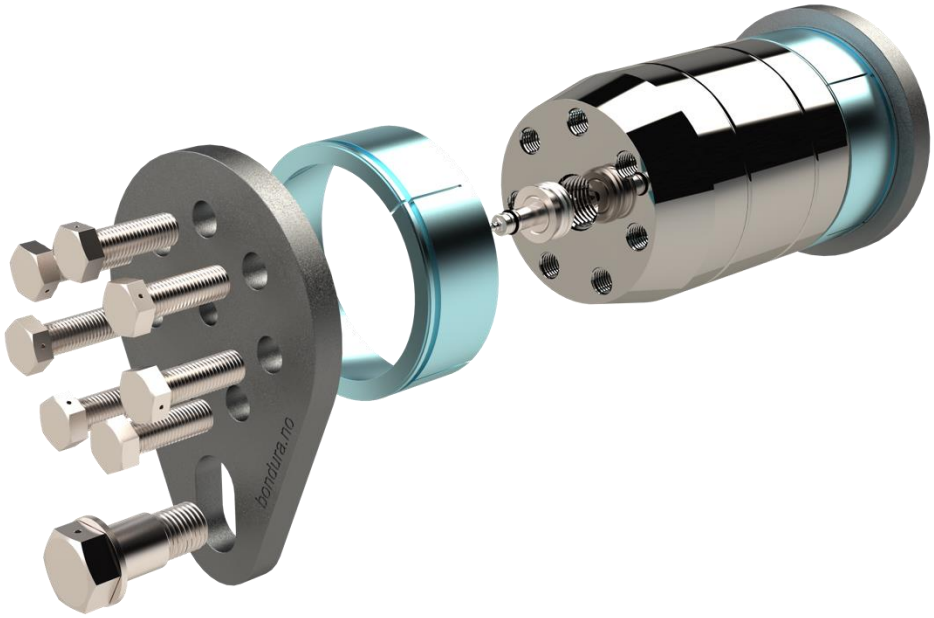
EN

Assembly & Inspection Manual

bondura® Expanding Pins

Document Article Number: 110086



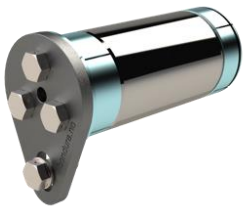
This Assembly & Inspection Manual is applicable for the following bondura® pin types:

bondura ® 2.2

bondura ® 3.3

bondura ® 4.4

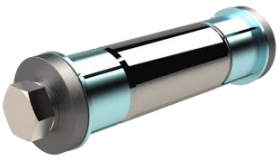
bondura ® 6.1



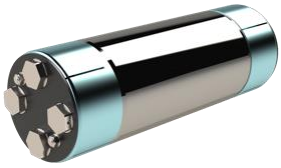
bondura ® 6.2

bondura ® 6.6

bondura ® 3.1



bondura ® BX



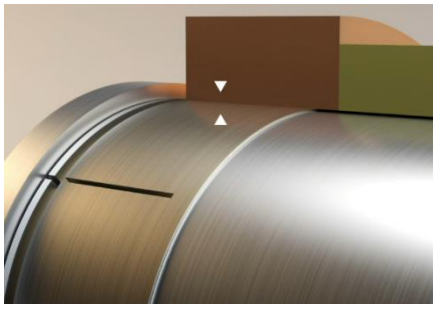
bondura ® BXC

1. General Information

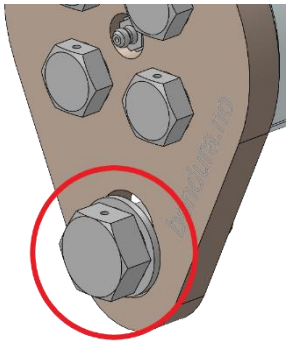
1.1. Function, Expansion & Suitability

The bondura® pin locks to the lug bore as the sleeves expand to create a wedge-force between pin and bore.

This prevents unwanted rotation and sideways sliding of the pin.



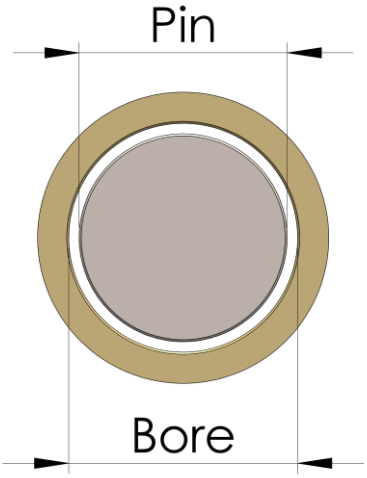
Positioning details can be included for some pin types.



Make sure to adjust the pin orientation so the position screw can be installed.

Sleeves expand and absorb up to 2,0 mm gap/wear in the lug bore from nominal pin diameter.

For larger clearances, oversized sleeves should be ordered and used. Full expansion normally results in the sleeve moving 5,0 mm inwards in the bore.

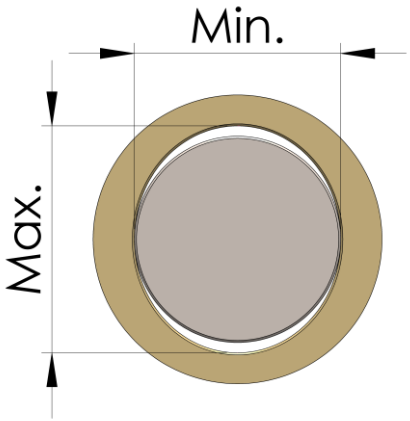


For temperature differences exceeding 50°C between installation and operation; torque values may need correction.

The difference of min. and max. diameter in the bore should not exceed 1,0 mm.

If exceeded, grinding the bore more circular is recommended.

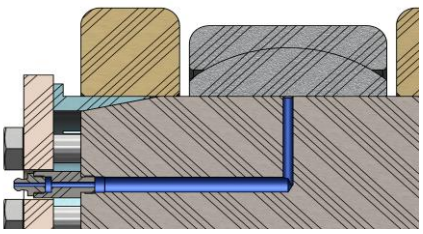
Note: re-tightening of fasteners after some time in operation may be necessary, especially for worn equipment.



1.2. Thread Paste, Lubrication & Fastener Security

To ensure correct friction and avoid damage or galling of the threads, bondura® Assembly Paste is recommended for use on all threads in the pin assembly.

If the pin is installed in a bearing requiring lubrication, please follow the lubrication recommendation for the bearing.



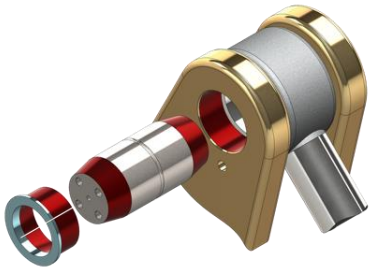
Methods of securing the screws/nuts may be used in the design; safety wire, wedge lock, split pin, nylon insert etc.

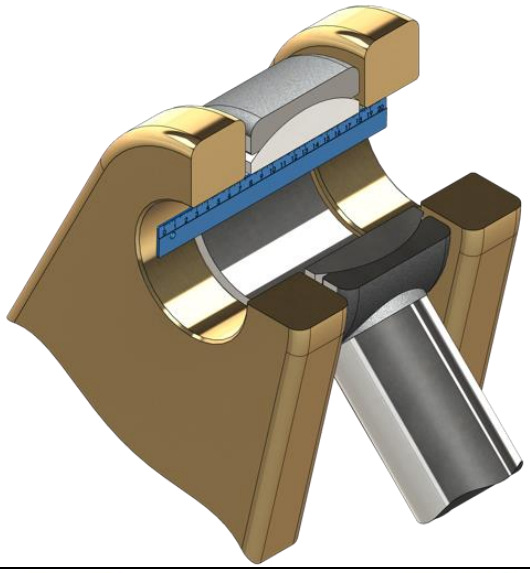
2. Installation

2.1 Preparations

Please ensure to have technical pin drawing(s) available before starting the installation. It may contain important information of pin positioning and torque values to use.

Prepare for installation by centring and cleaning the pin bore. Sleeves and all surfaces on pin and bore in contact with sleeves (marked red) must be clean from grease and other substances before installation.

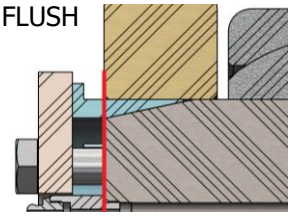




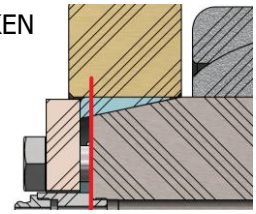
2.2 Insert pin assembly.

Sleeves may have to be removed before insertion and re-installed once pin is aligned, this depends on the pin design. Normally the pin is centred in the bore.
Pin face can either be flush with lug or sunken into bore depending on design.

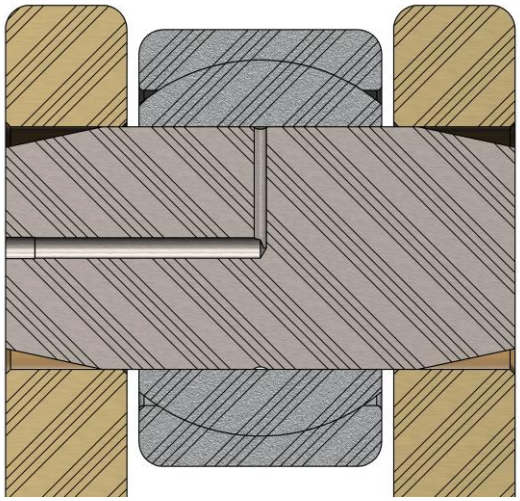
FLUSH



SUNKEN



Pin drawing may contain more detailed information.

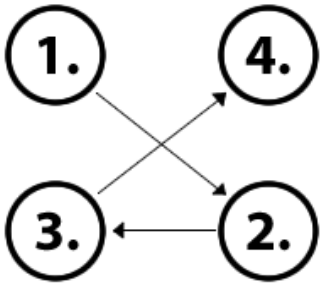


2.3 Use torque wrench to tighten fasteners alternating between sides.

For designs like 3.1 and 6.1 with a centre axle, the centre axle should be tightened first.

For designs with an end plate, tap the circumference of the plate with a hammer to release tension.

For multiple fastener configurations, tighten in a criss-cross pattern and turn each fastener max. 90° each time. Increase torque in intervals until final value is reached.



Standard Torque Values			
Fastener	**Torque [Nm]**	**Fastener**	**Torque [Nm]**
M10	35	M24	460
M12	65	M30	600
M14	100	M36	800
M16	160	M42	1200
M18	200	M56	1500
M20	300	M80	2000
M22	400	M100	3000

Specified torque values are based on the use of bondura® Assembly Paste.

If a torque table is present on the technical drawing, use values specified on drawing.

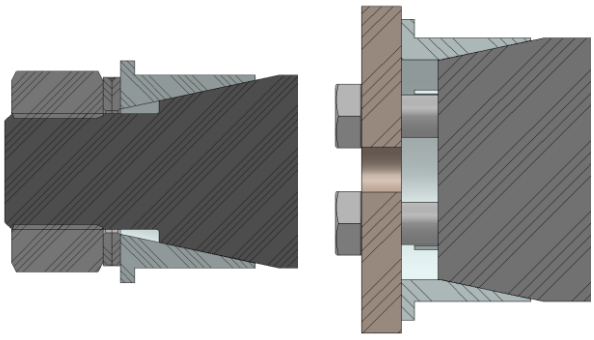
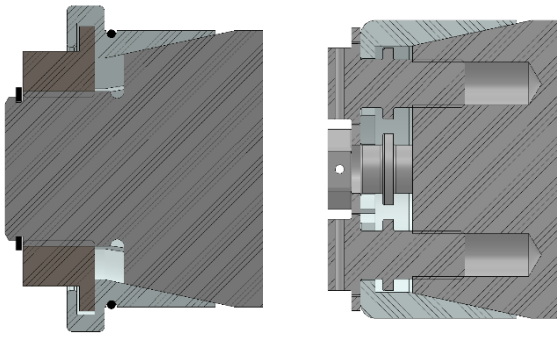
3. Inspection

Immediately after installation it is recommended to let the equipment run a few operations and then check the torque values on all outer fasteners.

Implementing a maintenance program to check the bondura® pins is recommended. This can be combined with the existing maintenance program and service intervals for the relevant equipment.

#	To be checked	Type of inspection	Control parameter	How to rectify
I-1	Pin condition	Visual	Missing or severe damage to parts.	Replace missing or damaged parts.
I-2	Sideways misalignment of pin	Measure	Measure protrusion on each side. See chapter 1.1 & 2.2, compare with technical drawing(s).	Disassemble pin and measure bore against values in chapter 1.1. Replace parts if necessary and re-install.
I-3	Torque values	Measure	Specified torque value.	Re-tighten to correct values. See chapter 2.3.
I-4	Function control	Visual and auditory	Unwanted movement or sound when system is in operation.	Disassemble to find root cause.

4. Disassembly

Fasteners separate from sleeve	Fasteners connected to sleeve
	
Bondura Multi Tool (BMT) is recommended for disassembly. See www.bondura.no for more information.	Turning the fastener(s) anti-clockwise will pull the sleeve loose. For multiple fastener configurations like BXC (right image) turn each fastener max. 90° each time in a criss-cross pattern to loosen and pull the sleeve out evenly.