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Hankun (Beijing) Fluid Control Technology Co., Ltd.

# Pneumatic Actuator

HANKUN QUALITY | DRIVING THE FUTURE

SUPER RELIABLE WITH HIGH PRECISION

## Company Introduction

Hankun was founded in 2007 with a vision to become a "respected international expert in fluid control ".Hankun independently develops and produces IoT hose pumps, unattended dosing devices, IoT electric actuators ,pneumatic actuators,valves. Hankun is the world-leading supplier in fluid control products and services.

Hankun is headquartered in Beijing with the factory in Shanghai and branch offices in Xi'an, Chengdu, Changsha, Guangzhou and other cities. Furthermore, Hankun has authorized distributors in Canada , Singapore , Indonesia, Thailand, Russia, Uzbekistan, Pakistan, India and other countries and regions , ensuring a robust and efficient sales network and service system.

With the mission of " Making fluid control more reliable and simpler under harsh working conditions of special media ", Hankun has long been dedicated to providing professional fluid control solutions for industries such as power plant , petrochemicals, water treatment and other process industries. Through the necessary on-site surveys and technical exchanges, Hankun recommends safe, cost-effective, environmentally friendly solution and design based on the actual site conditions , effectively addressing issues such as leaks and blockages.

Reputation is paramount for Hankun. We strictly adhere to contractual obligations by providing timely delivery, installation guidance, and commissioning to ensure compliance and smooth handover for customer use. Throughout the entire lifecycle, we provide whole process and considerate service.

Choose Hankun, Choose reliable, easy and satisfied.

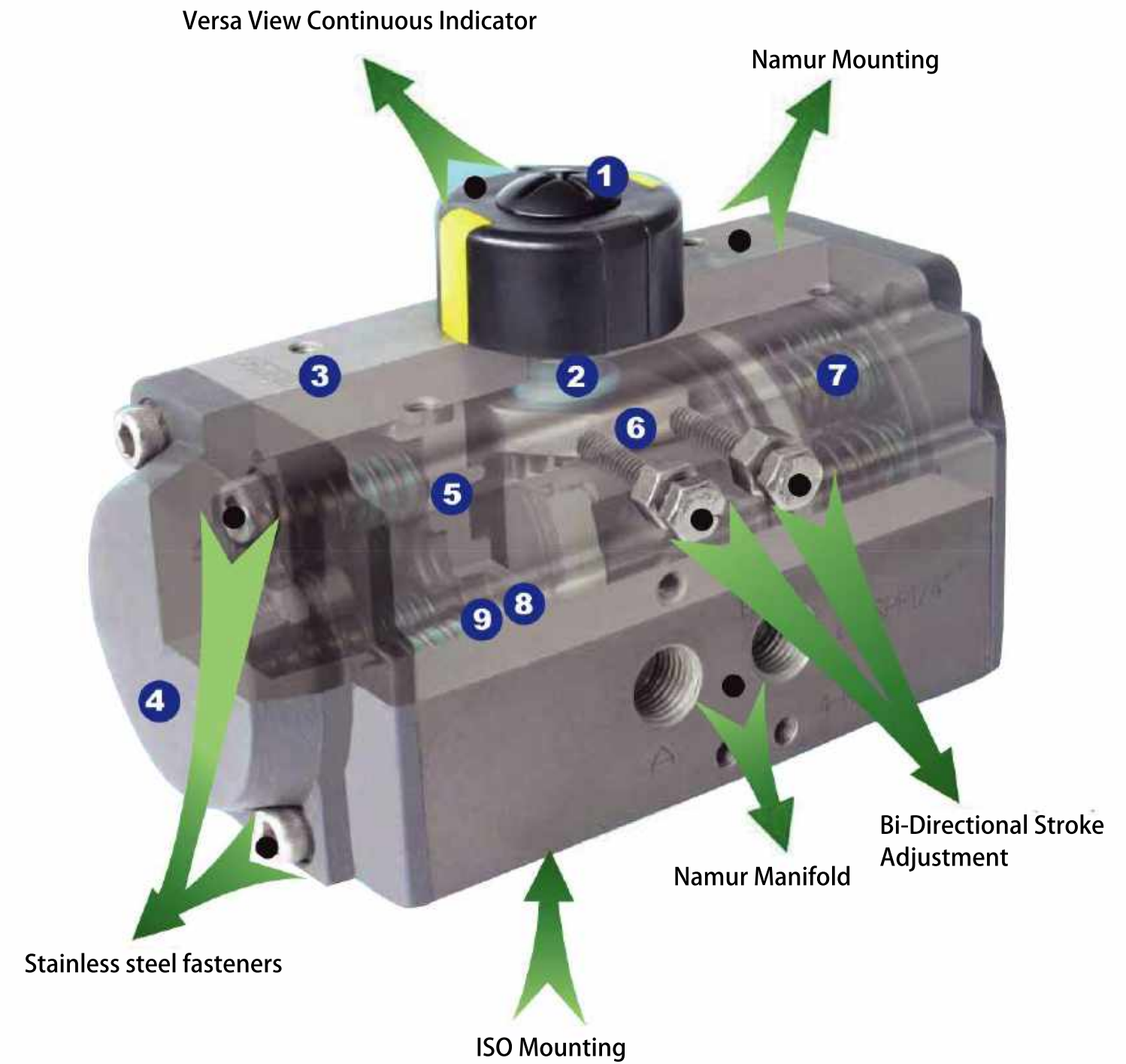
## Qualifications





Construction

**HPR series  
pinion and rack pneumatic actuators**



## 1 Indicator

Position indicator with NAMUR is convenient for mounting accessories such as limit switch box, Positioner and so on.

## 2 Pinion

The pinion is high precision and integrative, made from nickelled alloy steel, full conform to the latest standards of NAMUR, ISO5211, DN3337. The dimensions can be customized and the stainless steel pinion is available.

## 3 Actuator Body

According to the different requirements, the extruded aluminum alloy ASTM6005 Body can be treated with hard anodized, powder polyester painted (different colours is available such as blue, orange, yellow etc) ,PTFE coated or Nickel plated.

## 4 End Caps

With die casting aluminum alloy surface, coated with various metal powder, PTFE or Nickel plated.

## 5 Pistons

The twin rack pistons are with die-cast aluminum hard oxidation or cast steel galvanized treatment, symmetric mounted, quick operation, long service life and fast operation, change the rotation direction by simply reversing the pistons.

## 6 Travel Adjustment

Two independent external travel adjustment bolts can adjust the position at both on and off directions easily and precisely, the adjustment range is  $\pm 5^\circ$ .

## 7 High performance springs

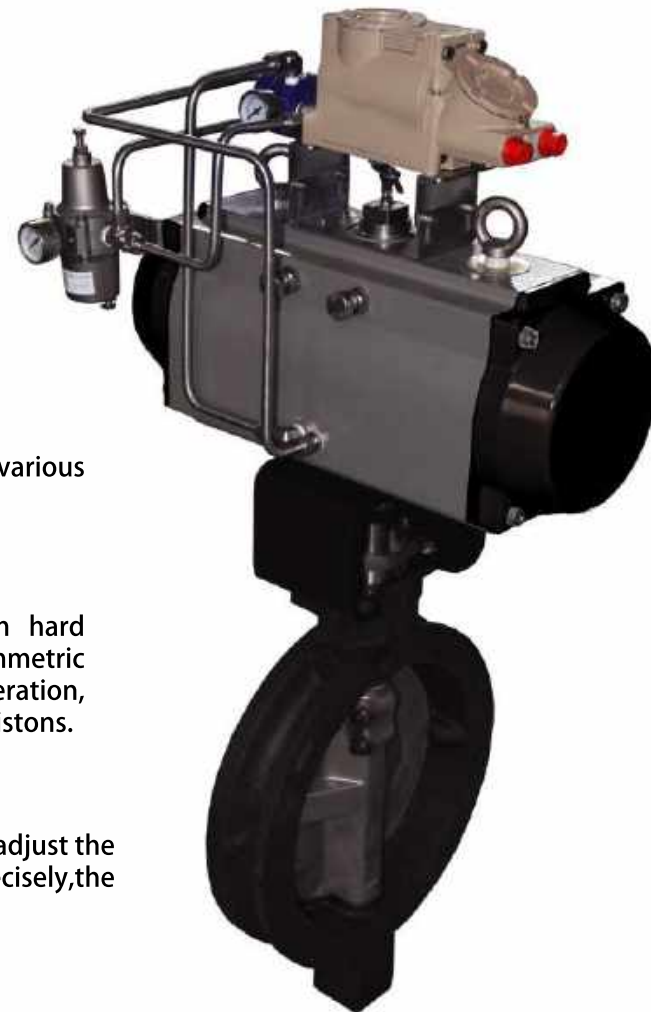
The spring adopts high quality material, coating treatment, and preload assembly. It has strong corrosion resistance and longer service life. It can disassembly single action actuators safely and simply, The single action actuators can be easily disassembled, meeting different torque requirements by changing the number of springs.

## 8 Bearings & Guides

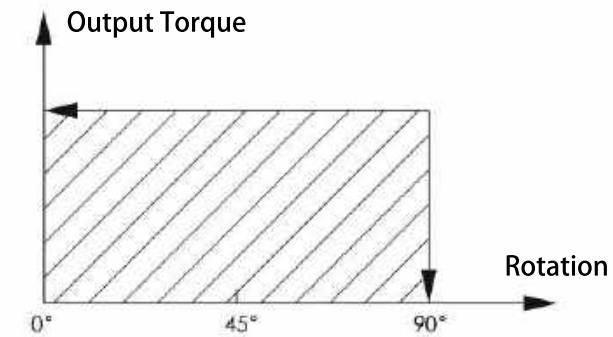
Adopt low friction, long-life compound material, to avoid the direct contact between metals. The maintenance and replacement are easy and convenient.

## 9 O-rings

NBR rubber O-rings provide trouble-free operation at standard temperature ranges. For high and low temperature applications viton or silicone rubber O-rings are the best choice.



## Output Torque of Double Acting Actuators



Unit: Nm

| Model     | Air supply pressure (Unit: bar) |      |      |      |      |      |      |      |       |       |
|-----------|---------------------------------|------|------|------|------|------|------|------|-------|-------|
|           | 2                               | 2.5  | 3    | 4    | 4.5  | 5    | 5.5  | 6    | 7     | 8     |
| HPR007DA  | 3                               | 4    | 5    | 6    | 7    | 8    | 8    | 9    | 11    | 12    |
| HPR012DA  | 5                               | 6    | 7    | 10   | 11   | 12   | 13   | 14   | 17    | 19    |
| HPR020DA  | 8                               | 10   | 12   | 16   | 18   | 20   | 22   | 24   | 28    | 32    |
| HPR035DA  | 15                              | 18   | 22   | 29   | 33   | 36   | 40   | 44   | 51    | 58    |
| HPR050DA  | 20                              | 25   | 30   | 40   | 45   | 50   | 55   | 60   | 70    | 80    |
| HPR075DA  | 31                              | 39   | 47   | 63   | 70   | 78   | 86   | 94   | 110   | 125   |
| HPR110DA  | 45                              | 56   | 68   | 90   | 102  | 113  | 124  | 135  | 158   | 181   |
| HPR160DA  | 66                              | 83   | 99   | 132  | 149  | 165  | 182  | 198  | 231   | 264   |
| HPR255DA  | 100                             | 125  | 150  | 200  | 226  | 251  | 276  | 301  | 351   | 401   |
| HPR435DA  | 171                             | 214  | 256  | 342  | 385  | 427  | 470  | 513  | 598   | 684   |
| HPR665DA  | 266                             | 332  | 399  | 532  | 598  | 665  | 731  | 798  | 931   | 1064  |
| HPR1000DA | 426                             | 532  | 638  | 851  | 958  | 1064 | 1170 | 1277 | 1490  | 1702  |
| HPR1200DA | 532                             | 665  | 798  | 1064 | 1197 | 1330 | 1463 | 1596 | 1862  | 2128  |
| HPR1800DA | 769                             | 962  | 1154 | 1539 | 1731 | 1924 | 2116 | 2308 | 2693  | 3078  |
| HPR2700DA | 1170                            | 1462 | 1754 | 2339 | 2632 | 2924 | 3216 | 3509 | 4094  | 4679  |
| HPR3800DA | 1526                            | 1908 | 2289 | 3052 | 3434 | 3815 | 4197 | 4578 | 5341  | 6104  |
| HPR5700DA | 2285                            | 2856 | 3427 | 4570 | 5141 | 5712 | 6283 | 6854 | 7997  | 9139  |
| HPR8000DA | 3256                            | 4070 | 4884 | 6512 | 7326 | 8140 | 8954 | 9768 | 11396 | 13024 |

## Sizing: Double Acting Actuator

The suggested safety factor for double acting actuators under normal working conditions is 120%-130%

Example:

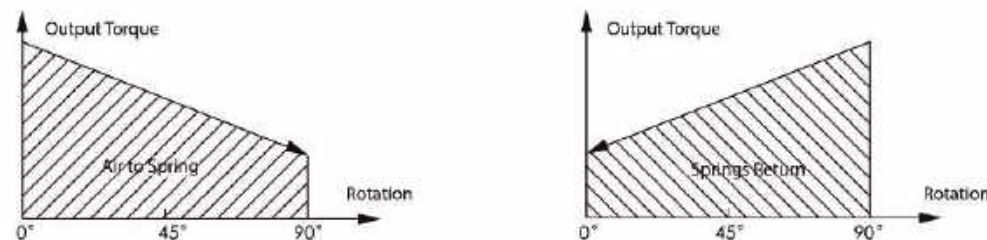
- The torque needed by valve=100N.m
- The torque considered safety factor 130%=130N.m
- Air Supply=5Bar

According to the above table we can choose the minimum model is HPR160DA.





## Output Torque of Spring Return Actuators



| Output torque of air to springs |             |          |         |          |         |          |         |          |         |          |         |          |         |          |         |           | Springs' output |  |
|---------------------------------|-------------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|-----------|-----------------|--|
| Air pressure                    |             | 2.5BAR   |         | 3BAR     |         | 4BAR     |         | 5BAR     |         | 6BAR     |         | 7BAR     |         | 8BAR     |         |           |                 |  |
| Model                           | Spring Qty. | 0° Start | 90° End | 0° Start | 90° End | 0° Start | 90° End | 0° Start | 90° End | 0° Start | 90° End | 0° Start | 90° End | 0° Start | 90° End | 90° Start | 0° End          |  |
| HPR020SR                        | K5          | 5.7      | 3.8     | 7.6      | 5.7     |          |         |          |         |          |         |          |         |          |         | 6.2       | 4.3             |  |
|                                 | K6          | 4.9      | 2.5     | 6.9      | 4.5     | 10.9     | 8.5     |          |         |          |         |          |         |          |         | 7.4       | 5.0             |  |
|                                 | K7          | 4.0      | 1.3     | 6.0      | 3.3     | 9.8      | 7.3     | 14.0     | 10.4    |          |         |          |         |          |         | 8.6       | 5.9             |  |
|                                 | K8          |          |         | 5.2      | 2.0     | 9.2      | 6.0     | 13.2     | 9.1     | 17.2     | 14.1    |          |         |          |         | 9.9       | 6.7             |  |
|                                 | K9          |          |         | 4.3      | 0.8     | 8.3      | 4.8     | 12.3     | 7.9     | 16.3     | 12.8    | 20.3     | 16.8    |          |         | 11.1      | 7.6             |  |
|                                 | K10         |          |         |          |         | 7.4      | 3.6     | 11.5     | 6.7     | 15.5     | 11.6    | 19.5     | 15.6    |          |         | 12.4      | 8.5             |  |
|                                 | K11         |          |         |          |         | 6.6      | 2.3     | 10.6     | 5.4     | 14.6     | 10.4    | 18.6     | 14.3    | 22.6     | 18.3    | 13.6      | 9.3             |  |
|                                 | K12         |          |         |          |         |          |         | 9.7      | 4.2     | 13.8     | 9.1     | 17.8     | 12.2    | 21.8     | 17.1    | 14.8      | 10.2            |  |
| HPR035SR                        | K5          | 11.4     | 7.7     | 15.0     | 11.4    | 22.3     | 14.9    |          |         |          |         |          |         |          |         | 10.4      | 6.8             |  |
|                                 | K6          | 10.1     | 5.7     | 13.6     | 9.3     | 20.9     | 16.6    | 28.3     | 23.9    |          |         |          |         |          |         | 12.5      | 8.2             |  |
|                                 | K7          | 8.6      | 3.6     | 12.5     | 7.2     | 19.5     | 14.5    | 26.8     | 21.9    |          |         |          |         |          |         | 14.6      | 9.6             |  |
|                                 | K8          |          |         | 10.9     | 5.1     | 18.2     | 12.4    | 25.5     | 19.8    | 32.8     | 27.0    | 40.1     | 34.3    |          |         | 16.7      | 10.9            |  |
|                                 | K9          |          |         |          |         | 16.8     | 10.4    | 24.1     | 17.7    | 31.4     | 24.9    | 38.7     | 32.2    |          |         | 18.8      | 12.3            |  |
|                                 | K10         |          |         |          |         | 1.4      | 8.2     | 22.8     | 15.6    | 30.0     | 22.8    | 37.3     | 30.1    | 44.7     | 37.4    | 20.9      | 13.7            |  |
|                                 | K11         |          |         |          |         |          |         | 21.5     | 13.5    | 28.7     | 20.7    | 36.0     | 28.0    | 43.3     | 35.3    | 22.9      | 15.0            |  |
|                                 | K12         |          |         |          |         |          |         | 20.0     | 11.4    | 27.3     | 18.6    | 34.6     | 25.9    | 41.9     | 33.3    | 25.0      | 16.4            |  |
| HPR050SR                        | K5          | 14.5     | 10.6    | 19.4     | 15.5    | 29.5     | 25.7    |          |         |          |         |          |         |          |         | 14.5      | 10.5            |  |
|                                 | K6          | 12.4     | 7.6     | 17.3     | 12.6    | 27.4     | 22.7    | 37.5     | 32.8    |          |         |          |         |          |         | 17.4      | 12.7            |  |
|                                 | K7          | 10.4     | 4.8     | 15.2     | 9.7     | 25.3     | 19.9    | 35.4     | 29.9    |          |         |          |         |          |         | 20.3      | 14.8            |  |
|                                 | K8          |          |         | 13.1     | 6.8     | 23.1     | 16.9    | 33.3     | 27.0    | 43.2     | 37.0    | 53.3     | 47.0    |          |         | 23.2      | 16.9            |  |
|                                 | K9          |          |         |          |         | 21.0     | 14.1    | 31.2     | 24.1    | 41.1     | 34.1    | 51.2     | 44.2    |          |         | 26.1      | 19.0            |  |
|                                 | K10         |          |         |          |         | 19.0     | 11.1    | 28.8     | 21.2    | 39.0     | 31.2    | 49.1     | 41.2    | 59.1     | 51.2    | 29.0      | 21.1            |  |
|                                 | K11         |          |         |          |         |          |         | 27.0     | 18.3    | 37.0     | 28.3    | 47.0     | 38.4    | 57.0     | 48.4    | 31.9      | 23.2            |  |
|                                 | K12         |          |         |          |         |          |         | 24.9     | 15.4    | 34.9     | 25.4    | 44.9     | 35.4    | 54.9     | 45.4    | 34.7      | 25.3            |  |
| HPR075SR                        | K5          | 23.3     | 16.1    | 31.1     | 24.0    | 46.8     | 39.7    |          |         |          |         |          |         |          |         | 23.0      | 15.8            |  |
|                                 | K6          | 20.1     | 11.5    | 28.0     | 19.3    | 43.7     | 35.1    | 59.4     | 50.7    |          |         |          |         |          |         | 27.6      | 19.0            |  |
|                                 | K7          | 17.0     | 6.9     | 24.8     | 14.8    | 40.5     | 30.5    | 56.2     | 46.2    |          |         |          |         |          |         | 32.2      | 22.1            |  |
|                                 | K8          |          |         | 21.7     | 10.1    | 37.4     | 25.8    | 53.1     | 41.5    | 68.8     | 57.2    | 84.5     | 72.9    |          |         | 36.8      | 25.3            |  |
|                                 | K9          |          |         |          |         | 34.2     | 21.3    | 49.9     | 37.0    | 65.6     | 52.6    | 81.2     | 68.3    |          |         | 41.4      | 28.5            |  |
|                                 | K10         |          |         |          |         | 31.0     | 16.6    | 46.7     | 32.3    | 62.4     | 48.0    | 78.1     | 63.7    | 93.8     | 79.3    | 46.0      | 31.6            |  |
|                                 | K11         |          |         |          |         |          |         | 43.6     | 27.7    | 59.3     | 43.4    | 75.0     | 59.1    | 90.6     | 74.8    | 50.6      | 34.8            |  |
|                                 | K12         |          |         |          |         |          |         | 40.4     | 23.2    | 56.1     | 38.9    | 71.7     | 54.5    | 87.4     | 70.2    | 55.2      | 38.0            |  |
| HPR110SR                        | K5          | 33.1     | 22.0    | 44.2     | 33.2    | 66.8     | 55.9    |          |         |          |         |          |         |          |         | 34.4      | 23.3            |  |
|                                 | K6          | 28.4     | 15.2    | 39.6     | 26.4    | 62.2     | 49.0    | 84.8     | 71.6    |          |         |          |         |          |         | 41.2      | 28.0            |  |
|                                 | K7          | 23.8     | 8.2     | 34.9     | 19.4    | 57.5     | 42.1    | 80.2     | 64.7    |          |         |          |         |          |         | 48.1      | 32.7            |  |
|                                 | K8          |          |         | 31.3     | 12.6    | 52.9     | 35.2    | 75.5     | 57.9    | 98.1     | 80.5    | 120.7    | 103.0   |          |         | 55.0      | 37.3            |  |
|                                 | K9          |          |         |          |         | 48.2     | 28.4    | 70.9     | 51.0    | 93.5     | 73.6    | 116.0    | 96.1    |          |         | 61.9      | 42.0            |  |
|                                 | K10         |          |         |          |         | 43.6     | 21.5    | 66.2     | 44.1    | 88.8     | 66.7    | 111.3    | 89.2    | 134.0    | 111.8   | 68.7      | 46.7            |  |
|                                 | K11         |          |         |          |         |          |         | 61.5     | 37.2    | 84.1     | 59.9    | 106.6    | 82.4    | 129.2    | 105.0   | 75.6      | 51.4            |  |
|                                 | K12         |          |         |          |         |          |         | 56.8     | 30.4    | 79.4     | 53.0    | 101.9    | 75.5    | 124.5    | 98.1    | 82.5      | 56.0            |  |
| HPR160SR                        | K5          | 51.0     | 33.4    | 67.5     | 49.9    | 100.6    | 83.0    |          |         |          |         |          |         |          |         | 49.2      | 31.6            |  |
|                                 | K6          | 44.7     | 23.5    | 61.1     | 40.0    | 94.2     | 73.2    | 127.3    | 106.2   |          |         |          |         |          |         | 59.1      | 38.0            |  |
|                                 | K7          | 38.4     | 13.7    | 54.9     | 30.3    | 87.9     | 63.4    | 121.0    | 96.4    |          |         |          |         |          |         | 68.9      | 44.3            |  |
|                                 | K8          |          |         | 48.5     | 20.4    | 81.6     | 53.5    | 114.7    | 86.5    | 147.7    | 119.6   | 180.8    | 152.7   |          |         | 78.7      | 50.6            |  |
|                                 | K9          |          |         |          |         | 75.3     | 43.7    | 108.4    | 76.8    | 141.5    | 109.8   | 174.5    | 142.9   |          |         | 88.6      | 56.9            |  |
|                                 | K10         |          |         |          |         | 68.9     | 33.4    | 102.0    | 66.5    | 135.1    | 99.6    | 168.2    | 132.6   | 201.2    | 165.7   | 98.4      | 63.3            |  |
|                                 | K11         |          |         |          |         |          |         | 95.7     | 57.0    | 128.7    | 90.1    | 161.8    | 123.1   | 194.8    | 156.2   | 108.3     | 69.6            |  |
|                                 | K12         |          |         |          |         |          |         | 89.4     | 47.5    | 122.5    | 80.6    | 155.5    | 113.6   | 188.6    | 146.7   | 118.1     | 75.9            |  |
| HPR255SR                        | K5          | 73       | 47      | 98       | 72      | 148      | 122     |          |         |          |         |          |         |          |         | 79        | 52              |  |
|                                 | K6          | 63       | 31      | 88       | 56      | 138      | 107     | 188      | 157     |          |         |          |         |          |         | 94        | 63              |  |
|                                 | K7          | 52       | 15      | 77       | 40      | 127      | 90      | 178      | 141     |          |         |          |         |          |         | 110       | 73              |  |
|                                 | K8          |          |         | 67       | 25      | 117      | 75      | 167      | 125     |          |         |          |         |          |         | 125       | 84              |  |
|                                 | K9          |          |         |          |         | 107      | 59      | 157      | 109     | 217      | 176     | 268      | 226     |          |         | 141       | 94              |  |
|                                 | K10         |          |         |          |         | 96       | 44      | 146      | 94      | 196      | 144     | 247      | 194     | 297      | 245     | 157       | 105             |  |
|                                 | K11         |          |         |          |         |          |         | 136      | 78      | 186      | 128     | 236      | 178     | 286      | 228     | 173       | 115             |  |
|                                 | K12         |          |         |          |         |          |         | 125      | 63      | 176      | 113     | 226      | 163     | 276      | 213     | 188       | 125             |  |
| HPR435SR                        | K5          | 128      | 85      | 171      | 127     | 256      | 213     |          |         |          |         |          |         |          |         | 129       | 86              |  |
|                                 | K6          | 111      | 59      | 154      | 102     | 239      | 187     | 325      | 273     |          |         |          |         |          |         | 155       | 103             |  |
|                                 | K7          | 94       | 33      | 137      | 76      | 222      | 162     | 308      | 247     |          |         |          |         |          |         | 181       | 120             |  |
|                                 | K8          |          |         | 120      | 50      | 205      | 136     | 291      | 221     | 376      | 307     | 462      | 392     |          |         | 206       | 137             |  |
|                                 | K9          |          |         |          |         | 187      | 110     | 273      | 196     | 358      | 281     | 444      | 367     |          |         | 232       | 155             |  |
|                                 | K10         |          |         |          |         | 170      | 84      | 256      | 169     | 341      | 255     | 427      | 340     | 512      | 426     | 258       | 172             |  |
|                                 | K11         |          |         |          |         |          |         | 238      | 143     | 324      | 229     | 409      | 314     | 495      | 400     | 284       | 189             |  |
|                                 | K12         |          |         |          |         |          |         | 221      | 118     | 307      | 203     | 392      | 289     | 478      | 374     | 310       | 206             |  |

| Output torque of air to springs |             |          |         |          |         |          |         |          |         |          |         |          |         |          |         |                 | Unit: Nm |  |
|---------------------------------|-------------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|-----------------|----------|--|
| Air pressure                    |             | 2.5Bar   |         | 3Bar     |         | 4Bar     |         | 5Bar     |         | 6Bar     |         | 7Bar     |         | 8Bar     |         | Springs' output |          |  |
| Model                           | Spring Qty. | 0° Start | 90° End | 0° Start | 90° End | 0° Start | 90° End | 0° Start | 90° End | 0° Start | 90° End | 0° Start | 90° End | 0° Start | 90° End | 90° Start       | 0° End   |  |
| HPR665SR                        | K5          | 193      | 124     | 259      | 191     | 392      | 324     |          |         |          |         |          |         |          |         | 208             | 140      |  |
|                                 | K6          | 165      | 83      | 232      | 149     | 365      | 282     | 498      | 415     |          |         |          |         |          |         | 250             | 168      |  |
|                                 | K7          | 137      | 41      | 203      | 107     | 336      | 240     | 469      | 373     |          |         |          |         |          |         | 292             | 196      |  |
|                                 | K8          |          |         | 176      | 66      | 309      | 199     | 442      | 237     | 575      | 465     | 708      | 598     |          |         | 333             | 223      |  |
|                                 | K9          |          |         |          |         | 280      | 157     | 413      | 290     | 546      | 423     | 679      | 556     |          |         | 375             | 251      |  |
|                                 | K10         |          |         |          |         | 253      | 115     | 386      | 248     | 519      | 381     | 652      | 514     | 785      | 647     | 417             | 279      |  |
|                                 | K11         |          |         |          |         |          |         | 358      | 207     | 491      | 340     | 624      | 473     | 757      | 606     | 458             | 307      |  |
|                                 | K12         |          |         |          |         |          |         | 330      | 165     | 463      | 298     | 596      | 431     | 729      | 564     | 500             | 335      |  |
| HPR1000SR                       | K5          | 332      | 222     | 438      | 329     | 651      | 542     |          |         |          |         |          |         |          |         | 309             | 200      |  |
|                                 | K6          | 292      | 161     | 398      | 267     | 611      | 480     | 824      | 693     |          |         |          |         |          |         | 371             | 240      |  |
|                                 | K7          | 252      | 99      | 358      | 205     | 571      | 418     | 784      | 631     |          |         |          |         |          |         | 433             | 280      |  |
|                                 | K8          |          |         | 318      | 143     | 531      | 356     | 744      | 569     | 957      | 782     | 1169     | 995     |          |         | 495             | 320      |  |
|                                 | K9          |          |         |          |         | 491      | 295     | 704      | 507     | 917      | 720     | 1130     | 933     |          |         | 557             | 360      |  |
|                                 | K10         |          |         |          |         | 451      | 233     | 664      | 446     | 877      | 658     | 1090     | 871     | 1302     | 1084    | 618             | 400      |  |
|                                 | K11         |          |         |          |         |          |         | 624      | 384     | 837      | 597     | 1050     | 809     | 1263     | 1022    | 680             | 440      |  |
|                                 | K12         |          |         |          |         |          |         | 584      | 322     | 797      | 535     | 1010     | 748     | 1223     | 960     | 742             | 480      |  |
| HPR1200SR                       | K5          | 390      | 285     | 523      | 418     | 789      | 684     |          |         |          |         |          |         |          |         | 380             | 275      |  |
|                                 | K6          | 335      | 209     | 468      | 342     | 734      | 608     | 1000     | 874     |          |         |          |         |          |         | 456             | 330      |  |
|                                 | K7          | 280      | 133     | 413      | 266     | 679      | 532     | 945      | 798     |          |         |          |         |          |         | 532             | 385      |  |
|                                 | K8          |          |         | 358      | 190     | 624      | 456     | 890      | 722     | 1156     | 988     | 1422     | 1254    |          |         | 608             | 440      |  |
|                                 | K9          |          |         |          |         | 569      | 380     | 835      | 646     | 1101     | 912     | 1367     | 1178    |          |         | 684             | 495      |  |
|                                 | K10         |          |         |          |         | 514      | 304     | 780      | 570     | 1046     | 836     | 1312     | 1102    | 1578     | 1368    | 760             | 550      |  |
|                                 | K11         |          |         |          |         |          |         | 725      | 494     | 991      | 760     | 1257     | 1026    | 1523     | 1292    | 836             | 605      |  |
|                                 | K12         |          |         |          |         |          |         | 670      | 418     | 936      | 684     | 1202     | 950     | 1468     | 1216    | 912             | 660      |  |
| HPR1800SR                       | K5          | 552      | 409     | 744      | 600     | 1129     | 985     |          |         |          |         |          |         |          |         | 554             | 410      |  |
|                                 | K6          | 470      | 297     | 662      | 489     | 1047     | 874     | 1432     | 1259    |          |         |          |         |          |         | 665             | 492      |  |
|                                 | K7          | 388      | 187     | 580      | 379     | 964      | 764     | 1349     | 1149    |          |         |          |         |          |         | 775             | 575      |  |
|                                 | K8          |          |         | 498      | 268     | 883      | 653     | 1267     | 1037    | 1652     | 1422    | 2037     | 1807    |          |         | 886             | 656      |  |
|                                 | K9          |          |         |          |         | 800      | 542     | 1185     | 926     | 1569     | 1311    | 1954     | 1696    |          |         | 998             | 739      |  |
|                                 | K10         |          |         |          |         | 718      | 431     | 1103     | 816     | 1488     | 1201    | 1872     | 1586    | 2257     | 1970    | 1108            | 821      |  |
|                                 | K11         |          |         |          |         |          |         | 1021     | 705     | 1406     | 1090    | 1791     | 1474    | 2176     | 1859    | 1219            | 903      |  |
|                                 | K12         |          |         |          |         |          |         | 939      | 594     | 1323     | 979     | 1708     | 1363    | 2093     | 1748    | 1330            | 985      |  |
| HPR2700SR                       | K5          | 903      | 675     | 1195     | 968     | 1779     | 1552    |          |         |          |         |          |         |          |         | 787             | 560      |  |
|                                 | K6          | 790      | 519     | 1083     | 811     | 1667     | 1396    | 2252     | 1981    |          |         |          |         |          |         | 943             | 672      |  |
|                                 | K7          | 679      | 361     | 972      | 654     | 1556     | 1238    | 2141     | 1823    |          |         |          |         |          |         | 1101            | 783      |  |
|                                 | K8          |          |         | 860      | 497     | 1444     | 1081    | 2029     | 1666    | 2614     | 2252    | 3199     | 2836    |          |         | 1258            | 895      |  |
|                                 | K9          |          |         |          |         | 1332     | 923     | 1917     | 1509    | 2502     | 2094    | 3087     | 2678    |          |         | 1416            | 1007     |  |
|                                 | K10         |          |         |          |         | 1220     | 767     | 1805     | 1352    | 2390     | 1937    | 2974     | 2521    | 3560     | 3107    | 1572            | 1119     |  |
|                                 | K11         |          |         |          |         |          |         | 1693     | 1194    | 2278     | 1779    | 2862     | 2364    | 3448     | 2949    | 1730            | 1231     |  |
|                                 | K12         |          |         |          |         |          |         | 1582     | 1037    | 2167     | 1623    | 2751     | 2207    | 3336     | 2792    | 1887            | 1342     |  |
| HPR3800SR                       | K5          | 1097     | 729     |          |         |          |         |          |         |          |         |          |         |          |         | 1061            | 730      |  |
|                                 | K6          | 935      | 494     | 1316     | 875     |          |         |          |         |          |         |          |         |          |         | 1273            | 876      |  |
|                                 | K7          | 772      | 258     | 1153     | 639     | 1916     | 1402    |          |         |          |         |          |         |          |         | 1485            | 1022     |  |
|                                 | K8          |          |         | 991      | 403     | 1754     | 1166    | 2517     | 1929    |          |         |          |         |          |         | 1697            | 1168     |  |
|                                 | K9          |          |         |          |         | 1592     | 930     | 2355     | 1693    | 3118     | 2456    |          |         |          |         | 1909            | 1314     |  |
|                                 | K10         |          |         |          |         | 1430     | 695     | 2193     | 1458    | 2956     | 2221    | 3719     | 2984    | 4482     | 3747    | 2122            | 1460     |  |
|                                 | K11         |          |         |          |         |          |         | 2030     | 1222    | 2793     | 1985    | 3556     | 2748    | 4319     | 3511    | 2334            | 1606     |  |
|                                 | K12         |          |         |          |         |          |         | 1868     | 986     | 2631     | 1749    | 3394     | 2512    | 4157     | 3275    | 2546            | 1752     |  |
| HPR5700SR                       | K5          | 1553     | 964     |          |         |          |         |          |         |          |         |          |         |          |         | 1702            | 1173     |  |
|                                 | K6          | 1292     | 586     | 1863     | 1157    |          |         |          |         |          |         |          |         |          |         | 2043            | 1408     |  |
|                                 | K7          | 1031     | 208     | 1602     | 779     | 2745     | 1922    |          |         |          |         |          |         |          |         | 2383            | 1642     |  |
|                                 | K8          |          |         | 1341     | 401     | 2484     | 1544    | 3626     | 2686    |          |         |          |         |          |         | 2724            | 1877     |  |
|                                 | K9          |          |         |          |         | 2224     | 1165    | 3336     | 2307    | 4508     | 3449    |          |         |          |         | 3064            | 2112     |  |
|                                 | K10         |          |         |          |         | 1963     | 787     | 3105     | 1929    | 4247     | 3071    | 5390     | 4214    | 6532     | 5356    | 3405            | 2346     |  |
|                                 | K11         |          |         |          |         |          |         | 2844     | 1551    | 3986     | 2693    | 5129     | 3836    | 6271     | 4978    | 3745            | 2581     |  |
|                                 | K12         |          |         |          |         |          |         | 2584     | 1172    | 3726     | 2314    | 4869     | 3457    | 6011     | 4599    | 4086            | 2816     |  |
| HPR8000SR                       | K7          | 2028     | 869     |          |         |          |         |          |         |          |         |          |         |          |         | 2880            | 1837     |  |
|                                 | K8          | 1736     | 411     | 2550     | 1225    |          |         |          |         |          |         |          |         |          |         | 3292            | 2100     |  |
|                                 | K9          |          |         | 2259     | 768     | 3887     | 2396    |          |         |          |         |          |         |          |         | 3703            | 2362     |  |
|                                 | K10         |          |         | 1967     | 311     | 3595     | 1939    | 5223     | 3567    |          |         |          |         |          |         | 4115            | 2624     |  |
|                                 | K11         |          |         |          |         | 3303     | 1482    | 4931     | 3110    | 6559     | 4738    |          |         |          |         | 4526            | 2887     |  |
|                                 | K12         |          |         |          |         | 3012     | 1025    | 4640     | 2653    | 6268     | 4281    | 7895     | 5908    | 9523     | 7536    | 4938            | 3149     |  |
|                                 | K13         |          |         |          |         |          |         | 4348     | 2195    | 5976     | 3823    | 7603     | 5450    | 9231     | 7078    | 5349            | 3412     |  |
|                                 | K14         |          |         |          |         |          |         | 4057     | 1738    | 5685     | 3366    | 7312     | 4993    | 8940     | 6621    | 5761            | 3674     |  |
|                                 | K15         |          |         |          |         |          |         | 3765     | 1281    | 5393     | 2909    | 7020     | 4536    | 8648     | 6164    | 6172            | 3937     |  |
|                                 | K16         |          |         |          |         |          |         |          |         | 5101     | 2452    | 6728     | 4079    | 8356     | 5707    | 6584            | 4199     |  |



Mounting Standard



Air supply connection is designed in accordance with NAMUR Standard to install solenoid valves



The NAMUR standard pinion groove and the NAMUR standard top mounting connection permit direct installation of accessories such as limit switch box and positioner



Bottom mounting connection is designed in accordance with ISO5211 and DIN3337 standards for direct mounting with valve gear boxes or mounting brackets

Model Comparison

Unit: mm

|          |        |        |        |        |        |        |        |        |        |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Model    | HPR007 | HPR012 | HPR020 | HPR035 | HPR050 | HPR075 | HPR110 | HPR160 | HPR255 |
| Cylinder | Ø32    | Ø40    | Ø52    | Ø63    | Ø75    | Ø83    | Ø92    | Ø105   | Ø125   |

|          |        |        |         |         |         |         |         |         |         |
|----------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| Model    | HPR435 | HPR665 | HPR1000 | HPR1200 | HPR 800 | HPR2700 | HPR3800 | HPR5700 | HPR8000 |
| Cylinder | Ø140   | Ø160   | Ø190    | Ø210    | Ø240    | Ø270    | Ø300    | Ø350    | Ø400    |

How to Order

| Unit    | 1              | 2       | 3             | 4           | 5      | 6             | Product code |
|---------|----------------|---------|---------------|-------------|--------|---------------|--------------|
| Content | Series         | - Model | Acting Type   | Spring Qty. | Travel | Custom-tailor |              |
| Example | Aluminum Alloy | -       | Spring Acting | 10 PCS      | None   | None          | HPR020SR K10 |
| Code    | HPR            | 020     | SR            | K10         | None   | None          |              |

HPR Aluminum Alloy

007  
012  
020

DA Double Acting  
SR Spring Acting

K8 8 PCS  
K9 9 PCS  
K10 10 PCS

None 90° Rotation  
120 120° Rotation  
135 135° Rotation  
180 180° Rotation

None Standard  
FC Failure Close  
FO Failure Open  
1P Three Position  
HC High Cycle  
C Custom

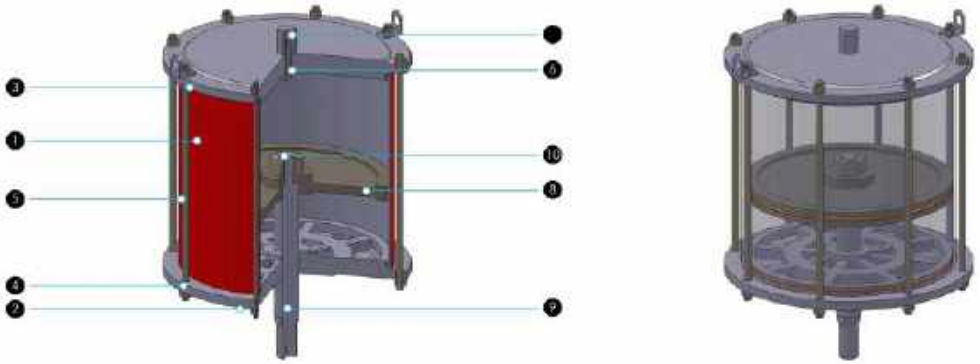
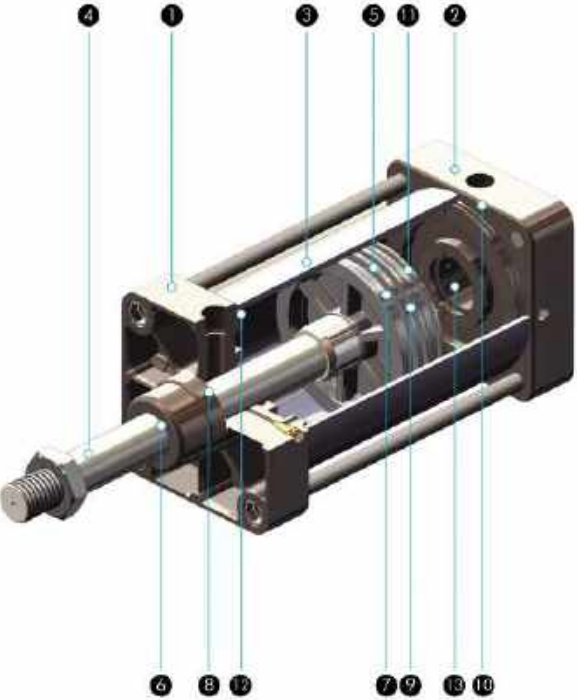
HPL series  
linear pneumatic actuators





Product Features

- 1.Adjustable travel stop for the rod-retract position,piston bottoms out for the rod-extend position . Specific travel applications available,consult factory.
- 2.Spring rod nut is locked to prevent unauthorized disassembly of the spring cartridge.
- 3.Pneumatic cylinder ranges Ø80-Ø320 the material of body is hard anodized aluminum.
- 4.The material of drive rod is carbon steel with chrome plated. Optional material available like stainless steel ect.
- 5.The coating color are upon customer request.
- 6.Consult factory for customized thrust travel and pressure requirements.



Ø280-Ø1000 Construction of Double Acting Pneumatic Actuators

| No. | Name         | Material     | Qty. |
|-----|--------------|--------------|------|
| 1   | Body         | Carbon Steel | 1    |
| 2   | Front Cap    | Ductile Iron | 1    |
| 3   | End Cap      | Ductile Iron | 1    |
| 4   | Nut          | Carbon Steel | n    |
| 5   | Bolt         | Carbon Steel | n    |
| 6   | Adjust screw | Carbon Steel | 1    |
| 7   | Nut          | Carbon Steel | 1    |
| 8   | Piston       | Ductile Iron | 1    |
| 9   | Stem         | Alloy Steel  | 1    |
| 10  | Lock Nut     | Carbon Steel | 1    |

Ø80-Ø320 Construction

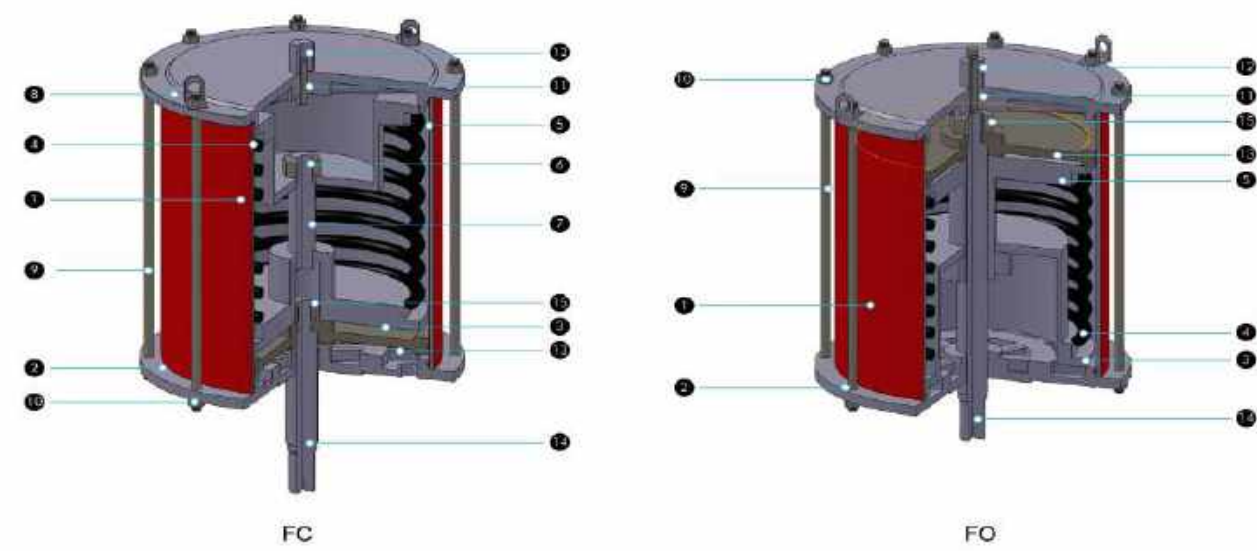
| No. | Description         | Material                    | Protection    | Qty. |
|-----|---------------------|-----------------------------|---------------|------|
| 1   | Front Cap           | Alluminum Alloy             | Painted       | 1    |
| 2   | End Cap             | Alluminum Alloy             | Painted       | 1    |
| 3   | Body                | Aluminum alloy              | Hard Anodized | 1    |
| 4   | Piston Rod          | Alloy Steel                 | Chrome Plated | 1    |
| 5   | Piston              | Cast Alluminum              | -             | 1    |
| 6   | U-ring (piston rod) | NBR                         | -             | 1    |
| 7   | Y-ring (piston)     | NBR                         | -             | 2    |
| 8   | Bearing             | Surface Lubricating Bearing | -             | 1    |
| 9   | Magnet              | Plastic                     | -             | 1    |
| 10  | Bufferscrew         | Aolly Steel                 | -             | 2    |
| 11  | Wear Ring           | PTFE                        | -             | 1    |
| 12  | O-ring(end cap)     | NBR                         | -             | 2    |
| 13  | Cushion Seal        | NBR                         | -             | 2    |

Output Torque Table of Pneumatic Actuators with Double Acting

| Cylindar<br>bore<br>mm | Output torque N    Air pressure    MPa |           |            |           |            |           |            |           |            |           |            |           |            |           |
|------------------------|----------------------------------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|
|                        | 0.3                                    |           | 0.35       |           | 0.4        |           | 0.45       |           | 0.5        |           | 0.55       |           | 0.6        |           |
|                        | Trust<br>N                             | Pull<br>N | Trust<br>N | Pull<br>N | Trust<br>N | Pull<br>N | Trust<br>N | Pull<br>N | Trust<br>N | Pull<br>N | Trust<br>N | Pull<br>N | Trust<br>N | Pull<br>N |
| 80                     | 1507                                   | 1360      | 1758       | 1587      | 2010       | 1813      | 2261       | 2040      | 2512       | 2267      | 2763       | 2493      | 3014       | 2720      |
| 100                    | 2355                                   | 2208      | 2748       | 2576      | 3140       | 2944      | 3533       | 3312      | 3925       | 3680      | 4318       | 4048      | 4710       | 4418      |
| 125                    | 3680                                   | 3439      | 4293       | 4012      | 4906       | 4585      | 5520       | 5158      | 6133       | 5731      | 6746       | 6304      | 7359       | 6877      |
| 160                    | 6029                                   | 5652      | 7034       | 6594      | 8033       | 7536      | 9043       | 8478      | 10048      | 9420      | 11053      | 10362     | 12058      | 11304     |
| 200                    | 9420                                   | 9043      | 10990      | 10550     | 12560      | 12058     | 14130      | 13565     | 15700      | 15072     | 17570      | 16579     | 18840      | 18086     |
| 250                    | 14719                                  | 14342     | 17172      | 16732     | 19625      | 19123     | 22078      | 21513     | 24531      | 23903     | 26984      | 26294     | 29438      | 28684     |
| 280                    | 18463                                  | 18086     | 21540      | 21101     | 24618      | 24115     | 27695      | 27130     | 30772      | 30144     | 33849      | 33158     | 36926      | 36173     |
| 320                    | 24115                                  | 23738     | 28134      | 27695     | 32154      | 31651     | 36173      | 35808     | 40192      | 39564     | 44211      | 43520     | 48230      | 47477     |
| 350                    | 28849                                  | 28472     | 33657      | 33217     | 38465      | 37963     | 43273      | 42708     | 48081      | 47453     | 52886      | 52199     | 57698      | 56944     |
| 400                    | 37680                                  | 37303     | 43960      | 43520     | 50240      | 49738     | 56520      | 55965     | 62800      | 62172     | 69080      | 68389     | 75360      | 74606     |
| 450                    | 47689                                  | 47100     | 55637      | 54850     | 63585      | 62800     | 71533      | 70650     | 79481      | 78500     | 87429      | 86350     | 95378      | 94200     |
| 500                    | 58875                                  | 58027     | 68688      | 67698     | 78500      | 77370     | 88313      | 87041     | 98125      | 96712     | 107988     | 106383    | 117750     | 116054    |
| 550                    | 73853                                  | 73005     | 86162      | 85173     | 98470      | 97340     | 110779     | 109508    | 123088     | 121675    | 135397     | 133843    | 147706     | 146010    |
| 600                    | 84780                                  | 83932     | 98910      | 97921     | 113040     | 111910    | 127170     | 125898    | 141300     | 139887    | 155430     | 153876    | 169560     | 167864    |
| 630                    | 93470                                  | 92622     | 109048     | 108059    | 124627     | 123496    | 140205     | 138933    | 155783     | 154370    | 171362     | 169807    | 186940     | 185244    |
| 700                    | 115395                                 | 114547    | 134628     | 133638    | 153860     | 152730    | 173083     | 171821    | 192325     | 190912    | 211558     | 210003    | 230790     | 229094    |
| 800                    | 150720                                 | 149566    | 178540     | 174494    | 200960     | 199421    | 226060     | 224349    | 251200     | 249277    | 276320     | 274204    | 301440     | 299132    |
| 900                    | 190755                                 | 189601    | 222548     | 221201    | 254340     | 252801    | 286133     | 284402    | 317925     | 316002    | 349718     | 347602    | 381210     | 379202    |



Construction of Spring Return Pneumatic Actuators



| No. | Name        | Material     | Qty. |
|-----|-------------|--------------|------|
| 1   | Body        | Carbon Steel | 1    |
| 2   | Cap         | Ductile Iron | 1    |
| 3   | Spring Seat | Carbon Steel | 1    |
| 4   | Spring      | Spring steel | n    |
| 5   | Spring Seat | Carbon Steel | 1    |
| 6   | Nut         | Carbon Steel | 1    |
| 7   | Spring Stem | Aolly Steel  | 1    |
| 8   | Cap         | Ductile Iron | 1    |
| 9   | Bolt        | Carbon Steel | n    |
| 10  | Screw       | Carbon Steel | n    |
| 11  | Bolt        | Carbon Steel | 1    |
| 12  | Nut         | Carbon Steel | 1    |
| 13  | Piston      | Ductile Iron | 1    |
| 14  | Stem        | Aolly Steel  | 1    |
| 15  | Lock Nut    | Carbon Steel | 1    |

Remark: The output torque of spring return actuator is based on actual stroke and spring force.

How to Order

| UNIT    | 1      | 2        | 3      | 4           | 5      | 6      | Product Code        |
|---------|--------|----------|--------|-------------|--------|--------|---------------------|
| CONTENT | Series | Cylinder | Stroke | Acting Type | Spring | Manual | HPL-500*100-SRC4+HM |
| CODE    | HPL    | 500      | 100    | SRC         | 4      | HM     |                     |
| EXAMPLE | HPL    | 500      | 100    | SRC         | 4      | HM     |                     |

HPL Series Pneumatic Actuators

80-1000

Upon Customer Requirements

DA Double Acting  
SRC Air to Open  
SRO Air to Close

4 Spring Size  
5 Spring Size

SM Screw Manual  
GM Gear Manual  
HM Hydraulic Manual

HPD series  
Linear pneumatic diaphragm actuators





## HPD Linear Pneumatic Diaphragm Actuators

### Application

The HPD high performance linear pneumatic diaphragm actuator adopts multi-spring structure, which make it with light weight, small volume and large output force. Its working principle is the unit balances the force created when diaphragm is air pressured and the force of compressed spring, so that the output rod is controlled and placed at a set position. HPD series linear actuator is suitable for linear motion control valve, regulating and on-off valves, and other linear motion devices etc.

### Features

- **Application Versatility**— Direct Action & Reverse Action in six sizes are available for an extensive variety of applications. Spring ranges, stroke limits, and manual overrides are available for nearly any control valve application.
- **Excellent Linearity Between Loading Pressure and Stroke** — A molded diaphragm travels in a deep diaphragm casing, the effective area of the diaphragm changes very small, which provides excellent linearity.
- **High Thrust Capability** — The molded diaphragm and cold stamping case allows high pressure supply and maximum thrust for given diaphragm size.
- **Long Service Life** — cold punched sheet metal casing cap and ductile iron construction provides increased stability and protection from corrosion and deformation should over-pressurization occur.
- **Cold Service Application** — Enhanced product specification for all sizes of HPD series diaphragm actuators allow performance to -40°C if required.
- **Positive Connections** — A split block stem connection provides a solid transfer of motion while allowing easy mounting. The absence of linkages helps to avoid lost motions and inaccurate valve positioning.
- **Compact & Light** — With the multiple springs and a high air supply pressure, HPD series are much more compact and light compared with conventional actuators.



### HPD Series Materials of Main Parts

|                |                                    |                            |
|----------------|------------------------------------|----------------------------|
| Diaphragm Case | Carbon Steel                       |                            |
| Diaphragm      | Cloth embedded EPDM                |                            |
| Piston Rod     | A276-303                           |                            |
| O Ring         | NBR or VITON                       |                            |
| Yoke           | Φ 220、270、350、450                  | Ductile Iron: A5056BE-H112 |
|                | Φ 550、650                          | A216-WCB                   |
| Bolts & Nuts   | Carbon steel with dacromet coating |                            |

Table 1. Output Thrust

| Actuator Size | Effective Diaphragm Area cm <sup>2</sup> | Air Supply KPa G | Spring Range KPa G | Thrust Capabilities N |
|---------------|------------------------------------------|------------------|--------------------|-----------------------|
| 220           | 188.8                                    | 400              | 120~300            | 2,177                 |
| 270           | 314.3                                    | 400              | 120~300            | 3,648                 |
| 350           | 555.8                                    | 400              | 120~280            | 6,472                 |
| 450           | 956.8                                    | 400              | 120~280            | 11,180                |
| 550           | 1,548.8                                  | 400              | 120~280            | 18,028                |
| 650           | 2,236.3                                  | 300              | 80~200             | 16,475                |
|               |                                          | 400              | 120~280            | 26,050                |

Table 2. Standard Stroke and Volume(L)

| Actuator Size | Stroke (mm) |      |       |       |       |       |       |       |       |       |       |
|---------------|-------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|               | 20          | 25   | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 110   |
| 220           | 0.70        | —    | —     | —     | —     | —     | —     | —     | —     | —     | —     |
| 270           | 1.31        | 1.46 | 1.60  | —     | —     | —     | —     | —     | —     | —     | —     |
| 350           | 2.25        | 2.52 | 2.78  | 3.30  | —     | —     | —     | —     | —     | —     | —     |
| 450S          | 4.18        | 4.64 | 5.09  | 6.00  | —     | —     | —     | —     | —     | —     | —     |
| 450L          | —           | —    | —     | —     | 7.28  | 8.1   | 9.0   | 10.00 | 10.91 | —     | —     |
| 550S          | —           | —    | 8.10  | 9.60  | 11.60 | 13.00 | 14.50 | —     | —     | —     | —     |
| 550L          | —           | —    | —     | —     | —     | —     | —     | 16.00 | 17.40 | 19.10 | 21.00 |
| 650S          | —           | —    | 22.75 | 24.83 | 26.92 | 29.00 | —     | —     | —     | —     | —     |
| 650L          | —           | —    | —     | —     | —     | —     | 32.67 | 34.75 | 36.83 | 38.92 | 41.00 |

Table 3. Weight without Accessories

| Actuator Size | Code No. | Weight (Kg)           |                    |
|---------------|----------|-----------------------|--------------------|
|               |          | Without Manual Handle | With Manual Handle |
| 220           | HPD22    | 9                     | 13                 |
| 270           | HPD27    | 15                    | 25                 |
| 350           | HPD35    | 37                    | 47                 |
| 450S          | HPD4S    | 65                    | 77                 |
| 450L          | HPD4L    | 87                    | 100                |
| 450E          | HPD4E    | 87                    | 100                |
| 450X          | HPD4X    | 87                    | 100                |
| 550S          | HPD5S    | 120                   | 145                |
| 550L          | HPD5L    | 130                   | 155                |
| 650S          | HPD6S    | 192                   | 232                |
| 650L          | HPD6L    | 223                   | 272                |

## How to Order

[illegible]

## HPY series

### scotch yoke pneumatic actuators

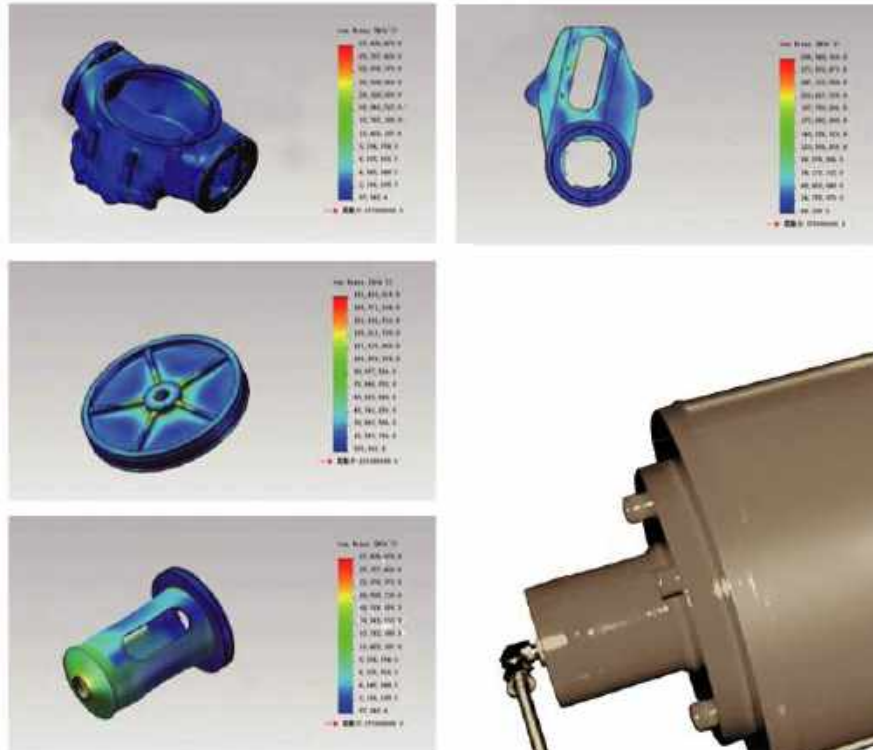




## Structural Features

### Design and Construction

HPY series pneumatic and hydraulic actuators provide global customers the latest valve actuation design. It is a highly unique and reliable means of operating ball valves, butterfly valves or plug valves with 90 degree rotating mechanisms.



HPY series pneumatic actuators

### Modular Design

The center body is available in ten sizes. A pneumatic or hydraulic cylinder can be attached to either or both sides. A spring cartridge can also be fitted to either side of the body for ESD (emergency shut down) applications. Modular design of components with replaceable, warehousing and other characteristics can meet quick delivery time.

### Robust and Lightweight Design

Totally enclosed weatherproof center-body fabricated in carbon steel or ductile iron provides an excellent strength to weight ratio. The mechanism of piston and yoke has an advantageous torque output.

### Manual Override Options

A dependable manual override facility is an important part in many valve/actuator applications. Hankun has a variety of manual override options available to meet any requirements. Available options include open or enclosed screws in both gear reducer and declutch override gear box, as well as a number of hydraulic override solutions.

### Extensive Product Range

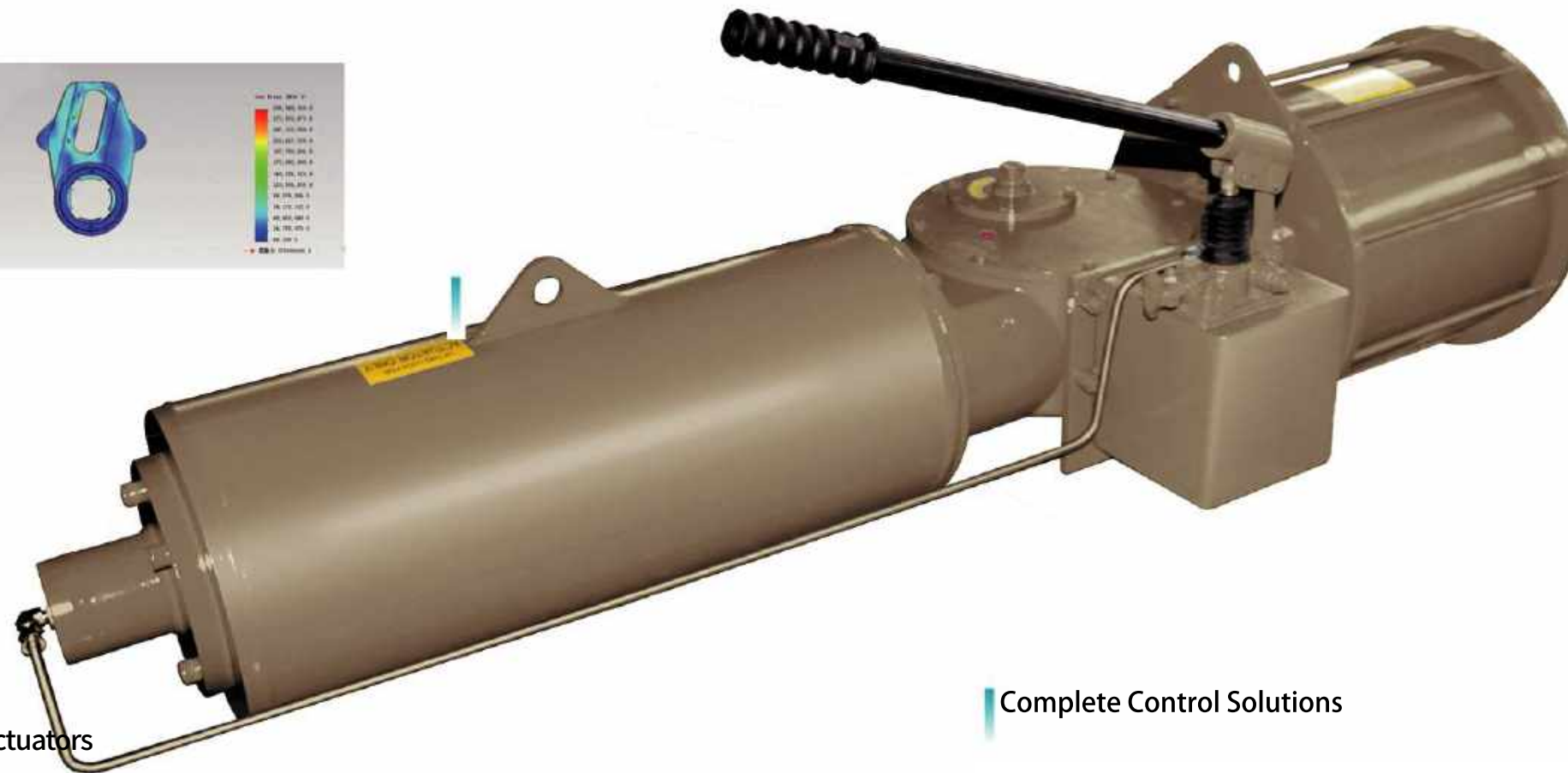
Hankun offers the most extensive line of fluid power valve actuators. Products include low and high pressure pneumatic, hydraulic and pneumatic-hydraulic actuators.

### Minimum Maintenance

Every HPY actuator is built to provide long and efficient service with minimum maintenance. The design, engineering and materials used in their construction ensure optimum performance even in the harshest environments.

### Complete Control Solutions

Air Control system is an important part of any actuator/valve installation. Hankun has extensive experience in the design and assembly of all types of air control systems to satisfy any customer's requirement for on/off, control or ESD service. Control units can be mounted on a panel or in a cabinet and mounted either on the actuator or at a remote location.



## Performance Characteristics

The pinion shape conforms to the latest standards of ISO5211, NAMUR. The dimensions can be customized and the stainless steel is optionally available. A position indicator acc. to NAMUR is convenient for the assembly of accessories such as Limit Switch box, Positioner etc..



The dual-material (rubber and PFA) encapsulated O-rings can be applied to a wide range of temperature and conditions. A double O-ring and bearing design ensures the stability and dependability of the modular cylinder.



The Center body is made from low friction, long-life compound material, to avoid any direct contact between metals. The maintenance is easy and convenient.

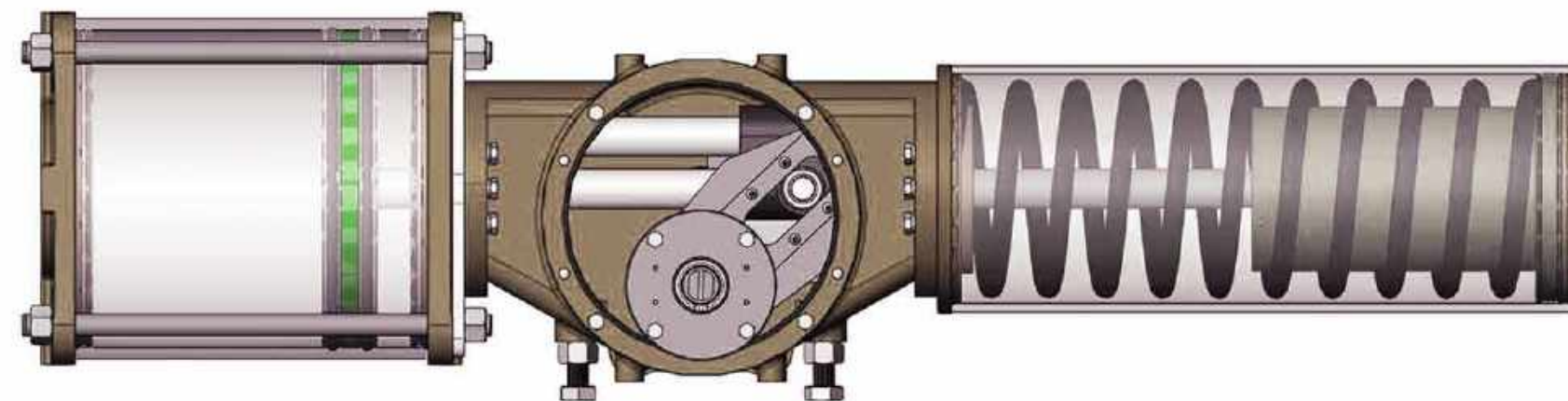


HPY actuators are available with either B or C body modules.

B body modules provide a balanced torque ratio at both the on and off position, which is more consistent with the torque demand of similar ball valves.

C body modules have a torque advantage in applications where higher open torque is needed to unseat the valve and less critical needs at the run or full open position, which is more consistent with the torque demand of similar butterfly valves.

Mounting Flange according to standard of ISO 5211.



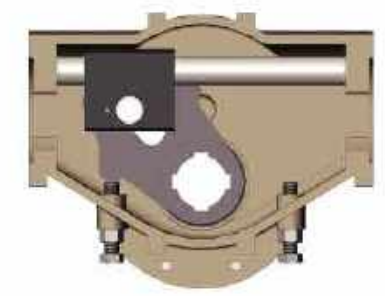
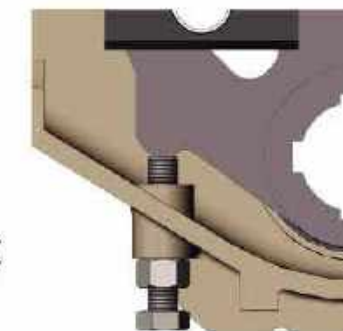
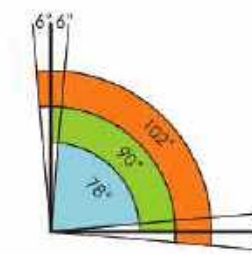
HPY actuators have torque outputs for spring-return models up to 110,000Nm and double-acting models up to 240,000Nm at operating pressures of 3-10 bar.



Operating Temperatures:  
Standard: -20°C to +80°C  
High Temperature: -15°C to +150°C  
Low Temperature: -40°C to +80°C

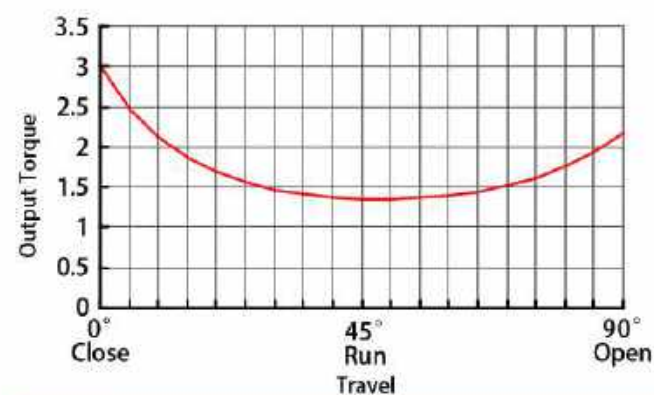


Two independent external travel adjustment bolts can adjust the position at both on and off directions easily and precisely, the adjustment range is  $\pm 6^\circ$ .



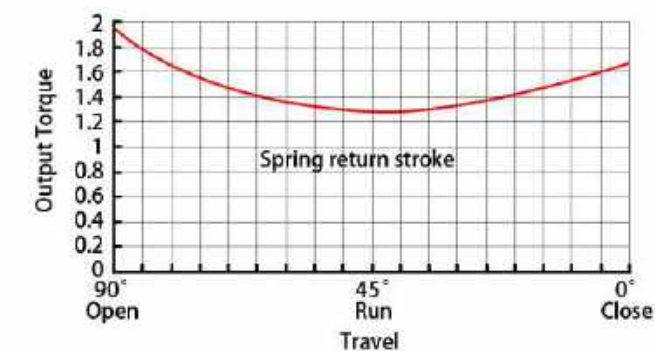
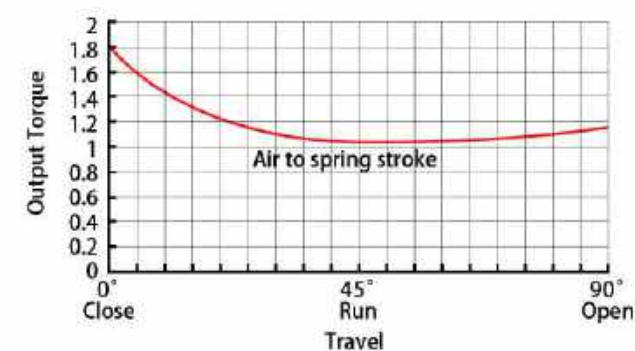


## Output Torque of HPY-C Series Double Acting Actuator



| Model          | Output Torque (Nm) |       |        |        |        |        |        |        |        | Air Pressure (Mpa) |        |        |
|----------------|--------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------------------|--------|--------|
|                | 0.35               |       |        | 0.4    |        |        | 0.5    |        |        | 0.6                |        |        |
|                | 0°                 | 45°   | 90°    | 0°     | 45°    | 90°    | 0°     | 45°    | 90°    | 0°                 | 45°    | 90°    |
| HPY-C06-201-DA | 1523               | 663   | 1068   | 1741   | 758    | 1220   | 2176   | 948    | 1525   |                    |        |        |
| HPY-C08-221-DA | 2400               | 1045  | 1682   | 2743   | 1194   | 1922   | 3428   | 1493   | 2403   | 4114               | 1792   | 2883   |
| HPY-C08-251-DA | 3118               | 1358  | 2185   | 3564   | 1552   | 2498   | 4455   | 1940   | 3122   |                    |        |        |
| HPY-C1-281-DA  | 4603               | 2005  | 3226   | 5261   | 2291   | 3687   | 6576   | 2864   | 4609   | 7891               | 3436   | 5531   |
| HPY-C1-321-DA  | 6042               | 2631  | 4234   | 6905   | 3007   | 4839   | 8631   | 3759   | 6049   |                    |        |        |
| HPY-C2-351-DA  | 8631               | 3759  | 6049   | 9864   | 4296   | 6913   | 12330  | 5369   | 8642   | 14796              | 6443   | 10370  |
| HPY-C2-401-DA  | 11329              | 4933  | 7939   | 12947  | 5638   | 9074   | 16184  | 7047   | 11342  | 19420              | 8457   | 13610  |
| HPY-C2-451-DA  | 14385              | 6264  | 10082  | 16441  | 7159   | 11522  |        |        |        |                    |        |        |
| HPY-C3-451-DA  | 17188              | 7476  | 12032  | 19620  | 8544   | 13750  | 24525  | 10680  | 17188  | 29430              | 12816  | 20626  |
| HPY-C3-501-DA  | 21267              | 9261  | 14905  | 24306  | 10584  | 17034  | 30382  | 13230  | 21293  |                    |        |        |
| HPY-C3-561-DA  | 26757              | 11652 | 18752  | 30579  | 13316  | 21431  |        |        |        |                    |        |        |
| HPY-C4-561-DA  | 32146              | 13998 | 22529  | 36738  | 15998  | 25747  | 45922  | 19997  | 32184  | 55107              | 23997  | 38621  |
| HPY-C4-601-DA  | 36957              | 16093 | 25901  | 42237  | 18392  | 29001  | 52796  | 22990  | 37001  | 63355              | 27589  | 44401  |
| HPY-C4-631-DA  | 40783              | 17760 | 28582  | 46810  | 20297  | 32666  | 58262  | 25371  | 40832  |                    |        |        |
| HPY-C4-701-DA  | 50437              | 21963 | 35348  | 57643  | 26101  | 40398  |        |        |        |                    |        |        |
| HPY-C5-701-DA  | 60479              | 26336 | 42386  | 69119  | 30099  | 48441  | 86399  | 37623  | 60551  | 103679             | 45148  | 72662  |
| HPY-C5-562-DA  | 76974              | 33519 | 53946  | 87970  | 38307  | 61652  | 109963 | 47884  | 77065  | 131955             | 57461  | 92478  |
| HPY-C5-601-DA  | 79181              | 34480 | 55492  | 90492  | 39406  | 63420  | 113115 | 49257  | 79275  | 135738             | 59109  | 95130  |
| HPY-C5-602-DA  | 88544              | 38557 | 62054  | 101193 | 44085  | 70919  | 126491 | 55082  | 88649  |                    |        |        |
| HPY-C5-632-DA  | 97744              | 42564 | 68503  | 111708 | 48644  | 78289  |        |        |        |                    |        |        |
| HPY-C5-901-DA  | 100375             | 43709 | 70346  | 114714 | 49954  | 80396  |        |        |        |                    |        |        |
| HPY-C6-801-DA  | 106337             | 46306 | 74525  | 121528 | 52921  | 85171  | 151911 | 66151  | 106464 | 182293             | 79381  | 127757 |
| HPY-C6-901-DA  | 134869             | 58730 | 94520  | 154136 | 67120  | 108023 | 192669 | 83900  | 135029 | 231203             | 100680 | 162035 |
| HPY-C6-702-DA  | 162326             | 70686 | 113763 | 185515 | 80784  | 130015 | 231894 | 100981 | 162519 |                    |        |        |
| HPY-C6-1001-DA | 166756             | 72616 | 116868 | 190579 | 82989  | 133564 | 238223 | 103737 | 166955 |                    |        |        |
| HPY-C6-802-DA  | 212675             | 92611 | 149050 | 243057 | 105842 | 170342 |        |        |        |                    |        |        |

## Output Torque of HPY-C Series Actuator with Spring Return (FC)



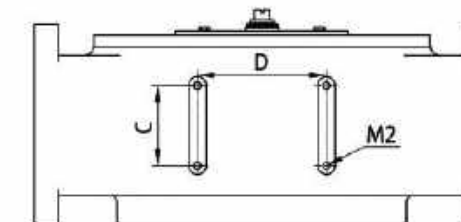
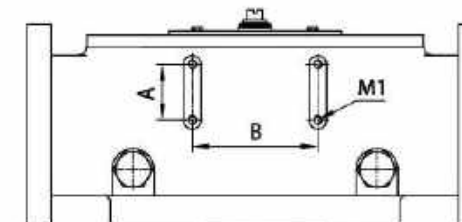
| Model            | Air to Spring (4Bar) |      |      |      |      |      | Spring |      |      | Air to Spring (5Bar) |      |      |       | Spring |      |       | Air to Spring (6Bar) |      |      | Spring |     |      |     |      |
|------------------|----------------------|------|------|------|------|------|--------|------|------|----------------------|------|------|-------|--------|------|-------|----------------------|------|------|--------|-----|------|-----|------|
|                  | 0°                   | 45°  | 90°  | 90°  | 45°  | 0°   | 0°     | 45°  | 90°  | 90°                  | 45°  | 0°   | 0°    | 45°    | 90°  | 90°   | 45°                  | 0°   | 0°   | 45°    | 90° |      |     |      |
| HPY-C06-201-SRC4 | 870                  | 279  | 305  | 915  | 479  | 870  | 1306   | 468  | 610  | 915                  | 479  | 870  | 1741  | 658    | 915  | 915   | 479                  | 870  | 1523 | 538    | 686 | 1144 | 599 | 1088 |
| HPY-C06-201-SRC5 |                      |      |      |      |      |      | 1088   | 348  | 381  | 1144                 | 599  | 1088 | 1523  | 538    | 686  | 1144  | 599                  | 1088 |      |        |     |      |     |      |
| HPY-C06-201-SRC6 |                      |      |      |      |      |      |        |      |      |                      |      |      | 1290  | 409    | 440  | 1390  | 728                  | 1322 |      |        |     |      |     |      |
| HPY-C06-221-SRC4 | 1027                 | 322  | 338  | 1144 | 599  | 1088 | 1556   | 552  | 708  | 1144                 | 599  | 1088 | 2084  | 782    | 1079 | 1144  | 599                  | 1088 |      |        |     |      |     |      |
| HPY-C06-221-SRC5 |                      |      |      |      |      |      | 1322   | 423  | 463  | 1390                 | 728  | 1322 | 1851  | 653    | 833  | 1390  | 728                  | 1322 |      |        |     |      |     |      |
| HPY-C06-221-SRC6 |                      |      |      |      |      |      |        |      |      |                      |      |      | 1586  | 508    | 555  | 1668  | 874                  | 1586 |      |        |     |      |     |      |
| HPY-C08-221-SRC4 | 1353                 | 427  | 460  | 1462 | 768  | 1390 | 2038   | 725  | 941  | 1462                 | 768  | 1390 | 2724  | 1024   | 1421 | 1462  | 768                  | 1390 |      |        |     |      |     |      |
| HPY-C08-221-SRC5 |                      |      |      |      |      |      | 1680   | 527  | 564  | 1838                 | 966  | 1748 | 2366  | 826    | 1045 | 1838  | 966                  | 1748 |      |        |     |      |     |      |
| HPY-C08-221-SRC6 |                      |      |      |      |      |      |        |      |      |                      |      |      | 1887  | 561    | 541  | 2342  | 1230                 | 2227 |      |        |     |      |     |      |
| HPY-C08-251-SRC4 | 1816                 | 586  | 659  | 1838 | 966  | 1748 | 2707   | 974  | 1284 | 1838                 | 966  | 1748 | 3598  | 1362   | 1908 | 1838  | 966                  | 1748 |      |        |     |      |     |      |
| HPY-C08-251-SRC5 |                      |      |      |      |      |      | 2227   | 710  | 780  | 2342                 | 1230 | 2227 | 3118  | 1098   | 1404 | 2342  | 1230                 | 2227 |      |        |     |      |     |      |
| HPY-C08-251-SRC6 |                      |      |      |      |      |      |        |      |      |                      |      |      | 2606  | 814    | 865  | 2882  | 1513                 | 2740 |      |        |     |      |     |      |
| HPY-C08-281-SRC4 | 2262                 | 725  | 804  | 2342 | 1230 | 2227 | 3385   | 1213 | 1591 | 2342                 | 1230 | 2227 | 4507  | 1702   | 2377 | 2342  | 1230                 | 2227 |      |        |     |      |     |      |
| HPY-C08-281-SRC5 |                      |      |      |      |      |      | 2872   | 930  | 1051 | 2882                 | 1513 | 2740 | 3994  | 1419   | 1838 | 2882  | 1513                 | 2740 |      |        |     |      |     |      |
| HPY-C08-281-SRC6 |                      |      |      |      |      |      |        |      |      |                      |      |      | 3367  | 1073   | 1179 | 3541  | 1860                 | 3367 |      |        |     |      |     |      |
| HPY-C1-281-SRC4  | 2630                 | 839  | 921  | 2766 | 1452 | 2630 | 3946   | 1411 | 1842 | 2766                 | 1452 | 2630 | 5261  | 1984   | 2764 | 2766  | 1452                 | 2630 |      |        |     |      |     |      |
| HPY-C1-281-SRC5  |                      |      |      |      |      |      | 3206   | 1003 | 1065 | 3544                 | 1861 | 3370 | 4521  | 1576   | 1986 | 3544  | 1861                 | 3370 |      |        |     |      |     |      |
| HPY-C1-281-SRC6  |                      |      |      |      |      |      |        |      |      |                      |      |      | 3750  | 1150   | 1176 | 4355  | 2286                 | 4141 |      |        |     |      |     |      |
| HPY-C1-321-SRC4  | 3535                 | 1146 | 1295 | 3544 | 1861 | 3370 | 5261   | 1898 | 2505 | 3544                 | 1861 | 3370 | 6988  | 2650   | 3715 | 3544  | 1861                 | 3370 |      |        |     |      |     |      |
| HPY-C1-321-SRC5  |                      |      |      |      |      |      | 4490   | 1472 | 1694 | 4355                 | 2286 | 4141 | 6217  | 2224   | 2904 | 4355  | 2286                 | 4141 |      |        |     |      |     |      |
| HPY-C1-321-SRC6  |                      |      |      |      |      |      |        |      |      |                      |      |      | 5098  | 1606   | 1727 | 5532  | 2904                 | 5260 |      |        |     |      |     |      |
| HPY-C1-351-SRC4  | 4141                 | 1320 | 1448 | 4355 | 2286 | 4141 | 6211   | 2222 | 2900 | 4355                 | 2286 | 4141 | 8282  | 3123   | 4351 | 4355  | 2286                 | 4141 |      |        |     |      |     |      |
| HPY-C1-351-SRC5  |                      |      |      |      |      |      | 5092   | 1604 | 1724 | 5532                 | 2904 | 5260 | 7163  | 2506   | 3175 | 5532  | 2904                 | 5260 |      |        |     |      |     |      |
| HPY-C1-351-SRC6  |                      |      |      |      |      |      |        |      |      |                      |      |      | 5927  | 1823   | 1875 | 6832  | 3586                 | 6406 |      |        |     |      |     |      |
| HPY-C1-401-SRC4  | 5591                 | 1821 | 2073 | 5532 | 2904 | 5260 | 8303   | 3002 | 3974 | 5532                 | 2904 | 5260 | 11016 | 4184   | 5875 | 5532  | 2904                 | 5260 |      |        |     |      |     |      |
| HPY-C1-401-SRC5  |                      |      |      |      |      |      | 7067   | 2320 | 2674 | 6832                 | 3586 | 6496 | 9780  | 3501   | 4575 | 6832  | 3586                 | 6496 |      |        |     |      |     |      |
| HPY-C1-401-SRC6  |                      |      |      |      |      |      |        |      |      |                      |      |      | 8138  | 2595   | 2848 | 8559  | 4493                 | 8138 |      |        |     |      |     |      |
| HPY-C2-401-SRC4  | 6473                 | 2064 | 2266 | 6808 | 3574 | 6473 | 9710   | 3474 | 4534 | 6808                 | 3574 | 6473 | 12947 | 4883   | 6803 | 6808  | 3574                 | 6473 |      |        |     |      |     |      |
| HPY-C2-401-SRC5  |                      |      |      |      |      |      | 7963   | 2509 | 2897 | 8645                 | 4538 | 8220 | 11200 | 3919   | 4965 | 8645  | 4538                 | 8220 |      |        |     |      |     |      |
| HPY-C2-401-SRC6  |                      |      |      |      |      |      |        |      |      |                      |      |      | 9428  | 2941   | 3102 | 10508 | 5516                 | 9992 |      |        |     |      |     |      |



| Model            | Air to Spring (4Bar) |       |       | Spring |       |       | Air to Spring (5Bar) |       |       | Spring |       |        | Air to Spring (6Bar) |       |        | Spring |       |        |
|------------------|----------------------|-------|-------|--------|-------|-------|----------------------|-------|-------|--------|-------|--------|----------------------|-------|--------|--------|-------|--------|
|                  | 0°                   | 45°   | 90°   | 90°    | 45°   | 0°    | 0°                   | 45°   | 90°   | 90°    | 45°   | 0°     | 0°                   | 45°   | 90°    | 90°    | 45°   | 0°     |
| HPY-C2-451-SRC4  | 8220                 | 2621  | 2877  | 8645   | 4538  | 8220  | 12330                | 4411  | 5758  | 8645   | 4538  | 8220   | 16441                | 6201  | 8638   | 8645   | 4538  | 8220   |
| HPY-C2-451-SRC5  |                      |       |       |        |       |       | 10559                | 3433  | 3894  | 10508  | 5516  | 9992   | 14669                | 5223  | 6775   | 10508  | 5516  | 9992   |
| HPY-C2-451-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 12330                | 3932  | 4316   | 12967  | 6807  | 12330  |
| HPY-C3-451-SRC4  | 9610                 | 3127  | 3434  | 10317  | 5417  | 9610  | 14715                | 5263  | 6871  | 10317  | 5417  | 9610   | 19620                | 7399  | 10309  | 10317  | 5417  | 9610   |
| HPY-C3-451-SRC5  |                      |       |       |        |       |       | 12263                | 3909  | 4292  | 12896  | 6771  | 12263  | 17168                | 6045  | 7730   | 12896  | 6771  | 12263  |
| HPY-C3-451-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 14239                | 4428  | 4850   | 15976  | 8388  | 15191  |
| HPY-C3-501-SRC4  | 12043                | 3813  | 4138  | 12896  | 6771  | 12263 | 18120                | 6459  | 8397  | 12896  | 6771  | 12263  | 24196                | 9105  | 12655  | 12896  | 6771  | 12263  |
| HPY-C3-501-SRC5  |                      |       |       |        |       |       | 15191                | 4842  | 5317  | 15976  | 8388  | 15191  | 21267                | 7489  | 9575   | 15976  | 8388  | 15191  |
| HPY-C3-501-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 17346                | 5324  | 5452   | 20100  | 10553 | 19112  |
| HPY-C3-561-SRC4  | 15388                | 4928  | 5455  | 15976  | 8388  | 15191 | 23033                | 8257  | 10813 | 15976  | 8388  | 15191  | 30078                | 11586 | 16171  | 15976  | 8388  | 15191  |
| HPY-C3-561-SRC5  |                      |       |       |        |       |       | 19112                | 6092  | 6889  | 20100  | 10553 | 19112  | 26757                | 9421  | 12047  | 20100  | 10553 | 19112  |
| HPY-C3-561-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 23886                | 7842  | 9039   | 23108  | 12132 | 21973  |
| HPY-C3-631-SRC4  | 19809                | 6396  | 7177  | 20100  | 10553 | 19112 | 29539                | 10633 | 13997 | 20100  | 10553 | 19112  | 39269                | 14870 | 20816  | 20100  | 10553 | 19112  |
| HPY-C3-631-SRC5  |                      |       |       |        |       |       | 23305                | 7191  | 7441  | 26656  | 13995 | 25346  | 33035                | 11428 | 14280  | 26656  | 13995 | 25346  |
| HPY-C3-631-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 29191                | 9305  | 10217  | 30699  | 16118 | 29191  |
| HPY-C4-631-SRC4  | 21759                | 6584  | 6531  | 26135  | 13712 | 24851 | 33411                | 11658 | 14697 | 26135  | 13712 | 24851  | 45063                | 16732 | 22863  | 26135  | 13712 | 24851  |
| HPY-C4-631-SRC5  |                      |       |       |        |       |       | 29131                | 9297  | 10190 | 30636  | 16074 | 29131  | 40783                | 14371 | 18362  | 30636  | 16074 | 29131  |
| HPY-C4-631-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 33888                | 10506 | 11110  | 37888  | 19879 | 36027  |
| HPY-C4-701-SRC4  | 28512                | 9027  | 9762  | 30636  | 16074 | 29131 | 42922                | 15302 | 19861 | 30636  | 16074 | 29131  | 57333                | 21578 | 29961  | 30636  | 16074 | 29131  |
| HPY-C4-701-SRC5  |                      |       |       |        |       |       | 36027                | 11497 | 12609 | 37888  | 19879 | 36027  | 50437                | 17773 | 22709  | 37888  | 19879 | 36027  |
| HPY-C4-701-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 41280                | 12719 | 13078  | 47519  | 24932 | 45184  |
| HPY-C4-801-SRC4  | 39392                | 12963 | 14968 | 37888  | 19879 | 36027 | 58247                | 21173 | 28162 | 37888  | 19879 | 36027  | 77102                | 29384 | 41396  | 37888  | 19879 | 36027  |
| HPY-C4-801-SRC5  |                      |       |       |        |       |       | 49089                | 16120 | 18551 | 47519  | 24932 | 45184  | 67944                | 24331 | 31765  | 47519  | 24932 | 45184  |
| HPY-C4-801-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 56564                | 18052 | 19798  | 59487  | 31211 | 56564  |
| HPY-C5-801-SRC4  | 45246                | 14438 | 15836 | 47584  | 24968 | 45246 | 67869                | 24289 | 31691 | 47584  | 24968 | 45246  | 90492                | 34141 | 47546  | 47584  | 24968 | 45246  |
| HPY-C5-801-SRC5  |                      |       |       |        |       |       | 55758                | 17808 | 18954 | 60321  | 31651 | 57357  | 78381                | 27457 | 34809  | 60321  | 31651 | 57357  |
| HPY-C5-801-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 65955                | 20601 | 21742  | 73388  | 38508 | 69783  |
| HPY-C5-901-SRC4  | 57357                | 18302 | 20075 | 60321  | 31651 | 57357 | 86036                | 30791 | 40174 | 60321  | 31651 | 57357  | 114714               | 43279 | 60273  | 60321  | 31651 | 57357  |
| HPY-C5-901-SRC5  |                      |       |       |        |       |       | 73610                | 23934 | 27106 | 73388  | 38508 | 69783  | 102289               | 36423 | 47205  | 73388  | 38508 | 69783  |
| HPY-C5-901-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 86036                | 27454 | 30113  | 90481  | 47477 | 86036  |
| HPY-C6-801-SRC4  | 60764                | 19336 | 21267 | 63904  | 33585 | 60764 | 91146                | 32566 | 42560 | 63904  | 33585 | 60764  | 121528               | 45796 | 63853  | 63904  | 33585 | 60764  |
| HPY-C6-801-SRC5  |                      |       |       |        |       |       | 74843                | 23555 | 25414 | 81050  | 42596 | 77068  | 105225               | 36785 | 46707  | 81050  | 42596 | 77068  |
| HPY-C6-801-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 88036                | 27284 | 28630  | 99127  | 52097 | 94257  |
| HPY-C6-901-SRC4  | 77068                | 24524 | 26974 | 81050  | 42596 | 77068 | 115602               | 41304 | 53960 | 81050  | 42596 | 77068  | 154136               | 58084 | 80965  | 81050  | 42596 | 77068  |
| HPY-C6-901-SRC5  |                      |       |       |        |       |       | 96413                | 31803 | 35902 | 99127  | 52097 | 94257  | 136946               | 48583 | 62908  | 99127  | 52097 | 94257  |
| HPY-C6-901-SRC6  |                      |       |       |        |       |       |                      |       |       |        |       |        | 113847               | 35815 | 38615  | 123420 | 64864 | 117357 |
| HPY-C6-1001-SRC4 | 96322                | 30893 | 34437 | 99127  | 52097 | 94257 | 143867               | 51840 | 67828 | 99127  | 52097 | 94257  | 191611               | 72387 | 101219 | 99127  | 52097 | 94257  |
| HPY-C6-1001-SRC5 |                      |       |       |        |       |       | 120867               | 38872 | 43535 | 123420 | 64864 | 117357 | 168511               | 59620 | 76926  | 123420 | 64864 | 117357 |
| HPY-C6-1001-SRC6 |                      |       |       |        |       |       |                      |       |       |        |       |        | 142934               | 45483 | 50027  | 150319 | 79001 | 142934 |

The torque of the springs can be customized to your needs.

## Body Connecting Dimension



| Body No. | AxB     | CxD     | M1<br>Screw Hole | M2<br>Screw Hole |
|----------|---------|---------|------------------|------------------|
| B06/C06  | 50x90   | 80x125  | 4-M12 deep 18    | 4-M12 deep 18    |
| B08/C08  | 50x125  | 80x125  | 4-M12 deep 18    | 4-M12 deep 18    |
| B1/C1    | 50x125  | 80x125  | 4-M12 deep 18    | 4-M12 deep 18    |
| B2/C2    | 80x125  | 95x155  | 4-M12 deep 18    | 4-M12 deep 18    |
| B3/C3    | 80x180  | 115x185 | 4-M12 deep 18    | 4-M12 deep 18    |
| B4/C4    | 80x220  | 115x230 | 4-M12 deep 18    | 4-M12 deep 18    |
| B5/C5    | 80x220  | 140x310 | 4-M12 deep 18    | 4-M12 deep 18    |
| B6/C6    | 100x220 | 180x400 | 4-M12 deep 18    | 4-M12 deep 18    |

## How to Order

| UNIT    | 1      | 2         | 3    | 4        | 5           | 6      | 7      | 8                     | Product code |
|---------|--------|-----------|------|----------|-------------|--------|--------|-----------------------|--------------|
| CONTENT | Series | Structure | Body | Cylinder | Acting Type | Spring | Manual | Specific Requirements | HPY-C1-501   |
| CODE    | HP     | Y         | C1   | 501      | SR          | O4     | HM     | LT                    | -SR04+HM+LT  |
| EXAMPLE | HP     | Y         | C1   | 501      | SR          | O4     | HM     | LT                    |              |

|         |                                                      |                                      |                                                                     |                                                                                                           |
|---------|------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Y: Yoke | B06 C06<br>B08 C08<br>B1 C1<br>.....<br>B6 C6        | DA Double Acting<br>SR Spring Return | SM Screw Manual<br>GM Gear Manual<br>HM Hydraulic Manual            | LT Low Temperature (-40°C to +80°C)<br>HT High Temperature (-20°C to +150°C)<br>HC High Cycle<br>C Custom |
|         | 501 500mm*1<br>602 600mm*2<br>.....<br>1001 1000mm*1 |                                      | O Failure Open<br>C Failure Close<br>4 Spring Size<br>5 Spring Size |                                                                                                           |