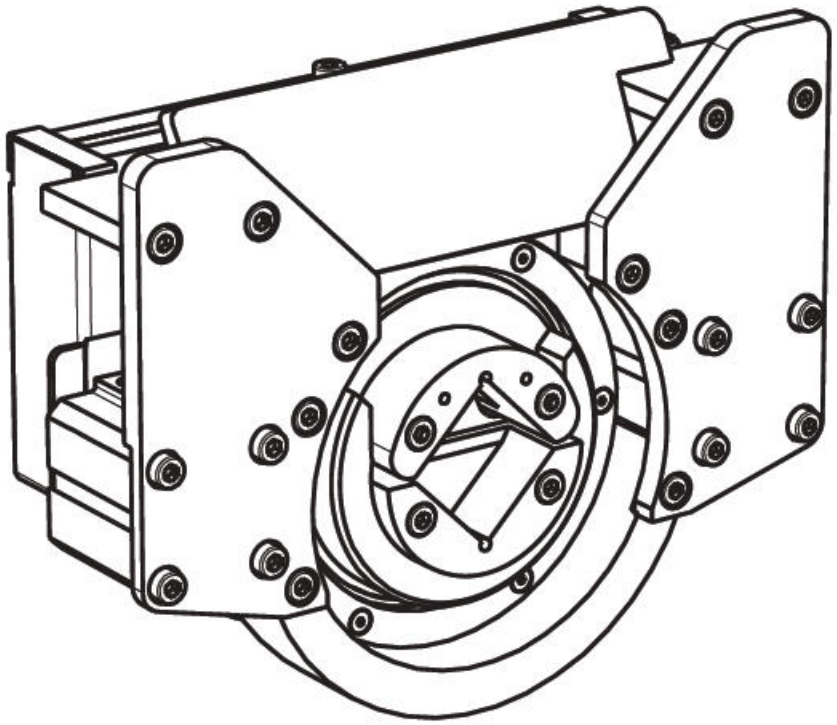
Boschert Safety Chuck
A Series

Installation, Operation and Maintenance



A40
A50
A80

TABLE OF CONTENTS

CAUTION

Chucks present a pinch hazard.
Use care when loading shafts into the chucks.
Keep loose clothing away from chuck.
All chuck wiring shall be performed only by qualified electrical personnel.
Follow your company's lock-out procedure before performing maintenance on the chuck.
The chuck does not emit radiation, gas, exhaust or dust.

The Boschert Safety Chuck is designed to operate at optimal levels when all fasteners are installed and tightened to recommended torque values. Before operation, check for damaged or missing fasteners. If any fasteners are damaged or missing, please contact Tidland Customer Service.

TIDLAND CUSTOMER SERVICE

1-800-426-1000 **www.tidland.com**

Visit the Tidland Repair and Return Center online to review our return policies or to submit an electronic Return Material Authorization Request.
www.tidland.com/returns

RECOMMENDED TOOLS

- Hex drive wrenches: 2.5, 3 and 4 mm
- Laser alignment tool (Contact Tidland Customer Service for information: 1-800-426-1000)

SPECIFICATIONS

Chuck size	Max. Square Size		Max. Beam Weight		Max. Torque		Interchangeable with this style chuck
	inches	mm	lbs.	kg	ft·lbs	Nm	
A40	1.5748	40	3527	1600	258	350	30-40 C or VT
A50	1.5748-1.9685	40-50	6172	2800	811	1100	40-50 C or VT
A80	1.9685-3.1496	50-80	15432	7000	1733	2350	50-80 C or VT

Operating Temperature

32° to194° F
0° to 90°C

Electrical

Tidland offers switch and sensor kit options for the A Series chuck. The manual switch kit is operator driven at the chuck. The sensors indicate open/closed/running positions. Sensor kits require +24 VDC. See page 4.

Air Pressure Requirements

Clean, dry air; 73-87 psi (5-6 bar)
When using optional switch or sensor kits, air hose routing and installation for proper operation are the customer's responsibility. Instructions and schematics are provided with each kit.

Mounting

Machine frame must be sturdy enough to maintain a true horizontal centerline for rotation. Deflection of the mounting frame or the shaft under load can substantially reduce the usable life of this product. Mount chucks to a frame sufficient to carry the required load during operation.

Operating Environment

Do not operate chucks in an abrasive dust environment (corundum) or in acid air/steam.

SAFETY CHUCK OPTIONS

The A Series Boschert Safety Chuck is a pneumatic safety chuck designed for unwind and rewind applications. See page 3 for product specifications and maximum loads.

Tidland offers a manual switch kit to open and close the chucks, and electronic sensor kits that indicate open, closed and rotational positions to help prevent operation when the chuck is not ready. The automatic sensor kit can also be integrated with your machine controls for automatic operation.

A Series Chuck Configurations		
Size	**Mount**	**Tidland Part No.**
A40	STO	697836
	STW	697838
	FLO	697835
	FLW	697837
A50	STO	697840
	STW	697842
	FLO	697839
	FLW	697841
A80	STO	697844
	STW	697846
	FLO	697843
	FLW	697845

Chuck size (A40, A50, A80) is designated on the chuck body.

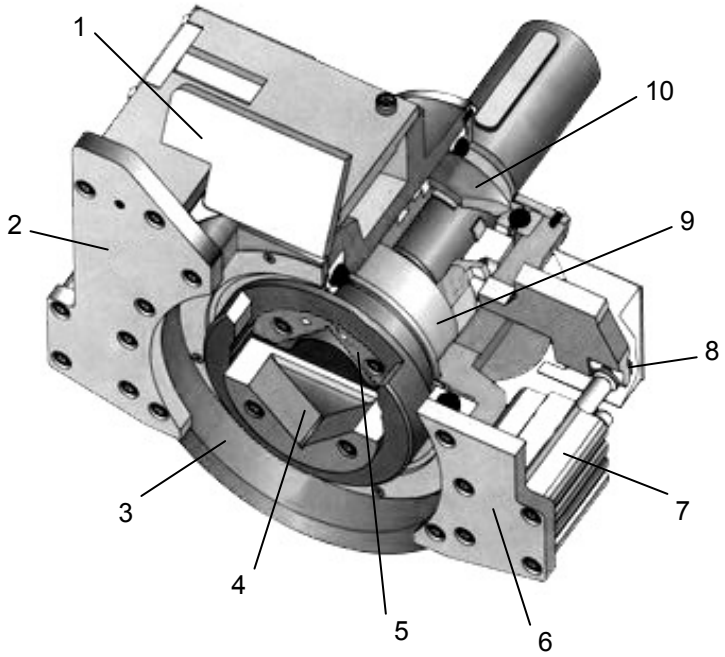
STO = Foot mount without shaft end
STW = Foot mount with shaft end
FLO = Flange mount without shaft end
FLW = Flange mount with shaft end

Kits available for use with the A Series chuck	Tidland Part No.
Manual switch kit; no sensors	711595
Manual switch with sensor kit	706650
Automatic switch operation kit with sensor kit	706649

(Sensors require +24 VDC)

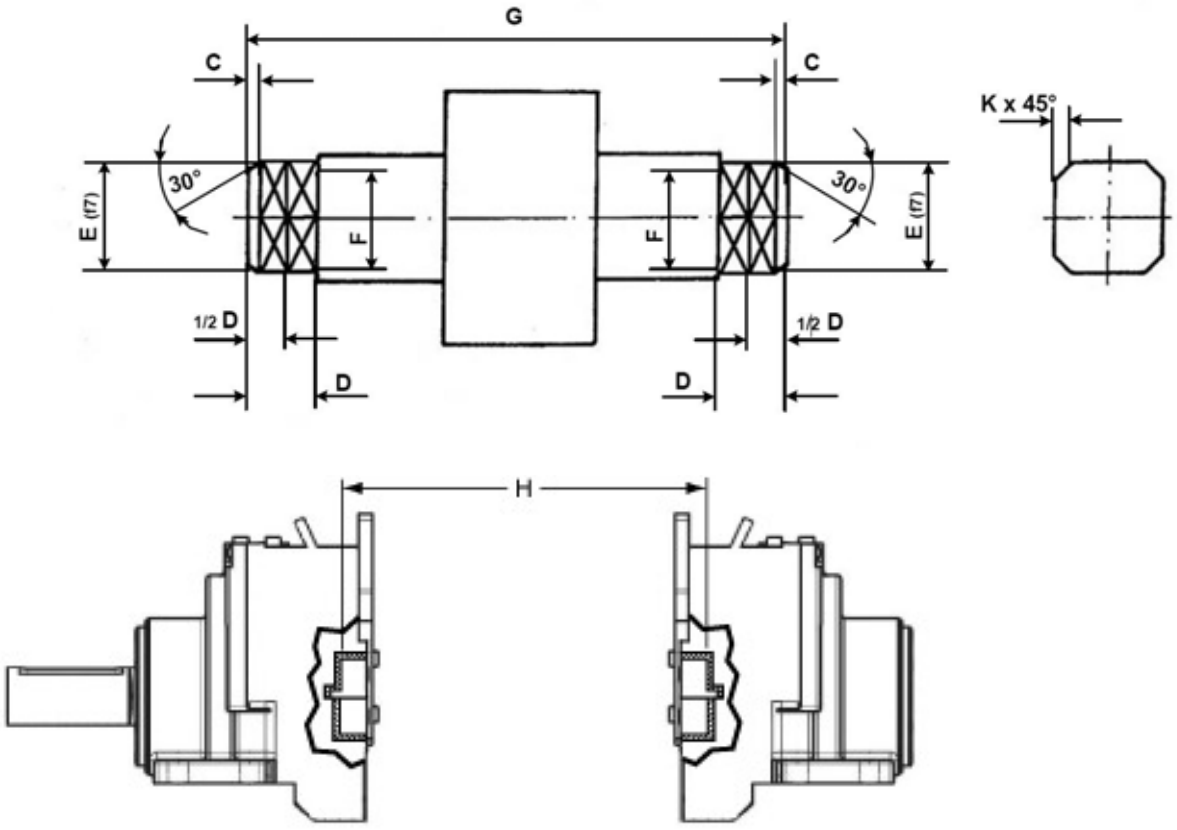
NOMENCLATURE

1 Axial guide
2 Radial guide
3 Emergency safety ring
4 Bottom VT2 insert
5 Top VT2 insert
6 Cylinder mounting
7 Cylinder
8 Lever
9 Sliding ring
10 Mechanical safety lock



Ensure Correct Shaft and Journal Size

- Due to close tolerances and the exact manufacture of these chucks, it is important to machine the shafts and journals to the dimensions below.
- The recommended clearance between the back of the chuck insert and the end of the shaft journal is 0.02" (0.5 mm) total—0.01" (0.25 mm) each side. (See chart below, H-G)



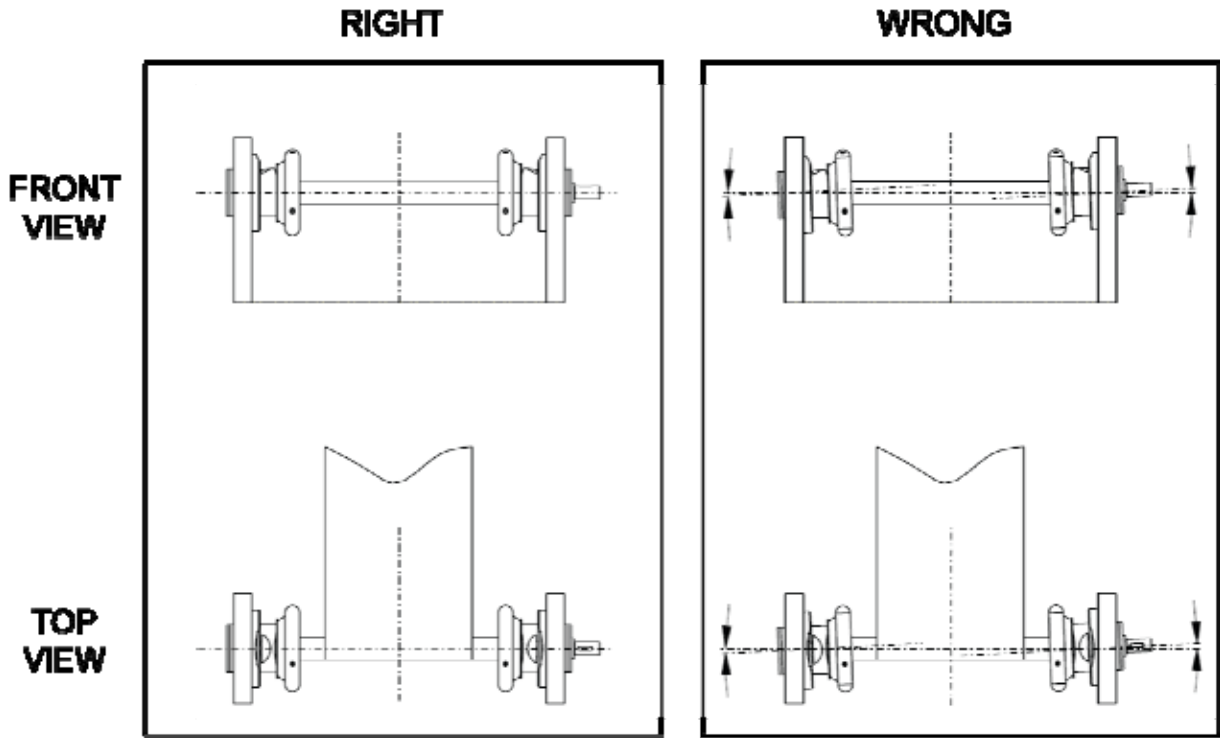
ENGLISH									
Size	**A**	**B**	**C**	**D**	**E (f7)**	**E-F**	**1/2 D**	**H-G**	**K**
A40	n/a	n/a	0.197	1.181	1.181-1.575	0.008	0.591	0.020	0.059
A50	n/a	n/a	0.197	1.260	1.575-1.969	0.012	0.630	0.020	0.079
A80	n/a	n/a	0.236	1.575	1.969-3.150	0.016	0.787	0.020	0.118
METRIC									
Size	**A**	**B**	**C**	**D**	**E (f7)**	**E-F**	**1/2 D**	**H-G**	**K**
A40	n/a	n/a	5	30	30-40	0.2	15	0.5	1.5
A50	n/a	n/a	5	32	40-50	0.3	16	0.5	2
A80	n/a	n/a	6	40	50-80	0.4	20	0.5	3

Install Chucks

- **Manufacturer recommends mounting the chuck for top-loading only.**
- **Make sure that the machine frame is sturdy enough to maintain a true horizontal centerline for rotation.** Deflection of the mounting frame or the shaft under load can substantially reduce the usable life of this product. Mount chucks to a frame sufficient to carry the required load during operation.
- Use the mounting bolt holes provided on the chuck; flange mount or foot mount.
- Core shaft must be designed to support all wound roll configurations with minimum deflection.
- Use of sensors requires +24 VDC. If your chuck is equipped with sensors, chuck wiring shall be performed only by qualified electrical personnel. Correct installation for proper operation is the customer's responsibility. Call Tidland Customer Service for assistance. 1-800-426-1000
- **Never begin the winding operation until the chucks are closed.** (See page 8.)

Align Chucks

Misalignment of chucks can substantially reduce the usable life of this product.
Ensure the two chucks are aligned – in both axes – within 0.3°.
See illustration below. Chuck profiles vary; alignment requirements are common to all.



PINCH HAZARD.
Do not contact the chucks while in operation.

Sensor Kits

Tidland offers two types of electronic sensor kits that indicate open, closed and rotational positions to help prevent operation when the chuck is not ready. The Manual sensor kit allows operator control at the chuck; the Automatic sensor kit is designed to be integrated into your machine controls.

Chuck Status Indicated by Sensors

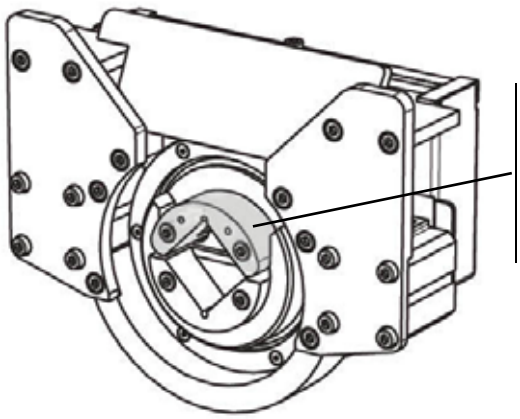
- Red light = chucks are open; ready to load shaft
- Green light, solid = chucks are at zero position; safe to open chuck
- ☼ Green light, flashing = running; shaft is rotating

Before Each Operation

1. Ensure that the sensors (if equipped) work properly.
   - Chuck open: back sensor LED is on, front sensor LED is off
   - Chuck closed: front sensor LED is on, back sensor LED is off
2. When chuck is closed, ensure top and bottom parts of VT insert are flush.
3. Closed chuck should turn smoothly and freely with little resistance.

Loading the Shaft

1. Chucks must be in the zero position to open; the sliding portion of the insert must be at the top position on the chuck.
   If system is equipped with the sensor kit, a solid green light indicates that the chuck is in zero position.
2. Open the chucks. Open the chucks:
   - Use switch to open the chucks on a manual system.
   - Systems equipped with automatic operation will open the chucks when they reach zero position.
3. Load the shaft. When installing the shaft, it is important to place the shaft straight into the chucks. The shaft should be level and the journals should enter chuck VT inserts at the same time.



Zero Position:
Sliding portion of insert is on top.

Insert must be open to install shaft, and insert faces must be flush when closed.

(Illustration shows chucks closed.)

Operating the Chucks

Without Sensor Kit

1. Use manual switch to close the chucks.
2. Begin operation.

Always use the switch or the automatic system to close the chucks.

To avoid premature wear on chuck parts, do not allow the chucks to close on their own as rotation begins.

Chucks should be in the closed position before winding operation begins.

With Sensor Kit

Chuck Status

- Red light = chucks are open; ready to load shaft
- Green light, solid = chucks are at zero position; safe to open chuck
- ☼ Green light, flashing = running; shaft is rotating

1. Turn on the sensor control.
   Note: Your chucks may be equipped with two sensors, one for each chuck.
2. Chucks must be in "zero" position, indicated by solid green light, to open.
3. Open the chucks:
   - Use switch to open the chucks on a manual system.
   - Systems equipped with automatic operation will open the chucks when they reach zero position.
4. Red light indicates chucks are open; load the shaft. Holding shaft level, insert both journals in chucks at the same time.
5. Close the chucks; red light goes out.
6. Begin winding operation; green light will flash (as "zero point" passes a sensor on each rotation.)

Removing the Shaft

1. Stop shaft rotation.
2. Manually rotate the shaft until the chucks are at zero position; the sliding portion of the insert should be at the top position of the chuck. If sensors are installed, a solid green light indicates zero position.
3. Open the chucks:
   - Use switch to open the chucks on a manual system.
   - Systems equipped with automatic operation will open the chucks when they reach zero position.
4. When both chucks are open, lift the shaft straight up and out of the chucks so that both journals exit the chucks at the same time.

To avoid equipment damage, make sure that both chucks are completely open before removing the shaft.

Before Performing Maintenance

Stop winding operation.
Follow your company lockout/tagout procedure.

Safety Check Inspection

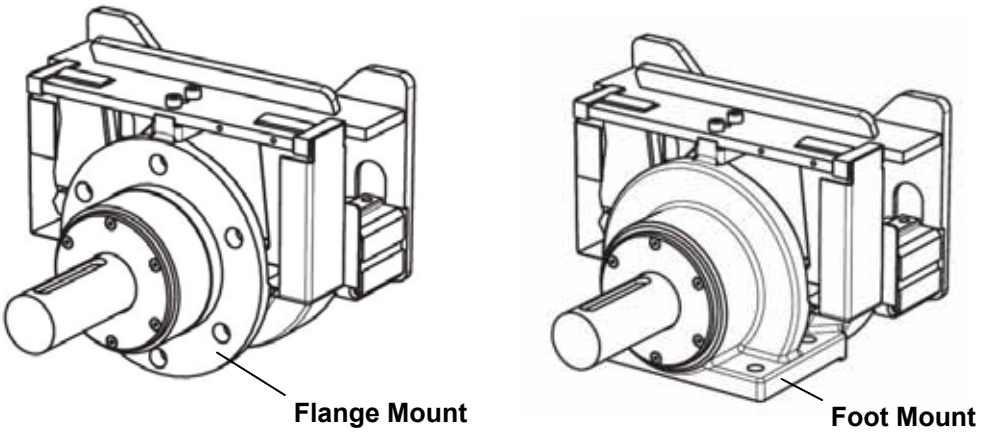
Inspect the safety chuck housing for wear. If there is evidence of metal shavings under the chuck, the housing is worn, which may indicate that chucks are out of alignment. See page 6 for alignment instructions. See *Troubleshooting* on page 10.

For information about the laser alignment tool, call Tidland Customer Service. 1-800-426-1000

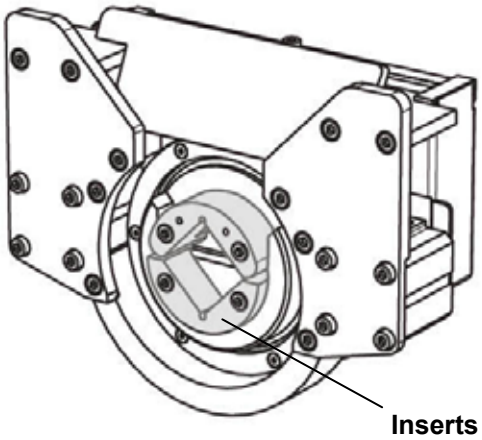
A) Is the chuck mounting tight?

B) Are the inserts worn? If worn, replace the inserts.

A)



B)



TROUBLESHOOTING

Problem	Possible Causes	Recommended Solution
Chucks won't close	The shaft is bending more than 0.4 degrees at the end of the journals	Review shaft design and application with Tidland Customer Service and Engineering. 1-800-426-1000
	Chucks are misaligned	Align chucks
Worn inserts	Excessive shaft deflection	Review shaft design and application with Tidland Customer Service and Engineering. 1-800-426-1000
	Shaft overall length is too short	Replace shaft
	The chuck is misaligned	Ensure correct chuck installation and correct shaft length. See Installation Instructions
Excessive journal wear	Wear part is too soft	Review shaft design and application with Tidland Customer Service and Engineering. 1-800-426-1000
	Chucks are misaligned	Align chucks
	Shaft is too short or too long	Properly size shaft to chuck spacing
	Journal dimensions are undersized or worn	Replace journal
Excessive insert wear	Wear part is too soft	Review shaft design and application with Tidland Customer Service and Engineering. 1-800-426-1000
	Journal dimensions are undersized or worn	Replace journal
Clanking noise when running	Insert is worn	Replace insert
	Journal dimensions are undersized or worn	Replace journal
Axial movement	Chucks are misaligned	Check specifications (p. 3); align chucks

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