



# CH1100F

WE PROVIDE CARGO HANDLERS FOR PORTS & TERMINALS.

OUR PRODUCTS ARE CHARACTERIZED BY HIGH EFFICIENCY, FAST PERFORMANCE, FAULTLESS RELIABILITY, HIGH MACHINE AVAILABILITY AND A LONG LOW-COST WORKING LIFE. THE PRODUCTS ARE BUILT OF MOSTLY STANDARD, TRIED-AND-TESTED, ULTRA-RELIABLE CATERPILLAR COMPONENTS ENHANCED WITH OUR OWN APPLICATION-SPECIFIC AND INNOVATIVE SOLUTIONS.

REACH:	21,4-24,8 meters
ENGINE OUTPUT:	352 kW
LIFTING CAPACITY:	17,7 tonnes
VESSEL SIZE	0-15.000 dwt
OPERATING WEIGHT:	87-99 tonnes

**MultiDocker®**



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## MultiDocker in brief:

- + 30 years experience of operating terminals and loading/discharging vessels with hydraulic cargo handlers
- + 30 years experience of developing, designing and manufacturing hydraulic cargo handlers
- + Partnership with Caterpillar since 1998  
Partnership with the major European Caterpillar dealers since 2008
- + MultiDockers products are mainly made of Caterpillar components, complemented with our own innovations that has been developed by many years of experience within the port and terminal industries
- + *Together with Caterpillar, we are able to present one of the most modern, efficient and powerful product portfolios in the world! We set the standard for meeting our customers technological needs for the future by continuously developing new designs, testing criteria, improving performance characteristics, and enhancing our service and support offerings.*

## Caterpillar

- + Choosing MultiDocker means that you also choose Caterpillar and your local Caterpillar dealer
- + World leading manufacturer of construction machines and diesel engines
- + Has developed, designed and manufactured machines for more than 80 years
- + Dealer network in 200 countries guarantees optimized access of spare parts and service
- + *Over the years, Caterpillar has introduced breakthrough solutions in turbo charging technology, electronic controls, fuel systems, drive systems and more for the purpose of enhancing our customers' success. Research and development is powered by the Caterpillar engineering community of more than 8,000 highly skilled technical experts around the world. Every day more than 5 million USD are used for research and development*

## Guiding stars

Our guiding stars are essential when we produce our ultimate cargo handler - adjusted for loading/discharging vessels up to 15.000 DWT.

### "Performance"

means high productivity. We believe high productivity is achieved by an efficient cargo handler with maximum uptime. A strong, fast and easily maneuverable cargo handler, reliable Caterpillar components and a well-organized service supplier makes the MultiDocker CH1100F just that – highly productive.

### "Operators comfort"

the operator should be able to operate the cargo handler to its maximum in a safe and comfortable environment. In order to do that, the cabin environment must be highly developed; for example the cabin needs to be stable, comfortable and the control system must allow the operator to feel like the cargo handler is like an extension of his own arms.

### "Economy"

the performance and the operators comfort added together equals "economy". We strive to make our customers' overall economy as competitive as possible and to do so we also offer advantageous financing solutions and the Caterpillar certified rebuild program.

## Examples:

Through high lifting capacity, high productivity is achieved, here are some examples:

Pulp logs	350-600 m³/h
Sawn timber	600 m³/h
Wood chips	1400 m³/h
Wood pulp	600 ton/hh
Grain	700 ton/h
Gravel	800 ton/h
Scrap	400-600 ton/h



# Durability & sustainability

- + Up to 20% less fuel consumption
- + Energy regeneration system
- + Increased efficiency
- + Stage 4 final
- + E-power available (electrical engine)

## ENVIRONMENT

Cat ACERT engines are now manufactured to meet the new emissions regulations. The engines use a combination of proven emissions-control technologies, including electronic management of fuel-injection/intake air systems and Caterpillar-designed exhaust after-treatment systems. Together with our partner we continue to invest in the research and development of cleaner engines and emissions-reduction technologies to meet the new emission standards, while providing ever-increasing value to our customers.

The **Cat NRS** is a compact "on-engine" system designed to reduce NOx by up to 50% while minimizing overall installation size.

The Cat NRS captures and cools a small quantity of exhaust gas and sends it back into the combustion chamber where it drives down combustion temperatures and reduces NOx emissions. The result of more than a decade of Caterpillar engineering research into this technology, the Cat NRS is designed to be the most reliable system of its type.

The hydraulically driven cooling fan is thermostatically controlled, so the fan only runs at the speed necessary to maintain correct system operating temperatures. The result is a cool, quiet operation with less disturbance to the surrounding environment.

The air conditioning unit uses only R-134a refrigerant which does not contain harmful chlorofluorocarbon's (CFC's) which help preserve the earth's ozone layer.

Engine oil and encapsulated hydraulic oil filters are positioned vertically and are easy to reach to minimize spillage.

The CH1100 is built for long service life. Service intervals are extended to reduce the times fluids are changed and handled.

The new hydraulic oil fine filtration system attachment extends the service intervals.

## FUEL CONSUMPTION

The F-series models include the Cat Adaptive Control System (ACS) valve technology that electronically manages flows and restrictions to match hydraulic response to joystick movement. This feature smoothens hydraulic functions and adds to overall hydraulic efficiency and fuel savings.

The new F-models consumes to 20 % less fuel while delivering more productivity. Fuel-saving features include standard or economy power modes, which allow the operator to match operating speed to application.

As a key component of the technology, injection timing precisely controls the fuel injection process through a series of carefully timed microbursts. This injection timing provides more control of combustion for the most efficient fuel burn. To maximize customer value, Cat engineers specified fuel systems based on the power and performance demands for each engine

## E-POWER

MultiDocker offer the E-Power concept, featuring a state of the art electric engine, offers customers a more energy efficient and environmentally friendly way to handle cargo. Electricity is a silent but powerful energy source that also means less emission of smoke, pollutants and sound. The performance of an E-Power machine is equal to our diesel engine. And, savings up to 70% per running hour compared to a diesel engine can be achieved.

Choosing E-Power means up-time and low service costs. The high quality VEM engine requires less service than an average diesel engine.





## AIR MANAGEMENT

Cat Tier 4 Interim air management is accomplished through simplified turbocharging solutions.

A range of turbocharging solutions, including smart wastegate and series units, optimizes performance for each model of generator set.

## MORE POWERFUL, RELIABLE ENGINE ELECTRONICS

- The electronics are more powerful and robust than ever.
- Increased feature and connection commonality improve the customer experience and increase quality and reliability.
- Sealed-over-foam wiring harness adds to reliability – even in the most demanding applications.

## REGENERATION SYSTEM - HYDRAULICS

The CH1100 features the new Cat Adaptive Control System (ACS) valve that is designed to intelligently manage restrictions and flows. It puts flow exactly where it's needed when it's needed, which means operators will experience much smoother operation, greater efficiency, and lower fuel consumption.

The ACS valve has a new automatic hydraulic oil warm up function – a definite plus in putting the machine to work more quickly in cold weather conditions. Major hydraulic components like pumps and valves are located close together to make it possible to use shorter tubes and lines. This design leads to less friction loss in the lines, and reduced pressure drops out front for the work at hand.

The CH1100 regenerates the flow of oil from the head end of the boom and stick cylinders to the rod end of the boom and stick cylinders during the work cycle to save energy and improve fuel efficiency. It's optimized for any dial speed setting selected, which results in less pressure loss for higher controllability, and lower operating costs.



# More about the new F-series:

The CH1100F is built to give you the highest production with the lowest owning and operating costs in its size class. Not only does the machine's C15 ACERT engine meet emission standards, but it does so with all the power, efficiency, and reliability you need to succeed.

Where the real power comes in is through the advanced hydraulic system and the new Adaptive Control System (ACS) valve. You can literally move tons of material all day long with a great deal of speed, precision, and efficiency. In fact, the CH1100F's ACS valve and engine work together to increase production and significantly decrease fuel consumption compared to our previous model. That means more work per unit of fuel for you. That's fuel efficiency!

When you add in a quiet operator environment that keeps you comfortable and productive, service points that make your routine maintenance quick and easy, and various tools that help you do a number of jobs very well, you simply won't find a better, more productive, more fuel-efficient machine in this size class.





## Engine - powerful and fuel efficient!

Every EU stage 4/U.S. EPA Tier 4 Final ACERT engine is equipped with a combination of proven electronic, fuel, air, and aftertreatment components. Applying these time-tested technologies lets us meet your high expectations for productivity, fuel efficiency, reliability, and service life. Following are the results you can expect:

- High performance across a variety of applications.
- Enhanced reliability through commonality and simplicity of design.
- Maximized uptime and reduced cost with world-class Cat dealer support.
- Minimized impact of emission systems – with no operator interaction required.
- Durability with long service life.
- Improved fuel efficiency with minimized maintenance costs.
- Same great power and response.

## Hydraulics - move the goods with speed and precision.

When it comes to moving heavy material quickly and efficiently, you need hydraulic horsepower – the type of ground-breaking power the CH1100F can deliver. Major components like the pumps, main control valve, and oil tank are positioned to reduce the effects of heat and hydraulic sound level on operators. And they are close together so shorter tubes and lines can be used. All of this leads to less friction loss, reduced pressure drops, and more power to the ground for the tons of work you need to get done.

Controllability is one of the main attributes and one of the key contributors to this is the new ACS valve. The valve is designed to intelligently manage restrictions and flows. It opens slowly when your range of joystick lever movement is small and opens rapidly when movement is high. It puts flow exactly where you need it when you need it, which means you will experience much smoother operation, greater efficiency, and lower fuel consumption. The ACS valve also has a new automatic hydraulic oil warm-up function – a definite plus in putting your machine to work more quickly in cold weather conditions.

## Integrated technologies - monitor, manage & enhance the operations

Cat Connect makes smart use of technology and services to improve your job site efficiency. Using the data from technology-equipped machines, you'll get more information and insight into your equipment and operations than ever before. Cat Connect technologies offer improvements in these key areas:

**Equipment Management** – increase uptime and reduce operating costs.

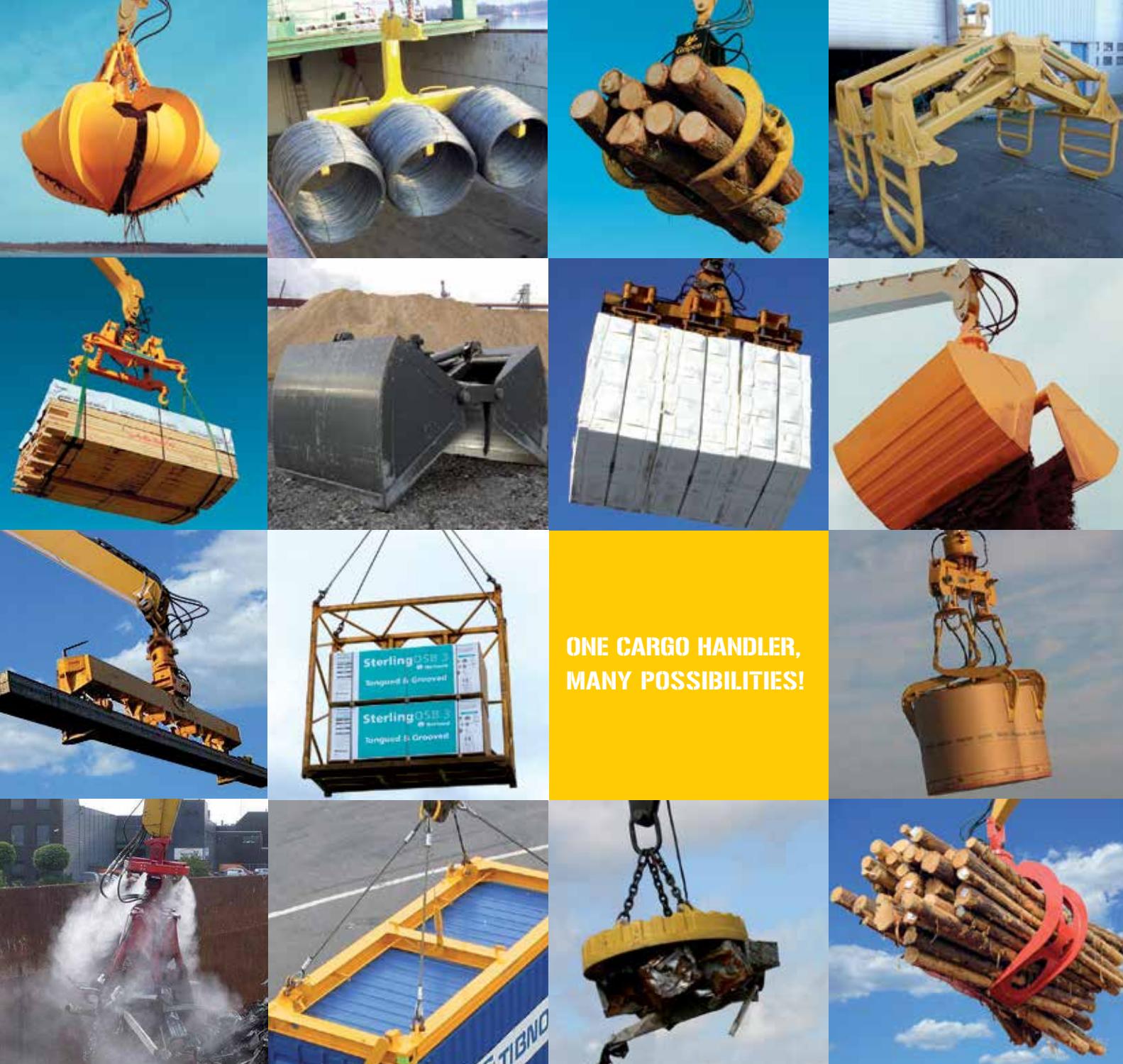
**Productivity** – monitor production and manage job site efficiency.

**Safety** – enhance job site awareness to keep your people and equipment safe.

LINK technologies like Product Link™ wirelessly connect you to your equipment, giving you valuable insight into how your machine or fleet is performing. The system tracks location, hours, fuel usage, productivity, idle time, and diagnostic codes through the online VisionLink® interface so you can make timely, fact-based decisions to maximize efficiency, improve productivity, and lower operating costs.

GRADE technologies like Cat Grade Control Depth and Slope combine digital design data and in-cab guidance to help operators work more productively and accurately with less rework. Real-time bucket tip positioning and cut and fill data on the standard cab monitor guide the operator to grade, saving money on fuel and materials. Easily upgrade to AccuGrade™ when 3D control is required.





**ONE CARGO HANDLER,  
MANY POSSIBILITIES!**

## Tools & quick release coupling

MultiDocker is one of the market's most versatile machines for fast and safe cargo handling. It can be equipped with a variety of tools, customized for different commodities. The quick release coupling facilitates convenient and quick change of tools to handle the different types of goods. Here are some examples:

### STEEL

- Steel coil attachments
- Scrap magnets
- Fully automatic billet devices
- Dust controls

### FORESTRY

- Fully automatic paper reel attachments
- Timber grabs 1,5-3,3 m<sup>2</sup>
- Semi automatic lumber spreaders 2-3 units
- Fully automatic paper pulp devices 3-6 units
- Clamshell buckets 2-13 m<sup>3</sup>

### OTHER

- Waste handling clamps
- Orange peel buckets 0,7-10 m<sup>3</sup>
- Container spreaders
- Clamshell buckets 2-13 m<sup>3</sup>
- Lifting frames

## Flexibility - Ship to shore, shore to ship in no time!

Our flexible solutions make you able to load or unload sawn wood, round timber, chips, pellets, bags, scrap, rocks, pulpwood, gravel, and several other sorts of bulk and general cargo.





## Service & maintenance

### **"Uptime is money. Downtime is cost."**

Material handlers from MultiDocker are based primarily on tested and well proven Caterpillar components. Meaning, that when you buy a MultiDocker you get one of the most reliable cargo handlers on the market. Through the Caterpillar Service network you also get a reliable service wherever you are, 24 x 7 x 365. You get fast access to well-trained service engineers and the right parts. In short, all the parts, services and knowledge you need to keep your machine working hard for you.

- ⊕ Service intervals are extended to reduce maintenance costs.
- ⊕ Oil sample and pressure ports provide easy checking of machine condition and are standard on every machine.
- ⊕ The return filters or capsule filters for the hydraulic system are located beside the hydraulic tank. The filter elements are revable without spilling hydraulic oil.
- ⊕ Service points are centrally located with easy access to facilitate routine maintenance.
- ⊕ Pilot hydraulic system filter keeps contaminants from the pilot system and is located in the pump compartment.
- ⊕ Radial seal main air cleaner with precleaner has double-layered filter element for more efficient filtration. No tools are required to change the element.
- ⊕ The water separator removes water from fuel, even when under pressure, and water can be monitored in the cab.

# World class customer support

## + Purchase

Consider the financing options available as well as day to day operating costs. This is also the time to look at dealer services that can be included in cost of the machine to yield lower equipment owning and operating costs in the long run.

## + 24/7/365 Service availability in most regions

Repair option programs guarantees the costs of repairs up front. Diagnostic programs help you avoid unscheduled repairs.

## + 24/7/365 Spare parts availability by Part Store or on call duty

You will find nearly all parts at your local dealer parts counter. Cat dealer utilize a worldwide computer network to find in-stock parts to minimize machine downtime. You can save money with Cat remanufactured components.

## + Operation

Improving operating techniques can boost your profits. Your Cat dealer and MultiDocker have videotapes, literature and other ideas to help you increase the productivity, and offers operator training classes to help maximize the return on your investment.

## + Customer Support Agreement (CSA)

Cat dealers offer a variety of product support agreements, and work with customers to develop a plan to meet specific needs. These plans can cover the entire machine, including attachments, to help protect the customer's investment.

## + Cat® Equipment Protection

Plans Your original Cat® warranty provides months of worry-free operation, but your machines are designed for years of productivity. Fortunately, the cost of unexpected repairs can be controlled—with a Cat Equipment Protection Plan.

## + S.O.S

By enrolling in the S•O•SSM Services Program, a routine oil sampling interval can be established to build-up a trend of data over time. That trend allows you to compare sample history and more easily identify deviations from the normal trend. This consequently adds value to the data interpretation process with more meaningful recommendations and recommended actions.

## + Caterpillar Product Link

Product Link is a satellite based system that up load important information about your MultiDocker on the internet. This gives you the possibility to control and evaluate the performance of your machine. It is also an important link between your Multi-Docker and your service provider, your local Caterpillar dealer.

## + Replacement

Repair, rebuild or replace? MultiDocker and your Cat dealer can help you to evaluate the cost involved so you can make the right choice.

Read more at: [www.cat.com/maintenance-and-support](http://www.cat.com/maintenance-and-support)

### Serviceability

The F-series machines offer greatly improved serviceability compared to its predecessors. Routine maintenance points like grease fittings, fuel and oil filters, and fluid taps are conveniently grouped and safely reached behind wide service doors from wide, slip-resistant catwalks.

A fuel tank drain cock also simplifies evacuating water and sediment to protect the fuel system, and an integrated fuel level indicator reduces the prospect of overfilling.

- Service door design helps prevent debris entry.
- Doors securely latch in place to simplify servicing.
- New side-by-side cooling system enables easy cleaning.
- New variable-speed fan reverses to blow out debris.
- Routine maintenance items such as grease points can be reached at ground level.
- Optional electric lubricator system reaches all greasing points.
- Optional electric refueling pump allows refueling from barrel or fuel reservoir.





# CH1100

REACH: 21-24,8 meters

ENGINE OUTPUT: 352 kW

LIFTING CAPACITY: 17,7 tonnes

VESSEL SIZE 0-15.000 dwt

OPERATING WEIGHT: 87-99 tonnes

MULTIDOCKER GETS THE JOB DONE. AND WE LISTEN TO OUR CUSTOMERS. WE THINK BIG BY THINKING OF THE SMALL THINGS, THE LITTLE TOUCHES THAT MAKE ALL THE DIFFERENCE. WE CAN MAKE YOUR MULTIDOCKER WORK JUST THE WAY YOU WANT IT TO, TO DO YOUR JOB. WE NEVER FORGET THAT THE WAY TO MAKE OUR BUSINESS BETTER IS TO MAKE YOUR BUSINESS BETTER.

WITH A CH1100 YOU CAN DO YOUR CARGO HANDLING WITH HALF THE EFFORT AND TWICE THE TURNOVER. WE CAN MAKE YOUR MULTIDOCKER WORK JUST THE WAY YOU WANT IT TO, TO DO YOUR JOB.

THE CH1100 HAS EXCELLENT CONTROL, IMPRESSIVE LIFT CAPACITY, SIMPLIFIED SERVICE AND A COMFORTABLE OPERATOR STATION TO INCREASE YOUR PRODUCTIVITY AND LOWER OPERATING COSTS. THE MULTIDOCKER CH1100 IS A STATE OF THE ART HYDRAULIC CARGO HANDLER: AN EFFICIENT MACHINE FOR HANDLING SHIPS UP TO CA 15.000 DWT.

#### LIFTING CAPACITY EXAMPLES:

Pulp logs 300-600 m<sup>3</sup>/h

Sawn timber 600 m<sup>3</sup>/h

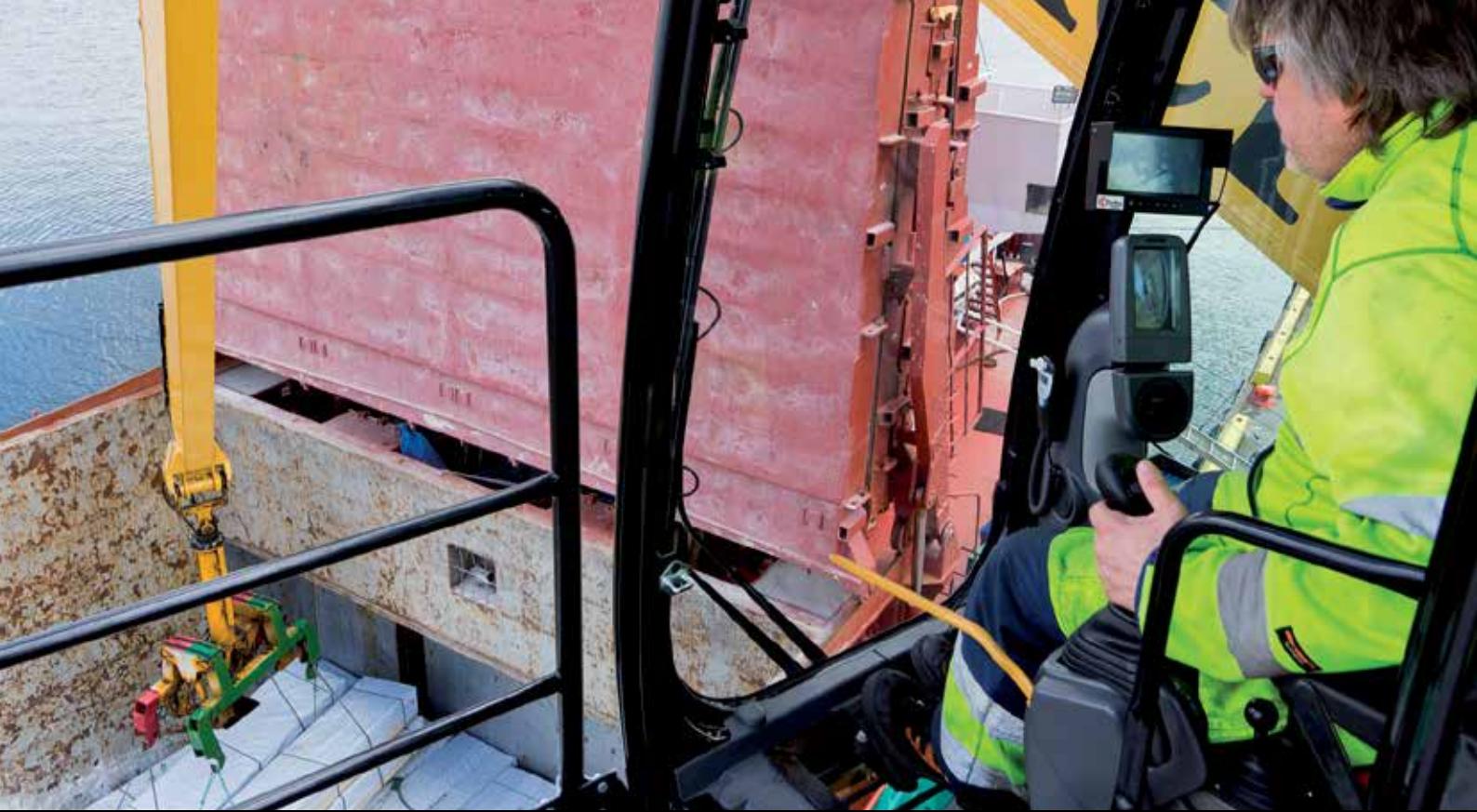
Wood chips 1400 m<sup>3</sup>/h

Wood pulp 600 ton/h

Grain 700 ton/h

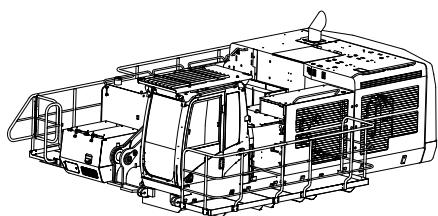
Gravel 800 ton/h

Scrap 400-600 ton/h



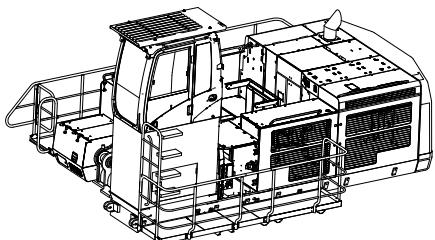
## Cabin solutions

**Cabin Standard, CS**



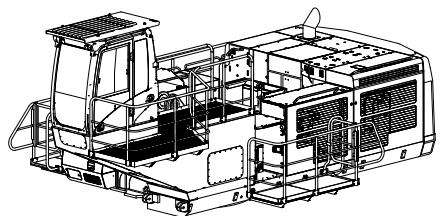
A very simple heavy duty standard solution.  
Suitable for material handling.

**Cabin Raiser, CR**



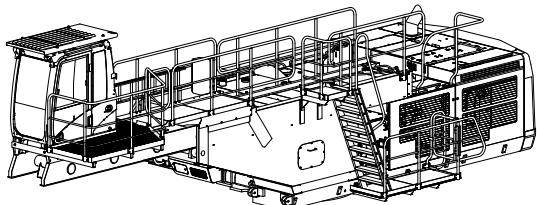
Fixed cabin raiser designed for material handling applications where the view/height is crucial. Raised 1500 mm from standard position.

**Cabin Forward, CF**



Fixed cabin raiser where the cabin is moved forward in a fixed position. Designed for material handling in combination with loading/dischargin vessels where the view into the vessel isn't crucial. Moved 4200 mm from the swing centre.

**Cabin Movable, CM**



Movable horizontally - 8000 mm from the swing centre. Designed for loading/discharging vessels.  
This model gives the operator the possibility to quickly adjust the position of the cabin to optimize the visibility in all situations without cutting back on the comfort. The CM is designed with an unique bider system without joints, which minimize vibrations and strokes efficiently. The horizontal adjustment can be done without stopping ongoing operation by using an ergonomic sliding switch on the joystick. A unique solution on the market!



**Comfort and convinence keeps people productive**

A proper cabin environment generates good comfort and increases efficiency. With four standardized cabin solutions, MultiDocker offer a unique approach to operating comfort. By consulting the customer, we choose the most optimal cabin for each customer's application.

All MultiDocker cabin solutions reflect powerful and exceptional design, which creates a stable and unaffected environment during full production and heavy lifts.

## Cab description

The cabin has been designed to be spacious, quiet and comfortable for the operator, assuring high productivity throughout the entire workday. Switches are conveniently located for easy access. The monitor is located to provide excellent visibility and access. The all-new cab provides you with a safe working environment. It also contributes to your comfort because it's attached to a reinforced frame with special viscous mounts that limit vibration and unnecessary sound. Add in special roof lining and sealing and you have a cab that's as quiet inside as any of today's top pickup trucks.

### SEAT

The seat range includes air suspension, heated, and air cooled options. All seats include a reclining back, upper and lower slide adjustments, and height and tilt angle adjustments to meet your needs for maximum comfort. Adjustable armrests and a retractable seat belt are also included.

### SKYLIGHT

An enlarged skylight with sunshade provides excellent visibility and good ventilation.

### HYDRAULIC ACTIVATION CONTROL LEVER

The hydraulic activation control lever deactivates all hydraulic functions during engine start-up, and prevents unintentional machine movements.

### CLIMATE CONTROL

The automatic climate control system features multiple air outlets with filtered ventilation to make your work in either hot or cold weather much more pleasant and productive.

### MONITOR

The LCD monitor is easy to see and navigate. Programmable in up to 42 languages to meet the needs of today's diverse workforce, the monitor clearly displays critical information you need to operate efficiently and effectively. You can even change between the backhoe pattern or cargo handler control pattern right through the monitor. Plus it projects the image from the standard rearview camera to help you see what's going on around you so you can stay safely focused on the job at hand.

### CABIN SAFETY SYSTEM

The machine is equipped with an electronic safety system with motion control. The system prevents from collision between the cabin and the work tool. The system also controls the load in the machine to avoid overload.

### CAB EXTERIOR

The exterior design uses thick steel tubing along the bottom perimeter of the cab, improving resistance fatigue and vibration. The cabin has an overhead protection frame (F.O.P.S = falling object protective system) bolted directly to the top of the cabin.

### CAB MOUNTS

The cabin shell is attached to the frame with viscous rubber cabin mounts, which dampen vibrations and sound levels while enhancing operator comfort.

### WIPERS

Parallel wiper, including a washer nozzle is mounted below the cab windshield; this optimizes the operator's viewing area and offers continuous and intermittent modes.

### WINDOWS

To maximise visibility, all glass is affixed directly to the cab. The cabin solution CM8000 has a floor window as standard. This gives the operator the possibility to view the working area underneath the cabin. .

### SOUND

The operator sound level measured according to the procedures specified in ISO 6396:2008.

### GAUGE DISPLAY

Three analogue gauges, fuel level, hydraulic oil temperature and coolant temperature, are displayed in this area.

### MONITOR DISPLAY SCREEN

The monitor is a full colour 400x234 pixels LCD graphic display. The Master Caution Lamp blinks ON and OFF when one of the critical conditions below occurs:

- Engine oil pressure low
- Coolant temperature high
- Hydraulic oil temperature high

Under normal conditions or the default condition, the monitor display screen is divided into four areas: clock and throttle dial, gauge, event display and multi-information display.

### MULTI-INFORMATION DISPLAY

This area is reserved for displaying information that is convenient for the operator. The "Cat" logo mark is displayed when no information is available to display.

### CONTROLS

Not only can the right and left joystick consoles be adjusted to improve your comfort and productivity during the course of a day, but the joystick levers themselves can be adjusted for gain and response. Gain is the relationship between the control lever stroke and cylinder speed, and response is the time elapsed from the moment the control lever is operated until the cylinder attains speed. The CH74F has multiple gain and response settings to make the machine respond exactly how you want it to.

### ELECTRONIC JOYSTICKS

Electronic joysticks provide features not possible with hydraulic pilot valves:

- Eliminate pilot lines in cab for quieter operation
- Adjustable gain/response

## Standard Cab Equipment

To enhance operator comfort and productivity, the cab includes a lighter, drink holder, coat hook, service meter, FM Radio, literature holder, magazine rack and storage compartment. The cab can be equipped with optional 12 volt converter and up to 12V - 7amp electrical sockets to provide additional electrical resources.

- Air conditioner, heater and defroster with automatic climate control
- Power supply 24 V
- Console mounted electronic type joystick with adjustable gain and response
- Instrument panel and gauges with full colour graphical display
- Neutral lever (lock out) for all controls
- Positive filtered ventilation
- Pressurised cabin
- Retractable seat belt
- Stationary skylight
- Sunshade for windshield
- Travel control pedals with removable hand levers
- Windshield wipers and washers
- Rear view camera
- FOPS-Falling Object Protective System including overhead and windshield guards

## Optional equipment

- Weight Scale (excl summarise function.)
- Weight Scale (incl summarise function.)
- Electric Pre-heater 220 V
- Camera for stick incl. LCD display Others
- Radio /CD incl. remote control



## Port Line Cabin

The Port Line Cabin is an option for the CM and CF cabin solutions.

The Port Line Cabin features a larger interior for increased driver comfort, along with new features:

- the large glass surfaces provide excellent panoramic overview
- negative windshield for less reflections and impact from snow and rain
- one extra seat for training sessions
- greater floor windows for better visibility and a safer operation
- floor windows enhance operators precision and contribute to safety for ground personnel
- suspended on six additional rubber bushings – eliminating vibrations
- aluminium frame work for rigid and safe design
- high capacity heating and cooling units
- can be retrofitted (plug and play interface)
- full standing height allows comfortable access to and from operators seat
- plug and play interface with Caterpillar cabin ensures time and cost effective cabin upgrades

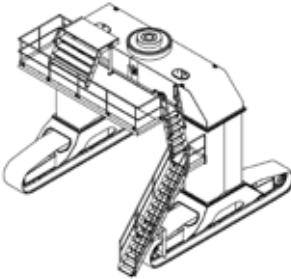


## Undercarriages

### MG7800C

The height of 5,0 meter allows lorries and railway wagons to safely pass through underneath the machine.

This solution saves space at the site and makes the MultiDocker extremely efficient by allowing short swing cycles and the possibility to work in a larger area without having to constantly move the machine.



#### Technical information MG7800C

Width – center - center (mm)	6 500
Flat shoes width (mm)	800 - 1 000
Length – center - center (mm)	6 400
Weight incl.crawler tracks (kg)	45 000

# Solutions for your needs!

Depending on the customer's needs, the MultiDocker CH1100 can be delivered in two standard undercarriage configurations with crawler tracks. Other options are the rail track fitted gantry undercarriage or pedestal. It's also possible to have the cargo handler installed onboard a vessel or a barge.

Due to the unique module system we can tailor the height and width of the undercarriage raiser, the length of the track frames and the width of the flat shoes to meet special requirements in regards of weight, ground loadings, available space at the site etc.

## Standard Undercarriage Equipment

### SEALED AND LUBRICATED ROLLERS

Track rollers and idlers are sealed and lubricated for excellent service life.

### IDLER GUARDS AND TRACK GUIDES

Idler guards and centre track guides used to maintain alignment are standard.

### TRACK

The MultiDocker cargo handler comes with grease lubricated tracks as standard. The track links are assembled and sealed with grease to decrease internal bushing wear, reduce travel noise and extend service life thus lowering operating costs.

### TRACK SHOES

The flat shoe's outer edges are curved and chamfered on the outer edges to further smooth transportation as well as prevent unnecessary damages to the ground. The flat shoe's original total width is up to 900 millimeters on the CH1100, but the fundamental surface area accounted for the CH1100 is 800 millimeters.

Being such a large material handler, the MultiDocker flat shoes cause very little effect to the ground surfaces. Due to the design of the MultiDocker bended flat shoes, they are very kind to all types of road surfaces, concrete, blocks or tarmac.

### TRAVEL MOTOR

Two-speed axial piston hydraulic motors provide the drive power and automatic speed selection when the high-speed position is selected. This enables the machine to automatically change between computer controlled high and low speeds depending on drawbar-pull requirements.

### FINAL DRIVES

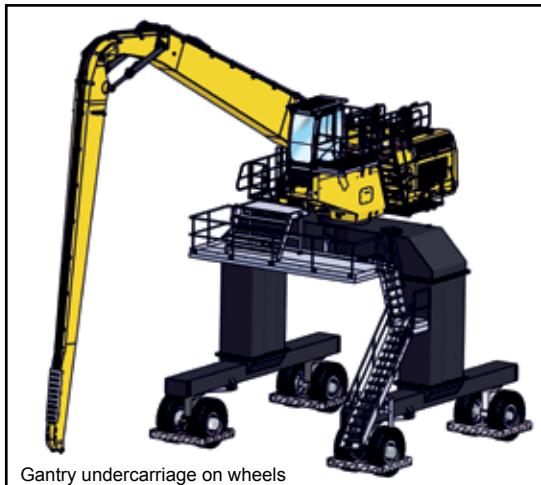
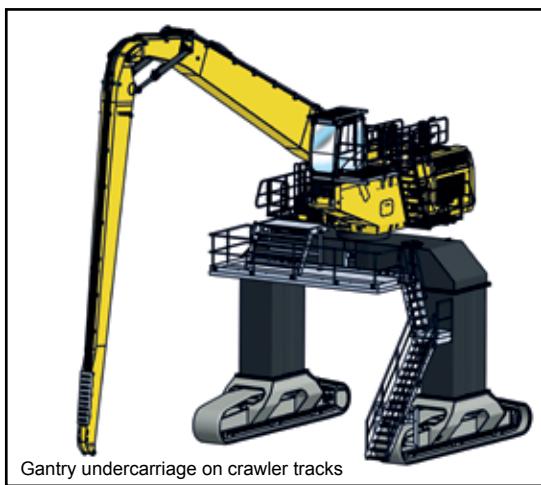
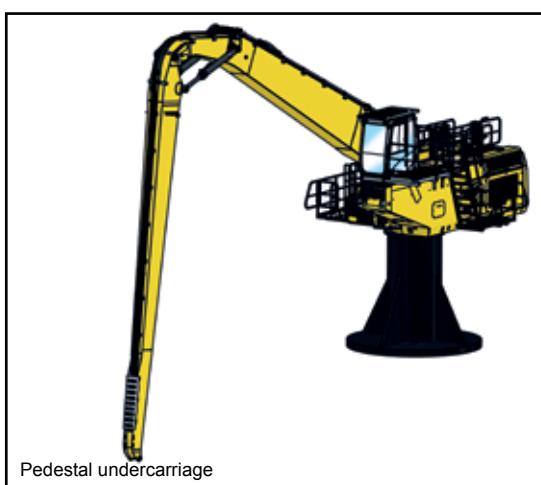
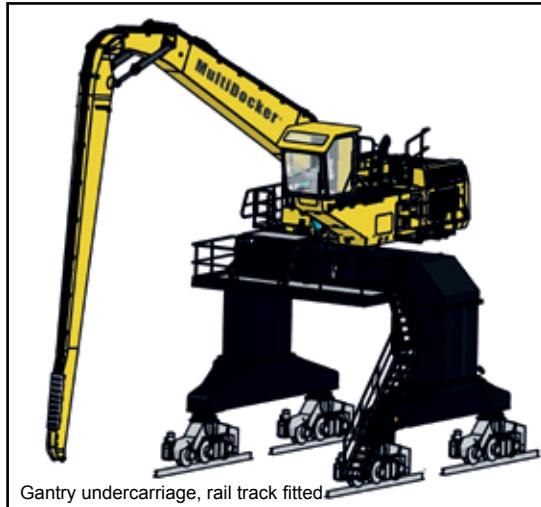
The final drives are the three-stage reduction planetary type. This design provides a complete drive/brake unit that is compact and delivers excellent performance and reliability.

### OTHERS

- + Color, black
- + Heavy-duty access service ladders and platforms
- + Footprint width 900 mm
- + Emergency stops, 2 pcs
- + Flashing and acoustic beacons, 2 pcs
- + Power supply to service platform

## Optional equipment

- + Customized colors
- + Extra fuel tank 5 000 liters
- + Wider flat shoes
- + Working light



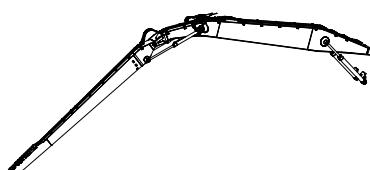


## Boom & stick

The boom and stick is designed for multi purpose use and can easily handle most different kind of cargoes. As an option we can offer a quick release coupling making the change between different work tools convenient and quick. Due to our unique module design we can tailor the lengths of booms and sticks for special requirements.

The MultiDocker CH1100 is offered with four standard boom and stick configurations with a reach ranging from 21,4 meter up to 24,8 meters excluding work tools. The reach of nearly 25 meters gives the possibility to handle ships up to 15 000 DWT with great efficiency.

Total length (mm)	Boom (mm)	Stick (mm)
21 400	12 600	10 600
22 600	12 600	12 000
23 500	15 000	10 600
24 800	15 000	12 000



### SmartBoom

Unloading a barge or a vessel is easier when using SmartBoom. The SmartBoom avoids excessive force being put on the barge tank top by having the weight of the boom and stick weighting down its self and not being forced down by the boom cylinders allowing the operator to fully concentrate on production.

### Heavy Duty Pipe Protection

The boom and stick can be equipped with a heavy duty pipe protection in the end of the stick. It will protect the pipes from being damaged during operation in narrow areas, giving higher availability of the machine and lower maintenance costs.

### Standard Equipment

- + Heavy-duty pipe protection
- + LED lights, 4 pcs
- + Lubrication system - automatically lubricates the front end and the swing bearing
- + SLCV/BLCV (Stick lowering control valve/Boom lowering control valve)
- + Color, yellow
- + Logotype on stick
- + Hydraulic pipe closure valve cocks/ Shut off valve on stick and boom

### Optional equipment

- + Customized colors
- + Reinforced LED working lights
- + Weight scale
- + Extra hydraulic function (stick end)



# Other equipment

- Cold weather starting aid
- Scrap magnet generator
- Extra hydraulic pipe protection for arduous applications
- Hydraulic pipe closure valve cocks
- Quick release couplings
- Heavy duty semi-automatic Multicoupler
- Bio-degradeable hydraulic oil
- Reversible Fan

## FIRE PROTECTION SYSTEM

This fire suppression system discharges automatically at a detected fire when the machine is unmanned, i.e. when the main switch is turned off. When the machine is at work with the power on, a detected fire actuates only the alarm signals. The operator should then immediately then stop the operation and turn off the power or operate the extinguishing installation manually. Manual operation can be made from a firing button on the control unit in the cab

## CATERPILLAR MSS DATA SHEET

The Caterpillar Machine Security System (MSS) is an on-board system to manage access to your MultiDocker. It has programmable features to allow tailoring the system to fit your needs.

Can be programmed for active/inactive periods.

Can be programmed so individual keys expire on selected date and time.

Control access by untrained operators or unauthorized personnel. Manage access with minimum inconvenience!

## RADIATION DETECTING SYSTEM

Mounting the Cricket in the grapple allows direct exposure to all the material being handled. The system consist of a detector protective shield, a detection unit , a battery pack and a RC2000 Control Console. Typically, the Cricket grapple mounted radiation detection system is 2.5 times more sensitive than a vehicle monitoring system.

## SAFETY CAMERAS

Standard for all MultiDockers is the rear view camera. This camera will give the operator a better overview (over the worksite) giving a safer operation. However, for optimal performance your MultiDocker can be equipped with a stick mounted camera giving a perfect view of the material being handled. With the stick mounted camera comes a 7" color monitor reproducing the view perfectly.

## WORKING LIGHTS

MultiDocker CH1100 is equipped with seven working lights. As an option the standard halogen lights can be changed to xenon working lights, giving three times more light than the standard lights, for a safer and more efficient operation. Your MultiDocker can also be equipped with extra work lights on the undercarriage for improved illumination of the working area around the machine.

## HEATERS

230 V heater for the cabin, engine and hydraulic oil tank are optional. There is also a possibility to choose a diesel driven heater for preheating of the diesel engine and the cabin. This heater has programmable start time and also the possibility to be started on remote by phone.

## EXTRA FUEL TANK

As an option the MultiDocker CH1100 can be equipped with an extra fuel tank. The extra fuel is placed in the under carriage raiser and has a capacity of 5200 liter, giving the machine many hours availability before refueling is needed.

## CATERPILLAR PRODUCT LINK

Product Link is a satellite based system that up load important information about your MultiDocker on the internet. This gives you the possibility to control and evaluate the performance of your machine. It is also an important link between your MultiDocker and your service provider, your local Caterpillar dealer.

# Technical data CH1100

Base information	Base machine (Caterpillar)	374F MH
	Weight (tonnes)	93-99
	Maximum reach (m)	24,8
	Maximum lifting capacity (kg)	17 700
	Maximum wind speed in parked position without anchoring	42 m/s
	Maximum wind speed during operation	24 m/s
	Designed according to	SS-EN 13001
Engine (diesel)	Model (Caterpillar)	C15 ACERT
	Net power (kW)	352
	Bore (mm)	137
	Stroke (mm)	171
	Piston displacement (l)	15,2
	The CH1100 meets U.S EPA Tier 4 Final / EU4 emission standards	
Engine (E-power*)	Model (VEM)	Electrical engine
	Net power (kW)	315
	Voltage (V); standard 690 V	400-1 000
	Standard ampere (A)	460
	Standard travel distance (m)	150-200
Hydraulic system	Power supply	Cable drum/air supply/power duct
	Max. flow, working pumps (l/min)	880
	Max. flow, swing pump (l/min)	360
	Max. pressure, main circuit (kPa)	35 000
	Travel (kPa)	30 000
Undercarriage	Max. swing (kPa)	29 400
	Crawler tracks	MultiDocker CH1100
	Track (flat) shoe (foot print) width (mm)	800-1000
	Number of shoes each side	71
	Number of rollers each side	15
	Number of carrier rollers each side	3
Volumes	Max. tractive force (kN)	290
	Max. speed (km/h)	3,5
	Fuel tank (l)	935
	Cooling system (l)	95
	Engine cranecase (l)	65
	Swing drive – drive (l)	12
	Final drive – each (l)	15
Weight main components	Hydraulic system incl. tank (l)	670
	Hydraulic tank (l)	310
	Extra fuel tanks (l)	5 200
	Base machine incl. swing bearing [kg]	20 000
	Cabin moveable, CM8000 [kg]	3 000
	Cabin forward, CF [kg]	1 800
	Counterweight [kg]	14 000
	Body extension [kg]	16 600
	Platforms [kg]	2 750
	Short stick – 10 600mm [kg]	2 930

## Engine (diesel)

The Cat C15 engine with mechanically actuated electronic fuel injection (MEUI) powers the CH1100. The C15 has ACERT® Technology, a series of Caterpillar engineered innovations which provide advanced electronic control, precision fuel delivery and refined air management compliance. ACERT® Technology optimizes engine performance while meeting EU stage 4 / U.S Tier 4 Final emission regulations.

### Increased Power

The maximum power is 352 kW (476 hp). The Power Management System (PMS) is also available to manage productivity and fuel economy.

### Improved Fuel Efficiency

The CH1100 consumes significantly less fuel than the previous series model, and two built-in features help contribute to that: automatic engine speed control and automatic engine idle shutdown. Automatic engine speed control lowers rpm when the machine doesn't need it for work. Automatic engine idle shutdown turns the engine off when it's been idling for more than a specified amount of time, which will lower fuel consumption, hour accumulation, and lead to extended service intervals and higher resale value.

### Biodiesel

The Cat C15 ACERT engine can run on B20 biodiesel fuel that meets ASTM 6751 standards – all to give you more potential fuel-saving flexibility.

### Improved Reliability

The titanium-aluminum alloy rotor in the turbocharger improves reliability/durability and contributes to faster response of the turbocharger.

### Reversible Fan

A reversible fan option is offered as an attachment. The reverse function is operated through the monitor. By selecting this function, the fan rotates in the opposite direction for a preset time to help clean the cooling package for increased uptime and reduced service cost.

### Cooling system

The CH1100 features a new side-by-side cooling system that allows you to put the machine to work in extremely hot and cold conditions. The system is completely separated from the engine compartment to reduce noise and heat. Plus it features easy-to-clean cores and a new variable-speed fan that reverses to blow out unwanted debris that may accumulate during your work day.

## Engine (E-power\*)

The E-power concept, featuring a state of the art electric engine, offers customers a more energy efficient and environmentally friendly way to handle cargo. The high quality VEM engine requires less service than an average diesel engine - cutting the service time and cost significantly. Utilizing an Emotron frequency converter, the E-power enables the driver to very precisely adjust speed and effort by simply regulating the RPM. E-power has integrated Caterpillar software and hydraulic system - rendering the Caterpillar service network available for customers world wide.

## Environment

### Emissions

ACERT® Technology is a differentiated technology that reduces emissions at the point of combustion. The technology capitalizes on proven Caterpillar leadership in three core engine systems: fuel, air and electronics.

### Electro Magnetic Compliance

The CH1100 meets the following EMC (Electro Magnetic Compliance) requirements: ISO 13766 Earth Moving Machinery – Electromagnetic compliance EU Directive 89/336/EEC Aus EMC Framework.

### Fluid Management

Several serviceability elements are designed into the CH1100 to limit fluid spillage while performing routine maintenance.

### Ecology Drains

Ecology drains are provided for the fuel and hydraulic tanks, allowing fluids to be captured in a container when draining the tanks.

## Service and Maintenance

### Service Intervals

Long service intervals reduce maintenance costs. Engine oil, oil filter and fuel filters are at 500 hours.

### Oil Sample and Pressure Ports

Oil sample and pressure ports provide easy checking of machine condition and are standard on every machine.

### Hydraulic Capsule Filters

The return filters or capsule filters for the hydraulic system are located beside the hydraulic tank. The filter elements are removable without spilling hydraulic oil.

### Service Points

Service points are centrally located with easy access to facilitate routine maintenance.

### Pilot Hydraulic System Filter

Pilot hydraulic system filter keeps contaminants from the pilot system and is located in the pump compartment.

### Remote Greasing Block

A concentrated remote greasing block on the boom delivers grease to hard-to-reach locations.

### Radial Seal Cleaner

Radial seal main air cleaner with precleaner has a double-layered filter element for more efficient filtration. No tools are required to change the element.

### Fuel-Water Separator

The water separator removes water from fuel, even when under pressure, and the water level can be monitored in the cab.

## Hydraulics

### Main Pumps

The hydraulic system includes three pumps with an independent swing circuit. The hydraulic circuit utilizes a load-sensing system to ensure high hydraulic system efficiency and excellent productivity with little hydraulic loss. Large, heavy-duty main pumps and a separate swing pump provide quick cycle times during multi-function operation.

### Reverse Swing Dampening Valve

Swing dampening valves reduce swing wag and produce smooth swing stops.

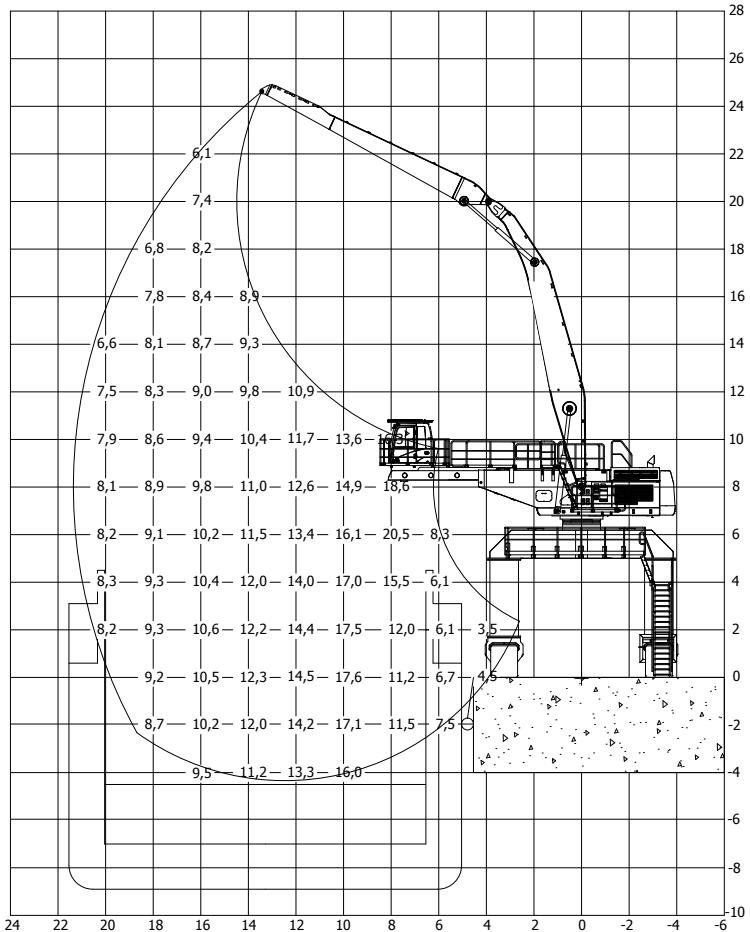
### Proportional Priority Pressure Compensation (PPPC) Hydraulics

Load-sensing, PPPC system, with Caterpillar-developed electronic actuation, provides high efficiency and excellent controllability. Cylinder speed is directly related to operator's movement of joystick from feathering to full speed. Flow to cylinders during multi-functional operation is directly controlled by the operator and is not dependent on loads.

### ACS valve

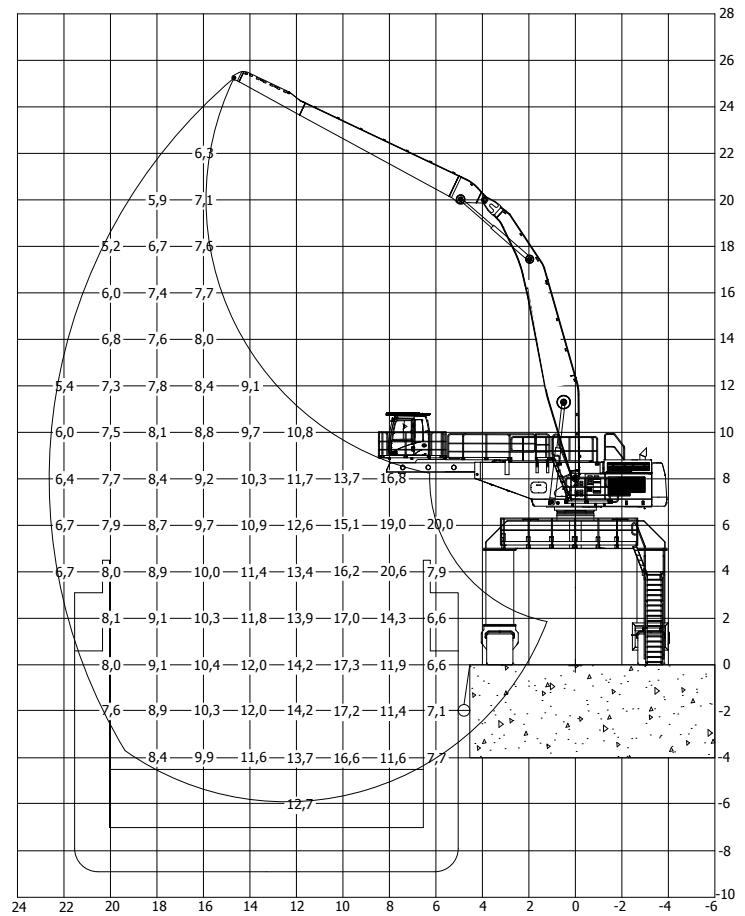
The valve is designed to intelligently manage restrictions and flows. It opens slowly when your range of joystick lever movement is small and opens rapidly when movement is high. It puts flow exactly where you need it when you need it, which means you will experience much smoother operation, greater efficiency, and lower fuel consumption. The ACS valve also has a new automatic hydraulic oil warm-up function – a definite plus in putting your machine to work more quickly in cold weather conditions.

# Lifting diagram, undercarriage MG7800C



Undercarriage MG7800C  
21,4 meters (boom 12.6 m & stick 10.6 m)

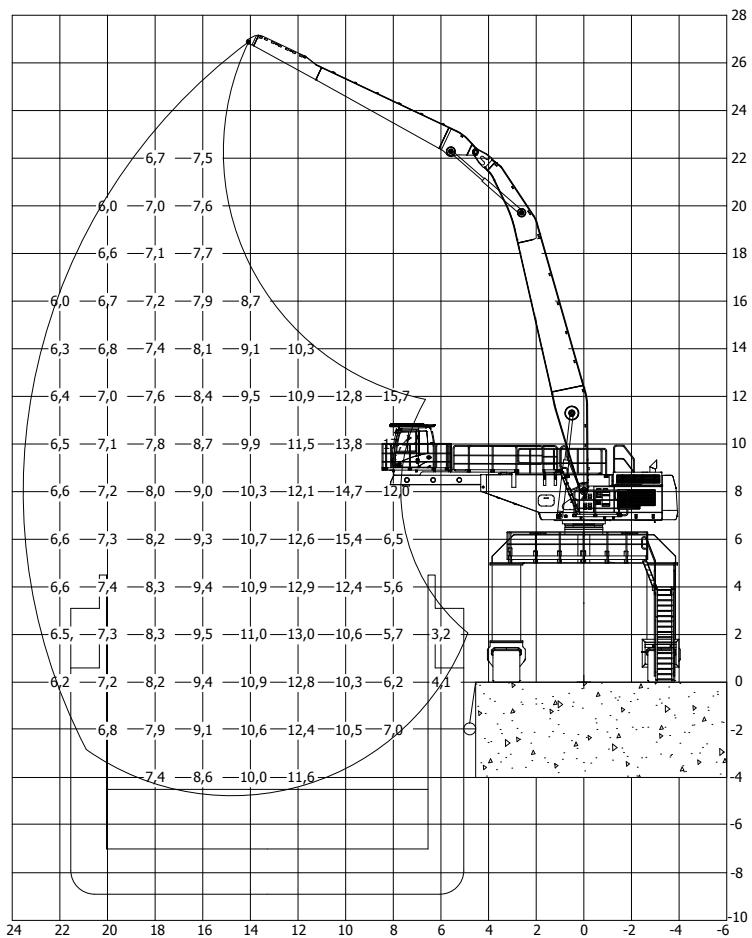
Undercarriage MG7800C  
22,6 meters (boom 12.6 m & stick 12,0 m)



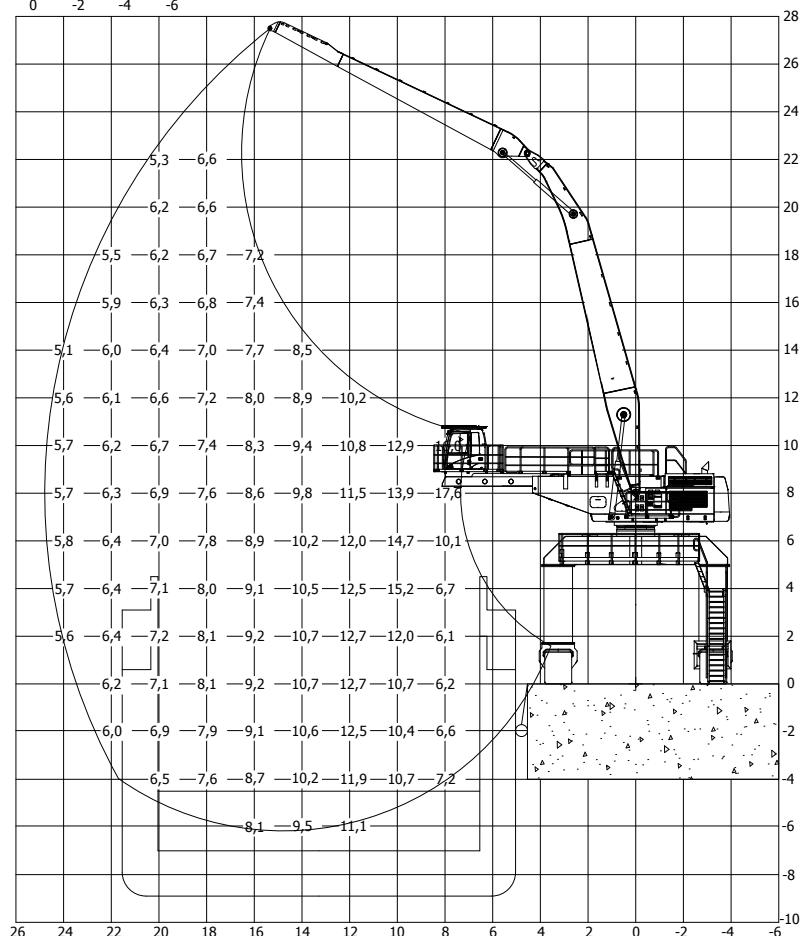
Lifting capacity table, unit tonne = 1 000 kg

The lifting capacities are measured at 360° in the stick end-joint.  
The above values have been calculated in compliance with SS-EN 13001. They do not exceed 87% of the hydraulic lifting capacity or 75% of the tipping load, with the machine on firm, level ground.

Lifting diagram calculations will be affected by choice of tool.



**Undercarriage MG7800C**  
23,5 meters (boom 15,0 m & stick 10,6 m)



Undercarriage MG7800C  
24,8 meters (boom 15,0 m & stick 12,0 m)

# Safety

## Safety Details

The MultiDocker CH1100 is equipped with sturdy galvanised steel access ladders, walkways and platforms all complete with strong handrails. Safety gates are fitted to platforms for improved safety.

In case of emergency/engine stop when operating it is fully possible to leave the machine by using the standard access route from the cab to the platforms and ladders then to ground. If the machine is rotated so that normal access routes cannot be used it is possible to use the emergency ladder located behind the cab to reach the service platform. This safety feature makes MultiDocker unique on the market.

1. Fire-extinguisher and emergency hammer (placed inside the cab).
2. Fire-extinguisher (one on each side).
3. Emergency ladder.
4. Flashing beacons when in travel mode (2 pieces).
5. Emergency stop (2 pieces), one placed on the access stair from ground level to platform, the second placed on the rear left portal leg.
6. Travelling alarm (acoustic, not marked in the picture).
7. Fire protection system (optional, not marked in the picture).

## Overload Protection System

The machines lifting capacity values have been calculated in compliance with SS-EN 130 01.

The capacities do not exceed 87% of the Hydraulic capability and 75% of the tipping load with the machine on a firm and level ground. In the case of an overload situation the protection system will not allow the dipper arm stick to move outwards therefore preventing an overload in the boom cylinders and uncontrolled lowering of the arm.

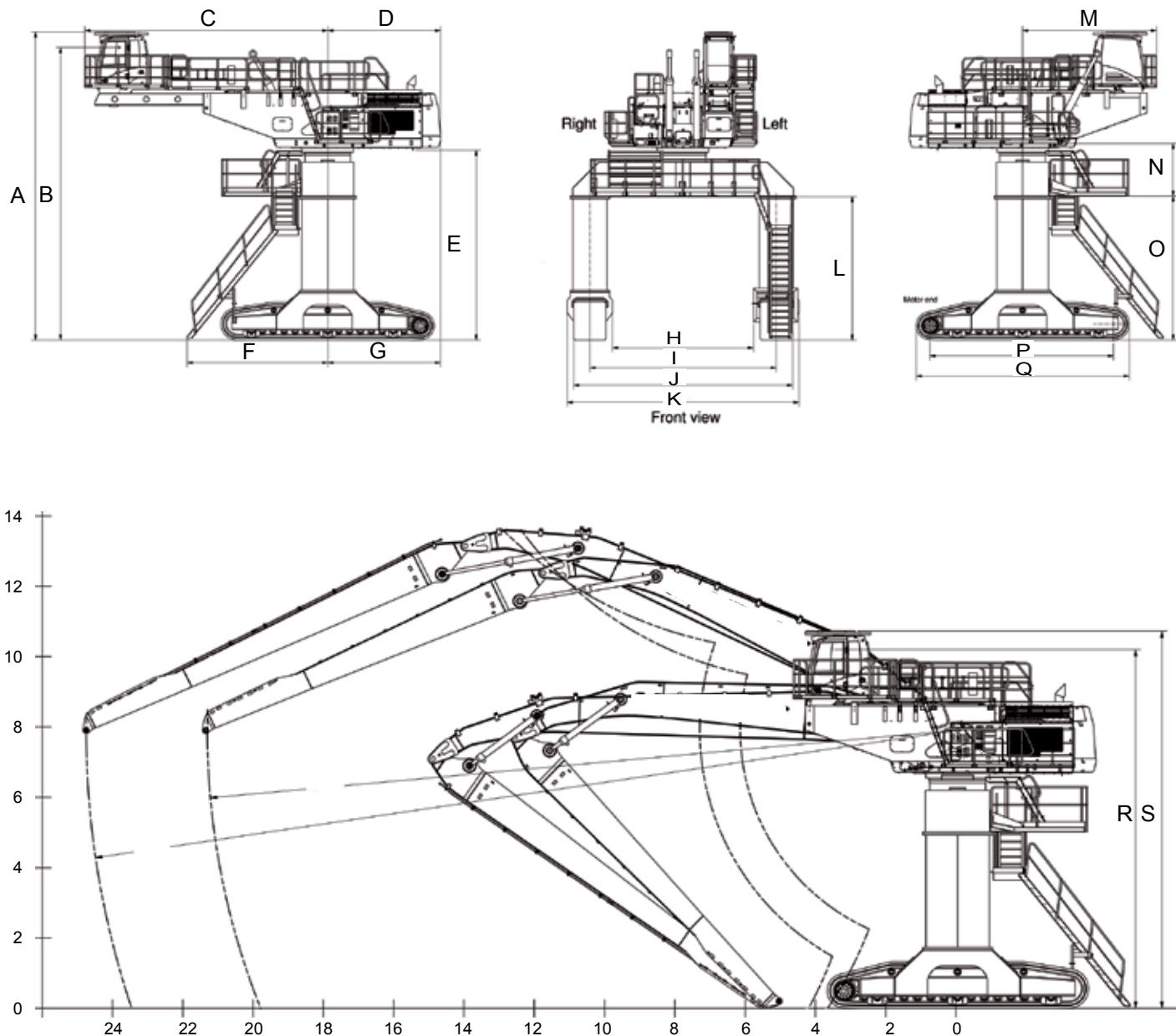
## Cabin Safety System

The machine is equipped with an electronic safety system with motion control. The system can as an option prevent from collision between the cabin and the work tool. The system also controls the load in the machine to avoid overload



# Dimensions

## Undercarriage MG7800C CM



A	10730 mm
B	10190 mm
C	8473 mm
D	3937 mm
E	6615 mm
F	4908 mm
G	3936 mm

H	4909 mm
I	6500 mm
J	7634 mm
K	8094 mm
L	5000 mm
M	4673 mm
N	1832 mm

O	5013 mm
P	6400 mm
Q	7437 mm
R	10190 mm
S	10730 mm

# CH1100L

REACH: 21-24,8 meters

ENGINE OUTPUT: 352 kW

LIFTING CAPACITY: 17,7 tonnes

VESSEL SIZE 0-15.000 dwt

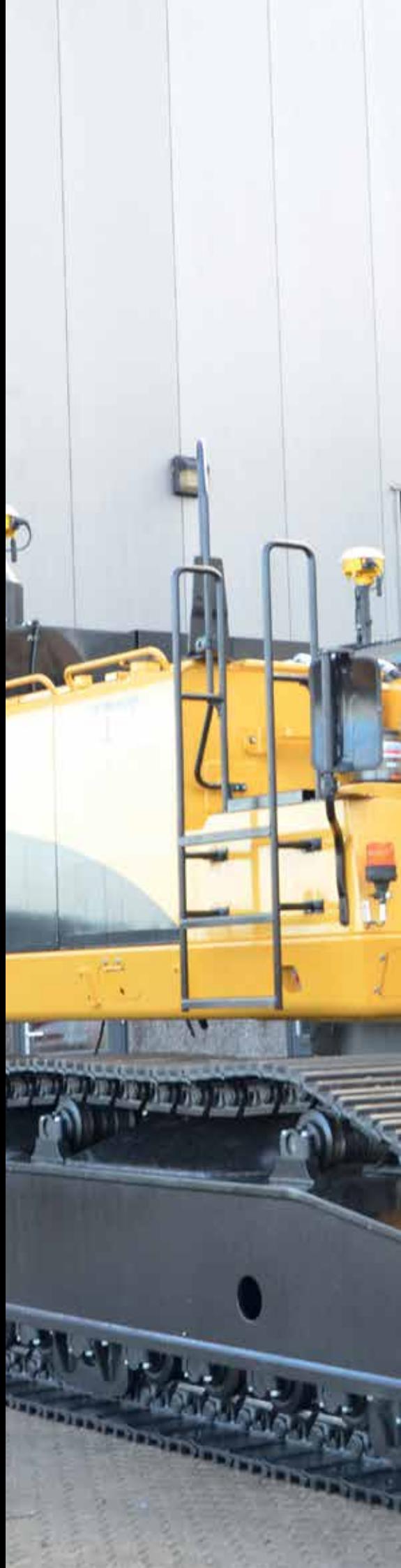
OPERATING WEIGHT: 87-99 tonnes

WE DIDN'T INVENT THE MULTIDOCKER AND START THE COMPANY TO MAKE MONEY. WE INVENTED THE MULTIDOCKER TO DO A JOB, FOR US. BECAUSE WE WERE DOCK-OPERATORS OURSELVES, WE KNEW JUST WHAT'S NEEDED. WE SAT DOWN AND SAID TO OURSELVES: IF WE COULD INVENT EXACTLY THE RIGHT MACHINES TO DO THE JOBS WE NEED, WHAT WOULD IT LOOK LIKE? HOW WOULD IT WORK?

AND WITH A LONG PROCESS OF EXPERIMENTATION, WE DEVISED THE MULTIDOCKER CH - A MACHINE THAT'S MOSTLY STANDARD, TRIED- AND-TESTED, ULTRA-RELIABLE CATERPILLAR COMPONENTS. WE WANTED HIGH EFFICIENCY, FAST PERFORMANCE, FAULTLESS RELIABILITY, HIGH MACHINE AVAILABILITY AND A LONG LOW-COST WORKING LIFE. SO WE BUILT IT, AND IT WORKED. OVER THE YEARS WE HAVE DEVELOPED THE PRODUCTS FURTHER AND INCREASED OUR PORTFOLIO. A RESULT OF OUR DEVELOPMENT IS THE CH1100L.

THE CH1100L IS BUILT TO KEEP YOUR PRODUCTION UP AND YOUR COSTS DOWN. THE MACHINE'S C15 ACERT ENGINE MEET THE TIER 4 FINAL EMISSION STANDARDS, WHILE GIVING YOU ALL THE POWER, FUEL EFFICIENCY, AND RELIABILITY YOU NEED TO SUCCEED.

REAL POWER AND ADVANCED HYDRAULICS ALLOW YOU TO MOVE TONS OF GOODS ALL DAY LONG WITH A GREAT DEAL OF SPEED, PRECISION, AND EFFICIENCY. IN FACT, THE HYDRAULIC SYSTEM AND ENGINE TEAM TOGETHER TO KEEP FUEL CONSUMPTION TO AN ABSOLUTE MINIMUM – WITH ZERO IMPACT ON YOUR PRODUCTIVITY. THE SERVICE POINTS ARE DESIGNED TO MAKE ROUTINE MAINTENANCE QUICK AND EASY. WELCOME TO READ MORE ABOUT THE CH1100L ON FOLLOWING PAGES!

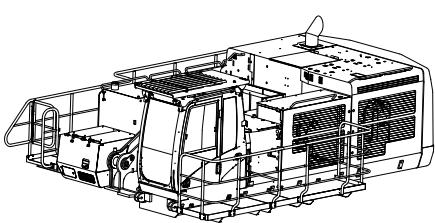






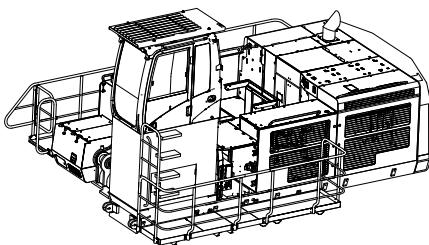
## Cabin solutions

**Cabin Standard, CS**



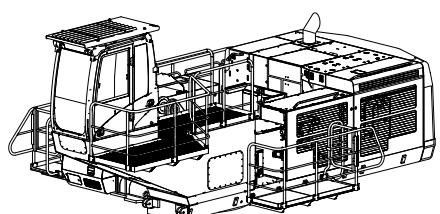
A very simple heavy duty standard solution.  
Suitable for material handling.

**Cabin Raiser, CR**



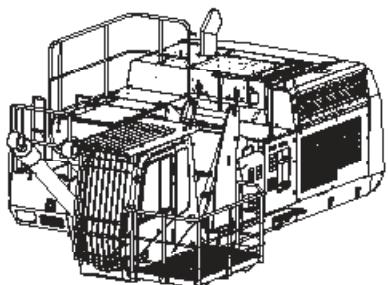
Fixed cabin raiser designed for material handling applications where the view/height is crucial. Raised 1500 mm from standard position.

**Cabin Forward, CF**



Fixed cabin raiser where the cabin is moved forward in a fixed position. Designed for material handling in combination with loading/dischargin vessels where the view into the vessel isn't crucial. Moved 4200 mm from the swing centre.

**Cabin Elevator Industrial, CEI**



Hydraulic elevated. Designed for material handling on low built machines where the visibility is crucial.



**Comfort and convinence keeps people productive**

A proper cabin environment generates good comfort and increases efficiency. With four standardized cabin solutions, MultiDocker offer a unique approach to operating comfort. By consulting the customer, we choose the most optimal cabin for each customer's application.

All MultiDocker cabin solutions reflect powerful and exceptional design, which creates a stable and unaffected environment during full production and heavy lifts.

## Cab description

The cabin has been designed to be spacious, quiet and comfortable for the operator, assuring high productivity throughout the entire workday. Switches are conveniently located for easy access. The monitor is located to provide excellent visibility and access. The all-new cab provides you with a safe working environment. It also contributes to your comfort because it's attached to a reinforced frame with special viscous mounts that limit vibration and unnecessary sound. Add in special roof lining and sealing and you have a cab that's as quiet inside as any of today's top pickup trucks.

### SEAT

The seat range includes air suspension, heated, and air cooled options. All seats include a reclining back, upper and lower slide adjustments, and height and tilt angle adjustments to meet your needs for maximum comfort. Adjustable armrests and a retractable seat belt are also included

### SKYLIGHT

An enlarged skylight with sunshade provides excellent visibility and good ventilation.

### HYDRAULIC ACTIVATION CONTROL LEVER

The hydraulic activation control lever deactivates all hydraulic functions during engine start-up, and prevents unintentional machine movements.

### CLIMATE CONTROL

The automatic climate control system features multiple air outlets with filtered ventilation to make your work in either hot or cold weather much more pleasant and productive

### MONITOR

The LCD monitor is easy to see and navigate. Programmable in up to 42 languages to meet the needs of today's diverse workforce, the monitor clearly displays critical information you need to operate efficiently and effectively. You can even change between the backhoe pattern or cargo handler control pattern right through the monitor. Plus it projects the image from the standard rearview camera to help you see what's going on around you so you can stay safely focused on the job at hand.

### CABIN SAFETY SYSTEM

The machine is equipped with an electronic safety system with motion control. The system prevents from collision between the cabin and the work tool. The system also controls the load in the machine to avoid overload

### CAB EXTERIOR

The exterior design uses thick steel tubing along the bottom perimeter of the cab, improving resistance fatigue and vibration. The cabin has an overhead protection frame (F.O.P.S = falling object protective system) bolted directly to the top of the cabin.

### CAB MOUNTS

The cabin shell is attached to the frame with viscous rubber cabin mounts, which dampen vibrations and sound levels while enhancing operator comfort.

### WIPERS

Parallel wiper, including a washer nozzle is mounted below the cab windshield; this optimizes the operator's viewing area and offers continuous and intermittent modes.

### WINDOWS

To maximise visibility, all glass is affixed directly to the cab. The cabin solution CM8000 has a floor window as standard. This gives the operator the possibility to view the working area underneath the cabin. .

### SOUND

The operator sound level measured according to the procedures specified in ISO 6396:2008.

### GAUGE DISPLAY

Three analogue gauges, fuel level, hydraulic oil temperature and coolant temperature, are displayed in this area.

### MONITOR DISPLAY SCREEN

The monitor is a full colour 400x234 pixels LCD graphic display. The Master Caution Lamp blinks ON and OFF when one of the critical conditions below occurs:

- Engine oil pressure low
- Coolant temperature high
- Hydraulic oil temperature high

Under normal conditions or the default condition, the monitor display screen is divided into four areas: clock and throttle dial, gauge, event display and multi-information display.

### MULTI-INFORMATION DISPLAY

This area is reserved for displaying information that is convenient for the operator. The "Cat" logo mark is displayed when no information is available to display.

### CONTROLS

Not only can the right and left joystick consoles be adjusted to improve your comfort and productivity during the course of a day, but the joystick levers themselves can be adjusted for gain and response. Gain is the relationship between the control lever stroke and cylinder speed, and response is the time elapsed from the moment the control lever is operated until the cylinder attains speed. The CH1100L has multiple gain and response settings to make the machine respond exactly how you want it to.

### ELECTRONIC JOYSTICKS

Electronic joysticks provide features not possible with hydraulic pilot valves:

- Eliminate pilot lines in cab for quieter operation
- Adjustable gain/response

## Standard Cab Equipment

To enhance operator comfort and productivity, the cab includes a lighter, drink holder, coat hook, service meter, FM Radio, literature holder, magazine rack and storage compartment. The cab can be equipped with optional 12 volt converter and up to 12V - 7amp electrical sockets to provide additional electrical resources.

- Air conditioner, heater and defroster with automatic climate control
- Power supply 24 V
- Console mounted electronic type joystick with adjustable gain and response
- Instrument panel and gauges with full colour graphical display
- Neutral lever (lock out) for all controls
- Positive filtered ventilation
- Pressurised cabin
- Retractable seat belt
- Stationary skylight
- Sunshade for windshield
- Travel control pedals with removable hand levers
- Windshield wipers and washers
- Rear view camera
- FOPS-Falling Object Protective System including overhead and windshield guards

## Optional equipment

- Weight Scale (excl summarise function.)
- Weight Scale (incl summarise function.)
- Electric Pre-heater 220 V
- Camera for stick incl. LCD display Others
- Radio /CD incl. remote control



## Port Line Cabin

The Port Line Cabin is an option for the CM and CF cabin solutions.

The Port Line Cabin features a larger interior for increased driver comfort, along with new features:

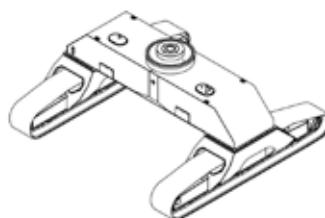
- the large glass surfaces provide excellent panoramic overview
- negative windshield for less reflections and impact from snow and rain
- one extra seat for training sessions
- greater floor windows for better visibility and a safer operation
- floor windows enhance operators precision and contribute to safety for ground personnel
- suspended on six additional rubber bushings – eliminating vibrations
- aluminium frame work for rigid and safe design
- high capacity heating and cooling units
- can be retrofitted (plug and play interface)
- full standing height allows comfortable access to and from operators seat
- plug and play interface with Caterpillar cabin ensures time and cost effective cabin upgrades



## Undercarriages

### MG4600C

A lower undercarriage configuration offer a versatile performance for cargo handling. A great option at terminals or at ports affected by the tide.



#### Technical information MG4600C

Width – center - center (mm)	6 500
Flat shoes width (mm))	800 - 1 000
Length – center - center (mm)	6 400
Weight incl.crawler tracks (kg)	38 600

### MG2900C

Our lowest undercarriage configuration offer a versatile performance for cargo handling. A great option at terminals or industries.



#### Technical information MG2900C

Width – center - center (mm)	5 400
Flat shoes width (mm))	800 - 1 000
Length – center - center (mm)	6 400
Weight incl.crawler tracks (kg)	33 000

# Solutions for your needs!

Depending on the customer's needs, the MultiDocker CH1100L can be delivered in two standard undercarriage configurations with crawler tracks. Other options are the rail track fitted gantry undercarriage or pedestal. It's also possible to have the cargo handler installed onboard a vessel or a barge.

Due to the unique module system we can tailor the height and width of the undercarriage raiser, the length of the track frames and the width of the flat shoes to meet special requirements in regards of weight, ground loadings, available space at the site etc.

## Standard Undercarriage Equipment

### SEALED AND LUBRICATED ROLLERS

Track rollers and idlers are sealed and lubricated for excellent service life.

### IDLER GUARDS AND TRACK GUIDES

Idler guards and centre track guides used to maintain alignment are standard.

### TRACK

The MultiDocker cargo handler comes with grease lubricated tracks as standard. The track links are assembled and sealed with grease to decrease internal bushing wear, reduce travel noise and extend service life thus lowering operating costs.

### TRACK SHOES

The flat shoe's outer edges are curved and chamfered on the outer edges to further smooth transportation as well as prevent unnecessary damages to the ground.

The flat shoe's original total width is up to 900 millimeters on the CH1100L, but the fundamental surface area accounted for the CH1100L is 800 millimeters.

Being such a large material handler, the MultiDocker flat shoes cause very little effect to the ground surfaces. Due to the design of the MultiDocker bended flat shoes, they are very kind to all types of road surfaces, concrete, blocks or tarmac.

### TRAVEL MOTOR

Two-speed axial piston hydraulic motors provide the drive power and automatic speed selection when the high-speed position is selected. This enables the machine to automatically change between computer controlled high and low speeds depending on drawbar-pull requirements.

### FINAL DRIVES

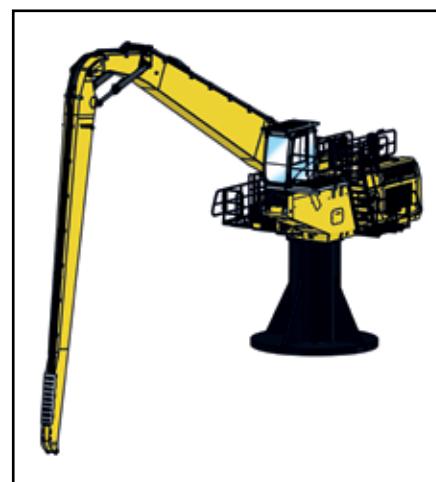
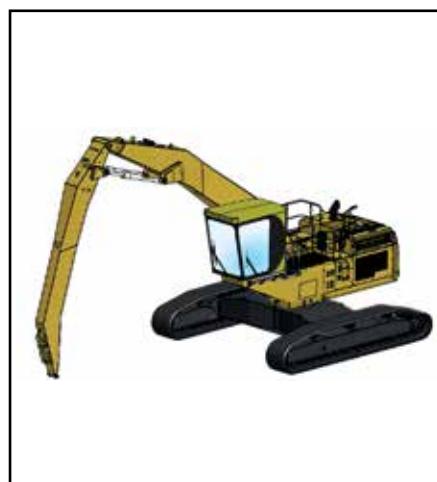
The final drives are the three-stage reduction planetary type. This design provides a complete drive/brake unit that is compact and delivers excellent performance and reliability.

### OTHERS

- + Color, black
- + Heavy-duty access service ladders and platforms
- + Footprint width 900 mm
- + Emergency stops, 2 pcs
- + Flashing and acoustic beacons, 2 pcs
- + Power supply to service platform

## Optional equipment

- + Customized colors
- + Extra fuel tank 5 000 liters
- + Wider flat shoes
- + Working light



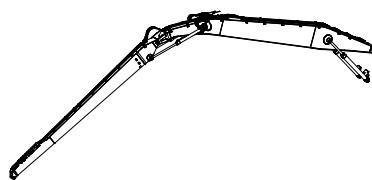


## Boom & stick

The boom and stick is designed for multi purpose use and can easily handle most different kind of cargoes. As an option we can offer a quick release coupling making the change between different work tools convenient and quick. Due to our unique module design we can tailor the lengths of booms and sticks for special requirements.

The MultiDocker CH1100L is offered with four standard boom and stick configurations with a reach ranging from 18 meter up to 24 meters excluding work tools. The reach of nearly 25 meters gives the possibility to handle ships up to 15 000 DWT with great efficiency.

Total length (mm)	Boom (mm)	Stick (mm)
18 000	11 400	8 400
21 000	12 400	9 900
24 000	14 680	11 300



### Integrated pipes

In order to protect the boom and the stick from outside interference MultiDocker has integrated the hydraulics in the boom and stick. As the tubing is placed in separate channels service availability is still outstanding!

### SmartBoom

Unloading a barge or a vessel is easier when using SmartBoom. The SmartBoom avoids excessive force being put on the barge tank top by having the weight of the boom and stick weighting down its self and not being forced down by the boom cylinders allowing the operator to fully concentrate on production.

### Standard Equipment

- + Heavy-duty pipe protection
- + LED lights, 4 pcs
- + Lubrication system - automatically lubricates the front end and the swing bearing
- + SLCV/BLCV (Stick lowering control valve/Boom lowering control valve)
- + Color, yellow
- + Logotype on stick
- + Hydraulic pipe closure valve cocks/ Shut off valve on stick and boom

### Optional equipment

- + Customized colors
- + Reinforced LED working lights
- + Weight scale
- + Extra hydraulic function (stick end)



# Other equipment

- Cold weather starting aid
- Scrap magnet generator
- Extra hydraulic pipe protection for arduous applications
- Hydraulic pipe closure valve cocks
- Quick release couplings
- Heavy duty semi-automatic Multicoupler
- Bio-degradeable hydraulic oil
- Reversible Fan

## FIRE PROTECTION SYSTEM

This fire suppression system discharges automatically at a detected fire when the machine is unmanned, i.e. when the main switch is turned off. When the machine is at work with the power on, a detected fire actuates only the alarm signals. The operator should then immediately stop the operation and turn off the power or operate the extinguishing installation manually. Manual operation can be made from a firing button on the control unit in the cab.

## CATERPILLAR MSS DATA SHEET

The Caterpillar Machine Security System (MSS) is an on-board system to manage access to your MultiDocker. It has programmable features to allow tailoring the system to fit your needs.

Can be programmed for active/inactive periods.

Can be programmed so individual keys expire on selected date and time. Control access by untrained operators or unauthorized personnel. Manage access with minimum inconvenience!

## RADIATION DETECTING SYSTEM

Mounting the Cricket in the grapple allows direct exposure to all the material being handled. The system consist of a detector protective shield, a detection unit, a battery pack and a RC2000 Control Console. Typically, the Cricket grapple mounted radiation detection system is 2.5 times more sensitive than a vehicle monitoring system.

## SAFETY CAMERAS

Standard for all MultiDockers is the rear view camera. This camera will give the operator a better overview (over the worksite) giving a safer operation. However, for optimal performance your MultiDocker can be equipped with a stick mounted camera giving a perfect view of the material being handled. With the stick mounted camera comes a 7" color monitor reproducing the view perfectly.

## WORKING LIGHTS

MultiDocker CH1100L is equipped with seven working lights. As an option the standard halogen lights can be changed to xenon working lights, giving three times more light than the standard lights, for a safer and more efficient operation. Your MultiDocker can also be equipped with extra work lights on the undercarriage for improved illumination of the working area around the machine.

## HEATERS

230 V heater for the cabin, engine and hydraulic oil tank are optional. There is also a possibility to choose a diesel driven heater for preheating of the diesel engine and the cabin. This heater has programmable start time and also the possibility to be started on remote by phone.

## CATERPILLAR PRODUCT LINK

Product Link is a satellite based system that up load important information about your MultiDocker on the internet. This gives you the possibility to control and evaluate the performance of your machine. It is also an important link between your MultiDocker and your service provider, your local Caterpillar dealer.

# Technical data CH1100L

Base information	Base machine (Caterpillar)	374F MH
	Weight (tonnes)	87-93
	Maximum reach (m)	24,8
	Maximum lifting capacity (kg)	17 700
	Maximum wind speed in parked position without anchoring	42 m/s
	Maximum wind speed during operation	24 m/s
	Designed according to	SS-EN 13001
Engine (diesel)	Model (Caterpillar)	C15 ACERT
	Net power (kW)	352
	Bore (mm)	137
	Stroke (mm)	171
	Piston displacement (l)	15,2
The CH1100 meets U.S EPA Tier 4 Final / EU4 emission standards		
Engine (E-power*)	Model (VEM)	Electrical engine
	Net power (kW)	315
	Voltage (V); standard 690 V	400-1 000
	Standard ampere (A)	460
	Standard travel distance (m)	150-200
Power supply		
Hydraulic system	Max. flow, working pumps (l/min)	880
	Max. flow, swing pump (l/min)	360
	Max. pressure, main circuit (kPa)	35 000
	Travel (kPa)	30 000
	Max. swing (kPa)	29 400
Undercarriage	Crawler tracks	MultiDocker CH1100L
	Track (flat) shoe (foot print) width (mm)	800-1000
	Number of shoes each side	71
	Number of rollers each side	15
	Number of carrier rollers each side	3
	Max. tractive force (kN)	290
Volumes	Max. speed (km/h)	3,5
	Fuel tank (l)	935
	Cooling system (l)	95
	Engine cranecase (l)	65
	Swing drive – drive (l)	12
	Final drive – each (l)	15
	Hydraulic system incl. tank (l)	670
	Hydraulic tank (l)	310
Weight main components	Extra fuel tanks (l)	5 200
	Base machine incl. swing bearing [kg]	20 000
	Cabin moveable, CM8000 [kg]	3 000
	Cabin forward, CF [kg]	1 800
	Counterweight [kg]	14 000
	Body extension [kg]	10 200
	Platforms [kg]	2 750
	Short stick – 10 600mm [kg]	3 000
	Long stick – 12 000mm [kg]	3 300
	Short boom – 12 600mm [kg]	7 950
	Long boom – 15 000mm [kg]	9 150
	Track frame – each [kg]	14 200
	Boom cylinder – each [kg]	650
	Stick cylinder – each [kg]	460
	Other [kg]	1 100

## Engine (diesel)

The Cat C15 engine with mechanically actuated electronic fuel injection (MEUI) powers the CH1100L. The C15 has ACERT® Technology, a series of Caterpillar engineered innovations which provide advanced electronic control, precision fuel delivery and refined air management compliance. ACERT® Technology optimizes engine performance while meeting EU stage 4 / U.S Tier 4 Final emission regulations.

### Increased Power

The maximum power is 352 kW (476 hp). The Power Management System (PMS) is also available to manage productivity and fuel economy.

### Improved Fuel Efficiency

The CH1100 consumes significantly less fuel than the previous series model, and two built-in features help contribute to that: automatic engine speed control and automatic engine idle shutdown. Automatic engine speed control lowers rpm when the machine doesn't need it for work. Automatic engine idle shutdown turns the engine off when it's been idling for more than a specified amount of time, which will lower fuel consumption, hour accumulation, and lead to extended service intervals and higher resale value.

### Biodiesel

The Cat C15 ACERT engine can run on B20 biodiesel fuel that meets ASTM 6751 standards – all to give you more potential fuel-saving flexibility.

### Improved Reliability

The titanium-aluminum alloy rotor in the turbocharger improves reliability/durability and contributes to faster response of the turbocharger.

### Reversible Fan

A reversible fan option is offered as an attachment. The reverse function is operated through the monitor. By selecting this function, the fan rotates in the opposite direction for a preset time to help clean the cooling package for increased uptime and reduced service cost.

### Cooling system

The CH100L features a new side-by-side cooling system that allows you to put the machine to work in extremely hot and cold conditions. The system is completely separated from the engine compartment to reduce noise and heat. Plus it features easy-to-clean cores and a new variable-speed fan that reverses to blow out unwanted debris that may accumulate during your work day.

## Engine (E-power\*)

The E-power concept, featuring a state of the art electric engine, offers customers a more energy efficient and environmentally friendly way to handle cargo. The high quality VEM engine requires less service than an average diesel engine - cutting the service time and cost significantly. Utilizing an Emotron frequency converter, the E-power enables the driver to very precisely adjust speed and effort by simply regulating the RPM. E-power has integrated Caterpillar software and hydraulic system - rendering the Caterpillar service network available for customers world wide.

## Environment

### Emissions

ACERT® Technology is a differentiated technology that reduces emissions at the point of combustion. The technology capitalizes on proven Caterpillar leadership in three core engine systems: fuel, air and electronics.

### Electro Magnetic Compliance

The CH1100F meets the following EMC (Electro Magnetic Compliance) requirements: ISO 13766 Earth Moving Machinery – Electromagnetic compliance EU Directive 89/336/EEC Aus EMC Framework.

### Fluid Management

Several serviceability elements are designed into the CH110L to limit fluid spillage while performing routine maintenance.

### Ecology Drains

Ecology drains are provided for the fuel and hydraulic tanks, allowing fluids to be captured in a container when draining the tanks.

## Service and Maintenance

### Service Intervals

Long service intervals reduce maintenance costs. Engine oil, oil filter and fuel filters are at 500 hours.

### Oil Sample and Pressure Ports

Oil sample and pressure ports provide easy checking of machine condition and are standard on every machine.

### Hydraulic Capsule Filters

The return filters or capsule filters for the hydraulic system are located beside the hydraulic tank. The filter elements are removable without spilling hydraulic oil.

### Service Points

Service points are centrally located with easy access to facilitate routine maintenance.

### Pilot Hydraulic System Filter

Pilot hydraulic system filter keeps contaminants from the pilot system and is located in the pump compartment.

### Remote Greasing Block

A concentrated remote greasing block on the boom delivers grease to hard-to-reach locations.

### Radial Seal Cleaner

Radial seal main air cleaner with precleaner has a double-layered filter element for more efficient filtration. No tools are required to change the element.

### Fuel-Water Separator

The water separator removes water from fuel, even when under pressure, and the water level can be monitored in the cab.

## Hydraulics

### Main Pumps

The hydraulic system includes three pumps with an independent swing circuit. The hydraulic circuit utilizes a load-sensing system to ensure high hydraulic system efficiency and excellent productivity with little hydraulic loss. Large, heavy-duty main pumps and a separate swing pump provide quick cycle times during multi-function operation.

### Reverse Swing Dampening Valve

Swing dampening valves reduce swing wag and produce smooth swing stops.

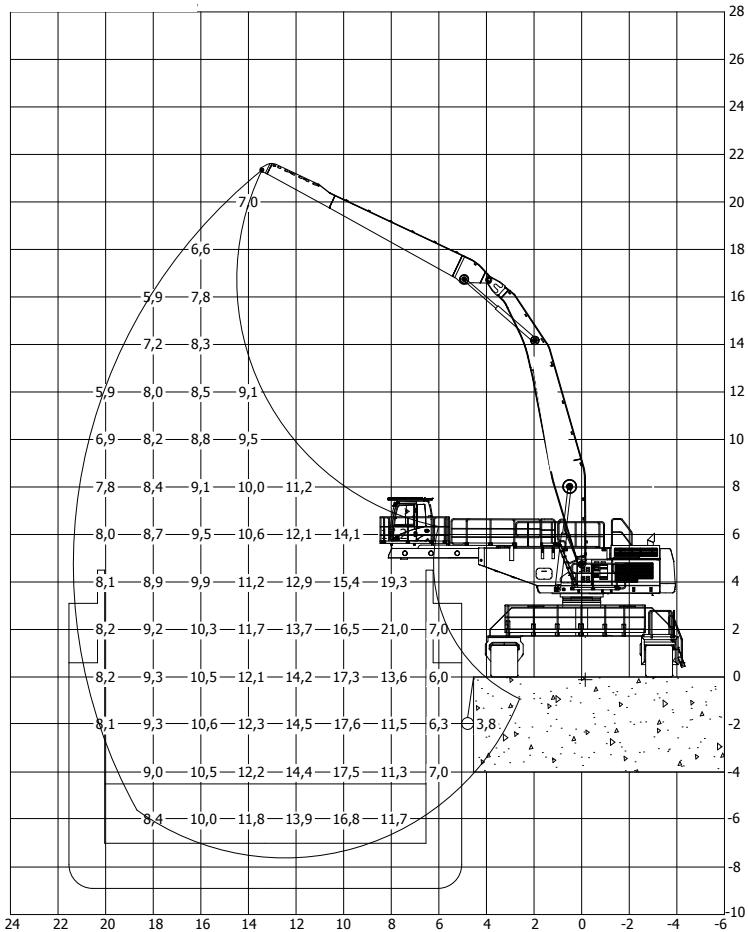
### Proportional Priority Pressure Compensation (PPPC) Hydraulics

Load-sensing, PPPC system, with Caterpillar-developed electronic actuation, provides high efficiency and excellent controllability. Cylinder speed is directly related to operator's movement of joystick from feathering to full speed. Flow to cylinders during multi-functional operation is directly controlled by the operator and is not dependent on loads.

### ACS valve

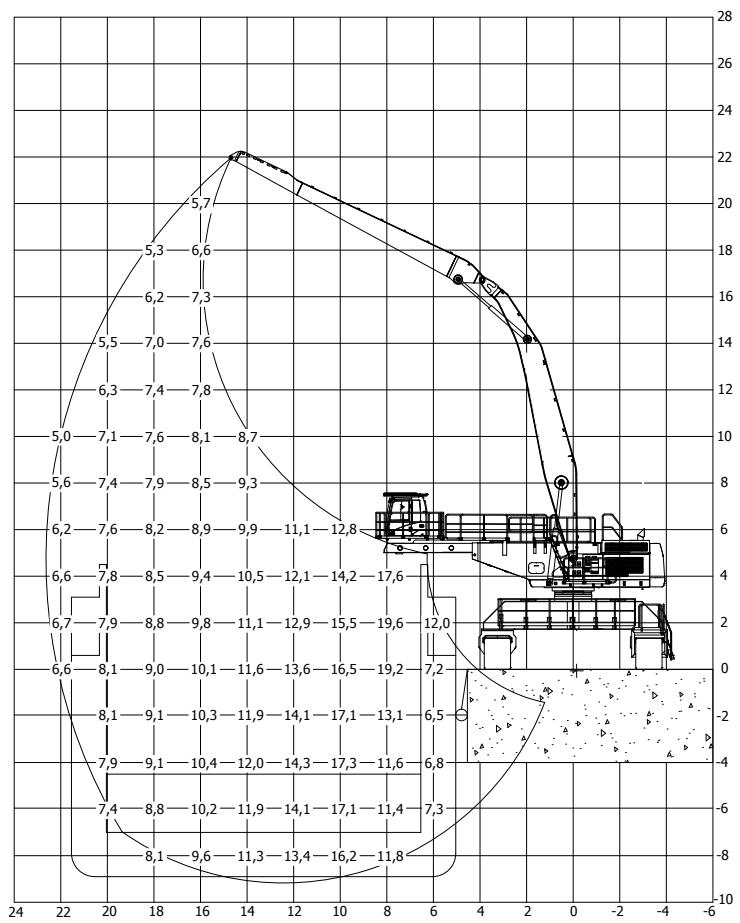
The valve is designed to intelligently manage restrictions and flows. It opens slowly when your range of joystick lever movement is small and opens rapidly when movement is high. It puts flow exactly where you need it when you need it, which means you will experience much smoother operation, greater efficiency, and lower fuel consumption. The ACS valve also has a new automatic hydraulic oil warm-up function – a definite plus in putting your machine to work more quickly in cold weather conditions.

# Lifting diagram, undercarriage MG4600C



Undercarriage MG4600C  
21.4 meters (boom 12.6 m & stick 10.6 m)

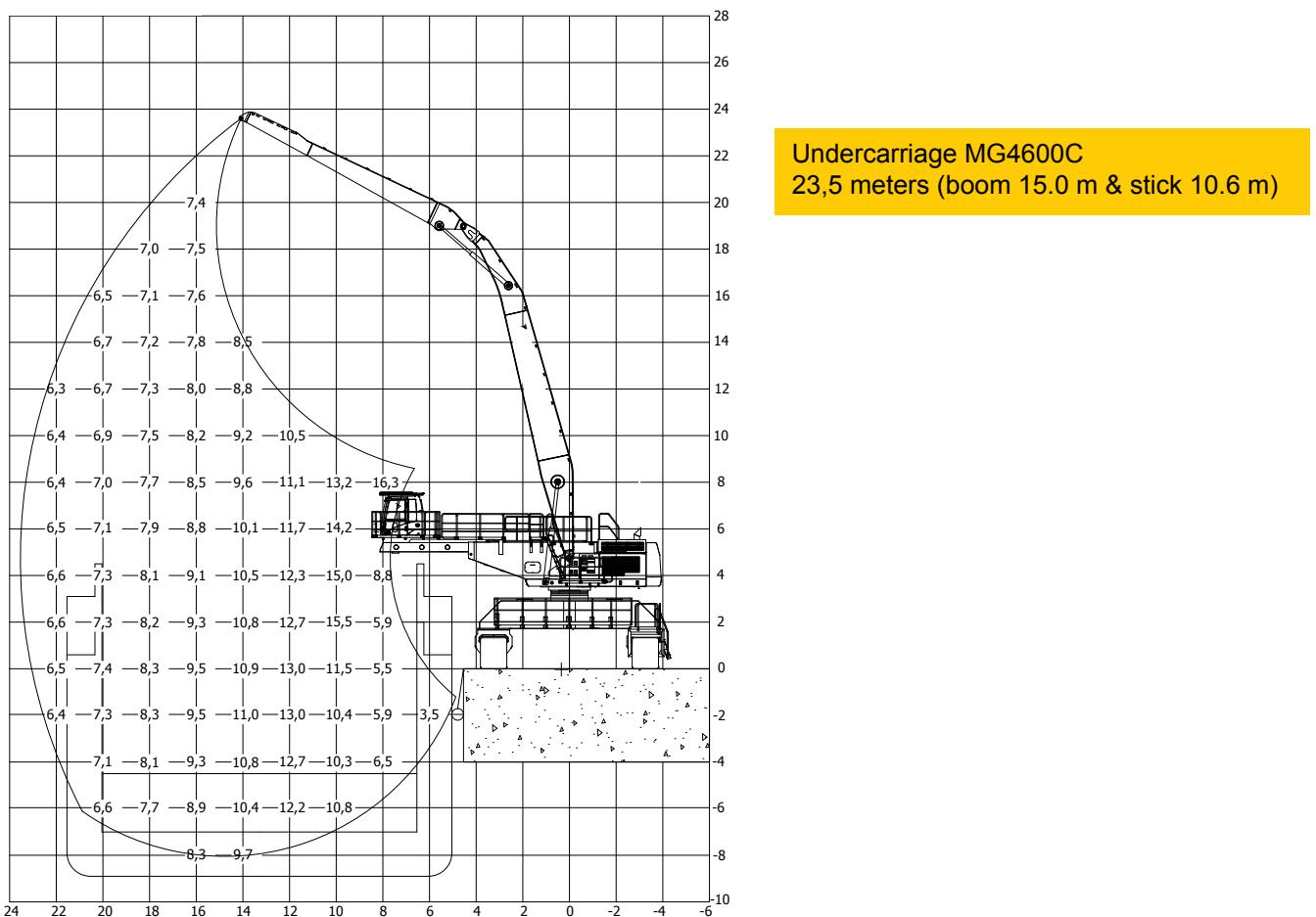
Undercarriage MG4600C  
22.6 meters (boom 12.6 m & stick 12.0 m)



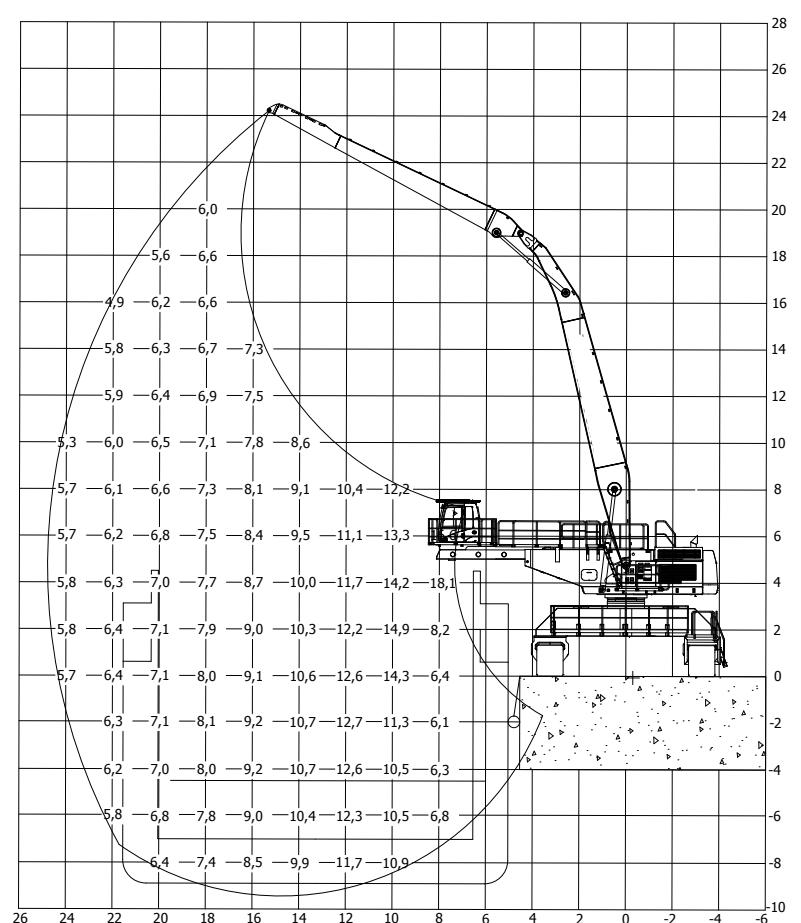
Lifting capacity table, unit tonne = 1 000 kg

The lifting capacities are measured at 360° in the stick end-joint. The above values have been calculated in compliance with SS-EN 13001. They do not exceed 87% of the hydraulic lifting capacity or 75% of the tipping load, with the machine on firm, level ground.

Lifting diagram calculations will be affected by choice of tool.



**Undercarriage MG4600C**  
24,8 meters (boom 15.0 m & stick 12.0 m)



# Safety

## Safety Details

The MultiDocker CH1100L is equipped with sturdy galvanised steel access ladders, walkways and platforms all complete with strong handrails. Safety gates are fitted to platforms for improved safety.

In case of emergency/engine stop when operating it is fully possible to leave the machine by using the standard access route from the cab to the platforms and ladders then to ground. If the machine is rotated so that normal access routes cannot be used it is possible to use the emergency ladder located behind the cab to reach the service platform. This safety feature makes MultiDocker unique on the market.

1. Fire-extinguisher and emergency hammer (placed inside the cab).
2. Fire-extinguisher
3. Flashing beacons when in travel mode.
4. Emergency stop (2 pieces)
5. Travelling alarm (acoustic, not marked in the picture).
6. Fire protection system (optional, not marked in the picture).

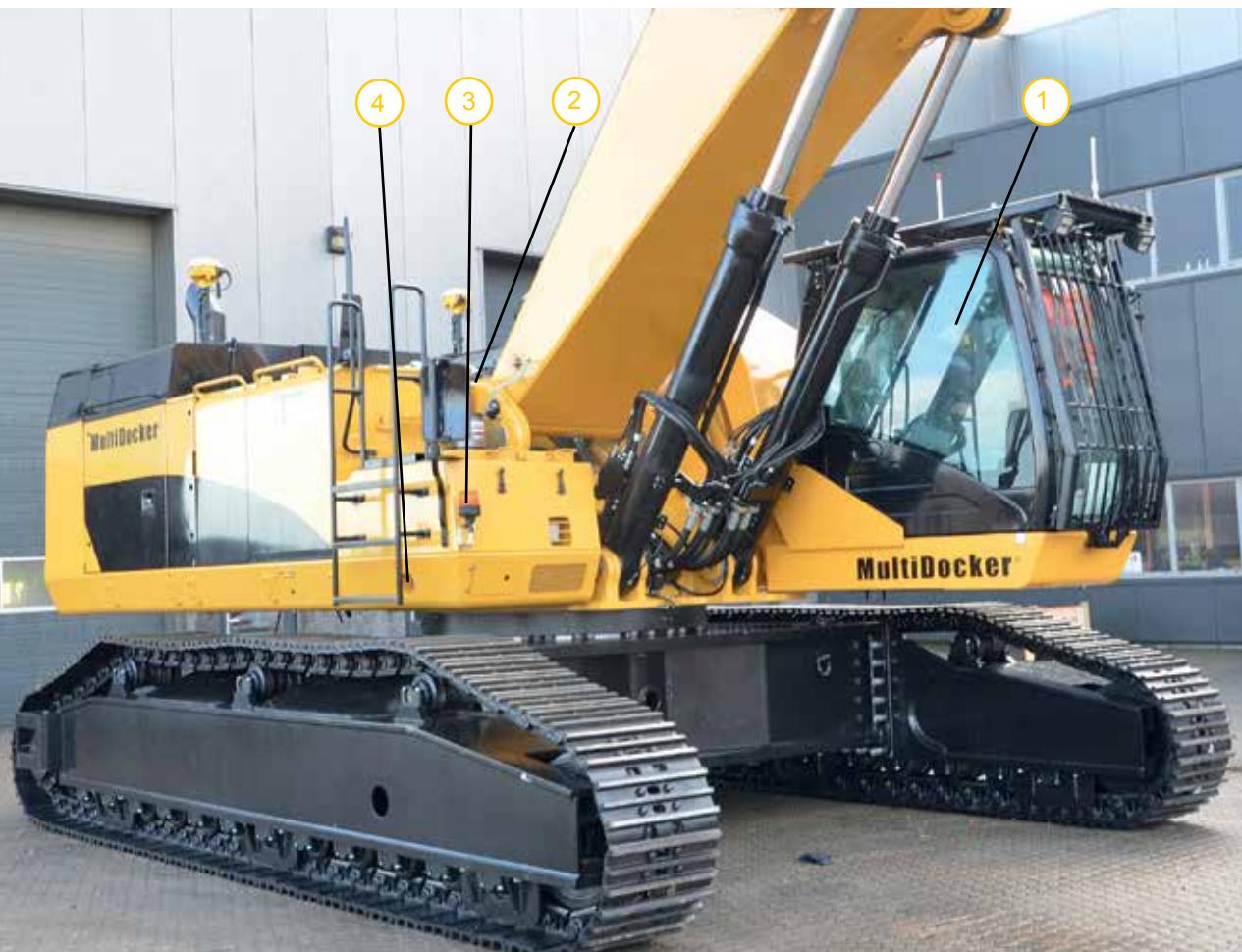
## Overload Protection System

The machines lifting capacity values have been calculated in compliance with SS-EN 130 01.

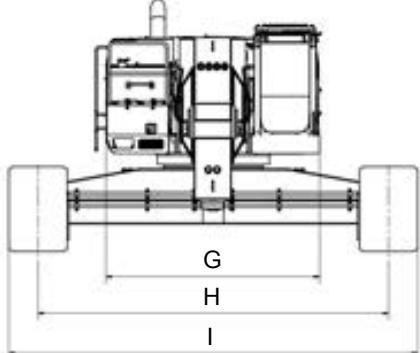
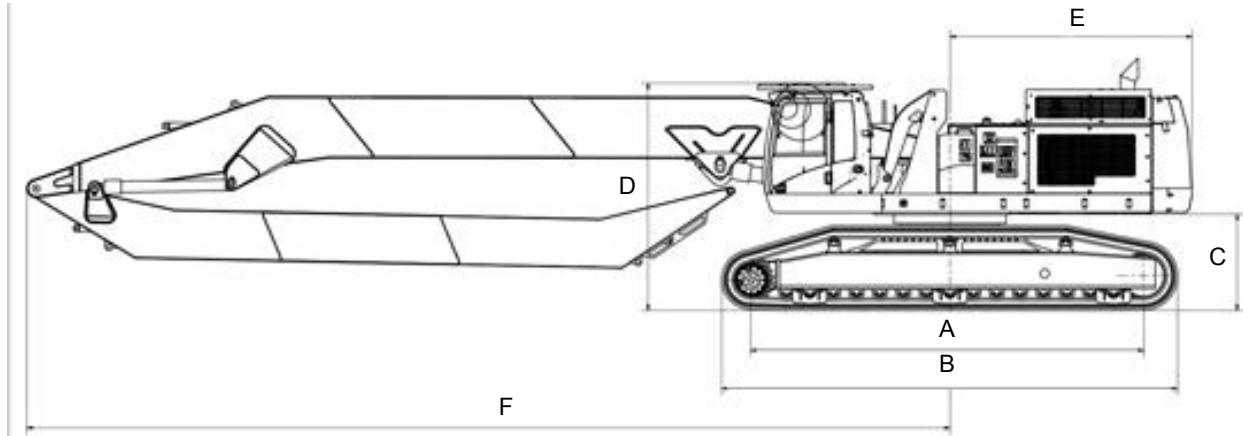
The capacities do not exceed 87% of the Hydraulic capability and 75% of the tipping load with the machine on a firm and level ground. In the case of an overload situation the protection system will not allow the dipper arm stick to move outwards therefore preventing an overload in the boom cylinders and uncontrolled lowering of the arm.

## Cabin Safety System

The machine is equipped with an electronic safety system with motion control. The system can as an option prevent from collision between the cabin and the work tool. The system also controls the load in the machine to avoid overload



# Dimensions



Dimensions	CH1100L
A	6 380
B	7 410
C	1 515
D	3 693
E	3 948
F	Boom length
G	3 468
H	5 400
I	6 300





# Working hard for you!



WE DIDN'T INVENT THE MULTIDOCKER AND START THE COMPANY TO MAKE MONEY. WE INVENTED THE MULTIDOCKER TO DO A JOB, FOR US. BECAUSE WE WERE DOCK-OPERATORS OURSELVES, WE KNEW JUST WHAT'S NEEDED. WE SAT DOWN AND SAID TO OURSELVES: IF WE COULD INVENT EXACTLY THE RIGHT MACHINES TO DO THE JOBS WE NEED, WHAT WOULD IT LOOK LIKE? HOW WOULD IT WORK?

AND WITH A LONG PROCESS OF EXPERIMENTATION, WE DEVISED THE MULTIDOCKER CH - A MACHINE THAT'S MOSTLY STANDARD, TRIED- AND-TESTED, ULTRA-RELIABLE CATERPILLAR COMPONENTS. WE WANTED HIGH EFFICIENCY, FAST PERFORMANCE, FAULTLESS RELIABILITY, HIGH MACHINE AVAILABILITY AND A LONG LOW-COST WORKING LIFE. SO WE BUILT IT, AND IT WORKED. OVER THE YEARS WE HAVE DEVELOPED THE PRODUCTS FURTHER AND INCREASED OUR PORTFOLIO AND OUR NUMBER OF PARTNERS. TODAY WE ARE PROUD TO OFFER WORLD LEADING PRODUCTS AND SERVICES TO CUSTOMERS IN MANY INDUSTRIES ALL OVER THE WORLD. WELCOME TO CONTACT US OR VISIT OUR WEB SITE FOR MORE INFORMATION!