Pneumatic & Hydraulic Cylinders built to:

Ford Motor Company

Specifications:

NC9
HD2
NC5
HD1
**ORDERING PROCEDURE**

**WHEN ORDERING - SPECIFY:**

1) **MODEL NO.** **DESCRIPTION**
   - NC9 (MX1) - Tie Rods Extended Both Ends
   - NC9 (MX2) - Tie Rods Extended Cap End
   - NC9 (MX3) - Tie Rods Extended Head End
   - NC9 (MF1) - Head Rectangular Flange (1 ½" - 6")
   - NC9 (MF2) - Cap Rectangular Flange (1½" - 6")
   - NC9 (ME3) - Head Square (8" - 12")
   - NC9 (ME4) - Cap Square (8" - 12")
   - NC9 (MP1) - Cap Fixed Clevis
   - NC9 (MS2) - Side Lug Mount
   - NC9 (MT4) - Intermediate Fixed Trunnion

2) **Cylinder Bore & Stroke** (Customer Selected)
   - Piston Rod Diameter & Rod-End Style (Do not indicate in model number)
   - (Only one Rod Diameter available per Bore Size - See Chart Below)
   - **Bore Size** | **Rod Diameter** | **Thread**
   - 1 1/2", 2", 2 1/2" | 1" | 7/8" - 14
   - 3 1/4" | 1 3/8" | 1 1/4" - 12
   - 4", 5" | 1 3/4" | 1 1/2" - 12
   - 6" | 2" | 1 3/4" - 12
   - 8", 10", 12" | 2 1/2" | 2 1/4" - 12

3) **Cushion Location** (Must be Specified by Customer)
   - “CC” Indicates Cap End Cushion
   - “HC” Indicates Head End Cushion
   - * Cushion Adjustment is available at position 1, 2, 3, or 4
   - * Cushions should be specified for cylinders with strokes greater than 2.0"

4) **Port Location & Port Thread Size** (Must be Specified by Customer)
   - “CT” Indicates Cap End Port
   - “HT” Indicates Head End Port
   - “P” Indicates NPTF (Standard).
   - Ports available at positions 1, 2, 3, or 4.

**Example:** NC9 - MS2 - 1.5x3.0 - CC2 - HC2 - CP1 - HP1 - S**

- SPECIAL
- PORT LOCATION AT 1, HEAD END
- PORT LOCATION AT 1, CAP END
- CUSHIONED AT POSITION 2, HEAD END
- CUSHIONED AT POSITION 2, CAP END
- 1½" BORE CYLINDER X 3" STROKE
- CYLINDER MOUNTING STYLE (SIDE LUG)
- GROUP NUMBER

**When using “S” in model number, ALL non-standard dimensions must be specified**

**NC9 CYLINDERS** are built to Ford Motor Company Vehicle Operation Specifications. Any deviations from this Standard must be approved in writing by the Ford Motor Company.
NC9 Cylinder Parts List

1. Tie Rod Nut
2. Tube O-Ring
3. Cushion Seal
4. Piston U-Cups
5. Piston
6. Rod Seal
7. Rod Cartridge
8. Rod Wiper
9. Cushion Adjustment
10. Cap End
11. Cylinder Tube
12. Wear Band
13. Tie Rod
14. Head
15. Rod Cartridge O-Ring
16. Rod Cartridge Retainer Plate
17. Piston Rod; Specify Rod End Style & Diameter

Peninsular Quality: Ford
“NC9” Cylinders

27650 Groesbeck Highway * Roseville, MI 48066-2759 * Phone: (586) 775-7211 Fax: (586) 775-4545
ORDERING PROCEDURE

WHEN ORDERING - SPECIFY:

1) Cushion - Head End  (Use Only if Cushion is Required)
2) Cylinder  Bore  (Specify in Inches)
3) Specify “HD2”  (Standard Group Code used in all HD2 Model Numbers)
4) Specify Piston Rod Diameter
   Specify Piston Rod End Style
   “SM” Style Shown.  All Others Available

<table>
<thead>
<tr>
<th>Bore Size</th>
<th>Rod Diameter</th>
<th>Rod Diameter</th>
<th>“SM” Style Shown</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2&quot;</td>
<td>5/8&quot;, 1&quot;</td>
<td>5/8&quot;</td>
<td>5/16 - 20</td>
</tr>
<tr>
<td>2&quot;</td>
<td>1&quot;, 1 1/2&quot;</td>
<td>1&quot;</td>
<td>3/4&quot; - 16</td>
</tr>
<tr>
<td>2 1/2&quot;</td>
<td>1&quot;, 1 1/2&quot;</td>
<td>1 1/8&quot;</td>
<td>1 - 14</td>
</tr>
<tr>
<td>3 1/2&quot;</td>
<td>1 1/8&quot;, 1 1/4&quot;</td>
<td>1 1/4&quot;</td>
<td>1 1/4 - 12</td>
</tr>
<tr>
<td>4&quot;</td>
<td>1 1/4&quot;, 2&quot;</td>
<td>2&quot;</td>
<td>1 1/2 - 12</td>
</tr>
<tr>
<td>5&quot;</td>
<td>2&quot;, 2 1/2&quot;</td>
<td>2 1/2&quot;</td>
<td>2 1/2 - 12</td>
</tr>
<tr>
<td>6&quot;</td>
<td>2 1/2&quot;, 3 1/2&quot;</td>
<td>3 1/2&quot;</td>
<td>3 - 12</td>
</tr>
<tr>
<td>8&quot;</td>
<td>3 1/2&quot;, 4&quot;, 5 1/2&quot;</td>
<td>4&quot;</td>
<td>4 - 12</td>
</tr>
</tbody>
</table>

5) MODEL DESCRIPTION  MODEL DESCRIPTION
MP1 - Cap Fixed Clevis  MF2 - Cap Rectangular Flange
MS2 - Side Lug Mount  MF5 - Head Square Flange
MT1 - Head Trunnion  ME5 - Head Rectangular
MT2 - Cap Trunnion  ME6 - Cap Rectangular
MT4 - Intermediate Fixed Trunnion  MX2 - Tie Rods Extended - Cap End
MF1 - Head Rectangular Flange  MX3 - Tie Rods Extended - Head End

6) Cylinder  Stroke  (Specify in Inches)
7) Cushion - Cap End  (Use Only if Cushion is Required)
8) Port Type
   N Indicates NPTF Thread Ports
   S Indicates SAE Thread Ports
9) Seal Type
   1 Indicates Cast Iron Piston Rings / Buna N Rod Seals
   2 Indicates Buna N (Nitrile) throughout
   3 Indicates Viton throughout
   4 Cast Iron Piston Rings / Viton Rod Seals

Example:  C - 1 1/2 - HD2 - 1SM - MS2 - 3 - C - S - 1
          CAST IRON PISTON RINGS
          SAE PORT THREADS (STD. POS. 1)
          CUSHIONED CAP END (STD. POS. 2)
          3" STROKE CYLINDER
          CYLINDER MOUNTING STYLE (SIDE LUG)
          5/16" PISTON ROD DIAMETER; SMALL MALE ROD-END STYLE
          “HD2” GROUP CODE
          1 1/2" BORE CYLINDER
          CUSHIONED HEAD END (STD. POS. 2)

Note: Consult Factory if the Cylinder needs to be Proximity Switch Ready
HD2 Cylinder Parts List

1. Tie Rod Nut
2. Teflon Backup Ring - Tube
3. Tube O-Ring
4. Piston U-Cups
5. Piston
6. Teflon Backup Ring - Z Seal
7. Rod Cartridge O-Ring
8. Rod Cartridge
9. Rod Wiper
10. Cushion Adjustment
11. Cap
12. Cylinder Tube
13. Tie Rod
14. Piston Rod; Specify Rod End Style & Diameter
15. Head
16. Z-Seal
17. Teflon Backup Ring for Rod Cartridge O-Ring
18. Rod Cartridge Retainer Plate
ORDERING PROCEDURE

WHEN ORDERING - SPECIFY:

1) Specify “NC5” or “HD1” (Standard Group Code(s) used in all NC5 & HD1 Model Numbers)

2) Specify Description

<table>
<thead>
<tr>
<th>Description</th>
<th>Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>F = Foot Mount</td>
<td>2 &amp; 4</td>
</tr>
<tr>
<td>T = Trunnion Mount</td>
<td>2 &amp; 4</td>
</tr>
<tr>
<td>C = Clevis Mount</td>
<td>2 &amp; 4</td>
</tr>
<tr>
<td>R = Rod End Flange</td>
<td>2 &amp; 4</td>
</tr>
<tr>
<td>B = Blind End Flange</td>
<td>1 &amp; 3</td>
</tr>
</tbody>
</table>

NPTF Double Supply Ports are Standard at the following Positions per Mounting Style

3) Specify Cushion Location

<table>
<thead>
<tr>
<th>Location</th>
<th>Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>B = Cushion on Blind End</td>
<td>2 &amp; 4</td>
</tr>
<tr>
<td>R = Cushion on Rod End</td>
<td>2 &amp; 4</td>
</tr>
<tr>
<td>BR = Cushion on Both Blind &amp; Rod Ends</td>
<td>2 &amp; 4</td>
</tr>
<tr>
<td>NC = No Cushions</td>
<td>1 &amp; 3</td>
</tr>
</tbody>
</table>

4) Specify Cylinder Bore Size

Note: Rod Diameters and Threads Sizes are Standard per Bore Size

<table>
<thead>
<tr>
<th>Bore Size</th>
<th>Rod Diameter</th>
<th>Thread Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2&quot;</td>
<td>3/8&quot;</td>
<td>3/4&quot; - 10</td>
</tr>
<tr>
<td>2&quot;</td>
<td>1 1/8&quot;</td>
<td>1 - 8</td>
</tr>
<tr>
<td>2 1/2&quot;, 3 1/4&quot;</td>
<td>3 3/8&quot;</td>
<td>1 1/4&quot; - 12</td>
</tr>
<tr>
<td>4&quot;, 4 1/2&quot;</td>
<td>1 3/8&quot;</td>
<td>1 1/2&quot; - 12</td>
</tr>
<tr>
<td>5&quot;, 6&quot;</td>
<td>2 1/8&quot;</td>
<td>2 - 12</td>
</tr>
<tr>
<td>8&quot;</td>
<td>3&quot;</td>
<td>2 3/4&quot; - 12</td>
</tr>
</tbody>
</table>

5) Specify Cylinder Stroke

Example: NC5 - F - BR - 3.25 - 7.00

Example: NC5 - F - BR - 3.25 - 7.00

GROUP NUMBER (HD1 or NC5)
NC5 & HD1 Cylinder Parts List

1. Tie Rod Nut
2. Cushion Seal
3. Tube O-Ring
4. Piston U-Cups
5. Piston
6. Rod Seal
7. Rod Cartridge
8. Rod Wiper
9. Cushion Adjustment
10. Cap End
11. Cylinder Tube
12. Wear Band
13. Tie Rod
14. Head
15. Rod Cartridge O-Ring
16. Rod Cartridge Retainer Plate
17. Piston Rod; Specify Rod End Style & Diameter

Note: The cylinder shown is the NC5. The HD1 is the same except with Teflon backup rings.
Hydraulic Cylinders
* 5,000 PSI Rated - 3,000 PSI Working Pressure
* All NFPA & Metric Mounting Styles & Rod Sizes
* Both High & Low Pressure Models Available

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For Severe Side Loaded Applications in both English & Metric Versions

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* 250 PSIG Rated (Steel & Aluminum Available)
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Our Clamps Hold Up as Well as Hold Down

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Special Cylinders can be Manufactured Application Specific to the Customer's Requirements and/or Specifications.

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NFPA or Metric Cylinder Accessories for all of your Cylinder Needs

Products
* Air Cylinders - (NFPA & Metric - Heavy, Medium, & Light Duty)
* Hydraulic Cylinders - (NFPA & Metric High & Low Pressure)
* Special Cylinders - (Per Application)
* Cylinder Accessories - (NFPA & Metric)
* Repairs & Rebuilds - (All Makes & Series)
* Air Powered Slides, Clamps & Die Lifters

Services & Features
* Quick Delivery & Customer Service
* Internally Lubricated for Life
* Lubricated Bearing Cartridge
* Improved Seals & Cushion Design
* In-Port Mounted Proximity Switch Sensing without Spacers
* Magnetic Piston Sensing