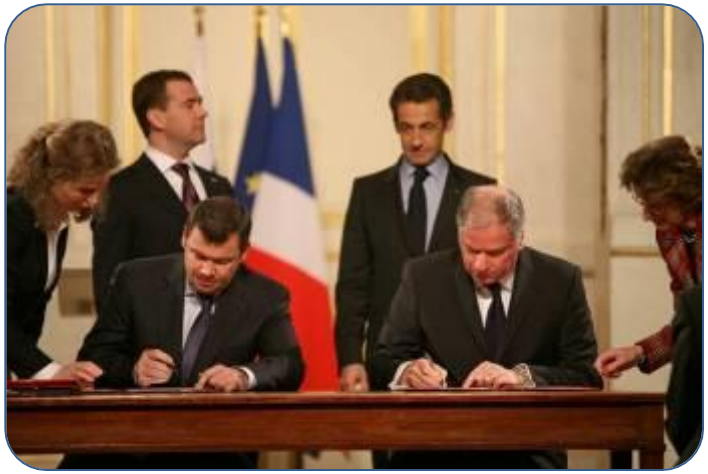
ТРАНСМАШХОЛДИНГ

LEADING MANUFACTURER OF ROLLING STOCK

TRANSMASHHOLDING

- ✓ The largest Russian company engineering and producing railway and metro rolling stock products
- ✓ No. 1 in CIS countries in terms of rolling stock sales
- ✓ Ranks among world top ten rolling stock manufacturers
- ✓ The largest RS supplier to the world largest transportation company, Russian Railways, JSC
- ✓ Russian Railways, JSC is the major shareholder of Transmashholding
- ✓ Transmashholding strategic partner and owner of the blocking share in the Company is the global railway manufacturer, Alstom Transport
- ✓ The Company products are operated in dozens of countries worldwide in all climate regions
- ✓ The only Russian company experienced in development and production of rolling stock for arctic application
- ✓ The Company representative offices operate in Belarus, Ukraine, Kazakhstan, Uzbekistan, Baltic states, Poland and Finland
- ✓ Sales of goods and services in 2013 – RUR 154 billion

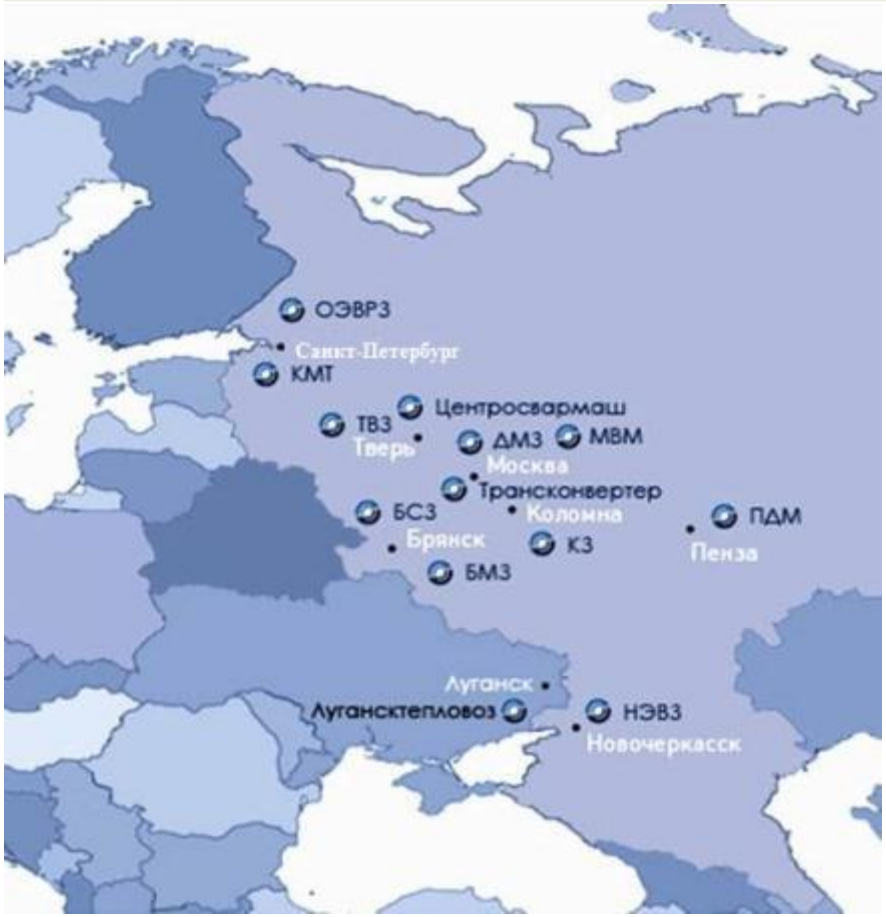
TRANSMASHHOLDING



- ✓ Transmashholding was established in 2002
- ✓ Major shareholder of TMH is the world largest transportation company Russian Railways, JSC
- ✓ Alstom Transport - the largest RS manufacturer in the world - is Transmashholding strategic partner and holder of the Company blocking share

PRODUCTION FACILITIES

TRANSMASHHOLDING CONSOLIDATES TOP INDUSTRIAL COMPANIES



NEVZ – Novocherkassk Electric Locomotive Plant

BMZ – Bryansk Engineering Plant

KZ – Kolomna Plant

PDM – Penzadieselmash

BSZ – Bezhitsk Steel Foundry

TVZ – Tver Carriage Works

DMZ – Demikhovo Engineering Plant

MWM – Metrowagonmash

OEVRZ – Oktyabrsky Electric Railway Car Repair Plant

TSM – Tsentrosvarmash Plant

KMT – KMT Industrial Group

Transconverter (JV with Siemens AG)

VELNII (All–Russian R&D Institute of electric locomotive building

Luganskteplovoz (Ukraine)

TRANSMASHHOLDING AND ALSTOM AS STRATEGIC PARTNERS

ТРАНСМАШХОЛДИНГ

ALSTOM

TRTrans

- Joint engineering center to develop new RS models
- Established in 2011
- Participants are Transmashholding 50% + Alstom 50%
- First projects implemented by TRTrans – EP20 and 2ES5 electric locomotives

RailComp

✓Joint Venture to manufacture traction systems and drive control systems for EP20, 2ES5, KZ8A и KZ4AT locomotives
✓Established in 2012
✓Participants are Transmashholding 50% + Alstom 50%
✓Manufacturing capacity is 17 traction systems per month

TramRus

- ✓ Joint Venture to manufacture tramways
- ✓ Established in 2012
- ✓ Participants are Transmashholding 50% + Alstom 50%
- ✓ Manufacturing capacity will be 100 low-floor trams per year

PROJECTS ABROAD

Locomotive Kurastyru Zauyty

Participants: TMH 50% and KTZ 50%

- ✓ Established in 2009
- ✓ State-of-the-art technology-intensive company specializing in manufacturing of mainline diesel locomotives TE33A
- ✓ Design plant capacity is 100 locomotives per year

Electrovoz Kurastyru Zauyty

Participants: TMH 25% , Alstom 25%, KTZ 50%

- ✓ Established in 2012
- ✓ Production of two locomotive models was launched at the plant – KZ8A mainline freight ac electric locomotives and KZ4A passenger ac electric locomotives
- ✓ Manufacturing capacity is 100 sections per year (reserve up to 120 section)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 (plan)
Sales of products and services, RUB billion	*24,2*	*41,7*	*55,1*	*68*	*100*	*67,5*	*77,2*	*106,3*	*124,9*	*154*	*148,9*
Investments into technical retooling and R&D, RUB billion	*0,8*	*1,7*	*1,5*	*3,1*	*5,1*	*5,1*	*4,4*	*8,5*	*9,3*	*5,9*	*7,9*
Headcount, thousand people	*34,5*	*53,8*	*54,4*	*55,1*	*63,4*	*56,9*	*52,5*	*53,2*	*56*	*56,7*	*53*

ТРАНСМАШХОЛДИНГ

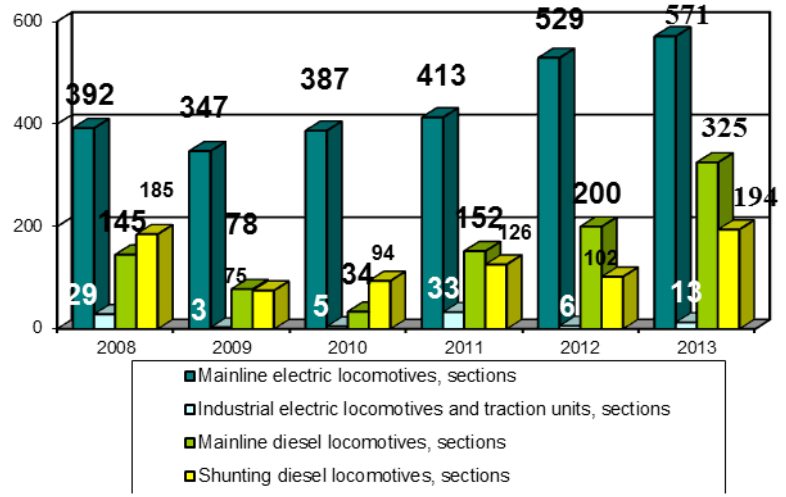
BUSINESS DIMENSIONS

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 (plan)
Mainline electric locomotives, sections	*55*	*104*	*201*	*234*	*392*	*347*	*387*	*413*	*529*	*571*	*836*
Industrial electric locomotives and traction units, sections	*4*	*10*	*25*	*34*	*29*	*3*	*5*	*33*	*6*	*13*	*14*
Mainline diesel locomotives, sections	*-*	*48*	*45*	*51*	*145*	*78*	*34*	*152*	*200*	*325*	*387*
Shunting diesel locomotives, sections	*35*	*74*	*152*	*158*	*185*	*75*	*94*	*126*	*102*	*194*	*95*
Passenger coaches, units	*547*	*701*	*799*	*935*	*1163*	*700*	*571*	*656*	*426*	*500*	*517*
EMU cars, units	*506*	*396*	*571*	*630*	*730*	*569*	*570*	*504*	*439*	*275*	*462*
Rail buses, units	*-*	*56*	*47*	*60*	*62*	*34*	*39*	*38*	*28*	*30*	*25*
Metro cars, units	*-*	*99*	*226*	*294*	*288*	*288*	*298*	*343*	*488*	*559*	*452*
Freight wagons, units	*689*	*1630*	*1902*	*2173*	*2245*	*415*	*3166*	*4652*	*6643*	*4044*	*3909*
Marine and locomotive diesel engines, gensets, units	*122*	*440*	*432*	*581*	*675*	*382*	*497*	*608*	*946*	*892*	*1541*
Car castings, thousand tons	*55*	*58,6*	*58,1*	*54,8*	*52,4*	*52,3*	*47,4*	*53,6*	*57,2*	*52,6*	*70,8*

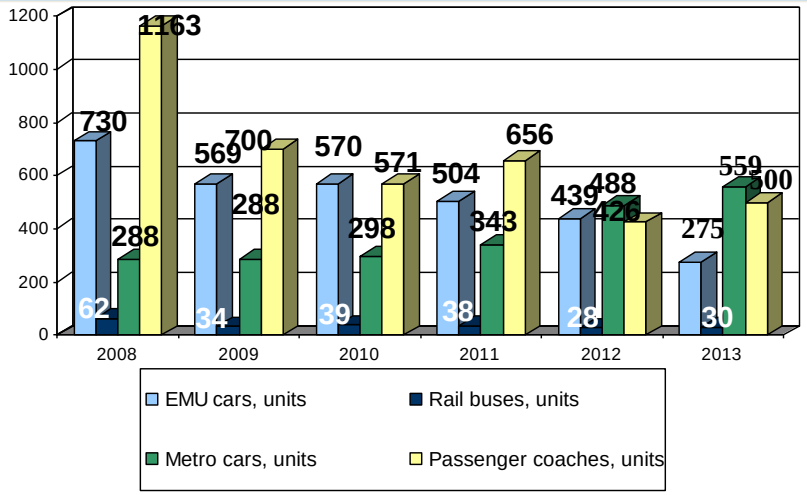
ТРАНСМАШХОЛДИНГ

SALES DYNAMICS OVER 2008-2013

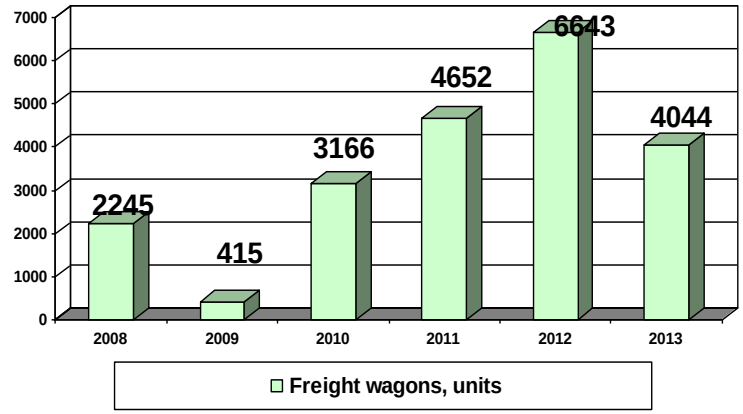
LOCOMOTIVES



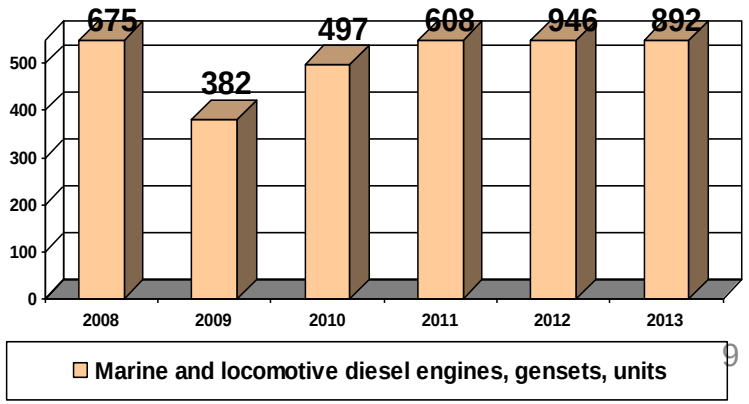
MULTIPLE UNIT ROLLING STOCK, METRO CARS, PASSENGER COACHES



FREIGHT WAGONS



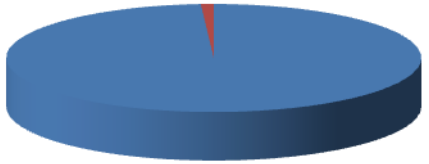
DIESEL ENGINES



TRANSMASHHOLDING IS THE LEADER ON ROLLING STOCK MARKET

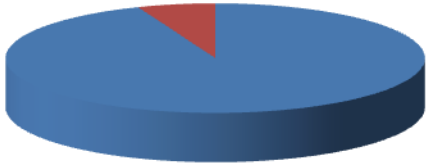
Mainline electric locomotives

Mainline diesel locomotives

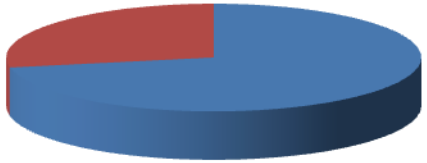


Shunting diesel locomotives

Metro cars



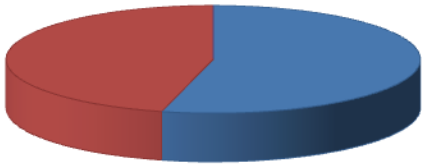
Locomotive diesel engines



■ *Transmashholding sales share in 2013 in CIS countries*

TRANSMASHHOLDING IS THE LEADER ON ROLLING STOCK MARKET

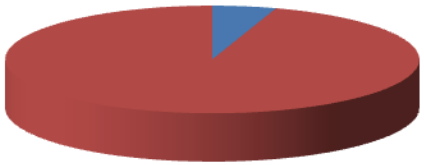
Passenger coaches



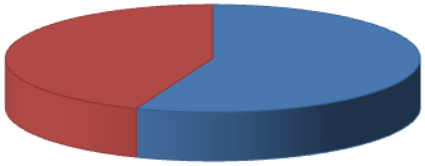
54%

Freight wagons

5%



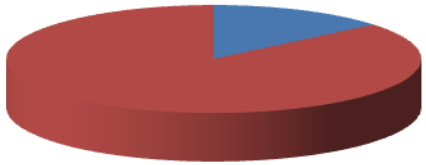
Multiple unit rolling stock



56%

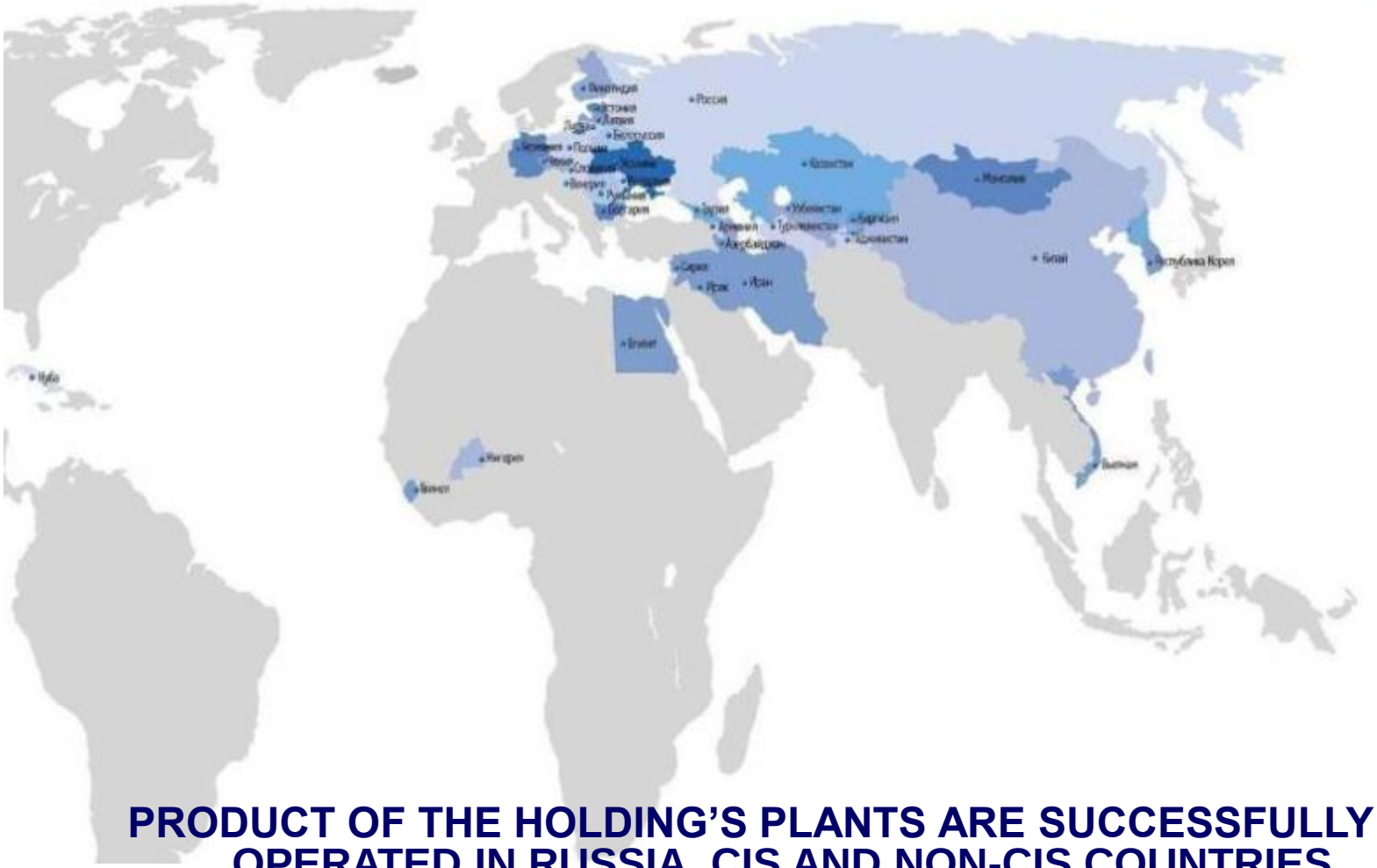
Car casting

14%



- *Transmashholding sales share in 2013 in CIS countries*

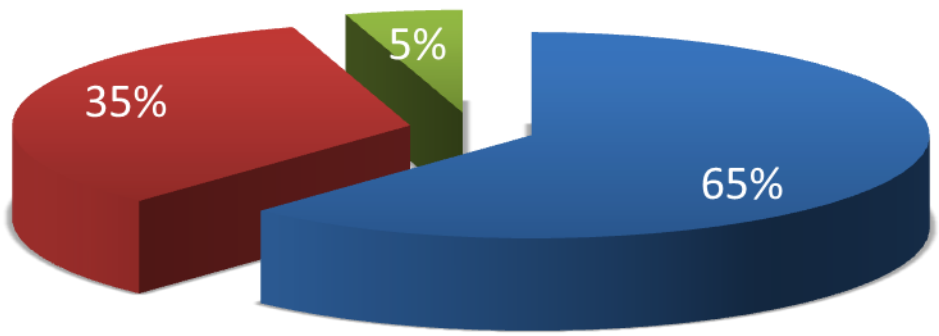
COMPANY SALES GEOGRAPHY



PRODUCT OF THE HOLDING'S PLANTS ARE SUCCESSFULLY OPERATED IN RUSSIA, CIS AND NON-CIS COUNTRIES

SALES STRUCTURE

Russian Railways



In 2013, **65%** of products were marketed to the order of **Russian Railways, JSC**

35% of products were manufactured **to the order of other Russian companies** – independent carriers, industrial companies, transport engineering plants, and lease companies

5 % of products were sold to **nondomestic customers**

PRODUCTS

Locomotives

Diesel locomotives:
- passenger
- freight
- shunting

Eclectic locomotives:
- passenger
- freight
- industrial
- traction units

Multiple unit rolling stock

- EMUs (commuter and regional)
- DMUs and rail buses

Metro cars

- For underground and above-ground lines

Passenger coaches

- for speeds up to 160 km/h
- for speeds up to 200 km/h

Freight wagons

- hopper wagons
- gondola wagons
- rail platform for container transportation
- special-purpose wagons

Components and equipment for rolling stock

- turbochargers
- carbody shells
- driver's cabs
- door modules
- converters
- bogies

Car casting

- for railway transport
- for automobile transport
- other kinds of casting

Diesel engines

- locomotive
- marine
- heavy-duty trucks
- power plans

PRODUCTS
Diesel Locomotives

Mainline passenger diesel locomotives

Mainline freight diesel locomotives

Shunting diesel locomotives

PASSENGER DIESEL LOCOMOTIVES

TEP70BS

- Speed: 120 or 160 kph
- Wheel arrangement: Co - Co
- Output: 2942 kW

TEP70U

- Speed: 160 kph
- Wheel arrangement: Co - Co
- Output: 3000 kW

TEP150

- Speed: 160 kph
- Wheel arrangement: Co - Co
- Output: 3100 kW

Operated in

- Belarus
- Lithuania
- Uzbekistan
- Ukraine

Russia:

- Oktyabrskaya Railway
- West Siberian Railway

MAINLINE FREIGHT DIESEL LOCOMOTIVES

2TE70 with collector traction motors

- Speed: 110 kph
- Wheel arrangement: 2 (Co - Co)
- Output: 6000 kW

2TE25A ‘Vityaz’ with asynchronous traction motors

- Speed: 120 kph
- Wheel arrangement: 2 (Co - Co)
- Output: 5000 kW

2TE25AM with asynchronous traction motors

- Speed: 120 kph
- Wheel arrangement: 2 (Co - Co)
- Output: 5400 kW

Operated on

- Moscow Railway
- East Siberian Railway

MAINLINE FREIGHT DIESEL LOCOMOTIVES

2TE116U

- Speed: 100 kph
- Wheel arrangement: 2 (Co - Co)
- Output: 5300 kW

3TE116U

- Three-section diesel locomotive 3TE116U
- Wheel arrangement: 3x(Co - Co)
- Output: 7 950 kW

2TE116UD

- Speed: 100 kph
- Wheel arrangement: 2x(Co - Co)
- Output: 6200 kW

Operated in

Russia:

- Privolzhskaya Railway
- Oktyabrskaya Railway
- Sverdlovsk Railway
- North Caucasus Railway
- Northern Railway
- East Siberian Railway

SHUNTING DIESEL LOCOMOTIVES

TEM18DM

- Speed: 100 kph
- Wheel arrangement: Co - Co
- Output: 882 kW

TEMTMH

- Speed: 100 kph
- Wheel arrangement: Co - Co
- Output: 970 kW

TEM18V

- Speed: 100 kph
- Wheel arrangement: Co - Co
- Output: 882 kW

Operated in

- Russia
- Lithuania
- Estonia

SHUNTING DIESEL LOCOMOTIVES

TEM35 with hybrid power unit

- Speed: 100 kph
- Wheel arrangement: Co - Co
- Output: 1071 kW

TEM33 with dual diesel power unit

- Speed: 100 kph
- Wheel arrangement: Co - Co
- Output: 1142 kW

TEM19 with gas reciprocating engine

- Speed: 100 kph
- Wheel arrangement: Co - Co
- Output: 880 kW

ТРАНСМАШХОЛДИНГ

PRODUCTS
Electric Locomotives

Mainline freight ac electric locomotive

Mainline passenger ac electric locomotive

Mainline freight dc electric locomotive

Passenger dc electric locomotives

Dual-voltage passenger electric locomotive

Traction units and industrial electric locomotives

MAINLINE FREIGHT ac ELECTRIC LOCOMOTIVES

Double-section 2ES5K

- Wheel arrangement: 2(Bo - Bo)

Three-section 3ES5K

- Wheel arrangement: 3(Bo - Bo)

One-section E5K

- Wheel arrangement: Bo - Bo

'Ermak' Family 25 kV ac electric locomotives for speeds up to 110 kph and output range from 3280 to 9840 kW.

Operated in

Russia:

- East Siberian Railway
- Far East Railway

Ukraine

- Odessa Railway

MAINLINE FREIGHT ac ELECTRIC LOCOMOTIVE

- Speed: 120 kph
- Current: 25 kV AC
- Wheel arrangement: 2(Bo - Bo)
- Output: 8400 kW

- Traction drive with asynchronous traction motors with standalone voltage invertors
- Oil-free piston-type air compressors with air drying and cleaning device
- Microprocessor control and diagnostic system

200 locomotives will be delivered to RZD by 2020

MAINLINE FREIGHT dc ELECTRIC LOCOMOTIVE

2ES4K ‘Donchak’

- Speed: 120 kph
- Current: 3 kV DC
- Wheel arrangement: 2(Bo - Bo)
- Output: 5735 kW

Operated in

Russia:
- West Siberian Railway
- North Caucasus Railway

Ukraine:
- Donetsk Railway

PASSENGER ac ELECTRIC LOCOMOTIVE

EP1M

- Speed: up to 140 kph
- Current: 25 kV AC
- Wheel arrangement: Bo-Bo-Bo
- Output: up to 4700 kW
- Traction effort: 230 kN

Operated in

Russia:

- Oktyabrskaya Railway
- Zabaikalskaya Railway
- North Caucasus Railway
- South-Eastern Railway
- Gorkovskaya Railway
- Far East Railway

PASSENGER dc ELECTRIC LOCOMOTIVE

EP2K

- Speed: 160 kph
- Current: 3 kV DC
- Wheel arrangement: Co - Co
- Output: 4800 kW

Operated in

Russia:

- West Siberian Railway
- Oktyabrskaya Railway

PASSENGER DUAL-VOLTAGE LOCOMOTIVE

- Speed: 160/200 kph
- Current: 3 kV DC and 25 kV AC
- Wheel arrangement: Bo-Bo-Bo
- Output: 7200 kW
- Asynchronous traction motors

EP20

Operated on

- Moscow Railway

INDUSTRIAL ELECTRIC LOCOMOTIVE

NPM2

- **Speed: 60 kph**
- **Current: 1,5 kV DC**
- **Wheel arrangement: Bo-Bo**
- **Output: 1400 kW**

Operated at

Magnitogorsk steel mill

TRACTION UNIT

- Speed: 65 kph
- Current: 10 kV AC
- Wheel arrangement: 3(Bo-Bo)
- Output: 7600 kW

NP1

Operated in

Russia

- Karelsky Okatysh
- Kachkanarsky Mining and processing plant
- Lebedinsky Mining and processing plant
- Mikhailovsky Mining and processing plant
- Severny Mining and processing plant
- Stoylensky Mining and processing plant
- Kuzbassrazrezugol

Kazakhstan

- EEK (Vostochny mining plant)

PRODUCTS
DMUs and Rail Buses

RAIL BUSES

- Has been produced since 2006
- Design speed: 100kph
- Rail buses provide 222 seats with maximum passenger capacity totaling 600
- Cars are equipped with environmentally friendly toilets

RA2 for RZD

Operated in:

- Russia
- Ukraine
- Lithuania

RA2 for Lithuania

Metrowagonmash has been delivering new DMUs to Serbia since 2011

- Designated for 1435 mm gauge railway
- Number of seats: 110 (+10 folding)
- Maximum design speed: 120 kph
- Modular structure

DMUs

DPM DMU

- A new DMU platform for urban, commuter and regional traffic on 1520 mm gauge
- Potential modifications for speed 120 and 160 kph
- Stand-alone power module first used in Russia
- HVAC system
- Adapted for disabled passengers

Power module

DEL02

- Design speed: 130 kph
- Wheel arrangement:
  of motor car: Bo-B
  of trailer car: B-B
- Output: 2x550 kW
- Trainset: 2 motor (head) - trailing
- Passenger capacity:
  seating - 336
  nominal – 672

Operated:

In Ukraine:

- On Odessa Railway
- On Lvov Railway
- On Donetsk Railway

PRODUCTS
EMUs

ED4M

- Speed: 120 kph
- HVAC system
- Energy conservation technologies incorporated

Operated on:

- Moscow Railway
- Octyabrskaya Railway
- Sverdlovsk Railway
- West Siberian Railway
- South Eastern Railway
- North Caucasus Railway
- Kuybyshev Railway
- South Ural Railway
- Northern Railway

500 series ED4M

- Speed: 120 kph
- Power conservation equipment
- Advanced exterior (smooth side walls of carbody shells, new body end of a head car) and car interior
- Air conditioning system in car saloons
- Adapted for disabled passengers

ED9E

- Speed: 120 kph
- Power conservation equipment unit
- Air conditioning system
- Adapted for disabled passengers

Operated:

In Russia

- On Gorkovskaya Railway
- On North Caucuses Railway

In Kazakhstan

- On Kazakhstan Railway

City-Airport EMU

ED4MKM-AERO

- Speed: 120 kph
- Air conditioning system in car saloons
- Adapted for disabled passengers
- Audio, video broadcasting system
- EMU incorporates a luggage car

Provides transit between Sheremetyevo, Vnukovo and Domodedovo airports and Moscow railway stations

PRODUCTS
Metro Cars

METRO CARS

Transmashholding has produced over 7000 metro cars that carry more than 16 million passengers in 19 metros of 11 countries worldwide

Carry over 15 million passengers daily.

METRO CARS

81-714.5M and 81-717.5M

Speed: 90 kph
Number of seats: 40/44

Speed: 90 kph
Number of seats: 40/44
HVAC system in saloon and cabin, air disinfection system

81-760 and 81-761

81-740.4 and 81-741.4

Speed: 90 kph
Number of seats: 46/42
Passenger saloons are equipped with air conditioning system

Speed: 90 kph
Number of seats: 38/42

81-780 and 81-781

CUSTOM-TAILORED PROJECTS

‘Aquarelle’ train (or Watercolor Train in English) was custom-built in 2008 for Moscow Metro. Carbody was specially upgraded to arrange pieces of painting in saloon, alongside this, interior layout design was modified.

‘Vintage’ train was custom-built in 2010 for Moscow Metro commemorating 75-th metro anniversary. Train exterior and interior match in all appearance of A type cars produced in 1935.

PRODUCTS
Passenger Coaches

PASSENGER COACHES

Double-deck coaches with speed up to 160 kph

Coaches with two-bed and four-bed compartments:

- Environmentally friendly toilets, shower cubicles
- Air conditioning system
- Access control and safeguard alarm system

Staff car of a trainset :

- Special-purpose compartment with a toilet for disabled passengers, elevating device, which facilitates passengers getting into and off a car
- Environmentally friendly toilets
- Air conditioning system
- Access control and safeguard alarm system

Restaurant car of a trainset:

Kitchen and bar are arranged on the first deck, saloon – on the second deck.

Number of seats:
-in saloon: 48
-in bar: 6

61-4462,4463, 4464 model trainsets

- Design speed: up to 160 kph
- Permanently arranged formation contributes to better comfort level and easier trainset maintenance
- Trainset can incorporate four-bed compartment, open, regional, staff cars and a restaurant car
- Design features:
  - Closed gangways
  - Slack-free couplers
  - Centralized power supply system.

61-4476 model RIC coaches

- Design speed: up to 160 and 200 kph
- Joint Project of TVZ, JSC and Siemens
- Designated for international railway traffic in Russia and Europe
- Two sets of bogies: for 1435 mm gauge and 1520 mm gauge
- Cars are equipped with HVAC, water supply systems, environmentally friendly toilet, shower, wall-sockets for cell phones and laptops, load speaker with volume control and reading lamps
- Bogies are designed for speed 160 kph with optional acceleration up to 200 kph
- Number of berths: 32

61-4440 model compartment car

- Design speed: up to 160 kph
- Designated to carry passenger and car service staff on 1520 mm gauge railways
- Provided with air conditioning system
- Number of berths for passengers: 36 or 18 (at customer's option)

61-4447 model open coach

- Design speed: up to 160 kph
- Designated to carry passenger and coach service staff on 1520 mm gauge railways
- Provided with air conditioning system
- Number of berths for passengers: 54

61-4458 model cars with seats

- Design speed: up to 160 kph
- Car with seats is designated to carry passenger on regional routes
- Provided with air conditioning system
- Number of seats: 40 or 60 (at customer's option)

61-4460 model restaurant car

- Design speed: up to 160 kph
- Designed to provide hot meals catering
- Car can be run with any type of passenger trains
- Provided with air conditioning system
- Number of seats: 32 — in saloon, 3 — in bar

61-4445 model staff car

- Design speed: up to 160 kph
- A car incorporates a compartment for a train master with radio equipment, radio system, video, audio broadcasting system, satellite TV receiver
- Cars are equipped for disabled passengers using wheelchair and travelling with accompanying persons
- Provided with air conditioning system
- Number of berths: 26

61-4483,4484 model escort railcars

- Design speed: up to 160 kph
- Designated to run with freight trains and trains for infrastructure repair service.
- Used for activities and accommodation of teams providing infrastructure maintenance and repair services and escorting freight trains.
- Car is equipped with a repair room, a store room, a dryer for clothes, a shower room with water heating system, a toilet, a sleeping compartment and a kitchen with state-of-the-art household appliances
- Suitable for operation in various environmental conditions.

TAILORED SOLUTIONS

- Display board in a compartment shows visual data and voices messages
- All signs and icons are duplicated in Braille
- 61-4445, 61-4463 и 61-4472 model staff cars are adapted for disabled passengers using wheelchair and travelling with accompanying persons
- A compartment for disabled passengers is equipped with a special berth, seat, wheelchair storing space and handrails.
- A toilet is built specially for wheel chair passenger
- Convenient and reliable elevating system, which facilitates wheelchair passengers getting into and off a car.

LIMITED BATCH PASSENGER COACHES

- Design speed: up to 160 and 200 kph
- Stainless steel carbody shell
- Lifecycle totaling 40 years
- Audio and video broadcasting system for passengers
- As to a coach type, number of seats may vary from 38 up to 48.

PASSENGER COACHES
VIP COACHES

Holding has vast experience in creating luxurious saloon-coaches. The plant used to produce coaches for Russian Tsars and Soviet Secretaries General. Nowadays TVZ creates customized rolling stock products for Russian top leadership and top managers of major private companies.

FREIGHT AND SPECIAL-PURPOSE CARS

- Wagon for nuclear wastes transportation
- Wagon for containers transportation within nuclear power plant
- Wagon for on- nuclear power plant transportation

- Car for transit of special categories of passengers
- Bathing and disinfection car
- Car for money and valuables transportation
- Laundry car

PRODUCTS
FREIGHT WAGONS

FREIGHT WAGONS

19-3018 model hopper wagon for cement transportation

- Freight capacity: 73 t
- Empty weight: 23 t
- Wheel set load applied on rails: 23,5 tf
- Carbody volume: 62 m3

19-3054, 19-3054-01, 19-3054-04, 19-3054-05 model hopper wagon

- Freight capacity: 75 t
- Empty weight: 22,8±3%
- Wheel set load applied on rails: 23,5 tf.
- Carbody volume: 112 m3

Major customers in Russia are Rusagrotrans, First Freight Company, Uralkaliy, Eurochem, Baltrans, Silvinit, Uralchemtrans, Kuzbassrazrezugol, FosArgo.

GONDOLA WAGONS

- Strengthened roof frame structure
- Requires no protection against precipitation
- Freight capacity: 69,5 t
- Number of unloading hatches: 14
- Total of over 1200 wagons has been built.

PRODUCTS
DIESEL ENGINES

DIESEL ENGINES

D49 (ChN26/26)

- Output range from 588 up to 4412 kW
- High level of standardization of units and details
- Modular design
- Fuel efficiency
- Respect to ecological Russian standards and EC guidelines

Application:

- New diesel locomotives
- Marine units for Navy ships
- Upgrading of diesel locomotives
- Power plants
- Genset for nuclear power plants

D42 (ChN30/38)

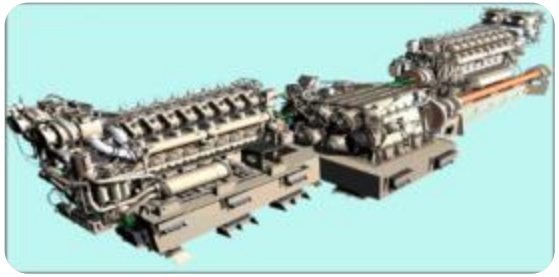
- Output: 500 kW in one cylinder
- Modular structure
- Operated without any restrains on environmental conditions
- Reliability, fuel efficiency and expanded life time
- Improved environmental performance
- Respect to standards of inland and maritime Registers of Shipping
- Suitable for operation on heavy oil (diesel) fuel
- Operative at exhaust back pressure up to 5 m

Application:
Marine units

SHIP POWER PLANTS

Corvette ‘Guarding’

Ship power plant has 2 diesel-diesel units (DDA) with overall output of 24000 h.p.



DDA12000

Submarine ‘Saint-Petersburg’

Submarine power plant has 2 gensets 28DG with overall output of 3400 h.p.

28DG diesel generator

MULTI-FUEL ENGINES

8GDG diesel gas generator

- Designed for power plants of various types
- Operated on diesel oil, crude oil, bio-fuel, natural and associated gas
- Long service life and high forcing rate
- Efficient fuel and oil consumption
- Smokiness, emissions and noise levels are compliant with applicable Russian and EU standards.

EGN1000 power plant

GAS RECIPROCATING UNIT

8GMG gas engine

Co-generation plant

- Designed to generate power in base load, backup and emergency power plants
- Output range from 860 kW to 2000 kW
- Natural and associated gases are used as fuel
- Emission parameters are in line with Russian and EU Norms.

NEW GENERATION ENGINE D500

- Designed for new generation locomotives, ships and nuclear power plants
- Output range from 2000 kW (2720 h.p.) to 7360kW (10000 h.p.)
- Modular frame-free design
- Creating a product line with new diesel engine sizes is based on the strategy of Russian industry development.

GENSETS FOR NUCLEAR POWER PLANTS

Genset for nuclear plant

16ChN26/26 diesel engine

- Kolomna Plant has licenses to engineer and produce equipment for nuclear power plants
- Today, the Site is the only Russian manufacturer of backup diesel gensets with output over 1 MW for nuclear power plants
- First four 6200 kW gensets with safety level II were built for Busher-1 nuclear power plant, Iran
- Factory-assembled gensets with 3200 kW output for emergency power supply and 4000 kW output for power generating unit No 4 of Beloyarsk nuclear power pant were delivered in 2012.

GENSETS

1-PDG4D

Output: 993 kW
Designed for shunting and industrial diesel locomotives, as well as power units of other application (power plants, marine ships, etc.)

1-PDG4A

Output: 882kW
Designed for shunting and industrial diesel locomotives, as well as power units of other application (power plants, marine crafts, etc.)

5DG50M

Output: 690 kW
Used as primary and auxiliary engines in marine and river crafts

5DG50M

Output: 600 kW
Used as primary and auxiliary engines in marine and river crafts

TURBOCHARGERS

TK 23N -06

Designed for 6ChN marine diesel engines 25/34

Turbine entry temperature max. 600°C

TK 34N -15F

Designed for 10D100 gensets applied on 2TE10M mainline diesel locomotive

Turbine entry temperature max. 650°C

4TK.03/04

Designed for the engine of 2M62 mainline freight locomotive

Turbine entry temperature max. 550°C

TK 30S- 05

Designed for 4-26DG and 14-26DG gensets (mobile power stations)

Turbine entry temperature max. 650°C

TK32 – 11

Designed for 18-9DG genset applied on 2TE116U mainline freight diesel locomotive

Turbine entry temperature max. 650°C

TURBOCHARGERS

TK34 N-04 S

Designed for 10D100M1 genset applied on 2TE10M mainline diesel locomotive

Turbine entry temperature max. 650°C

TK18S - 21

Designed for the engine of TGM4 shunting locomotive

Turbine entry temperature max. 650°C

TK 34 N-04 S

Designed for 2-26DG, 11-26DG, 12-26DG gensets applied on TEM7A shunting locomotive

Turbine entry temperature max. 650°C

TK30N-26

Designed for 1-PDG4A engine applied on TEM 18 D (DM) shunting locomotive

Turbine entry temperature max. 600°C

TURBOCHARGERS

TK 23S- 01

Designed for 7- 6D49 engine applied on TGM6 shunting locomotive

Turbine entry temperature max. 650°C

TK32-07

Designed for 1A-9DG version 3 genset applied on 2TE10MK mainline freight locomotive

Turbine entry temperature max. 650°C

TK32-09

Designed for 1A-9DG version 2 gensets applied on TE116 mainline freight locomotive

Turbine entry temperature max. 650°C

TK32 – 06

Designed for 5-26DG gensets applied on 2M62 mainline freight locomotive

Turbine entry temperature max. 560°C

WATER PUMPS

2D100.11-4M

designed for D100 type engine cooling system.

- **Pump type: centrifugal, reversing**
- **Output, m3/s (m3/h) min. 0,028 (100)**
- **Weight: max. 98 kg**
- **Efficiency min. 45%**

9D100.11-2M

designed for D100 type engine cooling system.

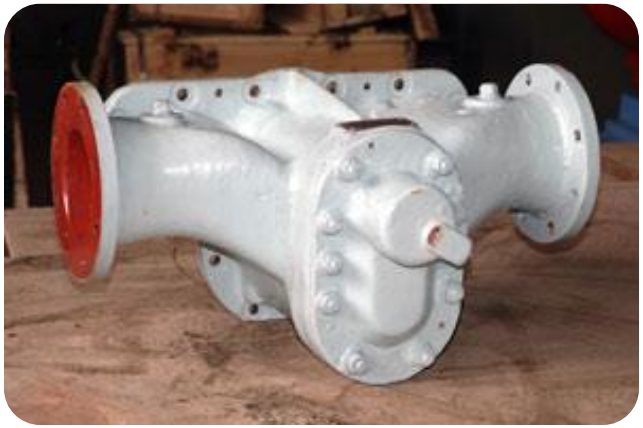
- **Pump type: centrifugal**
- **Output, m3/s (m3/h) min. 0,0416 (150)**
- **Weight: max. 109 kg**
- **Efficiency min. 70%**

D49.123 sb

designed for D49 and 1-PD4D type engine cooling system.

- **Pump type: centrifugal**
- **Output, m3/s (m3/h) min. 0,028 (100)**
- **Weight: max. 98 kg**
- **Efficiency min. 75%**

LUBRICATING OIL PUMP



9D 100.12-1

designed for D100 type engine lubricating system.

- **Pump type: geared**
- **Output, m3/s (m3/h) min. 0,033 (120)**
- **Weight: max. 118 kg**
- **Efficiency min. 50%**

MSh 40

designed for D49 type engine lubricating system.

- **Pump type: geared**
- **Output, m3/s (m3/h) min. 0,0153 (55)**
- **Weight: max. 57 kg**
- **Efficiency min. 60%**

PRODUCTS
Rolling stock components and equipment, car casting

Car castings




Bogie frames, bolsters, side frames, couplers etc.

Windows



Door modules


Auxiliary converters


for freight electric locomotives, EMUs, passenger coaches

Elevating devices for disabled passengers

Air disinfection device

COMPANY SERVICES
Repair and refurbishment of rolling stock

Metro car overhaul

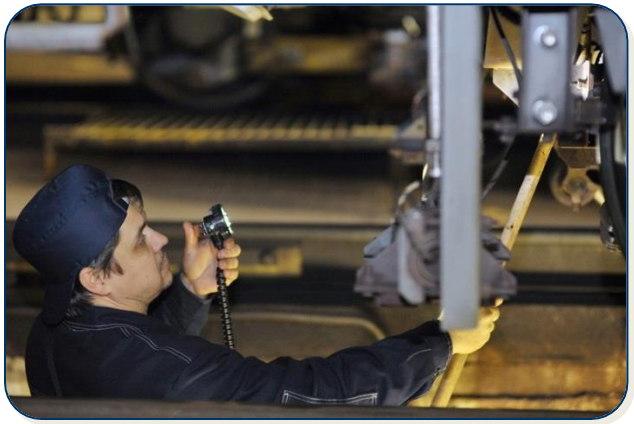
Overhaul and refurbishment of passenger coaches and EMUs

Overhaul and equipment of special –purpose cars

Overhaul of shunting diesel locomotives

Maintenance of all built products

Repairs of passenger coach wheelsets



JSC TRANSMASHHOLDING

26/1 Butyrsky Val, Moscow 127055,
Phone/fax: +7 495 660-89-50,

e-mail: info@tmholding.ru

www.tmholding.ru