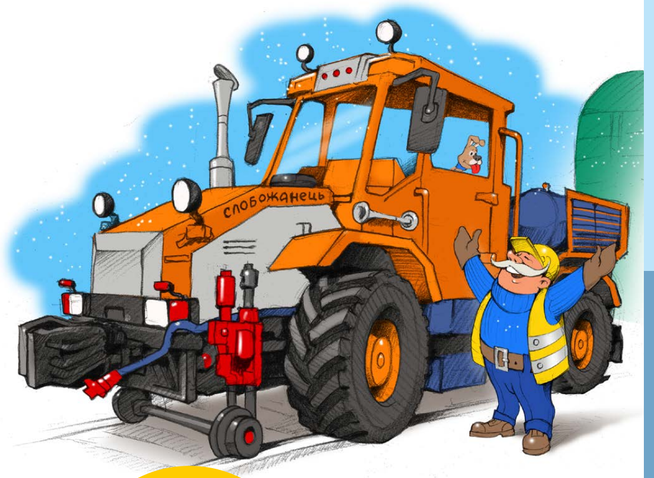

Shunting Tractor

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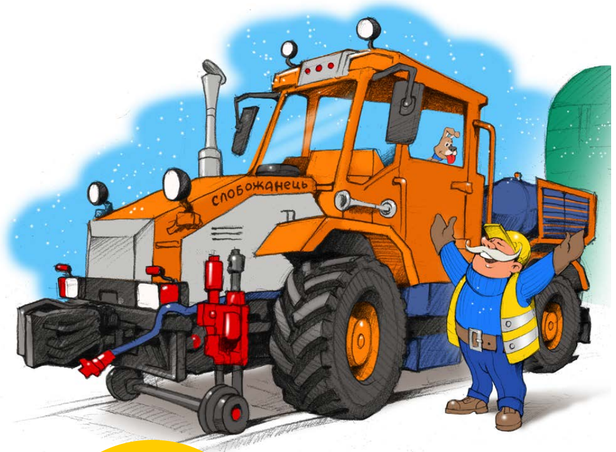

Shunting Tractor

CHEAPER THAN OTHER MANUFACTURERS +
MOBILITY. UNIFICATION. UNIVERSALISM +
LOW COSTS FOR MAINTENANCE =

SHUNTING TRACTOR ST-2

DESCRIPTION

As a base for shunting tractor ST-2 we adopted a modern HTA-220 tractor with axle arrangement 4x4. The tractor is equipped with a skeleton cabin that meets modern safety standards, it is provided with air conditioning, steering column with adjustable angle and height, car radio and comfortable workplace with a good driver's visibility.

With a combined travel (pneumatic tires and carrying rollers) ST-2 shunting tractor quickly and safely arrives at its destination, and always the shortest way. To set ST-2 tractor on the rails a small 5-meter long section of the railway crossing is enough as the tractor is equipped with ST-2 video cameras to facilitate setting guide rollers on the rails so the driver will require up to three minutes to do that.

Equipping of ST-2 shunting tractor with the compressor unit and the brake system makes it easy to cope with heavy shunting operations.

PURPOSE

ST-2 is basically intended to replace the middle class shunting locomotives used by large enterprises with well developed railroad tracks at their own territory.

USERS

Enterprises of metallurgical, engineering, building, power, agricultural, coal mining and chemical industries, sea and river ports, warehouses, elevators, timber industry, small and medium-sized enterprises in various areas.

Shunting tractors can be widely used instead of TGM-type shunting locomotives by the railway departments, and particularly by: locomotive and passenger depots, materials and machinery warehouses, various workshops of the track, sleeper-impregnating works, rein–forced concrete plants, open-cut mines, bridge construction trains, production facilities of track maintenance trains and by other structural units.

FEATURES

Among special features of ST-2 shunting tractor are:

- the ability to develop a sufficiently large driving force enabling to provides full services to facilities with car traffic volume up to 35 to 50 cars per day;
- the ability to move on the motor roads of the enterprise and quickly switch on the track to perform shunting operations with cars. This allows to speed up shunting work, provide flexibility of transport services and enables to use them for standard transport functions as a wheeled tractor.

ADVANTAGES

The main advantage of ST-2 shunting tractor is that having the mass of 10 to 12 tons and the capacity of 200HP it is able to develop a rail mounted traction sufficient to move 6 to 8 loaded cars on line pieces with slopes up to 8% and on lines pieces with a zero slope up to 1,000 tons, retaining at the same time the abilities of the locomotive as a towing vehicle for transport operations.

The use of ST-2 shunting tractor allows the Company to find a fundamentally new way to solve the issue of transport services, significantly improve the technology of shunting, provide timely delivery of large-nomenclature and small-nomenclature of goods, as well as to significantly reduce the consumption of energy resources.

Compared to the existing analogues, ST-2 shunting tractor made in Ukraine is much cheaper (3 to 4 times) though its characteristics are not inferior to the famous foreign models.

ECONOMY

75% industry is made of small production enterprises, transport servicing of which is associated solely with supply and removal of an external fleet of cars provided by rail transport. They are characterized by a limited freight flow (up to 0.25 million tons per year) and the volume of transport activity (up to 30 cars per day).

In addition, large enterprises have separately located production and storage facilities that have similar freight flows and car traffic volumes.

However, under these conditions they widely use traditional transport technologies of large enterprises with costly and energy-intensive means of traction (locomotives) with the capacity up to 1200 horsepower and with towing weight up to 100 tons.

The studies revealed that the companies with limited volumes of transportation work are characterized by extremely low utilization of powerful locomotives: 12 to 15% in towing weight; 12 to 16% in capacity and 23 to 28% in terms of daytime. Under these conditions the annual volume of work per one locomotive makes 16 to 47 thousand tons, while at large enterprises it reaches 300 thousand tons.

Using locomotives with the capacity of 800 to 1200 horsepower in the areas with limited car traffic volumes results in high transport costs, in which the cost of energy prevails (up to 70%).

Technical and economic calculations proved that with the freight flow up to 500 thousand tons per year (25 to 30 cars per day) the use of ST-2 shunting tractor will significantly (1.5 to 2 times) reduce operating costs for handling of cars.

The expected annual economic effect of using of ST-2 shunting tractor is estimated at up to 10-20 thousand USA a year. The major part of the economic effect is achieved due to energy saving (fuel economy per one vehicle is within the range of 20 to 35 tons per year).

At the same time, the absolute value of economic benefit primarily depends on the capacity of the replaced locomotives as well as on the operating conditions of using shunting locomotives (number of loading and unloading areas, number of operating days and freight cars handled a year).

ST-2P SHUNTING TRACTOR CONSTRUCTED ON THE BASIS OF HTZ T-156Б-09 WHEELED LOADER (SHUNTING TRACTOR-LOADER)

ST-2P shunting tractor constructed on the basis of the wheeled loader is recommended to be used for power-intensive excavation works during construction of rail and motor roads, repair of road carpets as well as for handling of bulk solids for industrial and agricultural purposes. The tractor merits high-capacity, stability and reliability. The capacity of its bucket makes 1.5cum with lifting capacity up to 3t, dumping height – 2920mm. Tractor loading capacity while loading general purpose civil and agricultural bulk solids – 170t/h. Like locomobile the tractor can move railway cars with towing weight totaling to 1000t.

ST-3 SHUNTING TRACTOR CONSTRUCTED ON THE BASIS OF XTA-300 TRACTOR

ST-3 shunting tractor is constructed on the basis of the 6-wheeled tractor and has three axles, heavy weight and improved tyres that results in a larger area of engagement between pneumatic tyres and rails and it has doubled capacity of compressor plant – 3.5cum/min. Due to these characteristics the tractor can move railway cars with towing weight totaling to 1500t.

ST-3 shunting tractor is made in various kitting versions:

1. It is provided with a special van for transportation of personnel, tools and equipment;
2. It is provided with a special body for transportation of tools, equipment and various loads.

In future if desired by the Customer ST-3 shunting tractor can be outfitted with crane-manipulator, power unit, welding and other equipment.

MULTIPURPOSE UPM-1M TRACK MACHINE

For enterprises doing minor and major repairs of railway tracks as well as for enterprises possessing and maintaining their own local railways our factory makes new, rehabilitates and overhauls basic UPM-1 haulage tractors – a multipurpose track machine that is designed for mounting of removable blocks and their delivery to the work site as well as for blocks travel and operation control. Our factory makes new and carries out overhauling of blocks attached to UPM-1M complex (VPA - track lifting and packing blocks, track cleaning blocks, RShR blocks - blocks for laying of sleepers by marks and for spacing of rail joint gaps and sleeper replacement blocks), which are intended for mechanization of all preparation, main and finishing works under conditions of unfrozen ballast and ambient temperature from -10°C to +40°C.

Removable block for lifting and packing of railroad tracks

The removable block for lifting and packing of railroad tracks (VPA-track lifting and packing block, rectifying and packing unit) is designed for lifting of rail-and-sleeper pads on the ballast and for packing of tracks placed on timber and cast sleepers with any type of rails and ballast during construction of new and local tracks with small scopes of work at scattered objects under conditions of unfrozen ballast; it allows some shifting of lifted track in plan.

Removable block for track cleaning

The removable block for track cleaning is designed for removal of extra ballast from the sleepers upper bed and for leveling of ballast section shoulders. The removable block cleans rail-and-sleeper pad and removes extra ballast to the slopes of ballast section shoulders on tracks with timber and cast sleepers with any type of rails and ballast.

Removable block for laying of sleepers by marks and for rail joint gaps spacing

The removable block for laying of sleepers according to marks and for rail joint gaps spacing (RShR block) mounted on the basic T-158 hauling tractor is designed for laying of track according to marks made on sleepers, alignment of drunken sleepers, adjustment and spacing of rail joint gaps during construction of the upper part of the track with rails up to P65 inclusive, with timber sleepers with any type of unfrozen ballast and at all stages of construction of new and local rail tracks on straight and curved track sections. The removable block RShR block is used for construction of the upper part of the track for rails up to P65 with track gages 1435 and 1520mm and with sleepers pattern from 1440 to 2000 per 1km of track.

Removable block for replacement of sleepers

The removable block for replacement of sleepers is designed for replacement of timber and cast sleepers laid on any unfrozen ballast.

Removable ballast metering device

The removable ballast metering device is designed for ballast spreading, leveling, finishing of ballast shoulders and for use in the following operations:

1 — as a head plough:

a) to redistribute ballast from the track center to shoulders and to form the upper part of horizontal ballast section;
b) to shift ballast from the track center to shoulders and to slopes;
c) to shift ballast from section shoulders and sleepers ends to the track center;
d) to shift ballast from one side of the track to the other;
e) to level ballast section shoulders;
f) to fill ballast boxes with ballast;
g) to dose ballast on curved track sections with one canting line.

2 — as a leveler of track slopes:

a) to shift ballast from track bench to ballast sections;
б) to cut track benches of ballast section;
в) to cut track benches of sand sub ballast;
г) to distribute ballast along track bench elements.

The ballast metering device is made of two removable attachments, which are mounted on the basic towing tractor: front – head plough and rear – slope leveler.

The ballast metering device is designed for operation in areas with moderate climate (modification V category I as per GOST 15150-69 (state standard) with ambient temperature from -10°C (with unfrozen ballast) to +40°C for any type of ballast on track sections with slopes and track rise up to 15%.

Removable snow-plough

The removable snow-plough is designed for high-speed cleaning of single-track railroads from snow at small scattered objects as well as for removal of snow at motorways and construction sites.

The snow-plough is a removable block that is attached to the basic tractor.

The snow-plough is intended for operation at ambient temperature above -40°C, humidity up to 80% and snow cover height up to 60cm from the level of rail head.

Rotor-type snow-plough

The rotary snow-plough is designed for removal of snow at railroads and motorways.

The rotary snow-plough is a removable block that is attached to the basic tractor.

The rotary snow-plough is intended for operation at ambient temperature above -40°C, humidity up to 80% and snow cover height up to 70cm from the level of motorway or rail head.

UNIFIED REMOVABLE EQUIPMENT USO-4

Unified removable equipment USO-4 is designed for fixing of rail lengths at open cars during transportation and shifting them along railway platforms during track laying.

Roller-type transporter is made to allow its mounting on all kinds of open railway cars that are manufactured now. Four stairs to climb the car and two stairs to climb the gantry allow easy servicing of equipment. Shoe brake allows to carry out operations at track sections with slopes. Strong restrictive chains with shock absorbers prevent displacement of the rail-and-sleeper pad wrt each other. Special stops provide reliable fixing of the whole rail-and-sleeper pad on the platform.