





ONE IDEA MANY SOLUTIONS



CAD valve maintenace







CAD valve maintenace



The following instructions describe the correct operating procedure of connection and disconnection of actuators and diaphragms on CAD valves.









General:

During connection and disconnection of actuators and diaphragms, take care of corners, surfaces, couplings and threadings.

Never use abrasive products or uncorrect tools.

Installation and repair work may be carried out by authorized technicians only and with appropriate tools.







DANGER:

Never open or disassemble the pneumatic actuator, spring under heavy load inside: open the actuator may result in serious injury.









WARNING:

Failure to observe the warning may result in fatal or serious injury.

Before disconnect an actuator, to operate in safety condition, empty the pipeline: presence of internal pressure may result in serious injury.

Never disassemble or try to unlock the ring when the valve is under pressure, this may result in serious injuries or death.







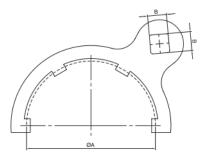


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TOOLS AND SPARE PARTS

TECHNICAL INFORMATION _ CAT. N. YACT WRSS 0##0 0000S

CAD WRENCH



Clean and Aseptic Valves of CAD Product Line have simple and safe design, with their full drainability, without asymptotic seal and dead leg, are offering fast cleanability and sterilization practices. They are designed to fulfil stringent demands of CIP-SIP and Production Cycles on Aseptic Processing.

CAD Wrench, manufactured from solid stock in AISI 316L – 1.4404, engineered to achieve a perfect load on CAD Diaphragms and Actuators. Minimum torque level as indicated in the following table.

Size	A mm (inch)	B mm (inch)	PTFE min.torque Nm (lbf-ft)	EPDM min.torque Nm (lbf-ft)	SILICONE min.torque Nm (lbf-ft)	Code
A12	42,00	12,70	90	60	60	YACT- WRSS -0120-0000S
(1/2")	(1.65)	(1/2")	(66)	(44)	(44)	
A19	60,00	12,70	130	80	80	YACT- WRSS -0190-0000S
(3/4")	(2.36)	(1/2")	(95)	(59)	(59)	
A25	80,00	12,70	140	90	90	YACT- WRSS -0250-0000S
(1")	(3.15)	(1/2")	(103)	(66)	(66)	
A38	99,00	12,70	150	100	100	YACT- WRSS -0380-0000S
(1.1/2")	(3.90)	(1/2")	(110)	(74)	(74)	
A50	119,00	12,70	190	110	110	YACT- WRSS -0500-0000S
(2")	(4.69)	(1/2")	(140)	(81)	(81)	
A63	143,00	12,70	200	120	120	YACT- WRSS -0630-0000S
(2.1/2")	(5.63)	(1/2")	(148)	(89)	(89)	
A76	168,00	12,70	220	130	130	YACT- WRSS -0760-0000S
(3")	(6.61)	(1/2")	(162)	(96)	(96)	
A00	198,00	12,70	240	NOT	NOT	YACT- WRSS -0000-0000S
(4")	(7.80)	(1/2")	(177)	AVAILABLE	AVAILABLE	



MATERIAL



SPECIFICATION	

AISI 316L - 1.4404

I .

Correct use: Keep torque tool aligned with CAD Wrench as shown,

to apply the correct torque.

Torque tool not included. Standard torque tool with standard 1/2" socket can be used.



Additional information: After first or second SIP cycle, please check torque level

or tight again CAD Ring.

Packaging: CAD Wrench is sealed in plastic bags and packaged in a closed box.

Quality Control: Quality Assurance System guarantees the control and traceability

of the product.

Orders and Information: For additional information or to place an order call your nearest Distributor

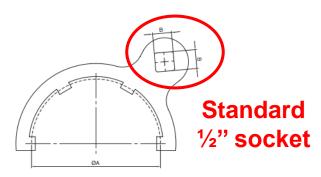
or visit www.rattiinox.com





TECHNICAL INFORMATION _ CAT. N. YACT WRSS 0##0 0000S

CAD WRENCH



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(1")	(3.15)	(1/2")	(103)	(66)	(66)	
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A00	198,00	12,70	240	NOT	NOT	YACT- WRSS -0000-0000S
(4")	(7.80)	(1/2")	(177)	AVAILABLE	AVAILABLE	



MATERIAL



SPECIFICATION:	

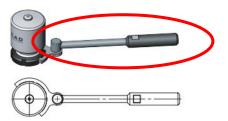
AISI 316L - 1.4404

Correct use: Keep torque tool aligned with CAD Wrench as shown,

to apply the correct torque.

Torque tool not included. Standard torque tool with standard 1/2"

Standard torque tool wrench



Additional information: After first or second SIP cycle, please check torque level

or tight again CAD Ring.

Packaging: CAD Wrench is sealed in plastic bags and packaged in a closed box.

Quality Control: Quality Assurance System guarantees the control and traceability

of the product.

Orders and Information: For additional information or to place an order call your nearest Distributor

or visit www.rattiinox.com

TOOLS AND SPARE PARTS



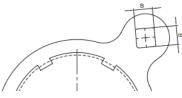


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TOOLS AND SPARE PARTS

TECHNICAL INFORMATION _ CAT. N. YACT WRSS 0##0 0000S

CAD WRENCH



Recommended torque

Clean and Aseptic Valves of CAD Product Line asymptotic seal and dead leg, are offering fast stringent demands of CIP-SIP and Production C

A00

198,00

(7.80)

12,70

(1/2")

and safe design, with their full drainability, without sterilization practices. They are designed to fulfil Processing.

YACT- WRSS -0000-0000S

CAD Wrench, manufactured from solid stock in AISI 31-1.4404, engineered to achieve a perfect load on CAD d in the following table.

Diaphragms and Actuators. Minimum torque level as indic

Size	A mm (inch)	B mm (inch)	PTFE min.torque Nm (lbf-ft)	EPDM min.torque Nm (lbf-ft)	SILICONE min.torque Nm (lbf-ft)	Code
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(3")	(6.61)	(1/2")	(162)	(96)	(96)	

AVAILABLE

AVAILABLE





SPECIFICATION:

MATERIAL

AISI 316L - 1.4404

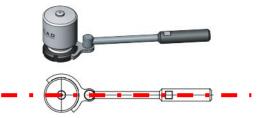
Correct use:

Keep torque tool aligned with CAD Wrench as shown,

to apply the correct torque.

Torque tool not included. Standard torque tool with standard 1/2"

Keep correct alignment!



Additional information:

After first or second SIP cycle, please check torque level

or tight again CAD Ring.

CAD Wrench is sealed in plastic bags and packaged in a closed box. Packaging:

Quality Control:

Quality Assurance System guarantees the control and traceability

of the product.

Orders and Information: For additional information or to place an order call your nearest Distributor

or visit www.rattiinox.com

Via Mara, 44 22066 Mariano C.se (Como) Italy

www.rattiinox.com info@rattiinox.com

NOTE:

Use of genuine CAD Wrench recommended.

CAD Wrench allow the possibility to connect and use standard ½" socket torque tool to apply the proper torque on actuator's ring and achieve the proper seal.

For additional information please refer to related document: YACT WRSS 0##0 0000S

Download link:

https://www.rattiinox.com/assets/files/PDF_Singoli/L-Tools%20and%20spare%20parts/L%20010.pdf

After first or second SIP cycle, please check torque level or tight again CAD Ring.







Internal valve inspection:

Before connect an actuator, check visually internal side of the valve: no dust, no dirty and no scratches allowed.

In case of presence of dust or dirty, remove it taking care to not scratch the internal side of the valve.

Clean and dry all internal area: take care of the closure area and sealing point.









Internal valve inspection:

Attention: in case of presence of evident scratches, contact Rattiinox or the nearest official distributor immediatly for support, scratches may compromize the correct function or cleanability of the valve also during CIP process.









Manual cleaning notes:

All cleaning products with chemical compatibility with AISI 316L stainless steel can be used for internal cleaning with soft cloths.

Do not use any tool or mechanical device or polishing compound or sand paper or abrasive.









ATTENTION

Pay the maximum attention for the presence of metal particle or dust produced during the construction of the piping, if entrapped inside the valve, may cause irreversible damage of the sealing part of the diaphragm.









- Turn the handle clockwise up to the end of the stroke (closure stroke end)
 - Take out the CAD diaphragm from the box
 Attention: do not use knife during to open the box, it may damage the diaphragm.
 Take care of the diaphragm, do not scratch the corners and

surfaces







- Connect the diaphragm to the connection on the manual actuator.

Attention: do not let it f all down, it may be damaged!







 Turn the handle anticlockwise up to support the two ends between the stainless steel of the manual actuator and the external area of the diaphragm

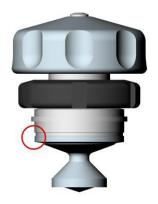




Insert the actuator and the diaphragm into the valve
 Attention: keep the maximum attention during this operation, do not scratch or beat the actuator over the valve, may damage the diaphragm

Attention: see "Internal valve inspection" before this step!

- Rotate the ring clockwise to close the diaphragm and the actuator on the CAD valve body.
 - Tighten the ring by hand, without any tool
- Turn the handle anticlockwise up to the middle of the stroke of the actuator







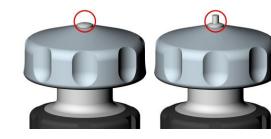
- Tighten the ring using the correct wrench size according to the "Tools table".

Use of genuine CAD Wrench recommended to apply the proper sealing force

 Check the correct full opening and closing movement once, before use the valve in your process.

Attention: this step has to be done with the actuator and diaphragm connected and properly tightened.

Never do this operation with a diaphragm connected to the actuator but not connected to the valve body. This operation may result in a damage of the diaphragm.







NOTE:

Pressurized air needed for this operation (min 6 bar – max 7 bar)







- Take out the CAD diaphragm from the box Attention: do not use knife during opening the box, it may damage the diaphragm.

Take care of the diaphragm, do not scratch the corners and surfaces.



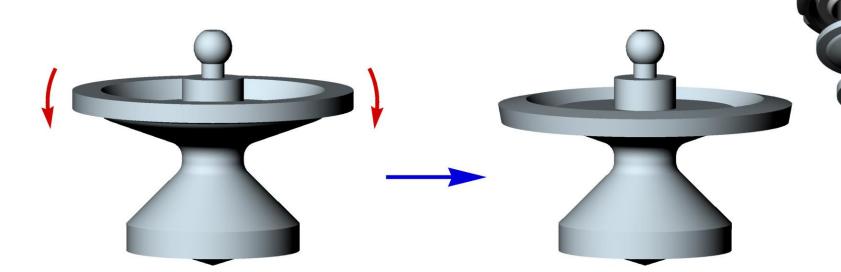






- Fold down the external area of the diaphragm gently Attention: do not use any tools during this operation, it may damage the diaphragm.

Take care of the diaphragm, do not scratch the corners and surfaces.

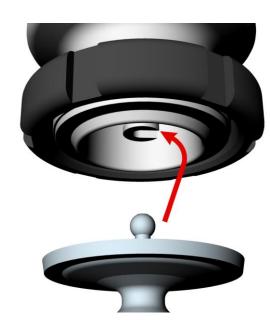






Connect the diaphragm to the connection of the actuator.
 Attention: do not let it fall down, it may be damaged!

 Do not use any tools during this operation, it may damage the diaphragm.







- Fold up the external area of the diaphragm gently
Attention: do not use any tools during this operation, it may
damage the diaphragm.

Take care of the diaphragm, do not scratch the corners and surfaces







- Fold up the external area of the diaphragm gently
Attention: do not use any tools during this operation, it may
damage the diaphragm.

Take care of the diaphragm, do not scratch the corners and surfaces







- Insert the actuator and the diaphragm on the CAD valve body Attention: keep the maximum attention during this operation, do not scratch or beat the actuator over the valve, may damage the diaphragm

Attention: see "Internal valve inspection" before this step!

-Rotate the ring clockwise to close the diaphragm and the actuator on the CAD valve body.

-Tighten the ring by hand, without any tool







- Connect the air supply to the actuator (6-7bar of air pressure required)
 - Feed in pressurized air into NC actuator (this will move the pneumatic actuator to open position and pull diaphragm in correct position)
- Tighten the ring using the correct wrench size according to the "Tools table"
- Use of genuine CAD Wrench recommended to apply the proper sealing force.
 - Attention: do not do this operation with actuator in closed position.







CAD valve maintenace

CAD Diaphragm + NC Pneumatic Actuator Connection

- Check the correct full opening and closing movement once, before use the valve in your process

Attention: this step has to be done with the actuator and diaphragm connected and tightened properly.

Never do this operation with a diaphragm connected to the actuator but not connected to the valve body.

This operation may result in a damage of the diaphragm.

Failure to observe this warning may result in fatal or serious injury.

- Deactivate the CAD NC Pneumatic Actuator, removing pressurized air supply (valve will reach closed position)









 Rotate the handle clockwise, up to the valve closure point, gently

Attention: do not tighten, just move near to the closure point

- Unlock the ring (turn anticlockwise using the correct wrench size according to the "Tools table") and turn until it will be completely unscrewed
- Pull out the acuator and the diaphragm carefully Attention: the diaphragm is connected to the actuator by a quick change system, do not let it fall down, it may be damaged!







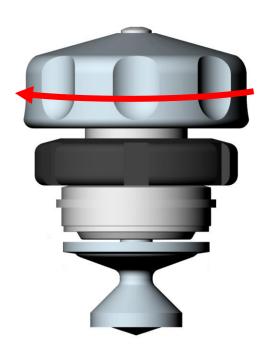


-Rotate again the handle gently clockwise up to the end of the lower stroke (fully closed position)

- Fold down the ends of the diaphragm gently
Attention: do not use any tools during this operation, it may
damage the diaphragm.

Take care of the diaphragm, do not scratch the corners and surfaces.

Attention: the diaphragm is connected to the actuator by a quick change system, do not let it fall down, it may be damaged!







- Disconnect the diaphragm

Attention: do not use any tools during this operation, it may damage the diaphragm.

Take care of the diaphragm, do not scratch the corners and surfaces.

Attention: the diaphragm is connected to the actuator by a quick change system, do not let it fall down, it may be damaged!







CAD Diaphragm + NC Pneumatic Actuator Disconnection NOTE:

Pressurized air NOT needed for this operation







- Switch off the air supply
- Pull out / disconnect the air supply Attention: be sure the air supply is off
- Unlock the ring (turn anticlockwise using the correct wrench size according to the "Tools table") and turn until it will be completely unscrewed
 - Pull out the actuator carefully
 Attention: the diaphragm is connected by a quick change system, do not let it fall down, it may be damaged!





CAD valve maintenace

CAD Diaphragm + NC Pneumatic Actuator Disconnection

- Fold down the ends of the diaphragm gently
Attention: do not use any tools during this operation, it may
damage the diaphragm.

Take care of the diaphragm, do not scratch the corners and surfaces.

Attention: the diaphragm is connected by a quick change system, do not let it fall down, it may be damaged!







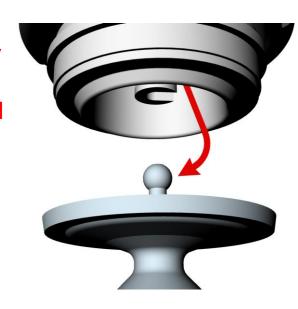


- Disconnect the diaphragm

Attention: do not use any tools during this operation, it may damage the diaphragm.

Take care of the diaphragm, do not scratch the corners and surfaces.

Attention: the diaphragm is connected by a quick change system, do not let it fall down, it may be damaged!







CAD Double Position Sensor

Protection against inrush current:

The sensor's power supply must be protected with the fast fuses of 100 or 160 mA, depending on the current absorbed by the input circuit (BX signals). That is to say that the fuse will have to take into account the absorption of the PLC input







CAD Double Position Sensor

Technical data:

Power supply	10 ÷ 30VDC
Maximum current consumption without load (@Vin= 30V)	40 mA
	Tipo: Open collector PNP
Transistor output signaling on opening and closing position (POS1 e POS2)	Imax: 80mA
	Vmax: 40V
Operating temperature limits	-10°C + 80°C
Temperature limits Storage	-10°C + 80°C
Protection level	IP67
EMC Conformity	EN 61326-1:2006, EN61000-6-2:2006, EN61000-6-3:2007, EN 61326-2-3:2006

	OPERATION				
LED	PROGRAMMING	NORMAL	MALFUNCTION		
Red	Flashes 2 times when it is recorded the closed valve position	Steady in the case of closed valve	Flash alternately with the GREEN LED in the case in which is recorded before the valve open position compared to that of valve closed		
Blue	Stay on for 10 sec.	Off	Flashes when the valve is locked in an intermediate position.		
Green	Flashes 2 times when it is recorded the valve open position	Steady when the valve is open	Flash alternately with the RED LED in the case in which is recorded before the valve open position compared to that of valve closed		







CAD Double Position Sensor

Status:

Blue = Program start or waiting for signal Red = Valve closed Green = Valve open







CAD Double Position Sensor

Programming:

Via PLC or with CAD Programmer













- Pull out CAD Double Position Sensor from its own box Attention: do not let it fall down, it may be damaged!

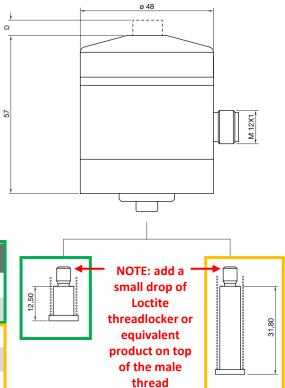






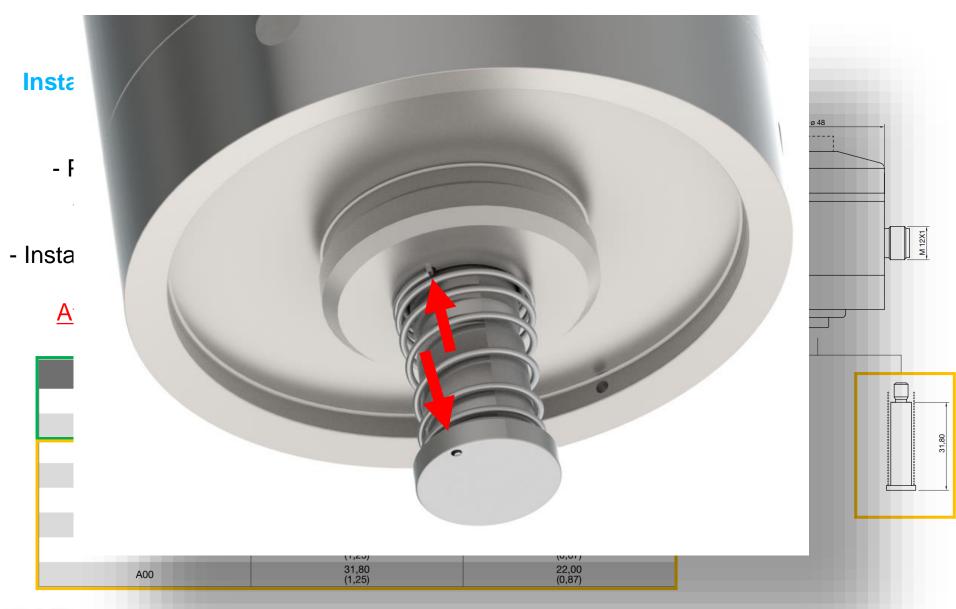
- Pull out CAD Double Position Sensor from its own box Attention: do not let it fall down, it may be damaged!
- Install the correct needle + spring on sensor shaft according the following table

SIZE	ADAPTOR LENGHT mm (inch)	D mm (inch)	
A12	12,50 (0,49)	2,50 (0,10)	
A19	12,50 (0,49)	4,50 (0,18)	
A25	31,80 (1,25)	5,50 (0,22)	
A38	31,80 (1,25)	8,50 (0,34)	
A50	31,80 (1,25)	11,00 (0,43)	
A63	31,80 (1,25)	14,00 (0,55)	
A76	31,80 (1,25)	17,00 (0,67)	
A00	31,80 (1,25)	22,00 (0,87)	













- Unscrew and remove the upper cap (turn anticlockwise with 24mm size wrench) from top of CAD NC Pneumatic Actuator







- Unscrew and remove the upper cap (turn anticlockwise with 24mm size wrench) from top of CAD NC Pneumatic Actuator

- Remove the visual indicator and its own spring

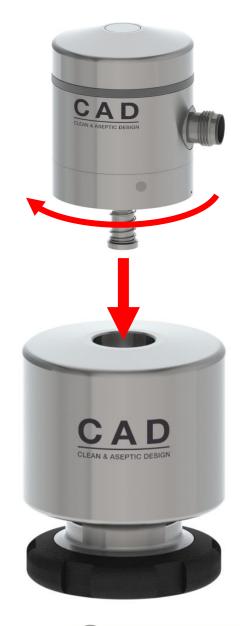






Installation of CAD Double Position Sensor over CAD NC Pneumatic Actuator

- Screw on the CAD Double Position sensor (do not use any tool) and tight by hand.







- Unlock the 3 M4 grub screw and rotate the sensor's head reaching the preferred position of cable connection.







- Unlock the 3 M4 grub screw and rotate the sensor's head reaching the preferred position of cable connection.
 - Tight the 3 M4 grub screw







- Connect to PLC or to CAD Programmer

Attention: use of genuine CAD Cable recommended to achieve a sealed connection











- Connect to PLC or to CAD Programmer
 Attention: use of genuine CAD Cable recommended
 to achieve a sealed connection
 - Proceed with programming via PLC or using the CAD Programmer





CAD





Programming of CAD Double Position Sensor

NOTE:

Programming (via PLC or with CAD Programmer)
has to be done in less than 12 seconds
otherwise
CAD sensor will abort the procedure
and reload the old program











Programming of CAD Double Position Sensor with CAD Programmer

Pushing sequences over CAD Programmer

1- Keep the valve closed, reset and change status







Programming of CAD Double Position Sensor with CAD Programmer

Pushing sequences over CAD Programmer

- 1- Keep the valve closed, reset and change status
- 2- Keep the valve closed, detect and save closed position













Programming of CAD Double Position Sensor with CAD Programmer

Pushing sequences over CAD Programmer

- 1- Keep the valve closed, reset and change status
- 2- Keep the valve closed, detect and save closed position
- 3- Open the valve, then detect and save open position















Programming of CAD Double Position Sensor with CAD Programmer

Pushing sequences over CAD Programmer

- 1- Keep the valve closed, reset and change status
- 2- Keep the valve closed, detect and save closed position
- 3- Open the valve, then detect and save open position
- 4- Wait for few seconds = Auto END Programing









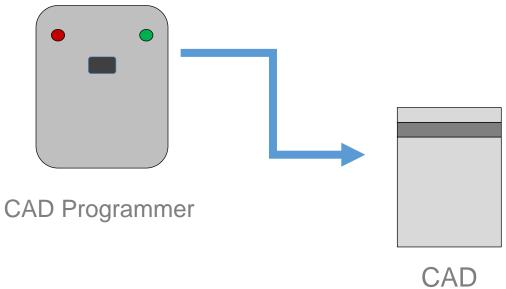


Programming of CAD Double Position Sensor with CAD Programmer









Double Position Sensor

Connect the CAD Programmer to the CAD Sensor



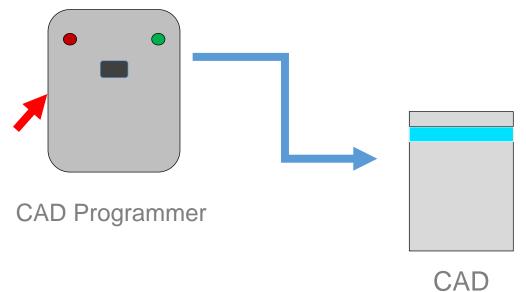


Programming of CAD Double Position Sensor with CAD Programmer









Double Position Sensor

Switch ON CAD Programmer

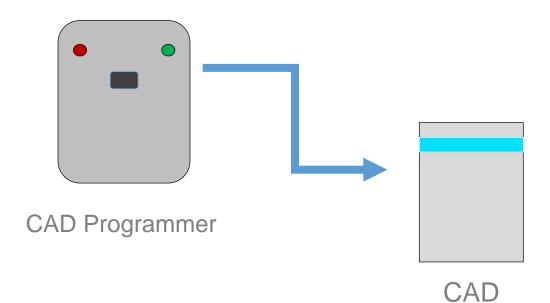




Programming of CAD Double Position Sensor with CAD Programmer







Double Position Sensor



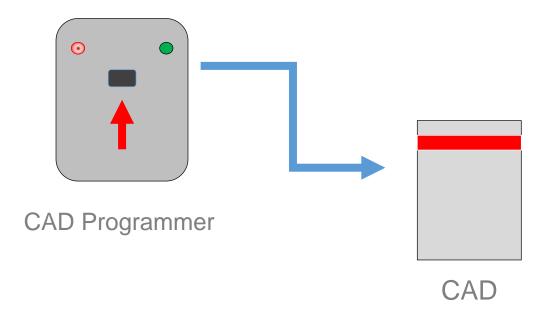


Programming of CAD Double Position Sensor with CAD Programmer









Double Position Sensor

Push button to save the close position



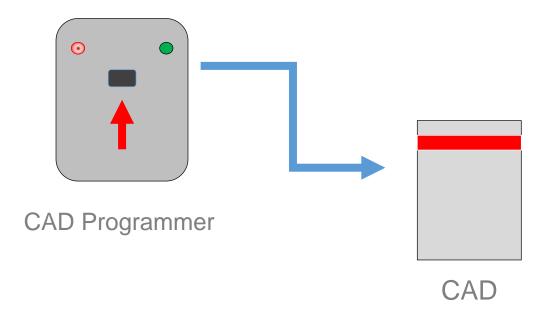


Programming of CAD Double Position Sensor with CAD Programmer









Double Position Sensor

Push button to save the close position



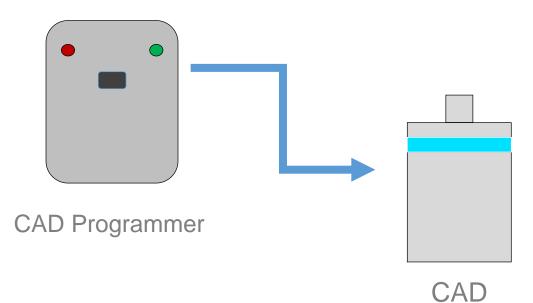








Programming of CAD Double Position Sensor with CAD Programmer



Double Position Sensor

Open the valve



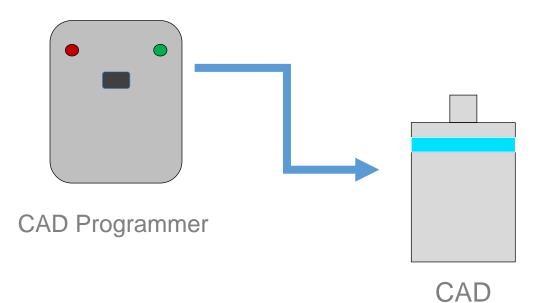








Programming of CAD Double Position Sensor with CAD Programmer



Double Position Sensor

Open the valve



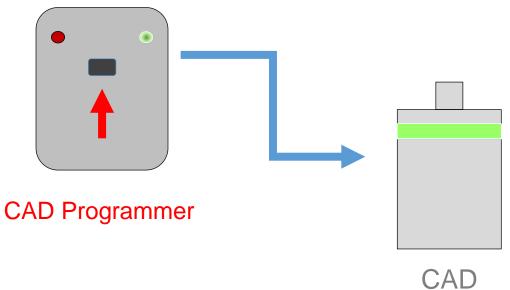


Programming of CAD Double Position Sensor with CAD Programmer









Double Position Sensor

Push button to save the open position



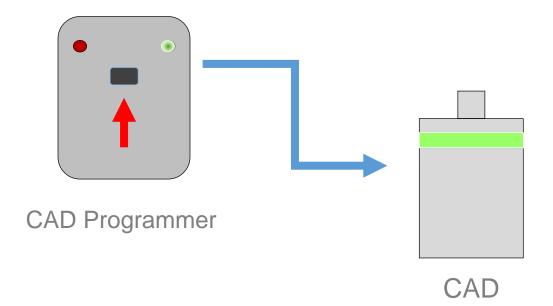


Programming of CAD Double Position Sensor with CAD Programmer









Double Position Sensor

Push button to save the open position



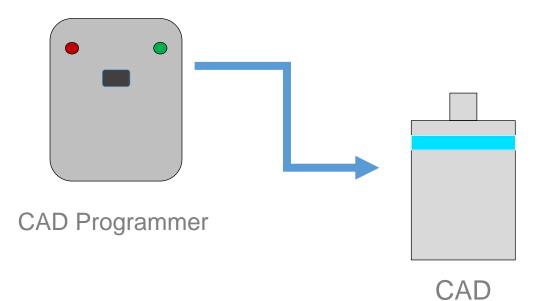








Programming of CAD Double Position Sensor with CAD Programmer



Double Position Sensor

Close the valve

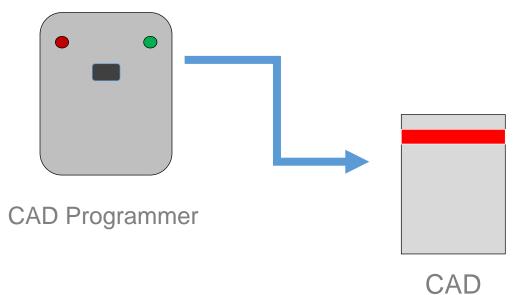












Double Position Sensor

Programming done...
Sensor ready to work!



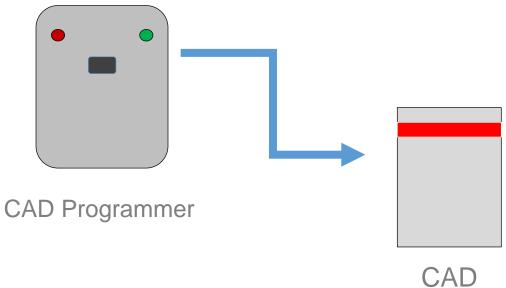












Double Position Sensor

Programming done...
Sensor ready to work!





CAD

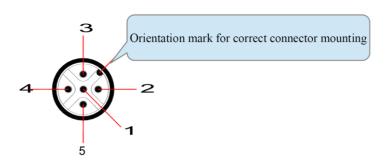


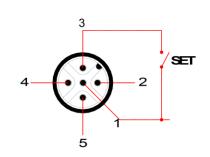


Programming of CAD Double Position Sensor via PLC

Programming of detecting points of the sensor without the CAD programmer, can be done connecting a Normally Open button on contacts between the SET and Vin via PLC.

CONNECTIONS							
Number	Name	Туре	Operation	V DC [V]	Max I [mA]		
1	Vin	supply	positive Power	10 ÷ 30	40		
2	GND	supply	negative Power				
3	SET	input	Limits setting		28		
4	POS1	Output	Output signal: valve closed	40	80		
5	POS2	output	Output signal: valve open	40	80		











CAD

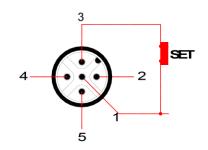


Programming of CAD Double Position Sensor via PLC

Programming of detecting points of the sensor without the CAD programmer, can be done connecting a Normally Open button on contacts between the SET and Vin via PLC.

Same procedure has to be followed

1- Keep the valve closed, reset and change status





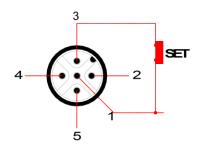


Programming of CAD Double Position Sensor via PLC

Programming of detecting points of the sensor without the CAD programmer, can be done connecting a Normally Open button on contacts between the SET and Vin via PLC.

Same procedure has to be followed

- 1- Keep the valve closed, reset and change status
- 2- Keep the valve closed, detect and save closed position











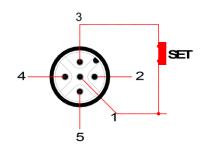


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- 1- Keep the valve closed, reset and change status
- 2- Keep the valve closed, detect and save closed position
- 3- Open the valve, then detect and save open position











CAD



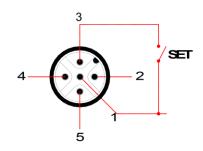


Programming of CAD Double Position Sensor via PLC

Programming of detecting points of the sensor without the CAD programmer, can be done connecting a Normally Open button on contacts between the SET and Vin via PLC.

Same procedure has to be followed

- 1- Keep the valve closed, reset and change status
- 2- Keep the valve closed, detect and save closed position
- 3- Open the valve, then detect and save open position
- 4- Wait for few seconds = Auto END Programing















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