Installation Instructions

Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

Kinetix VPAR and MPAR (Series B and C) Electric Cylinders Replacement Parts

Catalog Numbers MPAR-NA3210C, MPAR-NA4012C, MPAR-NA6310C, MPAR-NA6320C, MPAR-NP3210B, MPAR-NP4012B, MPAR-NP6310B, MPAR-NP6320B, MPL-*x*1520F-V-X20*x*, MPL-*x*1530F-V-X20*x*, MPL-*x*220F-V-X2*xx*, MPL-*x*330F-M-X21*x*, MPL-*x*420F-M-X21*x*, VPL-*x*0632F-P-X20*x*, VPL-*x*0633F-P-X20*x*, VPL-*x*0752F-P-X20*x*, VPL-*x*1003F-P-X20*x*, VPL-*x*1152F-P-X20*x*, MPAR-X1*xxx*B, MPAR-X1*xxx*E, MPAR-X2*xxx*C, MPAR-X2*xxx*F, MPAR-X3*xxx*E, MPAR-X3*xxx*H, VPAR-X1*xxx*B, VPAR-X1*xxx*E, VPAR-X2*xxx*C, VPAR-X2*xxx*F, VPAR-X3*xxx*E, VPAR-X3*xxx*H

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Summary of Changes

This manual contains new and updated information

Summary of Changes

Topic	Page
Removed discontinued parts: MPAR-NA323C, MPAR-NA405C, MPAR-NP323B, and MPAR-NP405B.	Throughout

Rockwell Automation

About This Publication

An electric-cylinder actuator and accessory supplier change affected the Kinetix® MP electric cylinders. MPAR-A1/2*xxx* and MPAR-B1/2*xxx* (series C) electric cylinders and MPAR-A/B3*xxx* (series B) electric cylinders reflect the change.

See MP-Series (series A and B) and TL-Series Electric Cylinders Replacement Parts, publication MPAR-IN004, for information regarding MPAR-A1/2*xxx* and MPAR-B1/2*xxx* (series A) and MPAR-A/B3*xxx* (series B) electric cylinders.

About Kinetix VPAR and MPAR Electric Cylinder Replacement Parts

Electric cylinders have three replaceable parts; the motor, actuator cylinder, and the transmission component. For inline-mount electric cylinders, the transmission component is the coupler and for parallel-mount electric cylinder, it is a belt. Instructions in this manual cover the replacement of these components.

Catalog Number Explanation

The tables that follow include the catalog number explanations for the replacement parts.

Table 1 - Replacement Couplings

Replacement Coupling Cat. No.	Electric Cylinder with Inline Motor Attributes		Use with Electric Cylinder Cat. No.
	Frame Size	Ball Screw Pitch mm/rev (in./rev)	
MPAR-NA3210C	32	10.0 (0.394)	MPAR-x1*xxx*E-*xx*A VPAR-x1*xxx*E-*xx*A
MPAR-NA4012C	40	12.7 (0.500)	MPAR-x2*xxx*F-*xx*A VPAR-x2*xxx*F-*xx*A
MPAR-NA6310C	63	10.0 (0.394)	MPAR-x3*xxx*E-*xx*A VPAR-x3*xxx*E-*xx*A
MPAR-NA6320C		20.0 (0.787)	MPAR-x3*xxx*H-*xx*A VPAR-x3*xxx*H-*xx*A

Table 2 - Replacement Belts

Replacement Belt Cat. No.	Electric Cylinder with Motor Mounted in Parallel Attributes		Use with Electric Cylinder Cat. No.
	Frame Size	Ball Screw Pitch mm/rev (in./rev)	
MPAR-NP622580	32	10.0 (0.394)	MPAR-x1*xxx*E-*xx*B/D/E VPAR-x1*xxx*E-*xx*B/D/E
MPAR-NP622581		3.0 (0.118)	MPAR-x1*xxx*B-*xx*B/D/E VPAR-x1*xxx*B-*xx*B/D/E
MPAR-NP622582	40	12.7 (0.500)	MPAR-x2*xxx*F-*xx*B/D/E VPAR-x2*xxx*F-*xx*B/D/E
MPAR-NP622583		5.0 (0.197)	MPAR-x2*xxx*C-*xx*B/D/E VPAR-x2*xxx*C-*xx*B/D/E
MPAR-NP622584	63	10.0 (0.394)	MPAR-x3*xxx*E-*xx*B/D/E VPAR-x3*xxx*E-*xx*B/D/E
MPAR-NP622585		20.0 (0.787)	MPAR-x3*xxx*H-*xx*B/D/E VPAR-x3*xxx*H-*xx*B/D/E

Table 3 - Replacement Motor for Kinetix MPAR Electric Cylinders

Replacement Motor Cat. No.	Electric Cylinder Attributes				Use with Electric Cylinder Cat. No.
	Voltage Class	Frame Size	Pitch mm/rev (in./rev)	Brake	
MPL-A1520F-V-X203	200	32	3.0 (0.118)	None	MPAR-A1*xxx*B-x2*x*
MPL-A1520F-V-X204				24V Brake	MPAR-A1*xxx*B-x4*x*
MPL-A1530F-V-X205			10.0 (0.394)	None	MPAR-A1*xxx*E-x2*x*
MPL-A1530F-V-X206				24V Brake	MPAR-A1*xxx*E-x4*x*
MPL-A1530F-V-X207		40	5.0 (0.197)	None	MPAR-A2*xxx*C-x2*x*
MPL-A1530F-V-X208				24V Brake	MPAR-A2*xxx*C-x4*x*
MPL-A220F-V-X209			12.7 (0.50)	None	MPAR-A2*xxx*F-x2*x*
MPL-A220F-V-X210				24V Brake	MPAR-A2*xxx*F-x4*x*
MPL-A330F-M-X211		63	10.0 (0.394)	None	MPAR-A3*xxx*E-x2*x*
MPL-A330F-M-X212				24V Brake	MPAR-A3*xxx*E-x4*x*
MPL-A420F-M-X213			20 (0.787)	None	MPAR-A3*xxx*H-x2*x*
MPL-A420F-M-X214				24V Brake	MPAR-A3*xxx*H-x4*x*
MPL-B1520F-V-X215	400	32	3.0 (0.118)	None	MPAR-B1*xxx*B-x2*x*
MPL-B1520F-V-X216				24V Brake	MPAR-B1*xxx*B-x4*x*
MPL-B1530F-V-X217			10.0 (0.394)	None	MPAR-BA1*xxx*E-x2*x*
MPL-B1530F-V-X218				24V Brake	MPAR-B1*xxx*E-x4*x*
MPL-B1530F-V-X219		40	5.0 (0.197)	None	MPAR-B2*xxx*C-x2*x*
MPL-B1530F-V-X220				24V Brake	MPAR-B2*xxx*C-x4*x*
MPL-B220F-V-X221			12.7 (0.50)	None	MPAR-B2*xxx*F-x2*x*
MPL-B220F-V-X222				24V Brake	MPAR-B2*xxx*F-x4*x*
MPL-B330F-M-X223		63	10.0 (0.394)	None	MPAR-B3*xxx*E-x2*x*
MPL-B330F-M-X224				24V Brake	MPAR-B3*xxx*E-x4*x*
MPL-B420F-M-X225			20.0 (0.787)	None	MPAR-B3*xxx*H-x2*x*
MPL-B420F-M-X226				24V Brake	MPAR-B3*xxx*H-x4*x*

Table 4 - Replacement Motor for Kinetix VPAR Electric Cylinders

Replacement Motor Cat. No.	Electric Cylinder Attributes				Use with Electric Cylinder Cat. No.
	Voltage Class	Frame Size	Pitch mm/rev (in./rev)	Brake	
VPL-A0632F-P-X203	200	32	3.0 (0.118)	None	VPAR-A1*xxx*B-x2*x*
VPL-A0632F-P-X204				24V Brake	VPAR-A1*xxx*B-x4*x*
VPL-A0633F-P-X205			10.0 (0.394)	None	VPAR-A1*xxx*E-x2*x*
VPL-A0633F-P-X206				24V Brake	VPAR-A1*xxx*E-x4*x*
VPL-A0633F-P-X207		40	5.0 (0.197)	None	VPAR-A2*xxx*C-x2*x*
VPL-A0633F-P-X208				24V Brake	VPAR-A2*xxx*C-x4*x*
VPL-A0752E-P-X209			12.7 (0.50)	None	VPAR-A2*xxx*F-x2*x*
VPL-A0752E-P-X210				24V Brake	VPAR-A2*xxx*F-x4*x*
VPL-A1003F-P-X211		63	10.0 (0.394)	None	VPAR-A3*xxx*E-x2*x*
VPL-A1003F-P-X212				24V Brake	VPAR-A3*xxx*E-x4*x*
VPL-A1152F-P-X213			20 (0.787)	None	VPAR-A3*xxx*H-x2*x*
VPL-A1152F-P-X214				24V Brake	VPAR-A3*xxx*H-x4*x*
VPL-B0632F-W-X215	400	32	3.0 (0.118)	None	VPAR-B1*xxx*B-x2*x*
VPL-B0632F-W-X216				24V Brake	VPAR-B1*xxx*B-x4*x*
VPL-B0633M-W-X217			10.0 (0.394)	None	VPAR-B1*xxx*E-x2*x*
VPL-B0633M-W-X218				24V Brake	VPAR-B1*xxx*E-x4*x*
VPL-B0633M-W-X219		40	5.0 (0.197)	None	VPAR-B2*xxx*C-x2*x*
VPL-B0633M-W-X220				24V Brake	VPAR-B2*xxx*C-x4*x*
VPL-B0752F-W-X221			12.7 (0.50)	None	VPAR-B2*xxx*F-x2*x*
VPL-B0752F-W-X222				24V Brake	VPAR-B2*xxx*F-x4*x*
VPL-B1003F-Q-X223		63	10.0 (0.394)	None	MPAR-B3*xxx*E-x2*x*
VPL-B1003F-Q-X224				24V Brake	VPAR-B3*xxx*E-x4*x*
VPL-B1152T-Q-X225			20.0 (0.787)	None	VPAR-B3*xxx*H-x2*x*
VPL-B1152T-Q-X226				24V Brake	VPAR-B3*xxx*H-x4*x*

Table 5 - Replacement Actuator

Replacement Actuator Cat. No.	Electric Cylinder Attributes			
	Frame Size	Pitch mm/rev (in./rev)	Stroke Length mm (in.)	Use with Electric Cylinder Cat. No.
MPAR-X1100B	32	3.0 (0.118)	100	MPAR-*x*1*xxx*B-*xxx* VPAR-*x*1*xxx*B-*xxx*
MPAR-X1200B			200	MPAR-*x*1*xxx*B-*xxx* VPAR-*x*1*xxx*B-*xxx*
MPAR-X1300B			300	MPAR-*x*1*xxx*B-*xxx* VPAR-*x*1*xxx*B-*xxx*
MPAR-X1400B			400	MPAR-*x*1*xxx*B-*xxx* VPAR-*x*1*xxx*B-*xxx*
MPAR-X1100E		10.0 (0.394)	100	MPAR-*x*1*xxx*E-*xxx* VPAR-*x*1*xxx*E-*xxx*
MPAR-X1200E			200	MPAR-*x*1*xxx*E-*xxx* VPAR-*x*1*xxx*E-*xxx*
MPAR-X1300E			300	MPAR-*x*1*xxx*E-*xxx* VPAR-*x*1*xxx*E-*xxx*
MPAR-X1400E			400	MPAR-*x*1*xxx*E-*xxx* VPAR-*x*1*xxx*E-*xxx*
MPAR-X2100C	40	5.0 (0.197)	100	MPAR-*x*2*xxx*C-*xxx* VPAR-*x*2*xxx*C-*xxx*
MPAR-X2200C			200	MPAR-*x*2*xxx*C-*xxx* VPAR-*x*2*xxx*C-*xxx*
MPAR-X2300C			300	MPAR-*x*2*xxx*C-*xxx* VPAR-*x*2*xxx*C-*xxx*
MPAR-X2400C			400	MPAR-*x*2*xxx*C-*xxx* VPAR-*x*2*xxx*C-*xxx*
MPAR-X2600C			600	MPAR-*x*2*xxx*C-*xxx* VPAR-*x*2*xxx*C-*xxx*
MPAR-X2100F		12.7 (0.50)	100	MPAR-*x*2*xxx*F-*xxx* VPAR-*x*2*xxx*F-*xxx*
MPAR-X2200F			200	MPAR-*x*2*xxx*F-*xxx* VPAR-*x*2*xxx*F-*xxx*
MPAR-X2300F			300	MPAR-*x*2*xxx*F-*xxx* VPAR-*x*2*xxx*F-*xxx*
MPAR-X2400F			400	MPAR-*x*2*xxx*F-*xxx* VPAR-*x*2*xxx*F-*xxx*
MPAR-X2600F			600	MPAR-*x*2*xxx*F-*xxx* VPAR-*x*2*xxx*F-*xxx*

Table 5 - Replacement Actuator (Continued)

Replacement Actuator Cat. No.	Electric Cylinder Attributes			
	Frame Size	**Pitch** mm/rev (in./rev)	**Stroke Length** mm (in.)	**Use with Electric Cylinder Cat. No.**
MPAR-X3100E	63	10.0 (0.344)	100	MPAR-x3*xxx*E-*xxx* VPAR-x3*xxx*E-*xxx*
MPAR-X3200E			200	MPAR-x3*xxx*E-*xxx* VPAR-x3*xxx*E-*xxx*
MPAR-X3300E			300	MPAR-x3*xxx*E-*xxx* VPAR-x3*xxx*E-*xxx*
MPAR-X3400E			400	MPAR-x3*xxx*E-*xxx* VPAR-x3*xxx*E-*xxx*
MPAR-X3600E			600	MPAR-x3*xxx*E-*xxx* VPAR-x3*xxx*E-*xxx*
MPAR-X3800E			800	MPAR-x3*xxx*E-*xxx* VPAR-x3*xxx*E-*xxx*
MPAR-X3100H		20.0 (0.787)	100	MPAR-x3*xxx*H-*xxx* VPAR-x3*xxx*H-*xxx*
MPAR-X3200H			200	MPAR-x3*xxx*H-*xxx* VPAR-x3*xxx*H-*xxx*
MPAR-X3300H			300	MPAR-x3*xxx*H-*xxx* VPAR-x3*xxx*H-*xxx*
MPAR-X3400H			400	MPAR-x3*xxx*H-*xxx* VPAR-x3*xxx*H-*xxx*
MPAR-X3600H			600	MPAR-x3*xxx*H-*xxx* VPAR-x3*xxx*H-*xxx*
MPAR-X3800H			800	MPAR-x3*xxx*H-*xxx* VPAR-x3*xxx*H-*xxx*

Before You Begin

Before you begin, use the Catalog Number Explanation to verify that the replacement parts match the electric cylinder that you are attempting to repair. Read through the procedure before you begin a repair or replacement.

Replace Inline-mount Electric Cylinder Motor

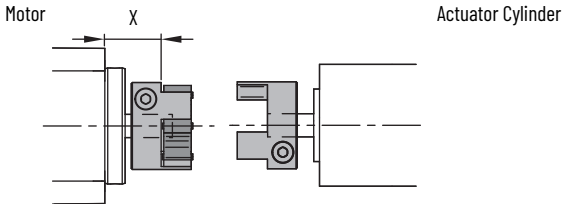
This procedure applies to Bulletin MPAR-*xxxxxx-xx*A and VPAR-*xxxxxx-xx*A electric cylinders.

IMPORTANT Apply Loctite 222 to screws ≤ M4 and Loctite 242 for screws ≥ M5 during assembly steps.

Follow these steps to replace the motor.

1. Disconnect motor and feedback cables.
2. Remove the four screws that secure the motor to the motor flange.
3. Remove the screw from the coupling hub on the motor shaft.
4. Remove the coupling hub from the motor shaft.
5. Clean the replacement motor shaft with a soft cloth and isopropyl alcohol.
6. Position the coupling hub on the shaft of the replacement motor.

   Use the dimensions shown in the table.
7. Torque the coupling screw to the value shown in the table.



Cat. No.	X mm (in.)	Torque N•m (lb•in)
MPAR-x1*xxx*E-*xx*A VPAR-x1*xxx*E-*xx*A	18.0 (0.71) (1)	4.0 (35.4)
MPAR-x2*xxx*F-*xx*A VPAR-x2*xxx*F-*xx*A	20.7 (0.81) (1)	4.0 (35.4)
MPAR-x3*xxx*E-*xx*A VPAR-x3*xxx*E-*xx*A	31.1(1.22) (2)	8.0 (70.8)
MPAR-x3*xxx*H-*xx*A VPAR-x3*xxx*H-*xx*A	38.5 (1.52) (2)	

(1) Tolerance is ± 0.3 mm (0.01 in.).
(2) Tolerance is ± 0.7 mm (0.03 in.).

8. Align the coupling, the motor, and the actuator cylinder, and push them together.
9. Attach the motor to the motor mount flange by using all four screws.

10. Torque the screws as shown in this table.

Cat. No.	Screw Size	Torque N•m (lb•in)
MPAR-x1*xxxx*-xxA VPAR-x1*xxxx*-xxA	M5 X 16	5.9 (52.2)
MPAR-x2*xxx*C-xxA VPAR-x2*xxx*C-xxA		
MPAR-x2*xxx*F-xxA VPAR-x2*xxx*F-xxA		

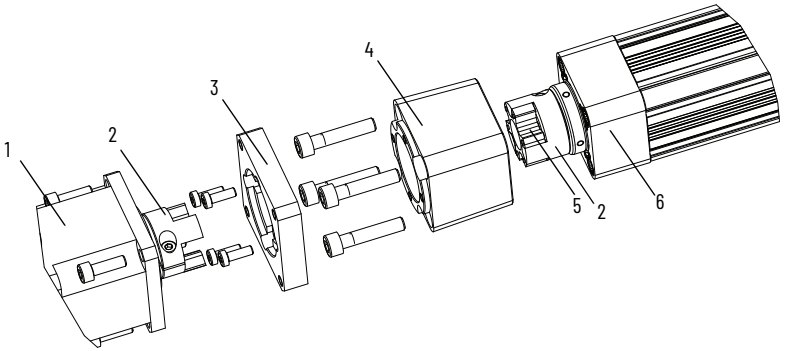
Cat. No.	Screw Size	Torque N•m (lb•in)
MPAR-x3*xxx*E-xxA VPAR-x3*xxx*E-xxA	M6 x 25	5.9 (52.22)
MPAR-x3*xxx*H-xxA VPAR-x3*xxx*H-xxA	M8 x 25	10.1 (89.39)

Replace Inline-mount Electric Cylinder Coupling or Actuator Cylinder

This procedure applies to Bulletins MPAR-*xxxxxx*-xxA and VPAR-*xxxxxx*-xxA electric cylinders. MPAR-*xxxxxx*-xxA is shown for illustrative purposes. Follow these steps to replace the coupling or actuator cylinder.

IMPORTANT Apply Loctite 222 to screws ≤ M4 and Loctite 242 for screws ≥ M5 during assembly steps.

1. Disconnect the motor and feedback cables.
2. Disassemble the motor, motor flange, and coupling housing, by using the following diagram.



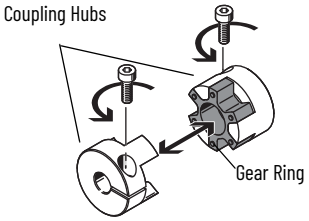
Item	Description
1	Motor
2	Coupling hub
3	Motor flange

Item	Description
4	Coupling housing
5	Gear ring
6	Actuator cylinder

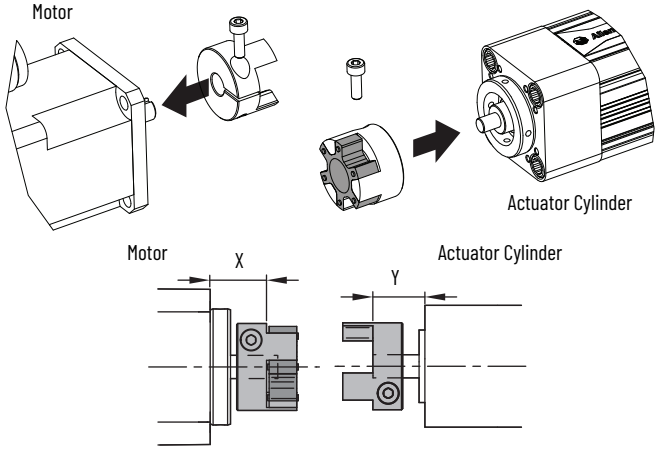
Replace Only the Coupling

If you are replacing the coupling only, follow these steps. If replacing the actuator cylinder, go to Replace Only the Actuator Cylinder on page 10.

1. Remove the coupling hubs from the motor and actuator.



2. Pull apart the new coupling.
3. Insert the new gear ring in one of the coupling hubs.
4. Position the coupling hubs on the motor shaft and on the actuator cylinder shaft to the values shown in the table.



Cat. No.	X mm (in.)	Y mm (in.)
MPAR-x1xxxE-xxA VPAR-x1xxxE-xxA	18.0 (0.71) (1)	19.7 (0.76) (1)
MPAR-x2xxxF-xxA VPAR-x2xxxF-xxA	20.7 (0.81) (1)	17.7 (0.70) (1)
MPAR-x3xxxE-xxA VPAR-x3xxxE-xxA	31.1 (1.22) (2)	23.5 (0.93) (2)
MPAR-x3xxxH-xxA VPAR-x3xxxH-xxA	38.5 (1.52) (2)	24.5 (0.94) (1)

(1) Tolerance is ± 0.3 mm (0.01 in.).
(2) Tolerance is ± 0.7 mm (0.03 in.).

5. Tighten the clamping screws on both the coupling hubs to the torque shown.

Cat. No.	Torque N•m (lb•in)
MPAR-x1xxxE-xxA VPAR-x1xxxE-xxA	4.0 (35.4)
MPAR-x2xxxF-xxA VPAR-x2xxxF-xxA	
MPAR-x3xxxE-xxA VPAR-x3xxxE-xxA	8.0 (70.8)
MPAR-x3xxxH-xxA VPAR-x3xxxH-xxA	

Continue with Assemble the Electric Cylinder on page 11.

Replace Only the Actuator Cylinder

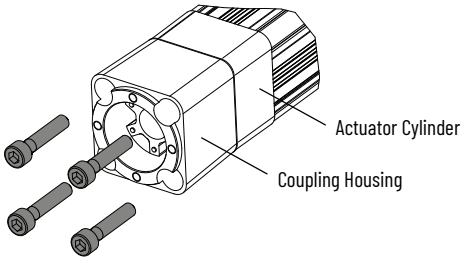
1. Remove the coupling hub from the actuator cylinder.
2. Remove the screw from the coupling hub.
3. Position the coupling hub on the shaft of the actuator cylinder.

   Use the dimension that is shown on the table in step 4 on page 9.
4. Tighten the coupling hub screw to the torque shown on the table in step 4 on page 9.

   Continue with Assemble the Electric Cylinder on page 11.

Assemble the Electric Cylinder

1. Attach the coupling housing by using four screws.

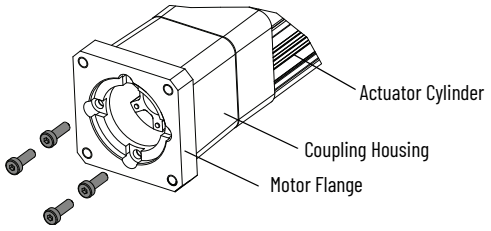


2. Torque the screws as shown in this table.

Cat. No.	Screw Size	Torque N•m (lb•in)
MPAR-x1xxxx-xxA VPAR-x1xxxx-xxA	M6 x 30	4.0 (35.40)
MPAR-x2xxxC-xxA VPAR-x2xxxC-xxA		
MPAR-x2xxxF-xxA VPAR-x2xxxF-xxA		
MPAR-x3xxxE-xxA VPAR-x3xxxE-xxA	M8 x 40	10.1 (89.39)
MPAR-x3xxxH-xxA VPAR-x3xxxH-xxA		

3. Attach the motor flange by using the required number of screws.

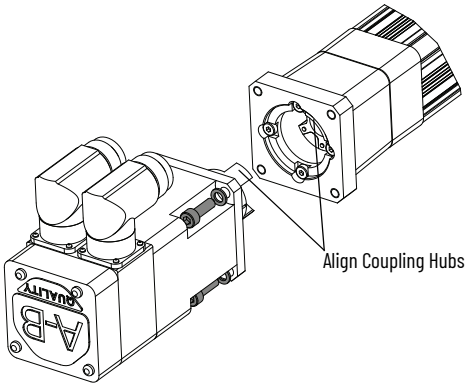
   See table in following the step for the screw quantity.



4. Torque the screws as shown in this table.

Cat. No.	Screw Quantity	Screw Size	Torque N•m (lb•in)
MPAR-x1xxxx-xxA VPAR-x1xxxx-xxA	4	M4 x 12	3.0 (25.6)
MPAR-x2xxxC-xxA VPAR-x2xxxC-xxA			
MPAR-x2xxxF-xxA VPAR-x2xxxF-xxA			
MPAR-x3xxxx-xxA VPAR-x3xxxx-xxA		M6 X 16	10.1 (89.39)

5. Align the coupling, the motor, and the actuator cylinder and push them together.



6. Attach the motor to the motor mount flange by using all four screws.
7. Torque the screws as shown in this table.

Cat. No.	Screw Size	Torque N•m (lb•in)
MPAR-x1xxxx-xxA VPAR-x1xxxx-xxA	M5 X 16	5.9 (52.22)
MPAR-x2xxxC-xxA VPAR-x2xxxC-xxA		
MPAR-x2xxxF-xxA VPAR-x2xxxF-xxA		
MPAR-x3xxxE-xxA VPAR-x3xxxE-xxA	M6 x 25	5.9 (52.22)
MPAR-x3xxxH-xxA VPAR-x3xxxH-xxA	M8 x 25	10.1 (89.39)

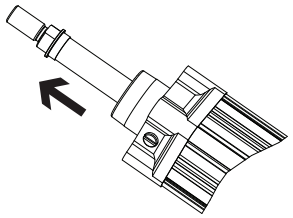
Replace a Parallel-mount Electric Cylinder Motor or Belt

This procedure is for Bulletins MPAR-*xxxxxx-xx*B/D/E and VPAR-*xxxxxx-xx*B/D/E electric cylinders. MPAR-*xxxxxx-xx*B is shown for illustrative purposes. These steps can be used to change the motor or the actuator cylinder orientation.

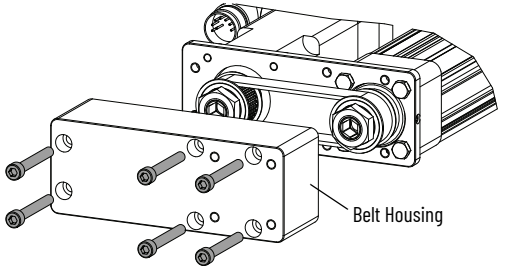
Follow these steps to replace the belt, motor, or actuator cylinder.

IMPORTANT Apply Loctite 222 to screws ≤ M4 and Loctite 242 for screws ≥ M5 during assembly steps.

1. Disconnect the motor and feedback cables.
2. If the motor has brake, release the brake on motor so that the rod moves freely.
3. Position the rod at the center of travel.



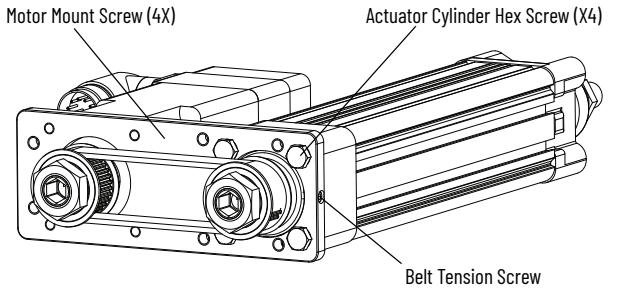
4. Remove the cover from belt housing.



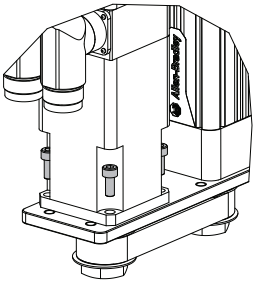
ATTENTION: Exposed parts that move can cause severe injury. Do not operate the electric cylinder without the cover in place. Follow the lock-out procedures before servicing the machine.

5. Loosen, but do not remove the four hex screws that hold the actuator cylinder to the baseplate.

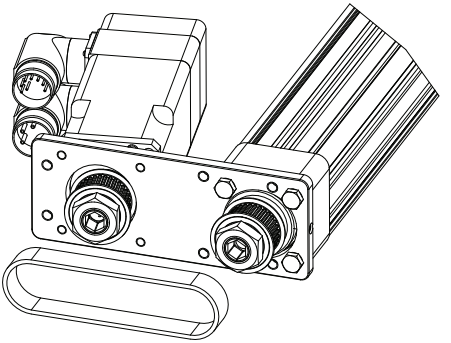
6. Loosen the belt tension screw.



7. Remove the four socket head cap screws that secure the motor to the baseplate.

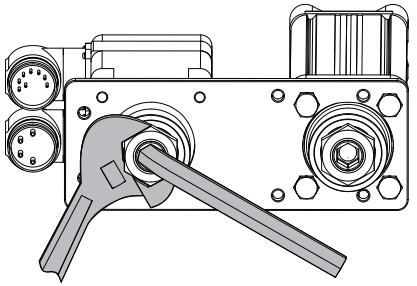


8. Angle the motor away from the actuator cylinder and remove the belt.

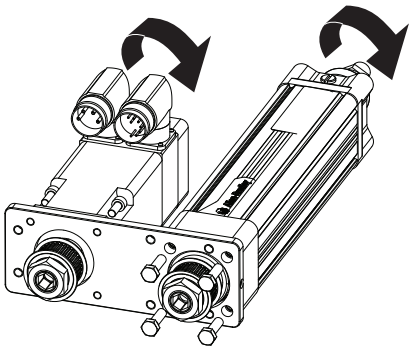


9. If you are replacing a motor or actuator cylinder, remove the pulley from the part being replaced.

Use a hex driver to hold the clamping cone and release the jam nut to release the pulley.



10. If necessary, reposition the motor and or actuator cylinder and secure to baseplate.



IMPORTANT If you are mounting the motor with the connectors between the actuator cylinder and the motor, rotate the motor connectors so they exit 180° away from the shaft.

11. Securely attach the motor and electric cylinder, but do not torque now.
12. Reinstall the pulley on the new part.

Set height and torque the motor jam nut to values shown in this table.

Cat. No.	Pulley Height mm (in.)	Jam Nut	Torque N•m (lb•in)
MPAR-x1*xxxx*-*xx*B/D/E VPAR-x1*xxxx*-*xx*B/D/E	6.5…7 (0.26…0.28)	M16 x 1.5	12 (106.21)
MPAR-x2*xxx*C-*xx*B/D/E VPAR-x2*xxx*C-*xx*B/D/E			
MPAR-x2*xxx*F-*xx*B/D/E VPAR-x2*xxx*F-*xx*B/D/E	8…8.5 (0.32…0.36)	M22x 1.5	32 (283.25)
MPAR-x3*xxx*E-*xx*B/D/E VPAR-x3*xxx*E-*xx*B/D/E	7.5…8 (0.30…0.32)	M30 x 1.5	70 (619.55)
MPAR-x3*xxx*H-*xx*B/D/E VPAR-x3*xxx*H-*xx*B/D/E			

13. Remove motor socket-head cap screws.
14. Position motor as shown in step 8 and slip on new belt.
15. Attach the motor to the baseplate by using four socket head cap screws.

Torque the motor socket-head cap screws to values shown in this table.

Cat. No.	Screw Size	Torque N•m (lb•in)
MPAR-x1xxxB-xxB/D/E VPAR-x1xxxB-xxB/D/E	M5 x 16	5.9 (52.2)
MPAR-x1xxxE-xxB/D/E VPAR-x1xxxE-xxB/D/E		
MPAR-x2xxxC-xxB/D/E VPAR-x2xxxC-xxB/D/E		
MPAR-x2xxxF-xxB/D/E VPAR-x2xxxF-xxB/D/E		
MPAR-x3xxxE-xxB/D/E VPAR-x3xxxE-xxB/D/E	M6 x 20	5.9 (52.22)
MPAR-x3xxxH-xxB/D/E VPAR-x3xxxH-xxB/D/E	M8 x 20	10.1 (89.39)

16. Secure, but do not tighten the actuator cylinder with four hex screws.
17. Tighten belt tension screw.

This table shows the recommended frequency values.

Cat. No.	Recommend Belt Tension N (lbf)	Frequency Hz
MPAR-x1xxxx-xxB/D/E VPAR-x1xxxx-xxB/D/E	32…35 (7.2…7.9)	242…254
MPAR-x2xxxC-xxB/D/E VPAR-x2xxxC-xxB/D/E		242…254
MPAR-x2xxxF-xxB/D/E VPAR-x2xxxF-xxB/D/E	57…63 (12.8…14.2)	152…160
MPAR-x3xxxx-xxB/D/E VPAR-x3xxxx-xxB/D/E	108…119 (24.3…26.8)	161…168

IMPORTANT A low pretension force is better than a high pretension force.
Excessive pretension on the belt results in:

- impermissible radial loads causing shaft to break.
- increased wear in the axis and motor gearings.
- reduction of the service life of the belt.

18. Torque the actuator cylinder screws to values shown in this table.

Cat. No.	Hex Screw Torque N•m (lb•in)
MPAR-x1*xxxx*-xxB/D/E VPAR-x1*xxxx*-xxB/D/E	5.9 (52.22)
MPAR-x2*xxx*C-xxB/D/E VPAR-x2*xxx*C-xxB/D/E	
MPAR-x2*xxx*F-xxB/D/E VPAR-x2*xxx*F-xxB/D/E	
MPAR-x3*xxxx*-xxB/D/E VPAR-x3*xxxx*-xxB/D/E	10.1 (89.39)

19. Secure the cover to the belt housing with five socket head cap screws.

Cat. No.	Screw Size	Torque N•m (lb•in)
MPAR-x1*xxxx*-xxB/D/E VPAR-x1*xxxx*-xxB/D/E	M6x45	5.9 (52.22)
MPAR-x2*xxx*C-xxB/D/E VPAR-x2*xxx*C-xxB/D/E		
MPAR-x2*xxx*F-xxB/D/E VPAR-x2*xxx*F-xxB/D/E	M6x60	
MPAR-x3*xxxx*-xxB/D/E VPAR-x3*xxxx*-xxB/D/E	M8x70	10.1 (89.39)

Notes:

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Kinetix VP Electric Cylinders Installation Instructions, publication VPAR-IN001	Information on how to install Kinetix VPAR electric cylinders.
MP-Series Electric Cylinders Installation Instructions, publication MPAR-IN001	Information on how to install Kinetix MPAR electric cylinders.
Kinetix VP Low Inertia Servo Motors with 063…165 mm Frame Size Instructions, publication VPL-IN001	Information on how to install, frame (063…165 mm) Kinetix VPL low-inertia motors.
MP-Series Brushless Servo Motor Installation Instructions, publication MP-IN001	Information on how to install, medium frame (100…165 mm) Kinetix MPL low-inertia motors.
MP-Series Brushless Servo Motor Installation Instructions, publication MP-IN006	Information on how to install small frame (<75 mm) Kinetix MPL low-inertia motors.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at rok.auto/literature.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Knowledgebase	Access Knowledgebase articles.	rok.auto/knowledgebase
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc

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Waste Electrical and Electronic Equipment (WEEE)

At the end of life, this equipment should be collected separately from any unsorted municipal waste.

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Rockwell Otomasyon Ticaret A.Ş. Kar Plaza İş Merkezi E Blok Kat:6 34752, İçerenköy, İstanbul, Tel: +90 (216) 5698400 EEE Yönetmeliğine Uygundur

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AMERICAS: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
EUROPE/MIDDLE EAST/AFRICA: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
ASIA PACIFIC: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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