Leviat®
A CRH COMPANY

Ancon Unilift Lifting Systems Compliance and Compatibility

Compliance with Good Practice Guidelines "SAFE WORK WITH PRECAST CONCRETE" (GPG)

Ancon Unilift lifting systems and components are proprietary products designed, manufactured and tested to comply with the requirements of "Safe Work with Precast Concrete" – October 2018

Property	GPG Reference	Compliance Statement
Design and Specifications		Leviat develop and control all system and product designs and manufacturing specifications
Testing and Characteristic Strength	Chapter 10.11 Appendix B	All system capacities are based on characteristic strength, evaluated using a 5% fractile (95% probability of exceedance) at a confidence limit of 90%
Factor of Safety	Chapter 6.6	The FoS between the WLL and the Characteristic Strength is: Lifting Clutches: A minimum FoS of 5.0 Cast-In Lifting Inserts: A minimum FoS of 3.0
Ductility - Inserts	Chapter 6.6	Lifting anchors are manufactured from fully killed alloy steels, wrought steel with a grain size less than 6 and total elongation not less than 20% for pearlitic steels and 15% for martensitic steels and when loaded to failure show ductile behaviour with plastic deformation and a 100% fibrous structure
Ductility - Clutches	Chapter 6.6	Ancon Unilift Locking Klaws are manufactured from ductile materials and when tested to failure: (a) failure occurs in a ductile manner away from any weld zone (b) distortion and plastic deformation of the clutch assembly is evident at failure (c) all fracture faces demonstrate ductile failure mechanisms
Integrity (freedom from cracks and other defects)	Chapter 6.6	Ancon Unilift Locking Klaws are manufactured in accordance with an international standard including Magnetic Particle (crack testing). Every cast or forged clutch component is 100% fluorescent magnetic particle tested in accordance with AS 1171 with an acceptance criterion of no linear indications
Production Control and Validation	Chapter 6.6	Material, heat treatment and mechanical properties are controlled to confirm compliance with specifications for each production batch
Clutch Proof Test	Chapter 10.11	Each Ancon Unilift Locking Klaw is proof tested to 2 times WLL prior to first sale and uniquely identified by metal stamping traceable to the proof test
Clutch Identification	Chapter 10.11	All anchors and clutches are clearly and permanently marked with its WLL

Invention, design and development

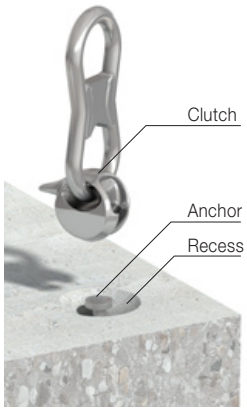
DEHA, now a part of the HALFEN product brand from Leviat, designed and manufactured the first proprietary lifting systems based on the numerous patents (from 1967) of its founder Dr Ernst Haeussler.

The patents covered lifting clutches, foot (cone) anchors, recess formers, eye anchors and other products.

DEHA licensed the patent rights to sell DEHA systems internationally.

Reid Swiftlift™ systems sold in New Zealand were developed under licence from DEHA.

The Ancon Unilift Locking Klaw is the only clutch which actually locks onto the anchor head. This unique feature improves lifting performance and safety in all applications, especially where rotation is involved.



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Identification of genuine DEHA and Ancon Unilift products

Genuine DEHA and Ancon Unilift products are marked with the following logos and marks:

Ancon Unilift

✓ U stamped on the anchor head

✓ Load range

✓ Anchor Length

Ancon Unilift Clutches

✓ Unilift logo and WLL

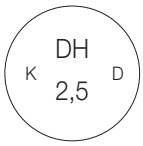
DEHA Anchors

✓ DH stamped on the anchor head

✓ Load range

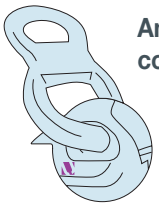
DEHA Clutches

✓ Brand name stamped on the handle

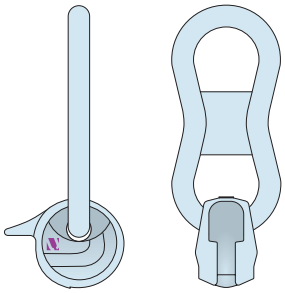


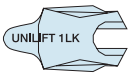
DEHA or HALFEN

Ancon Unilift and DEHA compatible clutches

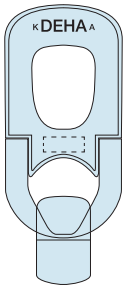


Ancon Unilift Locking Klaw





DEHA Clutch

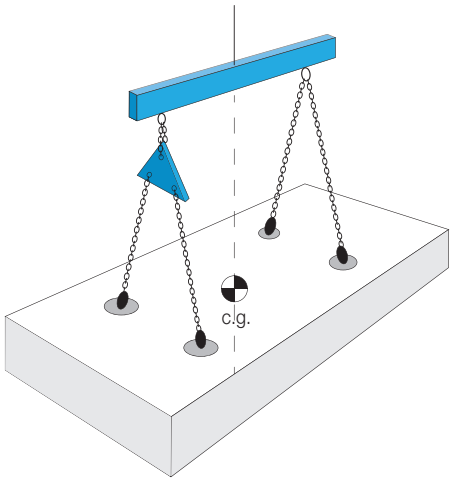
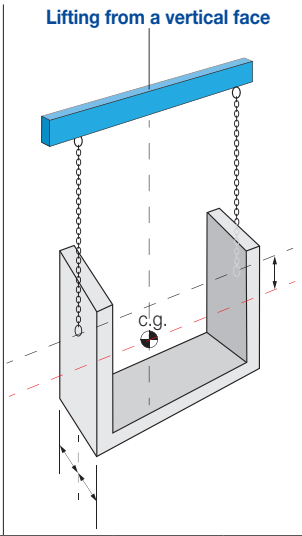
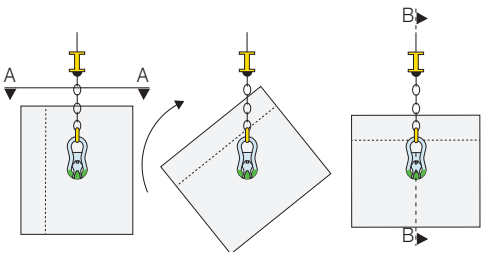


Compatibility and Interchangeability

Compatibility and interchangeability can depend on the lifting application.

The table below provides our interchangeability recommendations for the use of Ancon Unilift, Halfen and Reid anchors and clutches.

In the table, YES for a particular clutch means that it is interchangeable with the other two clutch types when lifting Ancon Unilift, Halfen or Reid anchors for the required operation.

Operation	Face lifting			Lifting from a vertical face			Operations with rotations		
							 Side Elevation		
Load Range	**1.3, 2.5, 5**	**10, 20**	**32**	**1.3, 2.5, 5**	**10, 20**	**32**	**1.3, 2.5, 5**	**10, 20**	**32**
Locking Klaw	Yes	Yes	NA	Yes	Yes	NA	Yes	Yes	NA
HALFEN, DEHA Clutch	Yes	Yes	Yes	**Under strict supervision!**	**Under strict supervision!**		**Not recommended**		
Reid clutch*	Yes	Unknown*			**Unknown***				

* Prior to 2011, Reid produced 1.3, 2.5 and 5t clutches based on DEHA designs and 10, 20 & 32t clutches were supplied by HALFEN-DEHA. Since 2011, there is no known compatibility between 10, 20 and 32t clutches sold by Reid and HALFEN-DEHA clutches or Ancon Unilift Locking Klaws.

™Note: Reid Swiftlift™ is a registered trade mark of ITW Ramset-Reid.

NA: 32LK not currently available

Frequently Asked Questions

Are Ancon Unilift Locking Klaws compatible with DEHA clutches and anchors?

1. Yes! Both clutches are designed for lifting HALFEN-DEHA and Ancon Unilift anchors.
2. When correctly connected, they are interchangeable when face-lifting.
3. Only the Ancon Unilift Locking Klaw is designed for all operations, face-lifts, vertical-face lifting and element rotations.

Are Ancon Unilift Locking Klaws and DEHA clutches compatible for use with Reid anchors?

- Yes! All these anchors are based on the DEHA specifications (e.g. HALFEN KKT, Ancon Unilift, Swiftlift).

In the past, Reid sold me clutches marked DEHA, are they compatible with Ancon Unilift anchors?

- Yes – refer to the table on page 2.

Are DEHA or Reid Swiftlift™ clutches always interchangeable with Locking Klaws?

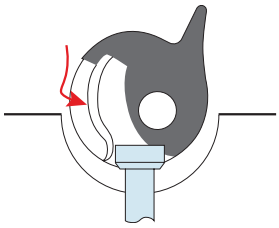
- No! It depends upon the application. The original DEHA system was intended for face lifting.
- The Locking Klaw is designed to overcome this design limitation. It is suitable for all operations.

DEHA-patent clutch limitations: face-lifts only!

1. The clutch should only be connected so that the "tail" points towards the direction of the load.
   If incorrectly connected (tail pointing away from the load), the sphere is free to rotate. This causes the anchor to move away from its design (fully supported) position, increasing the load in the side lips of the clutch which support the anchor and in the anchor head.

Connection

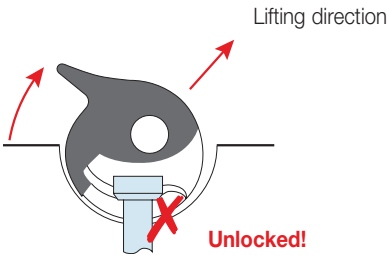
Smooth spherical anchor seat



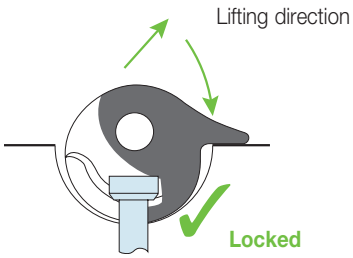
The lips of the slot slide around the anchor to the rear of the slot but nothing prevents movement away.

Original sphere rotates under load

Sphere rotates under load



The lifting load causes the sphere to rotate and the anchor moves towards the mouth of the slot, increasing the load on the lips and disconnection risk.



Supervision is required to ensure that the clutch is correctly connected for safe lifting toward the tail!

2. Clutch rotations during lifting caused by sling angles, side-ways lifting and turning operations may cause non-symmetric overloading of the sides of the clutch sphere.

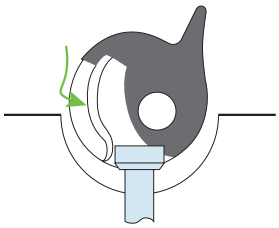
What is unique about the Locking Klaw and why is it suitable for all operations?

The Locking Klaw is backwards-compatible with the DEHA design but has improved geometry and a "locking well" which prevents sphere rotation and resolves the original clutch design limitations.

1. The Locking Klaw may be connected either tail towards or away from the load.
2. The anchor is retained in the optimum design position under all lifting conditions.

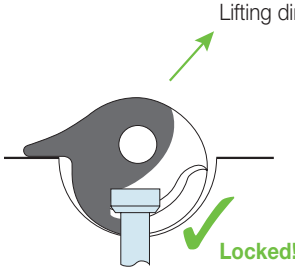
Connection

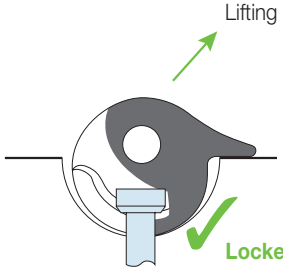
Patented locking well



The lips of the slot slide around the anchor head which drops into the locking well.

LK sphere rotation locked under load





The locking well prevents sphere rotation and permits loading towards or away from the tail. This eliminates the risk for mis-connection, reduces wear and prevents lip distortion.

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General rules for clutch compatibility

- DEHA-style clutches should only be used for face lifting, with the tail towards the load.
- Locking Klaws may be used in all applications to replace DEHA-style clutches.
- If the element is designed to be rotated or lifted from anchors not located in the top face, Locking Klaws are required and must not be replaced with DEHA-style clutches.

Training Guide

Refer to our Lifting Clutch training guide for a more detailed explanation of clutch operations.

Was there a connection between DEHA and Reid in Australia and New Zealand?

During the 1980s, the Reid companies in Australia and New Zealand joined the DEHA licensee network and sold DEHA lifting systems under the brand Reid Swiftlift™.

Reid manufactured foot anchors, recess formers and a restricted range of clutches (1.3t, 2.5t, 5t) in accordance with DEHA drawings and material specifications. Complementary products including 10t, 20t, 32t clutches and anchors were sourced from DEHA or other licensees.

DEHA and HALFEN companies merged and the Reid companies were purchased by ITW-Ramset in 2004. Reid sold HALFEN-DEHA clutches and other products as part of their Reid Swiftlift™ system until 2011.

I have been offered a different brand of lifting clutch by my local rigging supplier which looks similar to the DEHA clutch, is claimed to be compatible and fits the anchor. Is it equivalent and is it interchangeable?

No! DEHA and Ancon Unilift concrete lifting system components are proprietary products. The designs, drawings, material specifications, manufacturing and heat treatment processes are not published.

Copied products, made without knowledge of the genuine designs, may look similar but cannot be guaranteed to be identical to DEHA and Ancon Unilift products and may perform very differently in service.

Components may fit together but this does not imply that they are equivalent to genuine components.

Non-genuine clutches may also be sold separately and by different manufacturers or hardware suppliers, ignorant of the specifications of components they sell or of the overall system requirements.

If a clutch is claimed to comply with a "standard", does this make it compatible and interchangeable with a genuine DEHA or Ancon Unilift clutch?

No. Modern performance-based standards and Codes of Practice e.g. AS 3850.1 and Good Practice Guidelines "SAFE WORK WITH PRECAST CONCRETE" do not specify detailed design information but set minimum requirements for materials and factors of safety for the determination of the Working Load Limit (WLL) from tested characteristic strength.

Mere compliance with the strength and testing requirements of standards is not an assurance of equivalence with a proprietary product and does not guarantee interchangeability, compatibility nor performance equivalence.

Strength is not everything!

- Clutches made with incorrect materials or heat-treatment may meet the strength requirement but be too brittle to resist service loads. This has led to many failures.
- Products may have geometric differences which are not apparent and cannot be determined by inspection without detailed knowledge of the original design. These differences can lead to unpredictable loading and clutch (or anchor) failure in service.

Disclaimer

DEHA and Ancon Unilift components have no known compatibility with any other products than those described in this document and should not be interchanged.

There is no guarantee that products sold by others are designed, manufactured or tested to equivalent specifications or that they provide the same WLL, utility and lifting safety when interchanged with genuine Ancon Unilift and DEHA products sold and manufactured by Leviat.

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