

**642 - 644**  
**PLUS**



THE FUTURE CONSTRUCTOR

**MST**

**THE MACHINE FOR THE MOST DEMANDING WORKS** **MST**



## **AN ERGONOMIC, COMFORTABLE CAB DELIVERS MAXIMUM EFFICIENCY**

The MST 6 PLUS Series boasts a newly designed cab to help reduce fatigue and keep operator performance at its most efficient, especially during those long, demanding jobs.

## **HIGH PRODUCTIVITY AND FUEL EFFICIENCY WITH OPTIONAL PISTON TYPE PUMP AND FLOW SHARING VALVES**

The new MST 6 PLUS Series backhoe loaders come with an optional hydraulic piston pump which allows the load-sensitive system to provide the hydraulic power as much as the operator needs, and guarantees precise control and efficiency at every engine speed.

The flow sharing valves which accompany with the piston type pump remove operator limitations and allow multiple movements simultaneously (boom, arm and bucket) for maximum control.

To ensure the highest levels of operator comfort and efficiency, a pilot-controlled front loader joystick option is available with the machines that have piston type pump.

## **A STRONG, DURABLE DESIGN PROVIDES TOP PERFORMANCE EVEN UNDER THE MOST STRENUOUS WORKING CONDITIONS**

The MST 6 PLUS Series heavy-duty front and rear axles provide high load-bearing capacity and promise top performance under the toughest of conditions.

The MST 6 PLUS Series boasts the highest breakout force in its class and its, powerful chassis has been designed and produced with highest technology to be the robust foundation of the machine, helping it to withstand whatever the job throws at it.

## EFFICIENT AND ECONOMICAL



### ENGINE

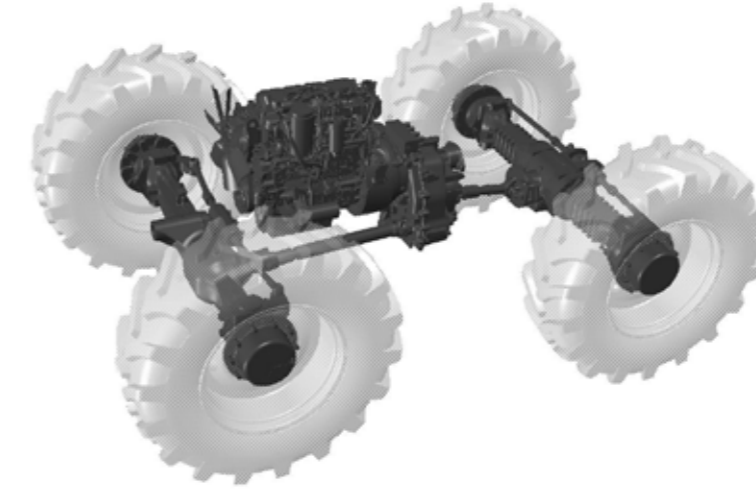
The 100 HP PERKINS diesel engine has been specifically designed for backhoe loader applications and has a volume of 4.4 liters. Its turbocharger and aftercooler mean that high torque can be achieved even at low rpm, allowing the engine to run with increased power and efficiency.

This highly efficient, economical engine is also environmentally friendly as it meets all the Vehicle Emission Standards. The result? Maximum efficiency without damaging the environment

### TRANSMISSION

The **Auto PowerShift** transmission is one of the main components which provide the MST 6 PLUS Series with its incredible power. The heavy-duty gearbox includes 4 forward and 4 reverse gears, and has Autoshift capability. The transmission and engine work together in perfect harmony, which means fuel consumption is kept to a minimum.

The gearbox performs seamless automatic gear changes and offers a 4-wheel drive feature while on the job. This feature is automatically disabled in 3rd and 4th gear to maximize fuel economy.



### AXLES

The heavy-duty axles used in the MST 6 PLUS Series provide high load-carrying capability and are integral to the machine's robust, sturdy construction.

The **LSD (limited slip differential)** on the rear axle is able to deliver different levels of torque to the left and right wheels, which reduces the risk of skidding and provides maximum traction, even on challenging worksites and slippery surfaces with this unique function not only tires' lifetime are being extended but also fuel efficiency and work cycle times are being improved.

### HYDRAULIC SYSTEM

A powerful and efficient hydraulic system with high flow capacity achieves top performance, especially when under heavy loads.

New MST 6 PLUS Series backhoe loaders with the optional hydraulic piston pump feature use a load-sensitive system to provide the operator with all the hydraulic power required, guaranteeing precise control and efficiency at every engine speed.

In machines with closed centered and variable displacement pumped hydraulic systems, when hydraulic power is not required it's simply not produced, reducing unnecessary power loss. This means more power can be sent to the drivetrain, resulting in better performance when loading and driving.

This highly efficient closed-center piston pump hydraulic system means the pump always provides exactly the right amount of hydraulic power required, cutting down on unnecessary fuel consumption.

With the flow sharing valves which accompany with the piston pump, operator limitations are eliminated and multiple parts (boom, arm and bucket) can be moved simultaneously for maximum control, not limited by the operators' capabilities.

Anti-cavitation valves integrated into the system prevent inertia load damage to the hydraulic system, and allow the boom and arm to move faster.



## MAXIMUM COMFORT AND EFFICIENCY



The new MST 6 PLUS Series has top performance at the core of its design. The front loader boasts the highest breakout force in its class. Furthermore, the pin height and truck approach distance values are able to meet the needs of the operator in the best way possible.

The positioning of the ergonomic joystick-type loader control lever ensures maximum comfort for the machine operator. Piston pump models come with a pilot-controlled front loader joystick option, allowing for precise control which won't put strain on the operator.

The **RTD (Return To Dig)** switch on the front loader lever allows for automatic loading. The front bucket will operate automatically through a defined range of movement, so the operator can carry out repetitive work with ease.

The front loader lever also features controllers which allow the opening-claw front loader bucket to be controlled proportionally. This means that operators can work with maximum efficiency when using the front loader.

## POWERFUL FRONT LOADER

The optional **Quick Hitch** on the front hydraulic arm lets users mount a range of attachments quickly and easily, minimizing drops in productivity.



The MST 6 PLUS Series powerful, heavy-duty front loader can take on the most demanding tasks. The opening-claw front loader bucket is manufactured from abrasion-resistant **HARDOX** steel, and has a volume of **1.2 m<sup>3</sup>**. This provides a loading capability which is about 10% greater than that the competitors.



## POWERFUL AND ROBUST



This newly designed backhoe series brings together increased excavation performance and delicate precision.

A sturdy steel construction lets the MST 6 PLUS Series tackle even the toughest jobs with ease.

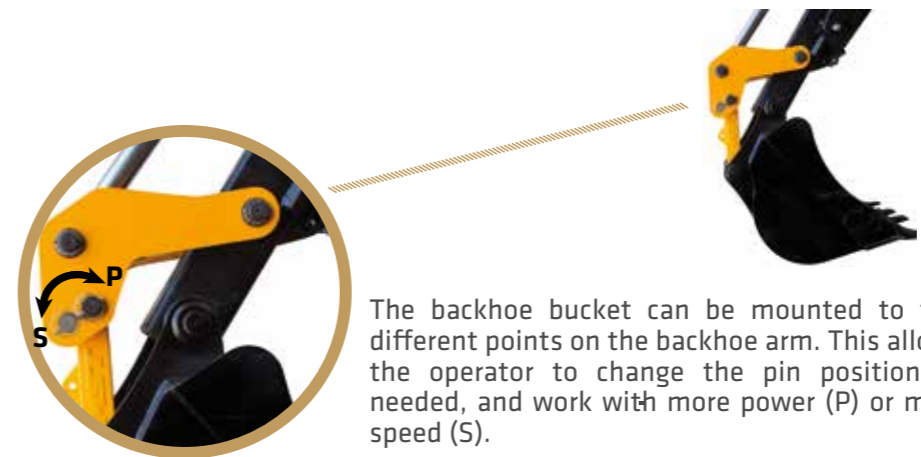
The extendable boom optional reaches farther and deeper than ever before.

**With the optional** piston pump, multiple simultaneous movements (boom, arm, bucket, telescopic) are no longer restricted to the capabilities of the operator, and can be executed using less fuel.

**Hydraulic boom lock feature** comes as standard on the new MST 6 PLUS Series machines. This lock is controlled via a button within the cab.

Backhoe joysticks allow the operator to control the machine with total precision, but without using excess power. These joysticks have been ergonomically positioned within the cab for ease of use and are adjustable.

**The optional ISO Pattern Shifter** (control diverter) prioritizes the preferences of the operator and allows the backhoe controllers to switch between the use of SAE or ISO standards at the touch of a button within the cab. This feature means that operators can easily switch between standard and inverted joystick control.



The backhoe bucket can be mounted to two different points on the backhoe arm. This allows the operator to change the pin position as needed, and work with more power (P) or more speed (S).



## SPACIOUS INTERIOR ENHANCED ERGONOMICS



## COMFORTABLE and USER-FRIENDLY

The new cab has been redesigned from the ground up to provide the machine operator with the best possible working environment and to allow for maximum efficiency. This class-leading cab boasts a panoramic field of vision, enhanced ergonomics and a spacious interior.

The angle of the newly designed, pilot-controlled backhoe joysticks can be adjusted depending on the type of excavator being used and on the preferences of the operator. This ensures operator comfort and helps maintain precise control, even during the longest and most testing of jobs.



The position of the joystick console can be set using the adjustment mechanism on the console itself.





Pilot-controlled front loader joystick **(optional)**



Ergonomic joystick-type front loader lever



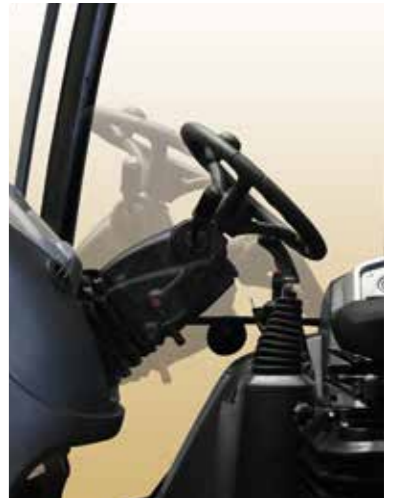
Radio-CD-MP3 music system  
ISO Pattern Shifter (control diverter) **(optional)**  
Hydraulic boom lock



Digital front cluster and ergonomic steering wheel



Steering column's height, depth and angle can be adjusted



Improved air conditioning and ventilation system **(optional)**  
Cool-box compartment for drinks **(optional)**



Operator seat with anti-fatigue with air suspension for heavy-duty use over extended periods.





Specially designed reinforced boom provides top performance under demanding conditions.



Hydraulic boom lock, controlled from within the cabin.



Ergonomic operator cab with ROPS and FOPS certification, in compliance with international standards.



Clean air intake vent and pollen filter.



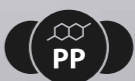
Additional impact-resistant hydraulic cylinder hidden behind the arm.



Strong and durable front loader bucket with a capacity of 1.2 m<sup>3</sup>.



Far-reaching telescopic arm (optional)



Non-metallic polypropylene (PP) fuel tank, offered as standard, prevents tank erosion and fuel system contamination.



Hard-wearing trencher buckets with varying capacities, suitable for excavating, loading and lifting jobs.



Long-life LED rear stop-lights with high luminosity.



New large-surface stabilizer legs.



Limited slip differential (LSD) on rear axle ensures maximum traction.



**WITH YOU ALL THE WAY**

## **AN EXTENSIVE SERVICE and REPLACEMENT PART NETWORK**

With authorized dealers in all over the world, we serve our customers quickly and effectively.

Replacement parts for MST backhoe loaders are readily available, meaning yours will be with you as soon as possible, so you can get back to work in no time at all.

## **HASSLE-FREE MAINTENANCE**

The easy-to-open battery box is positioned under the cab steps for ease of access, making any necessary maintenance or replacements quick and efficient.

All lubrication points on the boom and arm have been positioned to allow easy access. This means the operator spends less time when carrying out periodic lubrication.

The fuse box is positioned inside the cab for easy access, while also being protected against dirt and moisture. Fuses are located behind a quick-open maintenance hatch.

The hosing set on the new MST 6 PLUS Series now comes in multiple sections, allowing for faster maintenance and servicing, while reducing the cost of replacement parts.



**YOU'RE OUR TOP PRIORITY**



## **SAFETY FIRST**

The operator cab is ROPS and FOPS certified.

The rear boom can be kept stable with the hydraulic boom lock.

The rear stabilization legs feature a large surface area and guarantee stability, even on uneven surfaces.

High-powered working lights ensure safe working conditions at night.

Safe braking is maintained during any potential engine issues, even if the engine fails completely.

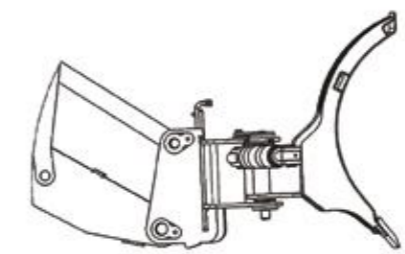
Seatbelts are integrated with the air-suspension operator seat for safety on the job or on the road.



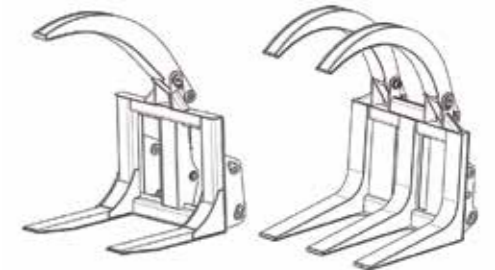
# ATTACHMENTS



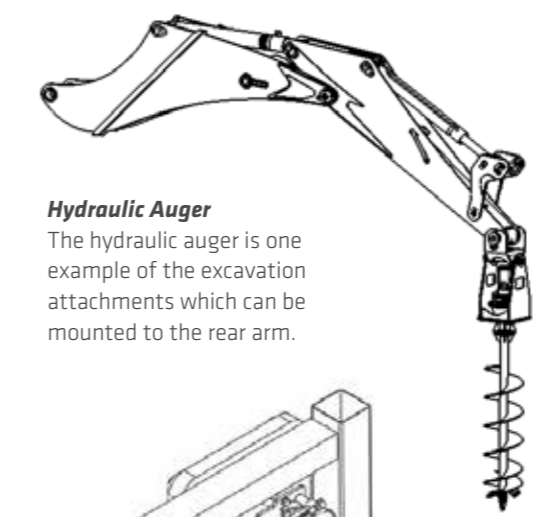
# OPTIONAL ATTACHMENTS



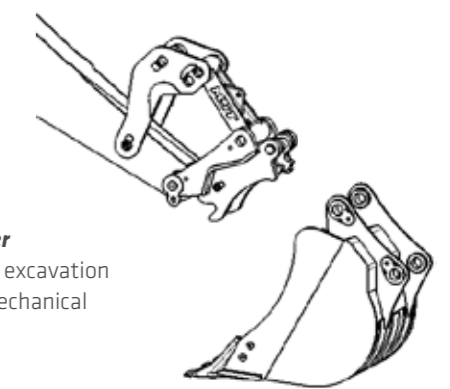
**Grading Blade**  
Rotating grading blade which can be mounted to the arm quickly and easily.



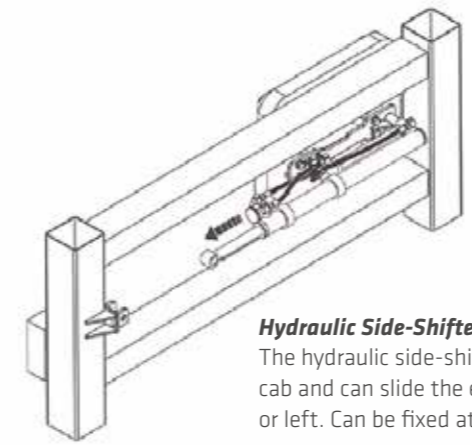
**Single and Double Log Grapplers**  
Hydraulic single and double log grapplers allow logs of any size to be lifted and stacked.



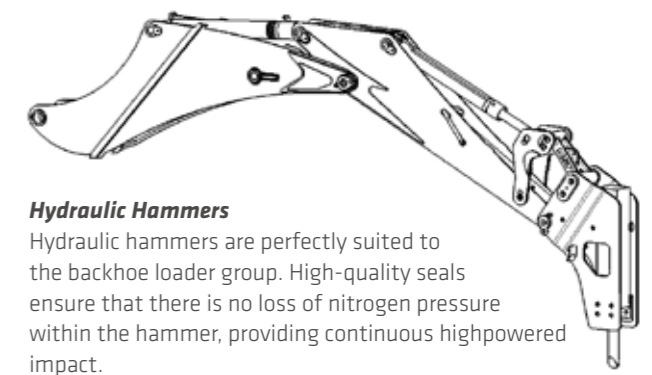
**Hydraulic Auger**  
The hydraulic auger is one example of the excavation attachments which can be mounted to the rear arm.



**Excavator Quick Coupler**  
Allows for fast and easy excavation attachment changes. Mechanical options available.



**Hydraulic Side-Shifter**  
The hydraulic side-shifter is controlled from the cab and can slide the excavation set to the right or left. Can be fixed at the desired point.



**Hydraulic Hammers**  
Hydraulic hammers are perfectly suited to the backhoe loader group. High-quality seals ensure that there is no loss of nitrogen pressure within the hammer, providing continuous highpowered impact.

# 642 PLUS

Emissions class	Stage III-A (Tier 3)	Stage III-B (Tier 4i)
<b>Model</b>	1104D - 44TA Diesel Engine	1204E - 44TA Diesel Engine
<b>Number of Cylinders</b>	4 inline	4 inline
<b>Caliber x Stroke</b>	105 x 127 mm	105 x 127 mm
<b>Displacement</b>	4.400 cc	4.400 cc
<b>Max. Power</b>	74.5 kW, 100 hp (@2200 rpm)	74.5 kW, 100 hp (@2200 rpm)
<b>Max. Torque</b>	410 Nm (@1400 rpm)	450 Nm (@1400 rpm)

- A reliable, fuel-efficient, low-maintenance diesel engine which uses the latest technology. Features high power and torque output, water cooling, a turbocharger and intercooling
- Complies with EU Stage III-A/III-B and US EPA Tier 3/4i emission regulations

**Highly efficient tandem gear pump open-center hydraulic system (standard)**  
**Closed-center hydraulic system with optional variable flow piston pump, and flow sharing valves**

	Gear pump	Piston pump
<b>Main pump</b>	2200 rpm	2200 rpm
<b>Flow</b>	90 lt/dk	163 lt/min
<b>Pressure</b>	240 bar	240 bar
<b>Auxiliary pump</b>	2200 rpm	
<b>Flow</b>	65 lt/min	
<b>Pressure</b>	207 bar	

- Anti-shock and anti-cavitation valves
- On models featuring a gear pump, an electronically controlled "Unloader Valve" is provided, which disables the auxiliary pump while on the road or as the operator sees fit, preventing unnecessary power expenditure
- Pilot-controlled front hydraulic joystick (optional) allows the operator to use the machine using less power
- Ergonomically positioned, pilot-controlled joystick-type Beko controls designed to control the backhoe group with minimal operator effort
- Safety system to disable the hydraulic joysticks while driving
- 10 micron oil filter

	Stage III-A (Tier 3)	Stage III-B (Tier 4i)
<b>Voltage</b>	12 V	12 V
<b>Battery</b>	135 amps hour heavy duty	165 amps hour heavy duty
<b>Alternator</b>	85 A	120 A

<b>Service Brake:</b> Oil bath, hydraulically operated, self-adjusting disc brakes located within the rear axle, with separate brake pedals for the left and right wheels	<b>BRAKES</b>
<b>Parking Brake:</b> Hand lever-controlled mechanical brake, effective on the rear axle differential	

Hydraulic steering system	<b>STEERING</b>
Steering column's height, depth and angle can be adjusted	
Soft-Touch steering wheel	

Heavy-duty Auto PowerShift transmission	<b>TRANSMISSION</b>
4 forward and 4 reverse gears	
2 or 4-wheel drive switch	
2.64 / 1 stall ratio converter	
Safety system to prevent engine start while in gear for safe operation	
Transmission lubricant cooling	

<b>Engine oil</b>	8,5 lt	<b>FILLING CAPACITY</b>
<b>Engine cooling system</b>	18 lt	
<b>Fuel tank</b>	140 lt	
<b>Hydraulic lubrication tank</b>	105 lt	
<b>Transmission lubrication</b>	20,5 lt	
<b>Front axle differential</b>	8,5 lt	
<b>Front axle heads</b>	2 x 0,8 lt	
<b>Rear axle differential</b>	13 lt	
<b>Rear axle heads</b>	2 x 1,5 lt	

<b>Opening bucket capacity</b>	1,2 m <sup>3</sup>	<b>LOADER PERFORMANCE</b>
<b>Bucket breakout force</b>	7734 kgf	
<b>Arm breakout force</b>	5905 kgf	
<b>Max. height lifting capacity</b>	3500 kgf	

	TB (Extended)	TB (Retacted)
<b>Rear bucket capacity</b>	0,17m <sup>3</sup>	0,17m <sup>3</sup>
<b>Bucket breakout force</b>	6424 kgf	6424 kgf
<b>Arm breakout force</b>	2506 kgf	3461 kgf
<b>Max. lifting capacity (telescopic boom)</b>	750 kg	1500 kg

At 2200 rpm	
<b>1st gear</b>	6,14 km/ hour
<b>2nd gear</b>	10,11 km/ hour
<b>3rd gear</b>	22,18 km/ hour
<b>4th gear</b>	41,93 km/ hour

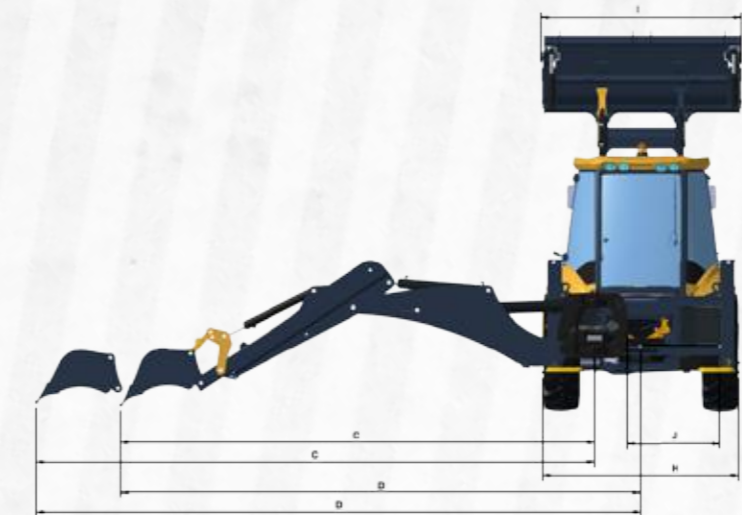
Heavy-duty axles	<b>AXLES</b>
16o front axle rocking	
Outboard planetary reduction	
LSD (limited slip differential) on the rear axle	

<b>Turning radius (while braking)</b>	9,8 m	<b>TURNING RADIUS</b>
<b>Turning radius (without braking)</b>	11,1 m	
<b>Turning radius of outermost point (without braking)</b>	12,2 m	
<b>Turning radius of outermost point (with-out braking)</b>	13,1 m	

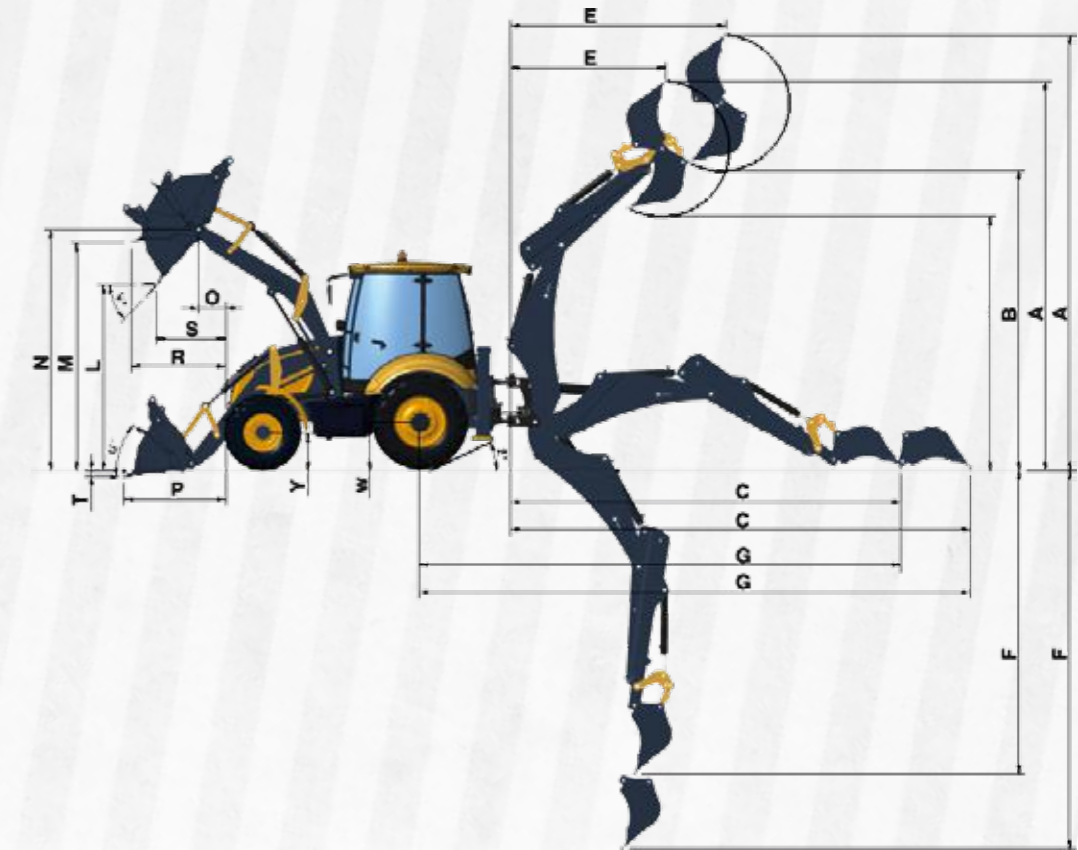
<b>Font tires</b>	16/70 - 20 (14 Layers)	<b>TIRES</b>
<b>Rear tires</b>	16.9 - 28 (14 Layers)	

<b>Standard machine operating weight (telescopic boom, hydraulic cylinder)</b>	8840 kg	<b>WEIGHT</b>
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	TB (Extended)	TB (Retacted)
A Working height	6470	5790
B Max. Loading Height (mm)	4493	3812
C Straight extension distance (mm)	6687	5677
D Machine to central axle distance (mm)	7264	6273
E Loading distance (mm)	3127	2198
F SAE maximum digging depth (mm)	5514	4292
G Maximum digging depth (provided by manufacturer) (mm)	6014	4792
H Extension distance from rear axle (mm)	8020	7034
I Rear frame base width (mm)		2315
J Bucket width (mm)		2400
K Total kingpost travel (mm)		1111
L Bucket rotation (o)		205
M Dumping height (mm)		2628
N Loading height (mm)		3277
O Pin height (mm)		3482
P Front arm pin to damper distance (mm)		443
R Bucket claw to damper distance (mm)		1481
S Bucket claw to damper distance at max. height (mm)		1440
T Dumping distance (mm)		1012
U Digging depth		118
V Roll back angle (o)		43
W Dumping angle (o)		46
X Rear wheel axle ground clearance (mm)		643
Y Total travel length (mm)		6228
Z Front wheel axle ground clearance (mm)		643
AA Departure angle (o)		28
BB Kingpost clearance		639
CC Operator cab roof height (mm)		3085
DD Total travel height (mm)		3826
EE Steering center ground clearance (mm)		2167
FF Wheelbase (mm)		2287
GG Slew center to rear axle center distance (mm)		1362
HH Stabilizer feet clearance (mm)		440



## TECHNICAL SPECIFICATIONS



# 644 PLUS

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- A reliable, fuel-efficient, low-maintenance diesel engine which uses the latest technology. Features high power and torque output, water cooling, a turbocharger and intercooling
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**Highly efficient tandem gear pump open-center hydraulic system (standard)**  
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- Anti-shock and anti-cavitation valves
- On models featuring a gear pump, an electronically controlled "Unloader Valve" is provided, which disables the auxiliary pump while on the road or as the operator sees fit, preventing unnecessary power expenditure
- Pilot-controlled front hydraulic joystick (optional) allows the operator to use the machine using less power
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- Safety system to disable the hydraulic joysticks while driving
- 10 micron oil filter

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<b>Parking Brake:</b> Hand lever-controlled mechanical brake, effective on the rear axle differential	

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Steering column's height, depth and angle can be adjusted	
Soft-Touch steering wheel	

Heavy-duty Auto PowerShift transmission	<b>TRANSMISSION</b>
4 forward and 4 reverse gears	
2 or 4-wheel drive switch	
2.64 / 1 stall ratio converter	
Safety system to prevent engine start while in gear for safe operation	
Transmission lubricant cooling	

<b>Engine oil</b>	8,5 lt	<b>FILLING CAPACITY</b>
<b>Engine cooling system</b>	18 lt	
<b>Fuel tank</b>	140 lt	
<b>Hydraulic lubrication tank</b>	105 lt	
<b>Transmission lubrication</b>	20,5 lt	
<b>Front axle differential</b>	8,5 lt	
<b>Front axle heads</b>	2 x 1,5 lt	
<b>Rear axle differential</b>	13 lt	
<b>Rear axle heads</b>	2 x 1,5 lt	

<b>Opening bucket capacity</b>	1,2 m <sup>3</sup>	<b>LOADER PERFORMANCE</b>
<b>Bucket breakout force</b>	7734 kgf	
<b>Arm breakout force</b>	5905 kgf	
<b>Max. height lifting capacity</b>	3500 kgf	

	TB (Extended)	TB (Retacted)
<b>Rear bucket capacity</b>	0,20 m <sup>3</sup>	0,20 m <sup>3</sup>
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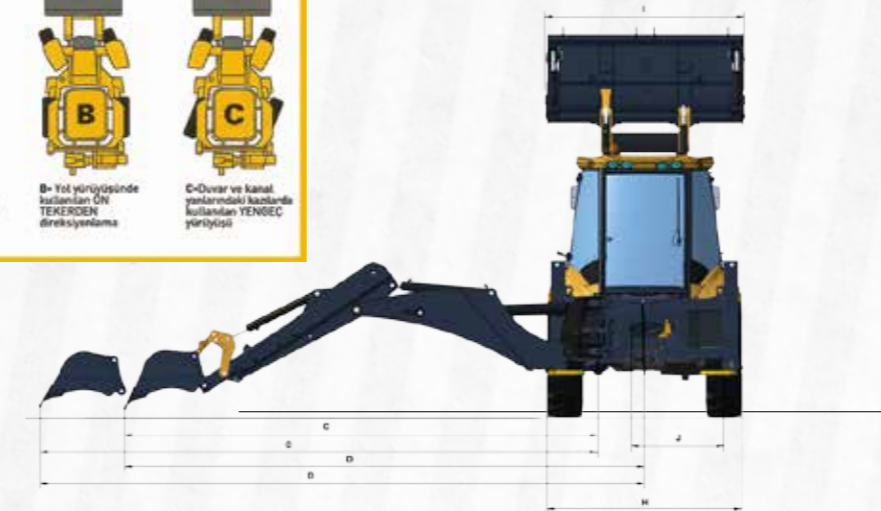
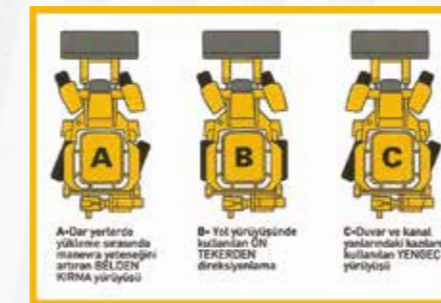
Heavy-duty axles	<b>AXLES</b>
16o front axle rocking	
Outboard planetary reduction	
LSD (limited slip differential) on the rear axle	

<b>Turning radius (while braking)</b>	8.4 m	<b>TURNING RADIUS</b>
<b>Turning radius (without braking)</b>	9.85 m	
<b>Turning radius of outermost point (without braking)</b>	10.15 m	
<b>Turning radius of outermost point (with braking)</b>	11.45 m	

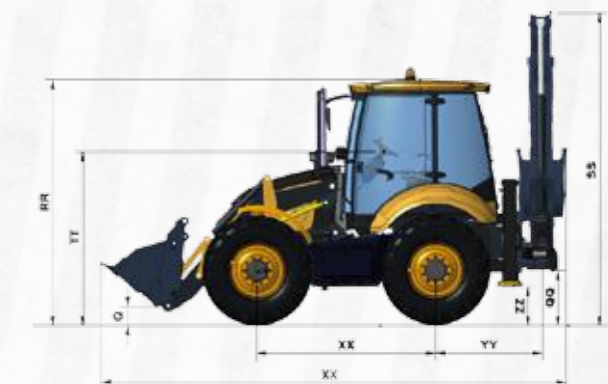
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N Pin height (mm)		3482
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Y Front wheel axle ground clearance (mm)		643
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ZZ Stabilizer feet clearance (mm)		440



## TECHNICAL SPECIFICATIONS



**MST**



**MST**

# MST

August 2016

## FACTORY ADRESS

4. Organize Sanayi Bölgesi 83426. Cad. No:1 P.K. 27120 Başpınar / Gaziantep / TURKEY  
P 00 90 342 211 59 00 F 00 90 342 357 00 32 • www.mst-tr.com • export@mst-tr.com  
MST İş ve Tarım Makinaları San. Tic. A.Ş.



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