



William Hackett

SS-C4 QP Chain Hoist User Manual



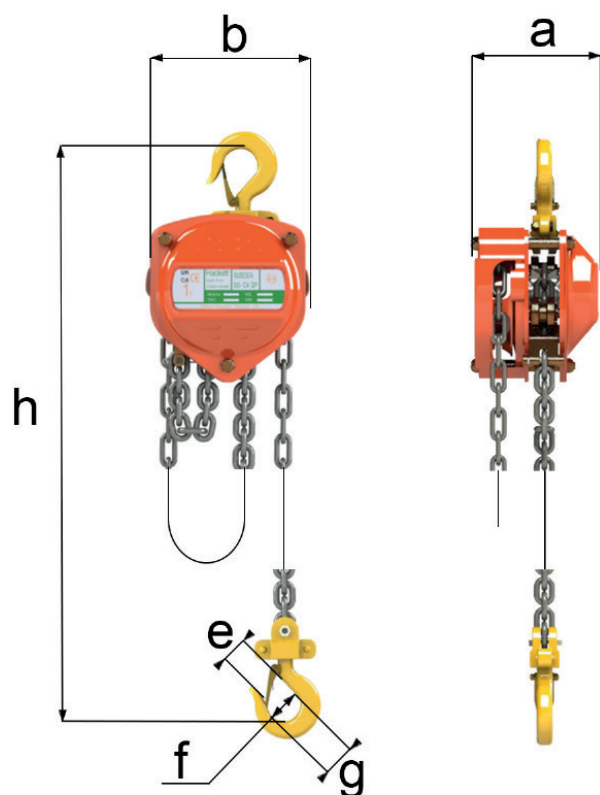


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Dimensions and Specifications

Single Fall



Multi Fall

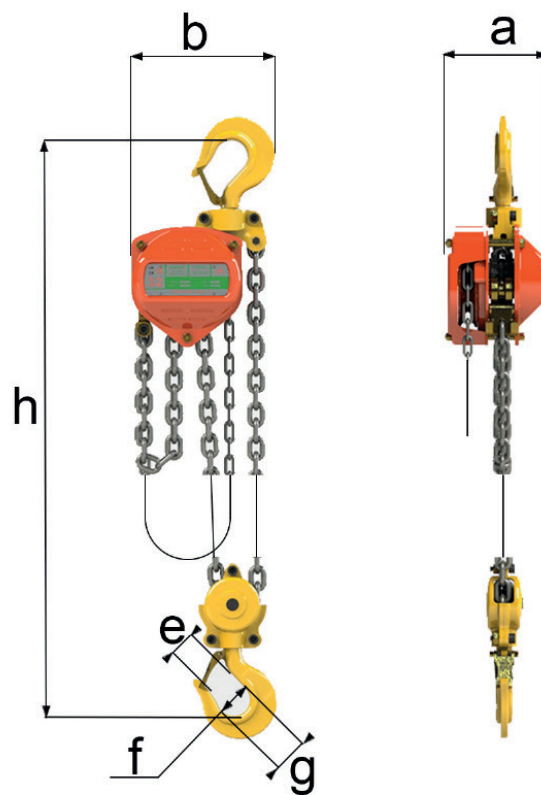


Table 1: Product specification, dimensions and WLL for William Hackett SS-C4 QP chain hoists

Part Code	WLL t	No of Falls	Load Chain Size mm	a mm	b mm	e mm	f mm	g mm	h min mm	Mass kg 3m HOL	Extra Weight per m (kg)
025.SS.053	0.5	1	6.0 x 18	134	155	31.5	40	44	306	11.1	1.71
025.SS.103	1.0	1	6.0 x 18	134	155	31.5	40	44	306	11.1	1.71
025.SS.163	1.6	1	8.0 x 24	157	185	36.5	46	52	445	16.8	2.24
025.SS.203	2.0	1	8.0 x 24	157	185	36.5	46	52	445	16.8	2.24
025.SS.32D3	3.2	2	8.0 x 24	157	235	43.5	52	62	520	24.2	3.58
025.SS.503	5.0	2	10.0 x 30	180	262	51.0	60	77	600	38.4	5.24
025.SS.753	7.5	3	10.0 x 30	180	373	69.0	85	86	740	58.2	7.51
025.SS/1003	10.0	4	10.0 x 30	180	406	69.0	85	86	760	68.9	9.58
025.SS/1503	15.0	6	10.0 x 30	210	406	80.0	100	-	1000	116.7	13.92
025.SS/2003	20.0	8	10.0 x 30	225	550	80.0	110	-	1150	149.5	19.16
025.SS/3003	30.0	12	10.0 x 30	360	680	80.0	110	-	1250	230.0	27.84
025.SS/5003	50.0	20	10.0 x 30	585	832	133.0	170	-	1700	750.0	45.20

Hoist Selection

William Hackett SS-C4 QP chain hoists are designed for use in the subsea and marine environments and are also suitable for use in topside and onshore lifting applications.

William Hackett SS-C4 QP chain hoists are designed for use in fleeting applications for both lifting or pulling (see appendix).

Careful consideration should be given to the mass of the load being lifted and any dynamic factors that may be likely to affect the load on the hoist. Select the hoist capacity equal to or greater than the load. Ideally chain hoists should not be used to lift loads below 10% of their rated WLL limit.

It is not intended that the recommendations in this manual take precedence over existing plant safety rules and regulations or OSHA regulations. In the event that conflict exists between a rule set forth in this publication and a similar rule already set by an individual company, the more stringent of the two should take precedence.

A thorough study of the information in this manual should provide a better understanding of safe operating procedures and afford a greater margin of safety for people and equipment.

In accordance with statutory requirements (e.g. The Lifting Operations and Lifting Equipment Regulations 1998), all lifts using chain block assemblies should be planned by a competent person; require risk assessment and the production of a task method statement; and be subject to execution by suitably trained operatives under the supervision of a responsible person. The specification of the lever hoist assemblies required to achieve a safe lifting operation must be determined by a competent person.

William Hackett SS-C4 QP chain hoists are assembled, chained and tested to the height of lift specified by the end user. Careful consideration should be given to the headroom required to lift the load and the position of the operator before specifying the length of load chain and the hoist model.

If two or more hoists are to be used together, the lift should be assessed by a competent person taking into account fleeting advice given later in this manual.

William Hackett SS-C4 QP chain hoists can be used within an operating temperature range of -40°C to +120°C.

The configuration of chain hoist assemblies are demonstrated on page 4, and are in accordance with the product specification, dimensions and working load limit (WLL) recorded in Table 1 (also on page 4).

Pre-use Checks

Before issue from the designated storage location the certification supplied with the SS-C4 QP chain hoist should be confirmed as within date.

The label on the hoist should be fully legible and it should correspond with the relevant certification.

Conducting thorough and consistent checks on a chain hoist immediately prior to use will help identify problems due to accidental damage, internal corrosion, brake contamination or inappropriate storage.

Recommended checks include:

1. If necessary the hoist should be cleaned before inspection.
2. Name Plate – details clear and visible
3. Hook latches in good working order
4. Is the Load chain worn or damaged. In particular attention should be given to the wear which occurs on the bearing surfaces inside the links and to damage in the form of bent, notched, stretched, or corroded links and the chain should move freely.
5. Obvious signs of hooks opening out increase in throat opening or any other form of distortion in the hooks or suspension fittings.
6. Top and bottom hooks free to rotate with no load applied.
7. With no load applied turning the hand chain clockwise should produce a clear and positive clicking sound as the brake ratchet activates.
8. On multiple fall hoists check that all chain sheaves are free to rotate whilst no load is applied.
9. Check all fixings are in place and in good condition, split pins or nyloc nuts.
10. Obvious signs of damage to the hoist slack end chain anchor.
11. General damage to the hoist body, this can be an indicator of neglect throughout the hoist.
12. The load chain wheel should be checked for damage or debris
13. Chain guides and strippers should be free of debris and in good condition.
14. Operating instructions should be available.

If any of these points are not satisfied the hoist MUST NOT be used.

Hoist Attachment / Mounting

Check the correct engagement of the top and bottom hooks. The hooks should be free to articulate fully when engaged with the load attachment points without overcrowding or point loading that is detrimental to the hook in any way.

Ensure that the suspension structure has sufficient load bearing strength and capacity to support the load being lifted.

If more than one hoist is to be used in a fleet arrangement, load attachment equipment should be chosen that allows for the angles of the lift.

Do not use the load chain of the chain hoist as a chain sling. The chain hoist is a lifting appliance and suitable lifting accessories should be incorporated into the lift plan to facilitate attachment to the load.

Make sure that the load chain is free from any twists or knotting. In the case of multi-fall chain hoists ensure that the bottom hook has not been capsized causing chain twist.

Safe Use information

Do not attempt lifting operations unless you understand the use of the equipment, the lifting and slinging procedures and you have been suitably trained.

William Hackett SS-C4 QP chain hoists are not designed for lifting people and should not be used for that purpose.

Use appropriate personal protective equipment (PPE).

Always inspect the chain hoist prior to use, and if any damage is apparent the block should be quarantined for inspection by a competent person. Labels should clearly show the identification and other data for the hoist.

Check the correct engagement of the top and bottom hooks.

Ensure that the suspension structure has sufficient load bearing strength and capacity to support the load.

Do not use the chain hoist as a chain sling; it is a lifting appliance and suitable lifting accessories should be incorporated into the lift plan to facilitate a safe lifting operation.

If more than one chain hoist is to be used, refer to fleeting instructions on page 9..

Establish a clearly defined zone around the area of the lifting operation.

Always stand aside from the load when operating the hoist and ensure that no one enters the lift zone unintentionally during the lifting operation.

Ensure that the load and hand chains are not twisted, particular care should be taken when using multi-fall chain hoists.

During the lift the load and hand chains should be straight and should not contact any angles or edges.

Take the load steadily and avoid shock loads.

Do not expose chain hoist assemblies to chemicals or corrosive solutions (whether immersed in such solutions or used in atmospheres in which fumes are present), particularly acidic or strongly alkaline environments without consulting the supplier or manufacturer.

Do not leave suspended loads unattended. In an emergency cordon off the working area and establish safe exclusion zones.

Never return a damaged chain hoist to stores; it should be reported to a competent person.

Immersion Policy, Procedures and Storage Control

The William Hackett SS-C4 QP can be deployed subsea in any single immersion for a period of up to 21 days and multi immersion for a period of 31 days. Please seek advice from William Hackett for periods of time beyond 21 days.

Check the SS-C4 QP chain hoist Service and Inspection Log for the number of exposures and the total duration the SS-C4 QP has been in use. The SS-C4 QP chain hoist can be used as many times as the project requires over 31 day multi immersion period however when the SS-C4 QP chain hoist is in between immersions the William Hackett Immersion Policy, Procedures and Storage Control must be adhered to. After the 21 day single immersion or 31 day multi immersion the SS-C4 QP chain hoist should be sent to an authorised William Hackett agent. The service should include a full strip down and inspection of internal components followed by a range of load tests carried out after re-assembly.

After each period of use subsea the hoist should be flushed with unpressurised fresh water, functionally checked and then stored in a dry storage area protected from the elements. Solvents or lubricants should not be used for cleaning the hoists.

Any defects should be reported to the responsible person and damaged hoists should be quarantined.

The load chain should be dried and wrapped around the hoist, not left on the floor.

During transport to the offshore worksite and whilst in store at the worksite, the equipment should be protected from exposure to any conditions which may affect its ability to operate safely. In particular, it should be protected from exposure to:

- water/sea water.
- temperatures higher than can be comfortably tolerated by the hand.
- temperatures below freezing point.
- solvents.
- corrosive chemicals or fumes.
- grit, sand and wind-blown dust.

Storage would normally be on suitable racks within a container a manner that prevents accidental mechanical damage and where the load chains are clear from the ground.

The equipment should ideally be stored in purpose designed facility where it can be kept secure from unauthorised use. A responsible person should control the issue and receipt of all lifting appliances and accessories.

Duty holders and actual users of lifting equipment, including chain hoists and associated components can obtain more detailed information and guidance on safe use and compliance with statutory requirements from the following publications:

- DNV Salt Water Immersion Test Report No. A0359376.02, Rev. 1.
- HSE Publication L22 (2014) Safe Use of Work Equipment.
- HSE Publication L113 (2014) Safe Use of Lifting Equipment.
- HSE Publication INDG422 (2008) Thorough Examination of Lifting Equipment.
- HSE Publication L23 (2004) Manual Handling.
- HSE Publication L25 (2005) Personal Protective Equipment at Work.

Practical Considerations for use of the SS-C4 QP in the offshore environment

All William Hackett hoists are suitable for use in the offshore environment but the SS-C4 QP chain hoist has additional features to enable the chain hoist to be used subsea.

In addition to the standard storage and control measures, hoists that have been used subsea should be flushed with unpressurised fresh water before being returned to the designated storage area.

As with any item of lifting equipment, the chain hoist will be specified for a maximum working load limit. This should not be exceeded during any lifting operation. It is important, therefore, when planning an underwater lifting operation that the load to be lifted on the chain hoist is known or has been accurately estimated with an adequate allowance for safety. The possible effects of additional loading, such as dynamic load amplification, friction, seabed suction and buoyancy, should be included when the chain hoist is being selected for the lift.

The design of chain hoists is such that a brake mechanism is used to suspend the load, but also requires a load to operate. When planning a lifting operation using a chain hoist or selecting a chain hoist for a lift, the light load limitation of the braking mechanism should be recognised and the hoist should not be used to lift a load that is less than 10% of the stated working load limit for that hoist.

The chain hoist is intended for straight line static lifting. If used in a dynamic lifting arrangement, such as an adjustable leg in an overboarding rigging bridle, the changing loading may cause the hoist to fail or slip. As the load goes through the splash zone the weight could come off the brake mechanism and the chain could run out. Chain hoists are not suitable for use in overboarding rigging and should not be used in a dynamic lifting application.

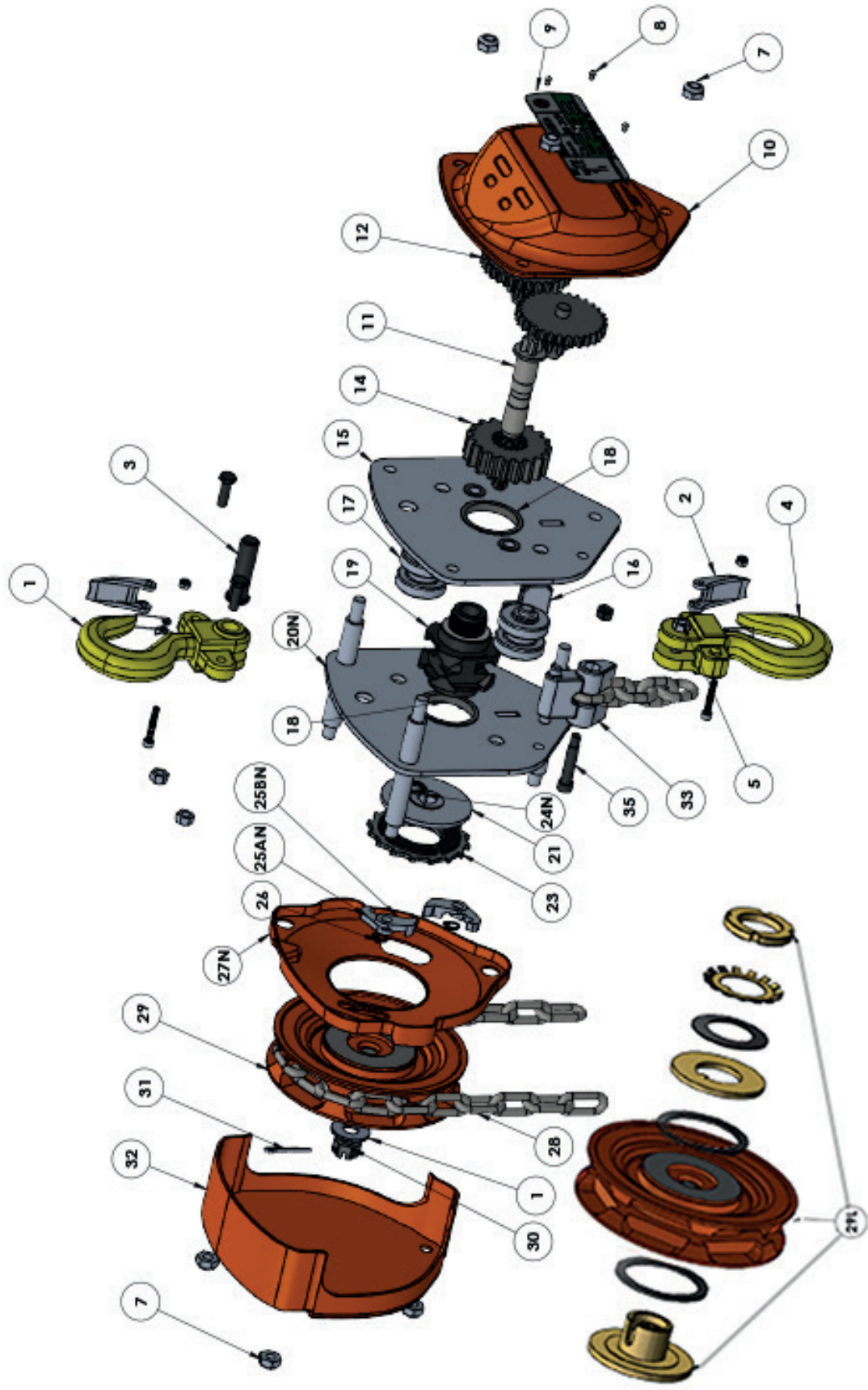
A chain hoist should be loaded and unloaded using the hand chain. When a load is removed from a chain hoist other than by the use of the hand chain (e.g. by transfer of a load to a surface crane) the brake mechanism will remain locked together. Subsequent loading of the hoist (for example, by the transferring of a load on to the hoist from a surface crane) will result in the load being applied to a locked brake mechanism - something manufacturers regard as bad practice, potentially resulting in unexpected slippage as the hoist is then operated. If a chain hoist has the load transferred off it (a common practice during subsea use) the hoist should be operated in an upward direction to unlock the brake and confirm the hoist is fully functional before a load is transferred back on to it.

Spare Parts Inspection Category

SPECIAL INSPECTION - Type 1			Corrosion Protected / Stainless Steel / Copper Components (Do Not Shotblast)
STANDARD INSPECTION - Type 2			Non-Corrosion Protected or Painted Components
Part Code	Quantity	Description	Inspection Type (1 or 2)
			SS-C4 QP
SS-C4.QP01	1	Top Hook Assembly	2
SS-C4.QP02	2	Latch Kit	2
SS-C4.QP03	1	Top Hook Pin	2
SS-C4.QP04	1	Bottom Hook Assembly	2
SS-C4.QP05	1	Chain Fixing Pin	2
SS-C4.QP07	6	Nut	1
SS-C4.QP08	4	Label Rivets	N/A
SS-C4.QP09	1	Label	1
SS-C4.QP10	1	Gear Cover Assembly	2
SS-C4.QP11	1	Pinion Shaft	1
SS-C4.QP12	2	Pinion Gear (pair)	2
SS-C4.QP13	1	Snap Ring	2
SS-C4.QP14	1	Load Gear	2
SS-C4.QP15	1	Gear Side Plate	2
SS-C4.QP16	1	Stripper	2
SS-C4.QP17	2	Guide Roller	2
SS-C4.QP18	2	Caged Roller Bearings	2
SS-C4.QP19	1	Load Sheave	1
SS-C4.QP20N	1	Wheel Side Plate Assembly	2
SS-C4.QP21	1	Disc Hub	1
SS-C4.QP23N	1	Ratchet Gear/w Sintered Friction Discs	1
SS-C4.QP24N	2	Pawl Spring	1
SS-C4.QP25AN	2	Primary Pawl	1
SS-C4.QP25BN	2	Secondary Pawl	1
SS-C4.QP26	2	Snap Ring	N/A
SS-C4.QP27	1	Brake Cover	2
SS-C4.QP28	1	Hand Chain (5 x 25mm)	1
SS-C4.QP29	1	Hand Chain Wheel	2
SS-C4.QP29L	1	Overload Limiter	2
SS-C4.QP30	1	Pinion Nut	1
SS-C4.QP31	1	Cotter Pin	N/A
SS-C4.QP32	1	Hand Wheel Cover	2
SS-C4.QP33	1	Chain Anchor Plate	2
SS-C4.QP35	1	Chain Anchor Pin	2
SS-C4.QP36	1	Top Hook Pin and Lock Nut	2

Parts List

Part Code	Part Name	SS-C4 QP Finish
SS-C4.QP01	Top Hook Assembly	Marine Powder Coating and Zinc Flake
SS-C4.QP02	Latch Kit	Zinc Flake
SS-C4.QP03	Top Hook Pin	Self Colour
SS-C4.QP04	Bottom Hook Assembly	Marine Powder Coating and Zinc Flake
SS-C4.QP05	Chain Fixing Pin	Zinc Flake
SS-C4.QP07	Nut	Stainless Steel
SS-C4.QP08	Label Rivets	Stainless Steel
SS-C4.QP09	Label	Stainless Steel
SS-C4.QP10	Gear Cover Assembly	Marine Powder Coating
SS-C4.QP11	Pinion Shaft	Zinc Flake
SS-C4.QP12	Pinion Gear (pair)	Self Colour
SS-C4.QP13	Snap Ring	Self Colour
SS-C4.QP14	Load Gear	Self Colour
SS-C4.QP15	Gear Side Plate	Zinc Flake
SS-C4.QP16	Stripper	Zinc Flake
SS-C4.QP17	Guide Roller	Zinc Flake
SS-C4.QP18	Caged Roller Bearings	Steel
SS-C4.QP19	Load Sheave	Zinc Flake
SS-C4.QP20N	Wheel Side Plate Assembly	Zinc Flake
SS-C4.QP21	Disc Hub	Zinc Flake
SS-C4.QP23N	Ratchet Gear	Zinc Flake
SS-C4.QP24N	Pawl Spring	Stainless Steel
SS-C4.QP25AN	Primary Pawl	Zinc Flake
SS-C4.QP25BN	Secondary Pawl	Zinc Flake
SS-C4.QP26	Snap Ring	Stainless Steel
SS-C4.QP27	Brake Cover	Marine Powder Coating
SS-C4.QP28	Hand Chain (5 x 25mm)	Zinc, Zinc Flake or Stainless Steel
SS-C4.QP29	Hand Chain Wheel	Marine Powder Coating
SS-C4.QP29L	Overload Limiter	N/A
SS-C4.QP30	Pinion Nut	Stainless Steel
SS-C4.QP31	Cotter Pin	Stainless Steel
SS-C4.QP32	Hand Wheel Cover	Marine Powder Coating
SS-C4.QP33	Chain Anchor Plate	Zinc Flake
SS-C4.QP35	Chain Anchor Pin	Zinc Flake
SS-C4.QP36	Top Hook Pin and Lock Nut	Zinc Flake and Stainless Steel



Part Code	Part Name
SS-C4, QP01	Top Hook Assembly
SS-C4, QP02	Latch Kit
SS-C4, QP03	Top Hook Pin
SS-C4, QP04	Bottom Hook Assembly
SS-C4, QP05	Chain Fixing Pin
SS-C4, QP07	Nut
SS-C4, QP08	Label Rivets
SS-C4, QP09	Label
SS-C4, QP10	Gear Cover Assembly

Part Code	Part Name
SS-C4, QP11	Pinion Shaft
SS-C4, QP12	Pinion Gear (pair)
SS-C4, QP13	Snap Ring
SS-C4, QP14	Load Gear
SS-C4, QP15	Gear Side Plate
SS-C4, QP16	Stripper
SS-C4, QP17	Guide Roller
SS-C4, QP18	Caged Roller Bearings
SS-C4, QP19	Load Sheave

Part Code	Part Name
SS-C4, QP20N	Wheel Side Plate Assembly
SS-C4, QP21	Disc Hub
SS-C4, QP23N	Ratchet Gear c/w Sintered Discs
SS-C4, QP24N	Pawl Spring
SS-C4, QP25AN	Primary Pawl
SS-C4, QP25BN	Secondary Pawl
SS-C4, QP26	Snap Ring
SS-C4, QP27N	Brake Cover
SS-C4, QP28	Hand Chain (5 x 25mm)

Part Code	Part Name
SS-C4, QP29	Hand Chain Wheel
SS-C4, QP 29L	Overload Limiter
SS-C4, QP30	Pinion Nut
SS-C4, QP31	Cotter Pin
SS-C4, QP32	Hand Wheel Cover
SS-C4, QP33	Chain Anchor Plate
SS-C4, QP35	Chain Anchor Pin
SS-C4, QP36	Top Hook Pin and Lock Nut

Hoist Disassembly

SS-C4 QP Servicing Tool Requirements

Metric spanners or socket set 5mm-19mm	Long nose pliers
Circlip pliers	Nylon/Dead blow hammer
Ball Pein hammer	Solvent free brake cleaner
120-180 grit Sandpaper	Cross head screw driver
Metric Allen Key set 3mm-12mm	Vernier caliper
Pop Rivet Gun	Drill (for speed link removal)

The following procedures should only be performed by a competent person.

It is a responsibility of the owner/user to install, operate, inspect and maintain product in accordance with all applicable Standards and Regulations. If the product is installed as part of a lifting system, it is also the responsibility of the owner/user to comply with the applicable standards that address other types of equipment used.

Disassembly

1. On single fall chain hoists remove bottom hook #4 and disassemble for inspection including latch.
2. Depending on model remove either split or bolt and locking nut from chain anchor #33.
3. The load chain can now be fed out from the hoist body using the hand chain, this is easiest when the hoist is hung from its top hook, take care that the chain does not catch or jam between the guides and sheave on removal #17 & 19.
4. On multiple fall hoists remove the chain end fixing #36 and feed the chain from the hook sheaves.
5. Loosen and remove the 3pcs of nyloc nuts from the hand wheel cover #32.
6. Remove hand chain for inspection, pay attention to the pop riveted speed link connection.
7. Remove and discard the split pin #31.
8. Remove castle nut #30.
9. The handle wheel #29 can now be rotated counter clockwise and removed from the pinion shaft.
10. Lift the brake cover from the hoist body.
11. Lift the ratchet gear c/w friction material from the disc hub, #22 (2pcs) and 23.
12. The Disc hub is removed by turning counter clockwise. Tip- after the hoist has been loaded the disc hub can become tight to remove, this can be freed with a gentle tap using a nylon hammer, whilst holding the pinion shaft tap the disc hub in the counter clockwise direction.

NOTE: At this point it is advisable to take notice of how the pawls (#25) are tensioned and located to the ratchet disc (#23)

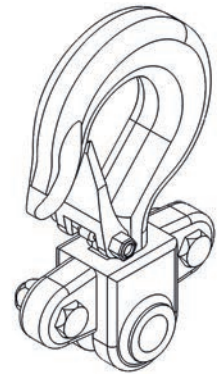
13. Remove the pawl circlips #26.
14. Lift the pawls and pawl springs #24 & 25).
15. Remove the top hook pin #3 and lift the top hook #4 from the hoist body.
16. Turn the hoist over and remove 3pcs nylon nut #7 then lift the gear cover #10 from the hoist body.
17. Remove pinion gears #12 (2pcs).
18. Lift the pinion shaft #11 from the sheave #19.
19. Remove the load gear circlip #13 then lift the load gear #14 from the sheave.
20. Gear side plate #15 can now be removed, it is recommended to make a note of the position of each component within the side plates.
21. Remove guides, stripper, sheave and anchor, #16, 17, 19 & 33, disassembly complete.

Maintenance and Repair

SS-C4.QP.01 Top Hook Assembly

Inspection Type: Visual and Dimensional - contact manufacturer
Quantity: 1

Check for distortion, damage, fractures and stretching. The hook shall be free and smooth to rotate, the hook to housing contact points should have even wear, check top hook bolt hole to diagram.



Action: Shotblast and repaint or replace if required.

SS-C4.QP.02 Latch Kit

Inspection Type: Visual
Quantity: 2

Latch assemblies shall be secure and free/smooth to open and close.

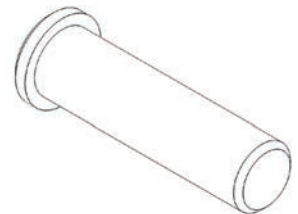


Action: Replace if necessary.

SS-C4.QP.03 Top Hook Pin

Inspection Type: Visual and Dimensional - contact manufacturer
Quantity: 1

Check dimensionally and visually for damage or wear.

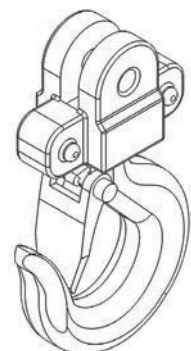


Action: Replace if necessary.

SS-C4.QP.04 Bottom Hook Assembly

Inspection Type: Visual and Dimensional - contact manufacturer
Quantity: 1

Check for distortion, damage, fractures and stretching. The hook shall be free and smooth to rotate, the hook to housing contact points should have even wear.



Action: Shotblast and repaint or replace if required.

Maintenance and Repair

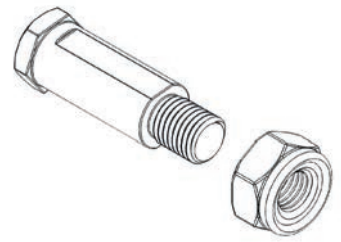
SS-C4.QP.05 Bottom Hook Chain Fixing Pin

Inspection Type: Visual

Quantity: 1

Check for damage or wear.

Action: Check and replace if necessary.

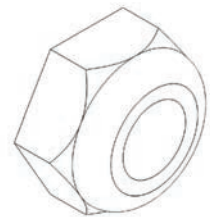


SS-C4.QP.07 Nut

Inspection Type: Not Applicable

Quantity: 6

Action: Discard and replace.

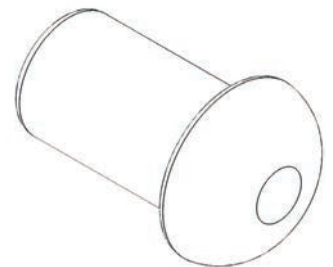


SS-C4.QP.08 Label Rivets

Inspection Type: Not Applicable

Quantity: 4

Action: Discard and replace.



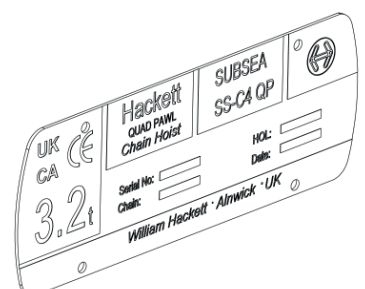
SS-C4.QP.09 Label

Inspection Type: Visual

Quantity: 1

Check nameplate is secure and in good condition, the unique hoist Ser no, WLL, HOL, chain grade and dimension should all be legible.

Action: Check and replace if necessary.



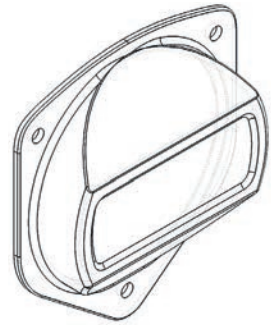
Maintenance and Repair

SS-C4.QP.10 Gear Cover Assembly

Inspection Type: Visual

Quantity: 1

Examine for cracks, distortion, damaged or broken parts, check gear bushings are secure and in good condition.



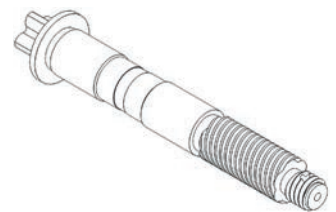
Action: Shotblast and repaint or replace if necessary.

SS-C4.QP.11 Pinion Shaft

Inspection Type: Visual

Quantity: 1

Check for wear and damage.



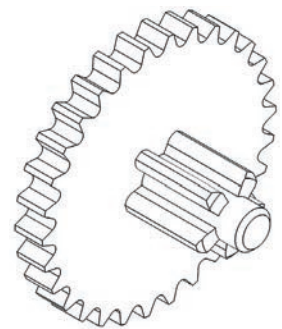
Action: Clean or replace.

SS-C4.QP.12 Pinion Gear (pair)

Inspection Type: Visual

Quantity: 2

Examine gears for wear, fractures and alignment



Action: Clean, reapply grease or replace if necessary.

SS-C4.QP.13 Snap Ring

Inspection Type: Visual

Quantity: 1

Examine for cracks, distortion or damage.



Action: Replace if necessary.

Maintenance and Repair

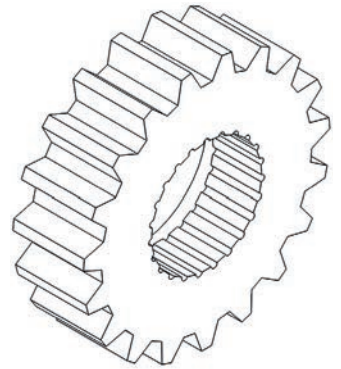
SS-C4.QP.14 Load Gear

Inspection Type: Visual

Quantity: 1

Examine gear for wear, fracture and alignment.

Action: Clean, reapply grease or replace if necessary.



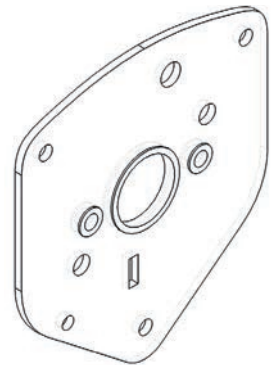
SS-C4.QP.15 Gear Side Plate

Inspection Type: Visual

Quantity: 1

Examine gear/right side plates for alignment and ensure they are free from excessive wear and distortion, examine load pin, guide, stripper and stay bolt holes for signs of wear and stretch, check gear bushings are secure and in good condition.

Action: Shotblast and repaint or replace if necessary.



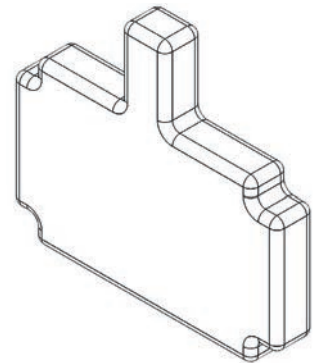
SS-C4.16 Stripper

Inspection Type: Visual

Quantity: 1

Examine chain stripper for wear and damage.

Action: Replace if necessary.



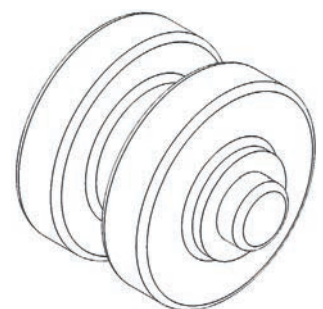
SS-C4.QP.17 Guide Roller

Inspection Type: Visual

Quantity: 2

Examine chain guide for wear and damage

Action: Replace if necessary.



Maintenance and Repair

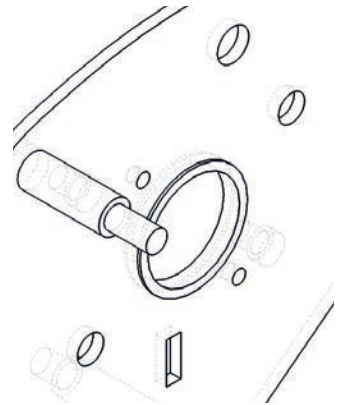
SS-C4.QP.18 Caged Roller Bearings

Inspection Type: Visual

Quantity: 2

Examine Bearings for excessive corrosion and wear, the bearings should be smooth and free to operate when a slight pressure is applied.

Action: Clean, reapply grease or replace if necessary.



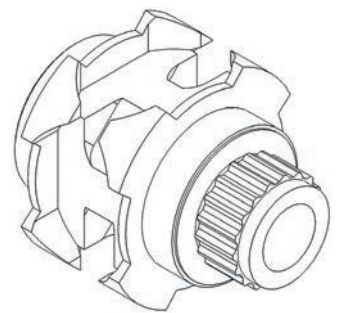
SS-C4.QP.19 Load Sheave

Inspection Type: Visual

Quantity: 1

Check load chain pockets for wear and damage, ensuring satisfactory seating of load chain in pockets.

Action: Clean, reapply grease or replace if necessary.



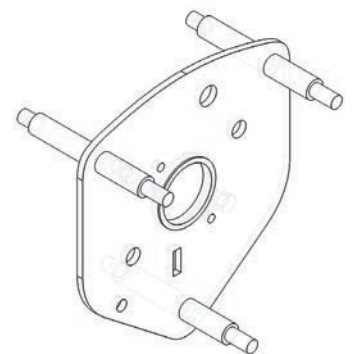
SS-C4.QP.20N Wheel Side Plate Assembly

Inspection Type: Visual

Quantity: 1

Examine body plates for alignment and ensure they are free from wear and distortion, examine load pin, guide and stripper holes for signs of wear and stretch, check stay bolts and pawl stands are secure and free from defects.

Action: Shotblast and repaint or replace if necessary.



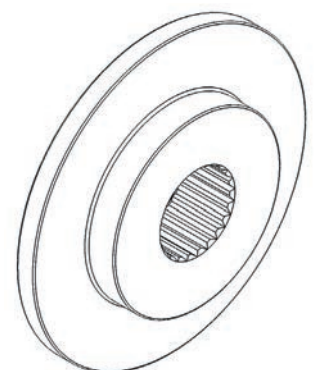
SS-C4.QP.21 Disc Hub

Inspection Type: Visual

Quantity: 1

Check splines and ensure the component mating surfaces are smooth, flat and without excessive corrosion.

Action: Replace if necessary.



Maintenance and Repair

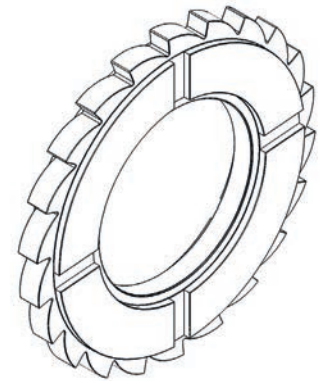
SS-C4.QP.23N Ratchet Gear

Inspection Type: Visual and Dimensional - see miscellaneous

Quantity: 1

Examine ratchet teeth and brake component surfaces ensuring they are smooth and flat.

Action: Replace if any defects found or below tolerance.



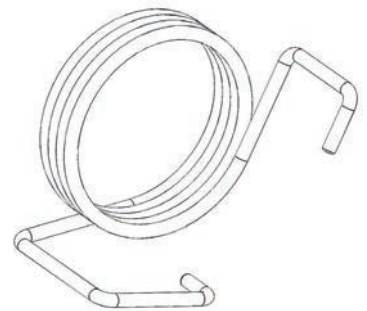
SS-C4.QP.24N Pawl Spring

Inspection Type: Visual

Quantity: 2

Examine pawl springs for corrosion and fractures, ensure the spring is good working order and not deformed or stretched.

Action: Replace if necessary.



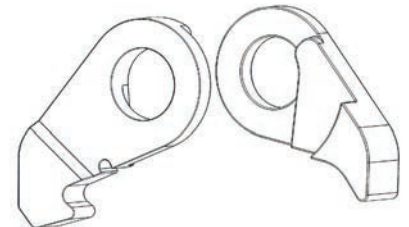
SS-C4.QP.25AN/BN Primary and Secondary Pawl

Inspection Type: Visual and Dimensional - see miscellaneous

Quantity: 2

Check pawl for wear ensuring pawl is free to move on pawl shaft

Action: Replace if any defects found or below tolerance.

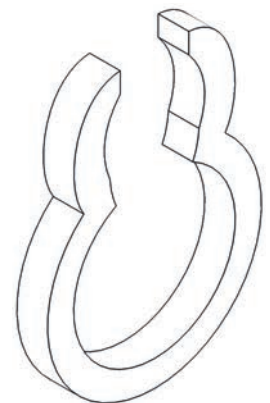


SS-C4.26 Snap Ring

Inspection Type: Not Applicable

Quantity: 2

Action: Discard and replace.



Maintenance and Repair

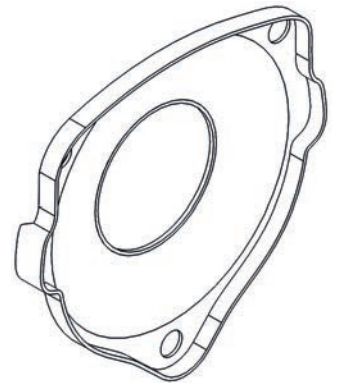
SS-C4.27 Brake Cover

Inspection Type: Visual

Quantity: 1

Examine for wear, damage fractures.

Action: Shotblast and repaint or replace if necessary.



SS-C4.28 Hand Chain

Inspection Type: Visual and Dimensional - see miscellaneous

Quantity: 1

Examine hand chain for damaged or distorted links, sharp edges, corrosion.

Check condition of speed link if present.

Action: Replace if necessary.



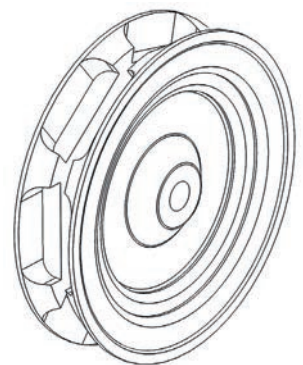
SS-C4.29 Hand Chain Wheel

Inspection Type: Visual

Quantity: 1

Check Handwheel for Damage, fractures, ensure brake surfaces are smooth and free from defects.

Action: Shotblast and repaint or replace if necessary. Ensure threads and brake surfaces are free from paint or powder coating if reconditioning.

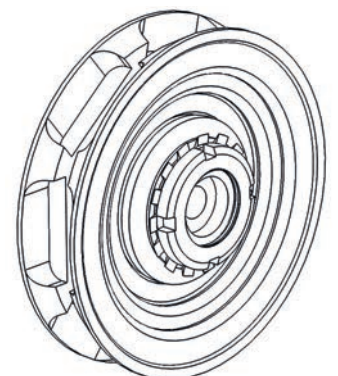


SS-C4.29L Overload Limiter Assembly

Inspection Type: Not Applicable

Quantity: 1

Action: Contact manufacturer.



Maintenance and Repair

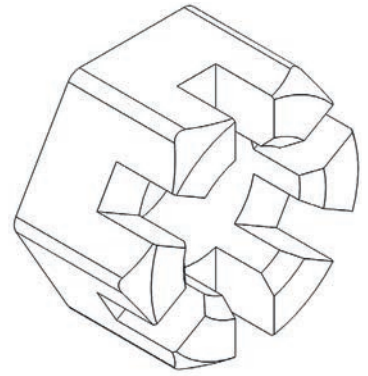
SS-C4.30 Pinion Nut

Inspection Type: Visual

Quantity: 1

Check thread condition, check for wear or fractures.

Action: Replace if necessary.

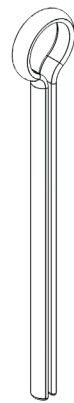


SS-C4.31 Cotter Pin

Inspection Type: Not Applicable

Quantity: 1

Action: Discard and replace.



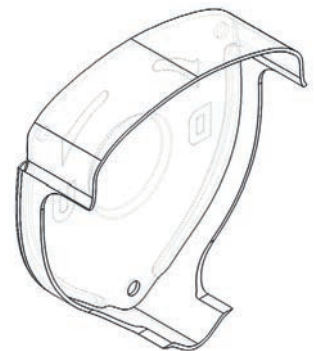
SS-C4.32 Hand Wheel Cover

Inspection Type:

Quantity: 1

Examine for cracks, distortion, damage or wear and the cover is of good condition and secure. Check cover assembly fixings.

Action: Shotblast and repaint or replace if necessary.



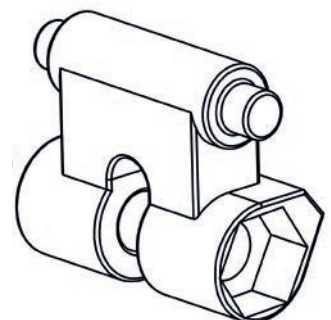
SS-C4.33 Chain Anchor Plate

Inspection Type: Visual

Quantity: 1

Check for damage and wear on all components of the anchor, pay attention to chain contact points including load pin.

Action: Shotblast and repaint or replace if necessary.



Maintenance and Repair

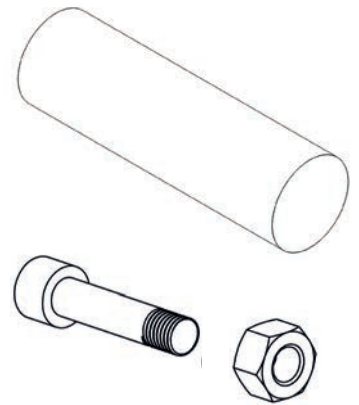
SS-C4.35 Chain Anchor Pin

Inspection Type: Visual

Quantity: 1

Check for damage and wear on all components of the anchor, pay attention to chain contact points including load pin.

Action: Check and replace if necessary.



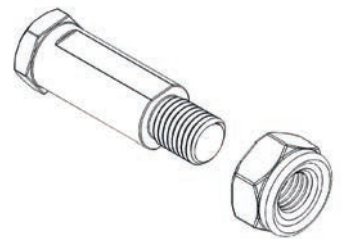
SS-C4.36 Top Hook Pin and Lock Nut

Inspection Type: Visual

Quantity: 1

Check for damage or wear.

Action: Check and replace if necessary.

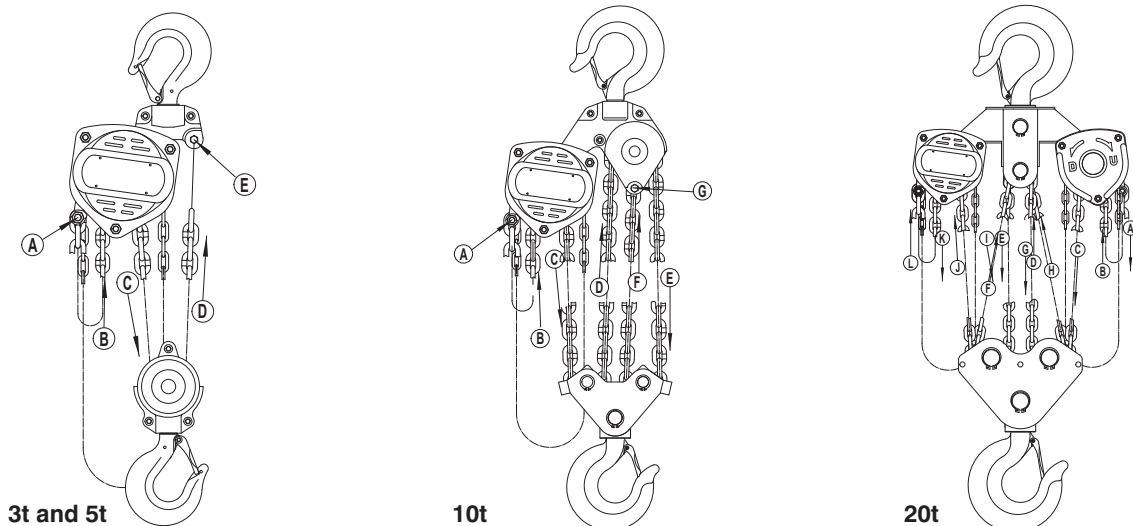


Assembly Instructions

1. With the wheel side plate facing pawl stands down, lubricate the sheave to bush contact points and insert the load sheave #19 with the splined section upwards.
2. Install chain guides, stripper and chain anchor #16, 17 & 33.
3. Again lubricate the sheave to bush contact points and install gear side plate #15 ensuring correct alignment with wheel side plate.
4. Lubricate and install load gear #14, refit circlip ensuring it is secure and fully seated in its recess.
5. Lubricate the pinion shaft taking care not to apply excessive amounts around the threaded/splined brake section then insert through load gear.
6. Install the pinion gears making sure the alignment marks are correctly positioned, apply a liberal amount of grease to the assembly then secure the gear cover using 3 nylon locking nuts.
7. Turn the hoist over so that the brake side faces upwards then reinstall the top hook, ensure the top hook pin is fully seated.
8. Install the pawl assemblies lightly greasing the pawl shafts, ensure the pawl springs are secured correctly and the circlip is seated firmly in its recess.
9. Install the disc hub #21 by rotating clockwise on to the pinion shaft.
10. Fit the ratchet gear assembly ensuring the ratchet tooth profile matches that of the pawls.
11. Install the brake cover #27.
12. Fit the hand wheel by turning it clockwise on to the pinion shaft ensuring the brake surfaces are fully mated.
13. Install the pinion washer and castle nut, tighten the castle nut finger tight then back to the nearest hole, install and secure split pin.
14. The hoist is now ready for chain installation.

Chain Installation

The Chain shall be installed with the weld facing away from the main hoist sheave in a vertical plain.



Miscellaneous

RAISING THE LOAD

To raise load, pull right side of hand chain (A, Figure 5) so that the wheel turns clockwise. To lower load, pull left side of hand chain (B, Figure 1) so that wheel turns counterclockwise.

Important: Make sure hoist has an adequate length of load chain to raise or lower the load in a safe manner. Do not attempt to lower hoist beyond its limit.

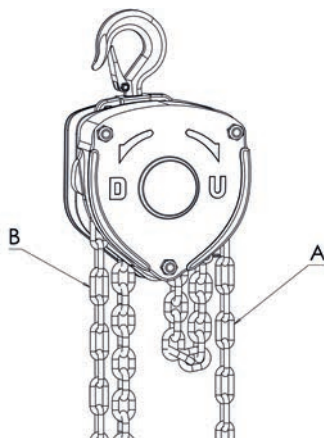


Figure 1

HAND CHAIN: JOINING AND INSTALLING

1. Cut the required length of 5mm x 25mm hand chain so that the links at either end plain in the same direction.



2. Make sure the chain is not twisted and bring the two ends together.



3. Join the two ends of hooking speed links over each side making sure that the chamfered edge of the speed link is to the outside.



4. Fix the two halves of the speed link together with two 2.4mm x 6mm stainless steel pop rivets.



Note: The indicated 'speed links' must only be used on hand chain which fully complies with the dimensional detail indicated within this script. The hand chain runs over a specific calibrated pocket wheel and the chain is also calibrated to suit this particular pocket wheel.

LOAD AND WEAR LIMITS

Alloy Steel Chain

Carefully inspect entire load chain. Measure five consecutive links with calipers to measure the length. Check every one metre and especially where excessive wear is indicated. Any load chain that shows noticeable deformation or heat influence must be replaced with a new one. Never extend load chain by welding a second piece to the original.

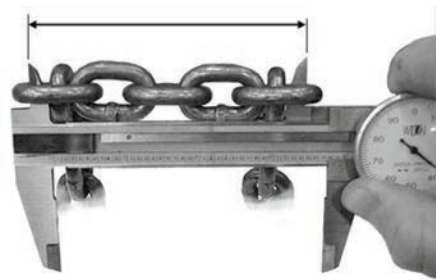
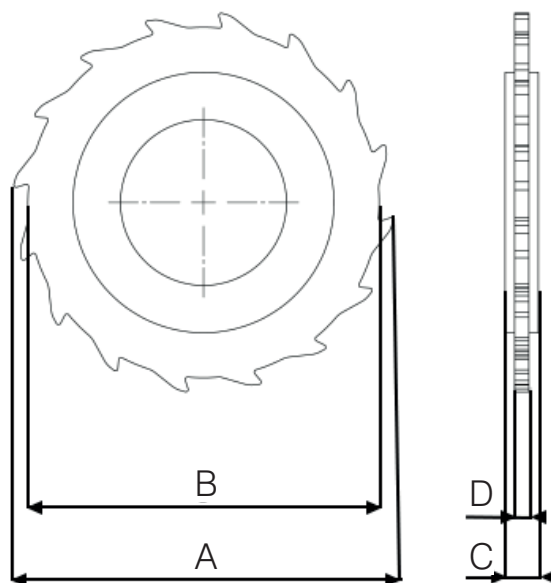


Figure 2

Capacity t	5 Links Normal mm	5 Links Limit Replace if more than:
0.5	90	77.3
1.0	90	92.6
1.6	120	123.4
2.0	120	123.4
3.2	120	123.4
5.0 - 50.0t	150	154.3

Miscellaneous

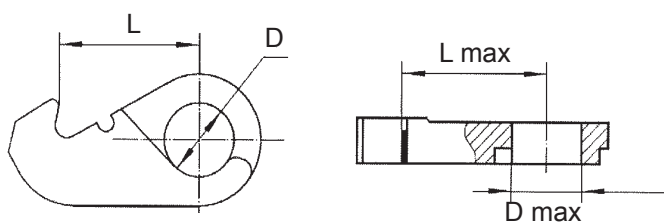
Ratchet Wheel with brake linings



WLL t	A mm	B min mm	C mm	D min mm
0.8	64	61	8	6
1.6	64	61	8	6
3.2	74	71	8	6
6.3	74	71	8	6
10.0	74	71	8	6
15.0	74	71	8	6

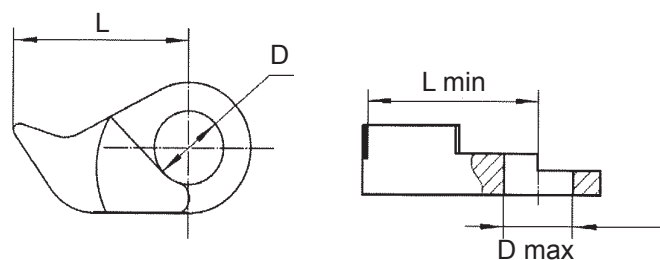
QUAD PAWL DIMENSIONS

Pawl A



Capacity t	L mm	L max mm	D mm	D max mm
0.5 to 1.0	19.2	20.2	7	7.4
1.6 to 3.2	24.0	25.2	8	8.4
5.0 to 30	25.2	26.5	9	9.5

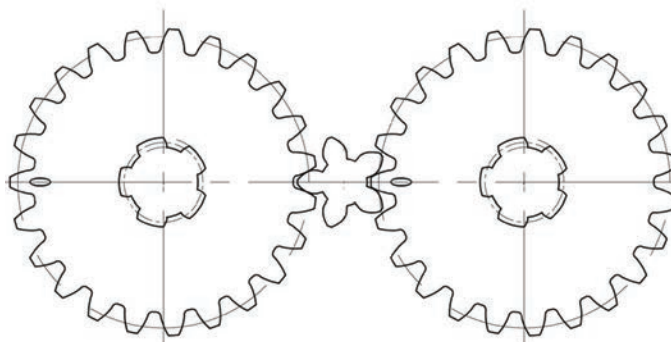
Pawl B



Capacity t	L mm	L max mm	D mm	D max mm
0.5 to 1.0	22.5	21.4	7	7.4
1.6 to 3.2	24.8	23.6	8	8.4
5.0 to 30	27.6	26.2	9	9.5

Miscellaneous

Gear Alignment



0.5t - 50t

Figure 5

TORQUE VALUE TABLE

Bolt/nut size	Min Nm	Max Nm
M5	5	6
M6	6	8
M8	20	22
M10	22	24
M12	25	27

LUBRICATION

C4 QP Chain Hoist

Recommended lubricant type: Corrosion Block Grease

C4 QP Chain Hoist Load Chain

Recommended Lubricant: Lear Chem ACF-50 fluid
or Lear Chem Corrosion Block Fluid

Warranty

When supplied new the SS-C4 QP chain hoist will be supplied with a Declaration of Conformity which sanctions the use of the product for a maximum period of 12 months before re-certification is required by a competent person.

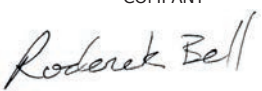
Providing that the use, storage, routine maintenance and servicing instructions contained in this document are followed, the SS-C4 QP can be used for multi immersions

The SS-C4 QP is a lifting appliance and should be thoroughly examined by a competent person at least every 12 months, or following each period of deployment.

Only original William Hackett spare parts should be used.

William Hackett guarantee the performance of the SS-C4 QP chain hoist for a period of 12 months from the date of sale subject to the purchaser and users complying with the safe use, storage, routine maintenance and servicing instructions, and there being no excessive wear and tear or misuse of the product.

These points do not affect the purchasers statutory rights.

 William Hackett Lifting Products Limited				   				DUAL PURPOSE DOCUMENT	
Delivery Address WILLIAM HACKETT LIFTING PRODUCTS OAK DRIVE LIONHEART ENTERPRISE PARK ALNWICK, NORTHUMBERLAND, NE66 2EU				Supplied To: WIL001		EC DECLARATION OF CONFORMITY		A	
				Certificate Number: L094821		DECLARATION I DECLARE THAT THE ITEMS DESCRIBED ON THIS DOCUMENT COMPLY WITH THE REQUIREMENTS OF THE MACHINERY DIRECTIVE 2006/42/EC			
				Customer Order No: SAMPLES		MANUFACTURER'S CERTIFICATE		B	
				Date Received: 28/09/2021					
PRODUCTS REQUIRING A DECLARATION OF CONFORMITY ARE INDICATED BY (A) THOSE REQUIRING JUST A MANUFACTURER'S CERTIFICATE BY (B)				CERTIFIED ON BEHALF OF THE COMPANY  RODERICK BELL 28/09/2021					
Authorised person for the configuration of the declaration documents: Roderick Bell, William Hackett Lifting Products, Alnwick, UK									
A/B	Batch	Lot No / Serial No	Product	Description	Qty	Working Load Limit	Proof Load	Min Breaking Load	
A	P16606	012110314	HN025.103	1t HACKETT C4-QP CHAIN HOIST C/W 3MT HOL to EN13157	1	1.0 TONNE	1.5 TONNE		
A	P16605	004230303	HN035.SS.163	1.6t HACKETT SS-L5 QP SUB SEA LEVER HOIST C/W 3MT HOL to EN13157	1	1.6 TONNE	2.4 TONNE		
A	P19702	012120150	HN025.SS.103	1t HACKETT SS-C4 QP SUB SEA CHAIN HOIST C/W 3MT HOL to EN13157	1	1.0 TONNE	1.5 TONNE		





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APPENDIX 1

General Guidance for Fleeting Lifting

A lifting operation that moves a load laterally using multiple hoists is a process called “fleeting”. These lifting operations can be complex, difficult to execute and potentially detrimental to the lifting equipment involved. This document explains the basic principles that should be followed when fleeting, but all lifting operations should be planned and supervised by a competent person.

Preparation

Follow the pre-use guidance issued with the lifting equipment to be used.

Ensure that the suspension points for the hoists have a safe working load equal to or greater than the load to be lifted.

Ensure that the suspension points and load attachment points are suitable for working at angles.

Ensure that the suspension points and load attachment points are of an adequate size to accommodate the hoist hooks and to allow them to rotate freely.

Prior to loading the hoists, the chain hoist shall be correctly orientated so that the hand chain can be operated freely and safely.

If the fleeting operation involves more than two hoists, then the distance between the hoists must not exceed the distance of the load beneath the hoists. (Refer to ‘a’ Dimensions in diagram 1)

Ensure that the hoists have sufficient length of load chain. They will need 1.4 times the vertical drop of load chain to fleet the load at 45°.

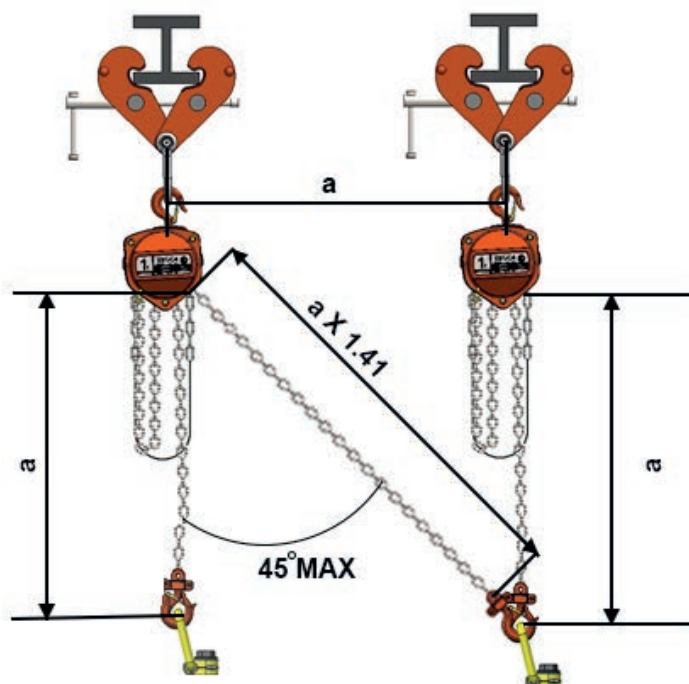


Diagram 1



Procedure

Step 1

- Two hoists (shown as A & B) are suspended above the load that is to be moved by fleeting. Hoist B must be suspended beyond the load towards the direction of movement of the load.
- Ideally hoist A should be suspended vertically above the load attachment point furthest away from the direction of travel and hoist B should be suspended at a point not exceeding 45° from vertical above the load attachment point towards the direction of travel. The distance between hoist A and hoist B must not exceed the distance of the load beneath the hoists in the vertical plane. (Refer to 'a' Dimensions in diagram 1)
- Both hoists are operated upwards (lifted) simultaneously to lift the load to the minimum required height in order to clear any obstacles.
- Once the load is suspended between the hoists, movement of load can commence. Simultaneously hoist A lowered while hoist B is lifted, maintaining the load being lifted as close to the horizontal plain as possible.
- Traverse the load until hoist B and the second load attachment point are in a vertical plain or hoist A reaches an angle to load attachment point of 45° from the vertical. At this point the load can move no further in step 1.

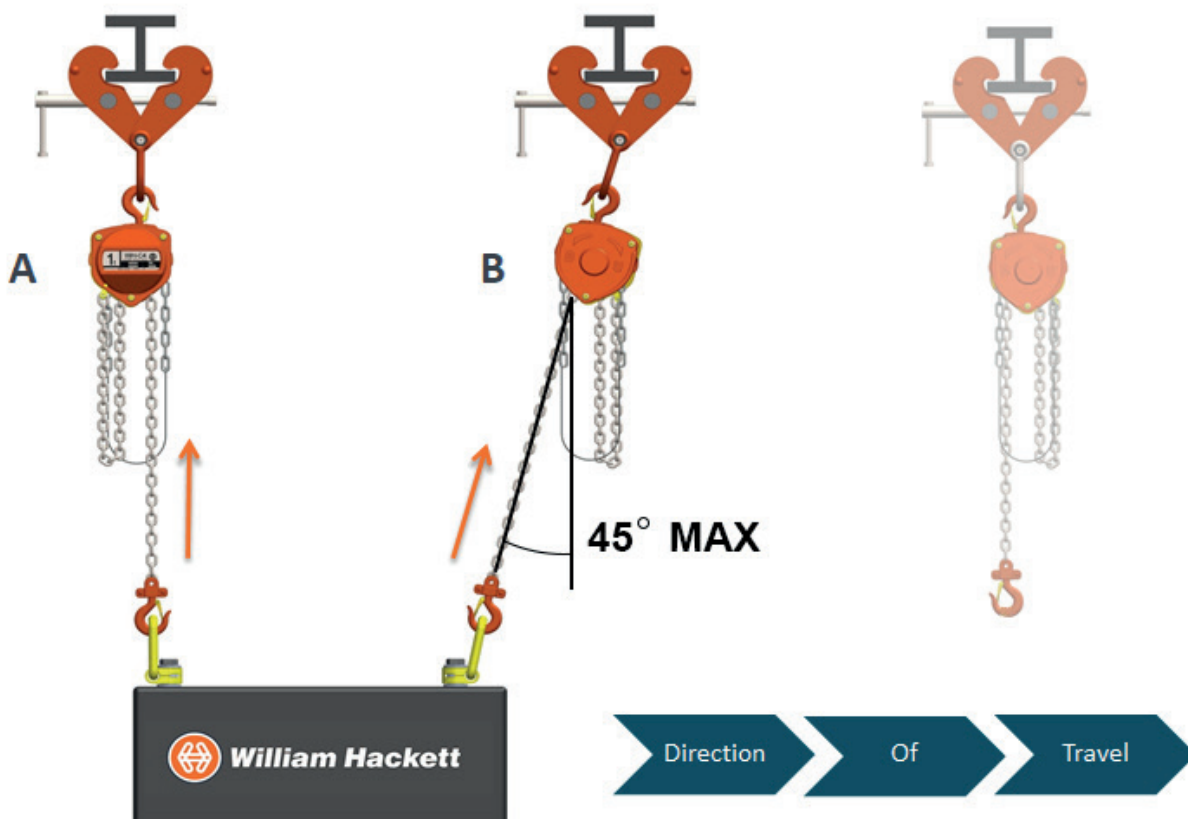


Diagram 2



William Hackett
Lifting Products Limited

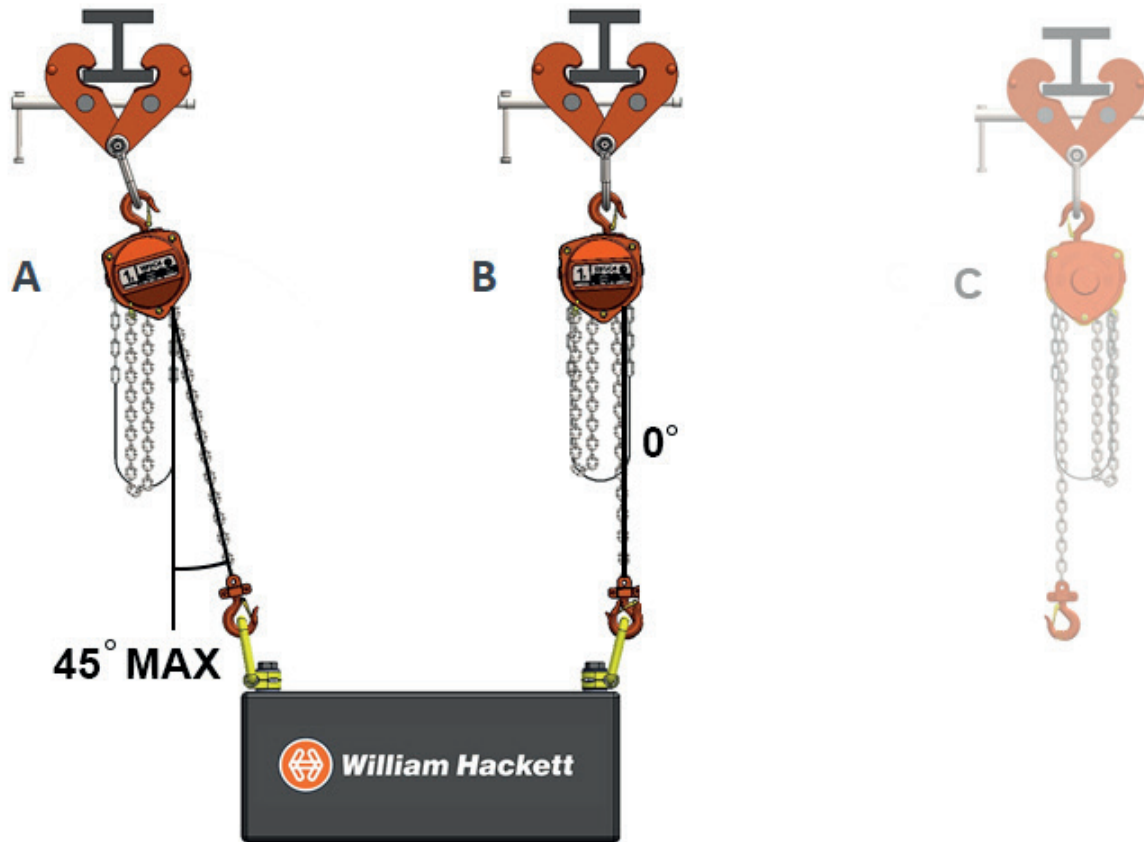


Diagram 3



Step 2

- Hoist C is suspended at a point beyond hoist B, not exceeding the distance of the load beneath hoist B, in the direction of travel. It is attached to the load attachment point alongside hoist B. The angle of hoist c when attached to the load attachment point must not exceed 45° from the vertical.

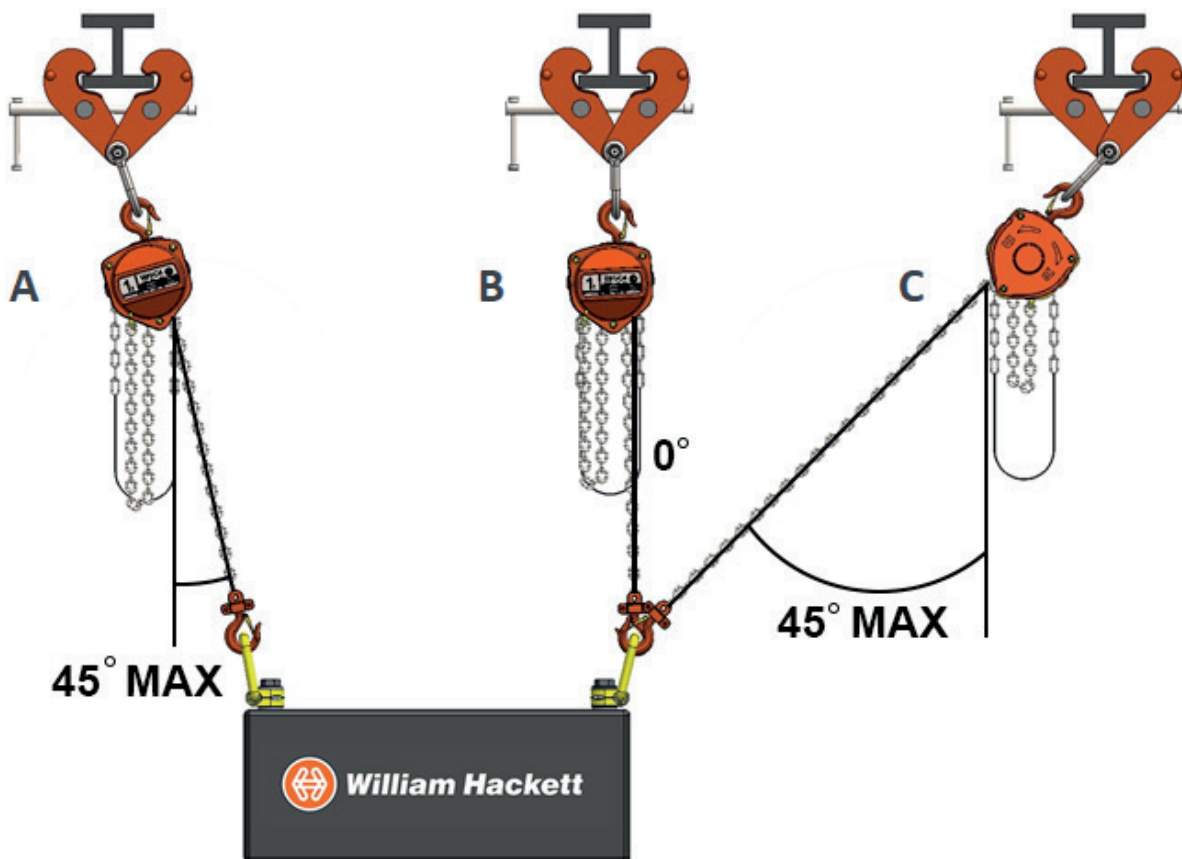


Diagram 4



Step 3

- Simultaneously hoist B is lowered while hoist C is lifted until hoist B is relieved of the load.

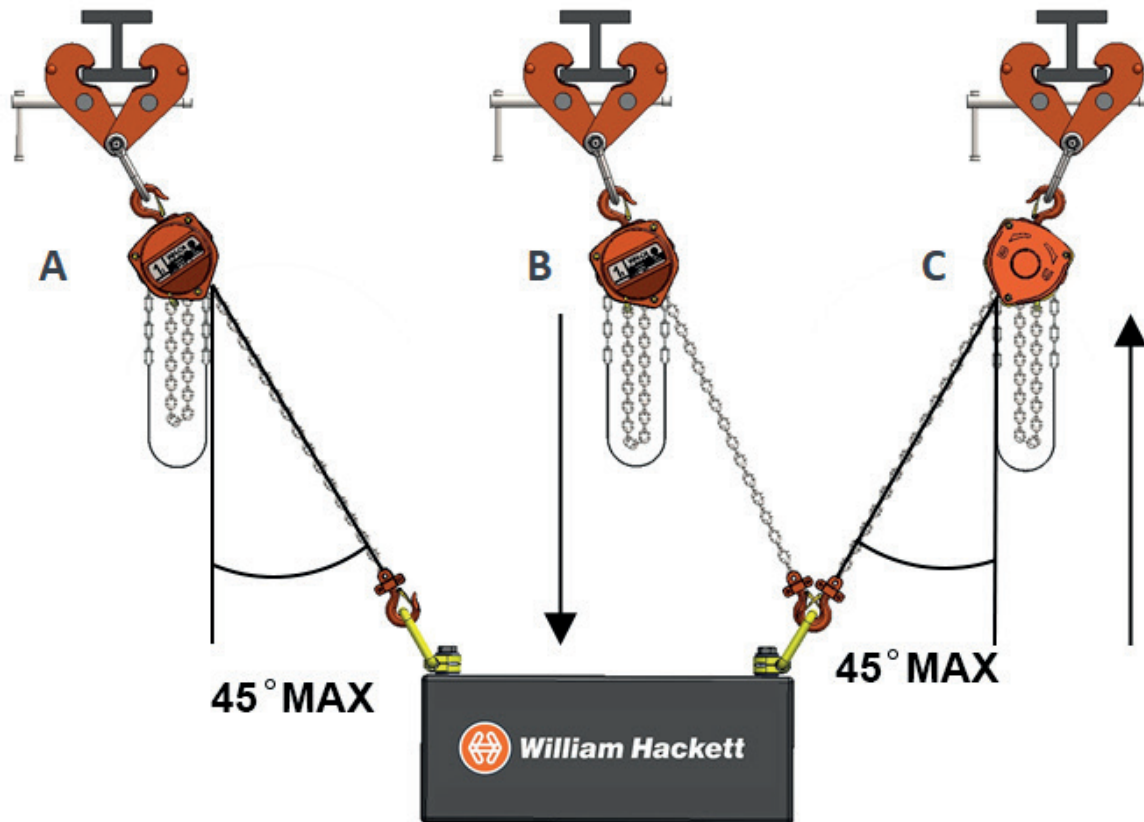


Diagram 5



Step 4

- As hoist B is relieved of the load the bottom hook is detached from the load attachment point. The load is now suspended between hoist A and hoist C.

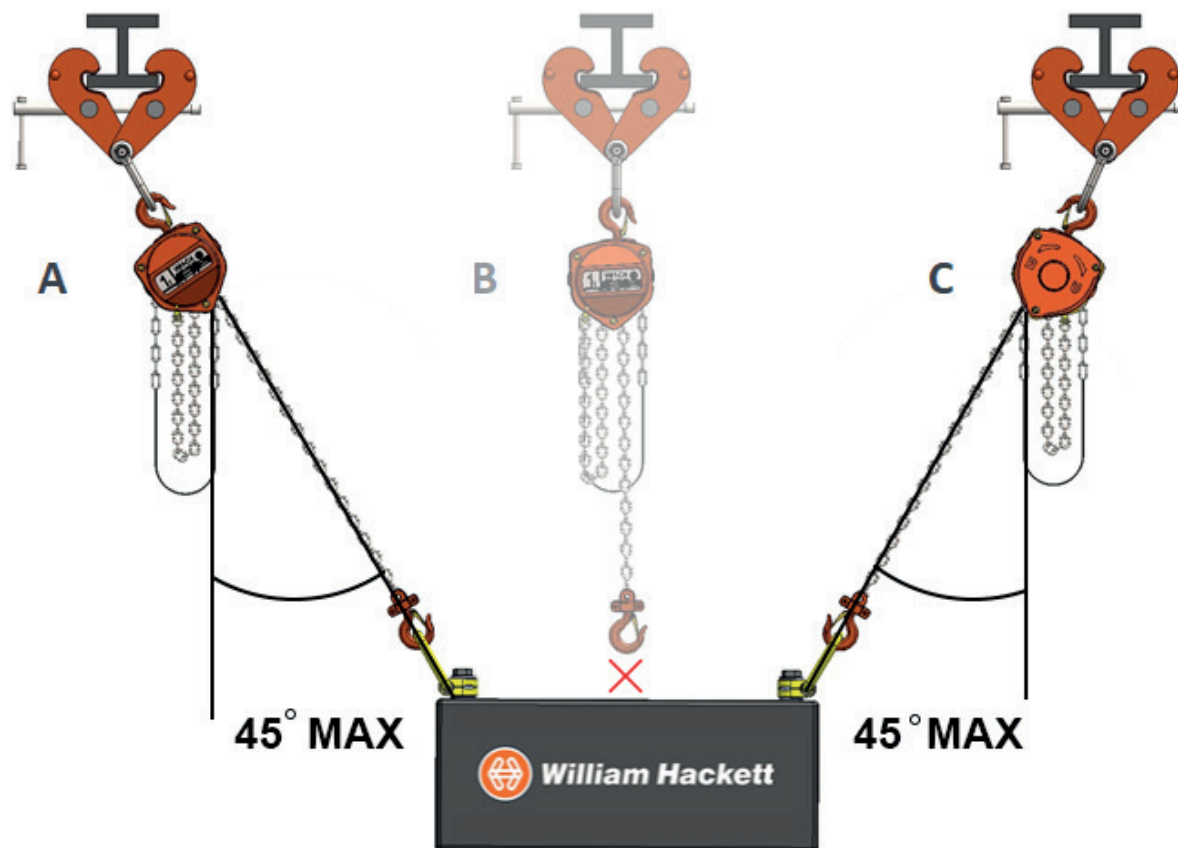


Diagram 6



Step 5

- Simultaneously hoist A lowered while hoist C is lifted, maintaining the load being lifted as close to the horizontal plain as possible.
- The load continues to traverse until the load attachment point furthest away from the direction of travel is directly beneath hoist B. Hoist A should not exceed 45° from the vertical
- Hoist B is attached to the load attachment point alongside hoist A.

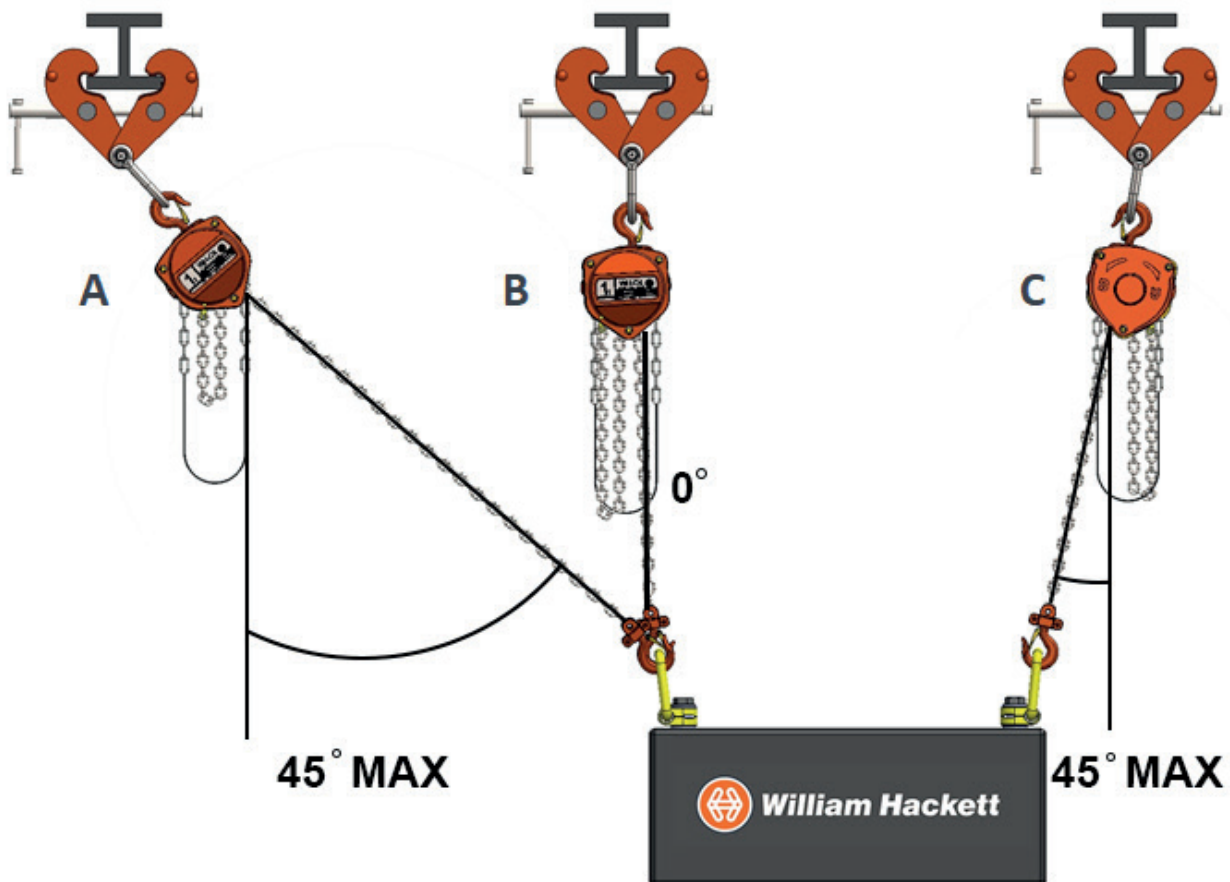


Diagram 7



Step 6

- Simultaneously, hoist A is lowered while hoist B is lifted until hoist A is relieved of the load.
- The load is now suspended between hoist B and hoist C. Hoist A is now detached from the load attachment point and can be removed from the lift and reinstalled to continue/repeat the process at the next stage.

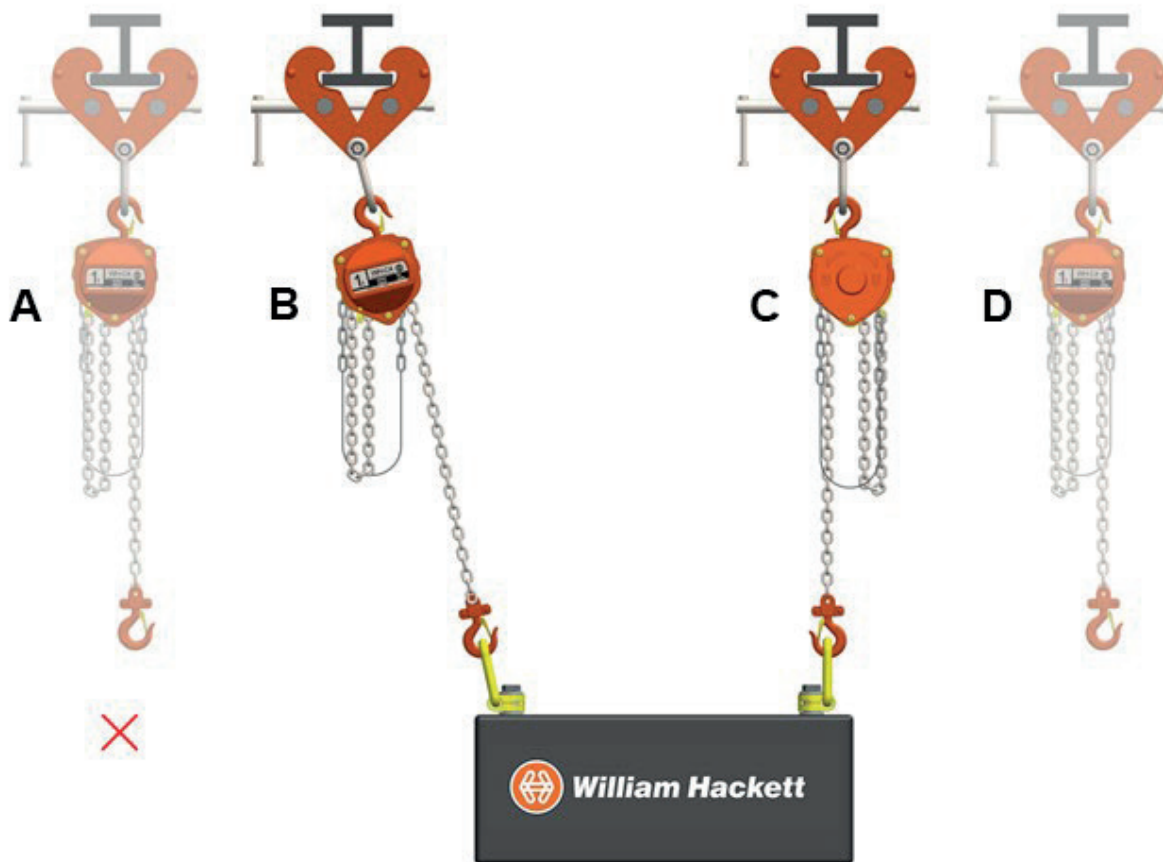


Diagram 8