

# AZV Twin Rod Cylinder



## Specifications

Features	
Type	Twin Rod
Series	AZV
Configurations	AZV: Double Acting, Double Rod, Magnetic Piston, Cushions AZV 3D: Double Acting, 3 Rods, Magnetic Piston, Cushions AZV 4D: Double Acting, 4 Rods, Magnetic Piston, Cushions
Construction Materials	
Barrel	Extruded Aluminum, Anodized (10µ)
End Caps	Die Cast Aluminum
Piston Rod	Steel Hard Chrome Plated (Optional: Stainless Steel)
Rod Bearing	Teflon Impregnated Bronze
Piston	Brass
Piston Bearing	Fiber Reinforced Nylon
Captive Cushion Screw	Brass (Optional: Stainless)
Seals	NBR (Optional: Viton)
End Cap Screws	Steel, Zinc Plated (Optional: Stainless)
Tooling Plate	Bore: 32, 40, 50 Steel, Black Oxide Treated Bore: 63, 80, 100 Aluminum, Black Oxide Treated
Characteristics	
Operating Temperature	Min: -5° F (-20°C) Max: +176 °F (+80°C)
Operating Pressure	Min: 15 PSI (1 bar) Max: 145 PSI (10 bar)
Normal Operating Pressure	90 PSI (6 bar)
Lubrication	Pre-lubricated at factory. If additional lubrication is required, use oil compatible for NBR seal and designed for use in pneumatic systems.
Media	Filtered and Regulated Compressed Air
Installation	In any Position
Weight	See Page 44
Stroke Length	Up to 20 inches—Longer Contact Factory
Theoretical Forces	See Technical Information Section
Load Capacity	See Technical Information Section
Specifications	
<b>Piston Diameter</b>	<b>RDV 25</b> <b>32</b> <b>40</b> <b>50</b> <b>63</b> <b>80</b> <b>100</b>
<b>Port Sizes</b>	<b>NPT</b> -- <b>1/8</b> <b>1/4</b> <b>1/4</b> <b>3/8</b> <b>3/8</b> <b>1/2</b>
	<b>Metric (G)</b> 1/8    1/8    1/4    1/4    3/8    3/8    1/2
Rod Diameter	
AZV (RDV) (2 Pcs)	mm    6    8    10    12    16    20    20
AZV 3D (2 Pcs)	mm    --    8    10    12    16    20    20
(1 Pc )	mm    --    12    16    20    20    25    25
AZV 4D (4 Pcs)	mm    --    8    10    12    16    20    20
Cushion Lengths	<b>Inch</b> <b>0.67</b> <b>0.78</b> <b>0.98</b> <b>0.98</b> <b>0.98</b> <b>1.10</b> <b>1.18</b>
All Cylinders	mm    17    20    25    25    25    28    30

## Series AZV

Ø32mm - 100mm

## Series RDV

Ø25mm

**AZV 5: Double Acting, Double Rod, Magnets, Cushions**



**AZV3D 5: Double Acting, 3 Rods, Magnets, Cushions**



**AZV4D 5: Double Acting, 4 Rods, Magnets, Cushions**



## Features:

- Magnetic Piston
- Adjustable Cushions
- Pre-Lubricated Design
- Inch or Metric Construction

# AZV Twin Rod Cylinder



## Ordering Information

**Example:** AZV3D - U5050/10-V  
 Twin Rod Cylinder  
 Single Set of Twin Rods w/Single Rod  
 U.S. Option  
 Double Acting, Magnets, Cushions  
 50mm Bore  
 10" Stroke  
 Viton Seals

A Z V 3 D - U 5 0 5 0 / 1 0 - V

### Versions:

RDV - Ø 25mm Bore Only (Metric Only)

#### AZV Series

- AZV - Single Set Twin Rods
- AZV 3D - Single Set Twin Rods with Single Rod
- AZV 4D - Double Set Twin Rods

### Design:

- - Metric Construction
- U - US Construction: Inch Stroke, NPT Ports, & UNC Threads

### Actuation:

- 5 - Double Acting, Magnets, Cushions
- 1 - Double Acting, Cushions
- 6 - Double Acting, Magnets
- 2 - Double Acting

### Options:

- - Standard
- V - Viton
- EN - Trunnion, Adjustable
- R - Ø32 Piston Rods Tapped 10•32
- 3D Version Only
- T - Rod Thread: Ø32 - 5/16•18  
 Ø40,50,63 - 7/16•20

### Stroke:

#### INCH:

- any inch increment up to 20" standard
- contact factory for special stroke lengths

#### MM:

- any mm increment up to 500mm standard
- contact factory for special stroke lengths

### Bore:

- 025 - 25mm (nom. 1")  
 (Available Only in Metric Construction)
- 032 - 32 mm (nom. 1 1/4")
- 040 - 40 mm (nom. 1 1/2")
- 050 - 50 mm (nom. 2")
- 063 - 63 mm (nom. 2 1/2")
- 080 - 80 mm (nom. 3 1/8")
- 100 - 100 mm (nom. 4")

Proximity Sensors/Brackets: See Page 73

# AZV Twin Rod Cylinder



## Cylinder Mounts

Body Mounts		25mm	32mm	Bore Ø			80mm	100mm
				40mm	50mm	63mm		
<b>Foot Mounting</b> Type: A-	<b>INCH</b> Metric	-- KK 29.302	<b>4170-0352</b> PD 27917	<b>4170-0452</b> PD 27918	<b>4170-0552</b> PD 28072	<b>4170-0652</b> PD 28073	<b>4170-0852</b> PD 28074	<b>4170-1052</b> PD 28075
<b>Rear Double Clevis</b> Type: B-	<b>INCH</b> Metric	-- --	<b>4172-0351</b> PD 22704	<b>4172-0451</b> PD 22705	<b>4172-0551</b> PD 22706	<b>4172-0651</b> PD 22707	<b>4172-0851</b> PD 22708	<b>4172-1051</b> PD 22709
<b>Rear Single Clevis</b> Type: BA-	<b>INCH</b> Metric	-- KB 28.303	<b>4174-0351</b> PD 23412	<b>4174-0451</b> PD 23413	<b>4174-0551</b> PD 23414	<b>4174-0651</b> PD 23415	<b>4174-0851</b> PD 23416	<b>4174-1051</b> PD 23417
<b>Rear Clevis w/Spherical Bearing</b> Type: BAS-	<b>INCH</b> Metric	-- --	<b>4173-0351</b> PD 23843	<b>4173-0451</b> PD 23844	<b>4173-0551</b> PD 23845	<b>4173-0651</b> PD 23846	<b>4173-0851</b> PD 23847	<b>4173-1051</b> PD 23848
<b>Front Flange</b> Type: CA for AZV 5/3D/4D	<b>INCH</b> Metric	-- --	<b>4175-0351</b> PD 57042	<b>4175-0451</b> PD 57043	<b>4175-0551</b> PD 57044	<b>4175-0651</b> PD 57045	<b>4175-0851</b> PD 57046	<b>4175-1051</b> PD 57047
<b>Rear Flange</b> Type: D	<b>INCH</b> Metric	-- --	<b>4176-0351</b> PD 23403	<b>4176-0451</b> PD 23404	<b>4176-0551</b> PD 23405	<b>4176-0651</b> PD 23406	<b>4176-0851</b> PD 23407	<b>4176-1051</b> PD 23408
<b>Trunnion</b> Type: EN	<b>INCH/mm</b>	--	PD 39195	PD 39196	PD 39197	PD 39198	PD 39199	PD 39200
<b>Trunnion Blocks</b> Type: EL (Pair) (See Page 76)	<b>INCH/mm</b>	--	PD 23381	PD 23382	PD 23382	PD 23383	PD 23383	PD 23384
<b>Pivot Mount</b> (w/o Bolts)	<b>INCH/mm</b>	--	PD 25621	PD 25622	PD 25623	PD 25624	PD 25625	PD 25626

Delivery Information: All mounts are sold separately and are not mounted for shipment, except for the trunnion mount which requires factory installation.

Rod Accessories		25mm	32mm	Bore Ø			80mm	100mm
				40mm	50mm	63mm		
<b>Rod Nut</b>	<b>INCH</b> Metric	-- ZP 3848	<b>ZP-U 1810</b> ZP 1810	<b>ZP-U 2189</b> ZP 2189	<b>ZP-U 0178</b> ZP 0178	<b>ZP-U 0178</b> ZP 0178	<b>ZP-U 0185</b> ZP 0185	<b>ZP-U 0185</b> ZP 0185
<b>Rod Clevis</b>	<b>INCH</b> Metric	-- --	-- KY 6135	-- KY 6136	-- KY 6139	-- KY 6139	-- KY 6141	-- KY 6141
<b>Rod Eye</b>	<b>INCH</b> Metric	-- --	-- KY 6147	-- KY 6148	-- KY 6150	-- KY 6150	-- KY 6151	-- KY 6151
<b>Clevis Pin</b>	<b>INCH/mm</b>	--	KY 6153	KY 6154	KY 6157	KY 6156	KY 6158	KY 6159
<b>Rod Alignment Coupling</b>	<b>INCH</b> Metric	-- --	-- KY 1129	-- KY 1131	-- KY 1133	-- KY 1133	-- KY 1134	-- KY 1134

### NOTES:

- \* Body Nut for RDV type cylinder
- \*\* Items in **BOLD** type either include Inch mounting hardware or indicate Inch threads.

**Proximity Sensors/Brackets: See Page 73**

# AZV Twin Rod Cylinder



## Weights

### AZV

Weight	25mm		32mm		40mm		Bore Ø 50mm		63mm		80mm		100mm		
	1	2	*1	*2	1	2	1	2	1	2	1	2	1	2	
<b>Basic Cylinder</b>	<b>lbs</b>	<b>1.01</b>	<b>0.18</b>	<b>1.76</b>	<b>0.55</b>	<b>2.21</b>	<b>0.77</b>	<b>3.75</b>	<b>1.10</b>	<b>5.73</b>	<b>1.32</b>	<b>9.26</b>	<b>1.98</b>	<b>13.67</b>	<b>2.21</b>
	<b>kg</b>	0.46	0.08	0.8	0.25	1.0	0.35	1.7	0.5	2.6	0.6	4.2	0.9	6.2	1.0
Type A (RA)	<b>lbs</b>	<b>0.22</b>	--	<b>2.21</b>	--	<b>2.76</b>	--	<b>4.41</b>	--	<b>6.62</b>	--	<b>11.03</b>	--	<b>15.66</b>	--
	<b>kg</b>	0.10	--	1.0	--	1.25	--	2.0	--	3.0	--	5.0	--	7.1	--
Type B (RA)	<b>lbs</b>	--	--	<b>1.98</b>	--	<b>2.43</b>	--	<b>4.08</b>	--	<b>6.17</b>	--	<b>10.14</b>	--	<b>14.99</b>	--
	<b>kg</b>	--	--	0.9	--	1.1	--	1.85	--	2.8	--	4.6	--	6.8	--
Type BA	<b>lbs</b>	--	--	<b>2.21</b>	--	<b>2.65</b>	--	<b>4.19</b>	--	<b>6.62</b>	--	<b>11.03</b>	--	<b>16.10</b>	--
	<b>kg</b>	--	--	1.0	--	1.2	--	1.9	--	3.0	--	5.0	--	7.3	--
Type BAS	<b>lbs</b>	--	--	<b>2.09</b>	--	<b>2.65</b>	--	<b>4.19</b>	--	<b>6.39</b>	--	<b>10.36</b>	--	<b>15.44</b>	--
	<b>kg</b>	--	--	0.95	--	1.2	--	1.9	--	2.9	--	4.7	--	7.0	--
Type D	<b>lbs</b>	--	--	<b>1.98</b>	--	<b>2.43</b>	--	<b>4.08</b>	--	<b>6.28</b>	--	<b>10.36</b>	--	<b>15.44</b>	--
	<b>kg</b>	--	--	0.9	--	1.1	--	1.85	--	2.85	--	4.7	--	7.0	--
Type EN	<b>lbs</b>	--	--	<b>2.65</b>	--	<b>3.75</b>	--	<b>5.73</b>	--	<b>8.60</b>	--	<b>13.23</b>	--	<b>19.18</b>	--
	<b>kg</b>	--	--	1.2	--	1.7	--	2.6	--	3.90	--	6.0	--	8.7	--

\*1 = Weight for cylinder with 4" (100 mm) stroke

\*2 = Weight for every additional 4" (100 mm) stroke length

### AZV 3D

Weight	32mm		40mm		Bore Ø 50mm		63mm		80mm		100mm		
	*1	*2	1	2	1	2	1	2	1	2	1	2	
<b>Basic Cylinder</b>	<b>lbs</b>	<b>2.21</b>	<b>0.66</b>	<b>3.31</b>	<b>0.99</b>	<b>5.51</b>	<b>1.54</b>	<b>7.06</b>	<b>1.87</b>	<b>11.69</b>	<b>2.87</b>	<b>16.54</b>	<b>3.31</b>
	<b>kg</b>	1.0	0.30	1.5	0.45	2.5	0.7	3.2	0.85	5.3	1.3	7.5	1.5
Type A	<b>lbs</b>	<b>2.65</b>	--	<b>3.97</b>	--	<b>6.17</b>	--	<b>8.38</b>	--	<b>13.23</b>	--	<b>18.74</b>	--
	<b>kg</b>	1.2	--	1.8	--	2.8	--	3.8	--	6.0	--	8.5	--
Type C	<b>lbs</b>	<b>2.43</b>	--	<b>3.53</b>	--	<b>5.84</b>	--	<b>7.61</b>	--	<b>12.79</b>	--	<b>18.08</b>	--
	<b>kg</b>	1.1	--	1.6	--	2.65	--	3.45	--	5.8	--	8.2	--
Type EN	<b>lbs</b>	<b>3.09</b>	--	<b>4.85</b>	--	<b>7.5</b>	--	<b>9.92</b>	--	<b>15.88</b>	--	<b>22.05</b>	--
	<b>kg</b>	1.4	--	2.2	--	3.4	--	4.5	--	7.2	--	10.0	--

\*1 = Weight for cylinder with 4" (100 mm) stroke

\*2 = Weight for every additional 4" (100 mm) stroke length

### AZV 4D

Weight	32mm		40mm		Bore Ø 50mm		63mm		80mm		100mm		
	*1	*2	1	2	1	2	1	2	1	2	1	2	
<b>Basic Cylinder</b>	<b>lbs</b>	<b>2.21</b>	<b>0.66</b>	<b>3.09</b>	<b>0.88</b>	<b>5.07</b>	<b>1.32</b>	<b>7.06</b>	<b>1.98</b>	<b>12.35</b>	<b>3.09</b>	<b>16.32</b>	<b>3.31</b>
	<b>kg</b>	1.0	0.30	1.4	0.40	2.3	0.6	3.2	0.9	5.6	1.4	7.4	1.50
Type A	<b>lbs</b>	<b>2.65</b>	--	<b>3.75</b>	--	<b>5.73</b>	--	<b>7.94</b>	--	<b>13.89</b>	--	<b>18.30</b>	--
	<b>kg</b>	1.2	--	1.70	--	2.6	--	3.6	--	6.3	--	8.3	--
Type EN	<b>lbs</b>	<b>3.09</b>	--	<b>4.63</b>	--	<b>7.06</b>	--	<b>9.92</b>	--	<b>16.54</b>	--	<b>22.05</b>	--
	<b>kg</b>	1.4	--	2.1	--	3.2	--	4.5	--	7.5	--	10.0	--

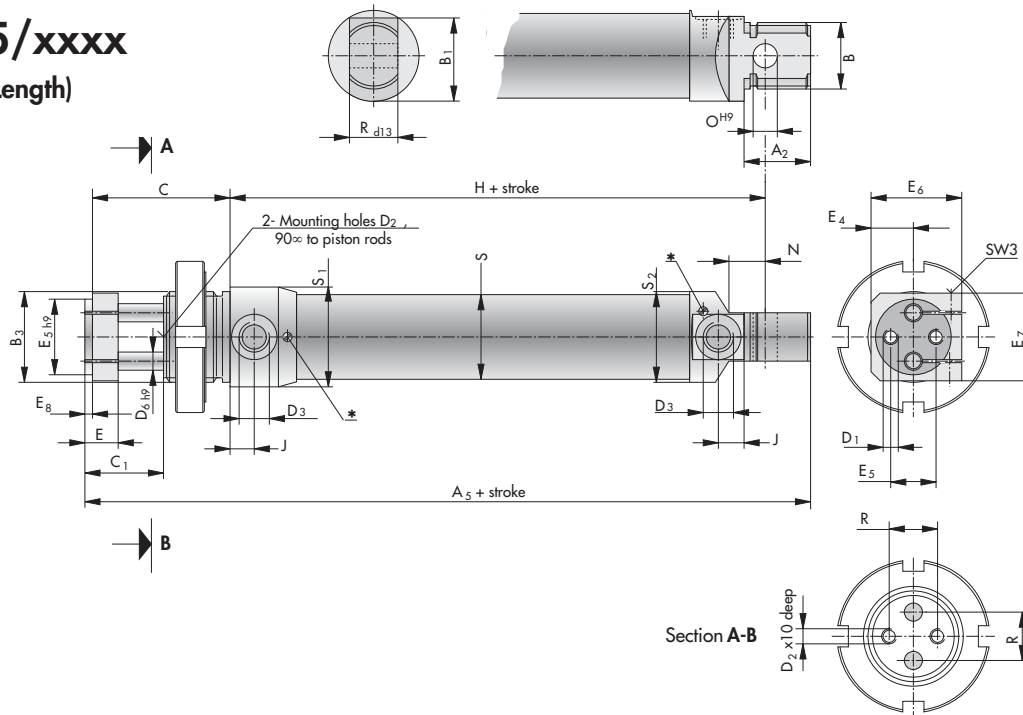
# AZV Twin Rod Cylinder



## Dimensional Data

### Basic Cylinder RDV 5025/xxxx

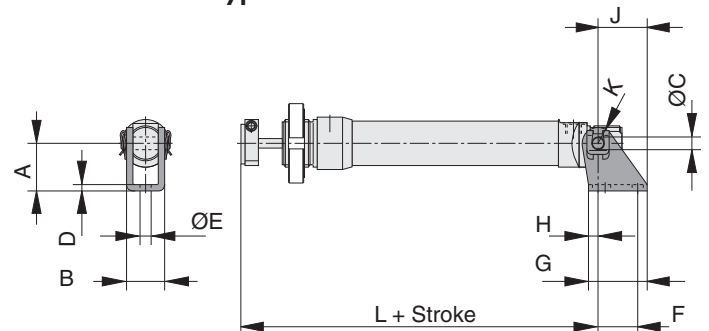
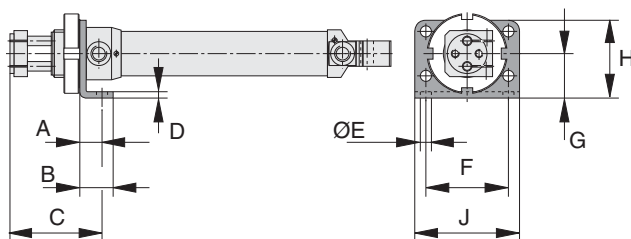
(xxxx= Stroke Length)



A2	A5+ stroke	B	B1	B3	C	D1	D3 h9	øD6	E	E4 h9	øE5	E6
0.87 22	6.16 156.5	-- M22 x 1.5	1.1 28	-- M30x1.5	1.81 46	-- M5	-- G1/8	0.24 6	0.43 11	0.59 15	0.98 25	1.14 29
E7	E8	F3 stroke	H+	N H9	øO	øS	øS1	øS2 d13	R	SW	*	
1.18 30	0.08 2	0.31 8	3.76 95.5	0.47 12	0.31 8	1.1 28	1.3 33	1.18 30	0.63 16	M3	M8x.75	

### Foot Mount - Type RA

### Rear Clevis - Type RB



	A	B	C	D	E	F	G	H	J	K	L+
RA	.55 14	.83 21	2.20 56	0.16 4	0.26 6.6	2.05 52	1.10 28	1.93 49	2.60 66		
RB	1.18 30	0.63 16.1	0.31 8	0.16 4	0.26 6.6	0.98 25	1.46 37	0.24 6	1.14 29	0.39 10	5.65 143.5

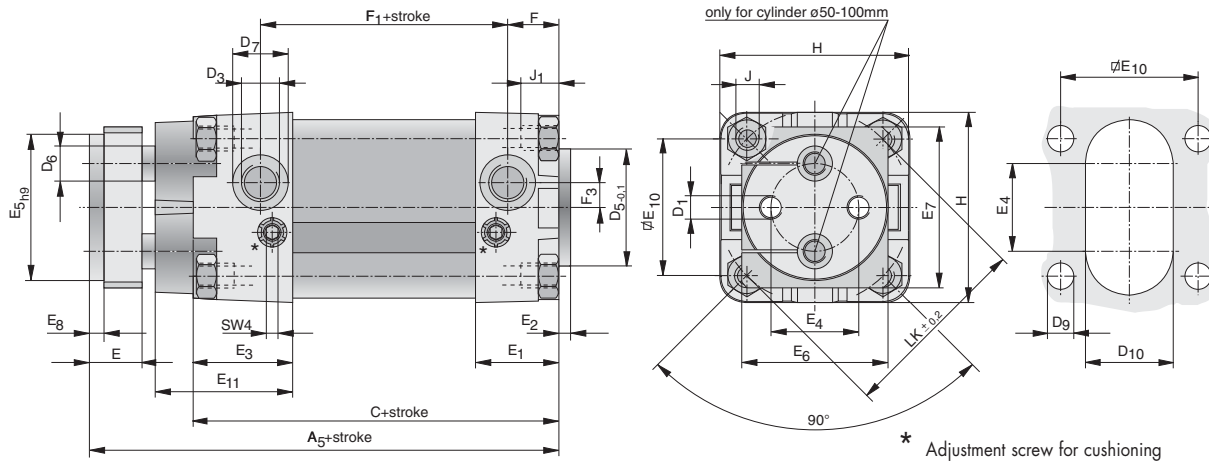
Dimensions: Bold Type= INCH, Standard= mm

# AZV Twin Rod Cylinder

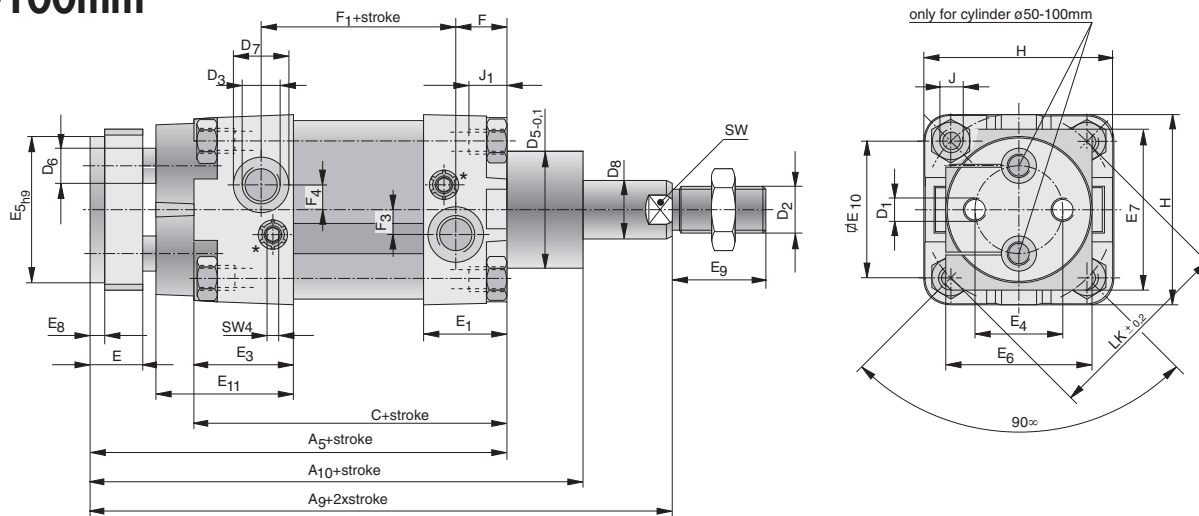


## Dimensional Data

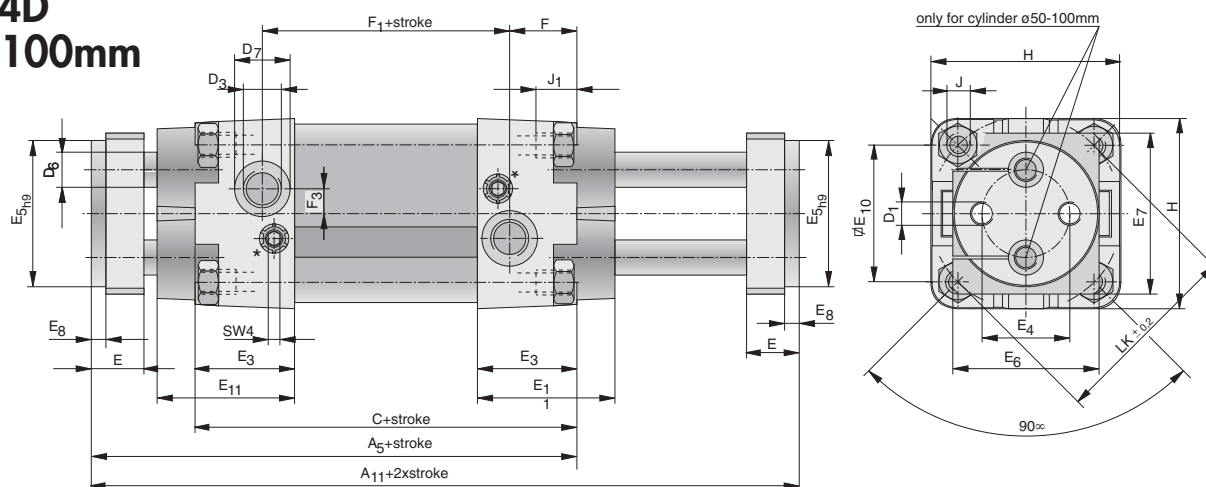
### AZV Ø32-100mm



### AZV 3D Ø32-100mm



### AZV 4D Ø32-100mm



# AZV Twin Rod Cylinder

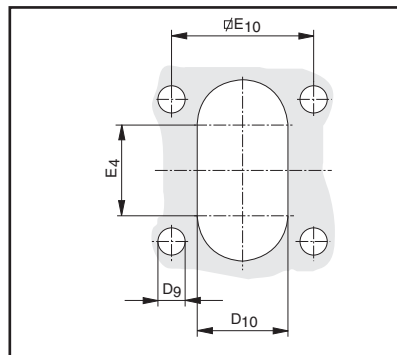


## Dimensional Data

Bore Ø	A <sub>5</sub> + Stroke	A <sub>9</sub> + Stroke	A <sub>10</sub> + Stroke	A <sub>11</sub> + Stroke	C+ Stroke	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	ØD <sub>5</sub>	ØD <sub>6</sub>	ØD <sub>7</sub>
32	5.04 128	6.06 154	5.75 146	6.06 154	4.02 102	1/4•20 M 6	3/8 •24 M10x1.25	1/8 NPT G 1/8	1.18 30	0.31 8	0.59 15
40	5.59 142	6.77 172	6.42 163	6.77 172	4.41 112	5/16•18 M 8	7/16 •20 M12x1.25	1/4 NPT G 1/4	1.38 35	0.39 10	0.75 19
50	5.94 151	7.40 188	6.97 177	7.28 185	4.61 117	5/16•18 M 8	5/8 •18 M16x1.5	1/4 NPT G 1/4	1.57 40	0.47 12	0.75 19
63	6.34 161	7.80 198	7.36 187	7.76 197	4.92 125	3/8•16 M 10	5/8 •18 M16x1.5	3/8 NPT G 3/8	1.77 45	0.63 16	0.91 23
80	6.85 174	8.66 220	8.11 206	8.35 212	5.35 136	1/2•13 M 12	3/4•16 M20x1.5	3/8 NPT G 3/8	1.77 45	0.79 20	0.91 23
100	7.13 181	9.13 232	8.58 218	8.62 219	5.63 143	1/2•13 M 12	3/4•16 M20x1.5	1/2 NPT G 1/2	2.17 55	0.79 20	1.1 28
Bore Ø	D <sub>8</sub>	D <sub>10</sub>	E	E <sub>1</sub>	E <sub>2</sub>	E <sub>3</sub>	ØE <sub>4</sub>	E <sub>5</sub> h <sub>9</sub>	E <sub>6</sub>	E <sub>7</sub>	E <sub>8</sub>
32	0.47 12	0.91 23	0.59 15	1.14 29	0.20 5	1.02 26	0.75 19	1.26 32	1.26 32	1.57 40	0.16 4
40	0.63 16	0.98 25	0.59 15	1.06 27	0.20 5	1.18 30	0.89 22.5	1.57 40	1.57 40	1.77 45	0.16 4
50	0.79 20	1.18 30	0.71 18	1.14 29	0.26 6.5	1.34 34	1.18 30	1.97 50	1.97 50	2.17 55	0.2 5
63	0.79 20	1.34 34	0.87 22	1.18 30	0.24 6	1.34 34	1.5 38	2.48 63	2.48 63	2.76 70	0.2 5
80	0.98 25	1.5 38	0.87 22	1.34 34	0.32 8	1.54 39	1.97 50	3.15 80	3.15 80	3.74 95	0.2 5
100	0.98 25	1.5 38	0.87 22	1.38 35	0.32 8	1.57 40	2.76 70	3.94 100	3.94 100	4.53 115	0.2 5
Bore Ø	E <sub>11</sub>	F	F <sub>1</sub> + Stroke	F <sub>2</sub> + Stroke	F <sub>3</sub>	F <sub>4</sub>	J	J <sub>1</sub> max	H	ØLK	SW
32	1.34 34	0.57 14.5	2.91 74	2.95 75	0.24 6	0.22 5.5	1/4•20 M 6	0.43 11	1.85 47	1.81 46	10
40	1.65 42	0.63 16	3.05 77.5	2.95 75	0.28 7	0.26 6.5	1/4•20 M 6	0.43 11	2.09 53	2.13 54	14
50	1.85 47	0.69 17.5	3.03 77	2.83 72	0.37 9.5	0.33 8.5	5/16•18 M 8	0.47 12	2.56 65	2.6 66	17
63	1.77 45	0.69 17.5	3.43 87	3.27 83	0.39 10	0.31 8	5/16•18 M 8	0.47 12	2.95 75	3.15 80	17
80	2.05 52	0.81 20.5	3.54 90	3.35 85	0.35 9	0.35 9	3/8•16 M 10	0.63 16	3.74 95	4.02 102	22
100	2.09 53	0.75 19	3.94 100	3.74 95	0.51 13	0.51 13	3/8•16 M 10	0.63 16	4.53 115	4.96 126	22

### Tolerance Chart

Bore Ø	h <sub>9</sub>	
	Inch	mm
32	0	0
40	-0.002	-0.062
50	-0.002	-0.062
63	-0.003	-0.074
80	-0.003	-0.074
100	-0.003	-0.087



### Dimensions for Front Mounted Installations

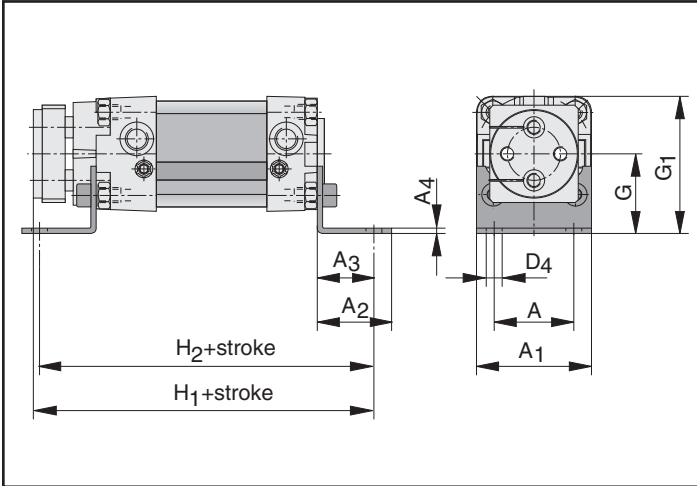
Bore Ø	D <sub>9</sub>	D <sub>10</sub>	E <sub>4</sub>	E <sub>10</sub>
32	0.28 7	0.91 23	0.75 19	1.28 32.5
40	0.28 7	0.98 25	0.89 22.5	1.52 38.5
50	0.35 9	1.18 30	1.18 30	1.83 46.6
63	0.35 9	1.34 34	1.50 38	2.23 56.6
80	0.39 10	1.50 38	1.97 50	2.84 72.1
100	0.39 10	1.50 38	2.76 70	3.50 89

# AZV Twin Rod Cylinder

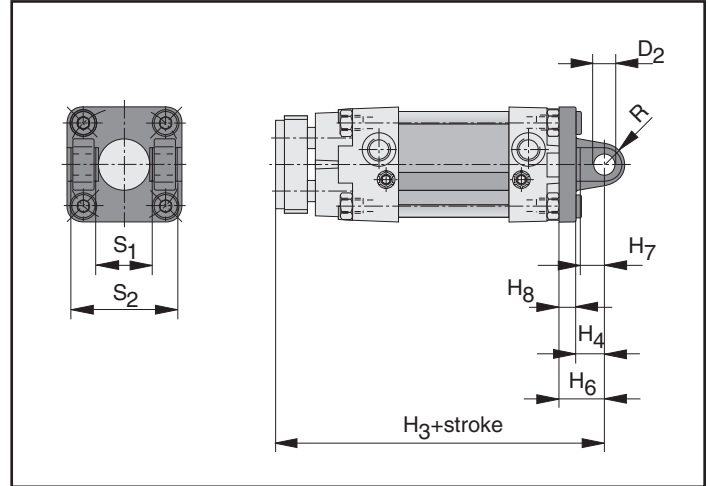


## Cylinder Mounts

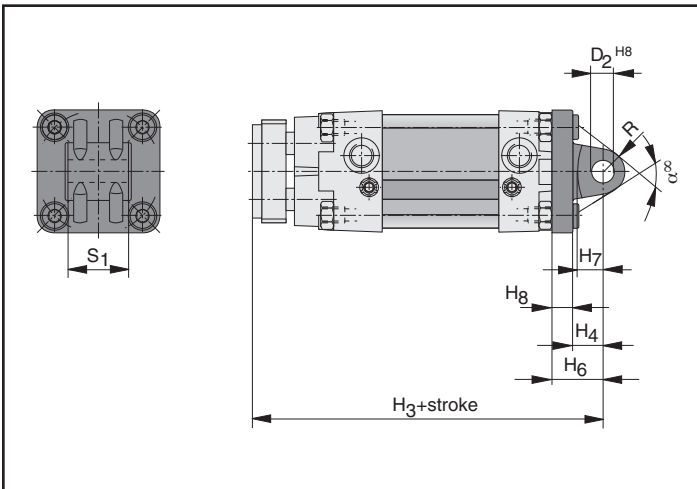
Foot Bracket - Type A



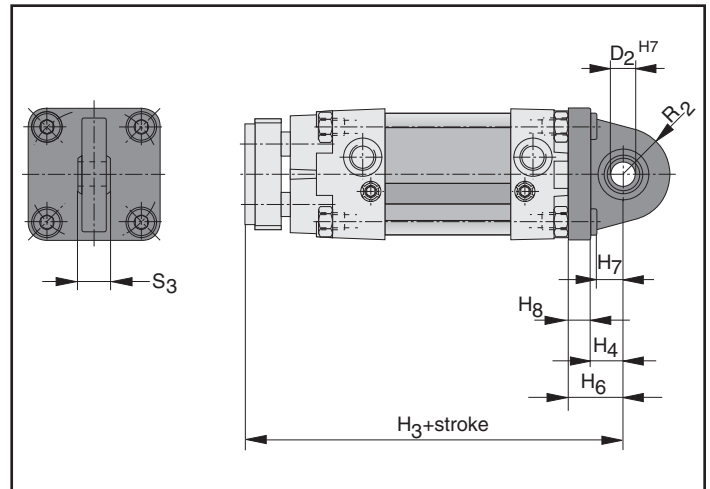
Rear Double Clevis - Type B



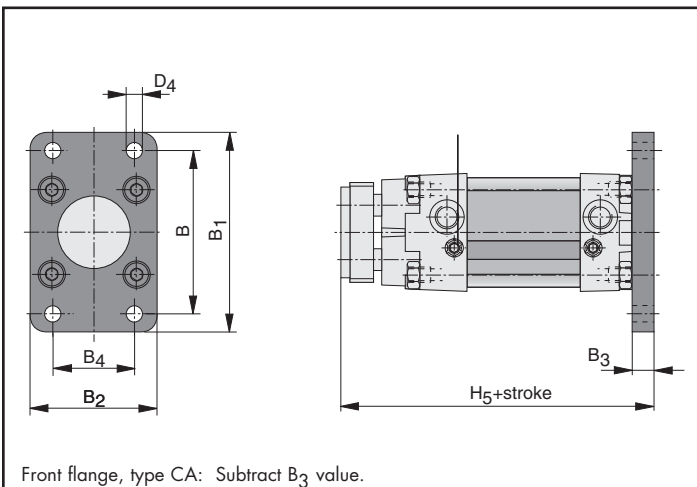
Rear Single Clevis - Type BA



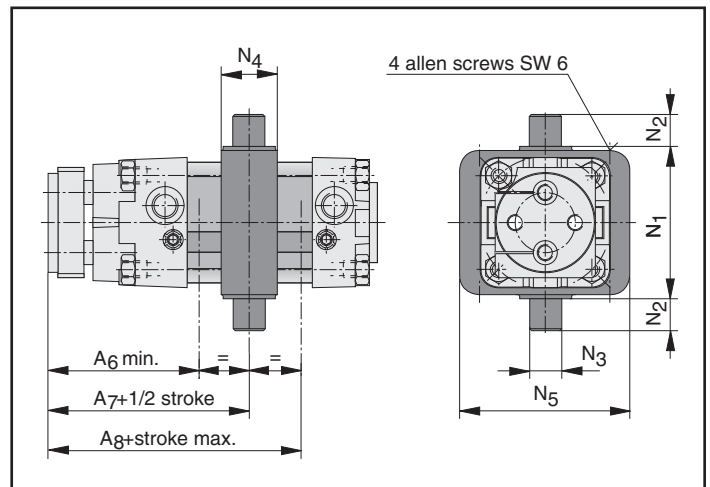
Rear Single Clevis with Spherical Bearing - Type BAS



Rear Flange - Type D



Adjustable Trunnion - Type EN





# AZV Twin Rod Cylinder



## Cylinder Mounts

Bore Ø	A	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	A <sub>6</sub> min	A <sub>7</sub> + 1/2 Stroke	A <sub>8</sub> max + Stroke	α°	B	B <sub>1</sub>	B <sub>2</sub>
32	1.26	1.85	1.26	0.94	0.12	2.52	2.99	3.43	2.36	2.52	3.11	1.97
	32	47	32	24	3	64	76	87	60	64	79	50
40	1.42	2.09	1.5	1.1	0.12	2.95	3.43	3.9	2.36	2.83	3.54	2.20
	36	53	38	28	3	75	87	99	60	72	90	56
50	1.77	2.56	1.65	1.26	0.12	3.31	3.74	4.17	2.76	3.54	4.33	2.76
	45	65	42	32	3	84	95	106	70	90	110	70
63	1.97	2.95	1.65	1.26	0.12	3.5	3.98	4.41	2.36	3.94	4.72	3.03
	50	75	42	32	3	89	101	112	60	100	120	77
80	2.48	3.74	2.17	1.61	0.16	3.78	4.29	4.76	2.76	4.96	6.02	3.94
	63	95	55	41	4	96	109	121	70	126	153	100
100	2.95	4.53	2.2	1.61	0.16	3.9	4.41	4.92	2.76	5.91	7.01	4.72
	75	115	56	41	4	99	112	125	70	150	178	120

Bore Ø	B <sub>3</sub>	B <sub>4</sub>	ØD <sub>2</sub>	ØD <sub>4</sub>	G	G <sub>1</sub>	H <sub>1</sub> + Stroke	H <sub>2</sub> + Stroke	H <sub>3</sub> + Stroke	H <sub>4</sub>	H <sub>5</sub> + Stroke	H <sub>6</sub>
32	0.39	1.26	0.39	0.28	1.26	2.19	5.98	5.91	5.91	0.47	5.43	0.87
	10	32	10	7	32	55.5	152	150	150	12	138	22
40	0.39	1.42	0.47	0.35	1.42	2.46	6.69	6.61	6.57	0.59	5.98	0.98
	10	36	12	9	36	62.5	170	168	167	15	152	25
50	0.47	1.77	0.47	0.35	1.77	3.05	7.2	7.13	7.01	0.63	6.42	1.06
	12	45	12	9	45	77.5	183	181	178	16	163	27
63	0.47	1.97	0.63	0.35	1.97	3.44	7.6	7.44	7.6	0.83	6.81	1.26
	12	50	16	9	50	87.5	193	189	193	21	173	32
80	0.63	2.48	0.63	0.47	2.48	4.35	8.46	8.58	8.27	0.83	7.48	1.42
	16	63	16	12	63	110.5	215	218	210	21	190	36
100	0.63	2.95	0.79	0.55	2.8	5.06	8.74	8.86	8.74	0.98	7.76	1.61
	16	75	20	14	71	128.5	222	225	222	25	197	41

Bore Ø	H <sub>7</sub>	H <sub>8</sub>	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub> e9	N <sub>4</sub>	N <sub>5</sub>	R	R <sub>2</sub>	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	T+ Stroke
32	0.43	0.39	1.97	0.47	0.47	0.99	2.56	0.41	0.71	1.02	1.77	0.55	0.63
	11	10	50	12	12	25	65	10.5	18	26	45	14	16
40	0.55	0.39	2.48	0.63	0.63	1.18	2.76	0.51	0.83	1.1	2.05	0.63	0.79
	14	10	63	16	16	30	70	13	21	28	52	16	20
50	0.59	0.43	2.95	0.63	0.63	1.18	3.54	0.51	0.91	1.26	2.36	0.63	0.98
	15	11	75	16	16	30	90	13	23	32	60	16	25
63	0.79	0.43	3.54	0.79	0.79	1.57	3.94	0.67	1.06	1.57	2.76	0.83	0.98
	20	11	90	20	20	40	100	17	27	40	70	21	25
80	0.83	0.59	4.33	0.79	0.79	1.77	5.51	0.67	1.14	1.97	3.54	0.83	1.18
	21	15	110	20	20	45	140	17	29	50	90	21	30
100	0.94	0.63	5.2	0.98	0.98	1.97	5.94	0.83	1.34	2.36	4.33	0.98	1.38
	24	16	132	25	25	50	151	21	34	60	110	25	35

### Tolerance Chart

Bore Ø	e9		H <sub>7</sub>		H <sub>8</sub>	
	Inch	mm	Inch	mm	Inch	mm
32	-0.001	-0.032	+0.001	+0.018	+0.001	+0.027
	-0.003	-0.075	0	0	0	0
40	-0.001	-0.032	+0.001	+0.018	+0.001	+0.027
	-0.003	-0.075	0	0	0	0
50	-0.001	-0.032	+0.001	+0.018	+0.001	+0.027
	-0.003	-0.075	0	0	0	0
63	-0.002	-0.040	+0.001	+0.018	+0.001	+0.027
	-0.004	-0.092	0	0	0	0
80	-0.002	-0.040	+0.001	+0.018	+0.001	+0.027
	-0.004	-0.092	0	0	0	0
100	-0.002	-0.040	+0.001	+0.021	+0.001	+0.033
	-0.004	-0.092	0	0	0	0

Dimensions: Bold Type: INCH, Standard: mm