



# D2-Series Heavy Duty Pneumatic Cylinders – 2-1/2 inch Bore

2-1/2 in. Bore, Double-acting, Tapped End Caps, Magnetic Piston



NITRA heavy duty pneumatic, NFPA interchangeable cylinder, 2-1/2" bore, 5/8" diameter piston rod, 7/16"-20 male threaded end, 1/4" female NPT ports, double acting, tapped end caps and one side for mount, flange, pivot and clevis mount options available. Some models available with cushions on both ends.

| 2-1/2 in bore, double acting, tapped end caps |          |                     |                              |          |                     |                    |             |
|-----------------------------------------------|----------|---------------------|------------------------------|----------|---------------------|--------------------|-------------|
| Part Number no Cushions                       | Price    | Drawing Link        | Part Number w/ Cushions*     | Price    | Drawing Link        | Stroke Length (in) | Weight (lb) |
| <a href="#">D240010DT-M</a>                   | \$265.00 | <a href="#">PDF</a> | -                            |          |                     | 1                  | 3.4         |
| <a href="#">D240020DT-M</a>                   | \$273.00 | <a href="#">PDF</a> | <a href="#">D240020DT-MC</a> | \$355.00 | <a href="#">PDF</a> | 2                  | 3.7         |
| <a href="#">D240030DT-M</a>                   | \$281.00 | <a href="#">PDF</a> | <a href="#">D240030DT-MC</a> | \$363.00 | <a href="#">PDF</a> | 3                  | 4.0         |
| <a href="#">D240040DT-M</a>                   | \$288.00 | <a href="#">PDF</a> | <a href="#">D240040DT-MC</a> | \$372.00 | <a href="#">PDF</a> | 4                  | 4.2         |
| <a href="#">D240050DT-M</a>                   | \$297.00 | <a href="#">PDF</a> | <a href="#">D240050DT-MC</a> | \$379.00 | <a href="#">PDF</a> | 5                  | 4.4         |
| <a href="#">D240060DT-M</a>                   | \$304.00 | <a href="#">PDF</a> | <a href="#">D240060DT-MC</a> | \$387.00 | <a href="#">PDF</a> | 6                  | 4.7         |
| <a href="#">D240070DT-M</a>                   | \$312.00 | <a href="#">PDF</a> | <a href="#">D240070DT-MC</a> | \$396.00 | <a href="#">PDF</a> | 7                  | 5.0         |
| <a href="#">D240080DT-M</a>                   | \$320.00 | <a href="#">PDF</a> | <a href="#">D240080DT-MC</a> | \$403.00 | <a href="#">PDF</a> | 8                  | 5.2         |
| <a href="#">D240100DT-M</a>                   | \$336.00 | <a href="#">PDF</a> | <a href="#">D240100DT-MC</a> | \$419.00 | <a href="#">PDF</a> | 10                 | 5.8         |
| <a href="#">D240120DT-M</a>                   | \$351.00 | <a href="#">PDF</a> | <a href="#">D240120DT-MC</a> | \$436.00 | <a href="#">PDF</a> | 12                 | 6.3         |
| <a href="#">D240140DT-M</a>                   | \$367.00 | <a href="#">PDF</a> | <a href="#">D240140DT-MC</a> | \$451.00 | <a href="#">PDF</a> | 14                 | 6.8         |
| <a href="#">D240160DT-M</a>                   | \$383.00 | <a href="#">PDF</a> | <a href="#">D240160DT-MC</a> | \$468.00 | <a href="#">PDF</a> | 16                 | 7.3         |
| <a href="#">D240180DT-M</a>                   | \$399.00 | <a href="#">PDF</a> | <a href="#">D240180DT-MC</a> | \$484.00 | <a href="#">PDF</a> | 18                 | 7.8         |
| <a href="#">D240200DT-M</a>                   | \$413.00 | <a href="#">PDF</a> | <a href="#">D240200DT-MC</a> | \$500.00 | <a href="#">PDF</a> | 20                 | 8.4         |
| <a href="#">D240240DT-M</a>                   | \$444.00 | <a href="#">PDF</a> | <a href="#">D240240DT-MC</a> | \$532.00 | <a href="#">PDF</a> | 24                 | 9.1         |
| <a href="#">D240280DT-M</a>                   | \$476.00 | <a href="#">PDF</a> | <a href="#">D240280DT-MC</a> | \$565.00 | <a href="#">PDF</a> | 28                 | 9.8         |
| <a href="#">D240320DT-M</a>                   | \$507.00 | <a href="#">PDF</a> | <a href="#">D240320DT-MC</a> | \$598.00 | <a href="#">PDF</a> | 32                 | 10.5        |

\* The cushions decelerate the piston rod over the last 11/16 inch (approx.) of stroke and are adjustable. Cushioned cylinders have an adjustable orifice and pre-lubricated nitrile cushion seal.

| Specifications                                                                                         |                                                  |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Aluminum hard anodized to 60 Rc cylinder body                                                          | 4.91 sq. in. piston area                         |
| Solid aluminum bar, black anodized end caps                                                            | Pressure rating 250 psi, AIR ONLY                |
| High tensile ground and polished hard chrome plated steel piston rod                                   | Non-detergent petroleum based oil is recommended |
| Low friction Buna-N seals                                                                              | Temperature range -20°F to 200°F (-25 to 90°C)   |
| Extend force at 100 psi = 491 lb.                                                                      | Retract force at 100 psi = 460 lb.               |
| Filtration: Not essential, however a standard 40 micron filter placed upstream will prolong seal life. |                                                  |

| Mounting Accessories     |                  |          |
|--------------------------|------------------|----------|
| Style                    | NFPA Designation | Part No. |
| <b>Front Flange</b>      | MF1              | D2FM-3   |
| <b>Rear Flange</b>       | MF2              | D2FM-3   |
| <b>Rear Clevis</b>       | MP2              | D2PC-3   |
| <b>Rear Clevis Short</b> | MP1              | D2SPC-3  |
| <b>Rear Pivot</b>        | MP4              | D2PA-3   |
| <b>Angle Mount</b>       | MS1              | D2AM-2   |
| <b>Base Mount</b>        | None             | D2BB-3   |

| Rod Accessories     |           |
|---------------------|-----------|
| Style               | Part No.  |
| <b>Rod Clevis</b>   | D2RC-1    |
| <b>Rod Eye</b>      | D2RE-1    |
| <b>Rod Couplers</b> | D2RCP-1   |
| <b>Rod Nuts</b>     | D2-716-20 |
| <b>Seal Kit</b>     | D2SK-40   |



# D2-Series Heavy Duty Pneumatic Cylinders – Accessories

## Rod Clevis



Part no. [D2RC-2](#)



Note: Comes with Pivot Pin installed.

### D2-Series Heavy Duty Pneumatic Cylinder Accessories

| Part Number            | Description                                                                         | Pcs/Pkg | Wt (lb) | Price   | Drawing Link        |
|------------------------|-------------------------------------------------------------------------------------|---------|---------|---------|---------------------|
| <a href="#">D2RC-1</a> | NITRA rod clevis, 7/16-20 UNF thread, steel. For use with D2 series NFPA cylinders. | 1       | 0.3     | \$29.00 | <a href="#">PDF</a> |
| <a href="#">D2RC-2</a> | NITRA rod clevis, 3/4-16 UNF thread, steel. For use with D2 series NFPA cylinders.  | 1       | 0.8     | \$40.00 | <a href="#">PDF</a> |

## Rod Eye



Part no. [D2RE-2](#)

### D2-Series Heavy Duty Pneumatic Cylinder Accessories

| Part Number            | Description                                                                      | Pcs/Pkg | Wt (lb) | Price   | Drawing Link        |
|------------------------|----------------------------------------------------------------------------------|---------|---------|---------|---------------------|
| <a href="#">D2RE-1</a> | NITRA rod eye, 7/16-20 UNF thread, steel. For use with D2 series NFPA cylinders. | 1       | 0.4     | \$33.50 | <a href="#">PDF</a> |
| <a href="#">D2RE-2</a> | NITRA rod eye, 3/4-16 UNF thread, steel. For use with D2 series NFPA cylinders.  | 1       | 1.2     | \$47.50 | <a href="#">PDF</a> |



# D2-Series Heavy Duty Pneumatic Cylinders – Accessories

## Rear Clevis

Part no. [D2PC-3](#)Part no. [D2SPC-3](#)

Note: Comes with pivot pin installed.

### D2-Series Heavy Duty Pneumatic Cylinder Accessories

| Part Number             | Description                                                                                                                     | Pcs/Pkg | Wt (lb) | Price   | Drawing Link        |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------|---------|---------|---------------------|
| <a href="#">D2PC-1</a>  | NITRA cylinder rear clevis bracket, steel. For use with 1.5in bore D2 series NFPA cylinders. Mounting hardware included.        | 1       | 0.5     | \$31.50 | <a href="#">PDF</a> |
| <a href="#">D2PC-2</a>  | NITRA cylinder rear clevis bracket, steel. For use with 2in bore D2 series NFPA cylinders. Mounting hardware included.          | 1       | 0.7     | \$37.00 | <a href="#">PDF</a> |
| <a href="#">D2PC-3</a>  | NITRA cylinder rear clevis bracket, steel. For use with 2.5in bore D2 series NFPA cylinders. Mounting hardware included.        | 1       | 0.8     | \$43.50 | <a href="#">PDF</a> |
| <a href="#">D2PC-4</a>  | NITRA cylinder rear clevis bracket, steel. For use with 3.25in bore D2 series NFPA cylinders. Mounting hardware included.       | 1       | 1.6     | \$55.00 | <a href="#">PDF</a> |
| <a href="#">D2PC-5</a>  | NITRA cylinder rear clevis bracket, steel. For use with 4in bore D2 series NFPA cylinders. Mounting hardware included.          | 1       | 1.7     | \$62.00 | <a href="#">PDF</a> |
| <a href="#">D2SPC-1</a> | NITRA cylinder rear short clevis bracket, steel. For use with 1.5in bore D2 series NFPA cylinders. Mounting hardware included.  | 1       | 0.7     | \$31.50 | <a href="#">PDF</a> |
| <a href="#">D2SPC-2</a> | NITRA cylinder rear short clevis bracket, steel. For use with 2in bore D2 series NFPA cylinders. Mounting hardware included.    | 1       | 0.7     | \$37.00 | <a href="#">PDF</a> |
| <a href="#">D2SPC-3</a> | NITRA cylinder rear short clevis bracket, steel. For use with 2.5in bore D2 series NFPA cylinders. Mounting hardware included.  | 1       | 0.8     | \$43.50 | <a href="#">PDF</a> |
| <a href="#">D2SPC-4</a> | NITRA cylinder rear short clevis bracket, steel. For use with 3.25in bore D2 series NFPA cylinders. Mounting hardware included. | 1       | 2.4     | \$55.00 | <a href="#">PDF</a> |
| <a href="#">D2SPC-5</a> | NITRA cylinder rear short clevis bracket, steel. For use with 4in bore D2 series NFPA cylinders. Mounting hardware included.    | 1       | 3.2     | \$62.00 | <a href="#">PDF</a> |

## Rear Pivot Eye

Part no. [D2PA-3](#)

### D2-Series Heavy Duty Pneumatic Cylinder Accessories

| Part Number            | Description                                                                                                 | Pcs/Pkg | Wt (lb) | Price   | Drawing Link        |
|------------------------|-------------------------------------------------------------------------------------------------------------|---------|---------|---------|---------------------|
| <a href="#">D2PA-1</a> | NITRA rear pivot eye, steel. For use with 1.5in bore D2 series NFPA cylinders. Mounting hardware included.  | 1       | 0.4     | \$31.50 | <a href="#">PDF</a> |
| <a href="#">D2PA-2</a> | NITRA rear pivot eye, steel. For use with 2in bore D2 series NFPA cylinders. Mounting hardware included.    | 1       | 0.5     | \$37.00 | <a href="#">PDF</a> |
| <a href="#">D2PA-3</a> | NITRA rear pivot eye, steel. For use with 2.5in bore D2 series NFPA cylinders. Mounting hardware included.  | 1       | 0.7     | \$43.50 | <a href="#">PDF</a> |
| <a href="#">D2PA-4</a> | NITRA rear pivot eye, steel. For use with 3.25in bore D2 series NFPA cylinders. Mounting hardware included. | 1       | 1.3     | \$55.00 | <a href="#">PDF</a> |
| <a href="#">D2PA-5</a> | NITRA rear pivot eye, steel. For use with 4in bore D2 series NFPA cylinders. Mounting hardware included.    | 1       | 1.4     | \$62.00 | <a href="#">PDF</a> |



# D2-Series Heavy Duty Pneumatic Cylinders – Accessories

## Flange Attachment

Part no. [D2FM-2](#)

### D2-Series Heavy Duty Pneumatic Cylinder Accessories

| Part Number            | Description                                                                                                     | Pcs/Pkg | Wt (lb) | Price   | Drawing Link        |
|------------------------|-----------------------------------------------------------------------------------------------------------------|---------|---------|---------|---------------------|
| <a href="#">D2FM-1</a> | NITRA flange mount plate, steel. For use with 1.5in bore D2 series NFPA cylinders. Mounting hardware included.  | 1       | 0.3     | \$31.50 | <a href="#">PDF</a> |
| <a href="#">D2FM-2</a> | NITRA flange mount plate, steel. For use with 2in bore D2 series NFPA cylinders. Mounting hardware included.    | 1       | 0.4     | \$36.00 | <a href="#">PDF</a> |
| <a href="#">D2FM-3</a> | NITRA flange mount plate, steel. For use with 2.5in bore D2 series NFPA cylinders. Mounting hardware included.  | 1       | 0.5     | \$41.00 | <a href="#">PDF</a> |
| <a href="#">D2FM-4</a> | NITRA flange mount plate, steel. For use with 3.25in bore D2 series NFPA cylinders. Mounting hardware included. | 1       | 3.0     | \$53.00 | <a href="#">PDF</a> |
| <a href="#">D2FM-5</a> | NITRA flange mount plate, steel. For use with 4in bore D2 series NFPA cylinders. Mounting hardware included.    | 1       | 4.3     | \$59.00 | <a href="#">PDF</a> |

## Rod Couplers

Part no. [D2RCP-2](#)

NITRA self-aligning rod couplers reduce cylinder alignment issues by compensating for  $\pm 1^\circ$  angular error and 1/16" lateral misalignment on both the extension and retraction strokes. Better reliability by reducing cylinder and component wear.

### D2-Series Heavy Duty Pneumatic Cylinder Accessories

| Part Number             | Description                                                                                        | Pcs/Pkg | Wt (lb) | Price   | Drawing Link        |
|-------------------------|----------------------------------------------------------------------------------------------------|---------|---------|---------|---------------------|
| <a href="#">D2RCP-1</a> | NITRA self-aligning rod coupler, 7/16-20 UNF thread, steel. For use with D2 series NFPA cylinders. | 1       | 0.5     | \$45.00 | <a href="#">PDF</a> |
| <a href="#">D2RCP-2</a> | NITRA self-aligning rod coupler, 3/4-16 UNF thread, steel. For use with D2 series NFPA cylinders.  | 1       | 0.6     | \$68.00 | <a href="#">PDF</a> |

## Jam Nuts

Part no. [D2-34-16](#)

### D2-Series Heavy Duty Pneumatic Cylinder Accessories

| Part Number               | Description                                                                      | Pcs/Pkg | Wt (lb) | Price  | Drawing Link        |
|---------------------------|----------------------------------------------------------------------------------|---------|---------|--------|---------------------|
| <a href="#">D2-716-20</a> | NITRA jam nut, 7/16-20 UNF thread, steel. For use with D2 series NFPA cylinders. | 1       | 0.02    | \$1.75 | <a href="#">PDF</a> |
| <a href="#">D2-34-16</a>  | NITRA jam nut, 3/4-16 UNF thread, steel. For use with D2 series NFPA cylinders.  | 1       | 0.07    | \$5.50 | <a href="#">PDF</a> |



# D2-Series Heavy Duty Pneumatic Cylinders – Accessories

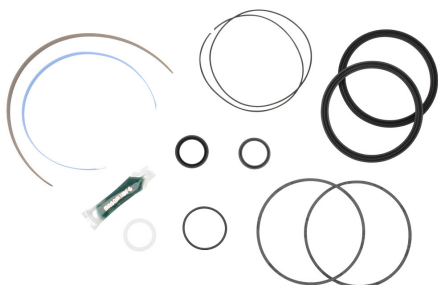
## Mount Brackets

Part no. [D2AM-3](#)Part no. [D2BB-3](#)

### D2-Series Heavy Duty Pneumatic Cylinder Accessories

| Part Number            | Description                                                                                                                 | Pcs/Pkg | Wt (lb) | Price   | Drawing Link        |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------|---------|---------|---------------------|
| <a href="#">D2AM-1</a> | NITRA angle mount bracket, steel. For use with 1.5in bore D2 series NFPA cylinders. Mounting hardware included.             | 1       | 0.5     | \$29.50 | <a href="#">PDF</a> |
| <a href="#">D2AM-2</a> | NITRA angle mount bracket, steel. For use with 2in bore D2 series NFPA cylinders. Mounting hardware included.               | 1       | 0.9     | \$34.00 | <a href="#">PDF</a> |
| <a href="#">D2AM-3</a> | NITRA angle mount bracket, steel. For use with 2.5in bore D2 series NFPA cylinders. Mounting hardware included.             | 1       | 0.9     | \$39.50 | <a href="#">PDF</a> |
| <a href="#">D2AM-4</a> | NITRA angle mount bracket, steel. For use with 3.25in bore D2 series NFPA cylinders. Mounting hardware included.            | 1       | 1.5     | \$50.00 | <a href="#">PDF</a> |
| <a href="#">D2AM-5</a> | NITRA angle mount bracket, steel. For use with 4in bore D2 series NFPA cylinders. Mounting hardware included.               | 1       | 2.2     | \$56.00 | <a href="#">PDF</a> |
| <a href="#">D2BB-1</a> | NITRA base mount bracket, anodized aluminum. For use with 1.5in bore D2 series NFPA cylinders. Mounting hardware included.  | 1       | 0.3     | \$36.00 | <a href="#">PDF</a> |
| <a href="#">D2BB-2</a> | NITRA base mount bracket, anodized aluminum. For use with 2in bore D2 series NFPA cylinders. Mounting hardware included.    | 1       | 0.4     | \$41.50 | <a href="#">PDF</a> |
| <a href="#">D2BB-3</a> | NITRA base mount bracket, anodized aluminum. For use with 2.5in bore D2 series NFPA cylinders. Mounting hardware included.  | 1       | 0.6     | \$49.00 | <a href="#">PDF</a> |
| <a href="#">D2BB-4</a> | NITRA base mount bracket, anodized aluminum. For use with 3.25in bore D2 series NFPA cylinders. Mounting hardware included. | 1       | 1.1     | \$59.00 | <a href="#">PDF</a> |
| <a href="#">D2BB-5</a> | NITRA base mount bracket, anodized aluminum. For use with 4in bore D2 series NFPA cylinders. Mounting hardware included.    | 1       | 1.2     | \$59.00 | <a href="#">PDF</a> |

## Seal Kits



### D2-Series Heavy Duty Pneumatic Cylinder Replacement Seal Kit

| Part Number             | Description                                                                                                                      | Pcs/Pkg | Wt (lb) | Price    |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------|---------|----------|
| <a href="#">D2SK-24</a> | NITRA seal kit, for use with 1.5in bore NFPA cylinders. All wear parts for both D-series and D2-series NFPA cylinders included.  | 1       | 0.1     | \$87.00  |
| <a href="#">D2SK-32</a> | NITRA seal kit, for use with 2in bore NFPA cylinders. All wear parts for both D-series and D2-series NFPA cylinders included.    | 1       | 0.1     | \$93.00  |
| <a href="#">D2SK-40</a> | NITRA seal kit, for use with 2.5in bore NFPA cylinders. All wear parts for both D-series and D2-series NFPA cylinders included.  | 1       | 0.1     | \$96.00  |
| <a href="#">D2SK-52</a> | NITRA seal kit, for use with 3.25in bore NFPA cylinders. All wear parts for both D-series and D2-series NFPA cylinders included. | 1       | 0.2     | \$117.00 |
| <a href="#">D2SK-64</a> | NITRA seal kit, for use with 4in bore NFPA cylinders. All wear parts for both D-series and D2-series NFPA cylinders included.    | 1       | 0.2     | \$127.00 |



# D2-Series Heavy Duty Pneumatic Cylinders

## Nitra Heavy Duty Pneumatic Air Cylinders

The NITRA Pneumatics D2-Series heavy duty cylinders include bore sizes from 1-1/2" to 4" and stroke lengths from 1" to 32" to meet a broad range of applications where abusive conditions exist. These NFPA heavy duty cylinders are constructed with high quality aluminum components and a magnetic piston fitted with a PTFE wear band.

The cylinders feature flush-mount sleeve nuts on the tie rods and are fitted with a PTFE coated cast iron bushing. This bearing ensures smooth rod motion while maintaining rod rigidity and stability.

All D2-Series cylinders have a magnetic piston that can be used along with solid state or reed switches for rod position sensing. The solid state and reed switches sense the rod position by emitting an electrical signal when the magnetized piston reaches a point adjacent to their location. Tie rod mounting allows fast and accurate positioning setup.

Cushioned cylinders are also available to provide end-of-

stroke deceleration at both ends. The cushions decelerate the piston rod at the end-of-stroke and are adjustable with a flat head screwdriver.

### Features

- Interchangeable with other popular brands of NFPA cylinders
- Available bore sizes: 1-1/2", 2", 2-1/2", 3-1/4", 4"
- Wide selection of stroke lengths
- All models are double-acting
- Head and end caps drilled for mounting
- All models have a magnetic piston
- PTFE coated cast iron bushing
- 250 psi max operating pressure
- Some models available with adjustable cushions (both ends)
- Made in the USA
- All models are typically available for same-day shipment
- Temperature range is -20° F to 200° F

## Operation

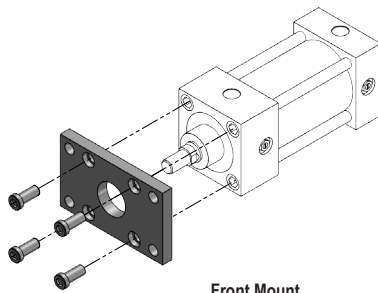
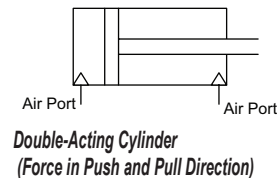
Double-acting cylinders have two compressed air ports. One of the ports will extend the rod in the "push" direction and the other port will retract the rod in the "pull" direction.

## Mounting Options and Accessories

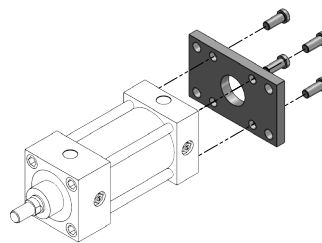
### Front or Rear Flange Mount (MF1 or MF2)

For Front or Rear Flange mounting, use the Flange Mount Kit.

Use the drawings below for installation reference.



Front Mount

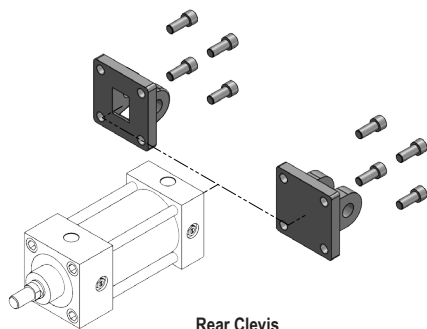


Rear Mount

### Rear Clevis Mount (MP1 or MP2)

For Rear Clevis mounting, use the Rear Clevis Mount Kit.

Use the drawing below for installation reference.



Rear Clevis



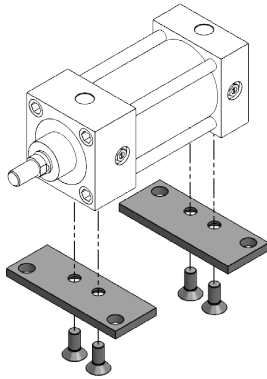
Click on the thumbnail or go to  
<https://www.automationdirect.com/VID-PN-0047> for a  
 short video on NITRA D2 Series Heavy Duty Cylinders.



# D2-Series Heavy Duty Pneumatic Cylinders

## Base Mount Bracket (Non NFPA)

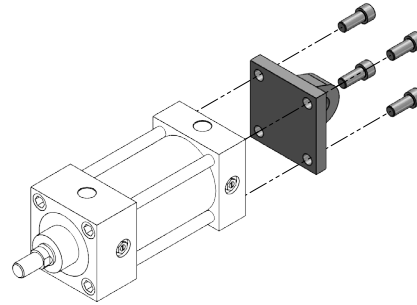
For base mounting, use the Base Mount Bracket Kit. Use the drawing below for installation reference.



Base Mount

## Rear Pivot Mount (MP4)

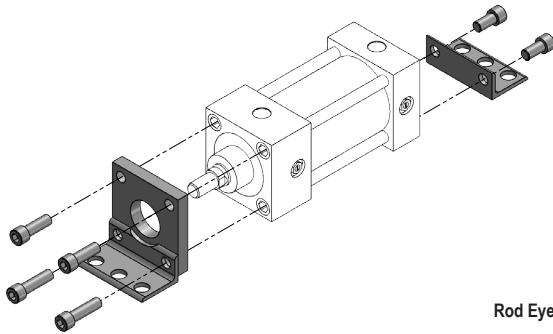
For Rear Pivot mounting, use the Pivot Attachment Kit. Use the drawing below for installation reference.



Rear Pivot

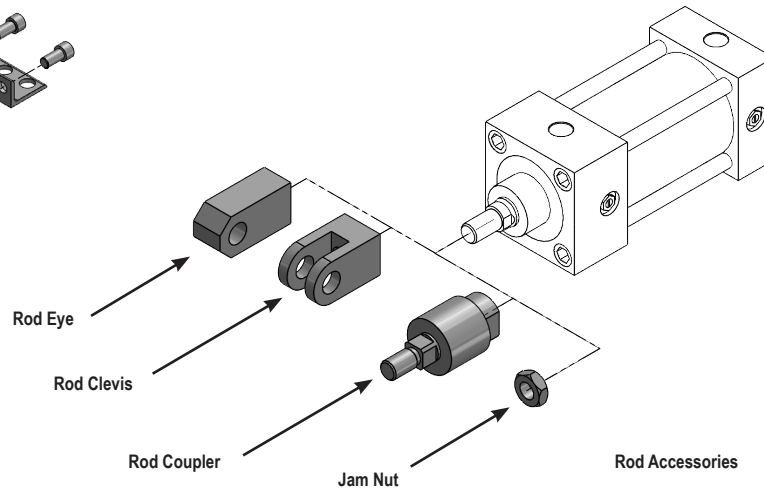
## Angle Mount Bracket (MS1)

For angle mounting, use the Angle Mount Bracket Kit. Use the drawing below for installation reference.



## Rod Accessories

There is a Rod Eye, Rod Clevis and Self-Aligning Rod Coupler to fit each size piston rod. 7/16-20 thread size fits 1-1/2", 2" and 2-1/2" bore cylinders. 3/4-16 thread fits 3-1/4" and 4" bore cylinders. Jam nuts are sold separately.





# D2-Series Heavy Duty Pneumatic Cylinders

## Cylinder Features

