

# MEGA 500.V

Operating weight: 30 to 32 Tons

Bucket volume: 4,5 to 5,4 m<sup>3</sup>

Max. Net engine horsepower: 267 kW (358 Hp)



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**DAEWOO**  
Tracing the Way

# Performance

The Mega 500-V is a machine that delivers a powerful, highly effective force, offering superior penetration of the hardest materials. The ratio of the engine power to machine operating weight is the most competitive in the 30-tonne wheel loader class. The exceptional drawbar pull at the wheels, is reinforced further by providing limited-slip differentials as standard equipment. The engine offers high power and torque characteristics. As a result, the hydraulic system is able to multi-function with power and speed.

The machine handles the toughest job with ease, standing up to all work environments. The perfect match of components results in a spectacular digging force. This is exactly what the operator expects in challenging sectors such as mining and quarrying.

**The Mega 500-V is a reliable wheel loader that offers optimal productivity at a low working cost.**

It is a fast machine that never stops. Built with highly robust elements such as the frame, with a tapered bearing central articulation joint and powerful loader arm system. All of these factors add up to make a machine that delivers everything that you need, hour-after-hour, day-after-day.

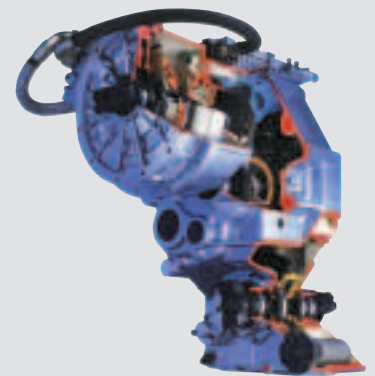
## THE DRIVE TRAIN IS BUILT WITH A BASE OF COMPONENTS THAT ARE RENOWNED, WORLDWIDE.



Equipped with a Cummins QSM11 engine, the Mega 500-V provides excellent fuel economy. This is supported by two working modes (power and economy). With 4 valves per cylinders, an air-air intercooling system and with electronic regulation, this 6-cylinders turbocharged diesel offers optimal combustion in all conditions – far superior to those stated in the emissions regulations.



The ZF axles, fitted with limited slip differentials, minimise wheel spin, allowing the best distribution of torque to the wheels. The maximal torque transfer is in the range of 45%.



The transmission ZF is particularly smooth and gear ratios perfectly spaced to give optimal speed. That gives comfort at the same time that it delivers excellent traction in every working conditions. A maximum drawbar pull of 27 tons is available at the wheels. All of these characteristics, combined, provide a machine that makes good shovel penetration.

**This combined to excellent fill-factor, gives high productivity across a wide range of applications.**

**MEGA 500-V**







Particular care has been given to the design and manufacture of the frame, so that it can stand up to the tough conditions that it will be subjected to, year-after-year.



Two engine power modes: power and economy.



The central articulation joint is particularly strong. The attachment points are well distanced in order to resist the dynamic stresses of torque and load.

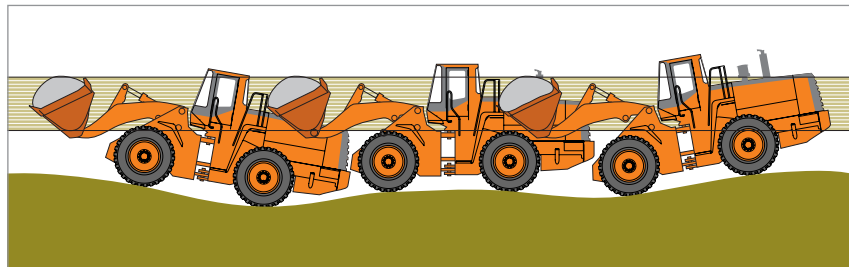


The **robust Z loader arm** is specially built for hard working conditions such as mining and quarrying.

With this loader arm geometry, we achieve a **rapid** digging movement with **nearly constant angles** in all bucket positions.

Few moving parts and minimum weight contribute to make a **very stable wheel loader** in straight as well as articulated positions.

A **Load Isolation Stabiliser (bucket stabiliser)** is supplied as standard equipment. This system **increases comfort and productivity** in all load-and-carry operations. Moreover, it reduces the loss of material on haul roads, minimising the cleaning of the job site.



The **load sensing steering system** works with a flow amplifier and priority valve. The emergency steering pump is fitted on a shaft that is connected to the transmission. It therefore becomes functional as soon as the loader moves.

The **oil cooling system for both axles is comprised of two pumps and an external cooling device.** When these axles work with the most challenging working demands, this cooling system becomes a very important asset – in hard work conditions such load-and-carry, transport in tunnels and work involving steep gradients.

**ZF axles with, limited-slip differential on both axles as standard equipment.** The torque transfer is up to 45%. It works automatically without any risk to the driveline. **It makes the penetration in the pile easier, reducing tyre slippage and therefore tyre wear.**



# Comfort

From the beginning, **Daewoo has had great concern for machine operators.**

People need to work in a well-designed and comfortable environment. The work area is spacious, with several places for storage. The checking and monitoring devices are comprehensive. There is an open view of the work area. For night work, operators are provided with powerful front and rear lighting.



The absolutely flat floor is not just a detail. It makes for easy cleaning.



Work environment with comfort, optimal ergonomics and efficiency.

Every detail has been considered, including even the smallest storage place.



For greater comfort, the steps are inclined, with hand and guard-rails ergonomically placed for safe climbing, inspection and disembarking.



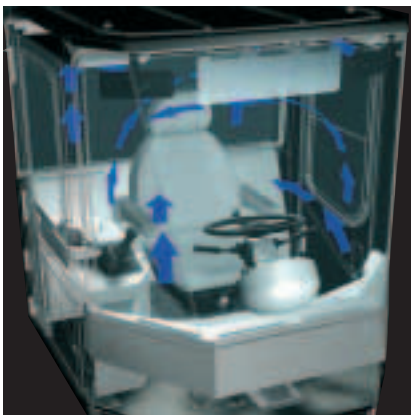
Viscous hydraulic suspension mounts reduce moving vibrations within the cab.



The selection of forward and reverse is integrated into the two hydraulic control levers. (option)



The steering column is adjustable.



Filtered air cab, air ducts are properly placed all around the cab with proportional sensitive controls and air re-circulation facility... we offer the same comfort as a passenger car.



The visibility is excellent from morning till night.

The air suspended seat is adjustable to match each operator's weight and shape.



An oil level indicator at the centre of the machine is clearly visible.









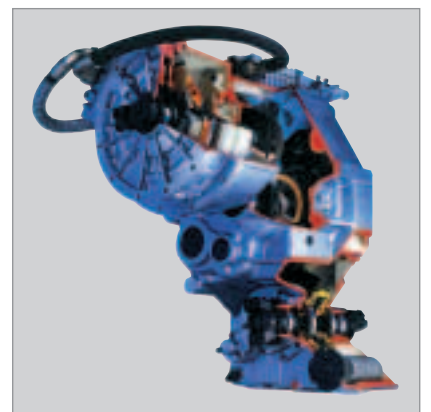




# Maintenance and controls



The radiator's fan swings clear for ease of cleaning. The cooling fan may, under specific circumstances, be regulated by the Daewoo technical department, allowing optimal cooling – to suit extreme conditions.



The ZF countershaft powershift transmission is both reliable and easy to maintain. This transmission can be used in manual or automatic mode. A modulation system authorises smooth speed changes, and an integrated security system protects components from any risk of unauthorised manoeuvres.

A liquid crystal display conveys information to the operator relative to the ZF transmission. At the same time, it reports the nature of a problem (if one exists). When servicing the loader, a specialised apparatus can be used to adjust the clutch disks to compensate for their wear. Additionally, by connecting a lap top computer, a complete transmission diagnostic can be performed.





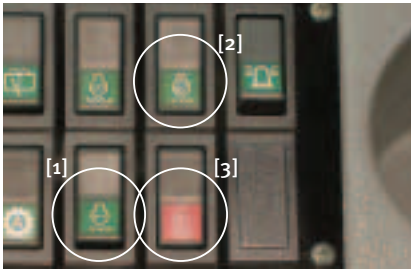
The transmission filters are within easy reach and like the rest of the machine's service components, can be checked from ground level.



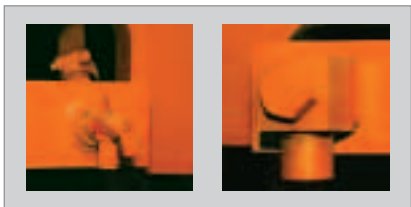
A diagnostic engine system, with a monitor located on the dashboard, continuously informs the operator of the engine's working condition. A warning light even indicates the time that maintenance is due.



The hydraulic pressure checkpoints are consolidated.



The engine idle value can be adjusted<sup>[1]</sup>. A faster value can also be selected when the engine is cold, to speed warm-up<sup>[2]</sup>, engine diagnostic knob<sup>[3]</sup>.



The radiator cooling circuits, as with the engine oil, can be remotely drained with ease, therefore safely respecting the environment.



A good accessibility at the articulation joint is essential for an easy maintenance. Some greasing points are grouped at central articulation location.

The transmission drive shaft is life time lubricated.

Centralised greasing is available as an option.



# Technical Specifications



## ENGINE

### GENERAL DESCRIPTION

The High performance Cummins QSM 11 engine offers low fuel consumption and low exhaust emissions, which are well below the requirements of the Phase II.

6 cylinders, direct injection, electronic regulation, 4 valves per cylinders, turbo charged, air-air intercooler.

The maximum torque remains almost constant from 1000 to 1400 rpm to get a fast answer without weakening of the loader movements and hydraulic actions.

It is in this range of engine rpm that the loader mainly works. But even at a low engine rpm not far from the idle, the torque remains impressive.

Advanced combustion technology.

Reshaped steel piston bowls reduce sooting and smoke while improving fuel economy.

Patented mid-stop cylinder liners last longer, increasing the time before overhaul.

Two operating modes are available (power and economy) to get either maximum productivity or an optimal economy.

When starting, an accelerated idle can be chosen to ensure faster warm up, and so reduces engine wear.

The operator, depending on the working conditions, can adjust the idle rpm.

An engine diagnosis and warning systems are fitted as standard.

### POWER

**RATED GROSS (SAE J1995)**

250 kW (335 Hp) at 2.100 rpm

**RATED NET (SAE J1349, ISO 9249)**

245 kW (329 Hp) at 2.100 rpm

**MAX NET (SAE J1349, ISO 9249)**

267 kW (358 Hp) at 1.800 rpm

**MAX NET TORQUE (SAE J1349, ISO 9249)**

171 kg.m (1.676 Nm) at 1.400 rpm

**DISPLACEMENT:**

10,8 l

**BORE X STROKE:**

125 mm x 147 mm

3 stages Air cleaner including a very efficient Turbo II pre-filter, main and safety elements.

Hydraulically driven puller type fan with possibility of adjustment, pivoting fan for easier cleaning

**BATTERY VOLTAGE:**

24 V

**CAPACITY OF THE 2 MAINTENANCE**

**FREE BATTERIES:**

150 Ah

**STARTER POWER:**

7,5 kW (10 Hp)

**ALTERNATOR OUTPUT:**

70 A

**STARTING COLD CAPACITY WITHOUT**

**AUXILIARY ASSISTANCE:**

-23°C



## LIFTING SYSTEM

The lifting system with two cylinders and Z configuration is designed for the toughest jobs. The breakout force (264 kN with a 4,8 m<sup>3</sup> bucket) is very important and the bucket movements are fast.

The buckets angles are well kept in good positions on all the range of bucket movement.

**LIFTING CYLINDERS (2)**

bore x stroke (mm): 200 x 902 mm

**TILTING CYLINDERS (2)**

bore x stroke (mm): 160 x 610 mm



## TRANSMISSION

“Full Power Shift” transmission. It can be used in manual or automatic modes.

This transmission is based on components having excellent worldwide reputations. It is equipped with a modulation system allowing soft gear shifting and inversion of travel direction. Safety devices also protect the transmission of bad operations.

The gear and direction shifting is operated by a single lever to the left of the steering wheel. A travel direction control is also mounted on the hydraulic joystick.

The transmission is remote mounted from the engine for better accessibility.

With a special electronic device, the transmission can be tested and adjusted easily for optimum performance and efficiently.

The transmission can be de-clutched by the operation of left brake pedal to increase the power available to the hydraulic pumps.

A safety device prevents the starting of the engine when not in neutral.

**TORQUE CONVERTER:**

Single stage, one phase

Max Torque ratio

2,987 : 1

**GEAR BOX:**

Maker and model

ZF 4 WG 310

**SPEED FORWARD / REARWARD:**

(Tyres 29.5 R25 L3)

1 7,2 / 7,2 km/h

2 12,2 / 12,2 km/h

3 27 / 27 km/h

4 35 km/h

**MAX TRACTION FORCE:**

27 tons



## AXLES

The front and rear axles with planetary hub reductions are built on the base of very reputed components.

Fitted as standard, the front and rear limited slip differentials, ensure the traction is optimal in all circumstances.

The axles are also equipped with an external oil cooling system with circulation pump and cooler.

**MAKER AND MODEL:**  
ZF AP 420 R

**MAX TORQUE TRANSFER AT THE FRONT AND AT THE REAR:**  
45 %

**OSCILLATION ANGLE:**  
+/- 10 °

**MAX VERTICAL MOVEMENT OF THE REAR WHEEL:**  
43 cm

**BRAKE:**  
Dual circuit multi-plate wet discs. Hydraulic actuation with pump and accumulator.

A Spring applied and hydraulically released parking brake is mounted on the transmission shaft.

## HYDRAULIC SYSTEM

The hydraulic system uses tandem vane pumps with automatic wear compensation.

Pilot actuation with standard single lever.

Automatic and adjustable systems for bucket kick out and boom stop at top position are standard.

The leveling function is also mounted on the wheel loader.

All hydraulic lines are equipped with special seals (ORFS)

**MAX FLOW (PUMP 1 AND 2):**  
475 l/min

**RELIEF PRESSURE:**  
200 bars

**PRESSURE OF THE PILOT CIRCUIT:**  
32 bars

**FILTRATION CAPACITY ON THE RETURN LINE:**  
10 microns

**LOADING CYCLES TIME:**  
Lifting speed (loaded): 6,5 seconds  
Dumping speed (loaded): 1,3 seconds  
Lowering speed (empty): 3,5 seconds

## STEERING SYSTEM

The steering system is a load sensitive type with a flow amplifier and a priority valve.

**STEERING ANGLE:**  
40°

**OIL FLOW:**  
237 l/min

**RELIEF PRESSURE:**  
185 bars

**STEERING CYLINDERS (2):**  
bore x stroke: 110 x 465 mm

The emergency steering pump is mounted on the transmission and gives a flow as soon as the loader moves.

## CAB

The modular cab allows excellent visibility in all directions. The optimal ventilation is obtained by numerous ventilation outlets. Touch buttons control the air re-circulation air conditioning and heating systems. The air of the cab is filtered.

All necessary information for the operator are centralized in front of him.

The main functions are actuated via switches located on a console at the right of the operator.

Generous storage places are well located.

The cab, mounted on viscous element and equipped with an air suspended seat, offers a better comfort for the operator.

**ACCESS DOOR:** 1

**EMERGENCY EXITS:** 2

The cab conforms ROPS ISO 3471 and FOPS: ISO 3449

**GUARANTEED EXTERNAL NOISE LEVEL LWA:**  
(following 2000/14/EC) 110 dB(A)

## MAINTENANCE

Maintenance is easy due to excellent access.

The cooler fan swivels to aid cleaning.

The engine and the transmission are electronically controlled. An error coding system allows easy diagnosis of the systems and proper intervention.

**ENGINE (oil):** 34 l

**RADIATOR (cooling liquid):** 60 l

**FUEL:** 480 l

**HYDRAULIC OIL:** 280 l

**GEAR BOX AND TORQUE CONVERTER:** 54 l

**FRONT AXLE:** 32 l

**REAR AXLE:** 32 l

**FRONT PLANETARY HUB REDUCTIONS:** 2 x 9 l

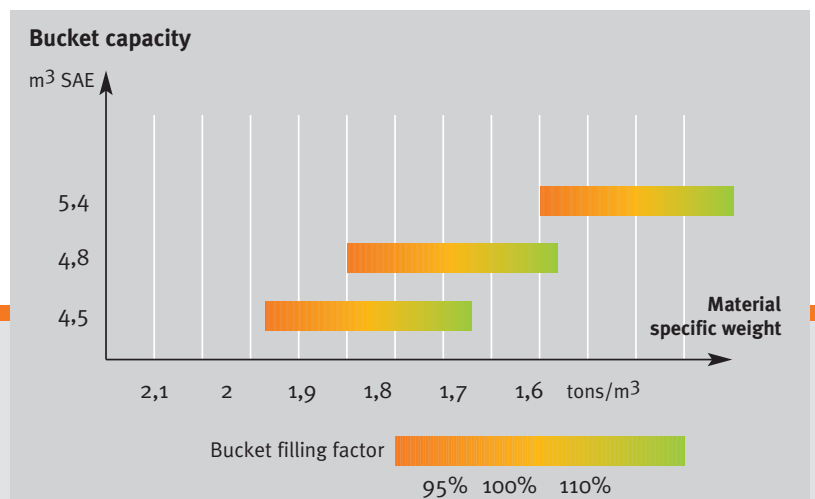
**REAR PLANETARY HUB REDUCTIONS:** 2 x 9 l



# Operational data

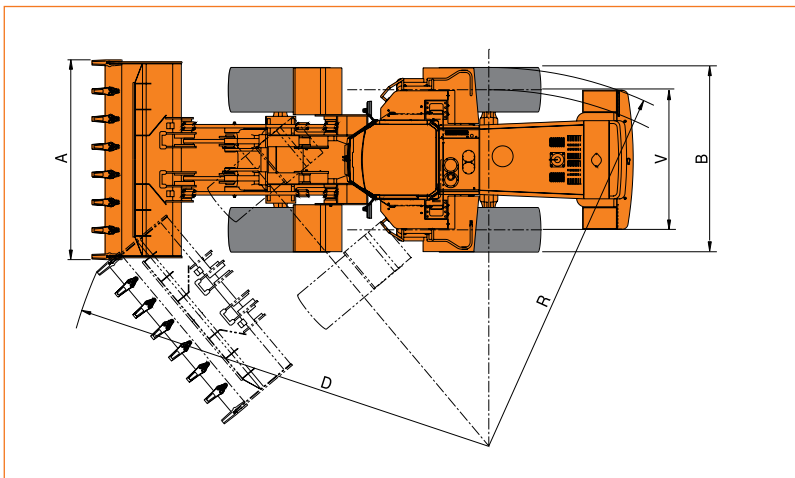
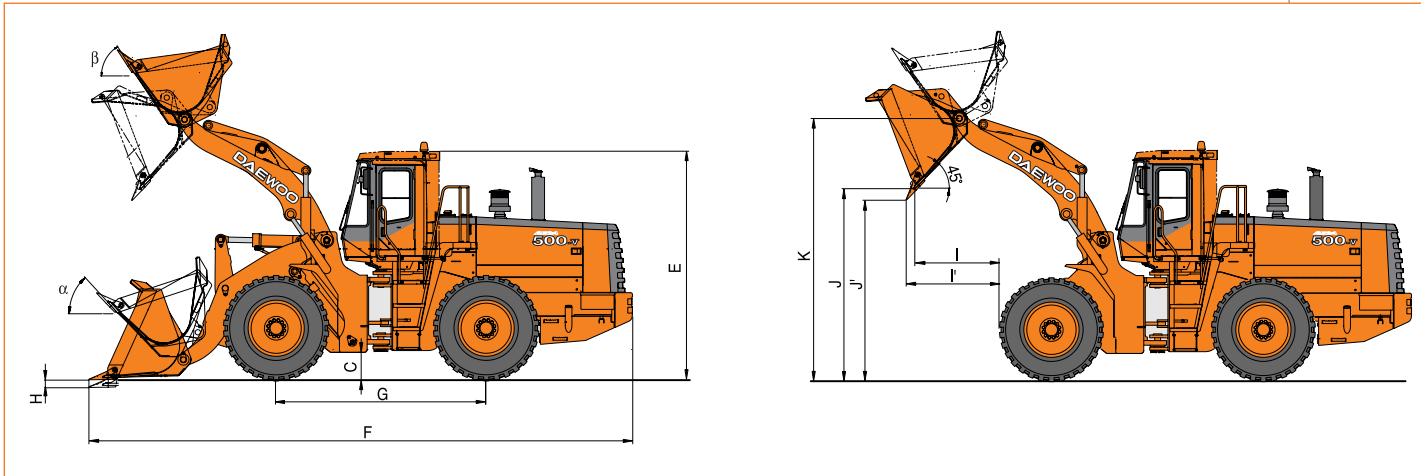
Bucket type			Heavy duty	General purpose	General purpose
Bucket configuration			Trapezoidal, welded teeth and segments	Straight with bolted teeth	Straight with blade
Capacity heaped ISO/SAE		m <sup>3</sup>	4,5	4,8	5,4
Bucket width	A	mm	3.480	3.480	3.400
Breakout force		kN	232	264	245
Static tipping load ( straight position)		kg	22.770	23.220	23.300
Static tipping load (articulated position 40°)		kg	19.800	20.200	20.270
Dump height (at 45°, under teeth)	J'	mm	2.980	3.100	---
Dump reach (at 45°/ under teeth)	I'	mm	1.660	1.370	---
Dump height (at 45°/ under blade)	J	mm	---	3.300	3.200
Dump reach (at 45°/ under blade)	I	mm	---	1.510	1.430
Digging depth	H	mm	75	80	70
Height at bucket pivot point	K	mm	4.500	4.500	4.500
Max. angle at carry position	α	°	48	48	48
Max. angle at fully raised	β	°	58	58	58
External radius at tire side	R	mm	6.535	6.535	6.535
External radius at bucket edge	D	mm	7.250	7.330	7.300
Wheel basis	G	mm	3.600	3.600	3.600
Width at tyres	B	mm	3.210	3.210	3.210
Tread	V	mm	2.420	2.420	2.420
Ground clearance	C	mm	510	510	510
Overall length	F	mm	9.450	9.320	9.200
Overall height	E	mm	3.800	3.800	3.800
Operating weight		kg	30.700	30.220	30.300
All the specifications are given with 29.5-25 VSNT (L4) tyres					
<b>SPECIFICATION CHANGES ACCORDING TYRES CHANGES OR ADDITIONAL COUNTERWEIGHT</b>			Tyres		Additional counterweight
			29.5-25 VMT (L3)	29.5-25 VSDL (L5)	
		kg	-450	1.120	400
Operating weight		kg	-250	850	1.000
Static tipping load (straight position)		kg	-220	740	870
Static tipping load (articulated position 40°)		mm	-20	35	---
Vertical dimensions changes (J/H/K/C/E)		mm	-20	35	---
Width at tyres (B)					

The bucket filling factor depends also of the nature of material, the working conditions and the operator ability.

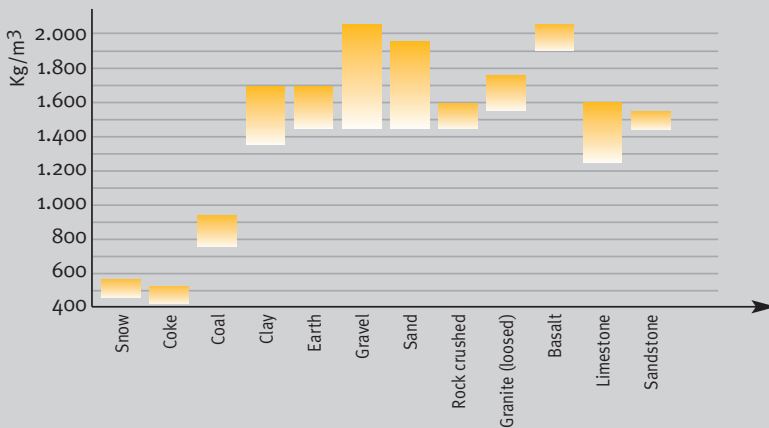




## DIMENSIONS



### Specific weight



The specific weight of material largely depends of moisture rate, compacting value, percentage of various components etc...

This chart is given only for information.

# Reliability

Every morning, when the operators commence work, **they know that things will go smoothly** – because Daewoo has taken care of it. The product is solid. The entire structure of the machine is built to guarantee a long and reliable life. The components of the drive train are proven and reliable. Operators know that they have significant reserves at hand and that they won't have to push the machine to its limit. The Daewoo Mega-500 wheel loader is designed and built to last. For Daewoo, 'reliable' means availability, accessibility and simplicity.

We believe **that technology must serve man** – not that man serves technology. And although our machines (like all machines) are designed and set up by engineers, it's important for us that it's easy for everyone to use and service them.

Excellent relationships, with a spirit of working in partnership, are the foundation of our dealer network.

We encourage them to have a close proximity to our customers. You can trust our dealers. You can always rely on them to find a solution. They can, for example, provide any replacement part from their own stock, or from our central spare parts facility in Belgium - the same site where other machines such as our hydraulic excavators are manufactured.



Efficient spare parts department.



A large capacity air cleaner, combined with a Turbo II pre-cleaner, allows reduction of the cleaning or the servicing of the main cartridge. This reduces the risk of the engine ingesting dust. This ingestion is often the cause of accelerated engine wear. The operator can check for clogging using an external indicator near the filter or a dial light on the dashboard.



Noise measurement and program for noise reduction in anechoic chamber.



Rolling conditions simulations (braking, acceleration, drawbar pull, heat dissipation...).

The hoses and cylinders that are exposed are especially well protected.



Simulation of extreme weather conditions (cold, warm and wet weather).



Cab tests according to Fops and Rops norms.





# Standard Equipment & Optional

## STANDARD EQUIPMENT

### ENGINE

- Three stages air cleaner with Turbo II prefilter and external plugging indicator as at the dashboard
- External drains for engine oil and cooling liquid changes
- Two power modes (Power / Economy)
- Secondary idling model (faster warm up)
- Adjustable idling mode
- Maintenance warning lamp
- Electronic engine diagnosis
- Hydraulic fan with adjustable speed for extreme temperatures

### ELECTRICITY

- Alternator 70 A / 24 V
- Working lights: 2 at the front and 2 at the rear (4 x 70 W)
- Driving lights: low and high beams
- Tail, indicators, stop, reversing lights
- Reversing alarm

### DRIVE LINE

- Gear box which can be de clutched when braking
- Gear box with diagnosis and monitoring indicator, and electronic plug for a fast adjustment
- Selection of Manual or Automatic mode
- Starting safety system
- Kickdown and travelling direction selection: lever at left of the steering wheel or on the joystick
- Limited slip differential on front and rear axles
- External cooling system for front and rear axles
- Dual braking circuit with pump and accumulator
- Tyres 29.5 R25 L4

### LIFTING AND HYDRAULIC SYSTEM

- Robust Z bar lifting system
- Standard general purposes 4,8 m<sup>3</sup> bucket
- Single lever joystick
- Hydraulic control valve with two sections
- Boom adjustable lift Kick out

- Bucket kick out
- Leveling function
- Hydraulic lock of bucket and arm cylinders
- Load insulation system (LIS)
- Fast couplers for hydraulic check

### STEERING SYSTEM

- Load sensing steering system
- Emergency steering system connected to the transmission

### CAB

- Air-conditioning / heating with re-circulation function
- Air cab Filtration
- Air Suspended seat with safety belt
- Adjustable steering column
- Compartment for can's
- Floor mat
- Flat floor
- Tinted glasses
- Left and right sliding windows
- Front and rear wiper
- Front and rear washers
- Sun visor
- Interior cab light
- Interior rear view mirrors (2)
- Exterior rear view mirrors (2)
- Machine monitoring (condition, control & maintenance indicators in front of the driver by dials, gauges and lamps)
- Main switches in front of the driver
- Switches for the general functions in the right console
- Electrical horn
- Cigarette lighter
- Pre equipment for radio

### EXTERNAL EQUIPMENT'S

- Mudguard
- Lower protection plates
- Lifting hooks
- Articulation lock in the transport position
- Towing hitch
- Wheel chocks
- Tools compartment

## OPTIONAL EQUIPMENT

Some of these optional equipments may be standard in some markets.

Some of these optional equipments cannot be available on some markets. You must check with the local Daewoo dealer to know about the availability or to release the adaptation following the needs of the application.

### GROUND ENGAGING TOOLS

- Various types of buckets, fork frame, timber grapples and accessories

### TYRES

- L3, L4, L5 following various types of manufacturers

### HYDRAULIC

- Hydraulic valve with 3 sections
- Mono lever and 3<sup>rd</sup> electric s/w for third hydraulic function
- Two hydraulic levers + 3<sup>rd</sup> electric s/w for the third hydraulic
- Two hydraulic levers + 3<sup>rd</sup> electric s/w for the third hydraulic + FNR function

### ELECTRICITY

- Rotating beacon
- Additional lighting

### CAB

- Special filtration for polluted environment
- Rear Camera (CCTV) and monitor
- Radio AM/FM

### VARIOUS

- Additional counterweight
- Full covering mudguard
- Fuel filling pump
- Central greasing
- Start system for cold areas
- Weighing system
- Catalytic muffler
- Tool Kit

# MEGA 500-V

## Seoul Office

9th Floor, Daewoo Heavy Industries & Machinery Ltd. Bldg.  
14-34, Youido-dong, Youngdungpo-gu  
150-010, Seoul Korea  
Mail: C. P. O Box 7955 Seoul, Korea  
Tel. +82 2 2167-3114 Fax +82 2 785-2677  
Website: www.dhiltltd.co.kr

## Euro Daewoo S. A.

1A Rue Achille Degrâce,  
7080 Frameries, Belgium  
Tel. +32 65 61 32 30 Fax +32 65 67 73 38

## Euro Daewoo France

2/4, Rue Pavlov, Z.I. des Bruyères  
78190 Trappes, France  
Tel. +33 1 30 16 21 41 Fax +33 1 30 16 21 44

## Euro Daewoo UK

Daewoo House Unit 6.3 Nantgarw Park Cardiff  
CF4 7QU, U.K.  
Tel. +44 1443 842273 Fax +44 1443 841933

## Daewoo Maschinen Vertriebs GmbH

Hans-Böckler-Str. 27-29  
40764 Langenfeld, Germany  
Tel. +49 2173 8509 18 Fax +49 2173 8509 45  
Website: www.daewoobaumaschinen.de



The illustrations do not necessarily show the products in standard version. All products and equipment's are not available in all markets. Components and specifications are subject to change without prior notice.

M500V\_UK\_02/05 • Design by Size Communication (Belgium)

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**DAEWOO**  
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