ZETOR

86 41 Forterra turbo
96 41 Forterra turbo
106 41 Forterra turbo
114 41 Forterra turbo

1/2002

Operator's manual

33. In the tractors fitted with reversing system, shift the reversing lever to the forward-drive position.
34. When leaving the tractor while the engine is in operation, apply the parking brake..
35. For getting out of the tractor, make normally use of its L.. H. side. When doing it, be sure that no vehicle, which could menace your safety, approaches. Then open the door.
36. When getting out, make use of steps and handles. Pay special attention to the gearshift lever, the hand-operated fuel supply lever, and to the upper step.

OPERATIONS TO BE DONE WITH THE STOPPED ENGINE ONLY:

37. All the operations associated with the tractor or implement refueling, cleaning, lubrication / greasing, and setting – excepting the checks of brake, hydraulic, and electrical charging systems for proper conditions - shall be carried out with the engine and other moving parts stopped.
38. Before removing the bonnet side covers, stop the engine. Inside the closed buildings, the tractor motor may only be put into operation if sufficient ventilation is ensured. Remember that the exhaust gases are harmful.

PRINCIPLES OF FIRE PREVENTION

39. Refuel the tractor preferably after concluding the work and with the engine stopped..
40. In summer season, do not refuel up to the top. Wipe off the spilled fuel immediately.
41. Do not refuel close to naked flames and do not moke
42. When checking the storage battery electrolyte for proper level, do not smoke, nor use the naked flames.
43. In the environments of enhanced danger of fire (haylofts, straw heaps, and the like) be consequent in attaining to the fire fighting safety instructions..
44. The manufacturer does not furnish tractors with fire extinguishers.

HEALTH AND LIVING ENVIRONMENT PROTECTION

45. Tractors are not furnished with special filters for cleaning the air sucked to the tractor cab. Therefore they are not designed for working with aerosols and other harmful substances.

46. Kerosene, gas oils, mineral oils and other crude oil products, which are used for tractor operation and servicing, can cause different skin diseases in the case of direct contact, they have irritating effects on the mucous membrane, eyes, digestive apparatus, and upper respiratory ways. Some of them – when swallowed – can cause even general intoxication.
47. The operators who enter in contact with oil products are obliged to attain to safety and hygienic instructions consequently, make use of appropriate protecting means, and work in well-ventilated rooms.

MANIPULATION OF CRUDE-OIL PRODUCTS

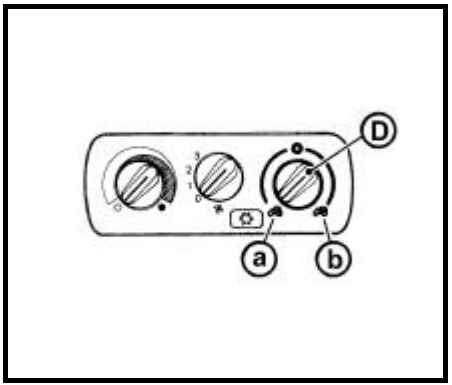
48. After concluding the work, wash yourself with a non-irritant agent and treat your hands with a suitable skin ointment or cream.
49. When connecting and disconnecting the hydraulic circuit quick couplers, remove – with a piece of any cloth – the residual oil, which remains in the coupler socket or plug.

WASTE DISPOSAL

5O. When disposing the tractor or some of its parts (including the service liquids), as soon as their service life is over, every body is obliged to proceed in accordance with the provisions of the

TRACTOR SURVEY

The tractor user has to acquaint with the recommended procedures and hints for the tractor safety operation in advance. It would be too late to do it in the course of tractor operation!



F_02_17b

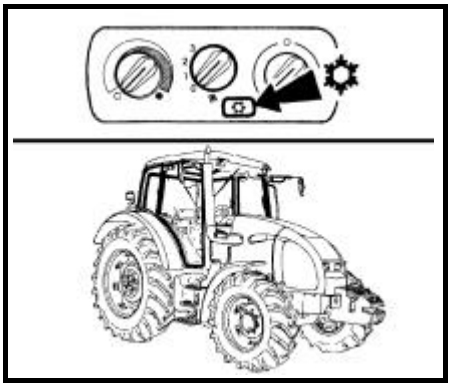
CAB AIR CIRCULATION CONTROLLER (D)

a - The surrounding (outdoor) air is sucked into the cab through the filter – suction of air from the cab is closed

b - The air is sucked from the cab interior and expelled back to the cab (inner re-circulation of air for the cab air fast conditioning.

In this position the intake of air from outside the cab is completely closed and no overpressure is generated in the cab for preventing the non-filtered air from entering the cab!

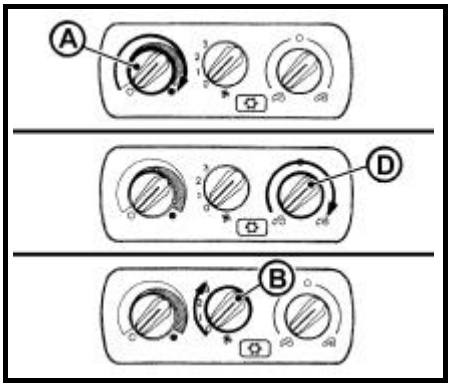
Keep the controller in this position for the indispensable period of time only!



F_02_52

HEATING AND AIR CONDITIONING SYSTEM PROPER OPERATION

For the heating of air conditioning proper operation certain overpressure has to be generated inside the cab. Therefore the closing of all the windows, door, and the cab roof cover is recommended.



F_02_18a

CAB INTERIOR FAST HEATING

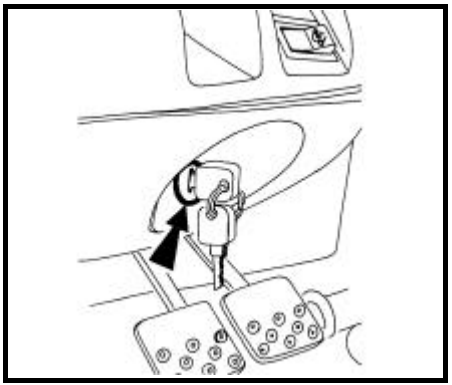
Proceed as follows:

1 - Turn the heating valve controller (A) to the right (heating valve completely open).

2 - Set the air circulation in the cab (D) to the position of internal re-circulation.

3 - Select the appropriate fan speed with the fan controller (B) (positions 1, 2, 3).

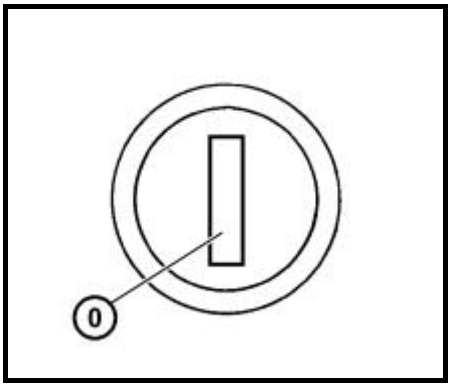
4 - Set the breathers in the cab to such an angel that the individuals in the cab are not blown over directly.



F62

SWITCH BOX

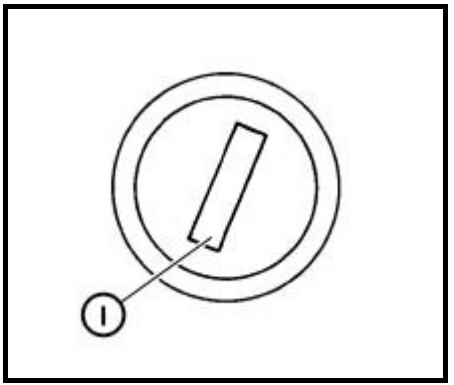
The switch box is installed at the front side of the steering console panel beneath the instrument dashboard.



S43

KEY IN THE ”0” POSITION

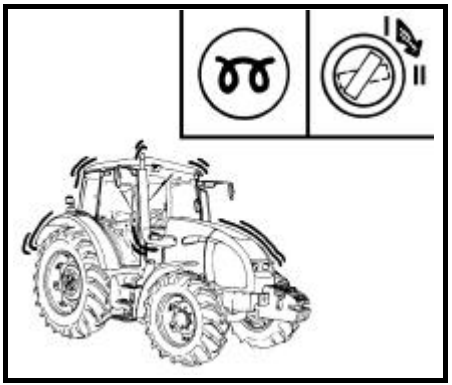
Voltage to all the appliances controlled with the key is disconnected. The key can be removed.



S44

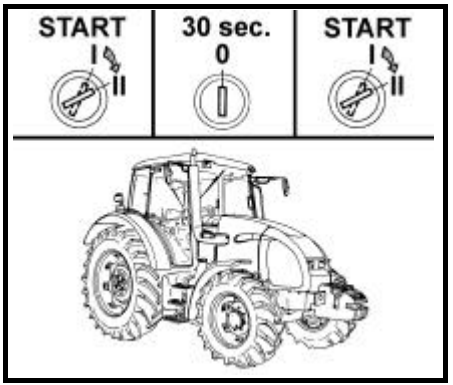
KEY IN THE ”I” POSITION

Voltage to all the appliances is connected excepting the starter. The key is kept in this position during the engine operation.



F_02_66

Note: As the driver's personal experience indicates, to start the engine at higher environmental temperature is also possible before the glowing signal light switches off. Analogously it is possible to proceed when starting a warm engine.

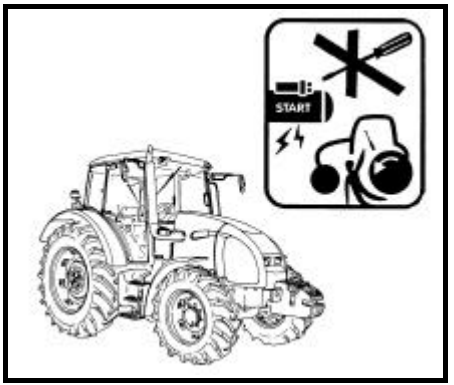


F_02_31

IN CASE THE ENGINE FAILS TO START

Wait 30 seconds. Return the key to the "0" position and repeat the start.

**In case the-tends to stop do not help it with the starter. You would expose the starter to the risk of being damaged.*

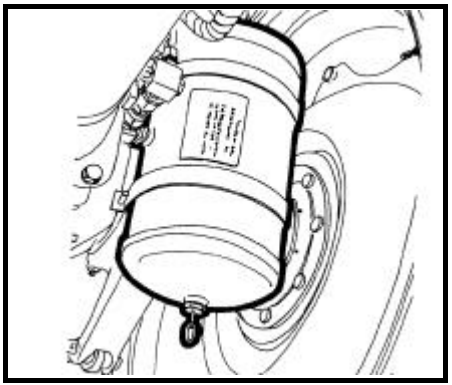


F_02_32

STARTING FORBIDDEN

It is strictly forbidden to start the tract by short circuiting the starter terminals. Start from the driver's seat only.

For any starter handling or repair the negative pole of the battery shall be disconnected and all the shift levers – including the P.T.O. shaft engagement shall be put to neutral positions. The starter terminals are protected with caps.

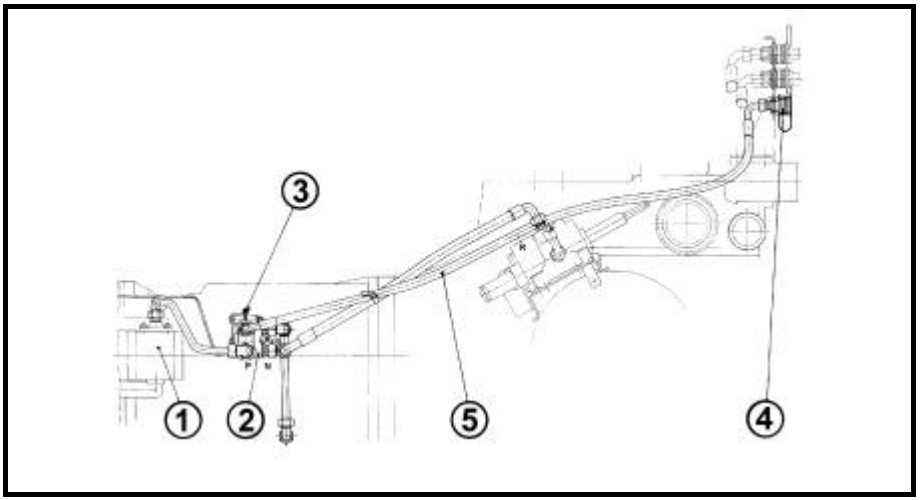


F111a

AIR STORAGE TANKS

The tractors are normally fitted with one air tank of 12-l capacity. The air tank is mounted at the right-hand side before the rear semi-axle.

In case the tractor is furnished with the trailer pneumatic brakes, another air tank of 12-l capacity is attached to the tractor left-hand side, before the rear half-axle.



F114

TRAILER HYDRAULIC BRAKES

Control of the trailer hydraulic brakes is synchronized with that of the tractor brakes including their braking effects. The operating pressure is generated with the oil supplied with a hydraulic system gear pump (1) operating continuously. Behind the pump, still before the additional hydraulic distributor, there is a brake valve (2) installed in the circuit.

The trailer brake valve is controlled with the pressure of the brake oil from the main brake cylinder depending on the pressure applied to the brake pedal. When the brake pedal is depressed at maximum, the pressure on the coupling head (4) has to be between 12 and 15 MPa. The trailer brake valve prioritizes the brake operation to the hydraulic control. When deaerating the brakes, do not forget to bleed the brake valve (2), too with the deaerating screw (3). In case impulses appear in the hydraulic circuit piping when depressing the brake pedals, the hydraulic hose (5) from the brake cylinder (2) to the quick coupler (4) has to be deaerated.

TRANSPORT APPLICATION

Still before starting the drive make sure that the technical conditions of your tractor meets the requirements of safety operation. If a trailer or any implements are attached, revise their connection and proper stowing of the load. Never leave the tractor while in move for suspending the trailer. Be also aware of the safety of your assistant.

DRIVE OF AGRICULTURAL MACHINES

Before coupling the machine driven with the P.T.O. shaft, make sure that the tractor and the attached machine P.T.O shaft speeds are compatible (540 or 1000), because different speeds may result in serious damage and accidents.

CONNECTING THE MACHINES AND IMPLEMENTS TO THE OUTER HYDRAULIC CIRCUIT

Connecting the machines and implements assembled of more components:

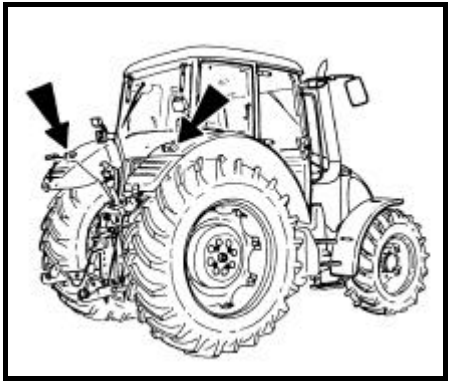
When operating the agricultural machines assembled of more components (cultivators, clod crushers, harrows, and the like), in which outer frames are hinged at the inner frame, and should be raised – during the transportation - to the vertical position by the action of separate hydraulic cylinders controlled by the tractor outer hydraulic circuit, the tilting of outer frames has to be controlled with moving the additional distributor lever upwards (rearwards). The ”lifting” branches of cylinders have to be connected to th quick couplers “2”, “4” or “6”. For the next hints see the text on the page 93.

Connecting the rotary hydro-motor

In case a rotary hydro-motor is connected to the outer hydraulic circuit, its return branch has to be connected to the quick coupler "0".

Connecting the reversing hydro-motor

The reversing rotary hydro-motor has to be connected – because of its function – to the quick couplers "1" and "2", or to the quick couplers of one section. In this case, nevertheless, both branches have to be fitted with relief valves, which would be able to restrict pressure peaks unfailingly during the machine final run. Discharge of these valves should be connected to the quick couplers "0".



F_02_98

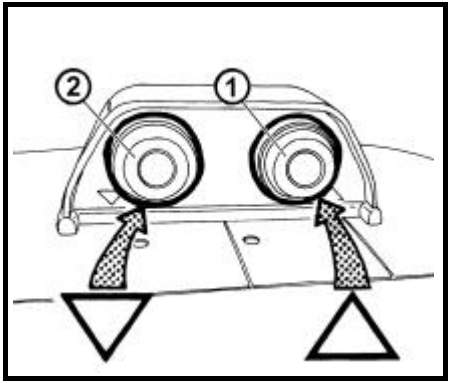
USE OF THE REAR CONTROL

The rear control is only used for coupling and uncoupling the agricultural implements. The pushbutton symbols shown on both tractor mudguards correspond to the sense of move of the three-point hitch. The move is only operative while the pushbuttons are depressed.

The rear control is not fitted with the limitation of the upper position with the regulating system, but with a mechanical stop of the cylinder.

The rear control may not be used in the upper portion of the three-point hitch move.

Every use of the rear control makes the regulating system block again, so that the whole procedure of Blocking cancellation has to be repeated – see page 98.

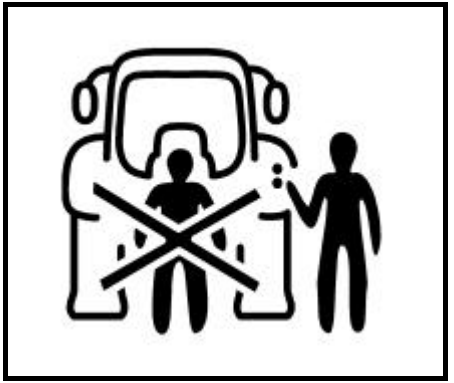


F_02_78

ELECTRO-HYDRAULIC SYSTEM EXTERNAL CONTROL PUSHBUTTONS

1. Lifting
2. Lowering

The motion is only operative while the pushbuttons are depressed.



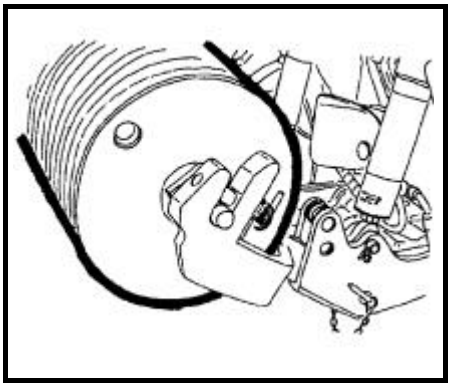
F_02_65

USE OF PUSHBUTTONS

When manipulating the three-point hitch by means of electrical buttons, the operator must keep off the area of implement connection for avoiding his catching and injury with the implement being manipulated.

CHANGING THE WHEEL TRACK

BALLAST WEIGHTS

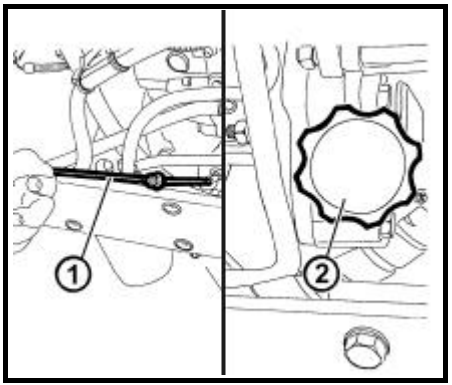


F_02_82

FRONT THREE-POINT HITCH BALLAST WEIGHTS

Circular weights		
Weight combination (units)	Ballast weight mass (kg)	
Girder+16	**Girder** 8+**16**x28	**456**

The weights with the girder shall be suspended at the lower tie rods of the front three-point hitch. The task of those weights consists in ensuring the tractor longitudinal stability in case heavier attached implements are suspended at the rear three-point hitch.

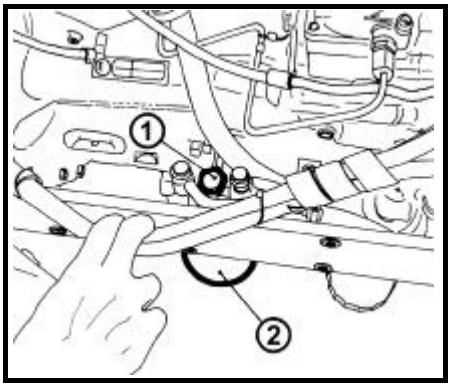


F_02_103

FILLING OIL INTO THE ENGINE

Through the filling hole (1) pour the prescribed amount of engine oil, start the engine and keep it running for 2 - 3 minutes at 750 - 800 rpm.

After stopping the engine and settlement of the oil level, check the oil for proper level with the dipstick (2) and the filter, drain plug and other joint for tightness.

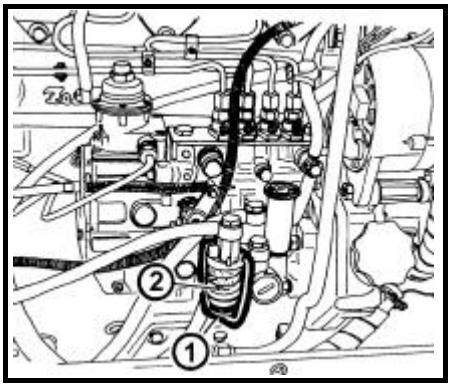


F238

REPLACING THE FUEL FILTERING CARTRIDGE

For replacing the filtering cartridge, loosen the nut (1) and unscrew the bowl (2). When replacing the clean bowl with the new filtering cartridge, ensure the proper seating of the bowl sealing. Bleed the fuel system.

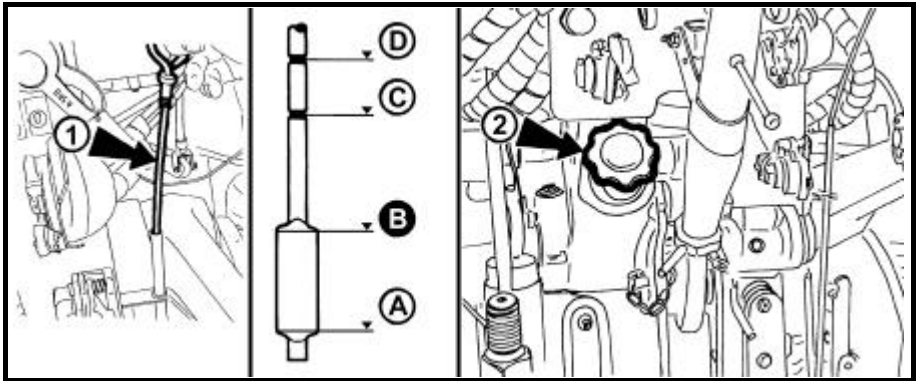
For cleaning and replacing the filtering cartridges, place a suitable vessel beneath the engine for collecting the dripping fuel.



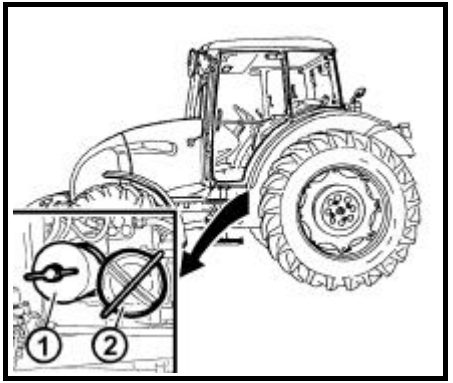
F239

REPLACING THE ROUGH FUEL FILTER

Unscrew the nut (1) and remove the filter bowl (2) with its sealing and strainer. Clean the bowl and strainer with Diesel oil. When putting back the filter bowl make sure - before tightening the nut - the sealing is in correct position. Bleed the fuel system.



F_02_136



F_02_111

CHECKING AND EXCHANGING OIL IN THE GEARBOX

If necessary, replenish the oil up to the upper border of the dipstick flat (1), or to some of the marks depending on the class of job the tractor is employed. For measuring the oil level in the gearbox, stop the engine and insert the plug dipstick fully into the tube mouth.

	Level in the gearbox	Tractor employment
A	minimum	Standard operation
B	**normal**	Standard operation
C	+7 l (increased)	Operation in a slope
D	+15 l - maximum	Aggregation of machines with high oil takeoff

The filling hole for the transmission oil (2) is placed in the hydraulic system cover.. Accessible from the tractor rear side.

AFTER DRAINING THE OIL OFF

1 - Clean the magnet (being a component of the cover) and the strainer element of the sucking filter (1)
2 - Replace the fine filter glass fiber cloth (2). Substitution with paper cartridge is inadmissible. Tighten the filter bawl screw by hand – do not use any tool.
3 - After the cleaning, screw back all the drain plugs and screws.
4 - Fill the system with oil (approx. 40 liters), start the engine and keep it running for approx. 2 minutes.
5 - After stopping the engine and settlement of oil level in the gearbox, check the oil for level and replenish it up to the upper border of the dipstick flat. If higher amount of oil is required, replenish the oil up to the dipstick lower or upper mark.

SETTING-UP OPERATIONS

Since most of the following operations require some experience and more demanding service and diagnostic equipment, it is recommended to entrust them to the professional or authorized workshops.

ELECTRICAL SYSTEM

No additional interventions into the electrical system are allowed (connection of other electrrical appliances) for the reason of its possible overloading!

SCHEDULED TECHNICAL MAINTENANCE

SCHEDULED TECHNICAL MAINTENANCE

Oils for transmission mechanism - Z 8641 - Z 114 41			TAB. 2
Viscosity class SAE J 306 MAR 85	**Output class API** SAE J 308 NOV 82	**Use suitability**	**Specifications**
80 W	GL-4	all-over the year	MIL-L-2105

Oils for transmission mechanisms - Z 8641 - Z 114 41			TAB. 2
Manufacturer	**Oil specification**	**Viscosity class SAE**	**Voutput class API**
Paramo Pardubice	Gyrol – UTTO	80W	GL-4
	Gyrol - PP80	80W	GL-4
Esso	Torque Fluid 62	80W	GL-4 •
Koramo Kolín	Mogul Trans 80	80W	GL-4
	Mogul Traktol UTTO/EKO	80W	GL-4 ••
Aral	EP 80	80W	GL-4
	Fluid HGS	80W	GL-4 •
	Super Traktoral	10W/30	GL-4 ••
ÖMV	Austromatic HGN	80W	GL-4
	Getriebeol MP	80W - 85W	GL-4
Shell	Donax TT	80W	
Fuchs	Titan Hydramot 1030MC	10W/30	GL-4 ••

• - Additive-type oil with an ingredient for differential with a limited slip, and for wet brakes

•• - Universal oil

MAIN TECHNICAL PARAMETERS

LOADING CAPACITY – REAR TIRES												
Tire size	Travel speed											
	40 km/h			30 km/h			20 km/h			8 km/h		
	Tire load. capacity (kg)			Tire load. capacity (kg)			Tire load. capacity (kg)			Tire load. capacity (kg)		
	Tire 1 unit	Axle	Inflation (kPa)	Tire 1 unit	Axle	Inflation (kPa)	Tire 1 unit	Axle	Inflation (kPa)	Tire 1 unit	Axle	Inflation (kPa)
16,9-34	1900	3800	170	2380	4760	170	2750	5500	170	3330	6660	170
16,9R34	2430	4860	160	2600	5200	160	2750	5500	150	3400	6800	150
18,4-34 8 PR	1965	3930	130	2460	4920	130	2750	5500	120	3400	6800	130
18,4R34	2750	5500	160	2750	5500	160	2750	5500	120	3400	6800	120
16,9-38	1900	3800	150	2375	4750	150	2750	5500	150	3325	6650	150
16,9R38	2575	5150	160	2750	5500	160	2750	5500	130	3400	6800	130
18,4-38	1890	3780	110	2365	4730	110	2750	5500	110	3310	6620	110
18,4R38	2750	5500	140	2750	5500	140	2750	5500	110	3400	6800	120
480/70R38	2750	5500	150	2750	5500	150	2750	5500	110	3400	6800	110
520/70R38	2750	5500	120	2750	5500	120	2750	5500	90	3400	6800	90

(Loading capacities hold for the 1725-mm rear wheel track)

ALTERATION OF THE TIRE LOADING CAPACITY %		
Travel speed (km/h)	**Diagonal**	**Radial**
8	+ 40	+ 50
20	+ 20	+ 23
30	0	+ 7
40	- 20	0

MAIN TECHNICAL PARAMETERS

MAIN DIMENSIONS (mm) WEIGHT (kg)	Tractor type	Z 8641, Z 9641					
	Front tires	**14,9 – 24**					
	Rear tires	16,9R38	18,4R38	480/70R38	520/70R38	16,9-38	18,4-38
Weight (kg) (tolerance ± 2%)							
Tractor + cab operating weight		4485	4617	4515	4550	4485	4617
- front axle		2053	2053	2053	2053	2053	2053
- rear axle		2432	2564	2462	2497	2432	2564
Weight of the front ballast weights							
Front lower weights 1+1		68 (**2**x34)					
Front weights 2+2		200 (**2**x50 + **2**x50)					
3+3		300 (**3**x50 + **3**x50)					
5+5		500 (**5**x50 + **5**x50)					
Weights of the rear ballast weights 2+4		170 (**2**x25 + **4**x30)					
2+6		230 (**2**x25 + **6**x30)					
2+10		350 (**2**x25 + **10**x30)					
Weights of the front three-point hitch 16 units (round ones)		456 (**beam** 8 + **16**x28)					
Weight of water in the rear tires		2x260	2x385	2x335	2x390	2x260	2x385

Operating weight = weight completely equipped tractor without ballast weight, without driver and with full stock of service liquids

MAIN TECHNOLOGICAL PARAMETERS

MAIN DIMENSIONS (mm) WEIGHT (kg)	Tractor type	Z 106 41, Z 114 41				
	Front tires	**13,6R24**				
	Rear tires	16,9R38	18,4R34	18,4R38	480/70R38	520/70R38
Weight (kg) (tolerance ± 2%)						
Tractor + cab operating weight		4450	4564	4582	4480	4515
- front axle		2018	2018	2018	2018	2018
- rear axle		2432	2546	2564	2462	2497
Weight of the front ballast weights						
Front lower weights 1+1		68 (**2**x34)				
Front weights 2+2		200 (**2**x50 + **2**x50)				
3+3		300 (**3**x50 + **3**x50)				
5+5		500 (**5**x50 + **5**x50)				
Weights of the rear ballast weights 2+6		230 (**2**x25 + **6**x30)				
2+10		350 (**2**x25 + **10**x30)				
Weights of the front three-point hitch 16 units (round ones)		456 (**beam** 8 + **16**x28)				
Weight of water in the rear tires		2x260	2x340	2x385	2x335	2x390

Operating weight = weight completely equipped tractor without ballast weight, without driver and with full stock of service liquids

MAIN TECHNICAL PARAMETERS

FORCES (kN)	Tractor type			
	Z8641	Z 9641	Z 10641	Z 114 41
Maximum towing force in the swing tie rod (kN) - On the concrete, tractor in operating conditions, standard version with the maximum ballast weights and 15% slip, with the driver in the cab.	31,96	34,30	37,26	38,90
Maximum towing force in the multi-stage hitch for trailer (kN) - In the middle position of the hitch, on the concrete, tractor in operating conditions, standard version with the maximum ballast weight, water in tires, and driver in the cab	35,64	37,85	42,31	44,20
Lifting force at the ends of the lower tie rods of the rear three-point hitch within the whole stroke range with the maximum utilizable pressure and auxiliary cylinder.	48,4			
Lifting force at the ends of the lower tie rods of the front three-point hitch within the whole stroke range with the maximum utilizable pressure	24			

OUTPUT AND CONSUMPTION	Tractor type			
	Z 8641	Z 9641	Z 10641	Z 114 41
Output on the P.T.O shaft (kW±2%) - At the rated engine speed and engaged 1000 rpm of the P.T.O. shaft	55,4	60,7	64,4	69,4
Maximum output on the P.T.O. shaft	57,4	62,6	68,1	73,9
Specific fuel consumption ($g.kW^{-1}.h^{-1}$±2%) - corresponding to the above mentioned output.	247	245	237	242