

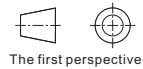
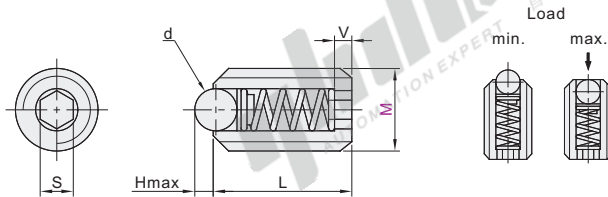
# Ball Plungers

- Compact
- w/o Thread-Locking Adhesive

## Compact

| Code  | Type    | Body Material | Ball     |                  | Spring Material |
|-------|---------|---------------|----------|------------------|-----------------|
|       |         |               | Material | Hardness         |                 |
| ZAF51 | Compact | Metal Ball    | SUSXM7   | SUS440C 60~66HRC | SUS304-WPB      |

Features: length is shorter than conventional ball plunger by 30%.



| Part Number |   | d   | H   | L  | V   | S   | Load (N) |      |
|-------------|---|-----|-----|----|-----|-----|----------|------|
| Code        | M |     |     |    |     |     | min.     | max. |
| ZAF51       | 3 | 1.5 | 0.5 | 5  | 1   | 1.5 | 1        | 2    |
|             | 4 | 2   | 0.8 | 6  | 1.2 | 2   | 1        | 3.8  |
|             | 5 | 2.5 |     | 8  | 1.7 | 2.5 | 2.1      | 6    |
|             | 6 | 4   | 1.2 | 9  | 1.8 | 3   | 4.5      | 8.8  |
|             | 8 | 5   | 2   | 10 | 1.8 | 4   | 7.4      | 12   |

kgf=N×0.101972



| Part Number | d   |
|-------------|-----|
| Code M      |     |
| ZAF51       | 2   |
| 5           | 2.5 |

ZAF51 — M4



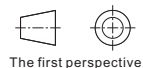
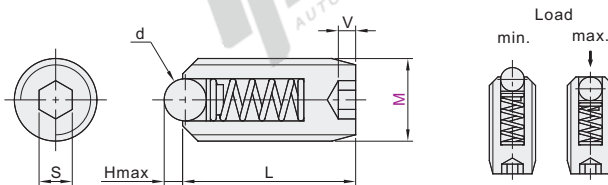
| Discount price                  |
|---------------------------------|
| Per 1~29 30~                    |
| Price 100% Additional quotation |



| Delivery |
|----------|
| 6        |

## w/o Thread-Locking Adhesive

| Code  | Type                        | Load             | Body     |          |                   | Ball     |          | Spring Material | Operating Temperature |
|-------|-----------------------------|------------------|----------|----------|-------------------|----------|----------|-----------------|-----------------------|
|       |                             |                  | Material | Hardness | Surface Treatment | Material | Hardness |                 |                       |
| ZAC31 | w/o Thread-Locking Adhesive | Ultra Light Load | SCM435   | 29-35HRC | Black Oxide       | SUJ2     | 56HRC~   | SWP-B           | -30~80°C              |
| ZAC32 |                             | Light Load       |          |          |                   |          |          |                 |                       |
| ZAC33 |                             | Heavy Load       | SUS304   | —        | —                 |          |          |                 |                       |
| ZAC34 |                             | Extra Heavy Load | SCM435   | 29-35HRC | Nickel Plating    |          |          |                 |                       |



| Part Number |    | d   | H   | L  | V   | S   | Load(N)          |      |            |      |            |      |                  |      |
|-------------|----|-----|-----|----|-----|-----|------------------|------|------------|------|------------|------|------------------|------|
| Code        | M  |     |     |    |     |     | Ultra Light Load |      | Light Load |      | Heavy Load |      | Extra Heavy Load |      |
|             |    |     |     |    |     |     | min.             | max. | min.       | max. | min.       | max. | min.             | max. |
| ZAC31       | 5  | 3   | 0.8 | 12 | 2   | 2.5 | 0.9              | 3.22 | 2.8        | 9.9  | 4.8        | 19.7 | 11.1             | 24.2 |
|             | 6  | 3.5 | 1.2 | 13 | 2.5 | 3   | 1.5              | 4.95 | 4.8        | 14.8 | 9.7        | 29.5 | 17.6             | 33.5 |
|             | 8  | 5   | 2   | 15 |     | 4   | 2.3              | 6.46 | 6.8        | 19.7 | 12.6       | 39.3 | 21.3             | 45.4 |
| ZAC33       | 10 | 6   | 2.5 | 16 |     | 5   | 2.9              | 8.2  | 8.7        | 24.6 | 18.5       | 49.1 | 23.4             | 58.8 |
| ZAC34       | 12 | 8   | 3   | 20 | 3   | 6   | 3.4              | 9.78 | 9.7        | 29.5 | 19.5       | 58.9 | 24               | 62.4 |
|             | 16 | 10  | 4   | 25 |     | 8   | 5.6              | 15.9 | 15.6       | 49.1 | 29.3       | 98.1 | 43.5             | 116  |

kgf=N×0.101972



| Part Number | d   |
|-------------|-----|
| Code M      |     |
| ZAC31       | 3   |
| ZAC33       | 3.5 |
| ZAC32       | 6   |

ZAC31 — M5



| Discount price                  |
|---------------------------------|
| Per 1~29 30~                    |
| Price 100% Additional quotation |



| Delivery |
|----------|
| 12       |