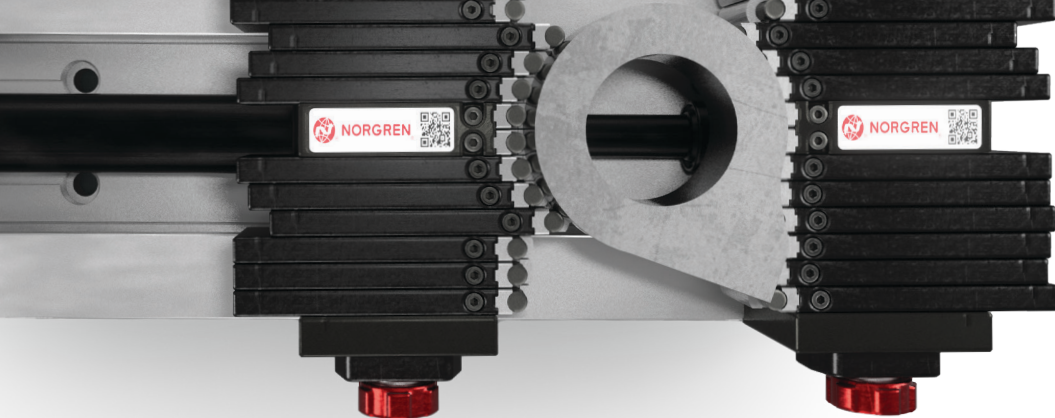


# **ADAPTIX™** **ASJ-SC-160** **Installation,** **Operations &** **Maintenance Guide**

Compatible with Schunk KSC-F 160 Vise



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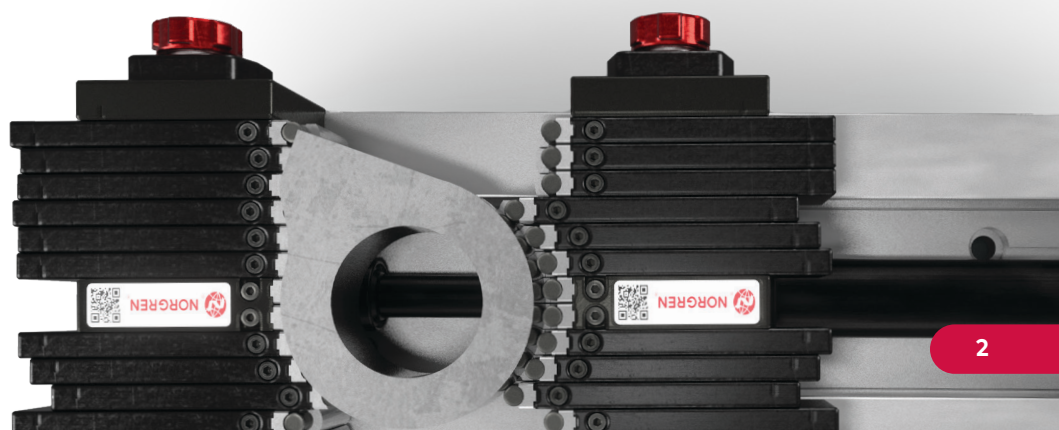


## ADAPTIX™ Installation, Operations & Maintenance Guide

### ASJ-SC-160

#### Things to Know Before You Get Started

1. The ADAPTIX™ ideally performs as a stationary work-holding device in a variety of operations utilizing a single station, fixed-jaw vise.
2. The manufacturer accepts no liability for any damage arising from misuse.
3. Avoiding misuse is necessary for safety, satisfactory performance, and product life.
4. Examples of misuse can include, but are not limited to:
  - Clamping workpieces that extend largely beyond the width of the jaws
  - Clamping tall workpieces with insufficient contact depth or without additional fixturing
  - Clamping thin workpieces that are insufficiently supported or without additional fixturing
  - Clamping workpieces without locking the fingers to the minimum specified torque
  - Supporting workpieces via the fingertip steps without performing the initial dressing procedure
5. To assure safety, satisfactory performance, and product life, only use original parts or parts approved by the manufacturer.
6. Always use the supplied torque screwdriver when changing and replacing fingertips and studs. Damage may occur if the fingertips and studs are not sufficiently tightened.
7. Installation, operation, monitoring and maintenance must be carried out by personnel with relevant machining qualifications.
8. Personal protective equipment must be worn when operating the device.





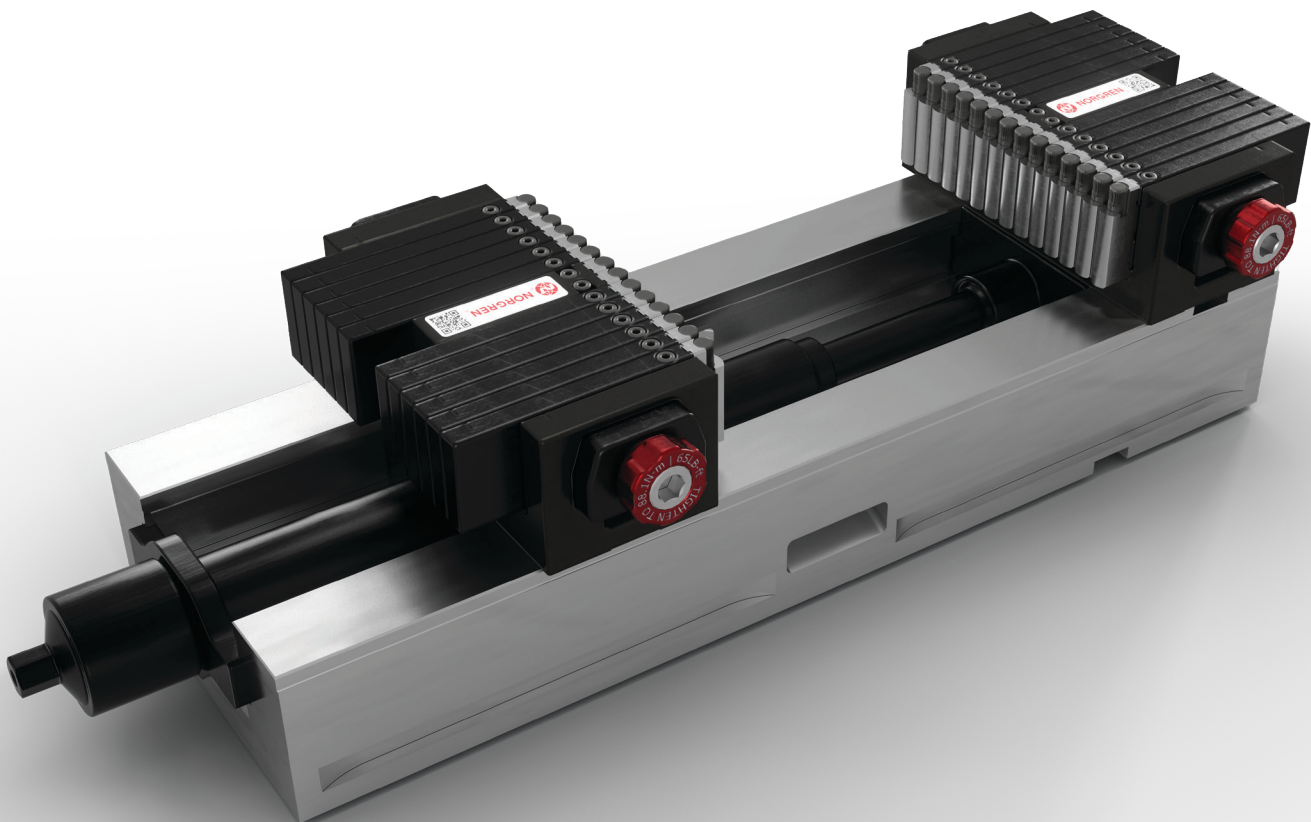
## Description

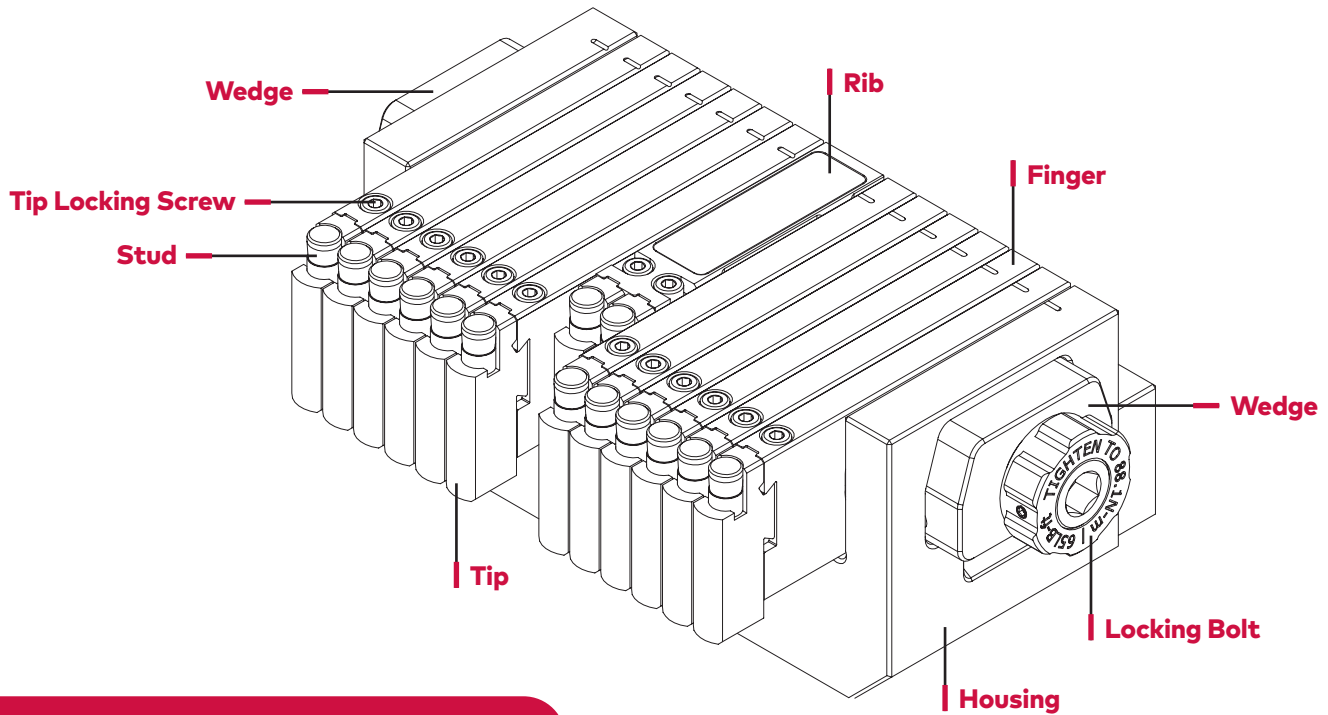
The ADAPTIX™ uses two sets of adjustable fingers within a specially designed housing that can be clamped to hold a shape. Interchangeable studs make contact with the workpieces while the modular tips act as a shelf to properly fixture workpieces in the vertical Z-axis.

The ADAPTIX™ system replaces equivalent size soft jaws for common machining operations by mounting directly to your existing vise base.

The ADAPTIX™ fingers can be freely adjusted to any linear, clamping-axis position within 25mm (0.98") from the fully retracted state. Once the fingers are set in their desired position, they are then locked to properly maintain the profile. The ADAPTIX™ effectively holds parts by forming around the profile of the parts.

The ADAPTIX™ fingers can function like parallels via the integrated steps. The steps support the workpiece from the bottom while the studs contact the workpiece along its profile. The studs transfer the force generated from the vise into the workpiece via the working surface.





## ADAPTIX™ Terminology

<b>Housing</b>	Frame of the ADAPTIX™ system, named for its function of housing the fingers.
<b>Finger</b>	Load Bearing body of the clamping mechanism of the ADAPTIX™.
<b>Fingerpack</b>	One set of six fingers. Each ADAPTIX™ jaw contains two fingerpacks, differentiated by Left and Right.
<b>Tip</b>	Workpiece interface, fastened to the fingers and rib, interchangeable based on user needs and considerations.
<b>Rib</b>	Stationary centerpiece of the housing, provides rigidity and additional positional support for the system.
<b>Side Plate</b>	Stationary ends of the housing that locate the fingers and facilitate the use of the locking system.
<b>Locking Bolt</b>	High-Grade Alloy Steel bolt used to clamp down the locking system.
<b>Locking System</b>	Transmits clamping force between the locking screw and the clamping mechanism of the ADAPTIX™
<b>Clamping</b>	Torquing down the vise jaws to constrain a workpiece.
<b>Locking</b>	Torquing the locking bolt down to specified parameters to set the position of the ADAPTIX™ fingers for clamping.
<b>Drift</b>	Unintended displacement of the finger(s) from their originally intended position.
<b>Rib Contact</b>	Workpiece is being held by both ribs.

## General Installation

### Preparing the Schunk KSC-F 160

1. Remove the fixed and floating jaws by loosening the top mount screw with a 14mm hex drive wrench.
2. Verify the fixed jaw dowel pin is not in the carriage of the vise. Remove it if it is.

### Installing the Housing Shims

1. Place the fixed and free ADAPTIX™ jaws on the vise body, without installing screws.
2. With a feeler gage, measure the gap between the fixed housing and the vise carriage. Record this value. **IMPORTANT:** If there is gap < 0.001" (25µm), shims will not be necessary.
3. Remove the ADAPTIX™ fixed jaw from the vise and set aside.
4. Based on the recorded gap value, select and stack the supplied shims to equal the size of the gap. Set shims aside for the fixed jaw install.

### Installing the ADAPTIX Jaws

1. Follow the field stripping procedure (see instructions under FIELD STRIPPING PROCESS), to disassemble the ADAPTIX and expose the mounting holes of the ADAPTIX™ housings.
2. Insert the supplied dowel pin into the bottom of the ADAPTIX™ fixed housing.
3. Nestle the shim(s), that were previously set aside, into the fixed jaw base, locating the dowel pin with the recession feature in the shim profile.
4. Place the fixed jaws and shims on the vise. Install the ADAPTIX™ free housing on the vise. **IMPORTANT:** Be careful not to shift the shims when installing the housings.
5. Install the supplied (4) M16 SHCS. Torque to 100 lbf-ft. (136 N-m)
6. Complete the field stripping procedure to re-assemble the ADAPTIX™ jaws.

### Reversing Lock Position

The ADAPTIX™ locking bolt head can be reversed to make access easier in certain setups or machines.

1. Remove the locking bolt with a 10mm hex drive wrench or by hand via the knob.
2. Remove the driving wedges and reverse their positions.
3. Reinstall the locking bolt.

### Installing Fingertips

1. Using the supplied 3mm hex drive torque screwdriver, loosen the finger clamp screw until the clamp is below the bottom surface of the finger clamp pocket.
2. Orient the fingertip so the stud mating hole is upwards.
3. Install the fingertip dovetail into the mating feature of the finger or housing. The tip should lay flat against the mating surface and the key should be engaged fully.
4. Tighten the finger clamp with the 3mm hex drive torque screwdriver until the screwdriver makes an audible "click".

## General Installation Cont.

### Dressing Fingertips

Before work can be performed with the ADAPTIX™ jaws, the fingertip steps must first be first dressed on a milling machine with a cutting tool to assure the workpiece will lay flat across both jaws.

1. Install the fingertips on both jaws without studs
2. Install the vise into a vertical milling machine or other precision machining center of your choice.
3. Place a piece of stock or a ¼" parallel between the jaws, resting flat on the vise ways.
4. Clamp the vise down against the piece of stock or parallel laid flat.  
**IMPORTANT:** The piece should be in contact with the housings only and not the fingertips
5. Using a felt tip marker or some other marking method, create a witness mark across the steps of the fingertips.
6. Perform a 0.13mm (0.005") deep skim cut with a cutting tool (12mm (0.5") recommended) across both sets of fingertips.  
**IMPORTANT:** Do not adjust the z-depth between cutting the fixed and free fingertip sets
7. Inspect the steps and assure no witness marks remain. If any remain, perform an additional 0.13mm (0.005") deep skim cut.

### Fingertip Installation Order

After the fingertips are dressed, it is important that they remain matched to both the finger they are fixed to as well as the jaw they are on. If the tips are removed, they can be placed back onto the same finger and their calibration will be maintained. If the finger and fingertips are removed as an assembly, they can be placed in any position on the same jaw and their calibration will be maintained.

### Re-Dressing

The fingertips can be re-dressed as many times as the fingertip step relief can accept. With each skimming, the fingertip step height will increase.

Fingertip re-dressing will be necessary under the following conditions:

- A fingertip is replaced in a set that has been previously dressed.
- Dressed fingertips are scrambled from their original order.
- Dressed fingertips and finger assemblies are placed on different jaws.

### Installing Studs

1. Orient the stud so that the threaded hole is facing down, and the working surface is pointing in the desired direction.
2. Insert the stud into the mating hole on the fingertip.
3. The stud should be flush or below the top surface of the fingertip. If it isn't, rotate the stud slightly and it will drop in place.
4. Install the supplied M4 SHCS into the bottom of the fingertip
5. Tighten the stud screw with the 3mm hex drive torque screwdriver until the screwdriver makes an audible "click".

## General Installation Cont.

### Configuring Jaws

For certain operations, it might be desirable to utilize the ADAPTIX™ jaw as a standard square jaw to grip square workpieces. Push the fingers completely backward until the fingertips stop on the housing face and lock them into place. This will create a square surface that can be used like a traditional softjaw.

### Adjusting Drag Force

Tightening and loosening the locking bolt via the thumb knob will increase and decrease the drag on the fingers in each jaw.

### Locking Fingers

1. Hand-tighten the locking bolt via the thumb knob to fix the fingers in place.
2. With a 10mm hex drive bit and a torque wrench, tighten the bolt to the specified minimum torque. **IMPORTANT:** Always use a torque wrench to assure the locking bolt is at the minimum torque. Do not clamp the vise without assuring the locking bolt is at minimum torque.

**IMPORTANT:** Make sure the part is removed from vise before torquing.

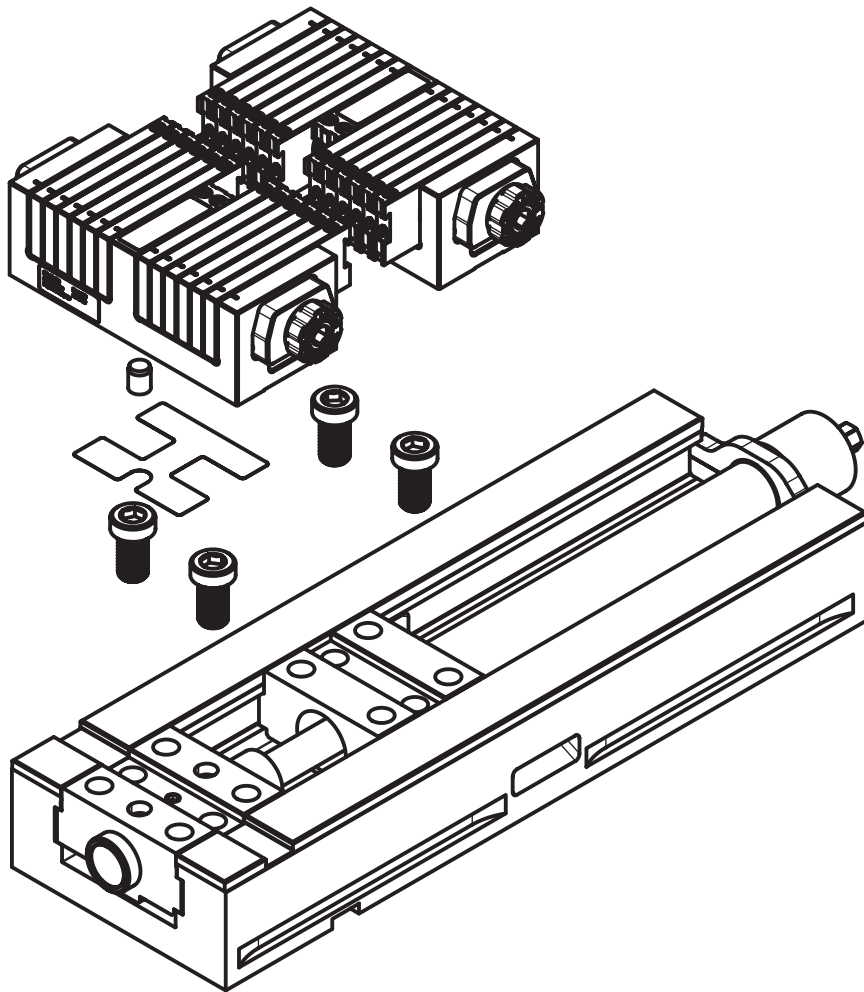
## Field Stripping Process

1. Ensure the use of proper PPE.
2. Ensure the jaw(s) are not under clamping tension, and the locking bolt is loose/not under tension. Note which side the bolt head knob is installed on.
3. Unthread the bolt head knob completely, the driving wedges will be able to be removed from the housing. Set the bolt and driving wedges aside.
4. From either side of the jaw, push the locking tube out from the center of the jaw.
5. Remove the locking tube and the driven wedges from both sides of the jaw. Set the parts aside.
6. Making sure to maintain the order of the fingers, lift the fingers out from the saddle of the jaw, by one fingerpack at a time. Keep the left fingerpack and right fingerpack separate to avoid mixing.
7. For the jaw to be removed, the mounting mechanism must be deactivated:
  - a. Loosen the (2) M16x2.0 LHCS in the housing saddle.
  - b. Completely remove the screws from the housing and set them aside.
8. Lift the housing out from the jaw mount position on the vise.
9. The ASJ system is considered completely stripped and removed from the vise.

## Cleaning & Lubrication

**NOTE:** The ADAPTIX™ system must be field stripped prior to cleaning and lubrication.

- Using a low-pressure air source (30 PSI or lower) blow off, then wipe dry all parts.
- During reassembly, apply low-friction extreme pressure grease to locking bolt threads, locking bolt washer/underhead of bolt.





## Part Quality & Finish

We understand that our customers all over the world have a variety of part quality requirements and these requirements must be maintained to meet production targets. To best accommodate to this range of needs and provide proper part engagement, the ADAPTIX™ System leverages multiple styles of studs.



### Round Studs

The ADAPTIX™ Round Studs are the standard for our solution, consisting of a higher hold taper profile. With our hardened A2 Tool Steel material and indexable hex-shaped bottom design, you can enjoy greater capability and extended tool life.



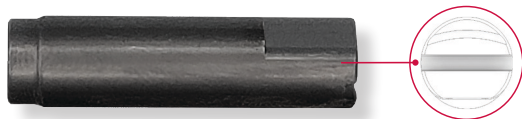
### Serrated Studs

The ADAPTIX™ Serrated Studs are crafted from hardened A2 Tool Steel and specially designed for high hold requirements. Also, due to the serration heights, our Serrated Studs can grip at any of the step heights on your unit. This can be great for Castings, Flame Cut parts, Rough Saw Parts, and even Teflon.



### Free Rotating Studs

The ADAPTIX™ Free Rotating Studs are a top option for any shop in need of a versatile workholding solution. With this stud's unique D-shape profile, it has the ability to rotate about its primary axis, allowing it to normalize to any surface upon part contact. This specific style allows more surface area contact with the part, making it less likely to mark the workpiece.



### Concave Studs

The ADAPTIX™ Concave Studs are a top option for any shop in need of a versatile workholding solution for round parts. When used correctly with round curvature surfaces, there is virtually zero surface marring visible.



For more info on our studs or other ADAPTIX™ accessories, visit us at [www.norgrenworkholding.com](http://www.norgrenworkholding.com)

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