



# LIFTINGSAFETY

SELBY ENGINEERING AND LIFTING SAFETY LTD

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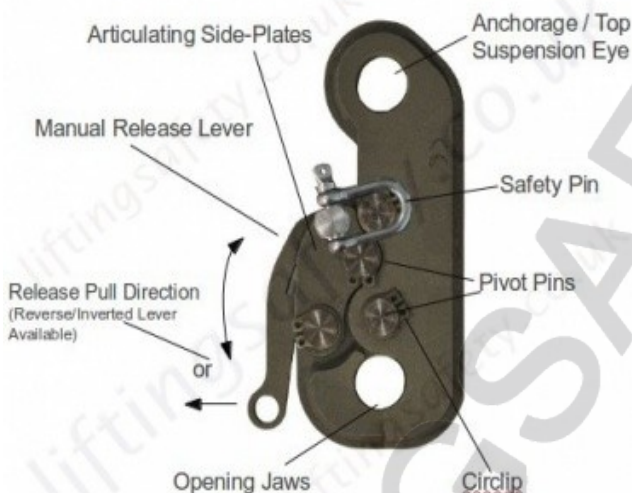
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## General Hook-Clamp Features:

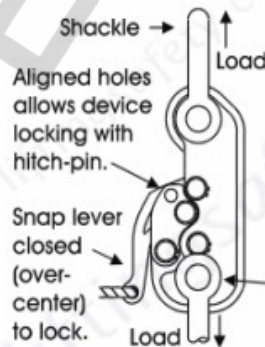
- Perpendicular or parallel release directions.
- Safety Hitch pin lock for device locking safety, prevents accidental dropping.
- Computer generated parts precision-cut from aerospace grade stainless steel plate.
- Low friction, low effort lanyard-style release for maximum user safety.
- On Load / Off Load Releasing.
- All parts 100% stainless steel.
- No springs (apart from spring loaded safety hitch pin option).



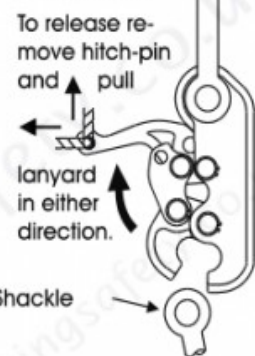
## Hook-Clamp Operation



### LOCKED:



### RELEASED:



## Device Locking

Having secured the recommended shackle to the rear end of the Hook-Clamp (anchorage / top suspension eye), open the jaw by removing the hitch pin and lifting up the release lever and opening it to the released position. Insert the pin of the shackle to be released into the jaw opening.

Secure the shackle by closing the release lever to the locked position and firmly lock the toggle pin over centre with a vice-grip-like snap.

The shackle is now held firmly locked even with no load on the device. The safety pin (Hitch pin) can be reinserted to prevent inadvertent release.

The Hook-Clamp is now ready to be loaded. Once the safety / hitch pin is removed, the Hook-Clamp is armed and ready to be released. Either to "set down" a load or to drop a load in a controlled manor (as a drop test / dropping clamp)



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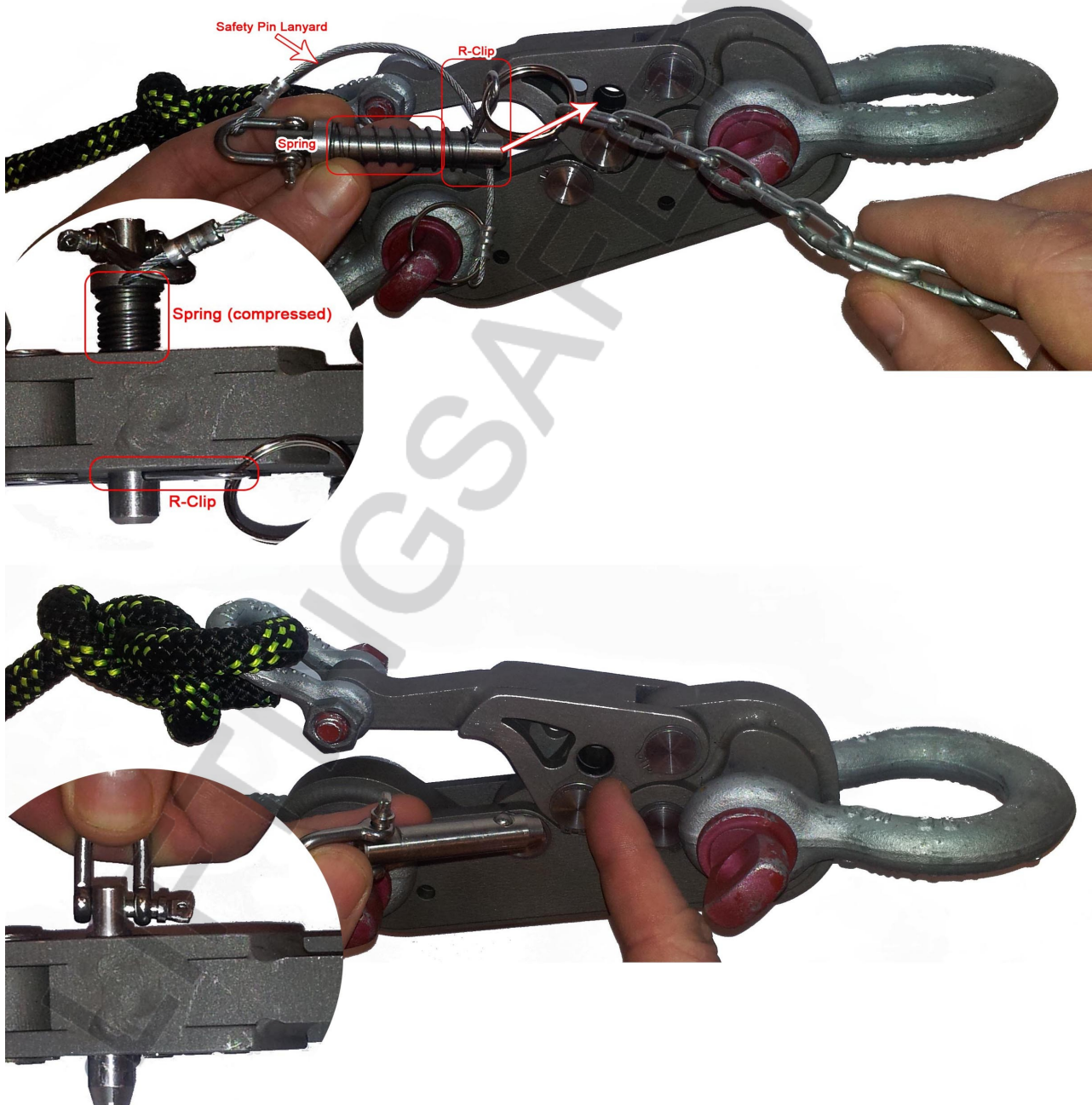
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## Device Releasing

Manual release of the loaded Hook-Clamp is activated by first removing the safety / hitch pin. This is done either manually (directly by hand) or by a pull cord attached to the spring loaded safety hitch pin; ie, remotely and safely from a distance. The safety hitch pin release cord can be activated from any direction.

Once the safety hitch pin has been removed the clamp is "loaded" or "Live" and pulling the cord attached to the release lever WILL DROP / RELEASE the load. Pulling firmly on a release line connected to the end of the release lever also means that the operator can safely release the load away from the "danger area". The release line can be activated "Directly" in any direction within the 90 degrees perpendicular and parallel to the line of load. The "Standard" release lever can also be operated from above the load as shown in the diagram below with the use of a suitable pulley; effectively giving 180 degree operation.

The Hook-Clamp can release the load with or without load on the unit. (providing the safety hitch pin is removed). The use of the hitch pin is not required to secure the device in the locked position. It is an added, secondary safety measure preventing inadvertent release. A safety hitch pin is provided with each unit. The standard safety hitch pin is not spring loaded for remote operation (from distance by a pull cord).



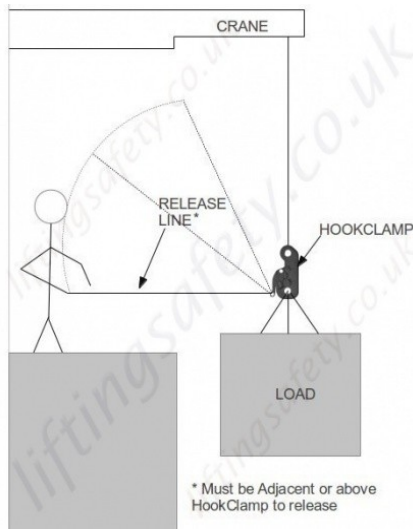


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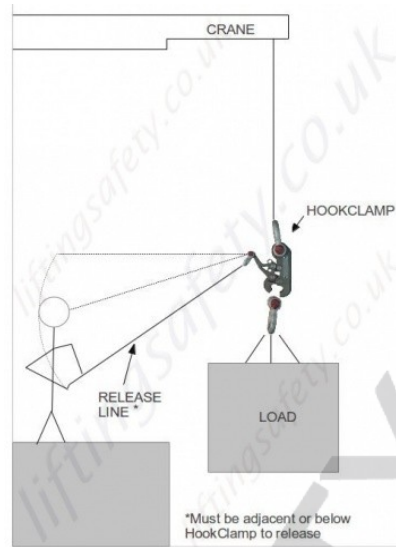
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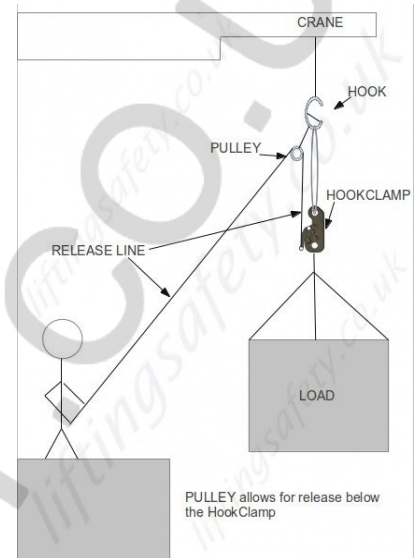
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Standard Lever



Reverse-Lever



Standard Lever with Pulley

## Alternative Methods of Release

These are the alternative methods for releasing the shackle:

- **Manually**, pulling a long release line. No modification of the device is required. This method is mainly used with lower capacity models, offers the lowest cost, and has many satisfied users.
- **By winch line**, using a winch and cable, such as used with a deck-mounted crane, to apply a load pulling against the release lever. No modification of the device is required for this method.
- **Hydraulically**, paying out the load against a fixed-length, bulkhead-mounted release cable. Using a clevis instead of a shackle, a bulkhead-mounted hydraulic ram is attached to the rear end of the horizontally positioned device to pull it back after the unit is locked. The release cable is then secured to the bulkhead and when release is desired, the hydraulic ram is actuated, allowing the Remote load release device to move toward the load and eventually against the secured release cable and the load releases the unit. This method allows the instalment of a pressure gauge into the hydraulic system to determine the actual tensile load being released. No modification of the device is required
- **Explosive** electric squib thrusters inserted into a special chamber below the toggle pin are used successfully to activate the device.
- **Hydraulic** pressure to drive a hydraulic cylinder to actuate the release lever of the Remote load release device is being used with the device ram models. These units can be activated by hydraulic hand pump, air-hydraulic foot pump, or electric pump.
- **Air Cylinders** / Pneumatics / compresses air provide another method of release and are fitted for activation using shop air at 60 to 100 PSI. The Pneumatic cylinder pushes the release lever activating the HookClamp to release the load.
- **Radio remote control**. Using a low voltage actuator attached to the HookClamp to remotely activate the release lever. The actuator is activated from a safe distance by radio remote control hand set. (This is a development item and will be available in the near future)



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## **Warnings**

**Before operating the Hook-Clamp device, please heed these warnings.**

- Improper use of the Hook-Clamp device may cause injury.
- The safety hitch pin must be used to prevent inadvertent release.
- On a fully loaded Hook-Clamp with the safety hitch-pin removed, do not use the release line as a tag line (to steer the load) or put any tension on it until time to release. An additional tag line secured to the upper shackle (as illustrated on page 3) and kept taught at all times is highly recommended to maintain a slack release line and prevent load twisting.
- Stay clear of all objects released under load.
- Do not exceed load capacity of this device.
- Choose the proper size Hook-Clamp so that it is not loaded with or releasing more than its rated load.
- Do not side load the Hook-Clamp as it may cause loss of retainer rings and other parts or permanently damage the device.
- While in its loaded position, do not obstruct the Hook-Clamp so as to prevent its body being aligned straight with the line of load. Misalignment may prevent the movable jaw from releasing the connected member even with the device in the released position.
- Do not mount the Hook-Clamp such that the mounting fixture damages the unit while in use. This could cause loss of parts and unit malfunction.

## **Maintenance**

- Inspection of the Hook-Clamp device is advised after each use.
- After use in or near sea water, a fresh water rinse of the Hook-Clamp is advised before the device is stored.
- Pivot pins may require periodic re-lubrication.



## **Load Release Effort**

### **Estimated Effort To Release Load**

Detailed below are the figures of the estimated effort required to release a load at full capacity. This effort can be adjusted by following the instructions below

<b>Safe Working Load</b>	<b>Estimated Effort To Pull Lanyard To Release Capacity Load (Can be adjusted)</b>
590kg	3.62kg (can be adjusted, see above)
1,507kg	8.61kg (can be adjusted, see above)
3,194kg	18.14kg (can be adjusted, see above)
4,342kg	39.91kg (can be adjusted, see above)
7,186kg	65.77kg (can be adjusted, see above)
12,776kg	117kg (can be adjusted, see above)
14,902kg	136.53kg (can be adjusted, see above)
22,770kg	208kg (can be adjusted, see above)
28,747kg	263kg (can be adjusted, see above)
42,975kg	393kg (can be adjusted, see above)
69,960kg	640kg (can be adjusted, see above)

### **Adjusting The Effort Required to Operate the Manual release lever**

(Remote load release device Over-Centre Pressure Adjustment)

Ample material has been left at the tip of the movable jaw (see arrow) where the jaw and body come in contact. This aids in holding the device securely over-centre in the locked position even when no load is applied to the device. It also helps prevent inadvertent release of the device.



Should the user require that the effort to lock the release lever of the device over-centre be reduced, a suggestion is to locate the area where the surface of the jaw tip comes in contact with the body tip and lightly file or grind off material in that area. It is important to test the effort frequently after some material has been removed so as to prevent the removal of too much material.

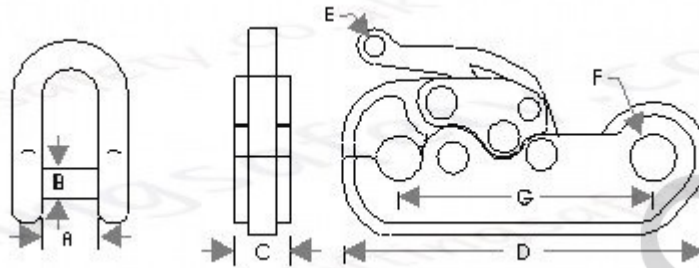
Should the user require that the effort to lock the release lever of the device over-centre be increased, a suggestion is to increase the thickness of the material between the two surfaces by applying a centre punch mark in the area of the jaw where the surfaces meet. Should there still be insufficient material to ensure the positive locking integrity of the device, the contact area of the jaw will need to be spot-welded. This welded material will then need to be ground to the appropriate thickness.



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## Hook-Clamp Users Manual



Part N°	Recommended Shackle Size	A	B	C	D	E	F	G	SWL (kg)	Break load (kg)	Weight (kg)
4193-T22955	Keyring	--	--	9.52	44.4	--	4.76	31.75	NOT	RATED	0.36
4193-T22956	1/4"	11.93	7.87	10.41	73.39	4.57	9.39	49.78	589	2,902	0.14
4193-T22957	7/16"	19.05	12.7	17.52	114.3	6.35	13.97	79.5	1,451	7,529	0.58
4193-T22958	5/8"	26.92	19.05	25.4	168.14	9.65	20.57	115.82	3,193	15,966	1.81
4193-T22959	3/4"	31.75	22.09	30.22	195.07	10.92	23.62	140.46	4,336	21,708	2.85
4193-T22960	1"	42.92	28.7	41.4	247.65	14.22	30.73	174.49	7,184	35,924	5.67
4193-T22961	1-3/8"	57.15	38.1	53.84	334.01	19.05	41.4	232.41	12,700	63,502	14.5
4193-T22962	1-1/2"	60.45	41.14	57.15	361.95	20.57	45.21	251.96	14,905	74,525	18.14
4193-T22963	1-3/4"	73.15	50.8	69.85	446.02	25.4	54.86	310.13	22,770	113,851	31.2
4193-T22964	2"	82.55	57.15	79.5	501.14	28.44	62.48	349.25	28,748	143,743	48.98
4193-T22965	2-1/2"	104.9	69.85	98.55	612.9	34.79	76.45	426.97	42,973	214,866	89.35
4193-T22966	3"	127	82.55	120.65	782.06	44.45	97.79	544.32	69,962	349,810	138.8

-SWL (capacity) is a ratio of 5:1 to Break load.

Products are constantly being improved. Designs, dimensions, capacities and weights are subject to variation.

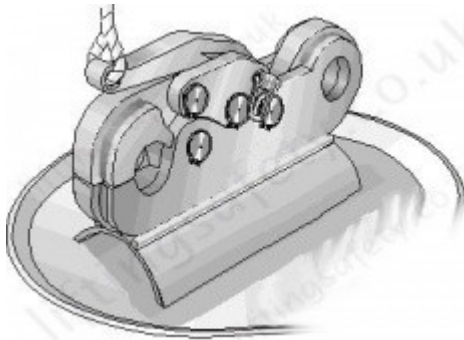


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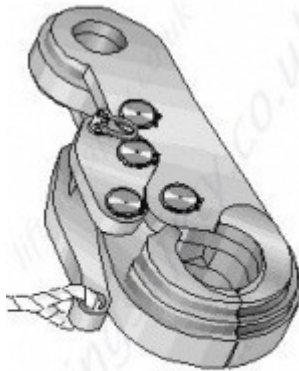
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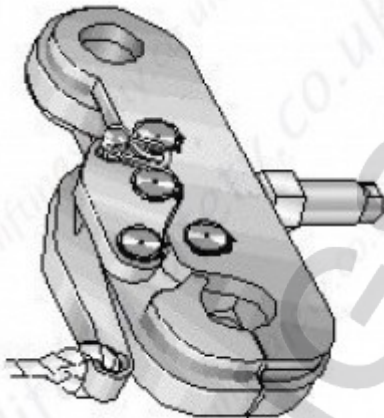
## **Hook-Clamp S-Series Welded Release** **(Manual release for horizontal use)**

The S-Series is securely mounted to a stainless steel dish. This stable base allows the unit to function dependably above seine gear during purse seine welded release applications. Low kick-back, quiet operation, and a safe hitch pin securement are key elements for welded release operations.



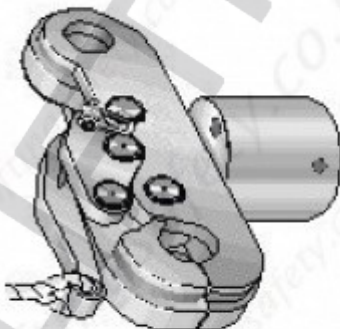
## **Hook-Clamp LS/LM-Series** **(Manual release / large and extra large jaw)**

This is a modified LS-series provided with a front jaw enlarged to receive up to 3.4" fibre line such as a fibre forerunner. Additional side plates at the jaw area help spread the load and prevent line chafing. Useful applications include tug/barge connections and emergency releasing at port terminals.



## **Hook-Clamp HYDRA-Series** **(Hydraulic Ram release with manual back-up)**

This Hook-Clamp is fitted with a hydraulic cylinder mounted below the device. This set-up can be used to replace a hydraulic release shackle (or hydraulic shackle). Above the cylinder is a plunger which penetrates through a hole in the body below the toggle pin. When this hydraulic system is activated, the cylinder pushes through the plunger and the toggle pin forcing the Clamp to release the shackle (or other rigging gear). The Hydraulic shackle release Hook-Clamp range can be operated remotely by a single 1/4" hydraulic hose. Can be operated by manual hand pump, remote accumulator or power pack (HPU). Most commonly used for subsea / offshore applications for hydraulic release of shackles.



## **Hook-Clamp PNU-Series** **(Pneumatic release with manual back-up)**

The "PNU-Series" Hook-Clamp is fitted with a compressed air cylinder (Pneumatic ram) and allows for air pressure to release the load. The Air Cylinders operate at 60 to 100 PSI.

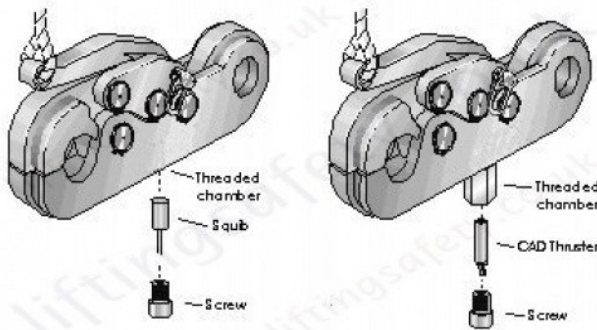


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## Hook-Clamp IB/IBT Series

### (Explosive charge release with manual back-up)

The "IB/IBT Series" Hook-Clamps feature either a squib or squib-fired thruster and are generally operated electrically and remotely. The Squib/Thruster offers a safe, split second release activation and the standard release lever is still available for further use. Squib activation is less expensive than the Thruster, however thrusters offer a greater reliability.

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