



*SS-C4 QP Manual
ROV Operable
Chain Hoist
User Guide*

**incorporating Fishtail, D-Link, T-Handle
and Torque Tool (class 1-4)
type interfaces**

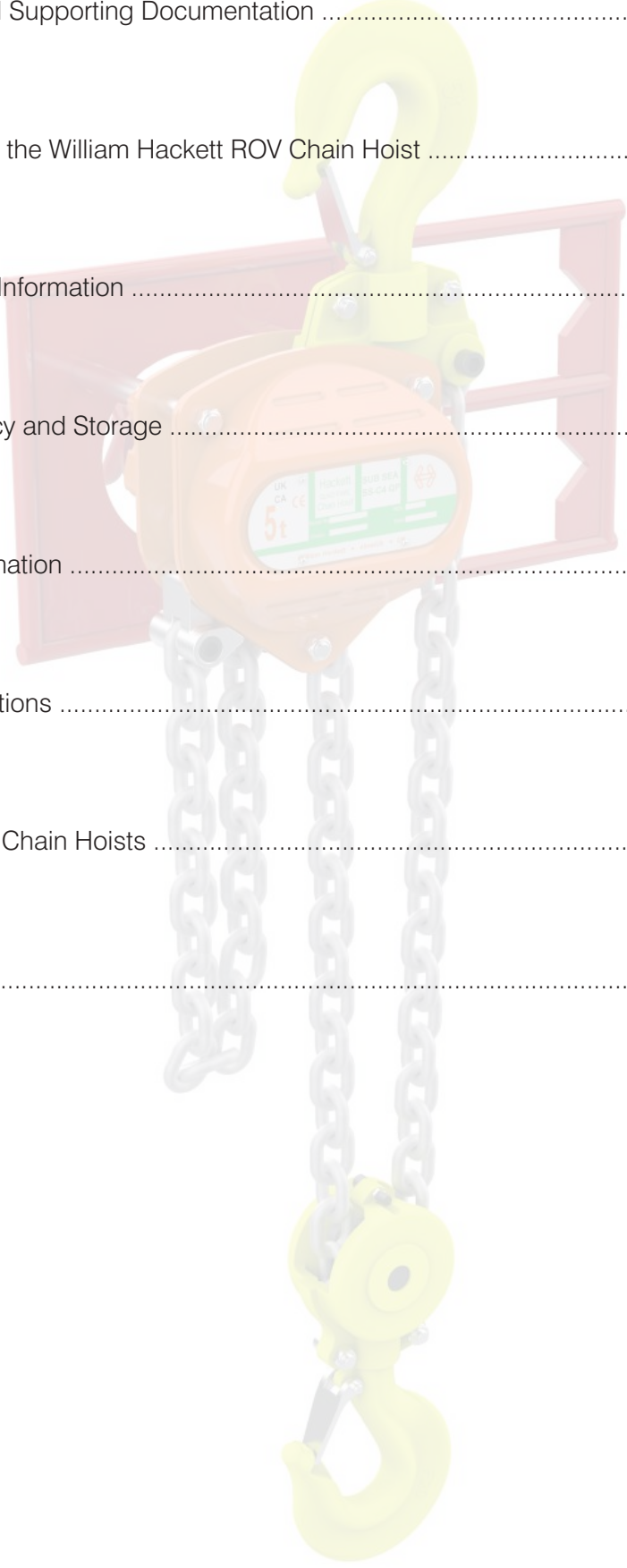




NOTE: ROV Hooks optional

Contents

1. References and Supporting Documentation	4
2. Key Features of the William Hackett ROV Chain Hoist	5
3. General Safety Information	6
4. Immersion Policy and Storage	7
5. Technical Information	8
6. Pre-Use Inspections	13
7. Operating ROV Chain Hoists	15
8. Warranty	16



1. References and Supporting Documentation

Ref. 1.

Manual - WH SS-C4 QP Chain Hoist.

Ref. 2.

DNV Salt Water Immersion Test Report No. A0359376.02, Rev. 1.

Ref. 3.

IMCA LR 005, D 028 - Rev. 3.

Ref. 4.

WHRD-0125 (Fleeting).

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:

Ref. 5.

HSE Publication L113 (2014) Safe Use of Lifting Equipment.

Ref. 6.

HSE Publication INDG422 (2008) Thorough Examination of Lifting Equipment.

2. Key Features of the William Hackett ROV Chain Hoist

William Hackett SS-C4 QP ROV Chain Hoists are intended to be operated by Remotely Operated Vehicles (ROVs) in underwater and offshore environments, specifically designed for deep-sea operations and subsea lifting applications. A range of ROV interfaces are available to meet specific project requirements.

The patented William Hackett quad-pawl brake system is incorporated into the ROV Chain Hoist design, making the fail-safe braking mechanism available even in ROV or power failure situations. ROV Chain Hoists units are built with high-quality materials and specialised coatings for enhanced corrosion resistance in marine environments. Ease of maintenance with accessible parts and serviceability is a critical design feature to prolong the service life of each unit and to ensure ROV Chain Hoists are safe and fit for use in sub-sea lifting environments.

Example applications of the William Hackett ROV Chain Hoist include:

- **Offshore Oil and Gas Platforms:**

Used for lifting and positioning heavy equipment, components, and tools on offshore oil rigs or during underwater installations.

- **Subsea Construction:**

Assists in underwater construction projects, including the installation of pipelines, cables, and other subsea infrastructure.

- **Marine Salvage Operations:**

Employed in the recovery and salvage of submerged vessels, machinery, or other heavy objects from the ocean floor.

- **Underwater Maintenance and Repairs:**

Facilitates maintenance tasks such as removing, replacing, or repairing subsea equipment and components, including anchor chains and mooring systems.

- **Renewable Energy Projects:**

Supports underwater tasks during the installation and maintenance of tidal turbines and offshore wind farms.

- **Research and Exploration:**

Used by scientific and research institutions for deep-sea exploration projects and the deployment of subsea equipment.

- **Civil Engineering and Bridge Construction:**

Aids in the construction and maintenance of submerged structures, including underwater parts of bridges, docks, and piers.

3. General Safety Information

All ROV chain hoists come with an EC Declaration of Conformity stating compliance with the relevant health and safety regulations.

Disassembly, inspection, maintenance, assembly and testing should only be performed by a competent person. It is the responsibility of the owner/user to install, operate, inspect and maintain the product in accordance with all applicable standards and regulations.

Do:

- use the William Hackett hoist within 2% of its rated load capacity (WLL) and its maximum rated load capacity (WLL)
- only allow a competent and trained person to operate the hoist
- make sure that the hoist suspension hook is securely attached to a suitable support
- make sure hook attachment points are the right size and seated in the hook saddle
- make sure that the hook latch is closed and does not interfere with any part of the load attachment
- make sure the load is free of all obstructions during the lifting operation
- inspect the chain block regularly (every 12 months), replace damaged or worn parts and keep maintenance records
- only use William Hackett parts when replacing components
- keep specific components well lubricated (refer to Ref. 1)
- ensure the load chain is not twisted
- lifting is done in a straight line and the load chain is always in-line with 2 attachment points
- ensure the top and bottom hooks are free to rotate under no load conditions
- ensure chain bags are fit for use and load chain feeds into the chain bag in a uniform manner

Do Not:

- lift more than the rated load capacity (WLL) of the hoist
- lift below 2% of the rated capacity (WLL) of the hoist
- use a hoist if markings are not legible
- use in an acidic environment
- use in excessively hot or cold environments (refer to section 5)
- use the hoist if an abnormal operating noise is heard
- wrap the load chain around the load and back-hook into a choker or basket hitch
- run the load chain over sharp edges
- allow the load to swing
- lift over people
- use a damaged hoist
- support a load on the tip of a hook
- attempt to repair a hoist unless you are competently trained
- shock load the hoist
- allow the load to swing
- use to lift people
- use modified hoists with components which are not manufactured by William Hackett
- use a hoist with excess corrosion/rusting
- submerge a hoist subsea for longer than the recommended timeframe (refer to section 4)
- use chain end stops or anchorage as an operational limiting device
- use a hoist if load chain is not running smoothly through the hoist pocket wheel i.e. if load chain is jumping or jamming in the hoist
- drive the hoist via the ROV interface if the hand chain is fitted to the hoist

4. Immersion Policy, Procedures and Storage

4.1. Immersion Policy

The William Hackett Subsea Chain Hoist is designed for single or multi-immersion operations lasting up to 31 consecutive days.

It is recommended that each William Hackett subsea chain hoist has a service and inspection log detailing the number of immersions and total duration of use. The hoist can be used as many times as required within a 31-day multi-immersion period; however, between immersions or when not in use, the hoist must be cleaned and stored in accordance with William Hackett's procedures (refer to section 4.1).

After each 31-day immersion period, the hoist should be sent to an authorized William Hackett agent for a thorough inspection and maintenance. This service must include a complete disassembly and visual inspection of all internal components, followed by a series of supplementary load tests after reassembly to ensure a safe and reliable performance.

Any use of a subsea chain hoist outside the parameters of the William Hackett Immersion Policy should be based on a thorough risk assessment. It is recommended to consult William Hackett's technical team for guidance in such cases.

4.2. Cleaning and Storage of Subsea Chain Hoists

After each period of subsea use, the hoist should be flushed with unpressurized fresh water, functionally checked, and stored in a dry, sheltered area. Avoid using solvents or lubricants during cleaning, as they may damage the equipment.

Report any defects immediately to the responsible person and quarantine any damaged hoists. Ensure the load chain is thoroughly dried and wrapped securely around the hoist rather than left on the floor.

During storage, including transporting the hoist to the offshore worksite, protect the hoist from exposure to conditions that could impair its safe operation, including:

- Water or seawater
- Temperatures outside the hoist's operating range
- Solvents
- Corrosive chemicals or fumes
- Grit, sand, and wind-blown dust

Store the hoist on suitable racks within a container to prevent accidental mechanical damage, ensuring the load chain remains off the ground.

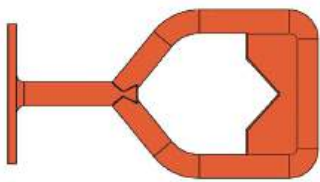
5. Technical Information

The harsh conditions experienced at subsea worksites undoubtedly will have an adverse effect on any hoist that has not been specifically designed for use in that environment. The saltwater conditions may accelerate the corrosion within the unit, the water immersion may wash grease from internal parts and particles suspended in the water can affect the ability of the brake to hold the load.

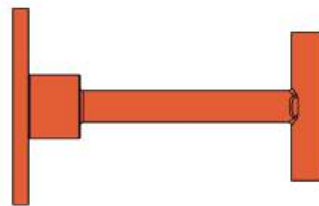
William Hackett ROV Chain Hoists have specifically been designed to combat these issues through innovative design functionality, material selection and specialist material coatings to ensure safety when operating ROV hoists subsea.

5.1. Manual ROV interfaces

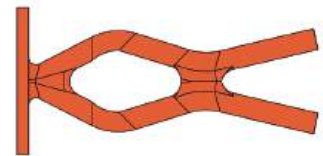
The William Hackett manual drive options provide a flexible range of operator-friendly interfaces for ROV pilots to engage with. The D-Handle, T-Handle and Fishtail interfaces are manufactured from 316L stainless steel.



D-HANDLE



T-HANDLE



FISHTAIL HANDLE

The Rotary Torque Bucket interface is engineered to meet the specifications of BS ISO 13628-8:2002, ensuring compatibility with classes 1 – 4 torque tools. The square drive mechanism is made from 316L stainless steel whilst the torque bucket shell can be made from plastic.



ROTARY TORQUE BUCKET

5. Technical Information

Standards:

The WH ROV SS-C4 QP chain hoist is verified by DNV as compliant with the requirements of the relevant international standards. (Verification No. N141UH09).

- British Standard BS EN13157: 2004 + A1:2009
- American Standard ASME B30.16-2014
- Australian Standard AS1418.2-1997
- South African Standard SANS 1594: 2007
- NORSOK R-002: 2017

Optional ROV interfaces:

- D-handle
- Fishtail
- T-bar
- Torque bucket

Light load capability: tested and certified at 2% of the chain hoist rated capacity.

Quad pawl (QP):

- Fitted as standard on all ROV chain hoists
- Enhanced resilience to failure
- Finer tolerance adjustment
- Endurance tested to twice the industry norm

Safety factor: 4 : 1

Safety latches: hooks are fitted with heavy duty latches which integrate with the hook tip, creating a strong and robust hook closure.

Hook overload and traceability marks: hooks have overload indicator marks either side of the hook throat (3.2t to 10t). Both top and bottom hooks are embossed with a batch code, manufacturer's mark and the working load limit.

5. Technical Information

Load chain: fitted with Grade T(8) load chain; fully compliant with BS 818-7 and other international standards.

Temperature range: -40°C to +60°C.

Proof tested: All hoists are proof tested to 1.5 times the WLL.

Optional equipment: ROV chain hoists can be fitted with specialist subsea lifting components such as Chain Bags, ROV Shank Hooks, Shackles, Clevis Shackles and Overload Limiters.

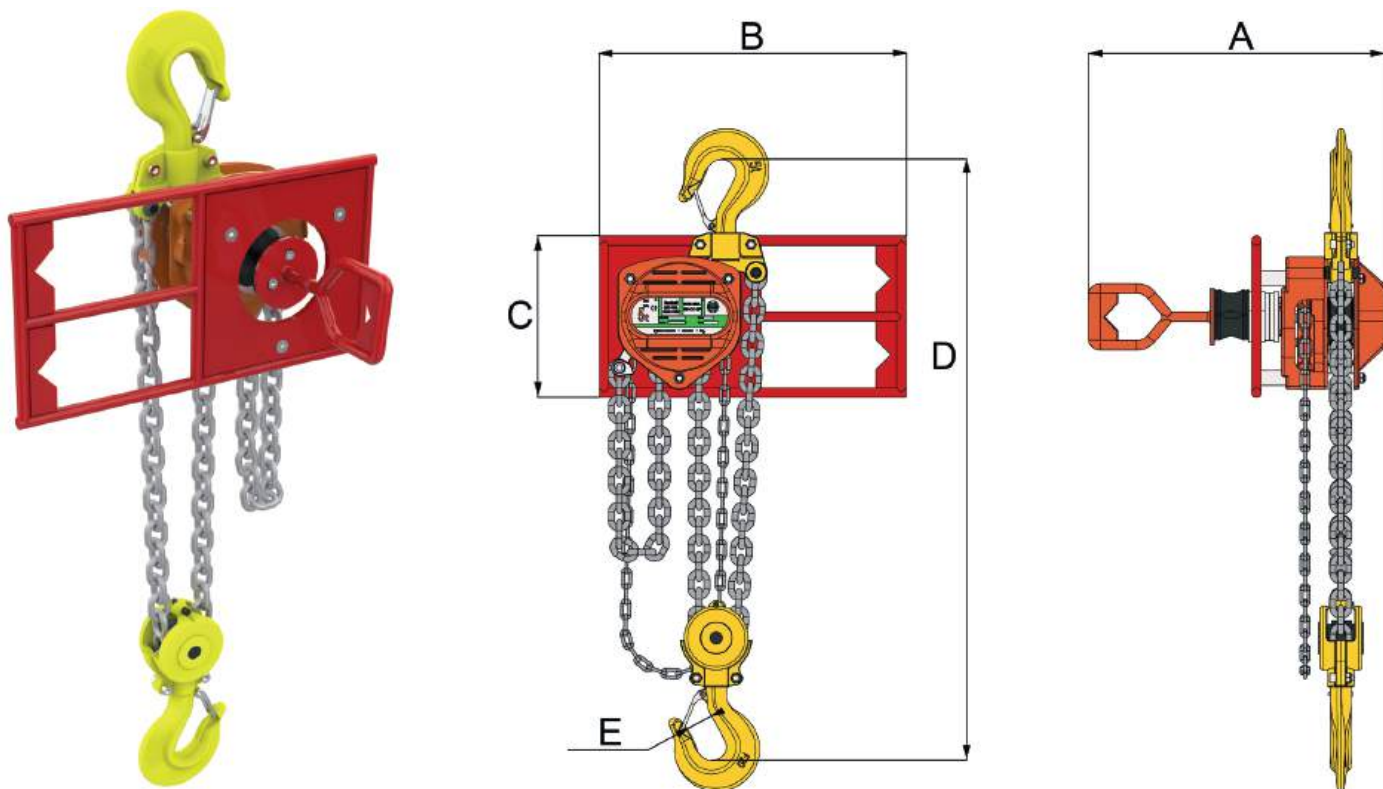
Operating effort: 50Nm to lift up to 20t.

Maximum ROV Operating Speed: 140rpm.

Fleeting/Cross Hauling: Independently tested and verified (Test Report 2550-7615) for fleeting or cross hauling applications. Certified to angles up to 60° from the vertical without deration of the WLL.

Manufactured and proof tested in the UK.

5. Technical Information



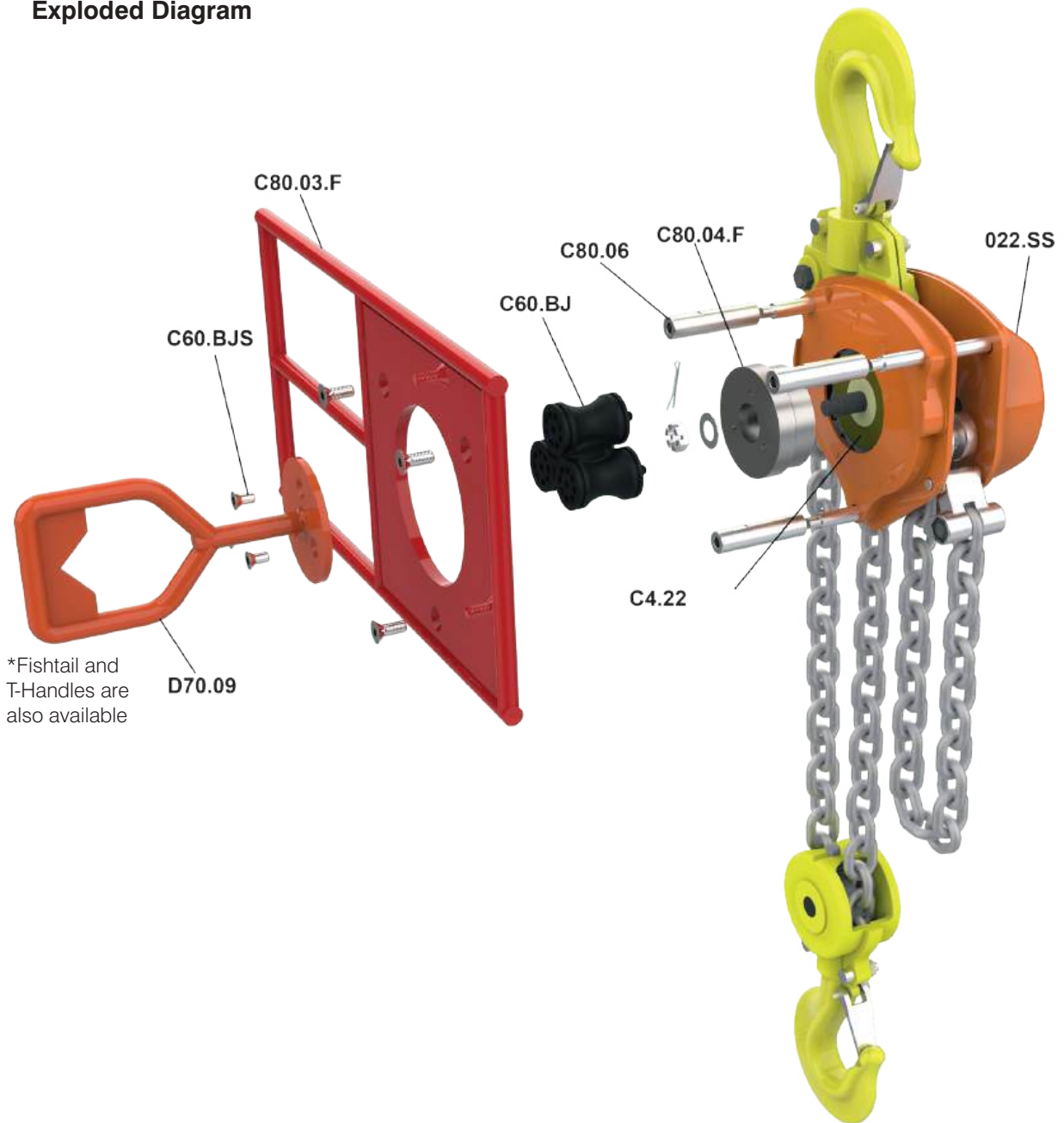
Specifications

Part Code	WLL tonnes	No. of Falls	Load Chain mm	A mm	B mm	C mm	D mm	E mm	Mass in air at 3m HOL kg	Extra Mass per m HOL kg
022.R.300.F1.P	3.2	1	10.0	507	516	292	520	37.5	39.0	2.2
022.R.500.F1.P	5.0	2	10.0	507	516	292	600	43.0	46.0	4.4
022.R.750.F1.P	7.5	3	10.0	507	512	292	740	53.0	66.0	6.6
022.R.1000.F1.P	10.0	4	10.0	507	516	292	760	53.0	77.0	8.8
022.R.1500.F1.P	15.0	6	10.0	537	516	292	1000	80.0	124.0	13.2
022.R.2000.F1.P	20.0	8	10.0	552	600	292	1150	80.0	165.0	17.6

*Larger capacities up to 50t available on request.

5. Technical Information

5.2. Exploded Diagram



Parts List

Part Code	Quantity	Description
022.SS	1	Hackett Subsea Chain Block Carcass C4
C4.22.SS	1	Subsea Brake Disc
C60.BJ	3	Boge Power Joint for ROV Interface
C80.03.F	1	ROV Backplate and Handle
C80.04.F	1	ROV Brake Adaptor
C80.06	1	Extension Bar Kit
2D70.09	1	ROV Handle Interface
C60.BJS	3	M8 S/S Countersunk Stud

6. Pre-Use Inspections

6.1. Manufacturer Testing and Verification

Systematic and logical checks are critical for identifying issues related to accidental damage, internal corrosion, brake contamination, or improper storage. Use the following checklist to ensure safe operation:

1. Preparation

Prior to issuing the SS-C4 QP ROV chain hoist from storage, confirm the certification is within date, and matches the identification on the label.

Clean the hoist if necessary, before inspection.

2. Label and Certification

Confirm the nameplate details are clear and visible.

3. Hooks and Latches

Ensure hook latches function correctly.

Verify hooks are free to rotate without load and show no signs of wear or distortion, such as an increased throat opening.

4. Load Chain

Check for wear or damage, especially on bearing surfaces inside the links. Look for bent, notched, stretched, or corroded links, and ensure the chain moves freely.

5. Brake and Ratchet

Without a load on the hoist, turn the ROV interface (e.g. D-Handle) clockwise to ensure a clear, positive clicking sound as the brake ratchet engages with the pawl system.

6. Chain Sheaves

On multiple-fall hoists, verify that all chain sheaves rotate freely without load.

7. Fixings and Anchors

Check that all fixings (e.g., split pins, nyloc nuts) are present and in good condition.

Inspect the hoist slack end chain anchor for damage.

8. Hoist Body

Inspect for general damage that could indicate neglect, damage, or misuse.

9. Load Chain Wheel, Guides, and Strippers

Ensure the load chain wheel is free from damage or debris.

Confirm guides and strippers are functional and in good condition.

10. Operating Instructions are available.

11. Manual Drive and ROV Interface

Inspect flexible rubber joints for secure attachment and damage.

Confirm the manual drive handle is secure and free from distortion.

For hand-chain operable ROV hoists, ensure connecting links are secure and free from cuts, nicks, cracks, corrosion, and acid damage.

13. Functional Test

Perform multiple lift and lower cycles to confirm the chain hoist operates as expected, with no unusual sounds or resistance.

14. Light Load Test

Lift a test load of 2% of the hoist's WLL through a distance of 300mm.

To check the brake's functionality; begin to lower the test load (opening the hoist's brake mechanism).

Stop driving the hoist and check the load instantly stops moving, checking for any indication of 'slippage'

WARNING: Remove hand chains prior to submersion and/or ROV-controlled operation of the hoist.

IMPORTANT: If any of the above criteria are not met, do not use the hoist.

6. Pre-Use Inspections

6.2. Manufacturer Testing and Verification

William Hackett ROV Hoists are proof load tested by the manufacturer to 1.5 x WLL. Light load testing at 2% of the hoist's WLL should be performed as part of a pre-use, interim or periodic inspection. A table of 2% light loads are detailed below.

Hoist WLL t	2% Light Load (0.02 x WLL) kg
3.2	64
5.0	100
7.5	150
10.0	200
15.0	300
20.0	400

Note:

Proof load tests should only be performed by the manufacturer. Never exceed the hoist's Working Load Limit.

7. Operating ROV Chain Hoists

William Hackett ROV Chain Hoists are actuated by an ROV receptacle which interfaces with the hoist's drive component; either a D-Handle, T-Handle, Fishtail or Torque Bucket interface. General principles for operating hoisting equipment are applied to subsea ROV hoists. The William Hackett ROV Hoist is made up of an ROV interface, attached to a WH SS-C4 QP Chain Hoist. For more information on the WH SS-C4 QP Chain Hoist, refer to the manual (Ref. 1).

The following steps detail the operation of the William Hackett ROV Chain Hoist for effective and safe lifting in underwater environments. Ensure that the ROV operator is well-versed in these instructions and the specific environmental considerations of the subsea lifting operation.

1. **Attach to Load:** Position the ROV to align the hoist with the load attachment point. Secure the hook around the load's attachment point and ensure the latch is fully closed.
2. **Engage Hoist with ROV:**
 - Use the ROV's manipulator to grip the hoist's operating handle/interface.
 - Apply the necessary drive parameters outlined to initiate the hoisting process.
3. **Lifting the Load:**
 - Carefully lift the load in a controlled, steady motion.
 - Avoid sudden jerking or rapid acceleration, which may place undue stress on the hoist and chain.
 - Continuously monitor the load during the lift, adjusting the ROV position as needed to maintain a safe orientation.
4. **Lowering the Load:**
 - Reverse the process to lower the load in a controlled manner.
 - Keep the load path clear, and ensure the descent is smooth and gradual.
5. **Disconnecting the Hoist:**
 - Once the load is lowered and secured, carefully release the hoist from the load attachment point using the ROV's manipulator.

Following these steps will help ensure efficient and safe operation of the William Hackett ROV Chain Hoist. For any issues during use, refer to the troubleshooting section in Ref. 1.

8. Warranty

When supplied new the SS-C4 QP ROV 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 ROV can be used for multi immersions

The SS-C4 QP ROV 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 ROV 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.