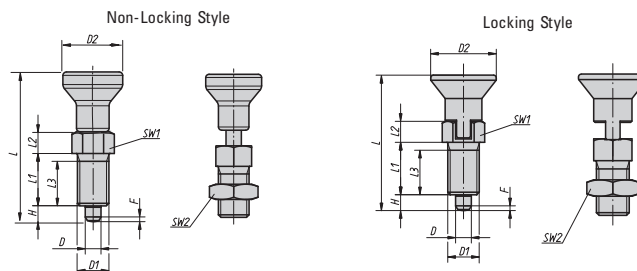


HAND RETRACTABLE PLUNGERS

Stainless Pull Knob | Stainless Steel | Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the handle retracts the plunger pin into the body. The locking style allows the pin to stay in the retracted position. The handle and plunger pin are made from stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications. They are available with or without a jam nut.

METRIC - NON-LOCKING STYLE - HARDENED PLUNGER PIN

| With Jam Nut Part # | Without Jam Nut Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|---------------------|------------------------|----------|---------|-------|------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | | D mm | D1 mm | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-002004 | 03089-001004 | 4 | M8x1 | 18 | 43 | 15 | 6 | 13 | 4 | 10 | 13 | 1.0 | 1.3 | 2.7 |
| 03089-002105 | 03089-001105 | 5 | M10x1 | 21 | 50 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03089-002206 | 03089-001206 | 6 | M12x1.5 | 25 | 59 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.3 | 3.2 |
| 03089-002308 | 03089-001308 | 8 | M16x1.5 | 33 | 77 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03089-002410 | 03089-001410 | 10 | M20x1.5 | 33 | 83 | 28 | 12 | 25 | 10 | 22 | 30 | 2.6 | 3.4 | 7.6 |

METRIC - LOCKING STYLE - HARDENED PLUNGER PIN

| With Jam Nut Part # | Without Jam Nut Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|---------------------|------------------------|----------|---------|-------|------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | | D mm | D1 mm | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-004004 | 03089-003004 | 4 | M8x1 | 18 | 43 | 15 | 6 | 13 | 4 | 10 | 13 | 1.0 | 1.3 | 2.7 |
| 03089-004105 | 03089-003105 | 5 | M10x1 | 21 | 50 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03089-004206 | 03089-003206 | 6 | M12x1.5 | 25 | 59 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.3 | 3.2 |
| 03089-004308 | 03089-003308 | 8 | M16x1.5 | 33 | 77 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03089-004410 | 03089-003410 | 10 | M20x1.5 | 33 | 83 | 28 | 12 | 25 | 10 | 22 | 30 | 2.6 | 3.4 | 7.6 |

METRIC - NON-LOCKING - NON-HARDENED PLUNGER PIN

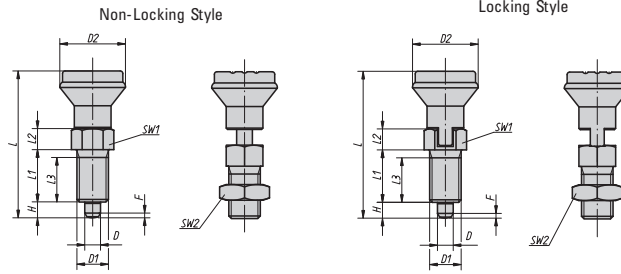
| With Jam Nut Part # | Without Jam Nut Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|---------------------|------------------------|----------|---------|-------|------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | | D mm | D1 mm | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-112004 | 03089-111004 | 4 | M8x1 | 18 | 43 | 15 | 6 | 13 | 4 | 10 | 13 | 1.0 | 1.3 | 2.7 |
| 03089-112105 | 03089-111105 | 5 | M10x1 | 21 | 50 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03089-112206 | 03089-111206 | 6 | M12x1.5 | 25 | 59 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.3 | 3.2 |
| 03089-112308 | 03089-111308 | 8 | M16x1.5 | 33 | 77 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03089-112410 | 03089-111410 | 10 | M20x1.5 | 33 | 83 | 28 | 12 | 25 | 10 | 22 | 30 | 2.6 | 3.4 | 7.6 |

METRIC - LOCKING - NON-HARDENED PLUNGER PIN

| With Jam Nut Part # | Without Jam Nut Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|---------------------|------------------------|----------|---------|-------|------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | | D mm | D1 mm | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-114004 | 03089-113004 | 4 | M8x1 | 18 | 43 | 15 | 6 | 13 | 4 | 10 | 13 | 1.0 | 1.3 | 2.7 |
| 03089-114105 | 03089-113105 | 5 | M10x1 | 21 | 50 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03089-114206 | 03089-113206 | 6 | M12x1.5 | 25 | 59 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.3 | 3.2 |
| 03089-114308 | 03089-113308 | 8 | M16x1.5 | 33 | 77 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03089-114410 | 03089-113410 | 10 | M20x1.5 | 33 | 83 | 28 | 12 | 25 | 10 | 22 | 30 | 2.6 | 3.4 | 7.6 |

HAND RETRACTABLE PLUNGERS

Novo-Grip Pull Knob | Steel and Stainless | Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the handle retracts the plunger pin into the body. The locking style allows the plunger to remain in the retracted position. The body is available in steel with black oxide finish or stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications. They are available with or without a jam nut. The Novo-Grip knob is made from black plastic.

METRIC - NON-LOCKING STYLE - WITHOUT JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -02/-04 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | FX 30° mm | SPRING FORCE | |
|--------------|------------------|--------------------|----------|----------|---------|----------|----------|----------|---------|-----------|--------------|--------------------|------------------|
| | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03090-1105 | 03090-01105 | 5 | M10x1 | 21 | 47 | 17 | 7 | 15 | 5 | 13 | 1.3 | 1.1 | 2.7 |
| 03090-1206 | 03090-01206 | 6 | M12x1.5 | 25 | 56 | 20 | 8 | 17 | 6 | 14 | 1.8 | 1.4 | 3.2 |
| 03090-1308 | 03090-01308 | 8 | M16x1.5 | 33 | 74 | 26 | 10 | 23 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03090-1410 | 03090-01410 | 10 | M20x1.5 | 33 | 80 | 28 | 12 | 25 | 10 | 22 | 2.8 | 3.4 | 7.7 |

METRIC - NON-LOCKING STYLE - WITH JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -02/-04 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|--------------|------------------|--------------------|----------|----------|---------|----------|----------|----------|---------|-----------|-----------|--------------|--------------------|------------------|
| | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03090-2105 | 03090-02105 | 5 | M10x1 | 21 | 47 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03090-2206 | 03090-02206 | 6 | M12x1.5 | 25 | 56 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.4 | 3.2 |
| 03090-2308 | 03090-02308 | 8 | M16x1.5 | 33 | 74 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03090-2410 | 03090-02410 | 10 | M20x1.5 | 33 | 80 | 28 | 12 | 25 | 10 | 22 | 30 | 2.8 | 3.4 | 7.7 |

METRIC - LOCKING STYLE - WITHOUT JAM NUT - HARDENED PLUNGER PIN

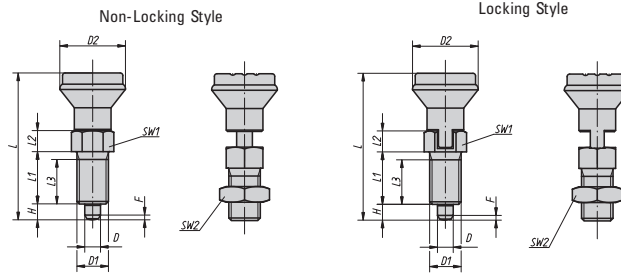
| Steel Part # | Stainless Part # | -02/-04 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | FX 30° mm | SPRING FORCE | |
|--------------|------------------|--------------------|----------|----------|---------|----------|----------|----------|---------|-----------|--------------|--------------------|------------------|
| | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03090-3105 | 03090-03105 | 5 | M10x1 | 21 | 47 | 17 | 7 | 15 | 5 | 13 | 1.3 | 1.1 | 2.7 |
| 03090-3206 | 03090-03206 | 6 | M12x1.5 | 25 | 56 | 20 | 8 | 17 | 6 | 14 | 1.8 | 1.4 | 3.2 |
| 03090-3308 | 03090-03308 | 8 | M16x1.5 | 33 | 74 | 26 | 10 | 23 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03090-3410 | 03090-03410 | 10 | M20x1.5 | 33 | 80 | 28 | 12 | 25 | 10 | 22 | 2.8 | 3.4 | 7.7 |

METRIC - LOCKING STYLE - WITH JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -02/-04 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|--------------|------------------|--------------------|----------|----------|---------|----------|----------|----------|---------|-----------|-----------|--------------|--------------------|------------------|
| | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03090-4105 | 03090-04105 | 5 | M10x1 | 21 | 47 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03090-4206 | 03090-04206 | 6 | M12x1.5 | 25 | 56 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.4 | 3.2 |
| 03090-4308 | 03090-04308 | 8 | M16x1.5 | 33 | 74 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03090-4410 | 03090-04410 | 10 | M20x1.5 | 33 | 80 | 28 | 12 | 25 | 10 | 22 | 30 | 2.8 | 3.4 | 7.7 |

HAND RETRACTABLE PLUNGERS

Novo-Grip Pull Knob | Steel and Stainless | Metric (continued)



METRIC - NON-LOCKING STYLE - WITHOUT JAM NUT - NON-HARDENED PLUNGER PIN

| Stainless Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | FX 30° mm | SPRING FORCE | |
|------------------|----------|---------|-------|------|-------|-------|-------|------|--------|-----------|-----------------|---------------|
| | D mm | D1 mm | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03090-11105 | 5 | M10x1 | 21 | 47 | 17 | 7 | 15 | 5 | 13 | 1.3 | 1.1 | 2.7 |
| 03090-11206 | 6 | M12x1.5 | 25 | 56 | 20 | 8 | 17 | 6 | 14 | 1.8 | 1.4 | 3.2 |
| 03090-11308 | 8 | M16x1.5 | 33 | 74 | 26 | 10 | 23 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03090-11410 | 10 | M20x1.5 | 33 | 80 | 28 | 12 | 25 | 10 | 22 | 2.8 | 3.4 | 7.7 |

METRIC - NON-LOCKING STYLE - WITH JAM NUT - NON-HARDENED PLUNGER PIN

| Stainless Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|------------------|----------|---------|-------|------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | D mm | D1 mm | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03090-12105 | 5 | M10x1 | 21 | 47 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03090-12206 | 6 | M12x1.5 | 25 | 56 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.4 | 3.2 |
| 03090-12308 | 8 | M16x1.5 | 33 | 74 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03090-12410 | 10 | M20x1.5 | 33 | 80 | 28 | 12 | 25 | 10 | 22 | 30 | 2.8 | 3.4 | 7.7 |

METRIC - LOCKING STYLE - WITHOUT JAM NUT - NON-HARDENED PLUNGER PIN

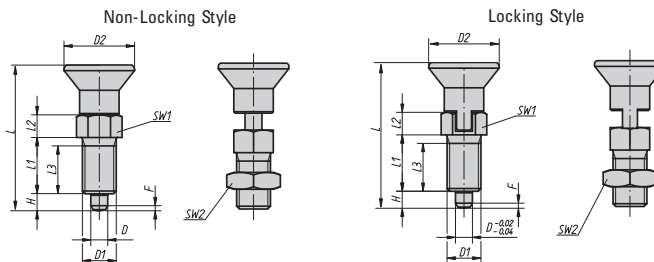
| Stainless Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | FX 30° mm | SPRING FORCE | |
|------------------|----------|---------|-------|------|-------|-------|-------|------|--------|-----------|-----------------|---------------|
| | D mm | D1 mm | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03090-13105 | 5 | M10x1 | 21 | 47 | 17 | 7 | 15 | 5 | 13 | 1.3 | 1.1 | 2.7 |
| 03090-13206 | 6 | M12x1.5 | 25 | 56 | 20 | 8 | 17 | 6 | 14 | 1.8 | 1.4 | 3.2 |
| 03090-13308 | 8 | M16x1.5 | 33 | 74 | 26 | 10 | 23 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03090-13410 | 10 | M20x1.5 | 33 | 80 | 28 | 12 | 25 | 10 | 22 | 2.8 | 3.4 | 7.7 |

METRIC - LOCKING STYLE - WITH JAM NUT - NON-HARDENED PLUNGER PIN

| Stainless Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|------------------|----------|---------|-------|------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | D mm | D1 mm | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03090-14105 | 5 | M10x1 | 21 | 47 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03090-14206 | 6 | M12x1.5 | 25 | 56 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.4 | 3.2 |
| 03090-14308 | 8 | M16x1.5 | 33 | 74 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03090-14410 | 10 | M20x1.5 | 33 | 80 | 28 | 12 | 25 | 10 | 22 | 30 | 2.8 | 3.4 | 7.7 |

HAND RETRACTABLE PLUNGERS

Plastic Pull Knob | Steel and Stainless | Inch and Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the handle retracts the plunger pin into the body. The locking style allows the plunger to remain in the retracted position. The body is available in steel with black oxide finish or stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications. They are available with or without a jam nut. The knob is made from black thermoplastic.

INCH - NON-LOCKING STYLE - WITHOUT JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -.001/-.002 D | D1 | D2 | L | L1 | L2 | L3 | H | SW1 | FX 30° | SPRING FORCE | |
|--------------|------------------|------------------|--------|------|------|------|-----|-----|-----|-----|--------|-----------------|---------------|
| | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-1105AL | 03089-01105AL | .197 (5mm) | 3/8-24 | .83 | 1.71 | .67 | .28 | .59 | .20 | .51 | .05 | 1.1 | 2.7 |
| 03089-1206A5 | 03089-01206A5 | .236 (6mm) | 1/2-13 | .98 | 2.04 | .79 | .31 | .63 | .24 | .55 | .07 | 1.4 | 3.2 |
| 03089-1308A6 | 03089-01308A6 | .315 (8mm) | 5/8-11 | 1.30 | 2.68 | 1.02 | .39 | .83 | .31 | .75 | .09 | 3.4 | 7.9 |
| 03089-1410A7 | 03089-01410A7 | .394 (10mm) | 3/4-10 | 1.30 | 2.91 | 1.10 | .47 | .91 | .39 | .87 | .11 | 3.4 | 9.0 |

INCH - LOCKING STYLE - WITHOUT JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -.001/-.002 D | D1 | D2 | L | L1 | L2 | L3 | H | SW1 | SW2 | FX 30° | SPRING FORCE | |
|--------------|------------------|------------------|--------|------|------|------|-----|-----|-----|-----|-------|--------|-----------------|---------------|
| | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-3105AL | 03089-03105AL | .197 (5mm) | 3/8-24 | .83 | 1.71 | .67 | .28 | .59 | .20 | .51 | 9/16 | .05 | 1.1 | 2.7 |
| 03089-3206A5 | 03089-03206A5 | .236 (6mm) | 1/2-13 | .98 | 2.04 | .79 | .31 | .63 | .24 | .55 | 3/4 | .07 | 1.4 | 3.2 |
| 03089-3308A6 | 03089-03308A6 | .315 (8mm) | 5/8-11 | 1.30 | 2.68 | 1.02 | .39 | .83 | .31 | .75 | 15/16 | .09 | 3.4 | 7.9 |
| 03089-3410A7 | 03089-03410A7 | .394 (10mm) | 3/4-10 | 1.30 | 2.91 | 1.10 | .47 | .91 | .39 | .87 | 1-1/8 | .11 | 3.4 | 9.0 |

METRIC - NON-LOCKING STYLE - WITHOUT JAM NUT - HARDENED PLUNGER PIN

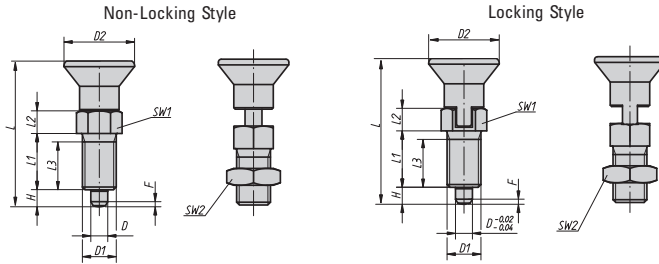
| Steel Part # | Stainless Part # | -.02/-.04 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | FX 30° mm | SPRING FORCE | |
|--------------|------------------|----------------------|----------|----------|---------|----------|----------|----------|---------|-----------|--------------|-----------------|---------------|
| | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-1903 | 03089-01903 | 3 | M6x0.75 | 14 | 31.5 | 12 | 5 | 10 | 3.5 | 8 | 0.8 | 1.0 | 2.5 |
| 03089-1004 | 03089-01004 | 4 | M8x1 | 18 | 38.5 | 15 | 6 | 13 | 4 | 10 | 1 | 1.4 | 2.7 |
| 03089-1105 | 03089-01105 | 5 | M10x1 | 21 | 43.5 | 17 | 7 | 15 | 5 | 13 | 1.3 | 1.1 | 2.7 |
| 03089-1206 | 03089-01206 | 6 | M12x1.5 | 25 | 51.7 | 20 | 8 | 17 | 6 | 14 | 1.8 | 1.4 | 3.2 |
| 03089-1308 | 03089-01308 | 8 | M16x1.5 | 33 | 68 | 26 | 10 | 23 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03089-1410 | 03089-01410 | 10 | M20x1.5 | 33 | 74 | 28 | 12 | 25 | 10 | 22 | 2.8 | 3.4 | 7.7 |
| 03089-1412 | 03089-01412 | 12 | M20x1.5 | 33 | 78 | 28 | 14 | 25 | 12 | 22 | 2.8 | 3.4 | 8.8 |
| 03089-1516 | 03089-01516 | 16 | M24x2 | 40 | 96 | 32 | 18 | 28 | 16 | 27 | 3.2 | 4.5 | 10.4 |

METRIC - NON-LOCKING STYLE - WITH JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -.02/-.04 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|--------------|------------------|----------------------|----------|----------|---------|----------|----------|----------|---------|-----------|-----------|--------------|-----------------|---------------|
| | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-2903 | 03089-02903 | 3 | M6x0.75 | 14 | 31.5 | 12 | 5 | 10 | 3.5 | 8 | 10 | 0.8 | 1.0 | 2.5 |
| 03089-2004 | 03089-02004 | 4 | M8x1 | 18 | 38.5 | 15 | 6 | 13 | 4 | 10 | 13 | 1 | 1.4 | 2.7 |
| 03089-2105 | 03089-02105 | 5 | M10x1 | 21 | 43.5 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03089-2206 | 03089-02206 | 6 | M12x1.5 | 25 | 51.7 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.4 | 3.2 |
| 03089-2308 | 03089-02308 | 8 | M16x1.5 | 33 | 68 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03089-2410 | 03089-02410 | 10 | M20x1.5 | 33 | 74 | 28 | 12 | 25 | 10 | 22 | 30 | 2.8 | 3.4 | 7.7 |
| 03089-2412 | 03089-02412 | 12 | M20x1.5 | 33 | 78 | 28 | 14 | 25 | 12 | 22 | 30 | 2.8 | 3.4 | 8.8 |
| 03089-2516 | 03089-02516 | 16 | M24x2 | 40 | 96 | 32 | 18 | 28 | 16 | 27 | 36 | 3.2 | 4.5 | 10.4 |

HAND RETRACTABLE PLUNGERS

Plastic Pull Knob | Steel and Stainless | Inch and Metric (continued)



METRIC - LOCKING - HARDENED PLUNGER PIN WITHOUT JAM NUT

| Steel Part # | Stainless Part # | D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | FX 30° mm | SPRING FORCE | |
|--------------|------------------|------|---------|-------|------|-------|-------|-------|------|--------|-----------|-----------------|---------------|
| | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-3903 | 03089-03903 | 3 | M6x0.75 | 14 | 31.5 | 12 | 5 | 10 | 3.5 | 8 | 0.8 | 1.0 | 2.5 |
| 03089-3004 | 03089-03004 | 4 | M8x1 | 18 | 38.5 | 15 | 6 | 13 | 4 | 10 | 1 | 1.4 | 2.7 |
| 03089-3105 | 03089-03105 | 5 | M10x1 | 21 | 43.5 | 17 | 7 | 15 | 5 | 13 | 1.3 | 1.1 | 2.7 |
| 03089-3206 | 03089-03206 | 6 | M12x1.5 | 25 | 51.7 | 20 | 8 | 17 | 6 | 14 | 1.8 | 1.4 | 3.2 |
| 03089-3308 | 03089-03308 | 8 | M16x1.5 | 33 | 68 | 26 | 10 | 23 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03089-3410 | 03089-03410 | 10 | M20x1.5 | 33 | 74 | 28 | 12 | 25 | 10 | 22 | 2.8 | 3.4 | 7.7 |
| 03089-3412 | 03089-03412 | 12 | M20x1.5 | 33 | 78 | 28 | 14 | 25 | 12 | 22 | 2.8 | 3.4 | 8.8 |
| 03089-3516 | 03089-03516 | 16 | M24x2 | 40 | 96 | 32 | 18 | 28 | 16 | 27 | 3.2 | 4.5 | 10.4 |

METRIC - LOCKING - HARDENED PLUNGER PIN WITH JAM NUT

| Steel Part # | Stainless Part # | D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|--------------|------------------|------|---------|-------|------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-4903 | 03089-04903 | 3 | M6x0.75 | 14 | 31.5 | 12 | 5 | 10 | 3.5 | 8 | 10 | 0.8 | 1.0 | 2.5 |
| 03089-4004 | 03089-04004 | 4 | M8x1 | 18 | 38.5 | 15 | 6 | 13 | 4 | 10 | 13 | 1 | 1.4 | 2.7 |
| 03089-4105 | 03089-04105 | 5 | M10x1 | 21 | 43.5 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03089-4206 | 03089-04206 | 6 | M12x1.5 | 25 | 51.7 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.4 | 3.2 |
| 03089-4308 | 03089-04308 | 8 | M16x1.5 | 33 | 68 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03089-4410 | 03089-04410 | 10 | M20x1.5 | 33 | 74 | 28 | 12 | 25 | 10 | 22 | 30 | 2.8 | 3.4 | 7.7 |
| 03089-4412 | 03089-04412 | 12 | M20x1.5 | 33 | 78 | 28 | 14 | 25 | 12 | 22 | 30 | 2.8 | 3.4 | 8.8 |
| 03089-4516 | 03089-04516 | 16 | M24x2 | 40 | 96 | 32 | 18 | 28 | 16 | 27 | 36 | 3.2 | 4.5 | 10.4 |

METRIC - NON-LOCKING - NON-HARDENED PLUNGER PIN WITHOUT JAM NUT

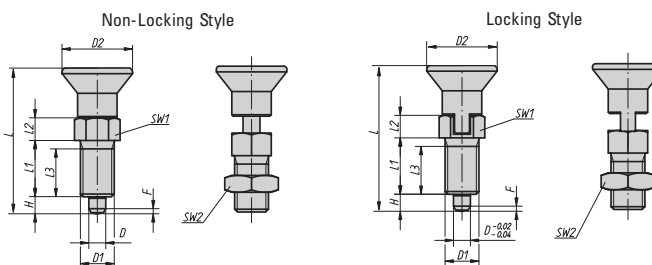
| Stainless Part # | D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | FX 30° mm | SPRING FORCE | |
|------------------|------|---------|-------|------|-------|-------|-------|------|--------|-----------|-----------------|---------------|
| | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-11903 | 3 | M6x0.75 | 14 | 31.5 | 12 | 5 | 10 | 3.5 | 8 | 0.8 | 1.0 | 2.5 |
| 03089-11004 | 4 | M8x1 | 18 | 38.5 | 15 | 6 | 13 | 4 | 10 | 1 | 1.4 | 2.7 |
| 03089-11105 | 5 | M10x1 | 21 | 43.5 | 17 | 7 | 15 | 5 | 13 | 1.3 | 1.1 | 2.7 |
| 03089-11206 | 6 | M12x1.5 | 25 | 51.7 | 20 | 8 | 17 | 6 | 14 | 1.8 | 1.4 | 3.2 |
| 03089-11308 | 8 | M16x1.5 | 33 | 68 | 26 | 10 | 23 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03089-11410 | 10 | M20x1.5 | 33 | 74 | 28 | 12 | 25 | 10 | 22 | 2.8 | 3.4 | 7.7 |
| 03089-11412 | 12 | M20x1.5 | 33 | 78 | 28 | 14 | 25 | 12 | 22 | 2.8 | 3.4 | 8.8 |
| 03089-11516 | 16 | M24x2 | 40 | 96 | 32 | 18 | 28 | 16 | 27 | 3.2 | 4.5 | 10.4 |

METRIC - NON-LOCKING - NON-HARDENED PLUNGER PIN WITH JAM NUT

| Stainless Part # | D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|------------------|------|---------|-------|------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-12903 | 3 | M6x0.75 | 14 | 31.5 | 12 | 5 | 10 | 3.5 | 8 | 10 | 0.8 | 1.0 | 2.5 |
| 03089-12004 | 4 | M8x1 | 18 | 38.5 | 15 | 6 | 13 | 4 | 10 | 13 | 1 | 1.4 | 2.7 |
| 03089-12105 | 5 | M10x1 | 21 | 43.5 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03089-12206 | 6 | M12x1.5 | 25 | 51.7 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.4 | 3.2 |
| 03089-12308 | 8 | M16x1.5 | 33 | 68 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03089-12410 | 10 | M20x1.5 | 33 | 74 | 28 | 12 | 25 | 10 | 22 | 30 | 2.8 | 3.4 | 7.7 |
| 03089-12412 | 12 | M20x1.5 | 33 | 78 | 28 | 14 | 25 | 12 | 22 | 30 | 2.8 | 3.4 | 8.8 |
| 03089-12516 | 16 | M24x2 | 40 | 96 | 32 | 18 | 28 | 16 | 27 | 36 | 3.2 | 4.5 | 10.4 |

HAND RETRACTABLE PLUNGERS

Plastic Pull Knob | Steel and Stainless | Inch and Metric (continued)



METRIC - LOCKING - NON-HARDENED PLUNGER PIN WITHOUT JAM NUT

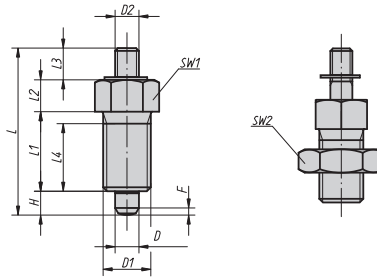
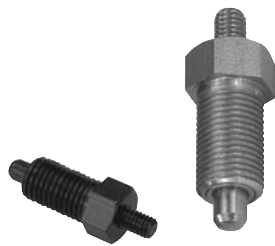
| Stainless Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | FX 30° mm | SPRING FORCE | |
|------------------|----------|---------|-------|------|-------|-------|-------|------|--------|-----------|-----------------|---------------|
| | D mm | D1 mm | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-13903 | 3 | M6x0.75 | 14 | 31.5 | 12 | 5 | 10 | 3.5 | 8 | 0.8 | 1.0 | 2.5 |
| 03089-13004 | 4 | M8x1 | 18 | 38.5 | 15 | 6 | 13 | 4 | 10 | 1 | 1.4 | 2.7 |
| 03089-13105 | 5 | M10x1 | 21 | 43.5 | 17 | 7 | 15 | 5 | 13 | 1.3 | 1.1 | 2.7 |
| 03089-13206 | 6 | M12x1.5 | 25 | 51.7 | 20 | 8 | 17 | 6 | 14 | 1.8 | 1.4 | 3.2 |
| 03089-13308 | 8 | M16x1.5 | 33 | 68 | 26 | 10 | 23 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03089-13410 | 10 | M20x1.5 | 33 | 74 | 28 | 12 | 25 | 10 | 22 | 2.8 | 3.4 | 7.7 |
| 03089-13412 | 12 | M20x1.5 | 33 | 78 | 28 | 14 | 25 | 12 | 22 | 2.8 | 3.4 | 8.8 |
| 03089-13516 | 16 | M24x2 | 40 | 96 | 32 | 18 | 28 | 16 | 27 | 3.2 | 4.5 | 10.4 |

METRIC - LOCKING - NON-HARDENED PLUNGER PIN WITH JAM NUT

| Stainless Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|------------------|----------|---------|-------|------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | D mm | D1 mm | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03089-14903 | 3 | M6x0.75 | 14 | 31.5 | 12 | 5 | 10 | 3.5 | 8 | 10 | 0.8 | 1.0 | 2.5 |
| 03089-14004 | 4 | M8x1 | 18 | 38.5 | 15 | 6 | 13 | 4 | 10 | 13 | 1 | 1.4 | 2.7 |
| 03089-14105 | 5 | M10x1 | 21 | 43.5 | 17 | 7 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03089-14206 | 6 | M12x1.5 | 25 | 51.7 | 20 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.4 | 3.2 |
| 03089-14308 | 8 | M16x1.5 | 33 | 68 | 26 | 10 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03089-14410 | 10 | M20x1.5 | 33 | 74 | 28 | 12 | 25 | 10 | 22 | 30 | 2.8 | 3.4 | 7.7 |
| 03089-14412 | 12 | M20x1.5 | 33 | 78 | 28 | 14 | 25 | 12 | 22 | 30 | 2.8 | 3.4 | 8.8 |
| 03089-14516 | 16 | M24x2 | 40 | 96 | 32 | 18 | 28 | 16 | 27 | 36 | 3.2 | 4.5 | 10.4 |

HAND RETRACTABLE PLUNGERS

Threaded End | Steel and Stainless | Inch and Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the threaded end retracts the plunger pin into the body. The handle end is threaded for users to attach their own grip or for use with air cylinders, cables, etc. The body is available in steel with black oxide finish or stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications.

INCH - WITHOUT JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -.001/- .002 D | D1 | D2 | L | L1 | L2 | L3 | L4 | H | SW1 | FX 30° | SPRING FORCE | |
|--------------|------------------|-------------------|--------|----|------|------|-----|-----|-----|-----|-----|--------|-----------------|---------------|
| | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03092-1105AL | 03092-01105AL | .197 (5mm) | 3/8-24 | M4 | 1.46 | .67 | .28 | .31 | .59 | .20 | .51 | .05 | 1.1 | 2.7 |
| 03092-1206A5 | 03092-01206A5 | .236 (6mm) | 1/2-13 | M6 | 1.65 | .79 | .31 | .31 | .67 | .24 | .55 | .07 | 1.4 | 3.2 |
| 03092-1308A6 | 03092-01308A6 | .315 (8mm) | 5/8-11 | M8 | 2.20 | 1.02 | .39 | .47 | .91 | .31 | .75 | .09 | 3.4 | 7.9 |
| 03092-1410A7 | 03092-01410A7 | .394 (10mm) | 3/4-10 | M8 | 2.44 | 1.10 | .47 | .47 | .98 | .39 | .87 | .11 | 3.4 | 7.7 |

METRIC - WITHOUT JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -.02/- .04 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | L4 mm | H mm | SW1 mm | FX 30° mm | SPRING FORCE | |
|--------------|------------------|--------------------|---------|-------|------|-------|-------|-------|-------|------|--------|-----------|-----------------|---------------|
| | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03092-1004 | 03092-01004 | 4 | M8x1 | M3 | 32 | 15 | 6 | 7 | 13 | 4 | 10 | 1 | 1.4 | 2.7 |
| 03092-1105 | 03092-01105 | 5 | M10x1 | M4 | 37 | 17 | 7 | 8 | 15 | 5 | 13 | 1.3 | 1.1 | 2.7 |
| 03092-1206 | 03092-01206 | 6 | M12x1.5 | M6 | 42 | 20 | 8 | 8 | 17 | 6 | 14 | 1.8 | 1.4 | 3.2 |
| 03092-1308 | 03092-01308 | 8 | M16x1.5 | M8 | 56 | 26 | 10 | 12 | 23 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03092-1410 | 03092-01410 | 10 | M20x1.5 | M8 | 62 | 28 | 12 | 12 | 25 | 10 | 22 | 2.8 | 3.4 | 7.7 |

METRIC - WITH JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -.02/- .04 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | L4 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|--------------|------------------|--------------------|---------|-------|------|-------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03092-2004 | 03092-02004 | 4 | M8x1 | M3 | 32 | 15 | 6 | 7 | 13 | 4 | 10 | 13 | 1 | 1.4 | 2.7 |
| 03092-2105 | 03092-02105 | 5 | M10x1 | M4 | 37 | 17 | 7 | 8 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03092-2206 | 03092-02206 | 6 | M12x1.5 | M6 | 42 | 20 | 8 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.4 | 3.2 |
| 03092-2308 | 03092-02308 | 8 | M16x1.5 | M8 | 56 | 26 | 10 | 12 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03092-2410 | 03092-02410 | 10 | M20x1.5 | M8 | 62 | 28 | 12 | 12 | 25 | 10 | 22 | 30 | 2.8 | 3.4 | 7.7 |

METRIC - WITHOUT JAM NUT - NON-HARDENED PLUNGER PIN

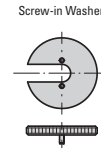
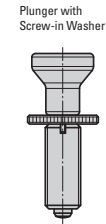
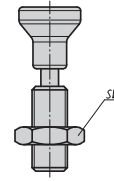
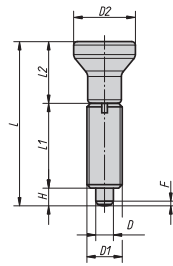
| Stainless Part # | -.02/- .04 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | L4 mm | H mm | SW1 mm | FX 30° mm | SPRING FORCE | |
|------------------|--------------------|---------|-------|------|-------|-------|-------|-------|------|--------|-----------|-----------------|---------------|
| | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03092-11004 | 4 | M8x1 | M3 | 32 | 15 | 6 | 7 | 13 | 4 | 10 | 1 | 1.4 | 2.7 |
| 03092-11105 | 5 | M10x1 | M4 | 37 | 17 | 7 | 8 | 15 | 5 | 13 | 1.3 | 1.1 | 2.7 |
| 03092-11206 | 6 | M12x1.5 | M6 | 42 | 20 | 8 | 8 | 17 | 6 | 14 | 1.8 | 1.4 | 3.2 |
| 03092-11308 | 8 | M16x1.5 | M8 | 56 | 26 | 10 | 12 | 23 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03092-11410 | 10 | M20x1.5 | M8 | 62 | 28 | 12 | 12 | 25 | 10 | 22 | 2.8 | 3.4 | 7.7 |

METRIC - WITH JAM NUT - NON-HARDENED PLUNGER PIN

| Stainless Part # | -.02/- .04 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | L4 mm | H mm | SW1 mm | SW2 mm | FX 30° mm | SPRING FORCE | |
|------------------|--------------------|---------|-------|------|-------|-------|-------|-------|------|--------|--------|-----------|-----------------|---------------|
| | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03092-12004 | 4 | M8x1 | M3 | 32 | 15 | 6 | 7 | 13 | 4 | 10 | 13 | 1 | 1.4 | 2.7 |
| 03092-12105 | 5 | M10x1 | M4 | 37 | 17 | 7 | 8 | 15 | 5 | 13 | 17 | 1.3 | 1.1 | 2.7 |
| 03092-12206 | 6 | M12x1.5 | M6 | 42 | 20 | 8 | 8 | 17 | 6 | 14 | 19 | 1.8 | 1.4 | 3.2 |
| 03092-12308 | 8 | M16x1.5 | M8 | 56 | 26 | 10 | 12 | 23 | 8 | 19 | 24 | 2.3 | 3.4 | 7.9 |
| 03092-12410 | 10 | M20x1.5 | M8 | 62 | 28 | 12 | 12 | 25 | 10 | 22 | 30 | 2.8 | 3.4 | 7.7 |

HAND RETRACTABLE PLUNGERS

Stainless Pull Knob without Collar | Stainless Steel | Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the handle retracts the plunger pin into the body. The handle and plunger pin are made from stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications. They are available with or without a jam nut. Screw-in washers are available to easily install the plungers.

METRIC - HARDENED PLUNGER PIN

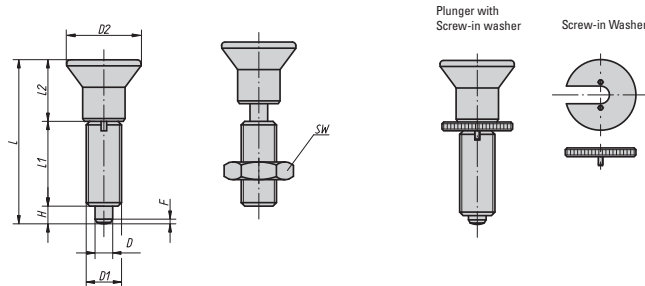
| With Jam Nut Part # | Without Jam Nut Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | H mm | SW mm | FX 30° mm | SPRING FORCE | | Screw-in Washer Part # |
|---------------------|------------------------|----------|---------|-------|------|-------|-------|------|-------|-----------|-----------------|---------------|------------------------|
| | | D mm | D1 mm | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. | |
| 03093-002004 | 03093-001004 | 4 | M8x1 | 18 | 43 | 21 | 18 | 4 | 13 | 1 | 1.4 | 2.7 | 03094-90 |
| 03093-002105 | 03093-001105 | 5 | M10X1 | 21 | 50 | 24 | 21 | 5 | 17 | 1.3 | 1.1 | 2.7 | 03094-91 |
| 03093-002206 | 03093-001206 | 6 | M12x1.5 | 25 | 59 | 28 | 25 | 6 | 19 | 1.8 | 1.4 | 3.2 | 03094-92 |
| 03093-002308 | 03093-001308 | 8 | M16x1.5 | 33 | 77 | 36 | 33 | 8 | 24 | 2.3 | 3.4 | 7.9 | 03094-93 |
| 03093-002410 | 03093-001410 | 10 | M20x1.5 | 33 | 83 | 40 | 33 | 10 | 30 | 2.6 | 3.4 | 7.7 | 03094-94 |

METRIC - NON-HARDENED PLUNGER PIN

| With Jam Nut Part # | Without Jam Nut Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | H mm | SW mm | FX 30° mm | SPRING FORCE | | Screw-in Washer Part # |
|---------------------|------------------------|----------|---------|-------|------|-------|-------|------|-------|-----------|-----------------|---------------|------------------------|
| | | D mm | D1 mm | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. | |
| 03093-112004 | 03093-111004 | 4 | M8x1 | 18 | 43 | 21 | 18 | 4 | 13 | 1 | 1.4 | 2.7 | 03094-90 |
| 03093-112105 | 03093-111105 | 5 | M10X1 | 21 | 50 | 24 | 21 | 5 | 17 | 1.3 | 1.1 | 2.7 | 03094-91 |
| 03093-112206 | 03093-111206 | 6 | M12x1.5 | 25 | 59 | 28 | 25 | 6 | 19 | 1.8 | 1.4 | 3.2 | 03094-92 |
| 03093-112308 | 03093-111308 | 8 | M16x1.5 | 33 | 77 | 36 | 33 | 8 | 24 | 2.3 | 3.4 | 7.9 | 03094-93 |
| 03093-112410 | 03093-111410 | 10 | M20x1.5 | 33 | 83 | 40 | 33 | 10 | 30 | 2.6 | 3.4 | 7.7 | 03094-94 |

HAND RETRACTABLE PLUNGERS

Plastic Pull Knob without Collar | Steel and Stainless | Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the handle retracts the plunger pin into the body. The body is available in steel with black oxide finish or stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications. They are available with or without a jam nut. Screw-in washers are available to easily install the plungers. The knob is made from black thermoplastic.

METRIC - WITHOUT JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | H mm | FX 30° mm | SPRING FORCE | | Screw Washer Part # |
|--------------|------------------|----------|---------|-------|------|-------|-------|------|-----------|-----------------|---------------|---------------------|
| | | D mm | D1 mm | | | | | | | F1 Initial Lbs. | F2 Final Lbs. | |
| 03093-1004 | 03093-01004 | 4 | M8x1 | 18 | 38.5 | 21 | 13.5 | 4 | 1.3 | 1.4 | 2.7 | 03094-90 |
| 03093-1105 | 03093-01105 | 5 | M10x1 | 21 | 43.5 | 24 | 14.5 | 5 | 1.3 | 1.1 | 2.7 | 03094-91 |
| 03093-1206 | 03093-01206 | 6 | M12x1.5 | 25 | 51.7 | 28 | 17.7 | 6 | 1.8 | 1.4 | 3.2 | 03094-92 |
| 03093-1308 | 03093-01308 | 8 | M16x1.5 | 33 | 68 | 36 | 24 | 8 | 2.3 | 3.4 | 7.9 | 03094-93 |
| 03093-1410 | 03093-01410 | 10 | M20x1.5 | 33 | 74 | 40 | 24 | 10 | 2.8 | 3.4 | 7.7 | 03094-94 |
| 03093-1412 | 03093-01412 | 12 | M20x1.5 | 33 | 78 | 42 | 24 | 12 | 2.8 | 3.4 | 8.8 | 03094-94 |
| 03093-1516 | 03093-01516 | 16 | M24x2 | 40 | 96 | 50 | 30 | 16 | 3.2 | 4.5 | 10.4 | 03094-95 |

METRIC - WITH JAM NUT - HARDENED PLUNGER PIN

| Steel Part # | Stainless Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | H mm | SW mm | FX 30° mm | SPRING FORCE | | Screw Washer Part # |
|--------------|------------------|----------|---------|-------|------|-------|-------|------|-------|-----------|-----------------|---------------|---------------------|
| | | D mm | D1 mm | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. | |
| 03093-2004 | 03093-02004 | 4 | M8x1 | 18 | 38.5 | 21 | 13.5 | 4 | 13 | 1.3 | 1.4 | 2.7 | 03094-90 |
| 03093-2105 | 03093-02105 | 5 | M10x1 | 21 | 43.5 | 24 | 14.5 | 5 | 17 | 1.3 | 1.1 | 2.7 | 03094-91 |
| 03093-2206 | 03093-02206 | 6 | M12x1.5 | 25 | 51.7 | 28 | 17.7 | 6 | 19 | 1.8 | 1.4 | 3.2 | 03094-92 |
| 03093-2308 | 03093-02308 | 8 | M16x1.5 | 33 | 68 | 36 | 24 | 8 | 24 | 2.3 | 3.4 | 7.9 | 03094-93 |
| 03093-2410 | 03093-02410 | 10 | M20x1.5 | 33 | 74 | 40 | 24 | 10 | 30 | 2.8 | 3.4 | 7.7 | 03094-94 |
| 03093-2412 | 03093-02412 | 12 | M20x1.5 | 33 | 78 | 42 | 24 | 12 | 30 | 2.8 | 3.4 | 8.8 | 03094-94 |
| 03093-2516 | 03093-02516 | 16 | M24x2 | 40 | 96 | 50 | 30 | 16 | 36 | 3.2 | 4.5 | 10.4 | 03094-95 |

METRIC - WITHOUT JAM NUT - NON-HARDENED PLUNGER PIN

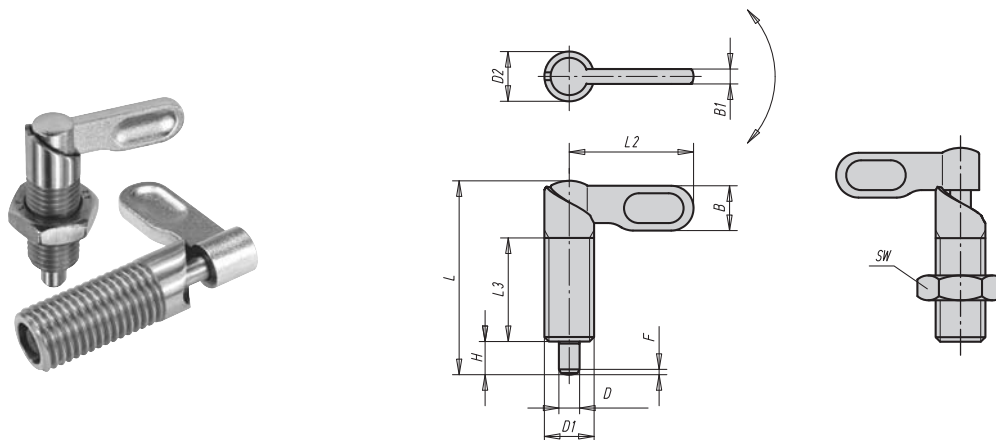
| Stainless Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | H mm | FX 30° mm | SPRING FORCE | | Screw Washer Part # |
|------------------|----------|---------|-------|------|-------|-------|------|-----------|-----------------|---------------|---------------------|
| | D mm | D1 mm | | | | | | | F1 Initial Lbs. | F2 Final Lbs. | |
| 03093-11004 | 4 | M8x1 | 18 | 38.5 | 21 | 13.5 | 4 | 1.3 | 1.4 | 2.7 | 03094-90 |
| 03093-11105 | 5 | M10x1 | 21 | 43.5 | 24 | 14.5 | 5 | 1.3 | 1.1 | 2.7 | 03094-91 |
| 03093-11206 | 6 | M12x1.5 | 25 | 51.7 | 28 | 17.7 | 6 | 1.8 | 1.4 | 3.2 | 03094-92 |
| 03093-11308 | 8 | M16x1.5 | 33 | 68 | 36 | 24 | 8 | 2.3 | 3.4 | 7.9 | 03094-93 |
| 03093-11410 | 10 | M20x1.5 | 33 | 74 | 40 | 24 | 10 | 2.8 | 3.4 | 7.7 | 03094-94 |
| 03093-11412 | 12 | M20x1.5 | 33 | 78 | 42 | 24 | 12 | 2.8 | 3.4 | 8.8 | 03094-94 |
| 03093-11516 | 16 | M24x2 | 40 | 96 | 50 | 30 | 16 | 3.2 | 4.5 | 10.4 | 03094-95 |

METRIC - WITH JAM NUT - NON-HARDENED PLUNGER PIN

| Stainless Part # | -.02/-04 | | D2 mm | L mm | L1 mm | L2 mm | H mm | SW mm | FX 30° mm | SPRING FORCE | | Screw Washer Part # |
|------------------|----------|---------|-------|------|-------|-------|------|-------|-----------|-----------------|---------------|---------------------|
| | D mm | D1 mm | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. | |
| 03093-12004 | 4 | M8x1 | 18 | 38.5 | 21 | 13.5 | 4 | 13 | 1.3 | 1.4 | 2.7 | 03094-90 |
| 03093-12105 | 5 | M10x1 | 21 | 43.5 | 24 | 14.5 | 5 | 17 | 1.3 | 1.1 | 2.7 | 03094-91 |
| 03093-12206 | 6 | M12x1.5 | 25 | 51.7 | 28 | 17.7 | 6 | 19 | 1.8 | 1.4 | 3.2 | 03094-92 |
| 03093-12308 | 8 | M16x1.5 | 33 | 68 | 36 | 24 | 8 | 24 | 2.3 | 3.4 | 7.9 | 03094-93 |
| 03093-12410 | 10 | M20x1.5 | 33 | 74 | 40 | 24 | 10 | 30 | 2.8 | 3.4 | 7.7 | 03094-94 |
| 03093-12412 | 12 | M20x1.5 | 33 | 78 | 42 | 24 | 12 | 30 | 2.8 | 3.4 | 8.8 | 03094-94 |
| 03093-12516 | 16 | M24x2 | 40 | 96 | 50 | 30 | 16 | 36 | 3.2 | 4.5 | 10.4 | 03094-95 |

HAND RETRACTABLE PLUNGERS

Cam Action | Steel and Stainless | Inch and Metric



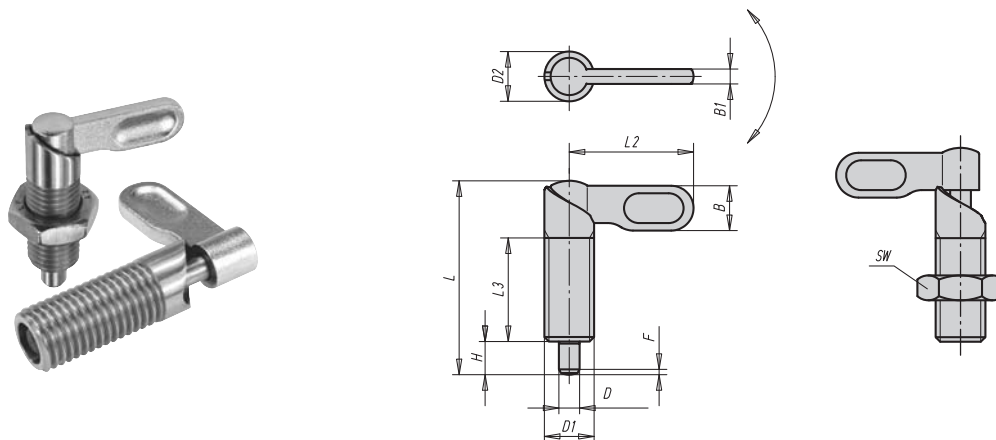
These hand retractable plungers are used for positioning, locating and fastening, without the use of tools, in a wide range of applications. As the handle is turned 180 degrees on the cam of the body, the plunger is retracted into the housing. There is a groove on the top of the cam that locks the plunger into the retracted position. They are available in steel or stainless steel. The steel style has a ground and hardened plunger with a black oxide finish and a powder coated handle. The stainless style has a ground and non-hardened plunger with a natural finish. They are available with or without a jam nut.

INCH - WITHOUT JAM NUT

| Steel Part # | Stainless Part # | -.001/-002 D | D1 | D2 | L | L2 | L3 | B | B1 | H | FX 30° | SPRING FORCE | |
|--------------|------------------|--------------|--------|-----|------|------|------|-----|-----|-----|--------|-----------------|---------------|
| | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03099-0604A4 | 03099-10404A4 | .157 (4mm) | 3/8-16 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | .04 | 1.8 | 3.2 |
| 03099-0605A4 | 03099-10405A4 | .197 (5mm) | 3/8-16 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | .05 | 1.8 | 3.2 |
| 03099-0606A4 | 03099-10406A4 | .236 (6mm) | 3/8-16 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | .07 | 1.8 | 3.2 |
| 03099-0604AL | 03099-10404AL | .157 (4mm) | 3/8-24 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | .04 | 1.8 | 3.2 |
| 03099-0605AL | 03099-10405AL | .197 (5mm) | 3/8-24 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | .05 | 1.8 | 3.2 |
| 03099-0606AL | 03099-10406AL | .236 (6mm) | 3/8-24 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | .07 | 1.8 | 3.2 |
| 03099-0605A5 | 03099-10405A5 | .197 (5mm) | 1/2-13 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | .05 | 1.8 | 3.4 |
| 03099-0606A5 | 03099-10406A5 | .236 (6mm) | 1/2-13 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | .07 | 1.8 | 3.4 |
| 03099-0608A5 | 03099-10408A5 | .315 (8mm) | 1/2-13 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | .09 | 1.8 | 3.4 |
| 03099-0605AM | 03099-10405AM | .197 (5mm) | 1/2-20 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | .05 | 1.8 | 3.4 |
| 03099-0606AM | 03099-10406AM | .236 (6mm) | 1/2-20 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | .07 | 1.8 | 3.4 |
| 03099-0608AM | 03099-10408AM | .315 (8mm) | 1/2-20 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | .09 | 3.4 | 7.9 |
| 03099-0606A6 | 03099-10406A6 | .236 (6mm) | 5/8-11 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | .07 | 3.4 | 7.9 |
| 03099-0608A6 | 03099-10408A6 | .315 (8mm) | 5/8-11 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | .09 | 3.4 | 7.9 |
| 03099-0610A6 | 03099-10410A6 | .394 (10mm) | 5/8-11 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | .11 | 3.4 | 7.9 |
| 03099-0606AN | 03099-10406AN | .236 (6mm) | 5/8-18 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | .07 | 3.4 | 7.9 |
| 03099-0608AN | 03099-10408AN | .315 (8mm) | 5/8-18 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | .09 | 1.8 | 3.4 |
| 03099-0610AN | 03099-10410AN | .394 (10mm) | 5/8-18 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | .11 | 3.4 | 7.9 |
| 03099-0608A7 | 03099-10408A7 | .315 (8mm) | 3/4-10 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | .09 | 4.5 | 13.5 |
| 03099-0610A7 | 03099-10410A7 | .394 (10mm) | 3/4-10 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | .11 | 4.5 | 13.5 |
| 03099-0612A7 | 03099-10412A7 | .472 (12mm) | 3/4-10 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | .12 | 4.5 | 13.5 |
| 03099-0608A0 | 03099-10408A0 | .315 (8mm) | 3/4-16 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | .09 | 4.5 | 13.5 |
| 03099-0610A0 | 03099-10410A0 | .394 (10mm) | 3/4-16 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | .11 | 4.5 | 13.5 |
| 03099-0612A0 | 03099-10412A0 | .472 (12mm) | 3/4-16 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | .12 | 4.5 | 13.5 |

HAND RETRACTABLE PLUNGERS

Cam Action | Steel and Stainless | Inch and Metric (continued)

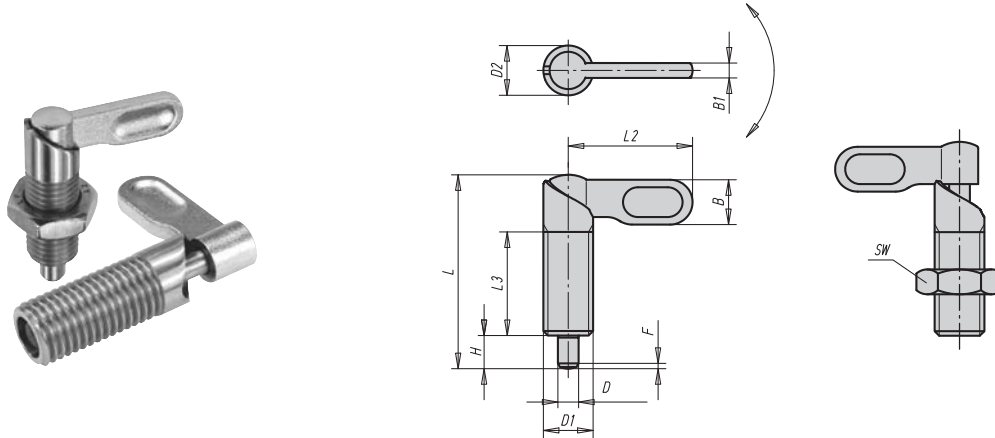


INCH - WITH JAM NUT

| Steel Part # | Stainless Part # | -.001/- .002 D | D1 | D2 | L | L2 | L3 | B | B1 | H | SW | FX 30° | SPRING FORCE | |
|--------------|------------------|----------------|--------|-----|------|------|------|-----|-----|-----|--------|--------|-----------------|---------------|
| | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03099-0704A4 | 03099-10504A4 | .157 (4mm) | 3/8-16 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | 9/16 | .04 | 1.8 | 3.2 |
| 03099-0705A4 | 03099-10505A4 | .197 (5mm) | 3/8-16 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | 9/16 | .05 | 1.8 | 3.2 |
| 03099-0706A4 | 03099-10506A4 | .236 (6mm) | 3/8-16 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | 9/16 | .07 | 1.8 | 3.2 |
| 03099-0704AL | 03099-10504AL | .157 (4mm) | 3/8-24 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | 9/16 | .04 | 1.8 | 3.2 |
| 03099-0705AL | 03099-10505AL | .197 (5mm) | 3/8-24 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | 9/16 | .05 | 1.8 | 3.2 |
| 03099-0706AL | 03099-10506AL | .236 (6mm) | 3/8-24 | .39 | 1.50 | .98 | .79 | .35 | .12 | .24 | 9/16 | .07 | 1.8 | 3.2 |
| 03099-0705A5 | 03099-10505A5 | .197 (5mm) | 1/2-13 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | 3/4 | .05 | 1.8 | 3.4 |
| 03099-0706A5 | 03099-10506A5 | .236 (6mm) | 1/2-13 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | 3/4 | .07 | 1.8 | 3.4 |
| 03099-0708A5 | 03099-10508A5 | .315 (8mm) | 1/2-13 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | 3/4 | .09 | 1.8 | 3.4 |
| 03099-0705AM | 03099-10505AM | .197 (5mm) | 1/2-20 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | 3/4 | .05 | 1.8 | 3.4 |
| 03099-0706AM | 03099-10506AM | .236 (6mm) | 1/2-20 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | 3/4 | .07 | 1.8 | 3.4 |
| 03099-0708AM | 03099-10508AM | .315 (8mm) | 1/2-20 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | 15/16 | .09 | 3.4 | 7.9 |
| 03099-0706A6 | 03099-10506A6 | .236 (6mm) | 5/8-11 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | 15/16 | .07 | 3.4 | 7.9 |
| 03099-0708A6 | 03099-10508A6 | .315 (8mm) | 5/8-11 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | 15/16 | .09 | 3.4 | 7.9 |
| 03099-0710A6 | 03099-10510A6 | .394 (10mm) | 5/8-11 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | 15/16 | .11 | 3.4 | 7.9 |
| 03099-0706AN | 03099-10506AN | .236 (6mm) | 5/8-18 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | 15/16 | .07 | 3.4 | 7.9 |
| 03099-0708AN | 03099-10508AN | .315 (8mm) | 5/8-18 | .47 | 1.84 | 1.18 | .98 | .43 | .14 | .31 | 15/16 | .09 | 1.8 | 3.4 |
| 03099-0710AN | 03099-10510AN | .394 (10mm) | 5/8-18 | .63 | 2.38 | 1.57 | 1.26 | .57 | .19 | .39 | 1"-1/8 | .11 | 3.4 | 7.9 |
| 03099-0708A7 | 03099-10508A7 | .315 (8mm) | 3/4-10 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | 1"-1/8 | .09 | 4.5 | 13.5 |
| 03099-0710A7 | 03099-10510A7 | .394 (10mm) | 3/4-10 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | 1"-1/8 | .11 | 4.5 | 13.5 |
| 03099-0712A7 | 03099-10512A7 | .472 (12mm) | 3/4-10 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | 1"-1/8 | .12 | 4.5 | 13.5 |
| 03099-0708A0 | 03099-10508A0 | .315 (8mm) | 3/4-16 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | 1"-1/8 | .09 | 4.5 | 13.5 |
| 03099-0710A0 | 03099-10510A0 | .394 (10mm) | 3/4-16 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | 1"-1/8 | .11 | 4.5 | 13.5 |
| 03099-0712A0 | 03099-10512A0 | .472 (12mm) | 3/4-16 | .79 | 2.76 | 1.97 | 1.38 | .71 | .24 | .47 | 1"-1/8 | .12 | 4.5 | 13.5 |

HAND RETRACTABLE PLUNGERS

Cam Action | Steel and Stainless | Inch and Metric (continued)

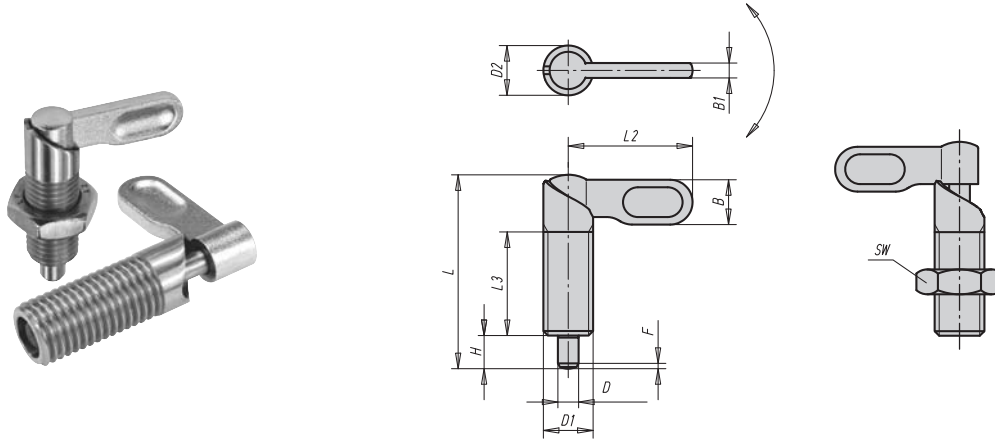


METRIC - WITHOUT JAM NUT

| Steel Part # | Stainless Part # | -.02/-.04 D mm | D1 mm | D2 mm | L mm | L2 mm | L3 mm | B mm | B1 mm | H mm | FX 30° mm | SPRING FORCE | |
|---------------|------------------|----------------------|----------|----------|---------|----------|----------|---------|----------|---------|--------------|--------------|------------|
| | | | | | | | | | | | | Initial Lbs. | Final Lbs. |
| 03099-060410 | 03099-1040410 | 4 | M10x1.5 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 1 | 1.8 | 3.2 |
| 03099-060510 | 03099-1040510 | 5 | M10x1.5 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 1.3 | 1.8 | 3.2 |
| 03099-060610 | 03099-1040610 | 6 | M10x1.5 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 1.8 | 1.8 | 3.2 |
| 03099-0604101 | 03099-10404101 | 4 | M10x1 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 1 | 1.8 | 3.2 |
| 03099-0605101 | 03099-10405101 | 5 | M10x1 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 1.3 | 1.8 | 3.2 |
| 03099-0606101 | 03099-10406101 | 6 | M10x1 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 1.8 | 1.8 | 3.2 |
| 03099-060512 | 03099-1040512 | 5 | M12x1.75 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 1.3 | 1.8 | 3.4 |
| 03099-060612 | 03099-1040612 | 6 | M12x1.75 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 1.8 | 1.8 | 3.4 |
| 03099-060812 | 03099-1040812 | 8 | M12x1.75 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 2.3 | 1.8 | 3.4 |
| 03099-0605121 | 03099-10405121 | 5 | M12x1.5 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 1.3 | 1.8 | 3.4 |
| 03099-0606121 | 03099-10406121 | 6 | M12x1.5 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 1.8 | 1.8 | 3.4 |
| 03099-0608121 | 03099-10408121 | 8 | M12x1.5 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 2.3 | 3.4 | 7.9 |
| 03099-060616 | 03099-1040616 | 6 | M16x2 | 16 | 60.4 | 40 | 32 | 14.4 | 4.8 | 10 | 1.8 | 3.4 | 7.9 |
| 03099-060816 | 03099-1040816 | 8 | M16x2 | 16 | 60.4 | 40 | 32 | 14.4 | 4.8 | 10 | 2.3 | 3.4 | 7.9 |
| 03099-061016 | 03099-1041016 | 10 | M16x2 | 16 | 60.4 | 40 | 32 | 14.4 | 4.8 | 10 | 2.8 | 3.4 | 7.9 |
| 03099-0606161 | 03099-10406161 | 6 | M16x1.5 | 16 | 60.4 | 40 | 32 | 14.4 | 4.8 | 10 | 1.8 | 3.4 | 7.9 |
| 03099-0608161 | 03099-10408161 | 8 | M16x1.5 | 16 | 46.8 | 30 | 25 | 10.8 | 3.6 | 10 | 2.3 | 1.8 | 3.4 |
| 03099-0610161 | 03099-10410161 | 10 | M16x1.5 | 16 | 60.4 | 40 | 32 | 14.4 | 4.8 | 10 | 2.8 | 3.4 | 7.9 |
| 03099-060820 | 03099-1040820 | 8 | M20x2.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 2.3 | 4.5 | 13.5 |
| 03099-061020 | 03099-1041020 | 10 | M20x2.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 2.8 | 4.5 | 13.5 |
| 03099-061220 | 03099-1041220 | 12 | M20x2.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 3 | 4.5 | 13.5 |
| 03099-0608201 | 03099-10408201 | 8 | M20x1.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 2.3 | 4.5 | 13.5 |
| 03099-0610201 | 03099-10410201 | 10 | M20x1.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 2.8 | 4.5 | 13.5 |
| 03099-0612201 | 03099-10412201 | 12 | M20x1.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 3 | 4.5 | 13.5 |

HAND RETRACTABLE PLUNGERS

Cam Action | Steel and Stainless | Inch and Metric (continued)

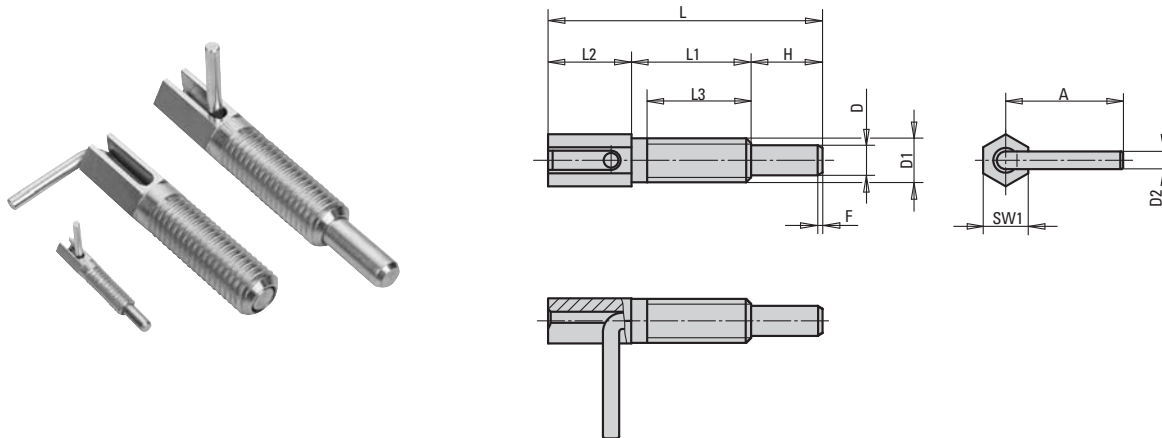


METRIC - WITH JAM NUT

| Steel Part # | Stainless Part # | -.02/-.04 D mm | D1 mm | D2 mm | L mm | L2 mm | L3 mm | B mm | B1 mm | H mm | SW mm | FX 30° mm | SPRING FORCE | |
|---------------|------------------|----------------------|----------|----------|---------|----------|----------|---------|----------|---------|----------|--------------|--------------------|------------------|
| | | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. |
| 03099-070410 | 03099-1050410 | 4 | M10x1.5 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 17 | 1 | 1.8 | 3.2 |
| 03099-070510 | 03099-1050510 | 5 | M10x1.5 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 17 | 1.3 | 1.8 | 3.2 |
| 03099-070610 | 03099-1050610 | 6 | M10x1.5 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 17 | 1.8 | 1.8 | 3.2 |
| 03099-0704101 | 03099-10504101 | 4 | M10x1 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 17 | 1 | 1.8 | 3.2 |
| 03099-0705101 | 03099-10505101 | 5 | M10x1 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 17 | 1.3 | 1.8 | 3.2 |
| 03099-0706101 | 03099-10506101 | 6 | M10x1 | 10 | 38 | 25 | 20 | 9 | 3 | 6 | 17 | 1.8 | 1.8 | 3.2 |
| 03099-070512 | 03099-1050512 | 5 | M12x1.75 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 19 | 1.3 | 1.8 | 3.4 |
| 03099-070612 | 03099-1050612 | 6 | M12x1.75 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 19 | 1.8 | 1.8 | 3.4 |
| 03099-070812 | 03099-1050812 | 8 | M12x1.75 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 19 | 2.3 | 1.8 | 3.4 |
| 03099-0705121 | 03099-10505121 | 5 | M12x1.5 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 19 | 1.3 | 1.8 | 3.4 |
| 03099-0706121 | 03099-10506121 | 6 | M12x1.5 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 19 | 1.8 | 1.8 | 3.4 |
| 03099-0708121 | 03099-10508121 | 8 | M12x1.5 | 12 | 46.8 | 30 | 25 | 10.8 | 3.6 | 8 | 19 | 2.3 | 3.4 | 7.9 |
| 03099-070616 | 03099-1050616 | 6 | M16x2 | 16 | 60.4 | 40 | 32 | 14.4 | 4.8 | 10 | 24 | 1.8 | 3.4 | 7.9 |
| 03099-070816 | 03099-1050816 | 8 | M16x2 | 16 | 60.4 | 40 | 32 | 14.4 | 4.8 | 10 | 24 | 2.3 | 3.4 | 7.9 |
| 03099-071016 | 03099-1051016 | 10 | M16x2 | 16 | 60.4 | 40 | 32 | 14.4 | 4.8 | 10 | 24 | 2.8 | 3.4 | 7.9 |
| 03099-0706161 | 03099-10506161 | 6 | M16x1.5 | 16 | 60.4 | 40 | 32 | 14.4 | 4.8 | 10 | 24 | 1.8 | 3.4 | 7.9 |
| 03099-0708161 | 03099-10508161 | 8 | M16x1.5 | 16 | 46.8 | 30 | 25 | 10.8 | 3.6 | 10 | 24 | 2.3 | 1.8 | 3.4 |
| 03099-0710161 | 03099-10510161 | 10 | M16x1.5 | 16 | 60.4 | 40 | 32 | 14.4 | 4.8 | 10 | 24 | 2.8 | 3.4 | 7.9 |
| 03099-070820 | 03099-1050820 | 8 | M20x2.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 30 | 2.3 | 4.5 | 13.5 |
| 03099-071020 | 03099-1051020 | 10 | M20x2.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 30 | 2.8 | 4.5 | 13.5 |
| 03099-071220 | 03099-1051220 | 12 | M20x2.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 30 | 3 | 4.5 | 13.5 |
| 03099-0708201 | 03099-10508201 | 8 | M20x1.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 30 | 2.3 | 4.5 | 13.5 |
| 03099-0710201 | 03099-10510201 | 10 | M20x1.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 30 | 2.8 | 4.5 | 13.5 |
| 03099-0712201 | 03099-10512201 | 12 | M20x1.5 | 20 | 70 | 50 | 35 | 18 | 6 | 12 | 30 | 3 | 4.5 | 13.5 |

HAND RETRACTABLE PLUNGERS

L Handle | Steel | Inch and Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the L handle retracts the plunger pin into the body. By turning the handle while in the retracted position, the plunger can be locked in the retracted position. The body and plunger are made from alloy steel with blue chromate finish.

INCH

| Part # | +/- .001 D | D1 | D2 | L | L1 | L2 | L3 | H | A | SW1 | FX 30° | SPRING FORCE | | Max Torque Ft/Lbs. |
|--------------|---------------|--------|-----|------|------|------|------|-----|------|-----|--------|--------------------|------------------|-----------------------|
| | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. | |
| 03091-11CWA2 | .157 (4mm) | 1/4-20 | .09 | 1.63 | .79 | .47 | .67 | .37 | .61 | .24 | .03 | .7 | 2.3 | 1.2 |
| 03091-12CMA4 | .236 (6mm) | 3/8-16 | .14 | 2.56 | 1.32 | .69 | 1.18 | .55 | .90 | .39 | .04 | .9 | 3.6 | 7.4 |
| 03091-13CNA5 | .315 (8mm) | 1/2-13 | .19 | 2.87 | 1.25 | .87 | 1.10 | .75 | 1.23 | .47 | .05 | .9 | 5.0 | 9.6 |
| 03091-14COA6 | .394 (10mm) | 5/8-11 | .19 | 4.04 | 1.99 | 1.06 | 1.75 | .98 | 1.29 | .63 | .06 | .9 | 5.2 | 31.1 |

METRIC

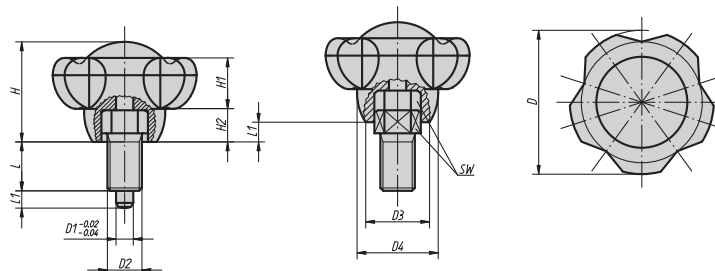
| Part # | + .01/- .03 D mm | D1 mm | D2 mm | L mm | L1 mm | L2 mm | L3 mm | H mm | A mm | SW1 mm | FX30° mm | SPRING FORCE | | Max Torque Ft/Lbs. |
|------------|------------------------|----------|----------|---------|----------|----------|----------|---------|---------|-----------|-------------|--------------------|------------------|-----------------------|
| | | | | | | | | | | | | F1 Initial Lbs. | F2 Final Lbs. | |
| 03091-1104 | 4 | M6 | 2.3 | 41.5 | 20 | 12 | 17 | 9.5 | 15.5 | 6 | .7 | .7 | 2.3 | 1.2 |
| 03091-1206 | 6 | M10 | 3.5 | 65 | 33.5 | 17.5 | 30 | 14 | 22.9 | 10 | 1.1 | .9 | 3.6 | 7.4 |
| 03091-1308 | 8 | M12 | 4.7 | 73 | 31.8 | 22.2 | 28 | 19 | 31.2 | 12 | 1.3 | .9 | 5.0 | 9.6 |
| 03091-1410 | 10 | M16 | 4.7 | 102.5 | 50.5 | 27 | 44.5 | 25 | 32.7 | 16 | 1.6 | .9 | 5.2 | 31.1 |

HAND RETRACTABLE PLUNGERS

Thermoplastic Palm Grip Handle | Inch and Metric



NOVO-GRIP by



These spring loaded hand retractable plungers allow you to quickly retract and engage the plunger for locating, fastening and quick change operations. Pulling on the handle of the plunger assembly retracts the plunger into the housing. Releasing the handle allows the spring loaded plunger to extend. The handle is made from grey thermoplastic. The locking pin and threaded bolt have a black oxide finish. The locking pin is hardened and ground. They are available in dark grey, light grey, traffic red and bright yellow. See www.fixtureworks.net for colors.

INCH

| Part # | D | ^{-001/-002} D1 | D2 | D3 | D4 | H | H1 | H2 | L | L1 | SW |
|---------------|------|----------------------------|--------|------|------|------|-----|-----|-----|-----|-----|
| 03190-1105AL* | 1.97 | .197 (5mm) | 3/8-24 | .87 | 1.11 | 1.37 | .70 | .45 | .51 | .20 | .51 |
| 03190-1206A5* | 1.97 | .236 (6mm) | 1/2-13 | .87 | 1.11 | 1.37 | .70 | .45 | .67 | .24 | .55 |
| 03190-1308A6* | 2.48 | .315 (8mm) | 5/8-11 | 1.10 | 1.40 | 1.73 | .89 | .57 | .87 | .31 | .75 |
| 03190-1410A7* | 2.48 | .394 (10mm) | 3/4-10 | 1.10 | 1.40 | 1.73 | .89 | .57 | .94 | .39 | .87 |

* Add the desired cap color to the end of the part number. No color code is required for dark grey. Light Grey = 5, Traffic Red = 6, Bright Yellow = 7

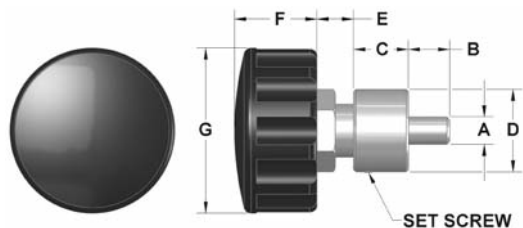
METRIC

| Part # | D mm | ^{-02/-04} D1 mm | D2 mm | D3 mm | D4 mm | H mm | H1 mm | H2 mm | L mm | L1 mm | SW mm |
|-------------|---------|--------------------------------|-----------|----------|----------|---------|----------|----------|---------|----------|----------|
| 03190-1105* | 50 | 5 | M10 X 1 | 22.2 | 28.2 | 34.8 | 17.8 | 11.5 | 13 | 5 | 13 |
| 03190-1206* | 50 | 6 | M12 X 1.5 | 22.2 | 28.2 | 34.8 | 17.8 | 11.5 | 17 | 6 | 14 |
| 03190-1308* | 63 | 8 | M16 X 1.5 | 28 | 35.5 | 44 | 22.5 | 14.5 | 22 | 8 | 19 |
| 03190-1410* | 63 | 10 | M20 X 1.5 | 28 | 35.5 | 44 | 22.5 | 14.5 | 24 | 10 | 22 |

* Add the desired cap color to the end of the part number. No color code is required for dark grey. Light Grey = 5, Traffic Red = 6, Bright Yellow = 7

Fairlane

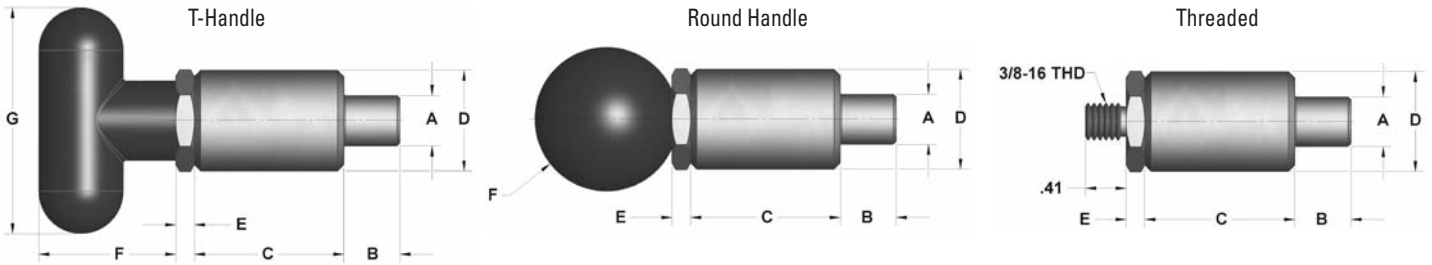
ADJUSTABLE CLAMPING PINS



These spring loaded adjustable clamping pins allow for quick clamping and release. Once the pin is engaged, turning the knob allows the pin to tighten down on the work piece or further extend the plunger in the locating hole. Because it can be quickly adjusted, it is ideal for applications where there is variance in the part being held. Pulling up on the handle retracts the plunger fully into the housing. The set screw on the housing allows you to lock the plunger at a set depth for repeated operations and prevents the mechanism from coming out of the housing. Plunger is made from 1038 steel providing a tensile strength of 90 to 95 KSI. These can be heat treated for greater strength as specials. The housing is made from 12L15 steel for welding to fixture. The plunger and hex are zinc plated.

| Part # | A | B | C | D | E | F | G | Adjustment |
|----------|-----|------|-----|-------|-----|-------|-------|------------|
| CP-C25P | 1/4 | 9/16 | 3/4 | 1-1/8 | 1/2 | 1-1/8 | 2-1/4 | 5/8 |
| CP-C100P | 3/8 | 9/16 | 3/4 | 1-1/8 | 1/2 | 1-1/8 | 2-1/4 | 5/8 |
| CP-C200P | 1/2 | 9/16 | 3/4 | 1-1/8 | 1/2 | 1-1/8 | 2-1/4 | 5/8 |

PULL PINS



These spring loaded pull pins allow you to quickly retract and engage the plunger for locating, fastening and quick change operations. They consist of two parts which include a housing (barrel) and a plunger assembly. The plunger assembly screws into the housing. The housing is designed to be welded into place for strength. Pulling on the handle of the plunger assembly retracts the plunger into the housing. Releasing the handle allows the spring loaded plunger to extend. The lockout style allows you to pull and rotate the handle 1/4 turn to hold the plunger in the retracted position. The style without handles feature a 3/8-16 threaded end so the user can add a different handle or other method of actuation. The zinc plated steel plunger assemblies are made from C1038 steel on all sizes except the 5/8 which is made from 12L15 steel. The steel housing is made from 12L15 steel for welding to the fixture and is not plated. The aluminum housings are made from 6061-T6. The stainless steel models (plunger assembly and housing) are made from 303 stainless steel. Pull up force is approximately 5 lbs. Handles are made from black plastic.

T-HANDLE - NON-LOCKING

| Steel Plunger Steel Housing Part # | Steel Plunger Alum Housing Part # | SS Plunger SS Housing Part # | +0.002 -.004 A | B | C | +0.000 -.005 D | E | F | G |
|--|---|------------------------------------|----------------------|------|-------|----------------------|------|--------|-------|
| CP-K25T | CP-K25TAL | — | 1/4 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-7/16 | 2-1/4 |
| CP-K100T | CP-K100TAL | CP-K100TSS | 3/8 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-7/16 | 2-1/4 |
| CP-K200T | CP-K200TAL | CP-K200TSS | 1/2 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-7/16 | 2-1/4 |
| CP-K320T | CP-K320TAL | CP-K320TSS | 1/2 | 9/16 | 2-1/4 | 1.000 | 3/16 | 1-7/16 | 2-1/4 |
| CP-K420T | CP-K420TAL | — | 5/8 | 9/16 | 2-1/4 | 1.000 | 3/16 | 1-7/16 | 2-1/4 |

T-HANDLE - WITH LOCKOUT

| Steel Plunger Steel Housing Part # | Steel Plunger Alum Housing Part # | SS Plunger SS Housing Part # | +0.002 -.004 A | B | C | +0.000 -.005 D | E | F | G |
|--|---|------------------------------------|----------------------|------|-------|----------------------|------|--------|-------|
| CP-K25TLO | CP-K25TLOAL | — | 1/4 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-7/16 | 2-1/4 |
| CP-K100TLO | CP-K100TLOAL | CP-K100TLOSS | 3/8 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-7/16 | 2-1/4 |
| CP-K200TLO | CP-K200TLOAL | CP-K200TLOSS | 1/2 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-7/16 | 2-1/4 |
| CP-K320TLO | CP-K320TLOAL | CP-K320TLOSS | 1/2 | 9/16 | 2-1/4 | 1.000 | 3/16 | 1-7/16 | 2-1/4 |
| CP-K420TLO | CP-K420TLOAL | — | 5/8 | 9/16 | 2-1/4 | 1.000 | 3/16 | 1-7/16 | 2-1/4 |

ROUND HANDLE - NON-LOCKING

| Steel Plunger Steel Housing Part # | Steel Plunger Alum Housing Part # | SS Plunger SS Housing Part # | +0.002 -.004 A | B | C | +0.000 -.005 D | E | F |
|--|---|------------------------------------|----------------------|------|-------|----------------------|------|-------|
| CP-K25R | CP-K25RAL | — | 1/4 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-3/8 |
| CP-K100R | CP-K100RAL | CP-K100RSS | 3/8 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-3/8 |
| CP-K200R | CP-K200RAL | CP-K200RSS | 1/2 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-3/8 |
| CP-K320R | CP-K320RAL | CP-K320RSS | 1/2 | 9/16 | 2-1/4 | 1.000 | 3/16 | 1-3/8 |
| CP-K420R | CP-K420RAL | — | 5/8 | 9/16 | 2-1/4 | 1.000 | 3/16 | 1-3/8 |

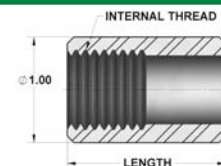
ROUND HANDLE - WITH LOCKOUT

| Steel Plunger Steel Housing Part # | Steel Plunger Alum Housing Part # | SS Plunger SS Housing Part # | +0.002 -.004 A | B | C | +0.000 -.005 D | E | F |
|--|---|------------------------------------|----------------------|------|-------|----------------------|------|-------|
| CP-K25RLO | CP-K25RLOAL | — | 1/4 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-3/8 |
| CP-K100RLO | CP-K100RLOAL | CP-K100RLOSS | 3/8 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-3/8 |
| CP-K200RLO | CP-K200RLOAL | CP-K200RLOSS | 1/2 | 9/16 | 1-1/2 | 1.000 | 3/16 | 1-3/8 |
| CP-K320RLO | CP-K320RLOAL | CP-K320RLOSS | 1/2 | 9/16 | 2-1/4 | 1.000 | 3/16 | 1-3/8 |
| CP-K420RLO | CP-K420RLOAL | — | 5/8 | 9/16 | 2-1/4 | 1.000 | 3/16 | 1-3/8 |

THREADED END - NON-LOCKING

| Steel Plunger Steel Housing Part # | Steel Plunger Alum Housing Part # | SS Plunger SS Housing Part # | +0.002 -.004 A | B | C | +0.000 -.005 D | E |
|--|---|------------------------------------|----------------------|------|-------|----------------------|------|
| CP-K25NK | CP-K25NKAL | — | 1/4 | 9/16 | 1-1/2 | 1.000 | 3/16 |
| CP-K100NK | CP-K100NKAL | CP-K100NKSS | 3/8 | 9/16 | 1-1/2 | 1.000 | 3/16 |
| CP-K200NK | CP-K200NKAL | CP-K200NKSS | 1/2 | 9/16 | 1-1/2 | 1.000 | 3/16 |
| CP-K320NK | CP-K320NKAL | CP-K320NKSS | 1/2 | 9/16 | 2-1/4 | 1.000 | 3/16 |
| CP-K420NK | CP-K420NKAL | — | 5/8 | 9/16 | 2-1/4 | 1.000 | 3/16 |

HOUSINGS ONLY



| Steel Housing Part # | Alum Housing Part # | SS Housing Part # | Internal Thread | Length |
|-------------------------|------------------------|----------------------|--------------------|--------|
| CP-K102-BO | CP-K102AL-BO | CP-K102SS-BO | 3/4-10 | 1-1/2 |
| CP-K102L-BO | CP-K102LAL-BO | CP-K102LSS-BO | 3/4-10 | 2-1/4 |