This Operator’s Manual for the Zetor tractors, which we are presenting to you will help you to become familiar with the operation and maintenance of your new tractor. Although many of you have rich experience with the operation of other tractors, please, read the information contained in this Operator’s Manual very carefully. In the Manual you will find a lot of new information and get a perfect overview of how to use the tractor with maximum efficiency during various kinds of work. If you observe the rules of tractor operation and maintenance and driving safety, your new tractor will become your reliable and long-term friend. The manufacturer of the tractor wishes you thousands of hours of satisfactory work.
Pedals ....................................................................................................................................................... 34
Road and reduced speeds shifting lever ........................................................................................................ 34
PTO revolutions preselection lever ................................................................................................................ 35
Manual brake lever and coupling for semi-trailer control lever .................................................................... 35
Battery disconnector ........................................................................................................................................ 36
Heating control panel, * air-condition .............................................................................................................. 36
Heating valve control (A) .................................................................................................................................. 36
Switch air-condition (C) ...................................................................................................................................... 37
Air circulation in cabin control (D) .................................................................................................................... 37
Proper function of the heating and air-condition system .................................................................................. 37
Fast heating of the cabin area ............................................................................................................................ 38
Fast cooling of the space of the cabin .................................................................................................................. 38
Operation of heating or air-condition with tractor’s work .............................................................................. 38
Immediately after cooling the cabin .................................................................................................................. 38
Air-condition and heating registers (A) .............................................................................................................. 39
Front windshield (B) defrosting ....................................................................................................................... 39
*Air filter with active carbon .............................................................................................................................. 40
Wiper and washer of the front window ............................................................................................................. 40
Front wiper speed switch .................................................................................................................................. 40
Rear window wiper ......................................................................................................................................... 41
Windshield washer tank .................................................................................................................................... 41
Washer nozzle ................................................................................................................................................... 41
Fuel tank ............................................................................................................................................................ 42
Fuel tank drain plug ............................................................................................................................................ 42
Urea tank ............................................................................................................................................................. 42
Dashboard ....................................................................................................................................................... 43
Instrument panel - signal lamps .......................................................................................................................... 43
Instrument panel - instruments ........................................................................................................................... 44
Instrument panel - buttons .................................................................................................................................. 44
Display description ............................................................................................................................................. 45
Change of the look of display ............................................................................................................................. 45
Display - change of display .............................................................................................................................. 45
Display - resetting data ..................................................................................................................................... 49
Display - manual brake ...................................................................................................................................... 50
Display - indicator of service inspection intervals .......................................................................................... 50
Exceeding the service interval .......................................................................................................................... 50
Zeroing (reset) of the indicator of service inspection intervals ........................................................................ 51
Error signalling .................................................................................................................................................. 51
Display - error messages ................................................................................................................................... 52
Description of the display of error messages ...................................................................................................... 52
Symbols of tractor nodes .................................................................................................................................... 53
Display - service menu ....................................................................................................................................... 53
Service menu ...................................................................................................................................................... 53
Display - history of defects ............................................................................................................................... 54
Display - setting language mutation ................................................................................................................ 54
Display - machined area .................................................................................................................................... 55
Machined area menu ......................................................................................................................................... 55
Machined area width .......................................................................................................................................... 55
Setting of the user-defined width of aggregation ............................................................................................ 56
Machined area record ....................................................................................................................................... 56
Display - setting and calibration ....................................................................................................................... 57
Travel speed calibration ...................................................................................................................................... 58
Setting of steering sensors of the front axle ....................................................................................................... 59
Setting of time .................................................................................................................................................. 60
Instrument panel - warning ............................................................................................................................... 60
Replenish fuel .................................................................................................................................................... 60
Add urea ............................................................................................................................................................. 60
High temperature of the cooling liquid ........................................................................................................... 61
Low level of the cooling liquid ........................................................................................................................ 61
High temperature of the engine oil ................................................................................................................ 62
High air temperature in the engine air intake system ..................................................................................... 62
Water in the coarse filter of fuel ....................................................................................................................... 63
High oil temperature in the gearbox .............................................................................................................. 63
CONTENTS

Full pushing filter of the gearbox distributor ................................................................. 64
Full pushing filter of the hydraulics ............................................................................. 64
System of additional treatment of exhaust gases ......................................................... 65
  System of additional treatment of exhaust gases (SCR) .......................................... 65
  Conditions for system SCR operation ................................................................. 65
  Urea (Aqueous Urea Solution AUS 32) ................................................................. 65
  Principles for safe handling of urea ..................................................................... 65
  Limitation of the engine power and engine revolutions ..................................... 66
  Indication of amount of urea in the tank ............................................................ 66
  Long-term shutdown of tractor ........................................................................ 66
  Repairs and maintenance of the system of additional treatment of exhaust gases 66

Driving operation ..................................................................................................... 57
  Before you start .................................................................................................. 67
  If you do not succeed in starting the engine ......................................................... 67
  Non-permitted starting ....................................................................................... 67
  Starting the engine of the tractor ................................................................. 68
  Blocking of the start ......................................................................................... 68
  Immediately after start ..................................................................................... 68
  Engine heating .................................................................................................. 69
  Error signalling ................................................................................................. 69
  Indication of the limitation of the engine power and engine revolutions .......... 69
  Signalling errors in the system of additional treatment of exhaust gases ......... 70
  Gear shifting ..................................................................................................... 70
  Reversing lever ................................................................................................. 70
  Reversing lever position signalization .............................................................. 71
  Shifting road and reduced speeds ..................................................................... 71
  Road and reducing speeds lever position signalization ..................................... 71
  Driver’s seat - safety switch ............................................................................ 71
  The principles of appropriate use of tractors ...................................................... 72
  The description of the system of travel clutches .................................................. 72
  The way of controlling the travel clutch by ....................................................... 72
  The differences in ways of controlling the travel clutch by ......................... 72
  Interrupted sound signal .................................................................................. 73
  Dead start of the tractor ................................................................................... 73
  Dead start of tractor in regular operation - automatic dead start function ....... 73
  Dead start by means of automatic dead start function ....................................... 73
  Dead start of tractor in regular operation - clutch pedal ................................... 73
  Dead start - using the clutch pedal .................................................................... 74
  Change the direction of drive ............................................................................ 74
  Change the direction of drive by means of reversing lever ......................... 74
  Change the direction of drive - using the clutch pedal ........................................ 75
  Gear shifting ...................................................................................................... 75
  Gear shifting - Using the clutch pedal ............................................................... 75
  Gear shifting - using the clutch control button on the head of gear shifting lever 75
  Blocking the automatic dead start function ...................................................... 75
  Three-gear torque multiplier ............................................................................ 75
  Signalization of multiplier function ................................................................... 75
  Increasing, decreasing the travel speed by two gears ....................................... 76
  Multiplier preselection switch ........................................................................... 76
  Multiplier pre-selection signalization ............................................................... 76
  Automatic multiplier shifting ............................................................................ 77
  Front drive axle control .................................................................................... 77
  Driving with engaged front axle drive ............................................................. 78
  Manual Front drive axle control ...................................................................... 78
  Automatic front drive axle control ................................................................... 79
  Axle lock control of rear and front axle ............................................................ 79
  Automatic axle lock control of rear and front axle ....................................... 80
  Suspension front drive axle ............................................................................. 80
  Front drive axle suspension mode setting ....................................................... 81
  Height adjustment of the front part of the tractor .......................................... 81
  Manual brake - signalization .......................................................................... 82
  Driving down the slope .................................................................................... 82
  Foot brakes ....................................................................................................... 83
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning signalization of air pressured drop</td>
<td>83</td>
</tr>
<tr>
<td>One-hose and two-hose brakes</td>
<td>83</td>
</tr>
<tr>
<td>One-hose brakes</td>
<td>83</td>
</tr>
<tr>
<td>Two-hose brakes</td>
<td>84</td>
</tr>
<tr>
<td>Hydraulic brakes of trailers</td>
<td>84</td>
</tr>
<tr>
<td>Connecting and disconnecting quick couplings of trailer hydraulic brakes</td>
<td>84</td>
</tr>
<tr>
<td>Stopping the tractor - manual brake</td>
<td>85</td>
</tr>
<tr>
<td>Stopping the engine</td>
<td>85</td>
</tr>
<tr>
<td>Leaving the tractor</td>
<td>85</td>
</tr>
<tr>
<td>Warning signalization of hydrostatic steering failure</td>
<td>85</td>
</tr>
<tr>
<td>Limiting travel speed</td>
<td>85</td>
</tr>
<tr>
<td><strong>Running in the tractor</strong></td>
<td>87</td>
</tr>
<tr>
<td>General principles of new tractor run-in in first 100 hours of operation</td>
<td>87</td>
</tr>
<tr>
<td>In first 10 hours of operation</td>
<td>87</td>
</tr>
<tr>
<td>From 100 hours of operation</td>
<td>87</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td>89</td>
</tr>
<tr>
<td>CBM stage quick-adjusting hitch</td>
<td>89</td>
</tr>
<tr>
<td>Height adjustment and disassembly of the CBM stage hitch</td>
<td>89</td>
</tr>
<tr>
<td>Automatic mouth of the CBM stage hitch</td>
<td>89</td>
</tr>
<tr>
<td>Modular system of hitches for trailers and semi-trailers</td>
<td>90</td>
</tr>
<tr>
<td>Swinging draw-bar console module</td>
<td>90</td>
</tr>
<tr>
<td>Swinging draw-bar console with a fixed pin module</td>
<td>90</td>
</tr>
<tr>
<td>Console with a ø 80 ball module</td>
<td>91</td>
</tr>
<tr>
<td>Hitch for a single-axle CBM semi-trailer</td>
<td>91</td>
</tr>
<tr>
<td><strong>Drive of agricultural machinery</strong></td>
<td>95</td>
</tr>
<tr>
<td>Work with PTO shaft</td>
<td>95</td>
</tr>
<tr>
<td>Controlling the front and rear PTO shaft</td>
<td>95</td>
</tr>
<tr>
<td>Rear PTO shaft revolutions preselection lever</td>
<td>95</td>
</tr>
<tr>
<td>Standard and economical independent revolutions of rear PTO shaft</td>
<td>96</td>
</tr>
<tr>
<td>Dependent and independent rear PTO shaft revolutions</td>
<td>96</td>
</tr>
<tr>
<td>Facilitating connection of joint shaft of an aggregated machine to the tractor</td>
<td>97</td>
</tr>
<tr>
<td>Selection switch of rear PTO clutch revolutions (P.T.O.)</td>
<td>97</td>
</tr>
<tr>
<td>Replaceable end points of rear PTO shaft</td>
<td>98</td>
</tr>
<tr>
<td>Rear PTO switch</td>
<td>98</td>
</tr>
<tr>
<td>Engaging rear PTO shaft - Independent revolutions</td>
<td>99</td>
</tr>
<tr>
<td>Engagement of rear PTO shaft - dependent revolutions</td>
<td>99</td>
</tr>
<tr>
<td>Automatic disengagement of PTO clutch</td>
<td>100</td>
</tr>
<tr>
<td>Setting automatic disengagement of PTO shaft clutch - display description</td>
<td>100</td>
</tr>
<tr>
<td>Automatic disengagement of PTO shaft clutch - return to basic setting</td>
<td>100</td>
</tr>
<tr>
<td>Setting automatic disengagement of PTO shaft clutch</td>
<td>101</td>
</tr>
<tr>
<td>Work with automatic disengagement of PTO shaft clutch</td>
<td>102</td>
</tr>
<tr>
<td>Front PTO shaft</td>
<td>102</td>
</tr>
<tr>
<td>Front PTO shaft control</td>
<td>103</td>
</tr>
<tr>
<td>Maximum transferred output</td>
<td>103</td>
</tr>
<tr>
<td>Drive of machines with greater inertia masses</td>
<td>104</td>
</tr>
<tr>
<td><strong>Hydraulic system</strong></td>
<td>105</td>
</tr>
<tr>
<td>Hydraulic system</td>
<td>105</td>
</tr>
<tr>
<td>Hydraulic pump</td>
<td>105</td>
</tr>
<tr>
<td>Control elements placement</td>
<td>105</td>
</tr>
<tr>
<td>Outer hydraulic circuit</td>
<td>105</td>
</tr>
<tr>
<td>Connecting and disconnecting quick-couplers</td>
<td>106</td>
</tr>
<tr>
<td>Quick-couplings with drip collection</td>
<td>106</td>
</tr>
<tr>
<td>Hydraulic distributor of the outer hydraulic circuit</td>
<td>106</td>
</tr>
<tr>
<td>Description of the functions of individual positions of control levers of the hydraulic distributor</td>
<td>107</td>
</tr>
<tr>
<td>Rear outlets of the outer hydraulic circuit</td>
<td>107</td>
</tr>
<tr>
<td>Front outlets of the outer hydraulic circuit</td>
<td>108</td>
</tr>
<tr>
<td>Connecting machines and implements to the outer hydraulic circuit</td>
<td>108</td>
</tr>
<tr>
<td><strong>Electro-hydraulic system</strong></td>
<td>109</td>
</tr>
<tr>
<td>Control element functions</td>
<td>109</td>
</tr>
<tr>
<td>Equipment 'OFF'</td>
<td>109</td>
</tr>
<tr>
<td>Blocking cancellation</td>
<td>110</td>
</tr>
<tr>
<td>Quick sinking</td>
<td>110</td>
</tr>
<tr>
<td>Transport of implements</td>
<td>111</td>
</tr>
</tbody>
</table>
## CONTENTS

- Stop position ........................................................................................................................................ 111
- Vibration compensator (damper) ........................................................................................................ 111
- Limitation of the upper position of the three-point hitch ........................................................................ 112
- Lowering speed ................................................................................................................................. 112
- Free position ..................................................................................................................................... 112
- Setting the control of three-point hitch ............................................................................................... 112
- Manual setting of control of three-point hitch ..................................................................................... 113
- Automatic control of three-point hitch ................................................................................................ 113
- Using the rear control ........................................................................................................................ 114
- External control buttons of the electro-hydraulic system .................................................................... 114
- Indication of EHR-B errors ................................................................................................................ 114
- Description of signals of EHR-B electro-hydraulic system errors ....................................................... 115
- Description of minor errors of the EHR-B electro-hydraulic system .................................................... 116

### Hitches

- Rear three-point hitch ........................................................................................................................ 117
- Safety principles of working with the three-point hitch ...................................................................... 117
- Height adjustment of the lifting draw-bars .......................................................................................... 118
- Fixed and free position of the lower hydraulic draw-bars ................................................................... 118
- Limiting draw-bars ............................................................................................................................ 118
- Automatic limiting draw-bars ............................................................................................................. 119
- *Lower draw-bars with CBM hooks* .................................................................................................... 119
- Securing the lower draw-bars with CBM hooks .................................................................................. 119
- Upper draw-bar .................................................................................................................................. 120
- *Front three-point hitch* ....................................................................................................................... 120
- Adjusting the lowering rate of the front three-point hitch ................................................................. 120
- Controlling front three-point hitch ..................................................................................................... 120
- Hydraulic lock of the front three-point hitch ....................................................................................... 121
- Working and transport position of the front three-point hitch ........................................................... 121
- Driving with agricultural machines attached to the front three-point hitch ........................................ 121
- Front wheels track of front drive axle in tractors equipped with non-removable discs ...................... 123
- Toe-in of the wheels of the front driving axle ...................................................................................... 124
- Adjustment of toe-in of the wheels of the front driving axle ............................................................... 124
- Rear wheels wheel track ...................................................................................................................... 125

### Ballast weights

- *Rear wheel weights* ........................................................................................................................... 127
- Bottom weights .................................................................................................................................... 127
- *Front weights* .................................................................................................................................... 127
- *Weight of the front three-point hitch* ............................................................................................... 127
- Valve for filling tyre tubes with liquid ................................................................................................ 128
- Procedure of draining liquid from the tyres ....................................................................................... 129
- Antifreeze solution for tyre filling ....................................................................................................... 129

### Electric installation

- Basic service information ..................................................................................................................... 131
- Accumulator battery ............................................................................................................................ 131
- Battery disconnector ........................................................................................................................... 132
- Accumulator battery maintenance ....................................................................................................... 132
- Alternator ....................................................................................................................................... 133
- Alternator maintenance ....................................................................................................................... 133
- Electric installation overload .............................................................................................................. 133
- Fuse panel .......................................................................................................................................... 134
- Checking the adjustment of the front grill headlights .......................................................................... 136
- Adjusting the front grill headlights .................................................................................................... 136
- Checking the adjustment of the cab roof headlights ......................................................................... 137
- List of lamps ......................................................................................................................................... 138

### Tractor maintenance

- Steps performed daily before the start of work .................................................................................... 139
- Steps performed every 50 hours of work ............................................................................................. 139
- Steps performed every 100 hours of work ......................................................................................... 139
- Steps performed every 500 hours of work ......................................................................................... 139
- Steps performed outside the interval of 500 hours of work .............................................................. 139
- Filling and filter replacement ............................................................................................................. 140
- Used operation liquids and filling - quantities .................................................................................... 141
CONTENTS

ZETOR Service Fillings .................................................................................................................. 141
Motor Oils ......................................................................................................................................... 141
Specification of Oil for Tractor Transmission Devices ................................................................. 141
Specification of Oil for the Front Driving Axle ............................................................................... 141
Other Recommended Service Fillings Tested on Zetor Tractors .................................................. 142
Oil to gear systems of tractors ......................................................................................................... 142
Oil for the front driving axle ............................................................................................................. 142
Front PTO oil .................................................................................................................................... 142
Hydraulic brake liquid for the tractors ............................................................................................ 143
Liquid for the cooling system of the tractors .................................................................................. 143
Fuel ................................................................................................................................................... 143
Plastic lubricant for the tractor ....................................................................................................... 144
Tractor greasing scheme .................................................................................................................. 144
Solid front drive axle ....................................................................................................................... 144
Suspension front drive axle ............................................................................................................. 145
Hitch for a single-axle semi-trailer .................................................................................................. 145
Front three-point hitch .................................................................................................................... 145
Three-point hitch .............................................................................................................................. 146
Hitch mouth for a trailer .................................................................................................................. 146
Technical maintenance of the tractors after a general overhaul of the main groups ...................... 146

Maintenance instructions .............................................................................................................. 147
Opening the hood ............................................................................................................................... 147
Checking the oil level in the engine .................................................................................................. 147
Draining oil from the engine ............................................................................................................ 148
Filling the engine with oil .................................................................................................................. 148
Replacing full-continuous motor oil filter ...................................................................................... 149
Fuel Filtering ...................................................................................................................................... 149
Raw Fuel Filter Clearing ................................................................................................................... 150
Cartridge Replacement in the Raw Fuel Filter ............................................................................... 150
Cartridge Replacement in the Fine Fuel Filter .............................................................................. 151
Fuel system venting .......................................................................................................................... 151
Dry air cleaner maintenance instructions ...................................................................................... 152
Recovery of the main air cleaner element ...................................................................................... 152
Replacing the safety element of the air cleaner ........................................................................... 152
Reassembly of the air cleaner elements .......................................................................................... 152
Bleeding the hydraulic circuit of the hydrostatic steering ............................................................... 153
Replacing the hydrostatic steering hoses ....................................................................................... 153
Replacing coolant .............................................................................................................................. 153
Checking the oil in gearbox ............................................................................................................. 154
Check and replacement of oil in gear box ...................................................................................... 154
Draining and checking holes ........................................................................................................... 154
After draining oil ............................................................................................................................... 154
Replacement of the transmission oil cleaner element with hydraulic pump suction filter ............. 154
Insertion piece replacement of the oil cleaner with delivery filter of the gearbox switchboard ........ 155
Replacement of filter element of urea filter ................................................................................... 155
Lubrication and filling points of the front driving axle .................................................................... 155
Filling, inspection and drain opening of oil of the front wheel reducers ........................................ 156
Front PTO ......................................................................................................................................... 156
Brake fluid replacement ................................................................................................................... 156
Carbon filter installation instructions ............................................................................................... 156
Cleaning the heating filters .............................................................................................................. 157
*Air filter with active carbon ............................................................................................................ 157
Air-conditioning maintenance ......................................................................................................... 157
Draining condensate from the air reservoir .................................................................................... 158
Checking the air systems for leaks .................................................................................................. 158
Working pressure of air brakes ....................................................................................................... 158
Maintenance and treatment of tyres ............................................................................................... 159
Tyres for driving wheels .................................................................................................................. 161
Storing the tractor ............................................................................................................................. 161

Adjustment ....................................................................................................................................... 163
Adjusting valve clearance .................................................................................................................. 163
Flat belt drive tension of accessories .............................................................................................. 163
Adjusting the play of the brake pedals ............................................................................................ 163
CONTENTS

Bleeding the brake system of the tractor ................................................................. 163
Bleeding the rear brake system ............................................................................... 164
Foot brake check ....................................................................................................... 164
Foot brake adjustment ............................................................................................... 165
Parking brake adjustment ........................................................................................ 165
Adjustment of the lifting draw-bars of the hitch for a single-axle semi-trailer ........ 165
Adjusting the bowden cable ..................................................................................... 165

Main technical parameters ....................................................................................... 167
Main tractor’s parameters (mm) ............................................................................... 167
Technical data of engines ........................................................................................ 167
Permitted maximum load of front axle (kg) ............................................................. 168
Permitted maximum load of rear axle (kg) ............................................................... 168
Permitted maximum weight of set ‘tractor + mounted machine’ (kg) ..................... 168
Manoeuvrability condition ...................................................................................... 168
Front tires steerability ............................................................................................. 169
Change of the load-bearing capacity of the front tyres (%) ................................. 169
Bearing capacity of rear tires ................................................................................ 170
Change of the load capacity of the rear tyres (%) ................................................ 170
Permitted combinations of wheels for tractors ...................................................... 170
Performance on rear PTO shaft ............................................................................ 170
Lifting force of the three-point hitch ...................................................................... 171
Tensile force .......................................................................................................... 171
Speed of tractor with engine revolutions of 2 100 rpm and parameter of rear wheels (km/h) ................. 172
Independent rear pto shaft revolutions ................................................................. 173
Speed of the Zuidberg front PTO ....................................................................... 174
Clearance-circle and turning circle diameter ....................................................... 174

Index .................................................................................................................... 175
1. Tractor data plate
2. Cab serial number
3. Engine serial number
4. Tractor serial number

When ordering spare parts and within all written and oral communication always specify the data of your tractor that should be written in the frames below.

Tractor type

Tractor serial number

Engine serial number
The 'right', 'left', 'front' and 'back' indications refer to the driving direction of the tractor.
SAFETY INSTRUCTIONS FOR USERS

Please, pay increased attention to the parts of the Operator´s Manual that are marked with this symbol.

⚠ This symbol accompanies all important warnings that concern operation safety. Observe these instructions and be extremely careful in these cases! Inform your colleagues and other users about these warnings.

Carefully study the chapters marked with this symbol before starting to perform operation, repairs and adjustments of your tractor.

This symbol identifies all important information concerning operation, adjustment and repairs of the starter motor. Observe these instructions and be extremely careful in these cases!

This symbol marks parts of the Operator´s Manual concerning environment protection. Or possibly sections describing handling of dangerous waste.

★ This symbol refers to optional tractor accessories installed by the manufacturer on the customer´s request.

⚠ Accessories that are not installed by the manufacturer in the standard way or * optionally on the customer´s request (in the production plant) cannot be subject to a claim.

General safety regulations

- The tractor may only be operated by a trained person that has a valid driving licence and has been thoroughly acquainted with the operation and safety rules.
- Besides the safety instructions mentioned in the Operator´s Manual you are obliged to respect generally valid safety and traffic rules of the country where the tractor is used.

Proper clothing

- Do not wear loose clothing and free flying long hair.
- During all work use suitable (prescribed) means of personal protection (working boots, gloves, goggles, etc.)
SAFETY INSTRUCTIONS FOR USERS

Starting the engine

- Only start the engine from the driver’s seat with the clutch pedal fully depressed.


Life hazard when starting by means of short-circuiting the starter terminals!

- The key in the switch box must be in the 'I' position.
- When heating the engine with the * electric heater first plug the power supply cord to the heater and only then to the electric mains. After the end of heating first disconnect the heater from the electric mains.

Caution! Electric shock hazard!

Driving operation

- Driving down a slope with the aim of starting the engine is not permitted.
- It is forbidden to put the tractor in motion using another tractor or vehicle with the aim of starting the engine.

- Hoses of the hydrostatic steering, brakes and fuel system must be checked and replaced immediately if any signs of damage are found. These are some examples of hose damage signs: - cracks on the hose surface, releasing of pretensioning of hose connection (which can be verified by easy removal of the hose from the connection) and mechanical damage of the hose. Hoses with indicated service life must be replaced immediately after the expiration of the service period.
- The brakes and steering must be in the perfect condition all the time.
- During driving on roads with trailers and tools the brake pedals must be connected with a latch.
- Driving downhill without an engaged gear is forbidden.
- Pay special attention when driving on a slope and muddy, sandy, icy or uneven ground.

- Observe the maximum prescribed slope gradient of 12°.
- Respect the total permissible weight of the tractor and trailer specified on the data plate of the tractor or on the rear wheel mudguard.
- Do not use the differential lock when driving into a bend.
- It is forbidden to get into and out of a moving tractor.
- When driving with machines attached to the rear hitches the load of the steered axle must not drop below 18 % of the current weight of the set.
- When driving the tractor with agricultural machines attached to the front three-point hitch, reduce the driving speed to 20 km/h.

- During aggregation of Zetor tractors with machines and implements with high tensile resistance when the engine speed drops and the engine tends to stall, the 1R, 2R reduced gears must not be used for the work with these machines (risk of shaft twist-off).

Transportation of persons, operation

- The number of persons transported by the tractor must not exceed the number specified in the technical certificate of the tractor.
- Persons that are not authorized to work with the attached implement must not stand between the tractor and the hitched machine (implement).
- Before putting the tractor in motion make sure there is no person or obstacle in the driving direction.
SAFETY INSTRUCTIONS FOR USERS

Recovery, pushing

- To recover a tractor that has sunk in mud use a tow bar or rope attached to the front hook

⚠️ *Never use chains! Rupture of the chain represents a danger of death!*
- During recovery it is dangerous to stand near the towing rope.
- It is prohibited to use the tractor axles (individual wheels) as a winch for releasing a sunken tractor.
- The front hook should be only use to recover the entire tractor, i.e. without any trailer or another attached implement.
- Never recover the tractor with reduced gears engaged.
- When pushing other vehicles (trailers, implements, etc.) with the tractor never insert free wooden blocks or bars between the tractor and the pushed vehicle.

Leaving the tractor

- Park the tractor only on an even land and where not possible, support with a shim assy.
- Do not park the tractor with an attached implement in the lifted position.
- Usually use the left-hand side tractor door when leaving the tractor. Look round whether any vehicle is coming, that could jeopardize your safety when leaving the tractor.
- Use steps and handles when leaving the tractor. When leaving the tractor by the right-hand side door pay attention being in space of shifting lever and hand throttle control.
- Brake the tractor with parking brake before leaving tractor with running engine.

- Before leaving the tractor, do not forget to secure the tractor by manual brake. Engaging a gear does not secure the tractor against rozjetim (clutch is disengaged), remove the key from the switchbox and lock the cabin.

With stopped engine only

- All work connected with refuelling, cleaning, lubricating and adjusting the tractor or attached implements may only be performed with the engine and moving parts of the tractor stopped except functional checks of the brakes, hydraulic system and charging.
- Before removing the side plates of the hood it is always necessary to stop the engine. The tractor engine can only run in a closed building or room if sufficient ventilation is ensured. Exhaust gases are harmful for health.

Fire prevention principles

- Refuel the tractor best after the end of work and with the engine stopped.
- Do not refill fuel up to the top of the fuel tank in summer. Wipe spilt fuel immediately.
- Do not refuel the tractor near open flame and do not smoke.
- Do not smoke and do not use open flame when inspecting the battery electrolyte level.
- Make sure that fire safety instructions are strictly observed in environments with an increased danger of fire (hay-lofts, straw-stacks, etc.).
- The tractors are not equipped with a fire extinguisher from the production plant.
SAFETY INSTRUCTIONS FOR USERS

Health and environment protection

- The tractors are not equipped with special filters of air aspirated to the cab. Therefore, they are not designed for work with aerosols and other harmful substances.
- Coolant, brake liquid, kerosene, diesel fuel, mineral oil and other oil products that are used for the operation and maintenance of the tractor may cause various skin disorders in case of direct contact with your skin and can irritate mucous membranes, eyes, the digestive system and upper respiratory ways. Some of them may even cause systemic poisoning when swallowed.
- Persons that handle oil products are obliged to strictly observe safety and hygienic regulations, use suitable means of protection and work in well-ventilated rooms.

Working with oil products

- After the end of work or before a meal, you should wash yourself with a mild agent and treat your hands with a suitable ointment or cream.
- When connecting and disconnection quick-couplers of the hydraulic circuits, use any piece of cloth to remove residual oil remaining in the socket or on the plug of the quick-coupler.

Waste disposal

- When disposing of the tractor or its parts (incl. operation liquids) after the end of their service life, you must observe relevant provisions of valid acts and implementation directives of these acts of the country where the tractor is used. The last seller of the tractor is obliged in accordance with the Waste Act to inform the consumer - during the sale of the tractor - about the way of collection of some used parts of the tractor. This is the case of oil and other operation liquids, batteries and tyres. These used products must be received from the consumer without any obligation of the consumer to pay for this service.

Preventive daily maintenance

- Perform this maintenance daily or after every 8-10 hours of operation at the latest.

Safety cab

- If the protective frame of the safety cab is damaged by corrosion, an accident or otherwise, the safety cab must be replaced.

Air-conditioning

- Disassembling, turning or otherwise handling the screw union of the air-conditioning system is not allowed in any case. Sudden leak of the coolant may occur, causing quick local cooling. Contact or freezing of components in hands may cause serious damage of some tissues.
- The air-conditioning system is equipped with quick-couplers that make it possible to separate the cab from the tractor body if necessary without any coolant leak. Entrust interventions into the air-conditioning system to a specialized repair shop.
**SAFETY INSTRUCTIONS FOR USERS**

**Electric installation**

![Warning symbol]

*No additional interventions into the electric installation (connection of other electric appliances) are permissible due to its possible overloading!*

- The values of the electric installation are:
  
  Nominal voltage 12 V =
  
  Grounded minus pole ( - ) pole

- Using starting trucks or auxiliary power supplies with a different voltage or polarity may cause serious failures of the tractor.

- When handling the battery you must pay increased attention and avoid short-circuits. In tractors equipped with a battery disconnector switch the disconnector off when handling the battery.

- Zetor tractors must not be operated with a disconnected battery as this may lead to a serious failure of the tractor.

**Work in a chemically aggressive environment**

- If the tractor is operating in a chemically aggressive environment (e.g. working with chemical sprays, fertilizers, in environments with high concentrations of salt, etc.), it is always necessary to clean the tractor thoroughly from chemically aggressive substances and neutralize them after the termination of the work according to the manufacturer’s instructions.

**Front passenger’s seat notification**

**ATTENTION:**

Transportation of personnel on front passenger’s seat is allowed only with road transportation.

- **Transportation of front passenger outside the seat designed for this purpose is forbidden.**
- **Using the seat for front passenger during the work with a tractor (e.g. during the work on the fields) is explicitly forbidden.**
- **The use of safety belt on front passenger’s seat is governed by valid regulations. In this respect, keep the regulations valid in the country, where the tractor is operated.**

**Protection of cab against aerosols**

The cab of Zetor tractors in standard design is not designed for work with aerosols and other health hazardous substances. The level of cab protection in standard design complies with **EN 15695-1:2009 standard - level 2** (only dust proof cab).
SAFETY INSTRUCTIONS FOR USERS

The level of external noise of tractor

⚠️ The exposition to the effects of high levels of noise for a longer period of time may lead to hearing disorders or deafness. Protect your hearing with protective means, e.g. headphones, ear plugs etc.

Resulting levels of noise when measuring noise for hearing of a person near a tractor. Based on European directive 2009/63/EC - Amendment VI.

<table>
<thead>
<tr>
<th>Model</th>
<th>Crystal 150</th>
<th>Crystal 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel speed</td>
<td>40 km</td>
<td></td>
</tr>
<tr>
<td>Tractor noise levels when travelling dB</td>
<td>83</td>
<td>83,5</td>
</tr>
<tr>
<td>Tractor noise levels when standing dB</td>
<td>79</td>
<td>79,5</td>
</tr>
</tbody>
</table>

The level of internal sound of tractor

⚠️ The exposition to the higher sound levels for longer periods of time may lead to hearing disorders or deafness. Protect your hearing with protective measures, e.g. headphones, ear plugs etc.

Resulting levels of noise when measuring noise for hearing of driver. Based on European directive 2009/76/EC.

<table>
<thead>
<tr>
<th>Model</th>
<th>Crystal 150</th>
<th>Crystal 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel speed</td>
<td>40 km</td>
<td></td>
</tr>
<tr>
<td>Noise levels - Closed windows dB</td>
<td>73,5</td>
<td>73,5</td>
</tr>
</tbody>
</table>

The level of vibrations on driver’s seat

ZETOR tractors are classified in A category in classes I and II. ‘A’ category includes all tractors with set level of vibrations owing to similar specifications of construction.

Results of measurement on testing bench are listed in the following table pursuant to directive 78/764/EEC.

The value $a^{*}_{wS}$ is an adjusted value of effective acceleration balanced according to vibration movement. The following table is valid for all type series of Zetor tractors.

<table>
<thead>
<tr>
<th>Brand of seat</th>
<th>Model</th>
<th>Springing</th>
<th>Class I &amp; II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>$a^{*}_{wS(1)}$ (m/s²)</td>
</tr>
<tr>
<td>GRAMMER</td>
<td>MSG85/721</td>
<td>mechanical</td>
<td>1,18</td>
</tr>
<tr>
<td>GRAMMER</td>
<td>MSG95A/721</td>
<td>pneumatic</td>
<td>1,16</td>
</tr>
<tr>
<td>MARS</td>
<td>78/764-73xx</td>
<td>mechanical</td>
<td>1,25</td>
</tr>
<tr>
<td>SEARS</td>
<td>3008</td>
<td>mechanical</td>
<td>1,24</td>
</tr>
<tr>
<td>SEARS</td>
<td>3045</td>
<td>pneumatic</td>
<td>1,13</td>
</tr>
</tbody>
</table>

(1) Values corresponding to driver’s weight of 50 kg.
(2) Values corresponding to driver’s weight of 120 kg.
SAFETY INSTRUCTIONS FOR USERS

Tractors equipped with front end loader

Zetor Tractors in standard design are designed for utilization in agriculture and are not designed for special purposes. Tractors designed for operation within the European Union must be equipped, in case of using front end loader, with a protective structure (FOPS - Falling Object Protective Structure) protecting drivers from potential falling objects. It is necessary to observe applicable local valid regulations in countries which are not part of the European Union.

Two types of cab roofs are mounted to Zetor tractors.

1. Standard cab roof
2. Cab roof designed for tractors equipped with front end loader meeting the OECD code 10 (FOPS) conditions.

Tractors ZETOR supplied already from production with front end loader are equipped with cab roof according to point 2.

From safety reasons, series ZETOR tractors supplied without front end loader with standard roof pursuant to point 1 must not be equipped or used with front end loader.

In case of additional front end loader assembly, it is necessary to equip tractor with cab roof pursuant to point 2.

Only front end loaders approved by ZETOR TRACTORS may be mounted to ZETOR tractor. Additional assembly of front end loader approved by ZETOR TRACTORS can be done only by authorized ZETOR service. It is forbidden to use front end loaders unapproved of by ZETOR TRACTORS. Not observing this instruction may cause serious accidents. Carefully observe instructions for use supplied by the manufacturer of front end loader.

Carefully study operation manual supplied by the manufacturer of front end loader. In case of discord of Principles for operating tractors equipped with front end loader and operation manual for front end loader, which was supplied by the manufacturer of front end loader, the wording listed in operation manual supplied by the manufacturer of front end loader shall apply.

- The use of front end loader for transporting material at places accessible to the public is forbidden.
- The use of front end loader for transporting material in places inaccessible to the public is possible only in a limited way. In such case, instructions in user's manual supplied by the loader manufacturer must be observed.
- Observe local valid regulations at all times.
- A strict ban on transportation and lifting of people by means of loader is in effect.
- No matter whether the front end loader is loaded or empty, no-one may stand in front of the loader if it is in lifted position. When driving with a lifted loader, there is a risk of load transported by front end loader falling (there is a risk of disrupting the balance of the tractor).
- Never leave the tractor standing with the loader in lifted position.
- If it is necessary to open the bonnet of the engine at intervention, disconnect the front end loader first or secure hydraulic rollers of front end loader by metallic props designed for this purpose.
- Hydraulic circuit of the front end loader is designed in such a way to endure the maximum operation pressure of 20 MPa (200 bar). Do not do any changes on couplers of hydraulic circuit hoses.
- Any front end loader ZETOR mounting without observing the recommendation of ZETOR TRACTORS valid to the day of purchase revokes the validity of guarantee for the whole of supply.
- The loader may be used, maintained and repaired only by people who perfectly know the machine and who are informed about potential risks.
- When driving on roads do not transport any material on the front end loader.
- It is necessary to observe special instructions related to accidents prevention and general rules related to technical safety, labour medicine, labour hygiene and regulation defining operation on roads.
- The manufacturer does not bear any responsibility for any potential damage incurred as a result of changes conducted on the loader without their consent.
SAFETY INSTRUCTIONS FOR USERS

- Do not ever adjust the front end loader by yourselves and do not use the adjusted front end loader without prior ZETOR’s approval. The loader may become dangerous as a result of not observing these instructions. ZETOR TRACTORS shall not be held responsible in case of any damage or injury.
- Use front end loader without additional weights on the tractor (danger of mutual contact). The load of front and rear drive axle must not exceed the maximum permitted load listed in the manual. The use of front end loader requires mounting of counter weight in the rear part of the tractor.
- Each working tool was reconstructed for the purpose of specific usage and has its own tolerance of resistance and tightness.
- It is forbidden to use front end loader for cultivating soil and stubbing. Such work needs to be done with a special tool, front end loader is not designed for doing this.
- Using controls which would set the loader into motion without driver holding the gear shifting lever is strictly forbidden and results in installation not meeting the prescribed standard.
- To penetrate the loaded material, better use the kinetic energy of the tractor rather than pressing force which causes higher strain of both the loader and the tractor.
- Do not overload hydraulic parts if the load is too heavy or pistons are in end positions.
- Control the loader exclusively from driver's seat, if you are sitting on driver's seat.
- Do not leave the seat if you have not blocked any movement of controls.
- No people can be present in the working zone of the loader.
- When working with a lifted loader, mind electric and external cables etc.
- Loader/tractor set needs to be parked on a horizontal and solid base, the arms of the lifting device must be set in the lower position.

You will find more information in user's manual to front end loader.

⚠️ Important notification: Work always safely and with consideration.

Zetor tractors used for work in the woods

Principles for operating tractors equipped with front end loader

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.
Preventive daily maintenance
Perform this maintenance daily or after every 8 - 10 hours of operation at the latest.

Fuel system leaks
Check the fuel system for leaks, including the fuel tank. Repair any leaks immediately. The hole for draining dirt from the fuel tank is found in its bottom.

Engine oil level
After unscrewing and removing the oil dip-stick check the oil quantity in the engine and then check the connection of the engine lubrication system for leaks. Maintain the oil level between the dipstick marks.

Cooling system
Check the connections of the engine cooling system for leaks and the coolant quantity in the expansion tank. Replenish the missing quantity up to the upper mark indicated MAX. The minimum acceptable cooling liquid level is indicated by the MIN mark.

⚠️ Only release the overpressure plug when the coolant has cooled down! There is a danger of scalding!
PREVENTIVE DAILY MAINTENANCE

Liquid brakes
Check the liquid brakes for leaks as well as the liquid control of the clutch and the braking liquid level in the expansion tank. Maintain the brake liquid level in the range of 3/4 of the tank content (max. level) and 1/2 of the tank content (minimum level).

Trailer air brakes
Check the air system of the brakes for leaks and the efficiency of the tractor brakes with a trailer (see the Maintenance instructions chapter; the Checking the air systems for leaks section of this Operator’s Manual).

Trailer hydraulic brakes
Check the hydraulic brakes of the trailer for leaks.

Hydrostatic steering
- Check the tightening of screws and nuts of the steering rods and levers.
- Check the condition of all the hoses of the hydraulic steering circuit for damage and for oil leaks.
Air cleaner
If the air cleaner is heavily clogged with dirt, this condition is indicated by a sensor that lights up an indicator on the dashboard.

Cab filtration
Check and if necessary clean the cab ventilation air filters installed in the front overhang of the roof. The filter exchange interval depends on the dustiness of the working environment. Partial regeneration can be performed by beating out or blowing with compressed air. Do the cleaning or replacement of the filter elements after removing the covering grills in the roof overhang. At the customer’s request we supply filters with active carbon.

⚠️ Don’t clean the filter; don’t flush it with compressed air.

Hitches
Check the condition of the hitching and attachment systems of the tractor and trailer.

After work with front implements and in case of cooler clogging
After work with front implements:
- Check the connections of the external hydraulic circuit of the control of the front three-point hitch for leaks

Clogging of the coolers:
- Release and slide the cooler to the left side of the tractor.
- Clean the front walls of the engine (gearbox, air-conditioning condenser) cooler with compressed air (blow air in the direction from the engine).
- Remove residual dirt from the space under the hood so that it should not be suctioned again.
Tyres and wheels
Check the air pressure in the front and rear tyres. Depending on the character of work adjust the pressure to the recommended value. Check and if necessary retighten the bolts of the front and rear wheels.

⚠️ *Never drive with loose wheel bolts!*

Short functional test
When the engine is started, check whether the signal lamp of the hydrostatic control failure and of the charging signal lamp went out, and if the signal lamp of the engine lubrication and signal lamps indicating error messages are off.

Verify the function and tightness of hydraulic control circuits.
ACQUAINTANCE WITH THE TRACTOR

⚠️ Tractor user must be properly acquainted with recommended operating and safety rules for safe tractor operation in advance. It is too late to do it within operation!

Safety cabin

⚠️ Use the left side of the tractor for getting on and getting off the tractor. Use three-stage climbing irons and hold the bars when getting on and getting off the tractor. Pay increased attention in the area of gear shifting lever and manual throttle lever.

Safety cabin is equipped with toned glass.

Opening the door from the outside
Door can be opened from the outside by pressing a button. Left door can be locked.

Opening the door from the inside
1. Lever for opening the door from the inside
2. Lever for opening the door from the inside
The door is held by a gas strut with a full opening. Driving with open door is not recommended for their possible damage.

⚠️ It is forbidden driving with open door due to its possible damage.
Rear window
Is equipped with a handle and in an open position is locked by gas spruts. Rear window is heated.

⚠️ When driving on an uneven surface we recommend to secure the window in a closed position - danger of window cracking. Before starting the work with the machinery Before starting the work with mounted in three-point hitch of the tractor, make sure that there is not a danger of collision between the mounted tools with maximum lifting of rear three-point hitch and open rear window. In case of collision we recommend to work with a closed window.

Side window
The window is secured in the partly open position with a plastic latch. You can open the door by lifting the latch towards yourself upwards and pushing it into the groove. Then, the window will be secured in the fixed position.

Hinged lid
It is opened by turning the locking lever of the cover (1) and by pressing the locking lever in the upward direction. The swing cover is closed with the opposite procedure.

⚠️ By opening of the swing cover, the total height of the tractor is increased. Therefore always close the cover when driving through or parking in places with a reduced internal diameter.

Adjustable screen and cover of the swing lid
Pull out the adjustable screen of the front window (1) by pulling the hand rail in the arrow direction. To return to the original position, shortly pull the hand rail in the direction of the arrow and release the hand rail.

The sliding cover of the swing lid (2) is closed and opened with pressure or by pulling the slots in the arrow direction.
**Shelf**
Shelf is placed on the left side of driver’s seat. Toolbox is placed in the rear part of the cabin behind the driver’s seat.

Another shelf is placed on the right mudguard.

**Rear view mirrors**
Before the drive or starting the work, adjust rear view mirrors so that they enable to monitor the whole drive way or working field.

**Internal lighting**
To be turned on and off by means of a button marked with the arrow.
ACQUAINTANCE WITH THE TRACTOR

Aggregation opening
Aggregation opening serves for cabelling or Bowden control of aggregated tools placement.
Pull to protrude the part of sealing of rear window in upward direction. Put the aggregated tool control through the originated hole.
Insert cabelling or Bowden controls to the holes of passage of aggregation opening. Return the sealing of the rear window to its original position by exercising pressure.

Driver’s seat
1 - The control of setting the seat suspension according to the driver’s weight (setting by rotation, in the direction according to pictogram on the boot of the seat)
2 - Longitudinal setting of the seat lever
3 - Seat vibrations absorption control (by tilt over of the control forward, floating position of the seat is engaged)
4 - Setting the angle of rest control
5 - Tilting elbow rest
6 - Pneumatic suspension of seat setting control (by pulling in the direction upward, the rigidity of the suspension increases, by pulling in downward direction, it decreases)

Driver’s seat with mechanical suspension
Control according to points 1, 2, 3, 4 and 5
Point 2, lever is placed on the right

Driver’s seat with pneumatic suspension
Control according to points 2, 3, 4, 5 and 6
Point 2, lever is placed on the left
ACQUAINTANCE WITH THE TRACTOR

Driver’s seat Sears

The driver’s seat Sears can be made with a mechanical (A) or pneumatic (B) suspension.
1 - The seat suspension adjustment controller according to the driver’s weight (turn it in the direction based on icons shown on the seat bellows)
2 - The seat height adjustment controller (release the controller to increase the seat height, tighten the controller to decrease the seat height)
3 - The longitudinal seat adjustment lever (pull the lever to adjust the seat lengthwise, return the lever back to its original position to lock the longitudinal adjustment)
4 - The seat backrest inclination adjustment controller (pull the lever to adjust the seat backrest inclination, return the lever back to its original position to lock the backrest position)
5 - Foldable armrest
6 - The armrest height locking adjustment (release the controller to adjust the height of the armrest, tighten the controller to lock the armrest position)
7 - The seat vibration absorption setting (move the controller up to get the float seat position, move the controller to the lower position to lock it)
8 - The seat height adjustment and seat suspension adjustment according to the weight of the driver (push the controller to increase the air pressure in the pneumatic suspension of the seat - when the driver’s weight is bigger, pull the controller to decrease the air pressure in the pneumatic suspension of the seat - at the lower weight of the driver)

Passenger’s seat
Passenger’s seat is tiltable and placed on the left mudguard of the cabin.

Seat tilting out
Passenger’s seat to be tilted out in the direction of an arrow (1) upward. Locking of the seat is done automatically.

Seat tilting
Lift the passenger’s seat in the direction of an arrow (2), pull the lever (3) to the direction of the driver’s seat, tilt the seat in the direction of an arrow (4).
Control panel on the right column of the cabin
1 - switch of the cycler of the front wiper
2 - two-position switch of the front wiper and of the control of the front washer
3 - switch of the rear wiper
4 - switch of heating of the rear wiper
5 - switch of heating of the rear mirrors
6 - switch of the rear work lights on the cabin roof
7 - switch of the front work lights on the cabin roof
8 - switch of the rear PTO shaft
9 - switch of the front PTO shaft
10 - switch of the automatic switching off of the rear PTO shaft
11 - switch of the revolution control of the rear PTO shaft

Control panel on the right rear mudguard
There are controllers located on the control panel on the right rear mudguard
1 - Pre-selection lever of the rear PTO shaft (more information in chapter POWER OF AGRICULTURAL MACHINES)
2 - Firer
3 - Three-pin socket
4 - Switch of the multiplier pre-selection (more information in chapter DRIVING)
5 - Switch of differential closures (more information in chapter DRIVING)
6 - Switch of the control of the front driving axle (more information in chapter DRIVING)
7 - Switch of the height setting of the tractor front part (more information in chapter DRIVING)
8 - Switch of the setting of the suspension mode of the front driving axle (more information in chapter DRIVING)
9 - Panel of the electrohydraulic control (more information in chapter ELECTROHYDRAULICS)

Panel of the instrument panel
a - lights switch (off, parking, head)
b - lower beam lights in the grill of the tractor and working lights in the cabin of the tractor switch
c - Fog light switch (off - on). Fog light function is signalized by a lit symbol on the switch.
d - Working lamp switch (off - on). Working lamp function is signalized by a lit symbol on a switch.
e - warning lights switch
f - beacon switch (off - on)
g - working lights in the grill of the bonnet switch (off - on)
h - switch box
i - direction lights, lower beam head lights, head lights and horn switches acoustic and light
j - reversing lever (forward, neutral, backward)
Lights switch
a - illumination off
b - side and end point lights on, illumination of licence label, illuminated
c - all devices on in 'b' position. Lower beam head lights or head beam lights are engaged (according to the position of direction lights, lights and horn switches).

Lights switch between the grill and the cabin
a - roof lights on
b - roof lights off
The switch controls the illumination in the grill or in the roof of the cabin of the tractor. Use the lights in the roof of the cabin only when tools covering headlights in the grill is attached in front three-point hitch. A lit symbol on the switch signalizes light on in the roof. Headlights can be lit only in the grill of the bonnet.

Switch of warning lights
a - warning lights on
b - warning lights off
Function of warning lights is signalized by interrupted blinking control on the dashboard.
Direction lights, lower beam head lights, head lights and horn switches
a - Acoustic horn - press the switch in the direction of an axis
b - Lower beam head lights
c - Direction lights to the right
d - Direction lights to the left
e - Acoustic horn
f - Lower beam headlights

⚠️ *When the signal lamps are turned on, the acoustics signal is activated.*

Switch box
Switchbox is placed on the dashboard, see arrow.

Switch box key in the position (0)
The voltage of all the equipment controlled via the key is disconnected. The key can be removed.
Switch box key in the position (I)
The voltage is connected to all the equipment excluding starter. The key is in this position with the engine running.

Switch box key in the position (II)
Starter and supply of all equipment is connected in this position apart from wipers, washer, cab ventilator and air condition. After starting, the key automatically returns back to 'I' position.

Tilting and protrusion of steering wheel
Tilting column of steering wheel enables variable setting of position of the steering wheel both in terms of angle and height.

Height setting of steering wheel
The setting is done by protrusion or retracting the steering wheel after unlocking arrestment by turning a lever (1) in the direction of an arrow. After setting the steering wheel, lock the lever (1) by tightening in the direction of an arrow.

Angle setting of steering wheel
Setting is done by tilting the steering wheel after unlocking the lock by turning the lever (2) in the direction of the arrow. After setting the steering wheel, secure the lever (2) by retightening against the direction of the arrow.

Manual throttle
a - idle run
b - maximum supply

The lever enables to set engine revolutions in the whole range (a) to (b).
Reversing lever
F - front driving; lever in the front
N - neutral
R - back driving; lever at the back

Gear shifting lever
- main gear shifting lever
1. button for disengaging clutch on the head of gear shifting
2. buttons of shifting individual gears of multiplier

Gear shifting scheme
Reversing speeds can be shifted only by means of reversing lever. The scheme is placed on the head of gear shifting lever.

Pedals
1 - travel clutch pedal
2 - foot brake pedals joint by a catch
3 - throttle pedal
ACQUAINTANCE WITH THE TRACTOR

Road and reduced speeds shifting lever
The lever is placed on the right side of driver’s seat.

<table>
<thead>
<tr>
<th>H</th>
<th>Road speeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Neutral</td>
</tr>
<tr>
<td>L</td>
<td>Reduced speeds</td>
</tr>
</tbody>
</table>

PTO revolutions preselection lever
The lever (1) is placed on the right side of driver’s seat.

For more information see the chapter on Drive of agricultural machines.

Manual brake lever and coupling for semi-trailer control lever
1 - manual brake lever
   a - unbraked
   b - braked

2 - coupling for semi-trailer lever
   a - transporting position
   b - bearing hooks folded up; tow hook with carrier can be started
Battery disconnector

⚠️ Disconnect the battery immediately by battery disconnector which is placed on the right side of the tractor with long-term standstill, repairs or accident.

a - battery connected
b - battery disconnected

⚠️ Attention! When the engine is switched off, the engine control unit remains active for about 1 minute because of storage of operation data. During this time the supply of current from the accumulator must not be interrupted. Do not disconnect the accumulator before this time expires.

Heating control panel, * air-condition
The control panel of the heating and of the air conditioning is located on the right side of the lower view of the cabin roof.

A - valve heating controller
B - fan controller
C - air conditioner switch
D - controller of air circulation in the cabin

Heating valve control (A)
a - heating valve closed
b - heating valve opened
Ventilator control (B)
0 - ventilator off
1 - slowly run of ventilator
2 - medium run of ventilator
3 - maximum run of ventilator

Switch air-condition (C)
Do engagement and disengagement of air-condition system function by switching the switch with a symbol of snow flake (C). You will set the air-condition system going by pressing the switch (the symbol of snow flake lights up). You will disengage the air-condition system by repeated press of switch (snow flake symbol switches off).

Air circulation in cabin control (D)
a - Surrounding (outside) air is sucked in through filters to cabin - sucking the air from cabin is closed.
b - Air is sucked in from the space of the cabin and again blown off to the cabin (inner air recirculation for fast adjustment of temperature in the cabin).

⚠️ The intake of air from the outside of the cabin is completely locked and there is no surplus pressure in the cabin which would prevent pervasion of unfiltered air to the cabin! Do not use this position of the control with work of the tractor!

Proper function of the heating and air-condition system
It is necessary to create surplus pressure in the cabin for proper function of the heating or air-condition. We therefore recommend you to close all the windows and doors and tilting cover of the cabin.
Fast heating of the cabin area
Proceed accordingly:
1 - Turn the heating valve control (A) to the position on the right (fully opened heating valve).
2 - Set air circulation in cabin control (D) to the position of inner circulation.
3 - Select applicable gear of the ventilator run (position 1, 2, 3) by ventilator control (B).
4 - Set the expiration under the requested angle to avoid direct fanning of the people in the cabin.
5 - After heating the space of the cabin, set the air circulation in the cabin control (D) to the position of sucking the outer air - see fig. F_02_17b position (a).

Fast cooling of the space of the cabin
Proceed accordingly:
1 - Switch the heating valve control lever (A) to the position to the left
2 - Set the air circulation in the cabin lever (D) to the position of outer air sucking
3 - Select an applicable gear of the ventilator run (position 1, 2, 3) by ventilator control (B)
4 - Switch the air-condition system by a switch (C)
5 - Set expiration under the requested angle so that direct fanning of people in the cabin does not occur (the possibility of illness due to intensive cooling of parts of body).

Operation of heating or air-condition with tractor`s work
With engaged inner recirculation of air is the inflow of fresh air closed and there is foul air in the space of the cabin by operator. This state can cause the feeling of fatigue and there can also be penetration of dust to the cabin because of the loss of surplus pressure.

**Note:** Set the control (D) according to individual requirements on temperature to the position between (a) and (b) so that the ventilator sucks the air from the outside of the cabin through filters, when working.

⚠️ **When spraying pesticides and using the heating filter with active carbon, the recirculation controller should be in position ‘air is drawn into from the outside’ and the fan controller should be in the position ‘fan maximum work’ to create overpressure in the cabin.**

Immediately after cooling the cabin
Immediately after cooling the cabin and lowering the inner temperature on the required values, we recommend the following:
- Switch over the control of air circulation (D) from position (b - air re-circulation) to position (a - outer air suction)
- Do the continuous regulation of the air temperature with air condition on by opening the heating valve (A). The air entering the cabin from expiration is not so intensively dried with this setting.
- Continuous temperature control with air-condition on can be also done by lowering the output of ventilator by switching the control (B) to position 1 or 2.
Positionable heating and * air-condition registers, front (A), rear (B).

**Front windshield (B) defrosting**

To ensure quick defrosting of the front windshield direct the central heating outlets (1) under the angle of approx. 45° towards the windshield. Direct the side outlets (2) under the angle of approx. 45° to the cab corners.

After defrosting of the front windshield direct the side outlets to the side glasses of the doors as necessary and gradually defrost them. After defrosting direct the outlets in such a way that the air should not be blown directly to the driver, but down to the driver's legs.
Active carbon filters are installed in the place of standard dust filter and the replacement is done in the same way as with standard filters. Filter must be inserted with the white side to the grid. Assembly instructions are found in the chapter ‘Maintenance instructions’. Filter is used only when spraying pesticides, then it must be replaced back by a paper filter because the flying dust would clog the carbon filter very fast. The recirculation control must be in the position ‘air is sucked from the outside’. Ventilator control must be in the position ‘maximum ventilator run’.

**WARNING:** filter does not provide full protection against toxic substances

- Wear protective gloves when manipulating with the filter.
- Do not clean the filter and do not blow through with compressed air.

**DANGER:** Replace the active carbon filter every 200 hours or 36 months (date of production is given on the filter). If you happen to smell pesticides in the cabin, replace the filter immediately and have the sealing of the cabin checked. Used filters must be damaged in specialized collection centres.

When spraying pesticides and using heating filters with active carbon, the recirculation control must be in the position of ‘air sucked from the outside’ and the ventilator control ‘maximum ventilator run’ for creating surplus pressure in the cabin.

**Wiper and washer of the front window**

The switch of the front wiper and control of the front washer are located on the right column of the cabin. The double-speed engine of the front wiper is controlled by the two-position switch of the front wiper. The windshield washer is activated after pressing the switch of the front double-speed wiper located on the right column of the cabin. The maximum time of continuous operation of the washer pump is 20 s. When the washer is used, the windshield is automatically wiped by the wiper. The number of wipings depends on the operation time of the washer.
Front wiper speed switch
The front wiper speed switch is turned on using the switch located on the right column of the cabin.
Setting the wiper cycle period:
Turn on the speed switch, after the front window has been wiped, turn off the speed switch, wait the required period between wipes and turn on the speed switch.
The required gap between wipes is automatically set.

Rear window wiper
The switch of the rear wiper is located on the right column of the cabin.
The single-speed engine of the rear wiper is controlled by the single-position switch of the rear wiper.

Windshield washer tank
Windshield washer tank is placed on the rear wall of the cabin from the outside side.
The washer tank capacity is 2,5 litres.
In summer the reservoir should be filled with distilled water or mixture for washers.
Antifreeze mixture for washers must be used in winter season for filling the washer tank.

Washer nozzle
The washer nozzle is situated in the upper part of the hood and is adjustable by needle or steel wire of maximum diameter 0,8 mm.
Fuel tank
A plastic tank of 300 litres volume is mounted as a standard for all types of tractors.

⚠️ Do not step on the fuel tank!

Fuel tank drain plug
Plug for draining dirt and fuel off the fuel tank is in its bottom.

Urea tank
The tank for urea is located in the left side of the tractor and is equipped with the blue plug of the filling hole. The tank volume is 32 litres.

⚠️ Add only urea!
Other media, even a small amount (e.g. diesel oil), lead to the destruction of the system. If e.g. diesel oil was loaded and is present in the system, the whole system of urea injection must be replaced! If the loaded medium (e.g. diesel oil) does not reach the guide or export pump I of the dosing module, all you have to do is to empty and thoroughly clean urea tanks. Maintain cleanliness.
When switching the key in the switch box from 0 position to 1 position, all signal lamps light up.

1 - Signal lamp of the tractor left direction lamps (green).
2 - High beam lights (blue). Lights up with high beam lights on.
3 - Operational protection signal lamp (blue). It is lit up when there is disagreement between operational values of the tractor groups.
4 - Signal lamp of direction lights of 1st trailer (green)
5 - Signal lamp of direction lights of 2nd trailer (green)
6 - Minimum air pressure in brake system signal lamp (red). It is lit up with the pressured drop for air brakes of trailer below the critical limit.
7 - Manual brake signal lamp (red). It is lit with engaged manual brake.
8 - Charging signal lamp (red). With engine run, lights up with charging failure. When the engine is at standstill, it must be lit.
9 - Lubrication signal lamp (red). With engine running lights up with the oil pressure drop below the critical limit.
10 - Air cleaner clogging signal lamp (yellow). Lights up with air filter clogging.
11 - Urea level signal lamp (red/orange)
12 - SCR signal lamp (red)
13 - SCR signal lamp (orange)
14 - Indicator (red) of a failure in the hydrostatic control system. It lights with engine operation in hydrostatic control failure. When the engine is at standstill, it must be lit.
15 - Signal lamp of tractor right direction lights (green).
16 - Not connected
17 - Not connected
18 - Engine ignition signal lamp (yellow). Signalizes the activity of the device for facilitation of engine start.
19 - Not connected
20 - Fuel level signal lamp (orange). It is on with the remaining 0 - 1/4 of the tank volume.
21 - Gearbox malfunction signal lamp (dark red)
22 - Warning signal lamp (orange)
23 - Stop signal lamp (red)
Instrument panel - instruments

A - coolant thermometer
B - fuel gauge
C - air pressure gauge
D - speedometer
1. Engine revolutions
2. Indicator of engine revolutions at which nominal revolutions of the rear PTO at economic revolutions of the rear PTO shaft are achieved.
3. Indicator of engine revolutions at which nominal revolutions of the rear PTO at standard revolutions of the rear PTO shaft are achieved.
E - display

Instrument panel - buttons
A - Rolling up in the menu button
B - Rolling down in the menu button
C - Entry to the menu button, confirming items on the menu
D - LCD backlight inversion button
E - Reset button hours of operation and km
F - Change of display button in the navigation menu
**Display description**

The following values are displayed on the main display:

1 - shifted gear of multiplier of torque, according to shifted gear 1, 2 or 3 is displayed
2 - switching the switch of torque multiplier preselection
3 - switching the function of rear PTO shaft automatic disengagement
4 - gear shifting lever position, reversing F driving forward, N neutral, R reversing
5 - road and reduced speeds shifting lever position, reduced speeds, neutral or road speeds
6 - main field of display
7 - secondary field of display
8 - engagement of front axle drive switch
9 - engagement of differential locks
10 - maintenance interval exceeded

**Change of the look of display**

The change of look of display from display (1) to display (2) can be done by pressing a button (A).

**Display - change of display**

By repeated pressing of button (A) you can click between individual displays of data on the display (so called screens).

When the key in the switch box is moved to position I, the home screen is displayed on the display.
After about three seconds the main screen is displayed on the display.

In the main field (1) the travel speed of the tractor is displayed. In the secondary field (2) the current time in 24-hour format is displayed.

There are data regarding PTO shafts in this screen.

1. Front PTO shaft revolutions, if the shaft is activated.
2. Rear PTO shaft revolutions, when the shaft is switched on.
3. Tractor travel speed.

In the main field (1) the total moto hours worked by the tractor are displayed.
In the secondary field (2) the total moto hours worked by the tractor from the last resetting of the data are displayed.

In the main field (1) the total kilometres worked by the tractor are displayed.
In the secondary field (2) the number of kilometres travelled by the tractor from the last resetting of the data is displayed.
There are data regarding the automatic switching off of the rear PTO shaft; more information is available in the chapter Power of Agricultural Machines.

In the main field (1) the voltage of the accumulator battery is displayed.

In the main field (1) the total amount of the fuel consumed from the engine start is displayed. The entry is automatically cleared after two hours from the engine start. In the secondary field (2) the immediate consumption of the fuel is displayed. The entry is automatically cleared when the engine is switched off.

In the main field (1) the processed area in hectares is displayed. In the secondary field (2) the hourly output, i.e. the average of the processed area in hectares per hour, is displayed.
In the main field (1) the amount of urea in the tank in the volume percentage of the tank is displayed. More information in chapter System of Additional Treatment of Exhaust Gases.

In the main field (1) the number of revolutions of the engine per minute is displayed. In the secondary field (2) the engine load in percentage is displayed.

In the main field (1) the time is displayed. In the secondary field (2) the outdoor temperature is displayed.

In the main field (1) the average speed of the tractor is displayed. In the secondary field (2) the average consumption of the fuel is displayed.

⚠️ The entries are automatically cleared after two hours from the engine shutdown.
The average speed and the fuel consumption of the tractor

Average speed of the tractor
The average speed of the tractor (1) in km/h from the last reset of the data is displayed on the display. If you want to determine the average speed for a certain period, you must reset (zero) the value at the beginning of the measurement. After the reset, 0 is displayed during first 100 m on the display, then the value is updated every 10 s or 100 m of the distance travelled.

Average consumption of the fuel
The average consumption of the fuel (2) in litres per hour from the last reset of the data is displayed on the display (2). If you want to determine the average consumption for a certain period, you must reset (zero) the value at the beginning of the measurement. The value is updated every 10 s.

Manual zeroing (reset) of data
Except automatic zeroing of data, these entries can be zeroed manually. For manual zeroing of data, the tractor must be with the engine not started and with the key of the switch box in the position I. Select display of the corresponding main screen using the button (F). Zero the entry by longer pressing of the button (E) (RESET).

Attention! Both entries are always zeroed simultaneously; a single entry cannot be zeroed.

Display - resetting data
The procedure for zeroing data in the secondary field at the main screens where the data can be zeroed is as follows:
1 - Select display of the corresponding main screen using button (F).
2 - Zero the entry by longer pressing of button (E) (RESET).
Display - manual brake
If the tractor is not braked by a manual brake, a warning is displayed on a display (letter P in a circle) and at the same time a sound signal is heard. See the chapter "Driving operation" for more.

⚠️ **Brake the tractor by a manual brake.**

Display - indicator of service inspection intervals

The warning regarding an approaching maintenance date (service interval) is displayed if there is less than 30 operating hours remaining to the planned maintenance.
When the key in the switch box is moved to position I, the home screen is displayed on the display (A).
After several seconds the warning regarding an approaching maintenance (B) with the number of operating hours of the tractor (1) remaining to the maintenance date is displayed on the display.

Exceeding the service interval
In case of exceeding the service interval, the maintenance alert is displayed on the display when the key in the switch box is moved to position I.
When the display is switched to the main screen using button (F) (DISP), the symbol (1) remains on all displays of the main screens.
Zeroing (reset) of the indicator of service inspection intervals

When the maintenance was performed, zero (reset) the indicator of service inspection intervals.

Enter the service menu by longer pressing the button (A). Use the buttons (B) and (C) to select the item calibration indicated with the arrow (a). By pressing the button (A) you enter the calibration menu. Use the buttons (B) and (C) to select the item service indicated with the arrow (b). By pressing the button (A) you enter the service menu. Use the buttons (B) and (C) to select the item [clearing] indicated with the arrow (c). By pressing the button (A) reset the indicator of the service interval. To return to the service menu, use the buttons (B) and (C) to select the item EXIT and press the button (A) (Enter).

Error signalling

Errors arising during tractor operation are indicated by switching the corresponding signal lamp, acoustic signal and error message in the instrument panel display. If the error is indicated, the signal lamp still glows, even though the display is switched to the next display.

If the error is not eliminated or the indicated state has not returned to a normal state:
the corresponding signal lamp glows when the tractor is switched off, the key in the switch box is moved to position I and then the engine is started, the corresponding signal lamp is switched on again and the error message runs through the display.

1 - The signal lamp of a serious defect of the system (red).
2 - The signal lamp of a less serious defect of the system (orange).
3 - Operational protection signal lamp (blue).
4 - Gearbox malfunction signal lamp (dark red). It glows together with any of the signal lamps indicating errors, as long as the error relates to the gearbox or the system of travelling clutches.

During tractor operation, three types of error messages may appear in the display.
During tractor operation, three types of error messages may appear in the display.

A. **Warning of operational protection**, 
that a small deviation from the set values or error by the operator occurred. 
The warning is displayed in the display for about 10 seconds and then the display is switched to the previously set main screen.

The state is indicated by the signal lamp
The tractor can be used without limitation.

B. **Less serious defects of the system**
If a less serious defect of the system occurs, the defect number is displayed in the display for about 10 seconds. Then the display of the defect is minimized into the main field.
All the tractor's functions remain active; it can happen that some of the functions is not undepreciated.

The state is indicated by the signal lamp

❗️ **If this situation occurs, finish the work and contact the service centre.**

C. **Serious defects of the system**
If a serious defect occurs, the display is backlighted in red there is a label **STOP**. The display cannot be switched to another screen.

The state is indicated by the signal lamp

❗️ **If this situation occurs, stop the tractor immediately and contact the service centre.**

**Description of the display of error messages**
1 - The symbol of the defect significance.
2 - Node of the tractor where the defect appeared.
3 - Main display field - defect code.
4 - Secondary display field - defect specification.
Symbols of tractor nodes

- Engine
- Gears and travelling clutches
- Spring-loaded front driving axle
- Hydraulic systems
- System of treatment of exhaust gases
- Systems facilitating start of the engine

Display - service menu
Entry to service menu:
You will enter the service menu by a longer pressing of (A) button.
The selection of items to be done by (B) and (C) buttons.
The selected item is marked by an arrow (1).
Exit from service menu:
By buttons (B) and (C), select an item EXIT and press (A) button.

Service menu
Service menu
1 - Failures history, for servicing purposes
2 - Machined area
3 - Calibration
4 - Language selection
5 - Exit service menu
Display - history of defects

a - enter the service menu
use buttons (A) and (B) to select the item listing of defects and press button (C) (ENTER)
b - selection of tractor nodes
use buttons (A) and (B) to select the tractor node from which the listing of defects is needed and press button (C) (ENTER)

1 - engine
2 - gears and travelling clutches
3 - spring-loaded front driving axle
4 - hydraulic systems
5 - system of treatment of exhaust gases
6 - system facilitating start of the engine
7 - return to the previous screen

c - the listing of defects of the selected tractor node; use buttons (A) and (B) to scroll between individuals defects

1 - sequence number
2 - defect code
3 - code of defect specification
4 - number of defect repetitions

Return to the main screen by pressing button (C) (ENTER)

Display - setting language mutation
Enter the service menu:
Use buttons (B) and (C) to select the item LANGUAGE and press button (A) (ENTER). By successive pressing of button (A) (ENTER), available language mutations are successively displayed. When reaching the required language mutation, exit the service menu.
Use buttons (B) and (C) to select the item EXIT and press button (A) (Enter). The instrument panel is switched to the selected language mutation.

⚠️ If you want to change metric units to Anglo-Saxon, select the language mutation ENG. IMP.
Display - machined area
Machined area displays machined area in hectares in the main displaying array, in the secondary displaying array mean in hectares per hour.

⚠️ It is necessary to set the width of the machined area (i.e. working width of the tools) for the correct calculation of machined area.

Machined area menu

Enter service menu by pressing (A) for a longer period of time. Select an item machined area marked with an arrow (a) by (B) and (C) buttons. By pressing (A) button, you will enter the machined area (b) menu. Machined area (b) menu:
(1) - setting the width of machined area (i.e. working width of tools)
(2) - start of machined area record
(3) - end of machined area record
(4) - erase recorded area from ECU
(5) - return to service menu

Machined area width

Enter machined area menu. Select the item aggregation width marked with an arrow (a) by (B) and (C) buttons and by pressing the button (A) shift to the menu aggregation width. There are three preset values of aggregation width in aggregation width menu. Select the required aggregation width by (B) and (C) buttons and confirm by pressing (A) button. Select an item (1) by (B) and (C) buttons and press (A) button for return to machined area (a) menu.
Setting of the user-defined width of aggregation

In the aggregation width menu, each of the three preset values of the aggregation width can be changed. Enter the aggregation width menu, use buttons (B) and (C) to select the value that you want to change and press button (A) (ENTER). The value is indicated with asterisk (1).

By pressing of button (D) (DISP), value (a) is indicated with arrow (2); you can change this value using buttons (B) and (C).

By another pressing of button (D) (DISP), value (b) is indicated with arrow (2); you can change this value using buttons (B) and (C).

By another pressing of button (D) (DISP), value (c) is indicated with arrow (2); you can change this value using buttons (B) and (C).

By another pressing of button (D) (DISP) you can exit setting.

To return to the processed area menu, select the item exit using buttons (B) and (C) and press button (A) (ENTER).

Machined area record

Enter service menu (a) by longer pressing the (A) button. Select the item machined area marked with an arrow by (B) and (C) buttons. By pressing the (A) button, you will enter the machined area menu (b).

Select an item (1) by (B) and (C) buttons and in the aggregation width menu select a requested value and return to the machined area (b) menu.

Select an item (2) by (B) and (C) button and by pressing the button (A) start recording of machined area and exit service menu. From this time on, if the tractor is moving, machined area will be recorded depending on the aggregation width and the travelled distance.

The record of the machined area will end if you select item (3) in the machined area menu (b) and press (A) button.

If you start the record of machined area again, the newly read values will be added to the already saved values.

After annulling the values in the main and secondary array, select an item (4) in the menu by (B) and (C) buttons in the machined area menu (b) and by pressing the (A) button, confirm the selection. After returning to the main screen Machined area, there will not be any data in the main and secondary array of the display (c).

Override values cannot be renewed in any way.
Display - setting and calibration

Enter the service menu by a longer pressing of button (A):

a - Use buttons (B) and (C) to select the item calibration indicated with arrow.

b - By pressing button (A) you enter the calibration menu.

1 - calibration of travelling clutches
2 - calibration of travel speed
3 - setting of steering sensors of the front axle
4 - service setting
5 - setting of hours
6 - return to the main screen
Travel speed calibration

Dashboard is calibrated after assembly at a production plant. Do repeated calibration in the following cases:
- after a significant wear of tyres
- when mounting new tyres
- when replacing dashboard

Calibration procedure
- at a suitable place, mark a track of 100 m at length
- inflate tyres of tractor on the prescribed pressure, see tables of this Instructions manual
- start the engine
- move the tractor to the beginning of the 100-metre track
- enter the service menu by pressing (A) button
- select the item (1) by (B) and (C) buttons and by pressing (A) button go to calibration menu
- select the item (2) by (B) and (C) buttons and move to the speed menu by pressing (A) button
- select an item (4) by (B) and (C) buttons and by pressing the (A) button, move to the following menu. The item (3) serves only for setting the travelling speed in the production plant
- select an item (5) by (B) and (C) buttons and confirm with the (A) button
- start the tractor with a stable speed of approximately 10 km/h
- after travelling the whole distance of 100 m stop the tractor at the marked end of the track (b)
- select the item (6) by pressing the buttons (B) and (C) and by pressing (A) button, save the newly read values and you will return to initial screen
- if calibration of travelling speed did not run properly, error report will appear on the display (7), after confirming the item (8) you will return to initial screen by pressing the (A) button without saving the new values
Setting of steering sensors of the front axle

- During any interference in geometry of the front axle
- During replacement of sensors of the front axle
- During replacement of the instrument panel
- During replacement of the front axle

Calibration procedure
- Indicate the track of the length of 15 m on suitable place
- Inflate the tractor tyres to the required pressure
- Start the engine
- Park the tractor at the start of the track
- By pressing button (A) enter the service menu
- Use buttons (B) and (C) to select the item CALIBRATION indicated with arrow (a) and by pressing button (A) you enter the calibration menu
- Use buttons (B) and (C) to select the item SETTING OF STEERING SENSORS OF THE FRONT AXLE indicated with arrow (b) and by pressing button (A) you enter another screen
- Drive the tractor straight forward 15 metres and stop the tractor
- By pressing button (A) the values are stored and you are returned to the main screen
Setting of time

By pressing button (A) enter the service menu
a - Use buttons (B) and (C) to select the item CALIBRATION indicated with arrow (a) and by pressing button (A) (ENTER) you enter the CALIBRATION menu
b - Use buttons (B) and (C) to select the item SETTING OF TIME indicated with arrow (b) and by pressing button (A) (ENTER) you enter the next screen
c - Setting time screen

1 - Setting of hours
2 - Setting of minutes
3 - Store and return to CALIBRATION menu (b)
4 - Return to CALIBRATION menu (b) without saving
5 - Display of hours
6 - Display of minutes

Procedure for setting of time
Use buttons (B) and (C) to select the item hours (1); by successive pressing of button (A) (ENTER) we change the value of hours in the display; changes are displayed directly in the position (5).
Use buttons (B) and (C) to select the item minutes (2); by successive pressing of button (A) (ENTER) we change the value of minutes in the display; changes are displayed directly in the position (6).
Use buttons (B) and (C) to select the item STORE AND RETURN (3) to confirm changes in the setting of time and for the return to the CALIBRATION menu or select the item RETURN (4) to return to the CALIBRATION menu without saving the time setting and confirm it by pressing button (A) (ENTER).

⚠️ If the accumulator battery of the tractor is disconnected for a longer time, ca. after ten days the set time is reset (zeroed). When accumulator battery is connected, the current time must be set again.

Instrument panel - warning

Replenish fuel
When the fuel signal lamp is lit up, the appeal for replenishment of the fuel appears in the display for about 3 seconds.
Add urea
When the level of the urea tank content drops, the prompt for the addition of urea and the amount of urea in the tank in percentage of the tank volume are shortly displayed on the display.

High temperature of the cooling liquid

A - informative - reduce the engine power
B - warning - stop the tractor, set the engine to idling until the temperature of the cooling liquid is reduced
C - caution - stop the engine, wait until the temperature of the cooling liquid is reduced and check the level of the cooling liquid; if the cooling liquid starts to be overheated again when the engine is started, stop the engine and contact the service centre

Low level of the cooling liquid

A - informative
B - warning - the cooling liquid must be replenished
C - caution - stop the engine, wait until the temperature of the cooling liquid is reduced and replenish the cooling liquid

⚠️ Do not release the overpressure plug unless the cooling liquid is cold! Danger of scald burns!
High temperature of the engine oil

A - informative - reduce the engine power
B - warning - stop the tractor, set the engine to idling until the temperature of the engine oil is reduced
C - caution - stop the engine, wait until the temperature of the engine oil is reduced and check the level of the engine oil; if the engine oil starts to be overheated again when the engine is started, stop the engine and contact the service centre

High air temperature in the engine air intake system

A - informative - reduce the engine power
B - warning - stop the tractor, set the engine to idling until the air temperature in the engine air intake system is reduced
C - caution - stop the engine and wait until the temperature in the engine air intake system is reduced; if the air in the engine air intake system starts to be overheated again when the engine is started, stop the engine and contact the service centre
Water in the coarse filter of fuel

High water level in the coarse filter of fuel is indicated in several stages of warning

A - informative - it will be necessary to perform defecation of the fuel coarse filter (see chapter Maintenance Guidelines)
B - warning - it will be necessary to perform defecation of the fuel coarse filter (see chapter Maintenance Guidelines)
C - caution - stop the engine and perform defecation of the fuel coarse filter (see chapter Maintenance Guidelines)

High oil temperature in the gearbox

High temperature of the gear oil is indicated in several stages of warning

A - informative - reduce the engine power
B - warning - stop the tractor, set the engine to idling until the temperature of the gear oil is reduced
C - caution - stop the engine, wait until the temperature of the gear oil is reduced and check the level of the gear oil; if the gear oil starts to be overheated again when the engine is started, stop the engine and contact the service centre
Full pushing filter of the gearbox distributor

The full oil filter of the gearbox distributor is indicated in several stages of warning

A - informative - it will be necessary to perform replacement of the oil filter cartridge of the gearbox distributor (see chapter Maintenance Guidelines)
B - warning - it is necessary to perform replacement of the oil filter cartridge of the gearbox distributor (see chapter Maintenance Guidelines)
B - caution - perform immediate replacement of the oil filter cartridge of the gearbox distributor (see chapter Maintenance Guidelines)

Full pushing filter of the hydraulics

The full oil filter of the hydraulics is indicated in several stages of warning

A - informative - it will be necessary to perform replacement of the oil filter cartridge of the hydraulics (see chapter Maintenance Guidelines)
B - warning - it is necessary to perform replacement of the oil filter cartridge of the hydraulics (see chapter Maintenance Guidelines)
C - caution - perform immediate replacement of the oil filter cartridge of the hydraulics (see chapter Maintenance Guidelines)
System of additional treatment of exhaust gases (SCR)
The tractor is equipped with the engine fulfilling emission limits STAGE IIIB. The compliance with the emission limit is achieved, among others, by injection of the reduction agent (urea) into the exhaust manifold (SCR) and consequent catalytic reduction in the catalyst of exhaust gases. Using the SCR system, emissions of NOx (NOx = nitrogen oxides) exhausted by the engine can be continuously decreased.
At the same time, the reduction agent injected into the exhaust system reacts in SCR catalyst with NOx emissions contained in exhaust gases which are reduced to nitrogen (N2) and water (H2O).
The control of the injected amount of urea is performed using the engine electronic control.

Conditions for system SCR operation
The amount of urea in the tank is displayed on the instrument panel. If the amount of urea in the tank is exhausted when the engine is running, the injector in the exhaust manifold is in danger of being damaged. In this way also the catalytic reduction is stopped and the amount of harmful emissions in exhaust gases is increased.
When urea is added in the tank, the catalytic reduction is restored.

Conditions for proper functioning of the system
- temperature of cooling liquid must be higher than 60°C
- working temperature of the catalyst must be higher than 250°C
- outdoor temperature must be higher than -20°C
- engine revolutions must be higher than 1,000 rpm
- requirement for the withdrawn torque must be higher than 20%

Urea (Aqueous Urea Solution AUS 32)
Urea is a highly pure aqueous urea 32.5% solution used as a reducing agent NOx for additional treatment of exhaust gases SCR of motor vehicles with diesel engines. The product is labelled as Urea or AUS 32 (AUS: Aqueous Urea Solution) and complies with the standard ISO 22241-1 Reducing agents NOX AUS 32.
The urea solution AUS 32 is known in USA and North America as Diesel Exhaust Fluid (DEF).
The lifetime of urea without the loss of the quality is influenced by storage conditions. It crystallizes at ambient temperature of -11°C and at ambient temperature over +35°C it initiates hydrolytic reaction which means that a slow decomposition to ammonia and carbon dioxide begins. It is essential to protect unprotected vessels from direct sunlight. Barrel must not be stored longer than one year! Pay attention to the resistance of the used materials and store vessels. Urea freezes below the temperature of -11°C.

Principles for safe handling of urea

Contact with skin
- Prolonged or repeated contact may cause skin irritation.

Contact with eyes
- Prolonged or repeated contact may cause eye irritation. Rinse eyes with plenty of water for at least 15 minutes. If irritation persists, visit a physician.

Ingestion
- In case of ingestion of small quantities, toxic effects are not likely. Higher amount may cause intestinal or stomach problems. Do not induce vomiting. Drink half a litre of water or milk. In case of ingestion of a larger than small quantity, visit a physician.

Fire-fighting measures
- The product has fire extinguishing properties.

Extinguishing means
- If the material got in the fire, use large amount of water for extinguishing.

Accidental release measures
- Minimize contact of the spilled material with the soil so that you do not allow product to reach surface or underground water courses.
- Soak up the spilled material with dry soil, sand or other non-flammable material.
**Limitation of the engine power and engine revolutions**

If there is a serious error of SCR system or if the level of urea in the tank is low, the reaction of the system is reduced engine power output and revolutions. According to the error type, so-called one-stage or two-stage reduction of engine output is performed.

<table>
<thead>
<tr>
<th>stage 1</th>
<th>Reduction of engine power by 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>stage 2</td>
<td>Reduction of engine power by 20%</td>
</tr>
<tr>
<td></td>
<td>Reduction of engine revolutions to 1,200 rpm</td>
</tr>
</tbody>
</table>

**Indication of amount of urea in the tank**

The amount of urea in the tank is displayed on the corresponding main screen in percentage of the urea tank volume. Small amount of urea in the tank is indicated with urea signal lamp (1), defect signal lamp (2), acoustic signal and reduced engine power output and revolutions.

<table>
<thead>
<tr>
<th>amount of urea in the tank</th>
<th>urea signal lamp</th>
<th>defect signal lamp</th>
<th>acoustic signal</th>
<th>limitation of the engine power and engine revolutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 15%</td>
<td>glows</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than 10%</td>
<td>flashes (0.5 Hz)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than 5%</td>
<td>flashes (0.5 Hz)</td>
<td>glows</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>less than 5%</td>
<td>flashes (1 Hz)</td>
<td>glows</td>
<td>yes</td>
<td>reduction of power by 20%</td>
</tr>
<tr>
<td>0%</td>
<td>flashes (2 Hz)</td>
<td>glows</td>
<td>yes</td>
<td>reduction of power by 20% reduction of engine revolutions to 1,200 rpm</td>
</tr>
</tbody>
</table>

**Long-term shutdown of tractor**

During a long-term shutdown of the tractor, the urea filling must be drained from the tank. Before operating the tractor, the urea tank must be filled with a new filling again and the urea filter element must be replaced.

⚠️ The urea filling should not stay in the tank longer than four month; then it should be replaced.

**Repairs and maintenance of the system of additional treatment of exhaust gases**

⚠️ All repairs and maintenance of the system of additional treatment of exhaust gases must always be performed by a professional service All interventions in the system, except authorised service, are prohibited.
Before a drive with the new tractor get to know how to shift gears and try individual positions of the shifting lever when the engine is stopped. During normal operation and before you set up, make sure that the technical condition ensures safe operation of the tractor.

Before you start

Before you start the engine, make sure that:
1. the tractor is properly braked.
2. the main gear shifting lever of gears in neutral position.
3. Reversing lever is in neutral position
4. PTO switches are off
If clutch pedal is not depressed the tractor cannot be started - start protection switch is not switched

If you do not succeed in starting the engine
Return the key to ‘0’ position. Wait 60 second and repeat the start.

Never help the stopping engine by a starter. You are being exposed to the danger of starter damage.

Non-permitted starting

It is forbidden to start the tractor by short-circuiting the starter clamps. Start only from the driver’s seat. It is necessary to disconnect minus pole of accumulator and all the shifting levers including PTO shaft shifting lever to be shifted in neutral position with any manipulation or repair of the starter. The starter’s clamps are covered with a cap.
Starting the engine of the tractor

1. Insert the key to the switchbox (‘0’ position).
2. Depress the clutch pedal.
3. Shift the main gear shifting lever to neutral position.
4. Shift the reversing lever to neutral position.
5. Make sure that all PTO switches on the right column of the cabin are switched off.
6. Turn the key to ‘I’ position. A yellow control will light up on the dashboard signalising the proper igniting function.
7. Wait for the ignition control to turn off (the time is dependent on the temperature of the coolant).
8. Turn the key to the ‘II’ position (start).
9. After starting the engine, release the key immediately. Do not start for more than 20 sec.

Blocking of the start
If the engine cannot be started and the defect signal lamp is flashing, it means that blocking of the start was activated by electronic regulation of the engine and this way the engine is protected.
The blocking of the start is interrupted when the key in the switch box for about 30 seconds is moved to position 0.

Immediately after start

When the engine is started, leave it idling without load for ca. 2 minutes.
During this time, perform checking of lubrication, charging, hydrostatic control (signal lamps must not be illuminated) and other functions ensuring proper operation of the engine. The time of engine operation without load must be adhered to, especially in winter period.
Engine heating

⚠️ Do further heating of the engine during the drive. The heating of the engine by lengthy idle run or sharp increase in revolutions is harmful to the engine. If the temperature of coolant has not reached 45°C, do not exceed the engine revolutions over 2000 rpm.

Error signalling

Errors arising during tractor operation are indicated by switching the corresponding signal lamp, acoustic signal and error message in the instrument panel display.
If the error is indicated, the signal lamp still glows, even though the display is switched to the next display.
If the error is not eliminated or the indicated state has not returned to a normal state:
the corresponding signal lamp glows
when the tractor is switched off, the key in the switch box is moved to position I and then the engine is started, the corresponding signal lamp is switched on again and the error message runs through the display.

1 - The signal lamp of a serious defect of the system (red).
2 - The signal lamp of a less serious defect of the system (orange).
3 - Operational protection signal lamp (blue).
4 - Gearbox malfunction signal lamp (dark red). It glows together with any of the signal lamps indicating errors, as long as the error relates to the gearbox or the system of travelling clutches.

More information in chapter Instrument panel.

Indication of the limitation of the engine power and engine revolutions

If there is a serious error in control or auxiliary systems of the engine, SCR system or if the level of urea in the tank is low, the reaction of the system is reduced engine power output and revolutions.

According to the error type, so-called one-stage or two-stage reduction of engine output indicated by glow of the signal lamps (1) and (2) is performed.

<table>
<thead>
<tr>
<th>stage 1</th>
<th>Reduction of engine power by 20%</th>
<th>signal lamp (1) glows</th>
</tr>
</thead>
<tbody>
<tr>
<td>stage 2</td>
<td>Reduction of engine power by 20%</td>
<td>Reduction of engine revolutions to 1,200 rpm</td>
</tr>
</tbody>
</table>
Signalling errors in the system of additional treatment of exhaust gases

The label with a short description of indication of errors in the system of additional treatment of exhaust gases and subsequent activities of operators is located in the right bottom corner of the windshield (A).

On the label (B) in the left part there is a combination of signal lamps glowing or flashing on the instrument panel indicated using pictograms including their colours and the pictogram of the sounding acoustic warning signal. In the right part of the label a required reaction of the tractor operator is described.

1. Add urea.
2. Add urea. The engine power will be limited.
3. Add urea. Engine revolutions will be minimised.
4. Increase the engine load or contact service. The engine power will be limited.
5. Contact service. The engine power will be limited and engine revolutions will be minimised.

Gear shifting
The tractors are equipped with a five-gear synchronized gearbox, three-gear torque multiplier, reversing and two-gear reduction.
Five-gear gearbox is shifted by main shifting lever with buttons for disengaging the travel clutch (1) and for shifting the individual gears of multiplier (2).

Reversing lever
The selection of the direction of travel drive is done by reversing lever (forward, backward).
F - driving forward
N - neutral
R - driving backward
The lever also serves for starting the tractor without the depressed clutch pedal.
**Reversing lever position signalization**
The individual positions of reversing lever are signalized by a sign (1) on the display.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="driving forward" /></td>
<td>driving forward</td>
</tr>
<tr>
<td><img src="image" alt="Neutral" /></td>
<td>Neutral</td>
</tr>
<tr>
<td><img src="image" alt="driving backward" /></td>
<td>driving backward</td>
</tr>
</tbody>
</table>

**Shifting road and reduced speeds**

| H - | Road speeds |
| N - | Neutral     |
| L - | Reduced speeds |

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

⚠️ *Road and reduced speeds shifting lever can be shifted only with a tractor at standstill.*

**Road and reducing speeds lever position signalization**
The individual positions of road and reduced speeds lever are signalized by a sign (1) in the left bottom corner of the display.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="road speeds" /></td>
<td>road speeds</td>
</tr>
<tr>
<td><img src="image" alt="neutral position" /></td>
<td>neutral position</td>
</tr>
<tr>
<td><img src="image" alt="reduced speeds" /></td>
<td>reduced speeds</td>
</tr>
</tbody>
</table>

**Driver’s seat - safety switch**
The driver’s seat is equipped with a safety switch which signalizes the system of driver abandoning the driver’s seat.

If the tractor is started, there is nobody on the driver’s seat and reversing lever under the steering wheel is shifted to F or R position, N position is shifted automatically and tractor does not start.

If this situation occurs, it is necessary to sit on the driver’s seat, to return the reversing lever under the steering wheel to N position and then to select the direction of drive again (F or R).
The principles of appropriate use of tractors

⚠️ The listed principles for tractor’s operation serve for facilitating the operation and guarantee corresponding service life of travel clutch!

The description of the system of travel clutches
The tractor is equipped with two individual travel clutches, one for travelling forward and one for travelling backward.
The selection of the driving direction and also the choice of a specific travel clutch is done by shifting the reversing lever under the steering wheel from neutral position to the position forward or backward.

The way of controlling the travel clutch by
1 - Reversing lever
2 - Clutch control button on the head of reversing lever
3 - Clutch pedal

The differences in ways of controlling the travel clutch by
1 - Reversing lever
This way of control has automatic start function.
When shifting the reversing lever to neutral position, there is release of travel clutch.
When shifting the reversing lever to the forward or backward position, there is a switch of travel clutch and subsequent smooth dead start of the tractor in the direction defined by reversing lever.
The speed of switch of travel clutch and the smoothness of dead start is controlled by a controlling unit on the basis of information saved in calibration and the operators cannot influence it.

⚠️ Automatic dead start function is sparing to travel clutches than the control of travel clutches by clutch pedal, therefore use the ways of controlling travel clutch with the function of automatic dead start for the regular operation of tractor with dead start, gear shifting or the change of the driving direction.

2 - Clutch control button on the head of gear shifting lever
This way of control has the function of automatic switch of travel clutch.
When pressing the button of clutch control on the head of gear shifting lever there is release of travel clutch.
When releasing the red button of control clutch on the head of gear shifting lever, there is a switch of travel clutch.
The rate of travel clutch switch is controlled by electronic control unit on the basis of information saved with calibration and the operator cannot influence it.

3 - Clutch pedal
When depressing the clutch pedal, there is release of travel clutch.
When releasing the clutch pedal, there is a switch of travel clutch.
The speed of travel clutch switch is dependent on the speed of releasing the clutch pedal.
The clutch pedal does not enable the function of automatic dead start and operators influence the speed and smoothness of dead start.

⚠️ Use the clutch pedal only for stopping the tractor in regular operation.

⚠️ For the need of delicate inching, for example when connecting tools or when manipulating with the tractor in crammed spaces, when even the reduced gear speeds are not slow enough, use the clutch pedal for short time.

⚠️ It is forbidden to control the speed of tractor by partial depression of the clutch pedal with engine revolutions higher than 1200 revolutions per minute. Do not use the clutch pedal as a foot rest. There is a danger of limiting service life or failure of travel clutches.
## DRIVING OPERATION

### Interrupted sound signal

*If the speed of tractor is control by partial depression of the clutch pedal with engine revolutions higher than 1 200 rpm, there is an interrupted sound signal and gearbox failure control is still lit. If this situation occurs, fully depress the clutch pedal immediately to stop or release the clutch pedal to the upper position and wait until the sound signal goes silent and the control of gearbox failure. Lower the engine revolutions under 1 200 revolutions per minute and then continue working with the tractor. If you do not do it, 8 seconds later the interrupted acoustic signal changes to uninterrupted signal.*

### Dead start of the tractor

If at dead start, engine revolutions are higher than 1400 rpm L gear of multiplier is automatically shifted, not depending on the switch of multiplier pre-selection on dashboard being on or off. If the multiplier pre-selection switch on the dashboard is on at dead start, L gear of multiplier is shifted automatically independent on the number of engine revolutions at dead start (i.e. when the engine revolutions are lower than 1400 rpm).

*A very fast dead start can cause overloading of driving gear, increased fuel consumption, excessive wear of tyres and damage to load. Use dead start on the 1st gear only when driving with heavy trailer to the slope and in difficult terrain.*

#### Dead start of tractor in regular operation - automatic dead start function

- Use the control of travel clutch by reversing lever under the steering wheel for dead start of the tractor.
- Select the slowest L gear of torque multiplier for dead start of the tractor.

*Note: When starting or stopping the engine of the tractor, the fastest gear H is always automatically shifted.*

- If the road and reducing speeds shifting lever is shifted in the group of road speeds, shift the lowest gear speed for tractor dead start with respect for operational conditions.
- Use the lowest possible engine revolutions for tractor’s dead start, such that there is no turn off. After the switch of travel clutch, increase the engine revolutions according to your needs.

#### Dead start by means of automatic dead start function

Automatic dead start function is in the shift of reversing lever with engaged applicable gear followed by dead start without using the clutch pedal or clutch control buttons.

1. Start the engine.
2. Shift appropriate gear for starting the engine.
3. Release the manual brake, if you are standing on a slope, brake the tractor by foot brake.
4. When shifting the reversing lever form neutral to the requested direction of tractor drive (forward or backward), the tractor starts.
5. When you increase the engine revolutions simultaneously, release the foot brake.

*When depressing the clutch pedal, the automatic dead start function is put off from operation.*

### Dead start of tractor in regular operation - clutch pedal

*In regular operation use the clutch pedal only for stopping the tractor. For the need of delicate inching, e.g. when connecting the tools or when manipulating with tractor in cramped spaces, if even the reduced gears are not slow enough, use the clutch pedal only for short time.*

*It is forbidden to control the speed of tractor by partial depression of clutch pedal with engine revolutions higher than 1200 rpm. Do not use the clutch pedal as a foot rest. There is a risk of limited service life or failures of travel clutches.*
Dead start - using the clutch pedal
1. Start the engine.
2. Depress the clutch pedal.
3. Select road and reduced speeds.
4. Shift an applicable gear for starting the tractor.
5. Shift the reversing lever to the direction requested (forward or backward).
6. Slightly increase the engine revolutions.
7. Prepare the manual brake for unbraking.
8. Release the clutch pedal only to the point of travel engagement and with simultaneous increase of revolutions continue in a continuous release of the clutch pedal.
10. Start smoothly and slowly.

⚠️ Use this way of dead start when you need to inch carefully, for example when connecting tools etc.

Change the direction of drive

Change the direction of drive by means of reversing lever

⚠️ Change the direction of drive by means of reversing lever is done with travel speed lower than 10km/h. When you attempt to change the direction of drive in speed higher than 10 km/h, acoustic signal starts (uninterrupted tone) and the tractor engages neutral. The signal switches off after the shift of reversing lever back to N position, when depressing the clutch pedal or pressing the button of switching clutch on the head of gear shifting lever. It is also necessary to lower the travel speed of tractor under 10km/h, shift the reversing lever to neutral position and to repeat the shifting of requested direction.

Keeping the following instructions when changing the direction of the drive, contributes to prolonging service life of travel clutches.
- For changing the direction of the drive of tractor use reversing lever under the steering wheel without using the clutch pedal.
- For changing the direction of the drive of tractor, select the slowliest gear L with torque multiplier.
- For changing the direction of the drive of tractor, select lower gear with regard for the subsequent dead start and tractor load.

⚠️ Changing the direction of drive by means of reversing lever is done at tractor travel speed lower than 10km/h. When you try to change the direction of drive at the speed of more than 10 km/h, an acoustic signal starts (uninterrupted tone), the signal switches off after the shift of the lever back to N position, when depressing the clutch pedal or pressing the button for switching off the clutch on the head of the gear shifting lever.
1. Lower the travel speed of tractor under 10km/h by means of brake pedal.
2. Shift the reversing lever to the requested direction of tractor drive.
3. The tractor stops automatically and travels in the requested direction.
4. Continue in smooth dead start of the tractor with simultaneous increase of engine revolutions.

⚠️ Should the tractor speed drop below 10km/h, tractor shift neutral and it is necessary to lower the travel speed of tractor under 10km/h, shift the reversing lever to neutral position and to repeat the shifting to the required direction.

⚠️ When depressing the clutch pedal, the automatic function is put off operation. If the above mentioned is done subsequently after the attempt to change the direction of drive above 10 km/h, it is necessary to lower the travelling speed of tractor below this speed. In opposite case, after the release of clutch pedal the neutral remains shifted.
DRIVING OPERATION

Change the direction of drive - using the clutch pedal
1. Depress the clutch pedal and stop the tractor by foot brake.
2. Shift the reversing lever to the requested direction of tractor drive.
3. Release the clutch pedal only to the point of travel engagement and with simultaneous increase of engine revolutions continue in smooth release of the clutch pedal.
4. Start smoothly and slowly.

Gear shifting
- For shifting the gear speeds while travelling use the travel clutch control by a red button of clutch control on the head of gear shifting lever.
- When shifting gears, press and hold the red button of clutch control on the head of gear shifting lever, release the gas pedal, throw out the gear, shift an applicable gear speed, release the red button and then increase the engine revolutions.
- If operation conditions permit, use the function of multiplier preselection.

Gear shifting - Using the clutch pedal
Depress the clutch pedal (clutch disengaged). At the same time release the pedal of foot throttle and shift the applicable gear speed. Release the clutch pedal smoothly (clutch is being engaged) and at the same time increase the engine revolutions.

Gear shifting - using the clutch control button on the head of gear shifting lever
Press the clutch control button on the head of gear shifting lever. At the same time release foot throttle pedal and shift the applicable gear speed. Release the button of clutch control (clutch is being engaged) and at the same time increase the engine revolutions.

Note: Clutch pedal is always preselected to the use of button of clutch control on the head of gear shifting lever.

Blocking the automatic dead start function
With some failures of travel clutches system, the function of automatic dead start is blocked. This situation is signalized by an inscription displayed on a display. In this case reversing lever under the steering wheel serves only for the selection of direction of drive, the button for clutch control on gear shifting lever does not work. For dead start of tractor and gear shifting, it is possible to use only clutch pedal.

⚠️ If this situation occurs, finish your work and contact service.

Three-gear torque multiplier
Three-gear multiplier is a standard equipment of all types of tractors. Shifting individual gears of three-gear multiplier is controlled by two buttons on the head of main gear shifting lever.

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Increasing travel speed</td>
</tr>
<tr>
<td>L</td>
<td>Decreasing travel speed</td>
</tr>
</tbody>
</table>

It is done without travel clutch pedal depressed (under load).
Signalization of multiplier function
Individual engaged gears of multiplier are signalized by a sign (1) in the left upper corner of the display.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>The highest gear (the fastest)</td>
</tr>
<tr>
<td>2</td>
<td>Middle gear</td>
</tr>
<tr>
<td>1</td>
<td>Lowest gear (the slowest)</td>
</tr>
</tbody>
</table>

Increasing, decreasing the travel speed by two gears

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2xH</td>
<td>Increases the travel speed by two gears</td>
</tr>
<tr>
<td>2xL</td>
<td>Decreases the travel speed by two gears</td>
</tr>
</tbody>
</table>

Multiplier preselection switch
Multiplier pre-selection switch is located on the control panel on the right rear mudguard. Engaging the switch is signalized by a lit symbol on the switch.
If the preselection switch is off, the gears of multiplier can be engaged by buttons on the gear shifting lever.
If the preselection switch is on (b), the gears of multiplier are shifted automatically depending on engine revolutions according to pre-saved values.

Multiplier pre-selection signalization
The switch of multiplier reselection switch is signalized by a sign (1) on the display of dashboard.
Automatic multiplier shifting

The system of automatic multiplier shifting is switched by multiplier pre-selection switch. If the multiplier pre-selection switch is on (control on the switch is lit), the gears of multiplier are shifted automatically depending on the engine revolutions according to preset values (engine revolutions). The system of automatic multiplier shifting is not dependent on the engaged speed gear. With engaged multiplier pre-selection switch, it is possible to turn the engine off and start and the saved values (engine revolutions) do not change. The values for automatic multiplier shifting are read always when the pre-selection switch is off, with tractor drive with engine revolutions higher than 700 rpm, with travel speed higher than 2 km/h.

When meeting the previous conditions, the system will remember

- Engine revolutions with last use of L button on gear shifting lever for automatic shifting of multiplier gears for lowering the travel speed
- Engine revolutions with last used of H button on gear shifting lever for automatic engagement of gears of multiplier for increasing the travel speed

The difference between the engine revolutions for a and b must be greater than 250 rpm

Example of use:
We are driving with a tractor with multiplier pre-selection off with multiplier shifted to 2 gear, with engine revolutions of 1,600 rpm we press L button on the gear shifting lever, by this we shift the torque multiplier to 1 gear, now we increase the engine revolutions to 1,900 rpm and we press H button on the gear shifting lever, by this we shift the torque multiplier back to 2 gear. We continue driving with the tractor. Now we turn on the multiplier pre-selection switch. From this time, the automatic multiplier gear shifting system shifts gears of torque multiplier without any intervention of the driver in the following way:

- With the drop of engine revolutions under 1,600 rpm automatically shifts the multiplier to lower gear (lowering travel speed)
- When increasing the engine revolutions above 1,900 rpm, the multiplier automatically shifts to a higher gear (increasing the travel speed)

⚠ The values 1,600 and 1,900 engine revolutions necessary for automatic multiplier shifting used in this example are purely informative, in practice the number of revolutions is set by the driver according to the specific use of tractor.

With multiplier pre-selection on, it is possible to shift the multiplier gears also manually on a gear shifting lever, but only within the range of set values (engine revolutions); i.e. in the example presented in the range of revolutions from 1,600 to 1,900 rpm, when reaching the saved revolutions for automatic shift of multiplier gear the multiplier is automatically shifted without driver’s intervention. In this case (multiplier pre-selection switch on), manual shifting of multiplier by buttons on gear shifting lever does not influence the values (engine revolutions) that are saved in the system of automatic multiplier shifting. After turning the multiplier pre-selection on the dashboard off (the control on the switch is not lit) it is possible to shift the torque multiplier gears only manually by buttons on gear shifting lever.

⚠ Beware!

With tractor travel, when the pre-selection multiplier switch on the dashboard is off, the system of automatic multiplier selection keeps on reading the values (engine revolutions) with every use of H or L buttons use on gear shifting lever. After switching the multiplier pre-selection switch, the system of automatic multiplier shifting uses the last read value (engine revolutions) i.e. values read with last usage of H and L buttons on the gear shifting lever with multiplier pre-selection off.

Recommendation

Before switching the switch of multiplier on the dashboard, do the manual shift of multiplier gear when using H and L buttons (once by H button and once by L button) on gear shifting lever with requested engine revolutions. The values (engine revolutions) will be saved and after subsequent engagement of the multiplier pre-selection switch on dashboard, the system of automatic multiplier shifting will automatically shift multiplier gears according to these engine revolutions.

With multiplier pre-selection switch on, in case of release of travel clutch, for example with gear shifting, stopping and subsequent dead start of tractor or while using reversing, the system of automatic shifting of multiplier sets an applicable multiplier gear with subsequent switch of travel clutch.
**DRIVING OPERATION**

**Front drive axle control**
Front drive axle control button is placed on the panel on the right rear mudguard.

By pressing the upper part of the button, the function manual mode is engaged - front drive axle control.
By pressing the lower part of the button (auto symbol) the function automatic mode - front drive axle control is engaged.

With the tractor at stand-off (tractor braked, engine stopped, the key of switchbox disengaged) front drive axle drive is off.

After restart of the engine, front drive axle returns to the mode it was before turning the engine off.

**Driving with engaged front axle drive**

Use front drive axle when rear wheels slip to increase the tractor’s traction. It is not recommended to drive with engaged front axle drive on the roads or hard surfaces (driving with engaged front axle drive causes increased wear of front tyres).

Permanent engagement of front drive axle is admitted if there is an agricultural machine or tools mounted to the tractor from the front. This condition is listed in instructions manual of an applicable machine. The maximum permitted speed of these sets is 15 km.h⁻¹.

**Manual Front drive axle control**

Engagement of front drive axle in manual mode is done by pressing a button which returns to its initial position after release. The disengagement of front drive axle is done by repeated pressing of the button. The engagement of front drive axle is signalized by a lit symbol on the switch and a symbol on the display of the dashboard.

**Automatic disconnection of front drive axle**
When exceeding travel speed of 20 km/h, the drive of front drive axle is automatically disconnected.

Automatic disconnection of the drive is signalized by blinking of control in a switch. After switching off of the blinking control, front drive axle is automatically disconnected.

With the drop of travel speed under 20 km/h, front drive axle can be connected by a repeated depression of a button.

With speeds higher than 20 km/h, the drive of front drive axle can be connected by repeated depression of a blinking button. Front axle drive is engaged permanently by a long pressing of a button (app. 3s) for the whole period of tractor drive (without disengagement of automatics). Front axle drive remains engaged also when overcoming travel speed of 20 km/h. By putting the tractor at standstill, front axle drive is disengaged automatically.

The switch from manual to automatic mode can be done after the disengagement of manual mode.
Automatic front drive axle control

Engagement of front drive axle in automatic mode is done by pressing a button which returns to its initial position after release. The disengagement of front drive axle is done by repeated pressing of the button. Engagement of front drive axle is signalized by a lit symbol on the switch and a symbol on the display of dashboard.

Automatic mode of front drive axle control

When automatic front drive axle control is on, the drive of front axle connects automatically, if the angular front wheels displacement is smaller than 15° and travelling speed is lower than 20 km/h. When you exceed the angular displacement of front wheels 25° or with travelling speed higher than 20 km/h, the drive of front axle disconnects. When the front wheels angular displacement change has lower value than 15°, the drive of front axle connects automatically.

If there is a disconnection of front axle drive for the reason of travel speed higher than 20km/h, then the drive of front axle does not connect automatically with lower travel speed and it is necessary to connect it by pressing a button.

The switch from automatic to manual mode can be done by pressing the button of manual mode.

Axle lock control of rear and front axle

Axle lock control button is placed on the panel on the right rear mudguard. Engagement of axle locks is done by pressing the button which returns to its initial position after release. By pressing the upper part of the button, manual mode of axle locks control function is engaged. By pressing the lower part of the button (auto symbol) the function automatic mode of axle locks is on. Axle locks engagement is signalized by a lit symbol on the switch and a symbol on the display of the dashboard. It applies for mechanical and automatic mode of axle locks.

Axle locks cannot be engaged if front drive axle drive is not engaged. When engaging both of the brake pedals, the locks remain switched.

When achieving travel speed which is higher than 15 km/h for the time period of 5 seconds, the axle locks switch off automatically. This condition is signalized for a time period of 5 seconds before the axle locks are disengaged by a blinking of the button symbol. If the axle locks were disengaged due to higher travel speed than 15 km/h, then with a lowered travel speed the axle locks are not engaged automatically and it is necessary to turn them on by pressing a button.

Axle locks are disengaged by repeatedly pressing a button or by engaging one of the brake pedals. The switch from manual to automatic mode can be done by pressing the automatic mode button.
Automatic axle lock control of rear and front axle

The engagement of axle locks of rear and front drive axle in automatic mode is done by pressing a button which returns to its initial position after release. The disengagement of this function is done by a repeated pressing of the button.

The engagement of the axle locks is signalized by a lit symbol on the switch and a symbol on the display of the dashboard.

**Automatic mode of axle locks control**

Automatic mode of axle locks control lies in disengagement of axle locks if any of the following situations occur:

1. the angular displacement of front wheels is greater than 15°, if the angular displacement of front wheels changes to smaller than 15°, axle locks turn on automatically
2. arms of the rear three-point hitch are heaved in a position, in which the PTO shaft clutch is automatically disconnected (for more see DRIVE OF AGRICULTURAL MACHINES chapter), when lowering the arms of the rear three-point hitch, the axle locks get engaged automatically
3. travel speed is higher than 15 km/h, with lowered travel speed the axle locks are not engaged automatically and it is necessary to turn them on by pressing a button

The switch from automatic to manual mode can be done by pressing the manual mode button.

Disengagement of axle locks is to be done by pressing the button auto again or by depressing a brake pedal.

**Suspension front drive axle**

Tractors can be equipped with a suspension front drive axle upon request.

Suspension drive axle control buttons (1) and (2) are located on the panel in the area of the right rear mudguard.

Button (1) serves for setting the suspension mode of front drive axle.

Button (2) serves for height adjustment of the front part of the tractor.

⚠️ **If travelling speed of the tractor is higher than 13 km/h, front drive axle transfers automatically to automatic mode where the axle is automatically kept in approximately half of the suspension heave.**
Front drive axle suspension mode setting
Button (1) serves for front drive axle suspension mode setting.

(a) - after pressing the upper part of the button, there is a lock of front drive axle suspension, the front part of the tractor is lowered to the lowest position. Suspension does not work with the axle and the axle acts as if there were no suspension. The button is locked in (a) position. Front drive axle suspension lock mode can be disengaged by switching the button (1) to (b) position. Use this mode always when working with a front loader.

⚠️ If a tractor is at stand-off with a button (1) in position (a), with next engine starting the suspension of front drive axle is locked.

(b) - middle position of the button, the so-called manual mode. Height adjustment of front drive axle works in this position by the button (2). Suspension works by the axle.

(c) - after pressing the lower part of the button, front drive axle goes to automatic mode where the axle is automatically kept approximately in half of the suspension heave. This mode is signalized by a lit symbol on the button (1). Suspension works with the axle. Automatic mode can be disengaged by switching the button to (b) position.

⚠️ The blinking of the symbol on the button signalizes a failure in the circuit of front drive axle suspension. The code of failure is displayed on the dashboard display.

Height adjustment of the front part of the tractor
Button (2) serves for height adjustment of the front part of the tractor. Button (1) must be in the manual mode position.

C15N074

C15N073
DRIVING OPERATION

(a) - by holding the upper part of the bottom for a longer period of time, the front part of the tractor lifts upward after a certain delay, it is lifting for the time of button holding to the end position of the suspension.

(b) - by holding the lower part of the button, after a certain time, the front part of the tractor goes down. It is going down for the time of holding the button to the end position of the suspension.

Manual brake - signalization
If the tractor is not braked by a manual brake, a warning is displayed on a display (a letter P in a circle) and at the same time there is a sound signal. This situation occurs in two cases
a - a tractor unbraked by a manual brake with engine running and a driver leaves its seat
b - a tractor unbraked by a manual brake standing with engine off and the key is shifted in '0' position.

⚠️ Brake the tractor with a manual brake.

Driving down the slope

⚠️ Driving down the slope without engaged gear speed is forbidden. If you travel from a longer slope, shift the lower gear speed the steeper the slope is. Shift the lower gear speed before the slope, if possible.

Note: The gear speed with which you easily overcome an ascent, you will also successfully manage descent.
Foot brakes
They are disc, wet, hydraulically controlled, double-pedalled with automatic pressure equalizer.

⚠️ When driving on the road, both pedals must be connected by valve. Use disconnected pedals for braking right or left wheel only when working in terrain or on the field.

**Note:** When going down a steep slope with a trailer or articulated trailer equipped with air or hydraulic brakes, it is necessary to brake by a foot brake from the beginning of descend.

⚠️ When braking with one brake pedal trailer’s brakes are not active!

**Warning signalization of air pressured drop**
Air pressure drop below 450 kPa is signalized by an lit red control bulb placed on a dashboard.

⚠️ Tractor with braked trailer or articulated trailer with pressured drop in air pressure system under 450 kPa must not continue in transport if there is not increase in air pressure.

**One-hose and two-hose brakes**
1. clutch head of one-hose brakes
2. clutch heads of two-hose brakes

⚠️ Clutch heads after disconnection or without a connected trailer, articulated trailer must be closed by a valve.

**One-hose brakes**
Valve is marked with a black colour. Operating pressure is adjusted with the control valve at 600 ± 20 kPa.

⚠️ When connecting the trailer (articulated trailer) with a maximum allowed weight approved for the type of tractor at stake is a maximum allowed speed of the set of 30 km per hour! Maximum allowed speed of the set is defined by maximum allowed speed of the slower vehicle of the set.
Two-hose brakes
Operating pressure is adjusted with the control valve at 740 ± 20 kPa. Capacity of air tank is 20 l.
The valve of the left head is labelled in yellow (braking branch), the valve of the right head is labelled in red (filling branch).

⚠️ When connecting the trailer (articulated trailer) with a maximum permitted speed approved for the type of tractor, the maximum permitted speed of set is 40 km per hour!
Maximum permitted speed of set is given by maximum permitted speed of the slower vehicle of the set.

Hydraulic brakes of trailers

Connect hydraulic brakes of trailer or articulated trailer to the quick couplings marked by an arrow.
Control of hydraulic brakes of trailers (articulated trailers) and control of tractor brakes is done so that the braking effect of both vehicles is synchronized. Working pressure is derived by oil supplied by non-switched on/switched off gear pump of hydraulics. Brake valve of the trailer is done by the pressure of brake fluid from main braking rollers depending on the force effecting on the brake pedal. The pressure on clutch head must be 12 - 15 MPa with maximum depression of brake pedal. Brake valve of trailer prefers the function of brakes to the function of hydraulics. If there are shocks when foot brake pedals are depressed in the pipeline of hydraulic circuit, it is necessary to bleed the hose from the brake valve to the quick coupling.

⚠️ When driving with connected trailer or articulated trailer, the pedals of foot brake must be connected and secured by a valve! When braking with one brake pedal, hydraulic brakes of the trailer are not active.

Connecting and disconnecting quick couplings of trailer hydraulic brakes

⚠️ When connecting and disconnecting quick couplings, take increased care with regard for remaining oil which remains in the socket or in the plug of quick coupling. For ecological reasons, it is necessary to remove this remaining oil after every disconnection of quick couplings with any textile material.
**DRIVING OPERATION**

**Stopping the tractor - manual brake**
Stop the tractor slowly under standard conditions. Shortly before stopping:
1. Depress the clutch pedal.
2. Shift the main gear shifting lever to neutral position.
3. With every stopping, secure the tractor against spontaneous dead start by manual brake.

**Stopping the engine**
After the work of tractor when the engine was fully loaded, it is necessary to secure its cooling.
1. Before stopping the engine, lower the revolutions to 800 - 1000 revolutions per minute and allow it to run for the time of approximately 5 minutes.
2. Shift the lever of manual throttle to STOP position.
3. The engine stops after turning the key from 'I' position to '0' position.

**Leaving the tractor**
Before leaving the tractor with a safety cabin, do not forget to remove the key from the switch box in '0' position (in position 'I' and 'II' the key cannot be pulled out).

*Tractor must be secured against spontaneous start:*
1. **Engine off**
2. **Braked by manual brake**
3. **Wheels based by wedges.**

⚠️ **Engaging a speed gear does not secure the tractor from start (clutch is switched off).**

Lock the cabin.

**Warning signalization of hydrostatic steering failure**
Hydrostatic steering pump failure is with oil pressure drop under 120 kPa behind a pump signalized on a dashboard by an applicable symbol.

*Note:* When starting the tractor or with low engine revolutions, the control may blink, if it switches off after starting or increasing the revolutions, it is not a failure.
Limiting travel speed

⚠️ With the threat of exceeding the travel speed of 40 km/h, the maximum engine revolutions are automatically reduced. This function cannot be switched off.
RUNNING IN THE TRACTOR

General principles of new tractor run-in in first 100 hours of operation
During first 100 hours of operation:
- Load tractor in a normal way, avoid operation with low or maximum engine revolutions
- Avoid operation under partial loading of the engine
- Avoid excessive idle run operation
- Check oil levels in engine often (during this time increased oil consumption is normal)
- Check screw joints in particular in supporting parts of tractor
- Learned insufficiencies to be removed immediately, you will thus prevent subsequent damage or endangered operation
- Keep the same procedure also after tractor complete overhaul

In first 10 hours of operation
- perform run-in in traffic
- tighten fastening nuts of front and rear wheels including connection bead / rim with prescribed torque

From 100 hours of operation
After drive in completion you can work with tractor without limitations.
Before you start, make sure that the technical condition of the tractor corresponds to requirements for safe operation. When a trailer or implement is attached, check its connection and proper fixation of the load. Never leave the tractor while it is moving to connect the trailer by yourself. Also take care of your assistant’s safety.

CBM stage quick-adjusting hitch
It is designed for attachment of double-axle trailers or lighter single-axle semi-trailers. The guiding mouth is height adjustable. During work with various implements it may be necessary to adjust the height of the hitch or to disassemble the entire hitch.

Height adjustment and disassembly of the CBM stage hitch
By moving the control lever in the arrow direction to position (1) you will release the lever and by moving it subsequently to position (2) you will retract the locking pins (3). Now, the stage hitch is released and you can adjust its height or disassemble it. When you release the lever from position (2), the locking pins (3) will extend and the lever will automatically return to the initial position.

Automatic mouth of the CBM stage hitch
When the lever (1) is moved in the direction of the arrow (a), the pin (2) is retracted to the upper position, which is signalled by the extended indicator (3), see fig. (A). When the mouth gets onto the shaft lug, the pin will automatically slide into the lug of the connected trailer. You can lower the hitch pin (2) manually by moving the lever (1) in the arrow (b) direction. The insertion of the pin is signalled by the retracted indicator (3), see fig. (B).

After the attachment of the trailer you must always check whether the indicator (3) is retracted in accordance with fig. (B).
Modular system of hitches for trailers and semi-trailers

Module types:
Fig. (B) - Swinging draw-bar console
Fig. (C) - Swinging draw-bar console with a fixed pin
Fig. (D) - Console with a Ø 80 ball

Disassembly, fig. (A):
1 - Remove the locking screw (1).
2 - Secure the module against sinking, release and disassemble the pins (2).
3 - Slide the module out of the console downwards.

Do the assembly in the reverse order.

Swinging draw-bar console module
The swinging draw-bar console module is located in the stage hitch console.

Swinging draw-bar
Disassembly:
1 - Release and remove the pins (1).
2 - Slide the swinging draw-bar out in the arrow direction.

Do the assembly in the reverse order.

Swinging draw-bar console with a fixed pin module
Perform the assembly and disassembly of the swinging draw-bar in accordance with the 'Swinging draw-bar' chapter.
Connecting the shaft lug to the fixed pin (3):
1 - Release and remove the pin (1).
2 - Lift the locking wedge (2) in the arrow direction.
3 - Connect the shaft lug to the fixed pin (3):
4 - Return the locking wedge (2) to the original position and secure it with the pin (1).
Console with a ø 80 ball module

⚠️ The console with a ø 80 ball is only used to connect semi-trailers with a hitching device designed for a ø 80 ball.

Releasing the hitch, fig. (A):
By moving the lever (1) in the arrow direction you will remove the locking wedge (2).

Locking the hitch, fig. (B):
By moving the lever (1) in the arrow direction you will retract the locking wedge (2).

Hitch for a single-axle CBM semi-trailer

The hitch for a single-axle semi-trailer may be equipped with a hook (A) or with a swinging draw-bar (B).

Replacing the hook with the swinging draw-bar (C):
1 - Lower the hitch.
2 - Release and remove the pin (1).
3 - Remove the hook in the arrow direction.

Install the swinging draw-bar in the reverse order.
Maximum permissible vertical static load of hitches for trailers and semi-trailers

<table>
<thead>
<tr>
<th>Hitch type</th>
<th>Permissible vertical static load</th>
<th>Hitch pin Ø</th>
<th>Hitch type</th>
<th>Permissible vertical static load</th>
<th>Hitch pin Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitch class C</td>
<td>2 000 kg</td>
<td>28 mm</td>
<td>Hitch class D2</td>
<td>2 000 kg</td>
<td>43 mm</td>
</tr>
<tr>
<td>Hitch class D2</td>
<td>2 000 kg</td>
<td>31 mm</td>
<td>Hitch class D3</td>
<td>2 000 kg</td>
<td>38 mm</td>
</tr>
<tr>
<td>Hitch class D3</td>
<td>2 000 kg</td>
<td>43 mm</td>
<td></td>
<td>2 000 kg</td>
<td>50 mm</td>
</tr>
</tbody>
</table>

⚠️ The maximum weight of an aggregated braked trailer or semi-trailer must not exceed the value specified on the data plate of the tractor and the value specified in the technical certificate of the tractor. The maximum permissible speed of the set results from the maximum permissible speed of the slower vehicle in the set.

- Hitch of class C: max. weight of the trailer 6,000kg.
- Hitch of class D2: max. weight of the trailer 14,000kg.
- Hitch of class D3: max. weight of the trailer 20,000kg.
The maximum weight of an aggregated braked trailer or semi-trailer must not exceed the value specified on the data plate of the tractor and the value specified in the technical certificate of the traktor. The maximum permissible speed of the set results from the maximum permissible speed of the slower vehicle in the set.

<table>
<thead>
<tr>
<th>Hitch type</th>
<th>Permissible vertical static load</th>
<th>Hitch pin (ball) Ø</th>
<th>Hitch type</th>
<th>Permissible vertical static load</th>
<th>Hitch pin (ball) Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>736 kg</td>
<td>31 mm</td>
<td></td>
<td>2 000 kg</td>
<td>80 mm</td>
</tr>
<tr>
<td></td>
<td>3 000 kg</td>
<td>47 mm</td>
<td></td>
<td>1 200 kg</td>
<td>31 mm</td>
</tr>
<tr>
<td>Fixed pin</td>
<td>2,000 kg</td>
<td>44.5 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[\text{Hitch type} \quad | \quad \text{Permissible vertical static load} \quad | \quad \text{Hitch pin (ball) Ø} \quad | \quad \text{Hitch type} \quad | \quad \text{Permissible vertical static load} \quad | \quad \text{Hitch pin (ball) Ø} \]
Work with PTO shaft

⚠️ Before attaching of an implement, driven by means of the tractor PTO shaft, check the speed compatibility of both, it means tractor PTO shaft and implement driven shaft (540 rpm or 1,000 rpm). Different PTO speed values may cause serious damages and injuries.

⚠️ Within any repair or modification on the implement powered by PTO or within any operation on terrain in its working range the tractor engine ought to be switched off (ignition key in position 0).

1. When working with PTO shaft mind that all the covers are duly fixed.
2. After completing the work, always mount the cover of PTO shaft back.
3. Any repairs or cleaning of aggregated machines parts driven by PTO shaft to be done only with the engine at halt and PTO clutch disengaged.
4. Before starting an aggregated machine driven by PTO shaft, make sure that there are no unauthorized personnel near, there is a risk of injury.

Controlling the front and rear PTO shaft

Switches of the control of the front and rear PTO shaft are located on the right pillar of the cabin.

1. The switch of the revolution control of the rear PTO shaft.
2. The button of the automatic switching off of the clutch of PTO shaft.
3. The switch of the rear PTO shaft.
4. The switch of the front PTO shaft.

Rear PTO shaft revolutions preselection lever

The tractor may be equipped with one of two systems of rear PTO shaft revolutions preselection. The system used in the tractor is marked on the label placed by rear PTO shaft revolutions preselection lever.

1. Standard and economical independent revolutions of rear PTO shaft - label (1)
2. Dependent and independent revolutions of rear PTO shaft - label (2)

Rear PTO shaft revolutions preselection lever (3) is located on the right side of driver’s seat.

Independent rear PTO shaft revolutions - number of revolutions is dependent on the number of engine revolutions.
Dependent rear PTO shaft revolutions - number and the direction of revolutions is dependent on the engaged gear and reversing lever position.
Standard and economical independent revolutions of rear PTO shaft

The system used in the tractor is marked on the label placed by rear PTO shaft revolutions preselection lever. This system has only independent revolutions of rear PTO shaft.

A - Standard PTO shaft revolutions engaged
N - Neutral position (rear PTO shaft end-point can be spun freely)
B - Economical revolutions of PTO shaft engaged

With engaged standard PTO shaft revolutions (A), one can engage 540 or 1000 revolutions of rear PTO shaft on the right side of the cab column by the revolutions selection switch.
With engaged economical PTO shaft revolutions (B), the switch of rear PTO shaft revolutions preselection on the right column of the cab can be used to engage 540E or 1000E rear PTO shaft revolutions.
The lever is placed on the right side of driver's seat. After shifting the lever, it is necessary to lift collar in the direction of the arrow (C).

Dependent and independent rear PTO shaft revolutions

The system used in a tractor is marked on the label placed by the rear PTO shaft revolutions preselection lever. This system has only 540 or 1000 rear PTO shaft revolutions.

A - PTO shaft dependent revolutions engaged
N - Neutral position (rear PTO shaft end-point can be spun freely)
B - Independent PTO shaft revolutions engaged

With engaged dependent (A) or independent (B) rear PTO shaft revolutions (B), the switch of rear PTO shaft revolutions preselection on the right column of the cab can be used to engage 540E or 1000E of rear PTO shaft revolutions.
The lever is placed on the right side of driver's seat. For shifting the lever, it is necessary to lift collar in the direction of the arrow (C).
Facilitating connection of joint shaft of an aggregated machine to the tractor

For facilitating the connection of joint shaft of aggregated machine to a tractor a button (1) placed on mudguards can be used.

With the engine running and rear PTO shaft switch off, spinning of rear PTO shaft occurs after pressing the button (1). PTO shaft stops spinning after releasing the button.

**Beware:** Rear PTO shaft revolutions preselection lever must not be in (N) position or in the position of a dependent revolution of rear PTO shaft.

⚠️ **When manipulating with PTO shaft by means of buttons (1), the operator must stand beyond the space of the connected tools not to be caught or injured.**

Selection switch of rear PTO clutch revolutions (P.T.O.)

Shifting rear PTO shaft revolutions is done by a switch (1). The switch is equipped with a mechanical lock (2) against unwanted switch. When switching the switch, depress the lock in downward direction.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>540 rpm</td>
</tr>
<tr>
<td>B</td>
<td>1000 rpm</td>
</tr>
</tbody>
</table>

⚠️ **The change of PTO shaft revolutions - 540 and 1000 per minute to be done only with PTO shaft at halt! Check that the revolutions of PTO shaft are set accordingly with regard for the connected tools!**
Replaceable end points of rear PTO shaft
The tractor is equipped with six or twenty-one splined replaceable end point of rear PTO shaft.
Replacement procedure:
1. Use safety ring pliers to demount a safety ring (1)
2. Remove replaceable end point by pulling in the direction of an arrow (2)
3. Mount the end point in an opposite way, pay increased attention to the mounting of the safety ring (1)

⚠️ Replacement of the terminal shall be performed when the engine is stopped.
Rpm of the output shaft and terminal type shall be chosen depending on the prescribed rpm of the coupled mechanism.
Shifting 540 and 1,000 or 540E min⁻¹ is possible regardless to the number of splines of the installed terminal.

Rear PTO switch

Rear PTO shaft clutch is engaged by switch of rear PTO shaft. After engagement of the switch the shaft spins.
The engagement of the rear PTO clutch is done by a switch (1) placed on the right column of the cabin. The switch is equipped with a mechanical lock (2) against unwanted switch. When switching the switch, depress the lock in downward direction.
After switching the switch (1) from (A) position to (B) position rear PTO shaft clutch is engaged and the shaft spins.
After switching the switch (1) from (B) position to (A) position rear PTO shaft clutch is engaged and the shaft stops.

A - rear PTO shaft clutch disengaged
B - rear PTO shaft clutch engaged

⚠️ Check that the PTO shaft revolutions are set properly with regard for the connected tools!
Engaging rear PTO shaft - Independent revolutions

The number of PTO shaft revolutions is dependent on the number of engine revolutions.

With engine running:
1. Select applicable operation mode PTO shaft revolutions preselection lever.
2. Select applicable revolutions by switch of selection of rear PTO shaft (2) revolutions.
3. Rear PTO shaft is set into operation by switching the switch of rear PTO shaft (3).

Engagement of rear PTO shaft is signalized by the display of the number of rear PTO shaft revolutions on the display of the dashboard.

⚠️ If the aggregated machine allows it, engage the rear PTO shaft with minimum revolutions of 1500 rpm.

Engagement of rear PTO shaft - dependent revolutions

The number and the direction of the revolutions are dependent on the engaged gear and the position of reversing lever. The position of reduction lever does not have any influence on the number rear PTO shaft revolutions in dependent revolution mode.

With engine running:
1. Rear PTO shaft dependent revolutions are selected by PTO shaft revolutions preselection lever.
2. Rear PTO shaft switch (3) is not functional in this mode.
3. Select applicable revolutions by rear PTO shaft selection switch (2).
4. Engage gear by the main gear shifting lever and the direction of drive by reversing lever. When tractor drives off, rear PTO shaft also spins.

⚠️ Automatic PTO clutch disengagement is not functional in this mode.
Automatic disengagement of PTO clutch

The function of automatic deactivation of the clutch of PTO shaft means that when the PTO shaft is activated and the arms of the rear three-point hinge are lifted, the clutch of the rear PTO shaft is automatically deactivated and the shaft is stopped; when the arms of the rear three-point hinge are lowered again, the clutch of the rear PTO shaft is automatically activated and the shaft starts rotating provided that the driving direction is engaged with the return lever and the travelling speed of the tractor is 0.3 km/h at least.

When the clutch of the rear PTO shaft is activated, automatic deactivation of the clutch of PTO shaft is activated by pressing the button (2) for at least three seconds. When the button (2) is released, it returns into its original position.

Further pressing of the button (2) causes deactivation of this function.

The activation of the function of automatic deactivation of the clutch of PTO shaft is indicated by the symbol on the display of the instrument panel.

Setting automatic disengagement of PTO shaft clutch - display description

Display the third display on dashboard by gradual depressing of (A) button. These values are displayed on the display:

- **H-LIMIT** (1) - position of arms of three-point hitch at which disengagement of rear PTO shaft clutch occurs
- **ACTUAL** (2) - current position of arms of three-point hitch
- **L-LIMIT** (3) - position of arms of three-point hitch at which engagement of rear PTO clutch occurs

The number with individual items has only informative value.

Automatic disengagement of PTO shaft clutch - return to basic setting

Basic values set by the manufacturer are:

- **H-LIMIT** - 55
- **L-LIMIT** - 45

By pressing the button (B) basic values are set on dashboard with displayed display.
Setting automatic disengagement of PTO shaft clutch

Setting automatic disengagement of PTO shaft clutch is done with standing tractor with started engine, with disengaged PTO shaft clutch switch and reversing lever under the steering wheel in neutral position. Display the third display on dashboard by gradual depression of (A) button.

Setting **H-LIMIT** position
1. Set the arms of three-point hitch to a position of the required disengagement of rear PTO shaft clutch.
2. Press (C) button on the dashboard. By this a new value is saved and the number by **H-LIMIT** item changes and equals to **ACTUAL** value.

Setting **L-LIMIT** position
1. Set the arms of the three-point hitch to the position of required engagement of rear PTO shaft clutch.
2. Press (D) button on the dashboard. By this a new value is saved and the number with **L-LIMIT** item changes and equals to **ACTUAL** value.

The number by **H-LIMIT** item must be always greater at least by 10 than the number by **L-LIMIT** item, or the new value will not be saved.

⚠️ **Beware! When setting the position of arms of automatic disengagement of rear PTO shaft clutch outside basic values set by manufacturer not bearing any liability for damage incurred from this setting.**
Work with automatic disengagement of PTO shaft clutch

Switch automatic disengagement of PTO shaft clutch by (A) switch with tractor at standstill with engine running. Switching automatic disengagement of PTO shaft clutch is signalized by (B) display on the display of the dashboard.

After switching the function with a switch (A), the rear PTO shaft is at standstill; this is signalized by blinking of (B) symbol on the display of the dashboard.

**Starting rear PTO shaft**
Rear PTO shaft spins if the arms of three-point hitch are lowered lower than L-LIMIT is set and the tractor goes at a rate faster than 0.3 km/h. When spinning the rear PTO shaft, the display of symbol (B) on the display stops blinking.

**Stopping rear PTO shaft**
Rear PTO shaft stops if the arms of three-point hitch are lifted higher than H-LIMIT is set. When stopping rear PTO shaft, the display of symbol (B) starts blinking on the display.

**Restarting rear PTO shaft**
For subsequent spinning of rear PTO shaft it is necessary to proceed in accordance with see Starting rear PTO shaft.

If with Stopping rear PTO shaft also stopping of tractor occurs which lasts for more than three minutes, there is a blockage of starting rear PTO shaft. (B) symbol is not displayed on the display, control on switch (A) is blinking and PTO shaft does spin also when meeting the conditions for Starting rear PTO shaft.

If there is a blockage of blocking the starting of rear PTO shaft, it is necessary to switch the switch to (A) position - off. Then switch the rear PTO clutch again by switch A according to previous articles.

**Front PTO shaft**
Front PTO shaft is equipped with a solid six or twenty-one splined end point and it comes only in design of 1,000 revolutions.
Tractor may be equipped with front PTO shaft with varied direction of spinning:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a</strong></td>
<td>In compliance with the direction of engine revolutions (standard)</td>
</tr>
<tr>
<td><strong>b</strong></td>
<td>Against the direction of engine revolutions (*on request)</td>
</tr>
</tbody>
</table>
Front PTO shaft control
Engagement and disengagement of front PTO shaft is done by a switch (4) The switch is equipped with a mechanical lock (2) against unwanted switch. When switching the switch depress the lock in the downward direction. Front PTO shaft is set into activity by switch of a switch.

The engagement of front PTO shaft is signalized by displaying the number of revolutions of front PTO shaft on the display of dashboard.

⚠️ If the aggregated machine permits, engage front PTO shaft with min. engine revolutions of 1500 rpm.

Maximum transferred output

<table>
<thead>
<tr>
<th>PTO shaft</th>
<th>Transferred output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td></td>
</tr>
<tr>
<td>1000 per minute</td>
<td>90 kW</td>
</tr>
<tr>
<td>Rear</td>
<td></td>
</tr>
<tr>
<td>1000 per minute</td>
<td>full engine output</td>
</tr>
<tr>
<td>540 per minute</td>
<td>full engine output</td>
</tr>
<tr>
<td>1000E per minute</td>
<td>60 kW</td>
</tr>
<tr>
<td>540E per minute</td>
<td>60 kW</td>
</tr>
</tbody>
</table>
Drive of machines with greater inertia masses
(crushers, rotary harrows, reaping machines, etc.)
Cardan shaft for drive of these machines must be
equipped with the so called freewheel clutch which
ensures disconnection of torque transfer with retroaction
from the machine on the tractor.
HYDRAULIC SYSTEM

Hydraulic system
The system consists of the inner and outer circuit.
The source of pressurized oil is a gear pump.
Oil is drawn from the common filling of the gearbox and final drive housing.

Hydraulic pump
The hydraulic pump cannot be disengaged. When the engine is running, the pump is in operation.

<table>
<thead>
<tr>
<th>Pump type</th>
<th>Delivered quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHD0 32/12,6L</td>
<td>85 l/min</td>
</tr>
</tbody>
</table>

The pressure generated in the hydraulic system by the hydraulic pump is limited by a relief valve to 20 MPa.

Control elements placement
Control panel is placed on the right rear mudguard.
1. Electrohydraulics control
2. External hydraulic circuit control

Outer hydraulic circuit
The outer circuit supplies pressurized oil to hydraulic implements connected to the outer outlets of the hydraulic system terminated with quick-couplers.
The sockets of the rear (A) as well as front (B) quick-couplers have the inner diameter of 12.5 mm and comply with the international ISO 5675 standard.
Connecting and disconnecting quick-couplers

When connecting and disconnecting the quick-couplers pay increased attention with regard to the residual oil that remains in the socket or on the plug of the quick-coupler. For environmental reasons after every disconnection of quick-couplers this residual oil must be removed with any textile material.

Quick-couplings with drip collection
On request, dripping system for holding leakage oil can be installed. Regularly check whether the tank is not full; dispose of the oil in an environment-friendly way.

Hydraulic distributor of the outer hydraulic circuit
The outer circuit of the tractor hydraulics is controlled by the distributor with three four-position sections controlled by levers.
The control levers of the sections are located in the cabin on the mudguard of the right rear wheel.
The numbers on the label of the control levers correspond to the numbers of the quick couplers.
The levers controlling both end sections are locked in the rear position at maximum oil flow rate into the quick couplers 2 or 6. After overcoming the increased resistance the locked lever can be returned into the position (N).
The quick couplers 2, 4 and 6 are equipped with the return valve - use for the connection of the working branch of the machine with the increased requirement for tightness - minimum drop of the tools e.g. during transport.
Description of the functions of individual positions of control levers of the hydraulic distributor

<table>
<thead>
<tr>
<th>Lever position</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Rear (upper) position</td>
<td>Pressurized oil flows to quick-couplers: '2', '4', '6'</td>
</tr>
<tr>
<td></td>
<td>Quick-couplers connected to the return line: '1', '3', '5'</td>
</tr>
<tr>
<td>2 Central position</td>
<td>Neutral</td>
</tr>
<tr>
<td>3 Front (lower) position</td>
<td>Pressurized oil flows to quick-couplers: '1', '3', '5'</td>
</tr>
<tr>
<td></td>
<td>Quick-couplers connected to the return line: '2', '4', '6'</td>
</tr>
<tr>
<td>4 Front limit position</td>
<td>With an increased force you can shift the control levers from position (3) further to the front to position (4), i.e. floating (free) position, where the levers are locked. Both the quick-couplers of each section are connected to the return line in this position.</td>
</tr>
</tbody>
</table>

Always connect a single-acting cylinder to quick couplers: '2', '4' of the two-section auxiliary distributor and '2', '4', '6' of the three-section auxiliary distributor. Always connect a double-acting cylinder to quick-couplers of one section.

Rear outlets of the outer hydraulic circuit
In the tractor version that is not equipped with the front outlets or the front three-point hitch and that is equipped with:

a - a three-section distributor the rear outlets are terminated with pressure quick-couplers '1' to '6'.
b - a two-section distributor the rear outlets are terminated with pressure quick-couplers '1' to '4'.

The third quick-coupler marked '0' is directly connected to the final drive housing and is designed for return oil from external hydraulic implements (e.g. from rotational hydraulic motors, etc.).
Front outlets of the outer hydraulic circuit
They are installed on a panel in the right front part of the tractor. Their installation is bound to a three-section distributor. They are designed for the control of frontally attached adapters. The marking of the outlets and their use is the same as in the case of the rear outer outlets.

⚠️ If the tractor is equipped with a three-point hitch, the (F)(3)(4)(N) lever is used for its control. Quick couplers must not be connected at the time of three-point hitch usage connected because they are pressurized together like front three-point hitch!
After terminating the work with a front three-point hitch for further usage of the section with quick couplers 3 and 4 with the connection of three-point hitch, it is necessary to lift the arms of the front three-point hitch to transporting position and the lever of the cock of the front three-point hitch in the 'closed' position.

Connecting machines and implements to the outer hydraulic circuit

Connecting machines and implements consisting of more parts
During work with agricultural machines that consist of more parts (combinators, skids, harrows) and that have side frames that are hinged to the central frame and during transport are folded to the vertical position by separate hydraulic cylinders controlled by the outer hydraulic circuit of the tractor, the folding of the side frames must always be controlled by the upward (backward) movement of the auxiliary distributor lever. The 'lifting' branches of the cylinders must be connected to quick-couplers '2', '4' or '6'.

Connecting a rotational hydraulic motor
If a rotational hydraulic motor is connected to an outer outlet of the hydraulic system, its return branch must always be connected to quick-coupler '0'. In case of connection of the filling (pressure) branch to quick-coupler 1 or 2 the hydraulic motor is protected by the 'kick-out' function against overloading. This function interrupts the operation of the hydraulic motor at the pressure value in the filling branch of 17.5 - 1.6 MPa.

Connecting a reversing hydraulic motor
A reversing rotary hydraulic motor must be connected to quick-couplers '1' and '2' for functional reasons. However, relief valves must be inserted in both the branches in this case as they can reliably limit the pressure peaks during the stopping of the machine. The oil return lines from these valves are connected to quick-coupler '0'.

They are installed on a panel in the right front part of the tractor.
Control element functions

1. Lifting switch
   a - Transport, lifting
   b - STOP
   c - Regularity of lowering (working)
   d - Free position, fast sinking- automatic return of lever to (c) position by a spring

2. Blocking (in transport position)
3. Lowering speed
4. Setting the position of lifting device
5. Upper position restriction
6. Smooth setting - of manual control
   - automatic control
7. LED - diagnostic
8. LED - lifting
9. LED - lowering
10. Engaging compensator (softening vibrations)
11. LED - softening vibrations engaged

Equipment ‘OFF’
Electric installation deactivated with the key of the switching box. The electronic system is off, the lifting device is blocked.
Blocking cancellation
When you switch on the electric installation with the key of the switching box (I), the lifting device remains blocked electronically - the lifting and lowering function is deactivated; on the EHR-B control panel the diagnostic LED (7) and the vibration dampening LED (11) shortly light up - the system self-test is in progress. The lifting LED (8) and the lowering LED (9) are off. After a short time permanent illumination of the diagnostic LED (7) indicates the state of EHR-B blocking.
If the diagnostic LED (7) is permanently illuminated, the control circuits are disconnected.

⚠️ The engine can only be started if the engine (1) is in position (b).
The EHR-B electro-hydraulic system is only active when the engine is started.
Activation of the EHR-B system is only possible when the lubrication indicator has gone off.
The blocking can only be cancelled (system activated) with the engine running by moving the lifting lever (1) to position (a) - short-time switching is sufficient.
By moving the lever (1) to position (c) you will bring the three-point hitch to the position corresponding to the element setting, i.e. the current position of controls (4), (5), (6).

⚠️ After the activation of the system EHR-B first for safety reasons limits the lifting speed of the hydraulic arms. When the hydraulic arms first reach the selected position, this safety limitation is cancelled and then the lifting speed of the hydraulic arms is normal.

Quick sinking
Lever (1) in position (d) - free position. You must hold the lever in this position; after releasing the lever will return to position (c) - the system works in accordance with the setting of controls (3), (4), (5) and (6).
Transport of implements
Shift the lifting lever (1) to position 'a' and block it with the moving latch (2).
Blocking the lifting lever (1) by the moving latch (2) in position (a):
A - Lever movement blocked
B - Lever movement not blocked

⚠️ When the tractor with an attached implement is stopped, the implement must be lowered onto the ground (it must not be left in the lifted position).

Stop position
By moving the lever (1) to position (b) - STOP position - you will immediately stop the movement of the three-point hitch.

Vibration compensator (damper)

It is used during transport of a heavy implement attached to the rear three-point hitch.
After activation of the vibration compensator (10) the arms of the rear three-point hitch sink by approx. 4%, which allows oscillation of the arms in the range of approx. 8% of the lift. The upward oscillation is always limited by the position of the upper position limiter (5).

Advantages of active dampening of vibrations during transport of a heavy implement attached to the rear three-point hitch.
1. Increased operation safety (the steering axle is not unloaded so much)
2. Stabilization of the transported implement
3. Reduced dynamic stress of the hydraulic system and the rear three-point hitch

⚠️ During the adjustment of the hitch for a single-axle semi-trailer the vibration compensator must be off.
Limitation of the upper position of the three-point hitch
It is activated with the control (5). The limitation can be implemented in the upper half of the three-point hitch lift.

Lowering speed
The lowering speed of the three-point hitch is set with the control (3).

<table>
<thead>
<tr>
<th>Symbol of the maximum lowering speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol of the minimum lowering speed</td>
</tr>
</tbody>
</table>

⚠️ In the vibration dampening mode and during the use of the rear control buttons the lowering speed setting is out of function.

Free position
For permanent work with free hydraulic system, e.g. during work with a plough with a support wheel the position of the control (4) under the indication (A) and the position of the control (6) at the positional control symbol is used.

Setting the control of three-point hitch
Electrohydraulics enables two ways of three-point hitch control.
A. Manual control setting - control (6) is set in the range see arrow
B. Automatic control - control (6) is set in HitchTronic (AHC) position see arrow

Automatic control can be at any time exchanged for manual and the other way round by a control (6).
Manual setting of control of three-point hitch

Perform according to ‘Cancel blocking’ part and set the required position of elements with regard for the nature of performed works. To reach the depth of working tools, there is a control (4). For setting the kind of control and its mixing, use a control (6).

The activity of control (lifting and lowering) can be monitored by means of indication diodes (8) and (9). Na shift the lever (1) (a) position, after turning, set again to (c) position. Control system takes the previous working position (memory of ploughing). For setting the required speed of starting, there is a control (3).

Automatic control of three-point hitch

Do the step according to ‘Cancel blocking’ part. Set the control (6) to hitchtronic (AHC) position. By control (4), set the working depth of tools attached to rear three-point hitch. When the implement attached in the rear three-point hitch reaches the depth set by the control (4), control system measures the soil resistance and this value is used as default for further control. The activity of controls (lifting and lowering) can be monitored by means of indicated on diodes (8) and (9). At dead end, shift the lever (1) to (a) position, after turning set the (c) position again. For setting the required speed of lowering, there is a control (3). After reaching the depth set by the control (4) control system again measures the soil resistance and this value is used as default for further regulation.
Using the rear control
The rear control is used to connect and disconnect implements. The lifting switching lever (1) on the EHR-B 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.

Indication of EHR-B errors
The electronic part of the electro-hydraulic system continuously checks proper functioning of the system. Possible errors are indicated by repeated flashing combinations of the diagnostic LED (7). After the remedy of the error the diagnostic LED (7) goes off. Permanent illumination of the diagnostic LED (7) indicates the state of blocking of the electro-hydraulic system.
**ELECTRO-HYDRAULIC SYSTEM**

**Description of signals of EHR-B electro-hydraulic system errors**

<table>
<thead>
<tr>
<th>Flashing combination of the diagnostic LED (7)</th>
<th>Error category</th>
<th>Error description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long pause No. of flashes Short pause No. of flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1x 1x</td>
<td>Serious error</td>
<td>Error with internal safety shutdown of the electro-hydraulic system - the electro-hydraulic system is out of operation - the work with the tractor must be stopped</td>
</tr>
<tr>
<td>1x 2x</td>
<td>Moderately serious error</td>
<td>Error with internal safety shutdown of the electro-hydraulic system - the electro-hydraulic system is out of operation</td>
</tr>
<tr>
<td>1x 4x</td>
<td>Minor error</td>
<td>The electro-hydraulic system works with a limitation resulting from the error type</td>
</tr>
<tr>
<td>1x 5x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1x 6x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2x 2x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2x 3x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2x 4x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2x 8x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3x 1x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3x 2x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3x 4x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3x 6x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

⚠️ *Have EHR-B errors repaired by a specialized workshop.*
### Description of minor errors of the EHR-B electro-hydraulic system

<table>
<thead>
<tr>
<th>Long pause</th>
<th>No. of flashes</th>
<th>Short pause</th>
<th>No. of flashes</th>
<th>Error location</th>
<th>Possible cause of the error</th>
</tr>
</thead>
<tbody>
<tr>
<td>3x</td>
<td>1x</td>
<td></td>
<td>Right dynamometric pin (A)</td>
<td>Faulty dynamometric pin</td>
<td></td>
</tr>
<tr>
<td>3x</td>
<td>2x</td>
<td></td>
<td>Left dynamometric pin (A)</td>
<td>Faulty contact or interrupted conductor of the dynamometric pin</td>
<td></td>
</tr>
<tr>
<td>3x</td>
<td>4x</td>
<td></td>
<td>Lowering speed control (3)</td>
<td>Short-circuit of the dynamometric pin conductor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Short-circuit of the dynamometric pin conductor</td>
<td>Possible overloading of the dynamometric pin</td>
<td></td>
</tr>
<tr>
<td>3x</td>
<td>6x</td>
<td></td>
<td>Control setting switch (6)</td>
<td>Faulty potentiometer of the switch (6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Control setting switch (6)</td>
<td>Faulty contact or interrupted conductor of the switch</td>
<td></td>
</tr>
</tbody>
</table>

**ELECTRO-HYDRAULIC SYSTEM**

**F_02_174**
Rear three-point hitch
It is intended for attaching carried or semi-carried agricultural machines and implements with hitching points of ISO category III.

<table>
<thead>
<tr>
<th>Category III.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitch axis length</td>
</tr>
<tr>
<td>Ø of openings of connecting balls of the lower draw-bars according to ISO</td>
</tr>
<tr>
<td>Ø of the upper draw-bar opening</td>
</tr>
</tbody>
</table>

1. Upper draw-bar
2. Left lifting draw-bar
3. Right lifting draw-bar
4. Limiting draw-bars
5. Lower draw-bars

Safety principles of working with the three-point hitch

⚠️ Persons that are not authorized to work with the attached implement must not stand between the tractor and the hitched machine (implement) - (A). Do not park the tractor with an attached implement in the lifted position (B). During a drive without an implement the lower draw-bars (5) must be connected with springs and the upper draw-bar (1) must be inserted into the spring suspension! During transport of implements the limiting draw-bars (4) of the lower draw-bars must be adjusted in such a way to avoid unwanted lateral movement of the implement!
Height adjustment of the lifting draw-bars
Extend the capstan (1) in the arrow direction and make the adjustment by turning the capstan.

Fixed and free position of the lower hydraulic draw-bars
Fixed position of the lower hydraulic draw-bars (A):
The pin head (1) and washer (2) are installed horizontally.

Free position of the lower hydraulic draw-bars (B):
The pin head (1) and washer (2) are installed vertically.

The free position enables free connection of the tractor and implement. In this case both the draw-bar ends may move freely against each other as regards their height.

Limiting draw-bars
The limiting draw-bars - stabilizers (1) limit or completely prevent lateral swinging of the lower draw-bars. The adjustment of the left and right limiting draw-bar is performed by turning of the draw-bar pipe, see arrow.

⚠️ Both the limiting draw-bars must always be installed on the tractor.
Both limiting drawbars must be mounted to the tractor at all times.
The length adjustment of the left and right limiting drawbar is done by turning the tube of the drawbar (2) after hoisting the securing block (1) in the direction of an arrow (A). Floating position of limiting drawbars (B).
If the tools connected in the rear three-point hitch require floating position, set the applicable length of chain (3). Securing block (1) remains hanging on the chain (3) in lifted position when you lower the arms of rear three-point hitch and limiting drawbars enable side swing of tools connected in the rear three-point hitch.
After lifting the arms of the rear three-point hitch, securing block returns to initial position and blocks the side swing of arms of the rear three-point hitch.

*Lower draw-bars with CBM hooks
The lower (3) and upper (4) draw-bars of the hitch are equipped with CBM hooks.
First, suspension CBM balls (1) must be fitted to the implement and the limiting draw-bars must be used to set the distance between the lower draw-bars of the hitch (3). After reversing and subsequent lifting of the three-point hitch its lower draw-bars (3) are connected to the implement and then the driver connects the upper draw-bar (4) of the three-point hitch from the cab.
When disconnecting the implement release the hooks, with the control wires (2) lift the upper draw-bar (4) and by lowering the three-point hitch disconnect the lower draw-bars (3).

Securing the lower draw-bars with CBM hooks

For especially demanding working positions (aggregation with heavy machines on slopes or aggregation with machines overhanging to one side) we recommend you to securely lock the lower draw-bar hook by inserting an M8 screw in the opening (S) and locking it with a nut.
**Upper draw-bar**
The upper draw-bar (1) has adjustable length. It is attached to the tractor to the console openings.

⚠️ *When extending the upper draw-bar you must make sure that both the joints are unscrewed from the draw-bar pipe to the same length.*

---

**Front three-point hitch**
It is designed for attachment of frontally carried agricultural machines and implements in accordance with ISO 8759-2.

⚠️ *During transport of a carried implement the hitch must always be hydraulically locked in the lifted position with valves that are installed on the left side of the tractor over the front axle.*

This hydraulic lock is recommended even in case no machine is attached to the three-point hitch.

---

**Adjusting the lowering rate of the front three-point hitch**
Before the start of work with an implement attached to the front three-point hitch it is recommended to adjust the time necessary to lower the implement from the highest to the lowest position to 1 - 1.5 s by setting the throttle valve. By turning the valve body to the left (in the arrow direction) you will increase the lowering speed. During the adjustment the valve levers of the front hitch must be directed horizontally.

---

**Controlling front three-point hitch**
The hitch is equipped with two hydraulic cylinders that are supplied with oil from the integrated hydraulic distributor. The lifting and lowering is controlled by the control lever of the integrated distributor (1):

<table>
<thead>
<tr>
<th>Position</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Lifting</td>
</tr>
<tr>
<td>4</td>
<td>Lowering</td>
</tr>
<tr>
<td>N</td>
<td>Hitch lock</td>
</tr>
</tbody>
</table>
Hydraulic lock of the front three-point hitch
Hydraulic locking of the front three-point hitch is performed in any position of the hydraulic cylinders with the ball valve in the front part of the tractor (2).

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>Free position</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Valve levers are in the horizontal position</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The hitch can be controlled from the cabin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Locked position</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Valve levers are in the vertical position</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The hitch is locked</td>
</tr>
</tbody>
</table>

Working and transport position of the front three-point hitch

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>Working position of the front three-point hitch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Transport position of the front three-point hitch</td>
</tr>
</tbody>
</table>

Changing the position of the draw-bars of the front three-point hitch:
1. Release and remove the pin (1) from the opening.
2. Lift the arm from position (A) to position (B).
3. Lock the arm by inserting the pin (2) in the opening (2) and secure the pin.

⚠️ Only insert the pin in the openings, never check whether the opening is free with your fingers!

Driving with agricultural machines attached to the front three-point hitch

⚠️ The maximum permissible speed of the tractor with agricultural machines attached to the front three-point hitch is 15 km.h⁻¹. If no implement or weight is attached to the front three-point hitch, we recommend you to lift the lower lifting draw-bars to the transport position.
Front wheels track of front drive axle in tractors equipped with non-removable discs

Tighten the nut of front wheels at a torque of 300 - 350 Nm.

- Nuts tightening front wheels to be tightened at a torque of 300 - 350 Nm.
- After travelling the distance of 100 m with an unloaded tractor, tighten the nuts tightening the front wheels again to the prescribed torque.
- After loading the tractor, tighten the nuts tightening the front wheels after 3 Mh.
- After 10 Mh, retest the tightening of nuts fixing the front wheels.

Toe-in of the wheels of the front driving axle
Proper toe-in or toe-out (S) of front wheels in a tractor with front drive axle is measured on wheels’ rim
Toe-in or toe-out is determined by the difference of measured values.

Tractors with solid front drive axle
b = a + 0 to 2 mm

Tractors with suspension front drive axle
S value changes with height setting of front part of the tractor (see DRIVING OPERATION chapter).

Front part of tractor in the highest position
b = a +6 až -10 mm

Front part of tractor in the medium position
b = a + 0 až -4 mm

Front part of tractor in the lowest position
b = a +2 až -2 mm
Note: Tractors are in standard equipped with hydrostatic device.

- Set the wheel symmetrically with longitudinal axis of a tractor.
- Measure the distance between rims in the front on horizontal level of wheel axis. Mark the place of measurement.
- Travel forward with a tractor so that the marked places would be on horizontal level of rear wheel axis (turn by 180°) and remeasure the distance between marked places.
- Release locking nuts of ball joint heads (2) of connecting rods of devices in hydraulic cylinder.
- Adjust toe-in by turning the pin of ball joint (3). Do the adjusting symmetrically with both joints to keep the same lock of wheels to both sides (do the measurement on the sides of rims).
- Locking nuts of heads of ball joints (2), tighten with a torque of 122 - 136 N. Upper surfaces of heads must be (1) parallel.

Front drive axle fenders can come in two designs
A - Fenders with solid consoles where the axis of fenders turn corresponds with the axis of front wheel turn. Fenders are on adjustable holders that can be set according to required tracks and the type of tyres used on the side (by relocating screws (a) to different openings) and also in terms of height (by relocating screws (b) to different openings).
B - Fenders with turnable consoles where the axis of turning corresponds to the axis of front wheel only partially. This design enables the setting of greater front wheels lock. Fenders are on adjustable holders which can be set according to the kind of tyres used in terms of height (by relocating screws (b) to different openings).

Set the stops always with any wheel track change or tire replacement with front drive axle.
Wheel stops with front drive axle must be set so that there would be a distance of at least 50 mm between front drive axle tires and tractor with full lock and full axle swing around central pin.

Setting wheel stops with front drive axle check
1. Set full lock to one side and check that the distance between a tire and the nearest solid point on the tractor is at least 50 mm. Check both front tires.
2. Turn the steering to full lock to the other side and check according to point 1.
3. Heave one side of the front axle to the maximum swing (front axle leans against the bracket) and check according to point 1 and 2.
4. Hoist the other side of front axle to the maximum swing (front axle leans against the bracket) and check according to point 1 and 2.
WHEEL TRACK CHANGE

The setting of stops (A) changes after the release of a nut (2) and unscrewing or screwing in a screw (1).

⚠️ After the change in setting wheel stops with front drive axle, it is always necessary to check their setting according to points 1 to 4.

Rear wheels wheel track
Rear wheels wheel track in a tractor is 1 950 mm.
Ballast weights are necessary to additionally load the tractor axles and to ensure manoeuvrability and stability of the tractor.

**Rear wheel weights**

<table>
<thead>
<tr>
<th>Combination of weights (pcs)</th>
<th>Mass of weights (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2+6</td>
<td>2x25 + 6x30 230</td>
</tr>
<tr>
<td>2+10</td>
<td>2x25 + 10x30 350</td>
</tr>
<tr>
<td>2+14</td>
<td>2x25 + 14x30 470</td>
</tr>
</tbody>
</table>

They are installed in case the tractor is not equipped with the front PTO into the frame tub casting cavity with screws that are accessible after removal of the battery holder.

**Bottom weights**

<table>
<thead>
<tr>
<th>Combination of weights (pcs)</th>
<th>Mass of weights (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2x34 68</td>
</tr>
</tbody>
</table>

**Front weights**

<table>
<thead>
<tr>
<th>Combination of weights (pcs)</th>
<th>Mass of weights (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3+3</td>
<td>6x50 300</td>
</tr>
<tr>
<td>5+5</td>
<td>10x50 500</td>
</tr>
<tr>
<td>7+7</td>
<td>14x50 700</td>
</tr>
<tr>
<td>9+9</td>
<td>18x50 900</td>
</tr>
</tbody>
</table>

The front weights of the can type are suspended in the tool carrier. They are protected from lateral movement with a pin inserted between the central weights. The other weights are attached to the central ones with two clamps. **Note:** After the insertion of the pin the front weights and the weight carrier can be used as the front hook for emergency towing of a sunken tractor.
**Weight of the front three-point hitch**

<table>
<thead>
<tr>
<th>Material</th>
<th>Weight mass (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cast-iron</td>
<td>460</td>
</tr>
<tr>
<td>Concrete</td>
<td>800</td>
</tr>
<tr>
<td>Concrete</td>
<td>1200</td>
</tr>
</tbody>
</table>

**Valve for filling tyre tubes with liquid**

All the tubes of the rear wheels are equipped with a valve that makes it possible to fill the tubes with liquid with the use of an adapter.

⚠️ *Filling the tubes of the front tyres and double mounting of the rear wheels with liquid is not permitted.*

1. Unload the tyre by lifting the tractor and turn it with the valve upwards (A).
2. Deflate the tyre and unscrew the valve insert.
3. Screw the adapter for water filling on and attach the liquid supply hose to it.
4. Fill the tyre with the prescribed quantity of liquid.
5. For the filling you can use a gravity tank (B) or you can fill the tyre under pressure (C).
6. Remove the hose and unscrew the adapter for water filling.
7. Screw on the valve insert and inflate the tyre to the prescribed pressure.
8. After inflating screw the protective cap on the valve.
9. Fill the other tyre in the same way.

⚠️ *Water must not freeze in a tyre!*
Procedure of draining liquid from the tyres

1. Unload the tyre by lifting the tractor and turn it with the valve upwards (A).
2. Deflate the tyre and unscrew the valve insert; turn the wheel with the valve downwards.

⚠️ During draining of liquid vacuum may occur in the tyre. Therefore, turn the wheel time after time to get the valve to the upper position (B).

3. Remove the rest of the liquid after screwing on the adapter for water filling by supplying pressurized air (C).
4. Blow out the liquid until it stops running through the tube of the air adapter.
5. Unscrew the adapter for water filling
6. Screw the air part of the valve back on and inflate the tyre to the prescribed pressure.
7. Screw the protective cap on the valve.
8. Drain the liquid from the other tyre in the same way.

Antifreeze solution for tyre filling

<table>
<thead>
<tr>
<th>Water for solution preparation</th>
<th>Calcium chloride CaCl₂</th>
<th>Hydrated lime</th>
<th>Solution density at 20°C</th>
<th>Freezing point approx.</th>
<th>Total volume</th>
<th>Added weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(l)</td>
<td>(kg)</td>
<td>(kg)</td>
<td>(l)</td>
<td>(°C)</td>
<td></td>
<td>(kg)</td>
</tr>
<tr>
<td>45</td>
<td>11.8</td>
<td>0.21</td>
<td>1.13</td>
<td>-18</td>
<td>50</td>
<td>57</td>
</tr>
<tr>
<td>45</td>
<td>13.9</td>
<td>0.23</td>
<td>1.18</td>
<td>-25</td>
<td>50</td>
<td>59</td>
</tr>
<tr>
<td>45</td>
<td>15.4</td>
<td>0.25</td>
<td>1.21</td>
<td>-30</td>
<td>50</td>
<td>61</td>
</tr>
</tbody>
</table>

Solution preparation:

1. Dry calcium chloride CaCl₂ is added to water, never the other way round!
2. The solution is not dangerous, but it is necessary to work carefully with it. Remove spilt drops with clean water.
3. Before filling leave the solution to cool down. Observe the prescribed quantity of hydrated lime.
4. The solution must not get in contact with metal parts and the electric installation! The solution is not harmful for the tube valve.
5. The antifreeze solution with the above mentioned composition must not be used in the cooling system!
6. After draining dispose of the antifreeze liquid as special waste!
No additional interventions may be carried out on electric installation of the tractor (connection of other electric consumers) due to its possible overloading!

With repairs of electric installation pay special attention in particular to manipulation with the battery to avoid any contact of electrolyte with skin or clothing.

Basic service information
The battery must always be connected with the 'minus' pole to the ground and with the 'plus' pole to the alternator. If the battery is connected the other way round, it will destroy the whole semiconductor equipment of the alternator. When starting the tractor with the use of an auxiliary battery, do not forget to connect the terminals 'plus' to 'plus' and 'minus' to 'minus'. If you replace a part of the charging circuit, disconnect the battery from the tractor ground (-) with the battery disconnector. This way you will avoid accidental short-circuits on the terminals.

In case of any handling or repair of the started motor the minus pole of the battery must be disconnected and all the shifting levers, incl. the PTO shifting lever, must be in the neutral position (do not forget to check whether the locked PTO switches on the right cabin pillar are off as well to prevent spontaneous start and endangering of the service person's life).

It is forbidden to start the engine by short-circuiting the starter motor terminals. Only start the tractor from the driver's seat!

Accumulator battery
The accumulator battery is installed under the cover on the left side of the tractor under the cab step. The battery is accessible after folding up of the cab step.

During folding up of the cab step the cab door must be closed.
1. Remove the screw (1)
2. Lift the step in the arrow direction
3. Secure the lifted step with a screw inserted to the opening (2) in the step
4. Remove the safety pin (3)
5. Grasp the bottom edge of the cover and remove it
Battery disconnector
Battery disconnector is placed on the left side of the tractor behind the stairs of the driver.
- a - Battery connected
- b - Battery disconnected

⚠️ When the tractor is at dead parking, disconnect the battery by means of the battery disconnector (1). If a tractor is dead parked for a longer period of time, it is necessary to recharge at least once a month from the reasons of self-discharge of battery.

Attention! When the engine is switched off, the engine control unit remains active for about 2 minutes because of storage of operation data. During this time the supply of current from the accumulator must not be interrupted. Do not disconnect the accumulator before this time expires.

Accumulator battery maintenance

Keep the accumulator battery clean and properly fixed to the vehicle. However, the fixing device must not deform the battery case. In the case of polypropylene batteries the electrolyte level must not be below the minimum mark indicated on the case.

⚠️ Only add distilled water to the battery!
1. When working with the battery first read the attached manual.
2. During work with the battery protect your eyes with goggles or a safety shield!
3. The electrolyte is a caustic substance; therefore, handle it with proper care. If your skin or clothes get stained by electrolyte, wash the skin or clothes with water and neutralize them with soap.
4. During charging hydrogen is released from the electrolyte on the electrodes. Hydrogen mixed with the air forms an explosive mixture. Therefore, it is prohibited to handle open fire near the battery during charging.
5. An explosion may also be caused by a spark created on the disconnection or release of a terminal when the charging circuit is on.
6. Keep the battery out of reach of children!
7. A discarded battery is dangerous waste for the environment - when buying a new battery hand the old one over to the dealer, who will dispose of it free of charge.
Alternator
Charging is monitored by the red indicator on the combined dashboard instrument.

⚠️ During repairs of the tractor by electric welding all the conductors must be disconnected from the alternator. Protect the ‘+B’ conductor from a short-circuit.

Alternator maintenance

⚠️ When washing and cleaning the tractor protect the alternator from penetration of water or diesel fuel! During operation the alternator must not be disconnected from the battery! The alternator must never be put in operation without load, i.e. with the conductor disconnected from the ‘+B’ terminal and the ‘+D’ terminal connected. Such a condition may induce an extremely high voltage when the engine speed is increased, which would destroy the semiconductors! Never short-circuit any alternator terminal during operation! The alternator must not be additionally excited. Such an intervention would damage the semiconductors. Ensure perfect electric connection of the alternator terminals and proper grounding of the alternator! Poles of the alternator may not be re-versed even for a short time!

Electric installation overload
Is signalized by the selected display changing to a display with a symbol of a battery. It is a condition when electric installation of the tractor has such take-off, that the alternator performance is not sufficient to accumulator charging. If this state occurs, turn off a device or increase engine revolutions, load of electric installation drops and originally selected display is displayed.

⚠️ The operation of tractor in the electric installation overload mode can lead to accumulator depletion.
Fuse panel
The fuse panel is accessible after the left side cover of the control bracket is removed. During replacement of fuses it is necessary to adhere to the prescribed value of the fuse. If interrupted repeatedly, search the nearest service.
<table>
<thead>
<tr>
<th>Pos.</th>
<th>Fuse size</th>
<th>Secured system</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>15A</td>
<td>brake lights, tripper of warning lights</td>
</tr>
<tr>
<td>F2</td>
<td>15A</td>
<td>horn, beacon</td>
</tr>
<tr>
<td>F3</td>
<td>15A</td>
<td>appliances fed when key is in position I</td>
</tr>
<tr>
<td>F4</td>
<td>15A</td>
<td>distance lights with signal lamp</td>
</tr>
<tr>
<td>F5</td>
<td>10A</td>
<td>left position lights, instrument panel lighting, number plate lighting</td>
</tr>
<tr>
<td>F6</td>
<td>10A</td>
<td>right position lights</td>
</tr>
<tr>
<td>F7</td>
<td>15A</td>
<td>right dimmed lights, fog-lamp with signal lamp</td>
</tr>
<tr>
<td>F8</td>
<td>7,5A</td>
<td>left dimmed lights</td>
</tr>
<tr>
<td>F9</td>
<td>15A</td>
<td>Front work lights in engine bonnet</td>
</tr>
<tr>
<td>F10</td>
<td>3A</td>
<td>front PTO shaft</td>
</tr>
<tr>
<td>F11</td>
<td>15A</td>
<td>front and rear windshield, windshield washer</td>
</tr>
<tr>
<td>F12</td>
<td>15A</td>
<td>radio, dome light</td>
</tr>
<tr>
<td>F13</td>
<td>15A</td>
<td>Firer, two-pole socket</td>
</tr>
<tr>
<td>F14</td>
<td>7,5A</td>
<td>air-conditioning</td>
</tr>
<tr>
<td>F15</td>
<td>10A</td>
<td>heating of mirrors</td>
</tr>
<tr>
<td>F16</td>
<td>10A</td>
<td>heating of rear window</td>
</tr>
<tr>
<td>F17</td>
<td>15A</td>
<td>compressor of driver’s seat</td>
</tr>
<tr>
<td>F18</td>
<td>20A</td>
<td>three-pin socket DIN 9680</td>
</tr>
<tr>
<td>F19</td>
<td>15A</td>
<td>work lights under the roof</td>
</tr>
<tr>
<td>F20</td>
<td>15A</td>
<td>work lights under the roof</td>
</tr>
<tr>
<td>F24</td>
<td>15A</td>
<td>ECU power supply of gearbox</td>
</tr>
<tr>
<td>F25</td>
<td>7,5A</td>
<td>EHR</td>
</tr>
<tr>
<td>F26</td>
<td>7,5A</td>
<td>EHR</td>
</tr>
<tr>
<td>F27</td>
<td>unoccupied</td>
<td></td>
</tr>
<tr>
<td>F28</td>
<td>7,5A</td>
<td>spring-loaded front axle</td>
</tr>
<tr>
<td>F29</td>
<td>10A</td>
<td>tripper of direction lights</td>
</tr>
<tr>
<td>F31</td>
<td>15A</td>
<td>SCR system</td>
</tr>
<tr>
<td>F32</td>
<td>10A</td>
<td>turbo-blower</td>
</tr>
<tr>
<td>F33</td>
<td>unoccupied</td>
<td></td>
</tr>
<tr>
<td>F34</td>
<td>unoccupied</td>
<td></td>
</tr>
<tr>
<td>F35</td>
<td>15A</td>
<td>Rear work lights on the cabin</td>
</tr>
<tr>
<td>F36</td>
<td>10A</td>
<td>diagnostic socket, instrument panel</td>
</tr>
<tr>
<td>F37</td>
<td>unoccupied</td>
<td></td>
</tr>
<tr>
<td>F38</td>
<td>unoccupied</td>
<td></td>
</tr>
<tr>
<td>F51</td>
<td>30A</td>
<td>heating</td>
</tr>
<tr>
<td>F52</td>
<td>30A</td>
<td>engine control with electronic regulation of revolutions</td>
</tr>
<tr>
<td>F53</td>
<td>30A</td>
<td>heating of urea</td>
</tr>
</tbody>
</table>
Checking the adjustment of the front grill headlights

During a check on a test wall the tractor must stand on a level surface and the tyres must be inflated to the prescribed pressure. The basic vertical setting is 3.5% at the shipping weight of the tractor. In the horizontal direction the light beams must be parallel with the longitudinal axis of symmetry of the tractor.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>distance of the test wall from the headlight (5 m)</td>
</tr>
<tr>
<td>h</td>
<td>height of the headlight centre above the road surface</td>
</tr>
<tr>
<td>Δh</td>
<td>headlight inclination (-3.5 %) to the distance of the test wall = 17.5 cm</td>
</tr>
<tr>
<td>α</td>
<td>raising of the outline of an asymmetrical headlight (15%)</td>
</tr>
</tbody>
</table>

Adjusting the front grill headlights
The adjustment is performed simultaneously with all the screws for the vertical and horizontal direction of the beam. In the adjusted condition all the springs of non-adjusting screws must be pre-tensioned. Each headlight is adjusted separately. The lamps are replaced by removing from the rear side of the reflector.
Checking the adjustment of the cab roof headlights

In the vertical direction there must not be any point of illuminated area lying on the road surface plane to the left from the longitudinal vertical plane passing through the headlight centre further than 30 m from the front outline of the tractor.

In the horizontal direction the light beams must be parallel with the longitudinal axis of symmetry of the tractor.

Check the adjustment of the headlights at the shipping weight of the tractor. The front roof headlights may only be used when driving on public roads when the tractor carries a frontally attached machine or implement covering the main headlights (in the tractor grill).
## ELECTRIC INSTALLATION

### List of lamps

<table>
<thead>
<tr>
<th>pos.</th>
<th>Lamp location</th>
<th>voltage</th>
<th>power</th>
<th>lamp type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dimmed headlight</td>
<td>12V</td>
<td>60W</td>
<td>HB3</td>
</tr>
<tr>
<td>2</td>
<td>Distance headlight</td>
<td>12V</td>
<td>60W</td>
<td>HB3</td>
</tr>
<tr>
<td>3</td>
<td>Work headlight</td>
<td>12V</td>
<td>65W</td>
<td>H9</td>
</tr>
<tr>
<td>4</td>
<td>Dimmed headlight</td>
<td>12V</td>
<td>55W</td>
<td>H7</td>
</tr>
<tr>
<td>5</td>
<td>Direction light</td>
<td>12V</td>
<td>21W</td>
<td>P21W</td>
</tr>
<tr>
<td>6</td>
<td>Position light</td>
<td>12V</td>
<td>5W</td>
<td>R5W</td>
</tr>
<tr>
<td>7</td>
<td>Position / brake light</td>
<td>12V</td>
<td>21W/5W</td>
<td>P21/5W</td>
</tr>
<tr>
<td>8</td>
<td>Lighting of number plate and</td>
<td>12V</td>
<td>5W</td>
<td>W5W</td>
</tr>
<tr>
<td></td>
<td>interior</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Lighting of switches</td>
<td>12V</td>
<td>1.2W</td>
<td>1.2W</td>
</tr>
</tbody>
</table>
TRACTOR MAINTENANCE

Steps performed daily before the start of work
Check that the signal lamps in the instrument panel are off and if there are no error messages.

Before starting the engine
Check the oil level in the engine
Check the level of cooling liquid and tightness of connections of the cooling system
Check the quantity of the brake liquid and check the liquid brakes for leaks
Check the oil quantity in the gearbox and final drive housing
Check the air pressure in all tyres
Check the tightening of wheels
Check the condition of hitching and attaching equipment

After starting the engine
Check the engine lubrication function (indicator)
Check the charging function (indicator)
Check the steering function (indicator)
Check the function and tightness of the steering circuit
Check the function and efficiency of the tractor brakes
Check the function and efficiency of the brakes of the trailer or semi-trailer

Steps performed every 50 hours of work
Lubricate the tractor in accordance with the lubrication plan

Steps performed every 100 hours of work
Clean the cooler blades with pressurized air
Perform maintenance of the dry air cleaner (in accordance with the signal of the clogging indicator)
Check the oil quantity in the gearbox and final drive housing
Check the oil quantity in the gear box of the front PTO
Check the oil quantity in the reducers and in the box of the front driving axle
Drain condensate from the air reservoir
Cleansing and greasing of accumulator clamps with a layer of grease

Steps performed every 500 hours of work
Cogged belt tension check
Hydrostatic steering system clearance check
Pivot of front drive axle clearance check
Clutch and brake pedals adjustment clearance check
Manual clutch function check
Brake function for trailer check
Air pressure system tightness and function check
Driver's seat function check, greasing moving parts with grease

Steps performed outside the interval of 500 hours of work
of new tractor or tractor after general overhaul

<table>
<thead>
<tr>
<th>state of counter of Mth</th>
<th>100</th>
<th>500</th>
<th>1000</th>
<th>1500</th>
<th>2000</th>
<th>2500</th>
<th>3000</th>
<th>subsequently always after ... Mth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checking and adjustment of valve clearance</td>
<td>o</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>Replacement of belt of accessories drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,000</td>
<td></td>
</tr>
<tr>
<td>Replacement of hoses of hydrostatic control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>after every 3,500 Mth or every 4 years</td>
<td></td>
</tr>
<tr>
<td>Checking of convergency of front wheels</td>
<td>o</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>Calibration of travelling clutches</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>500</td>
</tr>
</tbody>
</table>
## Filling and Filter Replacement

<table>
<thead>
<tr>
<th>State of Counter of Mth</th>
<th>100</th>
<th>500</th>
<th>1,000</th>
<th>1,500</th>
<th>2,000</th>
<th>Subsequently Always After … Mth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement of Engine Oil</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>500</td>
</tr>
<tr>
<td>Replacement of Oil Filter Element of Engine Oil</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>500</td>
</tr>
<tr>
<td>Replacement of Filter Element of Urea Pump</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>500</td>
</tr>
<tr>
<td>Replacement of Coarse Filter Element of Fuel</td>
<td>o</td>
<td>o</td>
<td></td>
<td></td>
<td>o</td>
<td>1,000</td>
</tr>
<tr>
<td>Replacement of Fine Filter Element of Fuel</td>
<td>o</td>
<td>o</td>
<td></td>
<td></td>
<td>o</td>
<td>1,000</td>
</tr>
<tr>
<td>Replacement of Air Filter Element</td>
<td>o</td>
<td>o</td>
<td></td>
<td></td>
<td>o</td>
<td>1,000</td>
</tr>
<tr>
<td>Replacement of Safety Element of Air Filter</td>
<td>o</td>
<td></td>
<td></td>
<td></td>
<td>o</td>
<td>2,000</td>
</tr>
<tr>
<td>Replacement of Filter Element of Heating</td>
<td>o</td>
<td>o</td>
<td></td>
<td></td>
<td>o</td>
<td>After Every 1,000 Mth or Every 2 Years</td>
</tr>
<tr>
<td>Replacement of Cooling Liquid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Every 2 Years</td>
</tr>
<tr>
<td>Replacement of Brake Liquid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Every 2 Years</td>
</tr>
<tr>
<td>Replacement of Oil in Gearbox and Final Drive Housing</td>
<td></td>
<td>o</td>
<td></td>
<td></td>
<td>o</td>
<td>1,000</td>
</tr>
<tr>
<td>Cleaning of Magnet and Sieve Element of Suction Filter of Hydraulics Pump</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>500</td>
</tr>
<tr>
<td>Replacement of Oil Filter Element of Pushing Filter of Hydraulics Pump</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>500 or According to Indication of Full Filter</td>
</tr>
<tr>
<td>Replacement of Oil Filter Element of Pushing Filter of Gearbox Distributor</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>500 or According to Indication of Full Filter</td>
</tr>
<tr>
<td>Replacement of Oil in Housing of Front Axle Drive Switch</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
<td></td>
<td>1,000</td>
</tr>
<tr>
<td>Replacement of Oil in Reductors of Front Axle Drive Switch</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
<td></td>
<td>1,000</td>
</tr>
<tr>
<td>Replacement of Oil in Housing of Front PTO Shaft and Cleaning of Sieve Oil Filter</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>500</td>
</tr>
</tbody>
</table>
The manufacturer does not take responsibility for any damages caused by the usage of service fillings that do not comply with requirements stated in this service manual.

ZETOR Service Fillings
To maintain best operational characteristics of your tractor, original operational Zetor fillings are recommended to be used.

Oil for gearing mechanisms of tractors ZETOR EXTRA 10W30 STOU

Oil for front driving axle of ZETOR LS 80W

Motor Oils
While changing or refilling the oil fill in the engine always use an oil complying with the specification DQC III-10

Specification of Oil for Tractor Transmission Devices

<table>
<thead>
<tr>
<th>Viscosity Class SAE</th>
<th>Performance Class API</th>
</tr>
</thead>
<tbody>
<tr>
<td>10W - 30</td>
<td>GL-4</td>
</tr>
</tbody>
</table>

Specification of Oil for the Front Driving Axle

<table>
<thead>
<tr>
<th>Axle type</th>
<th>Performance class API</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid front axle</td>
<td>GL4/GL5</td>
</tr>
<tr>
<td>Suspension front axle</td>
<td>GL4/GL5</td>
</tr>
</tbody>
</table>
## TRACTOR MAINTENANCE

### Other Recommended Service Fillings Tested on Zetor Tractors

#### Oil to gear systems of tractors

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Oil designation</th>
<th>Viscosity class SAE</th>
<th>Performance class API</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramo</td>
<td>MOGUL Traktol STOU</td>
<td>10W - 30</td>
<td>GL-4</td>
</tr>
<tr>
<td>Aral</td>
<td>Super Traktoral</td>
<td>10W - 30</td>
<td>GL-4</td>
</tr>
<tr>
<td>ÖMV</td>
<td>Austrotrac</td>
<td>10W - 30</td>
<td>GL-4</td>
</tr>
<tr>
<td>Fuchs</td>
<td>AGRIFARM STOU 10W-30 MC</td>
<td>10W - 30</td>
<td>GL-4</td>
</tr>
<tr>
<td>ORLEN OIL</td>
<td>Agro STOU</td>
<td>10W - 40</td>
<td>GL-4</td>
</tr>
</tbody>
</table>

#### Oil for the front driving axle

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Oil designation</th>
<th>Viscosity class SAE</th>
<th>Performance class API</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td>Spirax AX</td>
<td>80W - 90</td>
<td>GL-5</td>
</tr>
<tr>
<td>Aral</td>
<td>Fluid HGS</td>
<td>80W</td>
<td>GL-4</td>
</tr>
<tr>
<td>Agip</td>
<td>Rotra Multi THT</td>
<td>80W</td>
<td>GL-4</td>
</tr>
<tr>
<td>Esso</td>
<td>Torque Fluid 62</td>
<td>80W</td>
<td>GL-4</td>
</tr>
<tr>
<td>Fuchs</td>
<td>Titan Supergear</td>
<td>80W - 90</td>
<td>GL-4/GL-5</td>
</tr>
<tr>
<td></td>
<td>Titan Hydramot 1030MC</td>
<td>10W - 30</td>
<td>GL-4</td>
</tr>
<tr>
<td>ÖMV</td>
<td>Gear Oil LS</td>
<td>85W - 90</td>
<td>GL-5</td>
</tr>
<tr>
<td>MOL</td>
<td>Hykomol K 80W-90</td>
<td>80W - 90</td>
<td>GL-5</td>
</tr>
<tr>
<td>ORLEN OIL</td>
<td>Platinum Gear 80W-90</td>
<td>80W - 90</td>
<td>GL-5</td>
</tr>
</tbody>
</table>

#### Front PTO oil

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Oil designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td>Donax TX</td>
</tr>
<tr>
<td>BP</td>
<td>Autran DX III</td>
</tr>
<tr>
<td></td>
<td>Fluid 9</td>
</tr>
<tr>
<td>Esso</td>
<td>ATF E 25131</td>
</tr>
<tr>
<td>Castrol</td>
<td>Transmax S</td>
</tr>
<tr>
<td>Elf</td>
<td>Elfmatic G2 Syn</td>
</tr>
<tr>
<td></td>
<td>Elfmatic G3</td>
</tr>
<tr>
<td>FINA</td>
<td>Finamatic HP</td>
</tr>
<tr>
<td></td>
<td>Finamatic S6726</td>
</tr>
<tr>
<td>Mobil</td>
<td>Mobil ATF</td>
</tr>
<tr>
<td>Texaco</td>
<td>Texamatic 7045</td>
</tr>
<tr>
<td>Valvoline</td>
<td>ATF Dextron II-E</td>
</tr>
<tr>
<td>Beverol</td>
<td>Dextron II-E</td>
</tr>
<tr>
<td></td>
<td>(Fina)matic HP</td>
</tr>
<tr>
<td>JD</td>
<td>Hygard JDMJ 20C</td>
</tr>
<tr>
<td>Total</td>
<td>Fluide AT42</td>
</tr>
<tr>
<td></td>
<td>Fluidematic Syn</td>
</tr>
<tr>
<td>MOL</td>
<td>ATF 3G</td>
</tr>
</tbody>
</table>
Hydraulic brake liquid for the tractors

<table>
<thead>
<tr>
<th>Type</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell Donax YB</td>
<td>SAE J 1703, ISO 4925</td>
</tr>
<tr>
<td>Synthol 205</td>
<td>PND 31-656-80, ISO 4925, SAE - J 1703</td>
</tr>
<tr>
<td>Fuchs Stopred</td>
<td>SAE - J 1703</td>
</tr>
<tr>
<td>Brake Fluid DOT 4</td>
<td>ISO 4925, SAE - J 1703</td>
</tr>
<tr>
<td>EVOX DOT 4+</td>
<td>ISO 4925/4 SAE - J 1704</td>
</tr>
</tbody>
</table>

**CAUTION!**
1. The liquid is not designed for arctic conditions!
2. Replace the brake liquid once every two years regardless of the number of hours of work!
3. Liquids of the same classification can be mixed together.

Liquid for the cooling system of the tractors
Coolant and demineralized water in the ratio of 1:1.5 (carry out refilling of the mixture using this ratio). While changing or refilling the cooling fill in the engine always use a coolant complying with the prescribed specifications.

**Specifyaton**
- Deutz TR 0199-99-01115/9 EN

⚠️ **Do not use water without an antifreeze for the cooling of a tractor!**

**Carry out a renewal of the coolant after two years of operation.**

Fuel
Diesel oil complying with the regulation of EN 590

⚠️ **Paraffin impurities or additional additives in fuel are not allowed for engines with Common-Rail injection.**

Urea (urea solution AUS 32)
Urea a highly pure aqueous urea 32.5% solution used as a reducing agent NOx for additional treatment of exhaust gases.
The product is labelled as urea or AUS 32 (AUS: Aqueous Urea Solution).
Add only solution adhering to prescribed specifications.

**Specification**
- DIN 70070
- ISO 22241-1
- ASTM D 7821

**Note:**
The urea solution AUS 32 is known in USA and North America as Diesel Exhaust Fluid (DEF).

⚠️ **The lifetime of urea without the loss of the quality is influenced by storage conditions.**

**It crystallizes at -11°C and over +35°C it initiates hydrolytic reaction which means that a slow decomposition to ammonia and carbon dioxide begins.**

**It is essential to protect unprotected vessels from direct sunlight.**
Tractor maintenance

Plastic lubricant for the tractor

<table>
<thead>
<tr>
<th>Type</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell retinax HD2</td>
<td>DIN 51825 KP 2 K-20</td>
</tr>
<tr>
<td>MOGUL LA 2</td>
<td>ISO 6743/9 CCEB 2/3, ISO - L - XBCEA 2</td>
</tr>
<tr>
<td>MOGUL LV 2M</td>
<td>ISO 6743/9 CCEB 2/3</td>
</tr>
<tr>
<td>ÖMV signum</td>
<td>DIN 51825-K 2 C-30</td>
</tr>
<tr>
<td>MOL</td>
<td>Liton LT 2EP</td>
</tr>
<tr>
<td>ORLEN OIL</td>
<td>Liten® Premium LT-4 EP2</td>
</tr>
</tbody>
</table>

⚠️ Use grease with PTFE additives for greasing suspension front drive axle.

Tractor greasing scheme

**Transmission shaft**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Number of greasing points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transmission shaft clutches</td>
<td>2</td>
</tr>
</tbody>
</table>

**Solid front drive axle**

<table>
<thead>
<tr>
<th>Pos. no.</th>
<th>Identification</th>
<th>No. of lubrication points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Turning radius pins</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Central pin</td>
<td>2</td>
</tr>
</tbody>
</table>
Suspension front drive axle

<table>
<thead>
<tr>
<th>Position number</th>
<th>Name</th>
<th>Number of greasing points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Greasing points</td>
<td>25</td>
</tr>
</tbody>
</table>

⚠️ Use grease with PTFE additives for greasing suspension front drive axle.

Hitch for a single-axle semi-trailer

<table>
<thead>
<tr>
<th>Pos. no.</th>
<th>Identification</th>
<th>No. of lubrication points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hook pin bearings</td>
<td>0 to 4 (by version)</td>
</tr>
</tbody>
</table>

Front three-point hitch

<table>
<thead>
<tr>
<th>Pos. no.</th>
<th>Identification</th>
<th>No. of lubrication points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pins of cylinders of the front three-point hitch</td>
<td>4</td>
</tr>
</tbody>
</table>
Three-point hitch

<table>
<thead>
<tr>
<th>Pos. no.</th>
<th>Identification</th>
<th>No. of lubrication points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pins of auxiliary hydraulic cylinders</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Lifting draw-bars</td>
<td>2</td>
</tr>
</tbody>
</table>

Hitch mouth for a trailer

<table>
<thead>
<tr>
<th>Pos. no.</th>
<th>Identification</th>
<th>No. of lubrication points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hitch mouth for a trailer</td>
<td>1</td>
</tr>
</tbody>
</table>

Technical maintenance of the tractors after a general overhaul of the main groups
Run in the tractor after a general overhaul in accordance with the instructions for running in a new tractor. Perform the maintenance in the same way as with a new tractor.
Most of operations of planned maintenance may be carried out by the driver or other user of the tractor. In case you do not have sufficient technical equipment, let the difficult operations carried out by a specialised repair shop.

⚠️ All works, connected with cleaning, lubrication and adjustments of the tractor or coupled mechanisms may only be carried out after stopping of the engine and other movable components except checks of brakes, recharging and hydraulic system.

Opening the hood
Opening the hood:
Release the hood by pressing the button (1), grasp it in the places of arrows and lift it. Thanks to a gas brace the hood will open automatically after that.
The hood is locked in this lifted position thanks to this gas-liquid brace.
Closing the hood:
Pull the hood down with the strap, grasp it in the place of arrows and press it downwards until the hood lock snaps.

⚠️ Do not use excessive force to close the front hood as the filaments of headlight bulbs situated in the front hood might get damaged.

Checking the oil level in the engine

Perform the check daily before starting the operation when the tractor is standing horizontally and the engine is not running.

The filling hole (1) is located in the left side of the engine (A). The engine oil dipstick is a part of the lid of the filling hole (B). The oil level must always be in the range from MIN and MAX (C).

The lid (1) is released by turning to the left. Take out the dipstick, wipe it with a clean cloth without fibres and insert it back till the end. When the dipstick is taken out again check the oil level. Add the oil as necessary through the filling hole (1) to the mark MAX on the dipstick.
Draining oil from the engine

Oil draining from the engine is preferably carried out when the driving is finished or when the engine is heated to the operating temperature.
Do not perform the oil draining until the tractor is standing horizontally and the engine is not running.
Release the filling hole plug (2) of the engine oil during the oil draining.

1. Place the retaining vessel for the drained oil under the drain plug (1) in the left side of the engine
2. Unscrew the drain plug (1) in the left side of the engine.
3. Drain the oil to the retaining vessel
4. Clean the drain plug
5. Screw the drain plug (1) back

Filling the engine with oil
Pour the specified amount of the engine oil through the filling hole (2), start the engine and leave it running for 2 - 3 minutes when engine idling.
When the engine is stopped and the oil level is quiet, check the oil level with the dipstick and perform checking of the tightness of the filter body, drain plug and other connections.
Replacing full-continuous motor oil filter
The full flow oil filter is located in the right side of the engine and is accessible when the engine bonnet is open and the right bonnet sidewall is disassembled. The replacement of the filter element is performed after each oil change in the engine. The replacement is performed when the engine is not running.

Procedure for filter element replacement
Release the cover (1) by 2 to 3 revolutions and wait ca. 30 seconds.
Unscrew the cover (1) in anticlockwise direction.
Carefully release the filter body from the guide (4) in the jacket (5) in the upward direction. Catch the leaking oil in a suitable vessel.
Slightly bend the filter element (5) in the retaining vessel to the side until the element is released from the clamp (6).
Clean the components.
Replace the sealing ring (2) and oil it slightly.
Press the new filter element (5) into the clamp (6) and carefully put them together in the guide (4).
Firmly screw the cover (1) (25 Nm) in clockwise direction.
Check the tightness when the engine is running.

Fuel Filtering
The fuel filters are located on the right side of the engine.

The fuel filtration is two stage:
preliminary fuel filter with desilter (1)
fine fuel filter (2)
Raw Fuel Filter Clearing
You perform it while the engine is stopped and the key is in the switch box in the position 0.

1. Put a catch reservoir under the raw fuel filter
2. Loosen the draining bolt (1)
3. Keep the liquid draining until a pure fuel flows out
4. Tighten up the draining bolt with a tightening moment of 1.3-1.9 Nm
5. After having started the engine check tightness of the raw fuel filter

Cartridge Replacement in the Raw Fuel Filter
1. Put a catch reservoir under the raw fuel filter
2. Unplug the cable of the condensate level sensor (3) in the raw fuel filter
3. Loosen the raw fuel filter cartridge (2) and screw it off using appropriate tools
4. Dismantle the draining bolt (4) with the condensate level sensor
5. Before screwing on a new filter cartridge clean the packing surface of the filter body (1)
6. Smear fuel on the rubber packing of the new filter cartridge (2) and screw on the filter cartridge
7. After the packing has sit down on the contact surface tighten up the filter manually
8. Attach the draining bolt (4) with the condensate level sensor
9. Plug in the cable of the condensate level sensor in the raw fuel filter (3)
10. Perform an air bleeding of the fuel system
11. After starting up the engine make a tightness check of the raw fuel filter

⚠️ The filter cartridge must not be filled with fuel before you start the mounting. Contamination danger.
**Cartridge Replacement in the Fine Fuel Filter**

1 - Cover  
2 - Sealing ring  
3 - Jacket  
4 - Guide  
5 - Filter element  
6 - Clamp

**Procedure for filter element replacement**
- Release the cover (1) by 2 to 3 revolutions and wait ca. 30 seconds.  
- Unscrew the cover (1) in anticlockwise direction.  
- Carefully release the filter body from the guide (4) in the jacket (5) in the upward direction.  
- Catch the leaking fuel in a suitable vessel.  
- Slightly bend the filter element (5) in the retaining vessel to the side until the element is released from the clamp (6).  
- Clean the components.  
- Replace the sealing ring (2) and oil it slightly.  
- Press the new filter element (5) into the clamp (6) and carefully put them together in the guide (4).  
- Firmly screw the cover (1) (25 Nm) in clockwise direction.  
- Check the tightness when the engine is running.

**Fuel system venting**
- Release the bleeder screw (2).  
- Unlock the bayonet closure of the fuel pump (1) by simultaneous pressing and turning and in anticlockwise direction. The pump piston is now pressed out due to the force of the spring.  
- Pump until no air leaks from the bleeder screw.  
- Tighten the bleeder screw (6.5) with the tightening torque of 6.5 ± 1.3 Nm.  
- Lock the bayonet closure of the fuel pump (1) by simultaneous pressing and turning and in clockwise direction.

Start the engine and leave it running for ca. 5 minutes when engine idling or at low load. During this check the tightness of the fuel system.
Dry air cleaner maintenance instructions
Perform maintenance of the air cleaner in the following way:
1. Remove the right side plate of the hood
2. Release the clamps of the air cleaner lid (marked with arrows)
3. Remove the air cleaner lid (1)

Recovery of the main air cleaner element
Remove the main element of the dry cleaner (2) by pulling.
If the main element is not damaged (there must not be any dust on the inner side of the element), recover it by blowing pressurized air from the inner side of the element.
This way you can recover the main element 3 times at the most. The element must be replaced once a year.

Replacing the safety element of the air cleaner
Remove the safety element of the dry cleaner (3) by pulling.

⚠️ The safety element cannot be recovered. It must always be replaced in these cases.
- If the main element is damaged.
- After covering 2000 hours of work
- At least once every two years.

Reassembly of the air cleaner elements
Carry out a reverse procedure in order to mount air filter cartridges back on.
While mounting the cartridges back on mind:
- The cleanliness of contact surfaces
- That the cartridges must not lose their shape while being mounted and they must not vibrate after their mounting has been finished
- That after having closed the filter with the cover you must ensure a perfect tightness of the entire filter
MAINTENANCE INSTRUCTIONS

Bleeding the hydraulic circuit of the hydrostatic steering
1 - Start the engine and let it run at the idle speed for approx. 1 minute.
2 - Turn the steering wheel several times to both the sides at the idle speed of the engine.
3 - At the maximum engine speed turn the wheels with the steering wheel 3 times alternately slowly and quickly to both the sides up to the limiting stops of the wheels.
4 - Stop the engine and lower the tractor onto the front wheels.

Replacing the hydrostatic steering hoses
The hoses must be replaced after four years from the production date (the date is indicated on their surface) or after 3500 hours of work of the tractor or immediately after discovering signs of their damage (hose sweating, local buckling, leaks of the working media around the end pieces and on the hose surface, abrasion of the hose surface to the metallic reinforcement, damage of the outer yarn braiding in the case of low-pressure hoses).

⚠️ In case of a pump failure or after stopping of the engine the steering capability is maintained, but the required steering force gets higher. You can drive the tractor at a reduced speed to the nearest workshop. The steering wheel must not be held in the limit turning angle positions for a long time (the maximum time is 20 s); otherwise the oil in the hydrostatic steering circuit is heated up excessively.

Replacing coolant

Follow the following procedure:
1 - Open the heating cock (B) and release the overpressure plug (A) on the equalizing vessel.
2 - Drain the cooling liquid from the cooler. The drain plug (C) is accessible when the engine bonnet is open.
3 - Drain the cooling liquid from the engine block. The drain plug (D) is located in the left side of the engine and is accessible when the engine bonnet is open.
4 - When the cooling liquid is drained, close the drain plugs (leave the heating cock open).
5 - Fill the cooling system with the liquid to the neck in the equalizing vessel and close it with the overpressure plug.
6 - Start the engine and leave it running for ca. 1 minute.
7 - Fill the cooling liquid in the equalizing vessel (A) to the mark MAX.
8 - Close the vessel with the overpressure plug.

⚠️ When filling the engine cooling system, always use the specified cooling liquid. Never fill the cooling system with water. Using other than specified cooling liquid may cause engine damage.
**MAINTENANCE INSTRUCTIONS**

**Checking the oil in gearbox**
The height of oil in gear box set is checked by oil level indicator which is placed at the right rear part of the gearbox behind the right hydraulic roller.

A - Standard oil filling

⚠️ *Carry out the check always with the engine stopped.*

**Check and replacement of oil in gear box**

**Draining and checking holes**
1. drain plug of oil from clutch box
2. drain plug of oil from gearbox
3. drain plug of oil from final drive housing
4. drain plug of oil from final drive housing box
5. drain plug of oil from final house driving box
6. Pouring opening for gear oil is placed in hydraulic mechanism housing. Accessible from the rear part of the tractor

**After draining oil**
1. Clean the magnet (it is part of the lid) and the strainer element of the suctioning filter (2)
2. After cleaning screw all the drain screws back on.
3. Fill oil, start the engine and let it run for approx. 2 minutes
4. After stopping of the engine and stabilization of the oil level in the gearbox check its quantity and fill up oil to the upper edge of the dipstick tab or if increased filling is necessary, to the lower or upper mark of the dipstick.

**Replacement of the transmission oil cleaner element with hydraulic pump suction filter**
The oil filter is located on the left side of the gearbox.

In case of indication of full oil filter element, replace the element regardless the interval of planned replacement of filters and their elements.

⚠️ *Prior to the replacement of the filter element put a suitable vessel for catching the dripping oil under the tractor.*

1. Unscrew the oil filter body (1)
2. Clean the oil filter body (1)
3. Replace the filter element
4. Perform the reassembly of the oil filter body
Insertion piece replacement of the oil cleaner with delivery filter of the gearbox switchboard

The oil filter is located on the left side of the gearbox. In case of indication of full oil filter element, replace the element regardless the interval of planned replacement of filters and their elements.

Prior to the replacement of the filter element put a suitable vessel for catching the dripping oil under the tractor.

1. Unscrew the oil filter body (1)
2. Clean the oil filter body (1)
3. Replace the filter element
4. Perform the reassembly of the oil filter body

Replacement of filter element of urea filter

Prior to the replacement of urea filter element put a suitable vessel under the tractor for catching the dripping urea liquid.

The urea filter element is replaced when the engine is not running and the key is removed from the switch box. The urea cleaner is located in the right side of the engine on the urea pump block (A).

B - Procedure for replacement:
1 - dismount the cover (1)
2 - remove the filter element with the compensation body (2)
3 - insert the new filter element with the compensation body (2)
4 - mount the cover (1) with the tightening torque of 20-25 Nm
5 - start the engine and check the tightness

When handling components that are in contact with urea, use protective gloves.

Lubrication and filling points of the front driving axle

Suspension front drive axle
1. Drain opening of the final drive housing oil
2. Filling and inspection opening of final drive housing oil (after removing of the inspection screw the oil level must reach the bottom edge of the inspection opening)

Solid front drive axle
3. Drain opening of the final drive housing oil
4. Filling and inspection opening of final drive housing oil (after removing of the inspection screw the oil level must reach the bottom edge of the inspection opening)
Filling, inspection and drain opening of oil of the front wheel reducers

Oil is checked, filled and drained through one opening after turning of the reducer in accordance with the figure.

1. Checking the oil level - opening on the horizontal axis of the reducer (after removing of the inspection screw the oil level must reach the bottom edge of the inspection opening)
2. Oil filling - opening at the top
3. Oil draining - opening at the bottom

Front PTO
The inspection and filling plug of oil (1) is situated on the front side of the front PTO case.

Note: The front PTO with the standard turning direction is equipped with a hollow bolt of the oil cooler hose instead of the inspection and filling plug. Perform the check after removing the hollow bolt.

After unscrewing of the inspection plug the oil level must reach the bottom edge of the inspection opening. During the oil replacement the oil cleaning strainer (2) must be cleaned. The cleaning strainer is accessible after the disassembly of the locking ring and removal of the cap.

Brake fluid replacement
The vessel is placed on the rights side and is accessible after lifting the front bonnet. Keep the level of brake fluid in the range of 3/4 of the content of the vessel (maximum height) to 1/2 of the vessel content (minimum height of the level).

When handling brake liquid, keep absolute cleanliness. Check the brake liquid level daily before starting your work.

Carbon filter installation instructions
1. Remove the old filter from the air duct orifice in the place of its mounting.
2. Remove the protective package from the new filter.
3. Insert the filter into the air duct orifice in such a way to make the air flow direction correspond to the flow direction through the filter in accordance with the arrow on the filter. The entering air must first pass through the white dust filtration layer.
4. Check proper sealing of the filter.
5. Secure the filter.
Cleaning the heating filters
Recover the filters positioned under the covering grills over the windshield outside the cabin with regard to the degree of clogging:
- by shaking
- by blowing with compressed air
Check the filters for clogging daily. Replace heavily clogged filters.

⚠️ The safety cab of the tractor is not equipped with special filters of air aspirated to the cab. It does not protect the operator from the effect of aerosols and other harmful substances! Use a filter with active carbon when working with harmful substances.

*Air filter with active carbon
Filters with active carbon are installed instead of the standard dust filter and they are replaced in the same way as the normal filters. The filter must be inserted with the white side towards the grill. The installation instructions are found on the next page. The filter is only used during spraying of pesticides; then it must be replaced with a paper filter again as flying dust would clog the carbon filter in a very short time. During its use the recirculation control must be in the position of 'air suctioned from the outside'. The fan control must be in the 'maximum' position.

⚠️ WARNING: The filter does not provide complete protection from toxic substances
- When handling the filter wear protective gloves
- Do not clean or blow the filter with compressed air

⚠️ DANGER: Replace the active carbon filter every 200 hours or 36 months (the production date is printed on the filter). If you feel the smell of pesticides in the cab, replace the filter immediately and have the cab sealing checked. Used filters must be disposed of in specialized collection centres.

Air-conditioning maintenance

⚠️ The most important element of the maintenance of the air-conditioning system is cleaning of the cooler (condenser) of the air conditioning (it is located in front of the engine cooler). The full condenser of the air conditioning decreases not only the efficiency of the cooling of the air-conditioning system, but also the efficiency of the engine cooling.

Lift up the engine bonnet, disassemble the locking screw (1) and release and push out the cooler in the direction of the arrow. Blow out with compressed air or rinse out with pressure water (against the tractor travelling direction). Then insert the cooler back and mount the locking screw (1). Make sure that the hoses correctly guided.
When the air-conditioning functions properly, water condenses in the roof space of the cab and the condensate is drained through hoses in the cab pillars and runs out at the bottom side of the pillar. This is why you must make sure that the condensate drain hoses will not be blocked.

Draining condensate from the air reservoir
Draining is performed by deflecting or compressing the protruding part of the valve. The air reservoirs are located in front of the rear axle. Th tractors are equipped with one air reservoir installed on the left side of the tractor as standard or * two air reservoirs positioned on the right and left side of the tractor (if air-pressure brakes are in-stalled).

Checking the air systems for leaks
- fill the air reservoir to the maximum pressure (730 ± 20 kPa).
- with the engine stopped the air pressure must not drop by more than 10 kPa in 10 minutes.

⚠️ Perform the leak check daily before driving with a trailer or semi-trailer. In case of a brake system failure or if the pressure drops below 450 ± 30 kPa, the warning indicator on the dashboard will light up.

Working pressure of air brakes
In the single- and double-hose version the air pressure at the double-hose coupling (2) (red cap) is 740 ± 20 kPa and at the single-hose coupling (1) max. 600 ± 20 kPa (at the moment the pressure controller relieves the compressor - blows out the air).
MAINTENANCE INSTRUCTIONS

Maintenance and treatment of tyres

Regularly check the outer surface of tyres and verify whether they are free of defects at the sides and over the bead and whether the reinforcement is not damaged.

⚠️ *Do not use tyres that show a defect any longer.*

**Tyre inflation**

The basic recommended inflation values are specified in the table. Regularly check the tyre pressure before driving, when the tyres are cold. To inflate the tyres use the pressure controller (B), which acts as a pressure equalizer, tyre filling device and safety valve. Remove the rubber cap of the pressure controller and screw a tyre inflation hose instead. Screw the hose up to the end of the thread to compress the non-return valve. If there is the maximum pressure in the air reservoir (A), the tyres cannot be inflated. In this case you must first reduce the pressure with the condensate drain valve located in the bottom part of the air reservoir (A). After inflating the tyres you must put the rubber cap back on the pressure controller.

The value of the permitted load-bearing capacity of the front axle must not exceed the sum of the load-bearing capacity values of both the tyres that are installed on the axle. The values of the permitted load-bearing capacity of the axles are specified in the 'Main technical parameters' of the corresponding tractor type. On the same axle of the tractor there must not be tyres of different dimensions and designs (in this case tyre design means the diagonal or radial tyre version).

<table>
<thead>
<tr>
<th>Principal working activity</th>
<th>Tyre dimensions and design</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>480/70 R24</td>
</tr>
<tr>
<td>For field work</td>
<td>Inflation (kPa)</td>
</tr>
<tr>
<td></td>
<td>Load-bearing capacity (kg)</td>
</tr>
<tr>
<td>For road transport</td>
<td>Inflation (kPa)</td>
</tr>
<tr>
<td></td>
<td>Load-bearing capacity (kg)</td>
</tr>
<tr>
<td>For work with a front loader at the maximum permitted speed of 8 km/h.</td>
<td>Inflation (kPa)</td>
</tr>
<tr>
<td></td>
<td>Load-bearing capacity (kg)</td>
</tr>
</tbody>
</table>
### Tyre dimensions and design

<table>
<thead>
<tr>
<th>Principal working activity</th>
<th>Tyre dimensions and design</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>540/65 R24</td>
</tr>
<tr>
<td>For field work</td>
<td>Inflation (kPa)</td>
</tr>
<tr>
<td></td>
<td>Load-bearing capacity (kg)</td>
</tr>
<tr>
<td>For road transport</td>
<td>Inflation (kPa)</td>
</tr>
<tr>
<td></td>
<td>Load-bearing capacity (kg)</td>
</tr>
<tr>
<td>For work with a front loader at the maximum permitted speed of 8 km/h.</td>
<td>Inflation (kPa)</td>
</tr>
<tr>
<td></td>
<td>Load-bearing capacity (kg)</td>
</tr>
</tbody>
</table>

**Note:** The 380/70R24 tyre is a dimensional equivalent of the 13.6R24 tyre. The 420/70R24 tyre is a dimensional equivalent of the 14.9R24 tyre.

The specified load-bearing capacities of tyres for field work and road transport correspond to the maximum travelling speed of the tractor, i.e. in the case of radial tyres 40 km/h and in the case of diagonal tyres 30 km/h. The specified values refer to one tyre. For a tractor the max. load per axle must not exceed the max. load-bearing capacity values of the tyres.

**Recommended inflation values of the rear wheel tyres**

The value of the permitted load-bearing capacity of the rear axle must not exceed the sum of the load-bearing capacity values of both the tyres that are installed on the axle. The values of the permitted load-bearing capacity of the axles are specified in the 'Main technical parameters' of the corresponding tractor type. On the same axle of the tractor there must not be tyres of different dimensions and designs (in this case tyre design means the diagonal or radial tyre version).
Tyres for driving wheels
Driving wheels - diagonal tyres

<table>
<thead>
<tr>
<th>Speed km/h</th>
<th>Load-bearing capacity %</th>
<th>Inflation pressure %</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>140**</td>
<td>125</td>
</tr>
<tr>
<td>20</td>
<td>120</td>
<td>100</td>
</tr>
<tr>
<td>25</td>
<td>107</td>
<td>100</td>
</tr>
<tr>
<td>30</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>35</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>40</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

** minimum value for 6 PR

It is not allowed to increase the load-bearing capacity of the tyres except the above mentioned cases by further increasing the inflation pressure above the values mentioned in the table while simultaneously decreasing the speed.

Driving wheels - radial tyres

<table>
<thead>
<tr>
<th>Speed km/h</th>
<th>Load-bearing capacity %</th>
<th>Inflation pressure %</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>150</td>
<td>125</td>
</tr>
<tr>
<td>20</td>
<td>123</td>
<td>100</td>
</tr>
<tr>
<td>25</td>
<td>111</td>
<td>100</td>
</tr>
<tr>
<td>30</td>
<td>107</td>
<td>100</td>
</tr>
<tr>
<td>35</td>
<td>103</td>
<td>100</td>
</tr>
<tr>
<td>40</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Storing the tractor
If the tractor is to be put out of operation for a shorter period, inflate the tyres to the value required for road transport. In case of a longer period of inactivity of the tractor (storage), support the tractor and reduce the pressure in the tyres to the minimum (the wheels must not touch the ground).
Almost all the following works require certain experience and more exacting service and diagnostic equipment. That's why we recommend to do the works at specialized or authorized workshops.

Adjusting valve clearance
Adjustment of the engine valves must be performed by an authorized service.

Flat belt drive tension of accessories
Flat belt drive tension of accessories (A) does not need to be adjusted. The belt is tensioned automatically.

* Tensioning the V-belt of the AC compressor
If the V-belt (B) is properly tensioned - its deflection must be 5.5 mm when the belt is subject to the force of 50 N. Tension the V-belt to the prescribed value after releasing the fixation screws of the AC compressor.

Adjusting the play of the brake pedals
The proper play between the piston rod of the brake pedals and the piston of the main cylinder is 0.5 - 1.0 mm (3 - 6 mm measured at the edge of the brake pedals with the pedal disconnected). Perform the adjustment with the pedals disconnected and after releasing the adjustment nut (1) that the piston rod is screwed in.

Bleeding the brake system of the tractor
Do the bleeding with the pedals disconnected, for each wheel separately, as follows:

Note: When bleeding the hydraulic brake circuits you must always depress one pedal (1) by 7.5+0.5 mm, measured at the piston rod of the main brake cylinder, which amounts to 3+0.2 mm at the adjustment screw (2) and do the bleeding with the other pedal. To maintain the proper distance insert between the pedal (1) and adjustment screw (2) a gauge with the corresponding thickness, i.e. 3+0.2 mm.
Bleeding the rear brake system

- Check the quantity of brake liquid in the compensation tank; fill up new liquid to the maximum level.
- Slide a hose onto the corresponding brake cylinder screw and immerse its other end to the bottom of a transparent container partly filled with the brake liquid.
- Depress the brake pedal, release the bleeding screw by 1/4 turn at the most, further depress the brake pedal and tighten the bleeding screw.
- Release the brake pedal and repeat the procedure until air bubbles stop escaping from the hose.

During the bleeding observe the liquid level in the compensation tank to avoid aspiration of air (A).

⚠️ Make sure that the hose end is continuously immersed in the liquid and hold the container as high as possible (B). After two years you must replace the brake liquid in the whole brake circuit.

Foot brake check

With the foot brake pedals disconnected depress the pedal with the maximum force of approx 500 N. If the pedal can be depressed almost to the stop consisting in the boss on the bottom part of the console, the foot brake must be adjusted.
Foot brake adjustment
Before the adjustment of the foot brake the parking brake lever must be in the unbraked position and between the nut (1) and pin (2) in the disc brake lever (3) there must be some play. If you find zero play, loosen the nut (1) slightly. Lift both the rear wheels and instruct your assistant to turn one of them by hand. At the same time tighten the adjustment nut (4) until the wheel cannot be turned. Stop tightening. Then, loosen the adjustment nut by 5/6 of a turn (5 tabs of the nut) and check the turning of the wheel.
After this basic adjustment check the operation of the foot brakes to see whether the braking effect of both the wheels is the same. If not, loosen the adjustment nut (4) by the required value on the side where the braking effect is higher.

Parking brake adjustment
The adjustment of the parking brake follows after the adjustment of the foot brake. The parking brake lever must be in the unbraked position. Perform the adjustment in such a way that the self-locking nut (1) of the parking brake draw-bar can touch the pin (2) in the disc brake lever (3).
After this basic adjustment check the operation of the parking brake to see whether the braking effect of both the wheels is the same. If not, loosen the adjustment nut (1) by the required value on the side where the braking effect is higher.

Adjustment of the lifting draw-bars of the hitch for a single-axle semi-trailer
- Raise the hydraulic arms to the upper - transport position with the position control selected and the vibration compensator off.
- Screw the nuts on the adjustable draw-bars towards the guiding pipe without any play.
- Tighten the nuts by another 3.5 turns.
- Check whether it is possible to tilt off the supporting hooks freely.
- By lowering and repeated lifting of the hydraulic arms to the transport position check whether the engine does not tend to 'stall' at the idle speed - the relief valve of the hydraulic pump must not be in operation.
- Then, lower the arms slightly.

Adjusting the bowden cable
It is performed if the carrier with the towing hook is in contact with the supporting hooks. The Bowden cable must be tensioned to avoid any play of the control lever in the cab. Then, the cable is secured against loosening with a nut.
NOTAS
### Main tractor’s parameters (mm)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Measurement</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position length with the suspension device with lowered front TPL</td>
<td>5,130</td>
<td>without additional weights</td>
</tr>
<tr>
<td>Position length with the suspension device with front TPL</td>
<td>4,605</td>
<td>without additional weights</td>
</tr>
<tr>
<td>Width over rear mudguards</td>
<td>2,330</td>
<td></td>
</tr>
<tr>
<td>Height to the exhaust muzzle</td>
<td>2,875-2,970</td>
<td>according to the tyre dimensions</td>
</tr>
<tr>
<td>Height of the tractor to the cabin upper edge</td>
<td>2,815-2,910</td>
<td>according to the tyre dimensions</td>
</tr>
<tr>
<td>Clear height under the front axle beam</td>
<td>515-570</td>
<td>according to the tyre dimensions</td>
</tr>
<tr>
<td>Height of the flat mouthpiece in the highest position (centre of the mouthpiece)</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Wheelbase</td>
<td>2,840</td>
<td></td>
</tr>
</tbody>
</table>

### Technical data of engines

<table>
<thead>
<tr>
<th>Tractor type</th>
<th>Crystal 150</th>
<th>Crystal 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine type</td>
<td>TCD6.1L6 C4ST106A</td>
<td>TCD6.1L6 C4ST120</td>
</tr>
<tr>
<td>Engine design</td>
<td>serial, standing, water cooled</td>
<td></td>
</tr>
<tr>
<td>Engine type</td>
<td>diesel, for-stroke with direct fuel injection, turbocharged with cooling of filling air</td>
<td></td>
</tr>
<tr>
<td>Injection system</td>
<td>Common rail</td>
<td></td>
</tr>
<tr>
<td>Additional treatment of exhaust gases</td>
<td>Selective catalytic reduction (SCR)</td>
<td></td>
</tr>
<tr>
<td>Number of cylinders</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Cylinder capacity</td>
<td>cm³</td>
<td>6,057</td>
</tr>
<tr>
<td>Bore x stroke</td>
<td>mm</td>
<td>101x126</td>
</tr>
<tr>
<td>Rated speed</td>
<td>min⁻¹</td>
<td>2,100</td>
</tr>
<tr>
<td>Idle speed</td>
<td>min⁻¹</td>
<td>700</td>
</tr>
<tr>
<td>Injection order</td>
<td></td>
<td>1-5-3-6-2-4</td>
</tr>
<tr>
<td>Engine pressure ratio</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Max. power / engine revolutions (EC 24)</td>
<td>kW / rpm</td>
<td>106.5/1,800</td>
</tr>
<tr>
<td>Specific fuel consumption at 2,100 rpm</td>
<td>g.kW.h</td>
<td>233.2</td>
</tr>
<tr>
<td>Max. torque / engine revolutions</td>
<td>Nm / rpm</td>
<td>664/1,500</td>
</tr>
<tr>
<td>Torque reinforcement</td>
<td>%</td>
<td>37.67</td>
</tr>
<tr>
<td>Minimum oil pressure at engine idle and oil temperature of 80°C</td>
<td>MPa</td>
<td>0.08</td>
</tr>
<tr>
<td>Max. temperature of cooling liquid</td>
<td>°C</td>
<td>110</td>
</tr>
</tbody>
</table>
### Main Technical Parameters

**Permitted maximum load of front axle (kg)**

<table>
<thead>
<tr>
<th>Travelling speed (km/h)</th>
<th>Wheel track (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 974</td>
</tr>
<tr>
<td>6</td>
<td>6 000</td>
</tr>
<tr>
<td>8</td>
<td>5 000</td>
</tr>
<tr>
<td>20</td>
<td>4 200</td>
</tr>
<tr>
<td>30</td>
<td>4 200</td>
</tr>
<tr>
<td>40</td>
<td>4 200</td>
</tr>
</tbody>
</table>

The load only refers to the entire axle; the permissible load with regard to tyres is specified in the tab 'Load-bearing capacity of the front tyres'.

**Permitted maximum load of rear axle (kg)**

<table>
<thead>
<tr>
<th>Travelling speed (km/h)</th>
<th>Wheel track (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 950</td>
</tr>
<tr>
<td>8</td>
<td>7 000</td>
</tr>
<tr>
<td>20</td>
<td>6 500</td>
</tr>
<tr>
<td>30</td>
<td>6 500</td>
</tr>
<tr>
<td>40</td>
<td>6 500</td>
</tr>
</tbody>
</table>

The load only refers to the entire axle; the permissible load with regard to tyres is specified in the tab 'Load-bearing capacity of the rear tyres'.

**Permitted maximum weight of set 'tractor + mounted machine' (kg)**

<table>
<thead>
<tr>
<th>Travelling speed (km/h)</th>
<th>Maximum weight of the set</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10000</td>
</tr>
<tr>
<td>8</td>
<td>9000</td>
</tr>
<tr>
<td>20</td>
<td>9000</td>
</tr>
<tr>
<td>30</td>
<td>9000</td>
</tr>
<tr>
<td>40</td>
<td>9000</td>
</tr>
</tbody>
</table>

**Manoeuvrability condition**

<table>
<thead>
<tr>
<th>Travelling speed (km/h)</th>
<th>Weight of the front axle of the tractor out of the total weight of the carrying set (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 40</td>
<td>min. 25</td>
</tr>
<tr>
<td>max. 15</td>
<td>min. 20</td>
</tr>
</tbody>
</table>
### MAIN TECHNICAL PARAMETERS

#### Front tires steerability

<table>
<thead>
<tr>
<th>Tyre dimensions</th>
<th>Travelling speed</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40 km.h⁻¹</td>
<td>30 km.h⁻¹</td>
<td>20 km.h⁻¹</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tyreload-bearing capacity (kg)</td>
<td>Tyreload-bearing capacity (kg)</td>
<td>Tyreload-bearing capacity (kg)</td>
<td></td>
</tr>
<tr>
<td>Tyre 1 pc</td>
<td>Axle</td>
<td>Inflation (kPa)</td>
<td>Tyre 1 pc</td>
<td>Axle</td>
</tr>
<tr>
<td>480/70 R24</td>
<td>2100</td>
<td>4200</td>
<td>120</td>
<td>2100</td>
</tr>
<tr>
<td>420/70R28</td>
<td>2060</td>
<td>4120</td>
<td>160</td>
<td>2100</td>
</tr>
<tr>
<td>480/65 R24</td>
<td>2100</td>
<td>4200</td>
<td>140</td>
<td>2100</td>
</tr>
<tr>
<td>540/65 R24</td>
<td>2100</td>
<td>4200</td>
<td>100</td>
<td>2100</td>
</tr>
<tr>
<td>480/65 R28</td>
<td>2100</td>
<td>4200</td>
<td>125</td>
<td>2100</td>
</tr>
<tr>
<td>14,9R24</td>
<td>1950</td>
<td>3900</td>
<td>160</td>
<td>2090</td>
</tr>
<tr>
<td>420/70R24</td>
<td>1900</td>
<td>3800</td>
<td>160</td>
<td>2030</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tyre dimensions</th>
<th>Travelling speed</th>
<th>8 km.h⁻¹</th>
<th>6 km.h⁻¹</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tyreload-bearing capacity (kg)</td>
<td>Tyreload-bearing capacity (kg)</td>
<td></td>
</tr>
<tr>
<td>Tyre 1 pc</td>
<td>Axle</td>
<td>Inflation (kPa)</td>
<td>Tyre 1 pc</td>
</tr>
<tr>
<td>480/70 R24</td>
<td>2600</td>
<td>5200</td>
<td>125</td>
</tr>
<tr>
<td>420/70R28</td>
<td>2600</td>
<td>5200</td>
<td>150</td>
</tr>
<tr>
<td>480/65 R24</td>
<td>2600</td>
<td>5200</td>
<td>135</td>
</tr>
<tr>
<td>540/65 R24</td>
<td>2600</td>
<td>5200</td>
<td>95</td>
</tr>
<tr>
<td>480/65 R28</td>
<td>2600</td>
<td>5200</td>
<td>120</td>
</tr>
<tr>
<td>14,9R24</td>
<td>2600</td>
<td>5200</td>
<td>165</td>
</tr>
<tr>
<td>420/70R24</td>
<td>2600</td>
<td>5200</td>
<td>180</td>
</tr>
</tbody>
</table>

The specified inflation values are minimum valued adapted to the current tyre load so that the tyre deformation can remain in the range in which all the operation requirements are met.

### Change of the load-bearing capacity of the front tyres (%)

<table>
<thead>
<tr>
<th>Travelling speed (km/h)</th>
<th>diagonal</th>
<th>radial</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>+ 40</td>
<td>+ 50</td>
</tr>
<tr>
<td>20</td>
<td>+ 20</td>
<td>+ 23</td>
</tr>
<tr>
<td>30</td>
<td>0</td>
<td>+ 7</td>
</tr>
<tr>
<td>0</td>
<td>- 20</td>
<td>0</td>
</tr>
</tbody>
</table>

169
### Bearing capacity of rear tires

<table>
<thead>
<tr>
<th>Tyre dimensions</th>
<th>Travelling speed</th>
<th>Tyreload-bearing capacity (kg)</th>
<th>Tyreload-bearing capacity (kg)</th>
<th>Tyreload-bearing capacity (kg)</th>
<th>Tyreload-bearing capacity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40 km.h⁻¹</td>
<td>Tyre 1 pc Inflation (kPa) Axle Inflation (kPa)</td>
<td>Tyre 1 pc Inflation (kPa) Axle Inflation (kPa)</td>
<td>Tyre 1 pc Inflation (kPa) Axle Inflation (kPa)</td>
<td>Tyre 1 pc Inflation (kPa) Axle Inflation (kPa)</td>
</tr>
<tr>
<td>650/65R38</td>
<td>3000</td>
<td>6000</td>
<td>70</td>
<td>3000</td>
<td>6000</td>
</tr>
<tr>
<td>1 pc Axle</td>
<td>3000</td>
<td>6000</td>
<td>95</td>
<td>3000</td>
<td>6000</td>
</tr>
<tr>
<td>580/70R38</td>
<td>3000</td>
<td>6000</td>
<td>60</td>
<td>3000</td>
<td>6000</td>
</tr>
<tr>
<td>520/70R38</td>
<td>3000</td>
<td>6000</td>
<td>140</td>
<td>3000</td>
<td>6000</td>
</tr>
<tr>
<td>600/65R38</td>
<td>3000</td>
<td>6000</td>
<td>100</td>
<td>3000</td>
<td>6000</td>
</tr>
</tbody>
</table>

**Note:**
The specified inflation values are minimum valued adapted to the current tyre load so that the tyre deformation can remain in the range in which all the operation requirements are met.

### Change of the load capacity of the rear tyres (%)

<table>
<thead>
<tr>
<th>Travelling speed (km/h)</th>
<th>diagonal</th>
<th>radial</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>+ 40</td>
<td>+ 50</td>
</tr>
<tr>
<td>20</td>
<td>+ 20</td>
<td>+ 23</td>
</tr>
<tr>
<td>30</td>
<td>0</td>
<td>+ 7</td>
</tr>
<tr>
<td>40</td>
<td>- 20</td>
<td>0</td>
</tr>
</tbody>
</table>

### Permitted combinations of wheels for tractors

<table>
<thead>
<tr>
<th>Front wheels</th>
<th>Rear wheels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tyredimensions</td>
<td>Tyredimensions</td>
</tr>
<tr>
<td>16,9 - 24</td>
<td>18,4 - 38</td>
</tr>
<tr>
<td>16,9 R 24</td>
<td>18,4 R 38</td>
</tr>
<tr>
<td>420/85 R 24</td>
<td>460/85 R 38</td>
</tr>
<tr>
<td>480/70 R 24</td>
<td>520/70 R 38</td>
</tr>
<tr>
<td>540/65 R 24</td>
<td>600/65 R 38</td>
</tr>
<tr>
<td>14,9 - 28</td>
<td>14,9 R 28</td>
</tr>
<tr>
<td>380/85 R 28</td>
<td>380/85 R 28</td>
</tr>
<tr>
<td>420/70 R 28</td>
<td>420/70 R 28</td>
</tr>
<tr>
<td>480/65 R 28</td>
<td>480/65 R 28</td>
</tr>
<tr>
<td>16,9 - 28</td>
<td>20,8 R 38</td>
</tr>
<tr>
<td>16,9 R 28</td>
<td>520/85 R 38</td>
</tr>
<tr>
<td>420/85 R 28</td>
<td>580/70 R 38</td>
</tr>
<tr>
<td>480/70 R 28</td>
<td>650/65 R 38</td>
</tr>
<tr>
<td>540/65 R 28</td>
<td>540/65 R 28</td>
</tr>
</tbody>
</table>

### Performance on rear PTO shaft

<table>
<thead>
<tr>
<th>Power</th>
<th>Traktor type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTO power (kW ± 2%)</td>
<td>CRYSTAL 150</td>
</tr>
<tr>
<td>at the nominal engine speed and engaged 1000 rpm of the PTO</td>
<td>CRYSTAL 160</td>
</tr>
<tr>
<td>Engine after the running-in stage (from 100 hours on)</td>
<td>93,7 kW</td>
</tr>
</tbody>
</table>
# MAIN TECHNICAL PARAMETERS

## Lifting force of the three-point hitch

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifting force at the end of the bottom draw-bars of the rear three-point hitch in the whole lifting range at the maximum usable pressure (kN).</td>
<td>76</td>
</tr>
<tr>
<td>Lifting force at the end of the lower draw-bars of the front three-point hitch in the whole lifting range at the maximum usable pressure (kN) - Zuidberg front three-point hitch</td>
<td>35</td>
</tr>
</tbody>
</table>

## Tensile force

<table>
<thead>
<tr>
<th>Traktor type</th>
<th>Crystal 150</th>
<th>Crystal 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine type (TIER III B)</td>
<td>TCD6.1L6 C4ST106A</td>
<td>TCD6.1L6 C4ST120</td>
</tr>
<tr>
<td>Maximum tensile force (kN) in swinging draw bar on concrete, tractor in emergency finish with ballast weights, with slippage to 15%</td>
<td>53</td>
<td>54</td>
</tr>
<tr>
<td>Speed gear</td>
<td>Multiplier gear</td>
<td>460/85 R38</td>
</tr>
<tr>
<td>------------</td>
<td>----------------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Front direction</td>
</tr>
<tr>
<td>Road speeds</td>
<td></td>
<td>Front direction</td>
</tr>
<tr>
<td>5</td>
<td>H</td>
<td>36,2</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>31,3</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>27,1</td>
</tr>
<tr>
<td>4</td>
<td>H</td>
<td>25,3</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>21,9</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>18,9</td>
</tr>
<tr>
<td>3</td>
<td>H</td>
<td>17,9</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>15,5</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>13,4</td>
</tr>
<tr>
<td>2</td>
<td>H</td>
<td>12,6</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>10,9</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>9,4</td>
</tr>
<tr>
<td>1</td>
<td>H</td>
<td>9,2</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>8,0</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>7,0</td>
</tr>
<tr>
<td>Reduced speeds</td>
<td></td>
<td>Front direction</td>
</tr>
<tr>
<td>5</td>
<td>H</td>
<td>8,8</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>7,6</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>6,5</td>
</tr>
<tr>
<td>4</td>
<td>H</td>
<td>6,1</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>5,3</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>4,6</td>
</tr>
<tr>
<td>3</td>
<td>H</td>
<td>4,5</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>3,7</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>3,2</td>
</tr>
<tr>
<td>2</td>
<td>H</td>
<td>3,0</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>2,6</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>2,3</td>
</tr>
<tr>
<td>1</td>
<td>H</td>
<td>2,2</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>1,9</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>1,7</td>
</tr>
</tbody>
</table>
### Dependence of PTO shaft revolutions with nominal engine revolutions

<table>
<thead>
<tr>
<th>gear</th>
<th>multiplier degree</th>
<th>540E</th>
<th>540</th>
<th>1000E</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>540/1913</td>
<td>593/2100</td>
<td>540/1595</td>
<td>711/2100</td>
</tr>
<tr>
<td>5</td>
<td>to the front</td>
<td>674</td>
<td>1 225</td>
<td>780</td>
<td>1 417</td>
</tr>
<tr>
<td></td>
<td>to the rear</td>
<td>471</td>
<td>855</td>
<td>545</td>
<td>990</td>
</tr>
<tr>
<td>4</td>
<td>to the front</td>
<td>333</td>
<td>605</td>
<td>386</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>to the rear</td>
<td>234</td>
<td>425</td>
<td>270</td>
<td>492</td>
</tr>
<tr>
<td>3</td>
<td>to the front</td>
<td>172</td>
<td>313</td>
<td>200</td>
<td>362</td>
</tr>
<tr>
<td></td>
<td>to the rear</td>
<td>674</td>
<td>1 225</td>
<td>780</td>
<td>1 417</td>
</tr>
<tr>
<td>5</td>
<td>to the front</td>
<td>471</td>
<td>855</td>
<td>545</td>
<td>990</td>
</tr>
<tr>
<td></td>
<td>to the rear</td>
<td>333</td>
<td>605</td>
<td>386</td>
<td>700</td>
</tr>
<tr>
<td>4</td>
<td>to the front</td>
<td>234</td>
<td>425</td>
<td>270</td>
<td>492</td>
</tr>
<tr>
<td></td>
<td>to the rear</td>
<td>172</td>
<td>313</td>
<td>200</td>
<td>362</td>
</tr>
<tr>
<td>3</td>
<td>to the front</td>
<td>674</td>
<td>1 225</td>
<td>780</td>
<td>1 417</td>
</tr>
<tr>
<td></td>
<td>to the rear</td>
<td>471</td>
<td>855</td>
<td>545</td>
<td>990</td>
</tr>
<tr>
<td>2</td>
<td>to the front</td>
<td>333</td>
<td>605</td>
<td>386</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>to the rear</td>
<td>234</td>
<td>425</td>
<td>270</td>
<td>492</td>
</tr>
<tr>
<td>1</td>
<td>to the front</td>
<td>172</td>
<td>313</td>
<td>200</td>
<td>362</td>
</tr>
<tr>
<td></td>
<td>to the rear</td>
<td>674</td>
<td>1 225</td>
<td>780</td>
<td>1 417</td>
</tr>
</tbody>
</table>

---

**Road speeds**

<table>
<thead>
<tr>
<th>gear</th>
<th>H</th>
<th>540</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>674</td>
<td>1 225</td>
<td>780</td>
</tr>
<tr>
<td></td>
<td>471</td>
<td>855</td>
<td>545</td>
</tr>
<tr>
<td></td>
<td>333</td>
<td>605</td>
<td>386</td>
</tr>
<tr>
<td></td>
<td>234</td>
<td>425</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td>172</td>
<td>313</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>407</td>
<td>739</td>
<td>471</td>
</tr>
<tr>
<td></td>
<td>288</td>
<td>523</td>
<td>333</td>
</tr>
<tr>
<td></td>
<td>202</td>
<td>368</td>
<td>234</td>
</tr>
<tr>
<td></td>
<td>149</td>
<td>270</td>
<td>172</td>
</tr>
<tr>
<td>3</td>
<td>504</td>
<td>915</td>
<td>582</td>
</tr>
<tr>
<td></td>
<td>471</td>
<td>855</td>
<td>545</td>
</tr>
<tr>
<td></td>
<td>333</td>
<td>605</td>
<td>386</td>
</tr>
<tr>
<td></td>
<td>234</td>
<td>425</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td>172</td>
<td>313</td>
<td>200</td>
</tr>
<tr>
<td>2</td>
<td>582</td>
<td>1 059</td>
<td>674</td>
</tr>
<tr>
<td></td>
<td>407</td>
<td>739</td>
<td>471</td>
</tr>
<tr>
<td></td>
<td>288</td>
<td>523</td>
<td>333</td>
</tr>
<tr>
<td></td>
<td>202</td>
<td>368</td>
<td>234</td>
</tr>
<tr>
<td></td>
<td>149</td>
<td>270</td>
<td>172</td>
</tr>
<tr>
<td>1</td>
<td>504</td>
<td>915</td>
<td>582</td>
</tr>
<tr>
<td></td>
<td>471</td>
<td>855</td>
<td>545</td>
</tr>
<tr>
<td></td>
<td>333</td>
<td>605</td>
<td>386</td>
</tr>
<tr>
<td></td>
<td>234</td>
<td>425</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td>172</td>
<td>313</td>
<td>200</td>
</tr>
</tbody>
</table>

**Reduced speeds**

<table>
<thead>
<tr>
<th>gear</th>
<th>H</th>
<th>540</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>674</td>
<td>1 225</td>
<td>780</td>
</tr>
<tr>
<td></td>
<td>471</td>
<td>855</td>
<td>545</td>
</tr>
<tr>
<td></td>
<td>333</td>
<td>605</td>
<td>386</td>
</tr>
<tr>
<td></td>
<td>234</td>
<td>425</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td>172</td>
<td>313</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>407</td>
<td>739</td>
<td>471</td>
</tr>
<tr>
<td></td>
<td>288</td>
<td>523</td>
<td>333</td>
</tr>
<tr>
<td></td>
<td>202</td>
<td>368</td>
<td>234</td>
</tr>
<tr>
<td></td>
<td>149</td>
<td>270</td>
<td>172</td>
</tr>
<tr>
<td>3</td>
<td>504</td>
<td>915</td>
<td>582</td>
</tr>
<tr>
<td></td>
<td>471</td>
<td>855</td>
<td>545</td>
</tr>
<tr>
<td></td>
<td>333</td>
<td>605</td>
<td>386</td>
</tr>
<tr>
<td></td>
<td>234</td>
<td>425</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td>172</td>
<td>313</td>
<td>200</td>
</tr>
<tr>
<td>2</td>
<td>582</td>
<td>1 059</td>
<td>674</td>
</tr>
<tr>
<td></td>
<td>407</td>
<td>739</td>
<td>471</td>
</tr>
<tr>
<td></td>
<td>288</td>
<td>523</td>
<td>333</td>
</tr>
<tr>
<td></td>
<td>202</td>
<td>368</td>
<td>234</td>
</tr>
<tr>
<td></td>
<td>149</td>
<td>270</td>
<td>172</td>
</tr>
<tr>
<td>1</td>
<td>504</td>
<td>915</td>
<td>582</td>
</tr>
<tr>
<td></td>
<td>471</td>
<td>855</td>
<td>545</td>
</tr>
<tr>
<td></td>
<td>333</td>
<td>605</td>
<td>386</td>
</tr>
<tr>
<td></td>
<td>234</td>
<td>425</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td>172</td>
<td>313</td>
<td>200</td>
</tr>
</tbody>
</table>

**Independent rear pto shaft revolutions**

<table>
<thead>
<tr>
<th>gear</th>
<th>PTO speed / engine speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>540</td>
<td>540/1913 593/2100</td>
</tr>
<tr>
<td>540E</td>
<td>540/1595 711/2100</td>
</tr>
<tr>
<td>1000</td>
<td>1000/1950 1077/2100</td>
</tr>
<tr>
<td>1000E</td>
<td>1000/1626 1292/2100</td>
</tr>
</tbody>
</table>
### MAIN TECHNICAL PARAMETERS

**Speed of the Zuidberg front PTO**

<table>
<thead>
<tr>
<th>Turning direction</th>
<th>PTO speed / engine speed</th>
<th>PTO speed / engine speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>right (a)</td>
<td>1000 / 1920</td>
<td>1094 / 2100</td>
</tr>
<tr>
<td>*left (b)</td>
<td>1000 / 2000</td>
<td>1050 / 2100</td>
</tr>
</tbody>
</table>

* - option

**Clearance-circle and turning circle diameter**

<table>
<thead>
<tr>
<th>Track width</th>
<th>front 1974 mm</th>
<th>rear 1850 mm</th>
<th>Tire size</th>
<th>front 540/65R28</th>
<th>rear 650/65R38</th>
<th>Left</th>
<th>Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Track diameter</td>
<td>Without engagement of the front driving axle</td>
<td>12840 mm</td>
<td>12870 mm</td>
<td>With engagement of the front driving axle</td>
<td>12630 mm</td>
<td>12640 mm</td>
<td></td>
</tr>
<tr>
<td>Outline diameter</td>
<td>Without engagement of the front driving axle</td>
<td>113620 mm</td>
<td>13670 mm</td>
<td>With engagement of the front driving axle</td>
<td>13370 mm</td>
<td>13440 mm</td>
<td></td>
</tr>
<tr>
<td>INDEX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front drive axle suspension mode setting</td>
<td>81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front outlets of the outer hydraulic circuit</td>
<td>108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front passenger’s seat notification</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front PTO</td>
<td>156</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front PTO oil</td>
<td>142</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front PTO shaft</td>
<td>102</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front PTO shaft control</td>
<td>103</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front three-point hitch</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front three-point hitch</td>
<td>145</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front tires steerability</td>
<td>169</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front weights</td>
<td>127</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front wheels track of front drive axle in tractors equipped with non-removable discs</td>
<td>123</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front windshield (B) defrosting</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front wiper speed switch</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel</td>
<td>143</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Filter</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel system leaks</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel system venting</td>
<td>151</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel tank</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel tank drain plug</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full pushing filter of the gearbox distributor</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full pushing filter of the hydraulics</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuse box</td>
<td>134</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gear shifting</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gear shifting</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gear shifting - using the clutch control button on the head of gear shifting</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gear shifting - Using the clutch pedal</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gear shifting lever</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gear shifting scheme</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General principles of new tractor run-in in first 100 hours of operation</td>
<td>87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General safety regulations</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating control panel, <em>air-condition</em></td>
<td>36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating valve control (A)</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height adjustment and disassembly of the CBM stage hitch</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height adjustment of the front part of the tractor</td>
<td>81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height adjustment of the lifting draw-bars</td>
<td>118</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High air temperature in the engine air intake system</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High oil temperature in the gearbox</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High temperature of the cooling liquid</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High temperature of the engine oil</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hinged lid</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hitch for a single-axle CBM semi-trailer</td>
<td>91</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hitch for a single-axle semi-trailer</td>
<td>145</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hitch mouth for a trailer</td>
<td>146</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hitches</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic brake liquid for the tractors</td>
<td>143</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic brakes of trailers</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic distributor of the outer hydraulic circuit</td>
<td>106</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic lock of the front three-point hitch</td>
<td>121</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic pump</td>
<td>105</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic system</td>
<td>105</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic system</td>
<td>105</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrostatic steering</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change of the load capacity of the rear tyres (%)</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change of the load-bearing capacity of the front tyres (%)</td>
<td>169</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change of the look of display</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change of direction of drive</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change of direction of drive - using the clutch pedal</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change of direction of drive by means of reversing lever</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check and replacement of oil in gear box</td>
<td>154</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checking the adjustment of the cab roof headlights</td>
<td>137</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checking the adjustment of the front grill headlights</td>
<td>136</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checking the air systems for leaks</td>
<td>158</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checking the oil in gearbox</td>
<td>154</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checking the oil level in the engine</td>
<td>147</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immediately after cooling the cabin</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicating amount of urea in the tank</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicating the electromagnetic pump of the engine revolutions</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indication of EHR-B errors</td>
<td>114</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indication of the limitation of the engine power and engine revolutions</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insertion piece replacement of the oil cleaner with delivery filter of the gearbox switchboard</td>
<td>155</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrument panel - buttons</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrument panel - instruments</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrument panel - signal lamps</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrument panel - warning</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal lighting</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interrupted sound signal</td>
<td>73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaving the tractor</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifting force of the three-point hitch</td>
<td>171</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lights switch</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lights switch between the grill and the cabin</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limitation of the engine power and engine revolutions</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limitation of the upper position of the three-point hitch</td>
<td>112</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limiting draw-bars</td>
<td>118</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limiting travel speed</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid brakes</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid for the cooling system of the tractors</td>
<td>143</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>List of lamps</td>
<td>138</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location of serial numbers</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term shutdown of tractor</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low level of the cooling liquid</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower draw-bars with CBM hooks</td>
<td>119</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowering speed</td>
<td>112</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lubrication and filling points of the front driving axle</td>
<td>155</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machined area menu</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machined area record</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machined area width</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main technical parameters</td>
<td>167</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main tractor’s parameters (mm)</td>
<td>167</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance and treatment of tyres</td>
<td>159</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance instructions</td>
<td>147</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maneuvarability condition</td>
<td>168</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual brake - signalization</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual brake lever and coupling for semi-trailer control lever</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual Front drive axle control</td>
<td>78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual setting of control of three-point hitch</td>
<td>113</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual throttle</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum transferred output</td>
<td>103</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modular system of hitches for trailers and semi-trailers</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Oils</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiplier pre-selection signalization</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiplier preselection switch</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-permitted starting</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil for the front driving axle</td>
<td>142</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil to gear systems of tractors</td>
<td>142</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-hose and two-hose brakes</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-hose brakes</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening the door from the inside</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening the door from the outside</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening the hood</td>
<td>147</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation of heating or air-condition with tractor’s work</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Recommended Service Fillings Tested on Zetor Tractors</td>
<td>142</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outer hydraulic circuit</td>
<td>105</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel of the instrument panel</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking brake adjustment</td>
<td>165</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger’s seat</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedals</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance on rear PTO shaft</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permitted combinations of wheels for tractors</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index</td>
<td>Page</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permitted maximum load of front axle (kg)</td>
<td>168</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permitted maximum load of rear axle (kg)</td>
<td>168</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permitted maximum weight of set 'tractor + mounted machine' (kg)</td>
<td>168</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic lubricant for the tractor</td>
<td>144</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preventive daily maintenance</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preventive daily maintenance</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preventive daily maintenance</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Principles for operating tractors equipped with front end loader</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Principles for safe handling of urea</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure of draining liquid from the tyres</td>
<td>129</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proper clothing</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proper function of the heating and air-condition system</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection of cab against aerosols</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTO revolutions preselection lever</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quick sinking</td>
<td>110</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quick-couplings with drip collection</td>
<td>106</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Fuel Filter Clearing</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear outlets of the outer hydraulic circuit</td>
<td>107</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear PTO shaft revolutions preselection lever</td>
<td>95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear PTO switch</td>
<td>98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear three-point hitch</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear view mirrors</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear wheel weights</td>
<td>127</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear wheels wheel track</td>
<td>125</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear window</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear window wiper</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reassembly of the air cleaner elements</td>
<td>152</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recovery of the mainair cleaner element</td>
<td>152</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repairs and maintenance of the system of additional treatment of exhaust gases</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replaceable end points of rear PTO shaft</td>
<td>98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacement of filter element of urea filter</td>
<td>155</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacement of the transmission oil cleaner element with hydraulic pump suction filter</td>
<td>154</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacing coolant</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacing full-continuous motor oil filter</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacing the hydrostatic steering hoses</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacing the safety element of the air cleaner</td>
<td>152</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replenish fuel</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reversing lever</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reversing lever</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reversing lever position signalization</td>
<td>71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road and reduced speeds shifting lever</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road and reducing speeds lever position signalization</td>
<td>71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Running in the tractor</td>
<td>87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety cabin</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety instructions for users</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety principles of working with the three-point hitch</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Securing the lower draw-bars with CBM hooks</td>
<td>119</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selection switch of rear PTO clutch revolutions (P.T.O.)</td>
<td>97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service menu</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting automatic disengagement of PTO shaft clutch</td>
<td>101</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting automatic disengagement of PTO shaft clutch - display description</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting of steering sensors of the front axle</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting of the user-defined width of aggregation</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting of time</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting the control of three-point hitch</td>
<td>112</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shelf</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shifting road and reduced speeds</td>
<td>71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short functional test</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side window</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signaling of multiplier function</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signalling errors in the system of additional treatment of exhaust gases</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid front drive axle</td>
<td>144</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specification of Oil for the Front Driving Axle</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specification of Oil for Tractor Transmission Devices</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed of the Zuidberg front PTO</td>
<td>174</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed of tractor with engine revolutions of 2 100 rpm and parameter of rear wheels (km/h)</td>
<td>172</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard and economical independent revolutions of rear PTO shaft</td>
<td>96</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting the engine</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting the engine of the tractor</td>
<td>68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steps performed daily before the start of work</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steps performed every 100 hours of work</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steps performed every 50 hours of work</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steps performed every 500 hours of work</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steps performed outside the interval of 500 hours of work</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stop position</td>
<td>111</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stopping the engine</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stopping the tractor - manual brake</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storing the tractor</td>
<td>151</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspension front drive axle</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspension front drive axle</td>
<td>145</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swinging draw-bar console module</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swinging draw-bar console with a fixed pin module</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch air-condition (C)</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch box</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch box key in the position (0)</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch box key in the position (I)</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch box key in the position (II)</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch of warning lights</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symbols of tractor nodes</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System of additional treatment of exhaust gases</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System of additional treatment of exhaust gases (SCR)</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical data of engines</td>
<td>167</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical maintenance of the tractors after a general overhaul of the main groups</td>
<td>146</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tensile force</td>
<td>171</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The description of the system of travel clutches</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The differences in ways of controlling the travel clutch by</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The level of external noise of tractor</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The level of internal sound of tractor</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The level of vibrations on driver’s seat</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The principles of appropriate use of tractors</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The way of controlling the travel clutch by</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three-gear torque multiplier</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three-point hitch</td>
<td>146</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tilting and protrusion of steering wheel</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toe-in of the wheels of the front driving axle</td>
<td>123</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tractor greasing scheme</td>
<td>144</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tractor maintenance</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tractors equipped with front end loader</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trailer air brakes</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trailer hydraulic brakes</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport of implements</td>
<td>111</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation of persons, operation</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel speed calibration</td>
<td>58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two-hose brakes</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tyres and wheels</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tyres for driving wheels</td>
<td>161</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper draw-bar</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urea (Aqueous Urea Solution AUS 32)</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urea tank</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used operation liquids and filling - quantities</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using the rear control</td>
<td>114</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve for filling tyre tubes with liquid</td>
<td>128</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration compensator (damper)</td>
<td>111</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warning signalization of air pressured fuel</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warning signalization of hydrostatic steering failure</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washer nozzle</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water in the coarse filter of fuel</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight of the front three-point hitch</td>
<td>128</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel track change</td>
<td>123</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windshield washer tank</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiper and washer of the front window</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work with automatic disengagement of PTO shaft clutch</td>
<td>102</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## INDEX

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work with PTO shaft</td>
<td>95</td>
</tr>
<tr>
<td>Working and transport position of the front three-point hitch</td>
<td>121</td>
</tr>
<tr>
<td>Working pressure of air brakes</td>
<td>158</td>
</tr>
<tr>
<td>Zeroing (reset) of the indicator of service inspection intervals</td>
<td>51</td>
</tr>
<tr>
<td>ZETOR Service Fillings</td>
<td>141</td>
</tr>
<tr>
<td>Zetor tractors used for work in the woods</td>
<td>20</td>
</tr>
</tbody>
</table>