Position Feedback Cylinders

Available for pneumatic (TDP) and hydraulic (TDH) service. The TD Option gives you an internal Linear Resistive Transducer (LRT) for extremely accurate piston position sensing. It is ideal for applications where magnetic Reed and Hall effect switches are not acceptable. The TD Option is the perfect solution for applications where variations in cylinder stroke and speed are required or where an application calls for real time position monitoring. Offered in bore sizes from 1-1/8” to 4” and strokes up to 18”. Cylinder comes standard with an IP 67 rated 8mm 3 pin male cable connector.
INDUSTRIES:
• AUTOMOTIVE
• CHEMICAL PROCESSING
• FOOD & BEVERAGE
• INDUSTRIAL AUTOMATION
• MACHINE TOOL
• MARINE
• PETROCHEMICAL
• MEDICAL / PHARMACEUTICAL
• PRINTING & PACKAGING
• SEMICONDUCTOR
• TEXTILE MACHINERY

APPLICATIONS:
• POSITIONING
• MEASURING
• INSPECTION
• PICK AND PLACE
• WELDING & CUTTING
• PROCESS CONTROL
• ASSEMBLY AUTOMATION
• PACKAGING
• PRINTING
• LABELING
• PART INSERTION
• DISPENSING
• SEALING
• ANALYZERS
• BOTTLING
• ANIMATRONICS
• VERIFICATION
• STACKING
• PROCESS ACCEPTANCE (GO/NO GO)
• MATERIAL TESTING
• ADJUSTABLE ACCELERATION
**EXTERNAL CONSTRUCTION**

**TDH** and **TDP** Standard cylinder construction differ depending on bore size, for instance 1-1/8" and 1-1/2" bore sizes have an aluminum threaded rear head with an aluminum snap-ring construction front head the 2" thru 4" bore have our traditional Snap-Ring construction front and rear. All bore sizes utilize stainless steel cylinder tubing with the exception of the 4" bore which use heavy wall brass tubing.

**SSTDH** and **SSTDP** Cylinders are constructed using 300 series stainless steel.

---

**INTERNAL CONSTRUCTION**

**TDP**
Type “C” Cylinders are constructed using low friction “U” Cup Seals and include a wear strip on the piston. These Cylinders are primarily used on low pressure applications and where low minimum breakaway is required.  
Pressure Rating: 120 PSI. Pneumatic only.  
Breakaway: Approximately 2 to 3 PSI.  

**TDH**
Cylinders are constructed using Block-Vee Seals and include double rod seals in the front head except on the 1-1/8" Bore. A heavy duty wear strip (bearing) on the piston minimizes friction and piston seal wear, and on side load conditions prevents metal-to-metal contact.  
Pressure Rating: 200 PSI Pneumatic, 500 PSI. Hydraulic.  
Breakaway: Approximately 10 to 15 PSI.  
5" BORE AVAILABLE-Consult Factory for Details.
**RESISTANCE** 1.0k OHM / INCH ± 20%

**LINEARITY** ± 1.0%, INDEPENDENT

**VOLTAGE & CURRENT** 2 mA MAX CURRENT, 28 VDC MAX VOLTAGE

**RESOLUTION** INFINITE

**STANDARDSTROKES** 1, 2, 3, 4, 6, 8, 9, 12 & 18 INCHES

**POWER DISSIPATION** 1 WATT / INCH @ 25°C

**PRESSURE** TDP 120 P.S.I. PNEUMATIC, TDH 200 P.S.I PNEUMATIC, 500 P.S.I. HYDRAULIC

**OPERATING TEMP.** -25°C TO +100°C (FOR HIGHER TEMP. CONSULT FACTORY)

**STROKE VELOCITY** TDH 20" SEC TDH 50" SEC

---

 QUESTIONS CALL ALLENAIR (516) 747-5450
MODIFICATIONS
Listed below are some of the many modifications Allenair makes daily

RODS:
- Non– Standard Rod Extensions ( "H" Dim.) Length Required
- Non– Standard Rod Threads ( "CC" Dim.) Size Required
- Non– Standard Rod Threads Length ( "J" Dim.) Length Required
- Female Threads In Rod Size & Depth Required
- No Threads On Rod No Threads
- Complete Special Rod End Print Required
- Non-Standard Wrench Flats Location & Size
- Special Rod Material Material Required

LISTED BELOW ARE SPECIAL CODES WE USE WHENEVER A SPECIAL CYLINDER IS ORDERED.
NOT ALL CODES ARE LISTED, ONLY THE MOST COMMON

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Sp. &quot;H&quot; Dimension</td>
<td>K</td>
<td>Female Thread In Rod</td>
</tr>
<tr>
<td>CB</td>
<td>Sp. &quot;H&quot; &amp; &quot;J&quot; Dimension</td>
<td>L</td>
<td>303 Stainless Steel Rod</td>
</tr>
<tr>
<td>CH</td>
<td>Sp. &quot;H&quot; &amp; &quot;J&quot; For Cyl-Check</td>
<td>LF</td>
<td>Low Friction</td>
</tr>
<tr>
<td>D</td>
<td>Sp. &quot;CC&quot; Dimension</td>
<td>NT</td>
<td>No Tang</td>
</tr>
<tr>
<td>FC</td>
<td>Front Cushion</td>
<td>Q</td>
<td>Stainless Steel Snap Ring</td>
</tr>
<tr>
<td>FS</td>
<td>Fail Safe W / Spring In Front</td>
<td>RG</td>
<td>Sp. &quot;H&quot; For Rod Guide</td>
</tr>
<tr>
<td>G</td>
<td>No Rod Threads</td>
<td>RM</td>
<td>Magnet On Piston</td>
</tr>
<tr>
<td>HTP</td>
<td>Fluorocarbon Seals</td>
<td>WR</td>
<td>Rod Wiper</td>
</tr>
</tbody>
</table>

SPECIAL DESIGNS
Many times Allenair is able to change the standard configuration of our cylinders to meet customer's special requirements.

MATERIALS
Special seal compounds are available for a wide range of fluid media and environments. Tubes, Heads and Rods can be supplied plated, Hardcoated or in other materials. Please consult factory for special requirement.

ORDERING PROCEDURE

EXAMPLE: TDP 3 X 4 FC HTP RG RM WR

QUALITY FIRST...TODAY
ALL STAINLESS STEEL THREADED CONSTRUCTION
Crevice Free Feed Back Cylinders

Allenair Corp. has added the (TDP) and (TDH) Option to their crevice free stainless steel threaded construction pneumatic and hydraulic cylinder line. The TD Option with this cylinder construction gives you the perfect cylinder for those demanding applications in harsh environments. The cylinder has an internal Linear Resistive Transducer (LRT) for extremely accurate piston position sensing. It is ideal for applications where traditional magnetic position sensing is not acceptable. Additionally, the TD Option is a solution for applications where variations in cylinder stroke and speed are required or where an application calls for continuous position monitoring. Offered in bore sizes from 1-1/8” to 2” and strokes to 18”, the cylinders are designed for 120 P.S.I Pneumatic and 500 P.S.I Hydraulic. Cylinder comes standard with an IP 67 rated 8mm 3 pin male cable connector.
1) TUBE: 300 SERIES STAINLESS STEEL TUBING
PRECISION HONED "I.D." (16 MICRO OR BETTER)
FOR SIZE AND ROUNDNESS WITH CROSS HATCH
LUBRICANT RETAINING PATTERN. POLISHED "O.D."
TO A 32 MICRO OR BETTER FOR EASE OF CLEANING.

2) FRONT HEAD: 300 SERIES STAINLESS STEEL
IS IDEAL FOR WASHDOWN APPLICATIONS. DESIGNED
SPECIFICALLY TO REDUCE POINTS OF CONTAMINATION.

3) REAR HEAD: 300 SERIES STAINLESS STEEL
IS IDEAL FOR WASHDOWN APPLICATIONS. DESIGNED
SPECIFICALLY TO REDUCE POINTS OF CONTAMINATION.

4) PISTON ROD: GROUND AND POLISHED 303 OR 316
STAINLESS STEEL FOR MAXIMUM CORROSION RESIST-
ANCE.

5) PISTON: PRECISION MACHINED FROM 303 STAINLESS
STEEL FOR INTERNAL CORROSION RESISTANCE. THEY ARE
ASSEMBLED WITH "BLOCK-VEE" OR "U" CUP SEALS. A
HEAVY-DUTY WEAR STRIP (BEARING) ON THE PISTON MINI-
MIZES FRICITION AND SEAL WEAR, AND ON SIDE LOAD CON-
DITIONS PREVENTS METAL-TO-METAL CONTACT.

6) PIVOT BUSHING: LONG LIFE REPLACEABLE PIVOT
BUSHING

7) HEAD SEALS: NITRILE MATERIAL IS STANDARD. HIGH
TEMPERATURE AND OTHER MATERIALS ARE AVAILABLE.

8) ROD BEARING: SNAP-IN BEARING CONSTRUCTION
MATERIAL IS NYLON FOR EXTREMELY LOW FRICTION
AND EXTENDED LIFE.

9) LEATHER BACK-UP RING: AIDS IN KEEPING ROD CLEAN.
“WR” TEFLON WIPER RING ALSO AVAILABLE.

10) NITRILE ROD SEAL: NITRILE MATERIAL IS STANDARD. HIGH
TEMPERATURE AND OTHER MATERIALS ARE AVAILABLE.

11) PISTON SEALS: "BLOCK-VEE" OR "U" CUP ARE PRESSURE
ACTIVATED AND WEAR COMPENSATING. NITRILE MATERIAL IS
STANDARD. HIGH TEMPERATURE AND OTHER MATERIALS ARE
AVAILABLE.

12) WEAR STRIP (BEARING): MINIMIZES FRICTION AND SEAL
WEAR, AND ON SIDE LOAD CONDITIONS PREVENTS
METAL-TO-METAL CONTACT.

13) 8mm 3 PIN MALE CONNECTOR FOR USE WITH
STANDARD CORDSETS. DEGREE OF PROTECTION (IP67).

14) REPLACEABLE TRANSDUCER PROBE AND WIPER BLOCK ASS’Y.
**TRANSDUCER SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Resistance</th>
<th>1.0k OHM / INCH ± 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linearity</td>
<td>± 1.0%, INDEPENDENT</td>
</tr>
<tr>
<td>Voltage &amp; Current</td>
<td>2 mA MAX CURRENT, 28 VDC MAX VOLTAGE</td>
</tr>
<tr>
<td>Resolution</td>
<td>INFINITE</td>
</tr>
<tr>
<td>Standard Strokes</td>
<td>1, 2, 3, 4, 6, 8, 9, 12 &amp; 18 INCHES</td>
</tr>
<tr>
<td>Power Dissipation</td>
<td>1 WATT / INCH @ 25°C</td>
</tr>
<tr>
<td>Pressure</td>
<td>TDP 120 P.S.I. PNEUMATIC, TDH 200 P.S.I PNEUMATIC, 500 P.S.I. HYDRAULIC</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-25°C TO +100°C (FOR HIGHER TEMP. CONSULT FACTORY)</td>
</tr>
<tr>
<td>Stroke Velocity</td>
<td>TDH 20&quot; SEC TDH 50&quot; SEC</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

**Cyl. Bore Sizes**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>BR</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>L</th>
<th>LR</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>Z</th>
</tr>
</thead>
</table>

**Cyl. Bore AA BB CC ROD Dia. WH**

<table>
<thead>
<tr>
<th>CYL. BORE SIZES</th>
<th>AA</th>
<th>BB REAR</th>
<th>BB FRONT</th>
<th>CC</th>
<th>ROD Dia.</th>
<th>WH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/8&quot;</td>
<td>1/8</td>
<td>3/4 - 16</td>
<td>7/8 - 14</td>
<td>1/2</td>
<td>1/2 - 13</td>
<td>1/2 - 1/4</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>1/4</td>
<td>1&quot; - 14</td>
<td>1&quot; - 14</td>
<td>5/8 - 11</td>
<td>5/8</td>
<td>1-5/8</td>
</tr>
<tr>
<td>2&quot;</td>
<td>1/4</td>
<td>1&quot; - 14</td>
<td>1 - 3/8 - 12</td>
<td>3/4 - 10</td>
<td>1/2</td>
<td>1-5/8</td>
</tr>
</tbody>
</table>

**Rod Dia. W X Y**

<table>
<thead>
<tr>
<th>ROD Dia.</th>
<th>W</th>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/8&quot;</td>
<td>7/16</td>
<td>1-5/16</td>
<td>5/16</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>1/2</td>
<td>1-3/8</td>
<td>5/16</td>
</tr>
<tr>
<td>2&quot;</td>
<td>5/8</td>
<td>1-3/8</td>
<td>5/16</td>
</tr>
</tbody>
</table>
MODIFICATIONS
Listed below are some of the many modifications Allenair makes daily

RODS:
- Non– Standard Rod Extensions ("H" Dim.) Length Required
- Non– Standard Rod Threads ("CC" Dim.) Size Required
- Non– Standard Rod Threads Length ("J" Dim.) Length Required
- Female Threads In Rod Size & Depth Required
- No Threads On Rod No Threads
- Complete Special Rod End Print Required
- Non–Standard Wrench Flats Location & Size
- Special Rod Material Material Required

LISTED BELOW ARE SPECIAL CODES WE USE WHENEVER A SPECIAL CYLINDER IS ORDERED.
NOT ALL CODES ARE LISTED, ONLY THE MOST COMMON

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Sp. &quot;H&quot; Dimension</td>
<td>K</td>
<td>Female Thread In Rod</td>
</tr>
<tr>
<td>CB</td>
<td>Sp. &quot;H&quot; &amp; &quot;J&quot; Dimension</td>
<td>L</td>
<td>303 Stainless Steel Rod</td>
</tr>
<tr>
<td>CH</td>
<td>Sp. &quot;H&quot; &amp; &quot;J&quot; For Cyl-Check</td>
<td>LF</td>
<td>Low Friction</td>
</tr>
<tr>
<td>D</td>
<td>Sp. &quot;CC&quot; Dimension</td>
<td>NT</td>
<td>No Tang</td>
</tr>
<tr>
<td>FC</td>
<td>Front Cushion</td>
<td>Q</td>
<td>Stainless Steel Snap Ring</td>
</tr>
<tr>
<td>FS</td>
<td>Fail Safe W / Spring In Front</td>
<td>RG</td>
<td>Sp. &quot;H&quot; For Rod Guide</td>
</tr>
<tr>
<td>G</td>
<td>No Rod Threads</td>
<td>RM</td>
<td>Magnet On Piston</td>
</tr>
<tr>
<td>HTP</td>
<td>Fluorocarbon Seals</td>
<td>WR</td>
<td>Rod Wiper</td>
</tr>
</tbody>
</table>

SPECIAL DESIGNS
Many times Allenair is able to change the standard configuration of our cylinders to meet customer’s special requirements.

MATERIALS
Special seal compounds are available for a wide range of fluid media and environments. Tubes, Heads and Rods can be supplied plated, Hardcoated or in other materials. Please consult factory for special requirement.

ORDERING PROCEDURE

EXAMPLE: SSTTDP 2 X 4 FC HTP RG RM WR

QUALITY FIRST...TODAY