

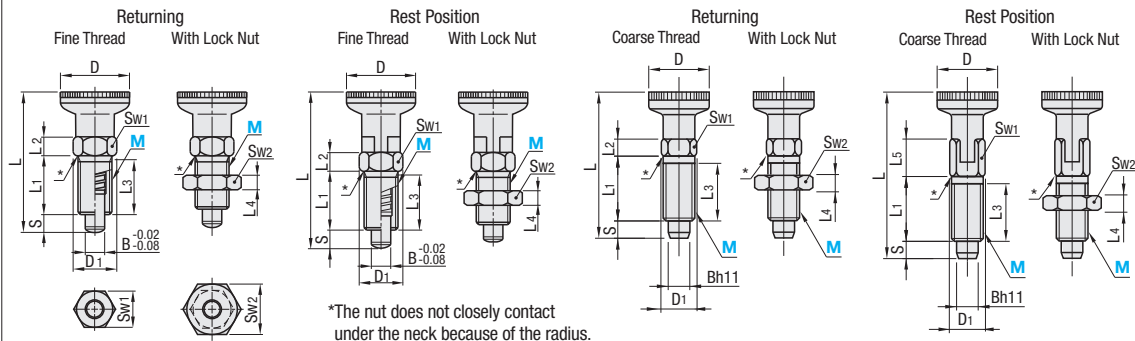
# Indexing Plungers

Fine Thread / Coarse Thread

■ Fine Thread / Coarse Thread



| Screw         | Returning | Rest Position | Knob                | Main Body          |                   | Pin      |          | Spring         | (Lock Nut) |                    |
|---------------|-----------|---------------|---------------------|--------------------|-------------------|----------|----------|----------------|------------|--------------------|
|               |           |               |                     | Material           | Surface Treatment | Material | Hardness |                | Material   | Surface Treatment  |
| Fine Thread   | PXA       | PXYA          | Nylon 6 (Mat Black) | SUM22L             | Black Oxide       | S45C     | 50~60HRC | Black Oxide    | SWP-B      | -                  |
|               | PXK       | PXYK          |                     | SUS303             | -                 | SUS303   | -        | Nickel Plating | SUS303     | Black Oxide        |
|               | SXPA      | -             |                     | SUS303             | -                 | SUS303   | -        | -              | SUS303     | -                  |
| Coarse Thread | SXPK      | SXYK          | SUM22L              | Trivalent Chromate | SUS303            | -        | -        | -              | SUS301     | -                  |
|               | PMXA      | PMXYA         |                     |                    |                   |          |          |                |            | S45C               |
|               | PMXK      | PMXYK         |                     |                    |                   |          |          |                |            | Trivalent Chromate |



• Features of the Returning Type and Rest Position Type **P.1779**

| Tolerance |        |
|-----------|--------|
| B         | h11    |
| 4         | 0      |
| 5         | -0.075 |
| 6         | 0      |
| 8         | -0.090 |

■ Fine Thread

| M  | Pitch (Fine Thread) | D  | D <sub>1</sub> | B | S min. | L         |               | L <sub>1</sub> | L <sub>2</sub> | L <sub>3</sub> | L <sub>4</sub> | Sw <sub>1</sub> | Sw <sub>2</sub> | Load (N) |           |           |           | Mass (g) |     |      |
|----|---------------------|----|----------------|---|--------|-----------|---------------|----------------|----------------|----------------|----------------|-----------------|-----------------|----------|-----------|-----------|-----------|----------|-----|------|
|    |                     |    |                |   |        | Returning | Rest Position |                |                |                |                |                 |                 | PXA min. | PXYA min. | SXPA min. | SXYK min. | PXA      | PXK | PXYA |
| 10 | 1.0                 | 21 | 13.8           | 5 | 5      | 45        | 51            | 17             | 5              | 15             | 5              | 12              | 17              | 7        | 17        | 6         | 15        | 20       | 27  | 23   |
| 12 | 1.5                 | 25 | 16.2           | 6 | 6      | 54.5      | 61            | 20             | 6              | 17             | 6              | 14              | 18              | 9        | 24        | 8         | 21        | 32       | 42  | 38   |
| 16 | 1.5                 | 31 | 21.9           | 8 | 8(7)   | 69        | 75.5          | 26             | 8              | 23             | 8              | 19              | 24              | 11       | 30        | 9         | 26        | 70       | 90  | 79   |

Min. S dimension of Rest Position Type M16 is shown in the ( ). kgf=Nx0.101972

| Part Number                        |    | Unit Price |      |     |      |               |      |      |  |
|------------------------------------|----|------------|------|-----|------|---------------|------|------|--|
| Type                               | M  | Returning  |      |     |      | Rest Position |      |      |  |
|                                    |    | PXA        | SXPA | PXK | SXPK | PXYA          | PXYK | SXYK |  |
| PXA<br>PXK<br>PXYA<br>PXYK<br>SXYK | 10 |            |      |     |      |               |      |      |  |
|                                    | 12 |            |      |     |      |               |      |      |  |
|                                    | 16 |            |      |     |      |               |      |      |  |
|                                    | 16 |            |      |     |      |               |      |      |  |

■ Coarse Thread

| Part Number |     | Pitch<br>(Coarse<br>Thread) | D  | D <sub>1</sub> | B | S<br>min. | L         |               | L <sub>1</sub> | L <sub>2</sub> | L <sub>3</sub> | L <sub>4</sub> | L <sub>5</sub> | Sw <sub>1</sub> | Sw <sub>2</sub> | Load (N) |      | Mass (g) |      |       |       | Unit Price    |               |
|-------------|-----|-----------------------------|----|----------------|---|-----------|-----------|---------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|----------|------|----------|------|-------|-------|---------------|---------------|
| Type        | M   |                             |    |                |   |           | Returning | Rest Position |                |                |                |                |                |                 |                 | min.     | max. | PMXA     | PMXK | PMXYA | PMXYK | PMXA<br>PMXYA | PMXK<br>PMXYK |
|             |     |                             |    |                |   |           |           |               |                |                |                |                |                |                 |                 |          |      |          |      |       |       |               |               |
| PMXA        | 6M  | 1.0                         | 12 | 6.9            | 4 | 4         | 30.5      | 33            | 12             | 4.5            | 10             | 3.2            | 7              | 6               | 10              | 3        | 12   | 5        | 9    | 4     | 8     |               |               |
| PMXK        | 8M  | 1.25                        | 16 | 9.2            | 5 | 5         | 40        | 43.5          | 16             | 6              | 14             | 4              | 9.5            | 8               | 13              | 5        | 24   | 10       | 15   | 11    | 16    |               |               |
| PMXYA       | 10M | 1.5                         | 18 | 11.5           | 6 | 6         | 49        | 52            | 20             | 7.5            | 18             | 5              | 10.5           | 10              | 16              | 5        | 21   | 17       | 24   | 18    | 15    |               |               |
| PMXYK       | 12M | 1.75                        | 21 | 13.8           | 8 | 8         | 59        | 63.5          | 24             | 9              | 22             | 6              | 13.5           | 12              | 18              | 6        | 22   | 31       | 41   | 36    | 46    |               |               |

kgf=Nx0.101972

Ordering Example  
Part Number  
SXPA16  
PMXK10M

Since the Coarse Thread Type (PMXA, PMXK, PMXYA, PMXYK) are thin threaded, do not exceed the tightening torques shown in the table to the right.

| M  | Allowable Tightening Torque (N · m) |
|----|-------------------------------------|
| 6  | 1.5                                 |
| 8  | 9                                   |
| 10 | 20                                  |
| 12 | 25                                  |

# Ball Lock Pins

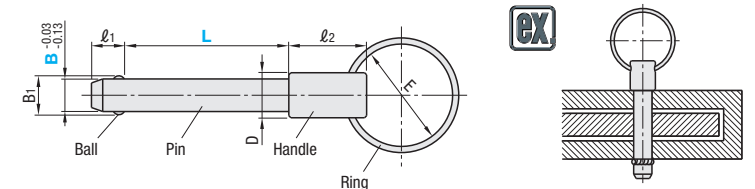
Spring Type / Push Type

■ Features: Locks with the spring force. Priced at approx. 1/3 of the Push Type.

■ Ball Lock Pins - Spring Type



| Type         |                | Ball     |          | Pin      |                            | Handle   |                            | Ring     |                   |
|--------------|----------------|----------|----------|----------|----------------------------|----------|----------------------------|----------|-------------------|
| L Selectable | L Configurable | Material | Hardness | Material | Surface Treatment          | Material | Surface Treatment          | Material | Surface Treatment |
| BLPS         | BLPF           | SUS440C  | HRC55~   | S45C     | Electroless Nickel Plating | SUM23    | Electroless Nickel Plating | SWRH     | Nickel Plating    |



■ L Selectable

| Part Number |    | L Selection |    |    |    | B1  | ℓ1   | D  | ℓ2 | E  | Unit Price |      |      |      |      |
|-------------|----|-------------|----|----|----|-----|------|----|----|----|------------|------|------|------|------|
| Type        | B  |             |    |    |    |     |      |    |    |    | L=25       | L=30 | L=40 | L=50 | L=60 |
| BLPS        | 5  | 30          |    |    |    | 5.5 | 6    | 11 | 22 | 25 | -          |      | -    | -    | -    |
|             | 6  | 25          | 30 | 40 | 50 | 7   | 7    | 11 | 22 | 25 |            |      | -    | -    | -    |
|             | 8  | 25          | 30 | 40 | 50 | 9.5 | 8    | 11 | 22 | 25 |            |      |      | -    | -    |
|             | 10 | 25          | 30 | 40 | 50 | 60  | 12   | 9  | 16 | 27 | 25         |      |      |      |      |
|             | 12 |             |    |    |    | 60  | 14.5 | 10 | 16 | 27 | 25         | -    | -    | -    | -    |
|             | 16 |             |    |    |    | 60  | 19   | 14 | 19 | 32 | 25         | -    | -    | -    | -    |

■ L Configurable

| Part Number |    | L<br>5mm Increment | B <sub>1</sub> | ℓ <sub>1</sub> | D  | ℓ <sub>2</sub> | E  | Unit Price |
|-------------|----|--------------------|----------------|----------------|----|----------------|----|------------|
| Type        | B  |                    |                |                |    |                |    |            |
| BLPF        | 5  | 10~30              | 5.5            | 6              | 11 | 22             | 25 |            |
|             | 6  | 15~50              | 7              | 7              | 11 | 22             | 25 |            |
|             | 8  | 20~100             | 9.5            | 8              | 11 | 22             | 25 |            |
|             | 10 | 25~100             | 12             | 9              | 16 | 27             | 25 |            |
|             | 12 | 30~100             | 14.5           | 10             | 16 | 27             | 25 |            |
|             | 16 | 50~100             | 19             | 14             | 19 | 32             | 25 |            |

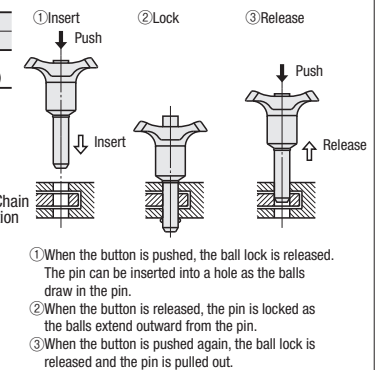
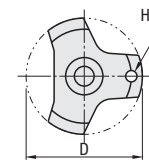
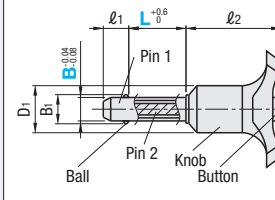
Ordering Example  
Part Number  
BLPS8  
BLPF10

| B  | Mating Hole Dimensions | Resistance when Removed (N) | Pin Fracture Load (kN) | Mass (g) |
|----|------------------------|-----------------------------|------------------------|----------|
| 5  | 5 +0.07<br>0           | 9                           | 5                      | 19~22    |
| 6  | 6 +0.07<br>0           | 9                           | 7                      | 21~28    |
| 8  | 8 +0.09<br>0           | 9                           | 13                     | 27~58    |
| 10 | 10 +0.09<br>0          | 20                          | 20                     | 59~105   |
| 12 | 12 +0.11<br>0          | 30                          | 29                     | 73~135   |
| 16 | 16 +0.11<br>0          | 50                          | 51                     | 159~237  |

■ Ball Lock Pins - Push Type



| Type | Ball     |          | Pin 1             | Pin 2    | Spring   | Knob                    |
|------|----------|----------|-------------------|----------|----------|-------------------------|
|      | Material | Hardness | Material          | Material | Material | Material                |
| BLP  | SUS440C  | 55HRC~   | SUS630 Equivalent | SUS303   | SUS631J1 | Nylon 6 (Black, Orange) |



| Part Number |    | L  |    |    |    |    | D  | D <sub>1</sub> | B <sub>1</sub> | ℓ <sub>1</sub> | ℓ <sub>2</sub> | Mating Hole Recommended Dimensions | Shear Load (kN) | Mass (g)                         | Unit Price                       |                                 |          |       |   |   |
|-------------|----|----|----|----|----|----|----|----------------|----------------|----------------|----------------|------------------------------------|-----------------|----------------------------------|----------------------------------|---------------------------------|----------|-------|---|---|
| Type        | B  |    |    |    |    |    |    |                |                |                |                |                                    |                 |                                  | L=10~25                          | L=30~50                         | L=60, 80 | L=100 |   |   |
| BLP         | 5  | 10 | 15 | 20 | 25 | 30 | 38 | 16             | 5.5            | 6              | 31.5           | 5 <sup>+0.07</sup> <sub>0</sub>    | 24              | 30~32                            |                                  |                                 | -        | -     |   |   |
|             | 6  | 10 | 15 | 20 | 25 | 30 |    |                | 40             | 50             |                | 7                                  | 7               | 6 <sup>+0.07</sup> <sub>0</sub>  | 35                               | 31~39                           |          |       | - | - |
|             | 8  | 20 |    |    |    |    |    |                | 25             | 30             |                | 40                                 | 50              | 9.5                              | 8                                | 8 <sup>+0.09</sup> <sub>0</sub> | 63       | 38~47 |   | - |
|             | 10 | 25 |    |    |    |    | 30 | 40             | 50             | 60             | 43             | 23                                 | 36              | 10 <sup>+0.09</sup> <sub>0</sub> | 100                              | 76~97                           |          |       | - |   |
|             | 12 | 40 |    |    |    |    | 50 | 60             | 80             | 14.5           |                |                                    |                 | 10                               | 12 <sup>+0.11</sup> <sub>0</sub> | 144                             | 100~135  | -     |   | - |
|             | 16 | 60 |    |    |    |    | 80 | 100            | 19             | 14             |                |                                    |                 | 16 <sup>+0.11</sup> <sub>0</sub> | 257                              | 171~232                         | -        | -     |   |   |

Ordering Example  
Part Number  
BLP8  
BLP10