

Hansa C Crane

Crane ID #:

Winch ID #:

Installation & Operation Manual

The Hansa C Crane is ideal for the safe and dignified transfer of sailors with disabilities and for lifting the keels in and out of sailboats. The crane is also suited to many other lifting applications including small dinghies, outboard motors and anchors.

Do not install or use a C Crane without first reading this manual and understanding the C Crane's operation and how it should be installed. The safe working load (SWL) applies to a C Crane where its shaft is vertical. Be aware that when a C Crane is installed on an unstable platform like a narrow pontoon or a boat the load will swing out from the shaft which is the center of its arc, increasing the reach which decreases the SWL .

In extreme situations, like where the Crane is fitted to a small boat and being used in wave conditions you can tether the load back to the shaft to prevent gyrations and ultimately capsizing the boat. It is important to note that;

- Very narrow and unstable pontoons are not suitable locations to permanently mount a C Crane
- Do not install a C Crane on a boat before understanding the implications on the boat's stability.

SWL 120kg

Davit	ISO 10535:2006	12 Jan 2011
Sling	AS 3582-1988	12 Sept 2000

The Hansa “C” Crane

Manufactured, Supplied and Serviced by:

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The Hansa “C” Crane was developed to fill the need for an inexpensive transferring aid for the marine environment. Although it can be used to transfer disabled sailors it can also be used for lifting the ballasted Hansa keels into and out of boats. The Hansa C Crane is also suited to many other lifting applications including small dinghies, outboard motors and anchors.

The C Crane consists of a davit which fits in a socket that is either sunk below foot level, or elevated above in a bolt on bracket. The above deck support base and below deck/ground sockets can be fitted to existing pontoons, docks, jetties and features on shore and are standard fittings on all Hansa modular pontoon systems.

Hansa Sailing manufacture several mounting options for below deck sockets and above deck stands. Responsibility for mounting rest with the installer.

The davit is fitted with a reel type brake winch and tested to a Safe Working Load of 120 kg. A winch based system like the C Crane has the advantage (depending on the length of rope fitted) of providing up to 3 metres of lift which allows it to work effectively on fixed shorelines and jetties and in tidal areas. Many patient lifters and hydraulic ram based hoists have limited travel and are only suitable on floating pontoons or non-tidal areas.

When transferring people regulations require a fall arrester to be fitted between the davit and the spreader bar/person as a secondary breaking device in case of a failure in the main system. Fall arresters have varying length belts and it is important to ensure that the one that is fitted has adequate belt length to suit the height of the lift. This height is constant when the crane is fitted to a floating pontoon but will vary with fixed cranes in tidal areas. The standard Fall Arrestor suits a floating pontoon or a fixed situation with up to 3 metres from davit head to the water level.

The Hansa C Crane is available in two basic models, either FLUSH MOUNT or elevated STAND MOUNT. There are 3 variations of Flush Mount C Cranes, 2 of which are also suitable for use in a stand where extra height is needed.

It is important to stress that it is the fall arrester which gives a secondary brake to the system and people should never be lifted without a correctly fitted and functional fall arrester, and used by people who are aware of its significance.

The following points are important considerations for the winch mechanism.

- Care must be taken to ensure the winch rope is evenly wound and laid on the winch drum.
- Care must be taken to ensure the winch rope is not loosely wound on the winch drum. Loose winding is caused when the rope is wound on under little or no load. When winding rope onto the drum keep some pressure or load on the rope to ensure its wound on in an orderly way.
- Do not allow the rope to ride under itself and jam between turns which can happen when taking up a lift over loosely wound turns. This can lead to the rope winding on the drum in reverse of the correct direction.

Hansa C Crane models and their part numbers (PN) are provided below. The part numbers include spreader bar, fall arrestor and shackles. All C Crane models have 1m reach. The height of each model also depends on its installation as below.

PN 5321	Stand Mount C Crane. Rotates in a stainless-steel Stand bolted to the deck. Stand height - 270mm. Shaft length - 270mm. Height of Crane - 1850mm. Reach of Crane - 1000mm.
PN 5311	Standard Flush Mount C Crane. Rotates in socket flush with the deck. Shaft - 450mm long. Height - 1850mm. Reach of crane - 1000mm.
PN 5312	Short Shaft Flush Mount. May be used in Flush socket or in Stand. Shaft - 270mm long. Flush height - 1850mm Stand height - 2120mm. Reach – 1000mm.
PN 5313	Extended Flush Mount. Extended length boom with short shaft. May be used Flush or in a Stand. Flush height - 2030mm. Stand height - 2300mm. Reach – 1000mm.

C Crane related parts and accessories.

PN 5331	Spreader Bar. Designed to attach slings as high as possible to maximize lifting height.
PN 5341	Fall Arrestor.
PN 5351	Stand on triangle base.
PN 5354	Stand on corner base.
PN 5357	Socket liner for Flush Mounted C Cranes.
PN 5361	Standard Sling. Designed as clean and practical so it can remain fitted while sailing.
PN 5362	Sling with dual length webbing. With an extra set of webbing loops for hoisting bigger people.

C CRANE INSTALLATION OPTIONS

Hansa C Cranes may be fitted to floating pontoons, wharves, jetties, shore facilities, swimming pools, trailers and onboard boats. Each installation requires either a stand or a socket. If you have questions about which type of installation best suits your purpose and venue please contact Hansa Sailing or your distributor.

Hansa produce standard stands and third parties produce their own. If you have questions about the types of stands that are available and the best option for your venue please make contact. There are options for both permanent and temporary installations for the duration of an event. We can offer advice, but the way stands are ultimately mounted is beyond our control and responsibility for installation ultimately rests with the installer.

Hansa produce a socket liner for Flush Mount C Cranes, as well as aluminum and stainless-steel sockets that are designed to be fitted and braced under a deck. These accept our socket liners.

Hansa also produce AUS/NZ standard PVC tubing which is used as the bush for our C Crane shafts. This is Class 12 40mm water pipe which we can send you as needed. This is a Nominal Bore Pipe with an actual ID of approx. 43mm. The C Crane Shaft is 42mm.

You can fit or grout this pipe in our standard sockets, or any aluminium or stainless-steel structural tube you install in a plastic pontoon, or on the side of an aluminium framed pontoon, or insert the PVC pipe in a hole bored through the timber whalers surrounding a concrete pontoon. Another approach is to create your own socket liner by boring a 43mm diameter hole through a plastic block at least 250mm long and insert that behind the outer timber whaler. These whalers are structural where they join concrete floats so you cannot bore holes near a float join. You need to discuss this option with the pontoon manufacturer.

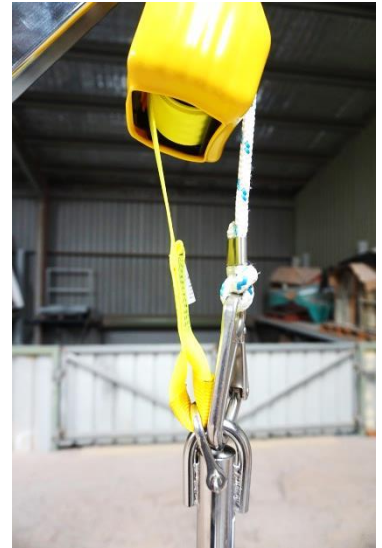
The PVC pipe can be fitted inside a structural tube or pipe (NB 2") that is sunk vertically into the seabed under a fixed jetty, or a tube fitted to a trailer, or in a hole bored thru concrete surrounding a swimming pool. An aluminium or stainless-steel tube can be mounted appropriately onboard a sailing, fishing or ski boat, or fibreglassed into a GRP hull. We have experience in all these types of installations, and we can offer advice but the way the installation is carried out is the installers responsibility.

In all of the installation options above it is important that the shaft of the C Crane should be as vertical as possible. On unstable platforms like narrow pontoons and small boats when the load is swung out over the water the pontoon or boat will heel, causing greater heeling force, which can overload the SWL of the Crane and ultimately cause a capsize. We recommend that all purchasers that are considering installation on a narrow pontoon or small boat contact Hansa Sailing to discuss implications and installation.

C CRANE ASSEMBLY INSTRUCTIONS

A C Crane is generally supplied complete with Fall Arrestor, Spreader Bar and attaching shackles. When the C Crane is used for lifting people it must have its Fall Arrestor attached correctly as this provides the secondary braking system which catches the load in the event of a primary brake failure. A Fall Arrestor is very similar to a Vehicle Seat belt ratchet.

The Spreader Bar and its lanyard should be attached as per the photo opposite. Note how the Fall Arrestor is shackled to the head of the C Crane. Note how the Fall Arrestor Lanyard is shackled to the Spreader Bar. Note how the C Crane carabiner is attached to the stainless-steel ring on the Spreader Bar.



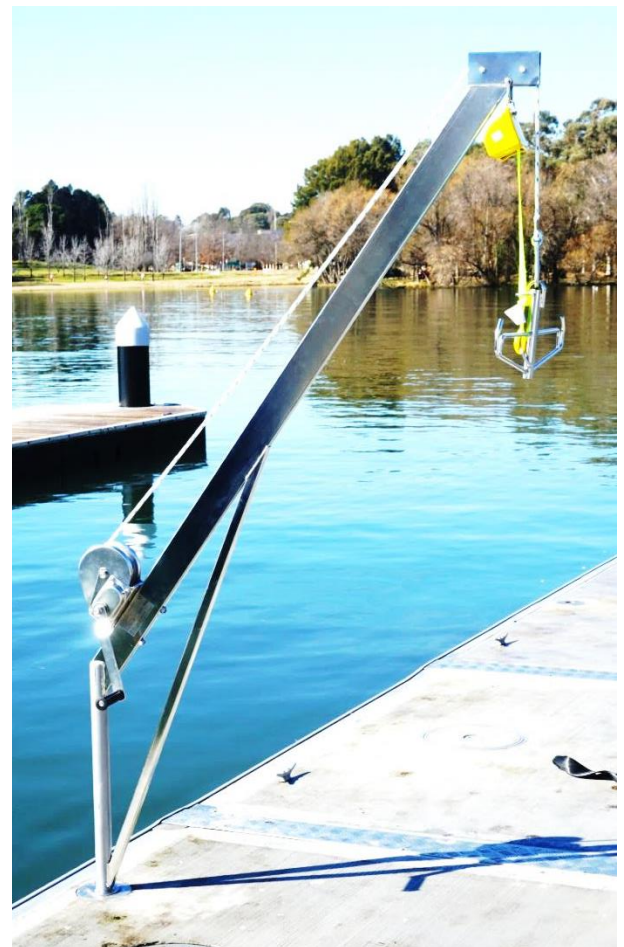
If you are lifting from high wheelchairs and need more height the alternate method for attaching the Fall Arrestor is shown in detail on page 7. This requires a 6.5mm hole drilled as low as possible in the base of the Spreader Bar as shown. A second Wide D shackle is needed. We use Ronstan RF 1853 Wide Dee shackle which can withstand a load 1000KG before deforming. New Hansa Spreader Bars in 2019 have this second hole drilled as standard.

On any Hansa Modular Pontoon the only installation required is to fit the C Crane's davit into the standard socket and attach the spreader bar and fall arrester by their respective carabiners.

Where the crane is to be mounted on existing pontoons, docks, jetties or on shore, a socket will need to be attached which is capable of withstanding the load.

Hansa Sailing Systems manufacture a socket/bush for grouting inside suitably mounted pipes and tubes sunk into the sea bed and attached to a jetty by a substantial saddle or similar. The can also be sunk into a hole bored into a concrete structure. If you want our advice we will require drawings and photographs of the location so we can determine if our equipment is suitable.

We also manufacture a base suitable to mount on certain concrete floating marina modules. We require drawings of your marina and possibly a visual inspection before the equipment can be custom made to suit the particular application (see below). Installation instructions can be provided to suit each individual application.



Hansa "C" Crane - Standard davit with winch, spreader bar and fall arrester.

A variety of base design is available depending on marina application.



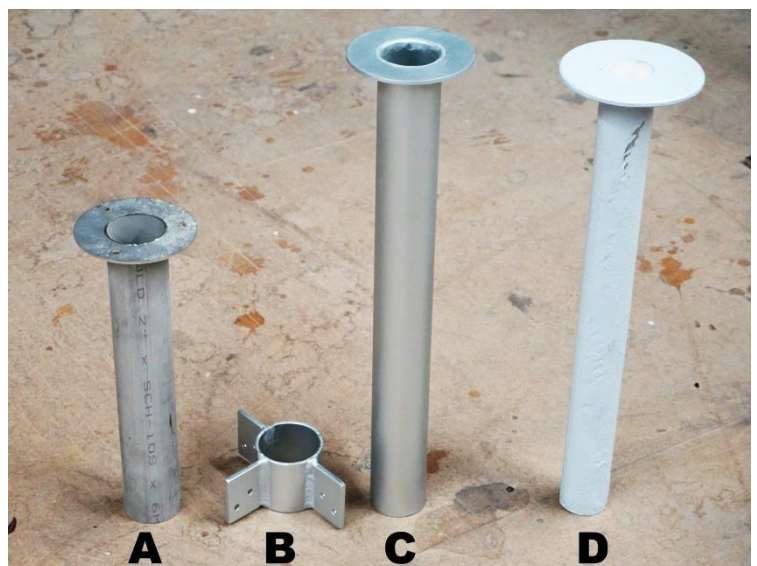
Triangle stand



Corner stand

[A]. This is a stainless steel socket with deck flange that is made from 2" Nominal Bore (NB) Schedule 10 304 Stainless Steel Pipe. That means it has an approximate OD of 60mm with an approximate wall thickness of 3mm and an approximate ID of 54mm.

[B]. This is a bracket is available in either stainless steel or aluminium. The aluminium bracket shown in this image is bolted at the bottom of A or C, just above the pontoon waterline is best, and takes 3 braces to support the bottom of the socket.



[C]. This is an aluminium socket with deck flange that is made from 60mm OD x 3mm wall thickness anodized aluminium tube. These are its actual dimensions as it's a tube.

The difference between a Pipe and a tube is Pipes are made to transport things, so the ID is important. Tubes are for making things so the OD and wall thickness are important.

[D]. This is a socket liner with flange, it's made from Class 12 x 40mm NB plastic water pipe. Being a pipe its ID is important to transport fluids. Its actual measurement is 43mm ID, important for us as the C Crane shaft is 42mm OD. The OD of this plastic pipe is about 49mm so it fits inside the [A] the stainless steel pipe and [C] the aluminium tube used for the sockets. But the bare plastic pipe is a loose fit so this plastic socket liner is wrapped in fiberglass which also attaches the flange.

The bare plastic 40mm Class 12 water pipe can also be used without fiberglass sheath or the flange and is what we fit into the corner and triangle stands we produce. To take up the loose fit and centre the plastic sleeve we use other pieces of pipe cut lengthways to give the right diameter and bond both tubes is with products like Sika Flex.

For old galvanized C Cranes these are still the 42mm stainless steel shaft, but the galvanizing has increased the shaft diameter, so the better plastic pipe top use for the sleeve is Class 9 40mm water pipe. The OD of both pipes are 40mm, but class 9 has thinner wall so larger ID.

C CRANE - OPERATING INSTRUCTIONS

These operating instructions aim to familiarise the operator with the basic functioning of the C Crane and determines its suitability for this at given locations. Sailors generally weigh between 30 - 100 Kg so it is advisable for a trainee operator to start with a sailor of around 50 Kg seated in a wheelchair. After fitting the sling (covered in Part 2 of these operating instructions) the trainee operator should raise and lower the sailor above their chair several times to become familiar with the procedure before slewing the davit and lowering the sailor into the boat.

Part 1: Hoist Familiarisation

- 1) Attach the spreader bar to Carabiner and the Fall Arrestor by its shackles.



Stand behind the davit, with the left hand preventing slewing, and with the right hand unwind the winch to lower the spreader bar over the side till it is at deck level of the boat below (about 300mm above the water).

- 2) Check there are still at least 3 turns of rope left on the winch drum and that the fall arrester still has play in its system.



- 3) Ensure that the rope is wound onto the winch correctly and rotates the correct way.



- 4) If you are in a tidal situation and operating from a fixed jetty or similar, determine the state of the tide and whether there is sufficient rope on the winch and belt on the fall arrestor to allow for a further drop in the water level.
- 5) Wind up the spreader bar taking care that the rope coils itself evenly on the winch drum.

Part 2: Preparing to Transfer Sailors

WARNING: All Slings MUST have a Safe Working Load of at least 120KG.



Fitting the Hansa Sling

- 1) Hold up the sling so that its banana shape curves downwards. On new 2019 slings the label is attached on the topline between the upper webbing loops.



- 2) Slide the sling down behind the sailor as far as the seat and under the buttocks if possible.



3) Pass the leg straps under each leg to support as much of the sailor's thigh as possible.



4) Wheel the chair under the C Crane and lower the spreader bar in front of the sailor.



5) Cross over the leg straps and hook them onto the opposite sides of the spreader bar, then hook on the shoulder straps outside the arms



Practice lifting a sailor

- 1) Ensure the spreader bar and fall arrester are correctly attached to the C Crane.
- 2) Take the strain and check that the straps are firmly hooked on the spreader bar, and that the sling is not folded but wrapped smoothly around the sailor's trunk and thighs.
- 3) Stand behind the davit (as per in Part 1: Hoist Familiarisation) in a well-balanced stance and take up on the winch to lift the sailor clear of their wheelchair seat.
- 4) Check that the sling is correctly fitted and the sailor is comfortable, then raise the sailor higher and lower them correctly back into the seat.
- 5) Repeat this procedure of lifting and lowering the sailor above their wheelchair until the trainee is confident and fluent in the hoist's operation.

Part 3: Transferring a sailor

The next part is slewing the C Crane to swing the sailor out over the water and lower the sailor into the sailboat's seat. This should only be undertaken when the trainee has demonstrated the strength and ability to manage the procedure.

- 1) Ensure that the sailor is wearing an appropriate sized lifejacket and that they are prepared to enter the boat.
- 2) Ensure that the boat is correctly rigged with keel fitted and locked down and moored alongside the C Crane. Un-shackle the mainsheet from the traveler if the boom is in the way. This may be particularly necessary if the sailor is to swing in over the stern. Remove the joystick from its holder.
- 3) Fit the sling as in Part 2 and follow the steps till the sailor is suspended above their chair.



- 4) Determine which is the most appropriate direction, then slew the C Crane and sailor out over the boat and lower them towards the seat, moving the boat until it is correctly positioned.



- 5) Help steady the sailor to prevent them from rotating and lower them into the sailboat's seat.



- 6) Unhook the sling from the spreader bar and taking care not to bump the sailor's head, slew the C Crane clear of the boat.

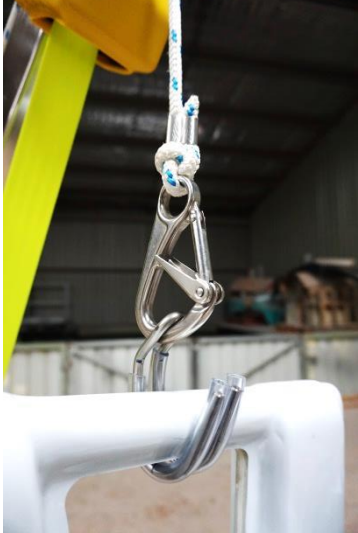


- 7) Either remove the sling or if it is to remain with the sailor, tuck the straps behind and under the sailor to prevent them fouling the steering lines.



USING THE C CRANE FOR TRANSFERRING KEELS

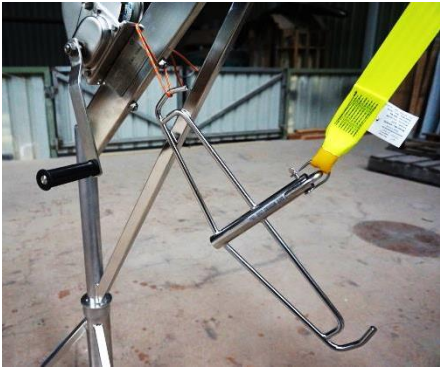
- 1) The C Crane may also be used to transfer keels in and out of boats.



- 2) For these operations the spreader bar can be unhooked at the Carabiner and hung on a short lanyard or loop tied to the C Crane.



3) This loop is also used to secure the spreader bar to the C Crane between lifting operations.



SERVICE, MAINTENANCE & TROUBLESHOOTING

Lubrication:

- The Hansa C Crane winch requires periodic lubrication. It is important not to oil the brake pad rings and washers, so you do not want oil running and dripping off the gears, therefore regular application of a few strategic drops of oil is the best policy.
- Lubricate lightly the small DRIVE and large MAIN gears. Also apply a drop of oil on the drum shaft end bushes and the bush at the end of the drive shaft, and at the handle end where the shaft exits the pawl housing.
- **Be careful NOT to lubricate the brake pads.**
- The davit head sheaves should be removed annually and bearing grease or petroleum jelly (vaseline) pressed in by a finger onto the balls. Handle the sheaves carefully so as not to lose the balls.



- The PAWL and its gear should be checked and lubricated annually. Remove the PAWL cover by removing the handle, the circlip, and the 4 x 6mm bolts. Apply a few drops of thick oil, or a light smear of Vaseline or grease to the gear.



Regular Inspection:

- Check the rope for chafe and wear. Replace if suspect.
- Check the davit for dints and damage which could result in a lowering of its SWL.

TECHNICAL SPECIFICATIONS

- 1) The Hansa C Crane is a davit standing 1800mm above foot or deck level, has a reach of 1100mm under load and a lift range of 2m with the standard 4.5m rope fitted. The range can be extended by fitting a longer rope and an appropriate fall arrester. Contact the manufacturer Hansa or our distributor for details.
- 2) Safe Working Load is tested to 120 kg under ISO/DIS10535.
- 3) The Rope fitted is Double Braid Polyester, 8mm diameter with a WL of 1320kg.
- 4) The Hansa C crane has an un-laden weight of 22 to 25kg depending on the model.

Safety Precautions.

- It is important for operators of this equipment to undergo supervised training before attempting to transfer people in and out of boats. A training schedule is part of this manual.
- Always ensure there are at least 3 wraps of rope around the winch drum when attempting any lift. See Page 7.
- Always ensure that the rope is wound correctly onto the drum, and not wound on backwards which will negate the operation of the braking system. See Page 7
- Always check that the Snap Hook or Carabiner attaching the fall arrester and spreader bar is correctly fitted before undertaking any lift.
- Regularly check the rope for chafe and wear.
- Keep all meshing gears and all shafts lubricated, but DO NOT lubricate the brake pads.
- Do not rotate the primary drive shaft above 60 RPM.
- Serious dents and damage to the davit will result in lowering of its SWL.

MARKING

Hansa Sailing Systems P/L
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Nowra NSW 2541
Ph: 02 44 030595

Model: "C" Crane
Date of manufacture: 2015
Serial No: 000XXX

Winch
Date of Manufacture: x/x/x
Serial Number: 000XXX

Rope – 8mm diameter polyester double braid, 4.5m length.
Always maintain at least 3 wraps of rope on the drum

S.W.L 120kg