

# Punch Stripper Unit [Overview]

## Coil Spring Type BPS Series

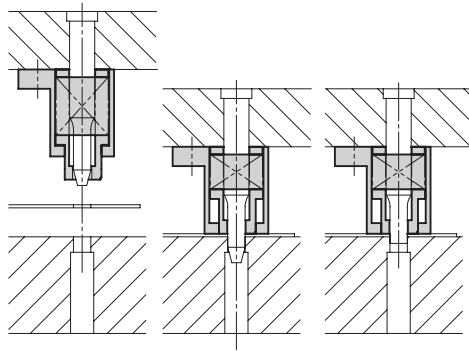
### Pierce Components

- It is a punch stripper unit for commercially available retainer.
- It is compatible with 5 sizes of  $\phi 10$ , 13 (overall length 80, 90) and  $\phi 16$  (overall length 90).
- The entry size is specified to max. 5 mm.
- The bushing end can be machined to a shape.

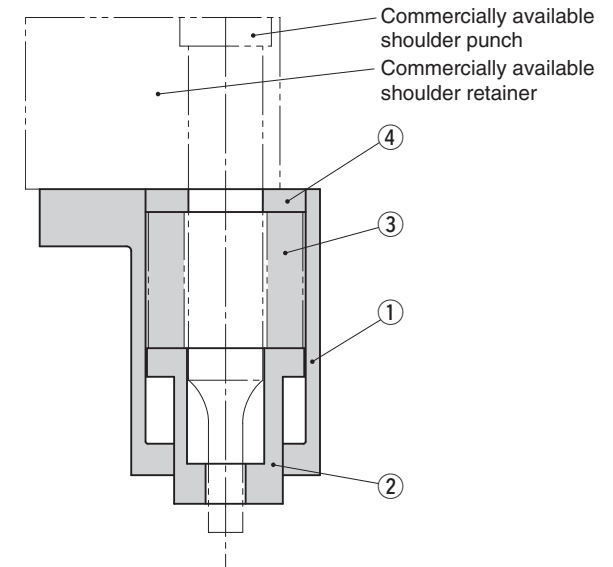
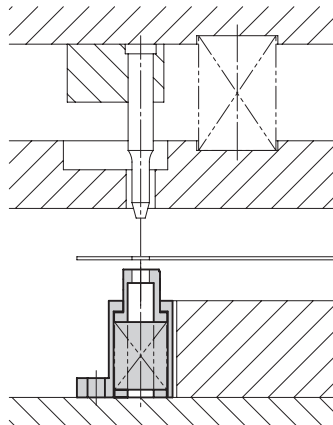


### Other examples of punch stripper unit

It can be used as the stripper for pilot punch.



It can be used as the lifter with pilot relief hole.



| No. | Description                          | Qty | Remark                              |
|-----|--------------------------------------|-----|-------------------------------------|
| 1   | Holder                               | 1   | —                                   |
| 2   | Steel bushing                        | 1   | —                                   |
| 3   | Coil Spring                          | 1   | Refer to the Spring Specification.  |
| 4   | Spacer                               | 1   | —                                   |
| 5   | Hexagon Socket Head Bolt (Accessory) | 2   | D=10:M8x60, D=13:M8x60, D=16:M10x16 |

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## Coil Spring Type BPS Series

### Pierce Components

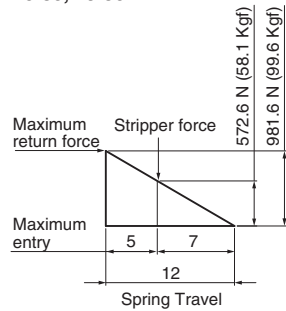
#### Spring Specification

| Catalog No. | D  | Punch Length | Travel S | Initial Load N (kgf) | Stripper Force N (kgf) *1 | Maximum Return Force N (kgf) | Spring Constant N/mm (kgf/mm) | Spring Model |
|-------------|----|--------------|----------|----------------------|---------------------------|------------------------------|-------------------------------|--------------|
| BPSB        | 10 | 80           | 12       |                      | 572.6 (58.1)              | 981.6 (99.6)                 | 81.8 (8.3)                    | TL27-30      |
|             |    | 90           | 11.2     |                      | 790.5 (80.6)              | 1427.8 (145.6)               | 127.5 (13.0)                  | TM27-35      |
| BPSA        | 13 | 80           | 12       | 0.0                  | 572.6 (58.1)              | 981.6 (99.6)                 | 81.8 (8.3)                    | TL27-30      |
|             |    | 90           | 11.2     |                      | 790.5 (80.6)              | 1427.8 (145.6)               | 127.5 (13.0)                  | TM27-35      |
| BPSR        | 16 | 90           | 16       |                      | 1116.5 (114.4)            | 1624.0 (166.4)               | 101.5 (10.4)                  | TL35-40      |
| BPSE        |    |              |          |                      |                           |                              |                               |              |

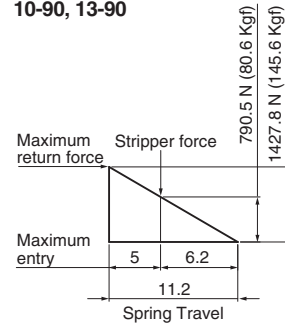
\*1 Pierce entry is set at 5 mm.

#### Spring Diagram

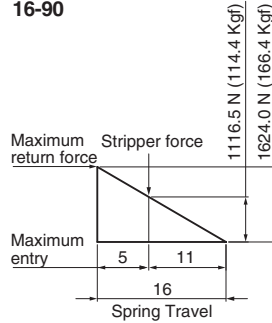
10-80, 13-80



10-90, 13-90

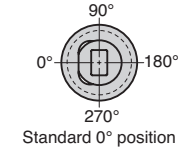


16-90

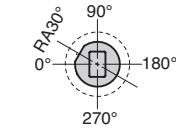


#### Option

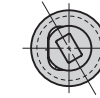
—RA Lock position of the irregular shape bushing can be changed.



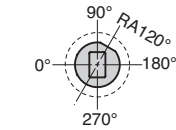
Standard 0° position



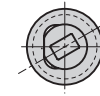
RA30° position



For RA30°



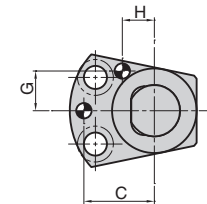
RA120° position



For RA120°

—PN Dowel hole is machined. (2-φ6H7)

When the unit is used as the stripper for pilot punch or the lifter with pilot relief hole, dowel holes should be drilled.



| D       | C    | G    | H    |
|---------|------|------|------|
| 10 · 13 | 27.5 | 15.5 | 12.5 |
| 16      | 32   | 18.5 | 15   |

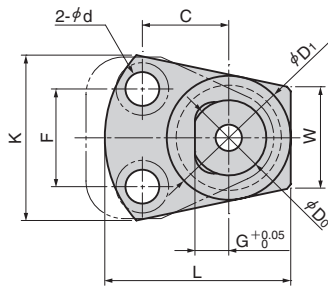
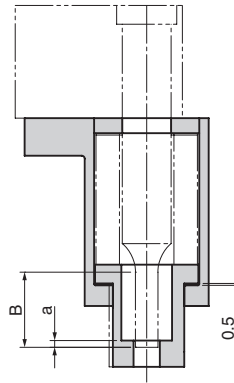
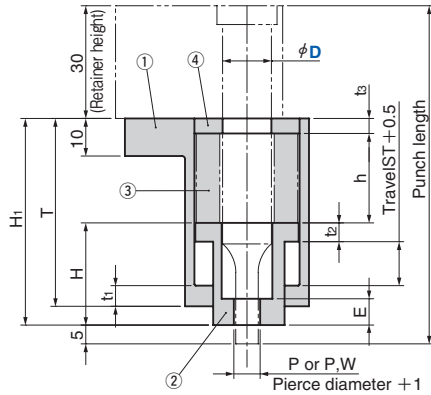
D is punch shank diameter.

# Punch Stripper Unit

## Coil Spring Type

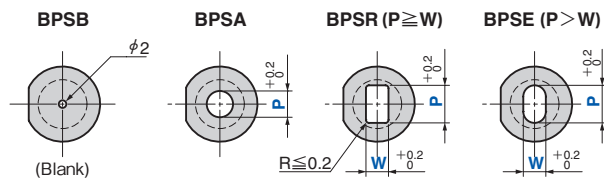
### Pierce Components

- BPSB** (Bushing blank type)
- BPSA** (Round hole)
- BPSR** (Square hole with radius)
- BPSE** (Oblong hole)



#### ● Hole of Steel Bushing

Determine the hole size with the pierce diameter + 1 mm.



| D  | Punch Length | T  | t <sub>1</sub> | H    | t <sub>2</sub> | H <sub>1</sub> | E  | h    | t <sub>3</sub> | C  | F  | G    | D <sub>0</sub> | D <sub>1</sub> | K  | L    | W  | d  | B  | a   |
|----|--------------|----|----------------|------|----------------|----------------|----|------|----------------|----|----|------|----------------|----------------|----|------|----|----|----|-----|
| 10 | 80           | 44 | 4.5            | 23   | 5.0            | 45             | 9  | 18   | 4              | 21 | 20 | 9    | 20             | 33             | 44 | 49.5 | 27 | 9  | 13 | 1.5 |
|    | 90           | 50 | 5.5            | 27.2 |                | 55             | 8  | 23.8 |                | 23 | 26 |      | 1.3            |                |    |      |    |    |    |     |
| 13 | 80           | 44 | 4.5            | 23   | 5.0            | 45             | 9  | 18   | 4              | 21 | 20 | 9    | 20             | 33             | 44 | 49.5 | 27 | 9  | 13 | 1.5 |
|    | 90           | 50 | 5.5            | 27.2 |                | 55             | 8  | 23.8 |                | 23 | 26 |      | 1.3            |                |    |      |    |    |    |     |
| 16 | 90           | 53 | 5.0            | 28   | 4.5            | 55             | 13 | 24   | 3              | 26 | 24 | 13.5 | 30             | 41             | 50 | 60.5 | 36 | 11 | 19 | 1.5 |

| Catalog No. | D  | Punch Length | 0.1 mm increments |          |          |          |          |
|-------------|----|--------------|-------------------|----------|----------|----------|----------|
|             |    |              | BPSA              | BPSR     |          | BPSE     |          |
|             |    |              | P                 | P        | W        | P        | W        |
| BPSB        | 10 | 80           | 3.0~11.0          | 3.0~ 8.0 | 3.0~ 8.0 | 3.1~11.0 | 3.0~10.8 |
| BPSA        | 10 | 90           |                   |          |          |          |          |
| BPSR        | 13 | 80           | 3.0~14.0          | 3.0~10.1 | 3.0~10.1 | 3.1~14.0 | 3.0~13.8 |
| BPSE        | 13 | 90           |                   |          |          |          |          |
|             | 16 | 90           | 3.0~17.0          | 3.0~12.3 | 3.0~12.3 | 3.1~17.0 | 3.0~16.8 |



| Catalog No. | D  | Punch Length | P    | W    | Option |
|-------------|----|--------------|------|------|--------|
| BPSB        | 10 | 80           |      |      |        |
| BPSA        | 10 | 80           | P8.2 |      |        |
| BPSR        | 13 | 90           | P8.0 | W6.0 |        |
| BPSR        | 13 | 80           | P8.0 | W6.0 | RA30   |
| BPSA        | 10 | 80           | P8.2 |      | PN     |



| Option Code | Specification  |
|-------------|--|
| RA          | Lock position of the irregular shape (square or oblong hole) bushing is changed (at increments of 1°). |
| PN          | Dowel hole is machined. 2-φ 6H7  |



Refer to page 240 for option details.

#### ■ Guideline for Use

- Use BPSB with the pierce guide hole.
- Set the entry of the pierce to 5 mm or less.