall drain plugs.

Turn the wheel so that the oil level mark "ÖLSTAND" (2) is horizontal.

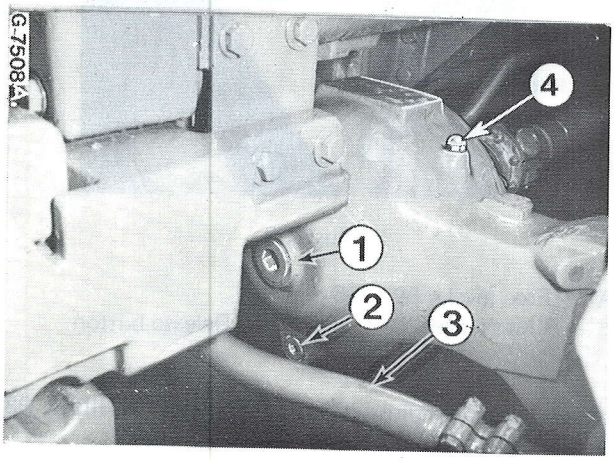
Fill the differential and planetary drive housings up to the level openings and reinstall the plugs (1) Illust. 88 and 89 or 90.

Remove accumulated dirt and oil from the axle breather (4) Illust. 88. Turn the breather cap several times to be sure it is clear.



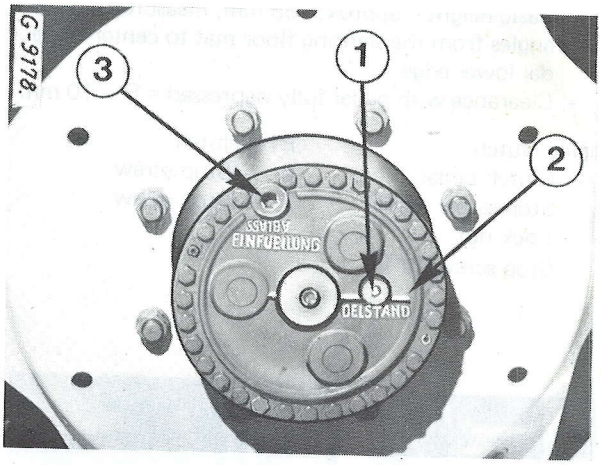
Illust. 89
Planetary drive APL 1552

1 — Filler- level- and drain plug
2 — Oil level mark "ÖLSTAND"



Illust. 88
Differential

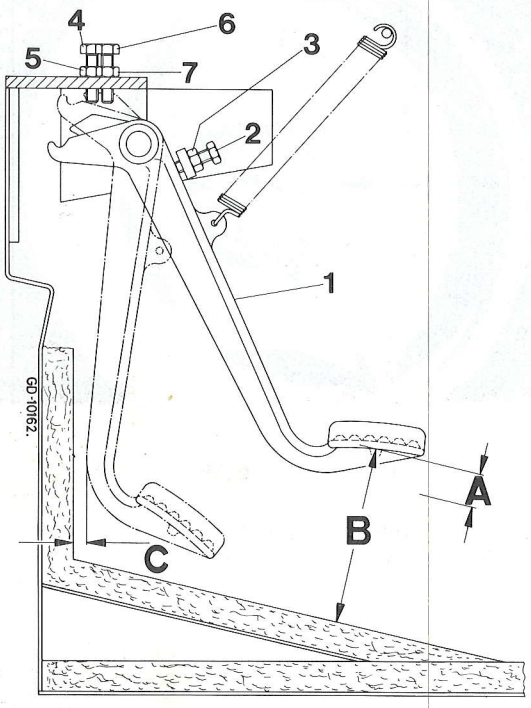
1 — Filler- and level plug
2 — Drain plug
3 — Tie rod
4 — Breather filter



Illust. 90
Planetary drive APL 3052

1 — Oil level plug
2 — Oil level mark
3 — Oil filler and drain plug

Engine Clutch

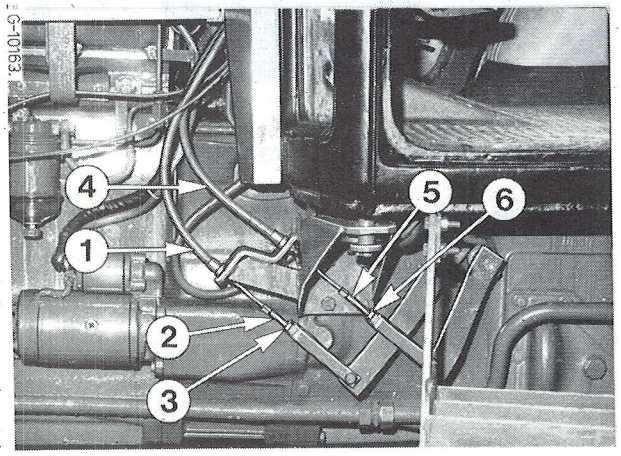


Illust. 91

A – Free travel = 25 – 30 mm
B – Basic height = approx. 165 mm, measured at right angles from the slanting floor mat to center of pedal lower edge
C – Clearance with pedal fully depressed = 5 – 10 mm

Engine clutch
1 – Clutch pedal
2 – Stop screw for B
3 – Lock nut
4 – Stop screw for C

PTO-clutch
6 – Stop screw
7 – Stop screw



Illust. 92

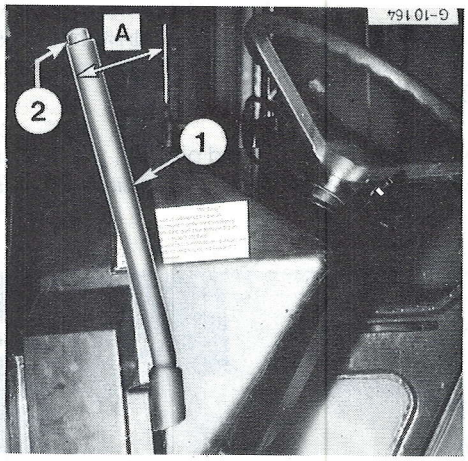
1 – PTO-clutch bowden cable
2 – Adjusting sleeve
3 – Lock nut
4 – Engine clutch bowden cable
5 – Adjusting sleeve
6 – Lock nut

When the clutch is fully engaged the clutch pedal (1) Illust. 91 should have a free travel (A). As the clutch wears, this free travel decreases and should be adjusted as soon as it is 10 mm. To adjust the clutch proceed as follows:

Loosen lock nut (6) Illust. 92. Turn adjusting sleeve (5) out until the correct free travel of pedal is obtained.

Note: Ref. dimensions B and C are not liable to change unless stop screws (2) and (4) are turned respectively. If necessary check and reset these dimensions. Be sure to readjust free travel A whenever B has been altered.

PTO-Clutch



Illust. 93

A – Free tavel = 50 – 55 mm
1 – Clutch lever
2 – Release button

When properly adjusted the hand lever (1) Illust. 93 should have a free travel (A).

As clutch linings wear this play decreases and adjustment it necessary when play is 40 mm.

To adjust the PTO clutch loosen nut (3) Illust. 92. Turn adjusting sleeve (2) out, until the correct free travel of the lever is obtained. Secure with lock nut (3) and recheck adjustment.

Note: To ensure proper engagement of the lever latch a clearance of 2 – 3 mm is required between detent and latch when the lever is pulled back all the way to the stop. If necessary, loosen lock nut (7) Illust. 91 and adjust at stop screw (6).

Service Brake

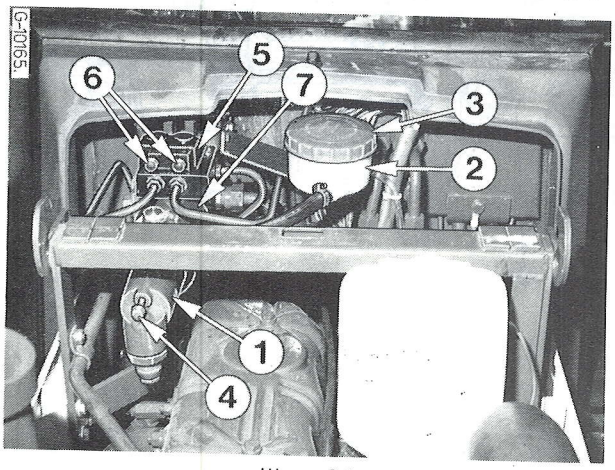
The service brakes are of the piston operated lined disk type and mounted in the rear axle.

An integrated hydraulic brake booster reduces pedal effort.

Adjustment and repairs on the brake system must only be carried out by authorized workshop personnel.

Checking Brake Oil Level

IH-Hy-Tran Fluid should be used in the brake system to ensure operating safety and trouble-free brake operation.



Illust. 94

1 – Slave brake cylinder
2 – Brake oil reservoir
3 – Breather cap
4 – Bleeder screw
5 – Steering brake valve
6 – Bleeder screw
7 – Master brake cylinder (booster)

Check the oil level in the reservoir (2) Illust. 94 as follows:

Clean the reservoir externally. It is not necessary to remove breather cap (3) because the reservoir is of a certain degree of transparency.

The oil level should be up to the upper mark "MAX" on the reservoir. If necessary add new oil taking care to observe strict cleanliness.

Before removing breather cap (3) clean reservoir and surrounding parts to make sure no foreign matter can drop into the reservoir. Replace breather cap and tighten by hand.

If loss of brake oil makes a repeated topping-up necessary the system must be checked in a service station.

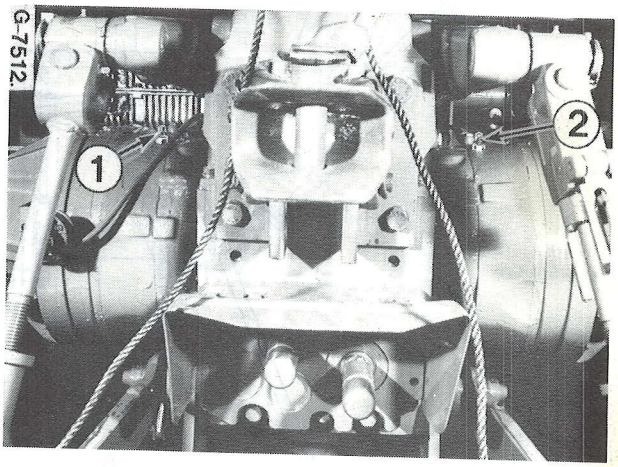
Changing the Brake Oil

Brake oil is only changed in the workshop when the rear axle is taken down for repair.

Bleeding Hydraulic Brake System

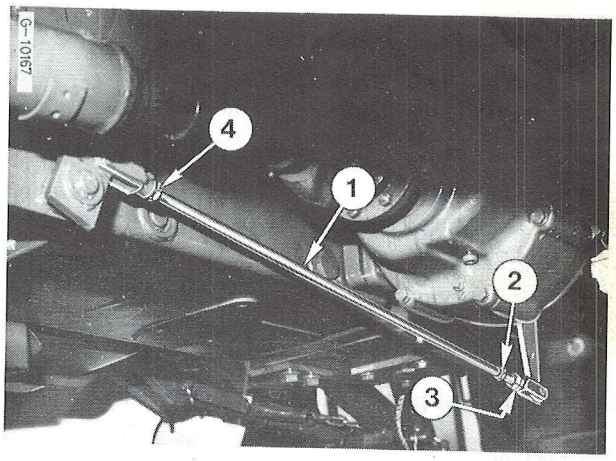
To ensure proper brake action the hydraulic brake system must be free of air. Air in the brake system can be caused by extremely low oil level in the brake oil reservor, or by faulty slave brake cylinder piston cup. The necessity for bleeding is indicated by a spongy feel when the brake pedals are depressed.

Bleeding of the brake system and repair of any leakage should be done by an IH-service station only.



Illust. 95
1 – 2 Bleeder screws

Adjusting Parking Brake



Illust. 96
Parking brake linkage

1 – Connecting rod
2 – Hexagon
3 – Lock nut
4 – Lock nut

The parking brake is properly adjusted when it is fully applied with the handle pulled up 250 mm max.

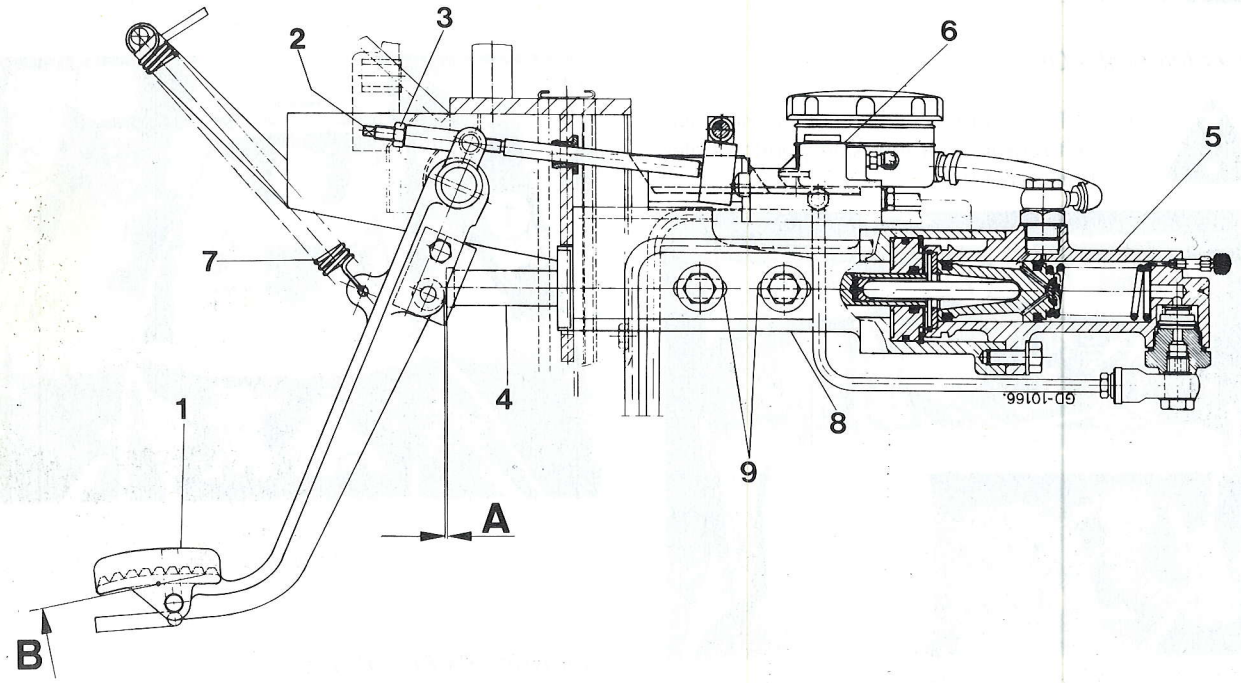
When the parking brake handle can be pulled up too far the brake requires adjustment as follows:

Loosen lock nuts (3 and 4) Illust. 96 and shorten rod (1) by turning hexagon (2) until correct adjustment is obtained i.e. as the lever is pulled up 110 – 120 mm a marked increase of resistance (12 – 14 daN) should be felt.

Tighten lock nut (3 and 4).

If the whole adjustment range is used up, brake lining requires replacement.

Master Brake Cylinder (Booster)
Check Operating Rod Play



Illust. 97

A – Play between pedal rollers and operating rod = 0.5 – 1.0 mm

B – Clearance = approx. 165 mm, measured at right angles from the slanting floor mat to center of pedal lower edge.

1 – Brake pedals
2 – Adjusting screws
3 – Lock nuts
4 – Operating rod
5 – Slave brake cylinder
6 – Steering brake valve
7 – Return springs
8 – Master brake cylinder (booster)
9 – Mounting slots

Check and adjust play (A) Illust. 97 as follows:

1. Checking
Bleed hydraulic brake system. Stop the engine. Unlatch brake pedals. Operate each brake pedal one time. Measure play (A). On both pedals it must be between 0.5 – 1 mm.

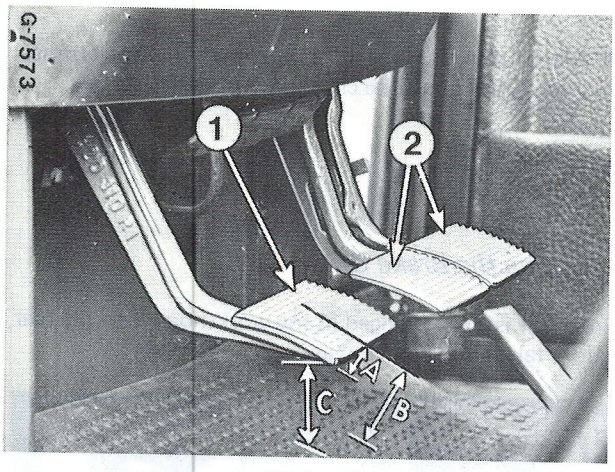
2. Adjustment
Remove steering wheel and instrument panel with cowling. Loosen lock nut (3). Adjust play (A) with adjusting screw (2). Latch brake pedals together. Operate brake system one time. Recheck play (A). Tighten lock nut (3).

Note: Max. permissible deviation of clearance (B) = ± 10 mm. If (B) is not within this tolerance see your IH-serviceman for basic adjustment of the brake linkage.

Adjusting procedure.

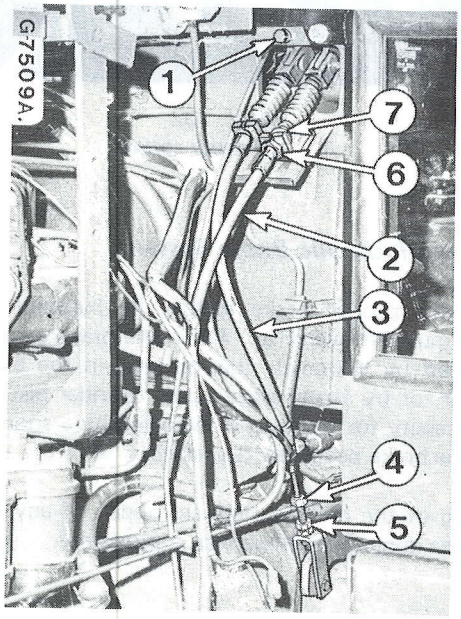
1. Adjust clearance (B) with screws (2).
2. Adjust play (A) by moving booster (8) within mounting slots (9).

Engine Clutch



Illust. 98

A – Free travel = 25 mm
B – Release stroke = 145 mm
C – Basic height = 155 mm (vertical from pedal to floor mat)
1 – Clutch pedal
2 – Brake pedals



Illust. 99

1 – Stop screw
2 – Bowden cable, pto clutch
3 – Bowden cable, engine clutch
4 – Adjusting screw
5 – Lock nut, engine clutch
6 – Lock nut, pto clutch
7 – Adjusting nut, pto clutch

When the clutch is fully enaged the clutch pedal (1) Illust. 98 should have a free travel (A). As the clutch wears, this free travel decreases and should be adjusted as soon as it is 10 mm. To adjust the clutch proceed as follows:

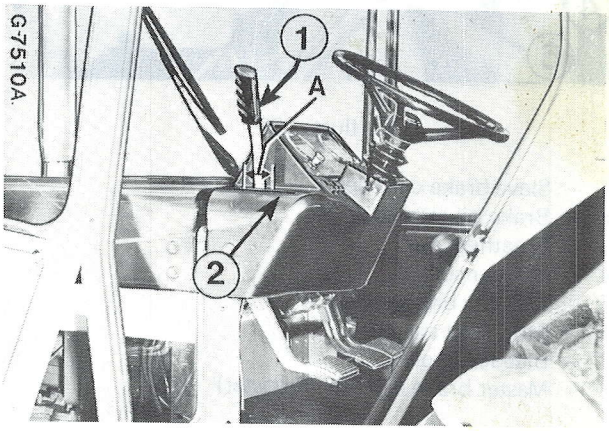
Loosen lock nut (5) Illust. 99. Turn adjusting screw (4) out until the correct free travel of pedal is obtained.

Check basic height (C) Illust. 98 and release stroke (B). If necessary, loosen lock nut and adjust at stop screw (1) Illust. 99 accordingly.

Note: Dimensions (B) and (C) Illust. 98 are not liable to change unless stop screw (1) Illust. 99 is turned.

Recheck adjustment (A), then tighten lock nut (5).

PTO Clutch



Illust. 100

A – Free travel = 25 – 35 mm
1 – Clutch lever
2 – Guide

When properly adjusted the hand lever (1) Illust. 100 should have a free travel (A) measured at the guide (2).

As clutch linings wear this play decreases and adjustment is necessary when play is 10 mm.

To adjust the PTO clutch loosen lock nut (6) Illust. 99. Tighten adjusting nut (7) until the correct free travel of the lever is obtained. Secure with lock nut (6) and recheck adjustment.

Service Brake

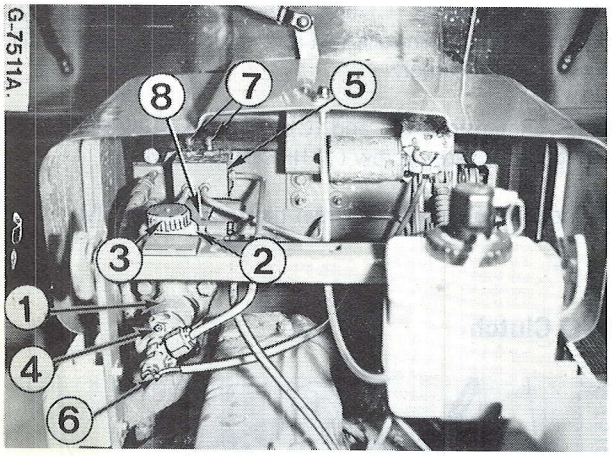
The service brakes are of the piston operated lined disk type and mounted in the rear axle.

An integrated hydraulic brake booster reduces pedal effort.

Adjustment and repairs on the brake system must only be carried out by authorized workshop personnel.

Checking Brake Oil Level

IH-Hy-Tran Fluid should be used in the brake system to ensure operating safety and trouble-free brake operation.



Illust. 101

1 – Slave brake cylinder
2 – Brake oil reservoir
3 – Breather cap
4 – Bleeder screw
5 – Steering brake valve
6 – Stop light switch
7 – Bleeder screw
8 – Master brake cylinder (booster)

Check the oil level in the reservoir (2) Illust. 101 as follows:

Clean the reservoir externally. It is not necessary to remove breather cap (3) because the reservoir is of a certain degree of transparency.

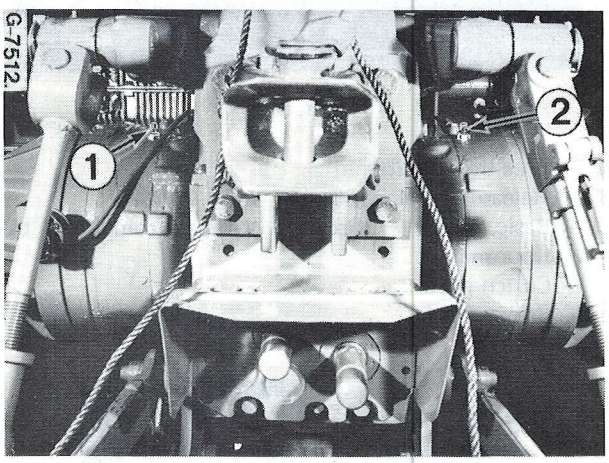
The oil level should be up to the upper mark "MAX" on the reservoir. If necessary add new oil taking care to observe strict cleanliness.

Before removing breather cap (3) clean reservoir and surrounding parts to make sure no foreign matter can drop into the reservoir. Replace breather cap and tighten by hand.

If loss of brake oil makes a repeated topping-up necessary the system must be checked in a service station.

Changing the Brake Oil

Brake oil is only changed in the workshop when the rear axle is taken down for repair.



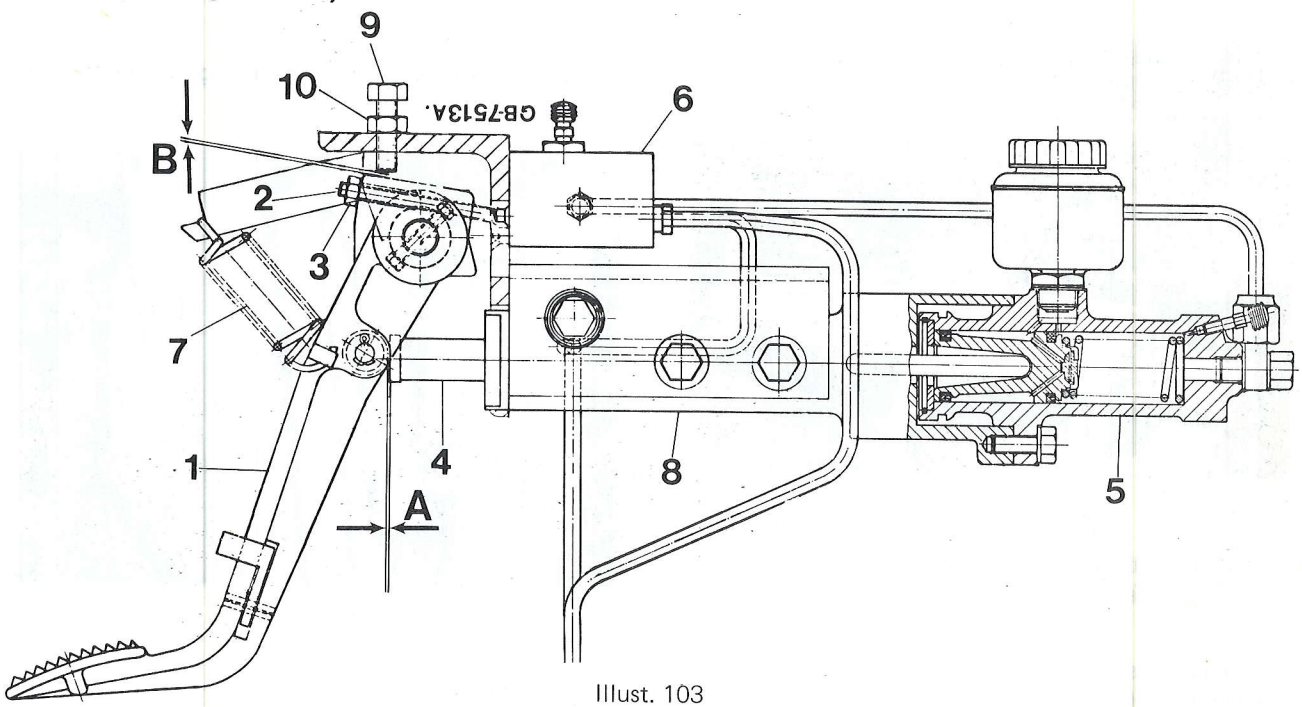
Illust. 102
1 – 2 Bleeder screws

Bleeding Hydraulic Brake System

To ensure proper brake action the hydraulic brake system must be free of air. Air in the brake system can be caused by extremely low oil level in the brake oil reservoir, or by faulty slave brake cylinder piston cup. The necessity for bleeding is indicated by a spongy feel when the brake pedals are depressed.

Bleeding of the brake system and repair of any leakage should be done by an IH-service station only.

Master Brake Cylinder (Booster)
Check Operating Rod Play



Illust. 103

A – Play between pedal rollers and operating rod = 0.5 – 1.0 mm

B – Play between pedal and set screw 0.5 mm

1 – Brake pedals
2 – Adjusting screws
3 – Lock nuts
4 – Operating rod
5 – Slave brake cylinder
6 – Steering brake valve
7 – Return springs
8 – Master brake cylinder (booster)
9 – Set screw
10 – Lock nut

Check and adjust play (A) Illust. 103 as follows:

1. Checking
Bleed hydraulic brake system. Stop the engine. Unlatch brake pedals. Operate each brake pedal one time. Measure play (A). On both pedals it must be between 0.5 – 1 mm.

2. Adjustment
Remove steering wheel and instrument panel with cowling. Loosen lock nut (3). Adjust play (A) with adjusting screw (2). Latch brake pedals together. Operate brake system one time. Recheck play (A). Tighten lock nut (3). Check play (B). If necessary adjust with set screw (9).

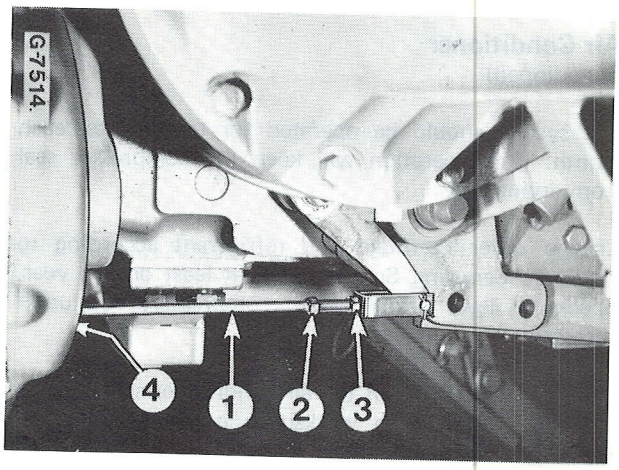
Adjusting Parking Brake

When properly adjusted the handle has a clearance of 85 – 100 mm to the floor mat. This coincides with the second or third tooth of the ratchet.

When the parking brake handle can be pulled up too far the brake requires adjustment as follows:

Loosen lock nuts (3 and 4) Illust. 104 and shorten rod (1) by turning hexagon (2) until correct adjustment is obtained.

If the whole adjustment range is used up, brake lining requires replacement.

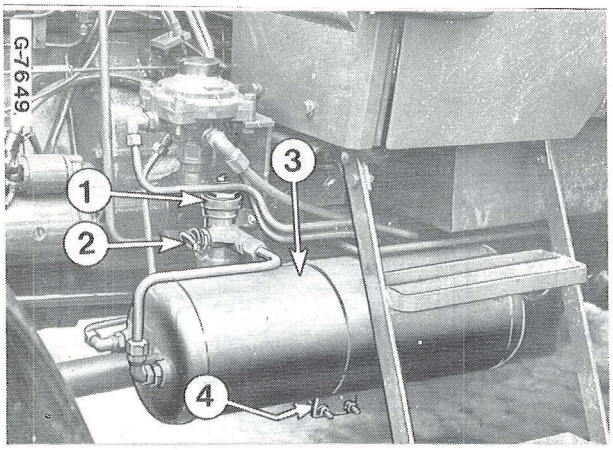


Illust. 104
Parking brake linkage

1 – Connecting rod
2 – Hexagon
3 – Lock nut
4 – Lock nut

1 091 788 R2
8.81

Pneumatic Trailer Brake Supply System
(if equipped)



Illust. 105

1 – Pneumatic governor
2 – Tire inflating valve
3 – Air tank
4 – Moisture drain valve

Maintenance is restricted to regular draining of air tank condensation (4) Illust. 105 and correct V-belt tension of the air compressor.

The governor (1) is equipped with a tire inflation valve (2). Remove the valve cap and connect suitable inflation hose. This equipment can only be used while the engine is running. Pressure in the air tank must be less than 0.62 MPa to ensure proper charging. If necessary operate the brake pedal repeatedly to lower the system pressure.

Note: If pressure builds up too slowly, or drops quickly with engine stopped and brakes released, consult a special workshop or your IH-dealer.

Once every year the equipment must be checked for operational efficiency.

Air Conditioner
(if equipped)

The system should be operated for ten minutes each month. This operation will keep the compressor seal from drying out.

Change dryer cartridge and refrigerant according to "Periodic Servicing Schedule" or at least once a year. Check oil level of refrigerant compressor. Top up if necessary.

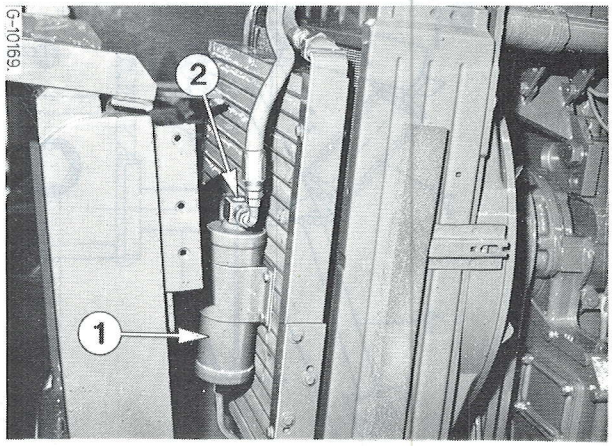
Servicing of the air conditioner system is restricted to workshops especially equipped for this purpose.

Checking the Refrigerant Level

To check the refrigerant level in the system, observe the sight glass (2) Illust. 106 while the system is operating.

If no air bubbles can be seen in the liquid refrigerant flowing through the sight glass, the refrigerant supply is adequate.

Bubbles or foam showing in the sight glass indicate that the refrigerant supply is low.



Illust. 106

1 – Air conditioner dryer cartridge
2 – Sight glass

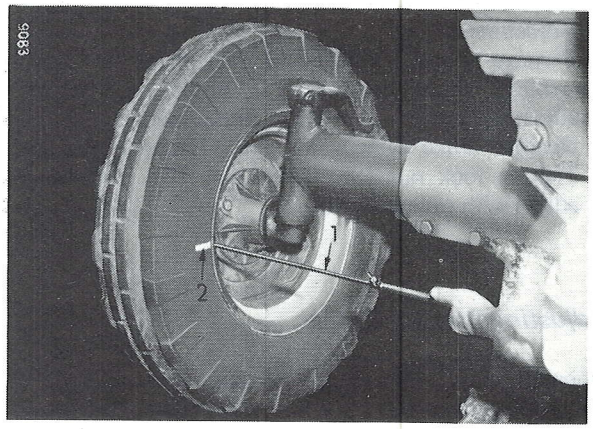
Air Conditioner Dryer Cartridge

Once a year before the warm season begins see your dealer to change dryer cartridge (1) Illust. 106 and refrigerant.

Toe-in

Check "toe-in" adjustment during every "Inspection" and readjust if necessary.

Beware the tractor is in a level position and the steering is in a straight ahead position when checking or adjusting "toe-in".



Illust. 107
Checking front wheel "toe-in"

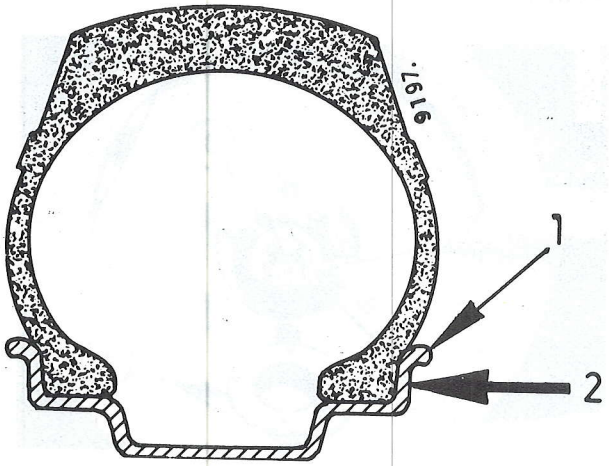
1 – "Toe-in" gauge
2 – Mark, hub cap height

Toe-in Check with Gauge (1) Illust. 107

Proceed as follows:

Mark hub cap height on tires, see (2) Illust. 107. Measure the distance between rims, placing the toe in gauge (1) against rim faces (2) Illust. 108 at the same height as markings (2) Illust. 107

Turn the wheels one-half rotation backward and measure again. The rear distance should be wider than in front, refer to "Technical Data".



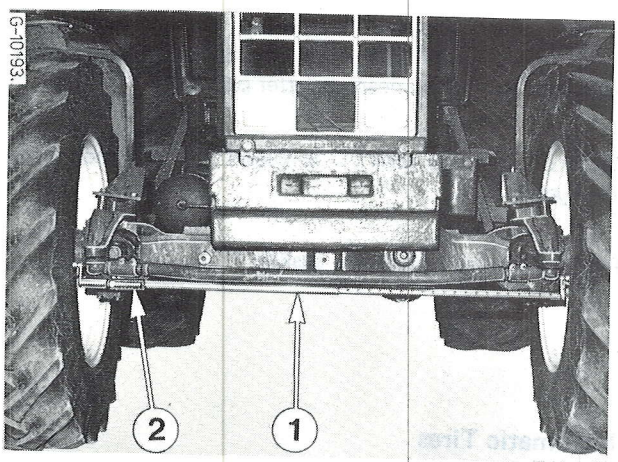
Illust. 108

1 – Rim edge 2 – Rim gauge face

Toe-in Check with Gauge (1) Illust. 109

Place toe-in gauge (1) between the front tires in line with hub center level as shown in Illust. 109. Adjust gauge scala to "0".

Turn the wheels one-half rotation forward and measure again. The rear distance should be wider than in front, refer to "Technical Data".

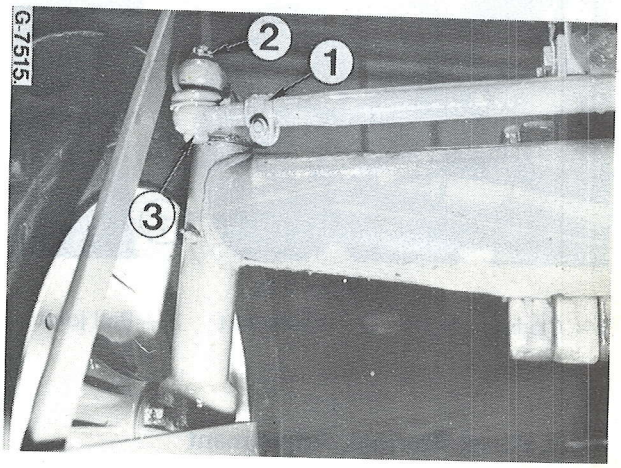


Illust. 109

1 – Toe-in gauge 2 – Scale

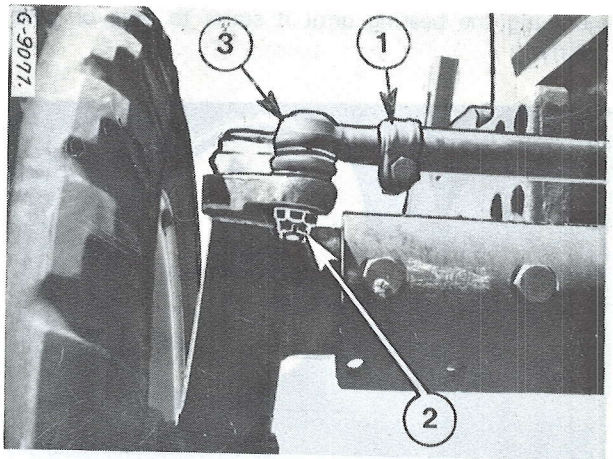
Toe-in Adjustment 2 WD-Tractors

Loosen clamp (1) Illust. 110 or 111. Remove castle nut (2) and turn ball joint (3) in or out to adjust "toe-in" as required.



Illust. 110
LD-axle

1 – Clamp
2 – Castle nut
3 – Ball joint

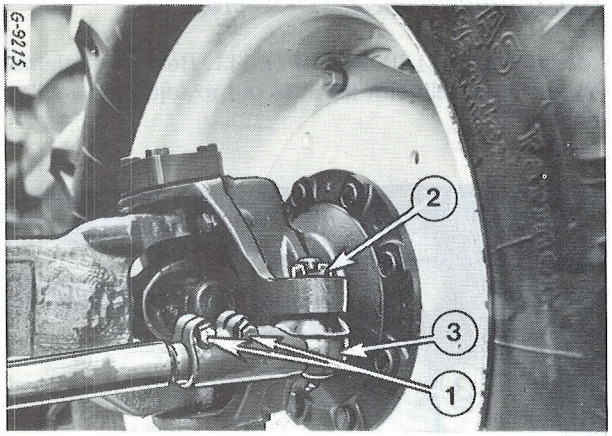


Illust. 111
HD-axle

1 – Clamp 2 – Castle nut 3 – Ball joint

To-in Adjustment 4 WD-Tractors

Loosen clamping bolts (1) Illust. 112. Remove castle nut (2) and turn ball joint (3) in or out to adjust "toe-in" as required.



Illust. 112

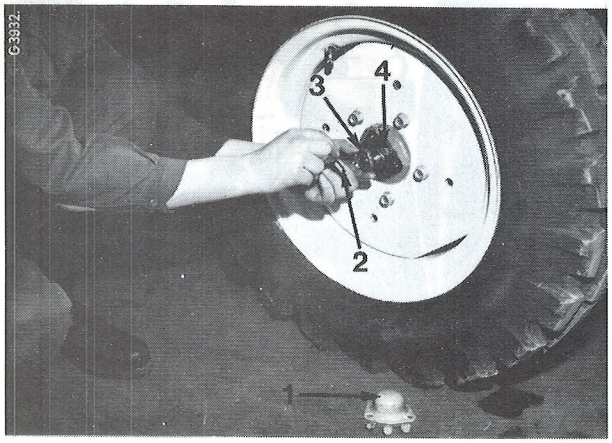
1 – Clamping bolts 2 – Castle nut 3 – Ball joint

Front Wheel Bearings, Adjustment

After the first few hours of operation but not later than after 50 operating hours, jack up the front end of the tractor and check the front wheels to make sure that bearings are not loose on the axles.

Adjustment on LD-Axle

Remove the hub caps (1) Illust. 113 cotter pins (2) and the locking caps (3) and tighten the bearing adjusting nuts (4) until all play has disappeared and a perceptible resistance is felt on the wrench. Rotate the wheel while tightening the bearing until it starts to drag or bind slightly.



Illust. 113

1 – Hub cap 3 – Locking cap
2 – Cotter pin 4 – Bearing adjusting nut

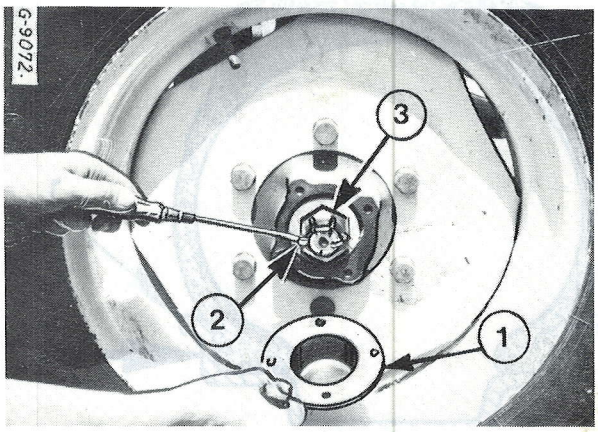
If in this position cotter pin cannot be inserted through locking cap tangs relocate the cap on the nut. Nearly always a suitable cotter position can be found without changing the bearing adjustment.

With bearings properly adjusted front wheels must turn easily without being slack.

Wash out the hub caps (1) in Diesel fuel and pack with new grease.

Replace the cap with a new gasket.

Adjustment on HD-Axle



Illust. 114

1 – Hub cap 3 – Bearing adjusting nut
2 – Cotter pin

Remove the hub caps (1) Illust. 114 and the cotter pins (2). Tighten the bearing adjusting nuts (3) until a resistance of 5 daNm is registered at the torque wrench.

Note: When installing new bearings, torque adjusting nuts (3) to 10 daNm.

Rotate the wheel while tightening the bearing.

If in this position cotter pin cannot be inserted loosen adjusting nut to the nearest cotter position.

Wash out the hub caps (1) in Diesel fuel and pack with new grease.

Replace the cap with a new gasket.

Pneumatic Tires

Inflated pressure in pneumatic tires must be relative to the footing and job application.

For special job application such as front loader, semi mounted trailers etc. see your IH-Dealer or your tire representative.

Tire changing must be done by an authorized workshop only. Incorrect mounting of tires can result in severe accidents.

Tighten wheel disk nuts or bolts in accordance with "Special Torques". Check torque regularly, espcially during the first hours of operation and retighten if necessary.

Four-wheel Drive Tractors

Tire sizes front and rear for four-wheel drive are matched to obtain a specified ratio which must not be altered, e.g. by mounting tires of a different size. This ratio is affected even by tire wear. Therefore, front tires with excessively worn treads should be replaced.

Note: Should front-end pitching occur at fast road speeds increase front tire pressure by .02 – .03 MPa.

Torque load of front wheel nuts, see "Special Torques".

Battery

For initial and periodic service see manufacturers instructions enclosed with this manual.

The 12V, 110 Ah battery is located behind the front grill, see Illust. 115.

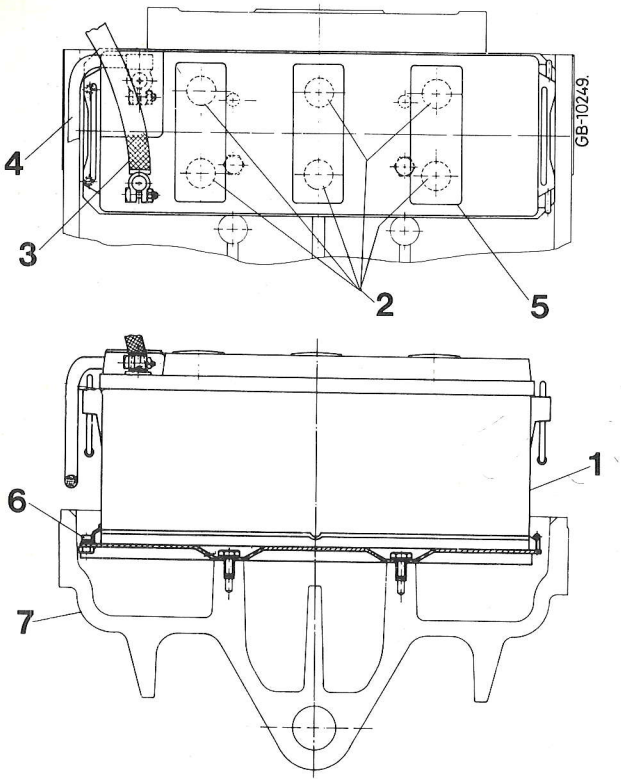
The 12 V, 143 Ah battery is located in front of the LH step.

The 12V, 165 Ah battery is located in front of the fuel tank Illust. 116.

Check the electrolyte level in accordance with "Servicing Schedule". The level is correct when it is approx. 1 cm above the separators. Top up with clean distilled water, if necessary.

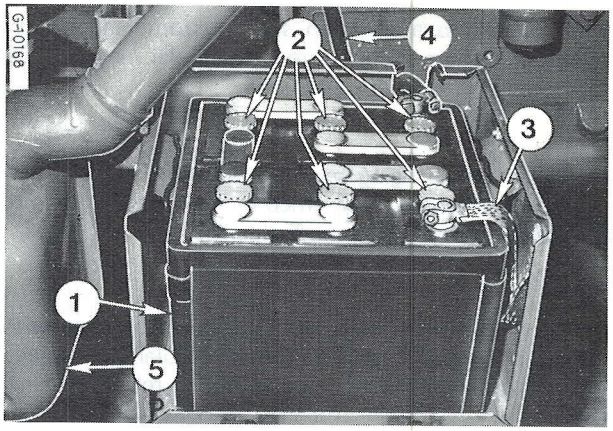
Remove the battery only when the engine is stopped.

First disconnect ground strap (3) and then the positive cable (4). Lift out the battery.



Illust. 115
12V, 110 Ah battery

1 – Battery
2 – Filler and breather caps (six)
3 – Ground strap (–)
4 – Positive cable (+)
5 – Rubber cover
6 – Mounting bolt
7 – Front axle bolster



Illust. 116
12V, 165 Ah battery, tractors with air conditioner and pneumatic trailer brake

1 – Battery
2 – Filler- and breather caps (six)
3 – Ground strap (–)
4 – Positive cable (+)
5 – Fuel tank

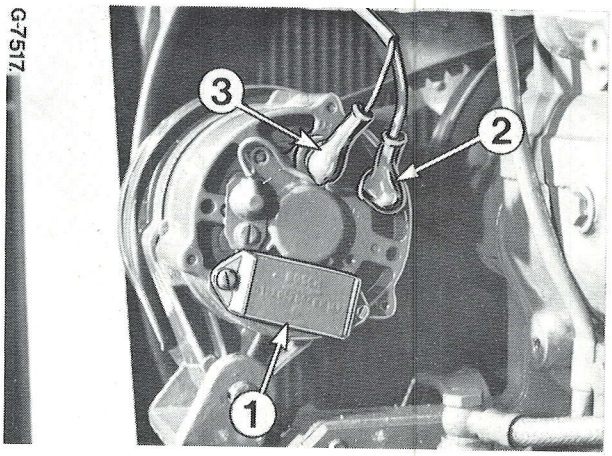
When installing the battery first connect the positive cable (4) to the positive terminal post (+) and then the ground strap (3) to the negative terminal post (–).

See that contatct surfaces are bright. Clean them with wire wool, if necessary, and supply some vaseline to the terminal posts.

Alternator

Precautions

Note: Since the alternator and regulator are designed for use on only one polarity system, the following precautions must be observed when working on the charging circuit. Failure to observe these precautions will result in serious damage to the electrical equipment.



Illust. 117

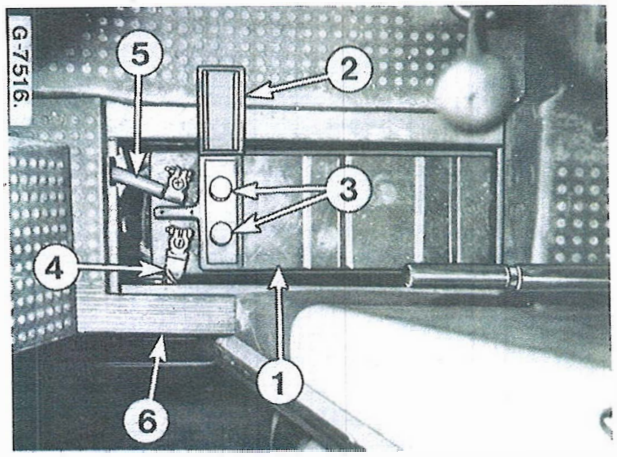
1 – Transistorized regulator
2 – B+ red lead 4 mm^2, to starter motor
3 – D+ light blue lead 0.75 mm^2, to charge control lamp

Battery

For initial and periodic service see manufacturers instructions enclosed with this manual.

The battery is located below the LH platform as shown in Illust. 122.

Check the electrolyte level in accordance with "Servicing Schedule". The level is correct when it is approx. 1 cm above the separators. Top up with clean distilled water, if necessary.



Illust. 122

1 – Battery
2 – Rubber cover (three)
3 – Filler- and breather caps (six)
4 – Ground strap (–)
5 – Positive cable (+)
6 – Door step

To remove the battery (only when the engine is stopped) remove the battery cover from the L H platform.

Disconnect first ground strap (4) Illust. 122 and then the positive cable (5). Lift out the battery.

When installing the battery first connect the positive cable (5) to the positive terminal post (+) and then the ground strap (4) to the negative terminal post (–).

See that contatct surfaces are bright. Clean them with wire wool, if necessary, and supply some vaseline to the terminal posts.

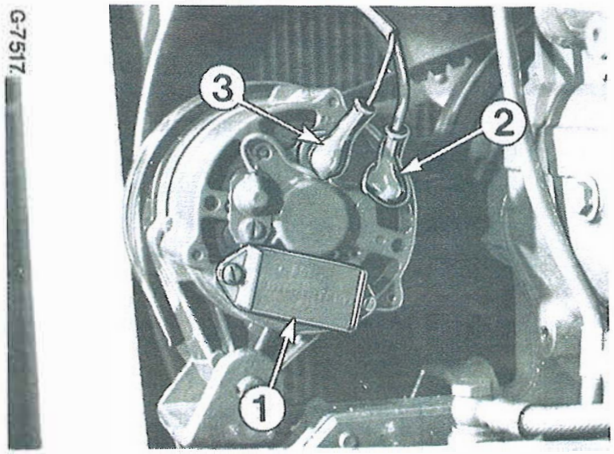
Alternator

Precautions

Note: Since the alternator and regulator are designed for use on only one polarity system, the following precautions must be observed when working on the charging circuit. Failure to observe these precautions will result in serious damage to the electrical equipment.

1. Never operate the alternator on open circuit. Make absolutely certain all connections in the circuit are secure.

   If the machine must operate without battery disconnect the cables at the terminals B+ and D+ at the alternator.



Illust. 123

1 – Transistorized regulator
2 – B+ red lead 4 mm^2, to starter motor
3 – D+ light blue lead 0.75 mm^2, to charge control lamp

2. When installing a battery, always make absolutely sure the ground polarity of the battery and the ground polarity of the alternator are the same i.e. negative to ground.

3. When connecting a booster battery make certain to connect the negative battery terminals together and the positive battery terminals together. Do not start with 24 V.

4. When connecting a charger to the battery, connect the charger positive lead to the battery positive terminal and the charger negative lead to the battery negative terminal.

5. Do not short across or ground any of the terminals on the alternator.

6. Do not attempt to polarize the alternator.

7. For welding operations on the tractor attach the ground terminal of the welding unit directly to the part to be welded so that the current will not flow through the alternator.

1. Never operate the alternator on open circuit. Make absolutely certain all connections in the circuit are secure.

   If the machine must operate without battery disconnect the cables at the terminals B+ and D+ at the alternator.

2. When installing a battery, always make absolutely sure the ground polarity of the battery and the ground polarity of the alternator are the same i.e. negative to ground.

3. When connecting a booster battery make certain to connect the negative battery terminals together and the positive battery terminals together. Do not start with 24 V.

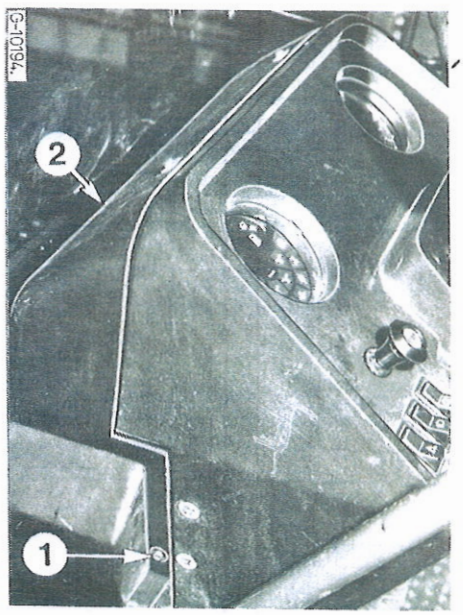
4. When connecting a charger to the battery, connect the charger positive lead to the battery positive terminal and the charger negative lead to the battery negative terminal.

5. Do not short across or ground any of the terminals on the alternator.

6. Do not attempt to polarize the alternator.

7. For welding operations on the tractor attach the ground terminal of the welding unit directly to the part to be welded so that the current will not flow through the alternator.

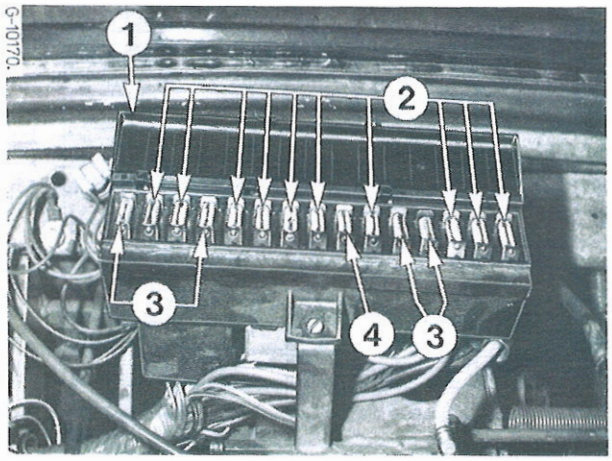
Fuses



Illust. 118

1 – Release knob (RH and LH)
2 – Cover

The fuse box is located under cover (2) Illust. 118. To remove the cover depress knobs (1) on both sides.



Illust. 119

1 – Cover, fuse box
2 – Fuses, 8 amp.
3 – Fuses, 16 amp.
4 – Fuse 25 amp.

All fuses are located in the fuse box Illust. 119. It is important to use the same capacity fuse for replacement.

If the lights fail, check the fuses. If a fuse continually burns out, check the electrical wiring for short circuits.

Never install a mended fuse. Always use a new one.

Head Lamps

Replace defective bulbs without delay. Do not touch a new bulb with bare or even dirty fingers. Any trace of sweat, grease or oil evaporates when the bulb becomes hot and dims the reflector. Never touch or attempt to brighten up "blind" reflectors. Do not open headlights except for replacing a defective bulb.

Starting Motor

Starting motor requires no special attention, but cleaning and lubricating should be done by an authorized service station after approx. 2000 operating hours.

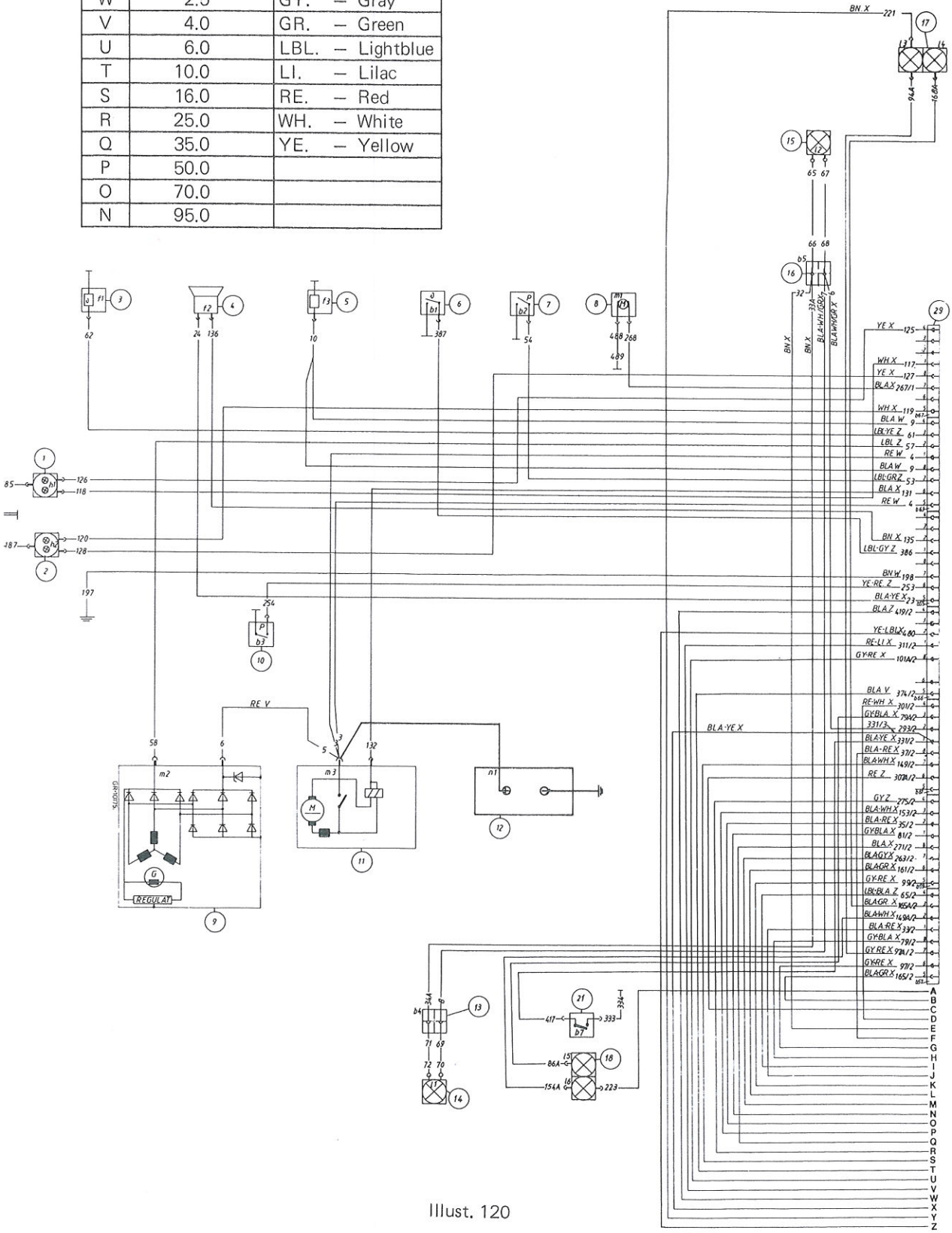
KEY TO WIRING DIAGRAM

Ref. No.	Name	Position
1	Headlight RH	h1
2	Headlight LH	h2
3	Coolant Temperature Sender	f1
4	Horn	f2
5	Heating Spiral	f3
6		b1*
7	Oil pressure Switch	b2
8	Windshield Washer	m1
9	Alternator	m2
10	Air Cleaner Vacuum Switch	b3
11	Starter	m3
12	Battery	n1
13	2 Pol. Socket	b4
14	Front Spotlight	l1
15	Front Spotlight	l2
16	2 Pol. Socket	b5
17	Pos. Lamp LH Front	l3
	Flashlamp RH Front	l4**
18	Pos. Lamp LH Front	l5
	Flashlamp LH Front	l6**
19	Start Safety Switch	b6
20		k1*
21	Switch Handbrake	b7
22	Brake Light Switch	b8**
23	Fuel Level Sender	f4
24	Differential Lock Switch	b9
25		b10*
26	2 Pol. Socket	b11
27	2 Pol. Connector	b12
28	2 Pol. Connector	b13
29	8 Pol. Connection	b66, b67, b62
	" "	b63, b54, b55
	" "	b64, b65, b61
	" "	b60, b58, b59
	" "	b56, b57
30	Start safety Relay	b14
31	Switching Relay	b15
32	Flash Warning Relay	b16**
33		b17*
34	Instrument Cluster	l15
	Coolant Temperature Indicator	h1
	Fuel Indicator Instrument	h2
	Charge Control Lamp	l7
		l8*
		l9*
	Oil Pressure Lamp Engine	l10
		l11*
	Air Cleaner Vacuum Lamp	l12
	Differential Lock Control	l13
	Flash Light Control C1, C2, C3	l14, l15, l16
	Headlight Control Lamp	l17
	Handbrake Control	l18
35	Tractormeter Lamp	l20, l21
36	Central Electrical Unit	u1
	Fuse 16 A	e1, e4

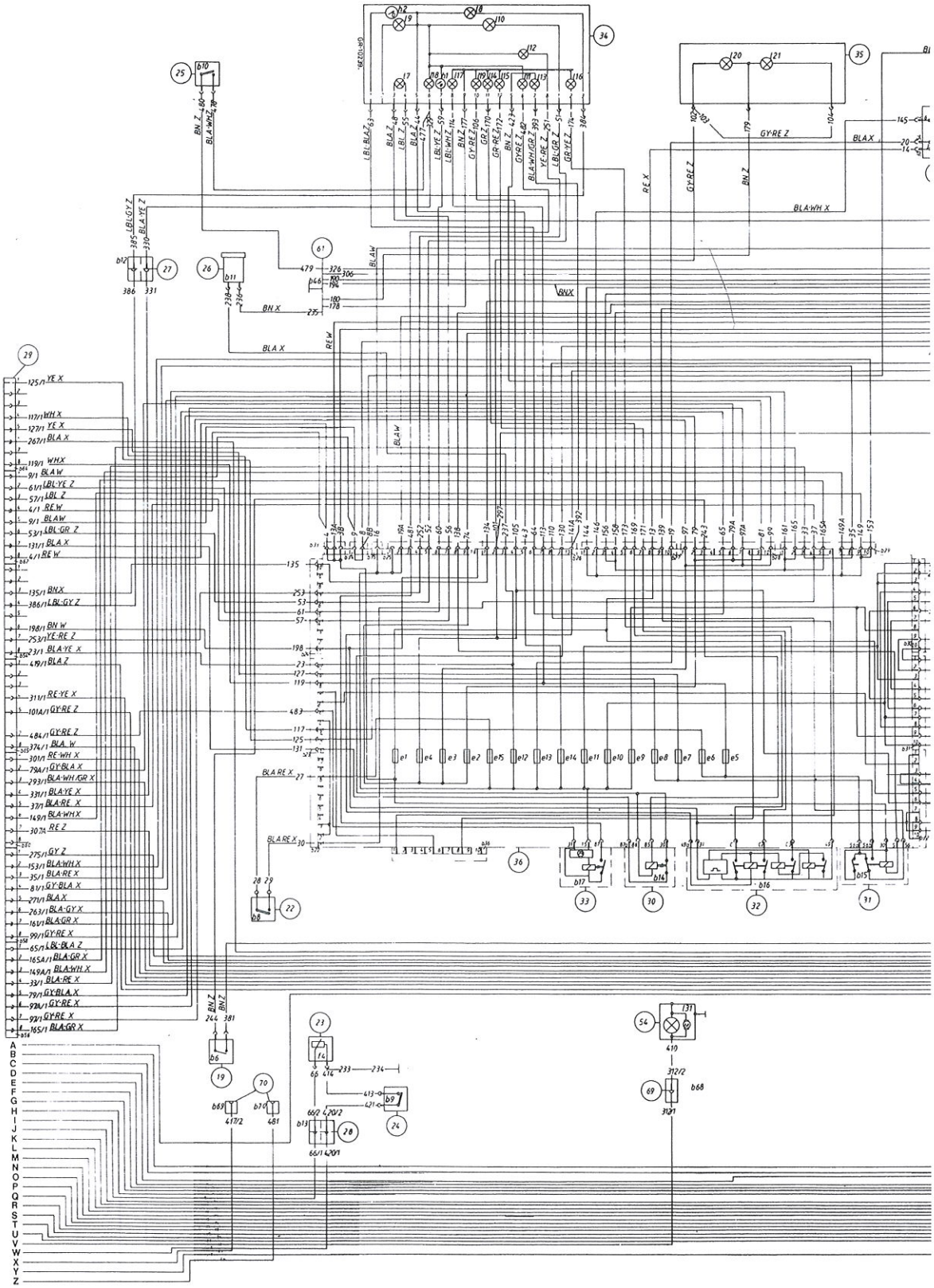
Ref. No.	Name	Position
	Fuse 8 A	e3, e2, e15
	" 16 A	e18
	" 8 A	e13, e14, e11
	" 8 A	e10
	" 25 A	e9
	" 8 A	e8, e7, e6
	" 8 A	e5
	10 Pol. Connection	b22, b23, b24
	10 " "	b25, b26, b27
	10 " "	b28, b29, b30
	10 " "	b31, b32
	2 " "	b33, b34
	1 " "	b35
	10 " "	b36
37	Master Switch	b18
38	Dimming Switch	b19
	Horn Push Button	b20
	Flash Light Switch	b21
39	Warning Flash Light	b37
40	Light Switch	b38
41	Spotlight Switch I	b39
42	Spotlight Switch II	b40
43	Windshield Wiper-Washer-Switch	b41
44	Rotating Beacon Switch	b42
45	Fan Switch	b43
46	Fan Relay	b44
47	Fan Resistor	f5
48	Fan	m4
49	Illumination Cab	l22
50	Flash Lamp RH Rear	l23**
	Pos. Light RH Rear	l24
	Brake Lamp RH Rear	l25**
51	Flash Lamp LH Rear	l26**
	Pos. Light LH Rear	l27
	Brake Light LH Rear	l28
52	Rear Spotlight	l29
53	Rear Spotlight	l30
54	Rotating Beacon	l31
55	Car Radio Telefone	r1
56	Radio	r2
57	7 Pol. Trailor Socket	b45
58	Number Plate Light I	l32
59	Number Plate Light II	l33
60	Windshield Wiper	m5
61	Central Ground Distributor I	b46
62	Central Ground Distributor II	b47
63	4 Pol. Socket	b48
64	3 " "	b49
65	3 " "	b50
66	2 " "	b51
67	2 " "	b52
68	2 " "	b53
69	1 " "	b68
70		b69, b70*

* not used ** if so equipped

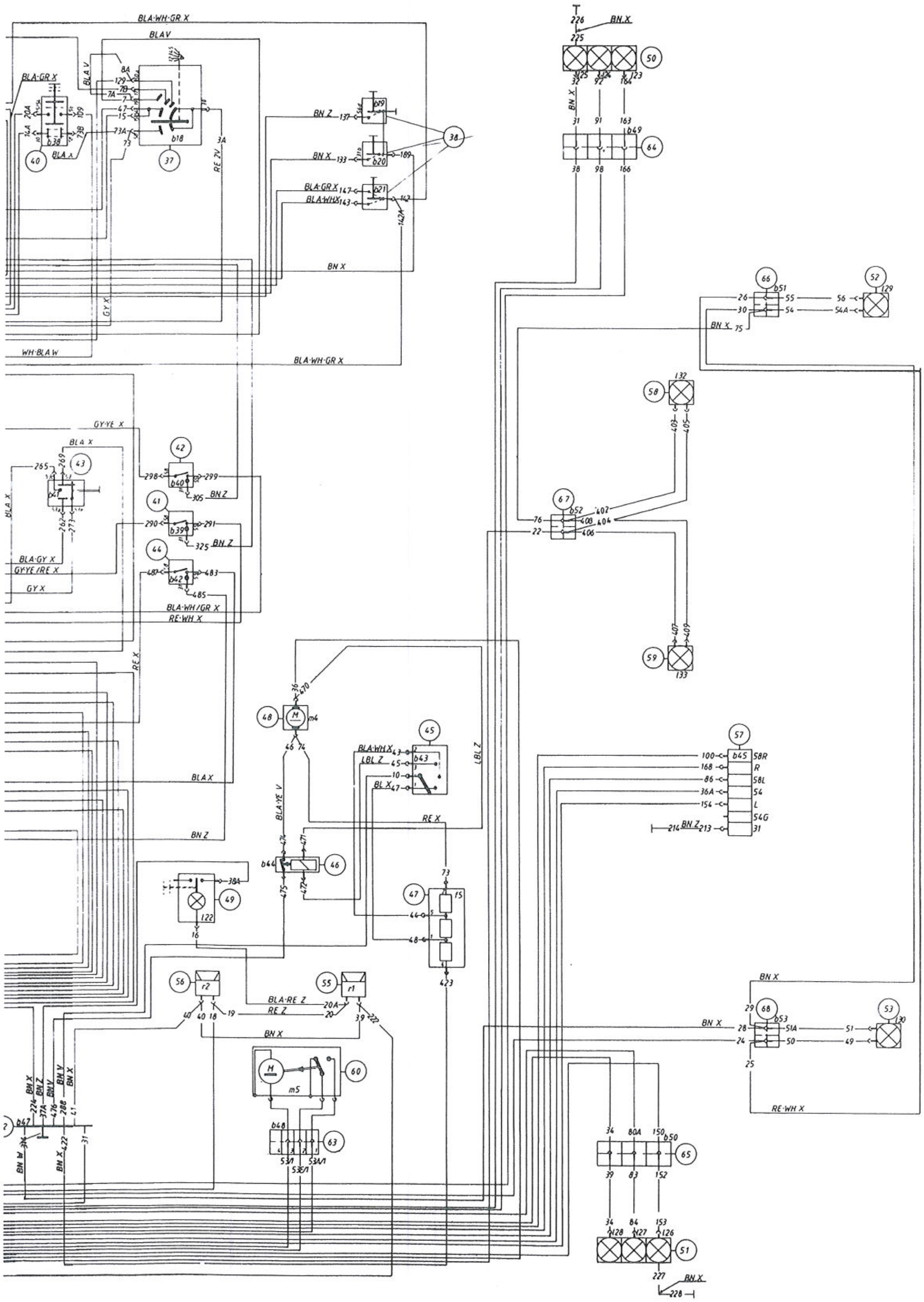
No.	Cross section mm^2 Acc. DIN 72 551	Colour
Z	0.75	BLA. – Black
Y	1.0	BL. – Blue
X	1.5	BN. – Brown
W	2.5	GY. – Gray
V	4.0	GR. – Green
U	6.0	LBL. – Lightblue
T	10.0	LI. – Lilac
S	16.0	RE. – Red
R	25.0	WH. – White
Q	35.0	YE. – Yellow
P	50.0	
O	70.0	
N	95.0	



Illust. 120

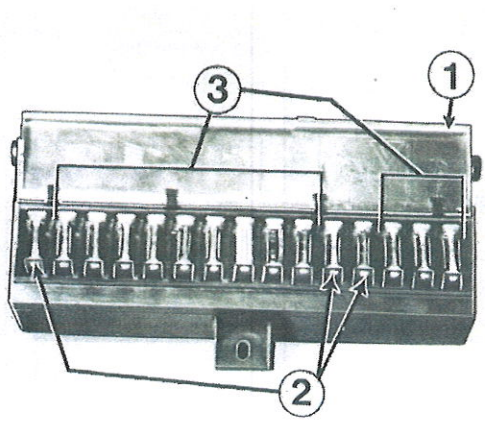


Illus


BLA·WH·GR X
BLA V
BLA·GR X
BN Z
BN X
BLA·WH X
GY X
WH·BLA W
GY·YE X
BLA X
BLA·GY X
GY·YE /RE X
BLA·WH/GR X
RE·WH X
RE X
BLA·YE V
LBL Z
BLA·RE Z
RE Z

Fuses

G-7518A



Illust. 124

1 – Cover, fuse box
2 – Fuses, 16 amp.
3 – Fuses, 8 amp.

All fuses are located in the fuse box Illust. 124. It is important to use the same capacity fuse for replacement. If the lights fail, check the fuses. If a fuse continually burns out, check the electrical wiring for short circuits.

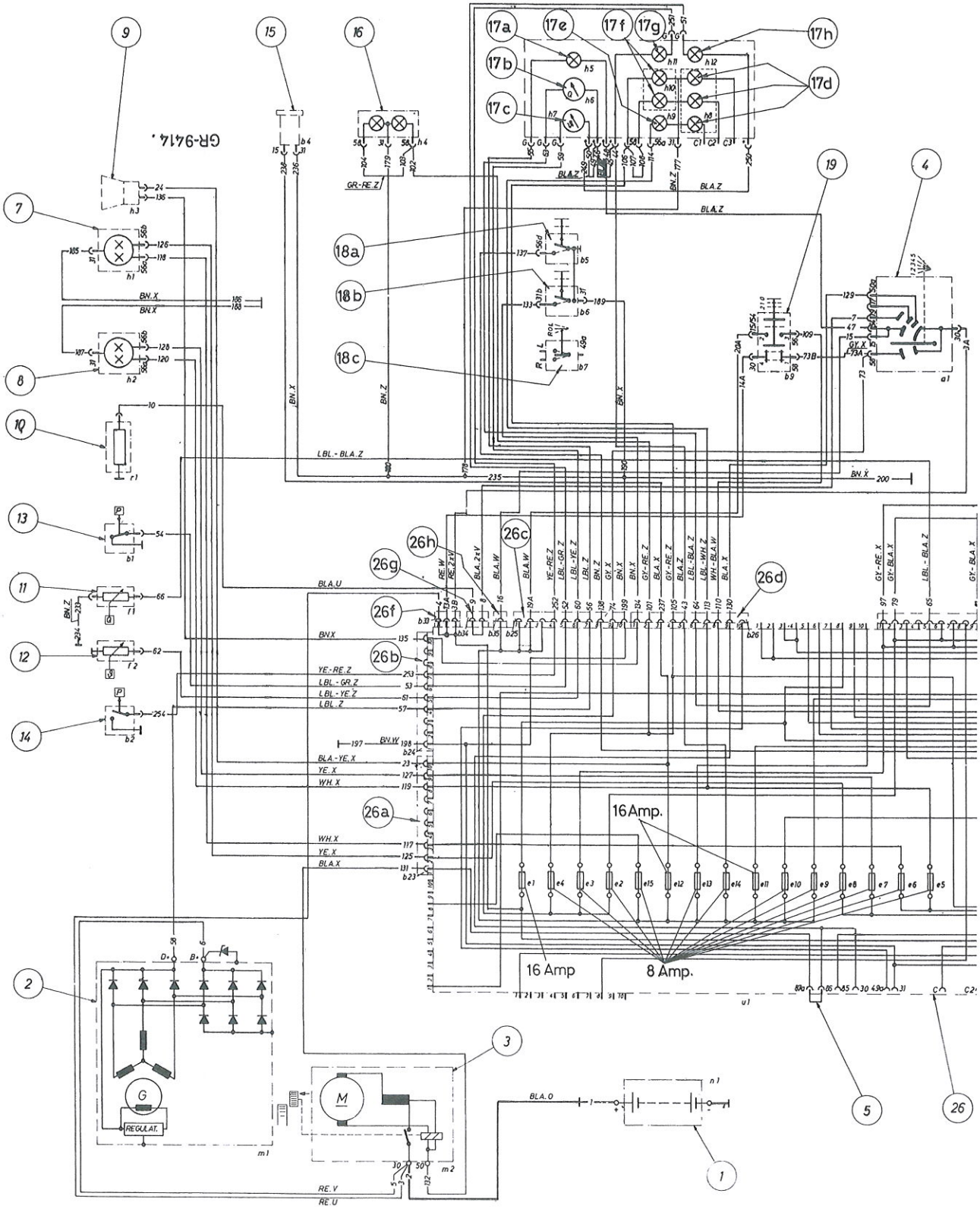
Never install a mended fuse. Always use a new one.

Head Lamps

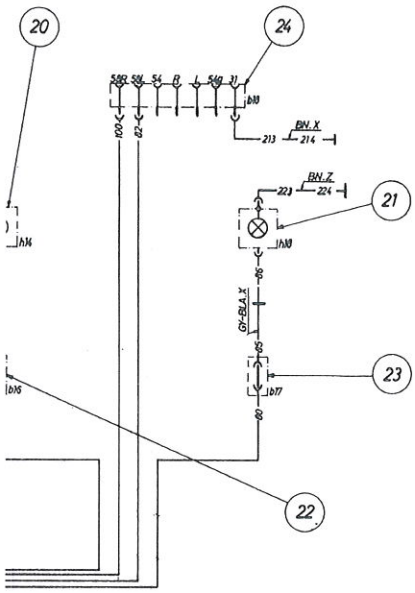
Replace defective bulbs without delay. Do not touch a new bulb with bare or even dirty fingers. Any trace of sweat, grease or oil evaporates when the bulb becomes hot and dims the reflector. Never touch or attempt to brighten up "blind" reflectors. Do not open headlights except for replacing a defective bulb.

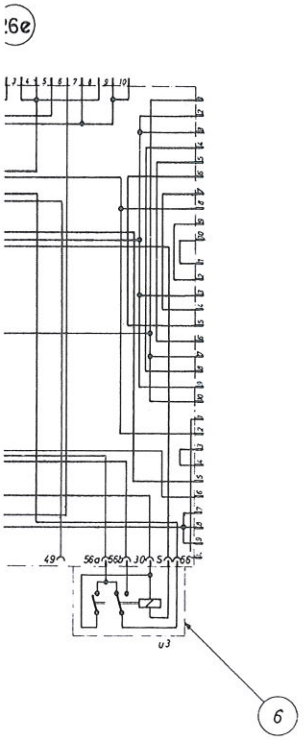
Starting Motor

Starting motor requires no special attention, but cleaning and lubricating should be done by an authorized service station after approx. 2000 operating hours.


GR-9414.
16 Amp
8 Amp.
16Amp.
GR-RE.Z
BLA.Z
BN.X
BN.Z
LBL-BLA.Z
BN.X
BLA.U
BN.X
YE-RE.Z
LBL-GR.Z
LBL-YE.Z
LBL.Z
BN.W
BLA-YE.X
YE.X
WH.X
WH.X
YE.X
BLA.X
BLA.O
RE.V
RE.U
REGULAT.

KEY TO WIRING DIAGRAM





Pos.	Name	Pos.	Name
1	Battery		
2	Alternator	26	Central electrical system
3	Starter		Fuse e1 16 A
4	Starting switch		" e2 8 A
5	Adapter		" e3 8 A
6	Switching relay		" e4 8 A
7	Headlight RH		" e15 8 A
8	Headlight LH		" e14 8 A
9	Horn		" e13 8 A
10	Heating spiral		" e12 16 A
11	Fuel level gauge		" e9 8 A
12	Temperature indicator		" e10 8 A
13	Oil pressure switch		" e11 16 A
14	Air cleaner vacuum switch		" e7 8 A
15	Socket cabin		" e8 8 A
16	Tractormeter lamp		" e5 8 A
17a	Charge control lamp		" e6 8 A
17b	Fuel indicator	26a	10 Pol Socket
17c	Temperature indicator, coolant	26b	10 " "
17d	Directional signal light control	26c	10 " "
17e	Combi-instrument illumination	26d	10 " "
17f	Air cleaner service indicator lamp	26e	10 " "
17g	Engine oil pressure warning lamp	26f	3 " "
18a	Dimming switch	26g	2 " "
18b	Horn push button	26h	1 " "
18c	Flash light switch		
19	Light switch		
20	Tail lamp RH		
21	Tail lamp LH		
22	1 Pol Socket RH		
23	1 Pol Socket LH		
24	7 Pol Trailer Socket		

No.	Cross section mm2 Acc. DIN 72 551	Colour
Z	0.75	BLA. – Black
Y	1.0	
X	1.5	BN. – Brown
W	2.5	GY. – Gray
V	4.0	GR. – Green
U	6.0	LBL. – Lightblue
T	10.0	LI. – Lilac
S	16.0	RE. – Red
R	25.0	WH. – White
Q	35.0	YE. – Yellow
P	50.0	
O	70.0	
N	95.0	

Preparing for Storage

When the machine is not to be used for a period of time, store it in a dry and protected place. Leaving equipment outdoors exposed to the elements will materially shorten its life.

Follow the procedure below when the tractor is placed in storage from 30 days to 6 month. See your IH-dealer for the procedure on longer storage periods.

It is important to run the machine on a fuel IH-Desolite mixture (1% Desolite) during the last few operating hours before the storage.

1. Wash or clean the machine thoroughly.
2. Lubricate all points of the machine as outlined in the "Service Guide".
3. Move the machine to storage location.
4. Jack up the tractor to relieve the tires. Observe tire manufacturer's instructions. Drain water-ballasted rear tires if not protected by an antifreeze mixture.
5. Change engine oil and filter while the engine is warm and run the engine 2 – 5 minutes at medium speed.
6. Fill up radiator with coolant according to mixture chart. Refer to "Changing Coolant".

   Note: Never store the tractor with the cooling system drained.
7. Remove the injection nozzles and pour one tablespoonful SAE-30 oil into each cylinder. Crank the engine two or three revolutions. Clean the nozzle seats and install the injection nozzles with new O-rings.
8. Service air cleaner system.
9. Drain the water from the fuel tank and fill with approved diesel fuel.
10. Seal the engine air intake, exhaust outlet, electrical components, fuel tank vent and breathers on the crankcase to prevent dirt and moisture from entering.
11. Remove the battery and store it in a cool dry place (0 to 10°C) to minimize self-discharge. Be sure the Battery is fully charged. Never allow battery to run down below 3/4 full charge.
12. Patch up pont coating.
13. Coat all machined, unpainted surfaces with chassis grease to prevent rust.
14. Slacken drive belts and protect them from light and sun.
15. The air conditioner should be operated for 10 minutes every month.

Preparing for Operation

1. Remove grease from all machined unpainted surfaces.
2. Install fully charged battery.
3. Check tire pressures.
4. Check the cooling system for leaks, loose connections, coolant level and IH-antifreeze mixture.
5. Restore proper tension of the V-Belts.
6. Remove coverings from engine air intake, exhaust outlet, electrical components, fuel tank vent, and breathers on the crankcase.
7. Drain condensation from the fuel tank and vent the fuel system.
8. Check oil levels in crankcase, transmission, hydraulic system, planetary final drive housing, service brake and axles. Add oil if necessary.
9. Jack down tractor.

Before starting the engine, be sure the area is adequately ventilated to avoid danger from exhaust gas. Do not accelerate the engine rapidly or operate it at high speed immediately after starting.

10. Start the engine and let it run slowly. Do not accelerate the engine rapidly or operate at high speed immediately after starting. Check instruments and controls, lighting, brakes, steering and transmission shifting.
11. If the engine is misfiring or loss of power is evident the fuel system is possibly clogged.

For repairs requiring expert knowledge and tools, consult an authorized workshop.

Engine

Problem	*Probable cause*	*Remarks*
Engine will not start.	Battery charge insufficient. Ground connections. corroded or defective. Insufficiently preheated. Preglow coil faulty. Bowden cable sticking (not in starting position). Fuel filter not properly sealed. Fuel tank empty or filters clogged. Fuel grade not in line with season. Water trap full of water. Faulty timing of injection pump. Injection nozzle(s) inoperative. Valves warped or sticking. Compression insufficient. Oil viscosity not in line with season.	Clean ground connections of corrosion and paint. Clean contacts.
Uneven engine operation.	Fuel filter clogged. Air in fuel system. Injection nozzle(s) defective.	
Engine overheats.	Fan belt slipping. Coolant supply insufficient. Excessive load. Water passages in cooling system clogged with dirt or scale. Radiator air passages clogged with dirt. Exhaust pipe or muffler restricted. Thermostat defective. Injection pump timing incorrect.	
Engine does not develop full power.	Fuel filter clogged. Air cleaner clogged. Exhaust pipe or muffler restricted. Accelerator linkage incorrectly adjusted. Valves faulty. Fuel lines restricted. Injection pump timing incorrect.	
Loss of oil pressure.	Low oil level. Oil filter clogged. Oil pressure switch defective. Poor quality oil. Oil pump filter screen clogged. Dirt in regulating valve. Crankshaft, connecting rod or camshaft bearings worn excessively.	Incorrect readings.
Engine knocks.	Insufficient engine temperature. Incorrect valve clearance or valves sticking. Faulty injection pump timing. Loose piston pin. Loose, worn connecting rod, camshaft or crankshaft bearings. Piston rings broken.	

Problem	*Probable cause*	*Remarks*
Lack of compression.	Valves sticking or warped. Inproper valve clearance. Piston rings sticking, worn or broken. Piston worn excessively. Cylinder head gasket defective. Cylinder sleeves worn excessively.	

Hydraulic Draft and Position Control System

System is too hot.	Excessive load.	Move operating levers down all the way. Allow system to cool down. Reduce load.
	Air in the system.	Check oil level and connections of suction line. Vent the system.
	Dirty oil cooling reservoir.	Clean, do not paint.
	Auxiliary control valve levers sticking, causing restriction.	
	Water in the system.	Drain the system and fill up with new oil.
	Valve spool sticking.	Clean or replace defective parts with new ones. *
	Relief valve opening pressure too low.	Check pressure setting and readjust. *
	Internal leakage (control valve and power cylinder).	Check and replace defective parts. *
	Pump badly worn (due to foreign matter in the oil).	Replace pump and change hydraulic fluid.
Insufficient lifting power.	Oil level too low.	Top up to correct level.
	Poor pump efficiency.	Replace pump. *
	Suction screen clogged.	Remove and clean the screen.
	Relief valve opens too early (whirling sound).	Check relief valve spring. Readjust. *
	Shut off spool sticking (foreign matter).	Remove and clean. *
System will not lower.	External obstruction of implement or linkage.	Remove obstruction.
	Lowering control valve closed.	Turn hand wheel clockwise.
	Pilot stream pressure in control valve too low.	
	Valve spool sticking.	Disassemble and clean. If badly damaged, use a new control valve. *
	Block valve does not open. Block valve piston stuck or damaged.	Replace or repair defective parts. *
System does not maintain its position and corrects repeatedly position of rocker arms (hiccups)	Leaking block valve.	Grind valve into its seat or replace the block valve. *
	Cylinder cushion valve leaky.	Replace. *
	External leakage on pressure line.	Replace packing rings and tighten up. *
	O-rings or piston seal in cylinder damaged.	Use new parts. *

* For these service jobs and repairs see your IH serviceman.

Problem	*Probable cause*	*Remarks*
System noisy.	Oil level too low. Air in the system. Rocker arms interfering with tractor parts. Restriction by foreign matter. Oil lines vibrate. Pump worn or defective.	Top up. Check oil level and connections of suction line. Vent the system. Check to make sure that rocker arms and lower links with mounted implement are free to move over the complete stroke. Clean the system. Use new oil. Check connections and pipe clamps. Tighten up. Replace pump. (Check also timing gear train of engine). *
Draft control does not respond.	Draft link plunger spring or spring of element broken or weak. Plow not suitable for draft control operation. Draft control lever between pressure and tension range.	Check by moving draft link plunger 1 – 2 mm. This should bring the system from neutral to lifting or to lowering. Replace defective parts with new ones. * Adapt plow by changing hitch points or use an new plow. Adapt plow by changing hitch points or use a new plow.
System lowers too fast with lowering control valve closed or too slow with lowering control valve open.	Position of hand wheel on spindle incorrect.	Remove hand wheel and readjust on spindle. *
Plow does not go deep enough or system does not lift high enough.	Operating levers not correctly positioned on shaft or tube.	Check and readjust operating levers. *

Hydrostatic Power Steering

Hard steering both toward the left and right.	Oil supply too low. Air in pump oil supply. Pump output too low. Flow divider faulty. Internat leakage in steering-cylinder or piston rod bent.	 Top up to correct level. Replace pump. * Clean or replace. *
Excessive wheel kick-back.	Insufficient oil supply. Air in hydraulic system.	

* For these service jobs and repairs see your IH serviceman.

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