

ZETOR

75200

75400

85200

85400

95200

95400

1005200

1005400

T00R0B00

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INTERCOOLER

T00R0B00

INTERCOOLER

OPERATOR'S MANUAL

Zetor

BRNO 1/95

The Instruction Manual we are putting forward to you will make you familiar with the operation and maintenance of your new tractor.

Though many of you have much experience in operation of other tractors, we would like to ask you to make yourselves as familiar with the contents of this manual as possible.

You will find here many items of new information and get the perfect view on how to make the best use of tractor in carrying out various tasks.

If you follow the mentioned principles of operation, maintenance and safe operation, the new tractor will be your reliable assistant for many years.

The manufacturer of your tractor wishes you thousands of conveniently accomplished engine hours.

Yours sincerely

Z E T O R

This Operating Instruction Manual contains descriptions, operation and maintenance instructions of standard tractor model and accessories the tractor can be equipped with.

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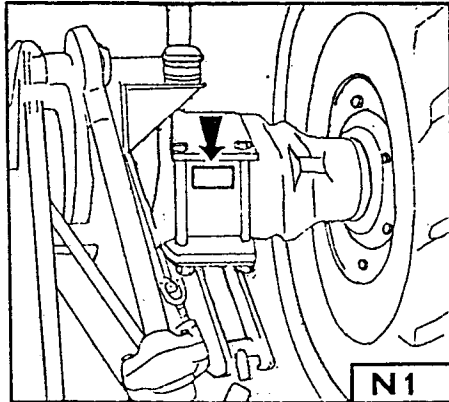
ZETOR	7520	-	51.5 kW
ZETOR	8520 TURBO	-	60.5 kW
ZETOR	9520 TURBO	-	67.5 kW
ZETOR	10520 TURBO INTERCOOLER	-	75.5 kW



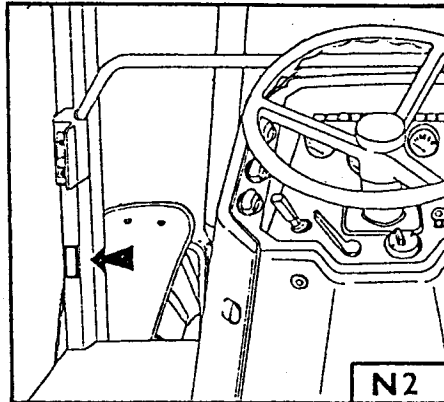
ZETOR	7540		-	51.5 kW
ZETOR	8540	TURBO	-	60.5 kW
ZETOR	9540	TURBO	-	67.5 kW
ZETOR	10540	TURBO INTERCOOLER	-	75.5 kW



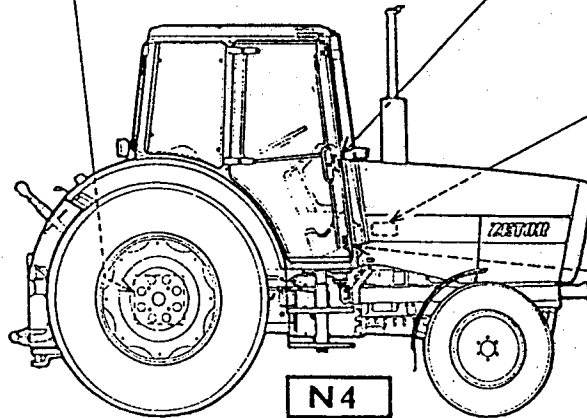
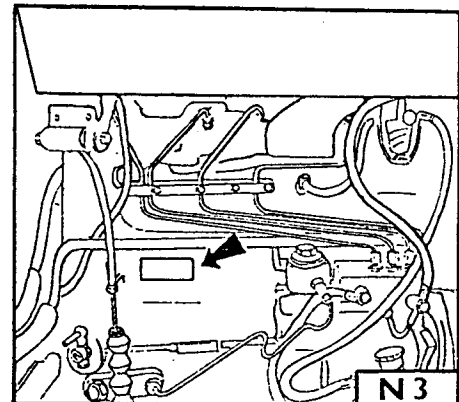
Tractor Serial Number



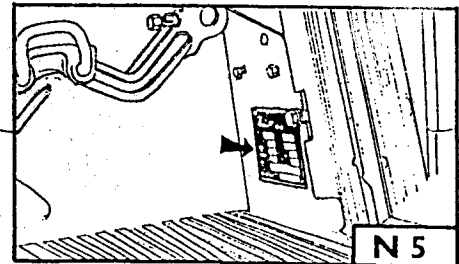
ROPS Cab Serial Number



Engine Serial Number



Tractor Rating Plate



When ordering spare parts or in any other contact, please, use the tractor data titled below and note the appropriate data of your tractor in the windows.

Tractor type

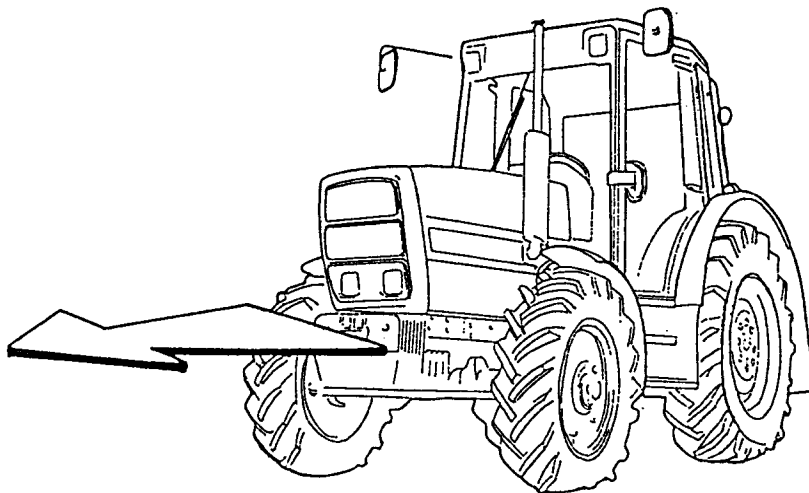
ZETOR 7520.0, ZETOR 7540.0
ZETOR 7520.1, ZETOR 7540.1
ZETOR 8520.0, ZETOR 8540.0
ZETOR 8520.1, ZETOR 8540.1
ZETOR 9520.0, ZETOR 9540.0
ZETOR 9520.1, ZETOR 9540.1
ZETOR 10520.0, ZETOR 10540.0
ZETOR 10520.1, ZETOR 10540.1

Indications "right", "left", "in the front" and "at the back" relate to the tractor's driving direction.

The manufacturer reserves his right to make changes to the tractor design and equipment resulting in technical improvement.

Tractor Serial Number

Engine Serial Number



GENERAL SAFETY REGULATIONS



You will find this safety alert symbol with all safety messages concerning the safety of tractor operation. Observe these warnings and behave yourself carefully in these cases. Warn your co-workers and other persons.

Only a trained operator having a valid driving license and acquainted well with the operating and safety principles is allowed to operate the tractor.

In addition to the warnings contained in the operating instructions you are obliged to follow the general safety and traffic regulations being in force in the country of tractor utilization.

PROPER CLOTHING

Do not wear loose garments nor long hair.

Take suitable (prescribed) personal safety precautions while working. (ware working boots, gloves, etc.)

ENGINE STARTING

The engine should never be started by running the tractor down a slope.

To tow the tractor in order to start the engine by another tractor or vehicle, a tow bar must be used. The key must be in its "I" position on the ignition switch.

While heating engine by an electrical heater, plug the cable plug in the heater socket and only then connect the cable to the mains. After heating disconnect the cable from the mains first.

WARNING!

Danger of injury by electric current.

RIDING OPERATION

Fuel system hoses should be checked and replaced if any indication of damage is revealed. The indications of hose damage could be: cracks on hose surface, slackening of hose connection pre-stressing which can be verified by sliding the hose down with an ease, mechanical damage of hoses. The condition of brakes and steering must be permanently perfect. The brake pedals must be coupled with one another using the latch prior to driving on roads with trailers or implements. Driving downhill with no speed-gear engaged is forbidden. Pay special attention to driving on slopes and muddy, sandy, icy or uneven surfaces. Do not exceed the maximum slope incline specified for the tractor. (11° as maximum).

Be respectful of total permissible weight of tractor-trailer unit as mentioned on the tractor rating plate or on the warning label attached to the rear wheel fender.

Do not use the differential interlock while driving in a bend. It is forbidden to climb on and off the moving tractor. When driving the tractor with agricultural machines hinged in the front three-point linkage the driving speed of the tractor should not be above 20 km/hour

TRANSPORT OF PERSONS, DRIVING

Number of persons transported on tractor must not exceed the data mentioned in the M.O.T. certificate. Inexperienced operators should not use tractor auxiliary equipment and must keep clear, and not stand between the tractor and any attached implements.

Before driving the tractor make sure that passengers or any other obstacle do not impede driving.

The maximum permissible velocity of road train (tractor+trailer or semi-trailer) with single-hose air brakes is 25 km/hour.

Follow the specified accessibility as slope angle is concerned, which for the individual tractors are:

Z 7520 11°

Z 7540 12°

Z 8520 11°

Z 8540 12°

Z 9520 11°

Z 9540 12°

Z 10520 11°

Z 10540 12°

SALVAGE, PUSHING

To free a "bogged-down" tractor use a tow bar or rope. Never use chains. It is dangerous to stand near the tow rope when the tractor is being freed. The tractor frame is equipped with a front hook serving only for towing the tractor itself, i.e. without any trailer or other attachment.

When pushing other vehicles, trailers, carriers or similar while making use the tractor never use loose planks or bars inserted between the tractor and the object being pushed.

LEAVING THE TRACTOR

Use the left side of the cab for getting out of the tractor. Lift off the passenger seat, look if any vehicle causing danger isn't near and open the door. Use the running board and hand rails for entry and exit to and from driver's cab. When getting out on the right side, special care should be taken in the area of the control levers.

Shift the gear lever in the direction toward the driver's seat and if the engine is still, engage the hand-operated throttle control to its "MAX" position. Do not park the tractor with implements lifted. Do not forget to remove the key from the ignition switch and to lock the cab.

ONLY WITH THE ENGINE STOPPED

All the jobs connected with refueling, cleaning, lubrication and adjustment to tractor or attached implements may be carried out only with the engine stopped or other moving parts at rest except when checking the break function, hydraulics or battery charging. Start and operate the engine in a well ventilated area only. Exhaust gas is harmful to health.

FIRE PREVENTION PRINCIPLES

Refueling should preferably be carried out with the engine stopped at the end of working day. In case of a leakage of fuel from the fuel hose system close the fuel cock on the right side of the reservoir, on tractors with an additional reservoir on the top reservoir on the left side. Do not refill the fuel tank completely in the summer season. Wipe off spilled fuel immediately.

Do not refill the tank near an open flame and do not smoke.

Take special care and follow the fire safety instructions in environments with increased danger of fire (haylofts, straw stacks and similar).

If the tractor is equipped with a fire extinguisher it should always be to hand.

HEALTH AND ENVIRONMENT PROTECTION WHEN HANDLING OIL PRODUCTS

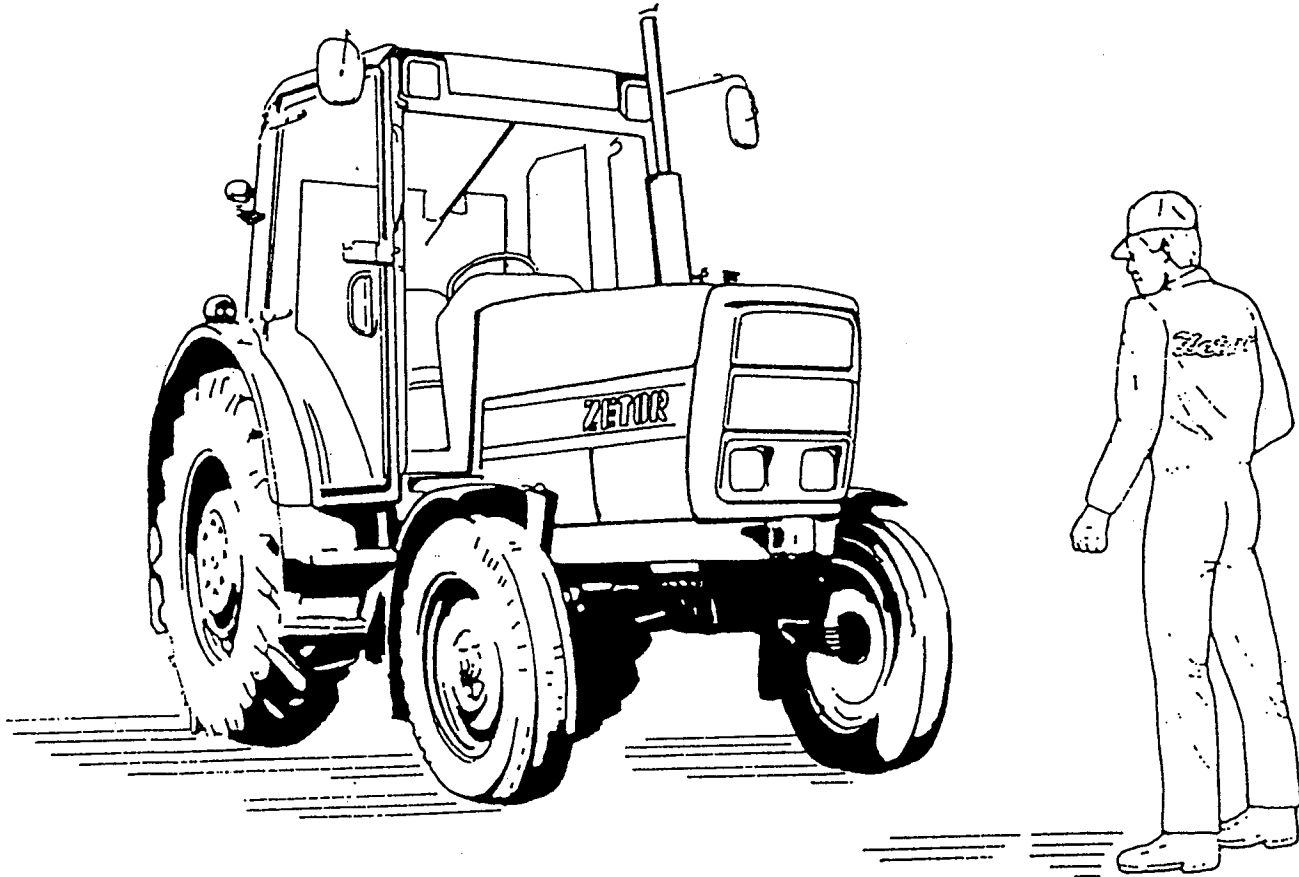
Tractors are not equipped with special cab intake air filters. They are therefore not intended for working with aerosols and other substances harmful to health. Kerosene, Diesel oil, mineral oil and other oil products used during tractor operation and maintenance of may cause skin disease, eye irritation or injury, stomach upsets and nasal irritations. Some oil products when inhaled as vapour or when take internally can be fatal.

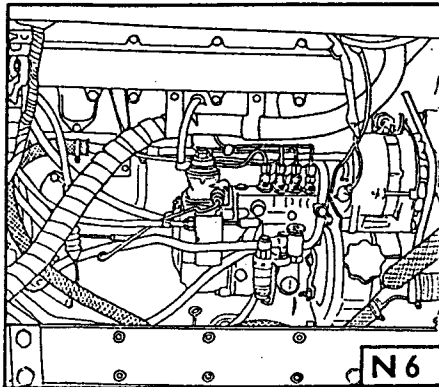
The persons in contact with oil products should constantly observe safety and hygiene precautions, use suitable protective clothing and apparatus and work only in well ventilated areas.

Having finished the work or before meal, it's essential the operator washes off all traces of an oil product using a non-irritant washing agent and applying suitable ointment/hand cream on his hands.

With disconnecting or reconnecting the hydraulic circuit quick-couplers use a textile material or cloth to remove the residual oil which remains inside the socket or on the plug of quick coupler.

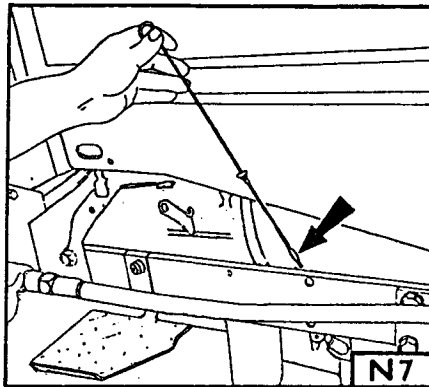
Should be carried out daily or every 10 engine hours, no later





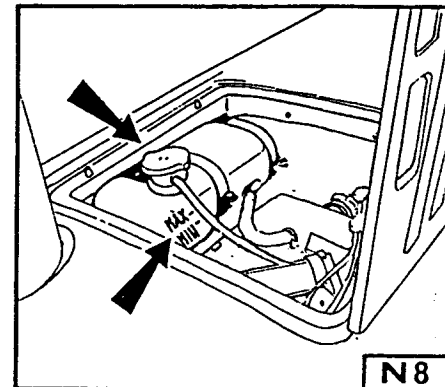
CHECK ON FUEL SYSTEM FOR LEAKS

Check the fuel system for leaks including the fuel tank placed above the engine. Fix any leaks.



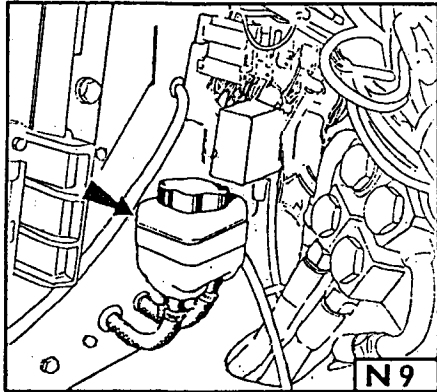
ENGINE OIL LEVEL

Check the oil level in engine and the engine lubrication system for leaks. Top up oil to the specified level.



COOLANT SYSTEM

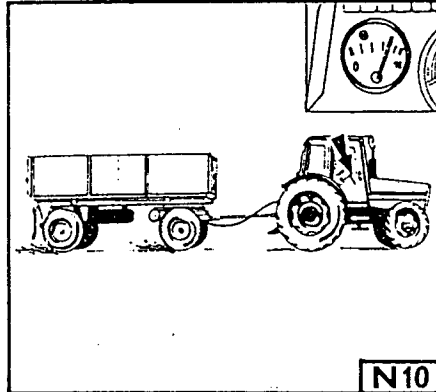
Check the engine coolant system for leaks and the coolant level in the expansion tank. Top up to "MAX" mark. Tractors with a non see-through expansion tank should have the level about 20 mm under the seat of expansion tank. The minimum coolant level is approximately 40 mm under the tank seat.



HYDRAULIC BRAKES

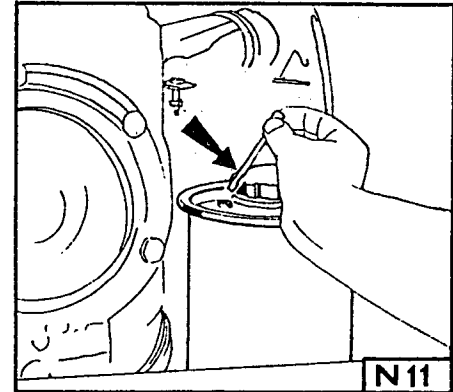
Check the hydraulic brakes and the hydraulic system of clutch control for leaks.

Check the brake fluid level in the expansion tank located under the steering wheel bracket. Also check the trailer hydraulic brakes.



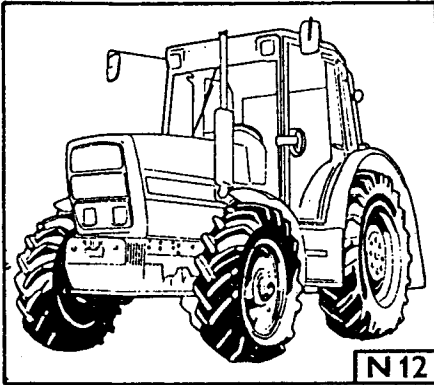
PNEUMATIC BRAKES

Check the air brake system for leaks and the tractor braking efficiency including trailer (see "Check of pneumatic brakes for leaks").



STEERING

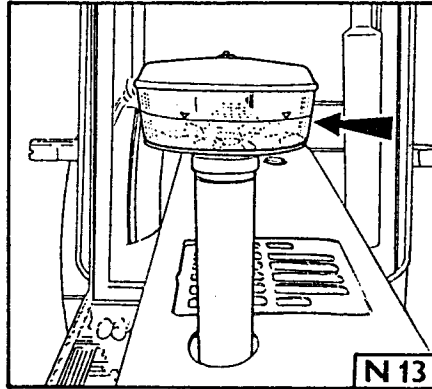
Check the oil level within the hydrostatic steering reservoir. Check the steering tie-rods and arms for torque of bolts and nuts.



TIRES AND WHEELS

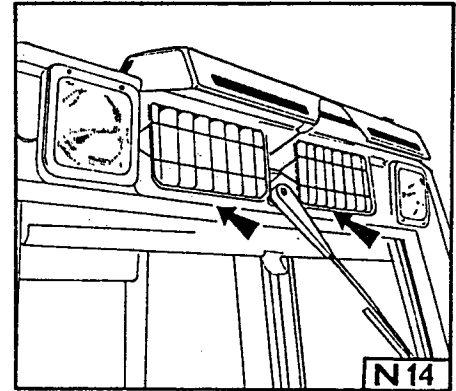
Check the inflation pressure both in front and rear tires. Adjust to the recommended values depending on the type of work. Check the thread on front and rear wheels - check all the bolts.

Never ride with bolts not tight.



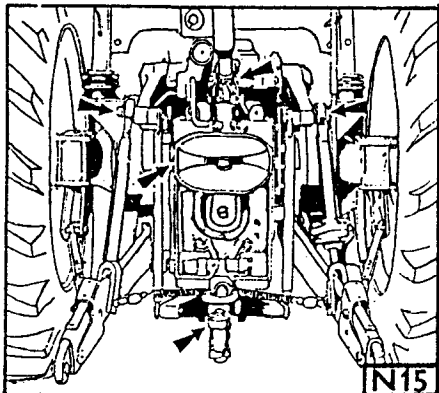
AIR CLEANER

Inspect the engine air precleaner and clean it, if necessary. The dry air cleaner contains a sensor that lights an indicator on the dash panel when too dirty.



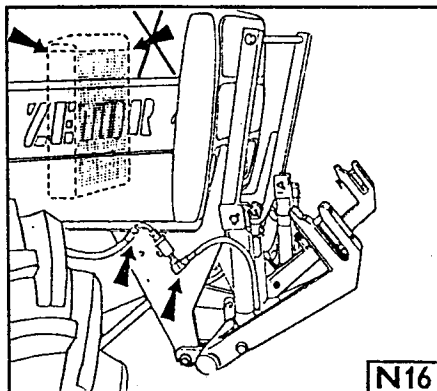
CAB AIR FILTER

Inspect and clean cab ventilation air filters located under the front panel.



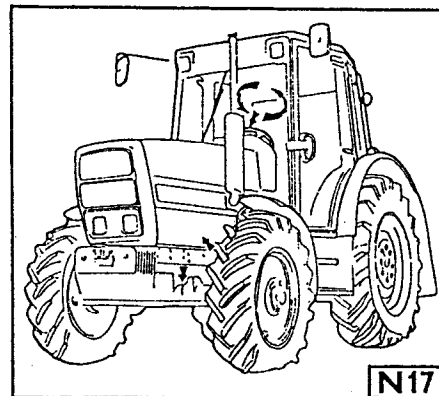
TRAILING ATTACHMENTS

Inspect the trailing and towing attachments including the trailer.



AFTER OPERATION WITH FRONT IMPLEMENTS

Clean the front wall of engine radiator using pressure air in the direction away from the engine. This, however, should be done after removing the front grill in order to blow the dirt outside the tractor. Remove the remaining dirt under the bonnet to avoid repeated obstruction. Check the external hydraulic circuitry fittings of the three-point linkage for leaks.



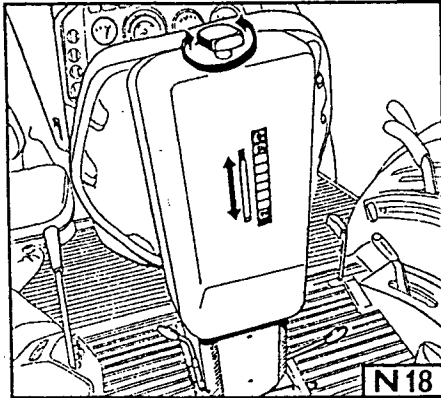
SHORT FUNCTIONAL TEST

After starting the engine check the engine lubrication indicator lamp is off, check the accumulator charging function (the indicator lamp should be off), and check the hydraulic steering circuits for function and leaks.



The tractor user is obliged to make himself familiar with the recommended procedures and instructions concerning safety operation of the tractor. It is too late to do so during operation!

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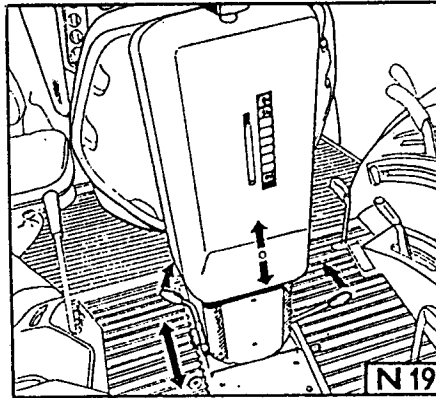
WEIGHT ADJUSTMENT

The spring loaded seat is adjustable to operator's weight within the range of 50 to 120 kgs. Adjustment can be carried out by turning the square handle. The weight adjustment indicator is placed on the rear cover of seat.

The total seat springing is 120 mm.



Do not adjust the seat while driving.
Danger of accident!

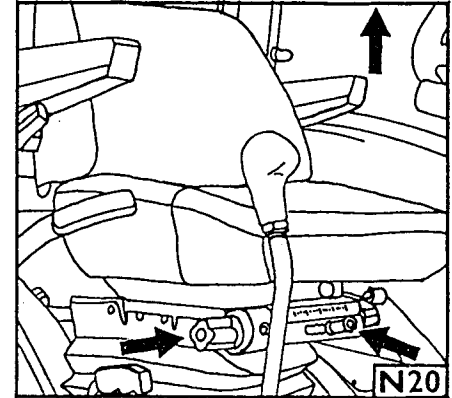


FORE-AND-AFT ADJUSTMENT

Use the left-hand side lever to slide the seat forwards or backwards within the range of ± 75 mm (11 positions).

VERTICAL ADJUSTMENT

Use the right-hand side lever to adjust the seat to height within the range of ± 30 mm (3 positions).



"GRAMMER" SEAT - FORE/AFT ADJUSTMENT

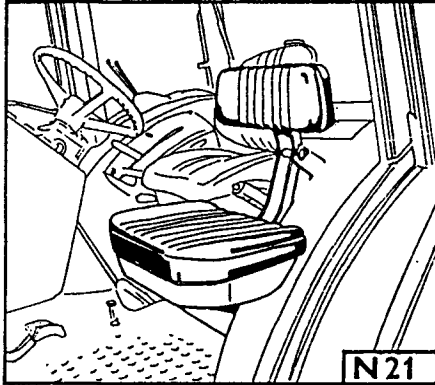
Adjustment is made by a lever on right hand side of seat within the range of ± 75 mm, steps of 15mm.

Height adjustment is made by lifting the seat. The height adjustment is in three positions within the range of ± 30 mm.

DRIVER'S WEIGHT ADJUSTMENT

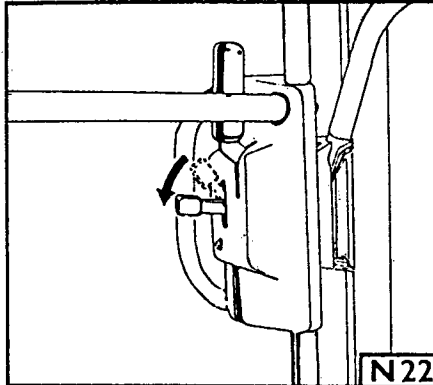
Adjustment is made by a control located on front bottom section of seat together with driver's weight indication.

PASSENGER'S SEAT



PASSENGER'S SEAT LOCATION

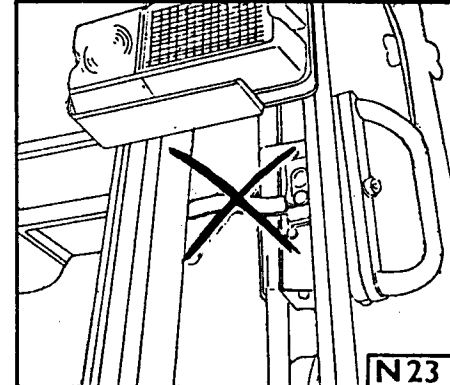
The passengers's seat is tilting and is located on the rear fender.



PASSENGER TRANSPORT



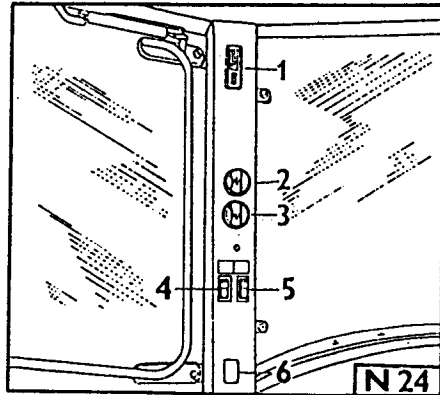
Always lock the door by locking lever when transporting a passenger.



PASSENGER TRANSPORT

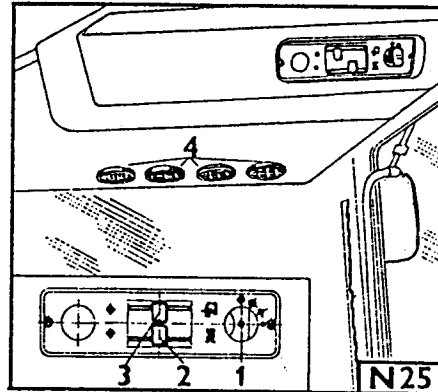


When transporting a passenger don't use the arrestment strut on his side for ventilation.



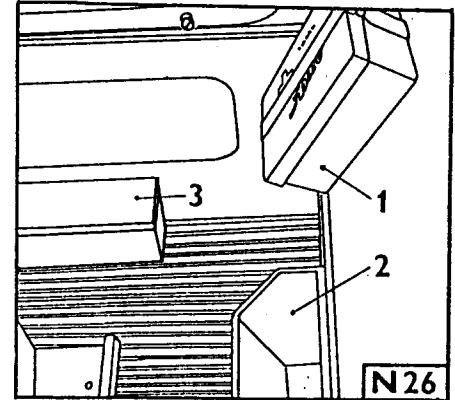
SWITCHES ON THE RIGHT-HAND SIDE CAB COLUMN

1. Inner cab lamp, including switch
2. Front two-speed windshield wiper and washer switch
3. Rear wiper switch
4. Independently controlled front PTO switch (tractors with front PTO only)
5. Independently controlled back PTO shaft switch (tractors with front PTO only)
6. Electro - pneumatic control of hydraulic system.



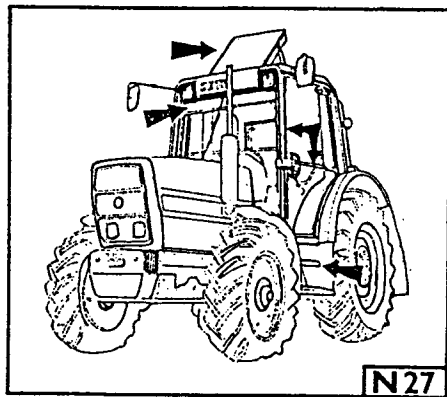
HEATER CONTROL PANEL

1. Four-position fan speed selector
2. Heating cock control lever. The LH position shuts off the cock.
3. Control lever of flap-valve for cab air circulation. Used for quick heating of cab at the beginning of heating. The lever positioned to the right - the flap-valve is closed and air is taken in only from outside of cab.
4. Rotatable outlets of air supplied to cab.



FIRST - AID BOX, GLOVE COMPARTMENT AND TOOL KIT BOX

1. First-aid box
Check and complete the contents of first-aid box regularly.
2. The glove compartment in the hand-brake panel.
3. Tool-kit box.



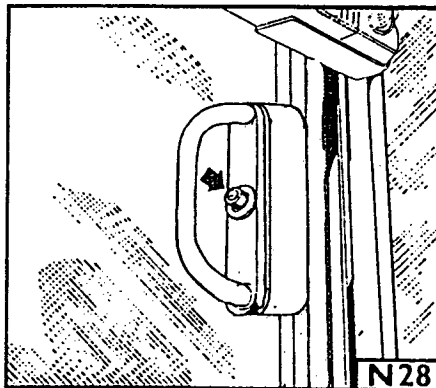
ROLL-OVER PROTECTION STRUCTURE (ROPS)

The cab doors are all-glass, equipped with inner handrails and telescopic struts. The front windscreen is equipped with an up-and-down sun visor while the rear window is tilting.

The inside of cab is sound-insulated. The cab roof can be equipped with a tilting top.

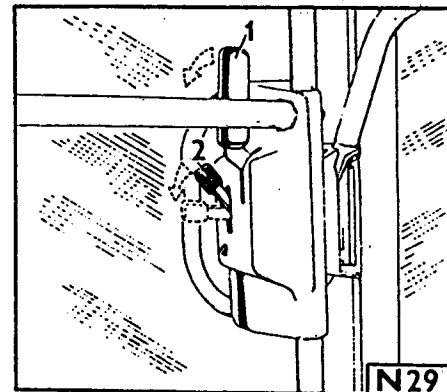


Use the running board and hand rail for entry and exit to and from the driver's cab.



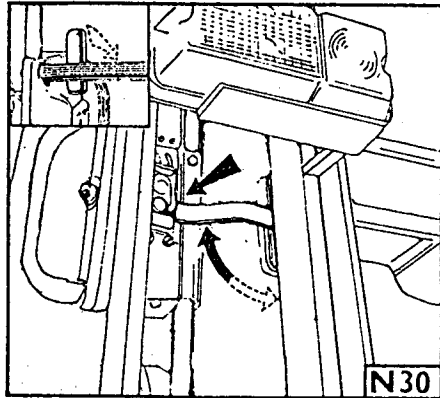
TO OPEN THE DOOR FROM THE OUTSIDE

The cab door can be locked from the outside. Depress the lock button after unlocking and use the handle to open the door.



TO OPEN THE DOOR FROM THE INSIDE

1. lever for opening the door from the inside
2. door-securing lever preventing spontaneous opening both from the inside and outside. Shift the lever to horizontal position to lock the door.

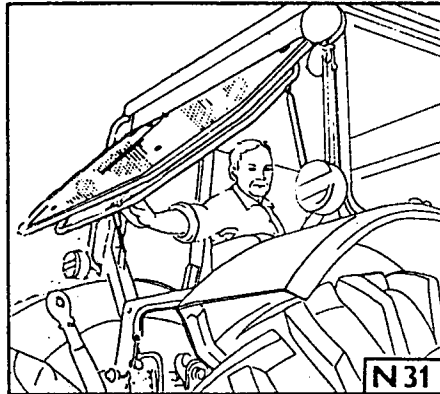


DOOR ARRESTMENT

A partially opened door can be locked in position by means of the arresting strut to vent the cab while driving. Release the strut from the door lock using the lever for door opening. Shift the arresting strut back to its initial position.

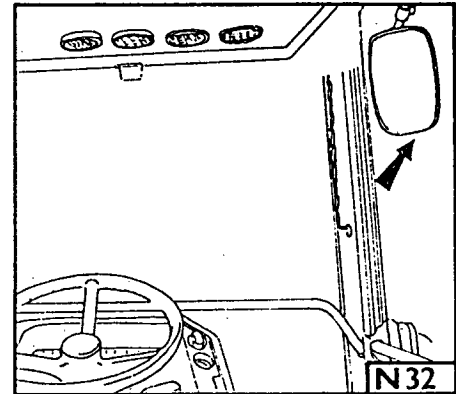


Do not use the arresting strut on the "passenger's" side when transporting him.



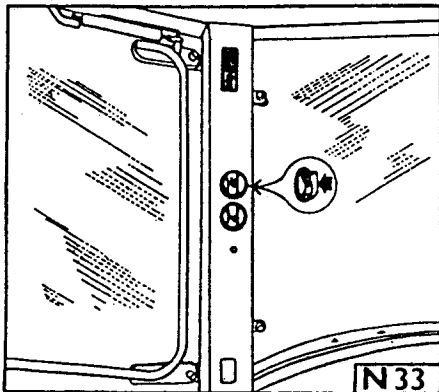
REAR WINDOW

The rear window is equipped with a handle. It's open position can be arrested by means of telescopic stabilizers.



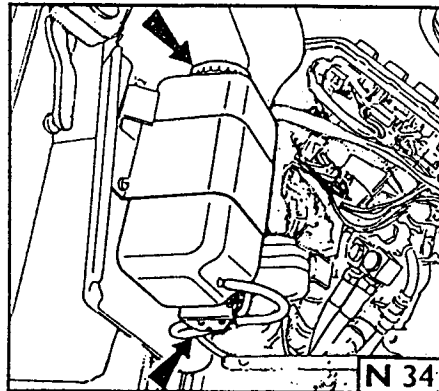
REAR-VIEW MIRRORS

Adjust the rear-view mirrors before driving to get good view all over the driving lane or working site.



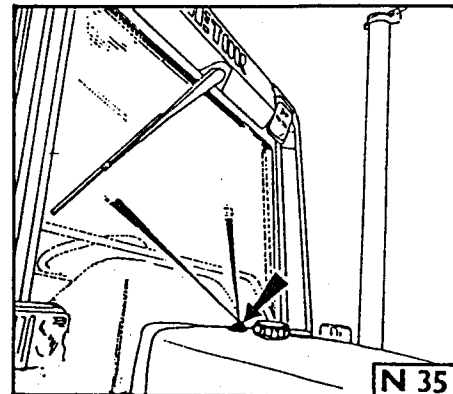
SWITCHING ON THE WASHER

The front windscreen washer can be put into operation by depressing the upper toggle switch of two-speed wiper located on the right-hand column. The maximum time of uninterrupted operation of washer pump is 20 seconds.



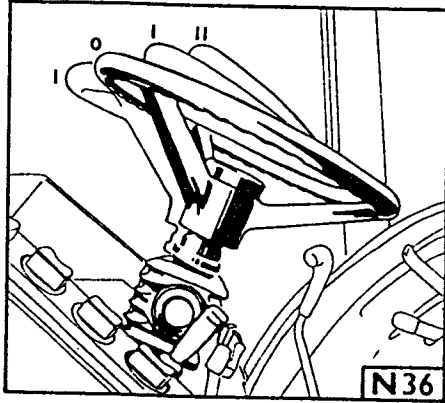
WASHER RESERVOIR

The washer reservoir including the pump unit is attached to the left tilting cover of the steering bracket.



WASHER NOZZLE

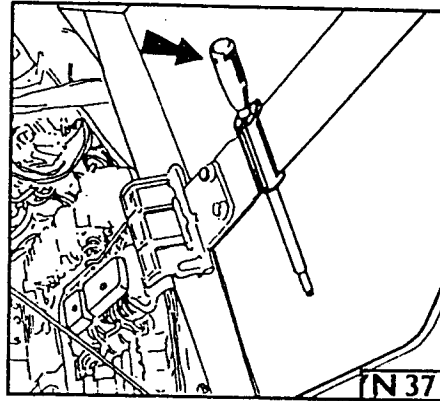
The nozzle is installed in the upper bonnet and can be directed by a needle or wire of maximum 0.8 mm in diameter.



STEERING WHEEL POSITIONS

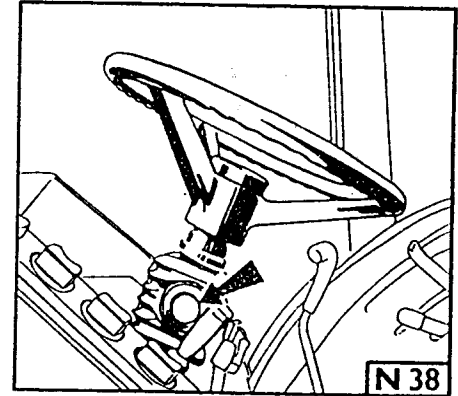
The tilting steering wheel can be set up in one of four positions possible : I, 0, I, II.

The steering wheel can be fitted with or without a lock.



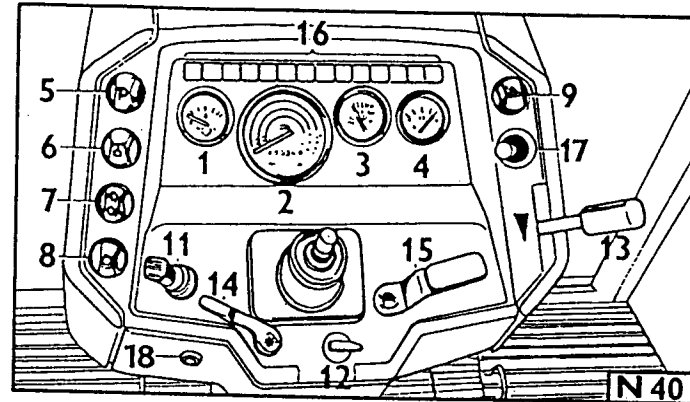
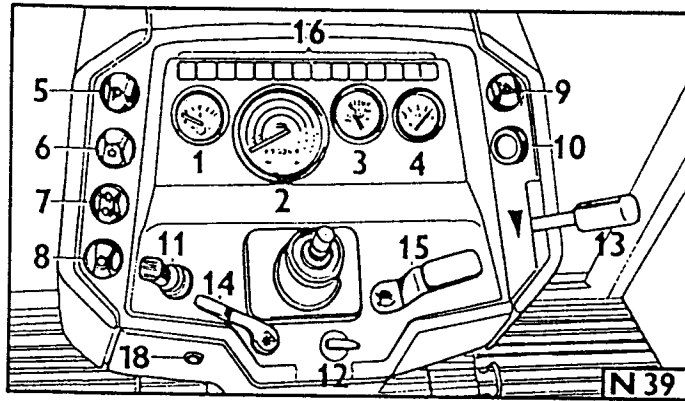
STEERING WHEEL ARRESTMENT LEVER

If the steering wheel position is to be changed the arrestment lever has to be used. This lever is attached to the inner side of right console door.



STEERING WHEEL ADJUSTMENT

Having unlocked the nut by means of the arrestment lever and loosened by hand, set up the steering wheel position required. Tighten the nut by hand again and use the force of about 300 N on the above-mentioned lever to arrest the steering wheel in this position.

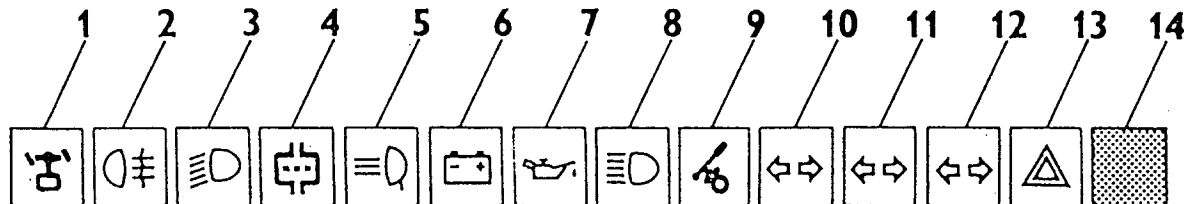


1. Air pressure gauge including minimum pressure indicator (380 kPa)
2. Tachometer with engine-hour counter
3. Thermometer
4. Fuel gauge with minimum fuel level indicator. Tractor with additional fuel tank contains sensors in both of these tanks. The fuel gauge first indicates the level in the top tank and when it's empty, the bottom tank level is sensed. When the warning light lights up, it indicates there are 8.5 litres left in the top tank and remains lit during the time the fuel from

bottom tank is being drawn. Also, when the warning light lights up, the gauge is switched for the bottom tank.

5. Low beam headlight switch: grill lights/cab lights
6. Front wheel drive switch
7. Rear work/fog light switch
8. Grill headlight switch
9. Warning light switch
10. (not used)
11. Turn signal/ horn/ light lever switch (high/low beam light, turn signal indicators, flasher and horn).

12. Key switch (could include electromagnetic locking and steering lock).
13. Hand operated throttle
14. PTO engagement lever
15. Torque multiplier lever switch
16. Warning indicator lights
17. Stopping device used for immediate engine stopping. When the control is pulled up, the engine stops (Z 10520 - Z 10540).
18. Thermostarter button

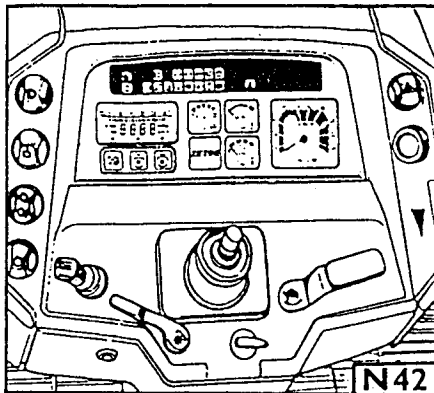


N 41

1. Front wheel drive (green)
2. Rear fog light (orange)
3. Cab lights (green)
4. Air intake filter clogged up (red)
5. Front work light (yellow)

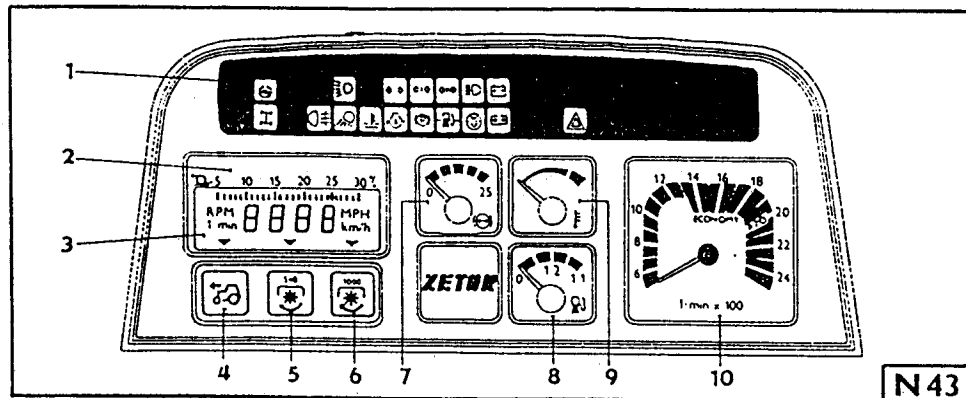
6. Battery charge (red)
7. Engine oil pressure (red)
8. High beam lights (blue)
9. Parking brake applied (red)
10. Tractor directional signal (green)

11. 1st trailer directional signal (green)
12. 2nd trailer directional signal (green)
13. Warning lights (red)
14. Not used



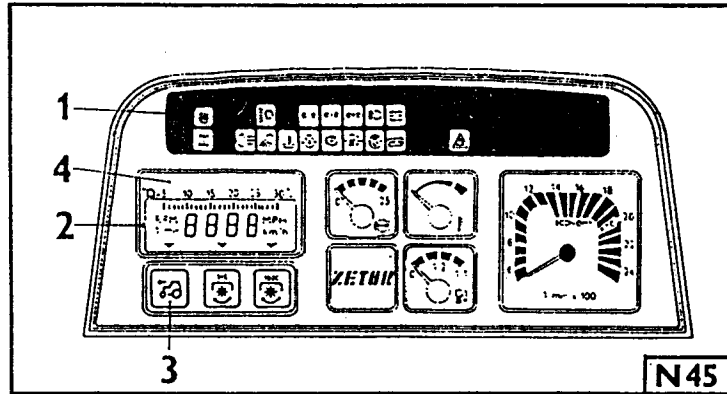
DASH PANEL LOCATION

Phoenix electronic dash panel is optional and substitutes the regular dash panel. The dash panel is wired to the electric installation by a cable with special connectors. The dash panel is velcro fitted to the control panel.



DASH PANEL DESCRIPTION

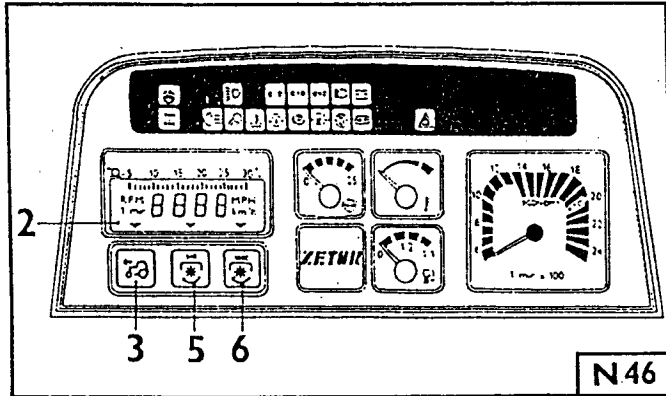
1. Warning indicator lights
2. The line display monitors wheel slip (if tractor actual speed sensor is fitted).
3. Display monitors engine hours (when entry test is on), tractor travel speed or PTO revolutions.
4. Travel speed indication button.
5. PTO revolutions indicator button. (540 min^{-1})
6. PTO revolutions indicator button. (1000 min^{-1})
7. Air pressure gauge
8. Fuel gauge - tractors with two tanks have the same connection as with the standard dash panel.
9. Coolant thermometer
10. Engine revolutions indicator



DASH BOARD OPERATION

The electronic dash board contains preprogrammed invariables stored in memory which are preserved even after disconnecting. The invariables are stored by the producer and operator's interference is impossible. The dash panel is made to match a certain type of tractor, it's properly tested and special service during operation is not needed. After inserting key into ignition switch and turning to "I" position, the dash panel goes through a n entry test. All warning indicator lights (1) and monitor (2) light up and the installed buzzer goes off for 1-2 seconds. This buzzer is also used for warnings of exceeding the maximum coolant tem-

perature and driving with applied parking brake. When the entry test is finished, the engine oil pressure and charging indicators (possibly others, depending on number of connected appliances) remain lit. The monitor (2) displays integer number of engine hours. When button (3) is pressed, the monitor (2) displays decimal values of engine hours. Your tractor can be equipped with a radar sensor for actual traveling speed on request. In that case, the line monitor (4) displays the percentage of wheel slip.



The tractor can now be started in the regular way. After riding off, the monitor (2) displays tractor traveling speed automatically. It is possible to select 540 min^{-1} or 1000 min^{-1} PTO revolutions monitoring by buttons (5) and (6). Tractor traveling speed can be monitored again by pressing button (3). The monitor (2) displays the engine hours value only after turning on the dash panel and going through the entry test. There is no other way to monitor this value. It is forbidden to turn the dash panel off while the engine is running by turning the key in the key switch to "0" position.

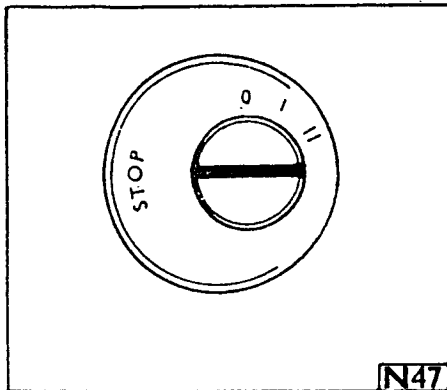
DASH PANEL MAINTENANCE

Other than changing blown LEDs, the dash panel doesn't need any other maintenance. If needed, the invariables could be checked or calibrated.

TRAVELING SPEED CALIBRATION

The PHOENIX dash panel is calibrated after fitted on the tractor in the producing factory. Repeat calibration when tires are worn off or after fitting new tires or different dimension tires. Calibration is done on a marked 100m distance.

Place the tractor with recommended inflation of tires and engine running on the start of the marked 100m track. Press button (3) for 5-10 seconds until "CAL" appears on the monitor. Press shortly button (5) subsequently, sign "CAL" starts to flash. Ride off with the tractor in a constant speed of approximately 10 km.hod^{-1} . Stop the tractor at the mark after reaching the 100m distance and press button (6). The monitor displays the new value of the "K9" invariable for about two seconds, the dash panel goes through the entry test and is then ready for operation.



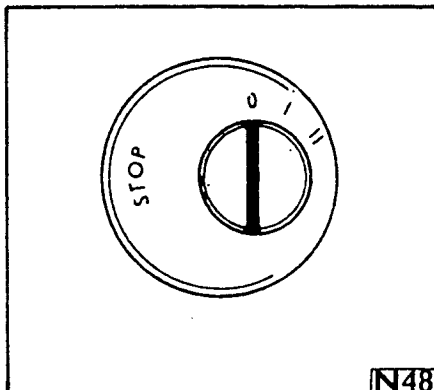
KEY REMOVED OR IN "STOP" POSITION

I. KEY SWITCH WITH STEERING WHEEL LOCK AND ELECTROMAGNETIC BLOCKING

If the key is not inserted in the starter switch, the steering wheel is locked. To unlock the steering wheel insert the key in the key switch and turn it to the "0" position. If key is not inserted or in "STOP" position, the same electrical circuits as with key in "0" position are connected.

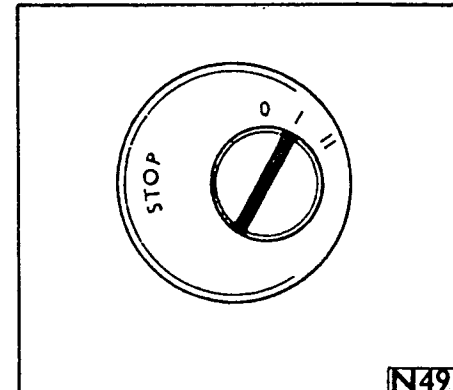
II. KEY SWITCH WITHOUT STEERING WHEEL LOCK AND ELECTROMAGNETIC BLOCKING

Steering wheel can be turned in any key position even if not inserted.



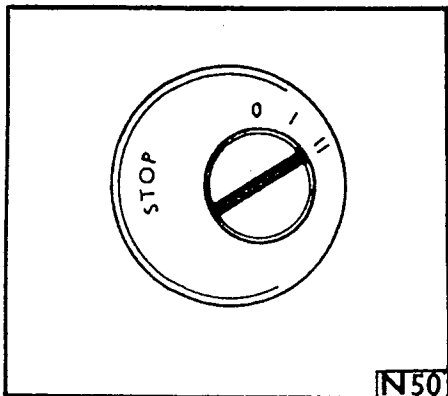
KEY IN "0" POSITION

The live electrical circuits: brake lights, cab light, horn and flasher, tractor lights, work light and rear fog light, electrical control of hydraulic arms, warning lights incl. turn signals fans for heating, cooling and air conditioning.



KEY IN "I" POSITION

In addition to appliances connected in "STOP" or "0" position: instruments and indicator lights on dash panel, front drive switch, turn signals, rear windscreen wiper, hand-lamp socket. The key in key switch with steering wheel lock and electromagnetic blocking is locked in this position with engine running.



KEY IN "II" POSITION

The starter circuit is connected. The position "II" of key is spring-loaded and the key is returned back to the "I" position after release. If starting is repeated, the key should be turned back to its "0" position and then through "I" to its "II" position.

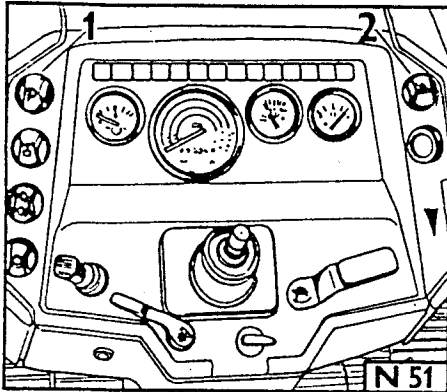
IMPORTANT



1. If the switch needs lubrication, it may be lubricated using solely fine graphite through the key opening (never use oil).
2. The key switch is equipped with a cover which has to be turned to protect the opening from dust and water after removing the key. (Important especially with tractors without a cab.)

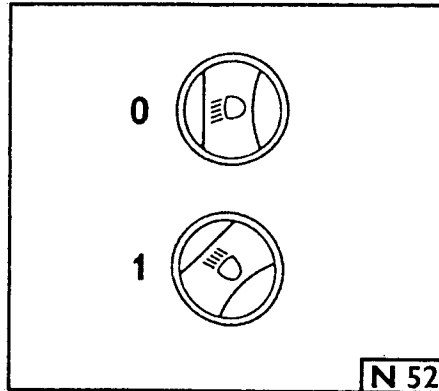
1. KEY SWITCH WITH STEERING WHEEL LOCK AND ELECTROMAGNETIC BLOCKING

1. Never use force to turn the key from its "I" position while the engine is running. The built-in electromagnet stops mechanically this key from turning.
2. The key can be turned from the "I" position to "0" only when the engine is stopped - the charging indicator must be lit.
3. When towing the tractor in emergency (with the battery connected) the key must be in the "I" position.
If the battery is not connected, the key should be turned from the "STOP" position to the "0" position only. In the "I" position the key would be blocked and it would not be possible to turn it to the "STOP" position and remove it from the key switch.
4. Never remove the key while driving the tractor - the steering would block.
5. It is necessary to turn the steering wheel slightly when unlocking the steering wheel - the lock will be released and twisting or breaking of key prevented.



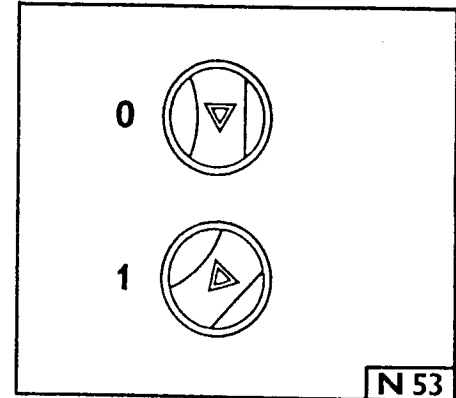
SWITCHES

1. Low beam asymmetric cab or front grill light switch
2. Road warning light switch



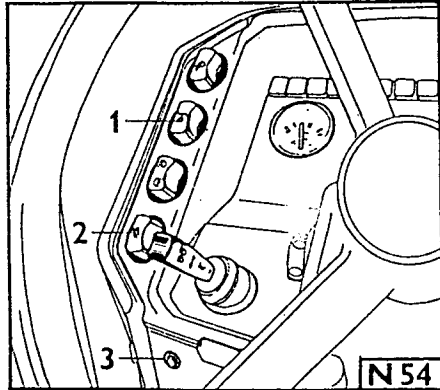
LOW BEAM LIGHT SWITCH

- "0" - Low beam lights in the front grill ON
"1" - Low beam cab lights ON



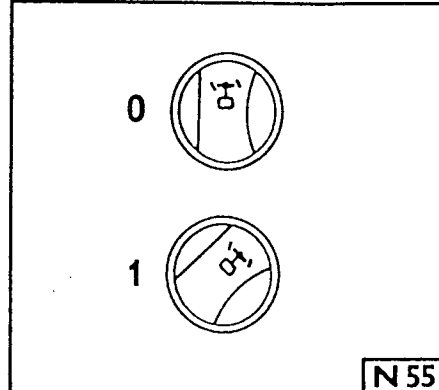
ROAD WARNING LIGHTS SWITCH

- "0" - Warning lights OFF
"1" - Warning lights ON



SWITCHES

- 1 - Front drive switch- tractors with front drive only
- 2 - Tractor lighting switch
- 3 - Thermostarter switch

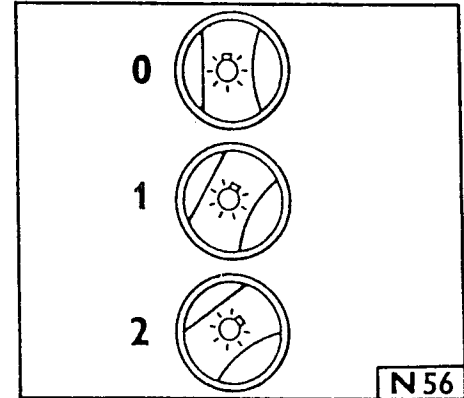


FRONT DRIVE SWITCH

- "0" - Front drive switched OFF
- "1" - Front drive switched ON



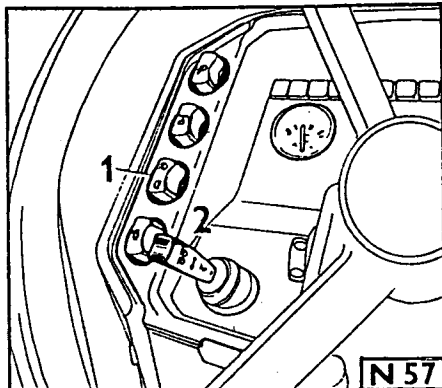
Use the front drive to increase the tractor traction only when the rear wheels are slipping. Driving with front wheel drive on roads and hard surfaces increases front wheel tire wear. An exception for continuous driving with front wheel drive is when carrying a front attached agricultural machine or implement. This case is suggested in the machine's manual. Maximum speed of these systems is 15 km.h^{-1} .



TRACTOR LIGHTS SELECTOR SWITCH

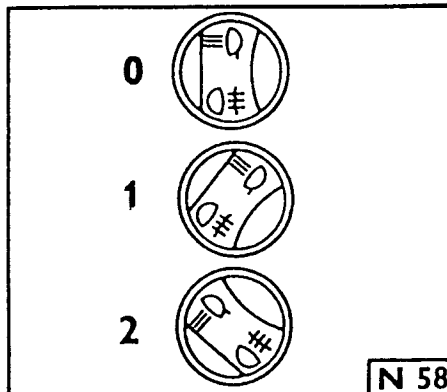
- "0" - Lights switched OFF
- "1" - Switched on: Clearance and tail lights, registration number and control panel lighting.
- "2" - Switched on- in addition to "1": High/low beam lights depending on the position of turn signal, lights and horn switches.

Only the front grill lights can be on high, irrespective of the low beam switch position.



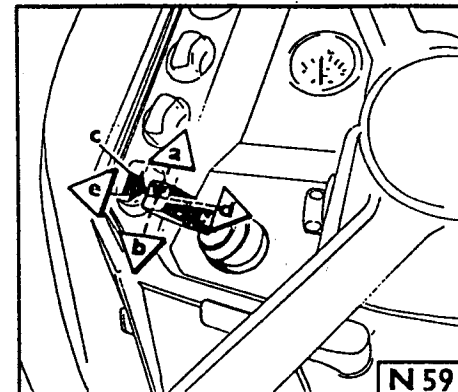
SWITCHES

- 1 - Front work light and rear fog light switch
- 2 - Turn signal, headlight and horn switch



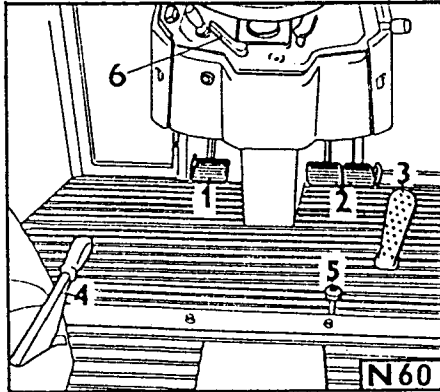
FRONT WORK LIGHT AND REAR FOG LIGHT SWITCH

- "0" - Switched off
- "1" - Rear fog light ON
- "2" - Front work light ON



TURN SIGNAL, HEADLIGHT AND HORN SWITCH

- a - Right turn signal
- b - Left turn signal
- c - Horn
- d - Headlight flasher
- e - Headlight high beam

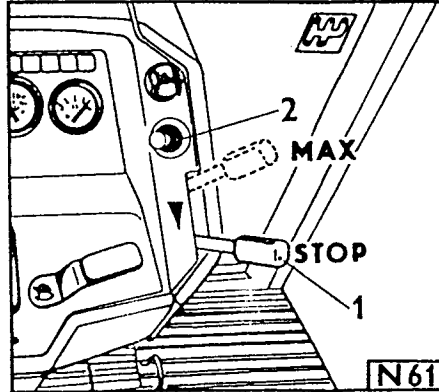


PEDALS AND LEVERS

1. Driving clutch pedal
2. Brake pedals coupled together by a latch.
3. Throttle pedal
4. Park brake lever
5. Rear axle differential lock pedal
6. PTO engagement lever

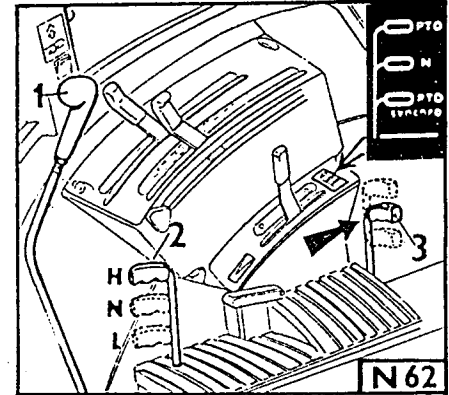


The differential lock must not be used when driving through a bend.



HAND THROTTLE LEVER

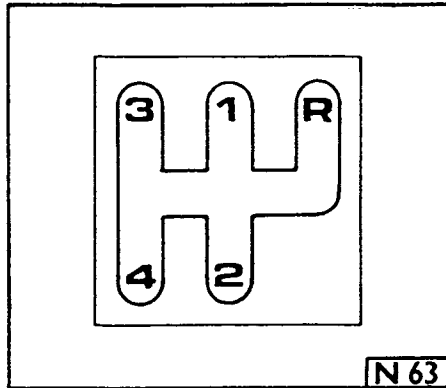
1. Hand throttle lever
 STOP - Stopping the engine
 MAX - Maximum fuel supply
2. STOPPING DEVICE lever
 By pulling the lever, the engine will stop automatically.
 (Only tractors with two lever injection pump control.)



GEAR SHIFTING

1. Main gearshift lever
2. Speed range selector lever
 H - High range, roading speeds
 N - neutral
 L - Low range, reduce speed
3. PTO dependent and independent speeds lever.

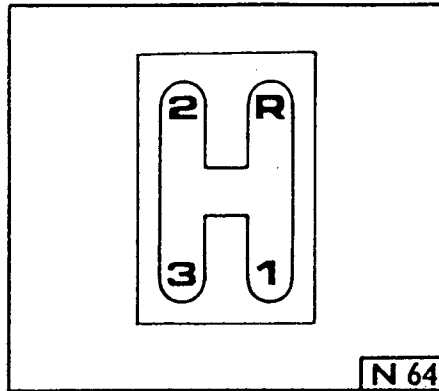
The shifting can only be done with engine stopped.



GEAR SHIFT PATTERN

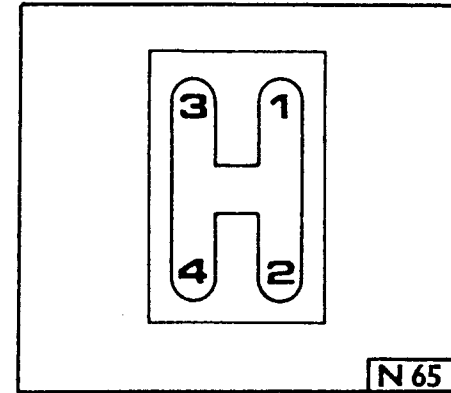
Applicable to the following variations

- a - Four-speed gearbox with two-stage torque multiplier
- b - Four-speed standard gearbox without torque multiplier
- c - Four-speed gearbox with creeper speeds



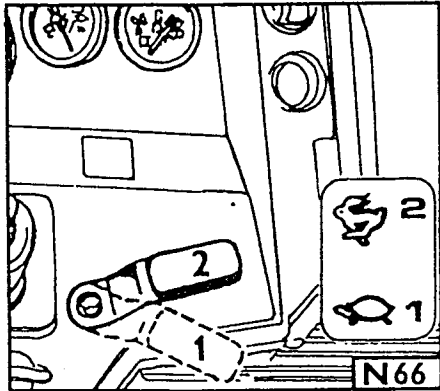
GEAR SHIFT PATTERN

Three-speed gearbox with three-stage torque multiplier.



GEAR SHIFT PATTERN

Four-speed gearbox with reverse.

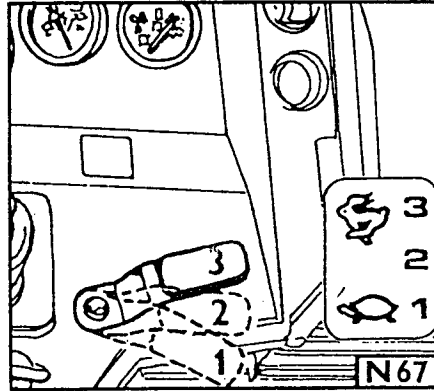


TORQUE MULTIPLIER LEVER

Two-stage multiplier

- 1 - Engaged, gear ratio of 1,3
- 2 - Disengaged, gear ratio of 1,0

16 forward and 4 reverse speeds available (incl. creeper speeds) in total.



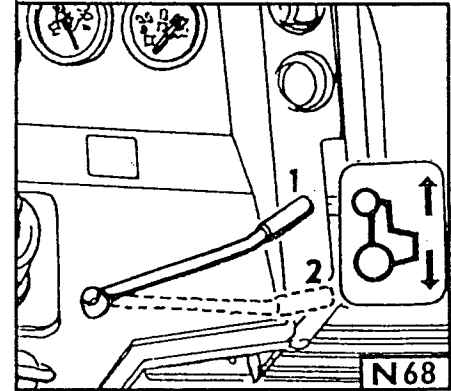
TORQUE MULTIPLIER LEVER

Three-stage multiplier

- 1 - Engaged, gear ratio 1,38
- 2 - Engaged, gear ratio 1,18
- 3 - Disengaged ,gear ratio 1,0

The three-speed gearbox is fitted with three-stage torque multiplier.

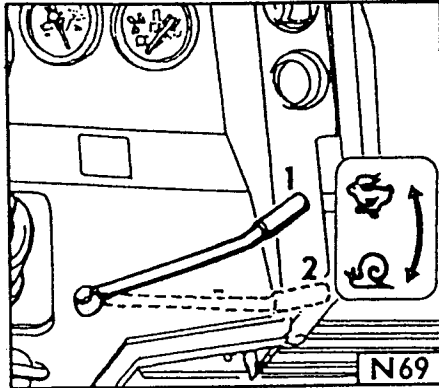
18 forward and 6 reverse speeds available (incl. high/low) in total.



FORWARD/REVERSE LEVER

- 1 - Forward speed
- 2 - Reverse speed

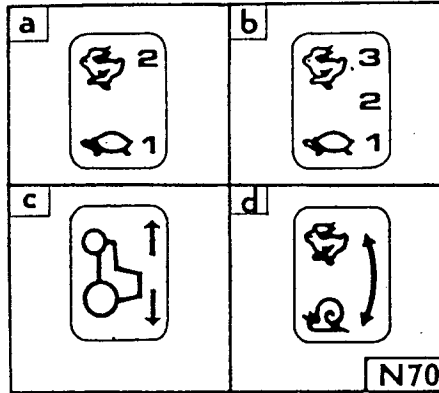
8 forward and 8 reverse speeds available (incl. high/low) in total. The main gear shift lever has four positions, no reverse position.



CREEPER SPEED LEVER

1. Disengaged, standard speed
2. Engaged, creeper speed

16 forward and 4 reverse speeds are available (incl. high/low) in total.

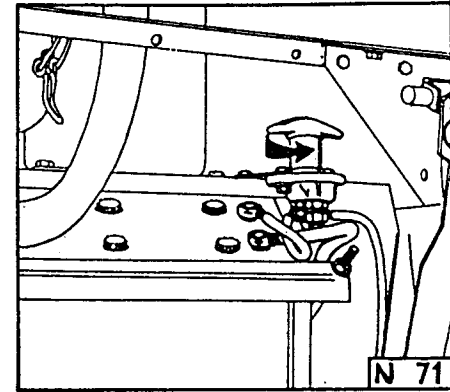


LABEL IDENTIFICATIONS

The following is fitted on special request :

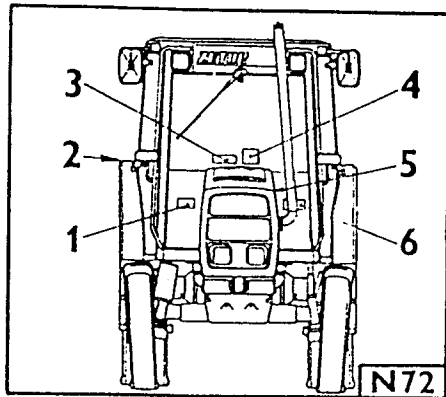
- a - two-stage torque multiplier
- b - three-stage torque multiplier
- c - reverser
- d - creeper

Only one of these devices can be installed as they exclude each other.



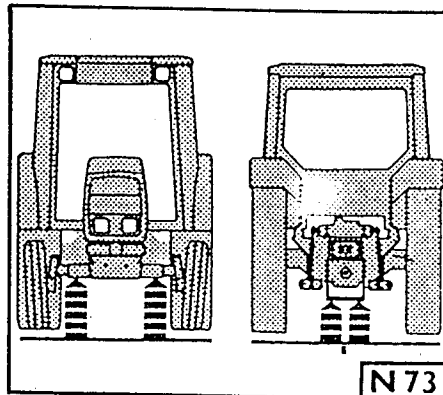
BATTERY DISCONNECTION SWITCH

This switch is accessible after tilting away the front shell of tractor. The battery can be disconnected by turning the disconnecting switch lever in the arrow direction.



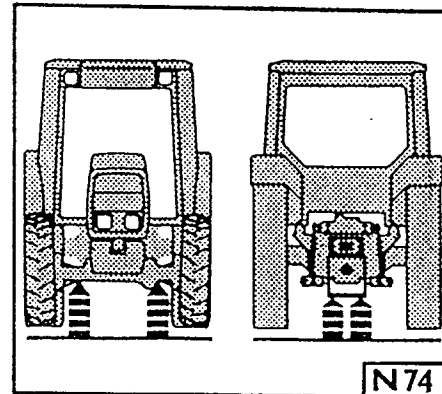
LABEL LOCATIONS

1. Gear shifting label
2. Maximum total weight of trailer label
3. Incline access label
4. Warning label 1
5. Warning label 2
6. Tractor lifting label



TRACTOR LIFTING LABEL

Indications of lifting points for non front wheel drive tractors. Tractor lifting may only be done by a hydraulic jack which is a part of the tractor equipment.



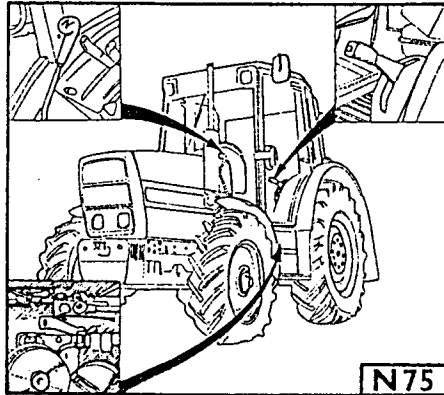
TRACTOR LIFTING LABEL

Indications of lifting points for front wheel drive tractors. Tractor lifting may only be done by a hydraulic jack which is a part of the tractor equipment.



Make yourself well acquainted with the gear-shift pattern prior to driving the new tractor and try the individual positions of the gear shift lever with the engine stopped.

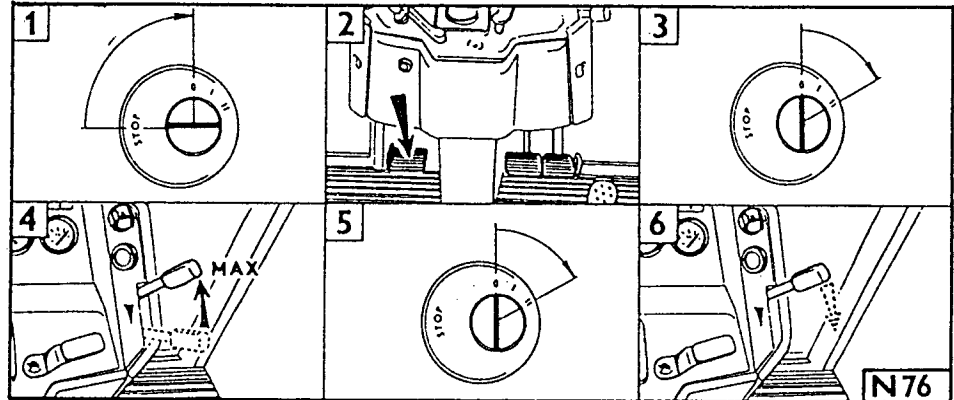
	Page
Starting the engine	42
Immediately after starting the engine	45
Driving off, gear shifting	46
Foot brakes	50
Pneumatic brakes of trailers and semitrailers	51
Stopping the tractor	54
Park brake	54
Stopping the engine	54
Leaving the tractor	54
Running-in procedure	55



Before starting the engine check to be sure the tractor is braked reliably and the gear shift lever in NEUTRAL position.

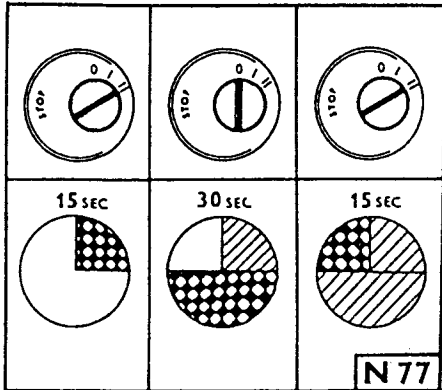
The engine cannot be started if the gear shift lever is in any other than neutral position - because of starting safety device.

It is recommended to switch the pump drive off at lower temperatures on tractors with switchable pump.



STARTING THE ENGINE WITHOUT AUXILIARY STARTING DEVICES

- 1 - Insert the key in the key witch and turn it to the "0" position.
- 2 - Press down the clutch pedal.
- 3 - Turn the key through "I" to "II" position (start). Let the engine idle for about 3 to 5 seconds, then release the key and return it back to the "0" position. With higher ambient temperatures the idling can be omitted.
- 4 - Set the maximum fuel supply position on the hand throttle lever.
- 5 - Turn the key through "I" to "II" position (start). Release the key after the engine starts. Do not start the engine longer than 15 seconds.
- 6 - After starting the engine reduce engine revolutions gradually. Running the engine in high revolutions is not suitable.

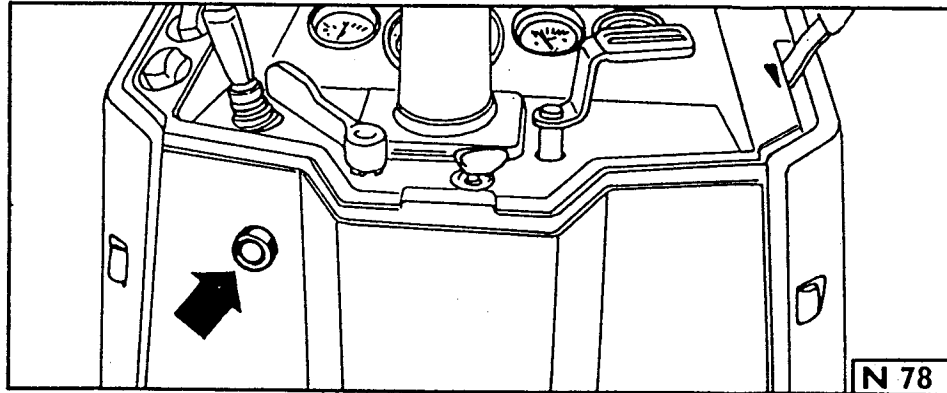


IF THE ENGINE DOESN'T START

Wait for 30 seconds, return the key to the "0" position and repeat starting.



Never help a stopping engine by the starter. The starter can be damaged that way.

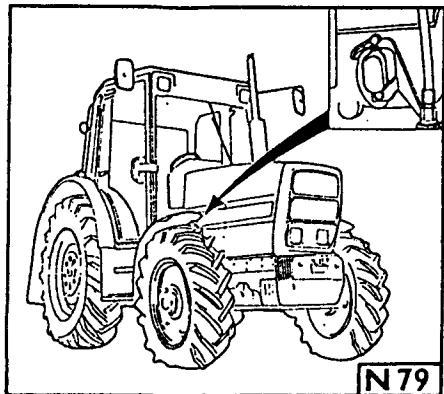


STARTING THE ENGINE USING THERMOSTART

The thermostart is a device which makes it easier to start the engine at temperatures below.

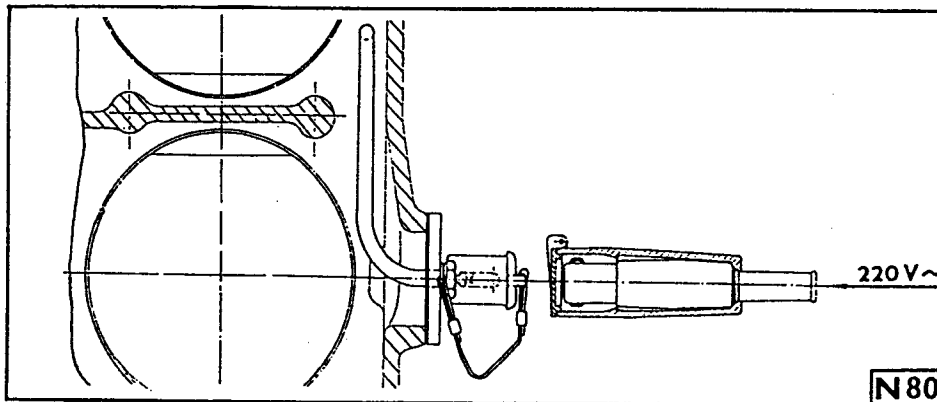
Starting procedure:

1. Follow steps 1 to 4 as described for engine starting without auxiliary devices.
2. Press down the thermostart button. After 20 seconds turn the key through "I" to "II" position (start). Do not start longer than 15 seconds. Release the key immediately after the engine starts but hold the thermostart button pressed until idle is regular.
3. If the engine fails to start, release the thermostart button also. Wait for 30 seconds and repeat starting. Do not start longer than 15 seconds.



COOLANT HEATER

The coolant heater is optional and is fitted to the engine block. Its output is 1000 W, the voltage 220 V a.c.

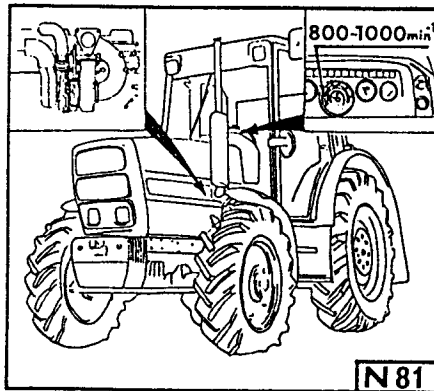


STARTING THE ENGINE USING COOLANT HEATER

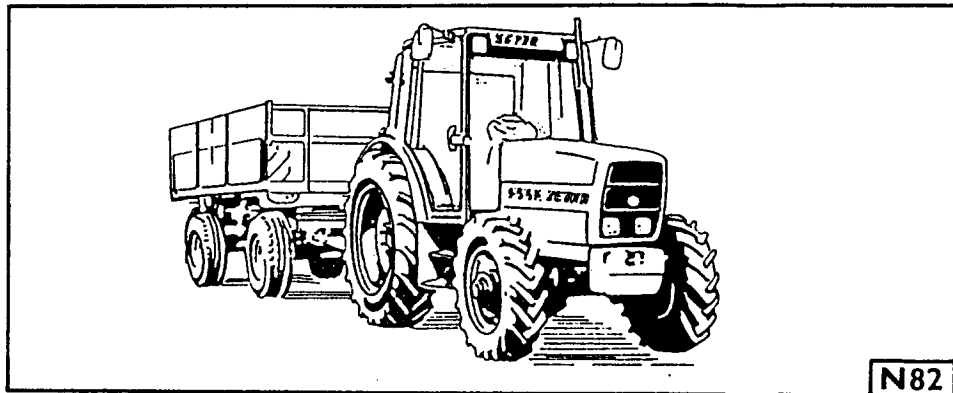
At low temperatures the heater makes the starting easier by warming up the coolant. The electrical installation and its protection against dangerous contact must be accomplished in accordance with the regulations. Connect the plug to the heater first and only then to the 220 V mains.



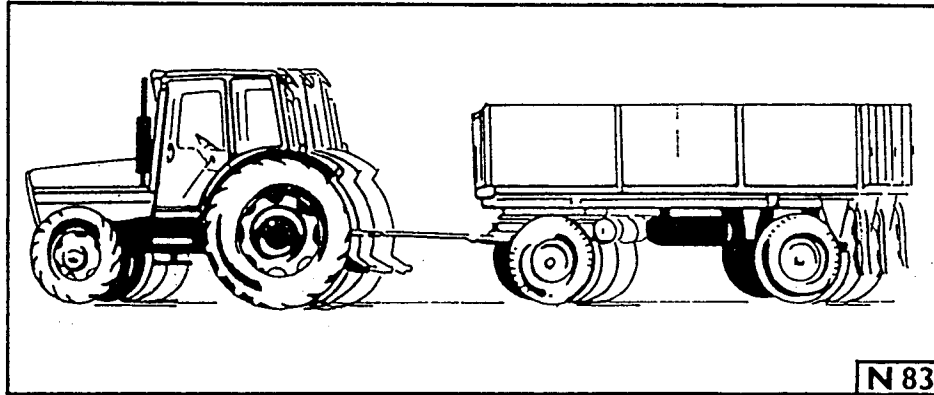
After heating disconnect the device from the mains first and then the plug from the heater.
Danger of accident !



If the engine is turbo-charged keep the engine speed at 800 to 1000 r.p.m. after starting and let it run without load for about 3 minutes. During that time check the tractor for correct lubrication and charging (both indicators should turn off) and for other functions ensuring the correct engine operation. The period of time for not putting the engine under pressure has to be respected, especially in the winter season.



Continue to warm up the engine while driving. Warming up the engine by idle or sharply increasing engine speed is bad for the engine. Do not exceed the engine speed above 2000 r.p.m. until the engine coolant temperature reaches 45 deg C.

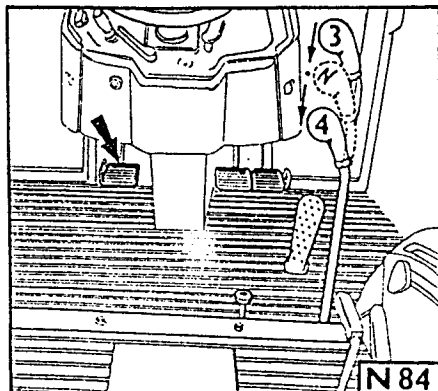


Select the road or low range speeds and press down the clutch pedal. Start the engine and set its speed to be within the range of 750 to 800 r.p.m. Engage the appropriate gear for starting the machine and increase the engine speed slightly.

Prepare the parking brake for releasing. Release the clutch pedal up to the point of drive only, then release the clutch pedal continuously while increasing the engine speed at the same time. Release the parking brake fully.

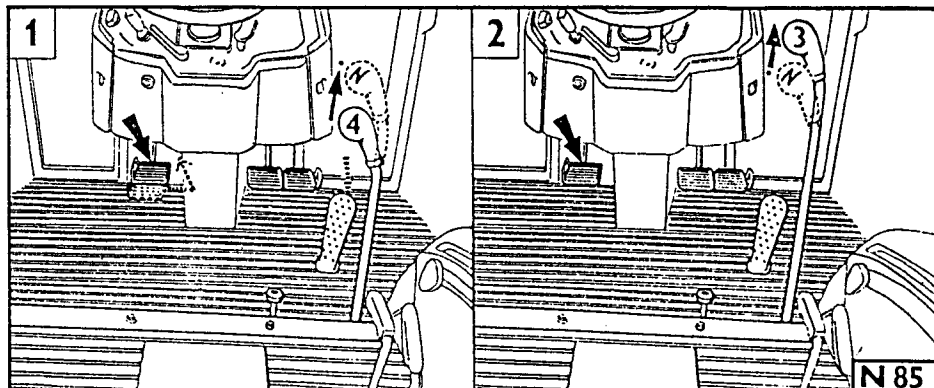
Drive off smoothly and slowly. Very quick start could overload the driving gear, cause excessive fuel consumption, excessive wear of tires and damage the load.

For driving off, use 1st gear only when driving with a heavy trailer, up a hill or in heavy ground conditions.



CHANGING TO A HIGHER GEAR

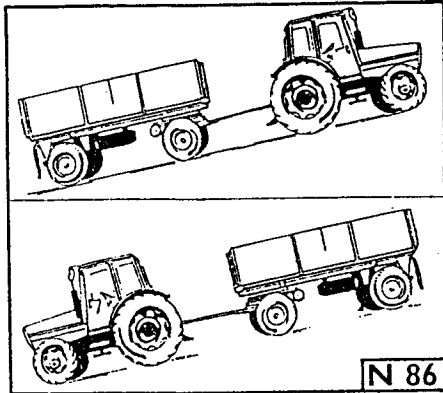
Press down the clutch pedal, release the throttle pedal at the same time and move the gear shift lever to neutral. Release the clutch pedal (the clutch will engage) and push it down again. Move the gear shift lever to the desired gear, release the clutch pedal slowly (the clutch is engaging) while increasing the engine speed at the same time.



CHANGING TO A LOWER GEAR

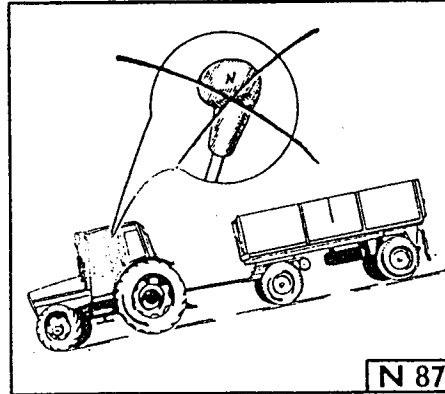
Changing to a lower gear should be done by using a double clutching method. Decrease the engine speed by releasing the throttle pedal and brake the tractor slightly, if necessary.

- 1 - Press down the clutch pedal and move the gear shift lever to neutral. Release the clutch pedal again and increase the engine speed simultaneously (the engine speed level depends on the speed of tractor).
- 2 - Press down the clutch pedal and engage the lower gear. Release the clutch pedal slowly while increasing the engine speed at the same time.



CHANGING GEARS DRIVING UP DOWN AND A SLOPE

When changing to a lower gear when driving uphill, use a short double-clutching method-the speed of tractor decreases sharply.
Use longer double - clutching method when driving downhill.



DRIVING DOWNHILL

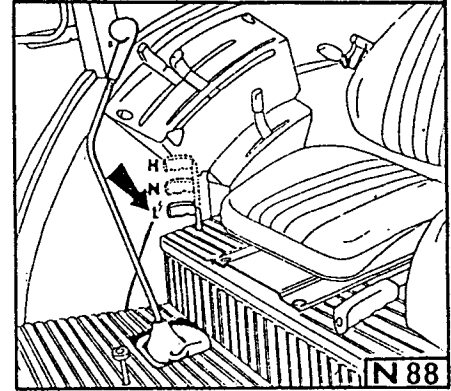


It is prohibited to drive the tractor downhill with no gear engaged.

The sharper the slope is, the lower the engaged gear should be. If possible, change the gear before driving downhill.

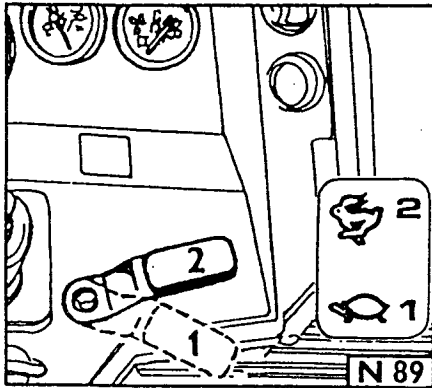
Remember:

The gear you use to drive reliably up a hill should be the same for driving safely down the hill.



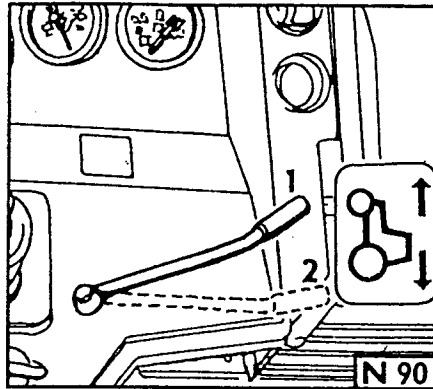
SHIFTING THE HIGH/LOW GEARS

Shifting High/Low gears is the same as the shifting of standard gears. The High/Low lever can be shifted only when the tractor is still.



TORQUE MULTIPLIER SHIFTING

The shifting is made without pressing down the clutch pedal by shifting the lever under the steering wheel and is automatic even when tractor is under load. There are two positions with the two-stage torque multiplier and three positions with the three stage multiplier.

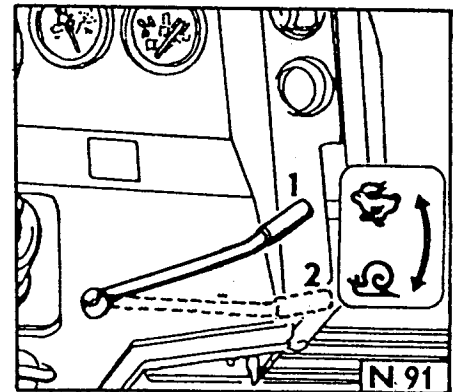


REVERSER SHIFTING

The shifting is made by moving the lever under the steering wheel. There are eight reverse gears available which are about the same speed as the forward speeds. Therefore the speed for driving backwards for a certain type of work has to be considered.



The reverser shifting is done with the clutch pedal pressed down and tractor still by moving the reverser lever to position 2. Operate the rest of the levers as described before.

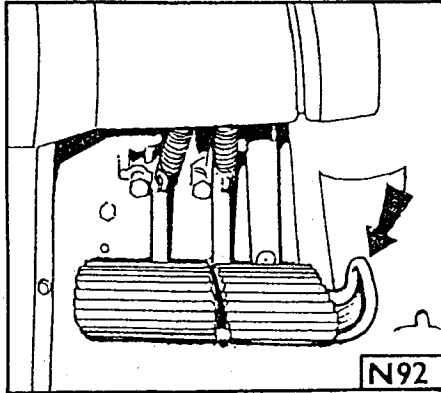


CREEPER GEAR SHIFTING

For a certain type of work select the appropriate standard gear, High/Low and only then shift the creeper gear.



The shifting is done with clutch pedal fully pressed down and with TRACTOR STILL by moving the creeper lever to position 2.

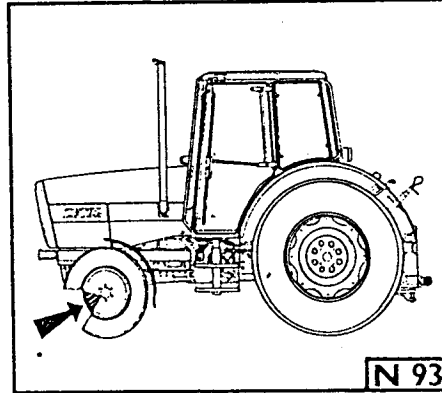


FOOT BRAKES

These brakes are of two pedal type that operate wet disc type hydraulic brakes with an automatic pressure equalizer.

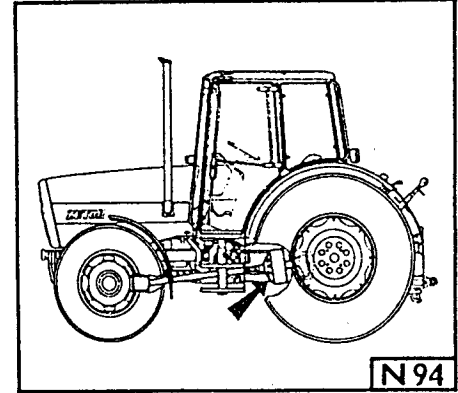


The two brake pedals must be latched together when driving on road. Use the pedals unlatched for braking the left or right wheel only when working on ground or field.



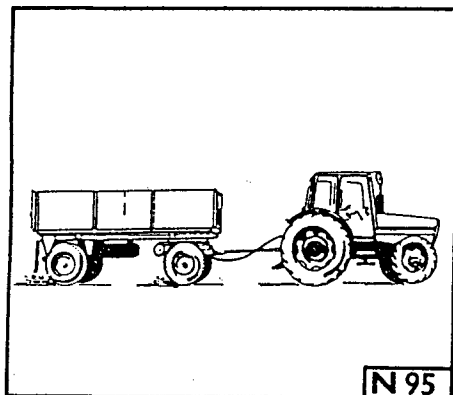
FRONT DRUM BRAKES

These brakes are optional for front wheel driven tractors. If only one pedal is used to brake the tractor, the front drum brakes are not in operation.



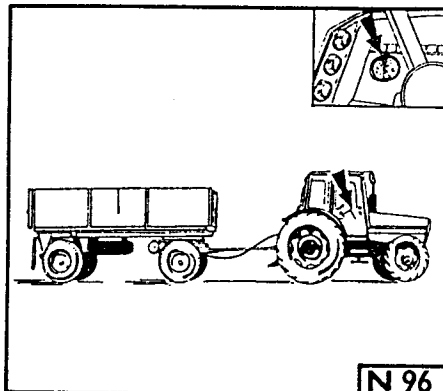
FRONT CARDAN SHAFT BRAKE

This is optional for front wheel driven tractors. If only one pedal is used to brake the tractor, the brake is not in operation.



TRAILER AND SEMI-TRAILER BRAKES

The trailer and semi-trailer air brakes control is synchronized with tractor braking including the brake effect. The working pressure is adjusted by a regulator to 710 ± 20 kPa. If the pressure value drops below 450 ± 30 kPa, the pressure-relief valve disconnects the secondary appliances (differential lock, front drive switch, electro-pneumatic lifting of three-point linkage).

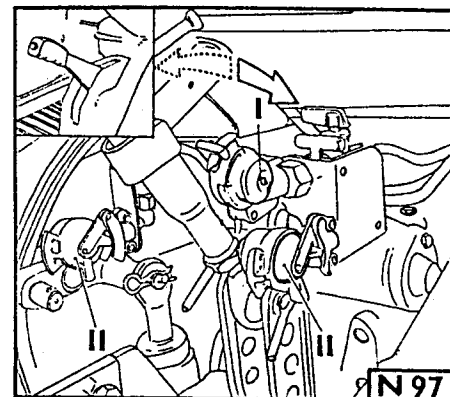


WARNING DEVICE

A decrease in pressure below 380 kPa is indicated by the red warning light located in the pressure gauge within the dash panel.



If the pressure drops below 380 kPa, the tractor with braked trailer or semi-trailer cannot continue in operation unless pressure increases.



SINGLE- AND DOUBLE-LINE BRAKES

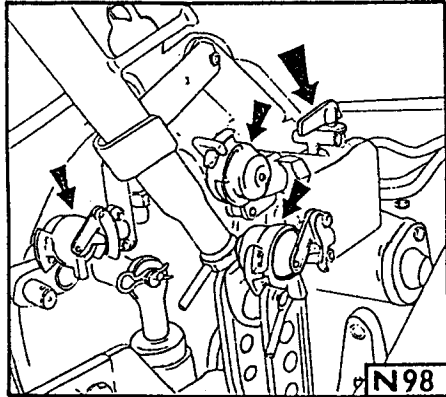
- I - single-line brake coupler
- II - double-line brake couplers

The air tank volume is 20 liters.



Connection of single-line brakes should be carried out with the tractor braked by the park brake or with the shut off cock located at the coupler shut.

The coupler should be closed by a cover when not connected to trailer.

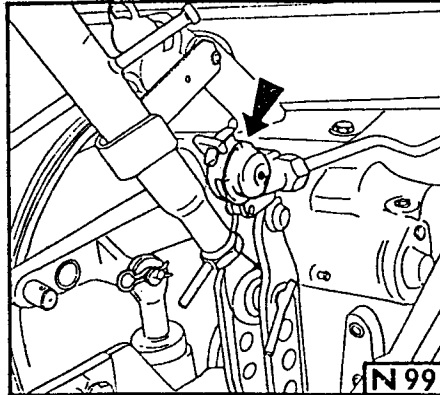


SHUT-OFF COCK

If the single- and double-line brakes are fitted, the single-line coupler is equipped with a shut-off cock.

The lengthwise position of cock lever means the cock is open. If double-line brakes are used, this cock must be shut.

Tractors with the new equipment are not fitted with a shut-off cock since the coupler contains a return valve.

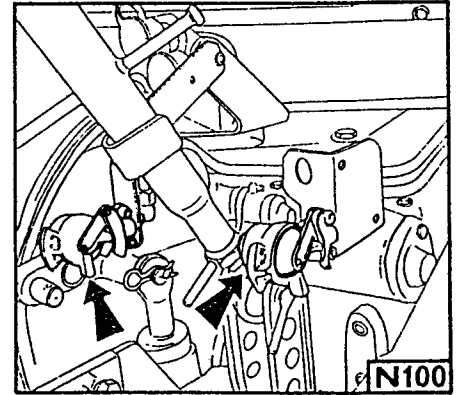


SINGLE-LINE BRAKES

The regulator adjusts the working pressure to 590 ± 20 kPa. The air tank volume is 20 liters.



The maximum permissible driving speed of tractor with trailer (semi-trailer) and single-line air brakes is 25 km/hour.

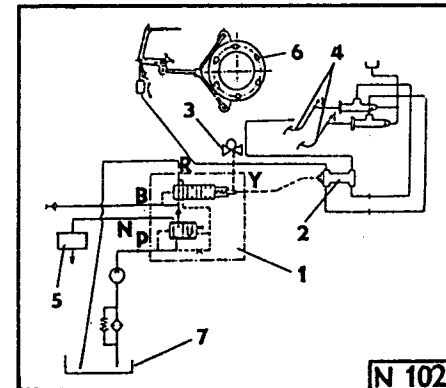
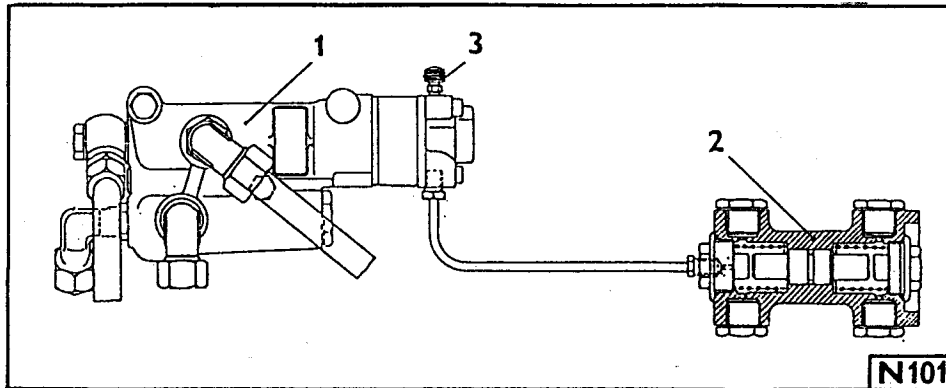


DOUBLE-LINE BRAKES

The working pressure is adjusted to 710 ± 20 kPa. The air tank volume is 20 litres. The left-hand coupler cover is marked yellow, the right-hand is red.



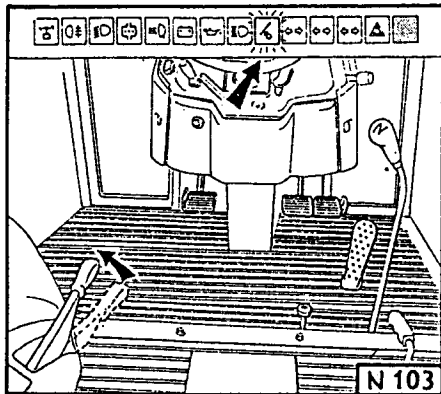
The maximum speed of tractor with trailer (semi-trailer) and double-line air brakes is 40 km/hour.



HYDRAULIC TRAILER BRAKES

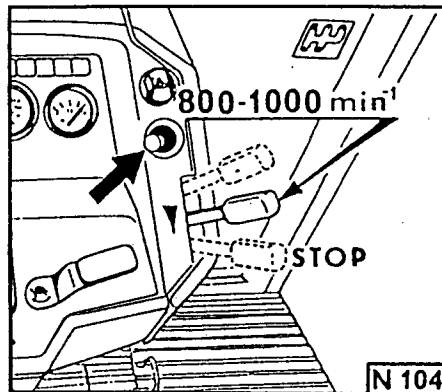
Hydraulic trailer brake control is synchronized with braking of tractor including brake effect. The hydraulic oil pump provides the operational pressure. Bosch brake valve 1 is fitted within the independent hydraulic pump in the circuit. The trailer brake valve is controlled by the brake fluid pressure from the compensator 2 according to the force on the brake pedal. The pressure at the coupler should be 12-15 MPa when the brake pedal is pressed fully. The brake valve provides brake function prior to hydraulic control. When bleeding the tractor brake system do not forget to also bleed the BOSCH brake valve by bleeding screw 3.

1. Bosch brake valve
 2. Pressure compensator
 3. Bleeding screw
 4. Foot brake pedal
 5. Rockshaft cover
 6. Tractor disc brakes
 7. Gearbox oil
- R - Oil outflow back to gearbox
 N - Oil intake to rockshaft cover
 B - Oil intake to trailer coupler
 Y - Brake fluid intake to pressure compensator
 P - Oil intake from hydraulic pump



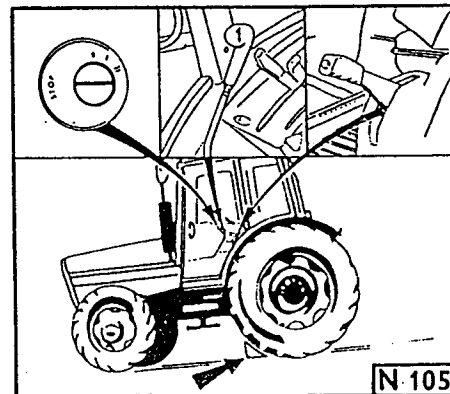
STOPPING THE TRACTOR - PARK BRAKE

Stop the tractor slowly under normal conditions. Press down the clutch pedal and move the gear shift lever to neutral before stopping completely. Brake the tractor to prevent it's spontaneous movement by applying the parking brake. It is indicated on the dash panel if the parking brake is applied.



STOPPING THE ENGINE

If the engine has been used under heavy load, it needs to be cooled down after work. Therefore, decrease the engine speed down to 800 to 1000 rpm for five minutes with no load before stopping. Stop the engine by moving the hand accelerator lever to STOP position or if tractor is equipped with STOP DEVICE, pull the control.



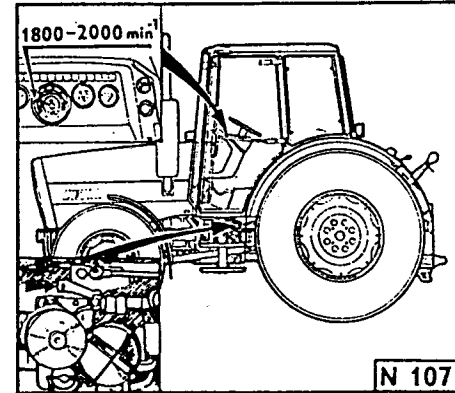
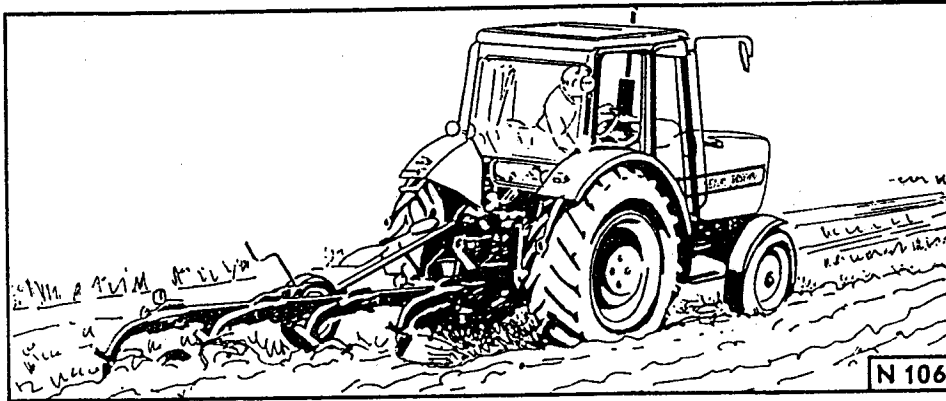
LEAVING THE TRACTOR

The key can be turned from the "I" to "0" position only when the engine is still-the battery charge indicator has to be lit.

If the tractor is on a slope, its spontaneous moving must be prevented, as follows: tractor braked, engine stopped, a low gear engaged and wheels blocked.



Do not forget to remove the key from the key switch before leaving the cab and lock the door.



DURING THE FIRST 100 HOURS

During the first 100 hours of operation :



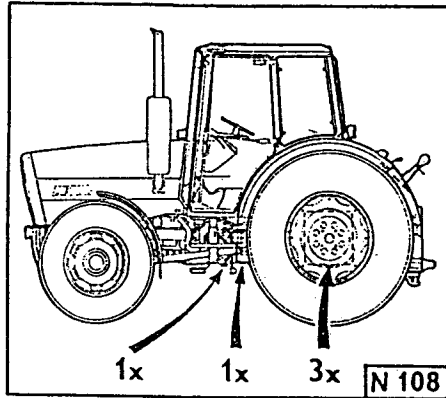
- put engine under normal loads
- avoid light loads
- avoid excessive engine idling
- check engine oil level frequently

(excessive engine consumption during this period is usual)

- check bolt joints, especially on parts used for lifting
- fix any defects to prevent later damage or even danger in operation
- use the same procedure after overhaul

FIRST 10 HOURS

The running in should be carried out in traffic with hydraulic pump switched off (control lever in "0" position).

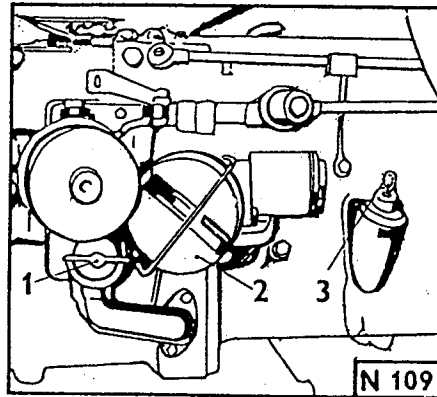


AFTER 10 HOURS

Drain warm oil from the gear-box and clean through an outside filtration unit with filtration ability of 20 microns. This can be done using suction or simply by draining.

If the filtration unit is not available drain the transmission oil into a prepared container.

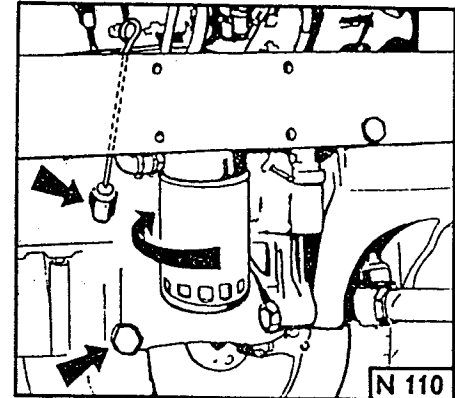
There are five draining holes totally: (1 - clutch housing, 1 - gearbox, 3 - final drive). Let oil set for at least 2 hours and then pour clean oil back into gearbox. The total oil volume is approximately 40 litres.



AFTER 10 HOURS

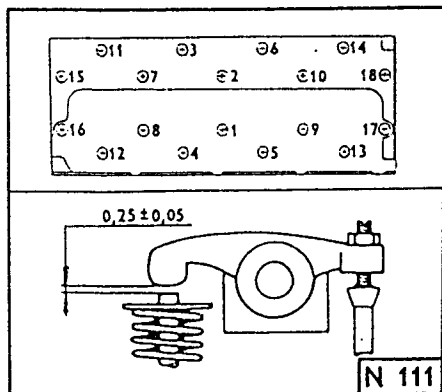
Remove and clean the magnetic insert (1) as well as the mesh insert (2) of transmission oil filter.

Wash both parts in petrol, fit them back after letting the petrol drip off. Add oil, if necessary, until the oil level reaches the upper mark on the dipstick (3). From now on, you can use the tractor hydraulic system with no limitations.



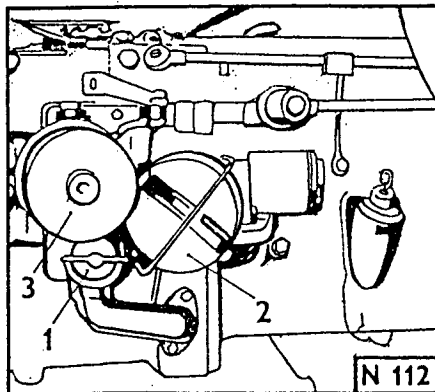
AFTER 70 HOURS

Drain warm oil from the engine and replace the engine oil cartridge filter. Fill the engine with new oil up to the specified level (after short engine idling and letting new oil to set, up to top mark on dipstick).



AFTER 70 HOURS

Check the cylinder liner head for torque (the recommended torque when the engine is cold is 160 to 180 Nm) and valve clearances (0.25 ± 0.05 mm when engine is cold).



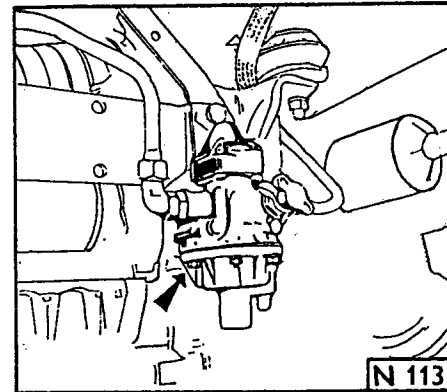
AFTER 70 HOURS

Remove and clean:

- 1 - magnetic insert of suction gearbox filter.
- 2 - mesh insert of suction gearbox filter.

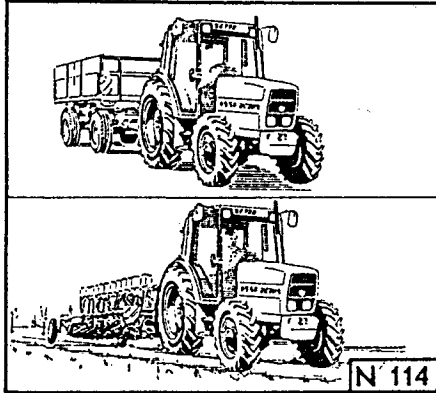
Replace:

- 3 - paper insert of paper cartridge oil filter.



AFTER 70 HOURS

Check the nuts on bottom flange of air regulator for torque.



AFTER 100 HOURS

The tractor can be operated with no restrictions after the running in period.

The recommended engine routine:

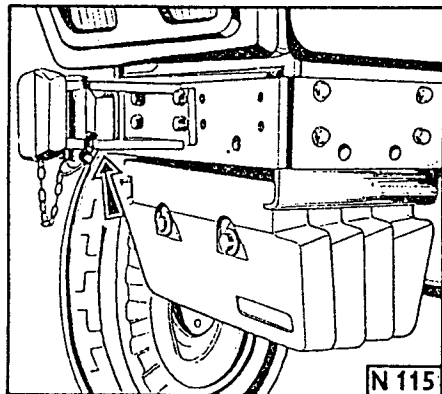
- recommended operation engine speed:
1400 to 2300 rpm
- engine idle:
700 down to 650 rpm
- operation oil pressure:
0.2 to 0.5 MPa
- operation oil pressure at idle:
0.05 MPa as minimum,
- coolant temperature: 80 to 95 degC.

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Swinging draw-bar	61
Automatic pick-up hitch	62
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Draw bar	63



Before you drive be sure the tractor's technical condition meets the requirements for safe traffic.

If a trailer or a semi-trailer is connected, check the coupling and secure load. Never leave moving tractor to couple trailer by yourself. Also keep in mind your assistant's safety.

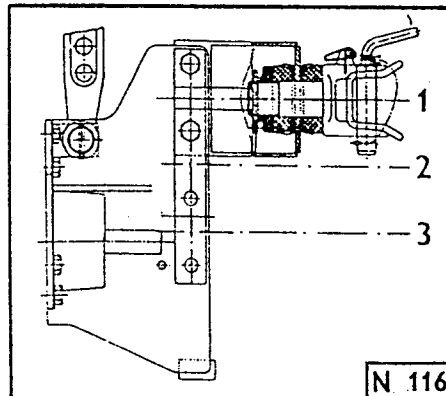


FRONT HOOK

It is used for towing tractor without a trailer or attachments.

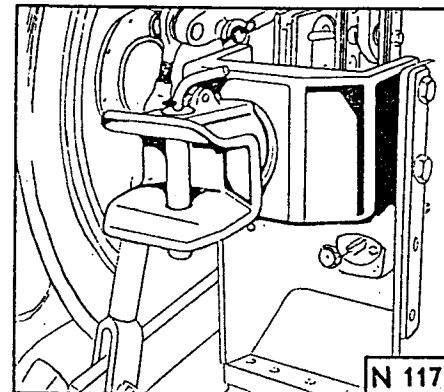


Use a tow bar or rope for freeing a bogged-down tractor, never use chains.



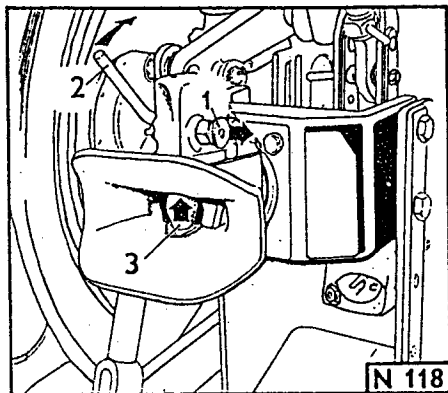
TRAILER HITCH ETAGEMENT

It is used for coupling double-axle or smaller single-axle trailers. It can be adjusted vertically into 3 positions with steps of 100 mm. When working with various implements, the hitch should be adjusted, tilted or removed including the carrier if necessary.



MULTISTAGE TRAILER HITCH

The diameter of the pin is 30 mm. The maximum vertical static load is 10 kN.



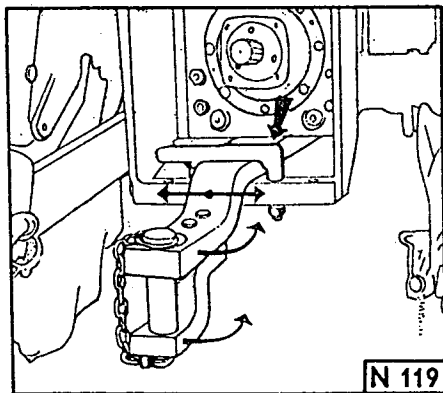
AUTOMATIC TAW JAW

The automatic tow jaw is mounted in place of the multistage hitch. It enables the driver to couple up a trailer from the driver's seat without the help of an assistant.

To attach a trailer simultaneously:

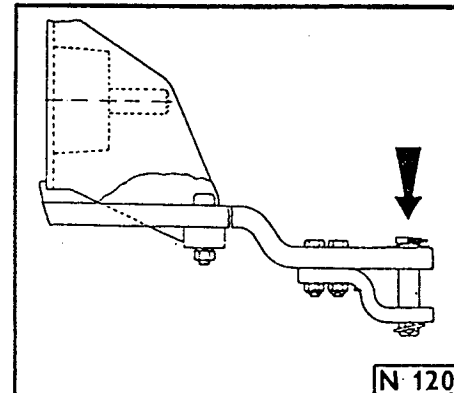
- pull out the locking device (1)
- using the lever (2), lift the main pin (3) until it remains in the upper position.

The static load on the hitch must not exceed 10 kN.



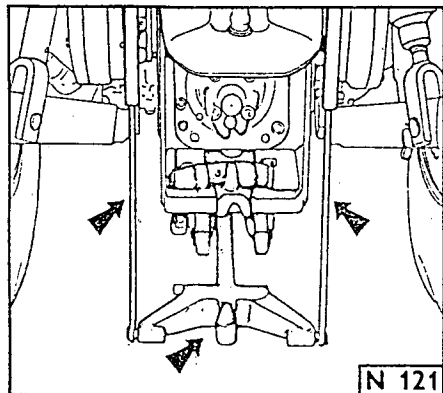
SWINGING DRAW BAR

This bar is used for attaching agricultural machinery and trailers. It can be adjusted transversely in five positions with steps of 80 mm and vertically in four positions (by turning the whole bar round the longitudinal axis about 180° and reassembling the lower portion of fork). If the tractor is equipped with a multistage trailer hitch, the swinging bar is fitted to the bracket on the hitch.



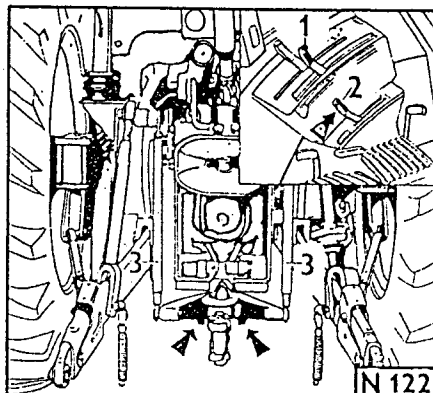
SWINGING DRAW BAR

When working with driveline, the necessary space for the work is provided only when the draw bar fork is set to its lowest position. The maximum vertical static load of the fork is 8 kN.



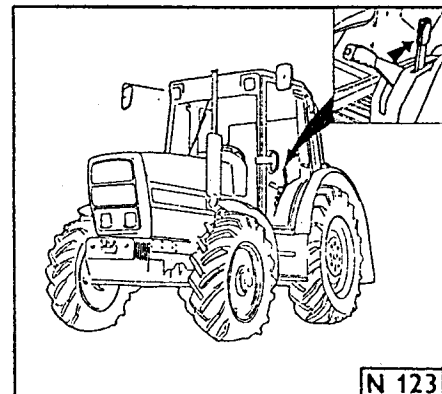
AUTOMATIC PICK-UP HITCH

This hitch is intended for coupling of single-axle trailers with the tow bar eye diameter of 50 mm. The hook on the automatic pick-up hitch is attached to the hydraulic lifting arms by adjustable telescopic drawbars. The pick-up hitch can be raised or lowered by the hydraulics making it simple to attach a trailer to the tractor. The maximum static load on the hitch should not exceed 15 kN.



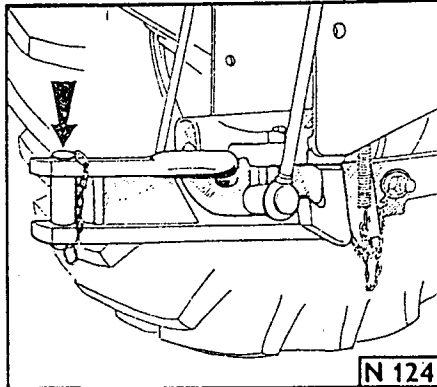
COUPLING THE TRAILER

The hitch is controlled by the inner circuit lever (1) with position control selected (the selection control lever (2) in "P" position). The hook on the tractor and the eyebolt on the hitch are hydraulically lifted to the position where the carrying hooks engage. The hydraulic lifting arms must be lowered slightly so that the pick-up hitch rests on the carrying hooks. The telescopic drawbars (3) must not be stretched.



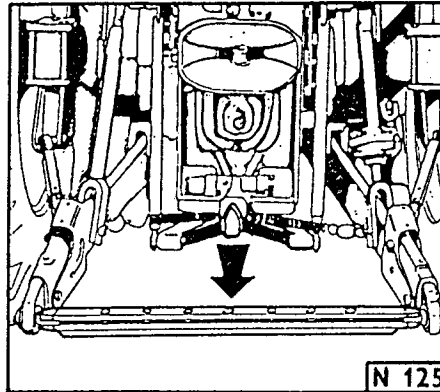
UNCOUPLING THE TRAILER

When disengaging the trailer the pick-up hitch has to be raised slightly to allow the carrying hooks to unlock by moving the pick-up hitch lever backwards.



PICK-UP HITCH EXTENSION

It is available together with the automatic pick-up hitch. It makes it possible to couple all machines connected to the swinging draw bar. The pick-up hitch extension substitutes the swinging draw bar in the middle position. The maximum static load should not exceed 8 kN.

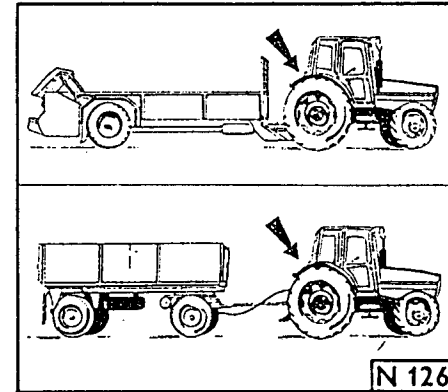


DRAW BAR

The draw bar is adjustable by the hydraulic lifting mechanism within the whole lifting range. Only those agricultural machines which load the draw bar downwards can be coupled to it. The maximum static load should not exceed 8 kN.



Remove the carrier of the trailer hitch etagement incl. jaw when working with the draw bar.



USING TRAILER OR SEMI-TRAILER



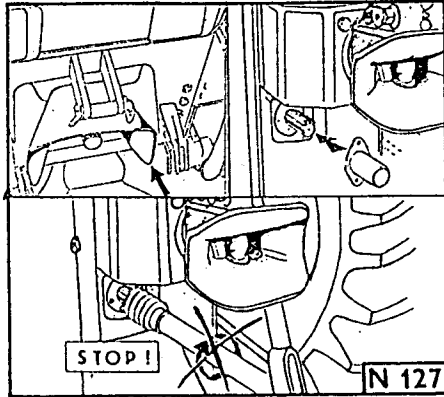
When a trailer is connected the tractor rear axle static load should not exceed the maximum specified value.

The maximum weight of the coupled braked trailer or semi-trailer must not exceed the maximum value.

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Prior to connecting an agricultural machine to the PTO check if the speed of the PTO and the machine are the same. Serious damage and accidents may result from different speeds selected.



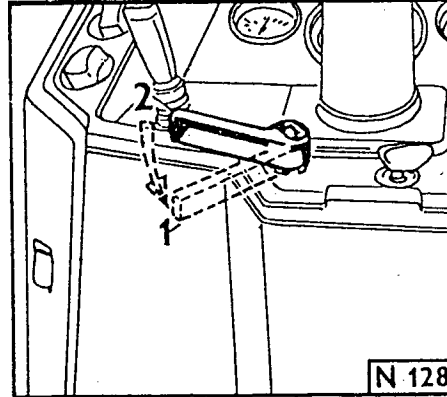
WHILE USING THE PTO



Check if all covers are attached properly. Do not forget to fit the PTO cover after work back again.

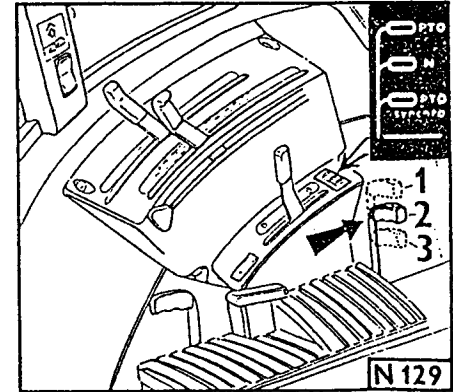
Coupling / uncoupling of the driveline must be carried out after the PTO has definitely stopped.

Persons not authorized to work with the tractor attachments mustn't dwell between the tractor and the coupled machine.



PTO CLUTCH - ENGAGEMENT/DISENGAGEMENT

- 1 - Clutch engaged
- 2 - Clutch disengaged



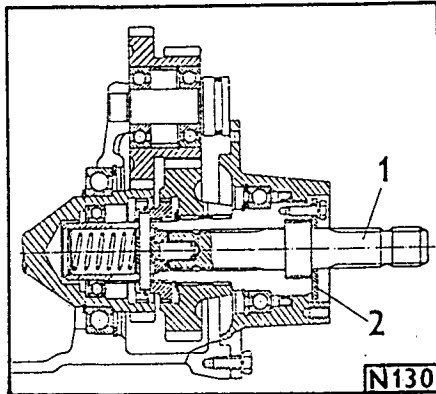
CHANGING DEPENDENT AND INDEPENDENT PTO SPEEDS

- 1 - Independent PTO speeds regardless on the tractor speed (1000 rpm or 540 rpm).

The gear shifting should be carried out at very low engine speed, the tractor clutch pedal should be pressed down at the same time.

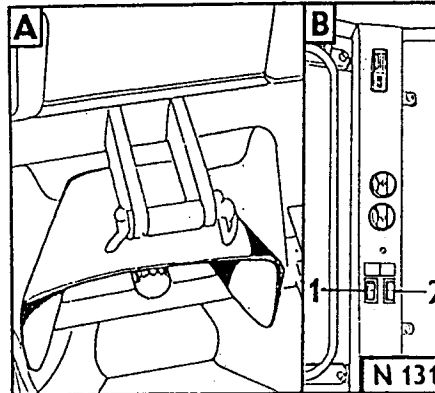
- 2 - Neutral
- 3 - Dependent PTO speeds (through the gear-box).

The gear shifting should be carried out with the PTO shaft clutch disengaged.



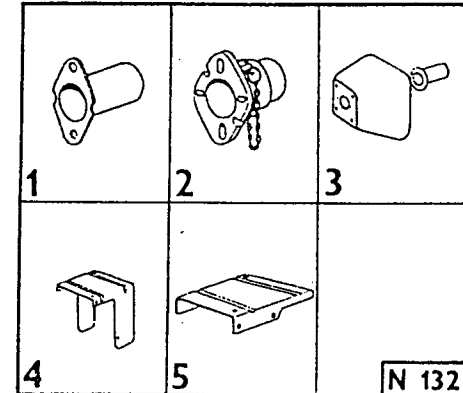
CHANGING THE PTO SPEEDS

The gear change can be carried out by turning the output shaft (1) of 35 mm in diameter. After removing the cover and the plug (2) the output shaft should be pulled out, turned around and fitted back again. The output shaft for 540 rpm has 6 splines, for 1000 rpm 21 splines. It is also possible to fit a 6 splines output shaft both for 540 and 1000 rpm.



FRONT PTO

Engagement/disengagement of the shaft is carried out as follows: Move the PTO clutch lever to the "engaged" position. The gear shifting it's self should be done by the electric switches located in the cab (B). The front PTO is put into operation by switch 1, the rear PTO by the switch 2. If switches 1 and 2 are both turned on both PTO shafts are put into operation at once. If the shafts are not in operation we recommend to move the lever on the control panel to the "off" position because of losses in performance.

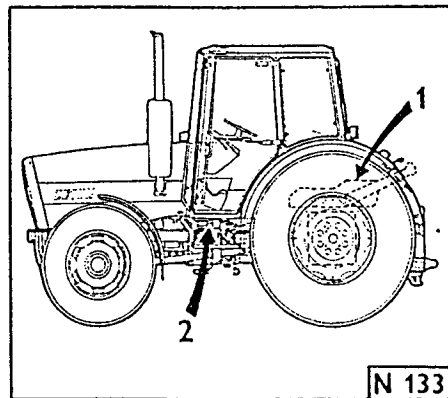


PTO COVERS

- 1 - metal PTO cover
- 2 - PTO cover
- 3 - ISO PTO cover
- 4 - PTO cover
- 5 - PTO cover

The PTO should always be protected by means of a cover of any type.

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HYDRAULIC SYSTEM

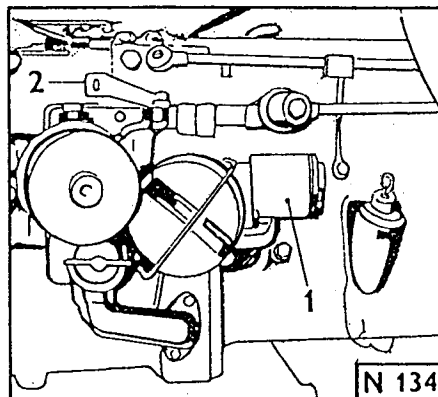
The system consists of the inner and outer circuit (1). The pressure oil supply is provided by a disengageable or non-disengageable hydraulic gear pump (2) of two optional sizes available, which pumps oil from the common fill of the gearbox and differential housing.

PUMP DISCHARGE RATE

-max. 43 l/min of oil with UN 16 pump

-max. 60 l/min of oil with UN 20 pump

The maximum oil pressure in the hydraulic system provided by the relief valve is 18.5 MPa.

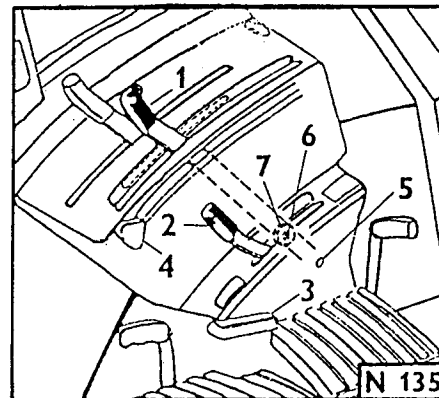


DISENGAGEABLE HYDRAULIC PUMP



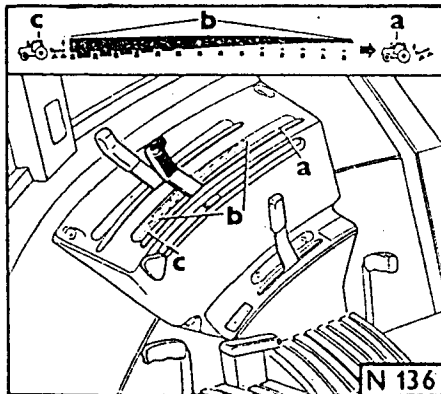
Switch on the hydraulic pump drive (1) by means of the lever (2) only if you use hydraulic implements.

("0" -switched off, "1" -switched on)
Engagement of the hydraulic pump should be carried out only when the engine is stopped. When starting the engine in the winter season, it is suitable to switch the pump off. (Lever in "0" position). A non-disengageable pump is optional. If the engine is running the pump is in operation. This option is used for tractors with hydraulic trailer brakes.



INNER CIRCUIT

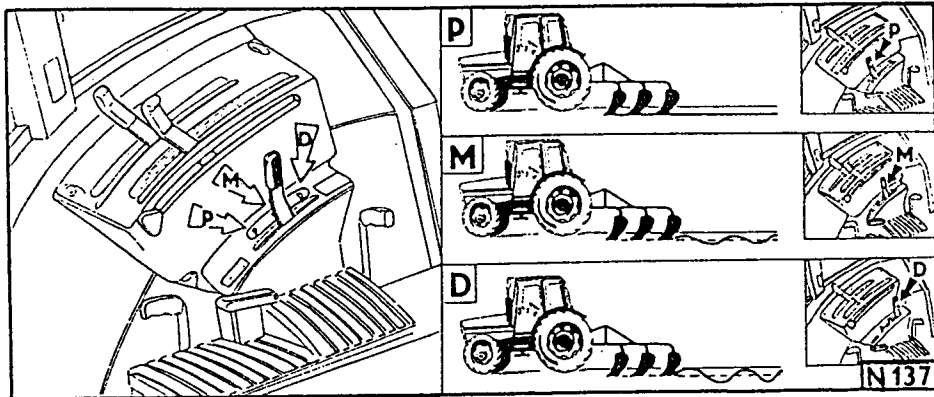
The inner circuit is controlled by the inner circuit control lever (1), the preselector lever (2) and the response control lever (3). The position of the inner circuit control lever can be locked by a control lever stop (4).



INNER CIRCUIT CONTROL LEVER

This lever can be used as follows:

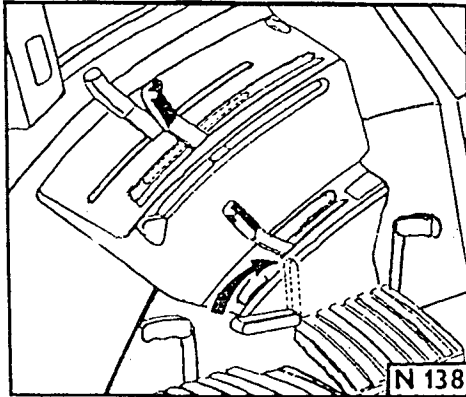
- a - Lifting the implements into transport position (raised to maximum)
- b - Height adjustment to three point linkage with implements with position control and ploughing depth adjustment with draft or mixed control.
- c - Setting of floating position when working with a wheeled implement.



PRESELECTOR CONTROL LEVER

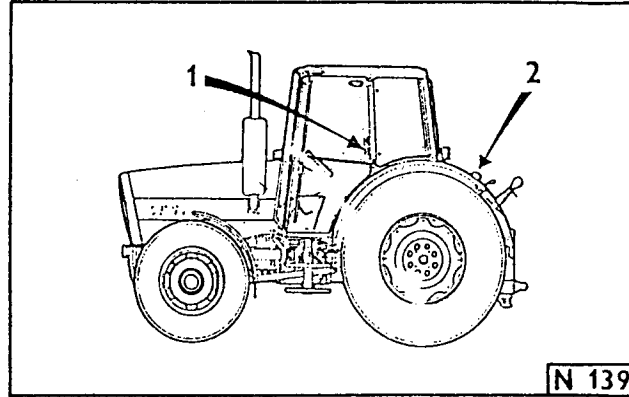
This control lever has three positions labeled P, M, D.

- P - Position control. The implements attached to the three-point linkage are kept automatically in a constant height (position) according to the tractor.
- M - Mixed control. It is a combination of position and draft control. It is suitable especially for ploughing on lands with various ground resistance.
- D - Draft control. The implements attached to the three points linkage are automatically moved to an appropriate height according to soil resistance.



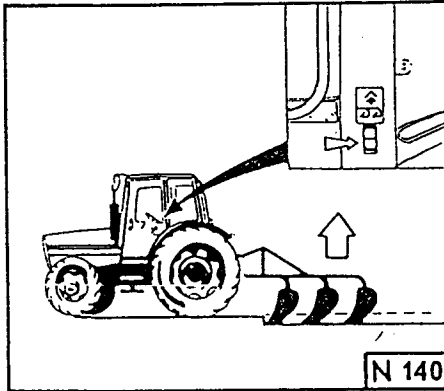
RESPONSE CONTROL LEVER

This lever operates the cock which controls the amount of oil floating to the outer and inner hydraulic circuits. With the lever in horizontal position, a minimum amount of oil is flowing to the inner circuit. The restriction of oil flow with draft and mixed control the response of hydraulic system is reduced (when ploughing under various soil conditions).



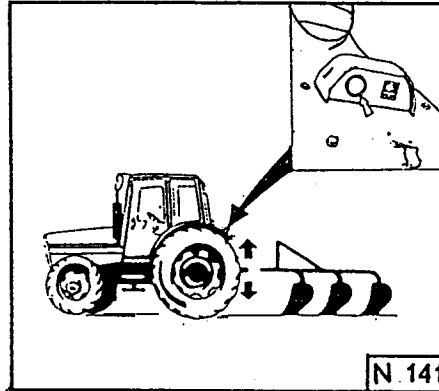
ELECTROPNEUMATIC CONTROL OF HYDRAULIC SYSTEM

It is an optional hydraulic control and to lift the three point linkage to its highest position without changing the set position of the main inner circuit control lever. This device can be operated either by a cab switch (1) or from the outside using the buttons located on the ends of both rear fenders (2).



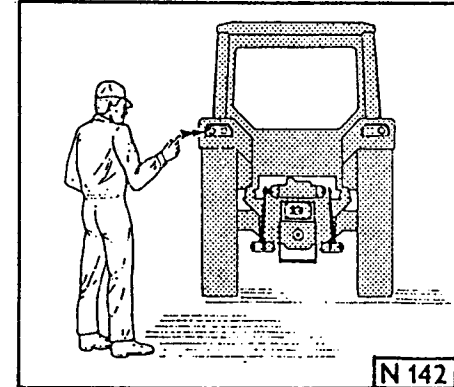
CAB SWITCH

It is used to raise implement at the end of a field where the tractor is to be turned round. When the switch is on, the implement is raised, when it is switched off the implement is lowered to the initial position set by the main inner circuit control lever.



FENDER BUTTON

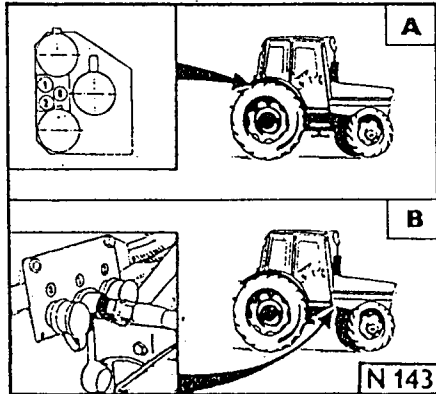
Controlling the lower link movements of the three point linkage from the outside, it enables the driver to attach the implement easier. The linkage is raised while the button is pressed, when it is released the links are lowered to the initial position set by the inner circuit control lever.



USING THE BUTTONS

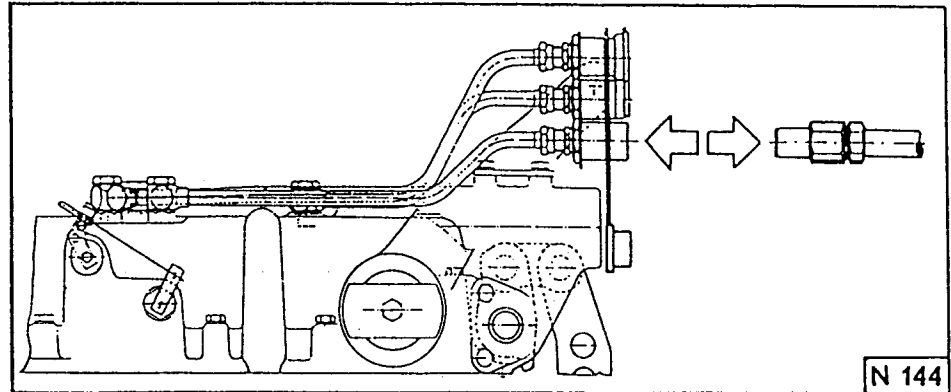


The driver must be standing clear of the implement being attached to the three point linkage when using the buttons not to be caught by the moving parts. When the implement is raised to the transport position the inner circuit lever has to be moved to the top position. The implement has to be lowered when the tractor is stopped.



OUTER HYDRAULIC CIRCUIT

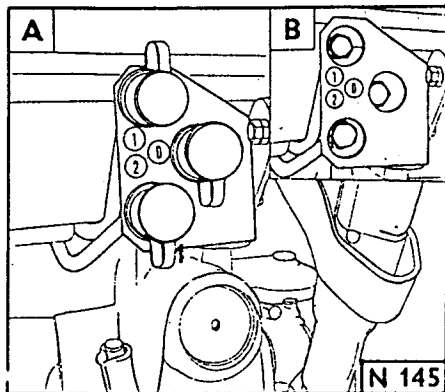
This circuit supplies oil to the hydraulic attachments connected to the outer hydraulic outlets with quick couplers at the ends. The front (B) and rear (A) quick coupler inner diameter is 12.5 mm according to ISO 5675. Quick couplers RK 12 are optional.



MAXIMUM OUTER HYDRAULIC OUTLETS SUPPLY

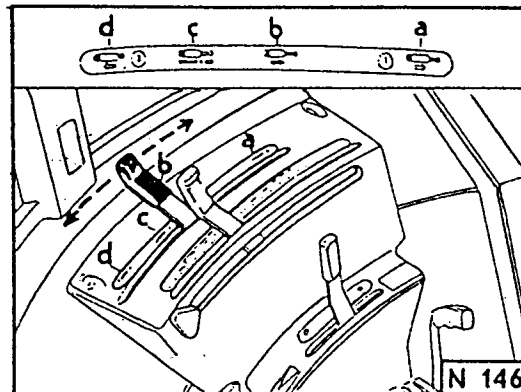


The maximum outer outlets supply to the implement assist cylinders is 12 litres of oil with 40 litres of gearbox oil volume (to the top mark), unless the tractor is operating on a slope. If the supplied volume is too high the oil level can lower so much it can result in damage of pumps, torque multiplier and PTO clutch caused by air drawn through the gearbox and hydraulic pumps. Special care should be taken with the oil that remains in the quick couplers when connecting or disconnecting the couplers. This oil should be wiped off with a piece of cloth for environmental reasons.



REAR OUTER HYDRAULIC CIRCUIT OUTLETS

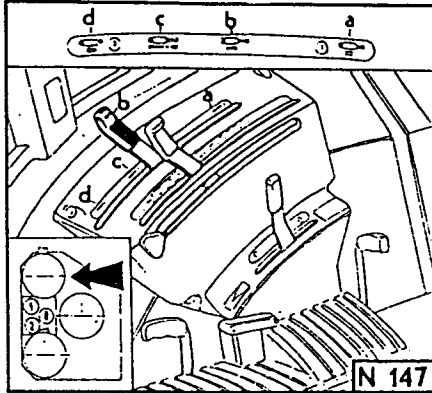
In the standard version there are three quick couplers at the end of the outlets on the panel (A). The couplers "1" and "2" are pressure couplers. The pressure in corresponding coupler depends on the outer circuit lever position. The third coupling "0" is connected to the return line for the oil of hydraulic implements flowing into the transmission (e.g. rotary hydromotors). The outer circuit outlets can be supplied without quick couplers but with plugs (B).



OUTER CIRCUIT CONTROL LEVER

This lever has 4 positions according to the label:

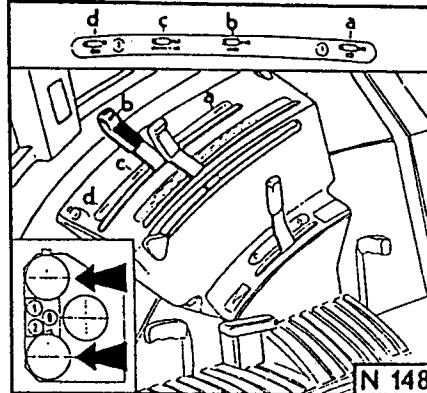
- a - Pressure within quick coupler "1", coupling "2" connected to the return line. The lever is moved to its far back position. It must be held in this position otherwise it returns to "b" (neutral) automatically.
- b - Neutral position (locked). The outlets of both "1" and "2" couplers are closed and the oil is blocked within the connected hydraulic implement. The spring-loaded lever is held in this position automatically.
- c - Floating position. The quick couplers "1" and "2" are connected to the return line, the oil can flow through in either direction. The lever in this position is locked.
- d - Pressure in coupling "2", coupling "1" connected to the return line. The lever is in its far forward position. It must be held in this position, otherwise it returns automatically to "c" (floating) position.



SINGLE-ACTING CYLINDER CONTROL

Cylinder connections should always be carried out to the quick coupler "1":

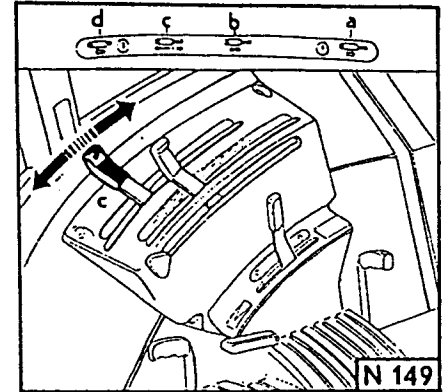
- lifting, lever in "a" position (pressure in coupler "1")
- end of lifting, the lever moves to "b" position (neutral),
- lowering, the lever in "c" position (floating),
- end of lowering, the lever is moved to the "b" position (neutral).



DOUBLE-ACTING CYLINDER CONTROL

The cylinder connections should be carried out to coupler "1" and "2":

- movement in one direction (the lever in "a" position - pressure to coupler "1"),
- end of movement (the lever in "b" position - neutral),
- movement in opposite direction (the lever in "d" position - pressure to the coupler "2")
- end of movement (lever in "b" position - neutral).



DOUBLE-ACTING CYLINDER CONTROL



When operating the double-acting cylinder the outer circuit control lever should be moved over the "c" position as quickly as possible due to the fact that both sides of the working cylinder are connected to the return line which can result in uncontrollable piston rod movement.

COUPLING OF MACHINES AND IMPLEMENTS TO THE OUTER HYDRAULIC CIRCUIT

COUPLING OF MACHINES AND IMPLEMENTS CONSISTING OF SEVERAL PARTS

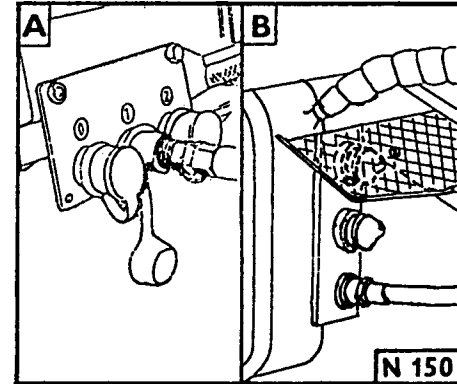
When working with agricultural machines and implements consisting of several parts (such as harrows, scrubbers and combinators) where side frames are attached to the center frame which could be raised into vertical position by using independent hydraulic cylinders operated by the outer hydraulic circuit of the tractor, it is necessary to always control the movement of the side frames by moving the outer circuit control lever to the top position. This way the oil in quick coupler "1" will provide the control of the side panels, coupler "2" is return.

CONNECTING A ROTARY HYDROMOTOR

If a rotating hydromotor is connected to the outer hydraulic outlet, its return line should always be connected to the quick coupler "0".

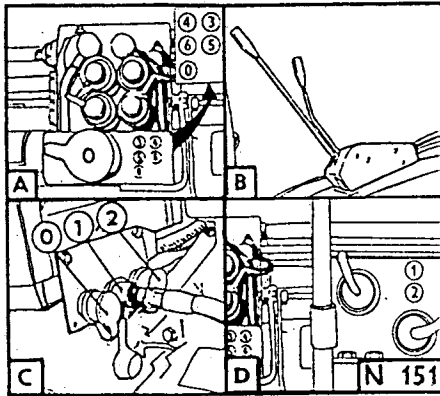
CONNECTING A REVERSIBLE ROTARY HYDROMOTOR

A reversible rotating hydromotor should be connected to the quick couplers "1" and "2" for functional reasons. In this case a relief valve must be fitted to both lines to reliably eliminate the pressure peaks when the machine is stopping. The return lines of these relief valves should be connected to the coupling "0".



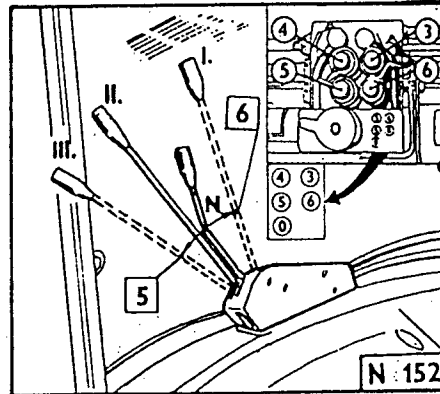
FRONT OUTER HYDRAULIC CIRCUIT OUTLETS

These outlets can be installed in the panel in the right-hand corner of cab frame. The installation is related to the additional SCV. They are intended for operation of the front three point linkage or for other front mounted adapters. The marking of the outlets as well as their utilization are the same as for the rear outlets.



OPTIONAL SELECTIVE CONTROL VALVE (SCV)

This block is intended for agricultural machines which require independent control of two hydraulic appliances. It is located on the rockshaft cover (A) and can be supplied in a three- or four-position version with float position. The control levers for both sections are located on the right rear fender in the cab (B). Front outer (C) outlets or rear outer outlets are installed with the additional SCV (D).

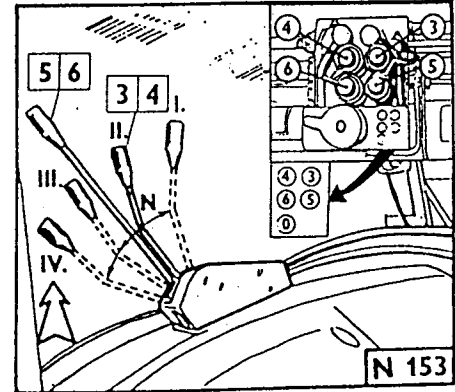


THREE-POSITION VERSION

Control lever positions:

- I. The rear end position - pressure oil is supplied to coupling "6".
 - II. Middle position - neutral (block).
 - III. The top end position - pressure oil is supplied to coupling "5".
- The lever returns to middle position automatically.

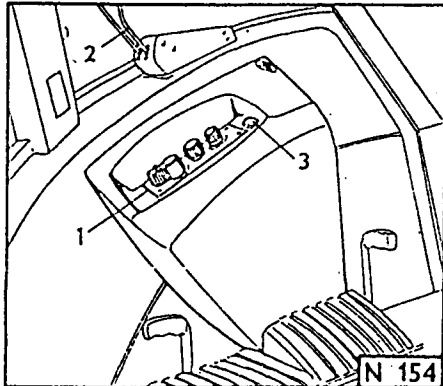
Tractors with mechanical hydraulic systems are equipped with two-section SCV, each in four-position version. Tractors with EHR hydraulic system are equipped with SCV with one four-position section and one three position section.



FOUR-POSITION VERSION

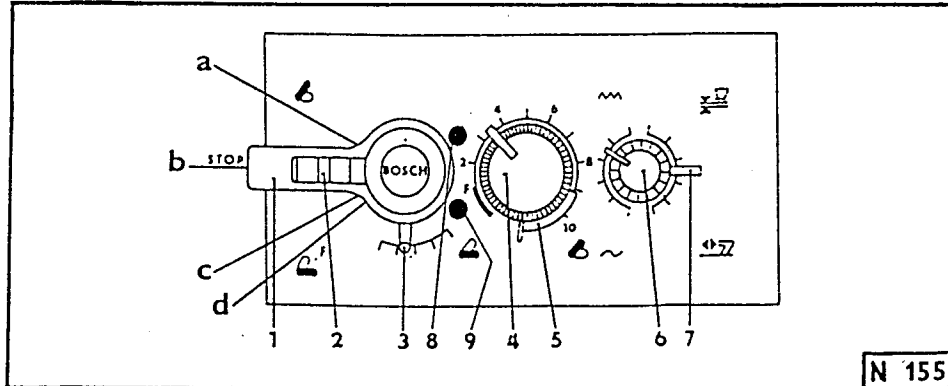
- I. The rear end position - pressure oil is supplied to coupling "4" or "6".
- II. Middle position - neutral (block).
- III. The top end position - pressure. oil is supplied to coupling "3" or "5".
- IV. Floating position.

The lever returns to middle position automatically. The lever can be moved forwards through "III" to "IV" position - floating position. Both couplings, "3" and "4" or "5" and "6" are connected to the return line. In this option the floating position is at the end of the control lever movement.



CONTROL PANEL LOCATION

The panel (1) is located on the top section of the right fender. It substitutes the manual hydraulic control (inner circuit). The outer hydraulic circuit function is provided by the optional SCV controlled by two levers located on the top area of the fender (2). If warning indicator (3) lights, the oil filter insert has to be removed.



CONTROL FUNCTIONS

- 1 - The lever for lifting has 4 positions:
 - a) transport, lifting
 - b) stop position
 - c) regulation, lowering control
 - d) free position, quick sinking (the spring returns the lever back to "c" position).
- 2 - Blocking of transport position.
- 3 - Lowering rate control 0..max.
- 4 - Selection of three point linkage position.
- 5 - Limitation top position of the three point linkage.

6 - Response control

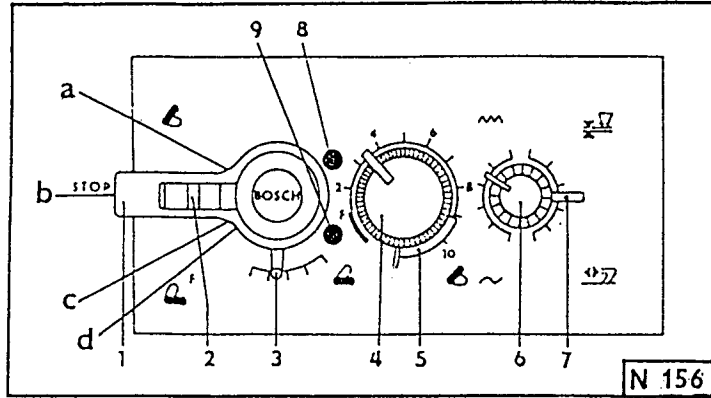
7 - Control mixing. Smooth setting from draft control to position control.

8 - Indication of lifting.

9 - Indication of lowering.

PUMP DISCHARGE RATE

A tractor with EHR BOSCH is equipped with a UR 20 pump with maximum supply of 60 l/min. The maximum pressure in a hydraulic system equipped with EHR BOSCH provided by the relief valve is 21 MPa.



USING THE EHR 4 - BOSCH CONTROL PANEL

A - Not in function

The electric installation is switched off by the key in the key switch. The electric circuits are switched off, the three point linkage is blocked.

B - Unblocking

After switching on the electric installation by key in the key switch the three point linkage is still blocked. The linkage doesn't lift nor lower. The unblocking is done with electric installation switched on and engine running by moving the lifting lever (1) to "a" position. (only a short period of time is sufficient)

After returning the lever (1) to "c" position the three point linkage takes up the position set by the control elements.

C - Using the fender button controls

The button controls only provide coupling and uncoupling of implements. The labels of the buttons on both fenders correspond to the movement of the three point linkage. The limitation of the three point linkage is not provided by the regulation system when using the fender button control. The piston stroke is stopped mechanically. Therefore it is not suitable to use the button controls in the upper area of the three point linkage movement. Each time the button controls are used the regulation system is blocked again and the "Unblocking" procedure (B) has to be repeated again.

D - Implement transport

Shift the lifting control lever (1) to "a" position and secure by locking lever (2).

E - Limitation of the three point linkage top position.

This is done by control lever (5). The limitation can be carried out in the upper half of the three point linkage movement.

F - Field operation

Go through the B procedure and set the desired position of the elements according to the type of work. Setting the depth of the implement is provided by control (4). Control (6) is used for response adjustment.

Maximum response symbol 

Minimum response symbol 

Use control (7) for preselection and mixing.

Draft control symbol 

Position control symbol 

The regulation function (lifting and lowering) can be observed by LEDs (8) and (9). Switch the control (1) to position "a" at the turning point, set the "c" position after turning again. The regulation system takes up the previous working position (ploughing memory). The lowering speed can be set by control (3). In "0" position the three point linkage does not lower!

G - Quick sinking

Lever (1) in "d" position - free position (not detent).

The control has to be held in this position otherwise it returns to "c" position - floating position.

H - Floating position.

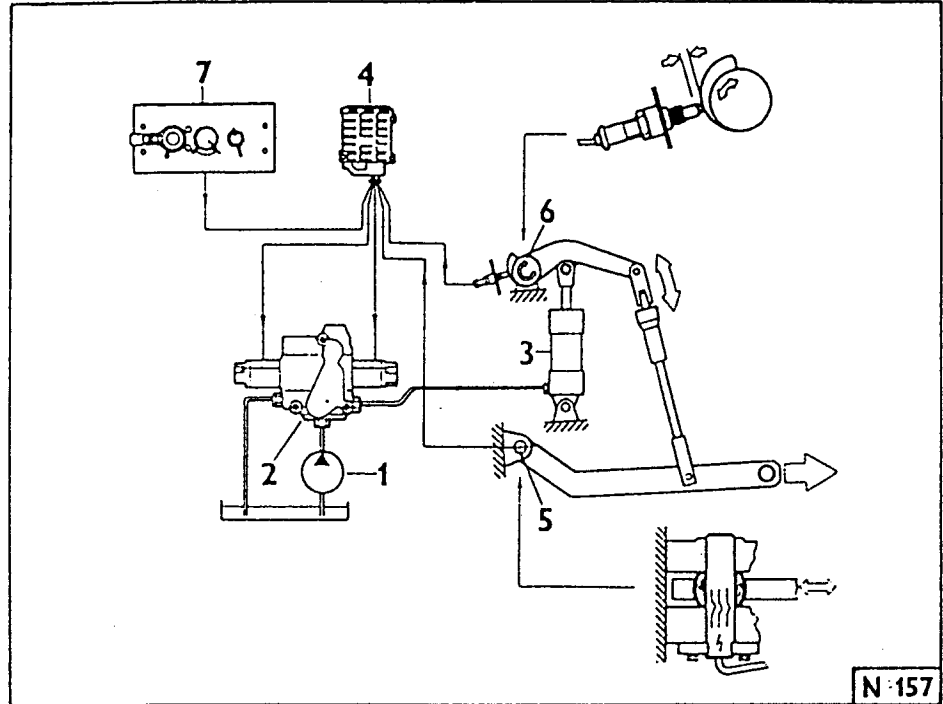
The positions of control (4) in the area marked "F" and control (7) set to a symbol  provide continuous operation in floating control when working with wheeled implements.

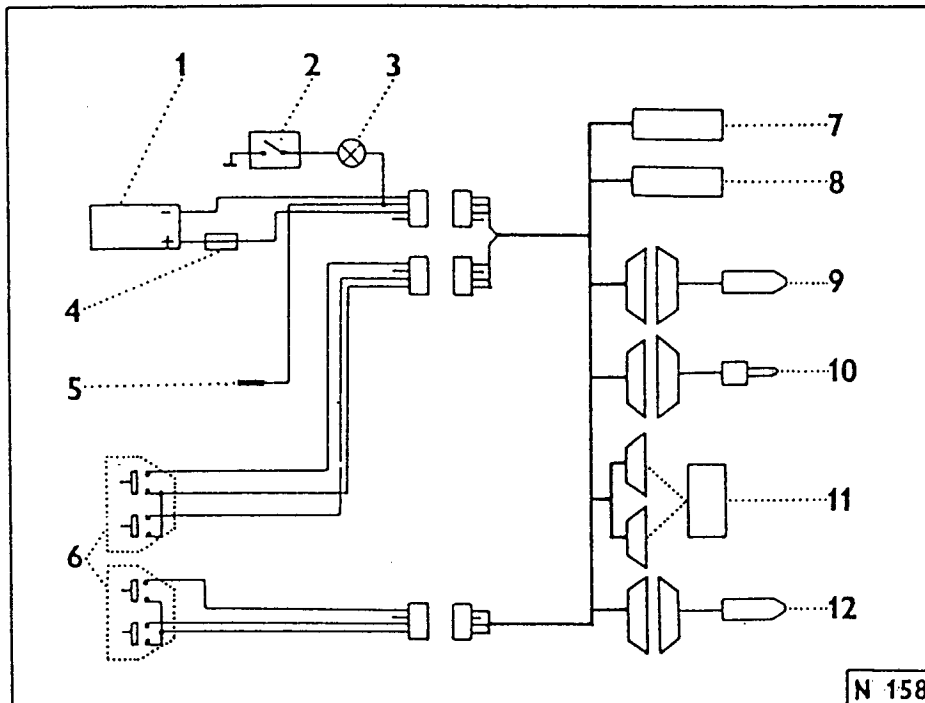
K - Stop position

If control (1) is moved to "b" (stop position) the three point linkage stops its movement immediately.

EHR 4 - BOSCH ELECTROHYDRAULICS
FUNCTION DIAGRAM

The hydraulic pump (1) supplies the oil to the selective control valve (2) which controls the cylinders (3) of the hydraulic lifting arms. The lifting arms are connected to the lower links of the three point linkage where a coupled implement is lifted, lowered or held in position. The electronic control unit (4) receives electric signals from sensing pins (5) and (6) which are compared to the desired value set on the control panel (7). The difference between the desired and real value is transferred to the selective control valve (2). The valve is reset by two proportional electromagnets. Lifting and lowering is done irrespective of the load.

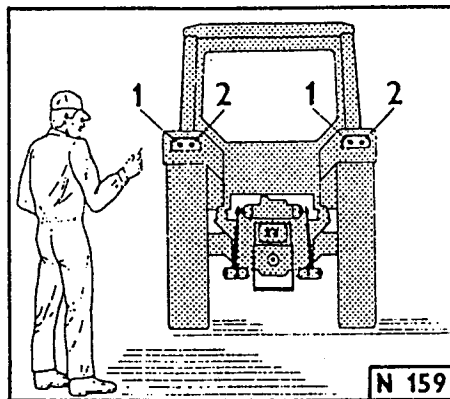




EHR 4 - BOSCH ELECTROHYDRAULICS ELECTRIC CONNECTIONS

1. Battery
2. Oil filter sensor
3. Oil filter indicator
4. Fuse compartment with 15 A fuse
5. Fuse no. 2 in fuse box
6. Electrohydraulic control fender button
7. Control panel
8. Electronic control unit
9. Sensing pin
10. Position sensor
11. Selective control valve
12. Sensing pin

N 158



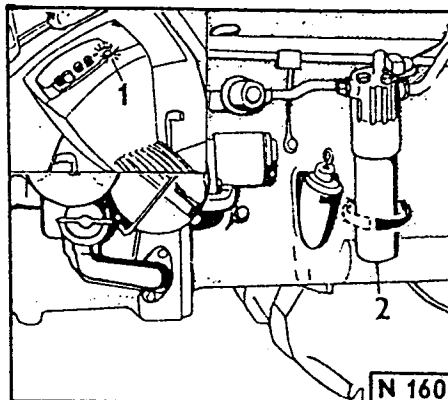
**ELECTROHYDRAULIC CONTROL FENDER
 BUTTONS**

- 1 - lifting
- 2 - lowering

The three point linkage moves only while the buttons are pressed.

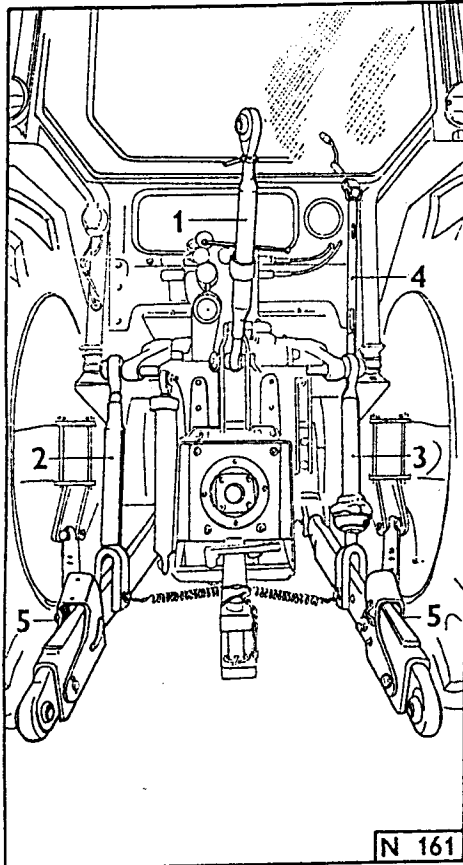


When working with the three point linkage using the buttons the operator must stay clear of the implement being attached to avoid the possibility of getting caught.



HIGH PRESSURE OIL FILTER INDICATOR

After starting the tractor at low temperatures indicator(1) could light to signal the oil filter insert needs to be replaced. That is caused by the thickness of the oil. When the operation temperature is reached the indicator is switched off. If the indicator lights during operation the oil filter insert (2) has to be replaced.

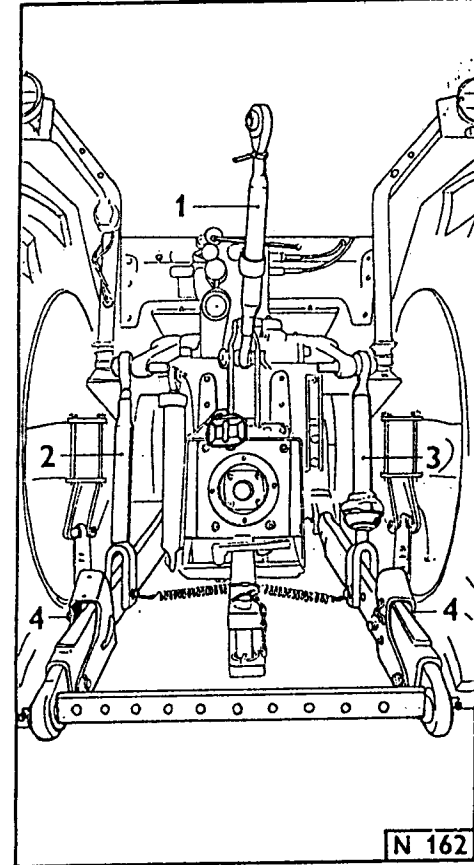


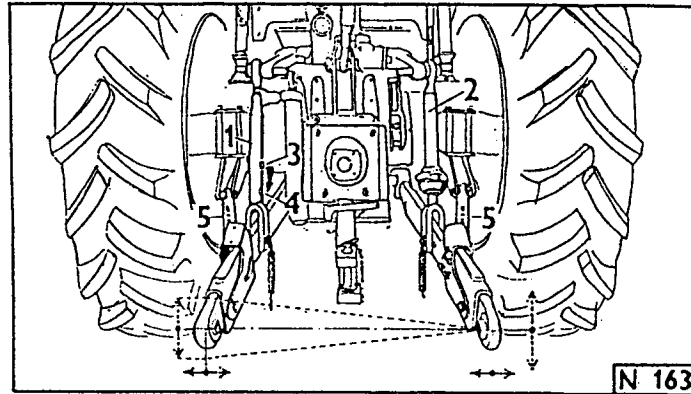
Sie dient zum Ankoppeln von getragenen oder halbgetragenen landw. Maschinen und Geräten der II. Kat. in Übereinst. mit ISO. Der Kugelmittenabstand der Aufhängegelenke ist 870 mm. Der Durchmesser der Kugelöffnungen der Aufhängeelemente ist 28,5 mm.

1. Obere Zugstange.
 2. Linke Hebezugstange.
 3. Rechte Hebezugstange mit Zahnradgetriebe für feine Einstellung.
 4. Teleskopische Welle zur Betätigung der rechten Hebezugstange von der Kabine aus.
 5. Untere Zugstangen der Dreipunktaufh.
- HINTERE DREIPUNKTAUFHÄNGUNG-Kabriolett**
1. Obere Zugstange.
 2. Linke Hebezugstange.
 3. Rechte Hebezugstange, höhenverstellbar.
 4. Untere Zugstangen der Dreipunktaufh.



Die Personen, die mit Arbeiten mit der Zusatzeinrichtung des Traktors nicht beauftragt sind, dürfen sich zwischen dem Traktor und der Aufhängemaschine nicht aufhalten. Den Traktor mit dem getragenen Gerät in der angehobenen Stellung nicht parken.





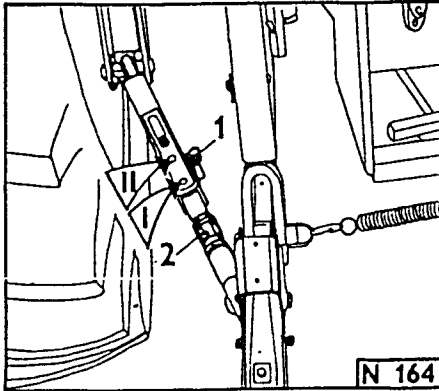
ANKOPPELUNG DER MASCHINEN AN DIE DREIPUNKTAUFHÄNGUNG

Die linke Hebezugstange (1) ist nach dem Entkoppeln des oberen Endes vom Bolzen des Hebearmes einstellbar und ist zur Grundeinstellung der Stellung bestimmt. Zur Feineinstellung dient die rechte Hebezugstange (2) mit dem Zahnradgetriebe, das von der Fahrerkabine aus gesteuert wird. Die Zugstangenenden können, was die Höhe betrifft, um 200 mm verstellt werden. Die freie Verbindung des landwirtschaftlichen Gerätes mit dem Traktor und das gegenseitige Verdrehen um die Längsachse sind nach der Verstellung des Zapfens (3) in die untere Öffnung (4) möglich. Die beiden Zugstangenenden können in diesem Fall gegeneinander frei, was die Höhe betrifft, um 100 mm bewegt werden. Die Querführung des Werkzeuges wird durch die Begrenzungsstangen (5) sichergestellt. Die Enden der unteren Zugstangen können im Falle eines Anbaugerätes der II. Kategorie von ihrer Zentralstellung auf beide Seiten um 100 mm ausgeschlagen

werden (bei der Kategorie I um 125 mm). Der Seitenausschlag kann verriegelt werden.

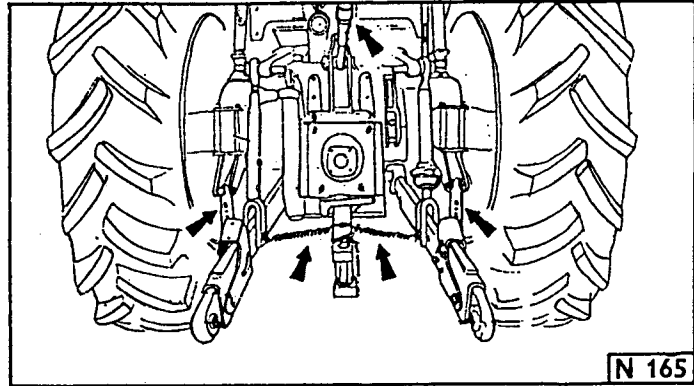
ANKOPPELUNG DER MASCHINEN IN DIE DREIPUNKTAUFHÄNGUNG CBM-Endstücke

Die unteren sowie die oberen Zugstangen sind mit den halb-automatischen Endstücken CBM versehen. Sie dienen zu einem einfacheren - Zweiphasenankoppeln und - abkoppeln der Geräte in die Dreipunktaufhängung ohne einen notwendigen Eingriff des Fahrers. Sie werden mittels Litzen von der Fahrerstelle aus gesteuert. In der ersten Phase werden beim Zurückfahren und beim Folgeanheben der Dreipunktaufhängung ihre unteren Zugstangen an das Gerät angekoppelt. In der zweiten Phase wird vom Fahrer von der Kabine aus die obere Zugstange der Dreipunktaufhängung, die in einer der vier Öffnungen der Konsole untergebracht ist, angekoppelt.

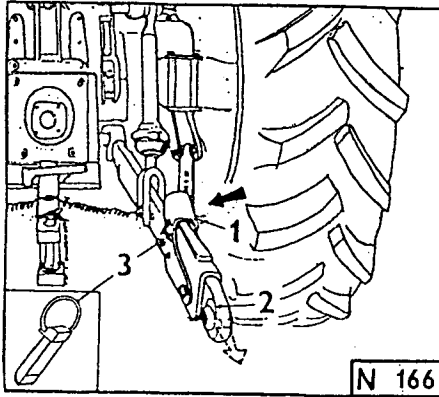


ELIMINATING THE LOWER LINKS LATERAL MOVEMENT

Insert pin (1) into hole II (category II implement) or into hole I (category I implement). The linkage is set in the central position. Fine adjustment of the linkage is possible by screw (2). Eliminating the lower links lateral movement is intended for transport of the raised implements or for implements that require precise guidance behind the tractor.

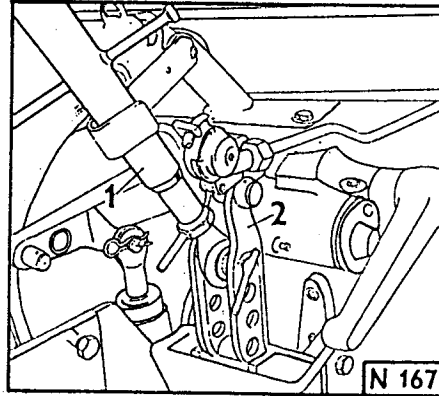


Both stabilizers with the same position of the pins must always be attached to the tractor. When working with category II implements which require lateral movement (i.e. plough) the rear wheels track have to be adjusted to at least 1500 mm. This way the collisions of the lower links with tires are avoided. The lower links should be joined by springs and the top link should be placed in a flexible holder when driving with no implement attached.



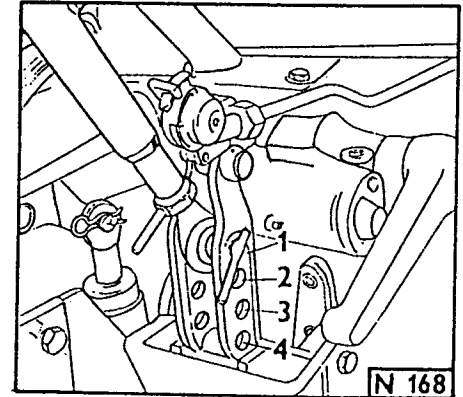
LOWER TELESCOPIC DRAFT LINKS

These links enable the attachment of implements. Push locking yoke (1) down to loosen draft link ends (2). Pull draft link end out and fit to lower pin of implement. Secure lower three point draft link end to pin of implement with retaining pin (3) in holder on locking yoke. Drive tractor in reverse to gear to push draft link ends into draft link bracket. The draft link ends will automatically lock into the work position.



TOP LINK

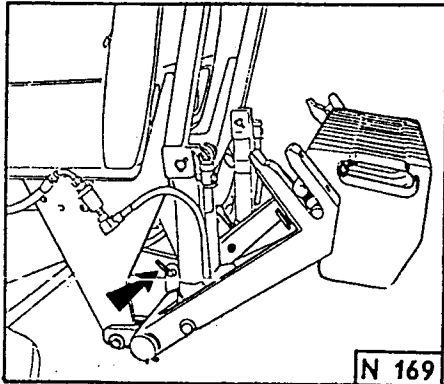
The top link (1) is a threaded turn-buckle that has a maximum adjustment of 200 mm. It can be attached to the tractor into one of four holes of the bracket (2) which transfers the force from the attached implement onto the torsion bar in rockshaft cover.



TOP LINK POSITION SELECTION

Attachment into one of the holes 1-4 in the bracket influences:

- Response of the preselections (pre-selector lever in "D" or "M" position). The sensing portion of the draft control is at maximum sensitivity in the top hole "1" and least sensitive in the lower hole.
- Implement tilting when in raised position. With respect to the height of the column of the raised implement (460 - 610 mm). Link in hole "1" provides minimum tilting.

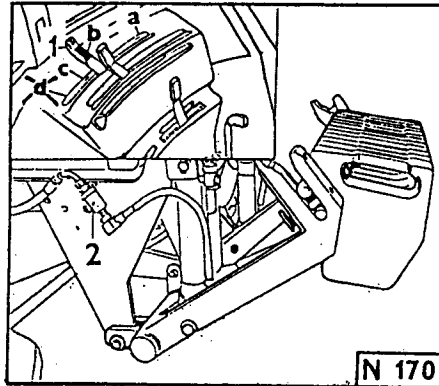


FRONT THREE POINT LINKAGE

The front linkage is intended for front mounted ISO category II implements. The front three point linkage is fitted to front wheel driven tractors.

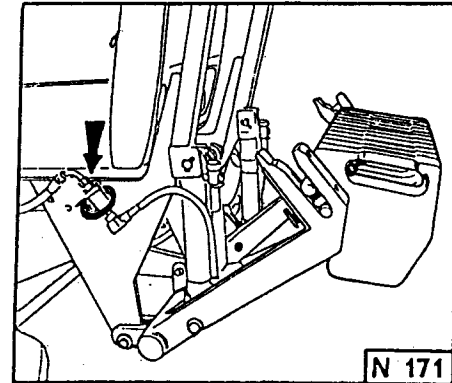


When transporting the implement the linkage in raised position has to be secured mechanically. It is advised to secure mechanically even when no implement is attached.



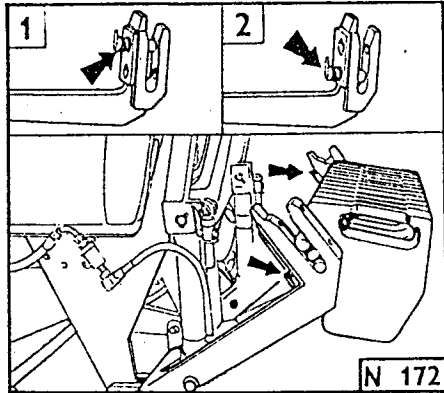
FRONT THREE POINT LINKAGE CONTROLS

The linkage is equipped with two single-acting cylinders which are supplied with pressure oil from outer hydraulic outlet (quick coupler "1"). The lifting and lowering is done by the outer circuit lever 1 - "a,b,c" lever positions. Do not use "d" position when working with the front three point linkage! The speed of lowering of the linkage with implement can be adjusted by a return reduction valve (2).



ADJUSTING THE RETURN REDUCTION VALVE

It is advised to adjust the return reduction valve before using the front three point linkage with front mounted implements. The lowering time from the highest to the lowest position should be 1 - 1.5 seconds. The lowering speed increases when the valve body is turned to right (arrow direction).



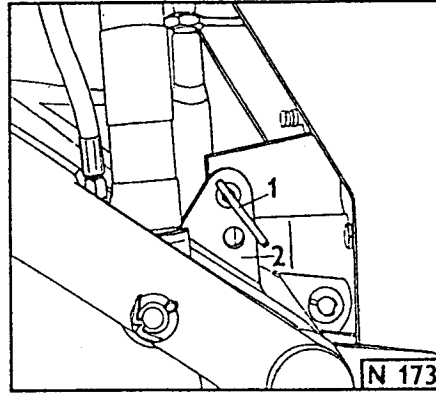
IMPLEMENT ATTACHMENT, FRONT LINKAGE BALLAST

The implement is attached to the linkage fork and secured by lock pins.

1 - pins in top position - $\pm 8^\circ$ tilting.

2 - pins in bottom position - when transporting the implement on a slope or road and when ballast is fitted.

Vertical position secures the pin. The pins can be pulled out after turning (90°) into horizontal position.



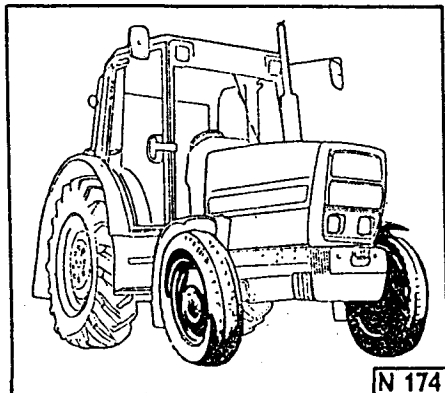
SECURING THE FRONT THREE POINT LINKAGE MECHANICALLY

This is done in the most upper position using securing pins (1) and double eyes welded to the lower links (2). The vertical pipe of the front three point linkage bracket is used for attaching top end of lightening spring connected to the implement.

CAUTION:

Reduce the speed of the tractor to 20 km/hour when driving with implements attached to the front three point linkage. If a four wheel drive tractor is not equipped with a cardan shaft brake is it is recommended to drive the tractor with front wheel drive switched on.

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Front wheel toe-in	94
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CHANGING FRONT WHEEL TRACK (non-driven front wheels)

The front wheel track can be set to these values:

1350 mm (only Z 7520 and Z 8520 with
7.50-16 tires)

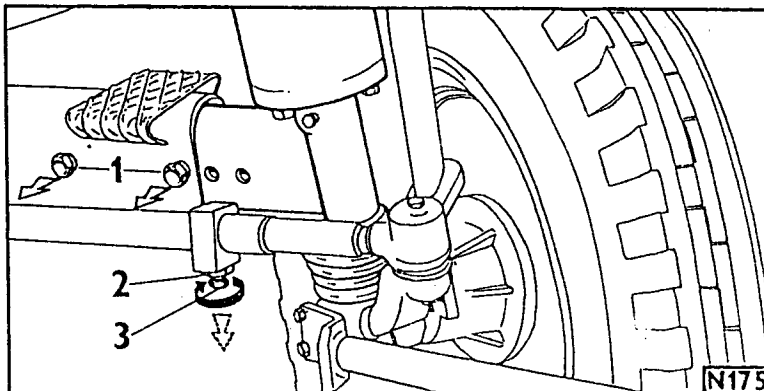
1425 mm

1500 mm

1800 mm

The changing of the track can be carried out by pulling out or sliding in the axle extension with front end of tractor jacked up.

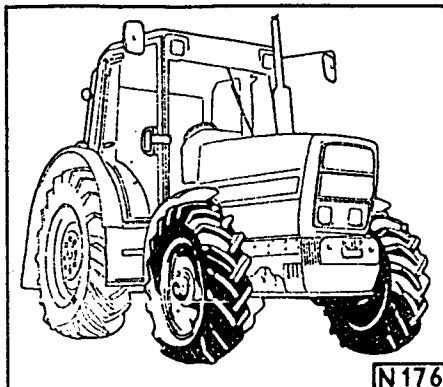
The track setting is wider of 18 mm on the front wheel brakes option.



ADJUSTMENT OF FRONT AXLE EXTENSIONS



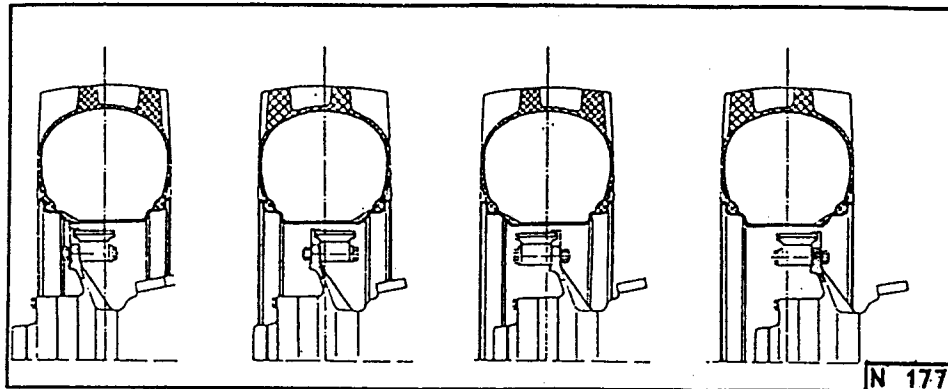
- Block the tractor to prevent any movement, jack up the front end of tractor and support the axle.
- Remove bolts (1) from the axle.
- Loosen the lock nuts (2) and remove bolts (3) from the tie rod.
- Slide axle extensions to desired position. Install axle bolts and tighten the nuts to 130 - 140 Nm.
- Secure the tie rods by bolts and lock nuts in their appropriate position. Tighten the lock nuts to 25 - 28 Nm, bolts to 58 - 63 Nm.
- Check toe-in of front wheels.



CHANGING FRONT WHEEL TRACK (tractors with front wheel drive)

The front wheel track can be adjusted to the values below (according to tire parameters).

11.2-24	12.4-28	13.6R24	14.9-24
11.2R24	12.4R28		
12.4-24			
12.4R24			
1550 mm	--	--	--
--	1645 mm	1635 mm	--
1720 mm	1720 mm	1730 mm	1720 mm
1820 mm	1820 mm	1805 mm	1815 mm



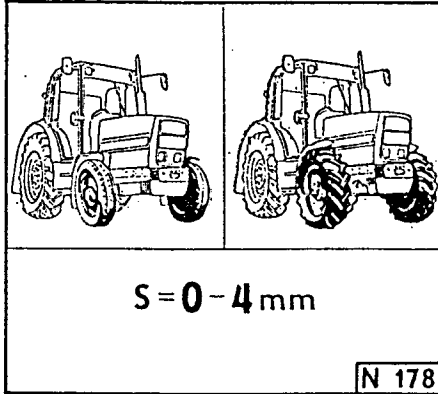
ADJUSTING THE POSITION OF RIM ON DISC

The adjustment to the track is made by changing the position of the offset rim lug to each wheel hub.



Block the tractor to prevent any motion and lift the front wheels with a safe lifting device and support axle.

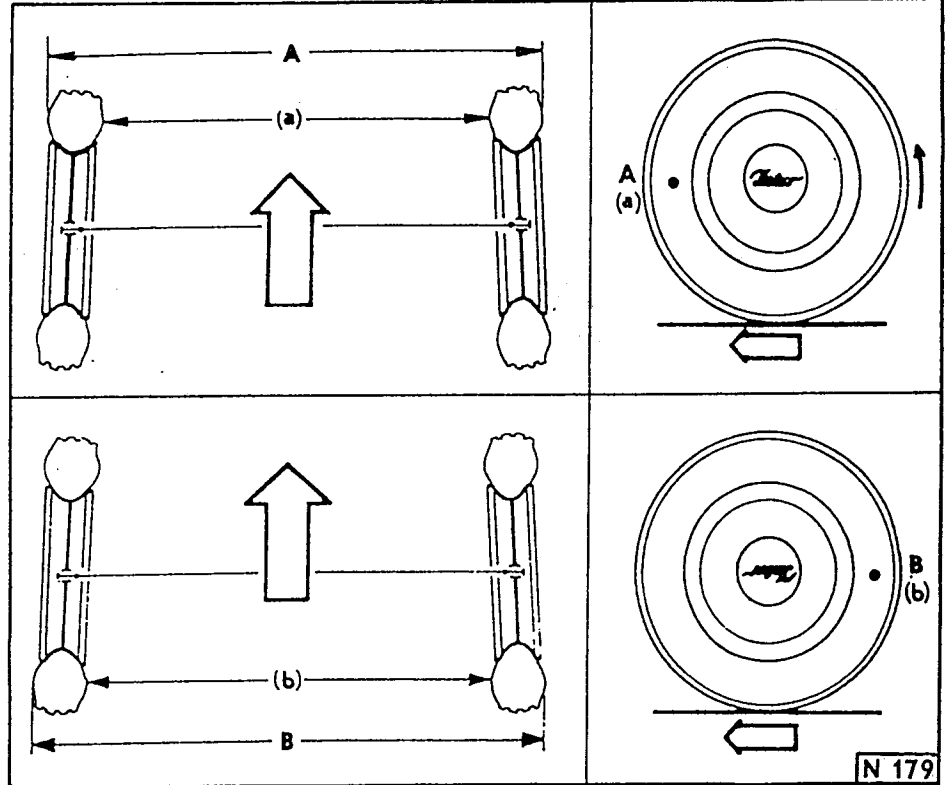
- Remove bolts, nuts and washers from front wheels.
- Install tires and wheel hubs to desired position.
- Install bolts, washers and nuts, tighten nuts to 155 - 175 Nm.
- Any times bolts are loosened, retighten them to specified torque.
- After driving about 100 m and before placing it under load, retighten bolts to specified torque.
- Retighten bolts after working 3 hours.

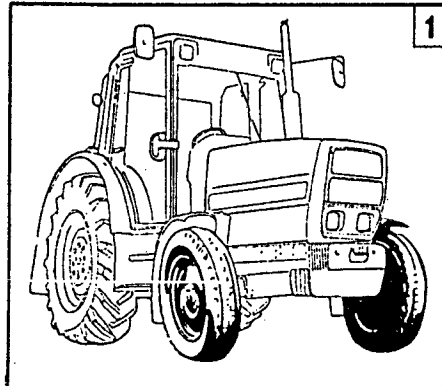


FRONT WHEEL TOE-IN

The correct toe-in of front wheels (both tractors with front wheel drive or without) is 0 to 4 mm. Check front wheel bearing end play and tire pressure before checking toe-in.

The toe-in measurement is done on the sides of tires. $\text{TOE-IN} = B - A$ (or $b - a$).



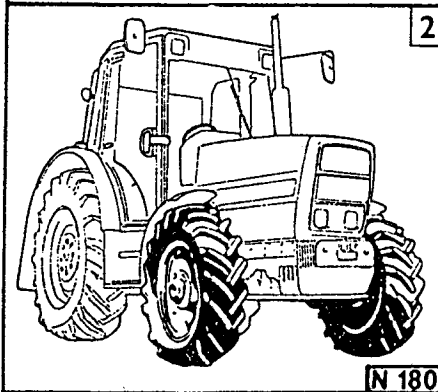


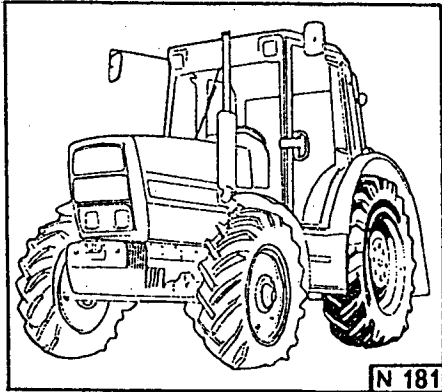
Tractors without front wheel drive (Fig. 1)

- Turn steering wheel to middle position so that the main hydrostatic steering tie rod will be in the longitudinal axis of the tractor.

Tractors with front wheel drive (Fig. 2)

- Position front drive wheels with respect to the longitudinal axis of the tractor irrespective of the steering wheel position.
- Loosen lock nut of spherical wheel joint of both wheels.
- Measure inside or outside front of front wheels in paralel level to the axel. Mark the point of measurement.
- Drive tractor straight forward until side mark is at the back in the horizontal level (turned by 180°) and measure length between marks again. Adjust toe-in by means of tie rods (by means of connecting rod with front wheel drive tractors) so that the difference between the two measurements is 3 to 9 mm. The maximum difference of turns of both tie rods is one turn per side (tractor without front wheel drive). In this case the wheel track adjustment screw will be pointing down. The flats of the spherical joints must be paralel when adjusting. Tighten the spherical joint lock nuts to 122 - 136 Nm.



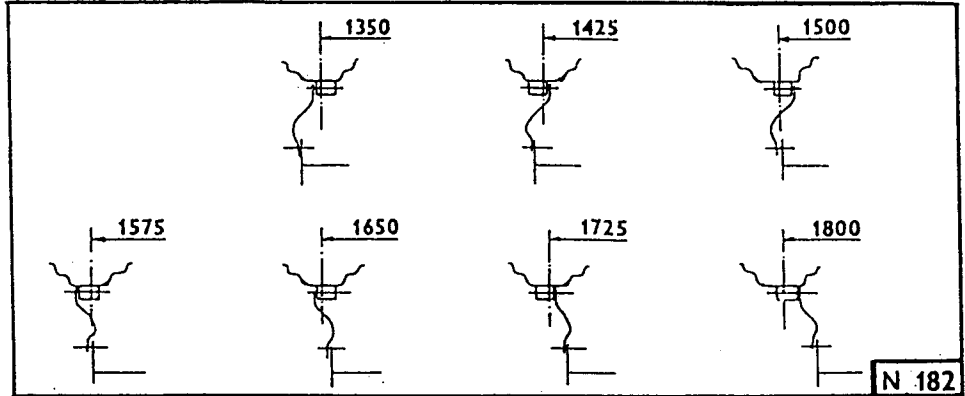


CHANGING REAR WHEEL TRACK

Depending on the width of rear tires the rear wheel tracks can be adjusted inside the following ranges:

1575 - 1800 mm for 18.4R38 tires
1350 - 1800 mm for 12.4-38, 13.6-38
1500 - 1800 mm for 16.9-34, 16.9-38
18.4-34, 480/70R38

The rear wheel track can be adjusted in steps of 75 mm by mounting the offset of the rim to wheel disc.



ADJUSTING REAR WHEEL TRACK

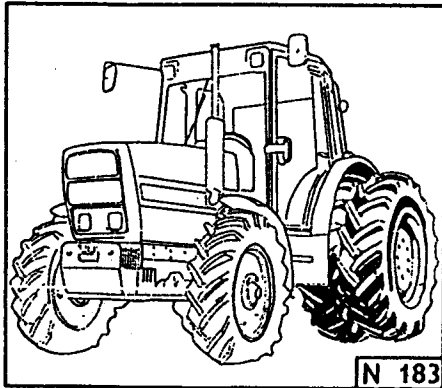
The rear wheel track can be adjusted in steps of 75 mm by mounting the offset of the rim to wheel disc with rear of the tractor lifted so the wheels can turn.



Never forget to block the front wheels to prevent any motion.

Having changed the rear wheel track install bolts and nuts. Tighten rim mounting bolts to 160 to 180 Nm. Tighten nuts that secure wheel disc to rear drive axle to 400-470 Nm.

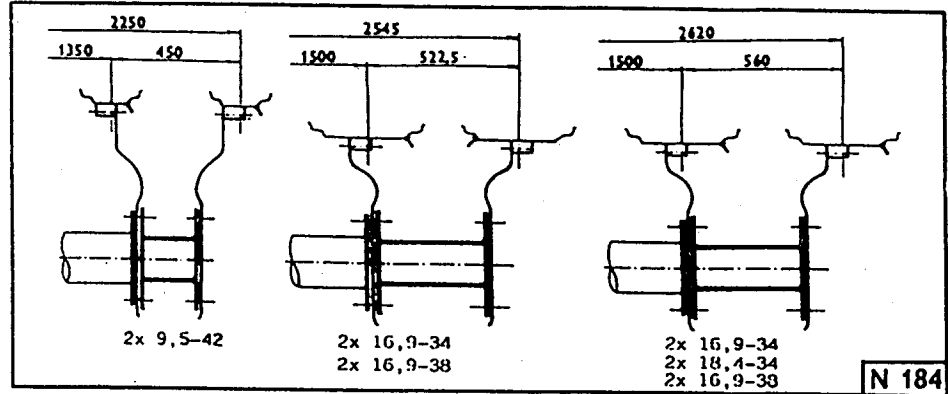
- Any time bolts are loosened, retighten to specified torque.
- After driving about 100 m and before placing it under load, retighten bolts to specified torque.
- Retighten bolts after working 3 hours.



DUAL REAR WHEEL FITTING

It is possible to mount the following dual wheels :

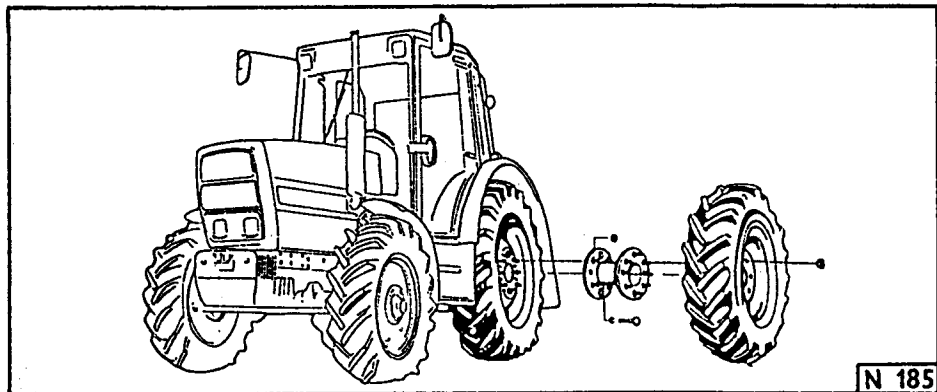
- 2x9.5 - 42
- 2x16.9 - 34
- 2x18.4 - 34
- 2x16.9 - 38



ADJUSTING THE DUAL WHEEL TRACK

Dual wheel type	Wheel track	
	inner wheels	outer wheels
2x9.5-42	1350 mm	2250 mm
2x16.9-34	1500 mm	2545 mm (2620 mm)
2x18.4-34	1500 mm	2620 mm
2x16.9-38	1500 mm	2545 mm (2620 mm)

The dual wheel fitting with 9.5-42 tires is used for cultivation of sugar beat, corn, silage and other certain agricultural plants. It can also be used for sugar beat drilling. Dual wheel fittings with 16.9-34, 18.4-34, 16.9-38 tires are used for cultivation with harrows, cultivators, crushers ...



FITTING OF THE DUAL WHEELS

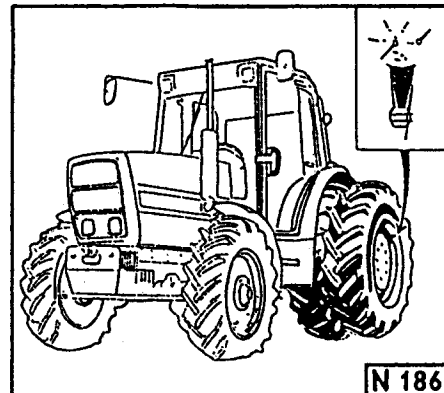


The fitting is carried out with the rear end of tractor lifted. Do not forget to support the wheels to avoid any motion of the tractor. The extra two wheels are mounted to the tractor wheels using a spacer of the same parameters.

Carry out the fitting as follows:

- Remove six M 22 nuts securing the wheel and wheel shaft. Two opposite nuts remain.
- Place the spacer to the wheel, secure with six M 22 nuts and four M 16x1.5x50 bolts.
- Fit the wheel on spacer using eight M 22x1.5 nuts and tighten to 400 - 470 Nm.

Note: With dual wheels special care should be taken when opening the doors. Do not drive the tractor with doors open.



SPECIFIED DUAL WHEEL INFLATION

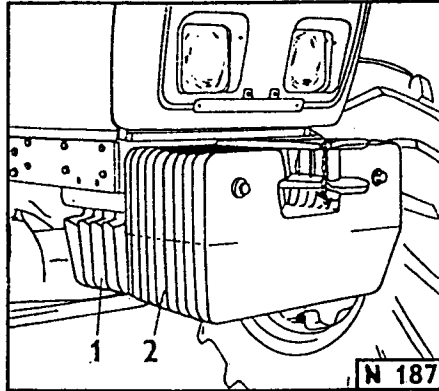
9.5-42 tires	 160 kPa
16.9-34	 130 kPa
18.4-34	 110 kPa
16.9-38	 130 kPa



Do not use rear ballast weights and do not fill tires with liquid when using the dual wheels. The maximum tractor speed with dual wheels is 20 km/h.

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Front three point linkage cast iron weights	100
Rear wheels cast iron weights	100
Liquid ballast in tires	101
Draining tire liquid	102
Maximum liquid weight	103
Antifreeze solution for liquid ballast	103

Ballast is very important for encreasing the pressure to the axles, providing better steering and ensuring stability of the tractor (use producer s instructions when working with front loader).



FRONT BALLAST (UNDER FRAME - 1)

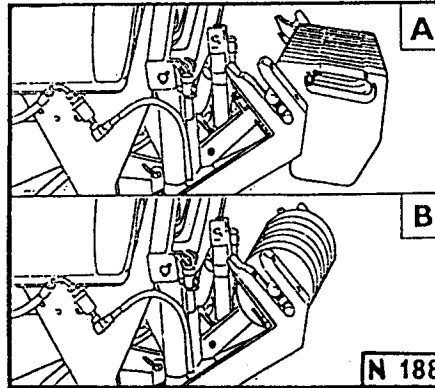
1 + 3 pieces - 120 kg

FRONT BALLAST (IN FRONT OF FRAME - 2)

1 + 2 pieces - 90 kg

1 + 5 pieces - 180 kg

1 + 7 pieces - 240 kg

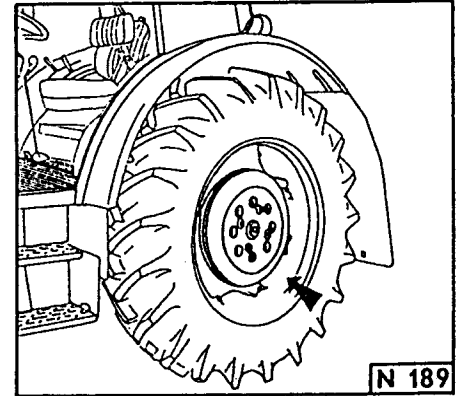


FRONT THREE POINT LINKAGE CAST IRON WEIGHTS

A - carrier + 12 pieces - 260 kg

The weights with carrier are hooked on to the lower links of the three point linkage. Additional front ballast may be needed for transporting very heavy rear-mounted implements.

B - 16 pieces of ring weights - 490 kg

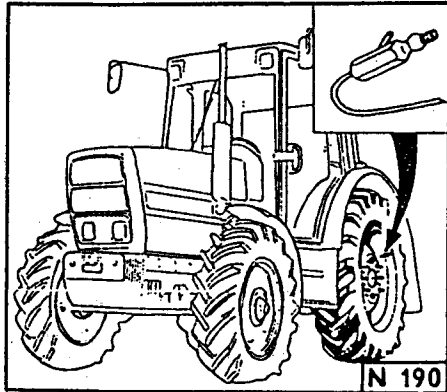


REAR WHEEL CAST IRON WEIGHTS

2 + 4 pieces - 170 kg

2 + 6 pieces - 230 kg

2 + 10 pieces - 350 kg

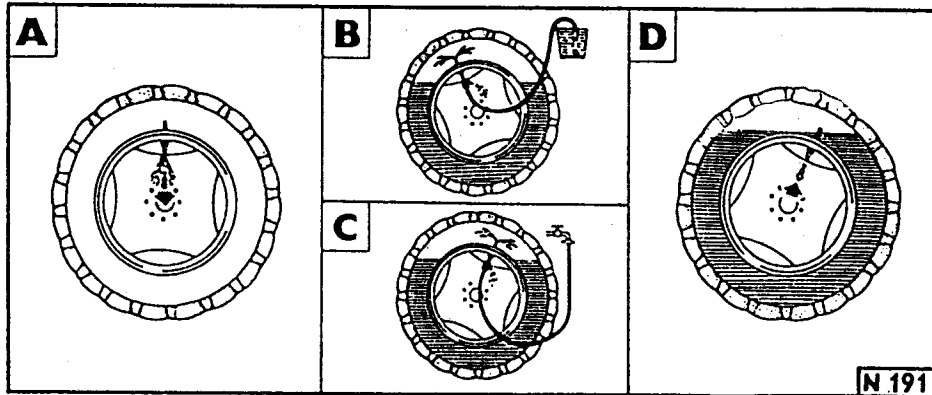


VALVE FOR FILLING TIRES WITH LIQUID

All rear wheel tubes are equipped with a valve which enables the tubes to be filled with liquid.

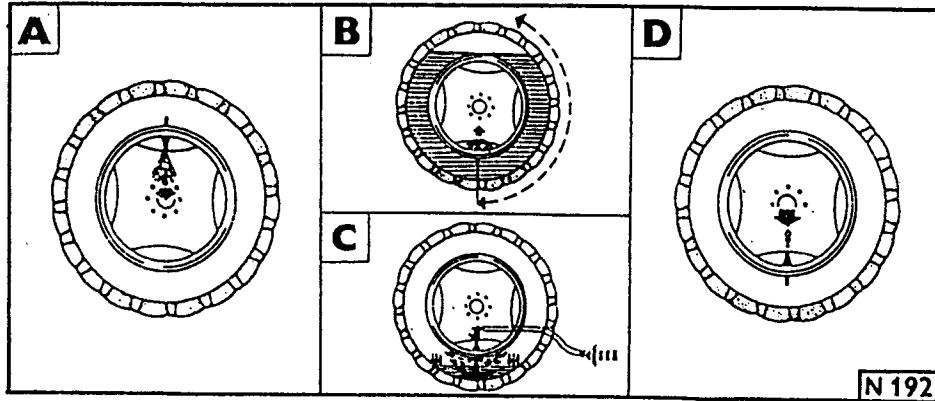


Do not fill front tire tubes or dual rear wheels with liquid.



FILLING TIRES WITH LIQUID

- Jack-up the tractor and turn the wheel so that the valve is facing upwards (A).
- Let the tire down and remove the valve.
- Fit the liquid hose to an installed water valve. Fill the inner tube to the specified level. Filling can be carried using a gravity tank (B) or by filling under pressure (C).
- Remove hose and water valve.
- Screw in the air valve and inflate the tire to the specified pressure (D).
- Replace the dust cap onto the valve after inflating.
- Repeat the same procedure with the other tire.

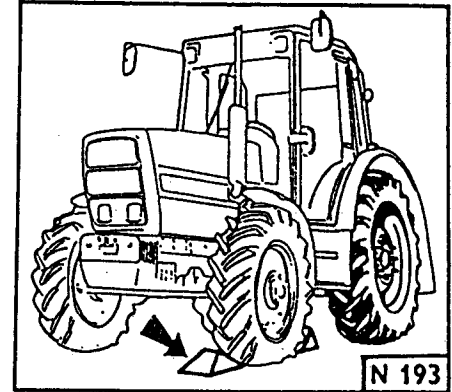


DRAINING WATER FROM TIRES

- Lift the tractor to take the load of tires and turn the wheel so that the valve is at the top (A).
- Let the air out and unscrew the tire valve. Turn the wheel so that the valve is at the bottom.

NOTE: When draining the liquid it is probable that vacuum will form in the tube stopping the flow. It is therefore necessary to turn the wheel to place the valve at the top from time to time to allow air to enter the tube (B).

- Remove the remaining liquid by screwing on the water valve and inflating the tire until liquid stops running from the extension tube (C).
- Screw off the water valve and fit the air valve. Inflate the tire to the specified pressure (D).
- Replace the dust cap after inflating.
- Repeat the same procedure with the other tire.



SUPPORTING THE FRONT WHEELS



Do not forget to support the front wheels to prevent any motion of the tractor when lifting the rear wheels.

MAXIMUM WEIGHT OF LIQUID (kg) ACCORDING TO TIRE DIMENSIONS

TIRE DIMENSIONS	480/70R 38	12.4-38	13.6-38	16.9-34	16.9-38	18.4-34	18.4R-38
WEIGHT (kg)	330	170	190	250	260	340	412

ANTIFREEZE SOLUTION FOR TIRE FILLING

Water for solution (litres)	Calcium Chloride CaCl_2 (kg)	Hydrated lime (kg)	Solution density at 20°C	Solidifies at approx. (°C)	Total volume (litres)	Added weight (kg)
45	11.8	0.21	1.13	-18	50	57
45	13.9	0.23	1.18	-25	50	59
45	15.4	0.25	1.21	-30	50	61

Making the solution:

1. Dry Calcium Chloride is added to water, never the other way round!
2. The solution is not dangerous but has to be handled carefully. Wash any spilled solution with water.
3. Let the solution to cool down before filling. Observe the specified amount of hydrated lime.
4. The solution must not get in contact with metal parts and electric installation.
5. This antifreeze solution must not be used in the cooling system.

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Regular and proper maintenance ensures trouble-free and safe operation. All important maintenance is included in the periodic maintenance which begins immediately after the tractor has been put into operation. Follow the safety precautions when working.

INSPECTION AND MAINTENANCE															1
Description	After ... engine hours														
	10	70	100	200	600	1200	1800	2400	3000	3600	4200	4800	5400	6000	
ENGINE															
Change engine oil	x		x						Every	200	hours				
Change engine oil filter	x		x						Every	200	hours				
Check the cylinder bolts tightening torque	x														
Check valve clearance, adjust if necessary	x					x	x		x		x			x	
Check the engine oil pressure after starting the engine	x								Every	10	hours				
Check the engine oil level and check for leaks	x								Every	10	hours				
Cleaning the turbocharger compressor housing and intake manifold								x				x			
Check the turbocharger for leaks and bearings free-play								x				x			
Check water pump bearing free-play								x				x			
ENGINE ACCESSORIES															
Check the clutch hydraulic function and check for leaks	x								Every	10	hours				
Check coolant level and cooling system for leaks	x								Every	10	hours				
Check fuel tank and fuel system for leaks	x								Every	10	hours				
Check the air pre-cleaner above the bonnet for sediments	x								Every	10	hours				

INSPECTION AND MAINTENANCE												2		
Description	After ... engine hours													
	10	70	100	200	600	1200	1800	2400	3000	3600	4200	4800	5400	6000
1 Air filter maintenance and changing the oil	x			x	Every 200 hours									
2 Cleaning the radiator fins using pressure air	x			x	Every 200 hours									
3 Drain, flush and refill the cooling system						x		x		x		x		x
Inspection and calibration of injection pumps								x				x		
Check the turbocharger lubrication for signs of leaks		x		x				x				x		
Check engine exhaust system for leaks		x		x	x	x	x	x	x	x	x	x	x	x
Check the fuel injection nozzles and burst pressure		x				x	x	x		x		x		x
Replace fuel filter element						x	x	x	x	x	x	x	x	x
Check and adjust drive belt tension		x		x	Every 200 hours									
Check and clean the fuel filter sediment bowl		x		x	Every 200 hours									
TRANSMISSION														
Change transmission hydraulic oil filter		x		x	Every 200 hours									
Clean the transmission oil magnetic element and mesh filter	*	x		x	Every 200 hours									
Check the transmission hydraulic system oil level	*	x		x	Every 200 hours									
3 Change the transmission hydraulic system oil						x		x		x		x		x
Change the front PTO gearbox oil level						x	Every 200 hours							

INSPECTION AND MAINTENANCE											3			
Description	After ... engine hours													
	10	70	100	200	600	1200	1800	2400	3000	3600	4200	4800	5400	6000
3 Change the front PTO gearbox oil Lubricate front PTO driveline joint using multipurpose grease			*	x	x	x	x	x	x	x	x			
			x	x	Every 100 hours									
AXLES AND STEERING														
3 Drain and refill the oil of front wheel drive axle and planetary reduction housings Check oil level in front wheel drive axle and planetary reduction housings Drain oil, refill and replace filter element of hydrostatic steering			*	x	x	x	x	x	x	x	x			
			x	Every 200 hours										
4 Replacement of hydrostatic steering hoses Lubricate front axle center pin using multipurpose grease Lubricate front axle spindles using multipurpose grease			*	x	x	x	x	x	x	x	x			
			x	Every 200 hours										
			x	Every 200 hours										
3 Repack front wheel hubs bearings using multipurpose grease (1/3 of space in hub as max.) Lubricate front wheel steering joints using multipurpose grease				x	x	x	x	x	x	x	x	x	x	x
3 Lubricate front axle housing bearing on right of reduction housing by multipurpose grease					x		x		x		x		x	
3 Lubricate front wheel drive joints and splines of the joint shaft Check the front wheel bearing freeplay Check front wheel toe-in measurement					x		x		x		x		x	
	x			x	x	x	x	x	x	x	x	x	x	x
	x			x	x	x	x	x	x	x	x	x	x	x

INSPECTION AND MAINTENANCE														4
Description	After ... engine hours													
	10	70	100	200	600	1200	1800	2400	3000	3600	4200	4800	5400	6000
Check torque of bolts and nuts of steering rods levers and wheels	x													Every 10 hours
Check tire inflation pressures	x													Every 10 hours
Check the steering function and steering reservoir oil level	x													Every 10 hours
HYDRAULICS														
Lubricate torsion bar pipe of hydraulic control using multipurpose grease						x	x	x	x	x	x	x	x	x
Lubricate center link of hydraulic draft control					x	Every 200 hours								
Lubricate rockshaft pivot points using multipurpose grease					x	Every 200 hours								
Lubricate telescopic adjustment arm using multipurpose grease					x	Every 200 hours								
Lubricate telescopic turning point using multipurpose grease						x	x	x	x	x	x	x	x	x
Lubricate front three point linkage using multipurpose grease						x	x	x	x	x	x	x	x	x
Check front three point linkage hydraulic circuit for leaks						x	x	x	x	x	x	x	x	x
Check hydraulic system function and check for leaks	x		x			Every 200 hours								
BRAKES														
Check brake fluid level and check for leaks	x													Every 10 hours

INSPECTION AND MAINTENANCE														5
Description	After ... engine hours													
	10	70	100	200	600	1200	1800	2400	3000	3600	4200	4800	5400	6000
Check the air brake line for leaks and efficiency	x													
Check the function and adjust foot and park brake														
Air brakes adjustment		x				x	x	x	x	x	x	x	x	x
Lubricate the brake system components							x			x		x		
Check torque of air regulator flange nuts		x												
Drain water from air tank					x	x	x	x	x	x	x	x	x	x
Lubricate all sliding surfaces of pneumatic instruments							x				x			
5 Replacement of brake system rubber components							x				x			
6 Inspection of air reservoir ISO							x				x			
* Replacement of diaphragm , cleaning and adjustment of the air pressure regulator							x				x			
ELECTRICAL INSTALLATION														
Check the charging function	x													
7 Check the condition and function of the electical equipment and accessories		x		x										
Tighten the terminals in the fuse box					x									
Check charging voltage							x				x			
8 Check the battery electrolyte level	x	x												

INSPECTION AND MAINTENANCE														6
Description	After ... engine hours													
	10	70	100	200	600	1200	1800	2400	3000	3600	4200	4800	5400	6000
8	Cleaning oxidized cable connections and prevention using grease													
	Check the starter motor bearings , carbon brushes and brush holders													
	Check the alternator-bearings,rectifier and commutator (carbon brushes and collector ring)													
3	Lubricate front and rear wiper lever assembly bearings													
SAFETY CAB AND ACCESSORIES														
				x	Every 200 hours									
				x	Every 200 hours									
				x	Every 200 hours									
					x	x	x	x	x	x	x	x	x	x
				x	Every 200 hours									
							x			x				
						x	x	x	x	x	x	x	x	x
						x	Every 200 hours							
						x	x	x	x	x	x	x	x	x

Notes:

- * - After first putting into operation of a new tractor or after overhaul
- 1 - Every 50 to 200 hours according to the level of dust and dirt (hay etc.). Check the oil level every day, add to the specified level or change the oil when the filter is in contact with snow.
- 2 - Perform cleaning every day or more often according to need when working with front mounted implements.
- 3 - Maximum period of time - 2 years.
- 4 - Replacement should be carried out after two years from the date of production of the hoses at the latest.
- 5 - Maximum period of time - 5 years from the year of production of the tractor.
- 6 - Maximum period of time - 5 years from the year of production of the air reservoir or after accident.
- 7 - It comprises the inspection for adjustment of front asymmetrical headlights and adjustment of gaps on brake light switches (the maximum play between the brake switch and the service brake pedal trip dog must be within the limits of 0.5 and 1.0 mm).
- 8 - Every 100 hours in the summer season
- 9 - In the case of liquid leaks remove the faulty sealing of piston rod, flush out the shock absorber using petrol and fill it up with 70 cu.cm of oil for shock absorbers.

ENGINE WITH TURBOCHARGER

1. Remove turbocharger compressor housing and inlet line.
2. Remove the helical spring of compressor.
3. Use brush with solvent liquid to clean the compressor housing and rotor.

Do not clean with a sharp object or wire brush.
Do not straighten bent blades !

CHECKING THE TURBOCHARGER FOR LEAKS AND BEARINGS FREEPLAY

If there are leaks from bearing housing around shaft or if the radial and axial freeplay of bearings have exceeded the maximum value, have the turbocharger repaired at a specialized workshop. Remove inlet line and exhaust line hoses when fitting the turbocharger back to the tractor.

Pour 0.2 litres of engine oil into the oil inlet of the turbocharger when fitting it back to the tractor.

REPLACEMENT OF DIAPHRAGM, CLEANING AND ADJUSTING THE AIR PRESSURE REGULATOR

Remove the air pressure regulator and have the diaphragm replaced, the control cylinder and the bleeding hole cleaned at a specialized workshop.

The re-assembled air pressure regulator should be adjusted on a test stand and sealed.

LUBRICATION OF HYDRAULIC BRAKES

Lubricate sliding surfaces of moving parts from gasket rings to outer cap with special vaseline - main brake cylinders, clutch master cylinder, brake cylinders, clutch disconnect valve and air pressure regulator. Also check rubber components. Replace damaged rubber components. Replace all rubber components at least every five years from the date of manufacture.

Tractor overhaul should be carried out if the further use of the tractor is uneconomical, if most parts need repairs or if the general technical condition of the tractor is no longer safe during operation.

Provided that all the maintenance instructions are followed, when working in a mild climate and in plain grounds, the average engine and transmission life is 6000 engine hours.

This value is calculated with the following work of tractor:

- | | |
|---|-----------|
| - ploughing and pre-drilling soil preparation | 15 - 25 % |
| - drilling and planting | 10 - 15 % |
| - harvest work | 10 - 20 % |
| - transport | 40 - 65 % |

If the tractor is used in the mountains or in hilly areas, the life of the engine and transmission is reduced by 15 - 20 %.

If the tractor is used in bad climate conditions, the life of the engine and transmission is reduced by 15 - 20 %.

Note:

Transmission also includes the front drive axle.

TECHNICAL MAINTENANCE AFTER TRACTOR OVERHAUL

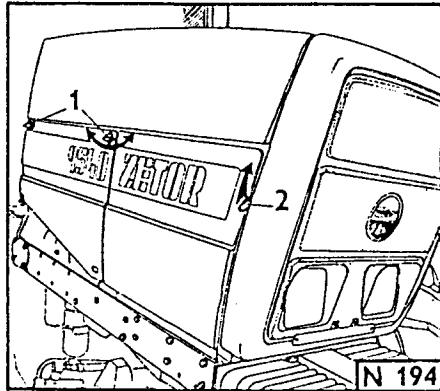
Use the instructions for the running in period of a new tractor when running in after overhaul.

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Checking and changing front wheel planetary reduction drive housing oil ..	130
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Putting the tractor out of service	139

Most of the scheduled technical maintenance can be carried out by the driver himself. However, if sufficient technical equipment is not available, have the more difficult operations done in a specialized workshop.

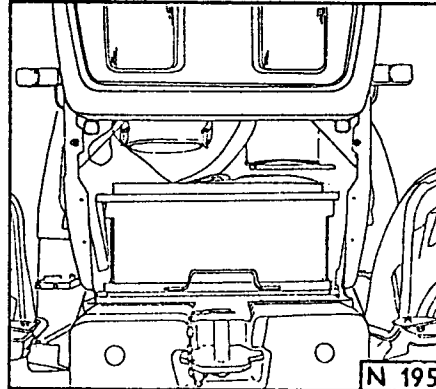


All operations connected with cleaning, lubrication or adjustment of the tractor or mounted implements can be carried out with the engine and other moving parts stopped except when inspecting brakes or the charging function.



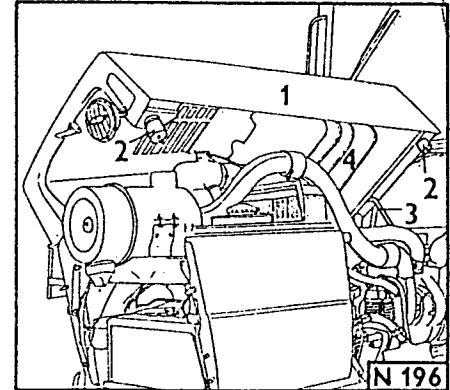
REMOVING SIDE COVERS AND FRONT GRILL

Both left and right side covers can be removed after releasing the spring fasteners (1). The front grill can be removed after lifting two securing levers (2) and disconnecting the wires of the front lights. Push the top corner of the grill towards the bonnet when lifting the securing levers.



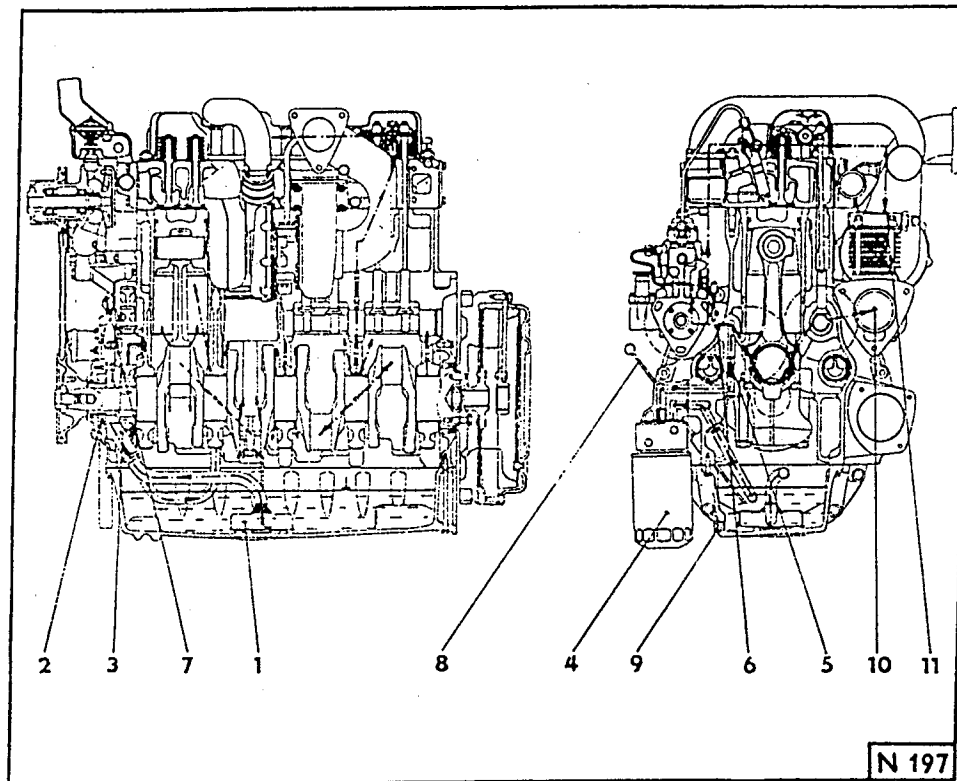
GRILL SUSPENDING

The grill can be fixed in the upper position after tilting the support arms. This position of the grill enables easy access to the battery and other accessories in front of the radiator.



TILTING THE UPPER BONNET COVER

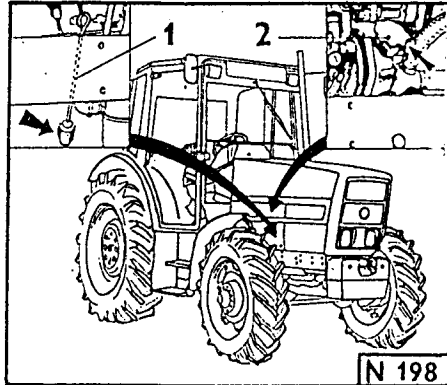
The upper bonnet cover (1) can be tilted after loosening the bolts on the silentblocks (2), which are accessible after removing the left side panel and front grill. The upper bonnet cover is secured in the tilted position by a strut (3). The fuel tank (4) is located in the upper part of bonnet.



ENGINE AND TURBOCHARGER LUBRICATION DIAGRAM

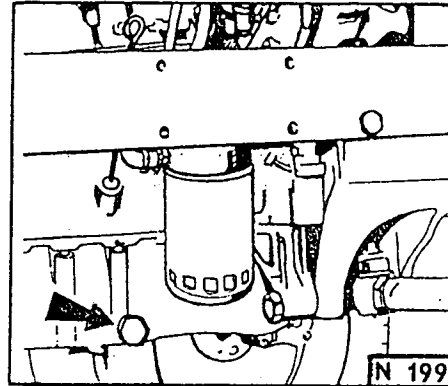
- 1 - Oil pump strainer
- 2 - GEROTOR oil pump.
- 3 - Reduction valve.
- 4 - Cartridge oil filter.
- 5 - Lubrication passidge.
- 6 - Pressure switch.
- 7 - Filler cap.
- 8 - Dipstick.
- 9 - Drain plug.
- 10 - Compressor lubrication.
- 11 - Turbocharger lubrication.

The lubrication diagram is identical for Z 7520, 7540 (without turbo) and for Z 10520, 10540 (with turbo and air cooling) tractor engines.



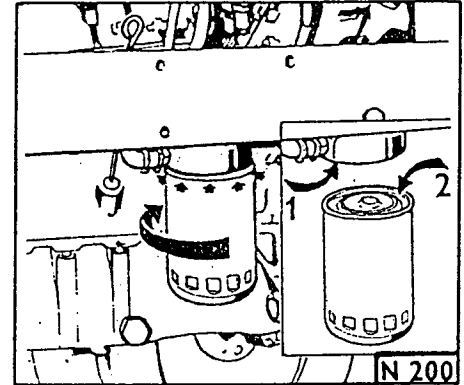
CHECKING THE ENGINE OIL LEVEL

Check daily before operation with tractor level. Remove dipstick (1), clean with cloth and measure the oil level by placing it back. The oil level must not be below the bottom mark. Add oil at the filler cap (2) if needed.



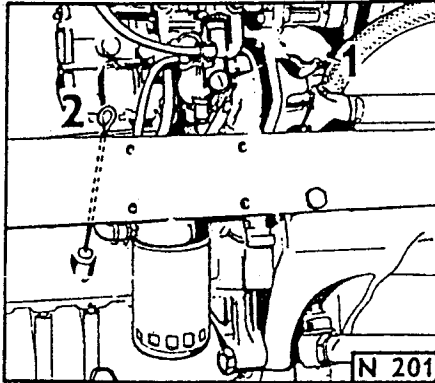
DRAINING ENGINE OIL

Drain the oil by removing the draining plug, preferably after working with the tractor or after bringing the engine to the working temperature. Clean the plug before placing back.



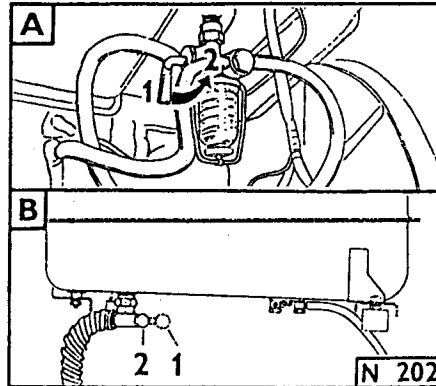
CHANGING THE ENGINE OIL FILTER

Change the oil filter each time you change the oil. Before screwing on the new filter clean the sealing area of the body (1) and filter (2). Grease the rubber sealing with the new engine oil. Tighten the filter by hand. Then tighten by another $\frac{3}{4}$ to $1 \frac{1}{4}$ turns. Check for leaks after starting the engine.



POURING OIL INTO ENGINE

Pour the prescribed amount of oil at the filler cap (1), start the engine and let it run for 2 - 3 minutes at 750 - 800 rpm. After the engine is stopped and the oil level still, use dipstick (2) to check the oil level again, also check the filter, drain plug and other parts for leaks.



FUEL COCK

A - Fuel cock for Z 8520 - 9540 is accessible after removing the right side engine cover.

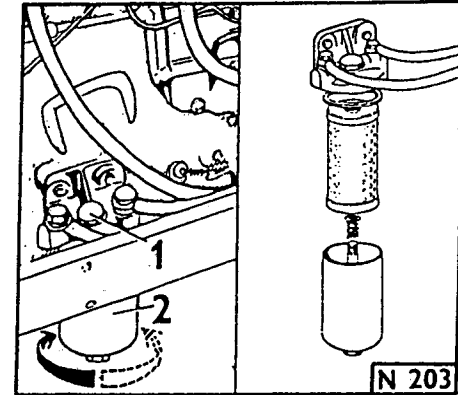
Cock lever position:

- 1 - cock open
- 2 - cock shut

B - Fuel cock for Z 10520 - 10540 is accessible after removing the left side engine cover.

Cock rod position:

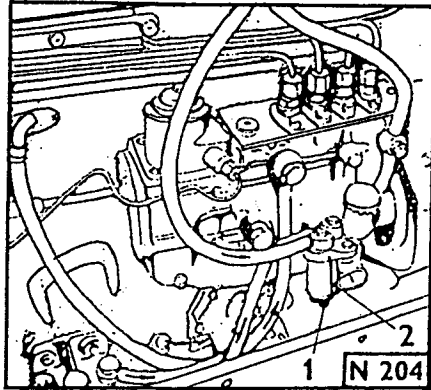
- 1 - cock open - rod pulled out
- 2 - cock shut - rod pushed in



REPLACEMENT OF FUEL FILTER INSERT

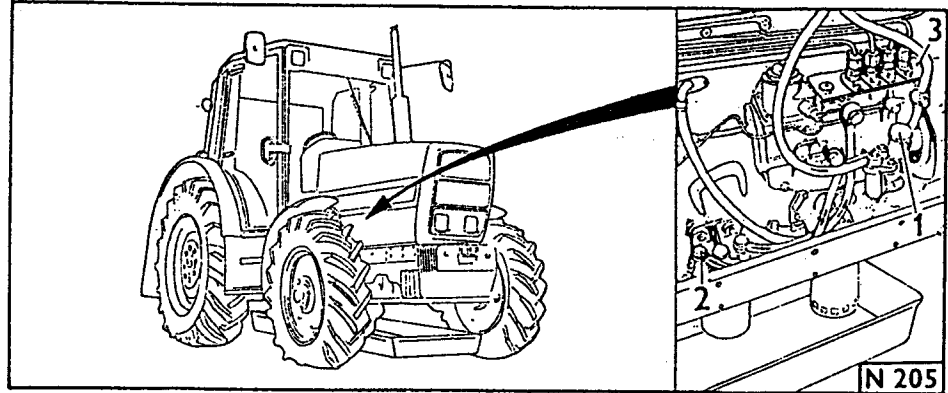
Replace the filter insert after loosening nut (1) and unscrewing the flask (2).

When fitting cleaned flask with new filter insert back be sure the flask seal fits correctly. Carry out purging of the fuel system.



CLEANING FUEL PRE-CLEANER

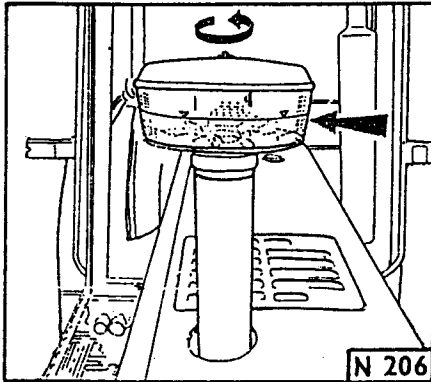
Unscrew nut (1) and remove primary sediment bowl (2) with gasket and screen. Wash bowl and screen in diesel fuel. Install bowl and screen making sure gasket is in correct position before tightening nut. Purge air from fuel system.



PURGING AIR FROM THE FUEL SYSTEM

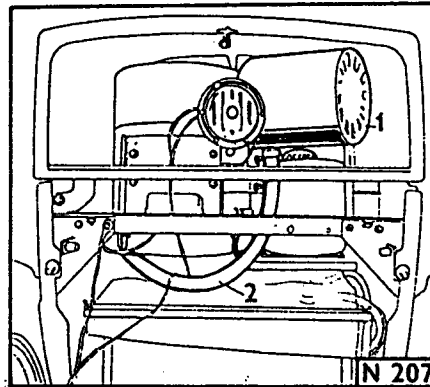
Place a bowl under the engine for fuel dripping from filter and injection pump. Then follow these instructions:

- pressurize the fuel system by pumping fuel pump primer plunger (1) by several strokes
- loosen nut (2) at top of fuel filter housing to bleed air until foam free fuel flows out from nut (2)
- tighten nut (2) and repeat the procedure until clear fuel flows out of the nut when loosened
- use the same procedure to purge air from the injection pump using nut (3) located on the pump



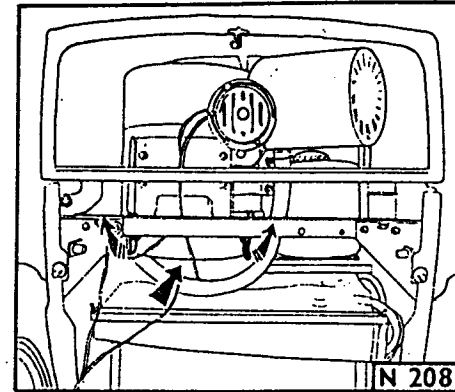
OIL AIR FILTER WITH PRE-CLEANER
ABOVE BONNET

Check pre-cleaner above bonnet daily. If the bowl is filled up to the mark loosen nut on cover, remove cover and empty bowl.



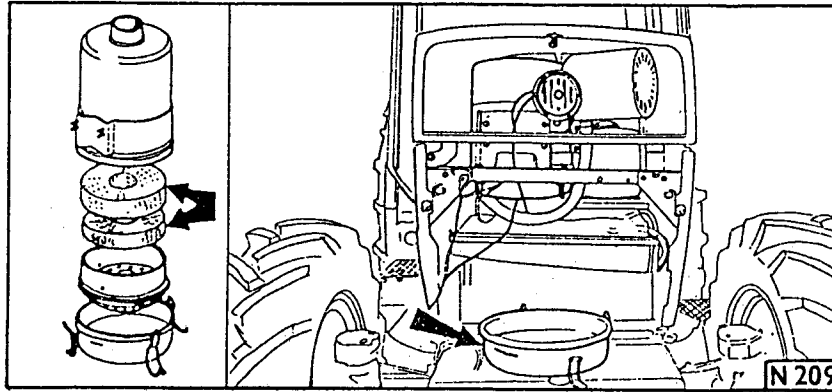
OIL AIR FILTER WITH PRE-CLEANER UNDER
BONNET

The horizontal version of pre-cleaner (1) under bonnet does not need any attention. The dust in pre-cleaner is automatically cleared away by hose (2).



OIL FILLING IN AIR FILTER

The oil filling is located in the bottom section of the dust collector. Change the oil in air filter each time engine oil is changed. Dust collector with oil can be removed after removing front grill and releasing fasteners on cleaner.



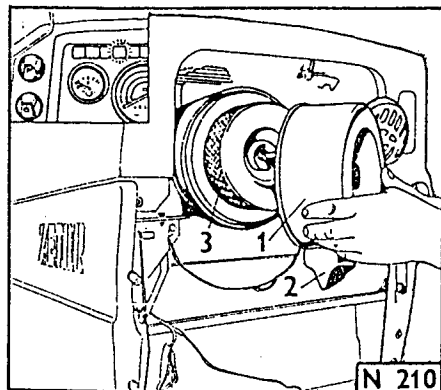
OIL AIR FILTER MAINTENANCE

After removing the dust collector, follow these steps.

- Pull down holder slightly, pull out recoil element with bottom insert and pull out top insert from cover.
- Remove bottom insert from recoil element and clean both inserts in diesel or kerosene. Do not use petrol, water, benzol, spirit and other organic solvents.
- Re-install all the parts properly, do not deform any parts, fit them correctly.
- Fill the cleaned dust collector with oil up to mark and fit back onto cleaner cover.



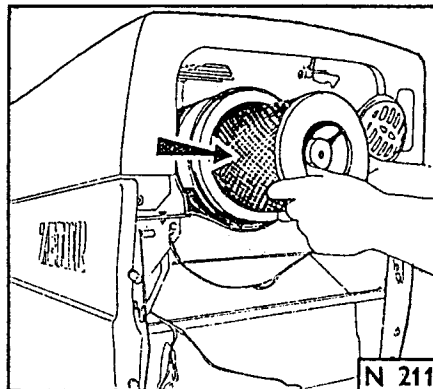
The air filter has to be filled with the same oil as in engine. All of the oil must be changed, it must not be added. If the temperature is lower than the lowest suitable temperature of oil, engine diesel may be added (max. 30% diesel). Oil with diesel has to be changed when temperature is above the freezing point again.



DRY AIR FILTER MAINTENANCE

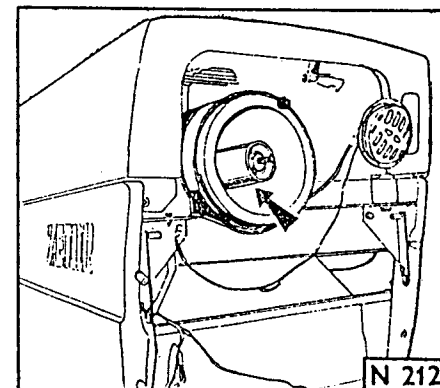
The engine air filter should be serviced when indicator light lights red on the control panel or at least once a year. The maintenance is done after removing the front grill as follows:

- remove the dust collector (1) and discharge nozzle (2) and clean it
- remove the main filter element (3).



CLEANING MAIN FILTER ELEMENT

If the main filter element is not damaged (no dust on the inside wall) clean it by compressed air (max. pressure 7 Bar). The element can be recovered three times before being replaced. The filter element should be replaced once a year.



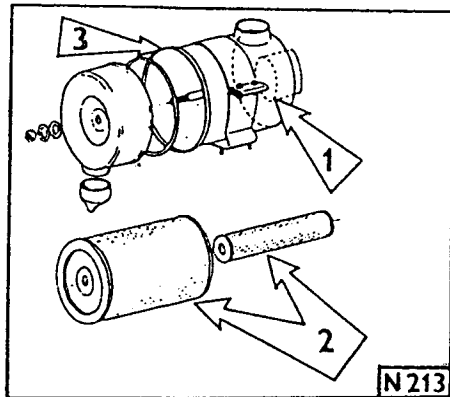
CHANGING INNER SAFETY FILTER ELEMENT



The inner safety element is not recoverable.

The safety filter element should be replaced in the following cases:

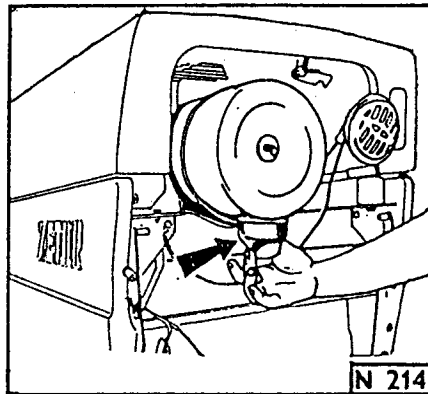
- main filter element was damaged
- main filter element has been serviced five times
- at least once every two years



INSTALLING AIR FILTER ELEMENTS

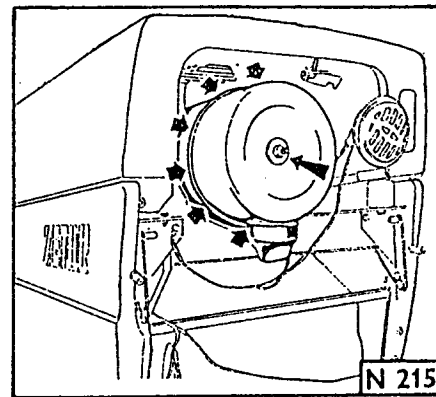
When installing air filter elements:

- inner rear surface of canister (1) must be clean
- the elements (2) must not be deformed when installed
- elements and divider must not vibrate after they are fitted
- gasket and cover must be in correct position (3).



DISCHARGE NOZZLE POSITION

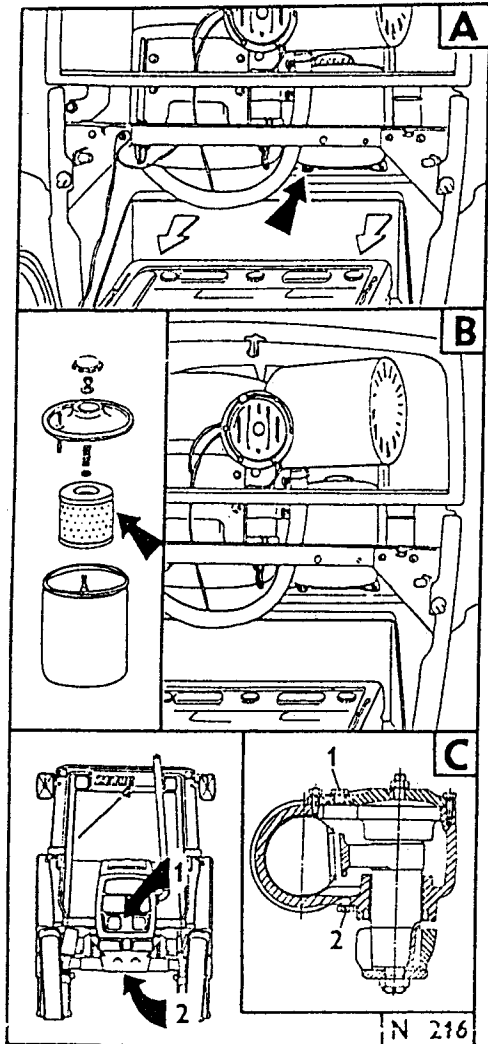
After installing the filter elements cover filter with cleaned sediment bowl. Position the sediment bowl so that discharge nozzle is pointing down.



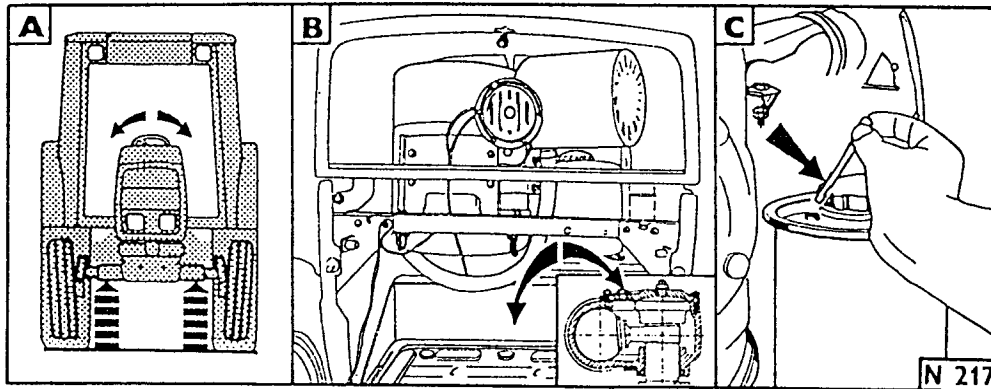
TIGHTENING THE FILTER

Tighten nut after placing rubber washer beneath it. The sediment bowl must squeeze the gasket to ensure the filter is sealed.

CHANGING OIL AND FILTER INSERT OF HYDROSTATIC STEERING



- Remove front grill, battery and drain oil by unscrewing the drain plug (A) at the bottom of tank.
- Unscrew nut bellow filler cap, remove cap with valve and change filter insert (B).
- Install the filler cap and drain plug.
- Turn the steering wheel to both sides two to three times to squeeze out the oil from steering unit.
- Block tractor to avoid any motion and lift front axle. Tractors with front driven axle - squeeze oil out from the working cylinder by turning the steering wheel to one side (as far as possible) and then to the other. Disconnect hose on the right side of cylinder before turning the steering wheel to the left, when turning the steering wheel to the right disconnect the hose on the left side of the cylinder. Tractors with non-driven front axle - (C) drain the oil after loosening air vent screw (1) on the top of working cylinder and removing drain cap (2) at the bottom of cylinder.
- Install all parts back to the cylinder, fill tank with new oil and install battery.
- Leave the front end of tractor lifted and purge air from hydraulic circuit of hydrostatic steering.

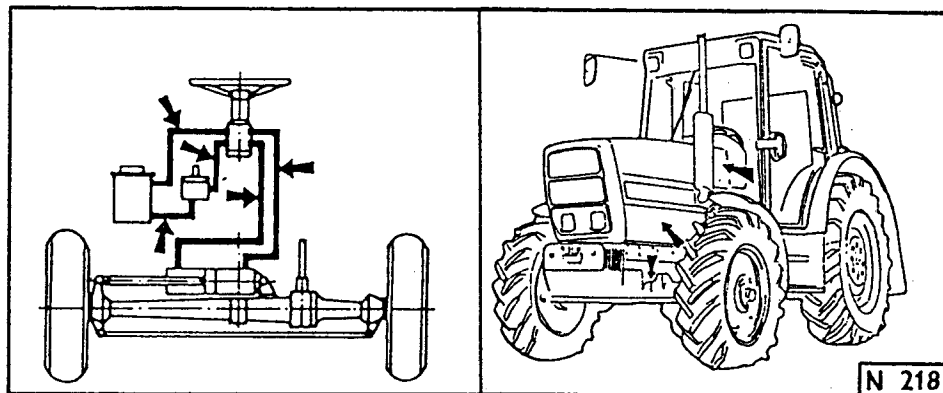


PURGING AIR FROM HYDRAULIC CIRCUIT OF HYDROSTATIC STEERING

- Start engine and let run at low idle for one minute.
- Turn steering wheel to both sides (A) several times with engine at low idle.
- Increase engine speed to maximum, turn steering wheel full left and full right slowly and then quickly three times (A).
- Stop engine and lower front wheels to ground.
- On non front wheel drive tractors, loosen air vent screw at top of cylinder until oil starts to flow out, then tighten air vent screw. Air vent screw and cylinder is located under the battery tray (B). Pull battery tray out to gain access to air vent screw.



Keep checking oil level in tank when purging air from steering system and do not let it become low, otherwise, air will be drawn into the steering system. Check oil level in reservoir after having finished the procedure and maintain oil level at mark on dipstick (C). Check for any leaks.

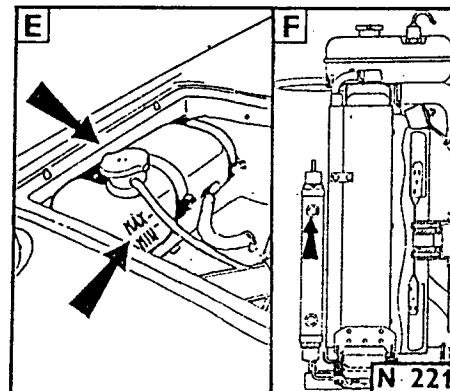
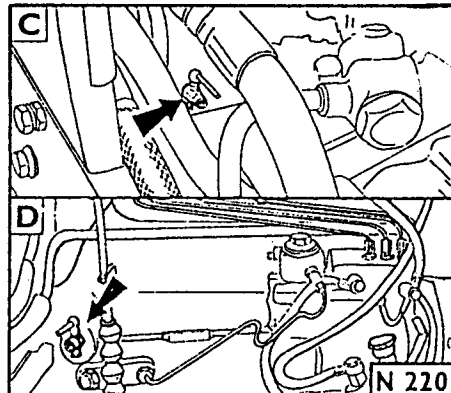
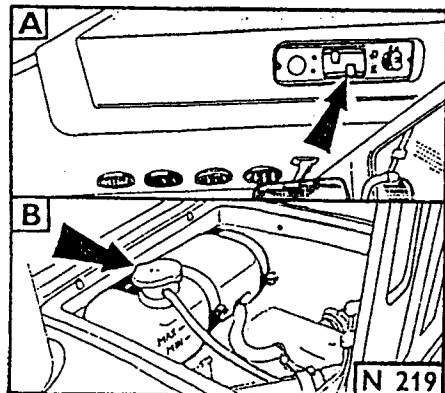


REPLACEMENT OF HYDROSTATIC STEERING HOSES

The hoses need to be replaced after two years from date of production (stated on hose surface) or after 3600 engine hours, or immediately after any signs of damage are discovered (drops on hose, bulging, leaks around joints and on surface, mechanical damage of hose surface, pay special attention to surface damage of 710 type hose).



If pump is damaged or when engine is still, the steering is still in function but needs more force on the steering wheel. It is possible to drive at reduced speed to nearest location for repairing the tractor. The steering wheel must not be held in full left or full right position (max. 20 seconds), otherwise, it will lead to excessive heating of the oil.



CHANGING COOLANT

Follow these instructions:

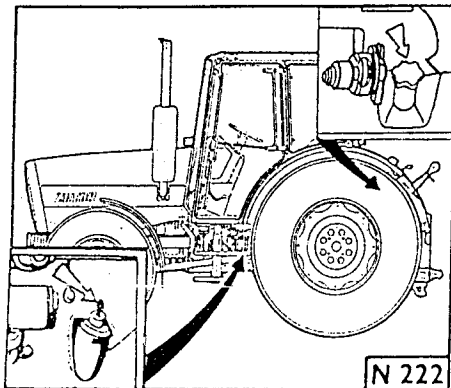
- Open the heater cock (A) (tractor with cab only) and loosen pressure cap on expansion tank (B).
- Drain coolant from cooling system. The drain cock is accessible after tilting the left side engine cover (C).
- Drain coolant from engine (D). The draining cock is accessible after removing right side engine cover.
- Shut both cocks after draining (leave the heating cock open).

- Fill cooling system with coolant up to filler in expansion tank and install the pressure cap.
- Start the engine and let it run for about one minute.
- Add coolant up to "max" mark of expansion tank (E). If the tractor has a non-seethrough expansion tank, coolant level should be 20 mm under tank seat. The minimum level of coolant is 40 mm under tank seat. Install the pressure cap.

- On Z 10520 and Z 10540 tractors: remove bolt on auxiliary radiator (F) and check bleeding carefully. Clear coolant has to flow out after loosening bolt.

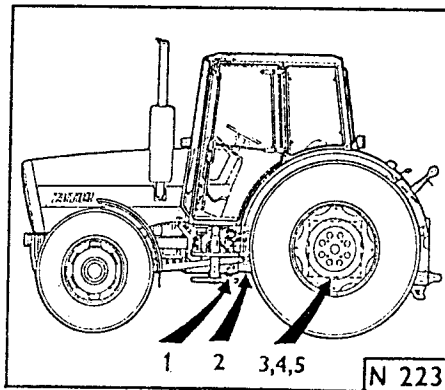
WARNING: Pure water must not be used on Z 10520 and Z 10540 tractors. The cooling system must always be filled with an anti-freeze solution (see "Liquids and fillings" section).





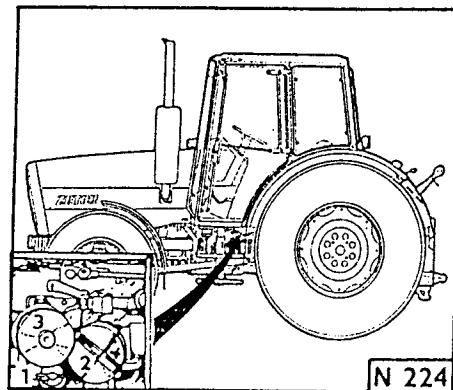
CHECKING AND CHANGING TRANSMISSION OIL
FILLERS AND CHECKING POINTS

Oil level is checked with dipstick in the filler cap on left side of transmission. On tractors with EHR 4 BOSCH electrohydraulics the filler cap for transmission oil is also placed at rockshaft cover. It is accessible from rear of tractor. With this version, dipstick is also placed in filler cap on left side of transmission. Check oil level only with engine stopped.



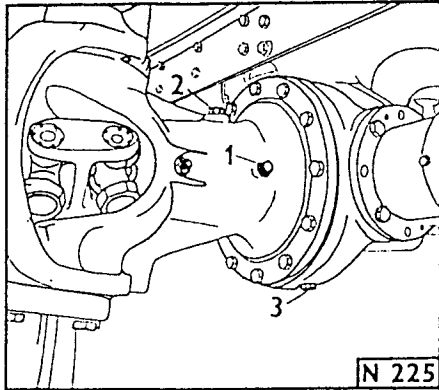
DRAINING POINTS AND PLUGS

- 1 - Oil from clutch housing.
- 2 - Oil from gearbox.
- 3 - Oil from transmission housing.
- 4 - Oil from left-hand axle housing.
- 5 - Oil from right-hand axle housing.



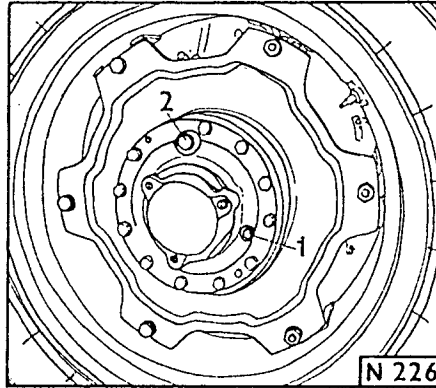
AFTER DRAINING OIL

- Clean magnetic plug (1) and strainer screen (2).
- Change filter element (3). Do not use tools when installing canister, tighten by hand.
- Install all draining plugs.
- Pour oil (approx. 40 liters), start engine and let it run for about two minutes.
- Check oil level in gearbox and fill up to top mark of dipstick after stopping engine and when oil level is still.



FRONT WHEEL DRIVE AXLE HOUSING

- 1 - Inspection plug
- 2 - Filler plug
- 3 - Drain plug



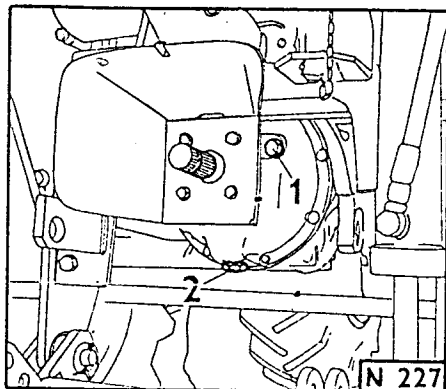
FRONT WHEEL PLANETARY REDUCTION DRIVE HOUSING

- 1 - Inspection plug
- 2 - Filler plug

Oil is checked with filler cap in top position (2). The filler plug is used as drain plug when wheel is turned by 180 deg. (2).

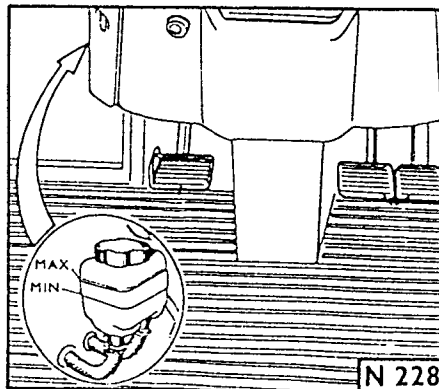
CHECKING AUTOMATIC UNLOCKING FUNCTION OF FRONT DRIVE AXLE DIFFERENTIAL INTERLOCK

With front wheel drive on and automatic unlocking function of front drive axle differential interlock correct, the outer wheel is turned off when turning. When going through a turn, inner wheel instead of outer wheel could be turned off with incorrect combination of front and rear wheels, inflation pressures or uneven tireware. This causes excessive tireware of outer wheel. This defect is indicated by marks on floor when turning on concrete or asphalt surface or if tire is rubbing off during turns. This checking of the automatic unlocking function of the front drive axle differential interlock should be performed after a year of service.



FRONT PTO HOUSING

- 1 - Filler cap
- 2 - Draining hole

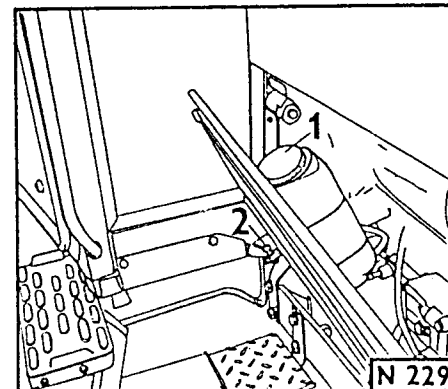


ADDING BRAKE FLUID

The reservoir is accessible after opening left cover of steering bracket. Brake fluid level should be maintained between $\frac{3}{4}$ (max. level) and $\frac{1}{2}$ (minimum level) of the reservoir volume.



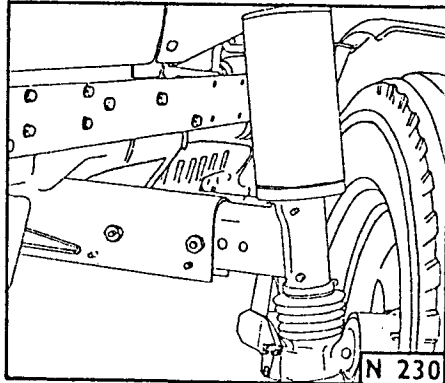
Everything must be clean when handling with brake fluid. Check brake fluid level daily before driving.



SERVICE WATER RESERVOIR

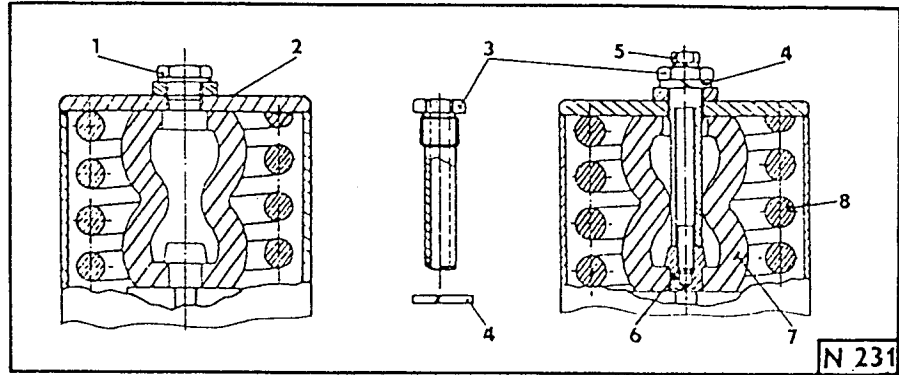
It is accessible after tilting right side engine cover.

- 1 - Filler cap
- 2 - Draining hole



SPRING MOUNTED FRONT WHEEL EXTENSIONS

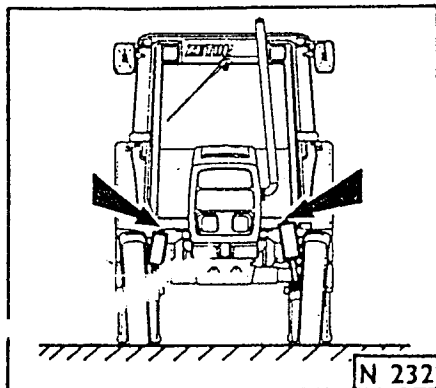
It is possible to lock the spring mounted extensions if work demands more load on front axle than the maximum permissible value or if work demands tractor in permanent height.



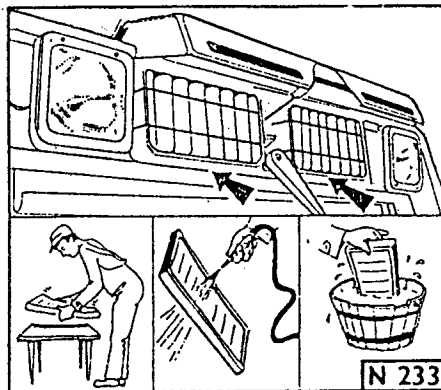
LOCKING AND UNLOCKING OF SPRING MOUNTED FRONT WHEEL EXTENSIONS

Blocking

- Unscrew cap (1) - to be used later, when unlocking.
- Instead of cap screw in springs (2) with pipe (3) and securing washer (4).
- Insert bolt M 10x1.25 (5) into tube and screw into nut (6) in spring (7). Function of wheel spring (8) is eliminated, extension is locked. To unlock, follow the instructions in reverse order. After locking or unlocking check toe-in adjustment.



Perform locking and unlocking of spring-mounted extensions under load (tractor weight only). When unlocking without load, wheel pin will be thrown away by the force of compressed spring. Spring sleeve is removed when spring mounted extension needs to be removed. We advise you to have this done at a specialized workshop.

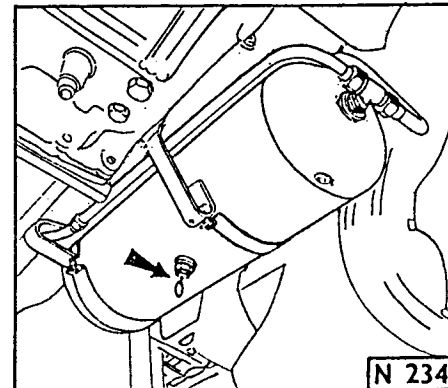


CLEANING CAB AIR FILTERS

Recover filters according to dirt build-up by patting sides of element, cleaning with compressed air or water and detergent and drying. Check for dirt build-up daily.

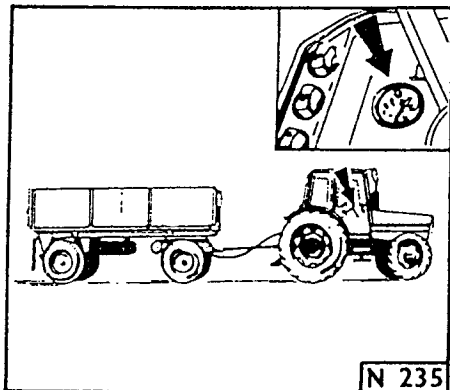


Tractors are not equipped with special intake cab air filters. They are, therefore, not intended for working with aerosols and other harmful agents.



DRAINING AIR TANK

Deflect or press the outer part of valve.

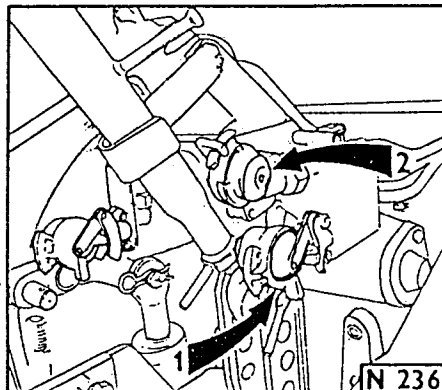


CHECKING AIR SYSTEMS FOR LEAKS

- Fill air tank to maximum pressure.
- With engine stopped the air pressure must not fall by more than 10 kPa in 10 minutes.

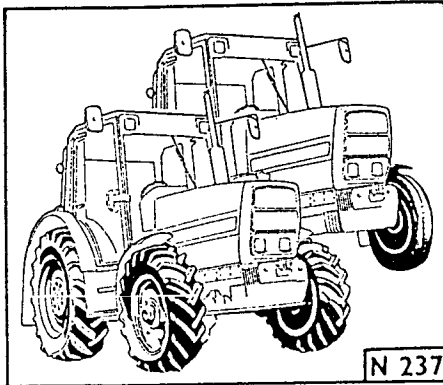


Check daily before driving with trailer or semi-trailer.



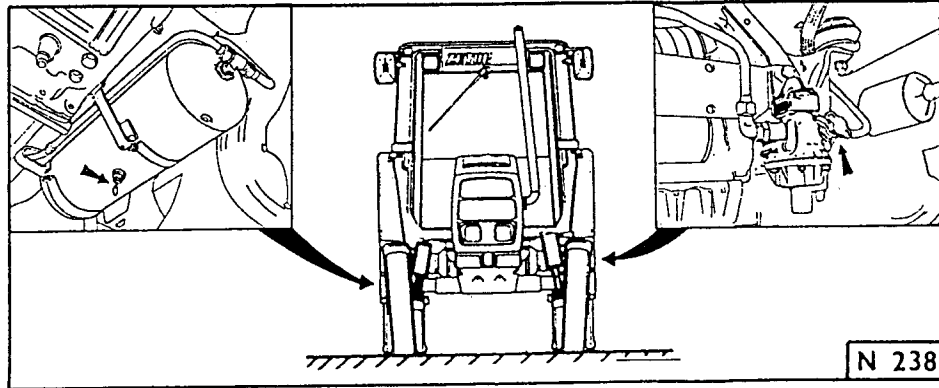
AIR BRAKES WORKING PRESSURE

Air pressure at double hose coupler head (red) is 710 ± 20 kPa, pressure at single hose coupler head is 608 ± 30 kPa (when regulator relieves the compressor, it blows shortly).



MAINTENANCE AND ATTENDANCE OF TIRES

Check tire surface regularly, make sure there are no defects and that structure is not damaged. Remove damaged tires from further use.



INFLATING TIRES

Basic recommended inflation pressure values are stated in the table. Check pressure regularly before driving when tires are still cold. Use pressure regulator for inflating which works as pressure equalizer, tire inflator and safety valve. Remove wing nut on pressure regulator (or rubber cap) and install hose for inflating tires. Screw hose to end of thread to press down return valve. Tires cannot be inflated with maximum pressure - 0.6 MPa - (0.7 MPa with double hose brakes) in air tank. In this case pressure has to be reduced first by draining valve at bottom of air tank. Wing nut (or rubber cap) must be installed after inflating.

RECOMMENDED TIRE INFLATION PRESSURES OF NON-DRIVEN FRONT WHEELS

The total of carrying capacity values of both tires used on front axle must not exceed the carrying capacity value of the axle. The carrying capacity values of axles are given in the "Technical data" section for the corresponding tractor type. Wheels of different constructions must not be fitted on one axle.

FIGURES

Working operations		Tire size and ply rating			
		7.50-16 6 PR	7.50-20 6 PR	9.00-16 6 PR	10.0-16 6 PR
Field work	Inflation (kPa)	230-260	230-280	160-190	170-200
	Carrying capacity (kg)	660-745	795-875	720-810	860-965
On-the-road transportation	Inflation (kPa)	230-280	230-300	190-230	180-230
	Carrying capacity (kg)	660-745	795-875	810-900	860-965
Front loader operations (8 km/hour)	Inflation (kPa)	350	350	max 290	250
	Carrying capacity (kg)	max.1490	max.1750	max.1350	max.1930

RECOMMENDED FRONT WHEEL INFLATION PRESSURES FOR TRACTORS WITH FRONT WHEEL DRIVE

The total of carrying capacity values of both tires used on front axle must not exceed the carrying capacity value of the axle. The carrying capacity values of axles are given in the "Technical data" section for the corresponding tractor type. Wheels of different constructions must not be fitted on one axle.

FIGURES

Working operations		Tire size and ply rating							
		11.2-24 8 PR	11.2R24	12.4-24 8 PR	12.4R24	13.6R24	12.4-28 6 PR	14.9-24 8 PR	14.9R24
Field work	Inflation (kPa)	120-170	130-160	100-170	130-160	130-160	140-170	150-180	130-160
	Carrying capacity (kg)	870-1010	1035-1180	895-1200	1190-1360	1270-1450	1140-1275	1575-1760	1490-1700
On-the-road transportation	Inflation (kPa)	200-260	130-160	200-250	130-160	130-160	140-170	150-180	130-160
	Carrying capacity (kg)	1120-1225	1035-1180	1330-1415	1190-1360	1270-1450	1140-1275	1575-1760	1490-1700
Front loader operations (8 km/hour)	Inflation (kPa)	max 300	max 200	290	max 200	max 200	max 210	max 220	max 200
	Carrying capacity (kg)	max.2450	max.2360	max.2830	max.2040	max.2170	max.1910	max.2460	max.2550

RECOMENDED TEAR TIRE INFLATION PRESSURES

The total of carrying capacity values of both tires used on front axle must not exceed the carrying capacity value of the axle. The carrying capacity values of axles are given in the "Technical data" section for the corresponding tractor type. Wheels of different constructions must not be fitted on one axle.

FIGURES

Working operations	(kPa)	Tire size and ply rating									
	(kg)	16.9-34 8 PR	16.9R34	18.4-34 8 PR	18.4R34	12.4-38 8 PR	13.6-38 6 PR	16.9-38 8 PR	16.9R38	480/70R38	18.4R38
Field work	Inflation	110-150	140-160	110-140	130-160	110-170	110-160	110-140	130-160	120-160	130-160
	Capacity	1830-2200	2130-2430	2250-2565	2450-2800	1165-1480	1340-1660	1940-2230	2255-2575	2500-2900	2625-3000
On-the-road transportation	Inflation	170-200	130-160	170-200	130-160	170-210	170-200	170-200	130-160	140-160	130-160
	Capacity	max.2380	2130-2430	max.2565	2450-2800	max.1655	max.1660	max.2520	2255-2575	2700-2900	2625-3000

Inflate front and rear tires to the lower given value when working on fields with light soils(dry, sandy). The higher given value is assigned to working on heavy and consitant soils. Sidewalls of tires must not wrinkle when ploughing with minimum inflation pressures. The carrying capacity values are valid if tractor speed does not exceed 30km/h. The given values refer to one tire. The maximum load on axle must not exceed maximum load values on tires.

Values of permissible loads given in the "Technical data" section must not be exceeded when loading tractor. Changes in carrying capacities from basic values are given in the following tables.

TIRES OF STEERED WHEELS

Front steered wheels

Speed km/h	carrying capacity %	Inflation pressure %
10	150 (200*)	125
20	135	100
25	115	100
30	100	100
35	90	100
40	80	100

* value for front loader only

TIRES OF DRIVEN WHEELS

Driven wheels - diagonal tires

Speed km/h	carrying capacity %	Inflation pressure %
10	140 **	125
20	120	100
25	107	100
30	100	100
35	90	100
40	80	100

** minimum value for 6PR

Do not increase carrying capacity of tires by increasing inflation pressures other ways than mentioned above and reducing speed.

TIRES OF DRIVEN WHEELS

Driven wheels - radial tires

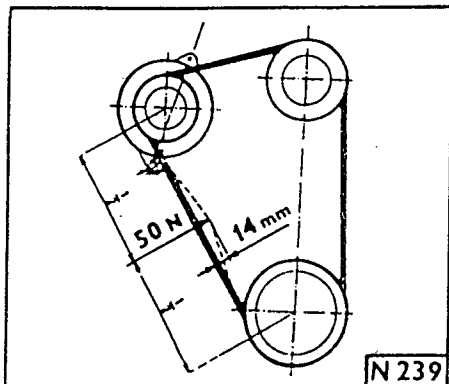
Speed km/h	carrying capacity %	Inflation pressure %
10	150	125
20	123	100
25	111	100
30	107	100
35	103	100
40	100	100

PUTTING TRACTOR OUT OF SERVICE

If tractor is put out of service for a short period of time inflate tires to the pressure value for driving on road. For putting tractor out of service for a longer period of time (storage) support the tractor and reduce tire pressures to minimum (wheels must not touch ground).

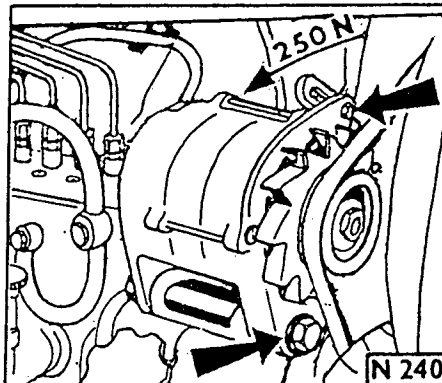
The majority of the following work will require certain experience and more exacting service and diagnostic equipment. Therefore, we advise you to have these jobs done in a specialized workshop.

	Page
Drive belt tension	141
Cylinder bolts tightening torque	141
Engine valve clearance adjustment	142
Injector nozzles adjustment	142
Brake pedal travel	142
Purging air from brake system of rear brake	143
Free movement of clutch pedal	144
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Purging air from front cardan brake	145
Purging air from front drum brake	145
Checking foot brake	146
Foot brake adjustment	146
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Changing braking segments in front cardan brake	148
Adjusting freeplay of taper roller bearing of front wheels	148
Checking and adjusting double-line brakes	149
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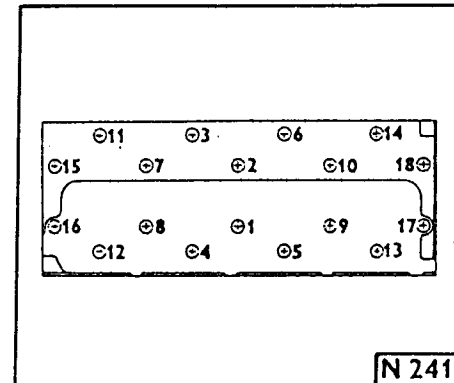
CHECKING DRIVEBELT TENSION

Deflection of drivebelt with correct tension after applying force of 50 N between pulleys should be 14 mm.



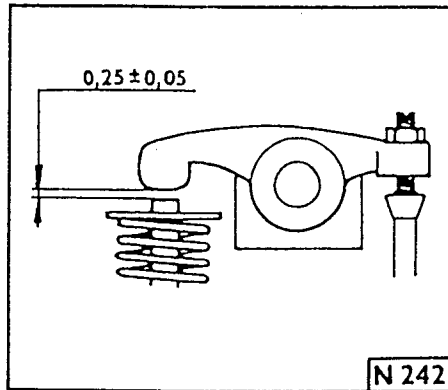
ADJUSTING TENSION

Adjust drivebelt tension to the prescribed value by force of 250 N after loosening mounting bolts.



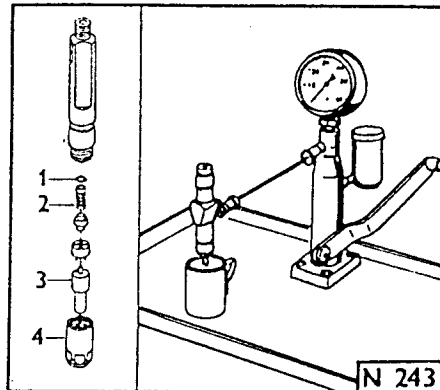
TIGHTENING ENGINE CYLINDER HEAD NUTS

Perform tightening of cylinder head nuts with cold engine in specified sequence. The tightening torque is 160-180 Nm.



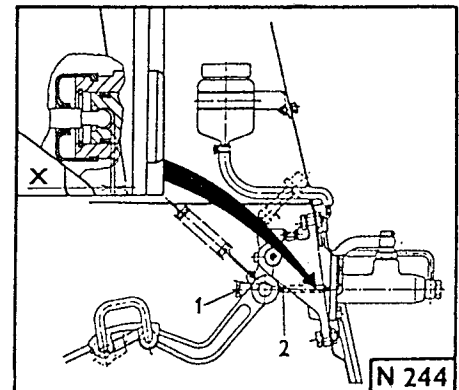
ENGINE VALVE CLEARANCE ADJUSTMENT

Perform adjustment of valve clearance with cold engine. The correct clearance of intake and exhaust valves is 0.25 ± 0.05 mm. With movement relief of rocker arm of 1st cylinder, valves of 4th cylinder are adjusted and vice versa. With movement relief of 2nd cylinder, valves of 3rd cylinder are adjusted and vice versa.



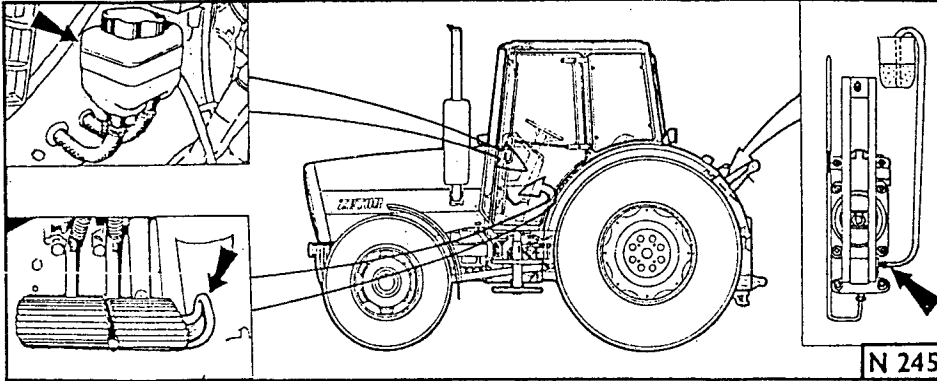
INJECTOR NOZZLES ADJUSTMENT

Burst pressure of fuel injector nozzles is 22.0 - 0.8 MPa. Burst pressure is adjusted to the highest value (22,0 MPa) by limiting shims (1) of various thickness which are inserted below spring (2). Correct position of injector nozzles (3) is determined by positioning pins on sealing panel. Tightening torque of nut (4) is 50 - 60 Nm. Before tightening nut push nozzle against spring by supporting nozzle on wooden pad.



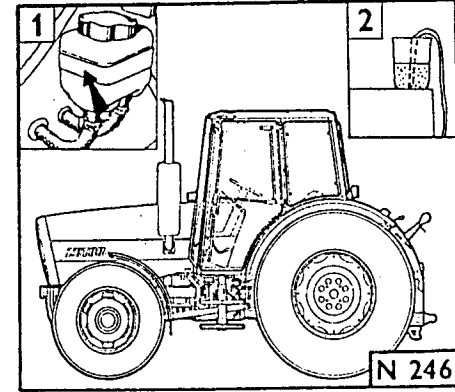
BRAKE PEDAL TRAVEL

Adjust piston rod (2) and adjusting nut (1) so that distance "X" is 0.5 to 1 mm. Press down pedal. After releasing and returning to initial position, clearance "X" must be 0.5 to 1 mm at both piston rods. Perform adjustment with pedals unlatched. With front cardan brake check function of front brake with pedals latched. Front brake must not function if only one pedal is pressed down and must not brake at all when pedal is released. Purge air from front brake first, by three draining nuts and pressing both pedals at once. Then purge air from rear brake.



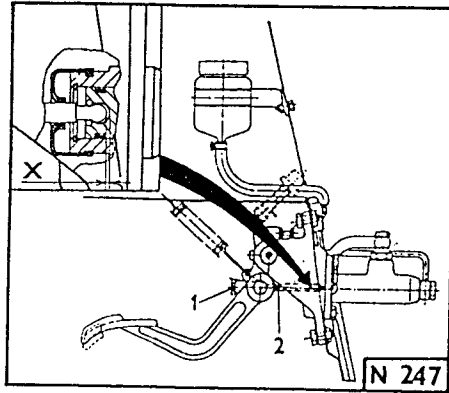
PURGING AIR FROM REAR BRAKE SYSTEM

- Perform this procedure for each wheel individually with pedals unlatched.
- Check brake fluid level in expansion tank, add brake fluid to maximum.
 - Fit hose onto bleeding screw of brake cylinder and put the other end to bottom of a seethrough reservoir filled partially with brake liquid.
 - Press down brake pedal, loosen bleeding screw (maximum 1/4 of thread), press down pedal fully and tighten bleeding screw.
 - Release brake pedal and repeat procedure until clear fluid without bubbles flows out from hose.



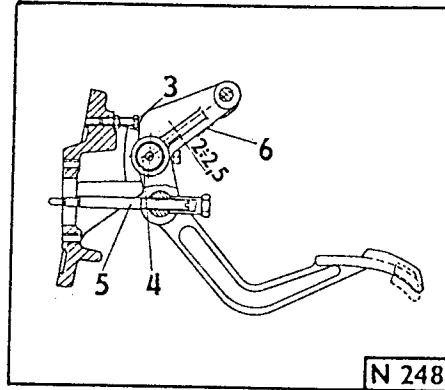
Check brake fluid level in expansion tank while bleeding the system to avoid air being drawn in (1). Make sure the end of hose is always in brake fluid and reservoir kept as high as possible (2). Change brake fluid in the whole system after two years.



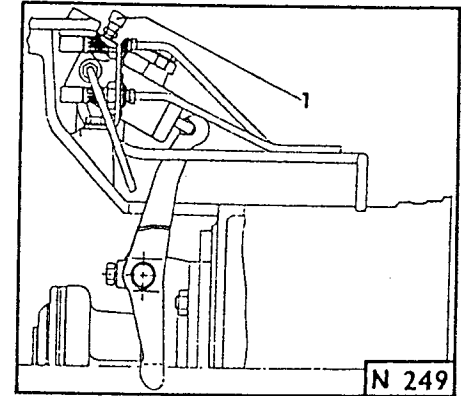


FREE MOVEMENT OF CLUTCH PEDAL

Adjust piston rod (2) and adjusting nut (1) so that gap "X" is 0.5 to 1mm. Press down pedal. Gap "X" must be 0.5 to 1 mm when pedal is released and returned to initial position.



Adjust bolt and nut (3) so that the axis of springs (6) is 2-2.5 mm above the shaft axis (4). After adjustment press down brake pedal to move piston rod (5) by 1.5 mm. The pedal must return to initial position when released.

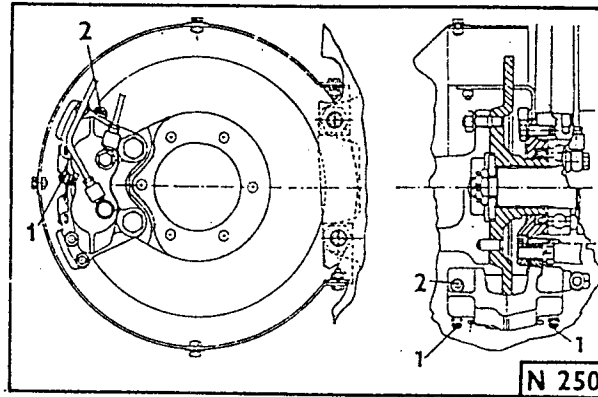


PURGING AIR FROM CLUTCH HYDRAULIC CIRCUIT

Use the same procedure as for purging air from brake system. The bleeding screw is located on clutch cylinder (1).

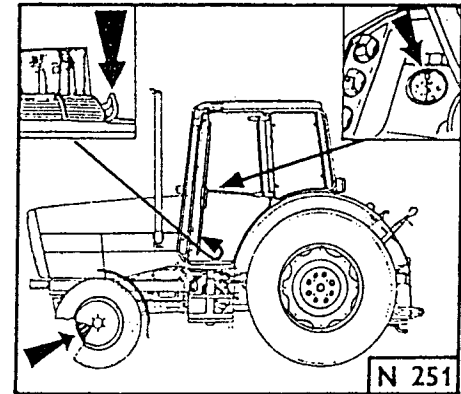


It is important to change brake fluid of brake system after two years including clutch disengagement hydraulic circuit.



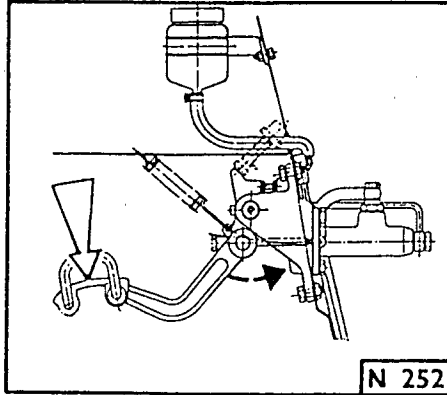
PURGING AIR FROM FRONT CARDAN BRAKE

On tractors with front wheel drive with cardan brake - begin purging on both cylinder pairs of stirrup. One pair of stirrup has two bleeding screws (1), the other one bleeding screw (2) . With pedals unlatched press down one of the pedals slightly and purge air from one stirrup cylinder pair of I. circuit by the other pedal. Perform the same procedure on the pedals the other way round to purge air from II. circuit. Having finished bleeding of front cardan brake purge air from rear brake.



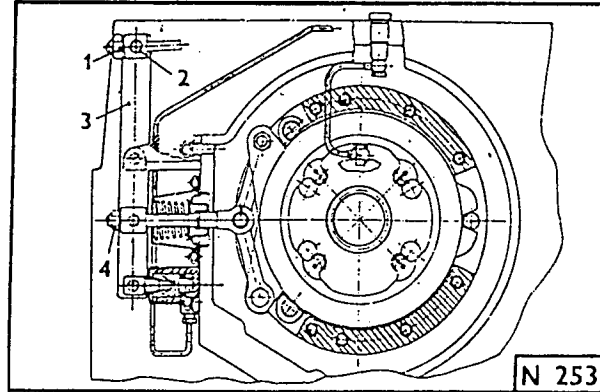
PURGING AIR FROM FRONT DRUM BRAKE

Purging of front brake can be done only with air system full. First purge air from pressure equalizer by two bleeding screws. Only then purge air from front drum brake cylinders by bleeding screws. Keep pressing down both pedals latched together while purging. Finally purge air from front brake.



CHECKING FOOT BRAKE

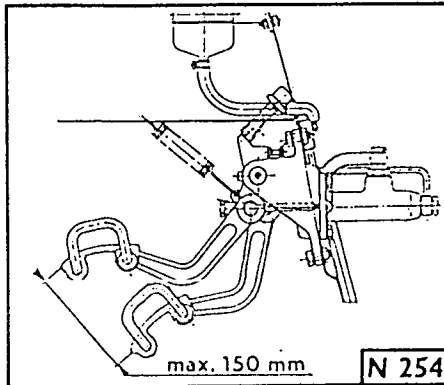
With pedals unlatched press down by maximum force of approx 500 N. If pedal is pressed almost to stop at bottom of bracket, foot brake has to be adjusted.



FOOT BRAKE ADJUSTMENT

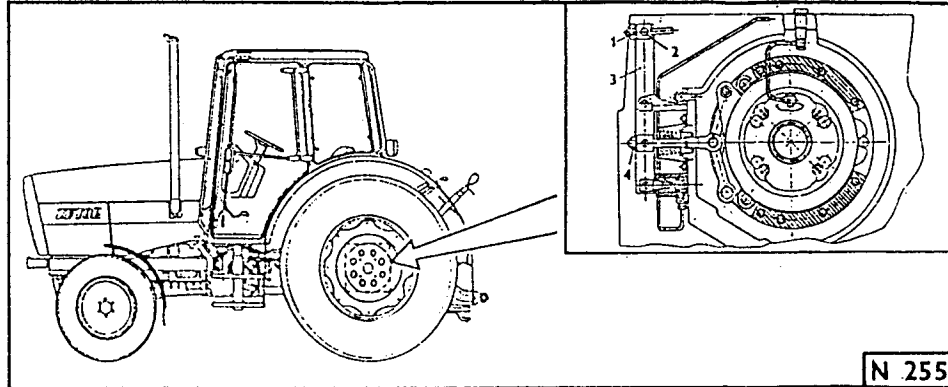
Park brake must be in disengaged position. Some clearance must be present between nut (1) and pin (2) at brake lever (3). Loosen lock nut (1) if necessary to obtain clearance.

Lift rear wheels from ground and have one of them being turned by hand of your assistant. While turning wheel tighten nut (4) until wheel cannot be turned by hand. Do not overtighten. Loosen nut (4) by 5/6 turns (five sides of nut) and check turning of wheel. If slight drag is noted, nut can be loosened by another 1/2 turn, but no more. Repeat for other wheel.



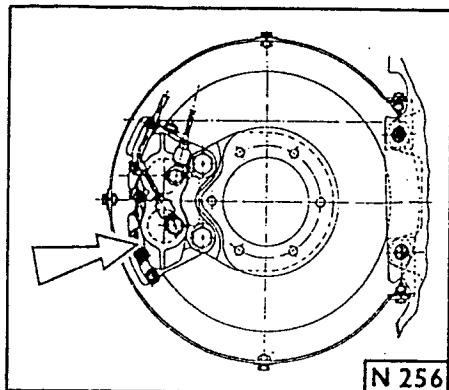
AFTER ADJUSTING FOOT BRAKE

- Check brake pedal movement. Brake pedal movement should not exceed 150 mm.
- Check on same function at both wheels. If function is not same loosen adjustment nut at wheel where braking is stronger.
- Check park brake adjustment after adjusting foot brake.



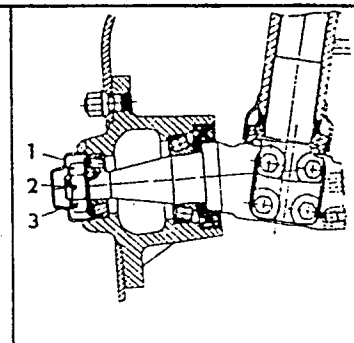
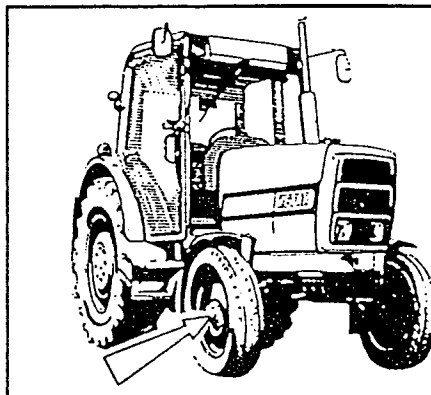
PARK BRAKE ADJUSTMENT

Park brake adjustment follows after foot brake adjustment. Park brake lever must be in disengaged position. Adjust parking brake by removing clearance between nut (1) and pin (2) at brake lever (3). Check foot brake function after this basic adjustment. Braking function must be same at both wheels. If necessary, loosen nut (4) at wheel where braking is stronger.



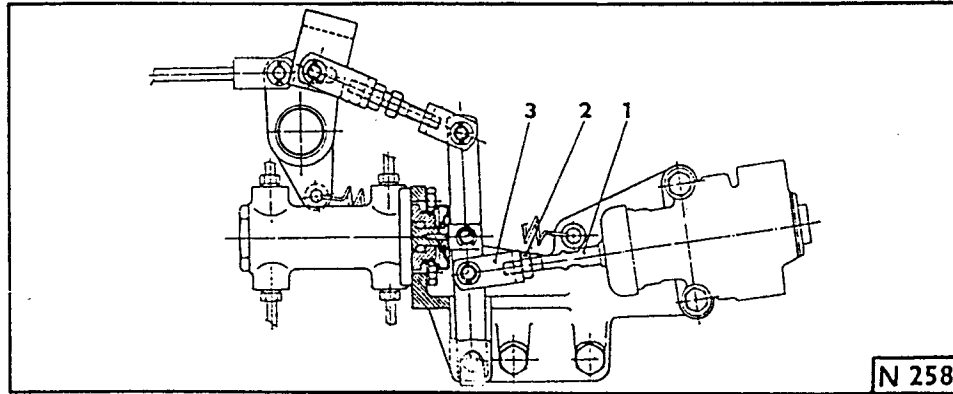
CHANGING BRAKING SEGMENTS IN FRONT
CARDAN BRAKE

Braking segments need to be replaced if thickness of lining reduces to 2 mm. Gain access to braking segments by removing two cotter pins securing cover.



ADJUSTING FREEPLAY IN TAPER ROLLER BEARING OF FRONT WHEELS (Z 7520, Z 8520, Z 9520 AND Z 10520 TRACTORS)

- Block tractor to avoid any motion, lift and support front axle.
- Screw off bearing cover (1) and remove cotter pin (2) from nut (3).
- Tighten nut (3) by torque of 15 Nm.
- Loosen nut by 180 deg, knock on hub by a wooden hammer to loosen bearing.
- Tighten nut (3) by 3-5 Nm. If splines of nut do not correspond with openings in pin then loosen nut to the nearest opening. Wheel must turn without noticeable freeplay, but also without increased resistance. Bearing must not make noise. (Seal of hub has certain resistance against turning the wheel and has to be considered.)
- Secure nut with new cotter pin.
- Add lubricant to cover (1) - max. up to 1/3 of hub.



CHECKING DOUBLE LINE BRAKES

- Fill air tank to 710 ± 20 kPa and connect pressure gauge to yellow coupler head.
- When touching the brake pedal so brake lights go on, pressure gauge should monitor a change by 50 to 100 kPa (electromagnetic valve should hiss shortly).
- When force of 500 N is applied to brake pedal or when park brake is engaged air pressure increases to 710 ± 20 kPa.

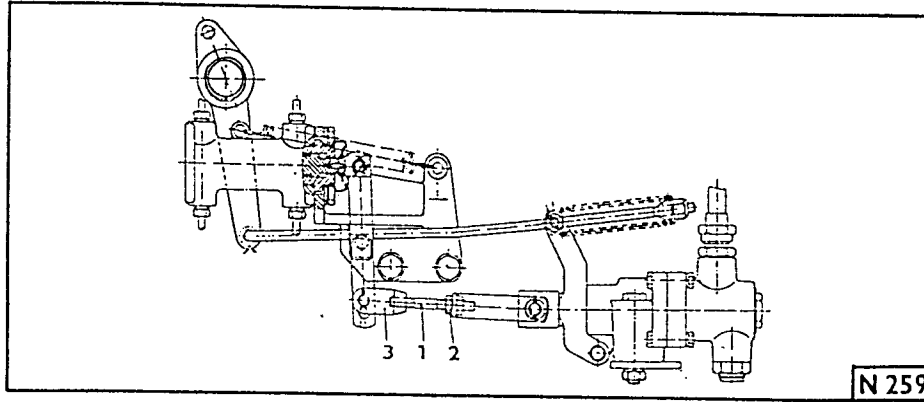
- At single-line coupler head air pressure drops from 608 ± 30 kPa to zero.
- If the result of this check is insufficient have the individual elements repaired and then adjust control valve.

gauge monitors initial increase in pressure.

- Begin to screw link in fork, when pressure drops to zero, screw in by another 1.5 turns.
- Check braking function with coupled trailer.

LINK ADJUSTMENT

- Fill air tank to 710 ± 20 kPa and connect air gauge to yellow coupler head.
- Loosen nut (2), slowly unscrew link (1) from fork (3) until pressure

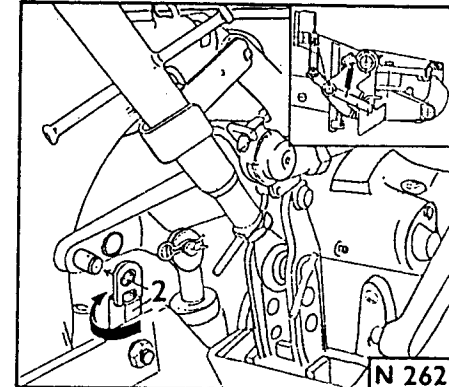
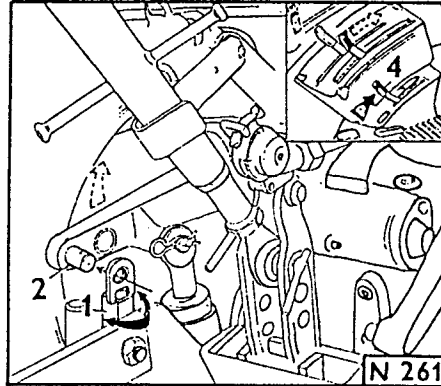
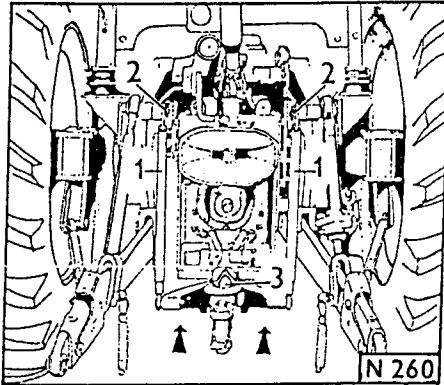


CHECKING SINGLE LINE BRAKES

- Fill air tank to 590 ± 20 kPa and connect pressure gauge to coupler head.
- When pressing brake pedal by greater force than 500 N or when applying park brake, pressure should drop from 590 ± 20 kPa to zero.
- If result of check is different, have the individual air brake elements repaired and then adjust link of brake valve.

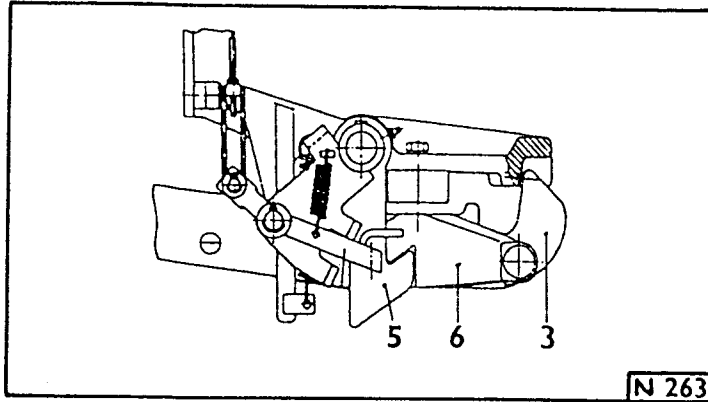
LINK ADJUSTMENT

- Fill air tank to 590 ± 20 kPa and fit pressure gauge to coupler head.
- With brake pedals latched together and pressed down by greater force than 500 N slowly screw in link (1) after loosening nut (2) into fork (3) until pressure drops to zero.
- Screw in link by 1.5 turns, secure with nut and release brake pedals.



ADJUSTING HITCH FOR SEMI-TRAILER

- Disconnect lifting links (1) from pins of hydraulic arms (2) and lift tow hook manually (3) until carrying hooks lock under brackets.
- Shift preselector lever (4) to "P" position and lifting links to top position hydraulically.
- By turning adjust length of lifting links (1) until eyelets of links can be fitted onto hydraulic arm pins (2). Length of link is reduced by turning right.
- After checking if carrying hooks (5) lock under brackets (6) turn top of links (1) by another 1/2 turns to the right. Then fit links back onto hydraulic lifting arms and secure with lock pins.



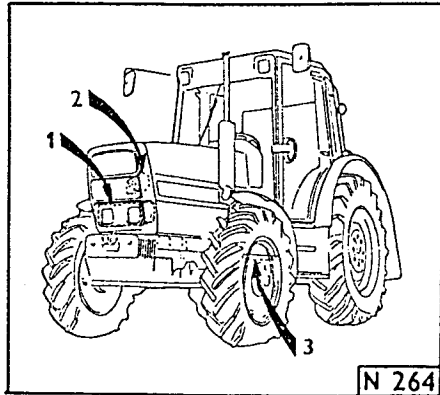
CHECKING HITCH ADJUSTMENT

After adjustment with hydraulic arms lifted in top position, clearance between carrying hooks (5) and brackets (6) must be at least 2 mm (tow hook (3) can be lifted by hand). Clearance enables carrying hooks to lock without tow hook resting on it's carrier. This eliminates excessive load on hydraulic pump. Adjust lifting links so that tow hook is not lifted on one side only.



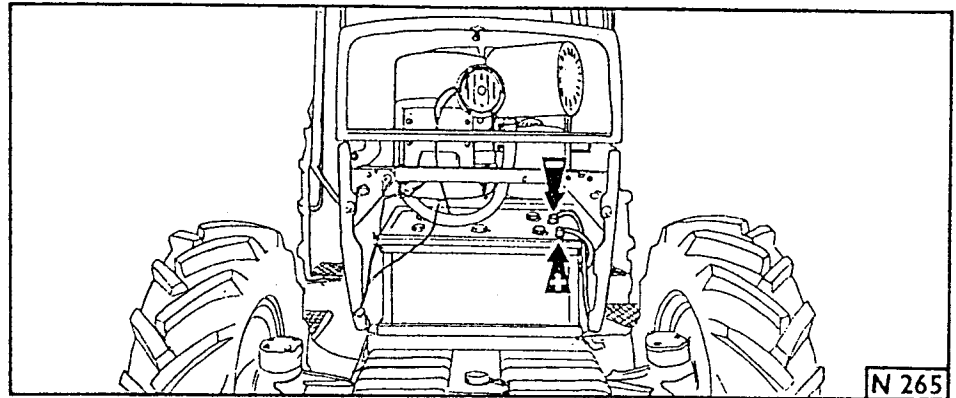
Be cautious when repairing electric installation especially when handling with battery, avoid any contact of electrolyte with skin or clothes.

	Page
Electrical equipment	154
Basic service information	154
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Alternator maintenance	156
Fuse box and fuse connections	157
Checking and setting headlights in front grill	158
Checking and setting lights in cab roof	159
Electrical installation diagram - without cab	160
Electrical installation diagram - cab	162
Electronic hydraulic control diagram	163
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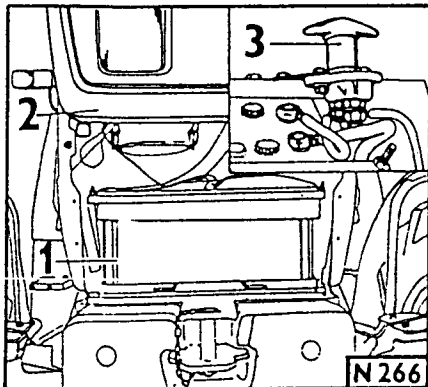
ELECTRICAL EQUIPMENT

Voltage	12 V
(negative (-) pole grounded)	
Battery (1)	12 V
12 D 11 AKUMA 125 Ah	
63 539 VARTA 135 Ah	
Alternator with remote regulator	
voltage (2)	14 V/ 55 A
Starter (3)	12 V/3.5 kW



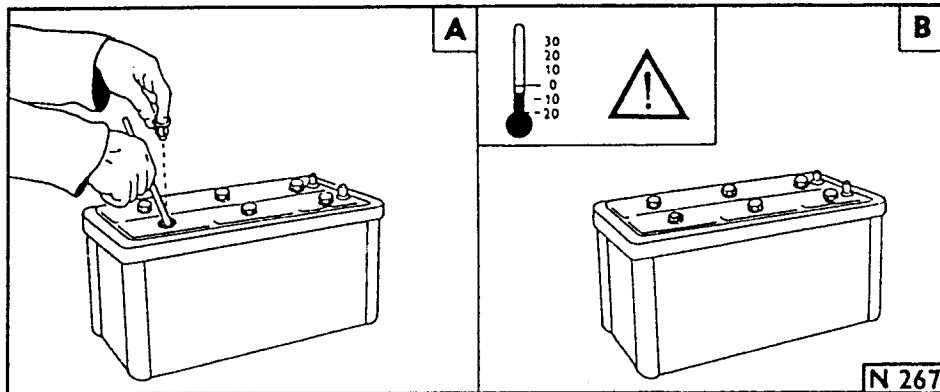
BASIC SERVICE INFORMATION

Battery must always be connected with negative pole (-) to frame and positive(+) pole to alternator. If battery is connected other way round, alternator circuits will be destroyed. When using an auxiliary battery for starting do not forget to connect "plus" to "plus" and "minus" to "minus". If any section of charging system is being replaced, disconnect battery from tractor frame (-). This way short circuits are eliminated at terminals.



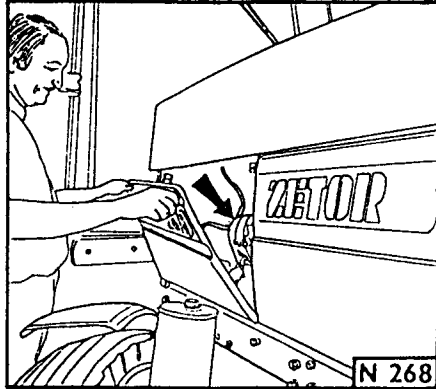
BATTERY

Battery (1) is accessible after tilting away front grill of tractor which can be fixed in top position (2). Battery disconnect switch (3) placed above battery is optional.



BATTERY MAINTENANCE

This requires special attention especially during summer season because of increased evaporation. Check correct fastening, connections, electrolyte level and if everything is clean at least every two weeks in summer season, every four weeks in winter season. Top up electrolyte with distilled water only, level should be 5 mm above separators (A). Top up before driving to provide proper mixing with electrolyte. Maintain electrolyte density at 1.28 (32° Bé) (1.23 = 27° Bé in tropical regions. Electrolyte of discharged battery could freeze in winter and destroy the battery (B). Therefore, never leave battery discharged. Clean cable connections and battery posts of corrosion and coat with anti-corrosion compound (every 100 engine hours in summer season). Further instructions are given in instructions from producer of battery.

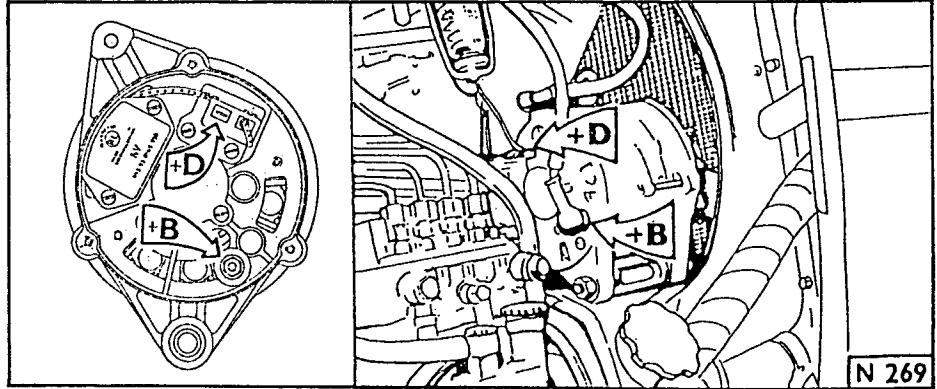


ALTERNATOR

Alternator is accessible after tilting right side panel. Red indicator light enables checking of charging. If light does not work bulb (12 V 2 W) must be replaced as soon as possible.

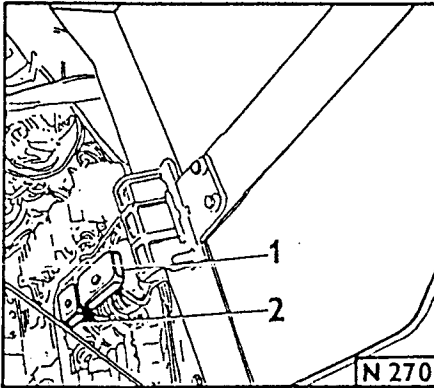


When repairing tractor by electric welding, all connections from alternator must be disconnected. Protect conductor "+B" from short circuit.



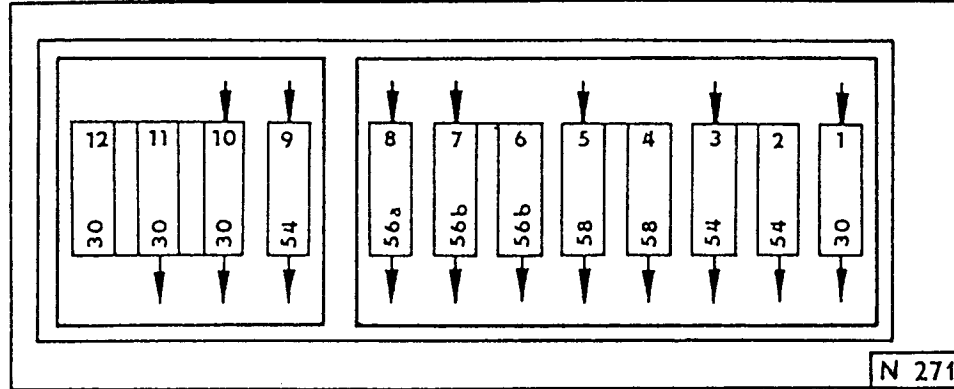
ALTERNATOR MAINTENANCE

- Protect alternator from water or diesel when cleaning or washing tractor.
- Alternator must not be disconnected when tractor is running.
- Alternator must not be put into operation with conductor "+B" disconnected and "+D" connected. With engine speed increasing, this would cause high voltage in alternator which would destroy alternator circuits.
- Never connect any terminal of alternator into short circuit.
- Alternator must not be excited additionally. This would damage alternator circuits.
- Make sure connections of terminals are perfect and that alternator is grounded correctly.



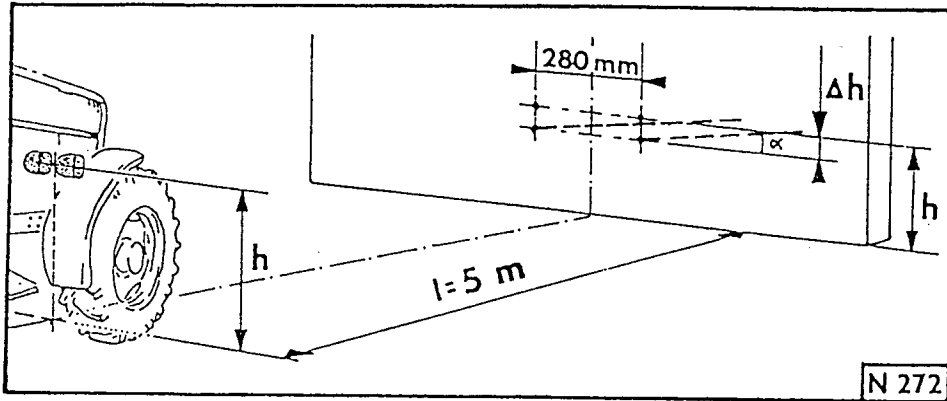
FUSE BOX

Fuse box is accessible after opening right steering bracket cover. Main fuse box (1) has eight fuses. Tractors with cab have another fuse box with four fuses (2). All fuses are 15 A.



FUSE BOX CONNECTIONS

- 1 - Brakes, flasher, horn, warning lights.
- 2 - Power supply of appliances, cooling fan clutch, front wheel drive switch, hand lamp socket.
- 3 - Directional lights, thermostat
- 4 - Left-hand tail lights, left-hand clearance lights, number plate light
- 5 - Right-hand tail lights, right-hand clearance lights, work light, dash panel lights.
- 6 - Right-hand headlight low beam (grill or cab), tail fog light.
- 7 - Left-hand headlight low beam (grill or cab).
- 8 - Head lights high beam, high beam indicator light.
- 9 - Front and rear windshield wipers, windshield washer.
- 10,11 - Cab dome light, electrical hydraulic control switch, heater and vent switch.
- 12 - Not used.



CHECKING FRONT GRILL HEADLIGHTS SETTING

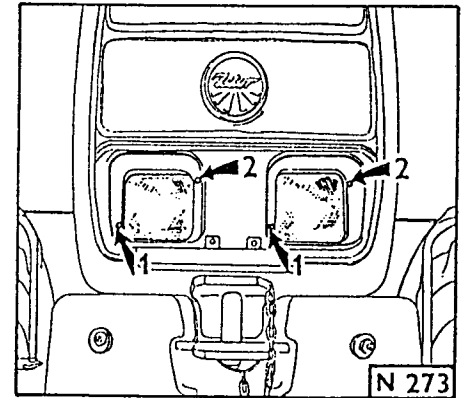
Test lights on wall. Tractor must stand on level ground with specified wheel inflation pressures. Basic vertical setting is 3.5 % with kerb weight of tractor. Horizontally, beam lights should be parallel with tractor symmetry axis.

l = distance between wall and light (5 m)

h = height of headlight center from floor

Δh = headlight inclination (-3.5 %) with respect to distance of wall = 17.5 cm

α = raise of asymmetric light (15 %)



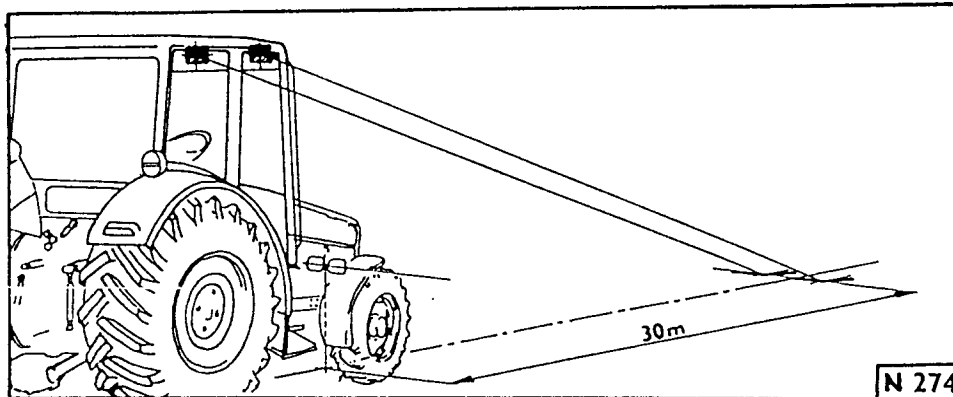
SETTING FRONT GRILL HEADLIGHTS

Adjusting screws are accessible through holes in front grill.

1 - Adjusting screw for vertical beam direction.

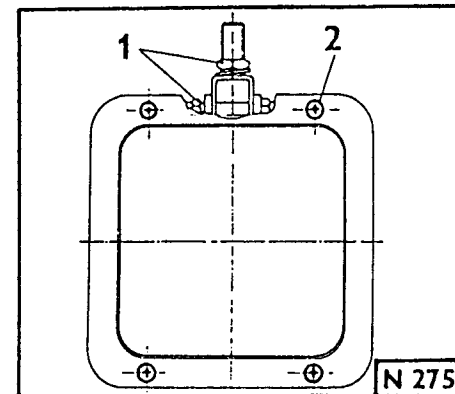
2 - Adjusting screw for horizontal beam direction.

Each light is set individually. Bulb replacement is performed from rear after tilting away front grill.



CHECKING AND SETTING LIGHTS IN CAB ROOF

Vertical setting - illuminated area on floor must not lie to left of vertical area going through center of lights farther than 30 m from front of tractor. Horizontal setting - light beam must be parallel to longitudinal symmetric axis of tractor. Perform testing with kerb weight of tractor.

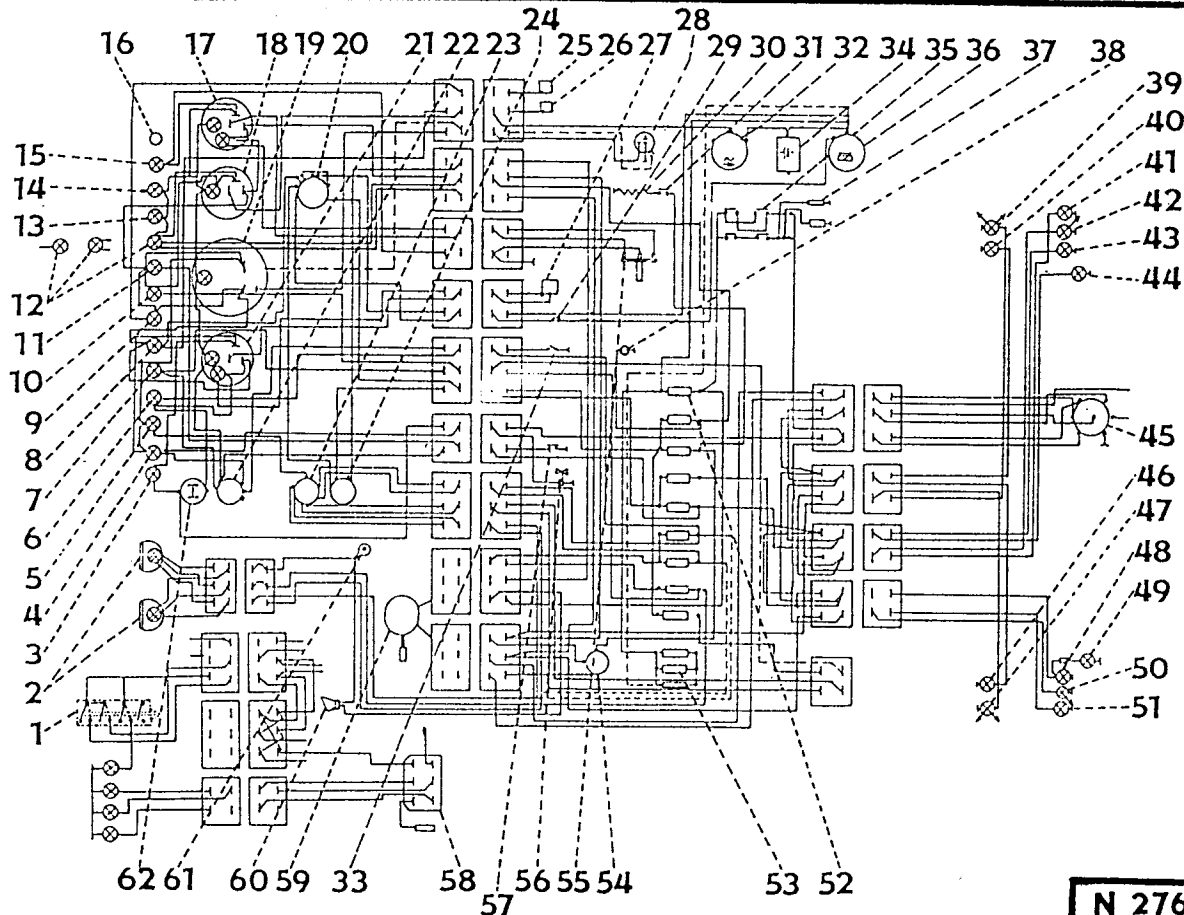


SETTING LIGHTS IN CAB ROOF

Setting is done after loosening nuts of holder (1) and after turning light shell horizontally or vertically. Bulbs are replaced after removing four screws (2).



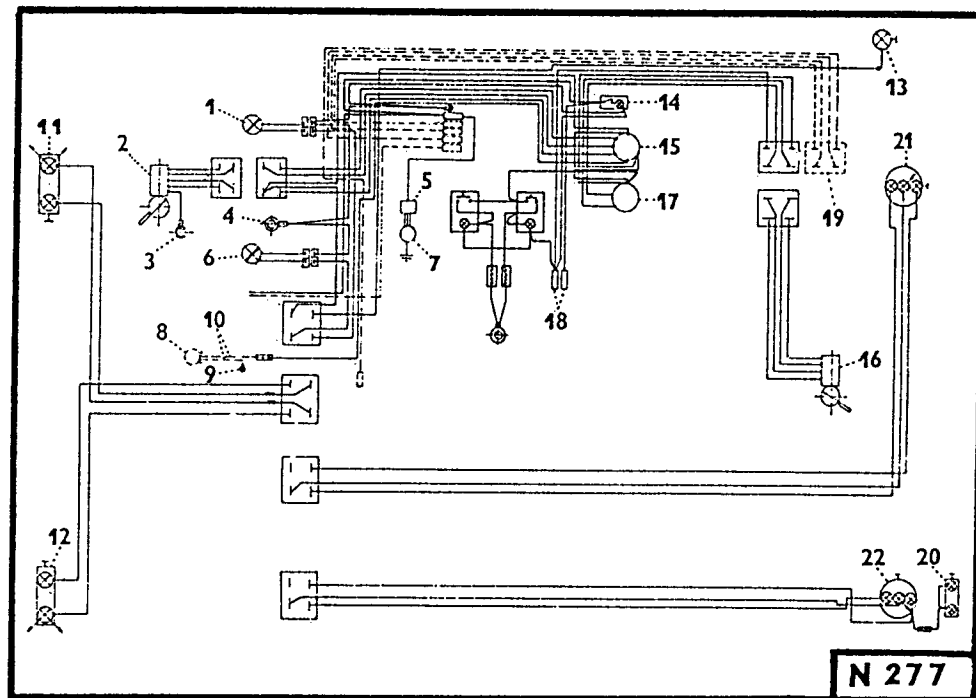
After bulb replacement maintain the position of parabola according to "TOP" sign and fit frame with drain hole at bottom.

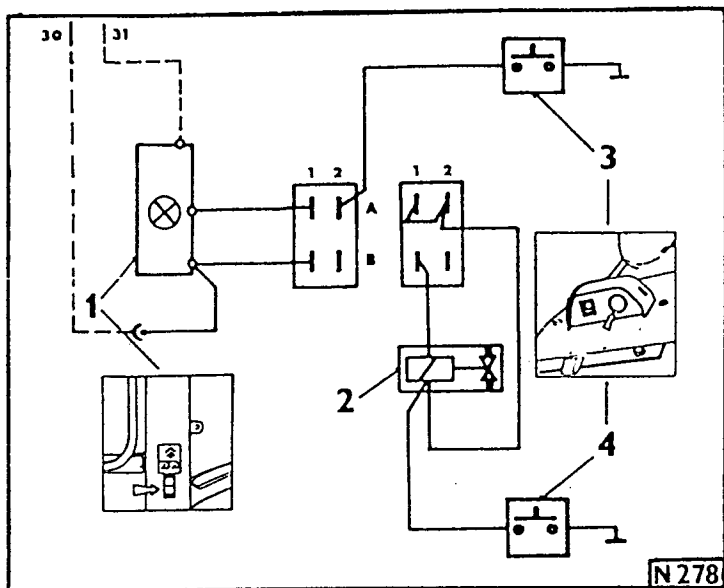


- | | | |
|--|--|--|
| 1. Warning light switch | 20. Steering lock with electromagnetic blocking and starter switch | 39. Front right turn signal |
| 2. Grill headlights | 21. Air pressure gauge and minimum pressure indicator | 40. Front right clearance light |
| 3. Front wheel drive indicator | 22. Work light and rear fog light switch | 41. Right brake light |
| 4. Rear fog light indicator | 23. Low beam lights selector - grill/cab | 42. Rear right turn signal |
| 5. Cab lights indicator | 24. Tractor light selector | 43. Right tail light |
| 6. Air filter indicator | 25. Engine oil pressure sensor | 44. Work light |
| 7. Working light indicator | 26. Temperature sensor | 45. Seven-pole trailer socket |
| 8. Battery charging indicator | 27. Air pressure sensor incl. warning contact | 46. Front left clearance light |
| 9. Oil pressure (engine lubrication) indicator | 28. Engine speed sensor | 47. Front left turn signal |
| 10. High beam indicator | 29. Starter motor safety switch | 48. Left tail light |
| 11. Park brake indicator | 30. Thermostarter | 49. Registration number plate light |
| 12. Turn signal indicator (if warning lights are fitted) | 31. Thermostarter switch | 50. Rear left turn signal |
| 13. Turn signal indicator (if warning lights are not fitted) | 32. Alternator with remote regulator | 51. Left brake light |
| 14. 1st trailer turn signal indicator | 33. Air filter sensor | 52. Eight-pole fuse box |
| 15. Warning lights indicator | 34. Battery | 53. Four-pole fuse box |
| 16. Not used | 35. Brake lights switch | 54. Turn signal braker |
| 17. Fuel gauge with fuel reserve indicator | 36. Starter motor | 55. Float |
| 18. Thermometer | 37. Air brake electromagnetic valve | 56. Front wheel drive electromagnetic clutch valve |
| 19. Engine speed and engine hours indicator | 38. Hand lamp socket | 57. Park brake indicator switch |
| | | 58. Electronic turn signal braker with warning lights function |
| | | 59. Turn signal, horn and light switch |
| | | 60. Horn |
| | | 61. Grounding eye |
| | | 62. Front wheel drive switch |

ELECTRIC INSTALLATION DIAGRAM OF Z 7520, Z 7540, Z 8520, Z 8540, Z 9520, Z 9540, Z 10520, Z 10540 TRACTORS - WITH CAB
<https://truckmanualshub.com/>

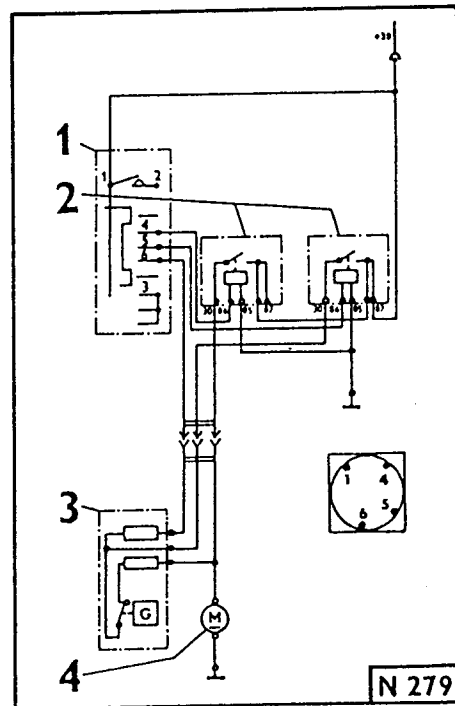
1. Right roof lamp
2. Front wiper
3. Front wiper grounding eye
4. Front lamp grounding eye
5. Heater fan control panel
6. Left roof lamp
7. Heater fan motor
8. Washer motor
9. Washer grounding eye
10. Washer motor connections
11. Front right combined lamp
12. Front left combined lamp
13. Work light
14. Inside lamp
15. Front wiper switch
16. Rear wiper
17. Rear wiper switch
18. Connector for external hydraulic control
19. Fan terminal plate
20. Registration number plate light
21. Right rear cluster light
22. Left rear cluster light





ELECTRIC HYDRAULIC CONTROL DIAGRAM

- | | |
|--------------------------|-------------------------------|
| 1. Switch with indicator | 3. Right cab switch (outside) |
| 2. Electromagnetic valve | 4. Left cab switch (outside) |



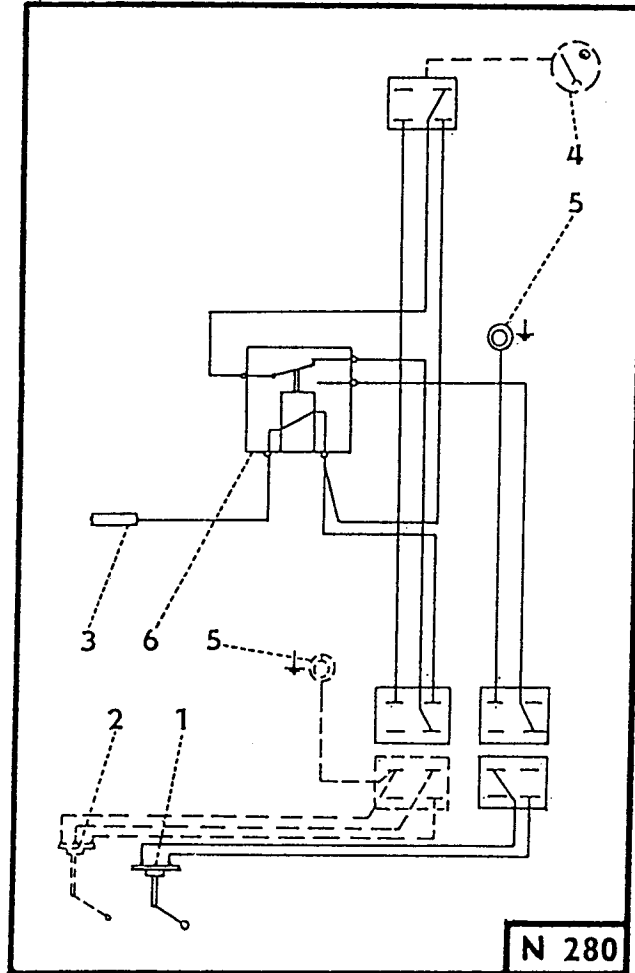
HEATER ELECTRIC INSTALLATION DIAGRAM

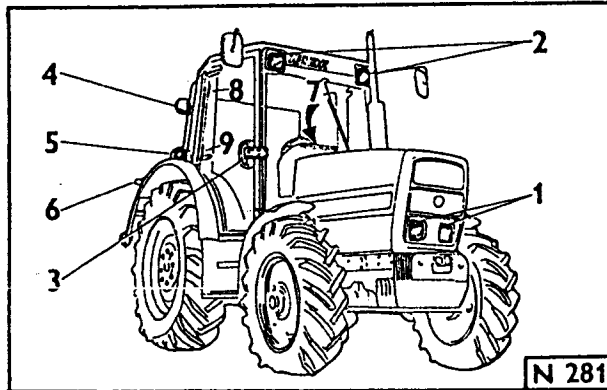
- | |
|-----------------|
| 1. Fan switch |
| 2. Relay switch |
| 3. Resistors |
| 4. Fan motor |

CONNECTION DIAGRAM OF FUEL GAUGES

This diagram corresponds to tractors with additional fuel tank only.

1. Float of fuel gauge in additional bottom tank
2. Float of fuel gauge in top tank
3. Fuse
4. Fuel gauge with indicator
5. Grounding eye
6. Relay switch





LIST OF BULBS

- | | |
|--|--|
| 1 - Front asymmetric headlights 12 V 45/40 W. | 12 V 21 W for brake lights |
| 2 - Asymmetric cab lights 12 V, 45/40 W (filament for low beam lights connected). | 12 V 21 W for turn signal lights. |
| 3 - Front combined lamps 12 V, 21W for turn signal lights, 12 V 10 W for clearance lights. | 6 - Register number plate light 2x12 V 5 W |
| 4 - Work light 12 V 55 W - H 3. | 7 - Dash panel - indicators |
| 5 - Rear cluster lights 12 V 10 W for tail lights. | Turn signal indicators 12 V 4 W. |
| | Other indicators 12 V 2 W. |
| | 8 - Cab lighting 12 V 5 W. |
| | 9 - Electromagnetic hydraulic control switch 12 V 1.2 W. |

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TRACTOR Z 7520, Z 7540 ENGINE TECHNICAL DATA
<https://truckmanualshub.com/>

Tractor model.....	Z 7520, Z 7540	Oil pressure at engine rated speed and 80°C oil temperature (MPa).....	0.2 to 0.5
Engine model.....	Zetor 7801	Minimum oil pressure at 700 rpm engine speed and 80°C oil temperature (MPa)...	0.05
Engine type.....	Compression ignition, 4-stroke with direct fuel injection	Coolant temperature (°C).....	80-95
Engine design.....	in-line, water cooled	Valve gear.....	OHV
Cylinders.....	4	Oil filter.....	single use cartridge filter single
Cubic capacity (cm ³).....	4156	Fuel filter.....	one-stage, replaceable insert
Bore x stroke (mm).....	105x120	Injection pump type.....	PP 4M 10K 1f 3153
Rated engine speed (min ⁻¹)...	2200	Regulator type.....	RV 4M 350/1100-3308
Cylinder firing order.....	1-3-4-2	Nozzle type.....	DOP 150 S 428-4104
Compression ratio.....	17	Injector burst pressure (MPa).....	22-0.8
Max. overrun engine speed....	2460	Injection timing angle(°)....	23+1
Slow idle (min ⁻¹).....	700-50	Valve clearance with cold engine (mm) - intake.....	0.25 ± 0.05
Engine output at rated speed according to ISO 2288 (kW)...	51.5	- exhaust.....	0.25 ± 0.05
Fuel consumption at given output (g.kW ⁻¹ .h ⁻¹).....	240		
Fuel lubrication.....	Pressure lubrication with Gerotor pump		
Max. oil consumption after 100 engine hours of running in engine (g.kW ⁻¹ .h ⁻¹).....	0.8		

TRACTOR Z 8520, Z 8540 TURBO ENGINE TECHNICAL DATA

Tractor model.....	Z 8520, Z 8540	Oil pressure at engine rated speed and 80°C oil temperature (MPa).....	0.2 to 0.5
Engine model.....	Zetor 1201	Minimum oil pressure at 700 rpm engine speed and 80°C oil temperature (MPa)...	0.05
Engine type.....	Compression ignition, 4-stroke with direct fuel injection, turbocharged	Coolant temperature (°C)....	80-95
Engine design.....	in-line, water cooled	Valve gear.....	OHV
Cylinders.....	4	Oil filter.....	single use cartridge filter
Cubic capacity (cm ³).....	4156	Fuel filter.....	one-stage, replaceable insert
Bore x stroke (mm).....	105x120	Injection pump type.....	PP 4M 10K 1f 3163
Rated engine speed (min ⁻¹)...	2200	Regulator type.....	RV 3M 350/1100-3307
Cylinder firing order.....	1-3-4-2	Nozzle type.....	DOP 150 S 428-4104
Compression ratio.....	17	Injector burst pressure (MPa).....	22-0.8
Max. overrun engine speed....	2460	Injection timing angle(°)....	23+1
Slow idle (min ⁻¹).....	700-50	Valve clearance with cold engine (mm) - intake.....	0.25 ± 0.05
Engine output at rated speed according to ISO 2288 (kW)...	60	- exhaust.....	0.25 ± 0.05
Fuel consumption at given output (g.kW ⁻¹ .h ⁻¹).....	235		
Fuel lubrication.....	Pressure lubrication with Gerotor pump		
Max. oil consumption after 100 engine hours of running in engine (g.kW ⁻¹ .h ⁻¹).....	0.9		

TRACTOR Z 9520, Z 9540 - TURBO ENGINE TECHNICAL DATA

<https://truckmanualshub.com/>

Tractor model.....Z 9520, Z 9540	Oil pressure at engine rated speed and 80°C oil temperature (MPa).....0.2 to 0.5
Engine model.....Zetor 1001	Minimum oil pressure at 700 rpm engine speed and 80°C oil temperature (MPa)...0.05
Engine type.....Compression ignition, 4-stroke with direct fuel injection, turbocharged	Coolant temperature (°C)....80-95
Engine design.....in-line, water cooled	Valve gear.....OHV
Cylinders.....4	Oil filter.....single use cartridge filter
Cubic capacity (cm ³).....4156	Fuel filter.....one-stage, replaceable insert
Bore x stroke (mm).....105x120	Injection pump type.....PP 4M 10K 1f 3150
Rated engine speed (min ⁻¹)...2200	Regulator type.....RV 4M 350/1100-3307
Cylinder firing order.....1-3-4-2	Nozzle type.....DOP 150 S 428-4104
Compression ratio.....17	Injector burst pressure (MPa).....22-0.8
Max. overrun engine speed...2460	Injection timing angle(°)....23+1
Slow idle (min ⁻¹).....700-50	Valve clearance with cold engine (mm) - intake.....0.25 ± 0.05
Engine output at rated speed according to ISO 2288 (kW)...67.5	- exhaust.....0.25 ± 0.05
Fuel consumption at given output (g.kW ⁻¹ .h ⁻¹).....230	
Fuel lubrication.....Pressure lubrication with Gerotor pump	
Max. oil consumption after 100 engine hours of running in engine (g.kW ⁻¹ .h ⁻¹).....0.9	

TRACTOR Z 10520, Z 10540 - TURBO-INTERCOOLER ENGINE TECHNICAL DATA

Tractor model.....Z 10520, Z 10540	Oil pressure at engine rated speed and 80°C oil temperature (MPa).....0.2 to 0.5
Engine model.....Zetor 1301	Minimum oil pressure at 700 rpm engine speed and 80°C oil temperature (MPa)...0.05
Engine type.....Compression ignition, 4-stroke with direct fuel injection, turbocharged, intercooled	Coolant temperature (°C).....80-95
Engine design.....in-line, water cooled	Valve gear.....OHV
Cylinders.....4	Oil filter.....single use cartridge filter
Cubic capacity (cm ³).....4156	Fuel filter.....one-stage, replaceable insert
Bore x stroke (mm).....105x120	Injection pump type.....PP 4M 10Kf 3195
Rated engine speed (min ⁻¹)...2200	Regulator type.....RV 3M 350/1100-3307
Cylinder firing order.....1-3-4-2	Nozzle type.....DOP 150 S 428-4104
Compression ratio.....17	Injector burst pressure (MPa).....22-0.8
Max. overrun engine speed....2460	Injection timing angle(°)....23+1
Slow idle (min ⁻¹).....700-50	Valve clearance with cold engine (mm) - intake.....0.25 ± 0.05
Engine output at rated speed according to ISO 2288 (kW)...75.5	- exhaust.....0.25 ± 0.05
Fuel consumption at given output (g.kW ⁻¹ .h ⁻¹).....230	
Fuel lubrication.....Pressure lubrication with Gerotor pump	
Max. oil consumption after 100 engine hours of running in engine (g.kW ⁻¹ .h ⁻¹).....0.9	

TRACTOR Z 7520,Z 8520 - TURBO MAIN TECHNICAL DIMENSIONS
<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 7520,Z 8520 7.50-16			Z 7520,Z 8520 7.50-20		
		12.4-38	13.6-38	16.9-34	12.4-38	13.6-38	16.9-34
Overall dimensions (mm)							
Clearance length without implement hitch		3876	3901	3911	3876	3901	3911
Clearance length with implement hitch		4209	4209	4209	4209	4209	4209
Width across rear fenders - narrow		1763	1763	1763	1763	1763	1763
Width across rear fenders - wide		1923	1923	1923	1923	1923	1923
Width across tires with 1500 mm wheel track		1815	1845	1929	1815	1845	1929
Height to top of exhaust pipe (with exhaust cap - exhaust silencer is extended)		2730	2737	2739	2777	2784	2786
Tractor height to top edge of cab		2602	2622	2627	2634	2648	2651
Ground clearance under front axle		472	472	472	536	536	536
Ground clearance under swinging draw bar (in lowest position)		255	292	300	231	268	276
Height for implement hitch for trailer (to center of tow jaw - adjustable in 100mm steps)		610-810	674-874	655-855	588-788	624-824	632-832
Height of swinging bar (to top of lower fork)		310	347	355	286	323	331
Height of implement hitch for semi-trailer							
Height to pick up hitch hook		362	397	404	344	379	387
Height of PTO shaft		597	630	637	584	617	624
Front wheel track - standard		1500	1500	1500	1500	1500	1500
- adjustable - for agricultural use		1350, 1425, 1500, 1800			1425, 1500, 1800		
Rear wheel track - standard		1500	1500	1500	1500	1500	1500
- adjustable - for agricultural use		1350-1800	1350-1800	1500-1800	1350-1800	1350-1800	1500-1800
Wheel base		2376	2376	2376	2376	2376	2376
Thread turning diameter with one wheel braked		7450+500	7450+500	7450+500	7450+500	7450+500	7450+500

TRACTOR Z 7520, Z 8520 TURBO MAIN TECHNICAL DIMENSIONS

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 7520, Z 8520 7.50-16			Z 7520, Z 8520 7.50-20		
		12.4-38	13.6-38	16.9-34	12.4-38	13.6-38	16.9-34
Body outline diameter with one wheel brake		6950+500	6950+500	6950+500	6950+500	6950+500	6950+500
Weight (kg))							
Kerb weight of tractor with cab		3245	3257	3303	3272	3284	3330
- on front axle		1268	1268	1268	1295	1295	1295
- on rear axle		1977	1989	2035	1977	1989	2035
without cab		2990	3002	3048	3017	3029	3095
- on front axle		1213	1213	1213	1240	1240	1240
- on rear axle		1771	1789	1835	1777	1789	1835
Front ballast weight							
- under frame		122	122	122	122	122	122
- in front of frame 1+2		90	90	90	90	90	90
rear - rear wheel ballast	2+4	170	170	170	170	170	170
	2+6	230	230	230	230	230	230
Weight of water in rear tires		2x170	2x190	2x250	2x170	2x190	2x250
MAXIMUM AXLE LOADS(kg)							
INFLATION (kPa) DURING MAX. SPEED							
Front unsprung axle, wheel track 1500 mm							
40 km.h ⁻¹ front axle with brakes						1650-325 8PR	1650-325 8PR
						1575-280 6PR	1575-280 6PR
rear axle						3400-120	3400-120
30 km.h ⁻¹ front axle with brakes		1490-280 6PR	1490-280 6PR	1490-280 6PR	1650-280	1650-280	1650-280
		1650-350 8PR	1650-350 8PR	1650-350 8PR			

TRACTOR Z 7520, Z 8520 TURBO MAIN TECHNICAL DIMENSIONS

<http://truckmanuals.ru/>

MAIN DIMENSIONS, WEIGHT		Z 7520, Z 8520			Z 7520, Z 8520		
		7.50-16			7.50-20		
Tractor model							
Front tires							
Rear tires		12.4-38	13.6-38	16.9-34	12.4-38	13.6-38	16.9-34
20 km.h ⁻¹	without brakes	1490-280 6PR	1490-280 6PR	1490-280 6PR	1800-325 8PR	1800-325 8PR	1800-325 8PR
		1740-350 8PR	1740-350 8PR	1740-350 8PR	1750-280 6PR	1750-280 6PR	1750-280 6PR
	rear axle	2960-170	3320-160	4000-130	2960-170	3320-160	4000-130
	with brakes	2010-280 6PR	2010-280 6PR	2010-280 6PR	2360-280	2360-280	2360-280
		2340-350 8PR	2340-350 8PR	2340-350 8PR			
	without brakes	2010-280 6PR	2010-280 6PR	2010-280 6PR	2360-280	2360-280	2360-280
8 km.h ⁻¹		2340-350 8PR	2340-350 8PR	2340-350 8PR			
	rear axle	3550-170	3980-160	4450-140	3550-170	3980-160	4450-140
	with brakes	2980-350 6PR	2980-350 6PR	2980-350 6PR	3000-350	3000-350	3000-350
		3000-437 8PR	3000-437 8PR	3000-437 8PR			
	without brakes	2980-350 6PR	2980-350 6PR	2980-350 6PR	3400-350	3400-350	3400-350
		3000-437 8PR	3000-437 8PR	3000-437 8PR			
40 km.h ⁻¹	rear axle	4140-212	4640-200	4750-170	4140-212	4640-200	4750-170
	Front unsprung axle, wheel track 1500 mm						
	with brakes	---	---	---	---	1650-325 8PR	1650-325 8PR
		---	---	---	---	1575-280 6PR	1575-280 6PR
	rear axle	---	---	---	---	2900-160	3400-120
	30 km.h ⁻¹ front axle	1490-280 6PR	1490-280 6PR	1490-280 6PR	1700-280	1700-280	1700-280
30 km.h ⁻¹	with brakes	1700-350 8PR	1700-350 8PR	1700-350 8PR			
		1490-280 6PR	1490-280 6PR	1490-280 6PR	1700-280	1700-280	1700-280
	without brakes	1700-350 8PR	1700-350 8PR	1700-350 8PR			
		2960-170	3320-160	4000-130	2960-170	3320-160	4000-170
	rear axle						

TRACTOR Z 7520, Z 8520 TURBO MAIN TECHNICAL DIMENSIONS

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 7520, Z 8520 7.50-16			Z 7520, Z 8520 7.50-20		
		12.4-38	13.6-38	16.9-34	12.4-38	13.6-38	16.9-34
20 km.h ⁻¹ front axle with or without brakes		1700-280	1700-280	1700-280	1700-280	1700-280	1700-280
rear axle		3500-170	3980-160	4450-140	3550-170	3980-160	4450-140
8 km.h ⁻¹ front axle with or without brakes		1700-280	1700-280	1700-280	1700-280	1700-280	1700-280
rear axle		4140-212	4640-200	4750-170	4140-212	4640-200	4750-170
Front unsprung axle, interlocked							
wheel track 1500 mm							
40 km.h ⁻¹ front axle with brakes						1650-325 8PR	1650-325 8PR
rear axle						1575-280 6PR	1575-280 6PR
30 km.h ⁻¹ front axle with brakes		1490-280 6PR	1490-280 6PR	1490-280 6PR	1700-280	1700-280	1700-280
		1700-350 8PR	1700-350 8PR	1700-350 8PR			
without brakes		1490-280 6PR	1490-280 6PR	1490-280 6PR	1700-280	1700-280	1700-280
		1700-350 8PR	1700-350 8PR	1700-350 8PR			
rear axle		2960-170	3320-160	4000-130	2960-170	3320-160	4000-170
20 km/h front axle with brakes		1700-280	1700-280	1700-280	1700-280	1700-280	1700-280
without brakes		1700-280	1700-280	1700-280	1700-280	1700-280	1700-280
rear axle		3500-170	3980-160	4450-140	3500-170	3980-160	4450-140
8 km/h front axle with brakes		1700-280	1700-280	1700-280	1700-280	1700-280	1700-280
without brakes		1700-280	1700-280	1700-280	1700-280	1700-280	1700-280
rear axle		4140-212	4640-200	4750-170	4140-212	4640-200	4750-170

TRACTOR Z 7520, Z 8520, TURBO MAIN TECHNICAL DIMENSIONS

<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 7520, Z 8520			Z 8520
		12.4-38	13.6-38	16.9-34	10.00-16 16.9-38
Overall dimensions (mm)					
Clearance length without implement hitch	3876	3901	3911	3961	
Clearance length with implement hitch	4209	4209	4209	4209	
Width across rear fenders - narrow	1763	1763	1763	1763	
Width across rear fenders - wide	1923	1923	1923	1923	
Width across tires with 1500 mm wheel track	1815	1845	1929	1929	
Height to top of exhaust pipe (with exhaust cap - exhaust silencer extended)	2765	2773	2774	2786	
Tractor height to top edge of cab	2626	2640	2643	2670	
Ground clearance under front axle	520	520	520	520	
Ground clearance under swinging draw bar (in lowest position)	237	274	282	341	
Height for implement hitch for trailer (to center of tow jaw - adjustable in 100mm steps)	593-793	630-830	638-838	696-896	
Height of swinging bar (to top of lower fork)	292	329	337	396	
Height of implement hitch for semi-trailer					
Height to pick up hitch hook	349	383	391	446	
Height of PTO shaft	587	620	627	679	
Front wheel track - standard	1500	1500	1500	1500	
- adjustable - for agricultural use		1425, 1500, 1800			
Rear wheel track - standard	1500	1500	1500	1500	
- adjustable - for agricultural use	1350-1800	1350-1800	1500-1800	1500-1800	
Wheel base	2376	2376	2376	2376	
Thread turning diameter with one wheel braked	7450+500	7450+500	7450+500	7450+500	

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 7520, Z 8520			Z 8520
		10.00-16			10.00-16
		12.4-38	13.6-38	16.9-34	16.9-38
Body outline diameter with one wheel brake		6950+500	6950+500	6950+500	6950+500
Weight (kg))					
Kerb weight of tractor with cab		3277	3289	3335	3406
- on front axle		1295	1295	1295	1295
- on rear axle		1982	1994	2040	2111
without cab		3022	3034	3080	3151
- on front axle		1240	1240	1240	1240
- on rear axle		1782	1794	1840	1911
Front ballast - under frame		122	122	122	122
- in front of frame 1+2		90	90	90	90
rear - rear wheel ballast	2+4	170	170	170	170
	2+6	230	230	230	230
Weight of water in rear tires		2x170	2x190	2x250	2x260
MAXIMUM AXLE LOADS(kg)					
INFLATION (kPa) DURING MAX. SPEED					
Front unsprung axle, wheel track 1500 mm					
40 km.h ⁻¹ front axle with brakes			1650-280	1650-280	1650-280
rear axle			2900-160	3400-120	3400-120
30 km.h ⁻¹ front axle with brakes		1650-280	1650-280	1650-280	1650-280
without brakes		1800-200	1800-200	1800-200	1800-200
rear axle		2960-170	3320-160	4000-130	4000-120

TRACTOR Z 7520, Z 8520 - TURBO MAIN TECHNICAL DIMENSIONS

<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model	Z 7520, Z 8520			Z 8520
	Front tires	10.00-16			10.00-16
	Rear tires	12.4-38	13.6-38	16.9-34	16.9-38
20 km.h ⁻¹ front axle	with brakes	2360-200	2360-200	2360-200	2360-200
	without brakes	2360-200	2360-200	2360-200	2360-200
rear axle		3550-170	3980-160	4450-140	4450-120
8 km.h ⁻¹ front axle	with brakes	3000-250	3000-250	3000-250	3000-250
	without brakes	3400-250	3400-250	3400-250	3400-250
rear axle		4140-212	4640-200	4750-170	4750-120

TRACTOR Z 9520 - TURBO MAIN TECHNICAL DIMENSIONS

<https://truckmanuals.ru/>

MAIN DIMENSIONS, WEIGHT	Tractor model			Z 9520			Z 9520		
	Front tires			7.50-20			10.00-16		
	Rear tires			13.6-38	16.9-34	18.4-34	13.6-38	16.9-34	18.4-34
Overall dimensions (mm)									
Clearance length without implement hitch				3901	3911	3944	3901	3911	3944
Clearance length with implement hitch				4209	4209	4209	4209	4209	4209
Width across rear fenders - narrow				1763	1763	1763	1763	1763	1763
Width across rear fenders - wide				1923	1923	1923	1923	1923	1923
Width across tires with 1500 mm wheel track				1845	1929	1967	1845	1929	1967
Height to top of exhaust pipe (with exhaust cap - exhaust silencer extended)				2784	2786	2794	2773	2774	2783
Tractor height to top edge of cab				2648	2651	2666	2640	2643	2659
Ground clearance under front axle				536	536	536	520	520	520
Ground clearance under swinging draw bar (in lowest position)				268	276	319	274	282	325
Height for implement hitch for trailer (to center of tow jaw - adjustable in 100mm steps)				624-824	632-832	674-874	630-830	638-838	680-880
Height of swinging bar (to top of lower fork)				323	331	374	329	337	380
Height of implement hitch for semi-trailer									
Height to pick up hitch hook				379	387	426	383	391	431
Height of PTO shaft				617	624	661	620	627	664
Front wheel track - standard				1500	1500	1500	1500	1500	1500
- adjustable - for agricultural use				1425, 1500, 1800			1425, 1500, 1800		
Rear wheel track - standard				1500	1500	1500	1500	1500	1500
- adjustable - for agricultural use				1350-1800	1500-1800	1500-1800	1350-1800	1500-1800	1500-1800
Wheel base				2376	2376	2376	2376	2376	2376
Thread turning diameter with one wheel braked				7450+500	7450+500	7450+500	7450+500	7450+500	7450+500

TRACTOR Z 9520 - TURBO MAIN TECHNICAL DIMENSIONS

<https://truckmandarinsub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 9520			Z 9520		
		13.6-38	7.50-20 16.9-34	18.4-34	13.6-38	10.00-16 16.9-34	18.4-34
Body outline diameter with one wheel brake		6950+500	6950+500	6950+500	6950+500	6950+500	6950+500
Weight (kg))							
Kerb weight of tractor with cab		3340	3386	3421	3325	3371	3406
- on front axle		1325	1325	1325	1310	1310	1310
- on rear axle		2015	2061	2096	2015	2061	2096
without cab		3085	3131	3166	3070	3116	3151
- on front axle		1270	1270	1270	1255	1255	1255
- on rear axle		1815	1861	1896	1815	1861	1896
Front ballast weight							
- under frame		122	122	122	122	122	122
- in front of frame 1+2		90	90	90	90	90	90
rear - rear wheel ballast	2+6	230	230	230	230	230	230
	2+10	350	350	350	350	350	350
Weight of water in rear tires		2x190	2x250	2x340	2x190	2x250	2x340
MAXIMUM AXLE LOADS(kg)							
INFLATION (kPa) DURING MAX. SPEED							
Front unsprung axle, wheel track 1500 mm							
40 km.h ⁻¹ front axle with brakes		1650-325 8PR	1650-325 8PR	1650-325 8PR	1650-280	1650-280	1650-280
		1575-280 6PR	1575-280 6PR	1575-280 6PR			
rear axle		3400-120	3400-120	3400-120	3400-120	3400-120	3400-110
30 km.h ⁻¹ front axle with brakes		1650-280	1650-280	1650-280	1650-280	1650-280	1650-280

TRACTOR Z 9520 - TURBO MAIN TECHNICAL DIMENSIONS
<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 9520			Z 9520		
		7.50-20			10.00-16		
		13.6-38	16.9-34	18.4-34	13.6-38	16.9-34	18.4-34
	without brakes	1800-325 8PR	1800-325 8PR	1800-325 8PR	1850-200	1850-200	1850-200
		1750-280 6PR	1750-280 6PR	1750-280 6PR			
	rear axle	3320-160	4000-130	4000-110	3320-160	4000-130	4000-110
20 km.h ⁻¹	front axle	2360-280	2360-280	2360-280	2360-200	2360-200	2360-200
	without brakes	2360-280	2360-280	2360-280	2360-200	2360-200	2360-200
	rear axle	3980-160	4450-140	4450-110	3980-160	4450-140	4450-110
8 km.h ⁻¹	front axle	3000-350	3000-350	3000-350	3000-250	3000-250	3000-250
	without brakes	3400-350	3400-350	3400-350	3400-250	3400-250	3400-250
	rear axle	4640-200	4750-170	4750-110	4640-200	4750-170	4750-110
Front unsprung axle, wheel track 1500 mm							
40 km.h ⁻¹	front axle with brakes	1650-325 8PR	1650-325 8PR	1650-325 8PR	--	--	--
	rear axle	2900-260	3400-120	3400-110	--	--	--
30 km.h ⁻¹	front axle with brakes	1650-280	1650-280	1650-280	--	--	--
	without brakes	1700-280	1700-280	1700-280	--	--	--
	rear axle	3320-160	4130-120	4000-110	--	--	--
20 km.h ⁻¹	front axle with brakes or without	1700-280	1700-280	1700-280	--	--	--
	rear axle	3980-160	4450-140	4450-110	--	--	--
8 km.h ⁻¹	front axle with brakes or without	1700-280	1700-280	1700-280	--	--	--
	rear axle	4620-200	4750-170	4750-110	--	--	--
Front unsprung axle, interlocked							
wheel track 1500 mm							
40 km.h ⁻¹	front axle with brakes	570-280 6PR	1570-280 6PR	1570-280 6PR	--	--	--
		650-325 8PR	1650-325 8PR	1650-325 8PR	--	--	--
	rear axle	960-160	3400-120	3400-110	--	--	--

TRACTOR Z 9520 - TURBO MAIN TECHNICAL DIMENSIONS
<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 9520 7,50-20			Z 9520 10,00-16		
		13,6-38	16,9-34	18,4-34	13,6-38	16,9-34	18,4-34
30 km/h	front axle with brakes	1650-280	1650-280	1650-280	--	--	--
	without brakes	1750-280	1750-280	1750-280	--	--	--
20 km/h	rear axle	3320-160	4000-130	4000-110	--	--	--
	front axle with brakes	2100-280	2100-280	2100-280	--	--	--
8 km/h	without brakes	2360-280	2360-280	2360-280	--	--	--
	rear axle	3980-160	4450-150	4450-110	--	--	--
	front axle with brakes	2600-350	2600-350	2600-350	--	--	--
	without brakes	3000-350	3000-350	3000-350	--	--	--
	rear axle	4640-200	4750-170	4750-110	--	--	--

TRACTOR Z 10520 - TURBO INTERCOOLER MAIN TECHNICAL DIMENSIONS
<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 10520 10.00-16			Z 10520 9.00-16		
		16.9-38	480/70R38	18.4-34	16.9-38	480/70R38	18.4-34
Overall dimensions (mm)							
Clearance length without implement hitch		3961	3956	3944	3961	3956	3944
Clearance length with implement hitch		4209	4209	4209	4209	4209	4209
Width across rear fenders - narrow		1763	1763	1763	1763	1763	1763
Width across rear fenders - wide		1923	1923	1923	1923	1923	1923
Width across tires with 1500 mm wheel track		1929	1980	1967	1929	1980	1967
Height to top of exhaust pipe (with exhaust cap - exhaust silencer extended)		2686	2786	2783	2785	2785	2779
Tractor height to top edge of cab		2670	2670	2659	2670	2673	2652
Ground clearance under front axle		525	525	525	505	505	505
Ground clearance under swinging draw bar (in lowest position)		354	358	328	362	366	336
Height for implement hitch for trailer (to center of tow jaw - adjustable in 100mm steps)		694-894	698-898	668-868	702-902	706-906	676-876
Height of swinging bar (to top of lower fork)		394	398	368	402	408	376
Height of implement hitch for semi-trailer							
Height to pick up hitch hook		446	448	420	450	454	426
Height of PTO shaft		678	681	655	682	685	659
Front wheel track - standard		1500	1500	1500	1500	1500	1500
- adjustable - for agricultural use			1500, 1800			1500, 1800	
Rear wheel track - standard		1500	1500	1500	1500	1500	1500
- adjustable - for agricultural use		1500-1800	1500-1800	1500-1800	1500-1800	1500-1800	1500-1800
Wheel base		2376	2376	2376	2376	2376	2376
Thread turning diameter with one wheel braked		7450+500	7450+500	7450+500	7450+500	7450+500	7450+500

TRACTOR Z 10520 - TURBO INTERCOOLER MAIN TECHNICAL DIMENSIONS

<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model	Z 10520			Z 10520		
		Front tires	10.00-16		9.00-16		
	Rear tires	16.9-38	480/70R38	18.4-34	16.9-38	480/70R38	18.4-34
Body outline diameter with one wheel brake		6950+500	6950+500	6950+500	6950+500	6950+500	6950+500
Weight (kg))							
Kerb weight of tractor with cab		3621	3651	3586	3618	3642	3583
- on front axle		1415	1415	1415	1412	1412	1412
- on rear axle		2206	2236	2171	2206	2236	2171
without cab		3366	3390	3331	3363	3393	3328
- on front axle		1360	1360	1360	1357	1357	1357
- on rear axle		2006	2030	1971	2006	2036	1971
Front ballast weight							
- under frame		122	122	122	122	122	122
- in front of frame 1+2		90	90	90	90	90	90
rear - rear wheel ballast 2+6		230	230	230	230	230	230
2+10		350	350	350	350	350	350
Weight of water in rear tires		2x260	2x330	2x340	2x260	2x330	2x340
MAXIMUM AXLE LOADS(kg)							
INFLATION (kPa) DURING MAX. SPEED							
Front unsprung axle, wheel track 1500 mm							
40 km.h ⁻¹ front axle with brakes		1650-280	1650-280	1650-280	1650-280	1650-280	1650-280
rear axle		3400-120	3400-120	3400-120	3400-120	3400-120	3400-120
30 km.h ⁻¹ front axle with brakes		1650-280	1650-280	1650-280	1650-280	1650-280	1650-280

TRACTOR Z 10520 TURBO INTERCOOLER MAIN TECHNICAL DIMENSIONS

MAIN DIMENSIONS, WEIGHT		Z 10520 10.00-16			Z 10520 9.00-16		
Tractor model Front tires Rear tires		16.9-38	480/70R38	18.4-34	16.9-38	480/70R38	18.4-34
20 km/h	rear axle	without brakes	1800-200	1800-200	1800-200	1800-200	1800-200
	front axle	with brakes	4000-120	4000-110	4000-120	4000-110	4000-110
		without brakes	2360-200	2360-200	2360-225	2360-225	2360-225
			2360-200	2360-200	2360-225	2360-225	2360-225
8 km/h	rear axle		4450-140	4450-110	4450-140	4450-110	4450-110
	front axle	with brakes	3000-250	3000-250	3000-275	3000-275	3000-275
		without brakes	3400-250	3400-250	3400-275	3400-275	3400-275
	rear axle		4750-150	4750- 80	4750-150	4750- 80	4750-120

TRACTOR Z 10520 - TURBO INTERCOOLER MAIN TECHNICAL DIMENSIONS

<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model	Z 10520		
	Front tires	7.50-20		
	Rear tires	16.9-38	480/70R38	18.4-34
Overall dimensions (mm)				
Clearance length without implement hitch	3961	3965	3944	
Clearance length with implement hitch	4209	4209	4209	
Width across rear fenders - narrow	1763	1763	1763	
Width across rear fenders - wide	1923	1923	1923	
Width across tires with 1500 mm wheel track	1926	1980	1967	
Height to top of exhaust pipe (with exhaust cap - exhaust silencer extended)	2797	2797	2794	
Tractor height to top edge of cab	2671	2674	2659	
Ground clearance under front axle	529	529	529	
Ground clearance under swinging draw bar (in lowest position)	353	357	377	
Height for implement hitch for trailer (to center of tow jaw - adjustable in 100mm steps)	693-893	697-897	667-867	
Height of swinging bar (to top of lower fork)	323	397	367	
Height of implement hitch for semi-trailer				
Height to pick up hitch hook	443	447	419	
Height of PTO shaft	677	681	654	
Front wheel track - standard	1500	1500	1500	
- adjustable - for agricultural use		1500, 1800		
Rear wheel track - standard	1500	1500	1500	
- adjustable - for agricultural use	1500-1800	1500-1800	1500-1800	
Wheel base	2376	2376	2376	
Thread turning diameter with one wheel braked	7450+500	7450+500	7450+500	

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 10520		
		16.9-38	7.50-20 480/70R38	18.4-34
Body outline diameter with one wheel brake		6950+500	6950+500	6950+500
Weight (kg))				
Kerb weight of tractor with cab		3636	3666	3601
- on front axle		1430	1430	1430
- on rear axle		2206	2236	2171
without cab		3381	3411	3346
- on front axle		1375	1375	1375
- on rear axle		2006	2036	1971
Front ballast weight				
- under frame		122	122	122
- in front of frame 1+2		90	90	90
1+5		180	180	180
rear - rear wheel ballast 2+6		230	233	230
2+10		350	350	350
Weight of water in rear tires		2x260	2x330	2x340
MAXIMUM AXLE LOADS(kg)				
INFLATION (kPa) DURING MAX. SPEED				
Front unsprung axle, wheel track 1500 mm				
40 km.h ⁻¹ front axle with brakes		1650-325 8PR	1650-325 8PR	1650-325 8PR
		1575-280 6PR	1575-280 6PR	1575-280 6PR
rear axle		3400-120	3400-120	3400-120
30 km.h ⁻¹ front axle with brakes		1650-280	1650-280	1650-280

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 10520		
		16.9-38	480/70R38	18.4-34
	without brakes	1800-325 8PR	1800-325 8PR	1800-325 8PR
		1750-280 6PR	1750-280 6PR	1750-280 6PR
20 km.h ⁻¹	rear axle	4000-120	4000-110	4000-110
	front axle	2360-280	2360-280	2360-280
	with brakes			
	without brakes	2360-280	2360-280	2360-280
8 km.h ⁻¹	rear axle	4450-140	4450-110	4450-110
	front axle	3000-250	3000-250	3000-250
	with brakes			
	without brakes	3400-250	3400-250	3400-250
	rear axle	4750-150	4750- 80	4750-120
Front unsprung axle, wheel track 1500 mm				
40 km.h ⁻¹	front axle	1650-325 8PR	1650-325 8PR	1650-325 8PR
	with brakes	1575-280 6PR	1575-280 6PR	1575-280 6PR
	rear axle	3400-120	3400-120	3400-120
30 km.h ⁻¹	front axle	1650-280	1650-280	1650-280
	with brakes	1700-280	1700-280	1700-280
	without brakes			
	rear axle	4000-120	4000-110	4000-110
20 km.h ⁻¹	front axle with brakes or without	1700-280	1700-280	1700-280
	rear axle	4450-140	4450- 80	4450-110
8 km.h ⁻¹	front axle with brakes or without	1700-280	1700-280	1700-280
	rear axle	4750-150	4750- 80	4750-120
Front unsprung axle, interlocked				
40 km.h ⁻¹	front axle	1650-325 8PR	1650-325 8PR	1650-325 8PR
	with brakes	1570-280 6PR	1570-280 6PR	1570-280 6PR
	rear axle	3400-120	3400-120	3400-120

MAIN DIMENSIONS, WEIGHT			Tractor model Z 10520 7.50-20		
			Front tires	16.9-38	478/70R38
			Rear tires	16.9-38	18.4-34
30 km/h	front axle	with brakes	1650-280	1650-280	1650-280
		without brakes	1750-280	1750-280	1750-280
20 km/h	rear axle		4000-120	4000-110	4000-110
	front axle	with brakes	2100-280	2100-280	2100-280
		without brakes	2360-280	2360-280	2360-280
	rear axle		4450-140	4450- 80	4450-110
8 km/h	front axle	with brakes	2600-350	2600-350	2600-350
		without brakes	3000-350	3000-350	3000-350
	rear axle		4750-150	4750- 80	4750-120

TRACTOR Z 7540 MAIN TECHNICAL DIMENSIONS

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 7540			Z 7540		
		11.2-24			12.4-24		
		12.4-38	13.6-38	16.9-34	13.6-38	16.9-34	18.4-34
Overall dimensions (mm)							
Clearance length without implement hitch		3876	3901	3911	3901	3911	3944
Clearance length with implement hitch		4209	4209	4209	4209	4209	4209
Width across rear fenders - narrow		1763	1763	1763	1763	1763	1763
Width across rear fenders - wide		1923	1923	1923	1923	1923	1923
Width across tires with 1500 mm wheel track		1815	1845	1929	1845	1929	1967
Height to top of exhaust pipe (with exhaust cap - exhaust silencer extended)		2767	2774	2776	2791	2793	2801
Tractor height to top edge of cab		2627	2641	2644	2652	2665	2671
Ground clearance under front axle		371	371	371	394	394	394
Ground clearance under swinging draw bar (in lowest position)		236	273	282	265	273	315
Height for implement hitch for trailer (to center of tow jaw - adjustable in 100mm steps)		593-793	629-829	637-837	621-821	629-829	671-871
Height of swinging bar (to top of lower fork)		291	328	337	320	328	379
Height of implement hitch for semi-trailer							
Height to pick up hitch hook		365	392	398	392	398	430
Height of PTO shaft		599	627	633	626	632	664
Front wheel track - standard		1550	1550	1550	1550	1550	1550
- adjustable - for agricultural use		1550, 1720, 1820			1550, 1720, 1820		
Rear wheel track - standard		1500	1500	1500	1500	1500	1500
- adjustable - for agricultural use		1350-1500	1500-1800	1500-1800	1350-1800	1500-1800	1500-1800
Wheel base		2376	2376	2376	2376	2376	2376
Thread turning diameter with one wheel braked		9850+500	9850+500	9850+500	9850+500	9850+500	9850+500

TRACTOR Z 7540 MAIN TECHNICAL DIMENSIONS

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 7540			Z 7540		
		12.4-38	11.2-24 13.6-38	16.9-34	13.6-38	12.4-24 16.9-34	18.4-34
Body outline diameter with one wheel brake		9050+500	9050+500	9050+500	9050+500	9050+500	9050+500
Weight (kg))							
Kerb weight of tractor with cab		3614	3626	3672	3651	3697	3735
- on front axle		1542	1542	1542	1567	1567	1567
- on rear axle		2072	2084	2130	2084	2130	2168
without cab		3359	3371	3417	3396	3442	3480
- on front axle		1487	1487	1487	1512	1512	1512
- on rear axle		1872	1884	1930	1884	1930	1968
Front ballast weight							
- under frame		122	122	122	122	122	122
- in front of frame 1+2		90	90	90	90	90	90
1+5		180	180	180	180	180	180
rear - rear wheel ballast 2+4		170	170	170	170	170	170
2+6		230	230	230	230	230	230
Weight of water in rear tires		2x170	2x190	2x250	2x190	2x250	2x340
Weights of front 3-point linkage 12 pieces		260	260	260	260	260	260
MAXIMUM AXLE LOADS(kg)							
INFLATION (kPa) DURING MAX. SPEED							
Front driven axle							
40 km.h ⁻¹ front axle (cardan brake)			1950-240 8PR	1950-240 8PR	2250-230	2250-230	2250-230
rear axle			2900-160	3400-120	3400-120	3400-120	3400-120
30 km.h ⁻¹ front axle with brakes		2200-240 8PR	2300-240 8PR	2300-240 8PR	2300-170	2300-170	2300-170
		2090-180 6PR	2090-180 6PR	2090-180 6PR			

TRACTOR Z 7540 MAIN TECHNICAL DIMENSIONS

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MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 7540 11.2-24			Z 7540 12.2-24		
		12.4-38	13.6-38	16.9-34	13.6-38	16.9-34	18.4-34
20 km/h front axle		2900-240 8PR	2900-240 8PR	2900-240 8PR	3200-230 8PR	3200-230 8PR	3200-230 8PR
		2500-180 6PR	2500-180 6PR	2500-180 6PR			
rear axle		3550-170	3980-160	4450-120	3980-160	4450-120	4450-110
8 km/h front axle		3430-300 8PR	3430-300 8PR	3430-300 8PR	3600-287 8PR	3600-287 8PR	3600-287 8PR
rear axle		4140-212	4640-220	4700-140	4640-200	4700-140	4750-120

TRACTOR Z 8540 TURBO//Z 9540 TURBO MAIN TECHNICAL DIMENSIONS

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 8540 12.4-24			Z 9540 12.4-24	
		16.9-34	16.9-38	18.4-34	16.9-38	18.4-34
Overall dimensions (mm)						
Clearance length without implement hitch	3911	3961	3944	3961	3944	
Clearance length with implement hitch	4209	4209	4209	4209	4209	
Width across rear fenders - narrow	1763	1763	1763	1763	1763	
Width across rear fenders - wide	1923	1923	1923	1923	1923	
Width across tires with 1500 mm wheel track	1929	1929	1967	1929	1967	
Height to top of exhaust pipe (with exhaust cap - exhaust silencer extended)	2793	2804	2801	2804	2801	
Tractor height to top edge of cab	2655	2677	2671	2677	2671	
Ground clearance under front axle	394	394	394	394	394	
Ground clearance under swinging draw bar (in lowest position)	273	332	315	332	315	
Height for implement hitch for trailer (to center of tow jaw - adjustable in 100mm steps)	621-821	687-887	671-871	687-887	671-871	
Height of swinging bar (to top of lower fork)	328	387	379	387	379	
Height of implement hitch for semi-trailer						
Height to pick up hitch hook	398	442	430	442	430	
Height of PTO shaft	632	676	664	676	664	
Front wheel track - standard	1550	1550	1550	1550	1550	
- adjustable - for agricultural use		1550, 1720, 1820			1550, 1720, 1820	
Rear wheel track - standard	1500	1500	1500	1500	1500	
- adjustable - for agricultural use	1500-1800	1500-1800	1500-1800	1500-1800	1500-1800	
Wheel base	2376	2376	2376	2376	2376	
Thread turning diameter with one wheel braked	9850+500	9850+500	9850+500	9850+500	9850+500	

TRACTOR Z 8540 TURBO Z 9540 TURBO MAIN TECHNICAL DIMENSIONS

<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 8540			Z 9540	
		12.4-24			12.4-24	
		16.9-34	16.9-38	18.4-34	16.9-38	18.4-34
Body outline diameter with one wheel brake		9050+500	9050+500	9050+500	9050+500	9050+500
Weight (kg))						
Kerb weight of tractor with cab		3717	3837	3755	3822	3787
- on front axle		1582	1582	1582	1597	1597
- on rear axle		2135	2255	2173	2225	2190
	without ca b	3462	3532	3500	3567	3532
- on front axle		1527	1527	1527	1542	1542
- on rear axle		1935	2005	1973	2025	1999
Front ballast weight						
- under frame		122	122	122	122	122
- in front of frame	1+2	90	90	90		
	1+5	180	180	180	180	180
	1+7				240	240
rear - rear wheel ballast	2+4	170	170	170		
	2+6	230	230	230	230	230
	2+10				350	350
Weight of water in rear tires		2x250	2x260	2x340	2x260	2x340
Weights of front 3-point linkage 12 piece s		260	260	260	260	260
MAXIMUM AXLE LOADS(kg)						
INFLATION (kPa) DURING MAX. SPEED						
Front driven axle						
40 km.h ⁻¹ front axle (cardan brake)		2250-230	2250-230	2250-230	2250-230	2250-230
rear axle		3400-120	3400-120	3400-120	3400-120	3400-120

TRACTOR Z 8540 TURBO / Z 9540 TURBO MAIN TECHNICAL DIMENSIONS

<https://truckmanuals.ru/>

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 8540 12.4-24			Z 9540 12.4-24	
		16.9-34	16.9-38	18.4-34	16.9-38	18.4-34
30 km/h front axle		2300-170	2300-170	2300-170	2300-170	2300-170
		3900-120	3900-120	3900-120	3900-120	3900-120
20 km/h front axle		3200-230 8PR	3200-230 8PR	3200-230 8PR	3200-230 8PR	3200-230 8PR
rear axle		4450-120	4450-120	4450-110	4450-120	4000-110
8 km/h front axle		3600-287 8PR	3600-287 8PR	3600-287 8PR	3600-287 8PR	3600-287 8PR
rear axle		4700-140	4750-120	4750-110	4750-120	4750-110

TRACTOR Z 10540 TURBO INTERCOOLER MAIN TECHNICAL DIMENSIONS

<https://truckmanuals.ru>

MAIN DIMENSIONS, WEIGHT	Tractor model			Z 10540		
	Front tires			Z 10540		
	Rear tires			12.4-28		
	16.9-38	480/70R38	18.4-34	16.9-38	480/70R38	18.4-34
Overall dimensions (mm)						
Clearance length without implement hitch	3961	3956	3944	3961	3956	3994
Clearance length with implement hitch	4209	4209	4209	4209	4209	4209
Width across rear fenders - narrow	1763	1763	1763	1763	1763	1763
Width across rear fenders - wide	1923	1923	1923	1923	1923	1923
Width across tires with 1500 mm wheel track	1929	1980	1967	1929	1980	1967
Height to top of exhaust pipe (with exhaust cap - exhaust silencer extended)	2819	2820	2814	2884	2845	2853
Tractor height to top edge of cab	2687	2689	2678	2704	2706	2721
Ground clearance under front axle	415	415	415	449	449	449
Ground clearance under swinging draw bar (in lowest position)	339	343	313	327	331	373
Height for implement hitch for trailer (to center of tow jaw - adjustable in 100mm steps)	679-879	683-883	653-853	667-867	671-871	713-913
Height of swinging bar (to top of lower fork)	379	383	353	367	371	413
Height of implement hitch for semi-trailer						
Height to pick up hitch hook	433	437	409	424	428	467
Height of PTO shaft	670	673	647	663	666	704
Front wheel track - standard	1635	1635	1635	1645	1645	1645
- adjustable - for agricultural use		1635, 1730, 1805			1645, 1720, 1820	
Rear wheel track - standard	1500	1500	1500	1500	1500	1575
- adjustable - for agricultural use	1500-1800	1500-1800	1500-1800	1500-1800	1500-1800	1575-1800
Wheel base	2376	2376	2376	2376	2376	2376
Thread turning diameter with one wheel braked	9850+500	9850+500	9850+500	9850+500	9850+500	9850+500

TRACTOR Z 10540 TURBO INTERCOOLER MAIN TECHNICAL DIMENSIONS

<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model	Z 10540			Z 10540		
		Front tires 13.6-24 or 380/70R24			12.4-28		
	Rear tires	16.9-38	480/70R38	18.4-34	16.9-38	480/70R38	18.4-38
Body outline diameter with one wheel brake		9050+500	9050+500	9050+500	9050+500	9050+500	9050+500
Weight (kg))							
Kerb weight of tractor with cab		4042	4072	4007	4037	4067	4097
- on front axle		1722	1722	1722	1717	1717	1717
- on rear axle		2320	2350	2285	2320	2350	2380
	without cab	3787	3817	3752	3782	3817	3842
- on front axle		1667	1667	1667	1662	1662	1662
- on rear axle		2120	2150	2085	2120	2150	2180
Front ballast weight							
- under frame		122	122	122	122	122	122
- in front of frame	1+2						
	1+5						
	1+7	240	240	240	240	240	240
rear - rear wheel ballast	2+6	230	230	230	230	230	230
	2+10	350	350	350	350	350	350
Weight of water in rear tires		2x260	2x330	2x340	2x260	2x330	2x412
Weights of front 3-point linkage	12 pieces	260	260	260	260	260	260
	16 pieces (rings)	490	490	490	490	490	490
MAXIMUM AXLE LOADS(kg)							
INFLATION (kPa) DURING MAX. SPEED							
Front driven axle							
40 km.h ⁻¹ front axle (cardan brake)		2500-160	2500-160	2500-160	2040-170	2040-170	2040-170
rear axle		3400-120	3400-120	3400-120	3400-120	3400-120	3400-120

TRACTOR Z 10540 TURBO INTERCOOLER MAIN TECHNICAL DIMENSIONS
<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 10540 13.6R24 or 380/70R24			Z 10540 12.4-28		
		16.9-38	480/70R38	18.4-34	16.9-38	480/70R38	18.4-38
30 km/h	front axle	2300-150	2300-150	2300-150	2300-150	2300-150	2300-150
	rear axle	3900-120	3900-110	3900-110	3900-120	3900-110	3900-110
20 km/h	front axle	3200-200 8PR	3200-200 8PR	3200-200 8PR	3200-200 8PR	3200-200 8PR	3200-200 8PR
	rear axle	4450-140	4450-110	4000-110	4450-140	4450-110	4450-110
8 km/h	front axle	3600-225 8PR	3600-225 8PR	3600-225 8PR	3600-225 8PR	3600-225 8PR	3600-225 8PR
	rear axle	4750-150	4750- 80	4000-110	4750-150	4750- 80	4750-110

TRACTOR Z 10540 TURBO INTERCOOLER MAIN TECHNICAL DIMENSIONS

<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model		
	Front tires	Z 10540	
	Rear tires	14.9-24	
	16.9-38	480/70R38	18.4-38
Overall dimensions (mm)			
Clearance length without implement hitch	3961	3956	3994
Clearance length with implement hitch	4209	4209	4209
Width across rear fenders - narrow	1763	1763	1763
Width across rear fenders - wide	1923	1923	1923
Width across tires with 1500 mm wheel track	1929	1980	2042
Height to top of exhaust pipe (with exhaust cap - exhaust silencer extended)	2846	2847	2855
Tractor height to top edge of cab	2705	2707	2722
Ground clearance under front axle	451	451	451
Ground clearance under swinging draw bar (in lowest position)	326	330	372
Height for implement hitch for trailer			
(to center of tow jaw - adjustable in 100mm steps)	666-866	670-870	713-913
Height of swinging bar (to top of lower fork)	366	370	412
Height of implement hitch for semi-trailer			
Height to pick up hitch hook	423	427	467
Height of PTO shaft	662	666	703
Front wheel track - standard	1720	1720	1720
- adjustable - for agricultural use		1720, 1815	
Rear wheel track - standard	1725	1725	1725
- adjustable - for agricultural use	1500-1800	1500-1800	1575-1800
Wheel base	2376	2376	2376
Thread turning diameter with one wheel braked	9850+500	9850+500	9850+500

TRACTOR Z 10540 TURBO INTERCOOLER MAIN TECHNICAL DIMENSIONS
<https://truckmanualshub.com/>

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 10540		
		16.9-38	14.9-24 480/70R38	18.4-38
Body outline diameter with one wheel brake		9050+500	9050+500	9050+500
Weight (kg))				
Kerb weight of tractor with cab		4063	4093	4123
- on front axle		1743	1743	1743
- on rear axle		2320	2350	2380
without cab		3808	3838	3868
- on front axle		1688	1688	1688
- on rear axle		2120	2150	2180
Front ballast weight				
- under frame		122	122	122
- in front of frame 1+2				
1+5				
1+7		240	240	240
rear - rear wheel ballast 2+6		230	230	230
2+10		350	350	350
Weight of water in rear tires		2x260	2x330	2x412
Weights of front 3-point linkage 12 pieces		260	260	260
16 pieces (rings)		490	490	490
MAXIMUM AXLE LOADS(kg)				
INFLATION (kPa) DURING MAX. SPEED				
Front driven axle				
40 km.h ⁻¹ front axle (cardan brake)		2500-150	2500-150	2500-150
rear axle		3400-120	3400-120	3400-120

MAIN DIMENSIONS, WEIGHT	Tractor model Front tires Rear tires	Z 10540 14.9-24		
		16.9-38	480/70R38	18.4-38
30 km/h front axle		2300-140	2300-140	2300-140
		3000-120	3000-110	3000-110
20 km/h front axle		3200-140	3200-140	3200-140
	rear axle	4450-140	4450-110	4450-110
8 km/h front axle		3600-150	3600-150	3600-150
	rear axle	4750-150	4750- 80	4750-110

TRACTOR Z 7520, Z 7540, Z 8520, Z 8540 MAIN TECHNICAL DIMENSIONS

<https://truckmanualslib.com/>

FORCES, OUTPUT, CONSUMPTION	Z 7520	Z 7540	Z 8520	Z 8540
FORCES (kN)				
MAX. TRACTIVE FORCE ON SWINGING DRAW BAR, on concrete, with tractor in standard weight with maximum weight of ballast at a slippage of 15 % with driver				
with cab	19.59	30.97	20.73	31.96
without cab	17.92	29.09	19.63	30.08
MAX. TRACTIVE FORCE AT HITCH FOR TRAILER ,with trailer in middle position on concrete, tractor in standard weight and maximum ballast with driver and with water in rear tires				
with cab	27.44	34.65	27.49	35.64
without cab	25.51	32.77	25.55	33.76
LIFTING FORCE AT END OF THREE-POINT LINKAGE LOWER LINKS				
- in whole range of lift at 14.4 MPa pressure - without auxiliary cylinder	27	27	27	27
- in whole range of lift at max. pressure - without auxiliary cylinder	32.5	32.5	32.5	32.5
- maximum at maximum pressure -without auxiliary cylinder	41	41	41	41
- in whole range at 16.2 MPa pressure - with auxiliary cylinder (EHR BOSCH)	36 (40.5)	36 (40.5)	36 (40.5)	36 (40.5)
- in whole range at max. pressure - without auxiliary cylinder (EHR BOSCH)	43 (48.4)	43 (48.4)	43 (48.4)	43 (48.4)
- maximum at maximum pressure - with auxiliary cylinder (EHR BOSCH)	52 (58.5)	52 (58.5)	52 (58.5)	52 (58.5)
LIFTING FORCE AT END OF FRONT THREE-POINT LINKAGE LOWER LINKS				
- in whole range of lift at 14.4 MPa pressure	10	10	10	10
- in whole range of lift at max. pressure	11	11	11	11
- maximum at maximum pressure	14.5	14.5	14.5	14.5
OUTPUT AND CONSUMPTION				
Output of PTO shaft at engine rated speed and with 1000 rpm of PTO shaft engaged (kW±2%)	46.35	46.35	54.45	54.45
Fuel consumption at above given output (g.kW ⁻¹ .h ⁻¹ ± 2 %)	264	264	258.5	258.5

Note : Consumption and output values refer to tractor after running in period

FORCES, OUTPUT, CONSUMPTION	Z 9520	Z 9540	Z 10520	Z 10540
FORCES (kN)				
MAX. TRACTIVE FORCE ON SWINGING DRAW BAR, on concrete, with tractor in standard weight with maximum weight of ballast at a slippage of 15 % with driver				
with cab	21.67	34.30	22.62	37.26
without cab	19.98	32.18	20.92	35.31
MAX. TRACTIVE FORCE AT HITCH FOR TRAILER ,with trailer in middle position on concrete, tractor in standard weight and maximum ballast with driver and with water in rear tires				
with cab	30.16	37.85	32.78	42.31
without cab	28.20	36.01	30.81	40.36
LIFTING FORCE AT END OF THREE-POINT LINKAGE LOWER LINKS				
- in whole range of lift at 14.4 MPa pressure - without auxiliary cylinder	36	36	36	36
- in whole range of lift at max. pressure - without auxiliary cylinder	43	43	43	43
- maximum at maximum pressure -without auxiliary cylinder	52	52	52	52
- in whole range at 14.4 MPa pressure - with auxiliary cylinder (EHR BOSCH)	40.5	40.5	40.5	40.5
- in whole range at max. pressure - without auxiliary cylinder (EHR BOSCH)	48.4	48.4	48.4	48.4
- maximum at maximum pressure - with auxiliary cylinder (EHR BOSCH)	58.5	58.5	58.5	58.5
LIFTING FORCE AT END OF FRONT THREE-POINT LINKAGE LOWER LINKS				
- in whole range of lift at 14.4 MPa pressure	10	10	10	10
- in whole range of lift at max. pressure	11	11	11	11
- maximum at maximum pressure	14.5	14.5	14.5	14.5
OUTPUT AND CONSUMPTION				
Output of PTO shaft at engine rated speed and with 1000 rpm of PTO shaft engaged (kW±2%)	60.75	60.75	54.45	54.45
Fuel consumption at above given output (g.kW⁻¹.h⁻¹ ± 2 %)	253	253	258.5	258.5

Note : Consumption and output values refer to tractor after running in period

REAR AXLE TRACTOR TIRES

<https://truckmanualshub.com/>

Rear tires	Tractor model							
	Z 7520	Z 7540	Z 8520	Z 8540	Z 9520	Z 9540	Z 10520	Z 10540
9.5-42	X		X					
12.4-38	X	X	X					
13.6-38	X*	X	X*		X*			
16.9-34	X	X*	X	X*	X			
16.9-38			X	X	X	X*	X*	X*
18.4-34		X	X	X	X	X	X	X
18.4-38							X	X
480/70R38							X	X

TIRES FOR DUAL WHEELS * - STANDARD TIRES

2x 9.5-42	X		X					
2x16.9-34	X	X	X	X				
2x16.9-38					X	X	X	X
2x18.4-34					X	X	X	X

FRONT AXLE TRACTOR TIRES (TRACTOR WITHOUT FRONT WHEEL DRIVE) <http://www.tractorshub.com/>

Front tires	Tractor model							
	Z 7520	Z 7540	Z 8520	Z 8540	Z 9520	Z 9540	Z 10520	Z 10540
7.50-16	X*		X*					
7.50-20	X		X		X*		X	
9.00-16	X		X		X		X*	
10.00-16	X		X		X		X	

FRONT AXLE TRACTOR TIRES (TRACTOR WITH FRONT WHEEL DRIVE) * - STANDARD TIRES

9.5-24								
11.2-24		X*						
12.4-24		X		X*		X*		
12.4-28								X*
13.6R24				X		X		X
14.9-24								X
320/70R24								
420/70R24								

FRONT AND REAR TIRES COMBINATIONS RECOMMENDED BY MANUFACTURER FOR Z 3540, Z 4540 TURBO, Z 9540 TURBO,
Z 10540 TURBO INTERCOOLER TRACTORS

This table gives the required number of teeth on gear in 78.185.000 construction group for tractor version with max. speed of 30/35 km/h (35/40km/h).

	11.2 - 24	12.4 - 24	13.6 R 24	12.4 - 28	14.9 - 24
12.4 - 38	43 (-)	44 (-)	---	---	---
13.6 - 38	42 (42)	43 (44)	---	---	---
16.9 - 34	42 (42)	43 (44)	---	---	---
16.9 - 38	---	42 (42)	42 (42)	44 (44)	44 (44)
18.4 - 34	---	42 (42)	43 (44)	---	---
18.4 - 38	---	---	---	43 (44)	43 (44)
480/72R38	---	---	42 (42)	44 (44)	44 (44)

TRACTORS Z 7520, Z 7540, Z 8520 TURBO, Z 8540 TURBO, Z 9520 TURBO, Z 9540 TURBO, Z 10520 TURBO INTERCOOLER,
 Z 10540 TURBO INTERCOOLER

ENGINE OILS

Viscosity classification SAE J 300 JUN 87	Grade class API,SAE J 183 MAR 88	Suitable for temperatures	Specification
	turbocharged naturally aspirated		
10W/30 10	CD+, CE, (CF4) CC	under -7°C	MIL-L-2104
20W/30 20W/40 15W/30 15W/40	CD+, CE, (CF4) CC	under -7°C up to +30°C	MIL-L-2104
20W/30 20W/40 20W/50 30 40	CD+, CE, (CF4) CC	above +30°C	MIL-L-2104

The following oils have been tested in Zetor engines:

Manufacturer	Oil identification	Viscosity classification	Output grade
Oils for turbocharged engines:			
Paramo Pardubice	M7ADS III-TRYSK	20W/40	SF/CD+
Paramo Pardubice	M7ADS III-TRYSK SUPER	15W/40	SG/CE
Paramo Pardubice	M7ADS IV-TRYSK SUPER TURBO	15W/40	SG/CF4
Oils for atmospheric engines:			
Koramo Kolin	M7ADX MOGUL SUPER STABIL	15W/40	SF/CC

OILS FOR GEARBOX, FRONT DRIVE AXLES, PTO TRANSMISSION

Viscosity classification SAE J 306 MAR 85	Output grade API, SAE J 308 NOV 82	Suitable for temperatures	Specification
80W	GL-4		MIL-L-2105

The following oils have been tested in Zetor tractor transmission system, also suitable for wet disc brakes.

Manufacturer	Oil identification	Viscosity classification	Output grade
Paramo Pardubice	GYROL - UTTO	80W	GL-4
Paramo Pardubice	GYROL-PP 80	80W	GL-4
ESSO	TORQUE FLUID 62	80W	GL-4

HYDROSTATIC STEERING OIL

Hydraulic oil OH - HM 46 is used for tractors without front wheel drive (this oil corresponds to high pressure oils according to ISO 6743, ISO - L - HM 46).

Hydraulic oil OH - HM 32 is used for tractors with front wheel drive (this oil corresponds to high pressure oils according to ISO 6743, ISO - L - HM 32).

SILICON LUBRICANT

Silicon lubricant LITOL 24 according to GOST 21150.75 (classification of silicon lubricants) or PM - LA 2 (ISO 6743/9, ISO-L XBCA 2 classification of silicon lubricants)

FUEL

Summer grade diesel fuel NM-4 according to ČSN 656506 for period from 1.4. to 31.10.

Winter grade diesel fuel NM-22 according to ČSN 656506 for period from 1.11. to 31.3.

NOTE: Suitable analogous fuels should be used abroad.

HYDRAULIC BRAKE FLUID, ENGINE CLUTCH CONTROL FLUID

Brake fluid SYNTHOL 205 yellow according to PND 31-656-80 (fluid classification according to ISO 4925 or SAE J 1703) Fluid is not suitable for arctic climate.

ATTENTION: 1. Fluids of same classification can be mixed together.

2. Brake fluid has to be changed at least once every two years regardless of engine hours.

ENGINE COOLING SYSTEM AND CAB HEATER FLUID

Anti-freeze FRIDEX-STABIL, FRIDOL 91 and demineralized water should be mixed 1 to 1.5 (when adding fluid, mixing ratio must be same). Anti-freeze fluids abroad must contain anticorrosive agents protecting all materials (including rubber and cylinder head gasket) of engine cooling system and cab heater.

ATTENTION: 1. Fluids FRIDEX-STABIL and FRIDOL 91 can be mixed together. Mixing of other fluids has not been tested.

2. Change fluid after two years of operation.

3. Water without anti-freeze solution must not be used on Z 10520 and Z 10540 tractors.

AMOUNT OF LIQUIDS AND FILLINGS
<https://trackmanuals.ru/>

Liquid	Z 7520, Z 8520, Z 9520 Z 7540, Z 8540, Z 9540	Z 10520 Z 10540
Coolant		
- without heater	17.5 l	20.5 l
- with heater	19.0 l	23.0 l
Fuel	105 l	160 l
Engine oil	10 l	10 l
Air filter oil (*)	1.8 l 2.3 l	--
Gearbox oil	40 l	40 l
Hydrostatic steering oil	4.5 l	4.5 l

Liquid	Z 7520, Z 8520, Z 9520, Z 10520 Z 7540, Z 8540, Z 9540, Z 10540
Front drive axle housing oil	3.1 l
Front wheel drive planetary reduction housing oil	1+1 l
Front PTO shaft gearbox oil	1.2 l
Brake fluid	0.5 l

Note : (*) Engine oil can also be used

TRACTOR SPEEDS - GEARBOX WITH TWO-STAGE TORQUE MULTIPLIER

<https://truckmanualshub.com/>

https://muckmanuall.com/

Tractor speeds (km/h) at 2200 rpm engine speed			16.9-34, Rd=773 mm tires			18.4-34, Rd=797 mm tires			16.9-38, 480/70R38 Rd=820mm tires			Dependent PTO shaft speeds (min ⁻¹)	
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)				
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40	540	1000
H-ROAD SPEEDS	1		7.74	8.72	9.68	7.98	8.99	9.98	8.21	9.25	10.27	190.4	345.9
			5.96	6.71	7.45	6.15	6.92	7.68	6.33	7.12	7.91	146.6	266.4
	2		11.44	12.88	14.30	11.80	13.28	14.75	12.14	13.66	15.17	281.3	511.1
			8.81	9.92	11.01	9.09	10.23	11.36	9.35	10.52	11.68	216.6	393.7
	3		18.01	20.27	22.51	18.57	20.90	23.21	19.10	21.51	23.88	442.7	804.7
			13.87	15.61	17.34	14.30	16.10	17.87	14.71	16.56	18.39	341.0	619.5
	4		25.92	29.18	32.40	26.73	30.09	33.41	27.50	30.96	34.37	637.3	1157.9
			19.96	22.47	24.95	20.58	23.17	25.73	21.18	23.84	26.47	490.8	891.7
L-REDUCED SPEEDS	1		1.99	2.24	2.48	2.05	2.30	2.56	2.11	2.37	2.63	190.4	345.9
			1.53	1.72	1.91	1.58	1.77	1.97	1.62	1.83	2.03	146.6	266.4
	2		2.93	3.30	3.67	3.02	3.41	3.78	3.11	3.50	3.89	281.3	511.1
			2.26	2.54	2.83	2.33	2.62	2.91	2.40	2.70	3.00	216.6	393.7
	3		4.62	5.20	5.77	4.76	5.36	5.95	4.90	5.51	6.12	442.7	804.7
			3.56	4.00	4.44	3.67	4.13	4.58	3.77	4.25	4.72	341.0	619.5
	4		6.65	7.48	8.31	6.85	7.71	8.57	7.05	7.94	8.81	637.3	1157.9
			5.12	5.76	6.40	5.28	5.94	6.60	5.43	6.11	6.79	490.8	891.7
R-REVERSAL SPEEDS	H		7.87	8.86	9.84	8.12	9.14	10.14	8.35	9.40	10.44	-335.4	-609.4
			6.06	6.82	7.57	6.25	7.03	7.81	6.43	7.24	8.03	-258.3	-469.3
	L		2.02	2.27	2.52	2.08	2.34	2.60	2.14	2.41	2.68	-335.4	-609.4
			1.55	1.75	1.94	1.60	1.80	2.00	1.65	1.86	2.06	-258.3	-469.3
PTO shaft independent speeds												621	1128

<https://tracmanualshub.com/>
TRACTOR SPEEDS - GEARBOX WITH TWO-STAGE TORQUE MULTIPLIER

Tractor speeds (km/h) at 2200 rpm engine speed			12.4-38, Rd=735 mm tires			13.6-38, Rd=763 mm tires			18.4R38 Rd=850mm tires			Dependent PTO shaft speeds (min ⁻¹)	
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)				
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40	540	1000
H-ROAD SPEEDS	1		7.36	8.29	9.20	7.64	8.60	9.55	8.51	9.59	10.64	190.4	345.9
			5.67	6.38	7.09	5.89	6.63	7.36	6.56	7.38	8.20	146.6	266.4
	2		10.88	12.25	13.60	11.29	12.72	14.12	12.58	14.16	15.73	281.3	511.1
			8.38	9.43	10.47	8.70	9.79	10.87	9.69	10.91	12.11	216.6	393.7
	3		17.12	19.28	21.40	17.78	20.01	22.22	19.80	22.29	24.75	442.7	804.7
			13.19	14.85	16.48	13.69	15.41	17.11	15.25	17.17	19.06	341.0	619.5
	4		24.65	27.75	30.81	25.59	28.81	31.98	28.50	32.09	35.63	637.3	1157.9
			18.98	21.37	23.73	19.70	22.18	24.63	21.95	24.71	27.44	490.8	891.7
L-REDUCED SPEEDS	1		1.89	2.13	2.36	1.96	2.21	2.45	2.18	2.46	2.73	190.4	345.9
			1.45	1.64	1.82	1.51	1.70	1.89	1.68	1.89	2.10	146.6	266.4
	2		2.79	3.14	3.49	2.90	3.26	3.62	3.23	3.63	4.03	281.3	511.1
			2.15	2.42	2.69	2.23	2.51	2.79	2.48	2.80	3.11	216.6	393.7
	3		4.39	4.94	5.49	4.56	5.13	5.70	5.08	5.72	6.35	442.7	804.7
			3.38	3.81	4.23	3.51	3.95	4.39	3.91	4.40	4.89	341.0	619.5
	4		6.32	7.11	7.90	6.56	7.39	8.20	7.31	8.23	9.14	637.3	1157.9
			4.87	5.48	6.08	5.05	5.69	6.32	5.63	6.34	7.04	490.8	891.7
R-REVERSAL SPEEDS	H		7.48	8.43	9.35	7.77	8.75	9.71	8.65	9.74	10.82	-335.4	-609.4
			5.76	6.49	7.20	5.98	6.73	7.48	6.66	7.50	8.33	-258.3	-469.3
	L		1.92	2.16	2.40	1.99	2.24	2.49	2.22	2.50	2.77	-335.4	-609.4
			1.48	1.66	1.85	1.53	1.73	1.92	1.71	1.92	2.14	-258.3	-469.3
PTO shaft independent speeds												621	1128

<https://truckmanualshub.com/>
TRACTOR SPEEDS- GEARBOX WITH TWO-STAGE TORQUE MULTIPLIER

MAXIMUM TRACTOR SPEEDS (at 2450 rpm engine speed)

Tractor speeds (km/h) at 2450 rpm engine speed			16.9-34, Rd=773 mm tires			18.4-34, Rd=797 mm tires			16.9-38, 480/70R38 Rd=820mm tires		
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)		
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40
	4		28.87	32.5	36.08	29.76	33.51	37.20	30.62	34.47	38.28

Tractor speeds (km/h) at 2450 rpm engine speed			12.4-38, Rd=735 mm tires			13.6-38, Rd=763 mm tires			18.4R38 Rd=850mm tires		
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)		
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40
	4		27.45	30.90	34.31	28.49	32.08	35.62	31.74	35.74	39.68

TRACTOR SPEEDS - GEARBOX WITH THREE-STAGE TORQUE MULTIPLIER

Tractor speeds (km/h) at 2200 rpm engine speed				16.9-34, Rd=773 mm tires			18.4-34, Rd=797 mm tires			16.9-38,480/70R38 Rd=820mm tires			Dependent PTO shaft speeds (min ⁻¹)	
				Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)				
				25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40	540	1000
H-ROAD SPEEDS	1		8,34	9,39	10,42	8,60	9,68	10,74	8,84	9,96	11,05	205,0	372,4	
			7,09	7,98	8,86	7,31	8,23	9,14	7,52	8,47	9,40	174,4	316,8	
			6,04	6,80	7,55	6,22	7,01	7,78	6,40	7,21	8,01	148,4	269,7	
	2		14,62	16,46	18,27	15,07	16,97	18,84	15,51	17,46	19,38	359,3	633,0	
			12,43	14,00	15,54	12,82	14,43	16,02	13,19	14,85	16,49	305,7	555,4	
			10,58	11,92	13,23	10,91	12,29	13,64	11,23	12,64	14,04	260,2	472,0	
	3		25,92	29,18	32,40	26,73	30,09	33,41	27,50	30,96	34,37	637,3	1157,9	
			22,05	24,82	27,56	22,73	25,59	28,42	23,39	26,33	29,24	542,1	985,0	
			18,77	21,13	23,46	19,35	21,79	24,19	19,91	22,42	24,89	461,5	838,5	
L-REDUCED SPEEDS	1		1,82	2,05	2,27	1,88	2,11	2,34	1,93	2,17	2,41	205,0	372,4	
			1,55	1,74	1,93	1,60	1,80	1,99	1,64	1,85	2,05	174,4	316,8	
			1,32	1,48	1,85	1,36	1,53	1,70	1,40	1,57	1,75	148,4	269,7	
	2		3,19	3,59	3,99	3,29	3,70	4,11	3,38	3,81	4,23	359,3	633,0	
			2,71	3,05	3,39	2,80	3,15	3,50	2,88	3,24	3,60	305,7	555,4	
			2,31	2,60	2,89	2,38	2,68	2,98	2,45	2,76	3,06	260,2	472,0	
	3		5,66	6,37	7,07	5,83	6,57	7,29	6,00	6,76	7,50	637,3	1157,9	
			4,81	5,42	6,01	4,96	5,59	6,20	5,10	5,75	6,38	542,1	985,0	
			4,10	4,61	5,12	4,22	4,75	5,28	4,35	4,89	5,43	461,5	838,5	

TRACTOR SPEEDS//GEARBOX WITH THREE-STAGE TORQUE MULTIPLIER

Tractor speeds (km/h) at 2200 rpm engine speed			16.9-34, Rd=773 mm tires			18.4-34, Rd=797 mm tires			16.9-38,480/70R38 Rd=820mm tires			Dependent PTO shaft speeds (min ⁻¹)	
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)				
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40	540	1000
R-RE/VERSAL SPEEDS	H		7,87	8,86	9,84	8,12	9,14	10,14	8,35	9,40	10,44	-335,4	-609,4
			6,70	7,54	8,57	6,90	7,77	8,63	7,10	8,00	8,38	-285,3	-518,4
			5,70	6,42	7,12	5,88	6,62	7,35	6,05	6,81	7,68	-242,9	-441,3
	L		1,72	1,93	2,15	1,77	1,99	2,21	1,82	2,05	2,28	-335,4	-609,4
			1,46	1,64	1,83	1,51	1,70	1,88	1,55	1,74	1,94	-285,3	-518,4
			1,24	1,40	1,55	1,28	1,44	1,60	1,32	1,49	1,65	-242,9	-441,3
			PTO shaft independent speeds										

TRACTOR SPEEDS - GEARBOX WITH THREE-STAGE TORQUE MULTIPLIER

Tractor speeds (km/h) at 2200 rpm engine speed			12.4-38, Rd=735 mm tires			13.6-38, Rd=763 mm tires			18.4R38 Rd=850mm tires			Dependent PTO shaft speeds (min ⁻¹)		
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)					
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40	540	1000	
H-ROAD SPEEDS	1		7,93	8,92	9,91	8,23	9,26	10,29	9,17	10,32	11,46	205,0	372,4	
			6,74	7,59	8,43	7,00	7,88	8,75	7,80	8,78	9,75	174,4	316,8	
			5,74	6,46	7,18	5,96	6,71	7,45	6,64	7,47	8,30	148,4	269,7	
	2		13,90	15,65	17,37	14,43	16,24	18,04	16,07	18,10	20,09	359,3	633,0	
			11,82	13,31	14,78	12,27	13,82	15,34	13,67	15,30	17,09	305,7	555,4	
			10,06	11,33	12,58	10,45	11,76	13,06	11,64	13,10	14,55	260,2	472,0	
	3		24,65	27,75	30,81	25,59	28,81	31,98	28,50	32,09	35,63	637,3	1157,9	
			20,97	23,60	26,21	21,76	24,50	27,20	24,25	27,30	30,31	542,1	985,0	
			17,85	20,09	22,31	18,53	20,86	23,16	20,64	23,24	25,80	461,5	838,5	
	L-REDUCED SPEEDS	1		1,73	1,95	2,16	1,80	2,02	2,24	2,00	2,25	2,50	205,0	372,4
				1,47	1,66	1,84	1,53	1,72	1,91	1,70	1,92	2,13	174,4	316,8
				1,25	1,41	1,57	1,30	1,46	1,63	1,45	1,63	1,81	148,4	269,7
2			3,03	3,41	3,79	3,15	3,54	3,94	3,51	3,95	4,38	359,3	633,0	
			2,58	2,90	3,23	2,68	3,02	3,35	2,98	3,36	3,73	305,7	555,4	
			2,20	2,47	2,75	2,28	2,57	2,85	2,54	2,86	3,17	260,2	472,0	
3			5,38	6,06	6,72	5,58	6,29	6,98	6,22	7,00	7,77	637,3	1157,9	
			4,58	5,15	5,72	4,75	5,35	5,94	5,29	5,96	6,61	542,1	985,0	
			3,89	4,38	4,87	4,04	4,55	5,05	4,50	5,07	5,63	461,5	838,5	

<https://truckmanualshub.com/>
TRACTOR SPEEDS - GEARBOX WITH THREE-STAGE TORQUE MULTIPLIER

Tractor speeds (km/h) at 2200 rpm engine speed			12.4-38, Rd=735 mm tires			13.6-38, Rd=763 mm tires			18.4R38 Rd=850mm tires			Dependent PTO shaft speeds (min ⁻¹)	
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)				
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40	540	1000
R-REVERSAL SPEEDS	H		7,48	8,43	9,35	7,77	8,75	9,71	8,65	9,74	10,82	-335,4	-609,4
			6,37	7,17	7,96	6,61	7,44	8,26	7,36	8,29	9,20	-285,3	-518,4
			5,42	6,10	6,77	5,63	6,33	7,03	6,27	7,06	7,83	-242,9	-441,3
	L		1,63	1,84	2,04	1,70	1,91	2,12	1,89	2,13	2,36	-335,4	-609,4
			1,39	1,56	1,74	1,44	1,62	1,80	1,61	1,81	2,01	-285,3	-518,4
			1,18	1,33	1,48	1,23	1,38	1,53	1,37	1,54	1,71	-242,9	-441,3
			PTO shaft independent speeds										

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TRACTOR SPEEDS - GEARBOX WITH THREE-STAGE TORQUE MULTIPLIER

MAXIMUM TRACTOR SPEEDS (at 2450 rpm engine speed)

Tractor speeds (km/h) at 2450 rpm engine speed			16.9-34, Rd=773 mm tires			18.4-34, Rd=797 mm tires			16.9-38, 480/70R38 Rd=820mm tires		
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)		
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40
	4		28,87	32,50	36,08	29,76	33,51	37,20	30,62	34,47	38,28

Tractor speeds (km/h) at 2450 rpm engine speed			12.4-38, Rd=735 mm tires			13.6-38, Rd=763 mm tires			18.4R38 Rd=850mm tires		
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)		
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40
	4		27,45	30,90	34,31	28,49	32,08	35,62	31,74	35,74	39,68

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TRACTOR SPEEDS - GEARBOX WITH REVERSER

Tractor speeds (km/h) at 2200 rpm engine speed			16.9-34, Rd=773 mm tires			18.4-34, Rd=797 mm tires			16.9-38,480/70R38 Rd=820mm tires			Dependent PTO shaft speeds (min ⁻¹)	
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)				
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40	540	1000
H-ROAD SPEEDS	1		7,74	8,72	9,68	7,98	8,99	9,98	8,21	9,25	10,27	190,4	345,9
			7,86	8,85	9,83	8,11	9,13	10,14	8,34	9,39	10,43	-193,3	-351,3
	2		11,44	12,88	14,30	11,80	13,28	14,75	12,14	13,66	15,17	281,3	511,1
			11,62	13,09	14,53	11,98	13,49	14,98	12,33	13,88	15,41	-285,7	-519,1
	3		18,01	20,27	22,51	18,57	20,90	23,21	19,10	21,51	23,88	442,7	804,4
			18,29	20,59	22,87	18,86	21,23	23,58	19,41	21,85	24,26	-449,7	-817,0
	4		25,92	29,18	32,40	26,73	30,09	33,41	27,50	30,96	34,37	637,3	1157,9
			26,32	29,63	32,89	27,13	30,55	33,92	27,92	31,43	34,89	-647,2	-1176,0
L-REDUCED SPEEDS	1		1,99	2,24	2,48	2,05	2,30	2,56	2,11	2,37	2,63	190,4	345,9
			2,02	2,27	2,52	2,08	2,34	2,60	2,14	2,41	2,67	-193,3	-351,3
	2		2,93	3,30	3,67	3,02	3,41	3,78	3,11	3,50	3,89	281,3	511,1
			2,98	3,35	3,72	3,07	3,46	3,84	3,16	3,56	3,95	-285,7	-519,1
	3		4,62	5,20	5,77	4,76	5,36	5,95	4,90	5,51	6,12	442,7	804,7
			4,69	5,28	5,86	4,84	5,44	6,04	4,98	5,60	6,22	-449,7	-817,0
	4		6,65	7,48	8,31	6,85	7,71	8,57	7,05	7,94	8,81	637,3	1157,9
			6,75	7,60	8,44	6,96	7,84	8,70	7,16	8,06	8,95	-647,2	-1176,0
PTO shaft independent speeds												621	1128

<https://truckmanualshub.com/>
TRACTOR SPEEDS - GEARBOX WITH REVERSER

Tractor speeds (km/h) at 2200 rpm engine speed			12.4-38, Rd=735 mm tires			13.6-38, Rd=763 mm tires			18.4R38 Rd=850mm tires			Dependent PTO shaft speeds (min ⁻¹)	
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)				
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40	540	1000
H-ROAD SPEEDS	1		7,36	8,29	9,20	7,64	8,60	9,55	8,51	9,59	10,64	190,4	345,9
			7,48	8,42	9,35	7,76	8,74	9,70	8,65	9,74	10,81	-193,3	-351,3
	2		10,88	12,25	13,60	11,29	12,72	14,12	12,58	14,16	15,73	281,3	511,1
			11,05	12,44	13,82	11,47	12,92	14,34	12,78	14,39	15,98	-285,7	-519,1
	3		17,12	19,28	21,40	17,78	20,01	22,22	19,80	22,29	24,75	442,7	804,4
			17,39	19,58	21,74	18,06	20,33	22,57	20,12	22,65	25,14	-449,7	-817,0
	4		24,65	27,75	30,81	25,59	28,81	31,98	28,50	32,09	35,63	637,3	1157,9
			25,02	28,17	31,28	25,98	29,24	32,47	28,94	32,58	36,17	-647,2	-1176,0
L-REDUCED SPEEDS	1		1,89	2,13	2,36	1,96	2,21	2,45	2,18	2,46	2,73	190,4	345,9
			1,92	2,16	2,40	1,99	2,24	2,49	2,22	2,50	2,77	-193,3	-351,3
	2		2,79	3,14	3,49	2,90	3,26	3,62	3,23	3,63	4,03	281,3	511,1
			2,83	3,19	3,54	2,94	3,31	3,68	3,28	3,69	4,10	-285,7	-519,1
	3		4,39	4,94	5,49	4,56	5,13	5,70	5,08	5,72	6,35	442,7	804,7
			4,46	5,02	5,57	4,63	5,21	5,79	5,16	5,81	6,45	-449,7	-817,0
	4		6,32	7,11	7,90	6,56	7,39	8,20	7,31	8,23	9,14	637,3	1157,9
			6,42	7,23	8,02	6,66	7,50	8,33	7,42	8,36	9,28	-647,2	-1176,0
PTO shaft independent speeds												621	1128

TRACTOR SPEEDS - GEARBOX WITH REVERSER

<https://truckmandalshub.com/>

MAXIMUM TRACTOR SPEEDS (at 2450 rpm engine speed)

Tractor speeds (km/h) at 2450 rpm engine speed			16.9-34, Rd=773 mm tires			18.4-34, Rd=797 mm tires			16.9-38,480/70R38 Rd=820mm tires		
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)		
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40
	4		28,87	32,50	36,08	29,76	33,51	37,20	30,62	34,47	38,28

Tractor speeds (km/h) at 2450 rpm engine speed			12.4-38, Rd=735 mm tires			13.6-38, Rd=763 mm tires			18.4R38 Rd=850mm tires		
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)		
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40
	4		27,45	30,90	34,31	28,49	32,08	35,62	31,74	35,74	39,68

TRACTOR SPEEDS - GEARBOX WITH CREEPER SPEEDS

<https://truckmanualshub.com/>

https://ruddickmachinery.co.uk/

Tractor speeds (km/h) at 2200 rpm engine speed			16.9-34, Rd=773 mm tires			18.4-34, Rd=797 mm tires			16.9-38,480/70R38 Rd=820mm tires			Dependent PTO shaft speeds (min ⁻¹)	
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)				
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40	540	1000
H-ROAD SPEEDS	1		7,74	8,72	9,68	7,98	8,99	9,98	8,21	9,25	10,27	190,4	345,9
			0,40	0,45	0,50	0,41	0,46	0,51	0,42	0,47	0,53	9,75	17,71
	2		11,44	12,88	14,30	11,80	13,28	14,75	12,14	13,66	15,17	281,3	511,1
			0,59	0,66	0,73	0,60	0,68	0,75	0,62	0,70	0,78	14,40	26,17
	3		18,01	20,27	22,51	18,57	20,90	23,21	19,10	21,51	23,88	442,7	804,4
			0,92	1,04	1,15	0,95	1,07	1,19	0,98	1,10	1,22	22,66	41,18
	4		25,92	29,18	32,40	26,73	30,09	33,41	27,50	30,96	34,37	637,3	1157,9
			1,33	1,49	1,66	1,37	1,54	1,71	1,41	1,58	1,76	32,62	59,27
L-REDUCED SPEED	1		1,99	2,24	2,48	2,05	2,30	2,56	2,11	2,37	2,63	190,4	345,9
			0,10	0,11	0,13	0,10	0,12	0,13	0,11	0,12	0,13	9,75	17,71
	2		2,93	3,30	3,67	3,02	3,41	3,78	3,11	3,50	3,89	281,3	511,1
			0,15	0,17	0,19	0,15	0,17	0,19	0,16	0,18	0,20	14,40	26,17
	3		4,62	5,20	5,77	4,76	5,36	5,95	4,90	5,51	6,12	442,7	804,4
			0,24	0,27	0,30	0,24	0,27	0,30	0,25	0,28	0,31	22,66	41,18
	4		6,65	7,48	8,31	6,85	7,71	8,57	7,05	7,94	8,81	637,3	1157,9
			0,34	0,38	0,43	0,35	0,39	0,44	0,36	0,41	0,45	32,62	59,27
R-REVERSAL SPEEDS	H		7,87	8,86	9,84	8,12	9,14	10,14	8,35	9,40	10,44	-335,4	-609,4
			0,40	0,45	0,50	0,42	0,47	0,52	0,43	0,48	0,53	- 17,17	- 31,2
	L		6,06	2,27	2,52	6,25	2,34	2,60	6,43	2,41	2,68	-335,4	-609,4
			0,10	0,12	0,13	0,11	0,12	0,13	0,11	0,12	0,14	- 17,17	- 31,2
PTO shaft independent speeds												621	1128

TRACTOR SPEEDS GEARBOX WITH CREEPER SPEEDS

Tractor speeds (km/h) at 2200 rpm engine speed			12.4-38, Rd=735 mm tires			13.6-38, Rd=763 mm tires			18.4R38 Rd=850mm tires			Dependent PTO shaft speeds (min ⁻¹)	
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)				
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40	540	1000
H-ROAD SPEEDS	1		7,36	8,29	9,20	7,64	8,60	9,55	8,51	9,59	10,64	190,4	345,9
			0,38	0,42	0,47	0,39	0,44	0,49	0,44	0,49	0,54	9,75	17,71
	2		10,88	12,25	13,60	11,29	12,72	14,12	12,58	14,16	15,73	281,3	511,1
			0,56	0,63	0,70	0,58	0,65	0,72	0,64	0,73	0,81	14,40	26,17
	3		17,12	19,28	21,40	17,78	20,01	22,22	19,80	22,29	24,75	442,7	804,4
			0,88	0,99	1,10	0,91	1,02	1,14	1,01	1,14	1,27	22,66	41,18
	4		24,65	27,75	30,81	25,59	28,81	31,98	28,50	32,09	35,63	637,3	1157,9
			1,26	1,42	1,58	1,31	1,47	1,64	1,46	1,64	1,82	32,62	59,27
L-REDUCED SPEEDS	1		1,89	2,13	2,36	1,96	2,21	2,45	2,18	2,46	2,73	190,4	345,9
			0,10	0,11	0,12	0,10	0,11	0,13	0,11	0,13	0,14	9,75	17,71
	2		2,79	3,14	3,49	2,90	3,26	3,62	3,23	3,63	4,03	281,3	511,1
			0,14	0,16	0,18	0,15	0,17	0,19	0,17	0,19	0,21	14,40	26,17
	3		4,39	4,94	5,49	4,56	5,13	5,70	5,08	5,72	6,35	442,7	804,4
			0,22	0,25	0,28	0,23	0,26	0,29	0,26	0,29	0,32	22,66	41,18
	4		6,32	7,11	7,90	6,56	7,39	8,20	7,31	8,23	9,14	637,3	1157,9
			0,32	0,36	0,40	0,34	0,38	0,42	0,37	0,42	0,47	32,62	59,27
R-REVERSAL SPEEDS	H		7,48	8,43	9,35	7,77	8,75	9,71	8,65	9,74	10,82	-335,4	-609,4
			0,38	0,43	0,48	0,40	0,45	0,50	0,44	0,50	0,55	- 17,17	- 31,2
	L		5,76	2,16	2,40	5,98	2,24	2,49	6,66	2,50	2,77	-335,4	-609,4
			0,10	0,11	0,12	0,10	0,11	0,13	0,11	0,13	0,14	- 17,17	- 31,2
PTO shaft independent speeds												621	1128

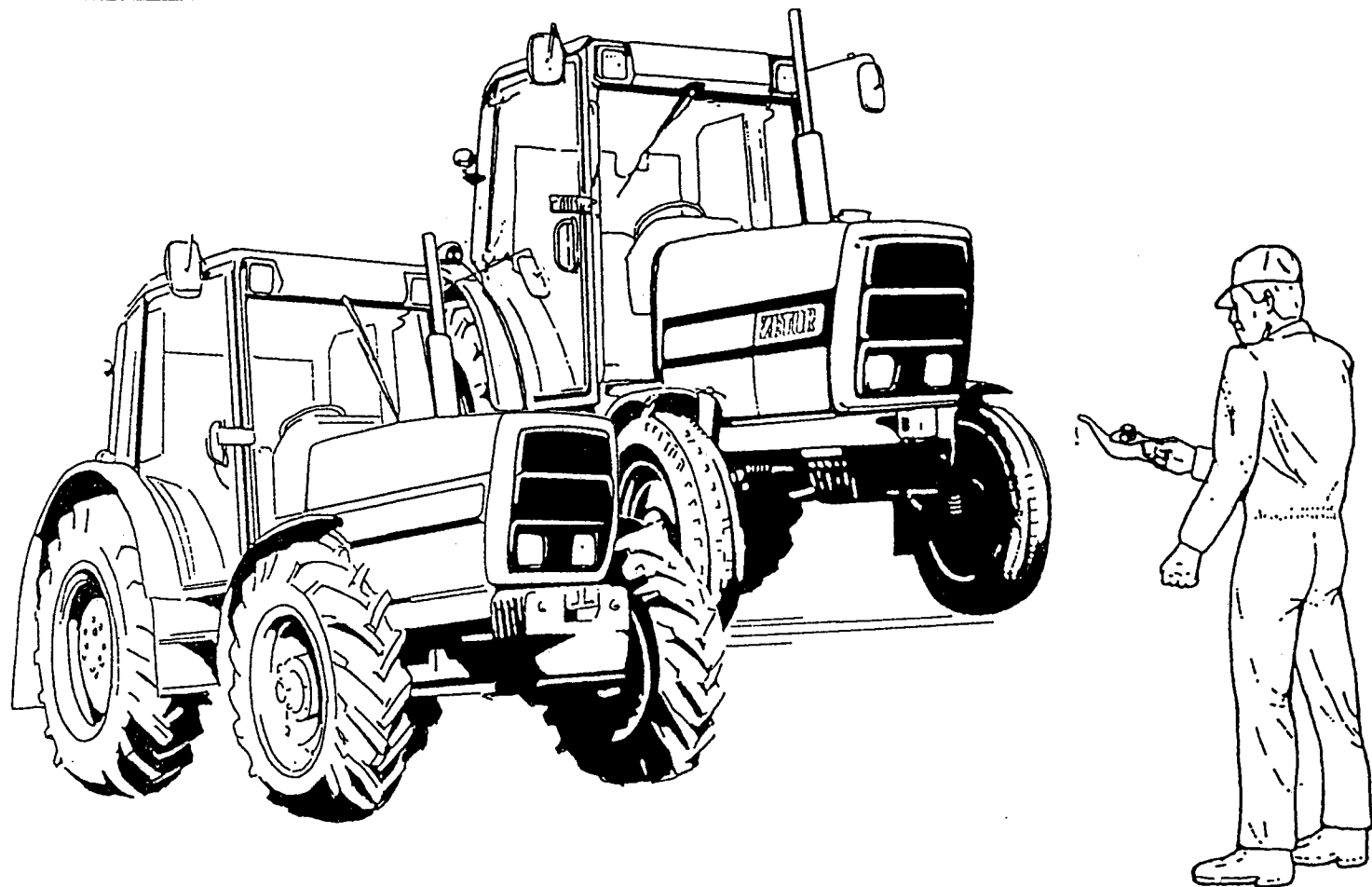
TRACTOR SPEEDS - GEARBOX WITH CREEPER SPEEDS

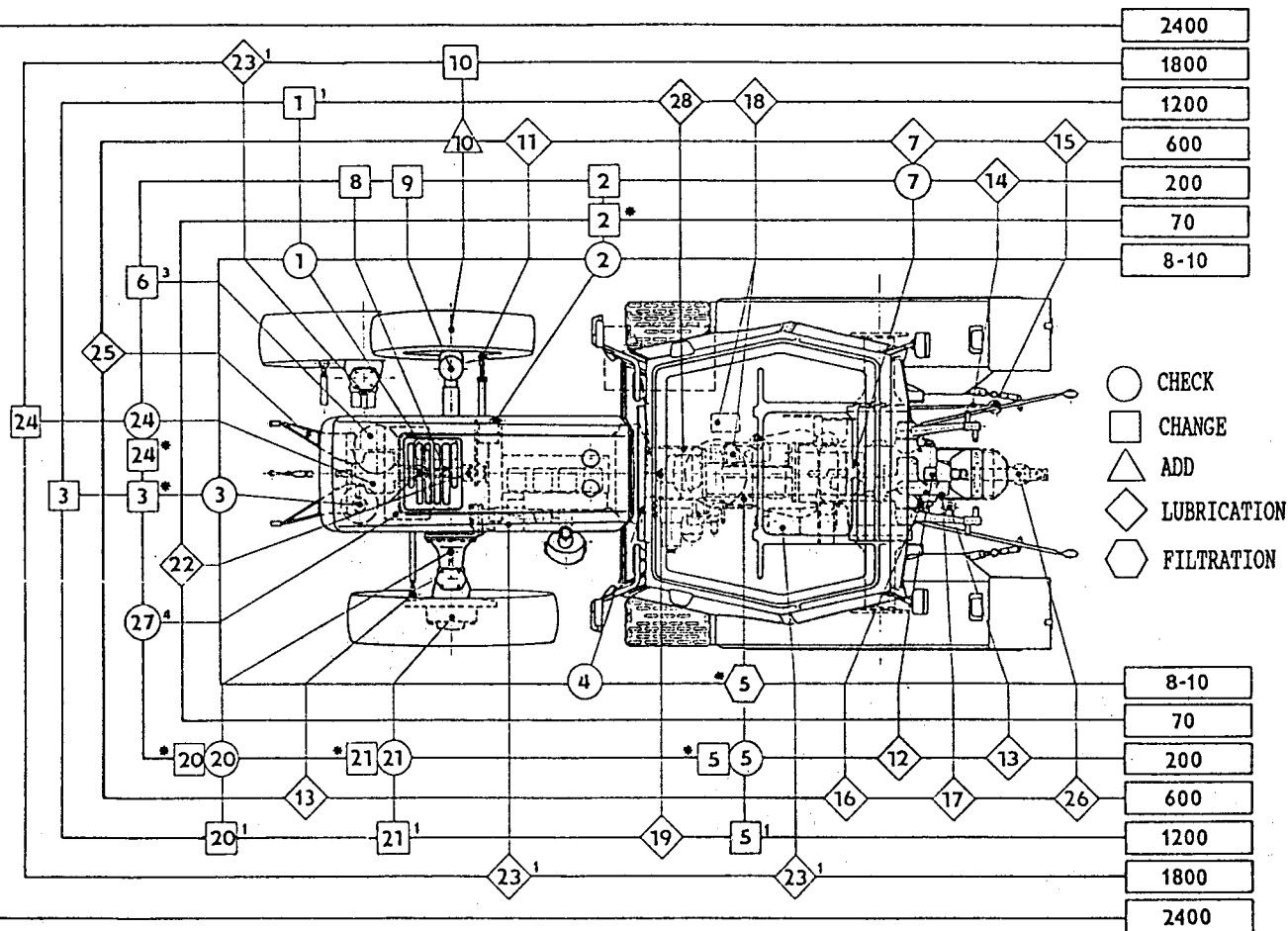
<https://tracemindalsrus.com/>

MAXIMUM TRACTOR SPEEDS (at 2450 rpm engine speed).

Tractor speeds (km/h) at 2450 rpm engine speed			16.9-34, Rd=773 mm tires			18.4-34, Rd=797 mm tires			16.9-38,480/70R38 Rd=820mm tires		
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)		
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40
	4		28,87	32,50	36,08	29,76	33,51	37,20	30,62	34,47	38,28

Tractor speeds (km/h) at 2450 rpm engine speed			12.4-38, Rd=735 mm tires			13.6-38, Rd=763 mm tires			18.4R38 Rd=850mm tires		
			Gear for max.speed (km/h)			Gear for max.speed (km/h)			Gear for max.speed (km/h)		
			25-30	30-35	35-40	25-30	30-35	35-40	25-30	30-35	35-40
	4		27,45	30,90	34,31	28,49	32,08	35,62	31,74	35,74	39,68



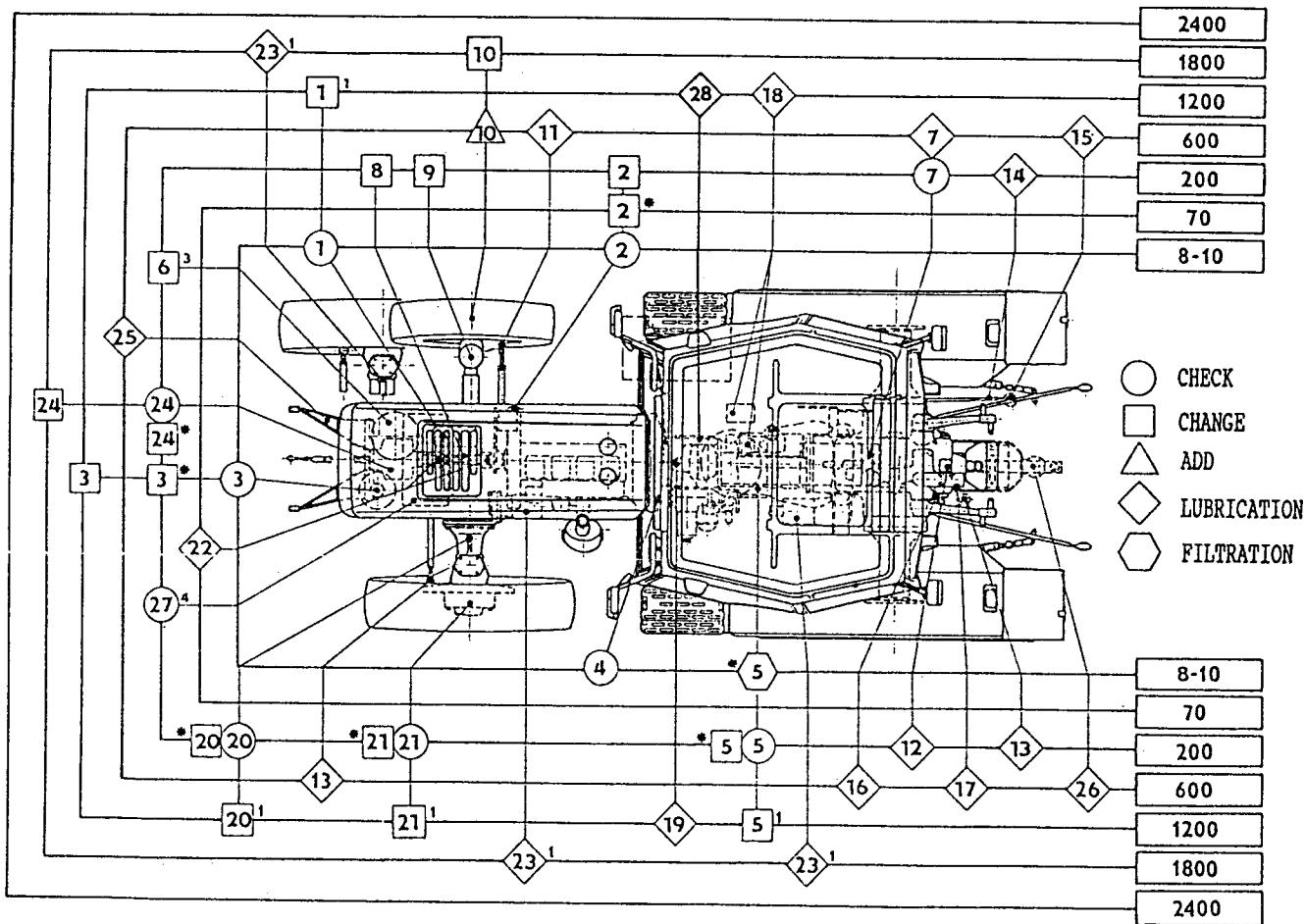


LUBRICATION CHART OF Z 7520, Z 7540, Z 8520, Z 8540, Z 9520, Z 9540, Z 10520, Z 10540 TRACTORS

	Point of lubrication - check	Perform after given number of engine hours						
		8-10	70	200	600	1200	1800	2400
1	Cooling system	C				V(1)		
2	Engine	C	V*	V				
3	Steering oil reservoir	C		V*		V		
4	Brake fluid reservoir (2)	C						
5	Gearbox	F*		C/V*		V(1)		
6	Air filter			V(3)				
7	Driver's seat (handle and seat pulleys)			K	L			
8	Front axle center pin			L				
9	Fixed or sprig mounted front wheel extensions			L				
10	Front wheel bearings				A		V	
11	Steering rod joints				L			
12	Draft control securing lever			L				
13	Auxiliary hydraulic cylinder pins			L				
14	Telescopic control of lift link			L				
15	Right-hand lift link of three point linkage				L			
16	Rockshaft sensing bar				L			
17	PUH bowden control							
18	Heater fan bearing				L	L		
19	Windscreen wiper lever bearing					L		
20	Front wheel drive axle housing oil			C/V*		V(1)		
21	Front wheel drive axle reducers			C/V*		V(1)		
22	Front PTO drive joints		L					

LUBRICATION CHART OF Z 7520, Z 7540, Z 8520, Z 8540, Z 9520, Z 9540, Z 10520, Z 10540 TRACTORS

<https://truckmanualshub.com/>



LUBRICATION CHART OF Z 7520, Z 7540, Z 8520, Z 8540, Z 9520, Z 9540, Z 10520, Z 10540 TRACTORS

	Point of lubrication - check	Perform after given number of engine hours						
		8-10	70	200	600	1200	1800	2400
23	Front wheel driveline joints, front wheel drive joints front wheel drive splines, right-hand side front axle shaft bearing						L(1)	
24	Front PTO gears housing			C/V*			V	
25	Front three point linkage pins				L			
26	Automatic trailer hitch				L			
27	Battery			C(4)				
28	STOPPING DEVICE bowden lubrication					L		

* - During running in period of tractor or after overhaul.

(1) - Or after two years of operation .

(2) - Fluid has to be changed after two years regardless of engine hours.

(3) - According to dust in environment.

(4) - After 100 engine hours in summer.

KEY:

C - Check A - Add F - Filtration or sedimentation

V - Change L - Lubrication

General principles must be followed to provide correct Zetor tractor aggregation with agricultural machines. This enables to take advantage of tractor with machine to the full extent in field conditions and on road.

1. Machine attachment must be provided by means of mounted hitch equipment (see "Utilization for transport" and "Three-point linkage" sections) or any other way approved by tractor and machine manufacturers.
2. Before coupling hydraulic equipment of tractor and machines by means of same type of quick couplers, check both oil types in systems.
3. After attachment of mounted implements check lifting movement to transport position to eliminate collision with tail lights or with rear window, front mounted implements with front grill, etc.
4. Machines which use the PTO shaft of tractor must always be used with the prescribed type of joined

shaft. Check the length in whole range of machine movement. Nominal speed of front and rear PTO is reached at 80 to 90 % of engine rated speed.

5. Add or remove ballast or other equipment to prevent the following:
 - Carrying capacities of axles and tires for specific speeds and inflation pressures must not be exceeded. (see tables for individual tractor models)
 - Steering axle must not be relieved, it would lead to decreased steering control or even total loss of control. Steering control is sufficient if at least 25% of total weight of tractor and machine load the steering axle at 25 km/h speed (18 to 19 % at 15 km/h).
6. Respect the values of accessible slope incline for tractor with attached implement. This value is lower than the individual values for tractor and implement.

7. Do not exceed the maximum weight of trailer and semi-trailer given on warning plate of tractor.
8. Do not exceed the maximum weight of semi-trailer implements- 2500kg at 15 km/h, 3000 kg at 10 km/h.
9. Follow the instructions for use of implement, especially where the tractor has to be adjusted. (cultivation wheels, dual wheels, auxiliary hydraulic distributor, front three point linkage, toe-in adjustment, front wheel drive, limiting steering movement etc.)
10. It is possible to attach two and more implements to the tractor (if tractor equipment enables it) only if conditions of tractor manufacturer are fulfilled (max. axle and tire carrying capacities, steering control etc.).

Operator`s manual

Zetor 7520 Zetor 7540
Zetor 8520 TURBO, Zetor 8540 TURBO
Zetor 9520 TURBO, Zetor 9540 TURBO
Zetor 10520 TURBO INTERCOOLER, Zetor 10540 TURBO INTERCOOLER

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