

Designed with new seal material and buffer structure, with a simple structure, light weight, low starting pressure, running balance, good sealing performance, long life, easy maintenance, etc., are widely used in light industry, chemical industry, gold, mechanical, electronics and other industries automation equipment, there are a varieties of components options to attend different installation requirements.

● Cylinder installation instructions

- 1、 Before installation, be sure if the cylinder was not damaged during transportation. Check if connecting parts were loose, etc.
- 2、 When installation, the cylinder piston rod shall not withstand eccentric or radial loads, the load must be consistent with the direction of piston rod axis.
- 3、 When cylinder installation, especially for long stroke cylinder, it must use level instrument for three-point position calibration.
- 4、 Before the pipe connects into air intake, it should clear pipe's burrs, pipeline without corrosion, after cleaning up and checked, can be installation.
- 5、 Speed adjustment: firstly adjusting speed control valve (one-way throttle) in the middle, gradually adjusting the output pressure of regulator, when cylinder speed is close to pre-determine speed, it can ascertain working pressure, and then using speed control valve for fine tuning. Finally adjusting the buffer speed (usually adjustable needle is adjusted at the factory)
- 6、 After cylinder installation, in working pressure range, to operate 2-3 times without load, checking the cylinder before if is working normally.
- 7、 At high temperature or corrosive conditions, it should use the appropriate temperature or corrosion resistance cylinders
- 8、 In the occasions of humidity, dust or water drop, oil, dust, welding slag, the cylinder should be protected with devices.
- 9、 In low-temperature environment, it should take antifreeze measure to prevent water freezing of the system.
- 10、 If the cylinder is not used for a long time, pay attention to the surface oxidation, the intake and exhaust ports should be added plug dust protection.

● Theoretical calculation of the cylinder output

$$F = P \times A$$

F : cylinder theoretical output

P : Working pressure

A : Piston force area

■ Theoretical force sheet

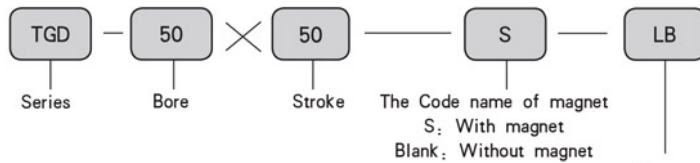
| Cylinder inside diameter            | 32            |       | 40            |        | 50            |        | 63            |        | 80            |        | 100           |        | 125           |       | 160           |       | 200           |      | 250           |       | 320           |      |      |
|-------------------------------------|---------------|-------|---------------|--------|---------------|--------|---------------|--------|---------------|--------|---------------|--------|---------------|-------|---------------|-------|---------------|------|---------------|-------|---------------|------|------|
| External diameter of piston rod     | 12            |       | 16            |        | 20            |        | 20            |        | 25            |        | 25            |        | 32            |       | 40            |       | 40            |      | 50            |       | 60            |      |      |
| Action Type                         | Double action |       | Double action |        | Double action |        | Double action |        | Double action |        | Double action |        | Double action |       | Double action |       | Double action |      | Double action |       | Double action |      |      |
|                                     | Push          | Pluk  | Push          | Pluk   | Push          | Pluk   | Push          | Pluk   | Push          | Pluk   | Push          | Pluk   | Push          | Pluk  | Push          | Pluk  | Push          | Pluk | Push          | Pluk  | Push          | Pluk |      |
| Compression area cm <sup>2</sup>    | 8.04          | 6.90  | 12.56         | 10.55  | 19.63         | 16.49  | 31.17         | 28.03  | 50.26         | 45.36  | 78.53         | 73.62  | 122.7         | 114.6 | 201.0         | 188.4 | 314           | 301  | 490.6         | 471   | 803           | 775  |      |
| Air pressure<br>kgf/cm <sup>2</sup> | 1             | 08.04 | 06.90         | 12.56  | 10.55         | 19.63  | 16.49         | 31.17  | 28.03         | 50.26  | 45.36         | 78.53  | 73.62         | 122   | 114           | 210   | 188           | 314  | 301           | 490.6 | 471           | 803  | 775  |
|                                     | 2             | 16.08 | 13.80         | 25.12  | 21.10         | 39.26  | 32.98         | 62.34  | 56.06         | 100.52 | 90.72         | 157.06 | 147.24        | 245   | 229           | 402   | 377           | 628  | 603           | 982   | 942           | 1608 | 1551 |
|                                     | 3             | 24.12 | 20.70         | 37.68  | 31.65         | 58.89  | 49.47         | 93.51  | 84.09         | 150.78 | 136.08        | 235.59 | 220.86        | 368   | 344           | 603   | 565           | 942  | 904           | 1473  | 1413          | 2411 | 2327 |
|                                     | 4             | 32.16 | 27.60         | 50.24  | 42.20         | 78.52  | 65.96         | 124.68 | 112.12        | 201.04 | 181.44        | 314.12 | 294.48        | 491   | 458           | 804   | 754           | 1257 | 1206          | 1963  | 1884          | 3215 | 3102 |
|                                     | 5             | 40.20 | 34.50         | 62.80  | 52.75         | 98.15  | 82.45         | 155.85 | 140.15        | 251.30 | 226.80        | 392.65 | 368.10        | 615   | 573           | 1005  | 942           | 1570 | 1507          | 2454  | 2355          | 4019 | 3878 |
|                                     | 6             | 48.24 | 41.40         | 75.36  | 63.30         | 117.78 | 98.94         | 187.02 | 168.18        | 301.56 | 272.16        | 471.18 | 441.72        | 736   | 688           | 1206  | 1130          | 1885 | 1808          | 2945  | 2826          | 4823 | 4654 |
|                                     | 7             | 56.28 | 48.30         | 87.92  | 73.85         | 137.41 | 115.43        | 218.19 | 196.21        | 351.82 | 317.52        | 549.71 | 515.34        | 859   | 802           | 1407  | 1319          | 2199 | 2110          | 3436  | 3297          | 5627 | 5429 |
|                                     | 8             | 64.32 | 55.20         | 100.48 | 84.40         | 157.04 | 131.92        | 249.36 | 224.24        | 402.08 | 362.88        | 628.24 | 588.96        | 982   | 917           | 1608  | 1507          | 2513 | 2411          | 3927  | 3768          | 6430 | 6205 |
|                                     | 9             | 72.36 | 62.10         | 113.04 | 94.95         | 176.67 | 148.41        | 280.53 | 252.27        | 452.34 | 408.24        | 706.77 | 662.58        | 1104  | 1031          | 1809  | 1696          | 2826 | 2713          | 4418  | 4239          | 7233 | 6980 |

### TGD Series Standard Cylinder

According ISO6431, ISO15552 Standard, VDMA24562



#### Ordering Code



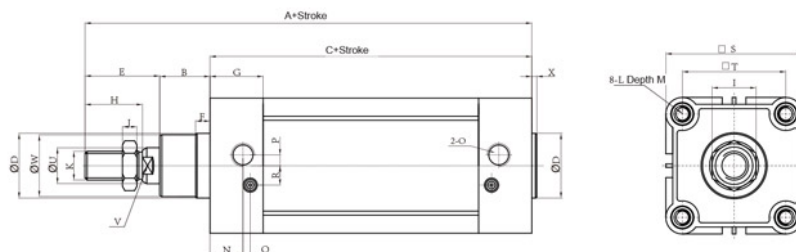
Fix type:  
Blank: Basic type  
LB: Front and back be fixed  
FA: Front port be fixed (front flange)  
FB: Back port be fixed (Back flange)  
CA: Back port be fixed (pivot type)  
CB: Back port be fixed (clevis type)

#### Standard Specification

|                     |                    |      |    |       |    |       |     |
|---------------------|--------------------|------|----|-------|----|-------|-----|
| Bore (mm)           | 32                 | 40   | 50 | 63    | 80 | 100   | 125 |
| Action              | Double action type |      |    |       |    |       |     |
| Applicable medium   | Air                |      |    |       |    |       |     |
| Pressure range      | 0.1 ~ 0.9 MPa      |      |    |       |    |       |     |
| Proof pressure      | 1.35 MPa           |      |    |       |    |       |     |
| Temperature range   | -10 ~ 60°C         |      |    |       |    |       |     |
| Speed range         | 50 ~ 800 mm/s      |      |    |       |    |       |     |
| Cushion type        | Adjustable cushion |      |    |       |    |       |     |
| Cushion stroke (mm) | 24 mm              |      |    | 32 mm |    | 38 mm |     |
| Prot Size           | G1/8               | G1/4 |    | G3/8  |    | G1/2  |     |

#### Figure Dimension

Φ32 - Φ125



#### Theoretical Force Sheet

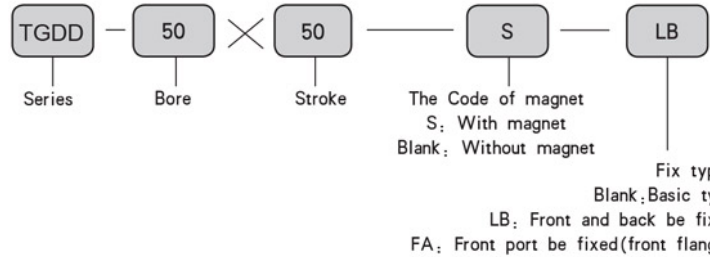
| Bore/Code | A   | B  | C   | D  | E  | F  | G    | H  | I  | J    | K        | L   |
|-----------|-----|----|-----|----|----|----|------|----|----|------|----------|-----|
| 32        | 142 | 16 | 94  | 30 | 32 | 10 | 27.5 | 22 | 17 | 6    | M10×1.25 | M6  |
| 40        | 162 | 20 | 108 | 35 | 34 | 10 | 29.5 | 24 | 17 | 7    | M12×1.25 | M6  |
| 50        | 178 | 27 | 109 | 40 | 42 | 10 | 32   | 32 | 23 | 8    | M16×1.5  | M8  |
| 63        | 193 | 26 | 125 | 45 | 42 | 10 | 36   | 32 | 23 | 8    | M16×1.5  | M8  |
| 80        | 216 | 35 | 129 | 45 | 52 | 10 | 37   | 40 | 26 | 10   | M20×1.5  | M10 |
| 100       | 232 | 40 | 140 | 55 | 52 | 10 | 39   | 40 | 26 | 10   | M20×1.5  | M10 |
| 125       | 279 | 46 | 160 | 60 | 73 | 11 | 45   | 54 | 40 | 13.5 | M27×2    | M12 |

| Bore/Code | M    | N    | O    | P  | Q | R   | S    | T    | U  | V  | W  | X |
|-----------|------|------|------|----|---|-----|------|------|----|----|----|---|
| 32        | 9.5  | 15   | G1/8 | 5  | 3 | 6.5 | 46.5 | 32.5 | 12 | 10 | 28 | 4 |
| 40        | 9.5  | 17.5 | G1/4 | 7  | 3 | 7   | 54   | 38   | 16 | 14 | 33 | 4 |
| 50        | 9.5  | 21   | G1/4 | 7  | 3 | 9   | 64.5 | 46.5 | 20 | 17 | 38 | 4 |
| 63        | 9.5  | 23   | G3/8 | 8  | 5 | 9   | 77   | 56.5 | 20 | 17 | 40 | 4 |
| 80        | 11.5 | 24   | G3/8 | 10 | 5 | 12  | 95   | 72   | 25 | 22 | 43 | 4 |
| 100       | 11.5 | 26   | G1/2 | 10 | 5 | 14  | 115  | 89   | 25 | 22 | 47 | 4 |
| 125       | 12   | 22.3 | G1/2 | 13 | 8 | 16  | 142  | 110  | 32 | 27 | 58 | 6 |

### TGDD Series Standard Cylinder

According to ISO6431, ISO15552 Standard, VDMA24562

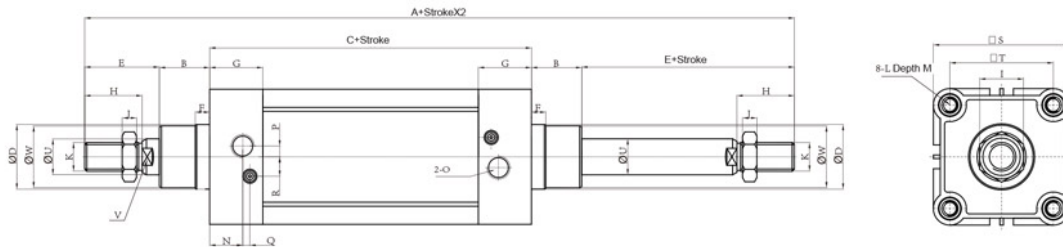
#### ● Ordering Code



#### ■ Standard Specification

|                    |                    |      |    |      |       |      |       |
|--------------------|--------------------|------|----|------|-------|------|-------|
| Bore (mm)          | 32                 | 40   | 50 | 63   | 80    | 100  | 125   |
| Action             | Double action type |      |    |      |       |      |       |
| Applicable medium  | Air                |      |    |      |       |      |       |
| Pressure range     | 0.1~0.9 MPa        |      |    |      |       |      |       |
| Proof pressure     | 1.35 MPa           |      |    |      |       |      |       |
| Temperature range  | -10 ~ 60°C         |      |    |      |       |      |       |
| Speed range        | 50~800 mm/s        |      |    |      |       |      |       |
| Cushion type       | Adjustable cushion |      |    |      |       |      |       |
| Cushion stroke(mm) | 24 mm              |      |    |      | 32 mm |      | 38 mm |
| Prot Size          | G1/8               | G1/4 |    | G3/8 |       | G1/2 |       |

#### ■ Figure Dimension



#### Theoretical Force Sheet

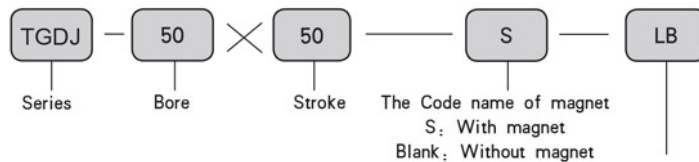
| Bore/Code | A   | B  | C   | D  | E  | F  | G    | H  | I  | J    | K        | L   |
|-----------|-----|----|-----|----|----|----|------|----|----|------|----------|-----|
| 32        | 190 | 16 | 94  | 30 | 32 | 10 | 27.5 | 22 | 17 | 6    | M10×1.25 | M6  |
| 40        | 216 | 20 | 108 | 35 | 34 | 10 | 29.5 | 24 | 17 | 7    | M12×1.25 | M6  |
| 50        | 247 | 27 | 109 | 40 | 42 | 10 | 32   | 32 | 23 | 8    | M16×1.5  | M8  |
| 63        | 261 | 26 | 125 | 45 | 42 | 10 | 36   | 32 | 23 | 8    | M16×1.5  | M8  |
| 80        | 303 | 35 | 129 | 45 | 52 | 10 | 37   | 40 | 26 | 10   | M20×1.5  | M10 |
| 100       | 324 | 40 | 140 | 55 | 52 | 10 | 39   | 40 | 26 | 10   | M20×1.5  | M10 |
| 125       | 352 | 46 | 160 | 60 | 73 | 11 | 45   | 54 | 40 | 13.5 | M27×2    | M12 |

| Bore/Code | M    | N    | O    | P  | Q | R   | S    | T    | U  | V  | W  |
|-----------|------|------|------|----|---|-----|------|------|----|----|----|
| 32        | 9.5  | 15   | G1/8 | 5  | 3 | 6.5 | 46.5 | 32.5 | 12 | 10 | 28 |
| 40        | 9.5  | 17.5 | G1/4 | 7  | 3 | 7   | 54   | 38   | 16 | 14 | 33 |
| 50        | 9.5  | 21   | G1/4 | 7  | 3 | 9   | 64.5 | 46.5 | 20 | 17 | 38 |
| 63        | 9.5  | 23   | G3/8 | 8  | 5 | 9   | 77   | 56.5 | 20 | 17 | 40 |
| 80        | 11.5 | 24   | G3/8 | 10 | 5 | 12  | 95   | 72   | 25 | 22 | 43 |
| 100       | 11.5 | 26   | G1/2 | 10 | 5 | 14  | 115  | 89   | 25 | 22 | 47 |
| 125       | 12   | 22.3 | G1/2 | 13 | 8 | 16  | 142  | 110  | 32 | 27 | 58 |

### TGDJ Series Standard Cylinder

According ISO6431, ISO15552 Standard, VDMA24562

#### Ordering Code



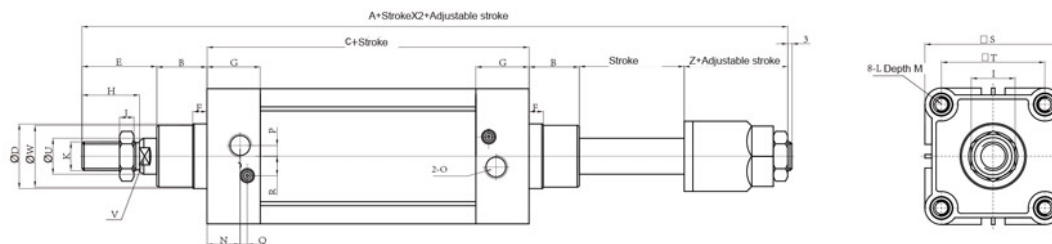
Fix type:  
Blank: Basic type  
LB: Front and back be fixed  
FA: Front port be fixed(front flange)

#### Standard Specification

| Bore (mm)          | 32                 | 40   | 50 | 63    | 80 | 100   | 125 |
|--------------------|--------------------|------|----|-------|----|-------|-----|
| Action             | Double action type |      |    |       |    |       |     |
| Applicable medium  | Air                |      |    |       |    |       |     |
| Pressure range     | 0.1 ~ 0.9 MPa      |      |    |       |    |       |     |
| Proof pressure     | 1.35 MPa           |      |    |       |    |       |     |
| Temperature range  | -10 ~ 60 °C        |      |    |       |    |       |     |
| Speed range        | 50 ~ 800 mm/s      |      |    |       |    |       |     |
| Cushion type       | Adjustable cushion |      |    |       |    |       |     |
| Cushion stroke(mm) | 24 mm              |      |    | 32 mm |    | 38 mm |     |
| Prot Size          | G1/8               | G1/4 |    | G3/8  |    | G1/2  |     |

#### Figure Dimension

Φ32 - Φ125



#### Theoretical Force Sheet

| Bore/Code | A   | B  | C   | D  | E  | F  | G    | H  | I  | J    | K        | L   |
|-----------|-----|----|-----|----|----|----|------|----|----|------|----------|-----|
| 32        | 185 | 16 | 94  | 30 | 32 | 10 | 27.5 | 22 | 17 | 6    | M10×1.25 | M6  |
| 40        | 210 | 20 | 108 | 35 | 34 | 10 | 29.5 | 24 | 17 | 7    | M12×1.25 | M6  |
| 50        | 236 | 27 | 109 | 40 | 42 | 10 | 32   | 32 | 23 | 8    | M16×1.5  | M8  |
| 63        | 250 | 26 | 125 | 45 | 42 | 10 | 36   | 32 | 23 | 8    | M16×1.5  | M8  |
| 80        | 290 | 35 | 129 | 45 | 52 | 10 | 37   | 40 | 26 | 10   | M20×1.5  | M10 |
| 100       | 311 | 40 | 140 | 55 | 52 | 10 | 39   | 40 | 26 | 10   | M20×1.5  | M10 |
| 125       | -   | 46 | 160 | 60 | 73 | 11 | 45   | 54 | 40 | 13.5 | M27×2    | M12 |

| Bore/Code | M    | N    | O    | P  | Q | R   | S   | T    | U  | V  | W  | Z  |
|-----------|------|------|------|----|---|-----|-----|------|----|----|----|----|
| 32        | 9.5  | 15   | G1/8 | 5  | 3 | 6.5 | 45  | 32.5 | 12 | 10 | 28 | 28 |
| 40        | 9.5  | 17.5 | G1/4 | 7  | 3 | 7   | 52  | 38   | 16 | 13 | 33 | 28 |
| 50        | 9.5  | 21   | G1/4 | 7  | 3 | 9   | 65  | 46.5 | 20 | 17 | 38 | 31 |
| 63        | 9.5  | 23   | G3/8 | 8  | 5 | 9   | 76  | 56.5 | 20 | 17 | 40 | 31 |
| 80        | 11.5 | 24   | G3/8 | 10 | 5 | 12  | 94  | 72   | 25 | 22 | 43 | 39 |
| 100       | 11.5 | 26   | G1/2 | 10 | 5 | 14  | 112 | 89   | 25 | 22 | 47 | 39 |
| 125       | 12   | 22.3 | G1/2 | 13 | 8 | 16  | 142 | 110  | 32 | 27 | 58 | -  |