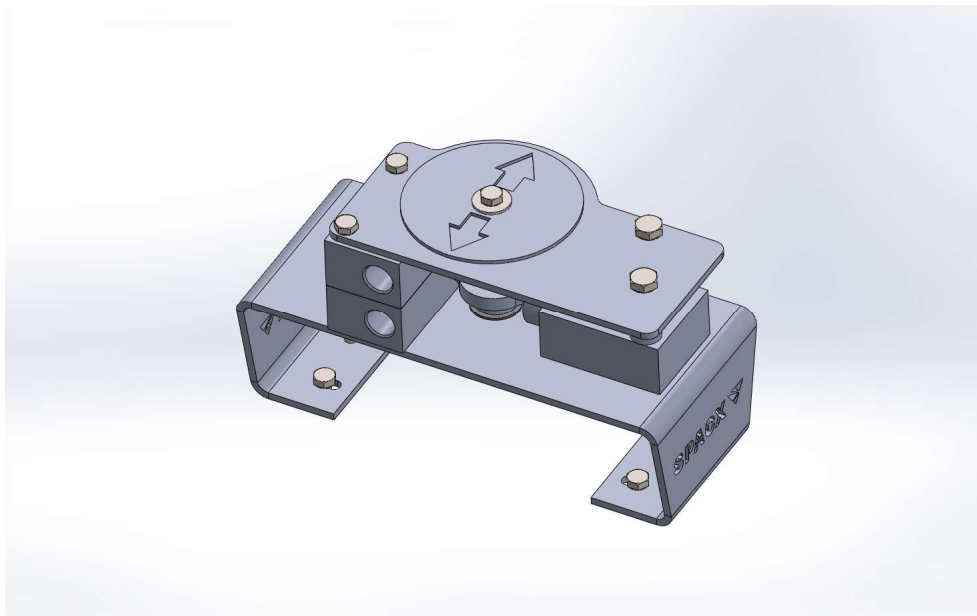




**Installation and Operating Manual for
NAMUR DA-D-A2 pneumatic position
feedback module**



**Read the complete manual prior to
commencing the installation**

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1. Safety

Installation inspection and maintenance should be performed by qualified personnel with sufficient education, training and experience to perform these tasks.

No work should be performed in a potentially explosive environment (zoned area) without precautions to prevent the possibility of an explosive atmosphere to occur and prior verification that no explosive atmosphere is present.

All work must be performed while wearing relevant protective clothing, goggles, footwear and gloves.

When the module has been exposed to temperatures above or below its designed temperature range, or pressures above its design pressure or any other potentially damaging external influence on pressure bearing parts, the module should be checked thoroughly and replaced if necessary.

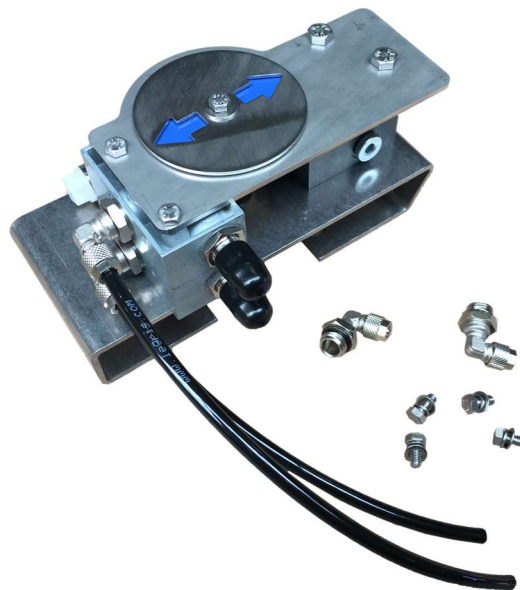
WARNING!

This manual is written with the understanding that the DA-D-A2 module will be installed to an actuator that is not in service or at least disconnected from supply pressures and possible electric connections.

2. Pre installation checks

Check if the module NAMUR size corresponds with the existing actuator NAMUR size.

Unpack the module and its parts and check it's content corresponds with the packing list and/or partslist. The module comes as a pre-assembled kit as far as possible to minimize fieldwork and to avoid possible misunderstandings during assembly.



Check for visible damage on the outside of the module and on the surface of the driveshaft. Check if the actuator is single acting and that it is in its relaxed fail safe position.

Spacx Actuators & Controls

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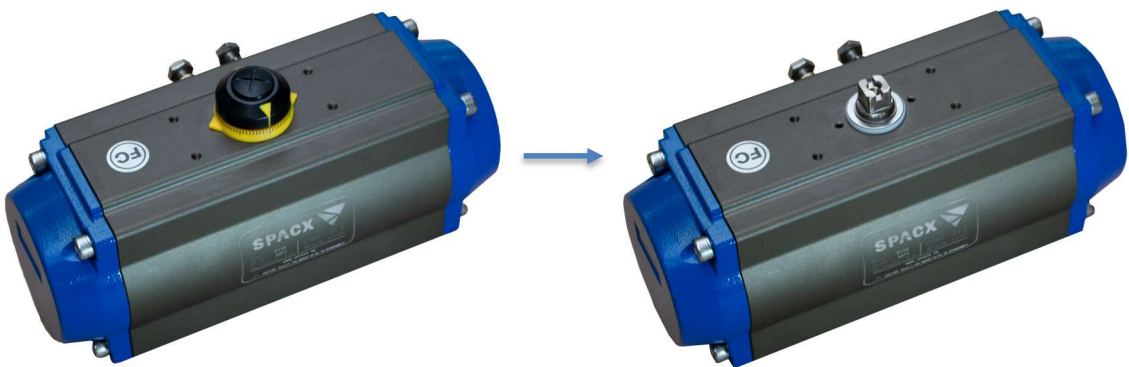
WARNING!

The actuator's output shaft will be moving during the functionality check, allow the output shaft to move freely and make sure to remain sufficient personal distance.

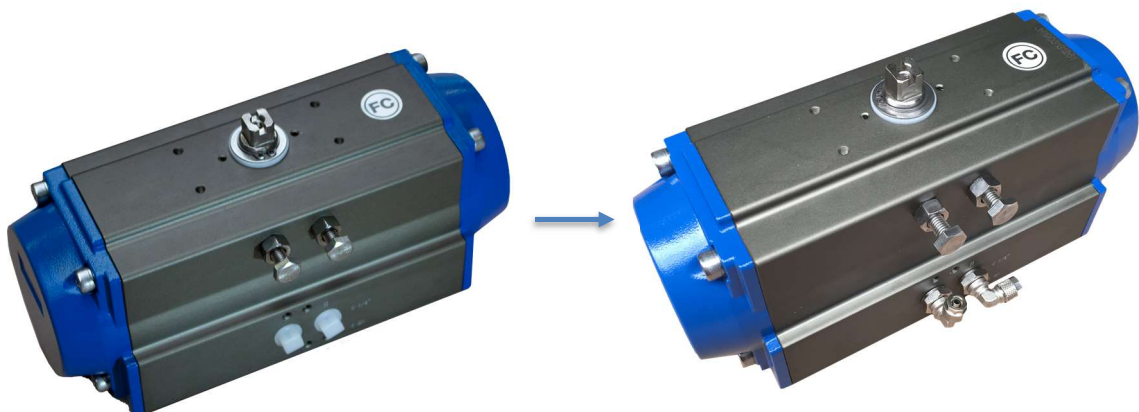
Wear protective eyewear and earplugs as vented instrument air may cause excessive noise and make foreign particals airbourne.

3. Installation

1. Remove all local visual position indicators from the actuators outputshaft.



2. Clear and clean the 1-off M6 drilling in the actuator shaft if necessary
3. Clear and clean the 4-off M5 drillings in the actuators body if necessary.
4. Have the actuator facing with the supply ports towards you.
5. Take away all possible plugs, breathers and couplings from the actuator supply ports.
6. Insert the tube couplings into the actuator supply ports.

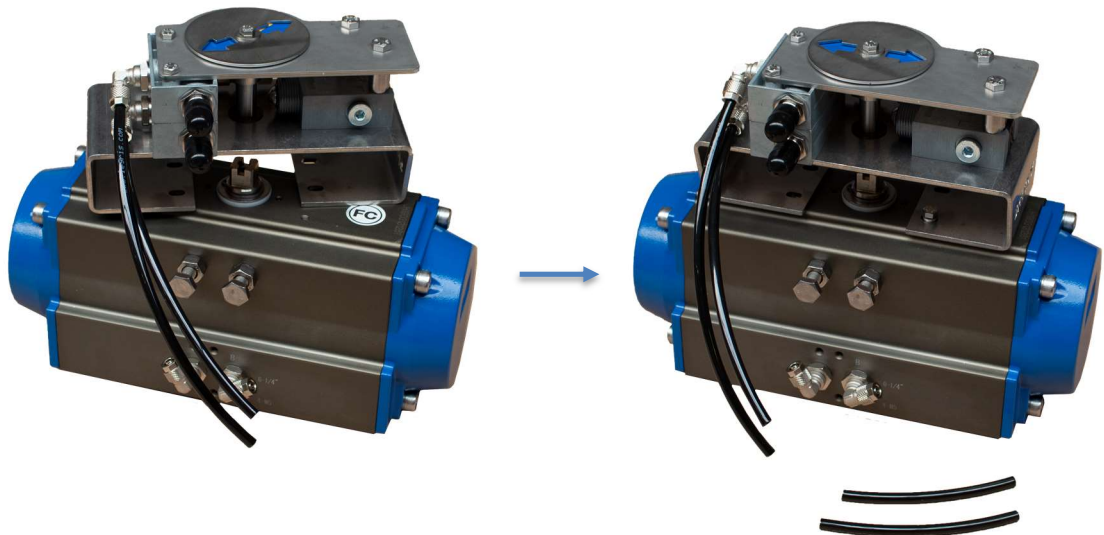


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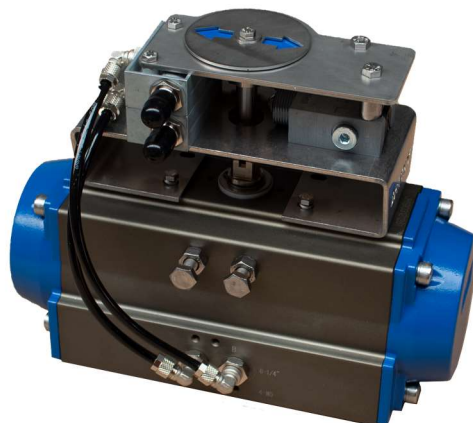
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1. Lower the DA-D-A2 Module with its shaft over the actuator outputshaft engaging the module's shaft flats in the actuator shaft slot. And rotate the Module as far as necessary in order for the holes in the module line up and meet the threaded holes in the actuator. Making sure that the quickconnector and the black PU hose on the module are facing towards the same side as where the actuator pneumatic supply ports are located.



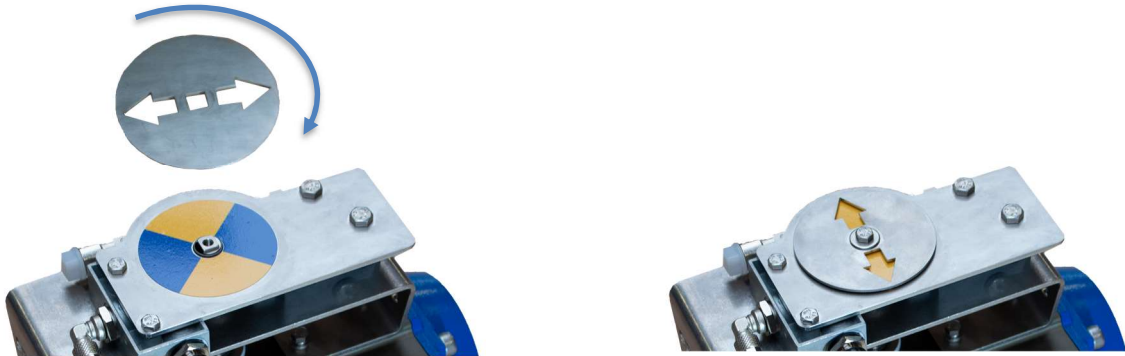
2. Insert and tighten the M5 bolts with spring washers that are included in the kit.
3. Locate the actuator supply port for the opening stroke, (on most actuators the supply port to open is port A on the left, but on some actuators this is inverted.)
4. Cut the lower 6mm tubing to the desired length, making sure it is a neat and stressfree length keeping the tubing run close to the actuator. And insert the tubing in the tube coupling inserted in the actuators opening port and tighten the curled nut.
5. Cut the upper 6mm tubing to the desired length, making sure it is a neat and stressfree length keeping the tubing run close to the actuator. And insert the tubing in the tube coupling closing port and tighten the curled nut.



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- If required the actuator can be assembled to the valve inline or crossline. The visual position indicator can be rotated 90 degrees showing pipeline flow.



- Remove the white plastic blindplugs and insert relevant tube coupling to connect the module to the onboard system (not included in the kit). The 1/4" connections are the actuator supply ports and the 1/8" connection is the pneumatic position feedback.



- Make sure all tube connections are tightened and apply airpressure to the system. Use dedicated leakspray to find possible leaks, operate the actuator and perform another leaktest.

Your DA-D-A2 position feedback module is now ready for testing.

WARNING!

The actuator's output shaft will be moving during this installation, allow the output shaft to move freely and make sure to remain sufficient personal distance.

Wear protective eyewear and earplugs as vented instrument air may cause excessive noise and make foreign particals airbourne.

4. Testing

WARNING!

Prior to testing make sure that all relevant product and application data is available and necessary precautions are taken to safely execute the test with regards to Health, Safety and environment.

Make sure all tube connections are tightened and slowly apply airpressure to the system. Use dedicated leakspray to find possible leaks, operate the actuator and perform another leaktest.

If no leak occurred your DA-D-A2 feedback module is now ready for duty.

WARNING!

The actuator's output shaft and valve closing member will be moving during this testing, allow the output shaft to move freely and make sure to remain sufficient personal distance.

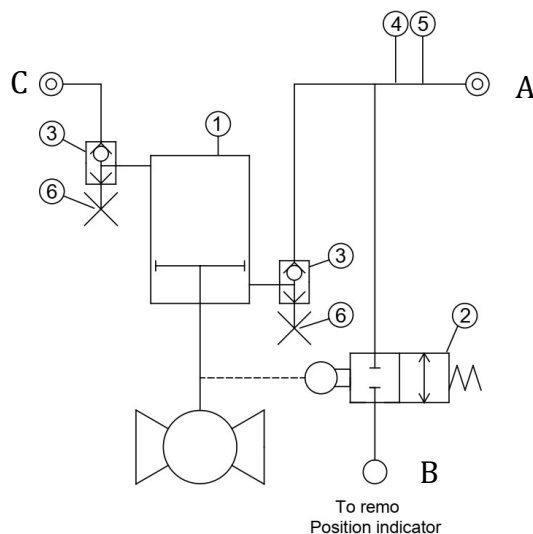
Wear protective eyewear and earplugs as vented instrument air may cause excessive noise and make foreign particals airbourne.

5. Operating

A pneumatic actuator with the DA-D-A2 feedback module installed will operate the actuator to the open position by feeding instrument air (A) and detect the valve open and close position by means of a pneumatic signal back to the control cabinet over one single line (B). by feeding instrument air (C) the actuator will move to the closed position. A small pneumatic signal will detect the relevant position and feed it back to the DCS. Upon loss of the DCS signal, pneumatic pressure is lost and the actuator will stay in its last known position.

In case manual or emergency operation is required, remove the plastic covers from the quickconnector couplings (6) and connect a portable manual emergency compressor, portable buffer tank or footpump and apply compressed air to one of the quickconnectors and move the actuator to the desired position..

- 2 = Rollerverve.
- 3 = Shuttle valve
- 6 = Quickconnector



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6. Maintenance and inspection

There is no need for scheduled maintenance for the Spacx DA-D-A2 pneumatic feedback module as long as it is functioning correctly.

Inspect the Module on regular intervals for functionality, external damage and operating medium leaks.

It's only necessary to disassemble the module when it's malfunctioning or leaking supply medium. The module is designed to be utilized as a single item and considered non serviceable and to be replaced as a whole. Nevertheless if service is required than please consider below as a minimum.

7. Disassembly

WARNING!

This manual does not cover the disassembly of the actuator itself. However, be aware that the spring inside the actuator may be pre-compressed, and to prevent injury, opening the actuator itself should never be attempted without consulting the relevant actuator manufacturers IOM manual and utilize the designed solution to relieve the spring tension first.

Contact Spacx Actuators & Controls in advance for spare parts and relevant product information. It is advisable to leave the module on top of the actuator before attempting to disassemble it.

WARNING!

Prior to disassembly make sure that all relevant product and application data is available and necessary precautions are taken to safely execute the disassembly with regards to Health, Safety and environment.

1. Ensure all pneumatic pressure are relieved and vented and the actuator is in its fail position.
2. Take away the air connections to the onboard system.
3. Remove the tubeconnector from the actuator supply port leaving the tubing attached.
4. Undo the 1-off M5 bolt (9) and washer (8) on top of the shaft and remove the visual position indicator (4).
5. Remove the 2-off M5 (11) and 2-off M6 (10) bolts, and remove the coverplate (2).
6. Now the rollervalve can be taken away as well as the shaft (6) with its bearings (7), cam (3) and spacer (5).
7. The rollervalve is still equipped with interconnecting tubing. This interconnection tubing can be taken away now.

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8. Reassembly

Assembly is disassembly in reverse order. Using relevant replacement parts.

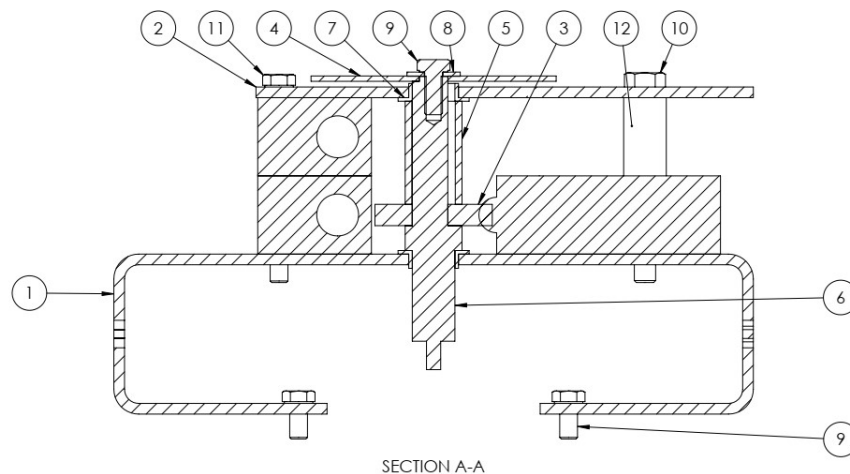
There are no dedicated service kits available. Relevant spare parts are available on request.

Make sure before assembly all surfaces are clean and free of debris. Also make sure that all parts are cleaned and degreased properly.

Use proper dedicated tube and pipe sealant when assembling tube couplings.

All mounting hardware shall be secured against unwanted loosening with proper locknuts, spring washers or threadlocker fluid such as Loctite 242.

9. Spareparts



Item	part nr.	Description	Material	QTY
1	730.614	Namur P1 Bracket	SS304	1
2	730.615	Namur P1 Cover Plate	SS304	1
3	730.616	Namur P1 Cam Rol	SS304	1
4	730.617	Namur P1 Indicator	SS304	1
5	730.637	Namur P2 Stem	SS304	1
6	730.638	Namur P2 Stem Spacer	SS304	1
7	660.100	GFM-1214-5	Iglidur	2
8	830.355	M5 Din9021 Ø15mm	A2	1
9	830.465	M5x10 Din933	A2	5
10	830.474	M6x55 Din933	A2	2
11	830.475	M5x55 Din933	A2	2
12	730.639	Namur P2 Spacer	SS316	2

In case of large Namur size, Item 01 shall be replaced with part:
730.620 Namur Bracket 130x30

WARNING!

When in doubt about the best way to disassemble your actuator, contact Spacx Actuators & Controls

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10. Packing and storage

See our procedure: Packing, storage and handling procedure Spacx Actuators & Controls.

11. Disclaimer

Poor maintenance, improper use, modifications to the module (or its components) or using replacement parts by other brands than used by Spacx Actuators & Controls' may affect the performance and proper operation of the module.

Spacx cannot be held responsible for damages that arise from failing to observe Spacx procedures.