



MANTSINEN 60
COMPACT, YET
STRONG AND
SMART





CONSIDER IT LOADED

Combining precision with efficiency, the Mantsinen multipurpose material handling machine is the perfect solution for various operations in ports and industrial terminals. It is suitable for handling any kind of bulk material, scrap, timber and breakbulk. Equipped with the Mantsinen quick coupling system, working with different attachments is easy, safe and efficient.

With more than 55 years of experience in logistics services for heavy industry, Mantsinen has the knowledge of the demands and challenges of material handling in many different applications. The combination of this operational experience and world-class engineering

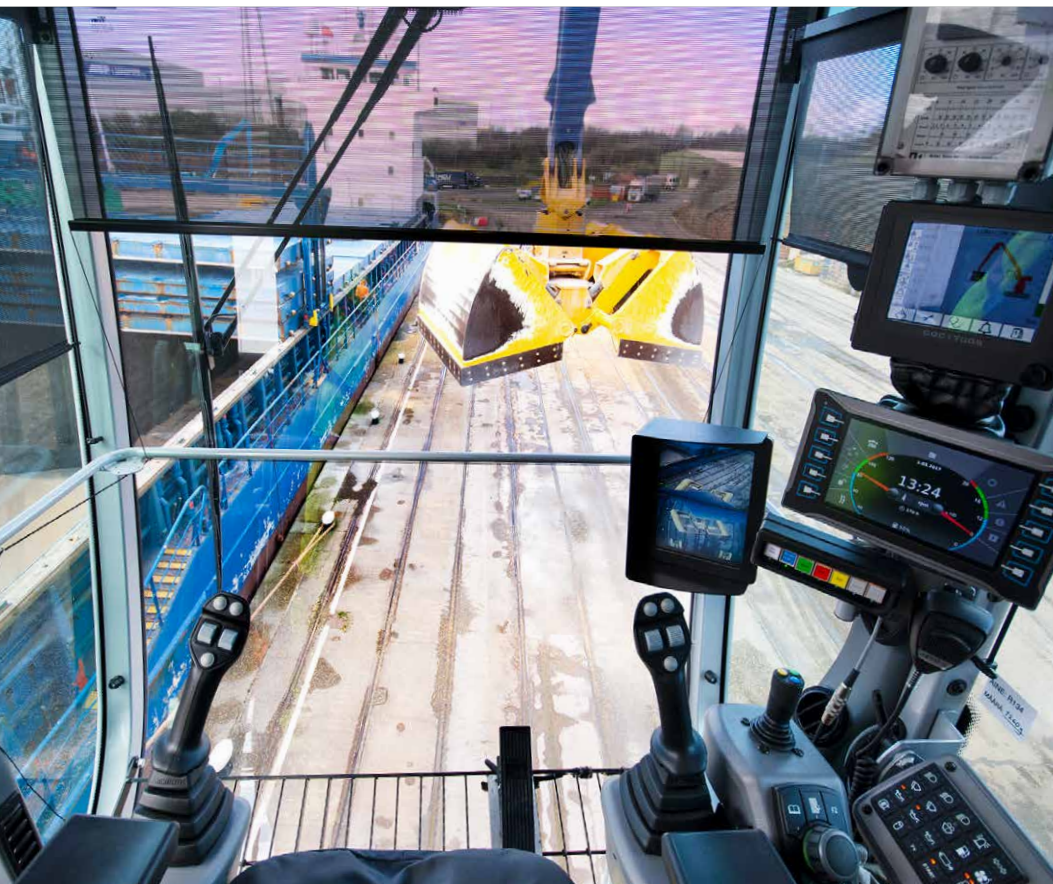
know-how create unique solutions for efficient handling operations. With our deep knowledge, we can optimise your operation and machine configuration.

LIFELONG PRODUCTIVITY

Mantsinen material handling machines are a generational investment, in respect of the machine's life and durability. Inhouse manufacturing of the machines and attachments ensures high quality without compromise. All of the critical components are thoroughly analysed using the finite element method based on strain gauge tests in real operation. The minimum lifetime expectancy of our machines is over two million work cycles with maximum load



EVERYTHING UNDER CONTROL



MANTSINEN CONTROL SYSTEM (MCS)

The Mantsinen control system is engineered for cost-efficient material handling with today's technology. Its operator friendly user interface runs under an "Only what's important is shown" approach making daily operations easier, while allowing the operator to concentrate on their current task. The adjustable multi-function joysticks for front equipment are extremely ergonomic and comfortable. Electrically controlled proportional functions ensure smooth and efficient operation under all conditions. Travel and steering are controlled by a onegrip joystick. Rail-mounted machines are driven by pedals. The system has electric end cushioning for the boom, the stick and the cab elevator to avoid unpleasant dynamic shocks.

HUMAN-MACHINE INTERFACE

- A graphic 7 user interface display
- Easy to use multifunction control wheel
- Operating data and gauges
- Optional functions state information
- On board and remote diagnostics with detailed error description
- Acoustic signal for critical alarms
- Precision mode and heavy lift mode
- Settings for main functions and options
- Error logging
- Instantaneous power consumption measurement
- Periodic fuel or electric power consumption



LEAD BY DATA

MANTSINEN INSIGHT™

MANTSINEN INSIGHT™ provides comprehensive information from individual material handling machines to a complete fleet. By following over 150 outputs per machine we will ensure that you keep track of your operations, on-site and remotely - wherever you are. With Insight, you will improve your performance and remain at the leading edge of your business.

MANTSINEN INSIGHT™ enables data storing automatically with access to operational and service information. Insight offers data storage, making the machine's history easily available when needed. In addition to remote machine monitoring, Insight enables a connection to the machine control system as standard. These features combined with the onboard diagnostics ensure the best possible support for all machine-related needs.



Machine history



Resale



Service history



Productivity improvement



Machine reports



Immediate data

MANTSINEN INSIGHT™

STANDARD

Asset reports	•
Productivity/efficiency views	•
Fleet view	•
Visualized sensor data	•
Upcoming services -tool	•
History data	•
Data for dealer/factory support	•
Control system remote access for factory support	•
Global SIM card	•

DEVELOPED TO GET THE JOB DONE

UPPER STRUCTURE

The Mantsinen upper structure is specifically designed for fast and hard material handling applications. In-house experience of hundreds of millions of tons in material handling gives the strong base for design, functionality and serviceability.

POWERLINE

Volvo Penta diesel engines are known in material handling industry for their high performance, low fuel consumption and durability. The engine is located in a sound insulated compartment.

HYDRAULICS

The main hydraulics consist of two variable displacement axial piston pumps and a closed loop swing pump. There is a separate circuit for the rotator, cab elevator and optional attachment function, as well for the hydraulics cooler fan. Efficient filtration and optional three-micron bleed-off fine filter with water absorption ensure continuously clean and dry oil, which increases uptime and extends

component and oil lifetime. Optional fan reversing function cleans the cooler and radiator without interrupting the machine operation.

RIGID MAIN FRAME

The rigid main frame and the large diameter pin sizes guarantees a long lifetime to the machine.

SERVICE

The internal service walkways provide unrestricted and safe access to all service points.

SWING MECHANISM

Mantsinen 60 has a large diameter heavy-duty slewing ring with internal teeth running in grease bath.

Heavy planetary swing gear with integrated automatic multi disc brake operates in a closed loop. Connected with state-of-the-art electric controls the machine swing is extremely smooth, controllable, saves a considerable amount of energy and provides maximum operator performance.

FRONT EQUIPMENT

A wide range of options with straight or curved booms and sticks are available to optimize the operation for maximum productivity. Mantsinen boom and stick structures are designed according to modern FEM-analyses based on real operation measurements and long-term practical experience.

Minimum lifetime expectation is over two million work cycles assuming maximum load. Booms and sticks are manufactured in-house under close quality supervision to ensure long lifetime of these structures under extreme fatigue stresses.

MAIN BOOM

The main boom foot is constructed of steel castings, providing excellent service life to one of the most critical structural

components of the machine. Optimized box structure ensures maximum lifetime without compromise. Strong structure and large pin diameters minimize surface pressures and wear on bushings.

STICK

The stick box is constructed of two profiles made of thermomechanically rolled steel. The design allows the stick to be constructed with no welding seams in high stress areas, making it light and extremely durable. Hydraulic lines are well protected on sides of the stick. As a consequence to the unique stick tip and rotator link design, no hoses are exposed from the rotator link or attachment assemblies.

OPTIONS AND STANDARD FEATURES

EQUIPMENT	STANDARD	OPTION
Working lights, 24 V LED; 4 underneath of cabin, 4 at stick, 1 on cab roof	•	
Central lubrication for front equipment and slewing ring raceway	•	
Second pressure adjustment for attachments 3600 psi	•	
Beacon and acoustic travel alarm	•	
Surface treatment for C3 medium according to ISO 12944-2	•	
User and service manuals. 2 printed, 2 on memory sticks	•	
Electronic spare part catalogue. 2 on memory sticks (English)	•	
HYDRAULICS		
Additional attachment function, 2900 psi, 15 gallon /min.		•
Magnet generator hydraulic preparedness. Max flow 26 gallon/min.		•
Magnet generator system 27 hp		•
Additional undercarriage hydraulic function with pedal		•
Biodegradable hydraulic oil		•
FILTRATION		
By-pass fine filter 3µm with water absorption		•
Large by-pass fine filter with water absorption		•
Attachment line filters		•
Additional fuel filter with heating		•
LUBRICATION		
Automatic lubrication system up to link		•
Automatic lubrication system up to attachment		•
Automatic undercarriage lubrication 60M		•
LIGHTS		
Additional 2 lights on boom		•
Undercarriage lights. One in each direction. Totally 4.		•
Undercarriage pad lights. One directed to each pad. Totally 4.		•
Travel lights for public roads		•

HEATING	STANDARD	OPTION
Electric heating for engine, hydraulics and cabin. 3-phase inlet socket		•
Additional automatic battery charger		•
Pre-heater for engine and cabin, by fuel. Including Multicontrol timer		•
REFILL		
Electric 24 V re-fuelling pump with 26', 1" hose reel		•
AdBlue 24 V refill pump, harness, pistol & 50' hose reel for IBC-container		•
GENERAL		
Preparedness for temporary person lift		•
Remote control for travel		•
Fire suppression systems (DAFO)		•
Safety access gate. Doorbell + operator openable electric lock		•
Cleaning with reversing fan. Flex-Air for diesel engine radiator & hydraulics cooler		•
NATO jump start plug		•
Emergency stops at undercarriage, 2 pcs		•
Pull coupling		•
Stick cover against grapple hits		•
Toolbox at undercarriage, aluminium		•
BACK UP SYSTEMS		
Portable hydraulic unit for swing, main boom, stick. Electric or engine driven		•
Preparedness for portable unit		•
Powerpack preparedness with quick connections, track versions		•
Main boom cylinder and swing release kit		•
SURFACE TREATMENT OPTIONS		
C4 Medium. Main components exterior surfaces		•

STRENGTH IS NOTHING WITHOUT VISION

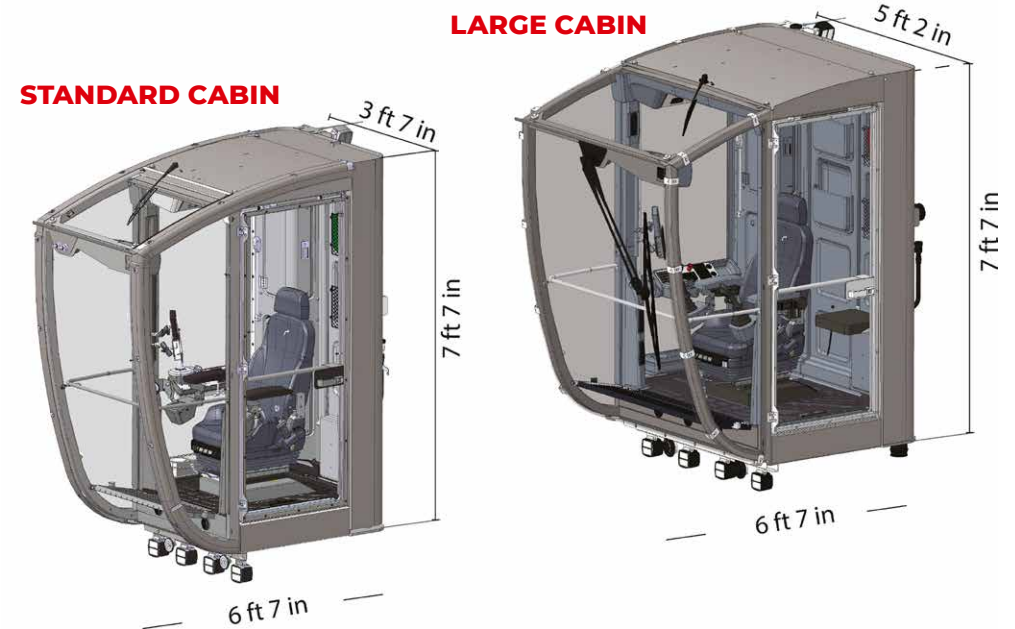
STAINLESS STEEL CABIN

The spacious and modern operator cabin has an excellent visibility with a large windscreen and floor window in one curved piece. The cabin is made of stainless steel for long lifetime even in the most demanding or corrosive working environments. Sound insulation, low vibration and high quality interiors create the most comfortable environment for the operator.

The powerful heating and air conditioning, tinted glasses and adjustable sun shades make the cabin comfortable in all weather conditions. Windshield wiper has two speeds, an adjustable intermittent function and a washer. There is a separate wiper for the skylight.

The operator works in an ergonomically designed environment. All joysticks, control panels and user interface displays can be easily controlled and operated.

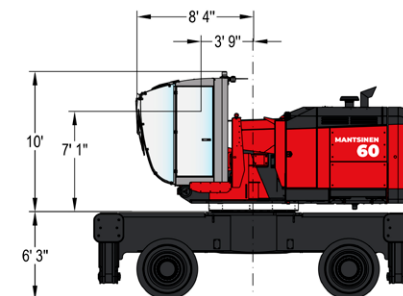
CABIN OPTIONS



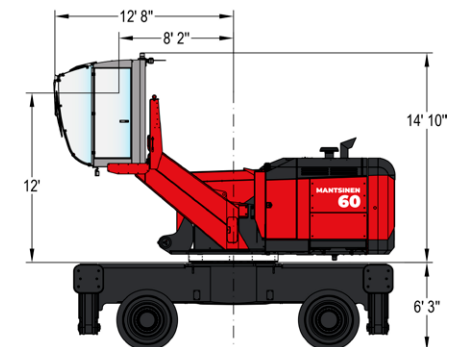
CABIN FIXED POSITIONS

Mantsinen 60 has two fixed cab positions.

FIXED CAB POSITION 1.



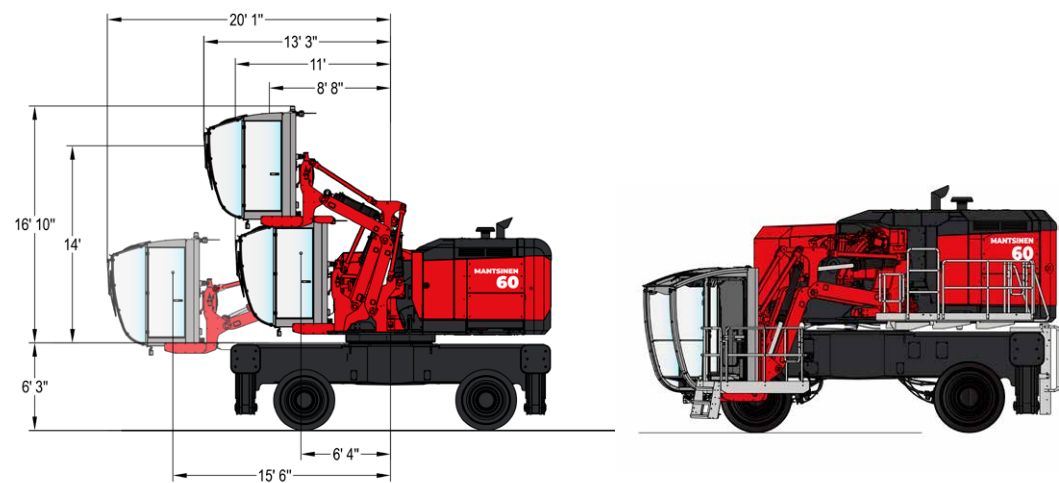
FIXED CAB POSITION 2.



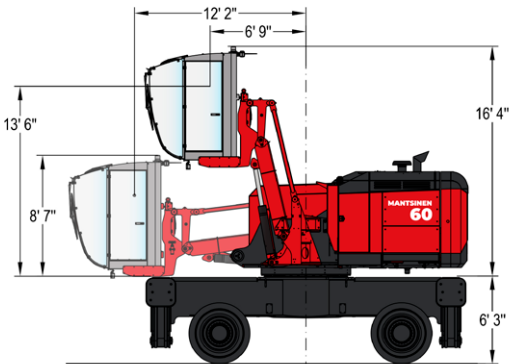
CABIN ELEVATORS

Mantsinen 60 has two cab elevator options. Robust Mantsinen N2-3000 cab elevator features independent vertical and horizontal movement to position the operator for maximum visibility of loading targets. One-arm cab elevator N1-3000 simply brings the operator high up.

N2-3000

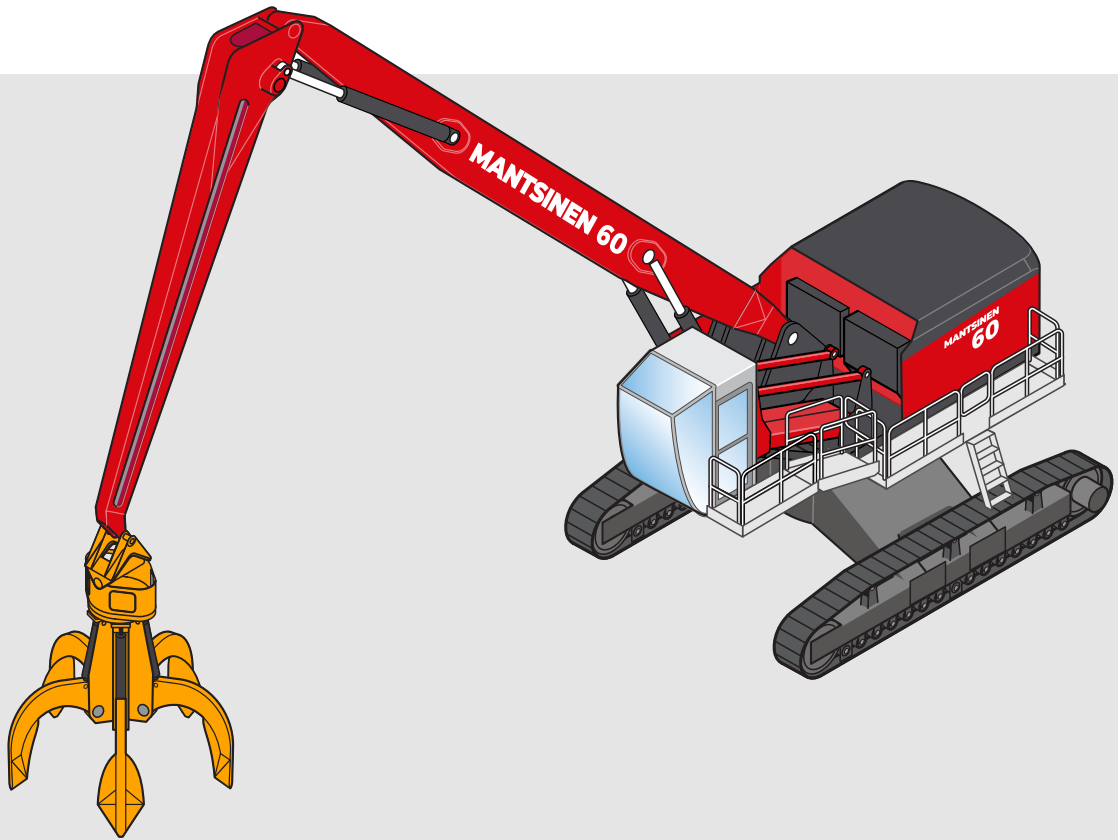


N1-3000



CABIN EQUIPMENT	STANDARD	OPTION
Heating and air conditioning, in large cabin automatic	•	
One-piece curved windshield with heating	•	
Skylight window	•	
Tinted window glasses	•	
Sunshades	•	
Folding instructor seat with seatbelt. Large cabin only	•	
Rear view camera connected to MCS display	•	
Auto-idle mode	•	
Signal horn	•	
Rear view mirror	•	
Bluetooth CD/USB, MP3/WMA receiver	•	
Cup holder	•	
Literature compartment	•	
Two 12 V plugs for chargers	•	
Standard seat	•	
- Air suspension	•	
- Automatic weight adjustment	•	
- Seat belt	•	
- Heating	•	
- Fully adjustable	•	
Large stainless steel cabin. 63" mm wide		•
Seat Be-Ge 3110 FC4 Airvent		•
Seat swivel function		•
Cabin protection guards. Windshield and skylight		•
Impact proof windshield		•
Sun protection foils, all windows except skylight		•
Loudspeaker with gooseneck microphone and pedal		•
VHF-phone preparedness, microphone, pedal & harness		•
Alco lock system with SMS function		•
Additional air filtration unit including cabin pressure control		•
Dead man switches on joysticks		•
Automatic clamshell bucket levelling while closing		•
Anemometer with alarm and slow down		•
Turbo timer, 3 min delayed engine stop		•
Vertical lift		•
Camera with 7" display. Stick camera		•
Camera with 12" display. Stick camera		•
Additional right side camera (with 12" display)		•
Camera recording system with 160 h capacity		•
WiFi camera		•

MANTSINEN 60R



CRAWLER UNDERCARRIAGES, STANDARD AND HEAVY DUTY

Long and wide apart tracks create an excellent stability foundation for the machine. Flat track shoes run smoothly on gravel, asphalt or concrete. Rigid box type frame and hydrostatic drive with two speeds. Planetary track drives with spring applied multidisc automatic brakes and hydraulic release.

60R, CRAWLER UNDERCARRIAGE		
	STANDARD	HEAVY DUTY
Undercarriage heights	5' 7". With pylon 9' 2" / 12' 6" / 15' 9"	5' 11". With pylon 9' 6" / 12' 10" / 16' 1"
Track gauge	17' 3"	17' 3"
Track length	18' 9"	20' 4"
Track shoes	44" flat	44" flat
Travel speed	2.6 mph	2.2 mph
OPTIONS		
Track shoes	55" flat / 36" mm three grouser	55" flat / 55" cast / 36" three grouser
Additional fuel tanks	260 gallon or 2x 260 gallon	260 gallon or 2x 260 gallon

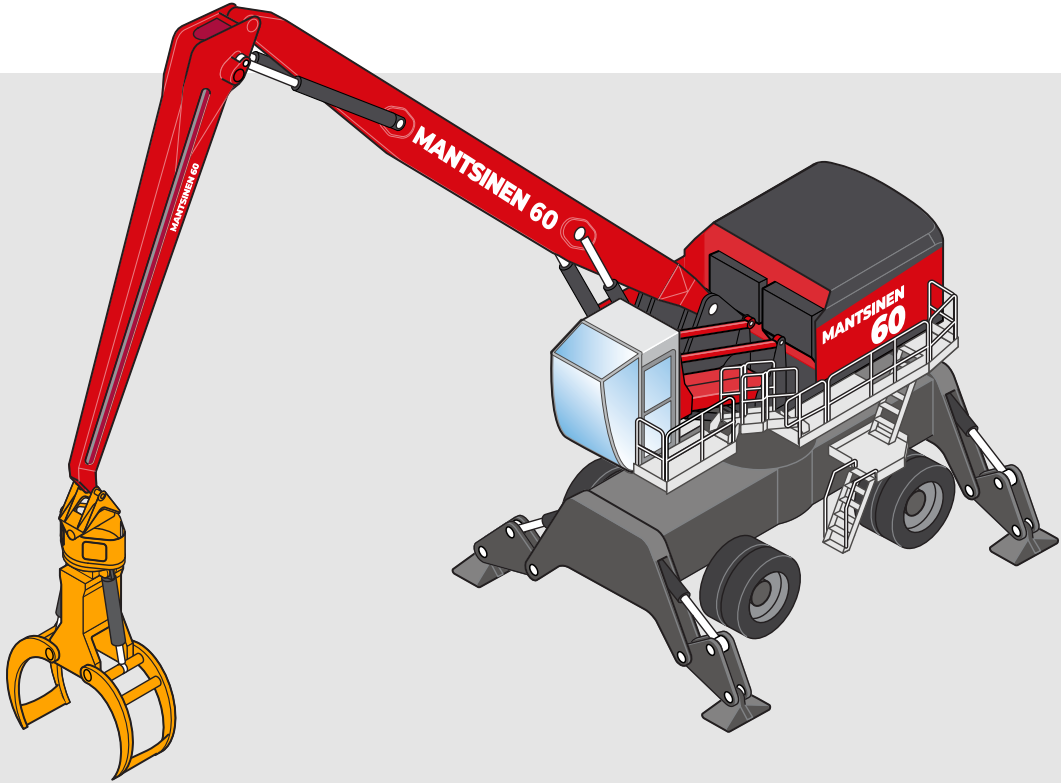
Robust and proven undercarriages are designed for every demand and conditions. Stability and robustness are the key features in all the Mantsinen undercarriages. All machines are able to operate a 360° sector with full load.

MANTSINEN 60M

MOBILE UNDERCARRIAGES, RUBBER TYRE STANDARD AND HEAVY DUTY

Rigidly mounted steering front and oscillating rear 70-ton axles with planetary reductions at wheel hubs. Hydrostatic four-wheel drive. Two variable displacement axial piston motors with two speeds. Service drum brakes both axels. Automatic multiple disc brake at steering axle. 4-point outriggers with cylinder rod protections.

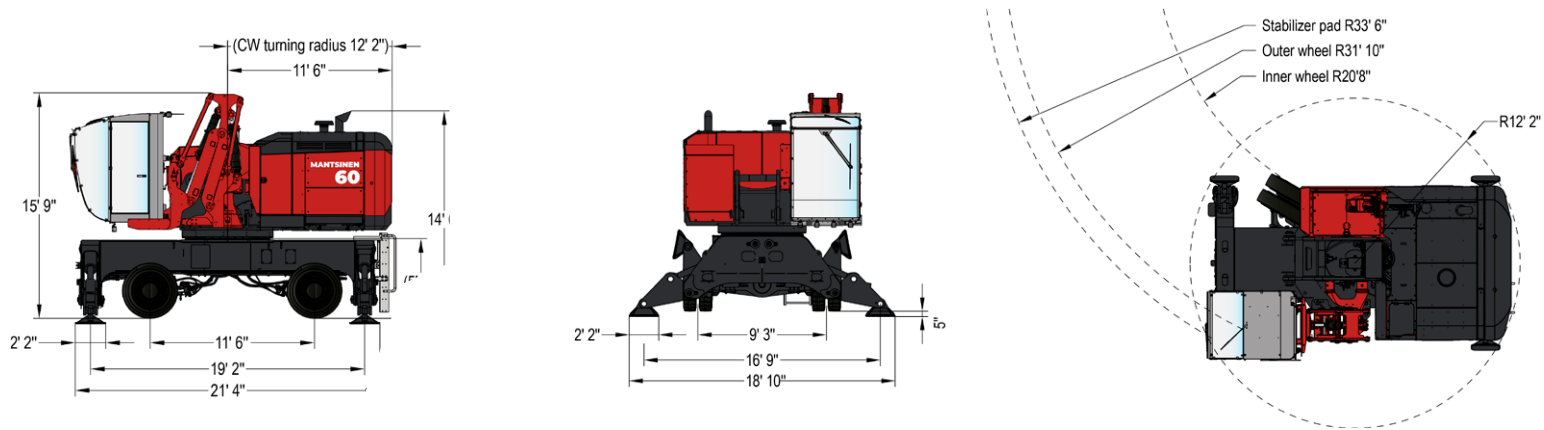
60M, RUBBER TYRE UNDERCARRIAGE		
	STANDARD	HEAVY DUTY
Undercarriage heights	5' 7"	6' 3". With pylon 9' 10" / 13' 1" / 16' 5"
Wheelbase	11' 6"	12' 11"
Wheel gauge	9' 3"	9' 3"
Tyres	8 × 12.00-24 solid rubber	8 × 14.00-24 solid rubber
Drive speed	Max 6.2 mph	Max 6.2 mph
Stabilizer pads	42" x 42"	42" x 42"
Individual outrigger control	Optional	Standard
OPTIONS		
Large pads, with spherical bearings	46" x 81"	46" x 81"
Additional fuel tank	260 gallon or 2x 260 gallon	260 gallon or 2x 260 gallon
	Drive motor covers	Drive motor covers
	Automatic undercarriage lubrication	Automatic undercarriage lubrication



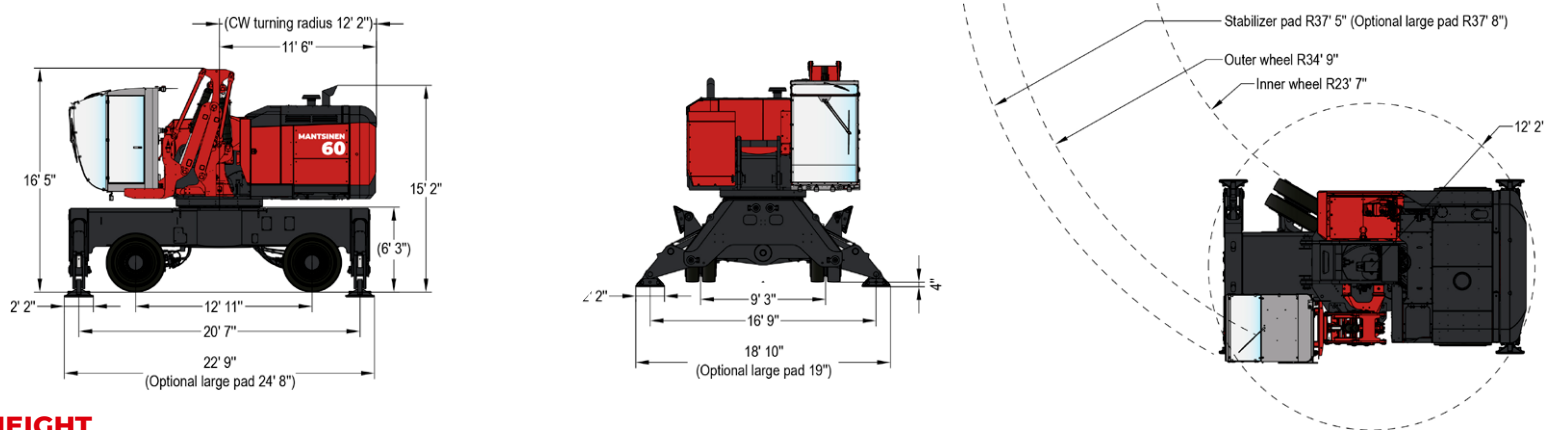
HD undercarriages available for harshest conditions.
Undercarriages are available in several different heights to optimize the operation, reach and visibility.

MAIN DIMENSIONS FOR 60M

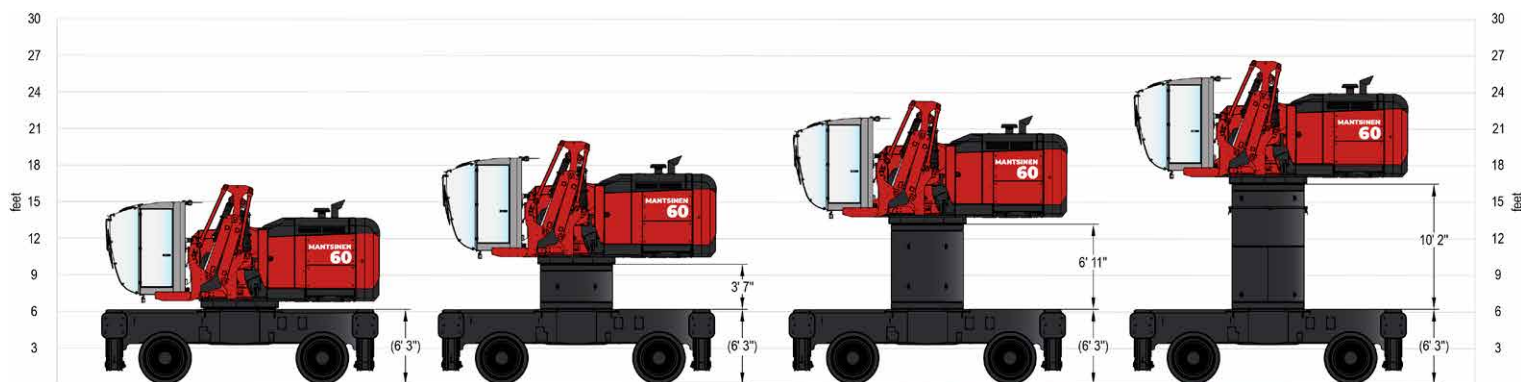
60M STANDARD



60M HEAVY DUTY

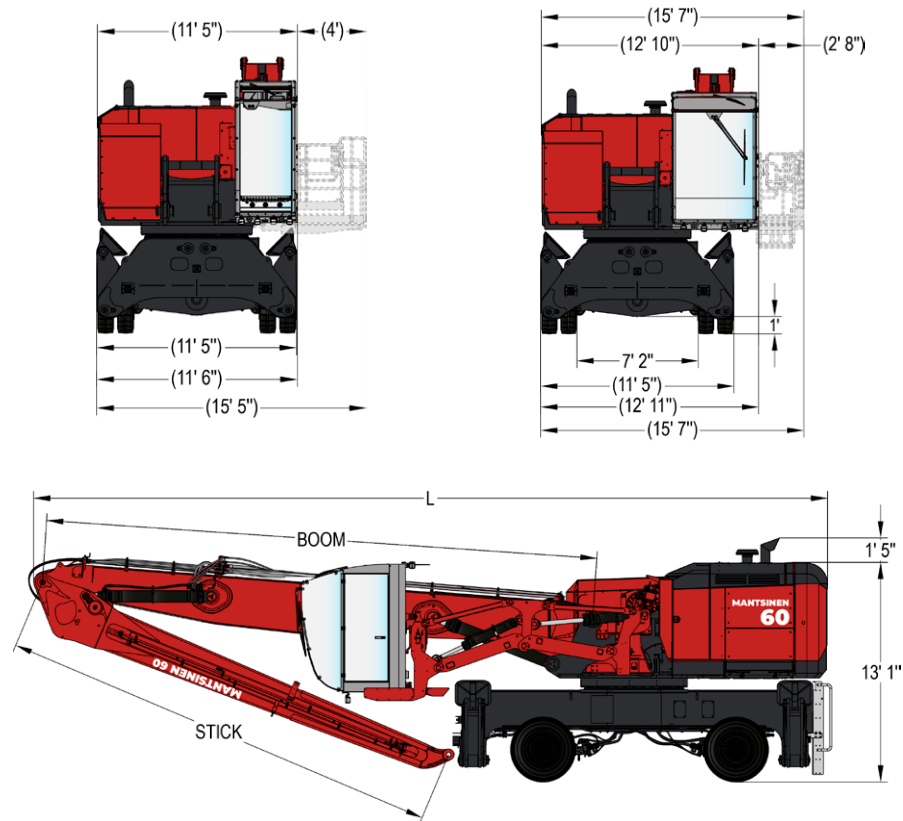


60M HEAVY DUTY HEIGHT



TRANSPORT DIMENSIONS FOR 60M

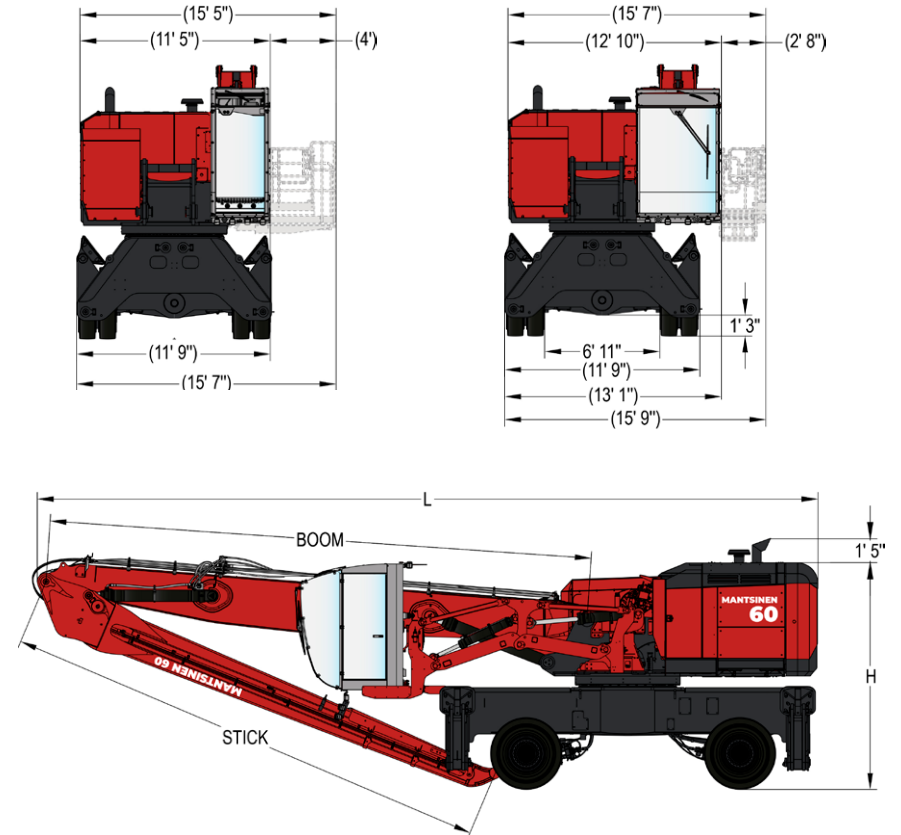
60M STANDARD



DIMENSIONS FOR 60M STANDARD

Boom length	29' 6" straight	32' 10" straight	32' 10" curved	37' 9" straight
Machine length (L)	44' 0"	47' 3"	47' 3"	52' 2"
Undercarriage height	5' 6"	5' 6"	5' 6"	5' 6"
Machine height (H)	13' 1"	13' 1"	13' 1"	13' 1"

60M HEAVY DUTY

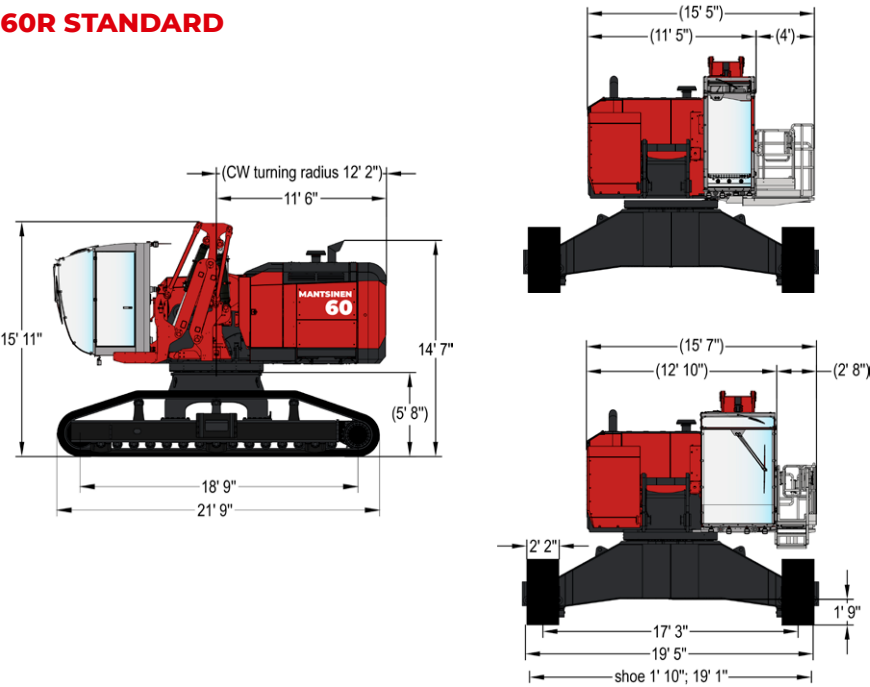


DIMENSIONS FOR 60M HEAVY DUTY

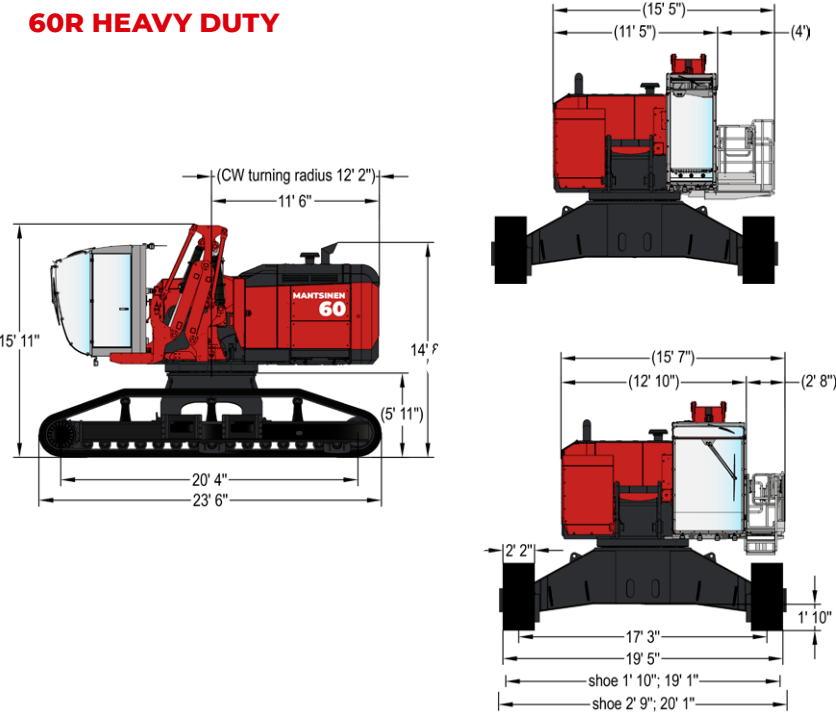
Boom length	29' 6" straight	32' 10" straight	32' 10" curved	37' 9" straight
Machine length (L)	44' 0"	47' 3"	47' 3"	52' 2"
Undercarriage height	6' 3"	9' 10"	13' 1"	16' 5"
Machine height (H)	13' 9"	17' 5"	20' 8"	23' 11"

MAIN DIMENSIONS FOR 60R

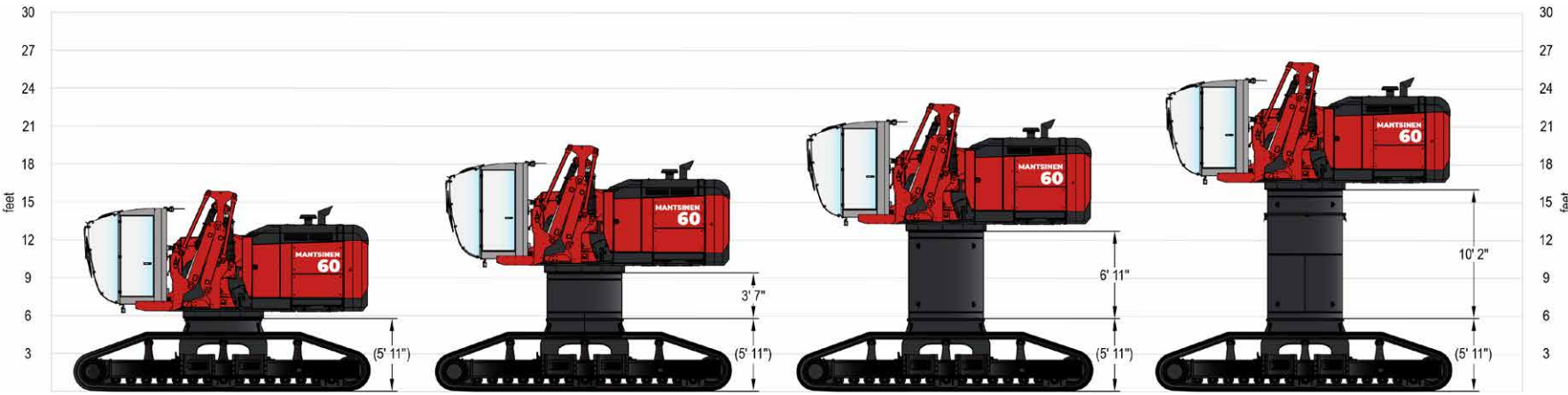
60R STANDARD



60R HEAVY DUTY

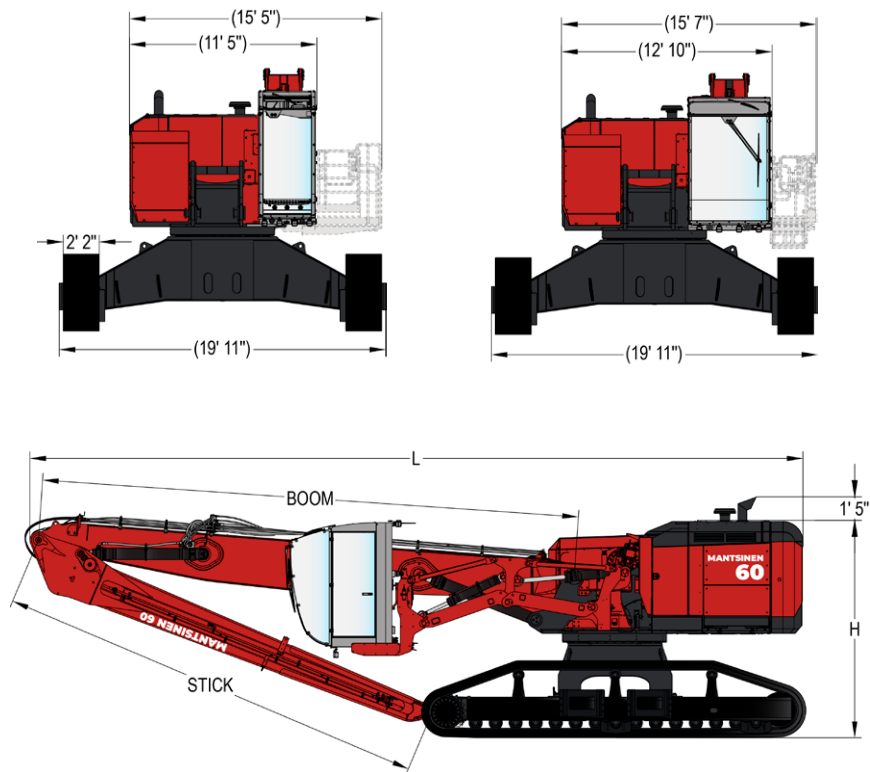


60R HEAVY DUTY



TRANSPORT DIMENSIONS FOR 60R

60R HEAVY DUTY



DIMENSIONS FOR 60R HEAVY DUTY				
Boom length	29' 6" straight	32' 10" straight	32' 10" curved	37' 9" straight
Machine length (L)	44' 0"	47' 3"	47' 3"	52' 2"
Undercarriage height	5' 11"	9' 6"	12' 10"	16' 1"
Machine height (H)	13' 5"	17' 1"	20' 4"	23' 7"

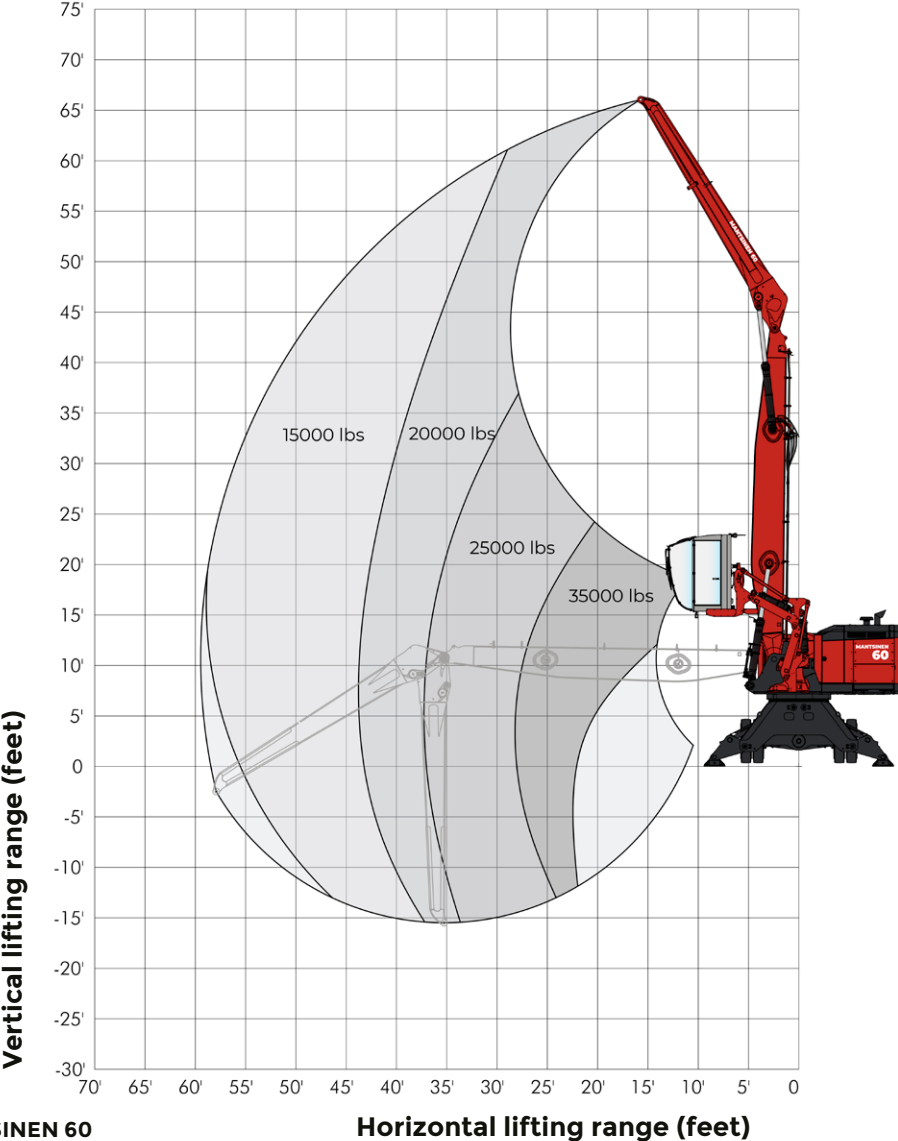


REACH FOR PRODUCTIVITY

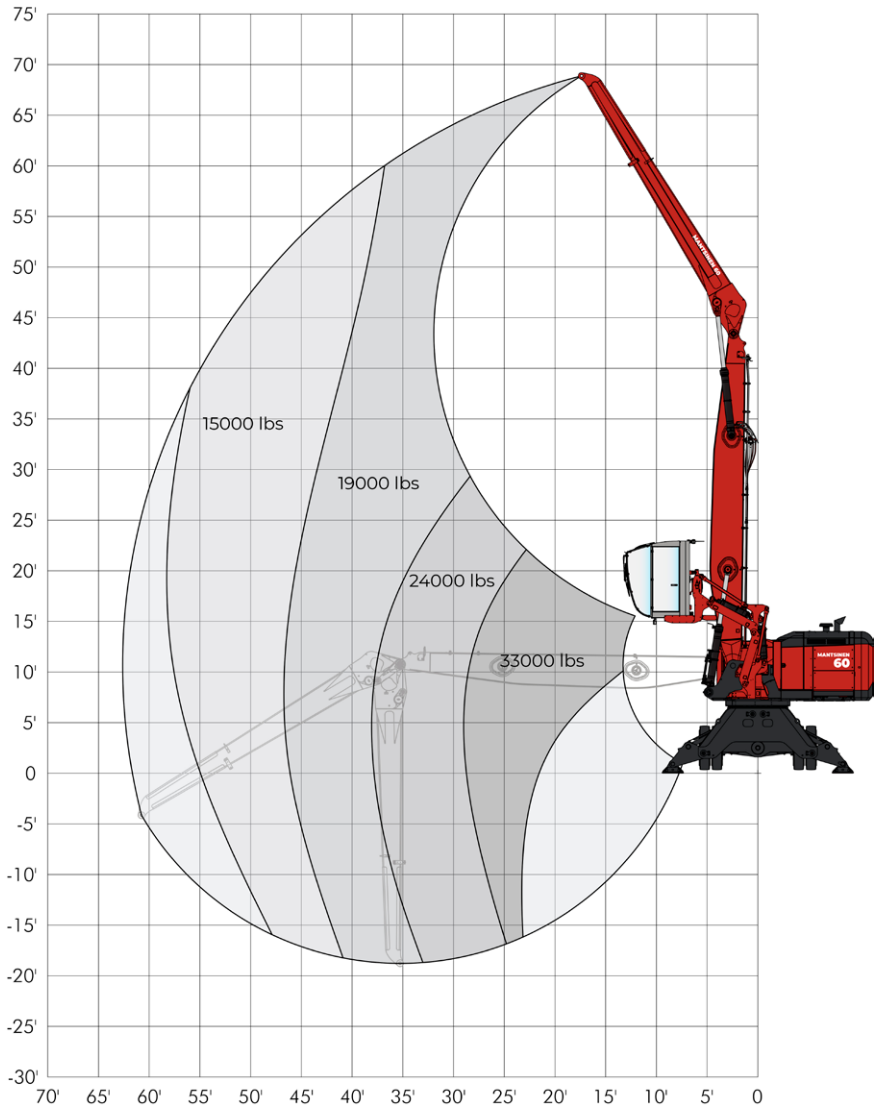
MANTSINEN 60

Contact your Mantsinen representative (www.mantsinen.com/en/sales/) for specific load diagrams for your operation.

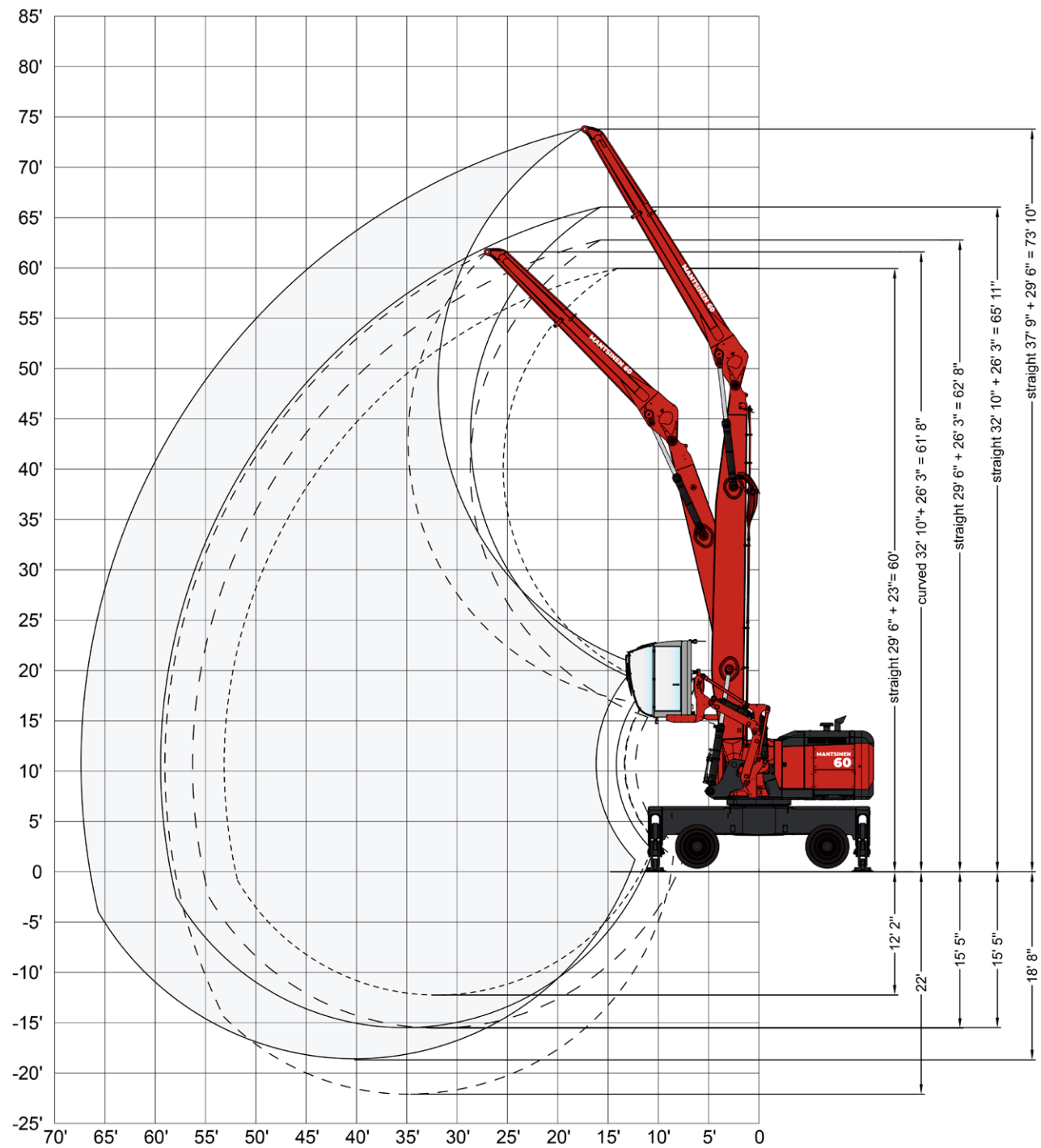
Lifting capacity range with 32' 10" straight main boom and 26' 3" stick



Lifting capacity range with 32' 10" straight main boom and 29' 6" stick



**REACH WITH
DIFFERENT BOOM
AND STICK
CONFIGURATIONS**



Specifications subject to change without prior notice. The photographs and/or drawings in this brochure are for illustrative purposes only. Refer to the Operator's Manual for instructions on the proper use of this equipment.

TECHNICAL SPECIFICATIONS

OPERATING WEIGHT		
Total weight without attachment	143 000 to 176 000 lbs according to configuration	
FRONT EQUIPMENT		
Boom configuration (boom and stick length)	29' 6" straight + 23'	Max. horizontal reach 53'
	29' 6" straight + 26' 3"	Max. horizontal reach 56'
	32' 10" straight + 26' 3"	Max. horizontal reach 60'
	32' 10" straight + 29' 6"	Max. horizontal reach 62'
	37' 9" straight + 29' 6"	Max. horizontal reach 67'
	32' 10" curved + 26' 3"	Max. horizontal reach 59'
DIESEL ENGINE		
Volvo Penta	TAD 872 VE,Tier 4f	
Power	286 Hp	
Displacement	470 in ³	
Number of cylinders	6	
Electric system	24 V DC, alternator 130 A / 24 V, batteries 2 × 170 Ah /12 V	
HYDRAULIC SYSTEM		
Oil flow, front equipment and travel	2 × 86 gallons /min	
Operating pressure, front equipment and travel	5 100 psi	
Oil flow, swing	61 gallons /min	
Operating pressure, swing	3 900 psi	
Max swing speed	6 r/min	
Swing torque	91 500 ft·lb	
REFILL CAPACITIES		
Hydraulic oil	170 gallons net volume	
Fuel tank	130 gallons	
Engine oil	7,1 gallons	
AdBlue tank	12 gallons	



ATTACHMENTS

RECOMMENDED ATTACHMENTS

CLAMSHELL BUCKET	Volume [yd³]	Attachment weight [lbs] with fixed R3 rotator and link		Total weight [lbs] with material density [lbs/yd³]			
		HBL series	HB series	843	1686	2528	3371
HB20-2 R3	2,62	6170	7720	8379	10587	12793	16552
HB25-2 R3	3,27	6390	7830	9147	11903	14657	18853
HB30-2 R3	3,92	6610	8160	9915	13219	18070	21374
HB35-2 R3	4,58	7500	8380	11361	15222	19958	23819
HB40-2 R3	5,23	7720	8490	12129	17308	21711	26120
HB50-2 R3	6,54	8160	9040	13673	20066	25573	
HB60-2 R3	7,85	8600	9480	15218	22715	29325	
HB70-2 R3	9,16	8820	9700	16542	25144		
HB80-2 R3	10,46	9260	10140	18078	27776		

HBL=Light series

= Preferred HBL attachment

= Preferred HB attachment



ORANGE PEEL GRAB (SEMI-OPEN)	Volume [yd³]	Attachment weight [lbs] with fixed R3 rotator and link	Total weight [lbs] with material density [lbs/yd³]			
			1012	1349	1686	2023
HG08-5 R3	1,05	6170	7233	7586	7940	8294
HG11-5 R3	1,44	6390	7847	8333	8818	9303
HG15-5 R3	1,96	6830	8814	9474	10135	10795
HG20-5 R3	2,62	7720	10371	11254	12137	13020
HG25-5 R3	3,27	8160	11469	12571	13673	14775
HG30-5 R3	3,92	9700	13667	14988	16309	17630
HG40-5 R3	5,23	10580	15873	17635	19398	21160

The weights with semi-open tines

= Preferred attachment



ROUND- WOOD GRAB	Size [yd²]	Attachment weight [lbs] with fixed R25 or R3 rotator and link	Total weight [lbs] with 1012 lbs/yd³ (pile) with timber length [ft]			
			10'	13'	16'	20'
RGB12	1,44	4630	9480	11023	12566	14110
RGB15	1,79	5290	11244	13228	15212	17196
RGB18	2,15	6170	13228	15653	18078	20503
RGB20	2,39	6390	14330	16976	19621	22267
RGT16	1,91	6170	12580	14551	16755	18960
RGT20	2,39	6830	14771	17417	20062	22708

RGB = By-Pass

RGT = Tip-to-Tip

= Preferred attachment





THE STRONGEST LINK IN THE GLOBAL LOGISTICS CHAIN

Mantsinen provides more efficiency, speed and capacity for our customers in global logistics chain, operating with heavy and basic industry raw materials and semi-finished products. We are the hands-on frontrunner in material handling.

MANTSINEN GROUP LTD OY

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