



MTZ-Kirovets K744 - 435 hp

For the large acre farmer, a powerful tractor is an essential piece of capital equipment. Choosing the right machine requires careful technical and economic analysis. Will it do the job? How much does it cost? Is it reliable? Is the service and spares support prompt and dependable? Will it last a long time?



Productive

MTZ-Kirovets tractors deliver **real productivity gains**. They cost less to buy and less to run. They have efficient engines and drivetrains, simple and straightforward maintenance requirements and low cost service and replacement parts.

Tough

MTZ-Kirovets tractors are **designed to work** under the world's toughest conditions. They have solid construction, powerful engines and a robust drivetrain. Engineered to handle the big loads, a MTZ-Kirovets is built to last.

Useful

A MTZ-Kirovets is unpretentious, functional and designed to **handle any job**. A floating drawbar and a cat. IV, 3 point hitch (\$25,000 value) with Walterscheid lower links are fitted as standard equipment. Duals, Tracks and a 1000 rpm 1³/₄" (44.45mm) x 20 spline PTO are optional extras. Bosch Rexroth 74 gpm (280 l/min) hydraulics are standard.

MTZ-Kirovets tractor ticks all the boxes

These machines embody all of the proven technical principles; equal-sized wheels, all driven, a massive articulated frame, ballasted for ideal weight distribution, powerful engines, strong transmissions and auto-locking axles. A MTZ-Kirovets tractor is easy to handle, comfortable, inexpensive to maintain and free from the overly complex and service intensive features common to many contemporary designs.

Model

K-744

Mercedes Benz engine OML470

435 hp

Frame

The frame provides the structural platform of the tractor; a mounting for all of its power generating, transmitting and controlling parts.

With ballast and a full fuel load, a MTZ-Kirovets can weigh over 44,000 lbs. (twenty tones). The frame needs to be strong enough to support the mechanical parts and absorb all the working loads, whether imposed by towed or attached implements or by difficult terrain. The frame must be built to endure, without failure or fatigue, a working life that may easily extend to more than forty years.

The MTZ-Kirovets frame is a solidly made all-enclosed box section steel weldment. Frame parts are cut and folded, assembled, carefully welded and precision machined. A massive centre pivot articulates the front and rear parts of the frame through a trunnion yoke with large, fully sealed, bearing surfaces.

This yoke provides for relative movement of the front and rear frame elements with two degrees of freedom; $\pm 32^\circ$ on the vertical axis and $\pm 16^\circ$ on the longitudinal axis. It is this design feature that gives articulated tractors their advantageous characteristics; the ability to maintain all-wheel ground contact on undulating terrain, a compact turn radius and a steering geometry that, unlike fixed-frame front wheel steered machines, ensures that the leading and trailing wheels follow the same path.

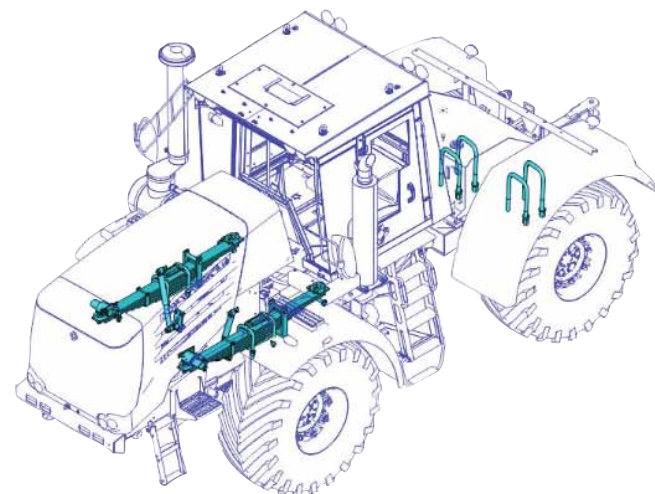
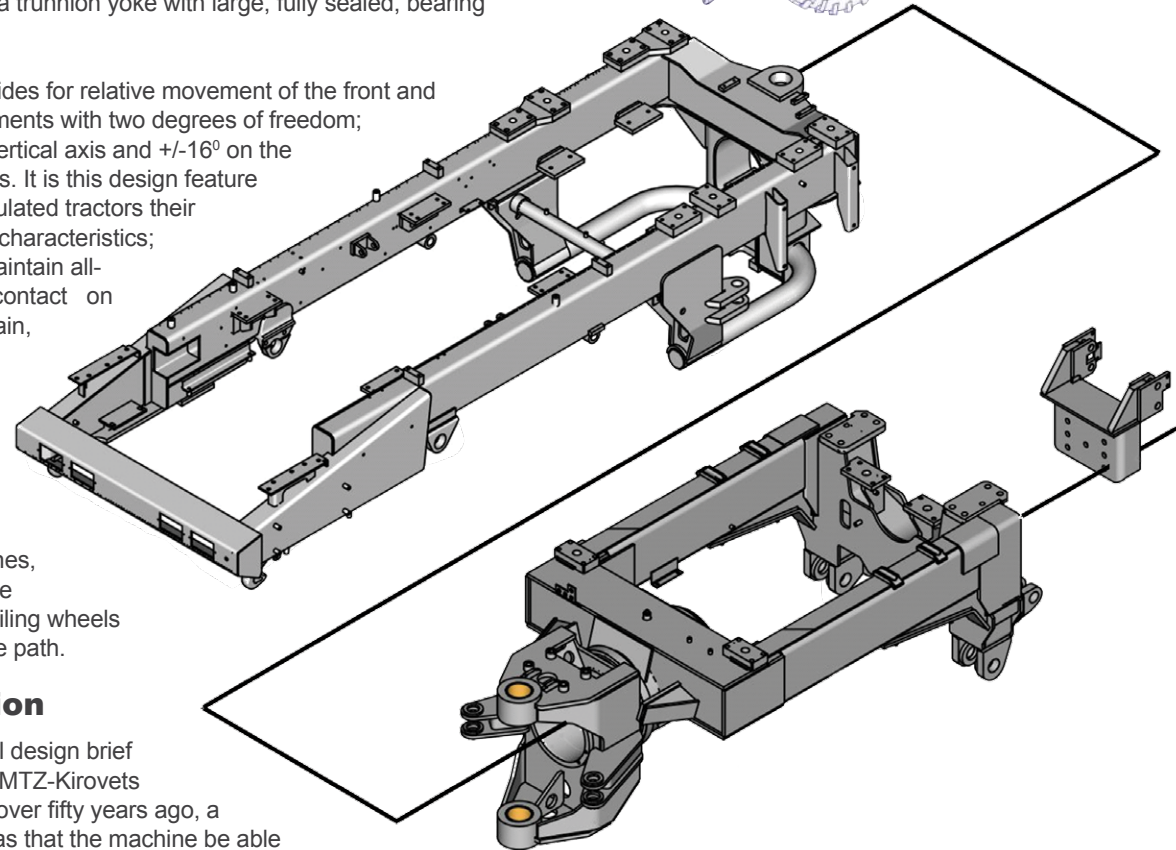
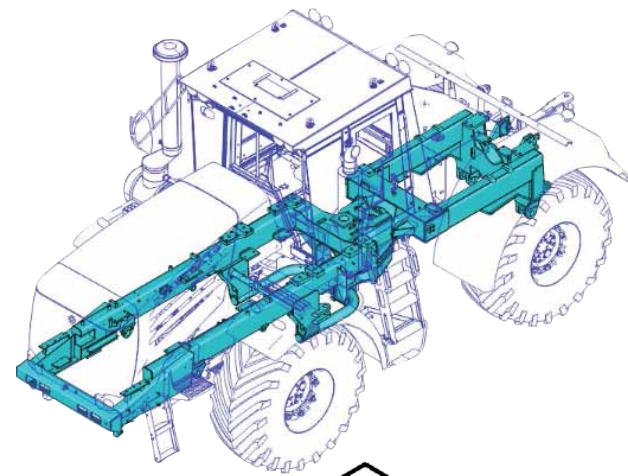
Suspension

When the initial design brief for the first big MTZ-Kirovets was drawn up over fifty years ago, a requirement was that the machine be able to perform a wide range of tasks.

Apart from its prime agricultural function, a MTZ-Kirovets was expected to be capable of performing on and off road transportation tasks and serve as a military tractor if required. To reduce operator fatigue when used on the most arduous terrain, the design team included a truck-type cantilever laminated spring front suspension with hydraulic shock absorbers.

This feature has carried forward in all subsequent design iterations and provides for a more comfortable ride than conventional, unsuspended, designs.

Air Ride cab is included in basic configuration.



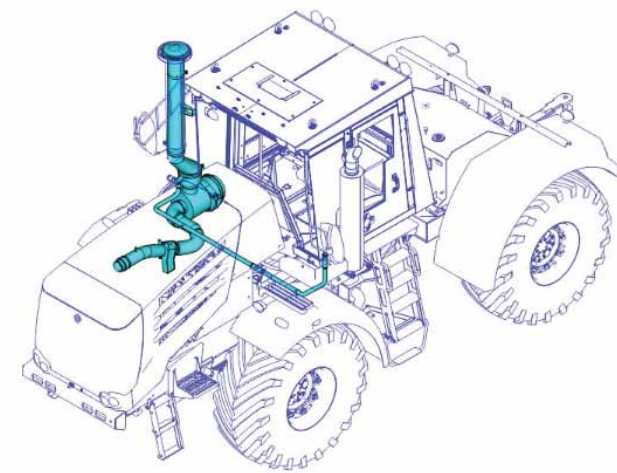
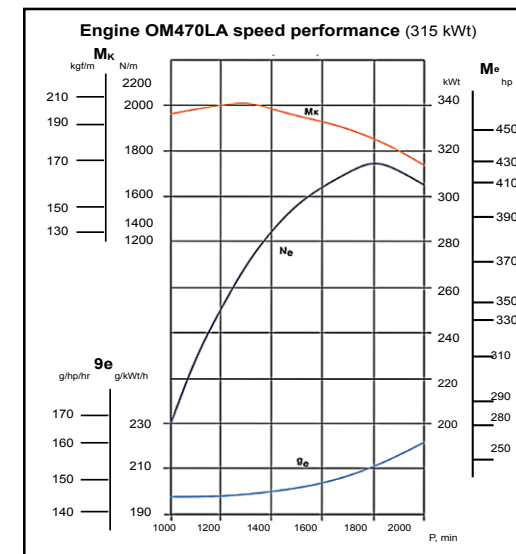
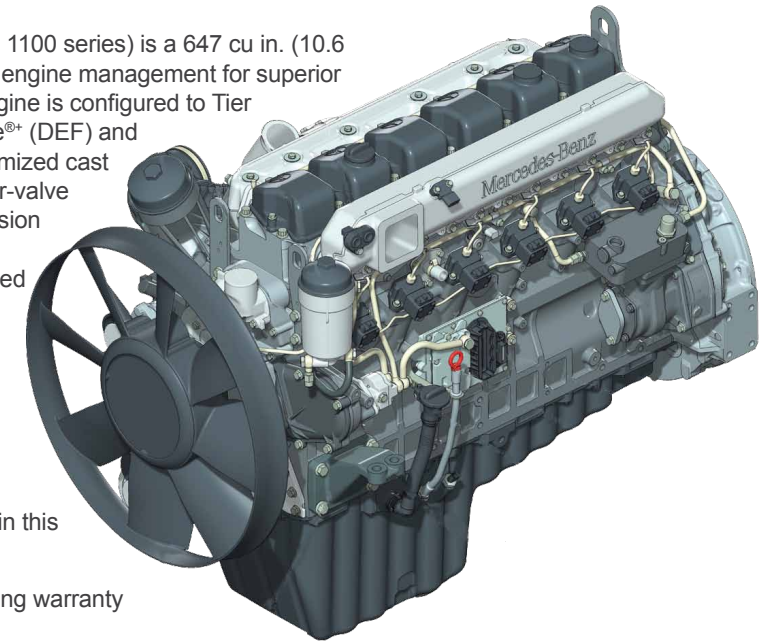
Engine

The German made Mercedes-Benz OM 470 (MTU 1100 series) is a 647 cu in. (10.6 litre) in-line six cylinder turbo-diesel with electronic engine management for superior fuel economy and emissions performance. The engine is configured to Tier 4F standard and very efficient on the use of Adblue[®] (DEF) and does not require DPF. The engine has a noise optimized cast iron block with wet cylinder liners and separate four-valve cylinder heads, oil-cooled aluminium pistons, precision forged connecting rods and an induction-hardened seven-bearing crankshaft. The oil cooler is integrated within the crankcase.

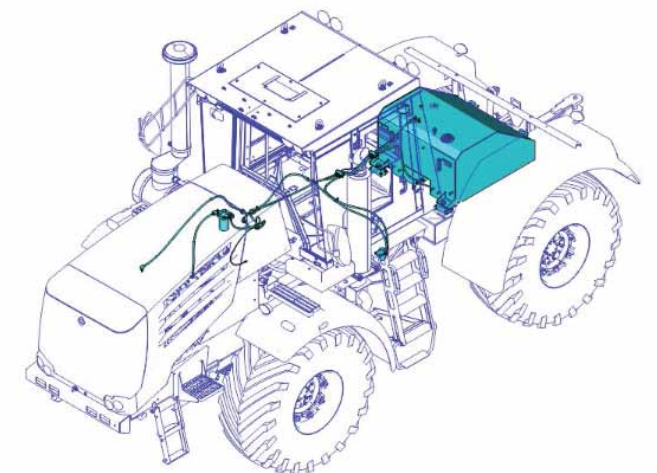
The Mercedes-Benz engine offers exceptional durability and fuel economy (205 g/kWh), proven throughout the world in many agricultural and transportation equipment applications.

Mercedes-Benz engine was tested by Nebraska institute and found to be most fuel efficient engine in this power category ever tested by Nebraska.

Mercedes engines are available with Industry leading warranty up to 10,000 hours/7years.



Engine air supply is cleaned through a two-stage cyclonic filter with elevated intake and an exhaust bypass. Access to the filter cartridge for purging or replacement is at ground level.



A large capacity fuel tank is mounted on the rear frame element. Capacity is 211 gal. (800 litres); enough to sustain the longest working shift.

Transmission

MTZ-Kirovets tractors use a constant mesh semi-powershift transmission with sixteen forward and eight reverse speeds in four ranges. Within each range, speeds can be selected under power, without interruption, by hydraulically actuating the appropriate clutch pack. The clutch packs are multi-disc assemblies with alternating steel and ceramic plates.

Ranges are engaged by axially sliding sleeve gears on the middle and bottom shafts. Gears are selected by an automotive type T-bar lever. Ranges, forward-reverse and 2WD-4WD modes are selected by switches and engaged by pneumatic actuators.

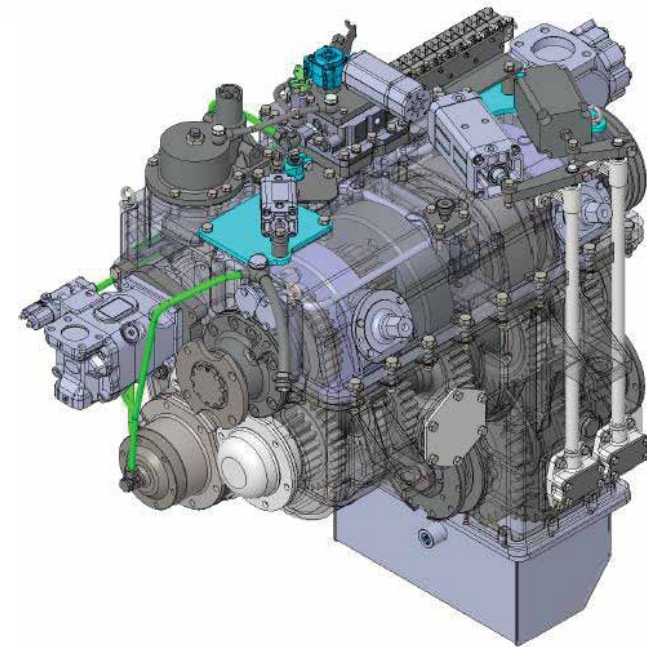
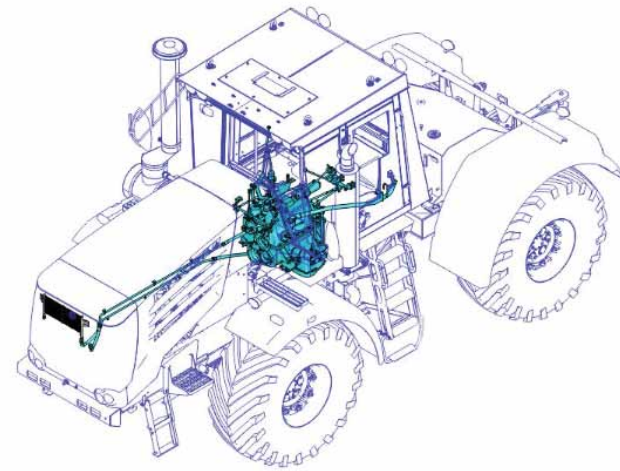
The transmission is pressure lubricated and has a front mounted oil cooler. The design is thoroughly proven, simple, robust and durable. Spur gears are used throughout for power transmission efficiency and the elimination of axial thrust loads within the transmission casing.

Gear wheels are processed from in-house cast and forged blanks on CNC gear-cutting machines. After heat treatment, tooth profiles are finish ground to precise final dimensions and geometry (DIN class 7 & 8). Transmissions are hand assembled by master technicians and thoroughly bench tested prior to installation on the tractor frame.

(take a look at https://youtu.be/5c_uz255TRw)



Gearbox control on fingertip platform



Speed - Standard Tires 710/70R38					
R	G			mph	km/h
1	1			2.6	4.3
1	2			3.3	5.4
1	3			3.9	6.2
1	4			4.6	7.5
2	1			5.4	8.7
2	2			5.7	9.4
2	3			6.5	10.6
2	4			7.1	11.5
3	1			7.8	12.6
3	2			8.6	13.8
3	3			9.5	15.4
3	4			10.2	16.5
4	1			11.8	19.0
4	2			14.1	23.2
4	3			17.2	27.8
4	4			21.3	34.4
mph	0	5	10	15	20
km/h	0	8	16	24	32

Speed - Optional Tires 800/65R32					
R	G			mph	km/h
1	1			2.3	3.7
1	2			2.9	4.7
1	3			3.4	5.4
1	4			4.0	6.5
2	1			4.7	7.6
2	2			5.0	8.2
2	3			5.7	9.2
2	4			6.2	10.0
3	1			6.8	11.0
3	2			7.5	12.0
3	3			8.3	13.4
3	4			8.9	14.4
4	1			10.3	16.6
4	2			12.3	20.2
4	3			15.0	24.2
4	4			18.6	30.0
mph	0	5	10	15	20
km/h	0	8	16	24	32

Axles

Power is transmitted via cardan shafts to the front and rear axles. MTZ-Kirovets axles are of a unique "no-spin" design that lock in the straight ahead position to provide unsurpassed tractive performance.

An important feature is that the rear axle can be disengaged for smoother running in transport mode on hard surfaces. Planetary gear assemblies are mounted, together with the truck-type air brakes, on the axle extremities.

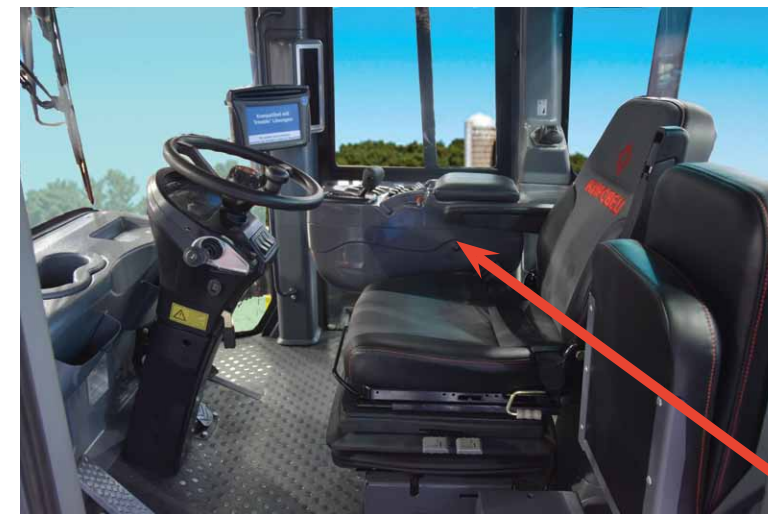
Self-locking differential locks are included in the basic package. The compact axle design allows wheels with wide, deep-section 710/70R38 or 800/65R32 low compaction tires to be fitted.

The tires have an R1W tread pattern to enhance ride comfort. Dual wheels and spacers are available as an option.

The design of the transmission, axles and wheel set, taken together, provide MTZ-Kirovets tractors with exceptional tractive efficiency.



Operator's Station offers modern fingertip control center



Panoramic view cab. Centrally located high quality operator's seat with adjustable suspension. The Operation Station is comfortable, convenient, quiet and safe.

The pneumatic control platform puts all controls at fingertip position. No mechanical connection to gearbox means lower vibration and quieter cab.

Air suspension under the pressurized cab gives you a smooth ride, regardless of terrain. The cab metal is shielded by modern vibration-absorbing rubberized and soundproofing materials. Tilting and adjustable steering column, heater, air conditioner, training seat and radio are standard.

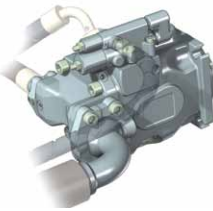
Trimble Auto Guidance is available as an option.



Attachments

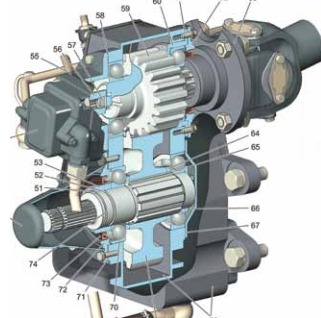
Equipment for mounting all types of implement is standard. Towed implements are attached by a floating drawbar and attached implements by the ISOcat. IV 3-point linkage with Walterscheid lower links. Drawbar is rated for 4,990 Kg (11,000 lbs). In cab Electronic Hitch Control (EHR) is available as an option.

Bosch Rexroth Axial Flow Pump



Hydraulics are load sensing type with five pairs of outputs (1 used for 3pt hitch + 4 available plus returns). The system is supplied by a Bosch-Rexroth axial flow pump with 74 gpm (280 l/min) capacity.

PTO



A 1000 rpm PTO with 44.45 mm (1 3/4") 20 spline output shaft is optional. Alternative output shaft configurations are available on request.

Complete Air System

Standard; Air compressor, Air tanks, hoses.



Tracks

Track kit is available to allow Interchange of wheels with tracks as needed, on the same tractor, in your yard, in about two hours. No need for a second expensive tractor with only tracks. Caterpillar track, designed specifically for use in harsh conditions, thus providing easy access to the terrain for working at any time of the year and saving money and time. Four independent tracks, with each being able to rotate at a different speed. Our tracks are 4 axle design with large rollers which can prevent the overheating of rollers and rubber tracks, improving the life time and reliability of the undercarriage rotating parts.

Dependable use of power is achieved by positive drive design with large sprocket diameter (increased speed) and always in contact rubber drive lugs to sprocket engagement thereby reducing the torque and pressure on each rubber track drive lug increasing the life of the track.



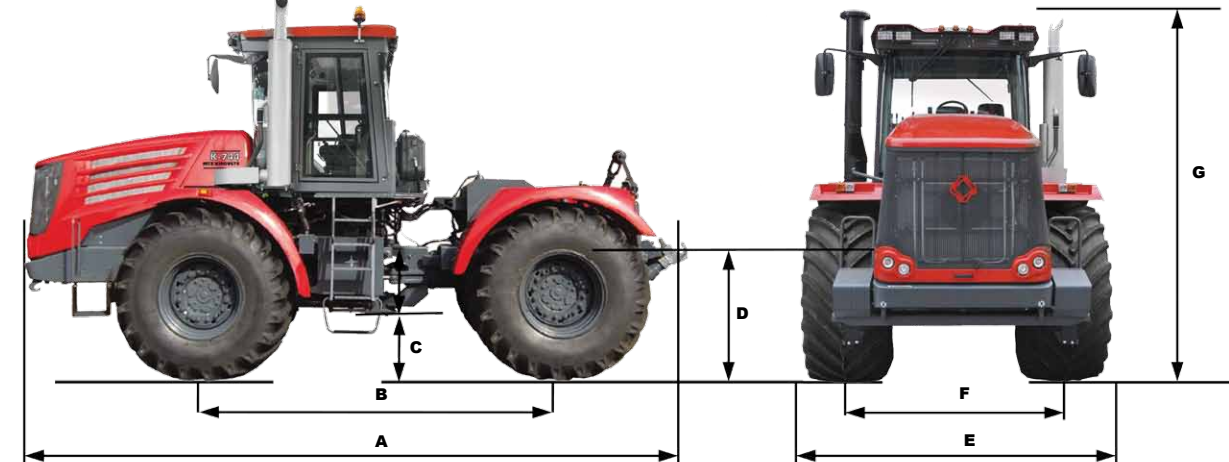
Technical data - Specifications

Engine	
Manufacturer	Mercedes-Benz
Model	OM470 (MTU 1100 series)
Horsepower*	435 hp Engine
	125/252/340 PTO, for PTO shafts
	35/45/55 mm (1 1/4"/1 1/2"/1 3/4")
Displacement	10.6L (647 cu. in.)
Max. Torque, Nm@RPM	2100 @ 1300
Rated Speed RPM	1800
Type	6 cyl. In line, 24 valves, Tier 4
Aspiration	Turbocharged / Air-to-Air aftercooled
Fuel Consumption	151 gr/hp hr (205 gr/kWh hr)
Oil change interval	600 hours
Electrical Equipment	
Alternator	28V 35/80A
Starter rated voltage	24V 7,000 W
Batteries	2 x 12V 190Ah 1100A(CCA)
Transmission	
Type	Semi Powershift
No. of Gears	16F (in 4 Ranges) / 8R (in 2 Ranges)
Speed Range*	Forward: 4.24 to 34.4 km/h (2.63 to 21.4 mph)
	Reverse: 5.27 to 25.7 km/h (3.27 to 15.9 mph)
Tracks: speed is lower by 1.2x	
4WD	
Front Axle	Full-time
Final Drive	Planetary
Rear Axle	Manually engaged
Differential	Self-locking
Suspension in front	Leaf springs with double stroke shock absorbers
Cab	
	Built-in ROPS, thermo/vibro/noise insulated. Radio, Heat and Air Conditioning

*Standard Wheels

Capacities	
Fuel Tank	1 Tank, 800 L (211.3 gal.)
Hydraulic System	175 L (46.2 gal.)
Cooling System	60 L (15.9 Gal.)
PTO* (Optional)	
	1,000 rpm, 20 spine, 45 mm (1 3/4")
Hydraulic System	
Pressure Maximum	Closed Center, Load Sensitive (LS)
	210 bar (3,046 psi)
At the coupler	185 bar (2,683 psi)
Standard Pump	280 L/min (74 gpm)
Standard Pump maximum available flow at single valve	140 L/min (37 gpm)
Remote Valves	4 free + 1 connected to 3pt hitch
Steering pump	80 l/min (21 gpm)
3 pt hitch* Cat IV 3	
Lift capacity @ hitch point	9000 Kg (19,841.6 lbs)
Return line from hydraulic motor, standard, low restriction, straight to hydraulic tank.	
Brakes	
	Air power - dry drum, 2 independent circuits plus spring actuated parking brake
Tires	
Front/Rear Standard	710/70R38
Front/Rear Optional†	800/65R32 (30.5R32)
Weights	
Weight (Singles/Duals‡)	17,000/19,200 kg (37,478/42,240 lbs.)
Weight distribution (Singles)	
Front axle	8,800 kg (19,001 lbs.)
Rear axle	8,200 kg (18,078 lbs.)
Weight distribution (Duals‡)	
Front axle	9,900 kg (21,826 lbs.)
Rear axle	9,300 kg (20,503 lbs.)

Dimensions - m - (ft)



Length A	Wheelbase B	Ground Clearance C	Fordable Depth D	Width E	Wheel Tread F	Height G	Minimum turning radius
7.35 m	3.75 m	0.50 m	1.00 m	2.88 m	2.10 m	3.88 m	7.96 m
24.1 ft	12.3 ft	1.64 ft	3.28 ft	9.4 ft	6.9 ft	12.7 ft	26.1 ft

MTZ-Kirovets - historical background

Petersburg Tractor Works (PTZ, manufacturer of the "MTZ-Kirovets") which was established in 1801, started mass producing licenced Fordson-Putilovets tractors in 1924. Since 1962, the plant has been manufacturing unique high-power articulated tractors under the brand name MTZ-Kirovets with total production exceeding 500,000 units. For many years, MTZ-Kirovets brand has been occupying leading position in the market segments of high-power wheel-tire tractors.

PTZ was among the first in the world to organise mass production of high-power wheeled tractors and with more than 90 years of experience in the tractor manufacturing industry, allows us to compete successfully with global tractor industry leaders. Today our plant moves forward. We are evolving. We have made active and consistent improvements in our company and our product line for several years. We manufacture our transmission in house. As a result, we now have state-of-the-art production lines, an efficient quality control system and a highly professional team.



ORIGINAL SPARE PARTS

Original spare parts are the same as the parts and components supplied to our assembly line. Since December 2013, all spare parts are branded with the Kirovsky Zavod trademark. Depending on the process conditions, the part branding is made by engraving or applying a self-destructing vinyl label with the part number on it. By branding the products, the manufacturer guarantees their quality and compliance with all requirements and standards.

MTZ-Kirovets tractors have been in use on farms in the USA and Canada since the 80's. Factory original parts are available for all new and older models, allowing the farmers to maximize their return on original investment.



MTZ-Kirovets - Features

Comfortable working environment.

Proven design - Most popular high powered tractor in the world: over 500,000 units produced since 1962.

800 liter Fuel tank.

Sun protected tinted glass provides panoramic view from the operator's position.

Includes many extra features as part of the standard package: Partial Power Shift, Differential locks, Drawbar and more.

Mercedes-Benz Tier 4F engine.

Bosch-Rexroth hydraulic system.

Easy to service and maintain with basic tools, available on most farms.

Duals Kit or Track System available.

Spring front axle - Heavy frame with enhanced hinge joint.

Solid mechanical design of the power train.

Optimal weight distribution 52/48), ideal for pulling implements.

60%

Wide wheelbase.

4 WD with automatic "no slip" differential locks.

40%





Model K-744 435 hp



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