

TM10.RU



**2021**

**CATALOG**

**ДСТ**  
УРАЛ



# The Advantages of TM10 HST Machines Produced by DST-URAL

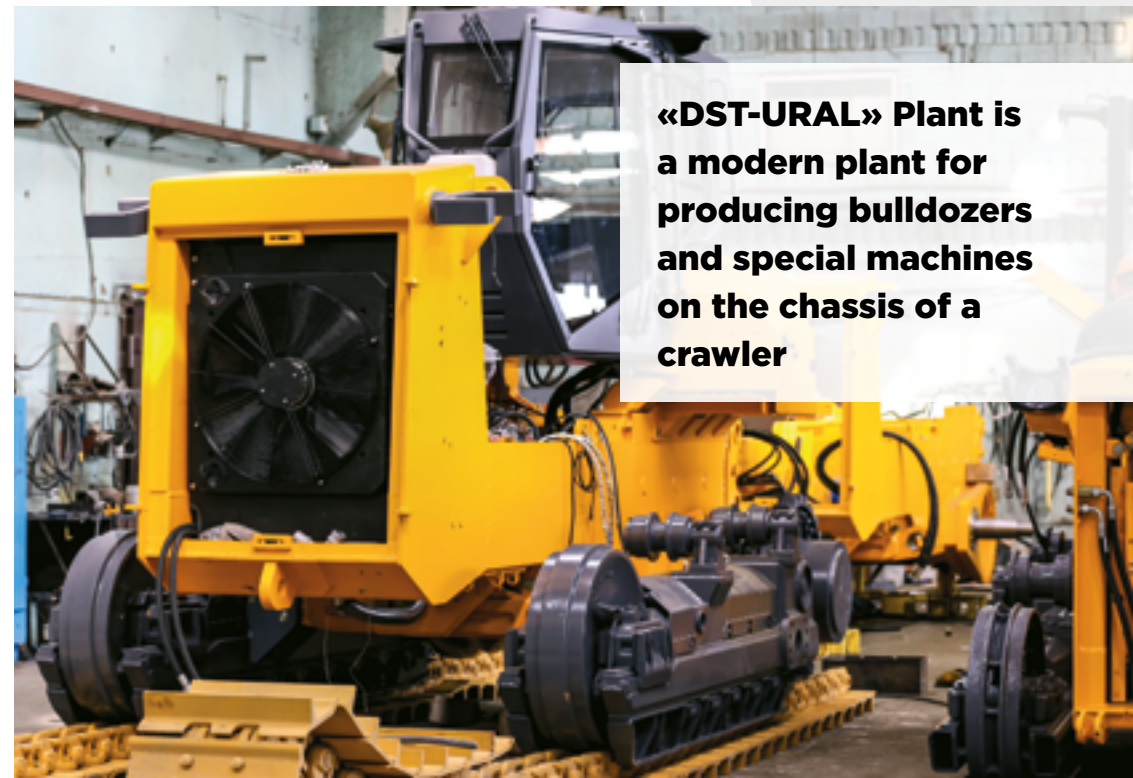
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## 1

### Modern industrial engineering at DST-URAL Plant

- Direct engineering documentation transfer to the automated industrial equipment
- Usage of modern lathes, including welding machines (KAWASAKI, MOTOMAN, ABB) that are used for the first time at Russian tractor manufacturing plants.
- Quality Control Department, Pre-Delivery Inspection, Service, Claim Procedure are all in one. This helps to have short feedback to the Production.



**«DST-URAL» Plant is a modern plant for producing bulldozers and special machines on the chassis of a crawler**

## 2

## Hydrostatic Power Transmission Bosch-Rexroth, DANFOSS, Linde Hydraulics



- The transmission consists of six elements: 4 hydraulic (pump motors), 2 on-board gearboxes.
- Maximal traction through all the operation range
- Maneuverability is ensured by stepless speed and direction change, including pivot turn with 100% of traction
- The hydraulic system and on-board planetary gearboxes are protected from overloads by maximal pressure and temperature breakers
- All the transmission is completely tight. The controller is in protective case, thus it is protected from water and mud. In contrast to

hydro-mechanical and mechanical transmissions HST can be submerged, and the tank should just be washed afterwards.

## 3

## Hexagonal Cab, Automation

- Improved visibility of blade edges
- Travel and implement control with joysticks
- Twindow insulation and efficient cab heater
- ROPS/FOPS protective systems; grates, Fleko protection from the trees, AC, etc.
- On-board navigation controller recording all the key operation parameters in the "black box" is installed

## 4

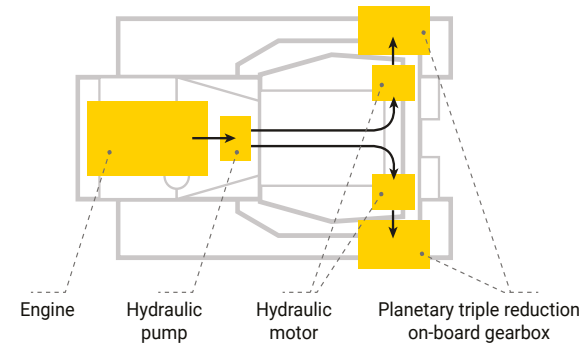
## TM10 Maintainability

- The largest dealer and service network on the territory of Russia and CIS countries, mobile service teams at the manufacturer's plant
- YMZ 236, 238, 536, 652 engines are the most large-scale diesel engine for special machines in the Russian Federation. 95% of the undercarriage is standardized with B10 (T170), B11, B12, D85, D155, SD32. Popular elements of the undercarriage: the track with a closed joint, track rollers on journals and idlers, track adjuster.

## 5

## HST Transmission Scheme - the Simplest Type

- The reliability is improved due to less number of transmission elements and no turning friction coupling. HST pump operation is max 75% of maximal rpm.



- The performance factor is 75-80% depending on the operation mode (more than for hydro-mechanical transmission: ~70%)
- Improved roadability thanks to constant traction on each side, up to track counter travel. Traction is maintained at turns.

## 6

## Undercarriage

- Simple structure
- On-board gearboxes are independent from the crawler truck
- Universal for all environments and operations: abrasive media, quarries, road construction.
- Full-length truck protection



New TM10 bulldozer with YMZ engine and mechanical transmission analogous to B10 (ChTZ-URALTRAC) was patented. The tests were carried out in the Republic of Belarus; basing on the test results the Belarus Ministry of Transport recommended the bulldozer as the optimal solution in terms of technical and economic parameters.



A new TM10 bulldozer with hydrostatic power transmission (Bosch-Rexroth HST) was commercialized. The selection of such HST is explained by successful utilization of this transmission by the leading manufacturers: Liebherr, CAT, Komatsu, John Deere, CHETRA. The main units are welded with KAWASAKI and MOTOMAN.



TM10 HST9 Bosch-Rexroth (Germany) bulldozer was commercialized, with m up to 18 t. Large-scale universal machine.



The Plant represented by DST-URAL Ltd. was listed as one of the largest manufacturers of building machines in Russia.

## 2007

## 2011

## 2014

## 2016

Heavy quarry bulldozer TM10 HST20 (weight is 33-40 t) was manufactured

## 2017

## From 1999

DST-URAL Plant has been manufacturing certified road-building machinery: the main machine is own-produced TM10 bulldozer with YMZ, Cummins, Deutz engines.

## 2008-2010

TM10 was modernized: control joysticks, on-board computer, and polymeric paint were introduced. Dealer and service centers were established in Russia and CIS countries.

## 2012-2013

Due to the transition to a hydrostatic transmission, the TM10 has come close to world standards in terms of performance, efficiency and reliability. Output > 150 units per year.

## 2015

Implementation of high-efficient welding robots to weld the frame for one cycle, a separate precise robotic welding shop with total area of 2 000 sq.m was organized.

## 2019

Commissioning of production of TG 50, 30 pipe-laying machines. Transition to mass production of equipment of the second generation (series D)

## 2020 год

Launch of the portal welding shop.



Bulldozer  
**D9**



Power, hp

**180**



Weight, t

**20,4**



Blade volume, m<sup>3</sup>

**5,0**



Traction, t

**26**

**Engine**

Type	YMZ-236
Power, kW/hp	132/180
Operating volume	11,15 l
Generator	24 V / 50 A
Storage battery	2*12 V 2*132 Ah
Pre-heating with autonomous heating function	14TC-10 Teplostar
Smart fan speed control system	Fan-Drive

**Undercarriage**

Type	linear
Frame	load-bearing structure made of HSS steel, high welding accuracy
Track rollers	lifetime lubricated, on sliding bearings (journals)
Number of track rollers	6 bottom rollers + side sprocket/ 2 carrier rollers on each side
Track chain	42 track shoes
Track shoe width	500 mm
Track shoe grouser	65 mm
Bearing area	2.86 m <sup>2</sup>
Track adjuster	hydraulic

**Transmission**

Type	hydrostatic with electronic control
Transmission	hydraulic pump coupled with hydraulic motor with stepless transmission shift
On-board gearboxes	planetary
Control	electric and hydraulic servo
Brake system	hydraulic, normally closed multiple-disc clutches

**Implement Control**

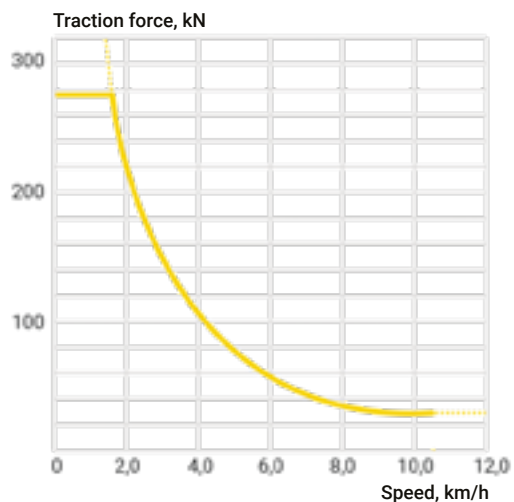
Type	hydraulic, separate for each device
Hydraulic pump	Gear Box Output: 200 l/min Max pressure: 20 MPa
Control valve	sectional
Filtration	double filtration: at suction, full-flow at discharge

### Cab and Control

Cab	hexagonal, improved visibility, with springs, twindow insulation, climate control system (heating and ventilation), cab air circulation, enlarged cab filter, circulation air filter, windscreen, rear window and door window wipers and washers, sun blind. Conditioner
Seat	ergonomic, with springs, two-point seat belt, seat switch
Safety	ROPS/FOPS, open door fixation
Travel and attachable implement control	4-position joysticks

### Filling Values

Cooling system	55 l
Fuel tank	400 l
Engine lubrication system	24 l
Transmission and implement hydraulic system	200 l



### Parameters under Load

Speed limit at 2100 rpm, km/h	forward – 10,4 backward – 10,4
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# Bulldozer D10



Power, hp

**180-240**



Weight, t

**20,4**



Blade volume, m3

**5,0**



Traction, t

**26**

### Engine

Type	YMZ-236/238/536
Power, kW/hp	132/180/240
Operating volume	11,15 l / 14,86 l / 6,65 l
Generator	24 V / 55 A
Storage battery	2*12 V / 2*132 Ah
Pre-heating with autonomous heating function	14TC-10 Teplostar
Smart fan speed control system	Fan-Drive system

## Undercarriage

Type	linear
Frame	load-bearing structure made of HSS steel, high welding accuracy
Track rollers	lifetime lubricated, on sliding bearings
Number of track rollers	6 bottom rollers + side sprocket/ 2 carrier rollers on each side
Track chain	42 track shoes on each side
Track shoe width	500 mm
Track shoe grouser	65 mm
Bearing area	2,86 m <sup>2</sup>
Track adjuster	hydraulic

## Transmission

Type	hydrostatic with electronic control
Transmission	hydraulic pump coupled with hydraulic motor with stepless transmission shift
On-board gearboxes	planetary
Control	electric and hydraulic servo
Brake system	hydraulic, normally closed multiple-disc clutches

## Implement Control

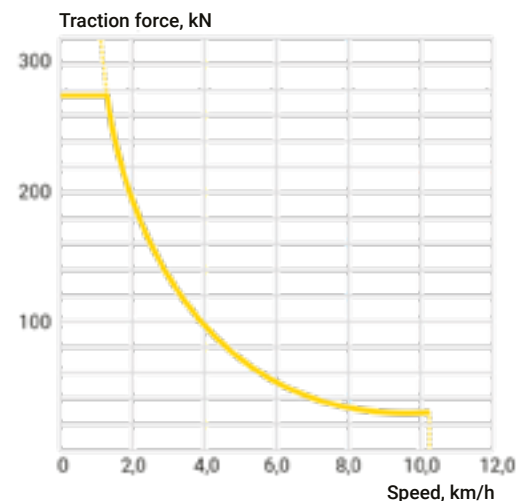
Type	hydraulic, separate for each device
Hydraulic pump	Gear Box Output: 200 l/min Max pressure: 18 MPa
Control valve	sectional
Filtration	double filtration: at suction, full-flow at discharge

## Cab and Control

Cab	hexagonal, improved visibility, with springs, twindow insulation, climate control system (heating and ventilation), cab air circulation, enlarged cab filter, circulation air filter, windscreen, rear window and door window wipers and washers, sun blind. Conditioner
Seat	ergonomic, with springs, two-point seat belt, seat switch
Safety	ROPS/FOPS, open door fixation
Travel and attachable implement control	4-position joysticks

## Filling Values

Cooling system	55 l
Fuel tank	400 l
Engine lubrication system	24 / 32 / 22,5 l
Transmission and implement hydraulic system	200 l



## Parameters under Load

Speed limit at 2100 rpm, forward-10,4 km/h  
backward-10,4



Bulldozer

# D12



Power, hp

**240**



Weight, t

**23,2**



Blade volume, m3

**5,0**



Traction, t

**30,5**

## Engine

Type	YMZ-536
Power, kW/hp at nominal rpm	176,5/240
Operating volume	6,65 l
Generator	AC, 24V, 100A, with installed voltage regulator
Storage battery	2*12 V / 2*132 Ah
Smart fan speed control system	Fan-Drive

## Undercarriage

Type	linear
Frame	load-bearing structure made of HSS steel, high welding accuracy
Track rollers	lifetime lubricated, on sliding bearings
Number of track rollers	7 bottom rollers on each side/ 2 carrier rollers on each side
Track chain	45 track shoes on each side
Track shoe width	500 mm
Track shoe grouser	65 mm
Bearing area	3.15 m2
Track adjuster	hydraulic

## Transmission

Type	hydrostatic with electronic traction control. S
Transmission	hydraulic pump coupled with hydraulic motor with stepless transmission shift.
On-board gearboxes	planetary (PMP, Italy)
Control	electric and hydraulic servo
Brake system	hydraulic, normally closed multiple-disc clutches

## Implement Control

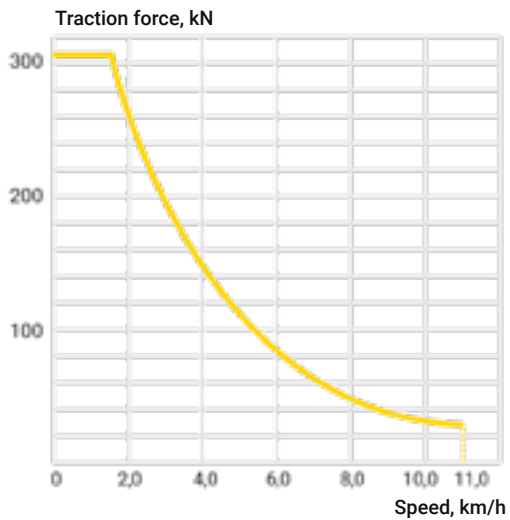
Type	hydraulic, separate for each device
Hydraulic pump	Gear Box Output: 200 l/min Max pressure: 20 MPa
Control valve	sectional
Filtration	double filtration: at suction, full-flow at discharge

## Cab and Control

Cab	Hexagon, high visibility, sprung, double glazing, climate control system (heating, air conditioning, ventilation), cabin air recirculation, enlarged cabin filter, air recirculation filter, windscreen wipers and washers for the front, rear and door windows, sun curtain. Conditioner
Seat	ergonomic, with springs, three-point seat belt, seat switch
Safety	ROPS/FOPS, open door fixation
Travel and attachable implement control	4-position joysticks

## Filling Values

Cooling system	55 l
Fuel tank	400 l
Engine lubrication system	22,5 l
Transmission and implement hydraulic system	200 l



## Parameters under Load

Speed limit at 2100 rpm, forward – 11,5 km/h  
backward – 11,5



Bulldozer

# D15



Power, hp

**300**



Weight, t

**29**



Blade volume, m<sup>3</sup>

**8,7**



Traction, t

**38**

## Engine

Type	YMZ-536 / Cummins QSL8.9 - C340
Power, kW/hp	235/320
Operating volume	6,65 l
Generator	24 V / 100 A
Storage battery	2*12 V / 2*190 Ah
Pre-heating with autonomous heating function	14TC-10 Teplostar
Smart fan speed control system	Fan-Drive

## Undercarriage

Type	linear
Frame	load-bearing structure made of HSS steel, high welding accuracy
Track rollers	lifetime lubricated, on sliding bearings
Number of track rollers	7 bottom rollers on each side/ 2 carrier rollers on each side
Track chain	41 track shoes on each side
Track shoe width	560 mm
Track shoe grouser	70 mm
Bearing area	3,55 m <sup>2</sup>
Track adjuster	hydraulic

## Transmission

Type	hydrostatic with electronic control
Transmission	hydraulic pump coupled with hydraulic motor with stepless transmission shift.
On-board gearboxes	planetary
Control	electric and hydraulic servo
Brake system	hydraulic, normally closed multiple-disc clutches

## Implement Control

Type	hydraulic, separate for each device
Hydraulic pump	Axial-piston Output: 250 l / min Max pressure: 23 MPa
Control valve	sectional
Filtration	double filtration: at suction, full-flow at discharge

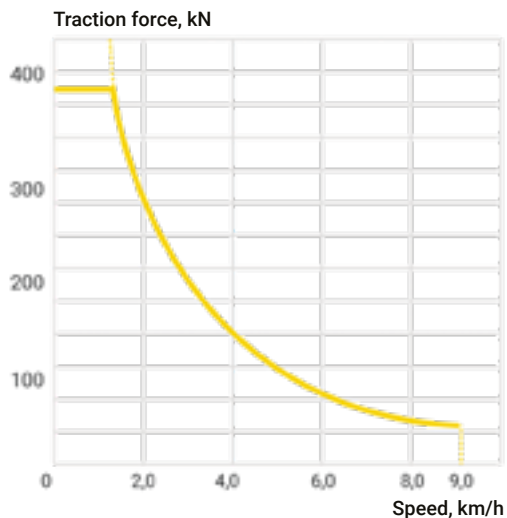


### Cab and Control

Cab	hexagonal, improved visibility, with springs, twindow insulation, climate control system (heating and ventilation), cab air circulation, enlarged cab filter, circulation air filter, windscreen, rear window and door window wipers and washers, sun blind. Conditioner
Seat	ergonomic, with springs, three-point seat belt, seat switch
Safety	ROPS/FOPS, open door fixation
Travel and attachable implement control	4-position joysticks

### Filling Values

Cooling system	60 l
Fuel tank	535 l
Engine lubrication system	22,5 l
Transmission and implement hydraulic system	250 l



### Parameters under Load

Speed limit at 2100 rpm, km/h	forward – 9,4 backward – 9,4
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# Bulldozer D25



Power, hp

**412**



Weight, t

**44**



Blade volume, m3

**10**



Traction, t

**55**

### Engine

Type	YMZ-652, turbocharged (weichai WD12 option)
Power, kW/hp	303/412
Operating volume	11,12 l
Generator	24 V / 100 A
Storage battery	2*12 V / 2*210 Ah
Pre-heating with autonomous heating function	Webasto Thermo E 320
Smart fan speed control system	Fan-Drive

## Undercarriage

Type	linear, three-point support of crawler trucks with equalizer beam
Frame	load-bearing structure made of HSS steel, high welding accuracy
Track rollers	lifetime lubricated, on sliding bearings
Number of track rollers	7 bottom rollers + side sprocket / 2 carrier rollers on each side
Track chain	41 track shoes
Track shoe width	560 mm
Track shoe grouser	80 mm
Bearing area	3,53 m <sup>2</sup>
Track adjuster	hydraulic

## Transmission

Type	hydrostatic with electronic control
Transmission	hydraulic pump coupled with hydraulic motor with stepless transmission shift
On-board gearboxes	planetary
Control	electric and hydraulic servo
Brake system	hydraulic, normally closed multiple-disc clutches

## Implement Control

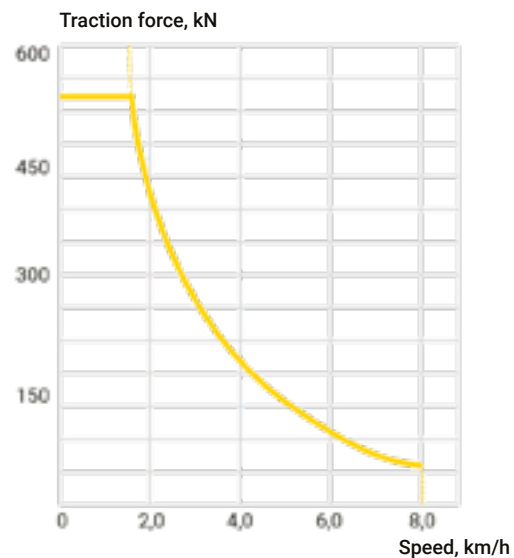
Type	hydraulic, separate for each device
Hydraulic pump	Axial-piston Output: 320 l/min Max pressure: 25 MPa
Control valve	Rexroth
Filtration	double filtration: at suction, full-flow at discharge

## Cab and Control

Cab	hexagonal, improved visibility, with springs, twindow insulation, climate control system (heating and ventilation), cab air circulation, enlarged cab filter, circulation air filter, windscreen, rear window and door window wipers and washers, sun blind. Conditioner
Seat	ergonomic, with springs, two-point seat belt, seat switch
Safety	ROPS/FOPS, open door fixation
Travel and attachable implement control	4-position joysticks

## Filling Values

Cooling system	85 l
Fuel tank	680 l
Engine lubrication system	35 l
Transmission and implement hydraulic system	280 l



## Parameters under Load

Speed limit at 1900 rpm, km/h	forward – 7,2 backward – 7,2
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# Modern Pipe Laying Machines

TG 12.25, TG 20.45, TG 35.80,  
TG 50.100



1

## Hydraulic Planetary (BDF) Boom and Hook Winches

- Planetary winches (Italy) with hydraulic drive
- Hydro motor lifetime is more than 10000 motor hours
- Planetary winch mechanism with normally closed multi-disc brakes. It is possible to complete the auto-reset. An on-board navigation controller is installed with the registration of all key operating parameters-the «BLACK BOX».



2

## Use of Modern HST Transmission

- Provides perfect maneuverability up to pivot turn
- Ensures high reliability
- Speed shift from 0 km/h to 10 km/h is stepless and smooth

3

## The Engine from a Basic Tractor YMZ-238

- Reserve power (240 hp) ensures operation at nominal rating enhancing the lifetime ( > 10 000 motor hours)
- V8 scheme without a turbine has no traction turbo lag in the range of 800-2100 rpm. Ensures the state of equilibrium with minimal vibration
- Generator for elevated current (55A) provides lighting and charging when idling.

4

## Hexagonal Cab with Ergonomic Operator's Seat

- Provides 360° vision in horizontal plane and 120° in vertical plane, thanks to the sunroof the operator can control the cargo in any location
- Hosting equipment is controlled with joysticks; it allows changing the boom reach and regulating hook lift simultaneously. Turn control with a joystick when moving
- AZK-110 to prevent overloads and tip over when hoisting a cargo, to protect when working in the area of power transmission lines, information on the cargo weight being hoisted, max load capacity, boom reach, boom angle



Pipelayer

# TG12.25



5

## Perfect Maneuverability

- Precise operator's message to both track chains allowing pivoting the machine with max load. This can be used to facilitate turning and moving aside a heavy pipe

6

## Construction Features of Rigid Undercarriage and Configuration

- Crawler trucks are rigidly connected making a single structure with the frame through bolt joins
- The frame allows maintaining the undercarriage and on-board gearboxes without dismantling them from the hoisting devices
- Offset axis of boom fixation allows lifting the boom vertically
- Solid even armored bottom improves flotation on timberland and weak soil



Power, hp

**180**



Weight, t

**24,3**



Boom reach, m3

**9**



Traction, t

**13**

## Engine

Type	YMZ-236
Power, kW/hp	132/180
Operating volume	11,5 l
Generator	24 V / 50 A
Storage battery	2*12 V / 2*132 Ah
Pre-heating with autonomous heating function	14TC-10 Teplostar
Smart fan speed control system	Fan-Drive

## Undercarriage

Type	rigid, four-point
Frame	load-bearing structure made of HSS steel, high welding accuracy
Track rollers	lifetime lubricated, on sliding bearings
Number of track rollers	7 bottom rollers on each side / 2 carrier rollers on each side
Track chain	45 reinforced track shoes on each side
Track shoe width	900 mm
Track shoe grouser	65 mm
Track adjuster	hydraulic, manual

## Transmission

Type	hydrostatic
Transmission	hydraulic pump coupled with hydraulic motor with stepless transmission shift
On-board gearboxes	planetary
Control	electric and hydraulic servo
Brake system	hydraulic, normally closed multiple-disc clutches

## Operator's Seat. Travel Control

Cab	hexagonal, improved visibility, twindow insulation, with springs
Safety	emergency hatch, FOPS, outer battery compartment
Seat	ergonomic, with seat belt
Travel and attachable implement control	4-position joysticks

## Pipe Layer Equipment

The values in brackets are given for 9 m boom

Hook	is actuated through a sheave system with a winch
Hoisting height:	5.9 (7.9) m
Hook lowering height	2.5 m
Hoisting/ lowering speed	from 0 to 8 m / min, from 0 to 22 m / min
Counterweight is built of 2 plates	non-detachable, weight is 4000 kg
Arrow	Welded box-section construction. It is driven through a multi-blade system by a winch
Winch	double-drum with hydraulic drive
Nominal load capacity at 2.5 m boom reach	12 t
Max calculated load capacity	25 t

## Filling Values

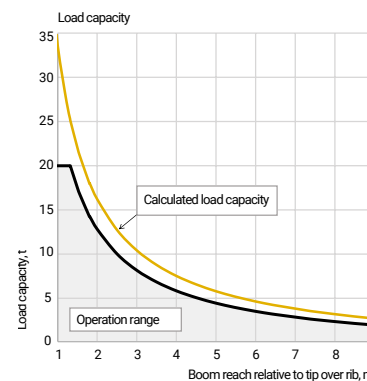
Cooling system	55 l
Fuel tank	450 l
Engine lubrication system	24 l
On-board gearbox	7 l
Transmission and attachable implement hydraulic system	150 l

## Attachable Implement Control System

Type	hydraulic, separate for each device
Hydraulic pump	axial-piston, non-adjustable
Max pressure	28 MPa
Control valve	sectional
Filtration	double filtration: at suction, full-flow at discharge

## Operating Weight

Weight, t	24,2
Specific ground pressure (from the equipment)	0,0399 MPa



Pipelayer

# TG20.45



Power, hp

**240**



Weight, t

**29**



Boom reach, m3

**9**



Traction, t

**20**

## Engine

Type	YMZ-238
Power, kW/hp	176/240
Operating volume	14,86 l
Generator	24 V / 50 A
Storage battery	2*12 V / 2*132 Ah
Pre-heating with autonomous heating function	14TC-10 Teplostar
Smart fan speed control system	Fan-Drive

## Undercarriage

Type	rigid, four-point
Frame	load-bearing structure made of HSS steel, high welding accuracy
Track rollers	lifetime lubricated, on sliding bearings
Number of track rollers	7 bottom rollers on each side / 2 carrier rollers on each side
Track chain	45 reinforced track shoes on each side
Track shoe width	900 mm
Track shoe grouser	65 mm
Track adjuster	hydraulic, manual

## Transmission

Type	hydrostatic
Transmission	hydraulic pump coupled with hydraulic motor with stepless transmission shift
On-board gearboxes	planetary
Control	electric and hydraulic servo
Brake system	hydraulic, normally closed multiple-disc clutches

## Operator's Seat. Travel Control

Cab	hexagonal, improved visibility, twindow insulation, with springs
Safety	emergency hatch, FOPS, outer battery compartment
Seat	ergonomic, with seat belt
Travel and attachable implement control	4-position joysticks

### Pipe Layer Equipment

The values in brackets are given for 9 m boom

Hook	is actuated through a sheave system with a winch
Hoisting height:	5.9 (7.9) m
Hook lowering height	2.5 m
Hoisting/ lowering speed	from 0 to 12 m / min, from 0 to 22 m / min
Counterweight is built of 2 plates	non-detachable, weight is 4000 kg
Arrow	Welded box-section construction. It is driven through a multi-blade system by a winch
Winch	double-drum with hydraulic drive
Nominal load capacity at 2.5 m boom reach	20 t
Max calculated load capacity	40 t

### Filling Values

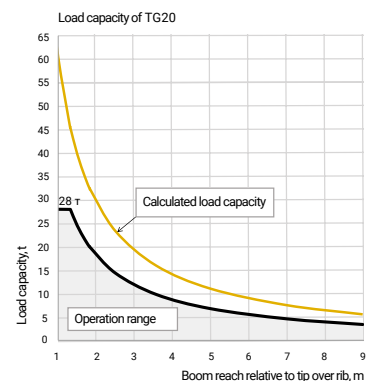
Cooling system	55 l
Fuel tank	450 l
Engine lubrication system	24 l
On-board gearbox	7 l
Transmission and attachable implement hydraulic system	150 l

### Attachable Implement Control System

Type	hydraulic, separate for each device
Hydraulic pump	axial-piston, non-adjustable
Max pressure	28 MPa
Control valve	sectional
Filtration	double filtration: at suction, full-flow at discharge

### Operating Weight

Weight, t	29
Specific ground pressure (from the equipment)	0,0478 MPa



# Pipe Layer Machines

# TG35.80



Power, hp

**330**



Weight, t

**60,5**



Boom reach, m3

**9**



Traction, t

**30**

### Engine

Type	CUMMINSQSN 8,9 / YMZ-536
Power, kW/hp	250/340; 229/312
Operating volume	8,9 / 6,65 l
Generator	24 V / 100 A
Storage battery	2*12 V / 2*210 Ah
Pre-heating with autonomous heating function	14TC-10 Teplostar
Smart fan speed control system	Fan-Drive

## Undercarriage

Type	Linear
Frame	load-bearing structure made of HSS steel, high welding accuracy
Track rollers	lifetime lubricated, on sliding bearings
Number of track rollers	9 bottom rollers on each side / 2 carrier rollers on each side
Track chain	48 reinforced track shoes on each side
Track shoe width	860 mm
Track shoe grouser	80 mm
Track adjuster	hydraulic

## Transmission

Type	hydrostatic
Transmission	hydraulic pump coupled with hydraulic motor with stepless transmission shift.
On-board gearboxes	planetary
Control	electric and hydraulic servo
Brake system	hydraulic, normally closed multiple-disc clutches

## Operator's Seat. Travel Control

Cab	hexagonal, improved visibility, with springs, twindow insulation, climate control system (heating and ventilation), cab air circulation, enlarged cab filter, circulation air filter, windscreen, rear window and door window wipers and washers, sun blind. Conditioner
Safety	emergency hatch, FOPS, outer battery compartment
Seat	ergonomic, with seat belt
Travel and attachable implement control	4-position joysticks

## Pipe Layer Equipment

The values in brackets are given for 8,6 (10) m boom

Hook	single
Hoisting height:	5.9 (7.9) m
Hook lowering height	2.5 m
Hoisting/ lowering speed	from 0,036 m/s to 0,179 m/s
Arrow	Length - 8.6 m; Weight - 1.9 t
Winch	double-drum with hydraulic drive
Nominal load capacity at 2.5 m boom reach	35 t
Max calculated load capacity	72 t
The speed of lifting / lowering the hook, changes in the departure of the boom	0 to 12 m/min, 0 to 22 m/min

## Filling Values

Cooling system	60 l
Fuel tank	600 l
Engine lubrication system	32 l
On-board gearbox	8 l
Transmission and attachable implement hydraulic system	280 l

## Attachable Implement Control System

Type	hydraulic, separate for each device
Hydraulic pump	axial-piston, non-adjustable
Max pressure	28 MPa
Control valve	Rexroth
Filtration	double filtration: at suction, full-flow at discharge

## Operating Weight

Weight, t	59,5
Specific ground pressure (from the equipment)	0,0821 mPa

Pipe Layer Machines

# TG50.100E2



Power, hp

**412**



Weight, t

**68**



Boom reach, m3

**9**



Traction, t

**50**

## Engine

Type	YMZ-652
Power, kW/hp	302/412
Operating volume	11,12 l
Generator	24 V / 100 A
Storage battery	2*12 V / 2*210 Ah
Pre-heating with autonomous heating function	14TC-10 Teplostar
Smart fan speed control system	Fan-Drive

## Undercarriage

Type	rigid
Frame	load-bearing structure made of HSS steel, high welding accuracy
Track rollers	lifetime lubricated, on sliding bearings
Number of track rollers	8 bottom rollers on each side / 2 carrier rollers on each side
Track chain	42 reinforced track shoes on each side
Track shoe width	960 mm
Track shoe grouser	93 mm
Bearing area	
Track adjuster	hydraulic, manual

## Transmission

Type	Hydrostatic
Transmission	hydraulic pump coupled with hydraulic motor with stepless transmission shift.
On-board gearboxes	planetary
Control	electric and hydraulic servo
Brake system	hydraulic, normally closed multiple-disc clutches

## Operator's Seat. Travel Control

Cab	hexagonal, improved visibility, with springs, twindow insulation, climate control system (heating and ventilation), cab air circulation, enlarged cab filter, circulation air filter, windscreen, rear window and door window wipers and washers, sun blind. Conditioner
Safety	forced ventilation, emergency hatch, FOPS, outer battery compartment
Seat	Ergonomic, sprung, three-point seat belt, operator presence sensor
Travel and attachable implement control	4-position joysticks

### Pipe Layer Equipment

The values in brackets are given for 8,6 m boom

Hook	is actuated through a sheave system with a winch
Max boom height	hoisting height 7.2 m. Hook lowering height: 2.5 m
Max extended boom	hoisting height 2 m Hook lowering height: 8 m
Min hoisting/ lowering speed	8.6 - 10.4 m/min
Arrow	welded box-shaped structure. It is actuated through a sheave system with a winch
Boom reach	min is 1.22 m, max is 8,5 m

### Filling Values

Cooling system	80 l
Fuel tank	700 l
Engine lubrication system	32 l
On-board gearbox	16 l
Transmission and attachable implement hydraulic system	280 l

### Attachable Implement Control System

Type	hydraulic, separate for each device
Max pressure	28 MPa
Control valve	sectional
Filtration	double filtration: at suction, full-flow at discharge

### Operating Weight

Weight, t	29
Specific ground pressure (from the equipment)	0,0478 mPa
Reclining counterweight, t	9,6
Arrow, t	2,5

# Modern CABLE LAYER MACHINES

## TM10.00 HST15 KVG-280

With hydrostatic power transmission, track width is 560 mm



### Description

### TM10.00 HST15 with KVG-280

Cable laying depth, mm	1500
Cable diameter, mm	Up to 50 (up to 80 as an option)
Pipe diameter, mm	32, 40, 50, 63
Cable laying speed, km/h	0-2.5
Number of drums, pcs:	
- Drum diameter is 2250 mm	2 (3)
- Drum diameter is 2500 mm	2
Layer part turn to the left and to the right, mm	1225
Operating weight without cable, kg	31000

Crawler Loader

# PG20



## Main Advantages

- Efficient cable and pipe laying in the ground with surface hardness range from 1 to 4
- Thanks to 7-roller truck and 560 mm track it made it possible to decrease ground pressure in comparison with the basic tractor; that allows using the cable layer machine on soft ground (waterlogged, boggy, peaty). Transport width clearance is 2550 mm.
- HST allows implementing traction parameters and ensures perfect maneuverability; and allows performing large scale laying operations. Maximal traction is 31 t is provided at speed up to 1.8 km/h.
- It is possible to set the layer part of the machine at 1225 mm on both sides in horizontal plane. This provides cable laying in complex environment.
- KVG-280 knife vibration in vertical direction leads to 30-60% decrease of traction resistance depending on soil harness and travel speed
- Self-loading and offloading of the cable drum



Power, hp

**107**



Weight, t

**6,1**



Lifting height, m3

**3,7**



Traction, t

**2**

## Engine

Type	Diesel (MMZ D-245)
Power, kW/hp	107/79
Operating volume	4,75 l
Fuel tank	100 l
Torque output	392 Nm



## Description

- Control of working equipment and movement-joysticks
- Preheater (preheater))
- Preparation of the hydraulic system for additional suspension (additional hydraulic line)
- Front beep
- Reverse signal
- Electronic dashboard
- Operator safety frame
- Cab equipped with ROPS\FOPS elements
- 2-point safety belt
- Adjustable sprung seat with mechanical suspension
- Quick change system for attachments (manual, hydrofected)
- Climate control system in the cabin (air conditioning/stove)
- Rubber track with a width of 450 mm
- Rubber boom and bucket stops.
- Folding one-piece operator's cab

## Main features

Type	Diesel (MMZ D-245S)
Engine power, hp (kW)	107 (79)
Speed of rotation at rated power, rpm	2200
Speed at maximum torque, rpm	392
Maximum torque, Nm	1400
On-board network voltage, V	24
Weight of the loaded loader, kg	6150
Rated load capacity of the loader (30%), kg	2000
Engine type (suspension)	Crawler (flexible on torsion shafts)
Maximum speed on the 2nd speed (optional), km/h	16,5
Maximum operating speed, km/h	8,2
Maximum pulling force, kN	50
Track belt width, mm	450
Fuel tank capacity,	100
Hydraulic tank capacity, l	65
Working equipment maximum pump capacity, l/min	120
Working equipment pump capacity (high flow), l/min	160
Maximum boom lifting height, mm	3690
Vertical boom lift	have

Wheel Loader

# P450



Power, hp

**240**



Weight, t

**14,5**



Blade volume, m<sup>3</sup>

**2,8**



Traction, t

**5**

## Engine

Type	YMZ
Model	53622
Power, max	176 (240) kW (hp) 2300 rpm
Torque, max	900 N·m
Engine capacity	6,65 l
Number of cylinders	6

## Transmission

Type	Hydrostatic
Max. speed	35 km/h

## Steering system

Steering configuration	Articulated
Operating pressure of the safety valve	24 MPa

## Hydraulic system

Main pump type	Axial-piston
Boom lifting time	4,7 s
Upload time	1,9 s
Lowering time	3,4 s
Minimum full cycle time	10 s

## Bucket Characteristics

Bucket capacity	2.8 m <sup>3</sup>
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## Bridges

Front differential, type	Standard
Rear differential, type	Standard
Rear axle swing angle	±15°

## Brakes

Type of service brakes	Closed hydraulic disc pumps
Type of service brake drive	Electrohydraulic
Parking brake type	Electrohydraulic
Type of parking brake drive	Hydraulic

Wheel Loader

# P465



Power, hp

**240**



Weight, t

**18**



Blade volume, m<sup>3</sup>

**3,6**



Traction, t

**7**

## Engine

Type	YMZ-536
Power, kW/hp	176/240
Operating volume	6,65 l
Fuel tank	330 l
Torque output	1166 Nm

## Main features

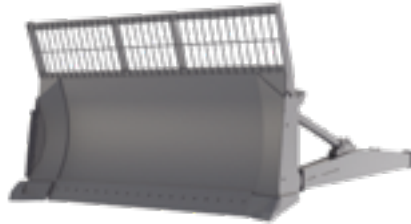
Rated load capacity of the loader, kg	7000
Standard bucket volume, m <sup>3</sup>	3,6
Engine	YMZ-536
Engine power, kW	176
Track gauge, mm	2160
Wheelbase, mm	3400
Tire dimension, mm	23.5-25 20PR
Minimum turning radius, mm	On the outer surface of the tire: 6200 By bucket: 6700
Maximum folding angle of the frame, gr	40
Length with bucket, mm	8380
Length without bucket, mm	7050
Height, mm	3340
Ground clearance, mm	500
Fuel tank capacity, l	330
Operating weight, kg	19000



# Attachment options [front]

Hemispherical dump with hydraulic mower, type E + option for solid waste

Height: 1950 mm  
Width: 3320 mm  
Volume: 5 m3  
Weight: 2470 kg



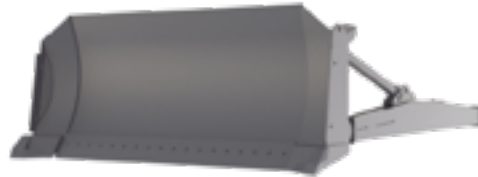
Straight road dump, type D

Height: 1330 mm  
Width: 4260 mm  
Volume: 4 m3  
Weight: 2900 kg



Hemispherical dump with hydraulic mower, type E

Height: 1350 mm  
Width: 3320 mm  
Volume: 5 m3  
Weight: 2330 kg



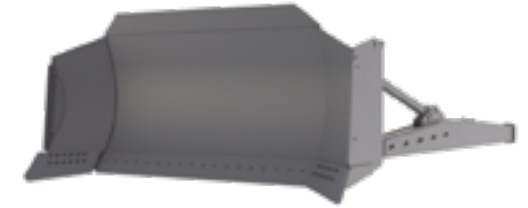
Uprooting blade

Height: 1250 mm  
Width: 3440 mm  
Weight: 2650 kg



Hemispherical blade with increased height and width, with hydraulic mower, type E3

Height: 1690 mm  
Width: 3725 mm  
Volume: 8,7 m3  
Weight: 3145 kg



Hemispherical dump with hydraulic mower, type E

Height: 1350 mm  
Width: 3320 mm  
Volume: 5 m3  
Weight: 2845 kg



Straight blade with hydraulic mower, type B

Height: 1375 mm  
Width: 3440 mm  
Volume: 4.8 m3  
Weight: 2120 kg



Straight blade with hydraulic mower, type B

Height: 1375 mm  
Width: 3440 mm  
Volume: 4.8 m3  
Weight: 2715 kg



Bolotny uprooting dump

Height: 1230 mm  
Width: 3900 mm  
Weight: 2820 kg



# Attachment options [front]

Straight blade with hydraulic mower, type B41

Height: 1395 mm  
Width: 4400 mm  
Volume: 6.3 m3  
Weight: 2685 kg



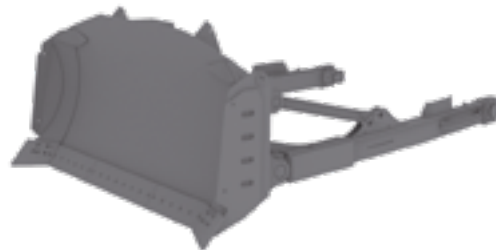
Straight, road, folding, three-position blade, VTRU type

Height: 1390 mm  
Width: 3426 mm (2500 mm folded state)  
Volume: 5 m3  
Weight: 3200 kg



Hemispherical blade with gyro-bevel, type 15E

Height: 1670 mm  
Width: 3710 mm  
Volume: 8 m3  
Weight: 3680 kg



Straight swamp dump with hydraulic mower, type 15B

Height: 1490 mm  
Width: 4335 mm  
Volume: 9.8 m3  
Weight: 3975 kg



Hemispherical dump with hydropercussor, type 25E

Height: 1795 mm  
Width: 4115 mm  
Volume: 9.8 m3  
Weight: 5980 kg



# Attachment options [rear]

Single-tooth single-axis ripper D9-12

Weight: 1477 kg



Three-pronged single-axis ripper D9-12

Weight: 2173 kg



30 ton Winch D9-12

Macca: 2000 kr



Single-tooth single-axis ripper D15

Weight: 2576 kg



Single-tooth two-axis ripper D25

Weight: 4200 kg





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The call to Russia is free of charge

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