



Belarus
Operator's Manual

T25A1
Tractor

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Operator's Manual

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BE-O-T25A1

Adhesion weight of the tractor can be increased by adding solid blocks or by filling the drive wheels with water (non-freezing liquid in winter).

To meet Customer's requirements two modifications of the tractor are available.

Modification T25A1-C1 is designed for general agricultural and transport operations including inter-row cultivation in vegetable and beet growing. This modification of the tractor is completed with 9—32" tyre drive wheels. The drive wheel track can be adjusted within 1100—1500 *mm* through 50 *mm* intervals. The P.T.O. shaft is made to GOST 3480—58, while the coupling elements of the rear implement linkage — to GOST 10677—63.

Modification T25A1-C2 is designed mainly for general transport and agricultural operations. It differs from the T25A1-C1 modification in drive-wheel tyre size (10—28"). The wheels with these tyres can be adjusted for a track of 1200, 1300, 1370 and 1470 *mm*, and with asymmetric wheel mounting the following intermediate track widths can be obtained: 1250, 1335, and 1420 *mm*.

The use of 10—28" tyres of higher carrying capacity allows to mount on the tractor machines and implements of larger weight (loaders, sprayers and others).

SPECIFICATIONS

General

Tractor type	wheeled, reversing, all-purpose	
Model	T25A1	
Overall dimensions, <i>mm</i> :		
total length (with implement linkage with front removable weights)	3072—3282	
total width (with 9—32" tyres and 1100 <i>mm</i> track)	1370	
total width (with 10—28" tyres and 1200 <i>mm</i> track)	1467	
Height to cowl, <i>mm</i> :		
basic set-up	1350	
low set-up	1200	
high set-up	1420	
Wheel base, <i>mm</i> :		
basic set-up	1778	
low set-up	1426—1840	
high set-up	1633	
Track, <i>mm</i> :		
front wheels	1200—1400	
rear wheels 9—32"	1100—1500	
rear wheels 10—28"	1200—1470	
Design weight (mass), <i>kg</i>	1600±50	
Clearance (under brake sleeves), <i>mm</i> :	9—32" tyres	10—28" tyres
basic set-up	587	572
low set-up	450	435
high set-up	657	642

Rated speeds (at 1800 rpm of engine crankshaft), km/hr:

forward:

1st speed	6.4
2nd speed	8.10
3rd speed	9.40
4th speed	11.90
5th speed	14.90
6th speed	21.90

reverse:

1st speed	6.4
2nd speed	8.10
3rd speed	9.4
4th speed	11.90
5th speed	14.90
6th speed	21.90

Retarded 1st speed, forward 1.79

Retarded 2nd speed, forward 2.64

Retarded 1st speed at 900 rpm of engine crankshaft 0.90

Traction effort, kgf:

1st gear	774
2nd gear	576
3rd gear	470
4th gear	338
5th gear	236
6th gear	106
Retarded 1st gear	720 max.
Retarded 2nd gear	720 max.

Engine

Type	four-stroke, air-cooled diesel engine with open combustion chamber in piston
Model	Д-21А1
Carburation	direct injection
Continuous net power, h.p.	29.4
Specific fuel consumption at continuous net power, g/b.h.p.-hr	190
Continuous gross power, h.p.	31
Specific fuel consumption at continuous gross power, g/b.h.p.-hr	178
Crankshaft speed, rpm	1800 ± 1.5%
Maximum gross power (at engine crankshaft 2200 rpm), h.p.	33
Empty weight (mass), kg	280
Cylinder number and arrangement	2 (vertical)
Firing order	1-2-0-0
Cylinder bore, mm	105
Piston stroke, mm	120
Displacement, l	2.08
Compression ratio (rated)	16.5
Specific fuel consumption at rated power, g/b.h.p.-hr	190 max.
Fuel	diesel fuel, GOST 4749-49 or GOST 305-62

Fuel injection pump

Injector

Fuel filters

Lubricating system

Engine oil

Oil filter

Cooling

Control of engine temperature

Starting

HD-21/2-4-07, single-plunger, distributing type with centrifugal variable-speed governor with fuel supply corrector

6T2-20CI-2D closed with multi-hole nozzle, pinless

primary — gauze type with settler secondary — changeable paper element combined: under pressure from gear pump and by splashing

diesel oil M10Г, Specification TV No. 38-1-211-68 in summer, M8Г, TV No. 38-1-01-46-70 in winter

full-flow reactive centrifuge air, forced from axial fan, V-driven from crankshaft

positive, seasonal, by throttle disc by electric starter, engine equipped with decompressor and air-heating electric-coil

Power Transmission

Clutch

Coupling of clutch shaft with axle drive

Gearbox

Number of speeds:

forward

reverse

Differential

Final drive

dry, single-plate, spring-loaded rigid type, split mechanical, sliding-mesh, reversing

8

6

simple, two-pinion, taper spur gear pair

Tractor Control

Control:

clutch

duplicator and reverse

gearbox

differential interlock mechanism

Steering

pedal

lever

lever with gearshift gate

pedal with automatic return

inclined steering column with worm gear. Direction of steering wheel rotation coincides with direction of turning at forward and reverse motion

Brakes:

type

number

control

band, floating

2 (one per each wheel)

two pedals (under right foot), separate and interlocked

lever and pedal

lever

Fuel injection pump control

Decompressor control

Driver's seat

single-seat, soft, sprung, with adjustable oscillation removable

Canopy

Running Gear

Type

Tyre size:

front wheels

rear wheels

low-pressure pneumatic-tyred wheels

6—16"

9—32"; 10—28" (extra)

Fuel Equipment

Tightening force applied to injector nut with wrench, delivered as standard equipment (without extender), <i>kgf</i>	24—30 (with torque of 8—10 <i>kgf-m</i>)
Fuel injection pressure, <i>kgf/cm²</i>	170 ⁺⁵
Start of fuel feed (before piston TDC to meniscus)	24—26°
Camshaft rated rpm	900
Capacity on engineless stand with stand injectors, <i>kg/hr</i> :	
at 900 rpm	5.3—5.5 max.
at 940—960 rpm	2.0
Pump camshaft maximum idle speed, rpm	940 ⁺²⁰

Implement Hydraulic Linkage

Oil pressure at automatic return of control valve plungers to neutral position, <i>kgf/cm²</i>	110—125
Pressure in hydraulic system, controlled by safety valve, <i>kgf/cm²</i>	130 ⁺⁵
Operating pressure of hydraulic system oil filter valve, <i>kgf/cm²</i>	3±0.5
Range of lifted implement swinging at draft link joints, mm	±20

Power Transmission

Clearance between clutch release levers and bearing, mm	2—3
Difference in clearances between various levers, mm	0.1 max.
Clearance between reverse axle drive and differential bevel gears, mm	0.3—0.6
Brake pedal rated travel, mm	40—60
Difference in the length of brake adjusting bolt protruding parts, mm	1 max.

Running Gear

Clearance in front and rear wheel bearings, mm	0.1—0.3
Steering wheel play, deg.	20 max.
Tyre pressure, <i>kgf/cm²</i> :	
for agricultural work:	
front wheels	1.5—1.8
rear wheels	0.8—0.9
for transport work:	
front wheels	1.8—2.0
rear wheels	0.9—1.2

Electrical Equipment

Voltage at position of generator-regulator adjusting screw, V:	
in winter (screwed out)	14—15.2
in summer (screwed in)	13.2—14
Electrolyte level in storage battery, (over the plates), mm	12—15

shaft pull the lever till it passes over the boss on the hydraulic lift housing, and to disengage it push the lever till it passes over the same boss. Disengage the clutch prior to manipulating the P.T.O. shaft.

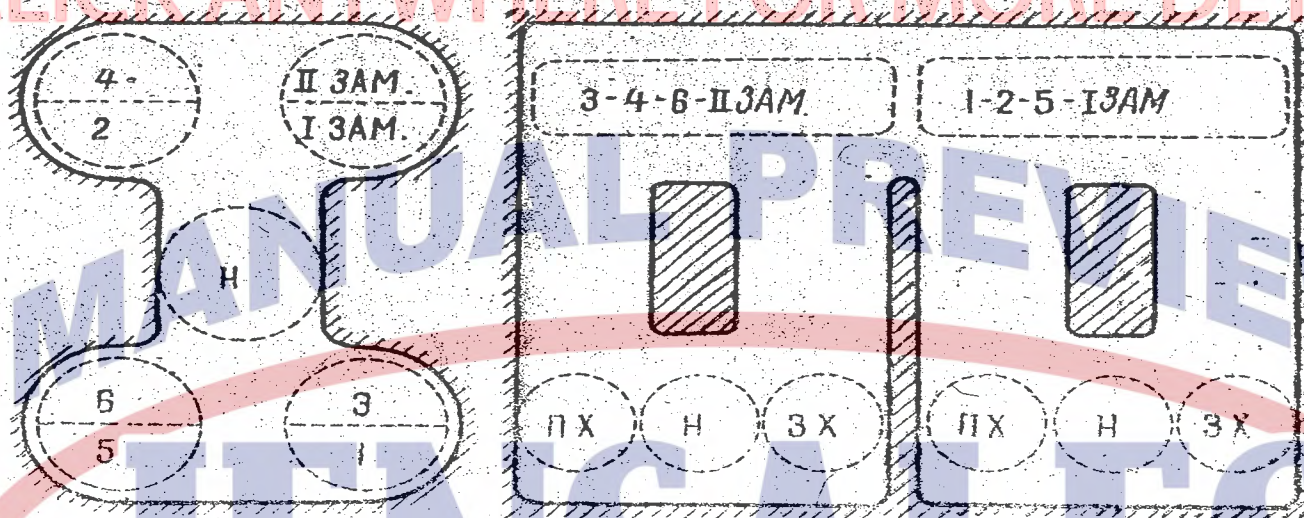


Fig. 4. Gearshift Diagram (in the right — positions of reverse and duplicator lever; in the left — positions of gearshift lever);

3AM — retarding gear (only for forward motion); ПХ — forward motion; 3X — reverse; H — neutral position for reverse only (in the right); H — neutral position of gearshift lever (in the left)

The differential interlock mechanism is controlled by pedal 23 (Fig. 3) which is automatically released. Depressing the pedal interlocks the drive wheels. The differential interlock mechanism can be engaged only when the tractor is stopped.

To engage the hydraulic pump pull up the hydraulic pump lever handle so that the lock could come out of the bore in the hydraulic pump housing and then shift the lever towards the coupling housing so

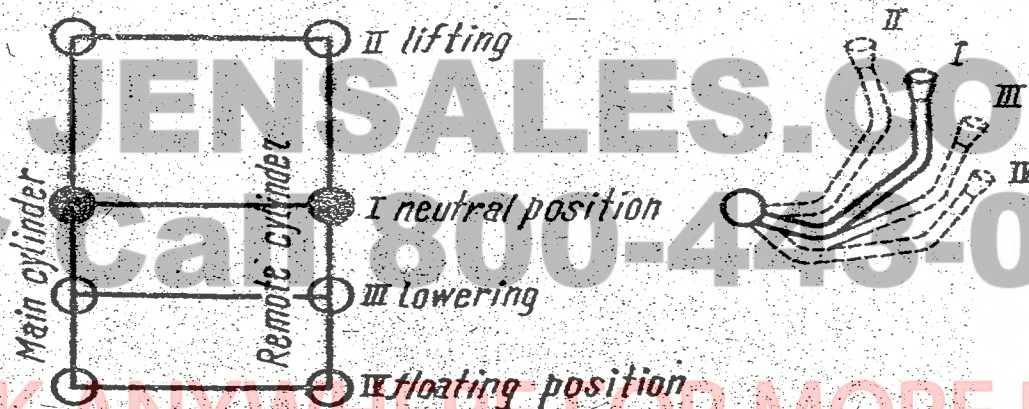


Fig. 5. Diagram of Control Valve Lever Operation