

## INTRODUCTION

Manual contains construction depiction, specifications, operation and maintenance rules of Belarus 1221.2/1221B.2/1221.3 tractors.

**Tractors BELARUS 1221.2/1221B.2** are equipped with index “S” 100kW engine certified under the 1<sup>st</sup> stage of Directive 2000/25/EC, with hydraulic hoist, modified-design casing.

**Tractors BELARUS 1221.3** are equipped with index “S” 100kW engine certified under the 2<sup>nd</sup> stage of Directive 2000/25/EC, with hydraulic hoist, modified-design casing.

Long-term and reliable tractor performance is secured in the case of proper operation and timely maintenance.

**ATTENTION!** Prior to putting new tractor in operation, study this manual and strictly observe all the recommendations in order to avoid accidents, injuries or mutilations.

**Note:** In connection with carrying out regular works on improving Belarus tractors and working conditions alterations, not represented in this edition, may be made in design.

**It is forbidden to reequip and change tractor construction without conformation to manufacturing works.**

### TO CONSUMERS ATTENTION!

Your tractor is equipped with range-type gearbox. In addition the ranges are shifted with toothed couplings, and gears within each range are shifted by virtue of synchronizers.

#### ***To throw into the range proceed as follows:***

- Depress the clutch pedal and await complete tractor stop;
- Throw into the required range smoothly, without jerks, using the range engaging lever;
- Smoothly release the clutch pedal.

#### ***To change the gear proceed as follows:***

- Depress the clutch pedal;
- Shift the gearshift lever smoothly, without sharp jerks, and hold it in depressed position until the gear is completely actuated;
- Smoothly release the clutch pedal.

You can change the gears in motion within the range only during the hauling operations on the hard-surface and dirt roads. Never attempt to change the gears in motion when a tractor unit is used in the cross-country conditions (arable fields, peat beds, sandy soil etc.) because sudden stop of the tractor-machine unit can occur. Cross the mentioned sections with previously selected gear.

Failure to comply with the stated operation rules will cause quick wearing out of gear splines and tooth-type couplings as well as synchronizers impairment

**Attention!** If you hear skirr when shifting ranges and gears with the clutch pedal being depressed, immediately turn to a repair shop for malfunction repair.

Observe the rules of PTO switch. When switching PTO move control lever smoothly with 2...4 sec. hang-up in the centre of motion from neutral position to PTO switch in order to prevent shaft breaking, reducer gears breaking and tail breaking of PTO.

When adjusting operating and parking brakes make sure that the ground is horizontal, the engine is not running, rear wheels from front and back are supported by wedges to exclude accidental movement of the tractor.


































Adopted abbreviations and symbolic notations.
















ADL —automatic differential lock;  
AB —accumulator battery;  
RADL —rear axle differential lock;  
PFE —paper filter element;  
TDC —engine piston top dead center;  
PTO —power take-off shaft;  
PIS —power intake shaft;  
HLL —hydraulic lift linkage;  
HSU —hydrostatic steering unit;  
SMS —shift-time maintenance service;  
SPTA —spare parts, tools and accessories;  
RHL —rear hitch linkage;  
IVR —integral voltage regulator  
SFE —safety filter element of engine air cleaner;  
GB —gearbox;  
TMU —tractor-machine unit;  
CC —clutch coupling;  
MS —maintenance service;  
THM —towing hitch mechanism;  
MFE —main filter element of engine air cleaner;  
FDA —front driving axle;  
FPTO —front power take-off;  
SM —season maintenance;  
CAC —engine charge air cooler;  
TC —engine turbocharger.

## International symbols

The manufacturer uses standard international symbols, regarding application of instruments and control units.

Given below are the symbols with indication of their meanings.

	— see the manual ;		— control manipulations;
	— brake;		— fast;
	— manual brake;		— slowly;
	— audible beep;		— forward;
	— alarm signaling;		— reverse;
	— fuel;		— accumulator charging;
	— coolant;		— cab roof light;
	— heating plugs;		— parking lights;
	— engine speed;		— tractor turn indicator;
	— oil pressure in the engine;		— trailer turn indicator;
	— temperature of engine coolant;		— upper beam;
	— off / stop;		— low beam;
	— on / start;		— working lights;
	— gradual adjustment;		— differential lock;
	— front screen wiper;		— PTO engaged;
	— rear screen wiper and washer;		— front driving axle drive;
			— fan;

- |   |   |   |                                   |
|---|---|---|-----------------------------------|
|  | — brake fluid level in main cylinder tanks; |  | — air filter clogged;             |
|  | — oil pressure in HSC                       |  | — engine start;                   |
|  | — beacon                                    |  | — road-train                      |
|  | — oil pressure in gearbox                   |  | — external cylinder – retracting  |
|  | — braking of gearbox                        |  | — external cylinder – protracting |
|  | — air pressure in pneumatic system          |  | — external cylinder – floating    |
|  | — swivel lever – up                         |  | — engine stop                     |
|  | — swivel lever – down                       |   |                                   |