



TECHNICAL SPECIFICATIONS MANTSINEN 90 M HybriLift® MATERIAL HANDLER

General information

Total weight without attachment	Approximately 90 to 100 tons according to configuration
Main boom	10.0 m straight/curved 11.0 m straight/curved 12.0 m straight/curved 13.0 m straight/curved 14.0 m straight/curved
Stick	8.0 m 9.0 m 10.0 m 11.0 m 12.0 m
Max. horizontal reach	Approximately 26 m
Counterweight	19 000 kg

Engine

Make/model	Agco Power 84 AWI, Stage 3B/Tier 4i
Power	265 kW / 1 800 rpm
Displacement	8.4 litres
Number of cylinders	6
Bore x stroke	111 mm x 145 mm

Radiator reversing function for cleaning

Electrical system

Voltage	24 V
Batteries	2 x 225 Ah
Alternator	100 A
Working lights	4 at operator cab 4 at stick 1 on cab roof, facing backwards

Hydraulic system

Type	Two main pumps for front equipment and drive, separate swing pump
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Main pumps - Oil flow	Two axial piston pumps with power regulation 2 x 420 l/min			
Swing pump - Oil flow	Axial piston pump, closed loop circuit 440 l/min			
Auxiliary hydraulic circuit - Oil flow	Gear pump 65 l/min			
Working pressures	- Front equipment	330 bar		
	- Heavy Lift	350 bar		
	- Drive	350 bar		
	- Swing	250 bar		
Main boom cylinders (2)	Piston	Ø 220 mm		
	Piston rod	Ø 150 mm		
	HybriLift® chamber	Ø 110 mm		
	Stroke	1 740 mm		
	Main boom cylinders with electronic end position cushioning			
Stick cylinders (2)	Piston	Ø 170 mm		
	Piston rod	Ø 125 mm		
	Stroke	1 815 mm		
	Stick cylinders with electronic and hydraulic end position cushioning			
	All main boom and stick cylinders with load control valves			
Filtering	Main filter	10 microns		
	Bleed-off fine filter	3 microns		
	- Water separator			
	HybriLift® filter	10 microns		
	Swing circuit filter	10 microns		
Hydraulic oil cooler	Installed separately from engine radiator Hydraulically driven, with temperature control Cleaning with reversing function			
Undercarriage				
Heights	2.1 m	3 m	4 m	5 m
Wheelbase	4.600 mm			
Steering	Hydrostatic steering			
- Max. steering angle	30°			
- Turning radius	12.1 m			

Front axle	Oscillating 90 ton steering axle with planetary reductions
Rear axle	Rigidly mounted 90 ton axle with planetary reductions
Tyres	Four solid rubber tyres 26.5 – 66
Stabilizer pads	700 x 1.250 mm - With spherical bearings
Drive	
Type	Hydrostatic four wheel drive
Drive motors	Two variable displacement axial piston motors with two speeds
Final drives	Planetary drives at wheel hubs
Drive speed	0 – 8 km/h
Service brakes	Drum brakes at wheel hubs
Parking brake	Automatic wet multiple disc brake at front axle
Swing mechanism	
Swing motors	Two axial piston motors
Swing brakes	Automatic wet multiple disc brakes
Swing drives	Planetary drives
Swing speed	0 to 5.8 rpm
Swing torque	230 kNm
Slewing ring	
Type	Three-row Heavy Duty roller type slewing ring Internal teeth in grease bath
Outer diameter	1.956 mm
Controls	
Type	Electro hydraulic pilot control, two joysticks for front equipment and swing - Joystick functions programmable - All movement speeds adjustable 0 to 100 % - All front equipment and attachment functions proportional - Proportion between main boom and stick adjustable Lever for drive control and steering

Safety lever and emergency stop button to shut off pilot line

Operator cabin

Equipment

Tinted windows

Two-speed windshield wiper with intermittent function

Air suspended seat Isri 6500 KM

- Adjustable armrests
- Seat belt
- Adjustable lumbar support
- Heating

Signal horn

Radio and CD player, MP 3 - compatible

Sun shades

Floor window

Heating and air conditioning

Mantsinen Control System

MCS

Can Open CAN-bus technology

Colour display 5.7"

Gauges:

- Engine rpm
- Coolant temperature
- Fuel level
- Operating hours
- Hydraulic oil pressures
- Current fuel consumption
- HybriLift® pressure

Warning lamps:

- Engine preheating
- Alternator
- Hydraulic oil level
- Hydraulic oil temperature
- Coolant level
- Engine oil level
- Engine overheating
- Engine oil pressure
- Working lights
- Air filter clog
- Return filter clog
- HybriLift® filter clog

Acoustic alarms:

- Engine oil pressure
- Hydraulic oil temperature

Mantsinen Safety System MSS

Can Open CAN-bus technology
Colour display 5.7"
Overload prevention, with motion cut
Can collision prevention, with motion cut

Cab elevator N1-3000 (option)

Operator eye level max.	Undercarriage height
6.2 m	2.1 m
8 m	4 m

Cab elevator N2-4000 (option)

Operator max.	7 m forward from swing centre
Eye level max.	Undercarriage height
6.7 m	2.1 m
8.5 m	4 m

Refill capacities

Hydraulic oil reservoir	800 l net capacity
Fuel tank	870 l
Engine oil	25 l

Others

Central lubrication system Lincoln

Options

Fixed cab risers
Large harbour crane cabin
Cab elevator N1-3000
Cab elevator N2-4000
Biodegradable hydraulic oil
Second hydraulic function for attachment
Xenon working lights
Magnet generator
Loudspeaker
Operator seat BE-GE 2000
- Air suspension
- Centralized control unit
Camera under stick
Rear view camera
Engine preheating
Hydraulic oil preheating
Operator cab preheating

Specifications subject to change without prior notice.