ZETOR

PROXIMA PLUS

90
100
110

Operator's manual

SAFETY INSTRUCTIONS FOR THE USERS

ONLY WITH ENGINE STOPPED

34. All works connected with refilling of fuel, cleaning, lubrication and adjustments of the tractor or suspension machines may only be carried out with engine stopped and stopping of movable parts of the tractor, except check of function of brakes, hydraulics and recharging of the battery.
35. Before removing the bonnet it is always necessary to stop the engine. In closed rooms the engine of the tractor may run only if sufficient ventilation is provided. Exhaust gases are harmful for human health.

PRINCIPLES OF FIRE SAFETY

36. Carry out refilling of fuel with engine stopped.
37. In summer season do not refill fuel tank to its full capacity. Wipe immediately spilled fuel.
38. Do not refill fuel in vicinity of open flame and do not smoke.
39. When inspecting level of electrolyte in the battery, do not smoke and do not use open flame. Pay attention to consistent observation of fire safety instructions in environment of increased risk of fire (haylofts, straw stacks, etc.).
40. In case that the tractor is equipped with a fire extinguisher, have it still available.

PROTECTION OF HEALTH AND THE ENVIRONMENT

41. The tractors are not equipped with any special filters of air supplied to the cabin. Therefore the tractors are not designed for work with aerosols and other harmful substances. Kerosene, diesel oil and other oil products that are used for operation and treatment of the tractor may cause skin diseases with direct contact, show irritation effects to mucous membranes, eyes, digestive and upper respiratory tract. Some of them may cause general poisoning when swallowed.
42. The workers that come into contact with oil products are obliged to observe safety and hygienic directives, use suitable protective means and work in well ventilated rooms.

WHEN WORKING WITH OIL PRODUCTS

43. After end of your work of before taking a food it is necessary to wash the hands thoroughly with a non-irritating washing preparation and use a suitable protective hand cream.
44. When connecting and disconnecting quick-couplings of hydraulic circuits remove, using any textile material, excessive hydraulic oil remaining in the socket or plug of the quick-coupling.

SAFETY INSTRUCTIONS FOR THE USERS

ZETOR TRACTORS USED FOR WORK IN THE WOODS

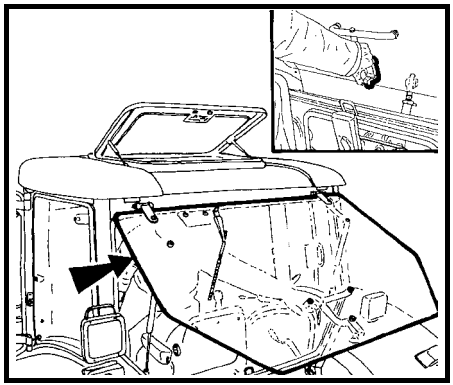
Standard tractors Zetor do not provide sufficient protection for operation in forest terrain as, for example, protection against a falling tree or branch on a cab or penetration of objects to a cab.

If Zetor tractor is utilized for forest work, a tractor operated within the European Union must be protected against these risks.
It is necessary to observe applicable local valid regulations in countries which are not part of the European Union.

To ensure this protection, it is advisable to conduct assembly of a specific protective structure, like for example FOPS / OPS (Falling Object Protective Structure / Operator Protective Structure), tested according to standards for forest machines.

Only forest superstructures approved by ZETOR TRACTORS can be mounted to ZETOR tractors.

In case of additional assembly of further tractor equipment for working in the woods, full responsibility is borne by the supplier and manufacturer of the protective structure that all the safety regulations (e.g: OPS / FOPS), all the conditions of homologation (e.g. the area of driver's view, lighting, parameters, permissible weight etc.) are met, same as for the provision of due assembly of protective equipment. The supplier/manufacturer of protective construction is also obliged to conduct all the necessary validation (approval) steps required by the legislature of the country in which the tractor is operated.

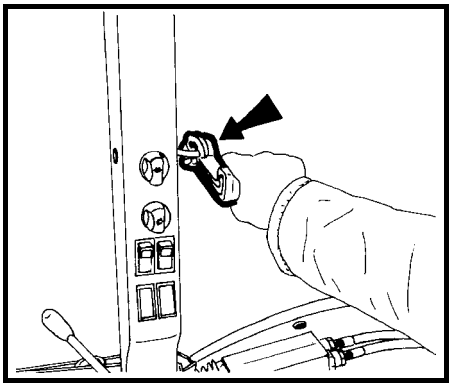


E104

REAR WINDOW

It is provided with a grab bar and in open position it is held by gas struts.

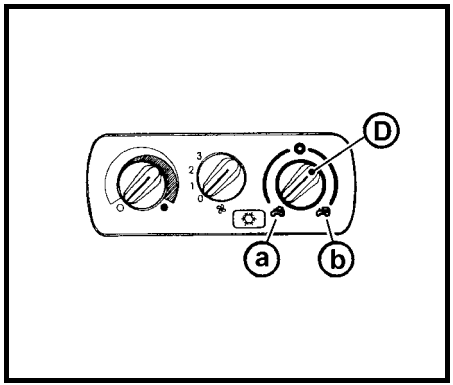
When driving on an uneven surface it is advisable to secure the window in closed position due to danger of a glass break. Before commencement of work with machines carried in the rear three-point suspension make sure if there is no risk of a collision between the carried tool with maximum stroke of the rear three-point suspension and open rear window. In case of a collision it is recommended to work with rear window closed.



E105

SIDE WINDOW

In partly open position it is held by a plastic window handle. The window can be opened by lifting the handle upwards and its pushing to lock it in the groove; this secures the window in a fixed position.



E120

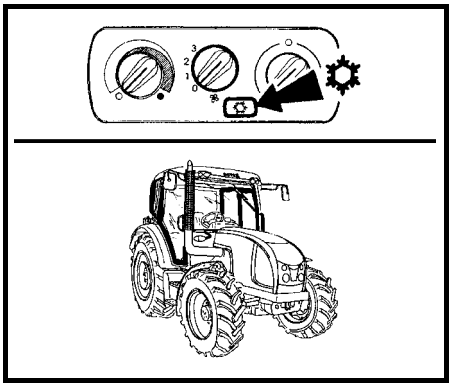
CONTROL OF AIR CIRCULATION IN THE CABIN (D)

a - Ambient (outdoor) air is sucked through the filters into the cabin; sucking of air from inside is closed;

b - Air is sucked from inside and exhausted to the cabin again (inner circulation for fast adjustment of temperature in the cabin).

Intake of air from outdoor is completely closed and there is no overpressure in the cabin to prevent penetration of non-filtrated air into the cabin!

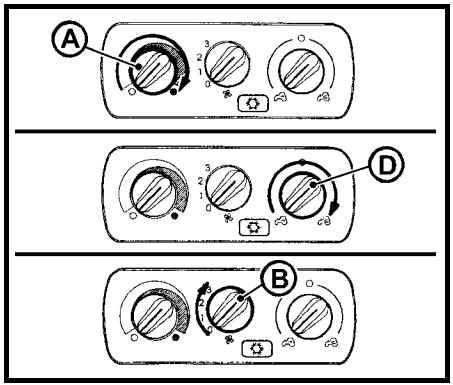
Use this control position for necessary period only!



G121

CORRECT FUNCTION OF THE HEATING AND A/C SYSTEMS

It is necessary to create overpressure in the cabin for correct function of heating or air-conditioning. Therefore it is recommended to close all windows, doors and upper cover.

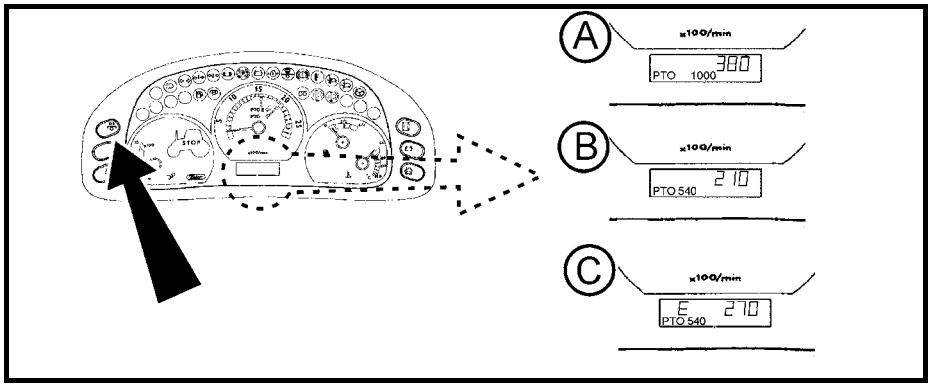


E122

FAST WARMING-UP OF THE CABIN SPACE

Proceed as follows:

1. Turn the heating valve control (A) to the right (fully open heating valve).
2. Set the air circulation in the cabin control (D) to position of inner recirculation.
3. Select the desired speed of the fans (position 1, 2, 3) using the fan control (B).
4. Adjust angles of the air outlets to prevent direct blowing of persons in the cabin.



F54e

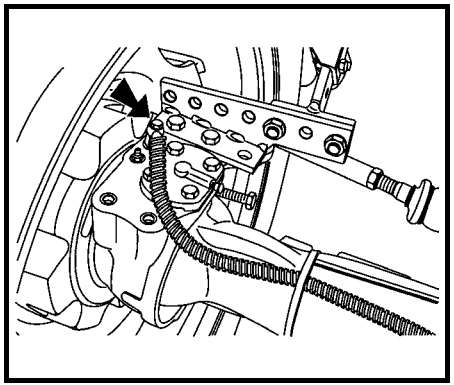
DISPLAY OF PTO SPEED

By pressing the switch marked with the arrow, you will display the PTO speed in the left and right parts of the display. It is a number of revolutions with engaged PTO independent revolutions.

By pressing the buttons gradually, you will induced the number of PTO revolutions for individual gears of PTO revolutions.

A - for 1000 revolutions
B - for 540 revolutions
C - for 540E revolutions

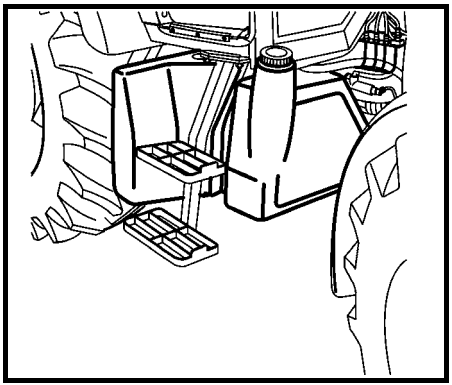
The button serves only for displaying data.



E158

TRACTORS WITH TRAVEL SPEED 40 KM.H^{-1}

All types of tractors with driven front axle that includes brakes in reducers of front wheel can be equipped with travel speed 40 km.h^{-1}.



E159

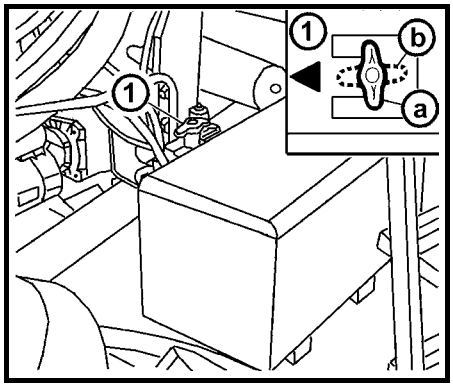
FUEL TANK

The fuel tank is located on the right side of the tractor. The volume of this plastic tank is 150 litres.

Do not step onto the fuel tank!

DRAINING PLUG OF THE FUEL TANK

A plug for draining of dirt from the fuel tank is installed in its bottom.



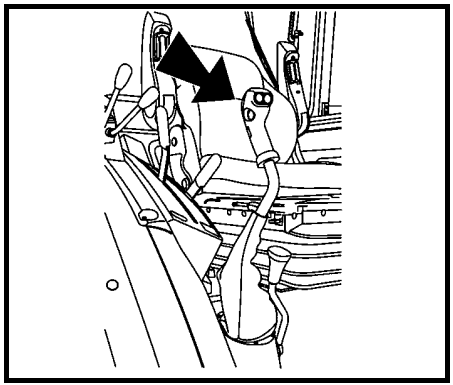
E157

BATTERY DISCONNECTOR

Disconnect the battery immediately using the battery disconnector in case of a long-term standstill, repairs, fault or accident.

The battery disconnector is located on the left side of the tractor, in front of the cabin.

a - Battery connected
b - Battery disconnected

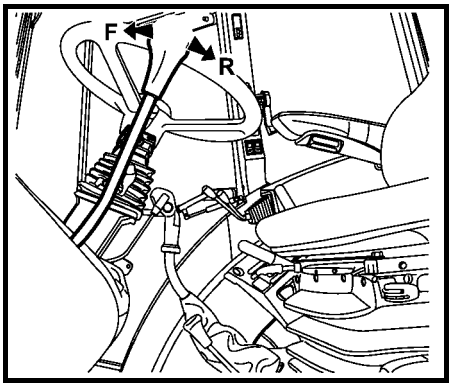


E211

SHIFTING OF GEARS

The tractors are equipped with a 4-speed synchronised gearbox, torque multiplier, reversing and two-stage reduction.

The 4-speed gearbox is operated using the main shifting lever with pushbuttons to control of the torque multiplier. Movement of the tractor forward and backward is selected by the reversing lever.



P+11NE212

REVERSING LEVER

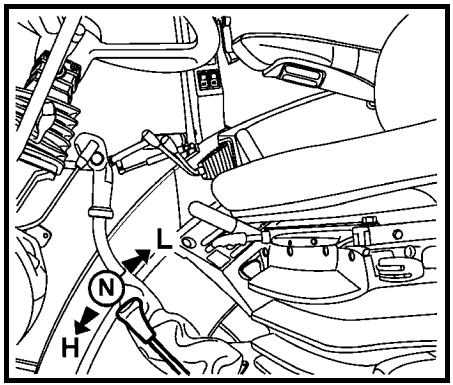
Reversing lever selects direction of movements of the tractor (forward, backward).

F – travel forward (16 speeds)

R – travel backward (16 speeds)

The reversing gearbox includes 16 reverse speeds that are approximately the same as the forward speeds. Therefore consider carefully when shifting a reverse gear for the given character of your work.

Perform reverse shifting with clutch pedal depressed and tractor in standstill.



G150

SHIFTING OF ROAD AND REDUCED GEARS

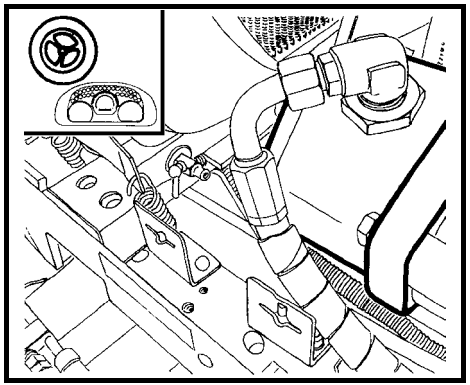
H – road speeds

N – neutral

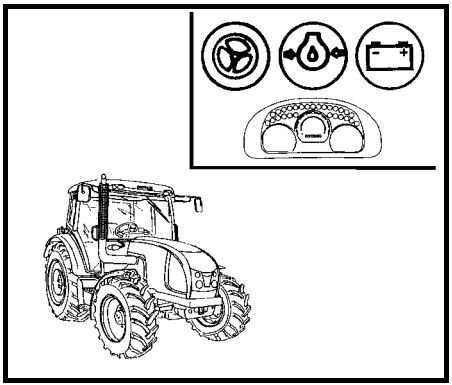
L – reduced speeds

Shifting of gears of the main gearbox with reduced speeds is the same as with road speeds.

Shifting using the lever of road and reduced speeds is only possible when the tractor is in standstill.



E235



G236

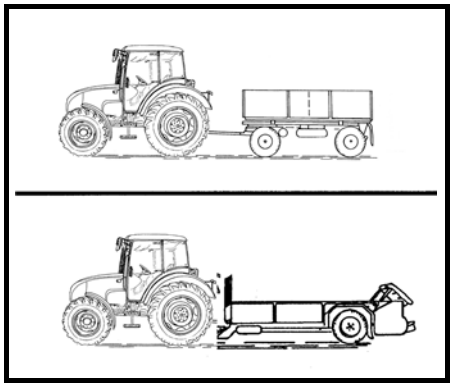
WARNING INDICATION OF A HYDROSTATIC STEERING FAULT

A fault of the hydrostatic steering pump occurs when pressure of oil drops under 120kPa; it is indicated by the respective symbol on the dashboard.

Note: When starting the engine or at low speed of the engine the indicator may flash; if the indicator light disappears after starting of increase of speed of the engine, this does not indicate any fault. The system is OK.

IMPORTANT WARNINGS

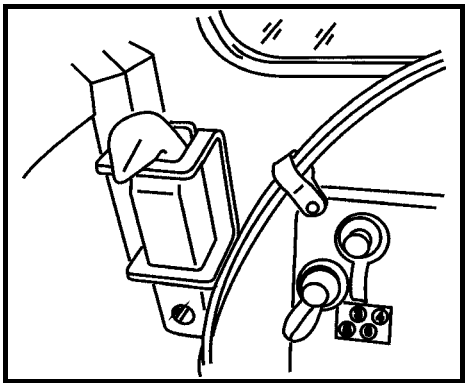
In case that indicator of lubrication, battery recharge or a fault of the hydrostatic steering is on during normal operation of the tractor, stop the tractor immediately, stop the engine and contact a specialised repair shop. This prevents a serious damage or breakdown of the tractor.



G313

COUPLING WITH A TRAILER OR SEMI-TRAILER

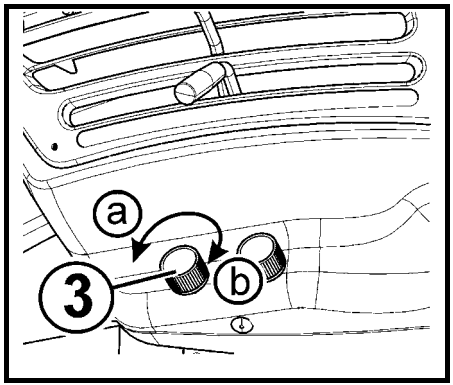
The tractor can be coupled only with a tractor trailer after matching of operating brakes of the tractor and pneumatic or hydraulic brakes of the trailer. In case of coupling with a semi-trailer the static loading of the rear axle of the tractor may not exceed the maximum permitted value.



G900

HOOK OF THE MOUNTING FOR A SINGLE-AXLE TRAILER

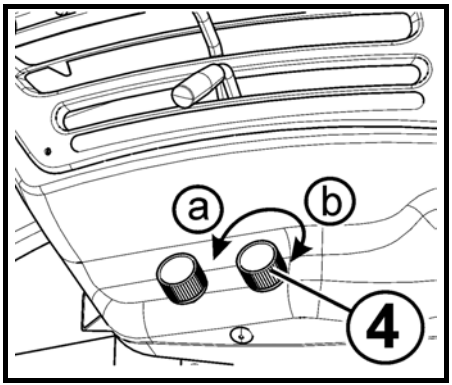
The hook of the mounting for a single-axle trailer is located in the bracket on the left-hand side of the cabin back wall.



P+11N006

THREE-POINT HITCH LOWERING SPEED CONTROL

Three-point hitch lowering speed control (3) selects the speed of lowering the arms of the rear three-point hitch. Turning the knob in (b) direction reduces the lowering speed of the arms of the rear three-point hitch, turning it in (a) direction increases the speed. If the knob is turned in (b) direction to its stop point, the arms of the rear three-point hitch cannot be lowered.

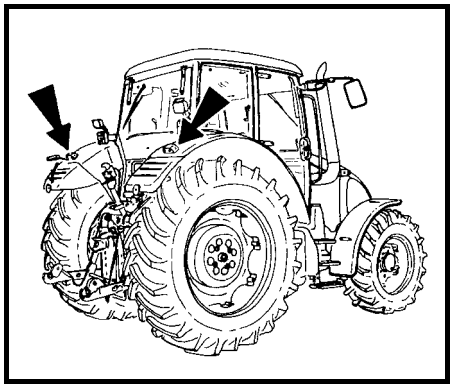


E408

HYDRAULIC SYSTEM SENSITIVITY CONTROL

Hydraulic system sensitivity control (4) adjusts the sensitivity of the hydraulics in power or mixed regulation. Turning the knob in (a) direction increases sensitivity, turning it in (b) direction decreases sensitivity.

ELECTRO-HYDRAULIC SYSTEM



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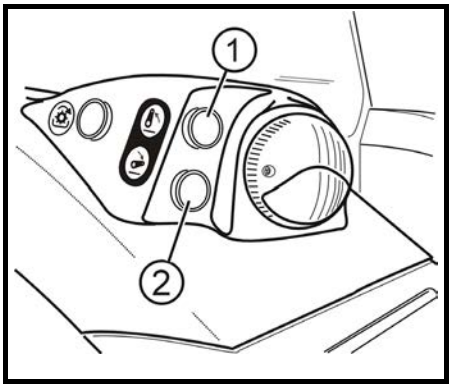

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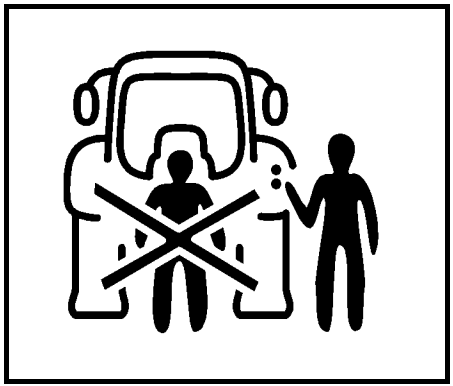


F_02_65

USING THE REAR CONTROL

The rear control is used to connect and disconnect implements. The lifting switching lever (1) on the EHR electro-hydraulic control panel must be in position (b) or (c). The designation symbols of buttons on both the tractor fenders correspond to the movement direction of the three-point hitch after their pressing. The movement only lasts as long as the button is held.

Every use of the rear control causes blocking of the control system and the “Blocking cancellation” must be repeated.

EXTERNAL CONTROL BUTTONS OF THE ELECTRO-HYDRAULIC SYSTEM

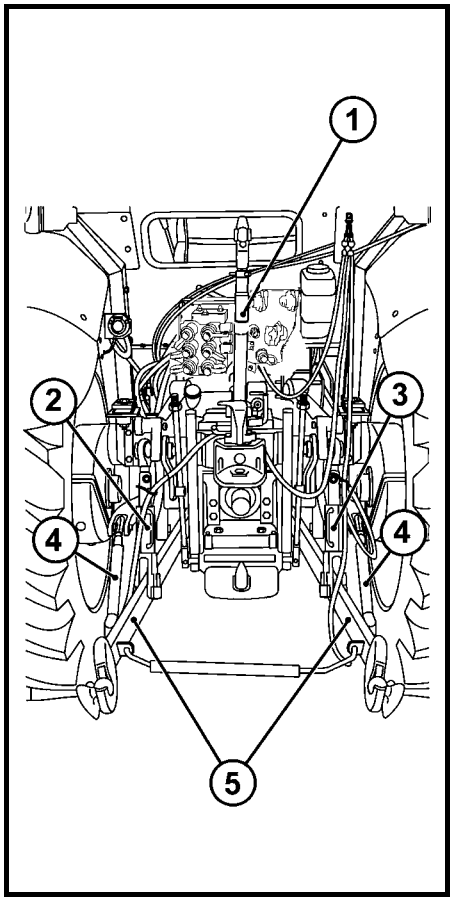
1.Lifting
2.Lowering
The movement only lasts as long as the buttons are held.

External hydraulic control buttons are functional also without previous activation of electrohydraulics even in case of electrohydraulics blockage for the reason of possible failure.

Control the arms of the rear three-point hitch by external electrohydraulics buttons only at the lower half of arms lift.

When handling the three-point hitch with the external control buttons the operator must stand out of reach of the connected implement to avoid being caught or injured by the implement.

HITCHES



P11NE451

REAR THREE-POINT HITCH

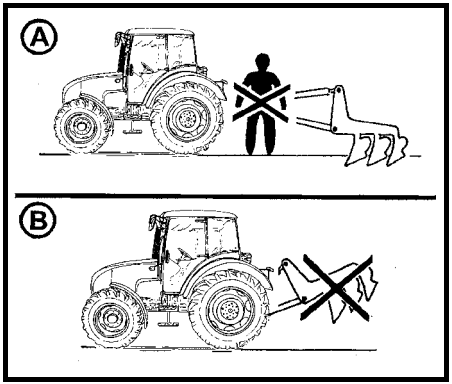
It is designed for coupling of carried or semi-carried farming mechanisms and implements with hitch points of category I or II according to ISO.

The categories differ in the length of the hitch axis, i.e. distance of centres of balls of lower hitch joints with attached implements.

Category I.	
Length of hitch axis	728mm
∅ of holes of coupling balls of lower pull rods acc. to ISO	28mm
∅ of the upper pull rod hole	25mm

Category II.	
Length of hitch axis	870mm
∅ of holes of coupling balls of lower pull rods acc. to ISO	28mm
∅ of the upper pull rod hole	25mm

1. Upper pull rod
2. Left lifting pull rod
3. Right lifting pull rod
4. Limiting pull rods
5. Lower pull rods



G452

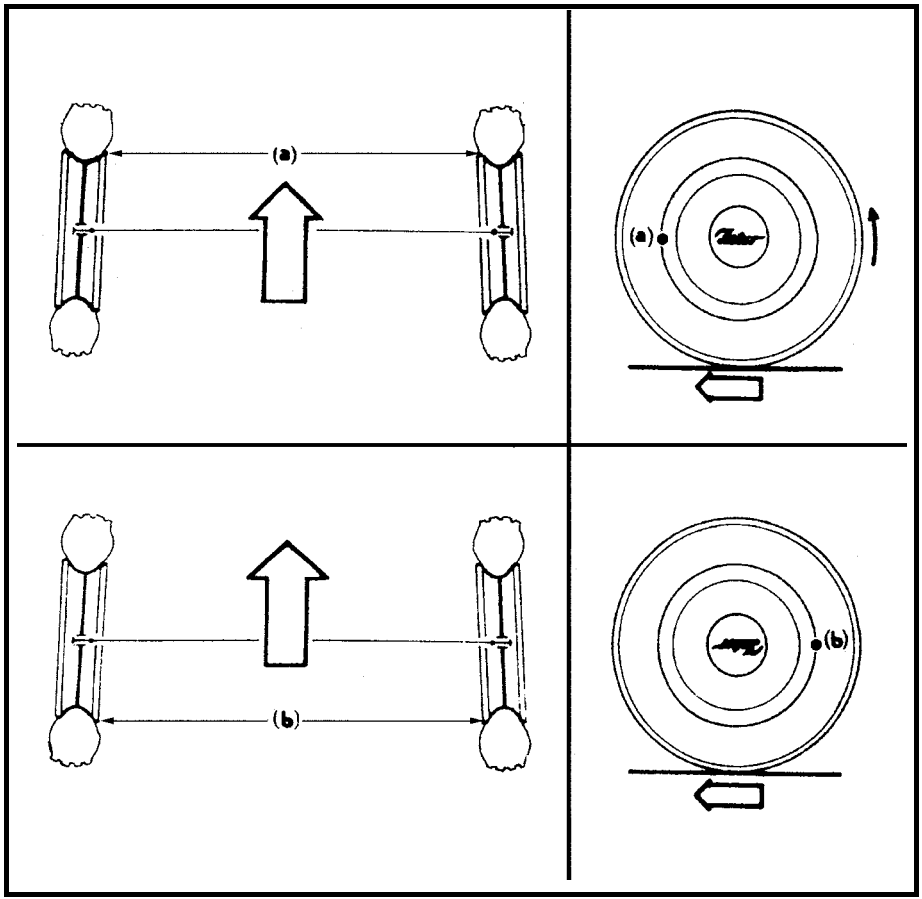
SAFETY PRINCIPLES WITH WORK WITH A THREE-POINT HITCH

The persons not charged with work with an implement to the tractor may not stay between the tractor and hitched mechanism (implement) - (A).

Do not park the tractor with hitched implement in lifted position (B).

When driving without any implement it is necessary to couple lower pull rods (5) using springs and set the upper pull rod (1) into the flexible hitch! For transport of an implement the limiting pull rods (4) shall be adjusted to prevent any undesired side movements of the implement!

CHANGE OF WHEELS TREAD



E503

FRONT WHEELS TOE-IN

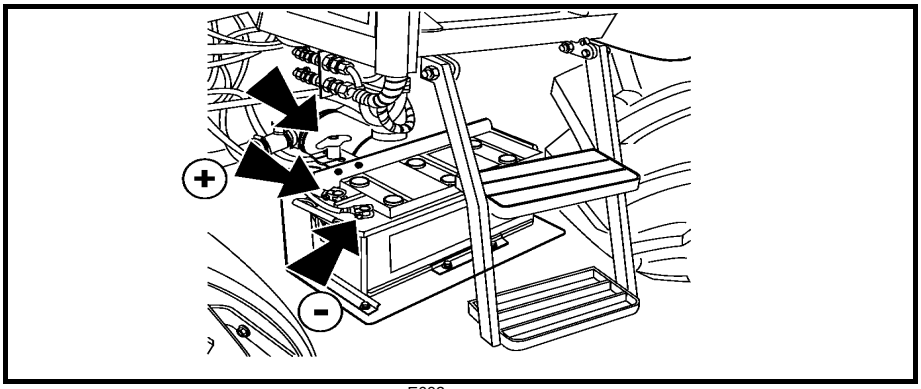
The value of front wheels toe-in was measured on the rim of the tractor:

– **With driving axle: 0 to 4mm**

The toe-in "**S**" is given by the difference of the measured values: **S = b - a**.

Before you check the toe-in, it is necessary to inflate the front tyres to the prescribed pressure. Measurement of toe-in is performed on rims of the wheels.

ELECTRIC INSTALLATION



E602

ESSENTIAL SERVICE INFORMATION

The battery shall always be connected with “minus” pole to the frame and “plus” pole to the alternator. Reverse connection of the battery destroys the semi-conducting equipment of the alternator. With use of an additional battery for starting of the tractor, do not forget connect the outlets "plus" to "plus" and "minus" to "minus". In case of a replacement of some part of the charging circuit, disconnect the battery using the disconnector from the frame of the tractor (“-“ pole). This prevents any accidental short-circuit on the terminals.

With any manipulation or repair of the starter it is necessary to disconnect minus pole of the battery and move all shifting levers including lever of engagement of the output shaft to neutral position (do not also forget if arrested switches of output shafts on the right column of the cabin are off to avoid spontaneous start and jeopardise life of the mechanic.

It is forbidden to start the tractor by short-circuiting the starter terminals. Start the tractor from the driver’s seat only.

TRACTOR MAINTENANCE

OPERATIONS CARRIED OUT DAILY BEFORE BEGINNING OF WORK

Before engine start

Check of amount of oil in engine
Check of amount of coolant and impermeability of joints of the cooling system
Check of amount of oil in steering hydrostatic circuit reservoir
Check of amount of brake fluid and impermeability of hydraulic brakes
Check of amount of oil in gearbox and axle drive
Check of indicator of air cleaner pollution
Check of air pressure in all of the tyres
Check of tightening of wheels
Check of towing jaws and connecting equipment

After engine start

Check of engine lubrication function (indicator lamp)
Check of charge function (indicator lamp)
Check of steering function (indicator lamp)
Check of steering circuit function and impermeability
Check of tractor brakes function and efficiency
Check of trailer or semi-trailer brakes function and efficiency

OPERATIONS CARRIED OUT AFTER EVERY 50 HOURS OF WORK

Tractor lubrication in accordance with lubrication chart

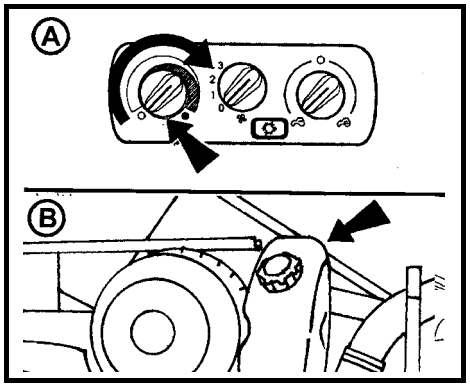
OPERATIONS CARRIED OUT AFTER EVERY 100 HOURS OF WORK

Cleaning of radiator elements with compressed air
Maintenance of dry air cleaner (depending on signal from the pollution indicator)
Check of amount of oil in gearbox and axle driving box
Check of amount of oil in rear axle portal
Check of amount of oil in front output shaft gearbox housing
Check of amount of oil in reducers and front driving axle housing
Discharge of condensate from air reservoir
Cleaning and application of a lubricating grease thin layer on accumulator battery terminals

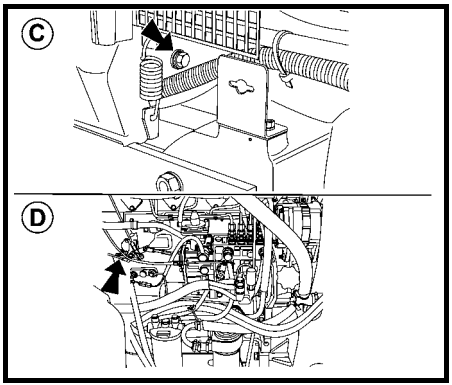
FLUID FOR TRACTOR COOLING SYSTEM
FRIDEX - STABIL, FRIDIOL 91 or FRICOFIN S and demineralised water in proportion 1:1.5 (refilling should be carried out in the above-mentioned proportion). Anti-freeze for refilling abroad should contain anti-corrosive additives protecting any materials (including rubber and head sealing) of the engine cooling system. ***NOTE!*** 1. *It is forbidden to charge the tractor cooling system with water without antifreeze!* 2. *The coolant should be changed after two years of operation. Fluids FRIDEX - STABIL and FRIDIOL 91 may be mixed.* 3. *Possibility to mix with fluids of other producers hasn't been tested!*

FUEL FOR ZETOR ENGINES WHICH ARE NOT EQUIPPED WTH DIESEL PARTICLE FILTER
Summer diesel for the period of April 1 to October 31. Winter diesel for the period of November 1 to March 31. ***Note:*** Similarly applicable types of fuel should be used abroad.
Mixed fuel Natural Diesel (bio diesel). ***Note:*** Tractor operated on bio fuel requires planting of fuel system by REP hoses. The use of bio fuel increases consumption, decreases the performance by approximately 5%, requires oil replacement in engine after 200 Mh. It is also manifested aggressively on polished parts.

MAINTENANCE INSTRUCTIONS



G725



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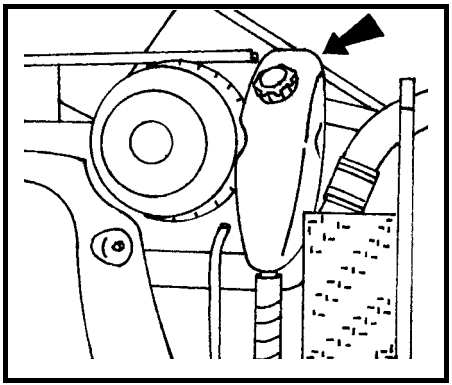
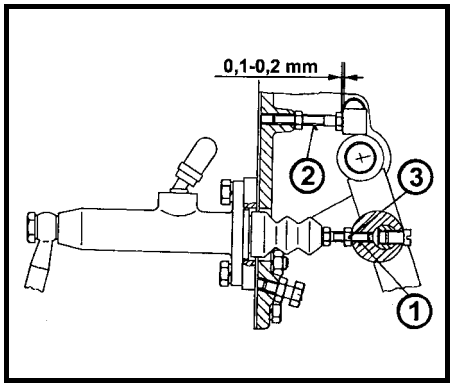

G716

REPLACEMENT OF COOLING FLUID

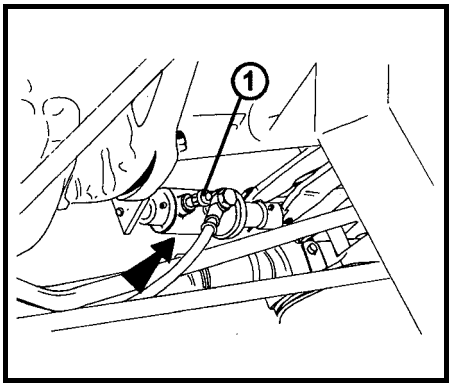
Follow this procedure:

1. Open the heating circuit cock (A) and release the overpressure lid on the expansion tank (B)
2. Drain cooling fluid from the tank (C). The drain screw is accessible after removal of the left part of the bonnet.
3. Drain cooling fluid from the block of the engine (D). The drain cock is accessible after removal of the right part of the bonnet.
4. After drainage of cooling fluid close the screw and cock (let the heating circuit cock open).
5. Fill the cooling system with an anti-freezing mixture.
6. Start the engine and let it running for approx. 1 minute.
7. Refill anti-freezing mixture in the expansion tank up to the upper gauge mark MAX.
8. Close the expansion tank by the overpressure lid.

Replace anti-freezing mixture after two years at the latest.



E764



E765

ADJUSTMENT OF CLUTCH PEDAL PLAY

Correct play between the piston rod of the pedal and piston of the main cylinder is not adjustable – it is adjusted by the manufacturer. Mutual positions of the piston rod and piston rod eye (1) so that when the piston rod is fully extended from the cylinder, the play between the pedal and upper stop screw (2) is 0.1-0.2mm. Then position of the piston rod should be secured against the eye using the nut (3). After adjustment check whether the dust cover of the cylinder is not deformed and reposition it if necessary.

BLEEDING OF CLUTCH HYDRAULIC CIRCUIT

Carry of bleeding using the same procedure as bleeding of the rear brake system. The bleeding screw of the hydraulic circuit for disengagement of the clutch is installed on the disengagement cylinder of the clutch (1).

⚠ *The expansion tank that is common for both the brake and clutch circuits shall be refilled with new fluid only.*

Brake fluid in the entire brake system including hydraulic circuit for disengagement of the clutch shall be replaced after two years of operation.

ENGINE TRAVEL CLUTCH ADJUSTMENT

The travel clutch is designed in such manner that no adjustment is required during the entire service life of clutch plate lining. Full wear of the plate becomes evident by clutch slipping.

ESSENTIAL TECHNICAL PARAMETERS

PERMITTED MAXIMUM WEIGHT OF VEHICLE SET ”TRACTOR + MECHANISM“ (KG)	
Travel speed ($km.h^{-1}$)	Maximum weight of the vehicle set
8	7,500
20	7,000
30	6,600
40	6,000

CONDITION OF STEERAGE	
Travel speed ($km.h^{-1}$)	Loading of the front axle of the tractor of total weight tractor + carried mechanism (%)
max. 40	min. 20
max. 20	min. 18 (set over 4.5t)
max. 20	min. 19 (set over 4.5t)

ESSENTIAL TECHNICAL PARAMETERS

OUTER CONTOUR AND TRACK WHEELING DIAMATER				
Wheel track	front	1,610mm	To the left (mm)	To the right (mm)
	rear	1,500mm		
Track diameter (mm)	Without engaged front driving axle (PHN)		11,850	11,380
	Without engaged front driving axle with partial braking of the inner rear wheel		9,880	9,650
	With engaged front driving axle		12,570	12,130
	With engaged front driving axle with partial braking of the inner rear wheel		8,750	8,580
Contour diameter (mm)	Without engaged front driving axle		12,160	11,720
	Without engaged front driving axle with partial braking of the inner rear wheel		10,190	9,990
	With engaged front driving axle		12,880	12,400
	With engaged front driving axle with partial braking of the inner rear wheel		9,060	8,920