MANTSINEN 95

LIFT YOUR EFFICIENCY TO THE NEXT LEVEL

CONSIDER IT LOADED

Lift your efficiency to the next level with hydraulic speed and precision.

Combining precision with efficiency, the Mantsinen multipurpose material handling machines are the perfect solution for various operations in ports and industrial terminals. They are 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.

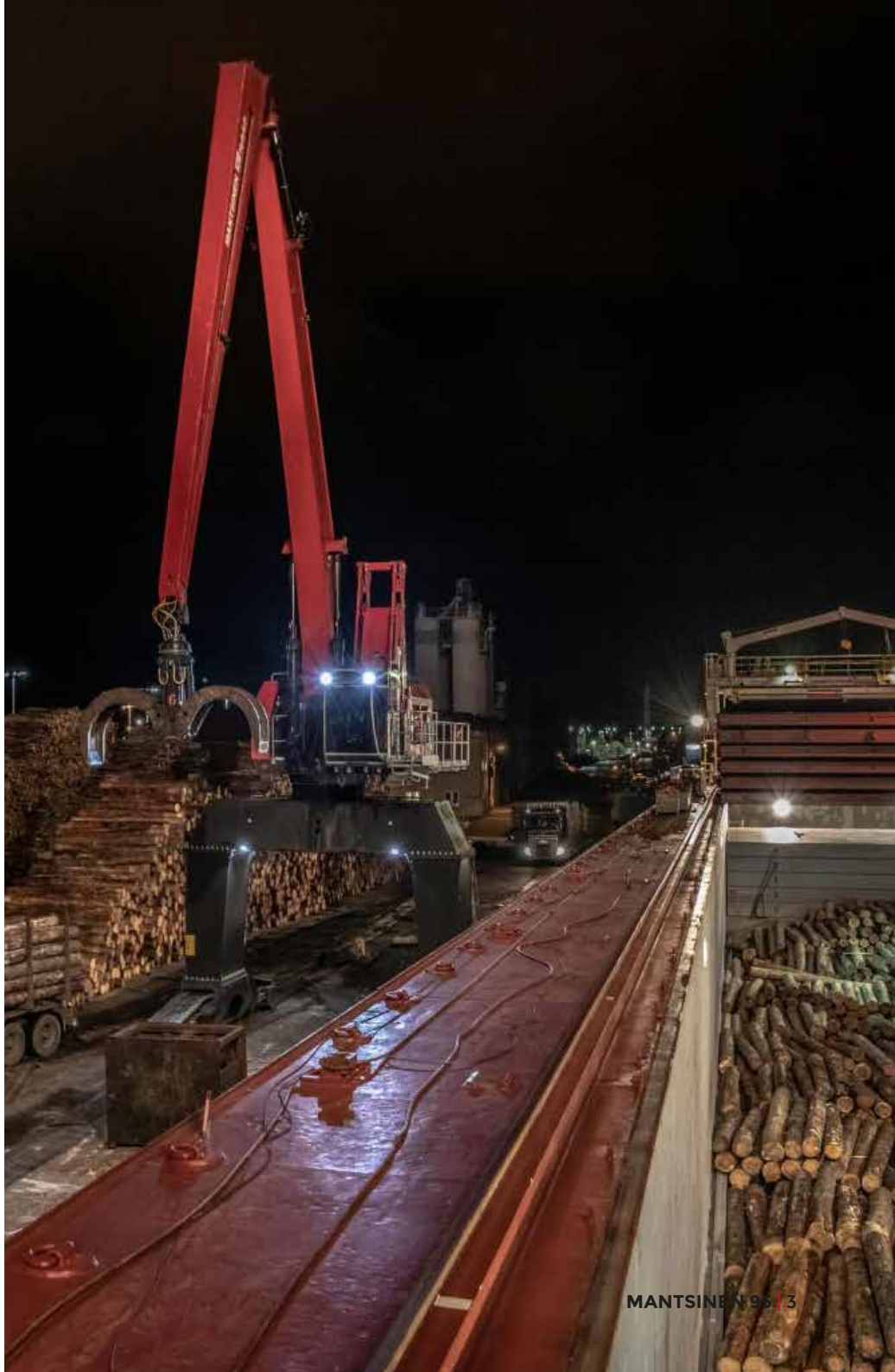
With more than 50 years of experience in logistics services for heavy industry, Mantsinen immediately recognizes the demands and challenges for material handling machines in different operations. The combination of this operational experience and world-class engineering knowledge create unique solutions for efficient handling operations. With our deep knowledge, we can optimise your operation and machine configuration.

SUSTAINABLE BY NATURE

LIFELONG PRODUCTIVITY

Mantsinen material handling machines are a generational investment, in respect of life and durability. In-house manufacturing of machines and attachments ensures high quality without compromise. All the critical components are thoroughly analyzed 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.

More than two decades, Mantsinen has paved the way in energy-saving innovations and sustainable solutions. The machine has an energy-efficient, function-specific “power on demand” load-sensing LUDV hydraulic system. Additionally, the closed-loop swing hydraulics return kinetic energy back into the system during swing deceleration. The thermostat-adjusted hydraulic fans run with optimum speed, thus saving power and keeping noise levels down.



EVERYTHING UNDER CONTROL

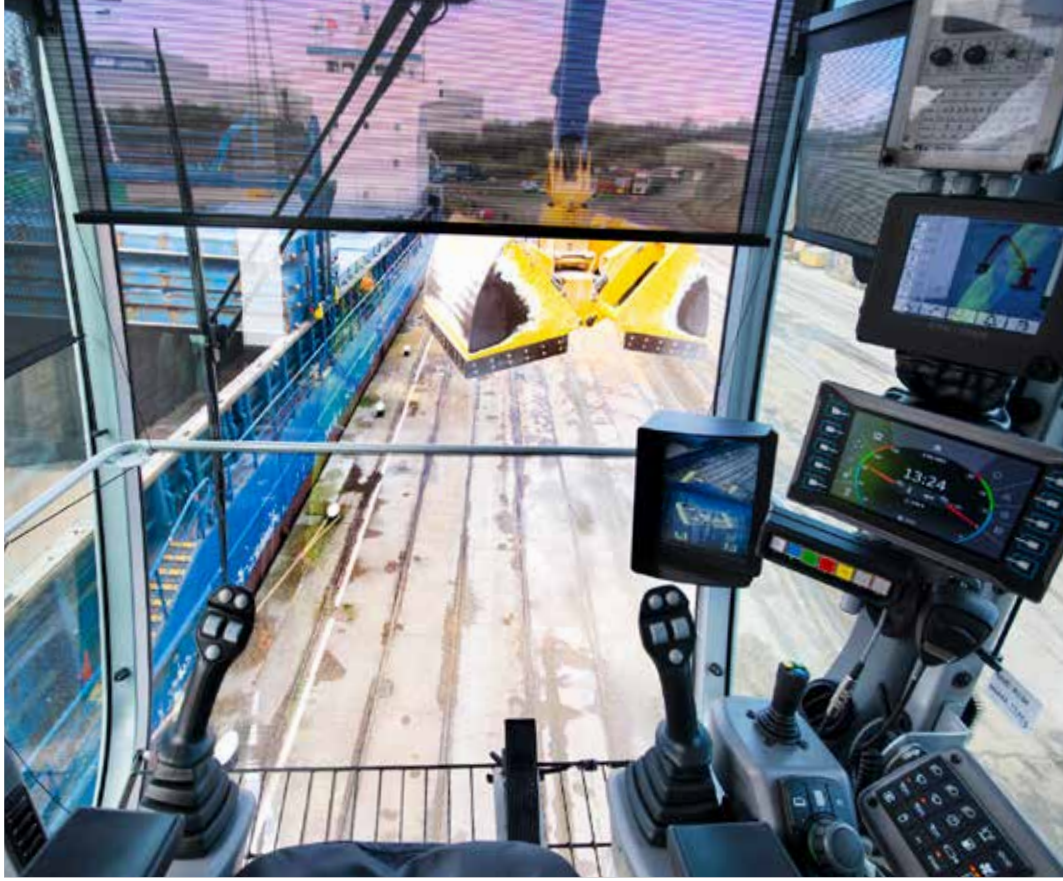
MANTSINEN CONTROL SYSTEM (MCS)

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 one-grip 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

- Graphic user interface with a 7" display
- Easy-to-use multifunction control dial
- Operating data and gauges
- Optional functions display information
- Onboard 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



CONTROL SYSTEM	STANDARD	OPTION
Auto-idle mode	•	
Heavy lift mode	•	
Precision mode	•	
Dead man switch on joysticks		•
Automatic clamshell bucket levelling while closing		•
Anemometer with alarm at 56 mph, slowdown 67 mph		•
Remote control for travel		•
Temporary person lift prep		•
Turbo timer		•
Vertical lift		•
Container handling mode		•

SAFETY WITHOUT COMPROMISES

MANTSINEN SAFETY SYSTEM (MSS)

Mantsinen machines come equipped with an advanced safety system as a standard.Front equipment, swing and cab elevator are equipped with sensors ensuring continuous control of the machine operation.

There is an overload and stability control sensor, as well as cabin collission prevention with warning and automatic motion cutoff functions. The attachment menu is a part of the system as well. Real time load, reach and height information is provided on the graphic user interface, which features a graphic animation of the machine's operation.

The system also enables various case-by-case adjusted safety features like maximum and minimum operational heights and restricted sectors. There are also optional operator-assisting systems available. For example, the automatic levelling system lifts the bucket while closing to avoid cargo hold or railcar damage. The system gathers operational load cycle history that enables evaluation of machine utilisation.

LEAD BY DATA

MANTSINEN INSIGHT™

MANTSINEN INSIGHT™ provides comprehensive information from individual material handling machines to a whole 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.

MANTSINEN INSIGHT™ STANDARD	STANDARD
Asset reports	•
Productivity/efficiency views	•
Fleet view	•
Visualised sensor data	•
Upcoming services tool	•
History data	•
Data for dealer/factory support	•
Control system remote access for factory support	•
Global SIM card	•

Machine history

Resale

Service history

Productivity improvement

Machine reports

Immediate data

STRENGTH IS NOTHING WITHOUT VISION

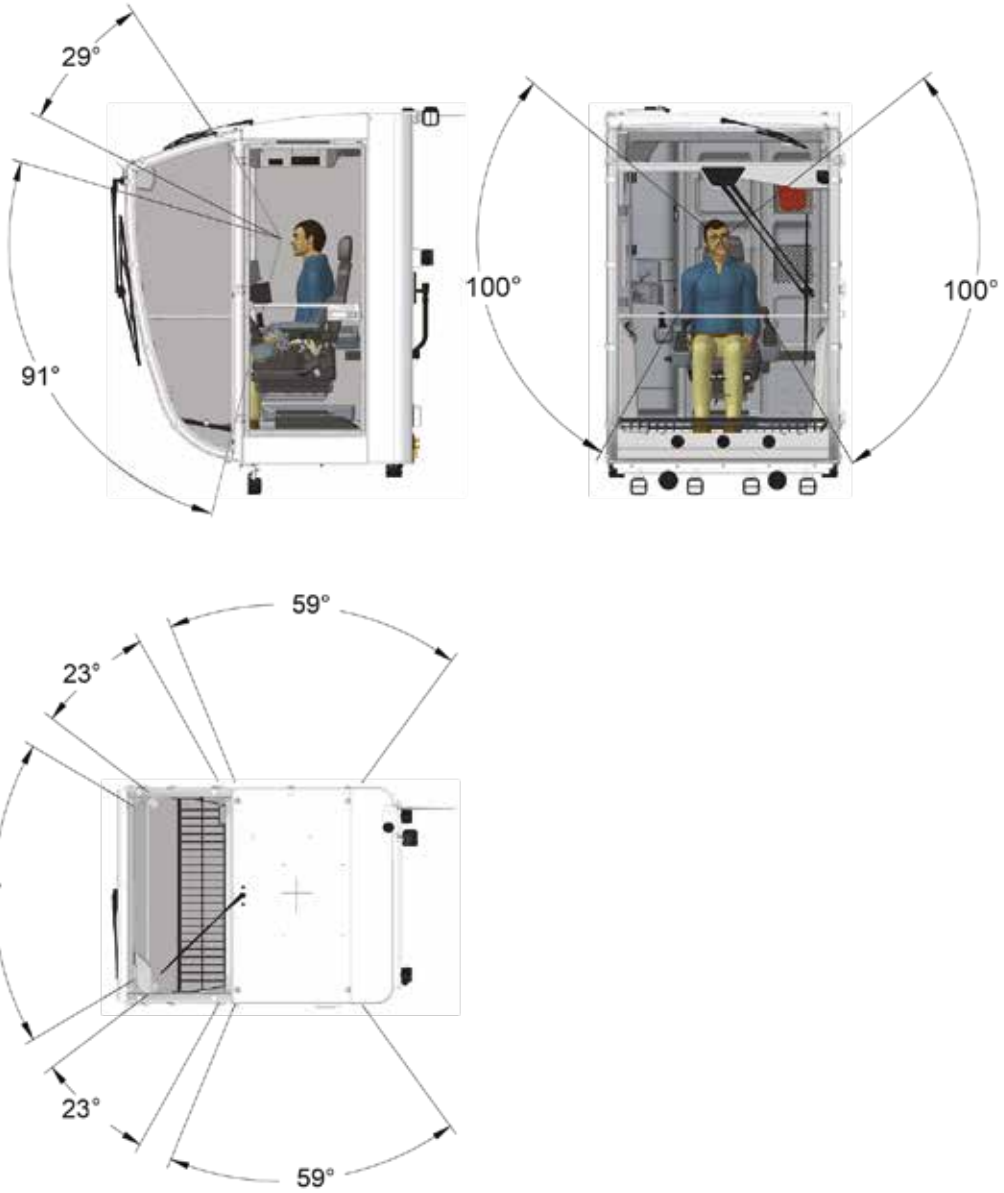
STAINLESS STEEL CABIN

The spacious and modern operator cabin has excellent visibility with a large windshield and floor window in one curved piece. The cabin is made of stainless steel, ideal for a 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. The windshield wiper has two speeds, an adjustable intermittent function and a washer. There is also a 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.

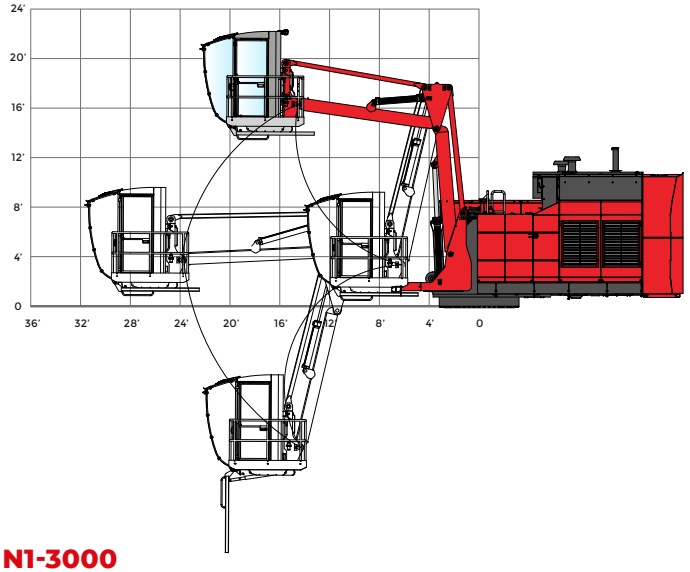
VISIBILITY FROM CABIN



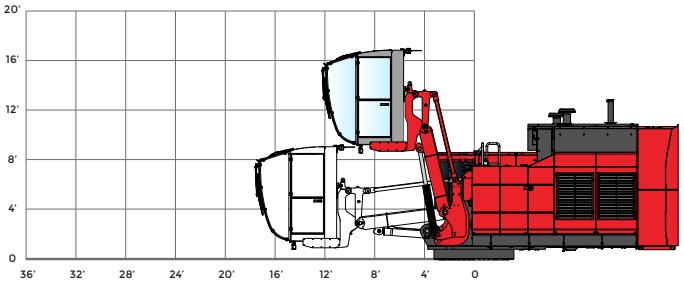
CABIN ELEVATORS

The Mantsinen 95 has two cab elevator options. The robust Mantsinen N2-5000 cab elevator features independent vertical and horizontal movement to position the operator for maximum visibility. The one-arm cab elevator N1-3000 lifts the operator providing improved visibility.

N2-5000



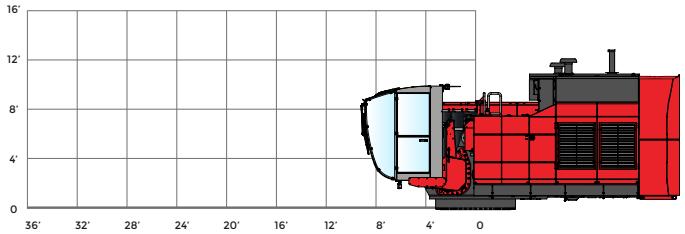
N1-3000



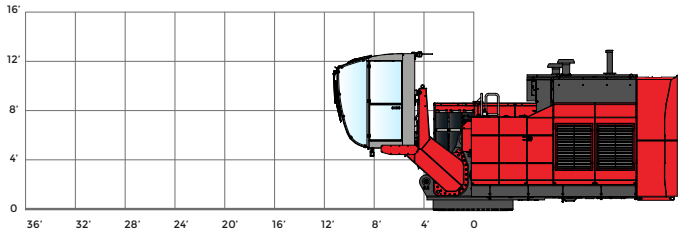
CABIN FIXED POSITIONS

The Mantsinen 95 has three fixed cab positions.

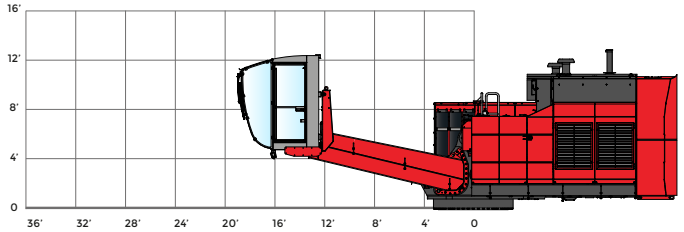
FIXED CAB POSITION 1.



FIXED CAB POSITION 2.



FIXED CAB POSITION 3.



CABIN EQUIPMENT AND OPERATOR'S SEAT	STANDARD	OPTION
Heating and air conditioning, in large cabin automatic	•	
One-piece curved windshield with heating	•	
Skylight	•	
Tinted window glasses	•	
Sunshades	•	
Folding instructor seat with seatbelt	•	
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	•	
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		•
Camera with 7" display. Stick or rear-view camera		•
Camera with 12" display. Stick or rear-view camera		•
Stick, rear-view and right-view cameras with shared 12" display		•
Camera recording system with 160 h capacity		•
WiFi camera		•

DEVELOPED TO GET THE JOB DONE

UPPERSTRUCTURE

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

POWERLINE

Volvo Penta diesel engines are known in the material handling industry for their high performance, low fuel consumption and durability. The engine is located in a sound proofed compartment.
The doors ensure easy access to service on both sides. To reduce fire risk, the pump compartment is isolated from the engine compartment by a firewall.

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 functions as well as for fans. Efficient filtration and a three-micron bleed-off fine filter with water absorption ensures continuously clean and dry oil, which increases uptime and extends component and oil lifetime.
The hydraulic oil cooler and the radiator are easily accessible for cleaning from the service platform. The fan reversal function cleans the cooler and radiator without interrupting the machine's operation.

RIGID MAIN FRAME

The rigid main frame and the large diameter pins guarantee a long lifetime for the machine.

SERVICE WALKWAYS ALSO INSIDE

The wide inside and outside service walkways satisfy international safety standards, providing unrestricted and safe access to all service points.

SWING MECHANISM

The Mantsinen 95 has a large-diameter heavy-duty, three-row, roller-type slewing ring with internal teeth running in a grease bath. Two heavy planetary swing gears have integrated automatic multi-disc brakes. The closed-loop swing hydraulic circuit operating with state of-the-art electric control system ensures the extremely smooth and controllable swing. The closed-loop swing system saves a considerable amount of energy and provides maximum operating performance.

FRONT EQUIPMENT

A range of straight or curved booms, as well as different boom and stick lengths are available to optimize the operation for maximum productivity. Mantsinen boom and stick structures are designed and analysed with modern FEM-methods based on real operation measurements and long-term practical experience. Their minimum expected lifetime is over two million work cycles, assuming maximum load. Booms and sticks are manufactured in-house under close quality supervision to ensure a long lifetime for these structures under stress and fatigue.

MAIN BOOM

The main boom foot and bosses are constructed from steel castings, providing an excellent service life to one of the most critical structural components of the machine. The optimised box structure ensures maximum lifetime without compromise. Strong structure and large pin diameters minimise surface pressures and wear on bushings.

STICK

The stick foot including cylinder brackets is a one-piece cast steel structure. The use of cast structures in the high-load stress areas ensures the component's strength, durability and long service life.

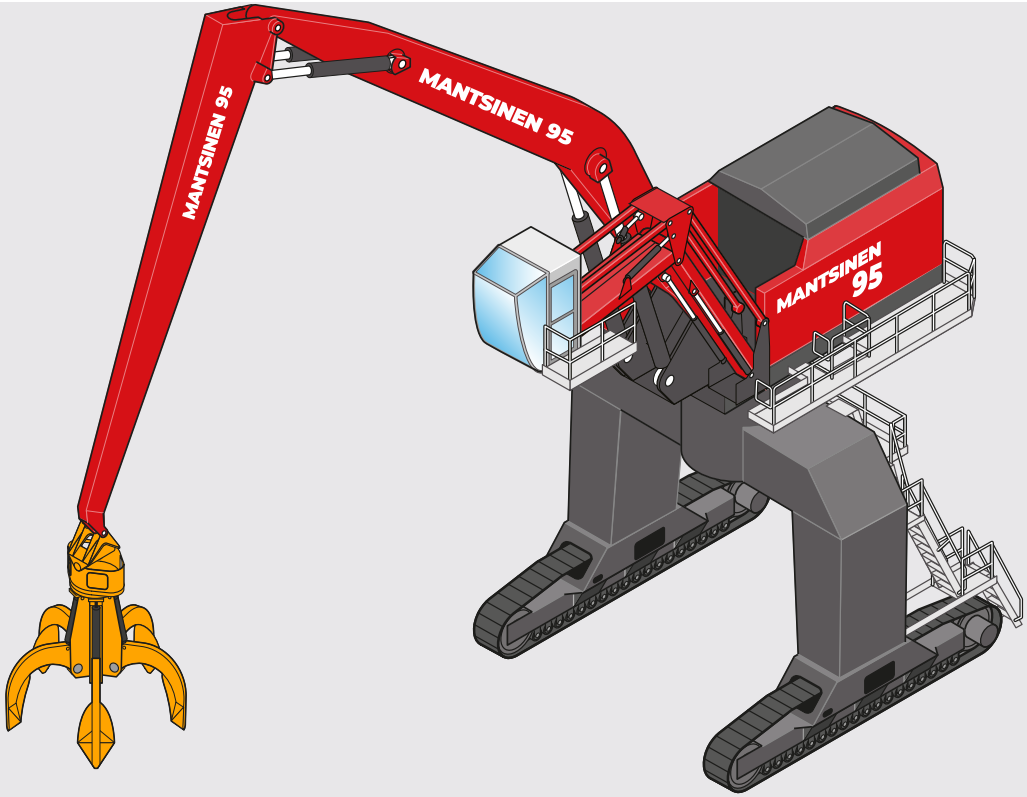
The stick box is constructed from four C-profiles using high tensile steel. The design allows the stick to be constructed with no welding seams in high-stress areas, making it light and extremely durable. Hydraulic lines are well protected on sides of the stick. As a consequence of the unique cast stick tip and link design, attachment hoses are not exposed for damages.

OPTIONS AND STANDARD FEATURES

EQUIPMENT	STANDARD	OPTION
Working lights, 24 V LED; 4 underneath cabin, 4 at stick, 1 on cab roof	•	
Central lubrication for front equipment and slewing ring raceway	•	
Central lubrication for mobile undercarriage	•	
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		•
Second additional attachment function, 2900 psi, 15 gallon/min		•
Magnet generator hydraulic preparedness, max flow 43 gallon/min		•
Magnet generator system 27 hp		•
Additional undercarriage hydraulic function with pedal		•
Biodegradable hydraulic oil		•
FILTRATION		
Large bypass 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		•
LIGHTS		
Additional 2 lights on boom		•
Undercarriage lights, one in each direction, 4 in total		•
Undercarriage pad lights, one directed to each pad, 4 in total		•
Travel lights for public roads		•

HEATING	STANDARD	OPTION
Electric heating for engine, hydraulics and cabin. 3-phase inlet socket		•
Automatic battery charger		•
Pre-heater for engine and cabin, by fuel. Including Multicontrol timer		•
REFILL		
Electric 24 V refuelling pump with 26', 1" hose reel		•
Refuelling 24 V pump cabinet on undercarriage		•
Refuelling line 2" from ground level		•
AdBlue 24 V refill pump, harness, pistol & 50' hose reel for IBC container		•
GENERAL		
Fire suppression systems		•
Safety access gate, doorbell + operator-openable electric lock		•
NATO jump start plug		•
Emergency stops in undercarriage, 2 pcs		•
Pull coupling		•
Stick corner covers, 4 pcs		•
Stick cover against grapple hits		•
Service lift SWL 1100 lbs, 16 feet swing beam, 1 x 115 V 60 Hz		•
Toolbox in undercarriage, aluminium		•
BACK UP SYSTEMS		
Portable hydraulic unit for swing, main boom, stick, electric or engine driven		•
Preparedness for portable unit		•
Diesel powerpack Mantsinen 100 for travel with remote control		•
SURFACE TREATMENT OPTIONS		
C4 Medium. Main component exterior surfaces		•
C5 Medium. Main component exterior surfaces		•
Customer stickers		•
Custom colour: Front equipment, cover panels, counterweight, cab elevator		•

MANTSINEN 95R



Long and widely spaced tracks and rigid box type frame create an excellent stability foundation for the machine. The flat track shoes run smoothly on gravel, asphalt or concrete. The hydrostatic track drive system consists of two-speed axial piston travel motors and planetary trackdrives. There are spring-applied multidisc automatic brakes with hydraulic release.

CRAWLER GANTRY

Crawler gantry provides logistic freedom by allowing trucks or rail cars pass through the crane. Additionally, the machine cycle time and truck waiting times are minimised due to the optimised swing angle.

95R		
	CRAWLER UNDERCARRIAGE	**CRAWLER GANTRY UNDERCARRIAGE**
Undercarriage heights	8'2", with pylon 13'1"/ 15'5"/ 17'1"	21'3" / 22'11" / 26'2", with pylon 26'2"/ 28'6"m
Track gauge	19'11"	19'11"
Track length	22'4"	22'4"
Track shoes	33" flat	33" flat
Travel speed	Max 2,2 mph	Max 2,2 mph
OPTIONS		
Track shoes	26" flat	26" flat
Additional fuel tank	1x 265 gal or 2x 265 gal	1x 528 gal or 2x 528 gal
	Heavy-duty tracks for extreme conditions	Heavy-duty tracks for extreme conditions

Robust and proven versions of the undercarriage are designed for every demand and condition. Stability and robust design are the key features in all the Mantsinen undercarriages. All the machines are able to operate full 360° circle at full load.

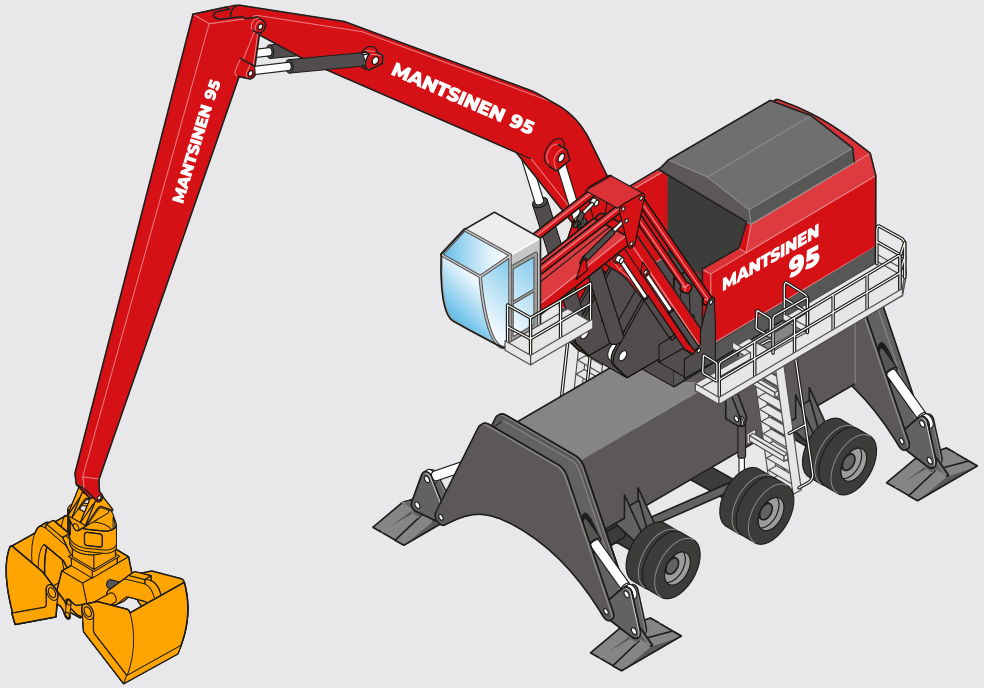
MANTSINEN 95M

The robust three-axel solid tyre mobile undercarriage provides great mobility in this machine size class with reduced axel loads. The two-axle drive and steering provides good drawbar pull and facilitates operation on uneven surfaces. There are hydraulic wet disc service brakes and spring-applied multi disc parking brakes on driven axels. Simultaneously or individually controllable outriggers permit stabile 360° operation with full loads even in demanding conditions. Outrigger cylinder protection and automatic undercarriage lubrication are included standard.

MOBILE GANTRY UNDERCARRIAGE

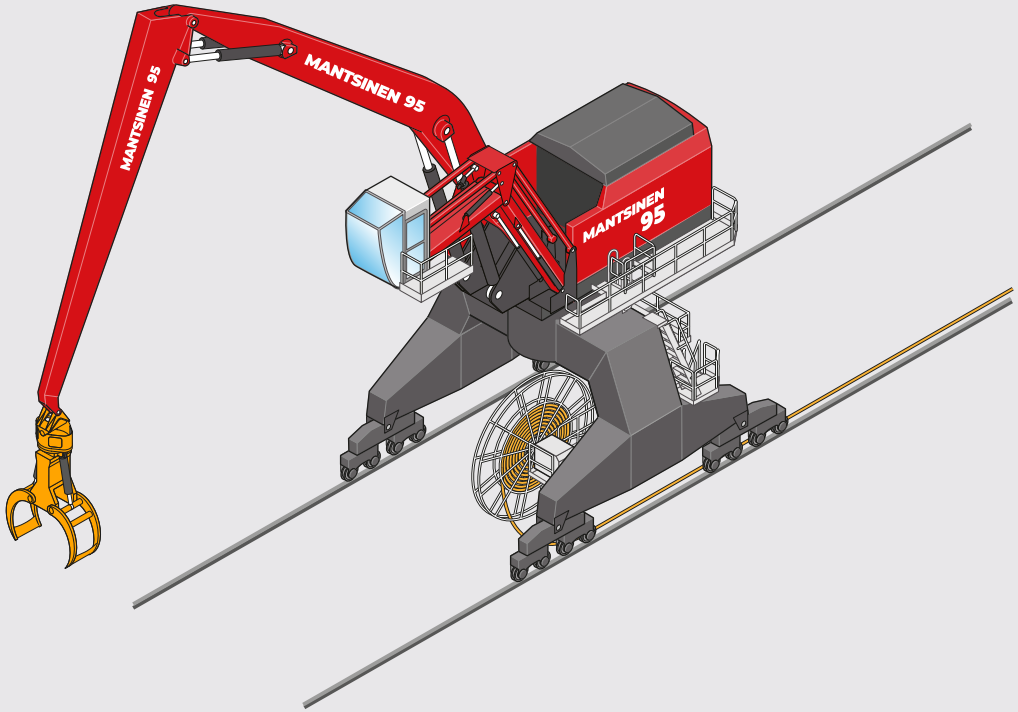
The Mantsinen 95's mobile gantry has a boxy rigid gantry frame. Six independently hydraulically suspended and steered oscillating axle units come standard and facilitate crab drive mode and lateral drive mode. The eight-wheel hydraulic drive has been implemented with variable displacement axial piston motors. Automatic levelling with 4-point hydraullic stabiliser cylinders as well as automatic undercarriage lubrication are included as standard features.

95M		
	MOBILE UNDERCARRIAGE	**MOBILE GANTRY UNDERCARRIAGE**
Undercarriage heights	9'10 with pylon 14'9" / 17'1" / 18'8"	21'4" / 23' / 26'3", with pylon 28'7"
Wheelbase	2 x 9'2"	2 x 9'6"
Wheel track width	13'7" c - c	20'10" c - c
Tyres	12 × 12.00-24 solid tyres	12 x 14.00 x 25 solid tyres
Drive speed	Max 6,2 mph	Max 3,1 mph
Stabiliser pads	37" x 59"	59" x 59"
Turning radius (wheelset centreline)	30'	39'
OPTIONS		
Large pads with spherical bearings (w x l)	53" x 59"	118" x 59"
Additional fuel tank	1x 265 gal or 2x 265 gal	1x 396 gal



Undercarriages are available in several different heights to optimise the operation, reach and visibility. Mantsinen provides tailored load information and operational drawings on case-by-case basis.

MANTSINEN 95S



RAIL MOUNTED

Rail undercarriage can be tailored around existing rails. Both the wheel diameter and number of wheels can be optimised to match permissible rail loads. There are Ø 16" and 25" wheel options available for different rail profiles. Hydraulic planetary wheel drives provide smooth travel and keep the machine steady throughout operation. The machine can be easily adapted to pull a hopper on rails. Rail cleaners, buffers and storm clamps are all available as options. Depending on gantry width, the undercarriage allows one or more rail wagons or trucks to pass through. Both diesel and electric versions are available for a rail-mounted machine.

FIXED

Fixed installation can be optimised using differing gantries or pylons. The machine, equipped with a diesel engine or an electric motor, can be adapted to an existing quay or pontoon.

TECHNICAL SPECIFICATIONS

FRONT EQUIPMENT		
BOOM, STRAIGHT OR CURVED	**STICK**	**HORIZONTAL REACH**
32'10"	26'3"	58'5"
36'1"	29'6"	64'4"
39'4"	32'10"	70'10"
42'8"	36'1"	77'5"
45'11"	39'4"	83'8"
49'3"	42'8"	89'11"

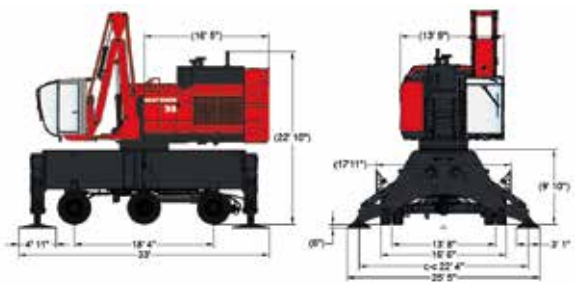
DIESEL ENGINE	
Volvo Penta	TAD1384VE 510 Hp Stage V / Tier 4f
Displacement	780 in³
Number of cylinders	6
Electric system	24 VDC, alternator 150 A / 24 V. Batteries 2 × 225 Ah / 12V

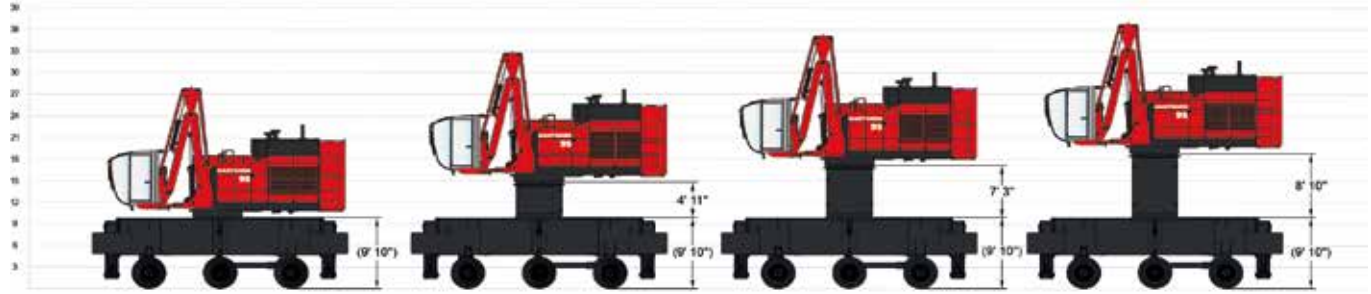
HYDRAULIC SYSTEM	
Oil flow, front equipment and travel	2 x 110 gal/min
Operating pressure, front equipment	4800 psi
Operating pressure, travel and Heavy Lift mode	5100 psi
Oil flow swing closed-loop system	108 gal/min
Operating pressure, swing	3900 psi
Swing speed	5.6 r/min
Swing torque	177,000 lbf-ft
REFILL CAPACITIES	
Hydraulic oil	260 gal net volume
Fuel tank	400 gal
Engine oil	9,5 gal
AdBlue tank	42 gal

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.

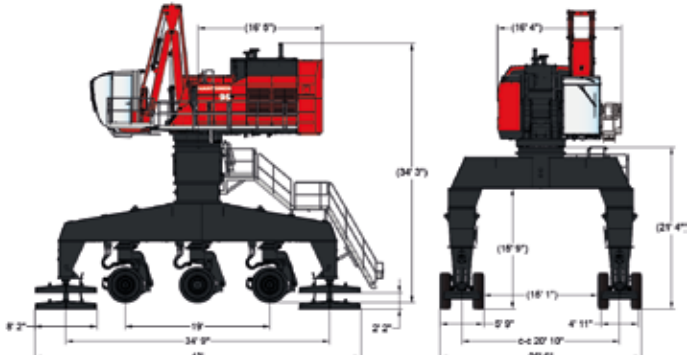
MAIN DIMENSIONS OF THE 95M

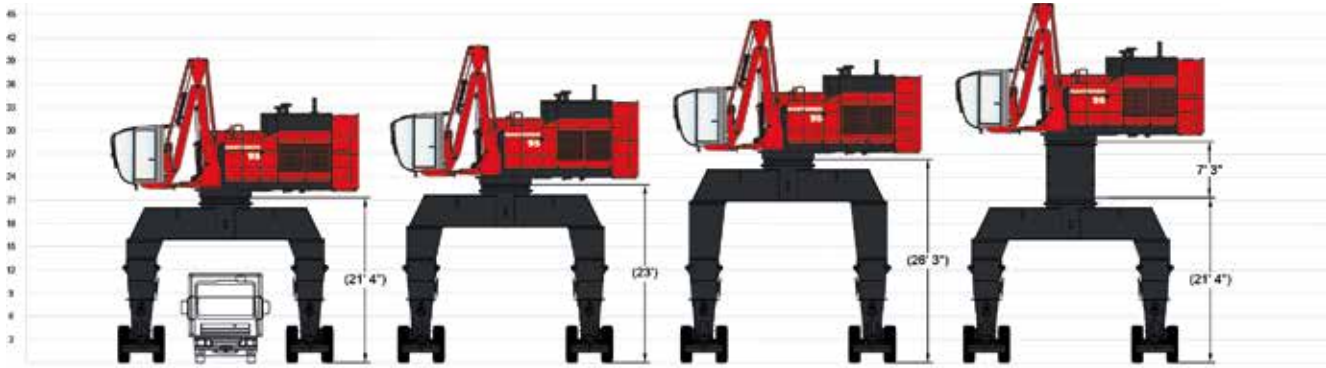
MOBILE UNDERCARRIAGE



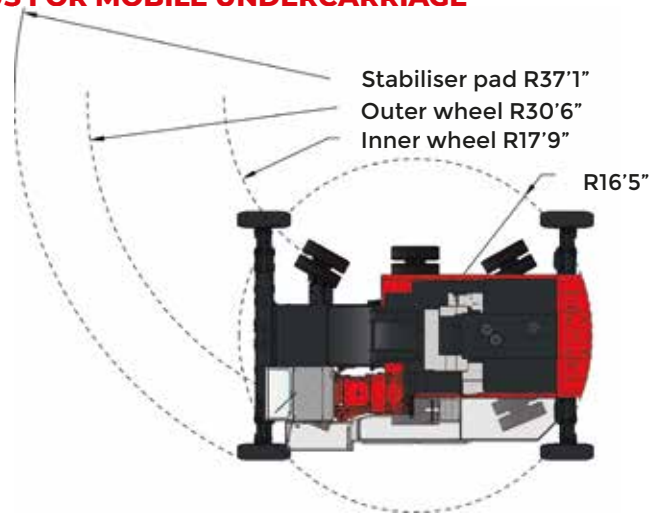


MOBILE GANTRY UNDERCARRIAGE

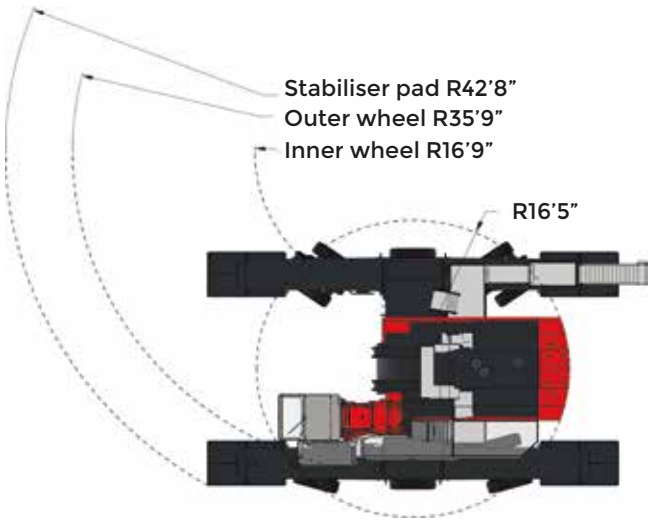




TURNING RADIUS FOR MOBILE UNDERCARRIAGE

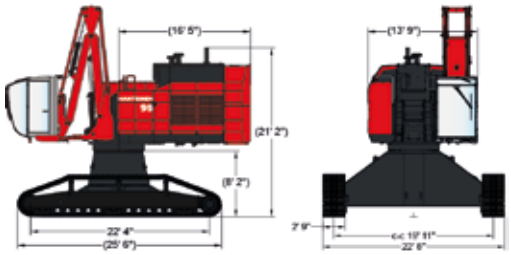


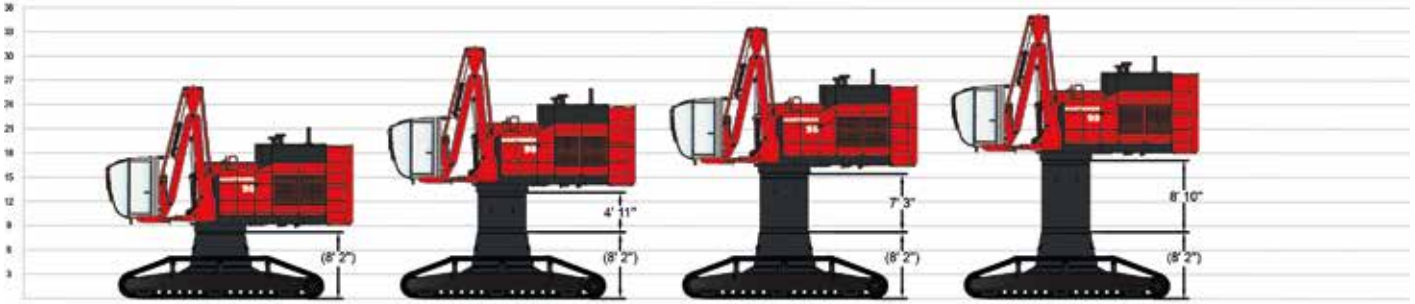
TURNING RADIUS FOR MOBILE GANTRY UNDERCARRIAGE



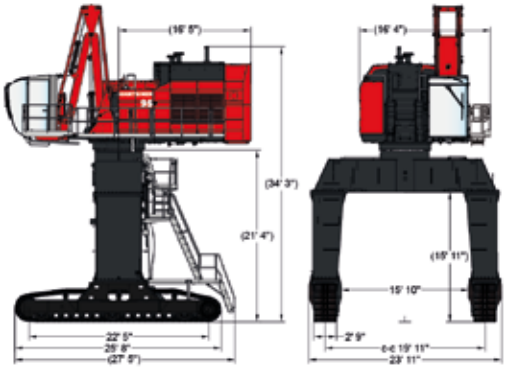
MAIN DIMENSIONS OF THE 95R

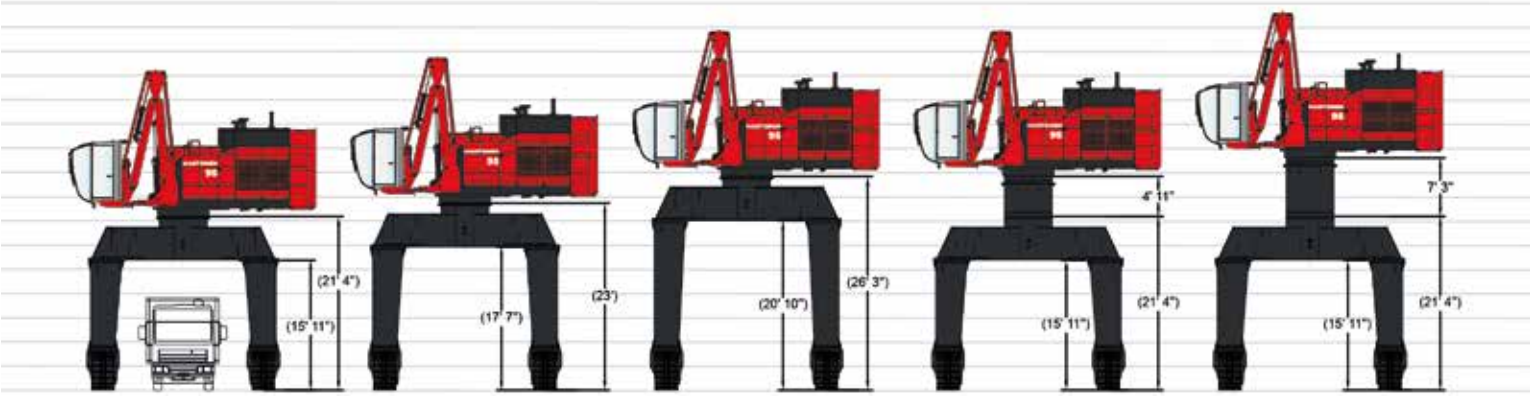
CRAWLER UNDERCARRIAGE





CRAWLER GANTRY UNDERCARRIAGE





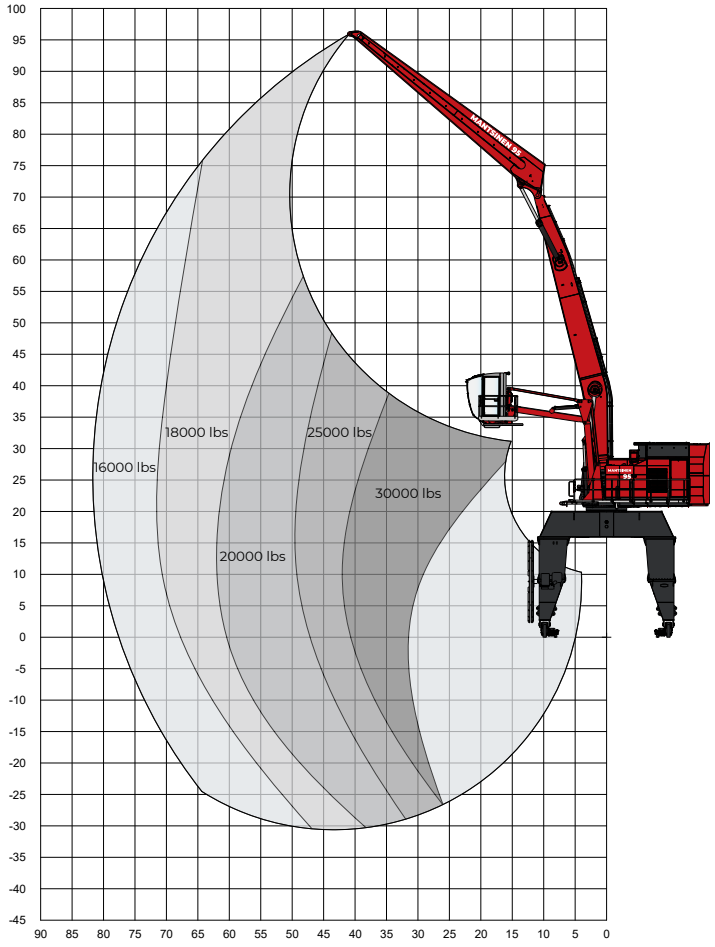
Measurements in this document are indicative only.
For detailed measurements, please consult your Mantsinen Professional.

REACH FOR PRODUCTIVITY

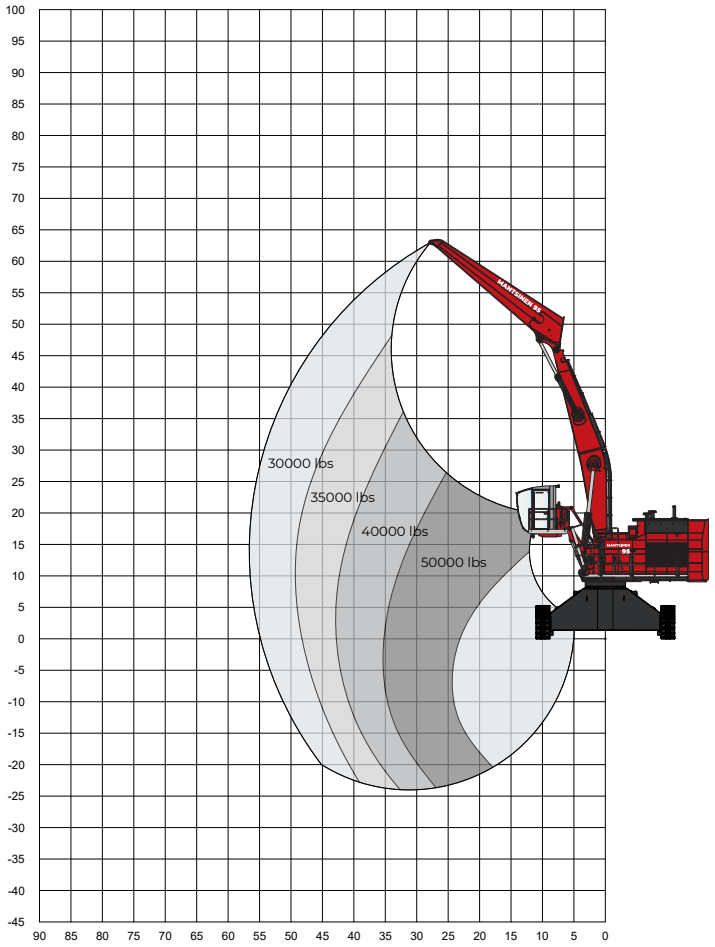
MANTSINEN 95

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

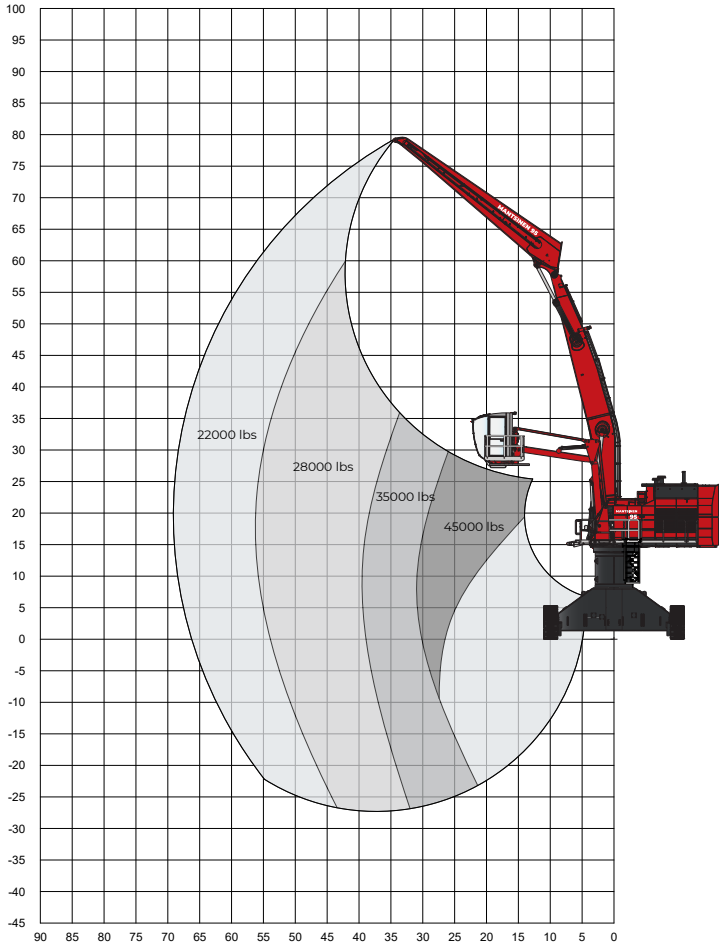
Lifting capacity range with 45'11" curved main boom and 39'4" stick.



Lifting capacity range with 32'9" curved main boom and 26'2" stick.

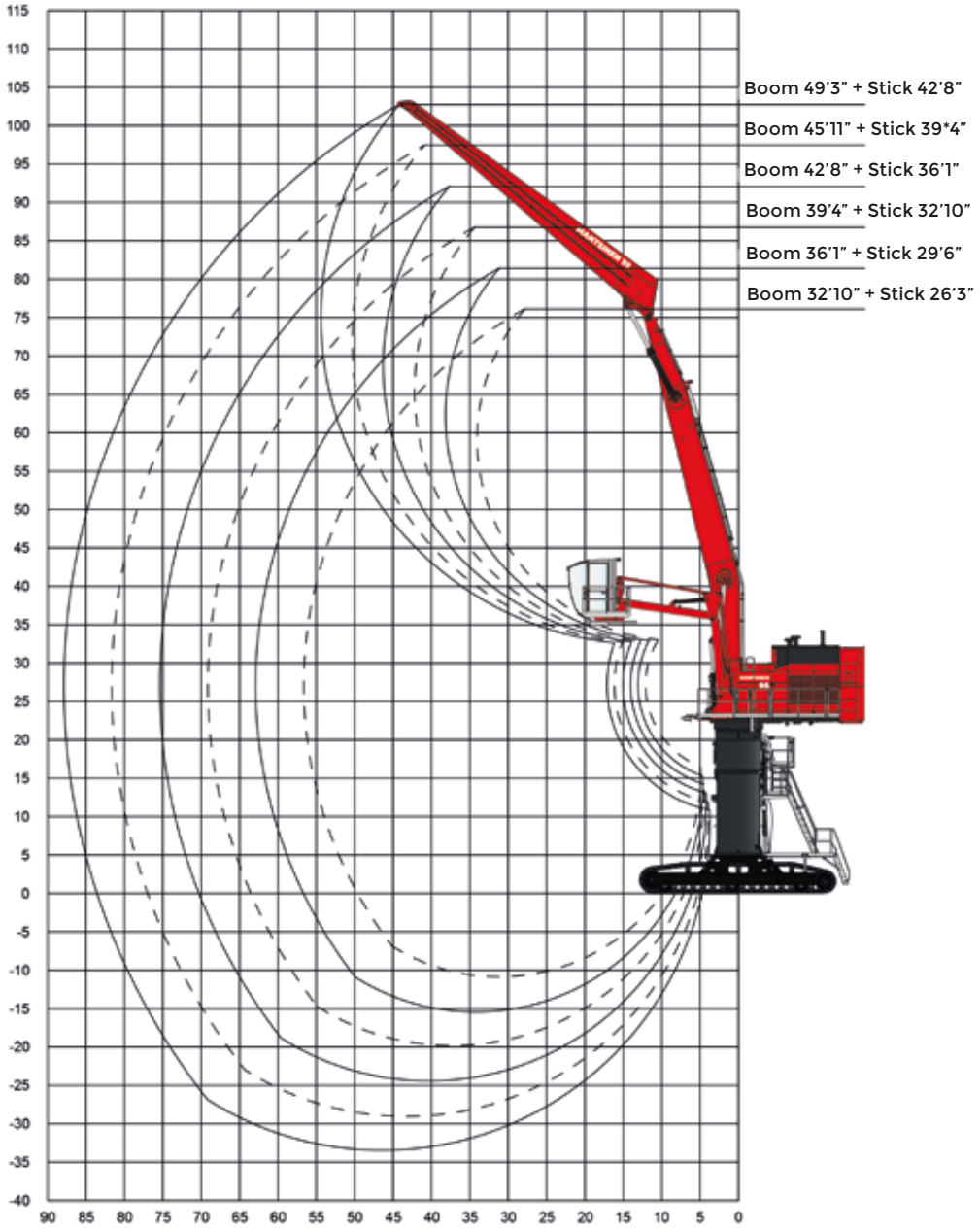


Lifting capacity range with 42'7"curved main boom and 36'1" stick.

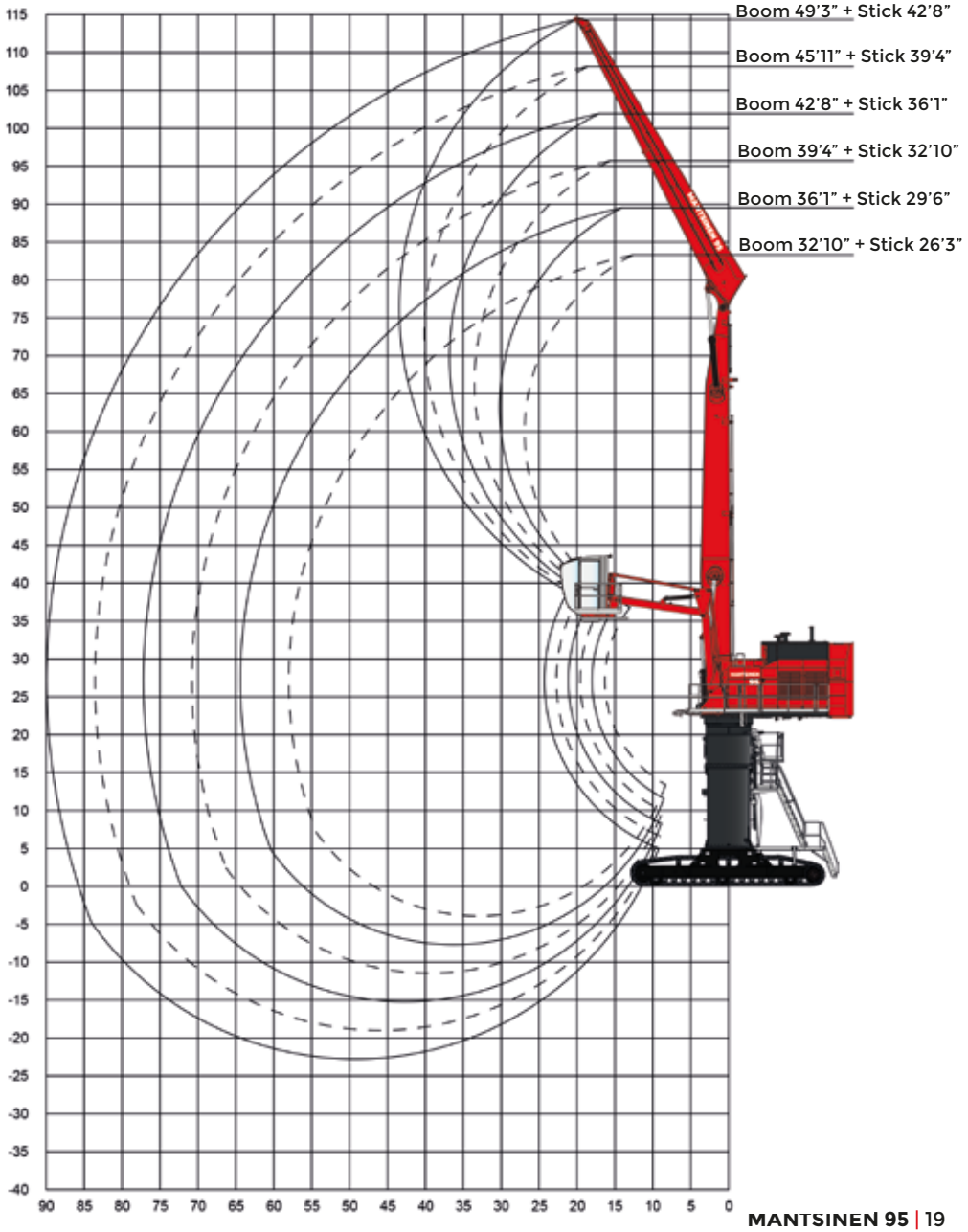


REACH WITH DIFFERENT BOOM AND STICK CONFIGURATIONS WITH 21’3” UNDERCARRIAGE

CURVED BOOMS



STRAIGHT BOOMS



MAXIMUM PRODUCTIVITY

QUICK COUPLERS & ATTACHMENTS

Mantsinen offers a wide variety of attachments to optimise productivity for every operation. Semi-automatic attachments, for example for big bags, pallets, and lumber bundles, ensure an efficient and safe operation. Fully automatic attachments, for example, for handling pipes or pulp bales, maximise production with minimal labor. Customised attachments are available upon request.

Attachments can be equipped with a fixed rotator or with a separate quick coupling system. In both cases the hydraulic hoses from the machine to the attachment are routed directly through the rotator link. The rotator swivel can be equipped with two to six hydraulic lines and an optional electric slip ring column.

The Mantsinen hydraulic quick coupling system enables fast and safe attachment changes. It takes only a few minutes to transition from one attachment and operation to another.

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
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	31086
HB60-2 R3	7,85	8600	9480	15218	22715	29325	35942
HB70-2 R3	9,16	8820	9700	16542	25144	32857	40579
HB80-2 R3	8	4.2	4.6	8.2	12.6	16.6	20.6

= Preferred HBL attachment
= Preferred HB attachment

HBL=Light series

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
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
HG50-5 R3	6,54	11460	18078	20282	22486	24690

= Preferred attachment

The weight with semi-open tines

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'
RGB15	1,79	5290	11244	13228	15212	17196
RGB18	2,15	6170	13228	15653	18078	20503
RGB20	2,39	6390	14330	16976	19621	22267
RGB26	3,11	7940	18254	21693	25133	28572
RGT16	1,91	6170	12580	14551	16755	18960
RGT20	2,39	6830	14771	17417	20062	22708
RGT25	3,00	7500	17417	20723	24030	27337

= Preferred attachment

RGB = By-Pass
RGT = Tip-to-Tip

13:24

MANTSINEN

THE STRONGEST LINK IN THE GLOBAL LOGISTICS CHAIN

Mantsinen provides more efficiency, speed and capacity for our customers in the 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

Välikankaantie 3, 80400 Ylämylly, Finland | www.mantsinen.com

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