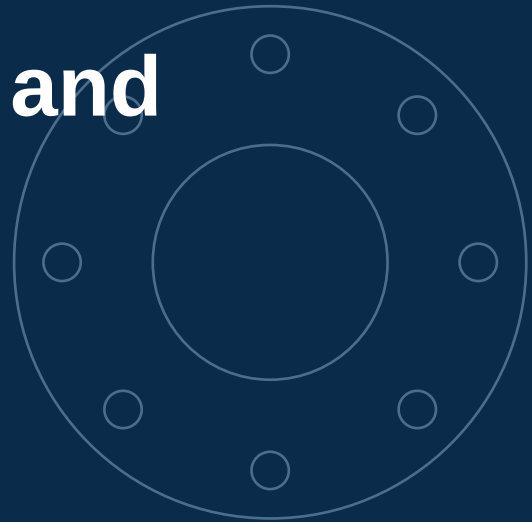


INSTALLATION AND MAINTENANCE MANUAL

Flange Installation and Torque Manual

This manual covers the inspection, alignment, assembly and torque of ASME bolted flange joints for Belvanta pipe and specialty flanges.

**DOCUMENT**
Installation manual

DOCUMENT	MANUAL-FLANGE-INSTALLATION
REVISION	Rev. 02
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PAGES	8

Flange Installation and Torque Manual

This manual covers the inspection, alignment, assembly and torque of ASME bolted flange joints for Belvanta pipe and specialty flanges.

SAFETY

- Isolate, depressurize, drain and purge the line before opening a joint.
- Confirm the line is at ambient temperature before handling components.
- Use mechanical lifting equipment for flanges and covers above the manual handling limit.
- Wear eye protection, gloves and protective footwear during assembly.

BEFORE YOU BEGIN

- Confirm the correct manual, drawing and product revision for the equipment.
- Check that the required tools, lifting equipment and personal protective equipment are available.
- Record the product identification, serial or heat number and installation date.

Ordering and technical support

sales@belvantaglobal.com · +1 (713) 555-0140 · www.belvantaglobal.com

1200 Industrial Parkway, Houston, TX 77032, United States

Quotations are prepared against the released specification. Certified drawings are issued with the order.

01 · RECEIVING AND INSPECTION

Check the flange against the packing list and the order acknowledgement before installation. Confirm size, pressure class, facing, material marking and quantity.

Inspect the gasket and bolting for damage. Do not install a gasket with a damaged sealing face, and do not mix bolt grades or lubricants without confirming compatibility.

CHECKS

- Verify the heat number and material certificate where supplied.
- Check the flange face for scratches, corrosion or weld spatter.
- Confirm the gasket dimensions and type against the flange facing.

02 · ALIGNMENT AND FIT-UP

Pipe ends must be aligned so that the flange faces are parallel and the bolt holes line up without forcing. Do not use bolts to pull the flanges together or to correct pipe misalignment.

Support the pipe independently of the joint. The flange should not carry pipe weight or bending loads after assembly.

CHECKS

- Check face parallelism and bolt-hole alignment.
- Keep the gasket centered on the flange face.
- Use only the specified gasket and bolting.

03 · LUBRICATION AND TORQUE

Apply the specified lubricant to the bolt threads and nut bearing faces. Use a calibrated torque wrench and tighten in a cross-pattern in at least three passes.

The final torque depends on gasket type, bolt size, lubrication and service. Use the project torque table where available; otherwise request the torque recommendation from Belvanta engineering.

CHECKS

- Tighten to approximately 30%, 60% and 100% of the target torque.
- Repeat the final pass in a clockwise sequence.
- Record the final torque and bolt identification.

04 · PRESSURE TEST AND LEAK CHECK

After assembly, pressure-test the joint in accordance with the project procedure. Inspect the joint for leaks at the flange face and around the gasket.

Do not re-torque a joint under pressure. Isolate and depressurize before any adjustment.

05 · DISASSEMBLY AND REUSE

Loosen bolts in a cross-pattern and support the pipe before removing the last bolts. Discard gaskets after disassembly unless the procedure expressly permits reuse.

Inspect the flange faces and bolt threads before reassembly. Replace damaged or corroded bolting.

Inspection and records

Maintain an installation and inspection record for each joint or nozzle. Record the product identification, installation date, torque or pre-compression setting, test result and any replacement parts.

INSPECTION CHECKLIST

ITEM	RESULT	INITIALS
Product identification and revision confirmed		
Installation alignment and supports checked		
Fasteners and torque or pre-compression recorded		
Leak or pressure test completed		
Inspection record filed with order documentation		

MAINTENANCE INTERVAL

Inspect at the interval defined by the site procedure. In severe service, inspect more frequently during the first operating cycle and after any abnormal event.

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