



M-000011 EN REV B

Kest-Lock

Installation and Operation Manual

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Notice

The information in this document is subject to change without notice and should not be construed as a commitment by Kest Technology AB or Kest Technology Inc. Kest Technology AB or Kest Technology Inc. assumes no responsibility for any errors that may appear in this document. This manual is believed to be complete and accurate at the time of publication. In no event shall Kest Technology AB or Kest Technology Inc. be liable for incidental or consequential damages in connection with or arising from the use of this manual.

LEGEND



WARNING, TO NEGLECT THIS WARNING CAN RESULT IN PERSONAL AND OR EQUIPMENT DAMAGE.



READ THIS PART CLOSELY OBSERVE THAT MORE DOCUMENTS CAN BE AVAILABLE.

INTRODUCTION

Thank you for selecting Kest-Lock Couplings. By reading this manual you will ensure that your Kest-Lock product get properly installed, this will ensure the product functionality.

For the installation of the Kest-Lock flange, read our separate welding instruction. Always use Kest-Lock welding tool during welding operation of all KLTF flanges, to avoid warpage.

This guide provides general installation guidelines and assumes that the Kest-Lock flange is correctly welded according to our welding guideline. For specific applications, contact your local Kest representative or Kest Technology AB. You will find the contact information at www.kest.se

The appropriate pressure vessel code or manufacturing specification shall always be followed and supersedes any recommendation in this guide.

The instructions in this manual are recommendations and focused on the component, the Kest-Lock. Any local legislation or internal procedure etc. shall override the recommendations in this manual. If the local legislation or internal procedure etc. contradicts with the instructions in this manual concerning personal safety or preventing equipment damage, please contact Kest Technology AB or our local representative for consultation.

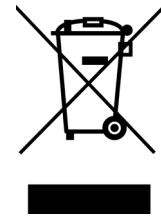
DISPOSAL OF OLD EQUIPMENT

This symbol indicates that this equipment should not be disposed of with general household waste. The equipment shall be handed over to the applicable collection point for recycling, so that the material can be disposed of in a responsible manner, in accordance with your national legislation.

Dispose the packaging material at applicable collection point for recycling.

By disposing of this product correctly, you will help to conserve natural resources and will help prevent potential negative effects on the environment and human health.

SAVE THE PLANET!

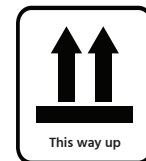


HANDLING/UNPACKING

Handling - The Kest-Lock is delivered in different sizes, depending on size and amount you might need an appropriate lifting device to move or lift the Kest-Lock packaging. Handle all parts with care, if dropped or exposed to physical stress the surface can get scratched. Keep the Kest-Lock dry.

Transportation/Storage - The symbols on the packaging gives instructions for transportation and storage conditions.

Unpacking - Check that the package contains all ordered parts and documentation. It is recommended that you keep the protective plastic bag on the Kest-Lock until installation. Handle all parts with care. Dispose the packaging material at applicable collection point for recycling.



SAFETY TO AVOID PERSONAL INJURY

- The appropriate pressure vessel code or manufacturing specifications shall always be followed and supercedes any recommendation in this guide.
- Read this document closely including further documentation referenced in the text before taking the product in operation.
- Secure that the Kest-Lock flange is free from any warpage from the welding procedure.
- Make sure the system is empty before opening the KEST-LOCK.
- Make sure the system is not pressurized before opening the KEST-LOCK
- Make sure the system is not heated before opening the KEST-LOCK
- Make sure the TC device is positioned correctly in the Kest-Lock flange so that the split rings can lock the device.
- Make sure to tighten the Kest-lock before putting the system in operation.

PRECAUTIONS TO AVOID PRODUCT DAMAGE

- Make sure to closely follow the welding guideline when installing the Kest-Lock flanges.
- Secure that the Kest-Lock flange is free from any warpage from the welding procedure.
- Secure that you have the appropriate gasket installed.
- Make sure to tighten the Kest-lock before putting the system in operation.



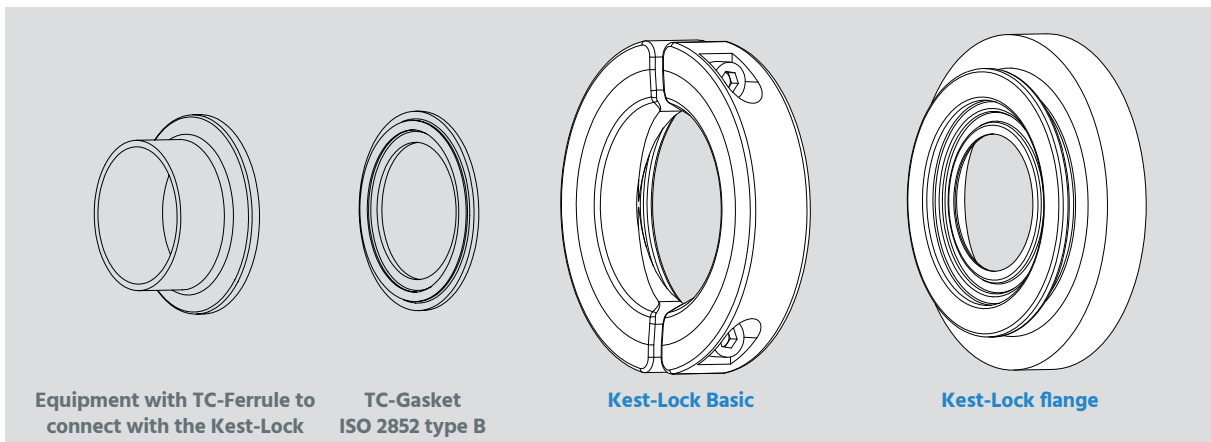
READ THIS PART CLOSELY OBSERVE THAT MORE DOCUMENTS CAN BE AVAILABLE.

KEST-LOCK, GENERAL INFORMATION

The Kest-Lock product range is a new innovative patented coupling that enables quick dismantling and assembling of tri-clamp connections also called TC-connections. The Kest lock consists of a flange and a pair of locking rings. The Kest-Lock flange can hold any device with a standard TC-connection of the same size. Kest-Lock flanges are available in several different types depending on application. Kest-Lock are available in two different models, Kest-Lock Snap and Kest-Lock Basic. Both options use the same flange.

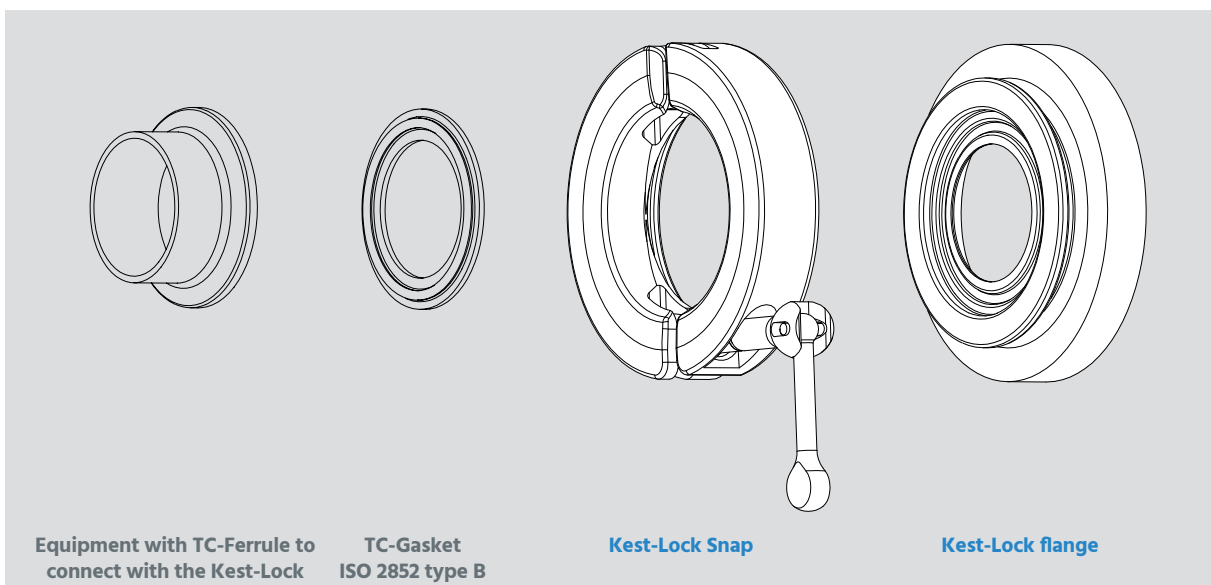
Kest-Lock Basic

This model has two bolts that tighten the locking rings and compress the TC-connection to the gasket.

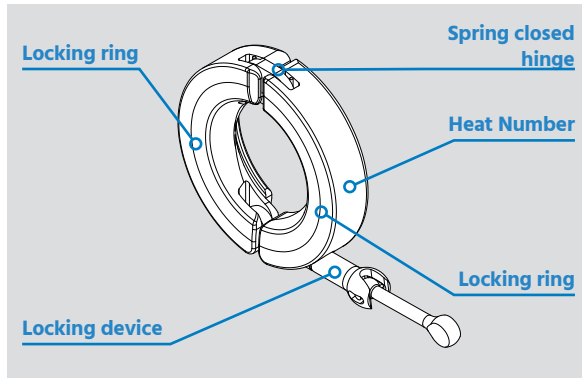


Kest-Lock Snap

The locking rings on the Kest-Lock snap model is spring closed to help the operator to hold the TC-connection in place while tightening the Kest-Lock. The Kest-Lock snap can be tightened by hand or with a torque wrench depending on the locking device you have selected.

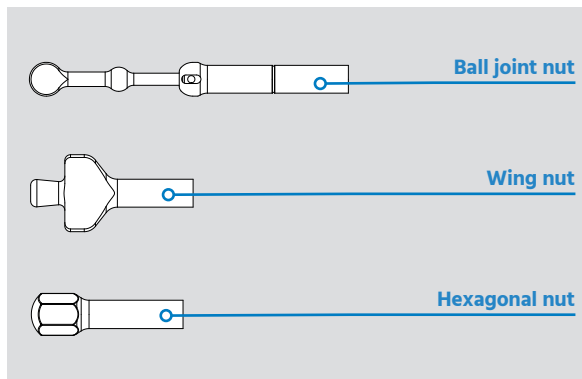


KEST-LOCK - PART DESCRIPTION



Kest-Lock Snap

The Kest-Lock Snap ring has a spring closed hinge that helps the operator to hold the TC-Connection in place while tightening the locking device. When tightening the locking device, the locking rings presses on the TC-Connection which makes it compress the gasket. Each Locking ring is marked with a Heat Number that corresponds to a material certificate.



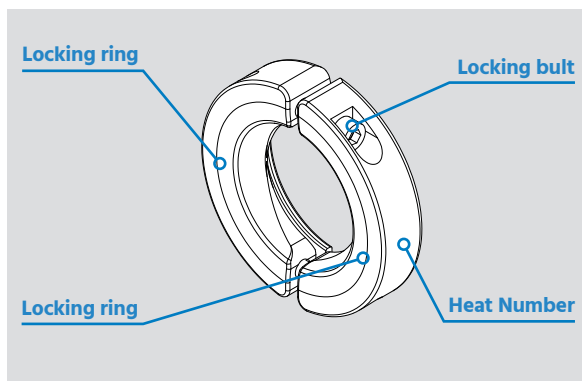
Locking devices

The Kest-Lock Snap range has 3 different locking devices.

The Ball joint nut has a tilt swivel that enables the handle to be angled so that you get more power.

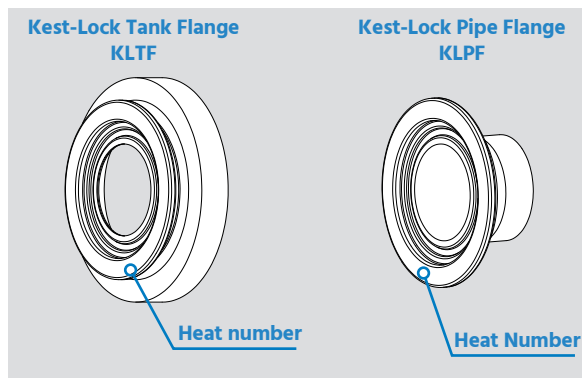
The Wing nut is for application with limited space around the tightening device.

Choose the Hexagonal nut if you going to use a torque wrench to tighten the Kest-Lock. This version is also good if you like to prevent that the Kest-Lock is opened unintentionally by hand.



Kest-Lock Basic

When tightening the locking bolts the locking rings presses on the TC-Connection which makes it compress the gasket. Each Locking ring is marked with a Heat Number that corresponds to a material certificate.

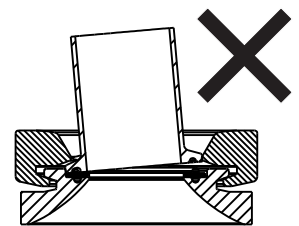
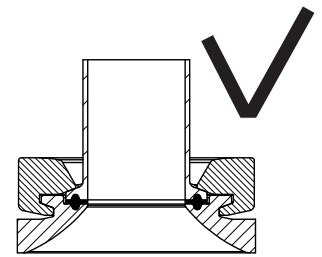


Kest-Lock flanges

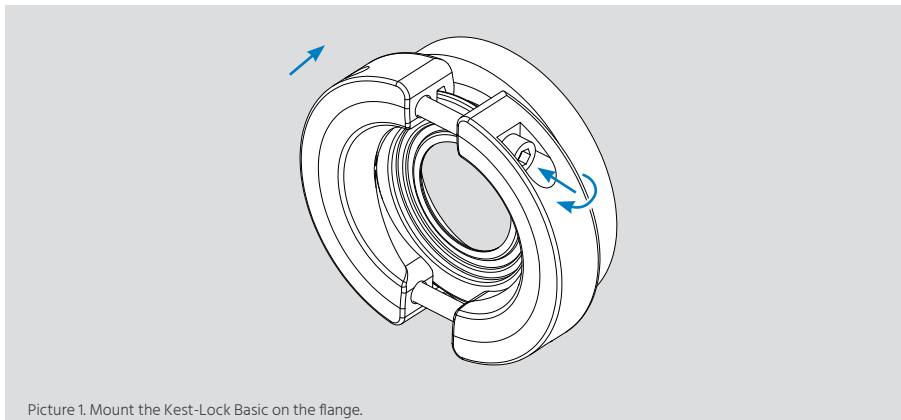
The Kest-Lock range has several flanges for different applications. The two most common is the Kest-Lock Tank Flange (KLTF) and the Kest-Lock Pipe Flange (KLPF). The flange is the part that is welded into a vessel or on a pipe. The flange holds the Kest-Lock split rings. The flanges are compatible with both Kest-Lock Snap and Kest-Lock Basic, this makes it easy if you like to change between Snap and Basic.

INSTALLATION KEST-LOCK BASIC

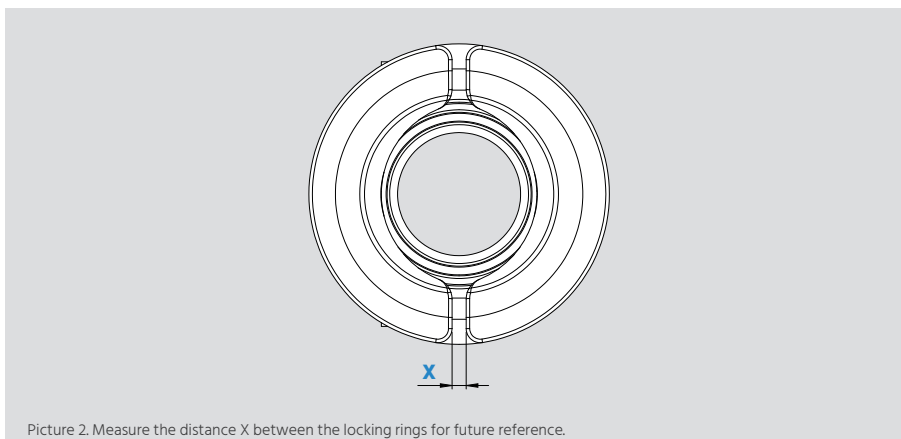
- 1 Mount the two locking rings on the flange and attach the bolts, turn the bolts 5-7 turns to make sure that they stay in the threads and keep the locking rings from falling apart, see picture 1.
- 2 Mount the gasket in the flange and push the TC-connection tight to the gasket. Secure that the gasket is aligned with the groove in the flange and the TC-connection, see picture 3.
- 3 Push the locking rings together by hand and tighten the bolts with an Allen key. Make sur that the TC-Connection stays aligned and that the locking rings slides on top of the TC-Connection, see picture 3.
- 4 The exact torque or distance that you shall tighten the Kest-Lock needs to be validated for each combination of gasket and TC-Connection. When you have tightened the connection and secured that it does not leak, you measure the distance between the locking rings, see picture 2.



Picture 3. Secure that the gasket is aligned in the groove of the flange and TC-Connection. The TC-Connection shall be aligned and locked by the locking rings.



Picture 1. Mount the Kest-Lock Basic on the flange.



Picture 2. Measure the distance X between the locking rings for future reference.



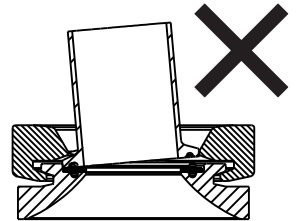
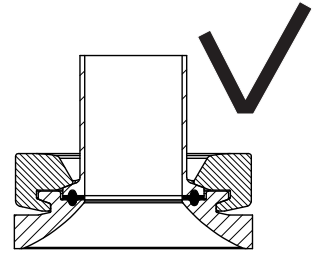
MAKE SURE YOU HAVE TIGHTEN THE KEST-LOCK CORRECTLY BEFORE TAKING THE SYSTEM IN OPERATION.



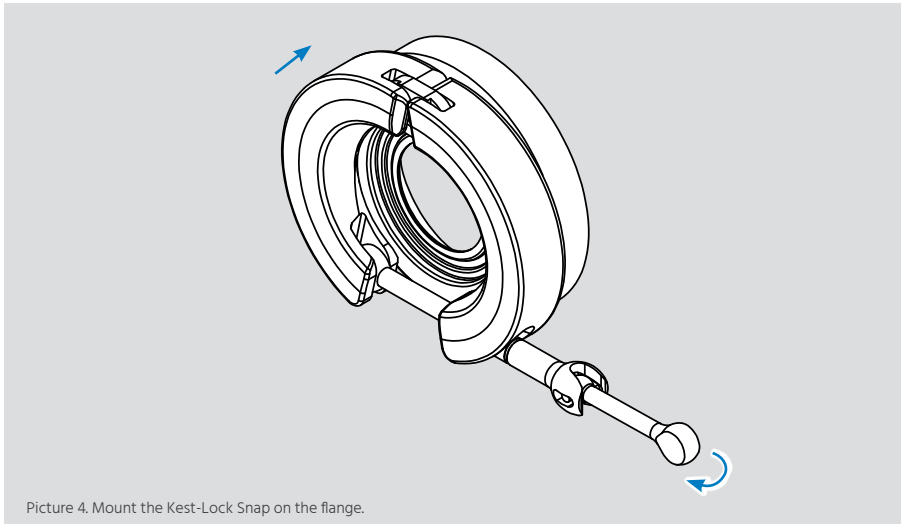
HOW HARD YOU SHALL TIGHTEN THE KEST-LOCK DEPENDS ON THE GASKET MATERIAL AND THE TOLERANCES OF THE TC-CONNECTION , THIS MUST BE VALIDATED FOR EACH COMBINATION.

INSTALLATION KEST-LOCK SNAP

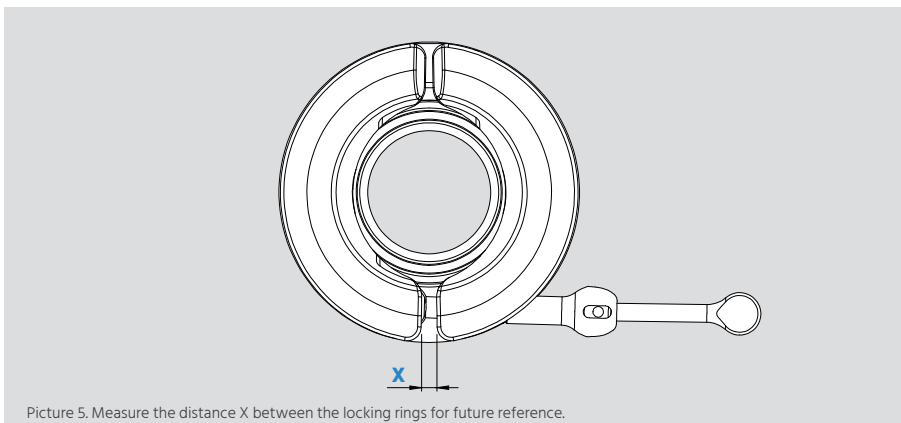
- 1 Untighten the locking device until you get the locking rings as far apart as you can mount them on the flange, see picture 4. Release the locking ring and they will clamp around the flange.
- 2 Mount the gasket in the flange and push the TC-connection through the Snap ring, tight to the gasket. When pushing the TC-Connection trough the snap ring you will feel that it snaps around the TC-connection and helps to hold it in place. Secure that the gasket is aligned with the grove in the flange and the TC-connection, see picture 6.
- 3 Tighten the locking device by hand or with a wrench depending on what locking device you have chosen. Make sur that the TC-Connection stays aligned and that the locking rings slides on top of the TC-Connection, see picture 6.
- 4 The exact torque or distance that you shall tighten the Kest-Lock needs to be validated for each combination of gasket and TC-Connection. When you have tightened the connection and secured that it does not leak, you meas-ure the distance between the locking rings, see picture 5.



Picture 6. Secure that the gasket is aligned in the groove of the flange and TC-Connection. The TC-Connection shall be aligned and locked by the locking rings.



Picture 4. Mount the Kest-Lock Snap on the flange.



Picture 5. Measure the distance X between the locking rings for future reference.



MAKE SURE YOU HAVE TIGHTEN THE KEST-LOCK CORRECTLY BEFORE TAKING THE SYSTEM IN OPERATION.



HOW HARD YOU SHALL TIGHTEN THE KEST-LOCK DEPENDS ON THE GASKET MATERIAL AND THE TOLERANCES OF THE TC-CONNECTION , THIS MUST BE VALIDATED FOR EACH COMBINATION.

OPERATION KEST-LOCK BASIC



DO NOT OPEN THE KEST-LOCK UNLESS YOU KNOW IT IS TOTALLY SAFE. THE SYSTEM SHALL BE EMPTY, COOL AND NON-PRESSURIZED.

- 1** Dismantle the TC-Connection by untighten the bolts holding the locking rings together. Unscrew the bolts enough to get the TC-Connection out. The Kest-Lock Basic can remain on the flange, see picture 1.
- 2** Assemble the connection by securing that the gasket is mounted correctly in the flange. Push the TC-connection tight to the gasket in the flange. Secure that the gasket is aligned with the groove in the flange and the TC-connection, see picture 3.
- 3** Push the locking rings together by hand and tighten the bolts with an Allen key. Make sur that the TC-Connection stays aligned and that the locking rings slides on top of the TC-Connection, see picture 3.
- 4** To validate that your connections is aligned and safely tightened, measure the distance X (see picture 2) and compare with the validated distance during installation. If the measure X deviates a lot you shall reinstall the Kest-Lock and secure that the gasket and TC-connection is mounted properly.



MAKE SURE YOU HAVE TIGHTEN THE KEST-LOCK CORRECTLY BEFORE TAKING THE SYSTEM IN OPERATION.

OPERATION KEST-LOCK SNAP



DO NOT OPEN THE KEST-LOCK UNLESS YOU KNOW IT IS TOTALLY SAFE. THE SYSTEM SHALL BE EMPTY, COOL AND NON-PRESSURIZED.

- 1** Unscrew the locking device enough to get the TC-Connection out of the locking rings, see picture 4. Pull out the TC-Connection, the Kest-Lock Snap remains on the flange.
- 2** Mount the gasket in the flange and push the TC-connection through the Snap ring, tight to the gasket. When pushing the TC-Connection through the snap ring you will feel that it snaps around the TC-connection and helps to hold it in place. Secure that the gasket is aligned with the groove in the flange and the TC-connection, see picture 6.
- 3** Tighten the locking device by hand or with a wrench depending on what locking device you have chosen. Make sure that the TC-Connection stays aligned and that the locking rings slide on top of the TC-Connection, see picture 6.
- 4** To validate that your connections are aligned and safely tightened, measure the distance X (see picture 5) and compare with the validated distance during installation. If the measure X deviates a lot, you shall reinstall the Kest-Lock and secure that the gasket and TC-connection is mounted properly.



MAKE SURE YOU HAVE TIGHTENED THE KEST-LOCK CORRECTLY BEFORE TAKING THE SYSTEM IN OPERATION.

APPENDIX A - INSTALLATION CHECKLIST

This checklist is to avoid errors during installation. Note that the whole manual shall be read and understood. Use this list as a guideline for the installation.

Kest-Lock Flange

NO.	DESCRIPTION	COMPLETE	COMMENT
1	Is the flange welded in correctly?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Is the flange clean, dry and free from damage?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Kest-Lock Basic

NO.	DESCRIPTION	COMPLETE	COMMENT
1	Is it the correct size for this flange?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Is the Kest-Lock Basic clean, dry and free from damage?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	Are the threads clean, dry and free from damage?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	Does the Kest-Lock Basic smoothly slide on the flange?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	Did you tighten the Kest-Lock Basic?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	Did you measure and note distance X between the split rings?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Kest-Lock Snap

NO.	DESCRIPTION	COMPLETE	COMMENT
1	Is it the correct size for this flange?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Is the Kest-Lock Snap clean, dry and free from damage?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	Are the threads clean, dry and free from damage?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	Does the Kest-Lock Snap smoothly slide on the flange?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	The Kest-Lock locking rings spring properly?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	Did you tighten the Kest-Lock Snap?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	Did you measure and note distance X between the split rings?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Gasket

NO.	DESCRIPTION	COMPLETE	COMMENT
1	Is it the correct size for this flange?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Is the gasket clean and undamaged?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	The gasket aligns with the groove in the flange and TC-connection?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

TC-Connection

NO.	DESCRIPTION	COMPLETE	COMMENT
1	Is it the correct size for this flange?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Is it clean, dry and free from damage?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Inspected By

NAME	SIGNATURE	DATE
------	-----------	------

Certificate

UTFÄRDAT TILL
ISSUED TO



KEST Technology AB

Kungälv, Sweden

Svensk Certifiering Norden AB intygar härmed att ledningssystemet har granskats och uppfyller kraven i:

Svensk Certifiering Norden AB certifies that the management system has been reviewed and complies with:

ISO 9001:2015

Certifieringens omfattning och villkor framgår av certifieringsbeslutet.

Details of scope and the range of the certificate are defined in the certification decision.

Ledningssystemet omfattar:

The management system covers:

Utvecklar och marknadsför processkomponenter för aseptiska processsystem.

Develops and markets process components for aseptic process systems.

Michael Persaud, CEO

SVENSK CERTIFIERING NORDEN AB

Certifikat nummer: 9001-0792
Certificate number:
Ursprungsdatum: 7 Aug 2019
Date of origin:
Utfärdandedatum: 7 Aug 2019
Issue date:
Giltighet till: 3 Jul 2022
Expiry date:



Certificate

UTFÄRDAT TILL
ISSUED TO



KEST Technology AB

Kungälv, Sweden

Svensk Certifiering Norden AB intygar härmed att ledningssystemet har granskats och uppfyller kraven i:

Svensk Certifiering Norden AB certifies that the management system has been reviewed and complies with:

ISO 14001:2015

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Michael Persaud, CEO

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