

## norelem positions

Flexible standard component system

**04751**  
Page 573



Clamp nuts with star or T-grip

**04752**  
Page 574



Tightening screws

**04753**  
Page 575



Clamping pin, steel



**04754**  
Page 576



Clamping pin, steel or stainless steel with washer



**04755**  
Page 577



Clamping pin, steel or stainless steel with clamping angle



**04756**  
Page 578



Clamping pin, steel or stainless steel with adapter plate



**04757**  
Page 579



Pivot bearing, steel with external thread



**04758**  
Page 580



Plate, steel open



**04759**  
Page 581



Angle, steel open



## 04000/05000

Toggle clamps  
Pneumatic clamps  
Accessories for clamps  
Latches  
Quarter-turn locks



**05020**  
Page 585



Toggle clamps vertical with horizontal foot

**05020**  
Page 586



Toggle clamps vertical with horizontal foot and full clamping lever

**05020**  
Page 587



Toggle clamps vertical with horizontal foot, large version

**05040**  
Page 588



Toggle clamps vertical with straight foot

**05060**  
Page 590



Toggle clamps vertical with angled foot

**05080**  
Page 591



Toggle hook clamps and catch plate

**05120**  
Page 592



Toggle clamps horizontal with horizontal foot

**05120**  
Page 592



Toggle clamps horizontal large version

**05130**  
Page 593



Toggle clamps horizontal with straight foot

**05140**  
Page 593



Toggle mini clamps

**05160**  
Page 594



Toggle clamps horizontal with push rod

**05170**  
Page 595



Toggle clamps with push rod push-pull operation, for bracket mounting

**05200**  
Page 585, 588, 590, 596



Plastic grips

**05220**  
Page 596



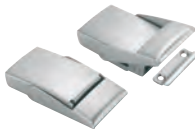
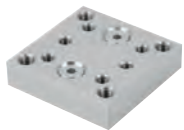
Thrust spindles spring mounted

New/Expanded Items

## norelem positions

Flexible standard component system

# 05000

|                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                               |                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>05240</b><br>Page 597<br><br><br>Thrust screws with thrust pad                            | <b>05331</b><br>Page 605<br><br><br>Pneumatic clamp                                          | <b>05530-05</b><br>Page 614<br><br><br>Latch stainless steel DIN 3133       | <b>05562</b><br>Page 623<br><br><br>Quarter-turn locks compact with wing grip              |
| <b>05241</b><br>Page 597<br><br><br>Thrust screws with thrust pad                            | <b>05332</b><br>Page 607<br><br><br>Pneumatic clamps vertical with vertical cylinder bracket | <b>05531</b><br>Page 615<br><br><br>Latches with draw bail                  | <b>05564</b><br>Page 624<br><br><br>Quarter-turn locks compact lockable                    |
| <b>05260</b><br>Page 598<br><br><br>Thrust screws neoprene                                   | <b>05340</b><br>Page 608<br><br><br>Pneumatic clamps push-rod                                | <b>05536</b><br>Page 616<br><br><br>Latches with draw bail                  | <b>05566</b><br>Page 626<br><br><br>Quarter-turn locks                                     |
| <b>05280</b><br>Page 598<br><br><br>Protective caps                                          | <b>05350</b><br>Page 609<br><br><br>Pneumatic clamps vertical heavy-duty version             | <b>05547-05</b><br>Page 617<br><br><br>Latches with release stainless steel | <b>05566-03</b><br>Page 627<br><br><br>Quarter-turn locks stainless steel, small version   |
| <b>05300</b><br>Page 599<br><br><br>Toggle clamps variable horizontal with horizontal foot | <b>05360</b><br>Page 610<br><br><br>Toggle clamps variable vertical with horizontal foot   | <b>05550</b><br>Page 618<br><br><br>Latches adjustable with swing bail    | <b>05566-04</b><br>Page 629<br><br><br>Quarter-turn locks, stainless steel long version  |
| <b>05302</b><br>Page 600<br><br><br>Toggle clamps variable vertical with horizontal foot   | <b>05400</b><br>Page 611<br><br><br>Toggle clamps heavy duty vertical                      | <b>05552</b><br>Page 619<br><br><br>Latches adjustable                    | <b>05566-05</b><br>Page 630<br><br><br>Quarter-turn locks stainless steel, small version |
| <b>05305</b><br>Page 601<br><br><br>Toggle clamps variable with thrust rod                 | <b>05420</b><br>Page 612<br><br><br>Toggle clamps heavy duty version straight foot         | <b>05560</b><br>Page 620<br><br><br>Adjustable latches heavy-duty version | <b>05566-06</b><br>Page 631<br><br><br>Quarter-turn locks lockable, stainless steel      |
| <b>05310</b><br>Page 602<br><br><br>Adapter block aluminium                                | <b>05520</b><br>Page 612<br><br><br>Plastic grips                                          | <b>05561</b><br>Page 621<br><br><br>Quarter-turn locks compact            | <b>05566-07</b><br>Page 627, 629-632<br><br><br>Tongue for quarter-turn lock             |
| <b>05312</b><br>Page 603<br><br><br>Adapter plates round                                   | <b>05526</b><br>Page 613<br><br><br>Latches with spring clip                               | <b>05561-02</b><br>Page 622<br><br><br>Quarter-turn lock, stainless steel | <b>05567</b><br>Page 633<br><br><br>Quarter-turn locks polyamide                         |

+ New/Expanded Items

## norelem positions

Flexible standard component system

# 05000

**05568**  
Page 635



Quarter-turn locks  
long version

**05571**  
Page 636



Quarter-turn locks  
with wing grip

**05571-02**  
Page 637



Quarter-turn lock stainless steel  
with wing grip

**05572**  
Page 638



Quarter-turn locks  
with T-grip

**05573**  
Page 639



Quarter-turn locks  
with L-grip

**05574**  
Page 640



Compression latches

**05575**  
Page 641



Compression latches  
with adjustable tongue height

**05576**  
Page 642



Quarter-turn locks  
with cam tongue

**05577**  
Page 643



Quarter-turn locks  
free-turning

**05578-02**  
Page 644



Quarter-turn security locks, stainless steel

**05584**  
Page 645



Dust caps

**05585**  
Page 645



Opening grips

**05586**  
Page 646



Keys  
for quarter-turn locks

**05587**  
Page 647



Quarter-turn locks  
stainless steel

**05588**  
Page 648



Quarter-turn locks  
stainless steel, lockable

**05589**  
Page 649



Quarter-turn locks  
stainless steel with wing grip

**05593**  
Page 650



Quarter-turn locks  
stainless steel with T-grip

**05593-01**  
Page 651



Quarter-turn locks  
stainless steel with T-grip

**05593-04**  
Page 652



Quarter-turn locks  
in Hygienic DESIGN  
with T-grip



**05594**  
Page 653



Quarter-turn locks  
stainless steel with L-grip

**05594-02**  
Page 654



Quarter-turn locks  
stainless steel with L-grip

**05595**  
Page 655



Quarter-turn locks  
for sterile areas

**05595-01**  
Page 656



Quarter-turn locks  
in Hygienic DESIGN

**05595-02**  
Page 657



Quarter-turn locks  
in Hygienic DESIGN

**05598**  
Page 658



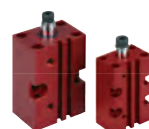
Slam latches

**05599**  
Page 659



Emergency openers

**05610**  
Page 660



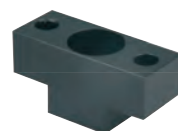
Swing clamps  
pneumatic

**05620**  
Page 661



Clamping arm  
for swing clamp

**05625**  
Page 661



Adapters  
for swing clamp

**05650**  
Page 665



Mini clamps

**05652**  
Page 667



Mini clamp  
manual operated

**05660**  
Page 668



Swing screws

**05665**  
Page 671



Mini clamp  
for horizontal installation

**05666**  
Page 672



Manual clamp  
vertical with hole pattern on the front

**05667**  
Page 673



Manual clamp  
vertical with hole pattern on the front

**05840**  
Page 674



Push-pull clamps  
heavy-duty version with handle

 New/Expanded Items

## norelem positions

### Flexible standard component system

05000

**05880**  
Page 675, 679, 689



Angle bracket

**05882**  
Page 675



Plastic grips

**05900**  
Page 679



Toggle clamps horizontal  
with flat foot and adjustable clamping  
spindle

**05900**  
Page 680



Toggle clamps horizontal  
with flat foot and adjustable clamping  
spindle, stainless steel

**05900**  
Page 681



Toggle clamps horizontal with safety  
interlock with flat foot and adjustable  
clamping spindle

**05900**  
Page 682



Toggle clamps horizontal with safety  
interlock with flat foot and adjustable  
clamping spindle, stainless steel

**05904**  
Page 683



Toggle clamps horizontal  
with straight foot and adjustable clamping  
spindle

**05904**  
Page 684



Toggle clamps horizontal  
with straight foot and adjustable clamping  
spindle, stainless steel

**05904**  
Page 685



Toggle clamps horizontal with safety  
interlock with straight foot and adjustable  
clamping spindle

**05904**  
Page 686



Toggle clamps horizontal with safety  
interlock  
with straight foot and adjustable clamping  
spindle, stainless steel

**05908**  
Page 689



Toggle clamps vertical  
with flat foot and adjustable clamping  
spindle

**05908**  
Page 691



Toggle clamps vertical  
with flat foot and adjustable clamping  
spindle, stainless steel

**05908**  
Page 693



Toggle clamps vertical  
with safety interlock  
with flat foot and adjustable clamping  
spindle

**05908**  
Page 695



Toggle clamps vertical  
with safety interlock  
with flat foot and adjustable clamping  
spindle, stainless steel

**05912**  
Page 696



Toggle clamps vertical  
with straight foot and adjustable clamping  
spindle

**05912**  
Page 697



Toggle clamps vertical  
with straight foot and adjustable clamping  
spindle, stainless steel

**05912**  
Page 698



Toggle clamps vertical with safety  
interlock with straight foot and adjustable  
clamping spindle

**05912**  
Page 699



Toggle clamps vertical with safety  
interlock with straight foot and adjustable  
clamping spindle, stainless steel

**05990**  
Page 700



Spherical seating nuts

**05990-20**  
Page 701



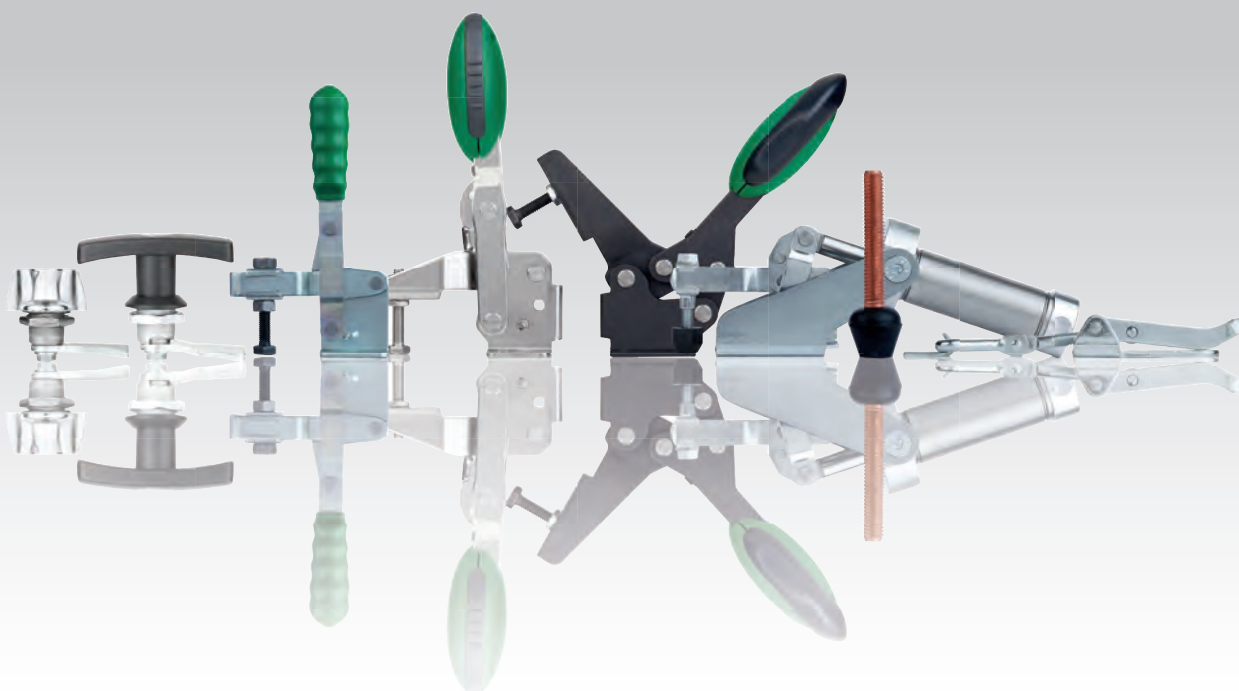
Status sensors,  
stainless steel with bracket  
for toggle clamps



New/Expanded Items

# 05000

**Toggle clamps**  
**Pneumatic clamps**  
**Accessories for clamps**  
**Latches**  
**Quarter-turn locks**



01000

02000

03000

04000

05000

06000

07000

08000

09000

10000

12000



# Toggle clamps

Toggle clamps offer effective solutions where quick and economical clamping or positioning is required.

Toggle clamps work according to the knee-lever principle and can be operated with very little expenditure of force.

Self-locking is guaranteed when the dead centre position (alignment of the three joints) is exceeded.

Toggle clamps are an optimal clamping solution in drilling, welding, grinding and inspection fixtures etc. In the timber industry extreme deformations are avoided by using toggle clamps when bonding or assembling fragile sheets as the clamping force is controllable.

## Principle of the knee lever



It is generally known that a person can support himself against a wall to shift a heavy piece of furniture. If the person has bent his knees and tries to move the furniture with the force of his legs, this is associated with the expenditure of considerable force.

However, if the person has his legs in the position as shown in the picture above, and presses on the knee joint from above with a force, the move is much easier to achieve.

As soon as the 3 points of the joint A, B and C are in a line (knees straightened), it is no longer possible for the piece of furniture to be pressed back by a counterforce.

This principle is used with the toggle clamps.

## Operating method:

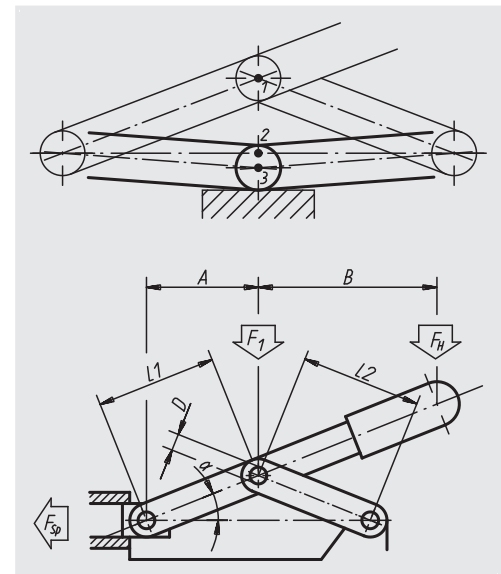
1. Position before clamping.
2. Dead centre position (points of the joint in line).
3. By exceeding the dead centre secure clamping is guaranteed (self-locking).

## Calculating the clamping force

### Calculation variables

- A: Distance between the centres (mm)  
B: Distance to the point of force application (mm)  
D: Diameter of the axle bolt (mm)  
FH: Hand force (N)  
F1: Force on the point of the joint (N)  
Fsp: Clamping force (N)  
L1, L2: Length of the lever arm (mm)  
 $\alpha$ : Inclination angle of the lever (degrees)  
 $\beta$ : Friction angle in the joints (degrees)  
 $\delta$ : Angle of repose at the connecting rod (degrees)  
 $\mu$ : Coefficient of friction = 0,1  $\Rightarrow \delta$  5,73°

$$F_{sp} = \frac{F_1}{2} \left[ \frac{1}{\tan(\alpha + \gamma)} - \tan \delta \right]; F_1 = \frac{F_H \cdot (A + B)}{A}; \gamma = \arcsin \left( \frac{2D}{L_1 + L_2} \cdot \mu \right)$$



Very high clamping forces can be achieved with toggle clamps. The full potential force cannot be used however. Adhering to the retaining forces F recommended in the catalogue guarantees a long life.

The clamping force must be attuned to the retaining force, which can be done by setting the thrust screw.

# Toggle clamps vertical

with horizontal foot



## Material:

Steel plate DD11 1.0332.

## Version:

Steel parts electro zinc-plated.

Hinge pins tempered.

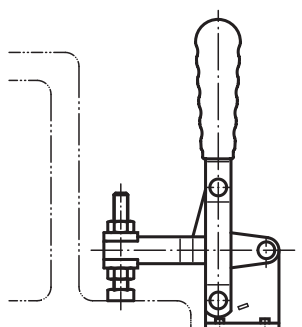
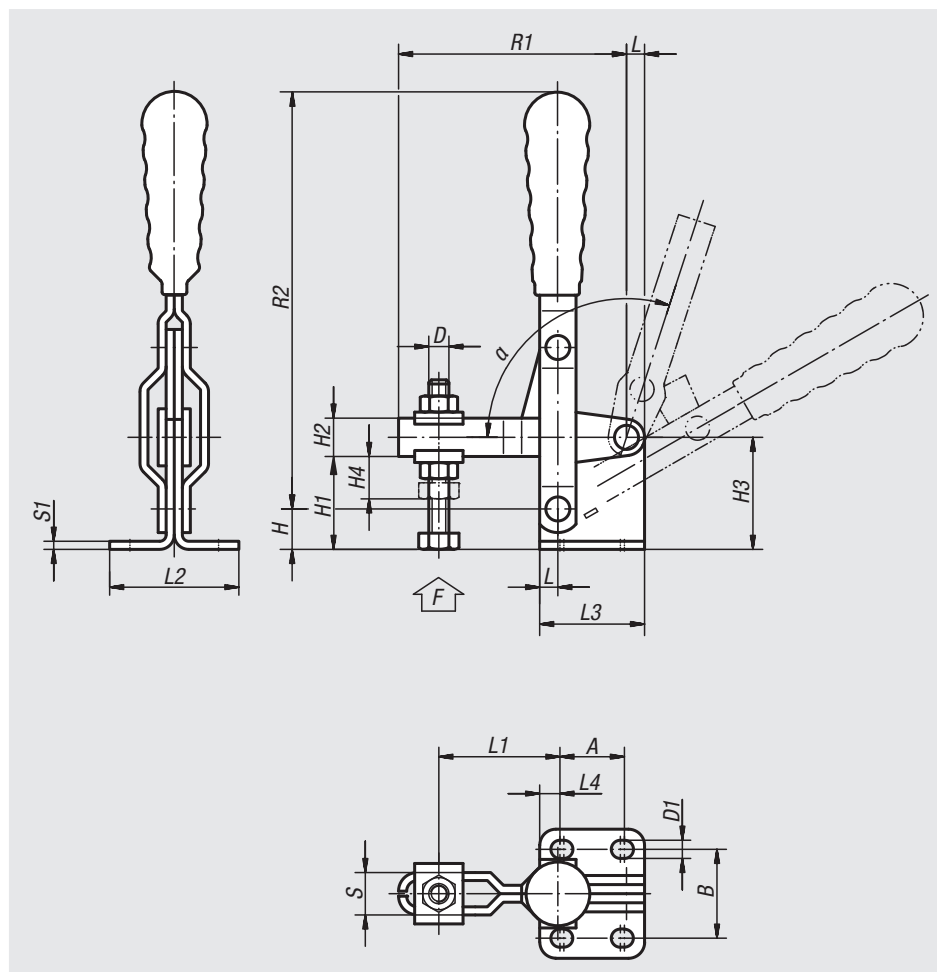
Plastic handle oil-resistant.

## Sample order:

nln 05020-08

## Note:

See 05200 – 05280 for accessories.



| Order No. | L   | L1<br>min. | L1<br>max. | L2 | L3 | L4  | B  | H  | H1 | H2   | H3 | H4 | A<br>min. | A<br>max. | D      | D1  | R1   | R2  | S    | S1  | F<br>kN | $\alpha$ | Plastic<br>grips |
|-----------|-----|------------|------------|----|----|-----|----|----|----|------|----|----|-----------|-----------|--------|-----|------|-----|------|-----|---------|----------|------------------|
| 05020-05  | 4,5 | 16         | 35         | 32 | 26 | 5   | 22 | 10 | 23 | 9,5  | 28 | 10 | 14        | 16        | M5x35  | 4,5 | 56,5 | 96  | 10,5 | 2   | 0,8     | 108°     | 05200-100        |
| 05020-06  | 5,5 | 23         | 46         | 38 | 32 | 9   | 27 | 13 | 29 | 11,5 | 35 | 11 | 12        | 14        | M6x50  | 5,5 | 70,5 | 121 | 13,5 | 3   | 1       | 108°     | 05200-105        |
| 05020-08  | 7   | 27         | 55         | 45 | 39 | 9   | 32 | 16 | 35 | 14   | 42 | 14 | 19        | 21        | M8x50  | 6,5 | 86   | 143 | 16   | 3   | 2,3     | 108°     | 05200-115        |
| 05020-10  | 8   | 33         | 74         | 56 | 43 | 7,5 | 38 | 20 | 39 | 18   | 48 | 18 | 26        | 28        | M10x70 | 8,5 | 110  | 177 | 18   | 3,5 | 3,5     | 108°     | 05200-120        |
| 05020-12  | 10  | 45         | 100        | 68 | 50 | 9   | 45 | 25 | 45 | 22   | 56 | 21 | 32        | 32        | M12x80 | 8,5 | 140  | 215 | 23   | 4   | 4       | 90°      | 05200-135        |

# Toggle clamps vertical

with horizontal foot and full clamping lever



## Material:

Steel plate DD11 1.0332.

## Version:

Steel parts electro zinc-plated.

Hinge pins tempered.

Plastic handle oil-resistant.

## Sample order:

nIm 05020-101

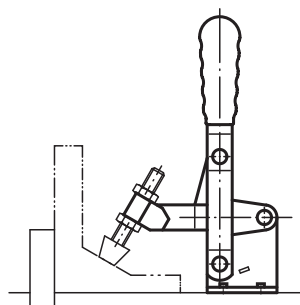
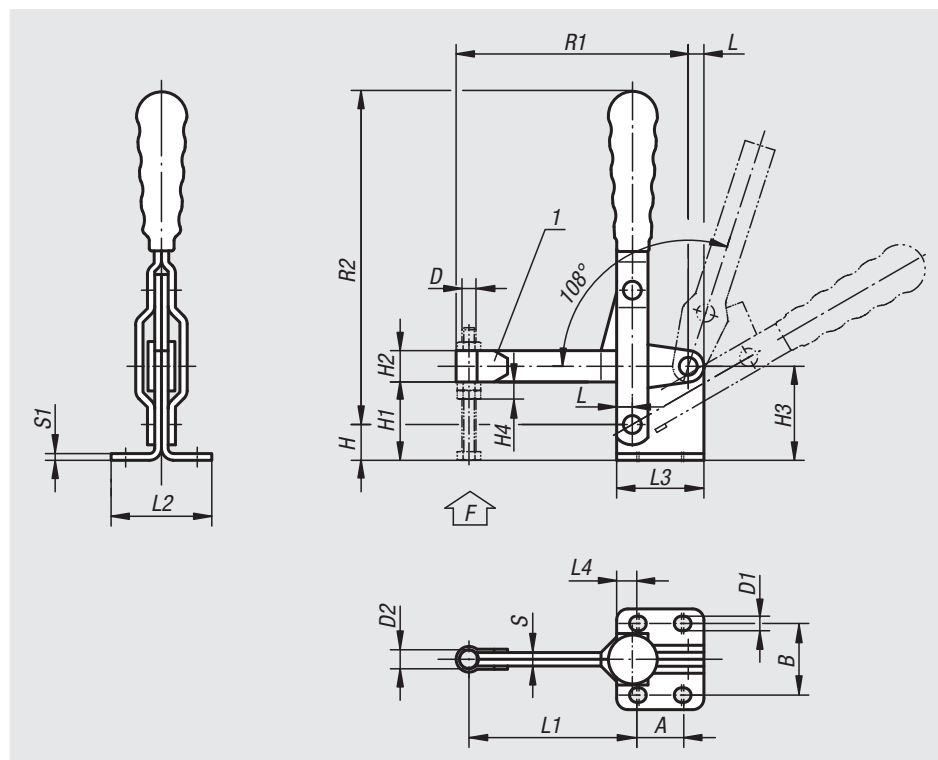
## Note:

Screws not supplied.

See 05200 – 05280 for accessories.

## Drawing reference:

1) Weldable



| Order No. | L  | L1  | L2 | L3 | L4  | B  | H  | H1 | H2 | H3 | H4 | A<br>min. | A<br>max. | D   | D1  | D2   | R1  | R2  | S | S1  | F<br>kN | Plastic<br>grips |
|-----------|----|-----|----|----|-----|----|----|----|----|----|----|-----------|-----------|-----|-----|------|-----|-----|---|-----|---------|------------------|
| 05020-081 | 7  | 75  | 45 | 39 | 9   | 32 | 16 | 35 | 14 | 42 | 12 | 19        | 21        | M8  | 6,5 | 8,5  | 103 | 143 | 6 | 3   | 2,2     | 05200-115        |
| 05020-101 | 8  | 92  | 56 | 43 | 7,5 | 38 | 20 | 39 | 18 | 48 | 16 | 26        | 28        | M10 | 8,5 | 10,5 | 125 | 177 | 7 | 3,5 | 3,4     | 05200-120        |
| 05020-121 | 10 | 122 | 68 | 50 | 9   | 45 | 25 | 45 | 22 | 56 | 19 | 32        | 32        | M12 | 8,5 | 12,5 | 159 | 215 | 8 | 4   | 4,5     | 05200-135        |

# Toggle clamps vertical

with horizontal foot, large version



## Material:

Steel plate DD11 1.0332.

## Version:

Steel parts electro zinc-plated.

Hinge pins tempered.

Plastic handle oil-resistant.

## Sample order:

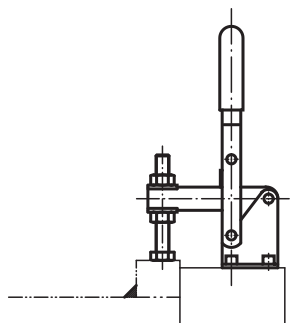
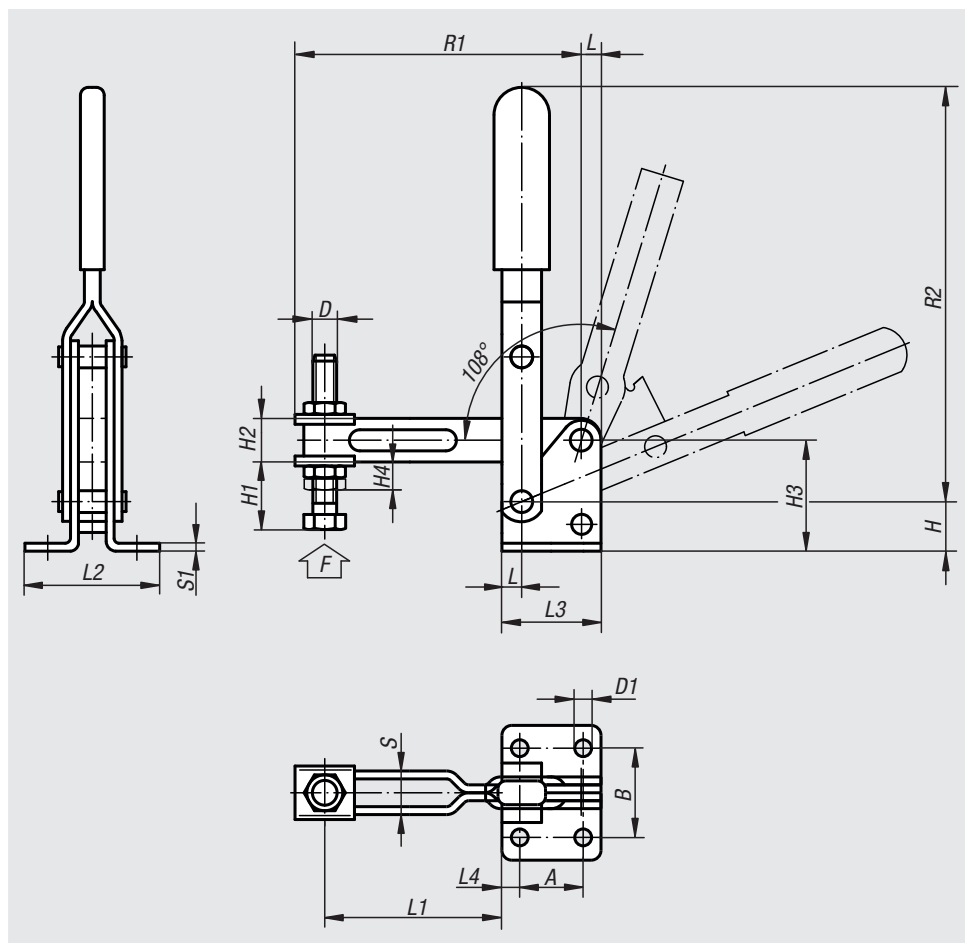
nIm 05020-14

## Note:

See 05200 – 05280 for accessories.

## Drawing reference:

1) plastic grip 05200



| Order No. | L  | L1<br>min. | L1<br>max. | L2  | L3 | L4 | B  | H  | H1   | H2 | H3  | H4 | A  | D       | D1   | R1  | R2  | S  | S1 | S3 | F<br>kN | Plastic<br>grips |
|-----------|----|------------|------------|-----|----|----|----|----|------|----|-----|----|----|---------|------|-----|-----|----|----|----|---------|------------------|
| 05020-14  | 10 | 50         | 165        | 73  | 60 | 10 | 52 | 35 | 62,5 | 25 | 75  | 21 | 40 | M14x90  | 8,5  | 225 | 230 | 25 | 4  | 34 | 4,6     | 05200-135        |
| 05020-16  | 15 | 55         | 215        | 100 | 90 | 20 | 70 | 58 | 101  | 30 | 116 | 27 | 50 | M16x140 | 12,5 | 300 | 305 | 30 | 5  | 44 | 6       | 05200-140        |

# Toggle clamps vertical

with straight foot



## Material:

Steel plate DD11 1.0332.

## Version:

Steel parts electro zinc-plated.

Hinge pins tempered.

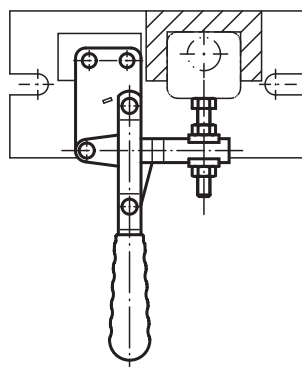
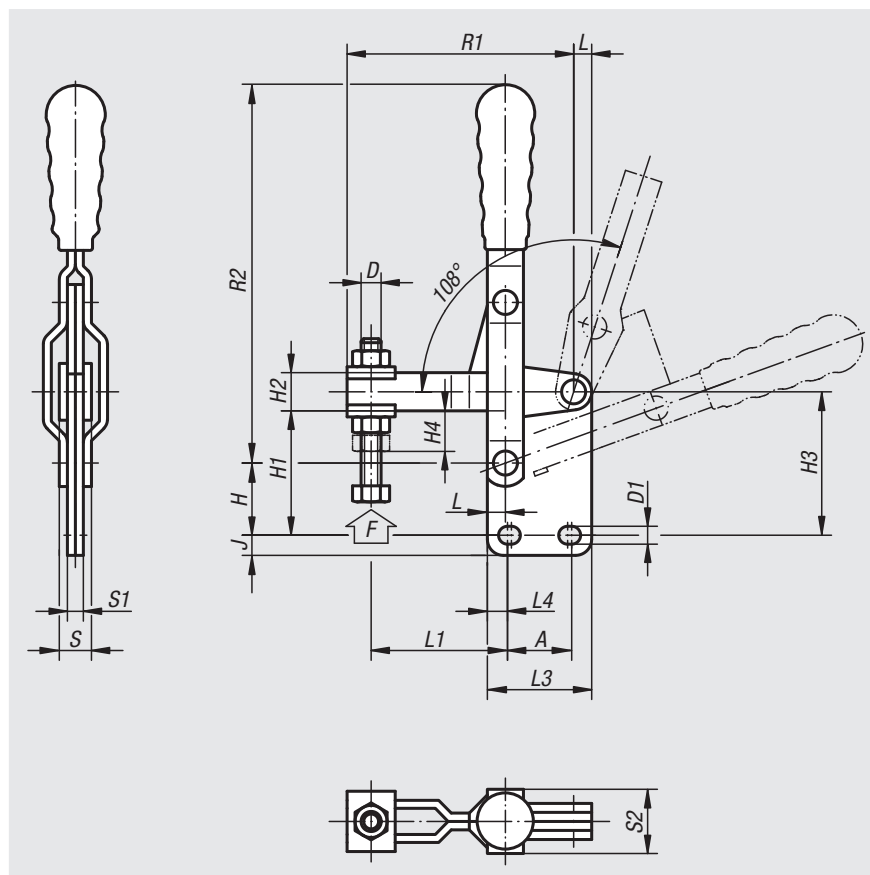
Plastic handle oil-resistant.

## Sample order:

nln 05040-12

## Note:

See 05200 – 05280 for accessories.



| Order No. | L   | L1<br>min. | L1<br>max. | L3 | L4  | H    | H1   | H2   | H3   | H4 | A<br>min. | A<br>max. | D      | D1  | J    | R1   | R2  | S    | S1 | S2 | F<br>kN | Plastic<br>grips |
|-----------|-----|------------|------------|----|-----|------|------|------|------|----|-----------|-----------|--------|-----|------|------|-----|------|----|----|---------|------------------|
| 05040-05  | 4,5 | 16         | 35         | 26 | 5   | 18   | 31   | 9,5  | 36   | 10 | 14        | 16        | M5x35  | 4,5 | 5    | 56,5 | 96  | 10,5 | 4  | 16 | 0,8     | 05200-100        |
| 05040-06  | 5,5 | 23         | 46         | 32 | 9   | 21   | 37   | 11,5 | 43   | 11 | 12        | 14        | M6x50  | 5,5 | 5,5  | 70,5 | 121 | 13,5 | 6  | 23 | 1       | 05200-105        |
| 05040-08  | 7   | 27         | 55         | 39 | 9   | 26,5 | 45,5 | 14   | 52,5 | 14 | 19        | 21        | M8x50  | 6,5 | 6,5  | 86   | 143 | 16   | 6  | 23 | 2,3     | 05200-115        |
| 05040-10  | 8   | 33         | 74         | 43 | 7,5 | 33   | 52   | 18   | 61   | 18 | 26        | 28        | M10x70 | 8,5 | 9    | 110  | 177 | 18   | 7  | 26 | 3,5     | 05200-120        |
| 05040-12  | 10  | 45         | 100        | 50 | 9   | 41   | 61   | 22   | 72   | 21 | 32        | 32        | M12x80 | 8,5 | 11,5 | 140  | 215 | 23   | 8  | 30 | 4,6     | 05200-135        |

# Toggle clamps vertical

with straight foot and full clamping lever



## Material:

Steel plate DD11 1.0332.

## Version:

Steel parts electro zinc-plated.

Hinge pins tempered.

Plastic handle oil-resistant.

## Sample order:

nIm 05040-121

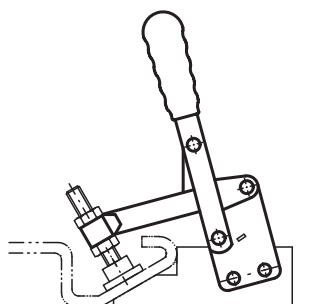
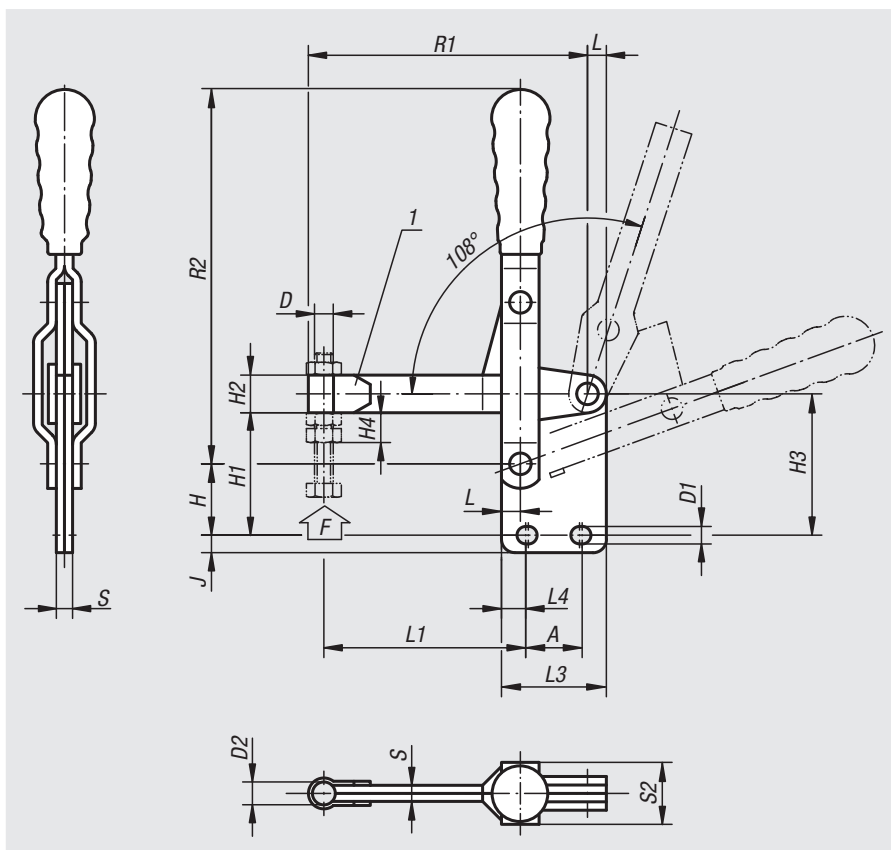
## Note:

Screws not supplied.

See 05200 – 05280 for accessories.

## Drawing reference:

1) Weldable



| Order No. | L  | L1  | L3 | L4  | H    | H1   | H2 | H3   | H4 | A<br>min. | A<br>max. | D   | D1  | D2   | J    | R1  | R2  | S | S2 | F<br>kN | Plastic<br>grips |
|-----------|----|-----|----|-----|------|------|----|------|----|-----------|-----------|-----|-----|------|------|-----|-----|---|----|---------|------------------|
| 05040-081 | 7  | 75  | 39 | 9   | 26,5 | 45,5 | 14 | 52,5 | 12 | 19        | 21        | M8  | 7   | 8,5  | 6,5  | 103 | 143 | 6 | 23 | 2,2     | 05200-115        |
| 05040-101 | 8  | 92  | 43 | 7,5 | 33   | 52   | 18 | 61   | 16 | 26        | 28        | M10 | 8,5 | 10,5 | 9    | 125 | 177 | 7 | 26 | 3,4     | 05200-120        |
| 05040-121 | 10 | 122 | 50 | 9   | 41   | 61   | 22 | 72   | 19 | 32        | 32        | M12 | 8,5 | 12,5 | 11,5 | 159 | 215 | 8 | 30 | 4,5     | 05200-135        |

# Toggle clamps vertical

with angled foot



## Material:

Steel plate DD11 1.0332.

## Version:

Steel parts electro zinc-plated.

Hinge pins tempered.

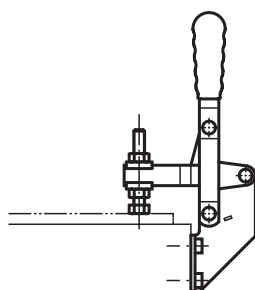
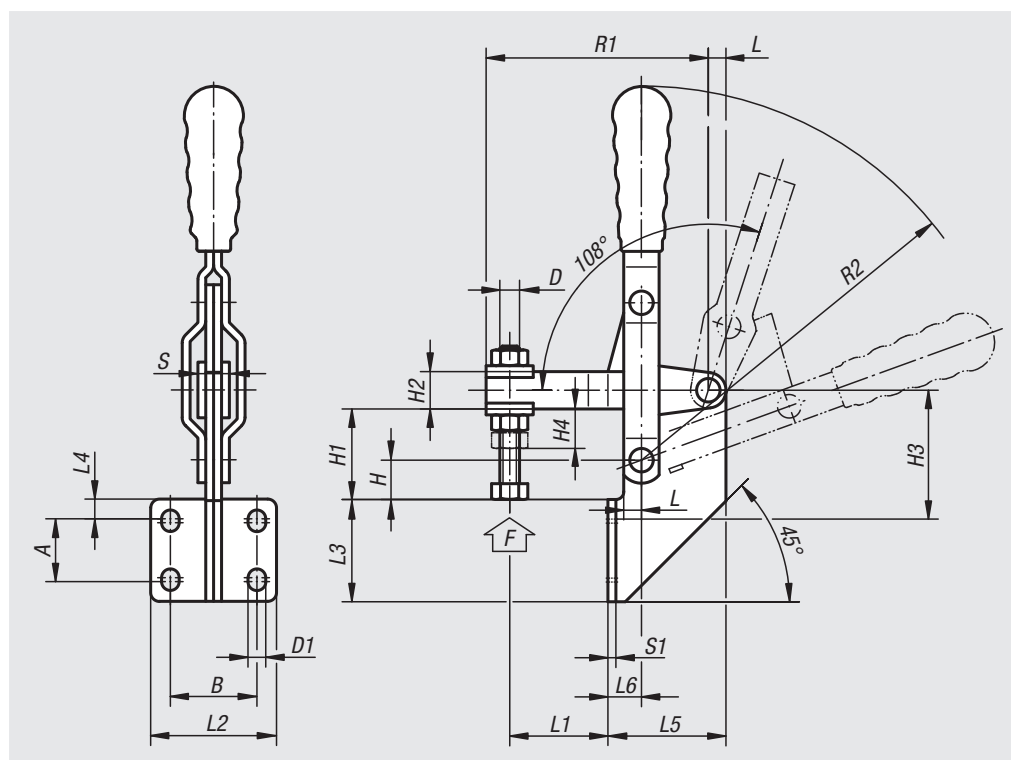
Plastic handle oil-resistant.

## Sample order:

nIm 05060-06

## Note:

See 05200 – 05280 for accessories.



| Order No. | L   | L1<br>min. | L1<br>max. | L2 | L3 | L4  | L5 | L6   | B  | H  | H1 | H2   | H3   | H4 | A<br>min. | A<br>max. | D      | D1  | R1   | R2  | S    | S1  | F<br>kN | Plastic<br>grips |
|-----------|-----|------------|------------|----|----|-----|----|------|----|----|----|------|------|----|-----------|-----------|--------|-----|------|-----|------|-----|---------|------------------|
| 05060-05  | 4,5 | 7          | 26         | 32 | 26 | 5   | 30 | 8,5  | 22 | 10 | 23 | 9,5  | 33   | 10 | 14        | 16        | M5x35  | 4,5 | 56,5 | 96  | 10,5 | 2   | 0,8     | 05200-100        |
| 05060-06  | 5,5 | 8          | 31         | 38 | 32 | 9   | 38 | 11,5 | 27 | 13 | 29 | 11,5 | 44   | 11 | 12        | 14        | M6x50  | 5,5 | 70,5 | 121 | 13,5 | 3   | 1       | 05200-105        |
| 05060-08  | 7   | 12         | 40         | 45 | 39 | 9   | 45 | 13   | 32 | 16 | 35 | 14   | 51   | 14 | 19        | 21        | M8x50  | 6,5 | 86   | 151 | 16   | 3   | 2,3     | 05200-115        |
| 05060-10  | 8   | 18,5       | 59,5       | 56 | 43 | 7,5 | 50 | 15   | 38 | 20 | 39 | 18   | 55,5 | 18 | 26        | 28        | M10x70 | 8,5 | 110  | 177 | 18   | 3,5 | 3,5     | 05200-120        |

# Toggle hook clamps

and catch plate



## Material:

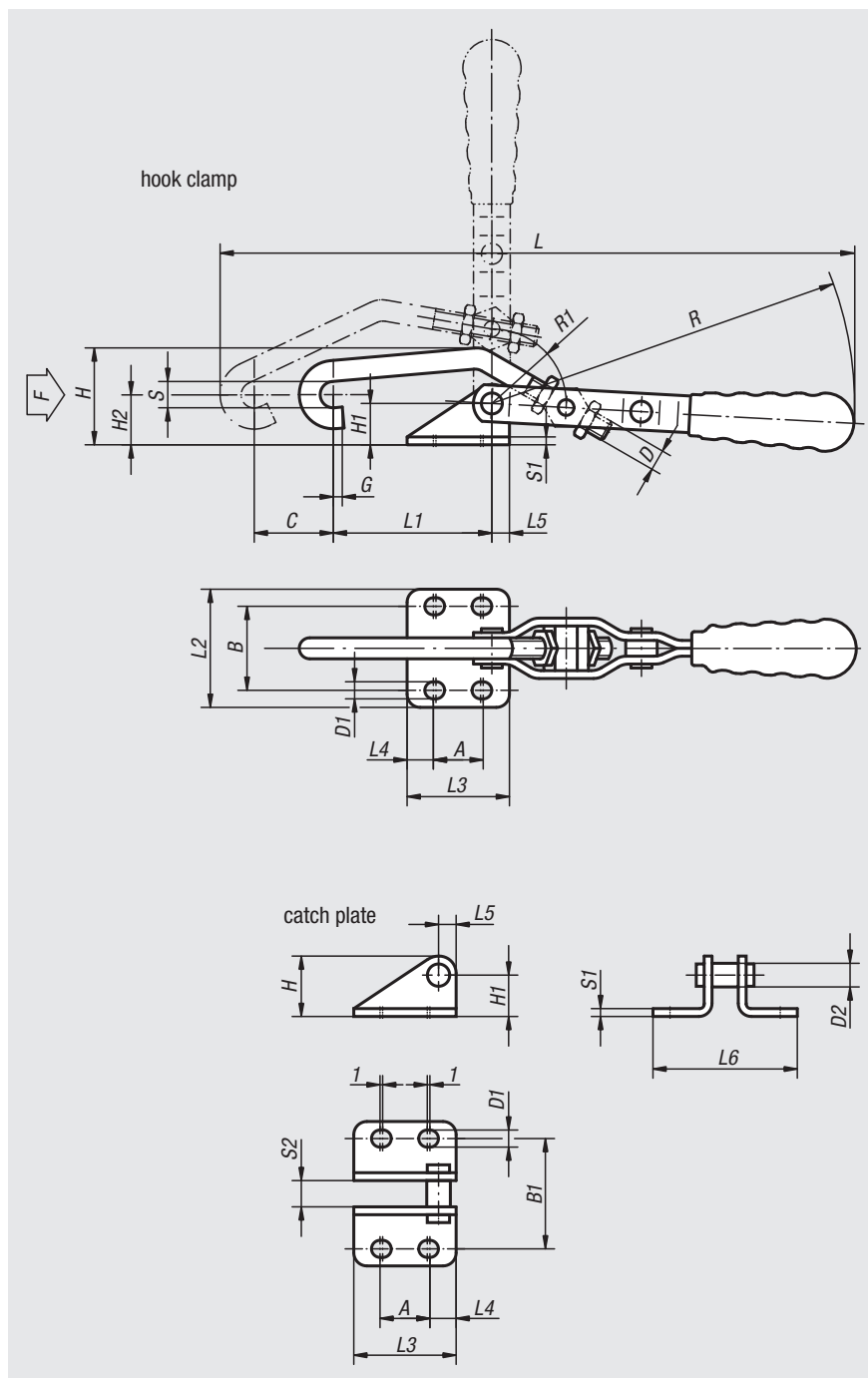
Lever, foot and catch plate steel plate DD11 1.0332.  
Hinge pins and hook carbon steel 1.0501.

## Version:

Steel parts electro zinc-plated.  
Hinge pins and hook tempered.  
Grip plastic, oil-resistant.

## Sample order:

nIm 05080-01 (hook clamp)  
nIm 05080-011 (catch plate)



## Toggle hook clamps

| Order No. | L   | L1 | L2 | L3 | L4 | L5 | B  | H  | H1 | H2 | A<br>min. | A<br>max. | C  | D   | D1  | G | R   | R1   | S  | S1 | F<br>kN | Plastic<br>grips |
|-----------|-----|----|----|----|----|----|----|----|----|----|-----------|-----------|----|-----|-----|---|-----|------|----|----|---------|------------------|
| 05080-01  | 231 | 60 | 45 | 39 | 10 | 7  | 32 | 36 | 16 | 17 | 17        | 19        | 25 | M8  | 6,5 | 3 | 151 | 29   | 10 | 3  | 1       | 05200-115        |
| 05080-03  | 349 | 90 | 68 | 50 | 9  | 10 | 45 | 64 | 30 | 31 | 30        | 32        | 30 | M12 | 8,5 | 5 | 215 | 36,5 | 14 | 4  | 3       | 05200-135        |

## Catch plate

| Order No. | L3 | L4 | L5 | L6 | B1 | H  | H1 | A<br>min. | A<br>max. | D1  | D2 | S1 | S2 |
|-----------|----|----|----|----|----|----|----|-----------|-----------|-----|----|----|----|
| 05080-011 | 39 | 10 | 7  | 55 | 42 | 23 | 16 | 17        | 19        | 6,5 | 9  | 3  | 10 |
| 05080-031 | 50 | 9  | 10 | 82 | 59 | 40 | 30 | 30        | 32        | 8,5 | 13 | 4  | 14 |

## Toggle clamps horizontal

with horizontal foot


**Material:**

Steel plate DD11 1.0332.

**Version:**

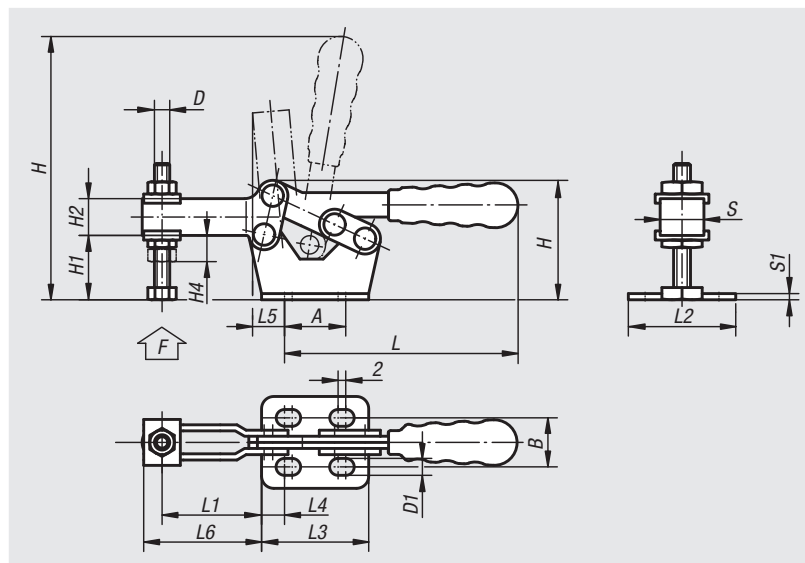
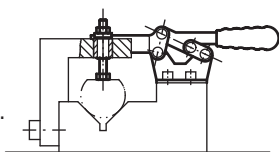
Steel parts electro zinc-plated.  
Hinge pins tempered.  
Plastic handle oil-resistant.

**Sample order:**

nln 05120-10

**Note:**

See 05200 – 05280 for accessories.



| Order No. | L   | L1<br>min. | L1<br>max. | L2   | L3   | L4   | L5   | L6   | B  | H<br>min. | H<br>max. | H1 | H2 | H4 | A<br>min. | A<br>max. | D      | D1  | S  | S1  | F<br>kN | Plastic<br>grips |
|-----------|-----|------------|------------|------|------|------|------|------|----|-----------|-----------|----|----|----|-----------|-----------|--------|-----|----|-----|---------|------------------|
| 05120-05  | 76  | 12         | 32,5       | 30   | 35   | 7,5  | 9,5  | 39   | 16 | 39        | 91        | 20 | 12 | 10 | 16        | 20        | M5x35  | 5,5 | 11 | 2   | 0,8     | 05200-200        |
| 05120-06  | 106 | 15,5       | 46         | 35,5 | 45   | 8,5  | 11,5 | 53,5 | 22 | 53        | 130       | 30 | 14 | 11 | 24        | 28        | M6x48  | 5,5 | 14 | 3   | 1       | 05200-205        |
| 05120-08  | 140 | 19,5       | 61         | 40,5 | 55,5 | 14   | 19   | 71   | 24 | 67        | 165       | 40 | 16 | 14 | 24        | 28        | M8x60  | 7   | 16 | 3   | 2,3     | 05200-210        |
| 05120-10  | 172 | 33         | 84         | 61   | 65,5 | 10,5 | 20   | 92   | 42 | 85        | 200       | 50 | 20 | 18 | 40        | 44        | M10x70 | 9   | 19 | 3,5 | 3,5     | 05200-215        |
| 05120-12  | 215 | 31         | 104        | 64,5 | 80   | 18,5 | 25,5 | 119  | 42 | 99        | 250       | 60 | 24 | 21 | 40        | 44        | M12x80 | 9   | 22 | 4   | 4,6     | 05200-220        |

## Toggle clamps horizontal

large version


**Material:**

Steel plate DD11 1.0332.

**Version:**

Steel parts electro zinc-plated.  
Hinge pins tempered.  
Plastic handle oil-resistant.

**Sample order:**

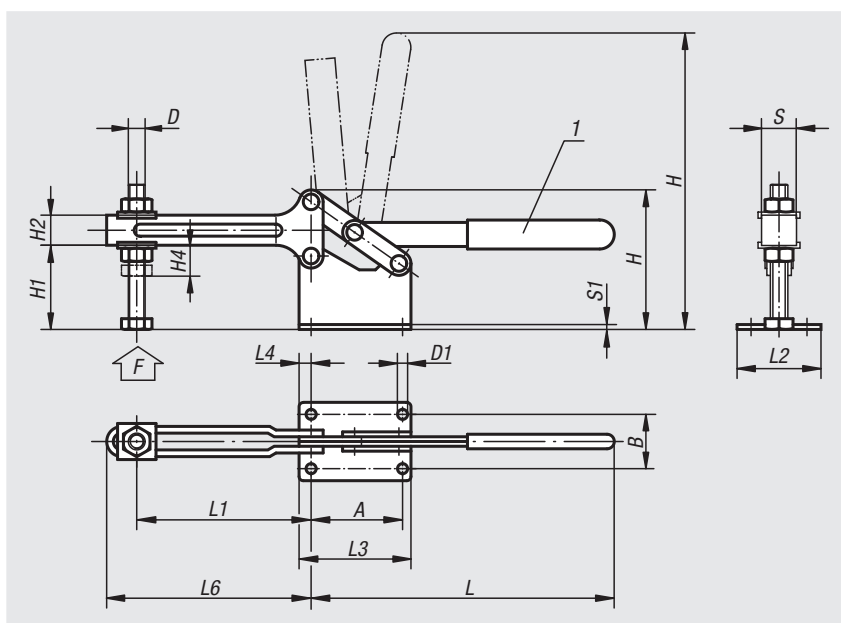
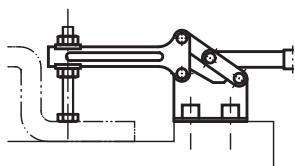
nln 05120-14

**Note:**

See 05200 – 05280 for accessories.

**Drawing reference:**

1) plastic grip 05200



| Order No. | L   | L1<br>max. | L1<br>min. | L2 | L3  | L4 | L6  | B  | H<br>min. | H<br>max. | H1    | H2 | H4 | A   | D       | D1   | S  | S1 | F<br>kN | Plastic<br>grips |
|-----------|-----|------------|------------|----|-----|----|-----|----|-----------|-----------|-------|----|----|-----|---------|------|----|----|---------|------------------|
| 05120-14  | 252 | 145        | 45         | 65 | 96  | 10 | 160 | 45 | 116       | 310       | 70    | 25 | 21 | 76  | M14x90  | 9    | 24 | 4  | 4,5     | 05200-145        |
| 05120-16  | 325 | 205        | 55         | 85 | 132 | 15 | 225 | 55 | 173       | 425       | 110,5 | 35 | 27 | 102 | M16x140 | 12,5 | 30 | 5  | 6       | 05200-140        |

## Toggle clamps horizontal

with straight foot



### Material:

Steel plate DD11 1.0332.

### Version:

Steel parts electro zinc-plated.

Hinge pins tempered.

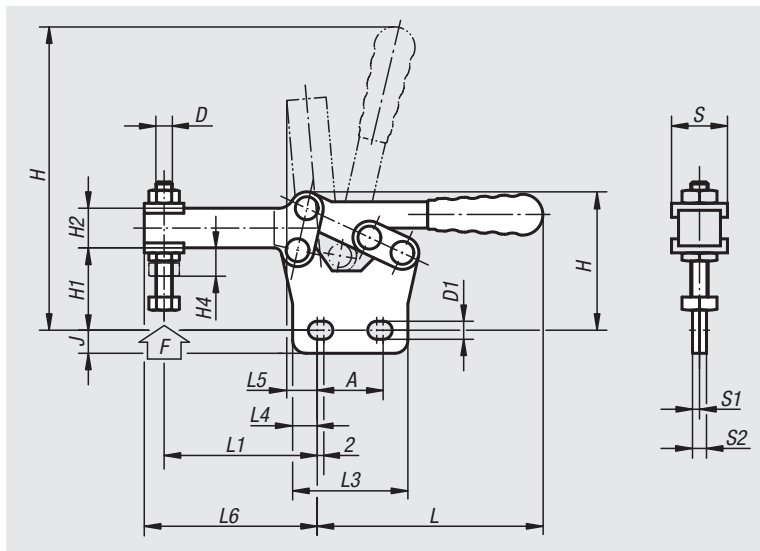
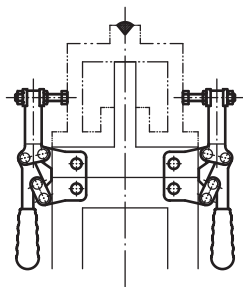
Plastic handle oil-resistant.

### Sample order:

nIm 05130-08

### Note:

See 05200 – 05280 for accessories.



| Order No. | L     | L1<br>min. | L1<br>max. | L3 | L4   | L5   | L6  | H<br>min. | H<br>max. | H1   | H2 | H4   | A<br>min. | A<br>max. | D      | D1 | J   | S  | S1  | S2 | F<br>kN | Plastic<br>grips |
|-----------|-------|------------|------------|----|------|------|-----|-----------|-----------|------|----|------|-----------|-----------|--------|----|-----|----|-----|----|---------|------------------|
| 05130-05  | 76    | 18         | 39         | 35 | 7,5  | 9,5  | 44  | 42        | 87        | 24   | 12 | 9    | 16        | 20        | M5x35  | 6  | 7   | 14 | 2   | 4  | 0,8     | 05200-200        |
| 05130-06  | 106   | 26         | 51         | 45 | 8,5  | 11,5 | 60  | 58        | 124       | 36   | 14 | 10,5 | 24        | 28        | M6x48  | 6  | 6,5 | 17 | 3   | 6  | 1       | 05200-205        |
| 05130-08  | 140   | 34         | 74         | 55 | 13,5 | 19   | 82  | 74        | 154       | 46,5 | 16 | 14   | 24        | 28        | M8x60  | 7  | 8   | 20 | 3   | 6  | 2,3     | 05200-210        |
| 05130-10  | 172,5 | 40         | 90         | 65 | 10,5 | 20   | 100 | 96        | 205       | 65   | 20 | 16,5 | 40        | 44        | M10x70 | 9  | 9   | 23 | 3,5 | 7  | 3,5     | 05200-215        |
| 05130-12  | 215   | 54         | 113        | 80 | 18   | 25,5 | 130 | 112       | 260       | 73   | 24 | 19   | 40        | 44        | M12x80 | 9  | 12  | 26 | 4   | 8  | 4,6     | 05200-220        |

## 05140

## Toggle mini clamps



### Material:

Stainless steel

### Version:

Bright.

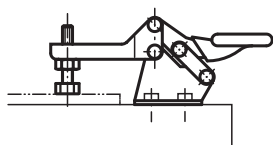
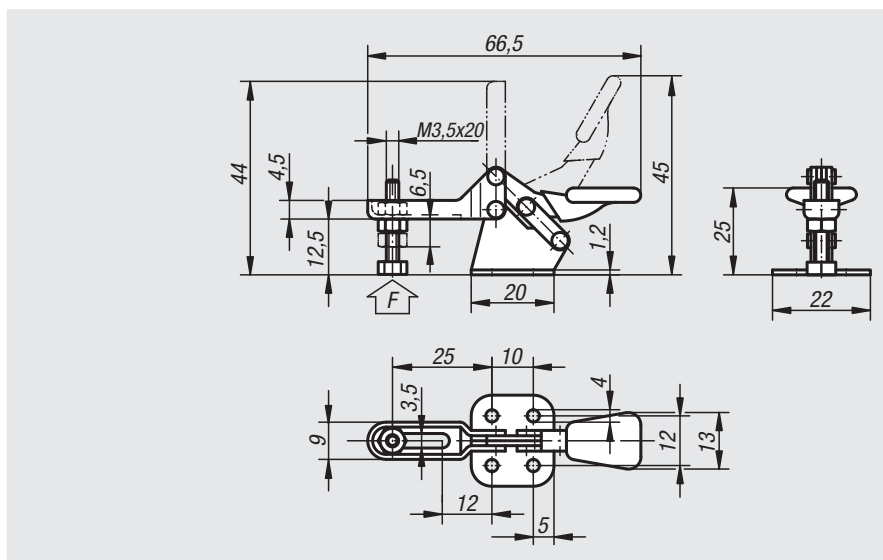
Grip with oil-resistant plastic sleeve.

### Sample order:

nIm 05140-01

### Note:

The handle lies horizontal when clamped.



Order No.

F

N

05140-01

250

## Application: welding fixture with norelem toggle clamps



### 05160

## Toggle clamps horizontal

with push rod



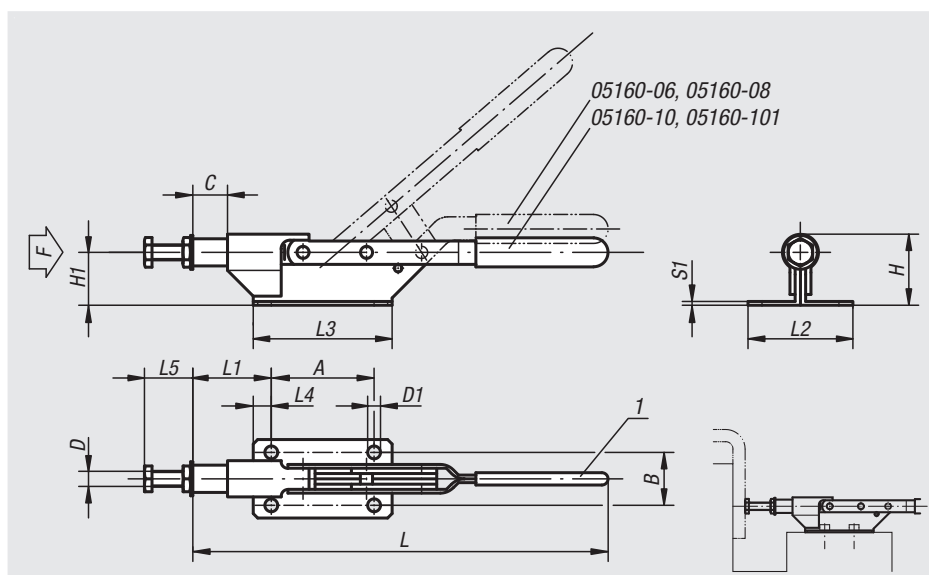
**Material:**  
Steel plate DD11 1.0332.

**Version:**  
Steel parts electro zinc-plated.  
Hinge pins tempered.  
Plastic handle oil-resistant.

**Sample order:**  
nlm 05160-10

**Note:**  
The 05160-06 and 05160-08 versions have a swan-necked clamping lever.  
See 05200 – 05280 for accessories.

**Drawing reference:**  
1) plastic grip 05200



| Order No. | L   | L1 | L2 | L3  | L4   | L5 min. | L5 max. | B  | H  | H1   | A  | C (travel) | D   | D1  | S1  | F kN | Plastic grips |
|-----------|-----|----|----|-----|------|---------|---------|----|----|------|----|------------|-----|-----|-----|------|---------------|
| 05160-06  | 178 | 40 | 40 | 75  | 10   | 13      | 23      | 28 | 33 | 26,2 | 55 | 15         | M6  | 6   | 2   | 1    | 05200-110     |
| 05160-08  | 255 | 49 | 45 | 85  | 12,5 | 14      | 26      | 30 | 42 | 31,5 | 60 | 22         | M8  | 6,5 | 2,5 | 2    | 05200-125     |
| 05160-10  | 275 | 52 | 52 | 92  | 12   | 25      | 35      | 35 | 47 | 35,5 | 68 | 22         | M10 | 8,5 | 2,5 | 3    | 05200-125     |
| 05160-101 | 300 | 62 | 58 | 100 | 12,5 | 25      | 36      | 40 | 59 | 50   | 75 | 26         | M10 | 9   | 3   | 4    | 05200-135     |

# Toggle clamps with push rod

push-pull operation, for bracket mounting



## Material:

Body and push-rod 1.0501 carbon steel.  
Lever parts steel plate DD11 1.0332.

## Version:

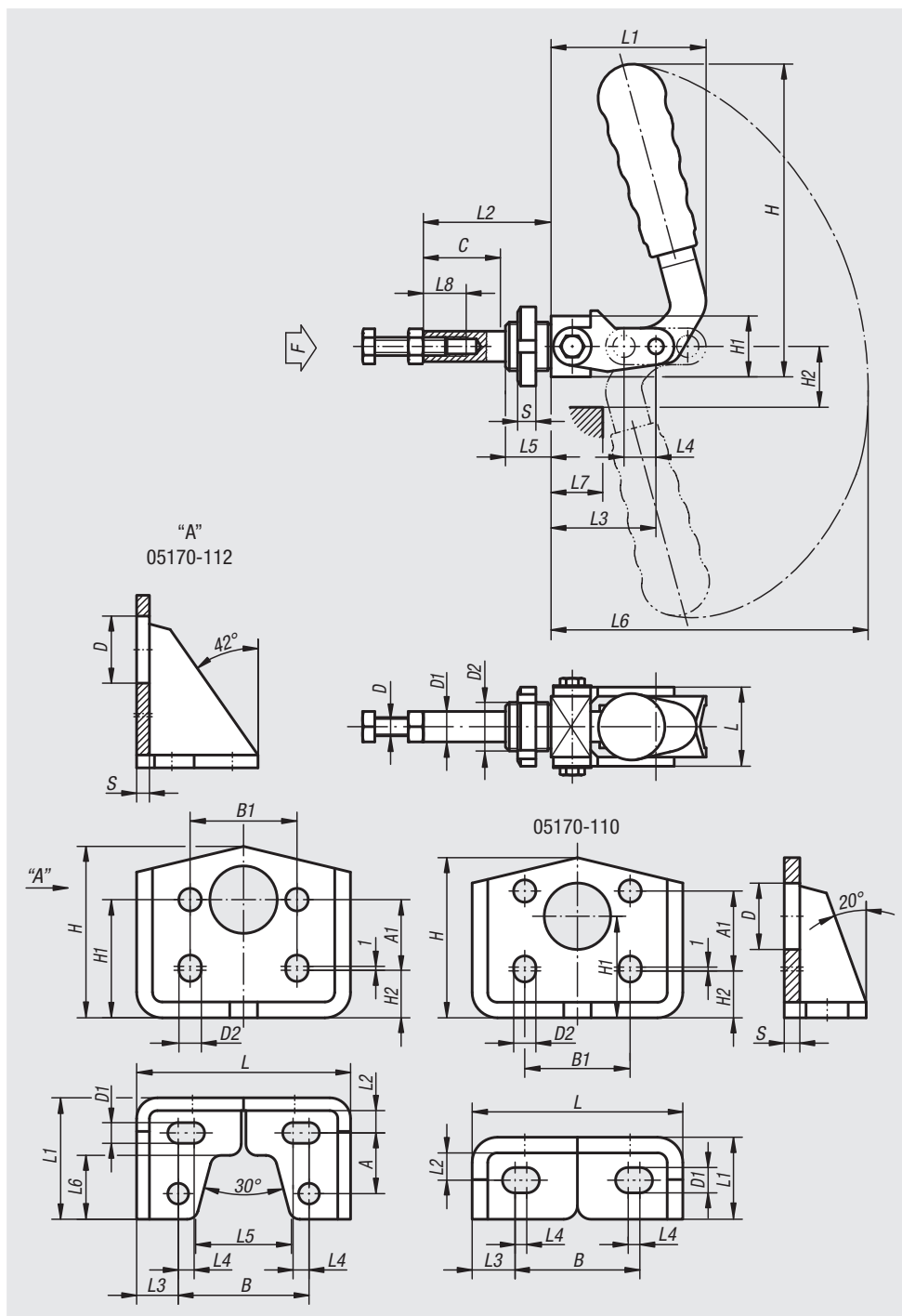
Body and lever parts electro zinc-plated.  
Hinge pins tempered.  
Plastic handle oil-resistant.

## Sample order:

nIm 05170-012 (toggle clamp)  
nIm 05170-110 (bracket)

## Note:

The clamp can be mounted with a bracket or into fixtures using the front screw.



## Toggle clamps

| Order No. | L  | L1  | L2 | L3 | L4 | L5 | L6  | L7 | L8 | H   | H1 | H2 | D      | D1 | D2      | C<br>(travel) | S | F<br>kN | Plastic<br>grips |
|-----------|----|-----|----|----|----|----|-----|----|----|-----|----|----|--------|----|---------|---------------|---|---------|------------------|
| 05170-010 | 26 | 52  | 42 | 34 | 13 | 15 | 130 | 18 | 20 | 101 | 20 | 20 | M6x30  | 10 | M16x1,5 | 26            | 6 | 1       | 05200-205        |
| 05170-012 | 32 | 75  | 60 | 50 | 20 | 18 | 170 | 30 | 30 | 139 | 25 | 28 | M8x40  | 12 | M20x1,5 | 40            | 8 | 1,5     | 05200-120        |
| 05170-016 | 40 | 105 | 92 | 78 | 35 | 20 | 213 | 60 | 35 | 155 | 32 | 44 | M10x50 | 16 | M27x1,5 | 70            | 8 | 3,5     | 05200-135        |

## Bracket

| Order No. | L  | L1 | L2 | L3 | L4 | L5 | L6 | B  | B1 | H    | H1 | H2 | A  | A1 | D  | D1  | D2  | S | matching<br>toggle<br>clamp |
|-----------|----|----|----|----|----|----|----|----|----|------|----|----|----|----|----|-----|-----|---|-----------------------------|
| 05170-110 | 54 | 21 | 7  | 11 | 3  | -  | -  | 32 | 27 | 42,5 | 26 | 14 | -  | 14 | 17 | 6,5 | 5,5 | 4 | 05170-010                   |
| 05170-112 | 67 | 38 | 7  | 13 | 5  | 30 | 20 | 41 | 32 | 55   | 37 | 16 | 19 | 21 | 21 | 6,5 | 6,5 | 4 | 05170-012                   |

## Plastic grips


**Material:**

Plastic

**Version:**

Oil-resistant

**Sample order:**

nIm 05200-130 (with boss)

05200-210 (without boss)

| Order No. | L   | H  | E | Order No. | L   | H  | E |
|-----------|-----|----|---|-----------|-----|----|---|
| 05200-100 | 33  | 9  | 4 | 05200-105 | 43  | 11 | 6 |
| 05200-110 | 55  | 12 | 5 | 05200-115 | 55  | 14 | 6 |
| 05200-120 | 75  | 16 | 7 | 05200-125 | 90  | 16 | 4 |
| 05200-130 | 85  | 19 | 6 | 05200-135 | 90  | 20 | 8 |
| 05200-140 | 115 | 30 | 9 | 05200-145 | 120 | 20 | 8 |
| 05200-200 | 33  | 8  | 4 | 05200-205 | 48  | 12 | 6 |
| 05200-210 | 65  | 14 | 6 | 05200-215 | 90  | 16 | 7 |
| 05200-220 | 120 | 20 | 8 |           |     |    |   |

## 05220

## Thrust spindles spring mounted


**Material:**

Screw and clamping plates steel.

Nut steel.

Spring class C spring wire.

**Version:**

Screw and clamping plates electro zinc-plated.

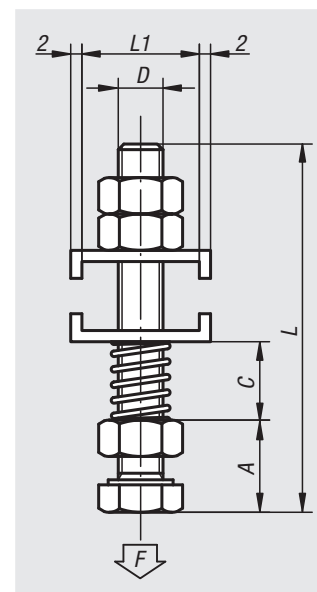
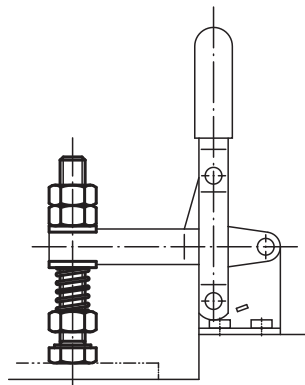
Nut black oxidised.

**Sample order:**

nIm 05220-10

**Note:**

For use with 05020, 05040, 05060, 05120 and 05130.



| Order No. | L    | L1   | D      | A  | C min. | C max. | F max. N |
|-----------|------|------|--------|----|--------|--------|----------|
| 05220-08  | 65,5 | 16   | M8x60  | 12 | 9      | 30     | 25       |
| 05220-10  | 87,5 | 20,5 | M10x80 | 15 | 14     | 35     | 35       |

## Thrust screws

with thrust pad


**Material:**

Screw and thrust pad steel.

**Version:**

Screw black.

Thrust pad black oxidised.

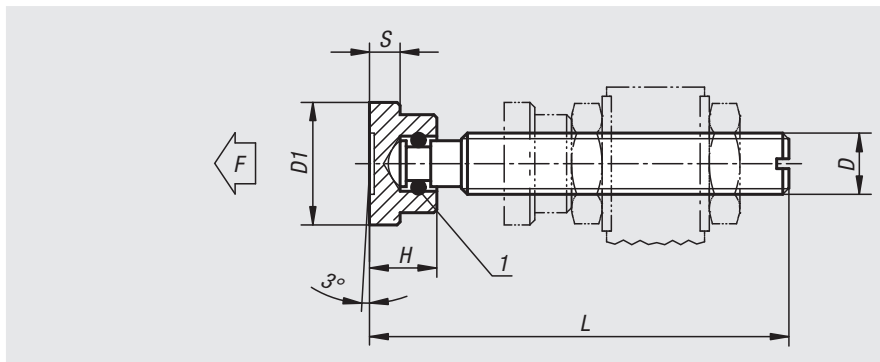
Screw pin and thrust pad case-hardened.

**Sample order:**

nIm 05240-10X63

**Drawing reference:**

1) snap ring



| Order No. | L                          | H  | D   | D1 | S   | F<br>max. kN |
|-----------|----------------------------|----|-----|----|-----|--------------|
| 05240-06X | 32/37/42/52                | 7  | M6  | 12 | 2,5 | 1            |
| 05240-08X | 38/43/48/53/63             | 9  | M8  | 16 | 4   | 2,3          |
| 05240-10X | 53,5/58,5/63,5/68,5/83,5   | 11 | M10 | 20 | 5   | 3,5          |
| 05240-12X | 64,5/69,5/74,5/84,5/104,5  | 13 | M12 | 25 | 6   | 4,6          |
| 05240-16X | 70,3/75,3/85,3/105,3/130,3 | 15 | M16 | 32 | 7   | 6            |

## Thrust screws

with thrust pad


**Material:**

Screw and thrust pad steel.

**Version:**

Screw black.

Thrust pad black oxidised.

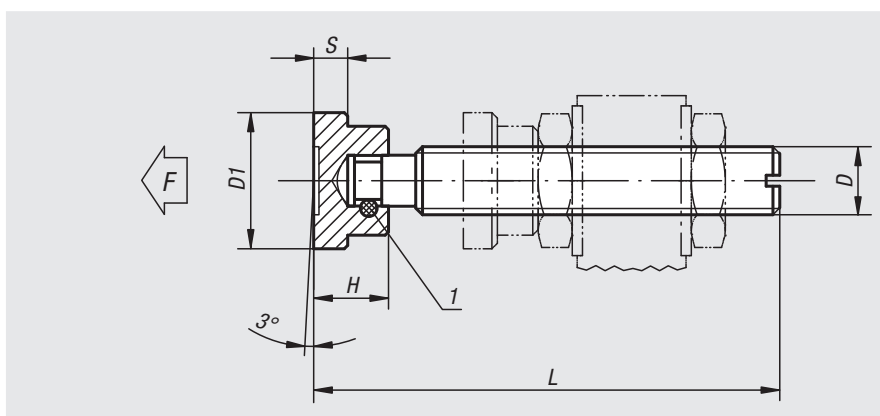
Screw pin and thrust pad case-hardened.

**Sample order:**

nIm 05241-10X84

**Drawing reference:**

1) retaining pin



| Order No.    | L   | H  | D   | D1 | S   | F<br>max. kN |
|--------------|-----|----|-----|----|-----|--------------|
| 05241-06X52  | 52  | 7  | M6  | 12 | 2,5 | 1            |
| 05241-08X63  | 63  | 9  | M8  | 16 | 4   | 2,3          |
| 05241-10X84  | 84  | 11 | M10 | 20 | 5   | 3,5          |
| 05241-12X104 | 104 | 13 | M12 | 25 | 6   | 4,6          |
| 05241-14X105 | 105 | 14 | M14 | 28 | 6   | 5            |
| 05241-16X130 | 130 | 15 | M16 | 32 | 7   | 6            |

## Thrust screws neoprene


**Material:**

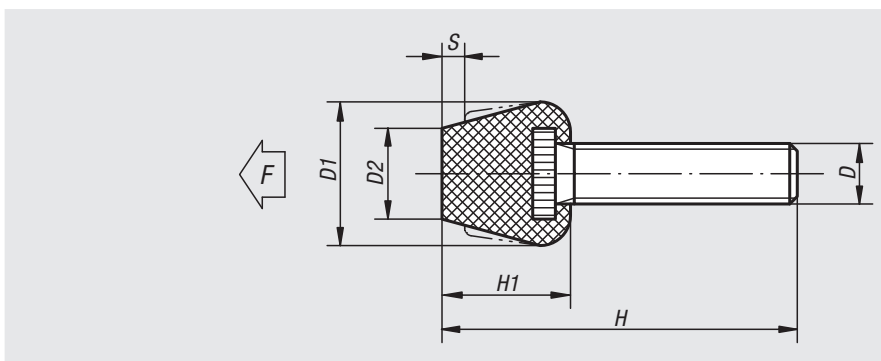
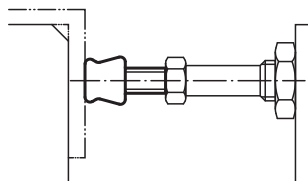
Screw steel.  
Thrust pad neoprene.

**Version:**

Neoprene pad moulded onto screw end.  
Screw copper-plated.

**Sample order:**

nIm 05260-08



| Order No. | H  | H1 | D        | D1 | D2 | S<br>max. | F<br>max. N |
|-----------|----|----|----------|----|----|-----------|-------------|
| 05260-08  | 63 | 17 | M8 x 46  | 19 | 12 | 3         | 750         |
| 05260-081 | 43 | 17 | M8 x 26  | 19 | 12 | 3         | 750         |
| 05260-10  | 80 | 19 | M10 x 61 | 19 | 14 | 3,5       | 1000        |
| 05260-101 | 55 | 19 | M10 x 36 | 19 | 14 | 3,5       | 1000        |

## 05280

## Protective caps


**Material:**

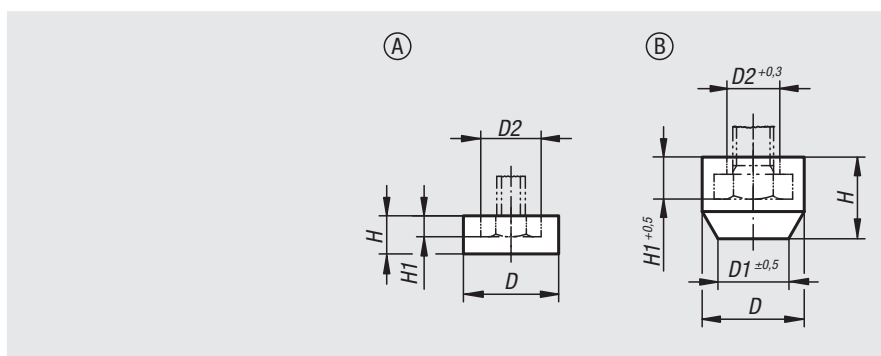
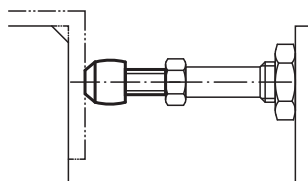
Neoprene or Polyamide.

**Version:**

Neoprene black, oil resistant, Shore hardness 75A.  
Polyamide white.

**Sample order:**

nIm 05280-03



| Order No. | Form | Main material | D    | D1   | D2   | H   | H1  | for screws |
|-----------|------|---------------|------|------|------|-----|-----|------------|
| 05280-06  | A    | polyamide     | 9    | -    | 6,6  | 4   | 2,3 | M3         |
| 05280-01  | B    | neoprene      | 11   | 6,6  | 5,5  | 8,5 | 4   | M4         |
| 05280-02  | B    | neoprene      | 12,5 | 7,3  | 6,5  | 10  | 4,7 | M5         |
| 05280-03  | B    | neoprene      | 15   | 9,9  | 8,5  | 12  | 5,8 | M6         |
| 05280-04  | B    | neoprene      | 19   | 12,7 | 11   | 15  | 7,1 | M8         |
| 05280-07  | B    | neoprene      | 23   | 15   | 14,5 | 18  | 9   | M10        |
| 05280-05  | B    | neoprene      | 26   | 19   | 16,5 | 20  | 10  | M12        |

# Toggle clamps variable horizontal

with horizontal foot



## Material:

Steel.

Grip made of 2-component plastic.

## Version:

Tempered and electro zinc-plated.

Grip element oil-resistant.

## Sample order:

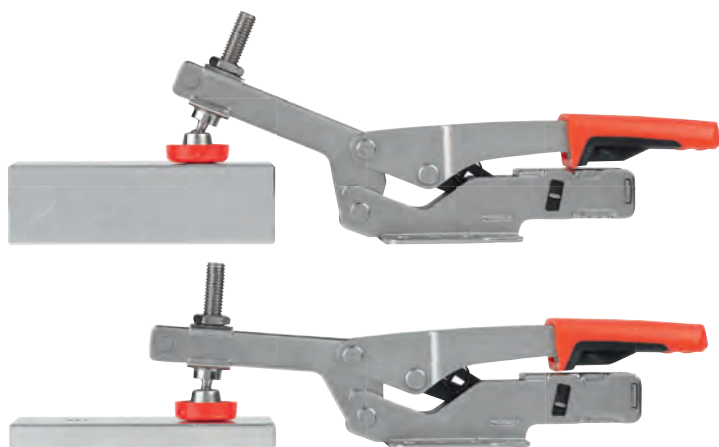
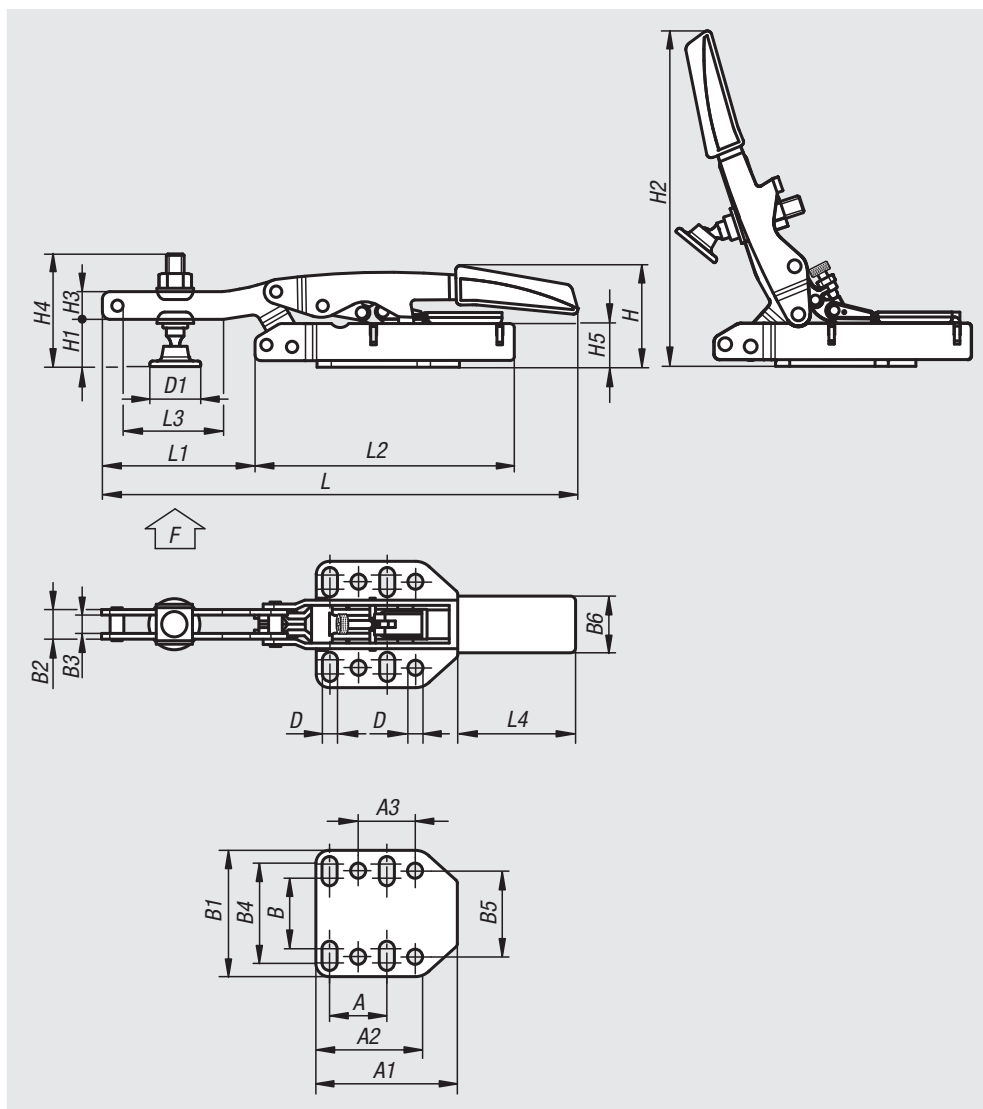
nln 05300-040

## Note:

The toggle clamp adjusts automatically to the height of the workpiece. Infinitely adjustable clamping height within 35 mm with approximately constant clamping force without manual adjustment of thrust screw position.

The clamping force can be adjusted up to 2.500 N according to requirements using a set screw under the lever in the hinge.

The hole pattern in the baseplate is suitable for millimetres and inches.



| Order No. | A    | A1 | A2 | A3   | B  | B1 | B2 | B3 | B4 | B5 | B6 | D   | D1   | H  | H1 | H2  | H3 | H4 | H5 | L   | L1 | L2  | L3 | L4 | max. clamping height | F kN |
|-----------|------|----|----|------|----|----|----|----|----|----|----|-----|------|----|----|-----|----|----|----|-----|----|-----|----|----|----------------------|------|
| 05300-040 | 25,4 | 53 | 38 | 25,4 | 33 | 60 | 13 | 8  | 48 | 38 | 32 | 6,5 | 24,5 | 47 | 20 | 158 | 14 | 60 | 27 | 217 | 77 | 113 | 58 | 72 | 40                   | 2,5  |
| 05300-060 | 25,4 | 53 | 38 | 25,4 | 33 | 60 | 13 | 8  | 48 | 38 | 32 | 6,5 | 24,5 | 64 | 36 | 175 | 14 | 68 | 44 | 217 | 77 | 113 | 58 | 72 | 60                   | 2,5  |

# Toggle clamps variable vertical

with horizontal foot



## Material:

Steel.

Grip made of 2-component plastic.

## Version:

Tempered and electro zinc-plated.

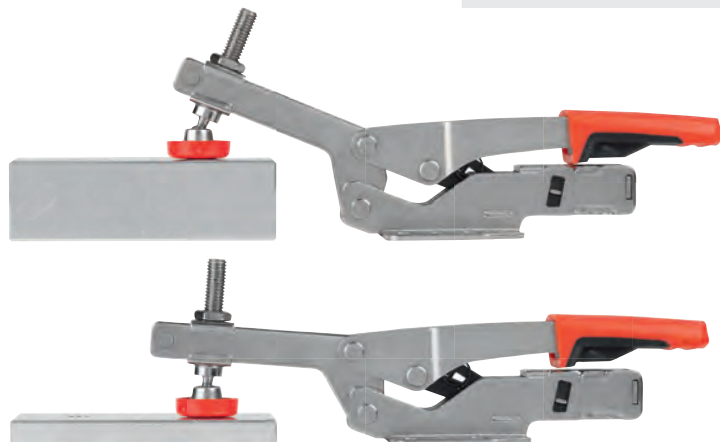
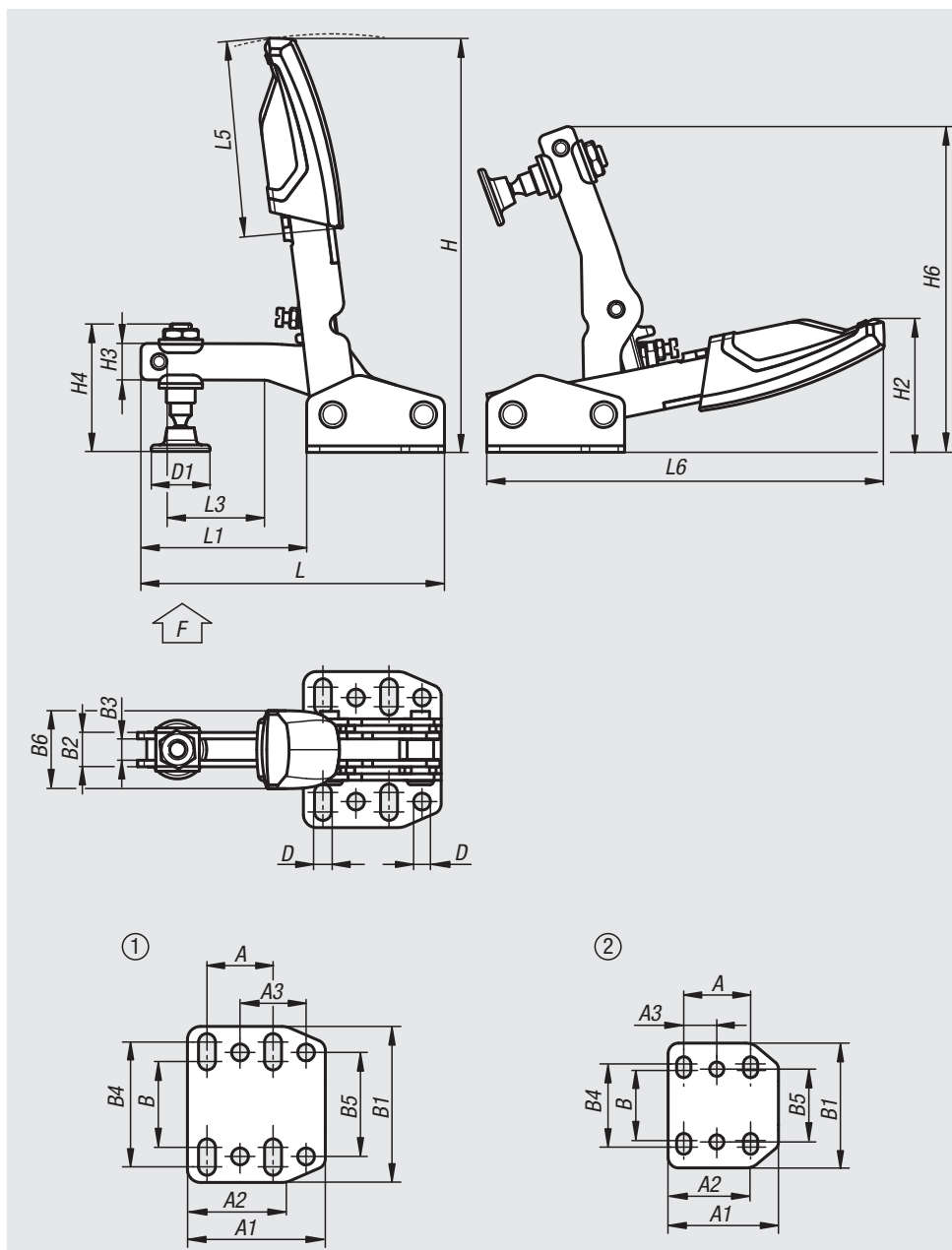
Grip element oil-resistant.

## Sample order:

nln 05302-035

## Note:

The toggle clamp adjusts automatically to the height of the workpiece. Infinitely adjustable clamping height within 35 mm with approximately constant clamping force without manual adjustment of thrust screw position. The clamping force can be adjusted up to 2.500 N according to requirements using a set screw under the lever in the hinge. The hole pattern in the baseplate is suitable for millimetres and inches.



| Order No. | hole arrangement | A    | A1   | A2   | A3   | B  | B1 | B2 | B3 | B4 | B5 | B6 | D   | D1 | H   | H2 | H3 | H4 | H6  | L    | L1   | L3 | L5 | L6  | max. clamping height | F kN |
|-----------|------------------|------|------|------|------|----|----|----|----|----|----|----|-----|----|-----|----|----|----|-----|------|------|----|----|-----|----------------------|------|
| 05302-035 | 2                | 25,7 | 42,4 | 32,4 | 12,7 | 27 | 48 | 10 | 6  | 32 | 28 | 24 | 5,5 | 19 | 129 | 41 | 10 | 42 | 100 | 93,7 | 51,3 | 30 | 60 | 123 | 35                   | 1,1  |
| 05302-040 | 1                | 25,4 | 53   | 38   | 25,4 | 33 | 60 | 13 | 8  | 48 | 40 | 30 | 6,5 | 25 | 160 | 62 | 14 | 60 | 126 | 116  | 63   | 40 | 76 | 154 | 40                   | 2,5  |

# Toggle clamps variable

with thrust rod



## Material:

Steel.

Grip made of 2-component plastic.

## Version:

Tempered and electro zinc-plated.

Grip element oil-resistant.

## Sample order:

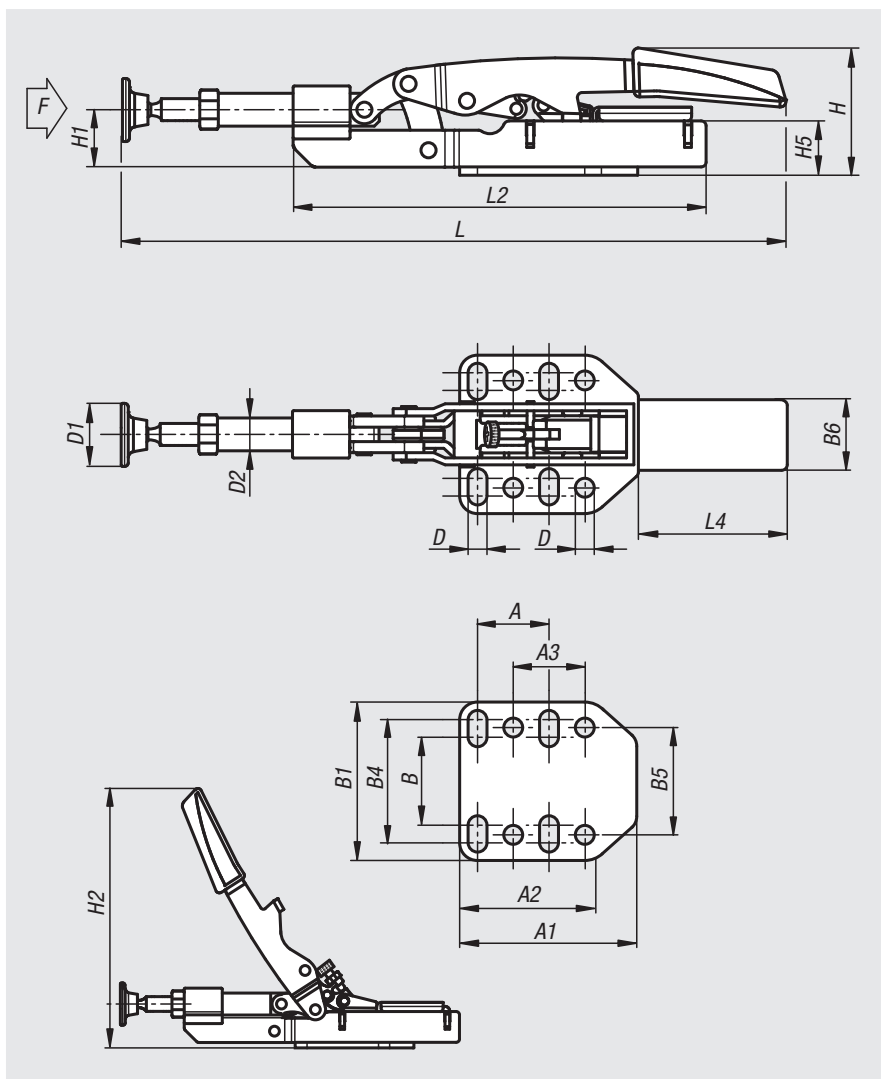
nln 05305-035

## Note:

The toggle clamp adjusts automatically to the height of the workpiece. Infinitely adjustable clamping height within 13 mm with approximately constant clamping force without manual adjustment of thrust screw position.

The clamping force can be adjusted up to 2500 N according to requirements using a set screw under the lever in the hinge.

The hole pattern in the baseplate is suitable for millimetres and inches.



| Order No. | A    | A1 | A2 | A3   | B  | B1 | B4 | B5 | B6 | D   | D1 | D2 | H  | H1 | H2  | H5 | L   | L2  | L4 | max.<br>clamping<br>height | F<br>kN |
|-----------|------|----|----|------|----|----|----|----|----|-----|----|----|----|----|-----|----|-----|-----|----|----------------------------|---------|
| 05305-035 | 25,4 | 53 | 38 | 25,4 | 33 | 60 | 48 | 38 | 32 | 6,5 | 23 | 12 | 46 | 27 | 155 | 25 | 233 | 154 | 73 | 35                         | 2,5     |

# Adapter block

aluminium


**Material:**

Aluminium.

**Version:**

natural tone anodised

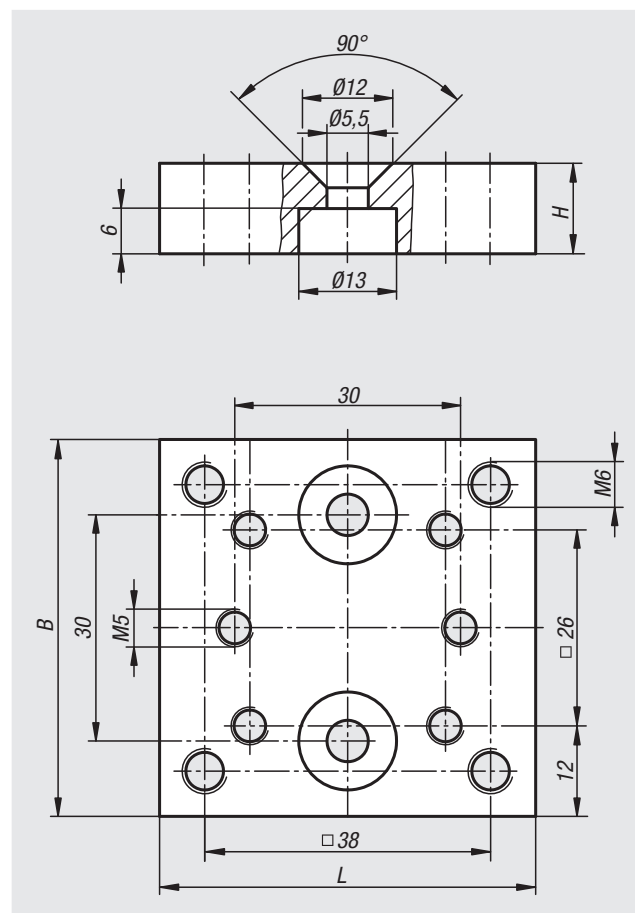
**Sample order:**

nIm 05310-5050

**Note:**

Adapter blocks are used as risers in combination with the round adapter plates 05312.

Fastening screws and nuts for assembling the block are supplied.



| Order No.  | B  | H  | L  |
|------------|----|----|----|
| 05310-5050 | 50 | 12 | 50 |

# Adapter plates

round



## Material:

Steel.

## Version:

Electro zinc-plated and trivalent blue passivated.

## Sample order:

nIm 05312-145

## Note:

Adapter plates can be used in combination with toggle clamps. They enable toggle clamps to be positioned flexibly.

The adapter plates are clamped to the machine table using eccentric clamp modules.

## Advantages:

Flexible movement and positioning.

Flexible height construction using the adapter block.

Easy assembly through the opening in Form B.

## Accessories:

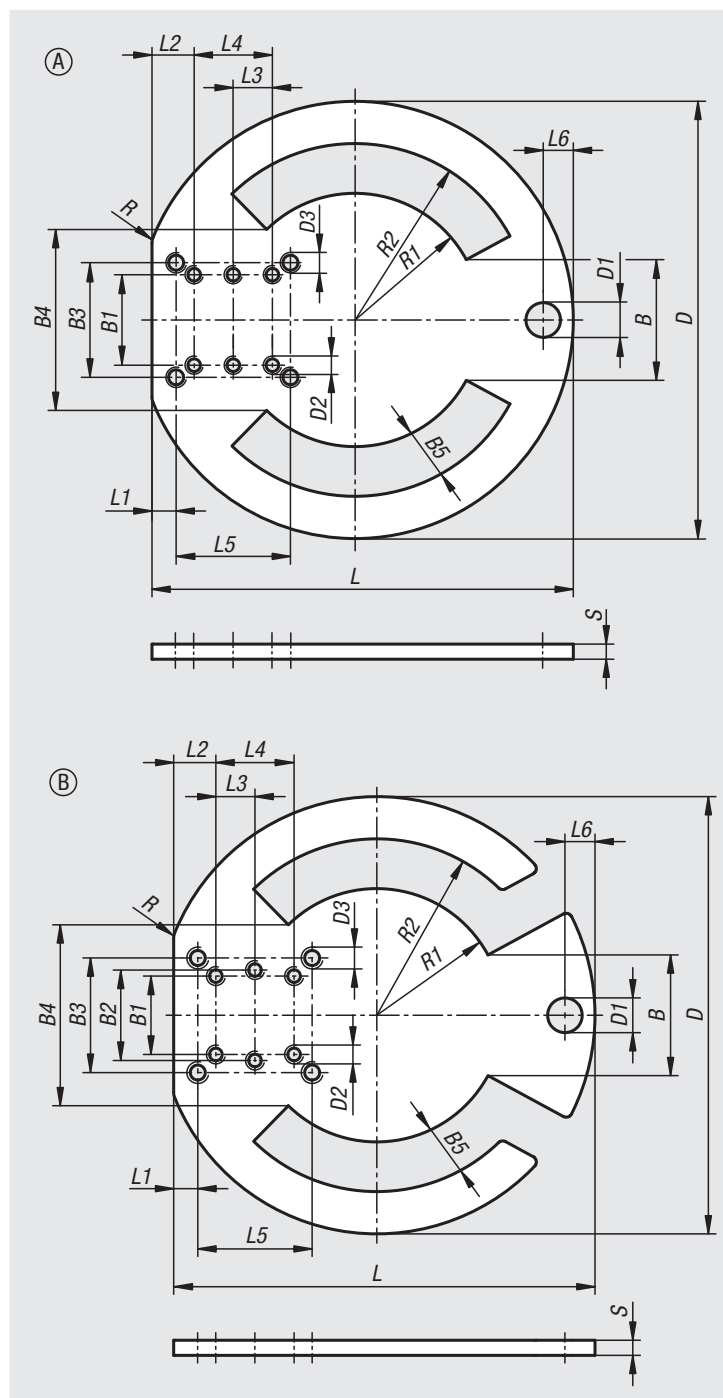
Eccentric clamp modules 10500

Toggle clamp 05....

## Drawing reference:

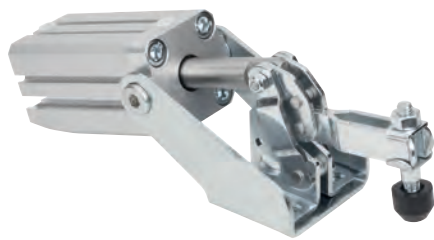
Form A: closed

Form B: open



| Order No.  | Form | Version 2 | B  | B1 | B2 | B3 | B4 | B5   | D   | D1   | D2 | D3 | L   | L1 | L2 | L3 | L4 | L5 | L6 | R | R1 | R2   | S |
|------------|------|-----------|----|----|----|----|----|------|-----|------|----|----|-----|----|----|----|----|----|----|---|----|------|---|
| 05312-145  | A    | closed    | 40 | 30 | -  | 38 | 60 | 16,5 | 145 | 11,5 | M5 | M6 | 140 | 8  | 14 | 13 | 26 | 38 | 10 | 5 | 42 | 58,5 | 5 |
| 05312-1145 | B    | open      | 40 | 30 | 30 | 38 | 60 | 16,5 | 145 | 11,5 | M5 | M6 | 140 | 8  | 14 | 13 | 26 | 38 | 10 | 5 | 42 | 58,5 | 5 |

# Pneumatic clamp



## Material:

Lever steel plate.  
Hinge pins stainless steel.

## Version:

Lever parts electro zinc-plated.  
Pneumatic cylinder, double-acting.  
With magnetic piston for end position feedback.  
Clamp trivalent passivated.  
Complete with tempered, trivalent passivated thrust screw with protective cap.

## Sample order:

n1m 05331-01

## Note:

Pneumatic clamps have the following advantages compared to hand clamps:

The operator is relieved of frequent clamping.

Several clamps can be activated at the same time and can be closed in a specific sequence.

Single or multiple clamps can be activated from varying positions by machine control or hand control.

Because of the toggle system:

- the clamp remains closed if the air supply fails.
- the air consumption is low due to the large end ratio.
- pivoting the clamping arm achieves a large opening travel.
- optimum force and movement ratios are achieved.

VL = air consumption per complete cycle in  $\text{dm}^3$  at 6 bar.

## Selection criteria:

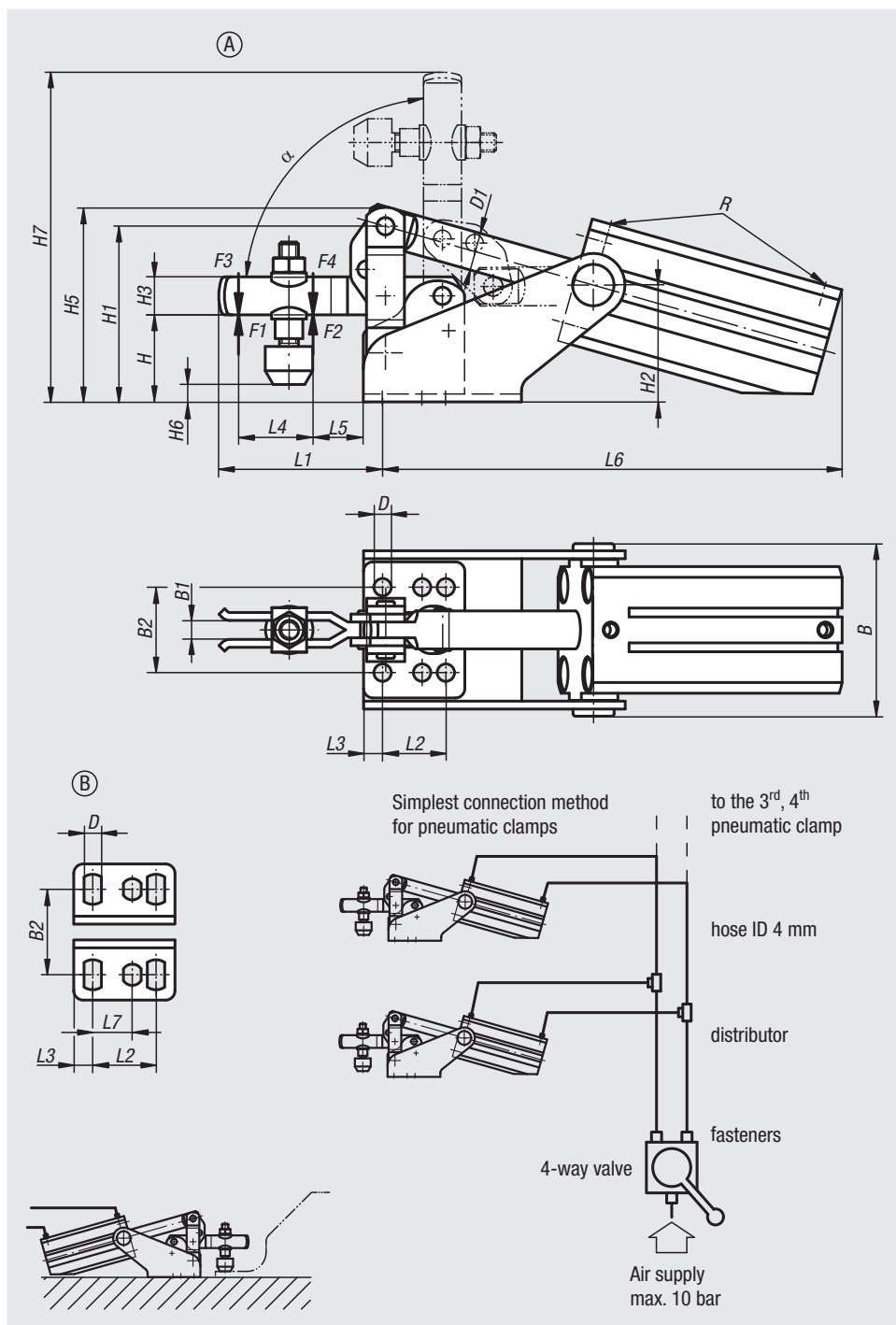
To select the correct size of pneumatic clamps, the possible clamping force at 6 bar (any compressed media are permissible, maximum pressure 10 bar) is specified besides the retaining force. F3 is the possible clamping force that the clamp exerts on the end of the clamping arm, F4 the force it exerts on the fulcrum side.

## Control:

The schematic diagram for the simplest control of one or several pneumatic clamps is shown here. When constructing complete switching systems consult a well known manufacturer of pneumatic valves who can also supply all the required connectors and fittings.

## Attention:

The forces F1 and F2 specified in the table are holding forces.  
F3 and F4 are clamping forces.



## Pneumatic clamp

| Order No. | Form | B    | B1 | B2 | D   | D1 | H    | H1   | H2   | H3 | H5   | H6         | H7  |
|-----------|------|------|----|----|-----|----|------|------|------|----|------|------------|-----|
| 05331-01  | A    | 50   | 5  | 24 | 4,5 | 8  | 21   | 45,5 | 32   | 10 | 49,5 | -2 to 4.5  | 84  |
| 05331-02  | B    | 54,5 | 6  | 27 | 5,5 | 12 | 26   | 55   | 40,5 | 12 | 61   | -1 to 7    | 104 |
| 05331-03  | A    | 62,5 | 8  | 32 | 7,5 | 16 | 36,5 | 74,5 | 56   | 18 | 82,5 | 5.4 to 14  | 151 |
| 05331-04  | A    | 77,5 | 10 | 45 | 8,6 | 16 | 45   | 90   | 64   | 20 | 98   | -3 to 25.5 | 191 |

| Order No. | L1   | L2 | L3  | L4 | L5 | L6    | L7   | R    | α     | F1<br>kN | F2<br>kN | F3<br>kN | F4<br>kN | VL   | suitable<br>thrust screws |
|-----------|------|----|-----|----|----|-------|------|------|-------|----------|----------|----------|----------|------|---------------------------|
| 05331-01  | 39   | 16 | 6   | 18 | 6  | 126   | -    | M5   | 92°   | 0,8      | 1,1      | 0,2      | 0,3      | 0,08 | M5x30                     |
| 05331-02  | 51,5 | 20 | 6   | 25 | 11 | 145   | 12,5 | M5   | 91,5° | 1        | 1,2      | 0,7      | 1        | 0,26 | M6x35                     |
| 05331-03  | 78   | 20 | 7,5 | 36 | 19 | 165,5 | -    | G1/8 | 90°   | 1        | 2,5      | 0,65     | 1,1      | 0,35 | M8x45                     |
| 05331-04  | 101  | 32 | 13  | 45 | 25 | 196   | -    | G1/8 | 90,5° | 2        | 3        | 1,5      | 2,2      | 0,8  | M8x65                     |

# Pneumatic clamps vertical

with vertical cylinder bracket



## Material:

Lever steel plate.  
Hinge pins stainless steel.

## Version:

Lever parts electro zinc-plated.  
Pneumatic cylinder, double-acting.  
With magnetic piston for end position feedback.  
Clamp trivalent passivated.  
Complete with tempered, trivalent passivated thrust screw with protective cap.

## Sample order:

n1m 05332-02

## Note:

Pneumatic clamps have the following advantages compared to hand clamps:  
The operator is relieved of frequent clamping.  
Several clamps can be activated at the same time and can be closed in a specific sequence.  
Single or multiple clamps can be activated from varying positions by machine control or hand control.  
Because of the toggle system:  
– the clamp remains closed if the air supply fails.  
– the air consumption is low due to the large end ratio.  
– pivoting the clamping arm achieves a large opening travel.  
– optimum force and movement ratios are achieved.

VL = air consumption per complete cycle in dm<sup>3</sup> at 6 bar.

## Selection criteria:

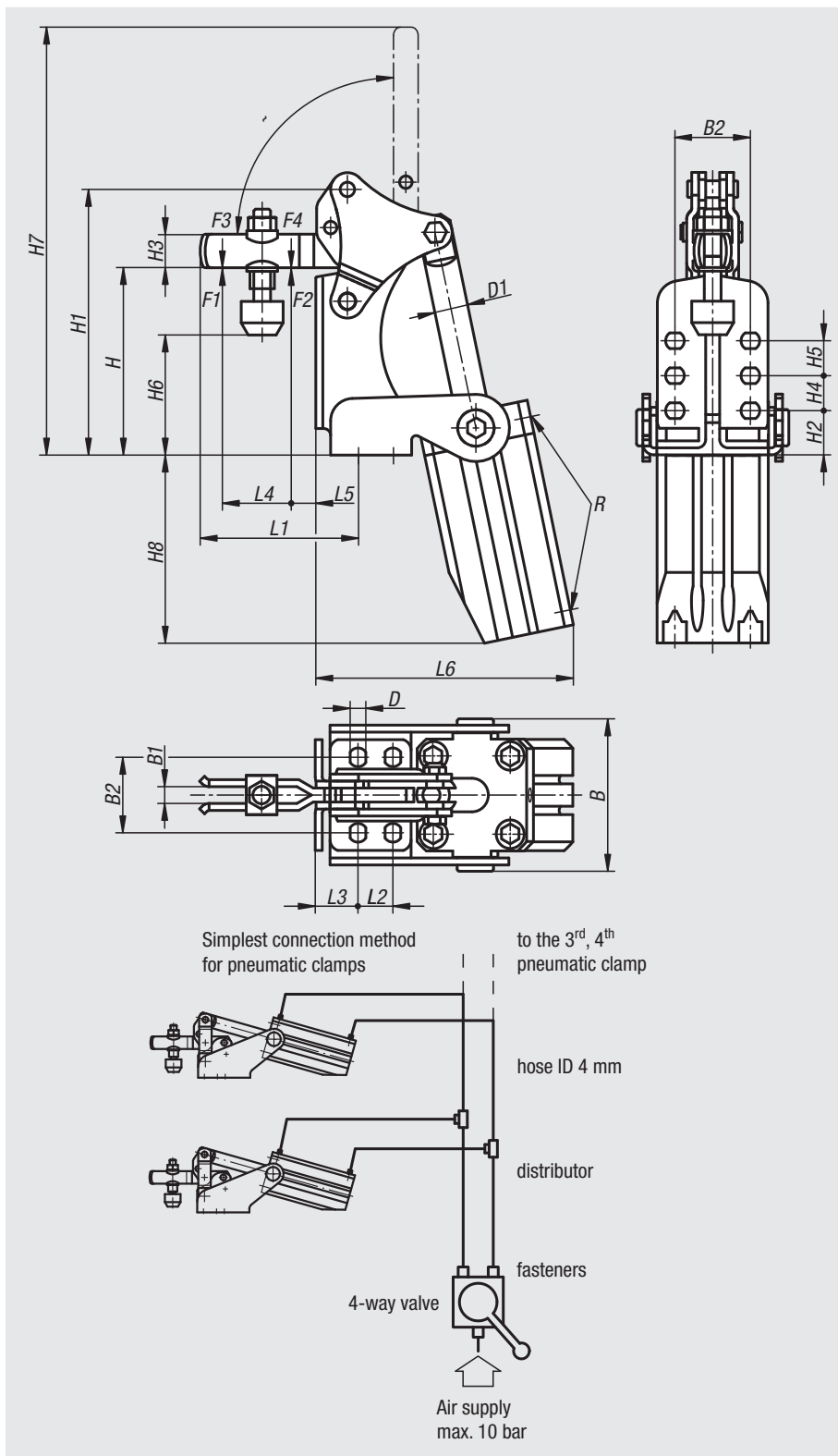
To select the correct size of pneumatic clamps, the possible clamping force at 6 bar (any compressed media are permissible, maximum pressure 10 bar) is specified besides the retaining force. F3 is the possible clamping force that the clamp exerts on the end of the clamping arm, F4 the force it exerts on the fulcrum side.

## Control:

The schematic diagram for the simplest control of one or several pneumatic clamps is shown here. When constructing complete switching systems consult a well known manufacturer of pneumatic valves who can also supply all the required connectors and fittings.

## Attention:

The forces F1 and F2 specified in the table are holding forces.  
F3 and F4 are clamping forces.



# Vertical pneumatic clamps

with vertical cylinder bracket



| Order No. | B    | B1 | B2 | D   | D1 | H    | H1  | H2   | H3 | H4   | H5   | H6          | H7    | H8   |
|-----------|------|----|----|-----|----|------|-----|------|----|------|------|-------------|-------|------|
| 05332-02  | 54,5 | 6  | 27 | 5,6 | 12 | 65   | 94  | 15,8 | 12 | 12,5 | 12,5 | 38,4 - 45,0 | 143,5 | 67,5 |
| 05332-03  | 62,5 | 8  | 25 | 6,5 | 16 | 68,7 | 107 | 17,5 | 18 | 16   | -    | 38,0 - 46,5 | 184   | 78   |
| 05332-04  | 77,5 | 10 | 45 | 8,5 | 16 | 100  | 144 | 20,5 | 20 | 32   | 32   | 51,0 - 80,0 | 245   | 80   |

| Order No. | L1   | L2   | L3   | L4 | L5   | L6    | R    | α   | F1<br>kN | F2<br>kN | F3<br>kN | F4<br>kN | VL   | suitable<br>thrust screws |
|-----------|------|------|------|----|------|-------|------|-----|----------|----------|----------|----------|------|---------------------------|
| 05332-02  | 56,5 | 12,5 | 15,3 | 25 | 6,5  | 93    | M5   | 90° | 1        | 1,2      | 0,7      | 1        | 0,26 | M6x35                     |
| 05332-03  | 80,5 | 16   | 16,5 | 36 | 12,5 | 112,5 | G1/8 | 90° | 1        | 2,5      | 0,65     | 1,1      | 0,35 | M8x45                     |
| 05332-04  | 102  | 32   | 17,5 | 49 | 19   | 139   | G1/4 | 90° | 2        | 3        | 1,5      | 2,2      | 0,8  | M8x65                     |

# Pneumatic clamps push-rod


**Material:**

Base malleable iron.  
Levers and push-rod carbon steel.

**Version:**

Body painted.  
Bracket, levers and push-rod trivalent passivated.

**Sample order:**

nlm 05340-07

**Note:**

The pneumatic clamp can be used as a push and pull clamp. The heavy-duty design and the dual-acting FESTO pneumatic cylinder guarantee a long life.

A tempered and trivalent passivated thrust screw with protective cap is also supplied.

VL = compressed air consumption per complete cycle in dm<sup>3</sup> at 6 bar.

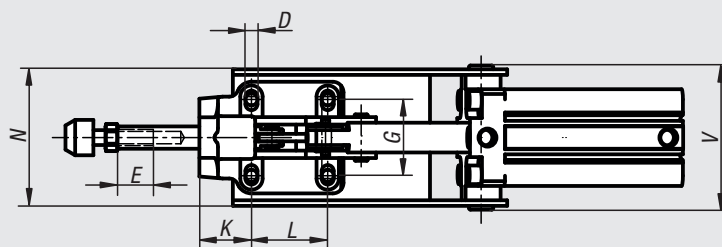
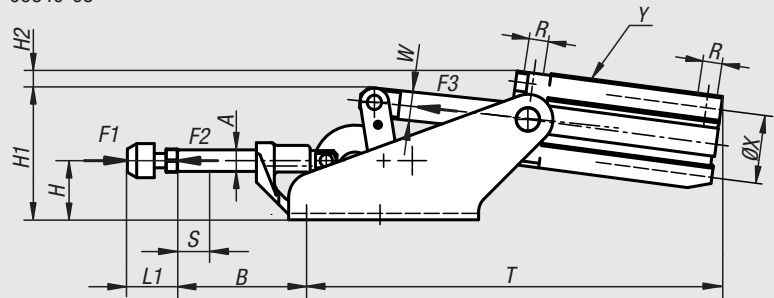
**Attention:**

The forces F1 specified in the table are holding forces  
F2 are clamping forces.

**Drawing reference:**

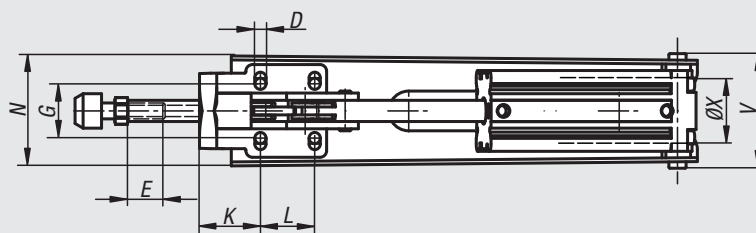
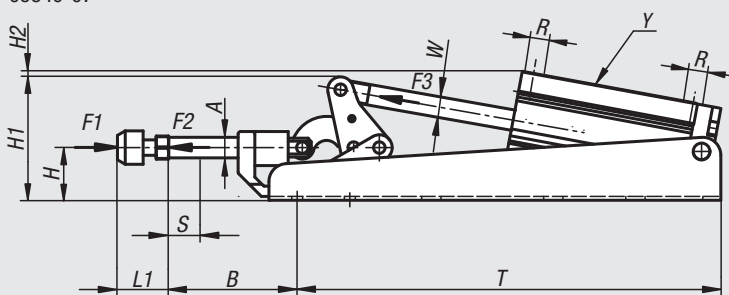
Y = cylinder travel

05340-03



05340-05

05340-07



| Order No. | A  | B   | D   | E  | G  | H  | H1  | H2 | K  | N    | T   | V  | W  | Travel S |
|-----------|----|-----|-----|----|----|----|-----|----|----|------|-----|----|----|----------|
| 05340-03  | 12 | 72  | 6,5 | 30 | 41 | 33 | 72  | 22 | 28 | 73,5 | 232 | 83 | 16 | 20       |
| 05340-05  | 16 | 98  | 8,5 | 50 | 41 | 41 | 96  | 22 | 45 | 84   | 316 | 86 | 20 | 29       |
| 05340-07  | 22 | 105 | 11  | 50 | 57 | 59 | 128 | 29 | 45 | 114  | 422 | 93 | 20 | 38       |

| Order No. | L  | L1 min. | L1 max. | R    | F1 kN | F2 kN | F3 kN | VL  | X  | suitable thrust screws |
|-----------|----|---------|---------|------|-------|-------|-------|-----|----|------------------------|
| 05340-03  | 41 | 21,5    | 35      | G1/8 | 4     | 2,5   | 0,75  | 0,8 | 40 | M8x35                  |
| 05340-05  | 41 | 30      | 50      | G1/4 | 10    | 5     | 1     | 2,2 | 50 | M12x50                 |
| 05340-07  | 70 | 30      | 50      | G1/4 | 25    | 10    | 1,8   | 4,5 | 63 | M12x50                 |

# Pneumatic clamps vertical

heavy-duty version


**Material:**

Carbon steel.

**Version:**

Black oxidised.

**Sample order:**

nlm 05350-06

**Note:**

The double-acting pneumatic cylinder guarantees a long life.

The fastening screws for the hinges are secured with LOCTITE.

The magnetic shaft is fitted for electrical end position feedback.

VL = air consumption per cycle in dm<sup>3</sup> by 6 bar.

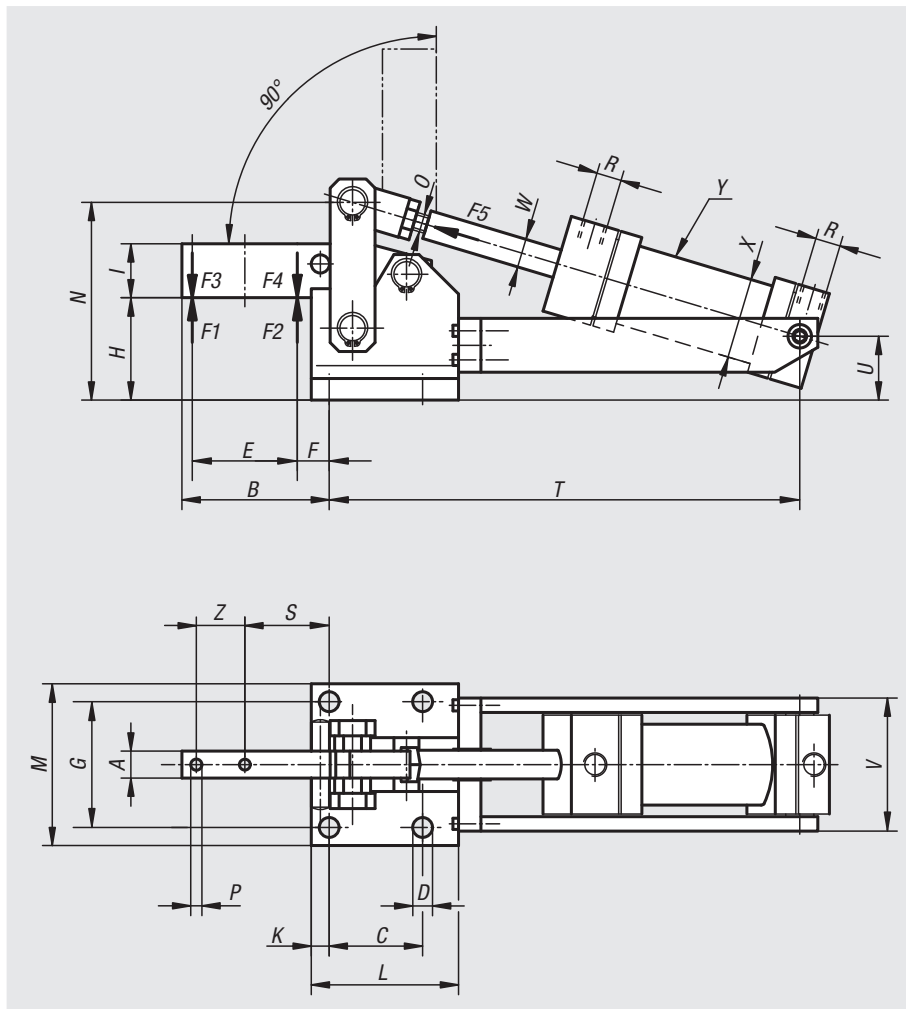
**Attention:**

The forces F1 and F2 specified in the table are holding forces.

F3 and F4 are clamping forces.

**Drawing reference:**

Y = cylinder travel



| Order No. | A  | B   | C  | D  | E  | F  | G   | H  | I  | K    | L     | M   | N   | O        | P    | R    | S    | T   |
|-----------|----|-----|----|----|----|----|-----|----|----|------|-------|-----|-----|----------|------|------|------|-----|
| 05350-04  | 15 | 82  | 52 | 11 | 54 | 20 | 70  | 57 | 30 | 10   | 77    | 90  | 109 | M12x1,25 | 6,2  | G1/8 | 47   | 277 |
| 05350-06  | 20 | 90  | 55 | 11 | 60 | 21 | 83  | 61 | 40 | 11   | 85    | 105 | 129 | M16x1,5  | 8,2  | G1/4 | 53   | 315 |
| 05350-08  | 30 | 128 | 80 | 13 | 95 | 22 | 111 | 86 | 60 | 12,5 | 112,5 | 135 | 176 | M16x1,5  | 13,2 | G1/4 | 69,5 | 383 |

| Order No. | U    | V   | W  | X  | Y   | Z  | total height | total length | F1<br>kN | F2<br>kN | F3<br>kN | F4<br>kN | F5<br>kN | VL  |
|-----------|------|-----|----|----|-----|----|--------------|--------------|----------|----------|----------|----------|----------|-----|
| 05350-04  | 35,5 | 82  | 16 | 40 | 80  | 27 | 122          | 380          | 6        | 9        | 1,5      | 2,2      | 0,75     | 1   |
| 05350-06  | 40   | 101 | 16 | 50 | 100 | 26 | 147          | 435          | 12       | 18       | 2,5      | 3,5      | 1        | 1,8 |
| 05350-08  | 54   | 123 | 20 | 63 | 120 | 40 | 196          | 540          | 20       | 30       | 4        | 6        | 1,8      | 4,3 |

# Pneumatic clamps vertical

with vertical mounted cylinder



## Material:

Carbon steel.

## Version:

Black oxidised.

## Sample order:

nIm 05360-08

## Note:

The clamps 05350 and 05360 are suitable for fitting in special machines and transfer machines. The tempered and ground bearing pins that run in Teflon bearings make them maintenance-free. The heavy-duty design and the double-acting pneumatic cylinder guarantee a long life.

The fastening screws for the hinges are secured with LOCTITE.

The magnetic piston is prepared for electric end position feedback.

VL = compressed air consumption per complete cycle in dm<sup>3</sup> at 6 bar.

## Clamping and retaining forces

The selection of the correct clamp size is dependant on the force (see table). It is distinguish between retaining force F1 or F2 and clamping force F3 or F4.

The clamping force F3 and F4 is the force exerted by the clamping arm on the part to be machined when the clamp is closed.

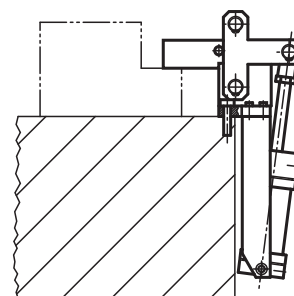
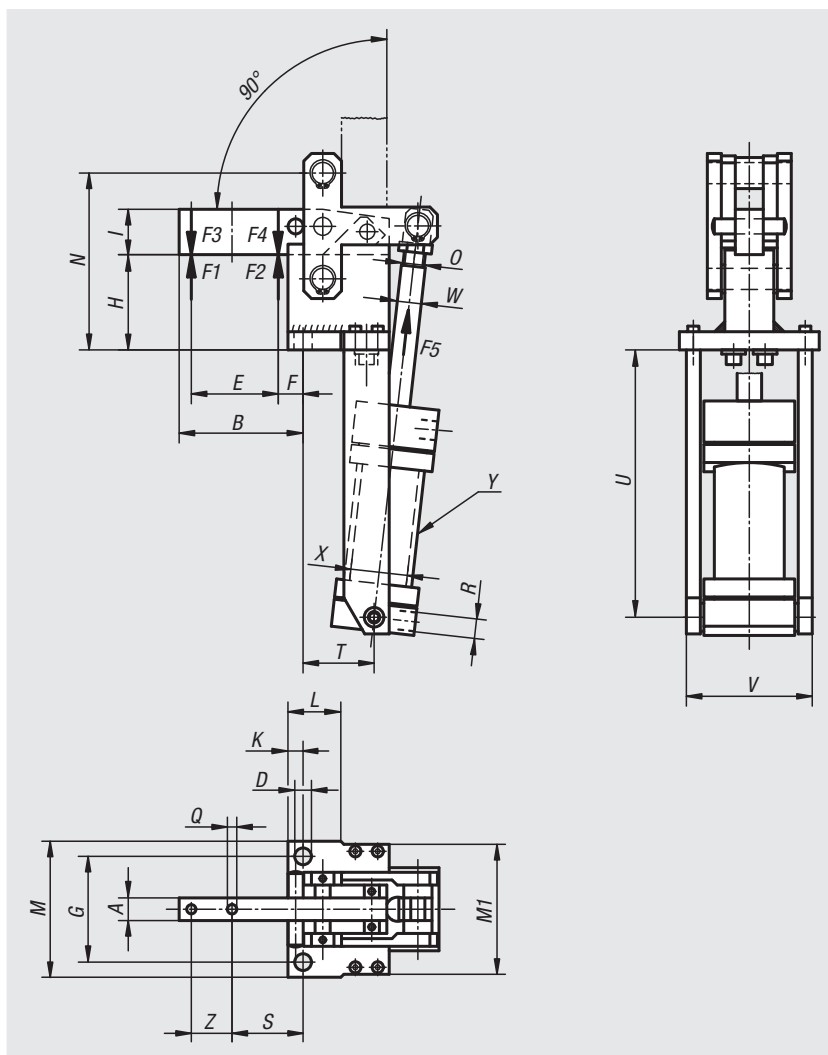
The retaining force F1 and F2 is the force with which the closed clamping arm opposes the machining forces occurring on the part to be machined and which it resists with no permanent deformation. It is greater than the clamping force because the dead point of the lever has to be overcome with the clamp closed when being pushed back.

## On request:

Clamps without cylinder.

## Drawing reference:

Y = cylinder travel



| Order No. | A  | B   | D  | E  | F    | G   | H  | I  | K  | L  | M   | M1  | N   | O        | Q    | S  | T  |
|-----------|----|-----|----|----|------|-----|----|----|----|----|-----|-----|-----|----------|------|----|----|
| 05360-04  | 15 | 82  | 11 | 54 | 20   | 70  | 65 | 30 | 10 | 35 | 90  | 90  | 117 | M12x1,25 | 6,2  | 47 | 46 |
| 05360-06  | 20 | 91  | 13 | 60 | 22   | 83  | 69 | 40 | 12 | 32 | 107 | 100 | 137 | M16x1,5  | 8,2  | 54 | 48 |
| 05360-08  | 30 | 125 | 17 | 95 | 24,5 | 115 | 94 | 60 | 15 | 49 | 145 | 123 | 184 | M16x1,5  | 13,2 | 67 | 77 |

| Order No. | U   | V   | W  | X  | Y   | R    | Z  | total height | total length | F1<br>kN | F2<br>kN | F3<br>kN | F4<br>kN | F5<br>kN | VL  |
|-----------|-----|-----|----|----|-----|------|----|--------------|--------------|----------|----------|----------|----------|----------|-----|
| 05360-04  | 193 | 82  | 16 | 40 | 74  | G1/8 | 27 | 172          | 340          | 6        | 9        | 1,5      | 2,2      | 0,75     | 1   |
| 05360-06  | 221 | 101 | 16 | 50 | 87  | G1/4 | 26 | 195          | 386          | 12       | 18       | 2,5      | 3,5      | 1        | 1,8 |
| 05360-08  | 255 | 123 | 16 | 63 | 120 | G1/4 | 40 | 272          | 470          | 20       | 30       | 4        | 6        | 1,8      | 4,3 |

## Toggle clamps heavy duty

vertical



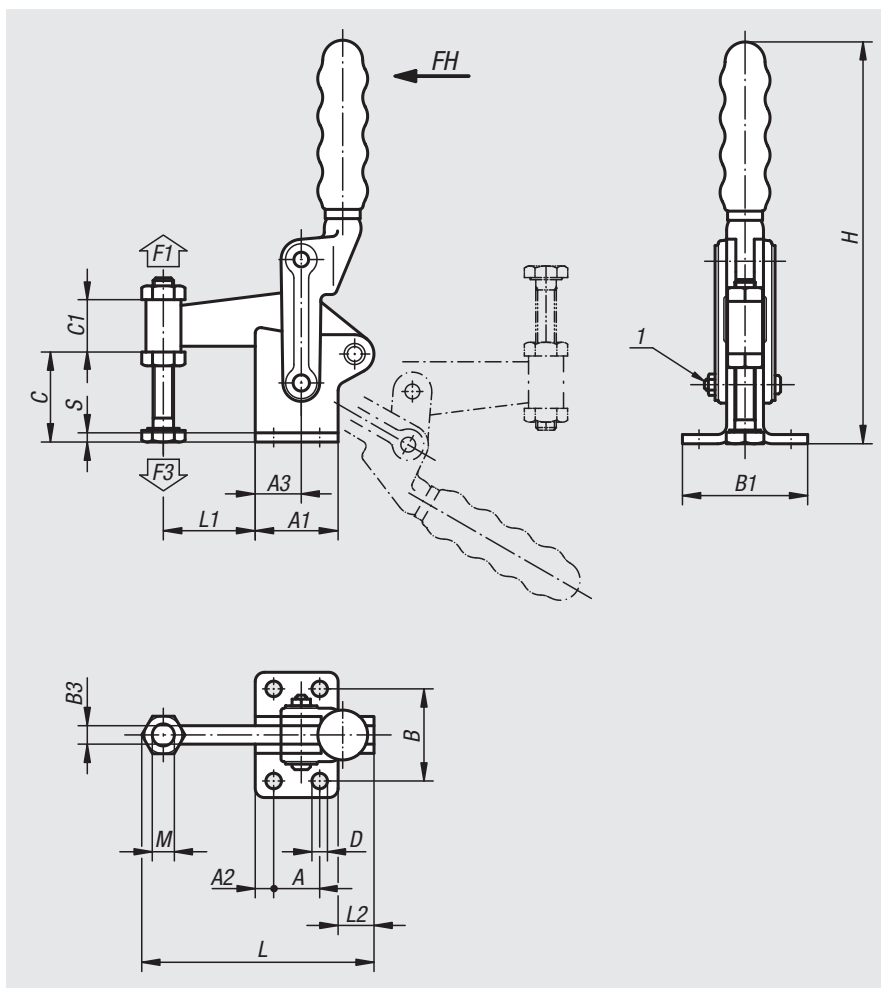
**Material:**  
Steel.

**Version:**  
Black oxidised.  
Thrust spindle and nuts phosphated.  
Hinge pins and hinge bushes case-hardened.  
Plastic grip oil-resistant.

**Sample order:**  
nlm 05400-04

**Note:**  
Oil all joints regularly.

**Drawing reference:**  
1) adjustable clamp arm guide



| Order No. | Opening angle of holding arm | Opening angle of handle | Hand force FH N | Retaining force F1 N | Clamping force F3 N | Matching plastic grip |
|-----------|------------------------------|-------------------------|-----------------|----------------------|---------------------|-----------------------|
| 05400-02  | 180°                         | 120°                    | 340             | 6000                 | 1400                | 05520-02              |
| 05400-04  | 180°                         | 125°                    | 500             | 8000                 | 1400                | 05520-04              |
| 05400-06  | 195°                         | 130°                    | 500             | 15000                | 1850                | 05520-06              |

| Order No. | A  | A1 | A2 | A3 | B  | B1   | B3 | C  | C1 | D    | H   | L   | L1 | L2 | M       | S |
|-----------|----|----|----|----|----|------|----|----|----|------|-----|-----|----|----|---------|---|
| 05400-02  | 25 | 45 | 10 | 25 | 50 | 68   | 10 | 45 | 30 | 8,3  | 215 | 124 | 50 | 20 | M12x100 | 5 |
| 05400-04  | 30 | 51 | 10 | 25 | 60 | 86,5 | 12 | 58 | 30 | 8,3  | 250 | 144 | 60 | 23 | M12x100 | 6 |
| 05400-06  | 40 | 64 | 12 | 40 | 75 | 104  | 16 | 70 | 38 | 10,3 | 295 | 188 | 75 | 37 | M16x150 | 8 |

## Toggle clamps heavy duty version

straight foot

### Material:

Steel.

### Version:

Black oxidised.

### Sample order:

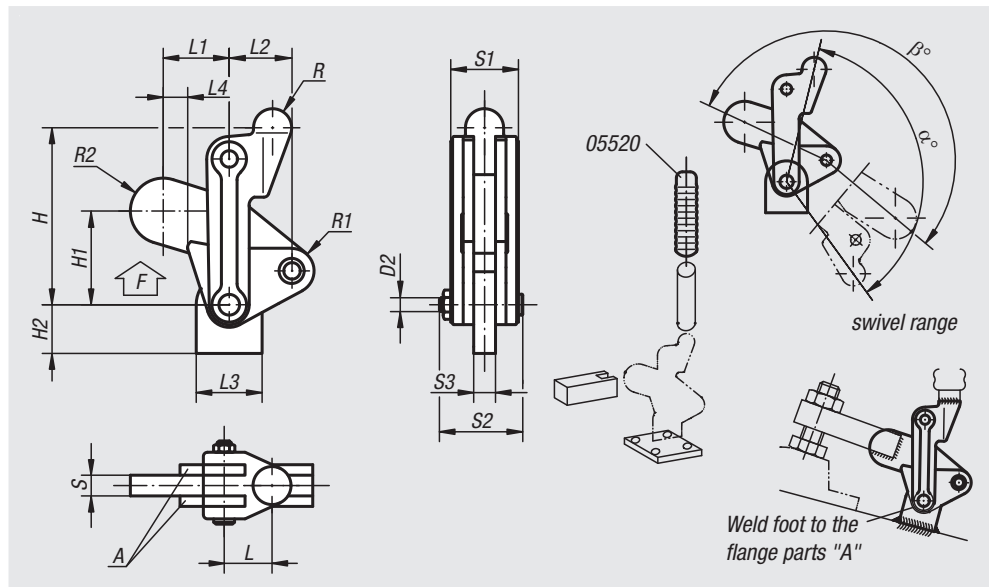
nlm 05420-02

### Note:

The hinge pins should be frequently lubricated. When welding the parts it should be ensured that the function of the hinges is not effected.

The toggle clamp can also be welded directly onto a solid base or a base plate. Remove the hinge pin D2 before welding and weld the base of the centre piece onto the base or base plate.

After assembly the bracket "A" should be welded to the centre piece.



| Order No. | L  | L1   | L2 | L3 | L4  | H   | H1   | H2 | D2   | S  | S1 | S2 | S3 | R  | R1 | R2   | α    | β    | F<br>kN |
|-----------|----|------|----|----|-----|-----|------|----|------|----|----|----|----|----|----|------|------|------|---------|
| 05420-02  | 23 | 26,5 | 29 | 29 | 1,5 | 84  | 38,5 | 20 | 8,2  | 10 | 32 | 41 | 10 | 10 | 10 | 13,5 | 134° | 205° | 7       |
| 05420-04  | 25 | 38   | 36 | 38 | 13  | 100 | 54   | 28 | 9,5  | 12 | 38 | 48 | 12 | 11 | 13 | 19   | 134° | 203° | 12      |
| 05420-06  | 35 | 51   | 44 | 51 | 10  | 129 | 69   | 33 | 12,6 | 16 | 50 | 62 | 16 | 15 | 17 | 22   | 132° | 200° | 24      |

## 05520

## Plastic grips



### Material:

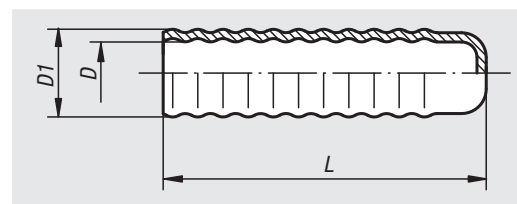
Plastic

### Version:

Green

### Sample order:

nlm 05520-04



| Order No. | L   | D  | D1   |
|-----------|-----|----|------|
| 05520-09  | 80  | 10 | 14,6 |
| 05520-00  | 80  | 12 | 16,5 |
| 05520-01  | 90  | 16 | 21   |
| 05520-02  | 90  | 19 | 25   |
| 05520-04  | 100 | 22 | 27   |
| 05520-06  | 100 | 25 | 29   |

# Latches

with spring clip



**Material:**

Steel or stainless steel 1.4301.

**Version:**

Electro zinc-plated, thick-film passivated and top coat sealed.

Stainless steel, bright.

**Sample order:**

nlm 05526-1550911 Latch

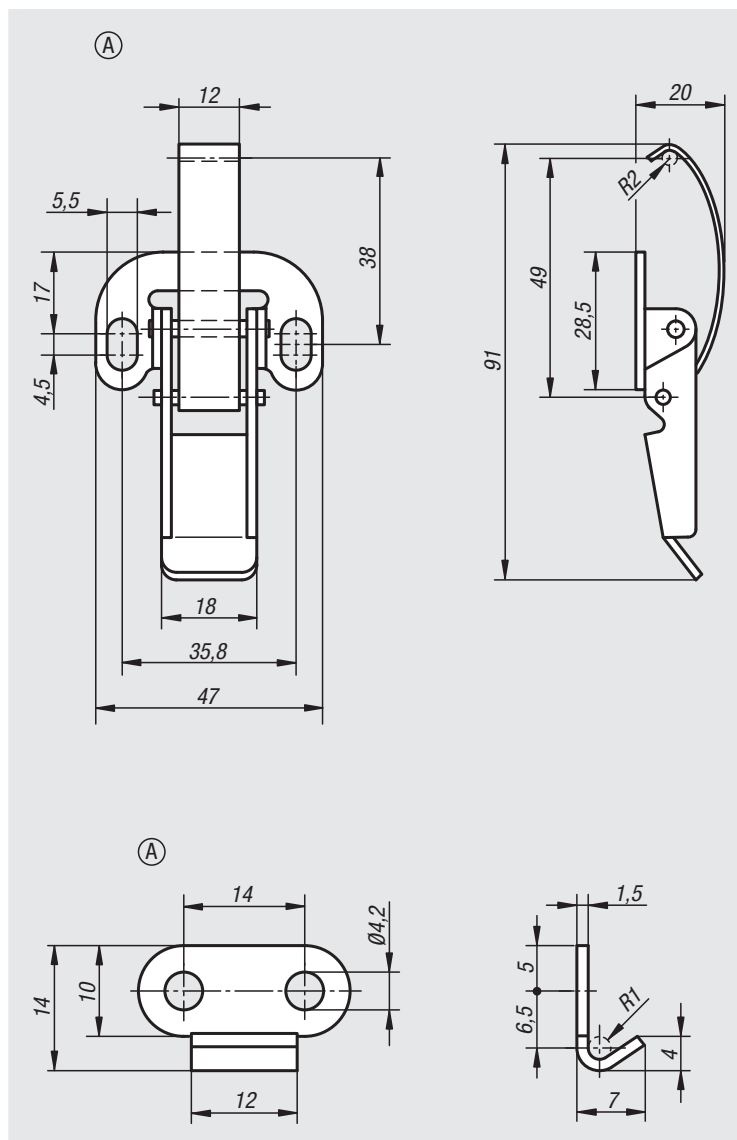
nlm 05526-91420141 Catch plate

**Note:**

Latches with spring clips for securing and locking hatches, container lids, machine cladding etc. By exceeding the dead centre they resist vibration. The locking force is applied by tensioning a spring clip.

The latches can be screwed down or riveted. We recommend using countersunk screws for fastening the components.

Order catch plates separately.



### Latches with spring clip

| Order No.<br>steel | Order No.<br>stainless steel | Form |
|--------------------|------------------------------|------|
| 05526-1550911      | 05526-1550912                | A    |

### Catch plate

| Order No.<br>steel | Order No.<br>stainless steel | Form |
|--------------------|------------------------------|------|
| 05526-91420141     | 05526-91420142               | A    |

# Latch stainless steel

DIN 3133

**Material:**

Stainless steel 1.4301.

**Version:**

Vibratory ground.

**Sample order:**

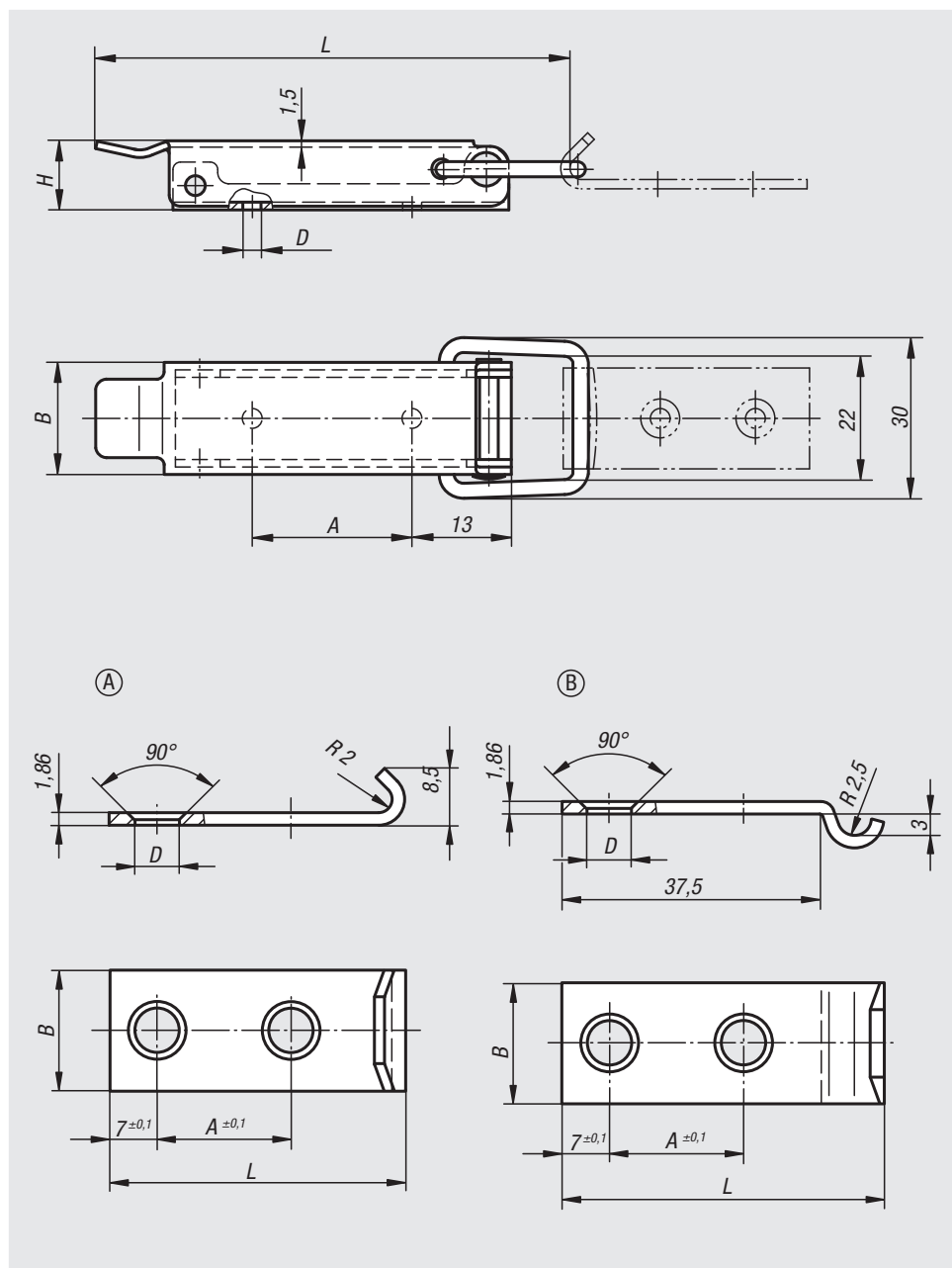
nlm Latch 05530-05-350742

nlm Catch plate 05530-05-91460442

**Note:**

For quickly locking vertical or horizontal lids and hatches.

With security seal possibility.



## Latch stainless steel DIN 3133

| Order No.       | L  | B  | H  | A  | D   |
|-----------------|----|----|----|----|-----|
| 05530-05-350742 | 70 | 18 | 12 | 22 | 3,5 |

## Catch plates

| Order No.         | Form | L  | B  | A  | D   |
|-------------------|------|----|----|----|-----|
| 05530-05-91460442 | A    | 44 | 18 | 20 | 4,8 |
| 05530-05-92460482 | B    | 48 | 18 | 20 | 4,8 |

# Latches

with draw bail



## Material:

Steel or stainless steel 1.4301.

## Version:

Electro zinc-plated, thick-film passivated and top coat sealed.

Stainless steel, bright.

## Sample order:

nln 05531-1420491 Latch

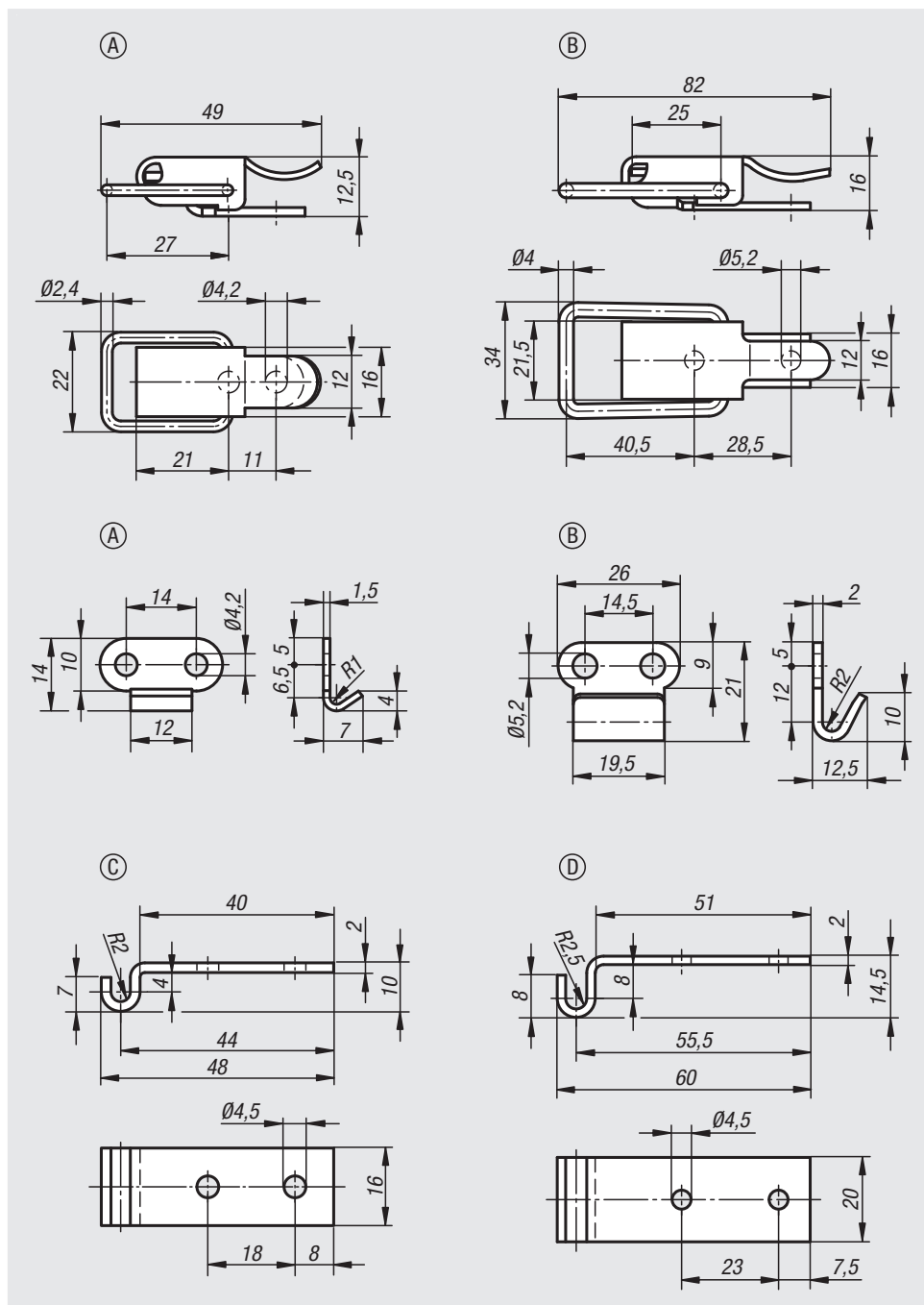
nln 05531-92520211 Catch plate

## Note:

Latches with draw bail for securing and locking hatches, container lids, machine cladding etc. By exceeding the dead centre they resist vibration. The locking force is applied by drawing on the bail.

The latches can be screwed down or riveted. We recommend using countersunk screws for fastening the components.

Order catch plates separately.



## Latches with draw bail

| Order No.<br>steel | Order No.<br>stainless steel | Form | Retaining<br>force<br>F1 N |
|--------------------|------------------------------|------|----------------------------|
| 05531-1420491      | 05531-1420492                | A    | 250                        |
| 05531-2520821      | 05531-2520822                | B    | 300                        |

## Catch plate

| Order No.<br>steel | Order No.<br>stainless steel | Form |
|--------------------|------------------------------|------|
| 05526-91420141     | 05526-91420142               | A    |
| 05531-92520211     | 05531-92520212               | B    |
| 05531-93450481     | 05531-93450482               | C    |
| 05531-94450601     | 05531-94450602               | D    |

# Latches

with draw bail



## Material:

Steel or stainless steel 1.4301.

## Version:

Electro zinc-plated, thick-film passivated and top coat sealed.

Stainless steel, bright.

## Sample order:

nlm 05536-1520871 Latch

nlm 05536-91520601 Catch plate

## Note:

Latches with draw bail for securing and locking hatches, container lids, machine cladding etc. By exceeding the dead centre they resist vibration.

The locking force is applied by drawing on the bail.

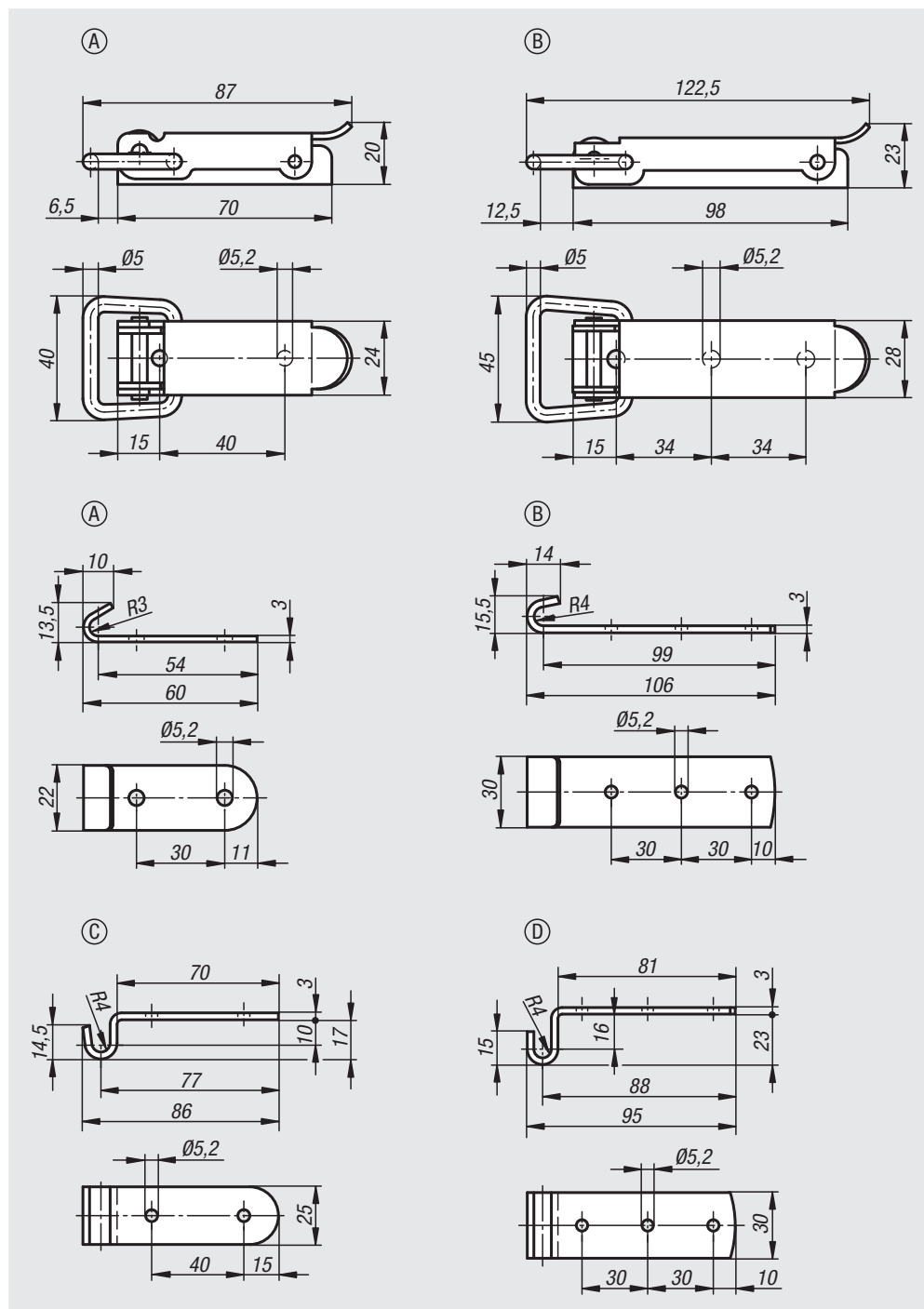
The latches can be screwed down or riveted.

We recommend using countersunk screws for fastening the components.

Order catch plates separately.

## On request:

Lockable version with padlock bracket.



## Latches with draw bail

| Order No.<br>steel | Order No.<br>stainless steel | Form |
|--------------------|------------------------------|------|
| 05536-1520871      | 05536-1520872                | A    |
| 05536-2521221      | 05536-2521222                | B    |

## Catch plate

| Order No.<br>steel | Order No.<br>stainless steel | Form |
|--------------------|------------------------------|------|
| 05536-91520601     | 05536-91520602               | A    |
| 05536-92521061     | 05536-92521062               | B    |
| 05536-93520861     | 05536-93520862               | C    |
| 05536-94520951     | 05536-94520952               | D    |

# Latches with release

stainless steel



## Material:

Stainless steel 1.4301.

## Version:

Bright.

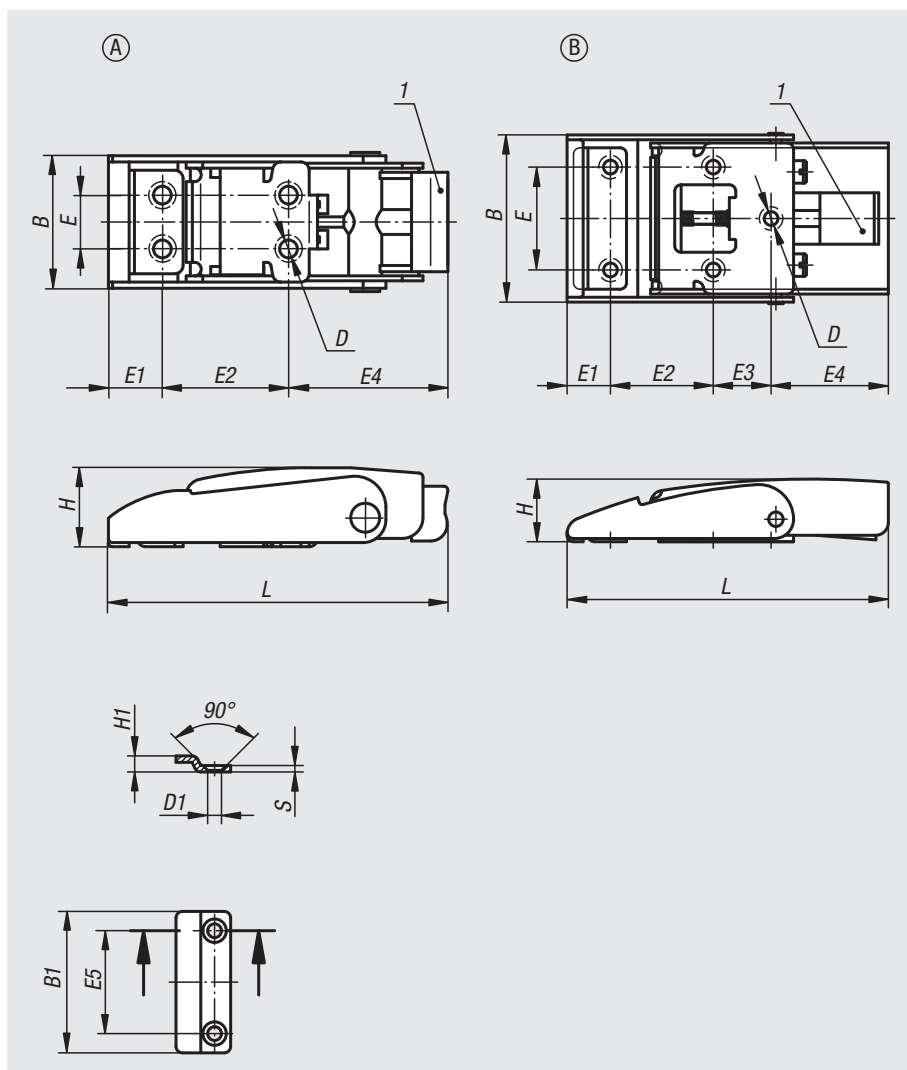
The latch surface is satin finished.

## Sample order:

nln 05547-05-43082

## Drawing reference:

1) Release



| Order No.      | Form | L   | E  | E1   | E2 | E3 | E4   | B    | H    | D   | B1 | E5 | H1 | D1  | S |
|----------------|------|-----|----|------|----|----|------|------|------|-----|----|----|----|-----|---|
| 05547-05-43082 | A    | 82  | 13 | 13,5 | 30 | -  | 38,5 | 33,6 | 19,5 | 4,3 | 25 | 13 | 5  | 4,3 | 2 |
| 05547-05-43100 | B    | 100 | 32 | 13,5 | 32 | 18 | 36,5 | 53   | 19,5 | 4,3 | 44 | 32 | 5  | 4,3 | 2 |

# Latches adjustable

with swing bail



## Material:

Steel or stainless steel 1.4301.

## Version:

Steel trivalent blue passivated.  
Stainless steel bright.

## Sample order:

nIm 05550-1421121 Latch

nIm 05550-9135211 Catch plate

## Note:

Adjustable latches are secure locking systems for industrial applications. By exceeding the dead center they resist vibration. To compensate for tolerances the latch has a swing mounted bail.

After the bail is engaged with the catch plate, the parts to be locked can be drawn together by up to 15 mm by pushing the lever down. To compensate for tolerances or to create enough tension the bail length can be adjusted by the M6 threaded spindle.

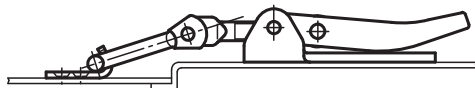
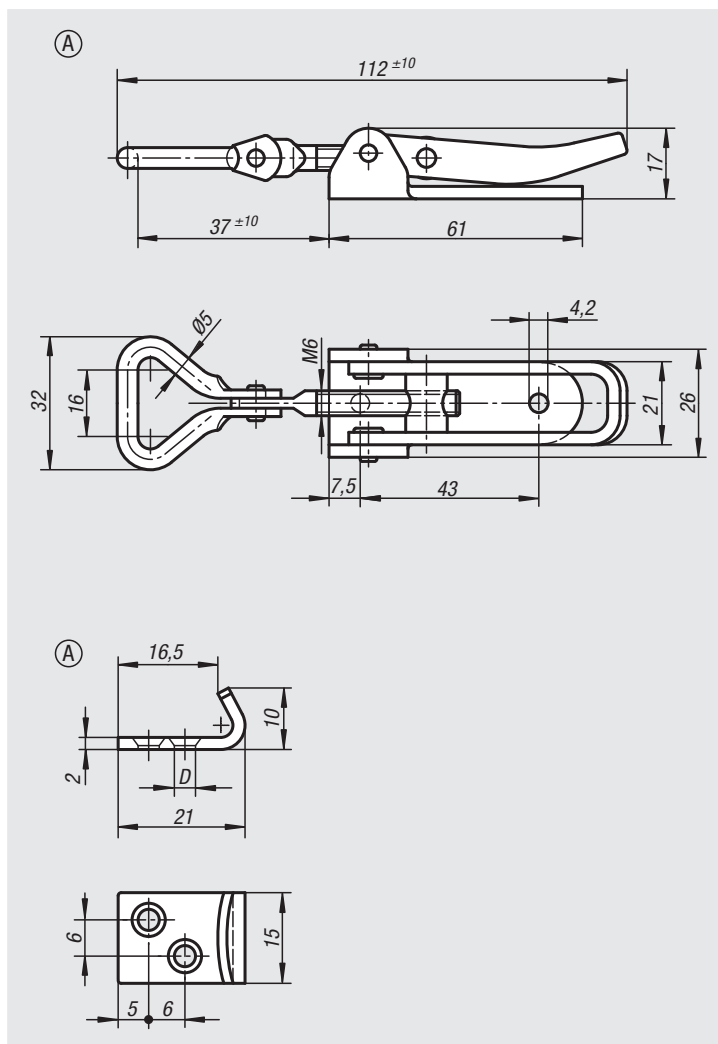
The latches can be screwed down or riveted. We recommend using countersunk screws for fastening the components.

Order catch plates separately.

The retaining force F1 applies to the latch, not the catch plate.

## On request:

Available with safety catch to prevent springing open.



## Latches adjustable, with swing bail

| Order No.<br>steel | Order No.<br>stainless steel | Form | Retaining<br>force<br>F1 N |
|--------------------|------------------------------|------|----------------------------|
| 05550-1421121      | 05550-1421122                | A    | 1000                       |

## Catch plates

| Order No.<br>steel | Order No.<br>stainless steel | Form | D   |
|--------------------|------------------------------|------|-----|
| 05550-9135211      | 05550-9135212                | A    | 3,7 |

## Latches adjustable


**Material:**

Steel or stainless steel 1.4301.

**Version:**

Steel trivalent blue passivated.

Stainless steel bright.

**Sample order:**

nIm 05552-1611451 Latch

nIm 05552-9143381 Catch plate

**Note:**

Adjustable latches are secure locking systems for industrial applications. By exceeding the dead center they resist vibration.

After the bail engages with the catch plate, the parts to be locked can be drawn together by up to 15 mm by pushing the lever down. To compensate for tolerances or to create enough tension the bail length can be adjusted using the M8 spindle.

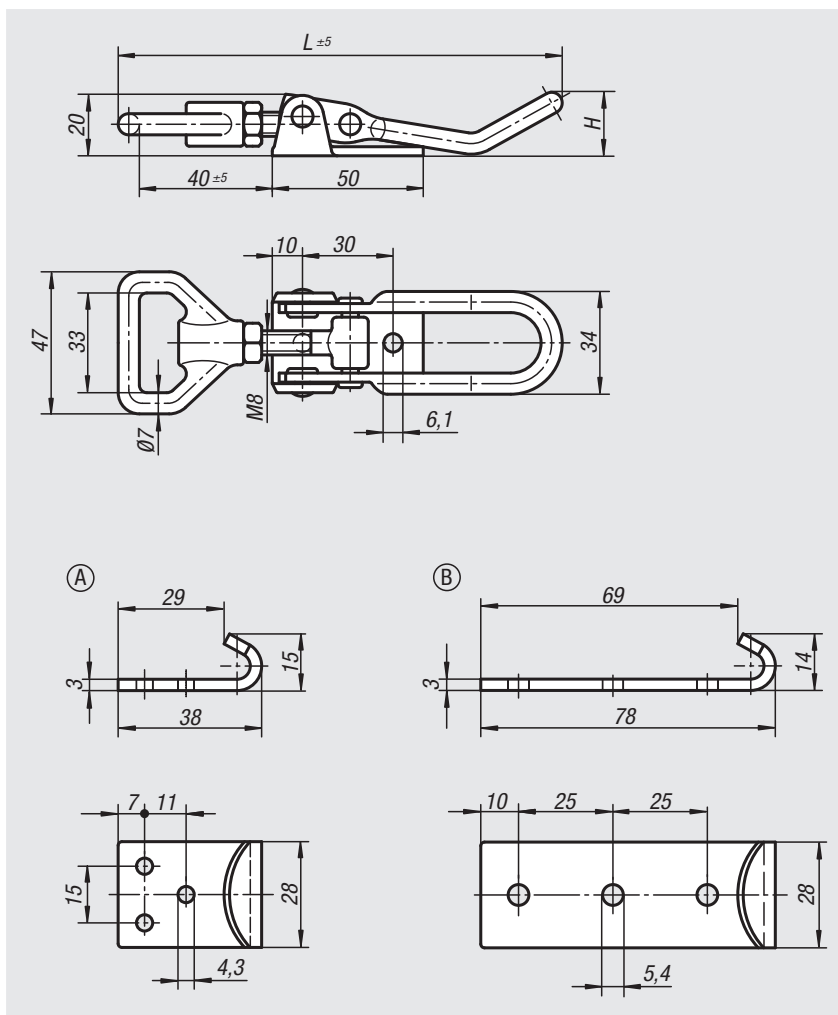
The latches can be screwed down or riveted. We recommend using countersunk screws for fastening the components.

Order the required catch plate version separately.

The retaining force F1 applies to the latch, not the catch plate.

**On request:**

Lockable version with padlock bracket.



### Latches adjustable

| Order No.<br>steel | Order No.<br>stainless steel | H  | L   | Retaining<br>force<br>F1 N |
|--------------------|------------------------------|----|-----|----------------------------|
| 05552-1611451      | 05552-1611452                | 21 | 145 | 6500                       |
| 05552-1611681      | 05552-1611682                | 36 | 168 | 6500                       |

### Catch plates

| Order No.<br>steel | Order No.<br>stainless steel | Form |
|--------------------|------------------------------|------|
| 05552-9143381      | 05552-9143382                | A    |
| 05552-9254781      | 05552-9254782                | B    |

# Adjustable latches

heavy-duty version


**Material:**

Steel.

**Version:**

Trivalent blue passivated.

Catch plate Form B (weldable), bright.

**Sample order:**

nIm 05560-1702041 Latch

nIm 05560-91851201 Catch plate

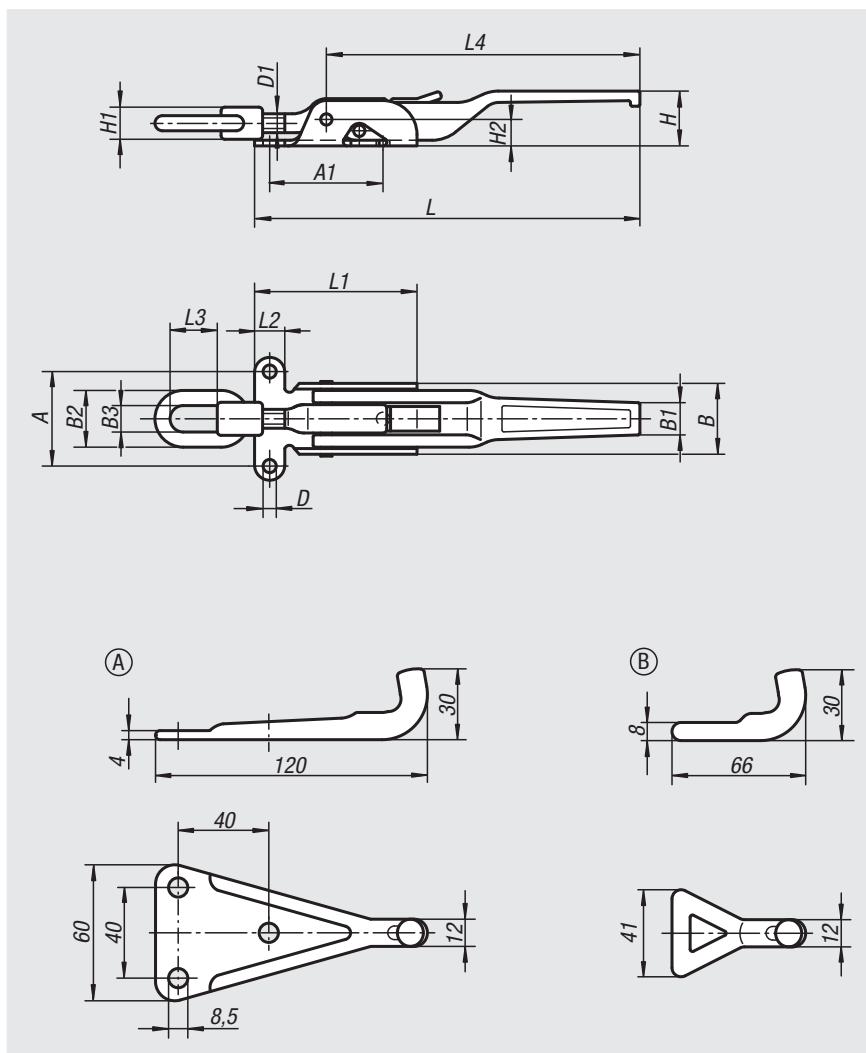
**Note:**

Heavy-duty forged latches for high tensile loads. Primarily used on utility vehicles, agricultural and construction machinery. A ratchet prevents unintentional opening when closed.

To compensate for tolerances or to create enough tension the bail can be adjusted using the spindle D1.

Order required catch plate version separately.

The retaining force F1 applies to the latch, not the catch plate.



## Latches adjustable, heavy-duty version

| Order No.     | A  | A1 | B  | B1 | B2 | B3 | D   | D1      | H  | H1 | H2 | L   | L1  | L2 | L3 | L4  | Retaining force F1 N |
|---------------|----|----|----|----|----|----|-----|---------|----|----|----|-----|-----|----|----|-----|----------------------|
| 05560-1702041 | 49 | 62 | 37 | 18 | 30 | 14 | 7   | M10     | 30 | 17 | 14 | 204 | 86  | 16 | 25 | 165 | 20000                |
| 05560-1852371 | 65 | 82 | 50 | 20 | 36 | 15 | 8,5 | M14x1,5 | 32 | 20 | 18 | 237 | 104 | 21 | 40 | 190 | 30500                |

## Catch plates

| Order No.      | Form |
|----------------|------|
| 05560-91851201 | A    |
| 05560-92000601 | B    |

## Quarter-turn locks compact



### Material:

Housing and actuator die-cast zinc.  
Nut brass.  
O-ring NBR, flat seal CR.  
Tongue steel.

### Version:

Housing and actuator, trivalent passivated or black powder-coated.  
Nut and tongue, electro zinc-plated.

### Sample order:

nIm Quarter-turn lock 05561-16131

nIm Tongue 05563-0124X075 (include tongue gap „A“)

### Note:

This quarter-turn lock is vibration-resistant through a detent mechanism in the end position. Right or left mounting with 90° closing and internal rotation limit. The quarter-turn lock can be installed pre-assembled (limitations by small A-dimensions and thick doors). Tested according to DIN EN 60068-2-64 (vibration) and DIN EN 60068-2-27 (shock), test standard 61373. Vibration-proof as per rail applications category 1, class B requirements (highest requirement).

Water and dust proof as per IP65 through O-ring and flat seal.

Order the required tongue version separately. Every tongue can be combined with every housing.

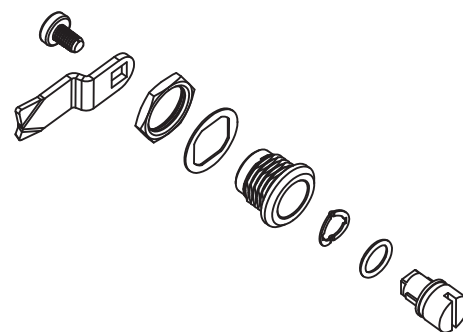
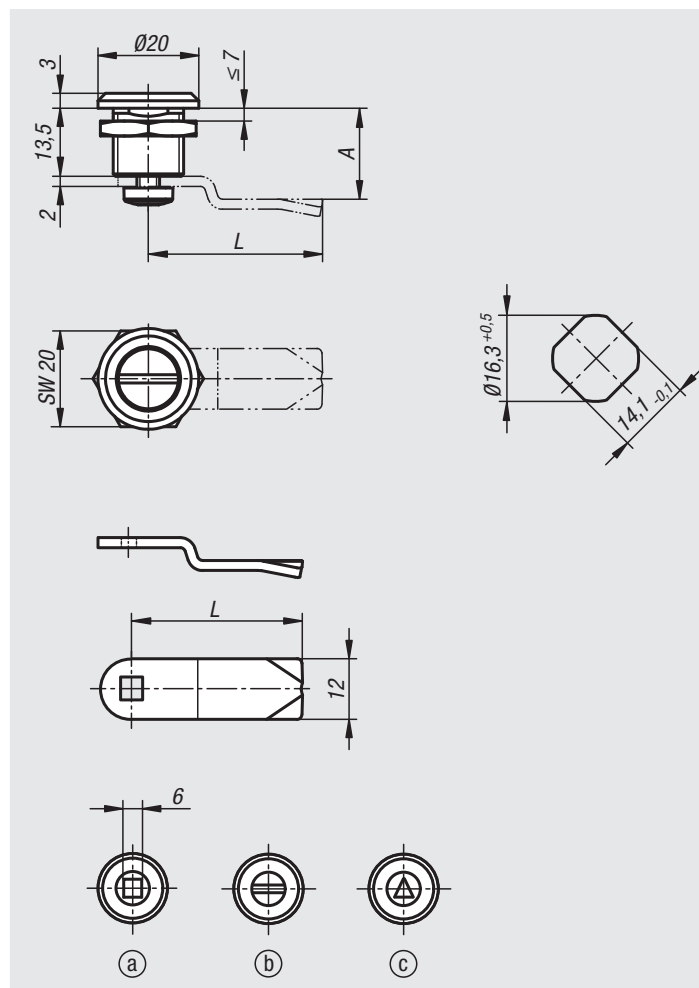
### Accessories:

Lock key 05586

### Drawing reference:

Actuation:

- a) square 6 mm
- b) slot
- c) triangle 6,5 mm



## Quarter-turn locks compact

| Order No.<br>silver | Order No.<br>black | Actuation       |
|---------------------|--------------------|-----------------|
| 05561-16131         | 05561-16132        | square 6 mm     |
| 05561-20131         | 05561-20132        | slot            |
| 05561-86131         | 05561-86132        | triangle 6.5 mm |

## Tongue for quarter-turn lock

| Order No.   | A             | L  |
|-------------|---------------|----|
| 05563-0124X | 7,5/13,5/19,5 | 24 |

# Quarter-turn lock, stainless steel


**Material:**

Quarter-turn lock 1.4401 stainless steel.  
Tongue 1.4301 stainless steel.

**Version:**

Bright.

**Sample order:**

nln 05561-02-1613

**Note:**

The lock can be installed pre-assembled and has a 90° closing angle.  
It is protected against water and dust according to IP65 of EN 60529.

**Accessories:**

Lock key 05586

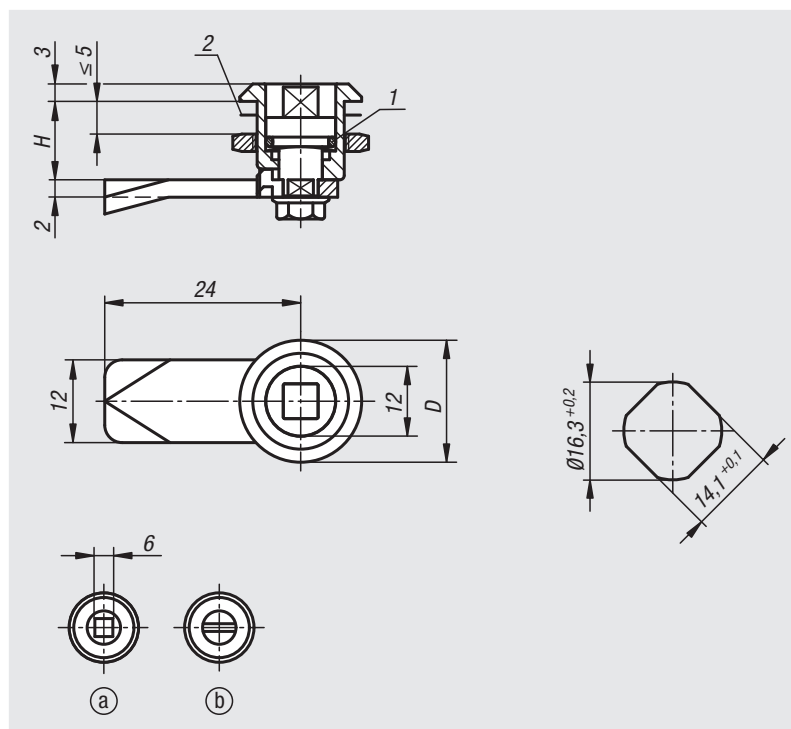
**Drawing reference:**

Actuation:

- a) square 6 mm
- b) slot

1) O-ring

2) flat seal



| Order No.     | Actuation   | D  | H    |
|---------------|-------------|----|------|
| 05561-02-1613 | square 6 mm | 20 | 13,5 |
| 05561-02-2013 | slot        | 20 | 13,5 |

# Quarter-turn locks compact

with wing grip



## Material:

Housing and actuator die-cast zinc.  
Nut brass.  
O-ring NBR, flat seal CR.  
Tongue steel.

## Version:

Housing trivalent passivated.  
Actuator black powder-coated.  
Nut and tongue electro zinc-plated.

## Sample order:

nIm Quarter-turn lock 05562-30132  
nIm Tongue 05563-0124X075 (include tongue gap "A")

## Note:

This quarter-turn lock is vibration-resistant through a detent mechanism in the end position. Right or left mounting with 90° closing and internal rotation limit. The quarter-turn lock can be installed pre-assembled (limitations by small A-dimensions and thick doors).

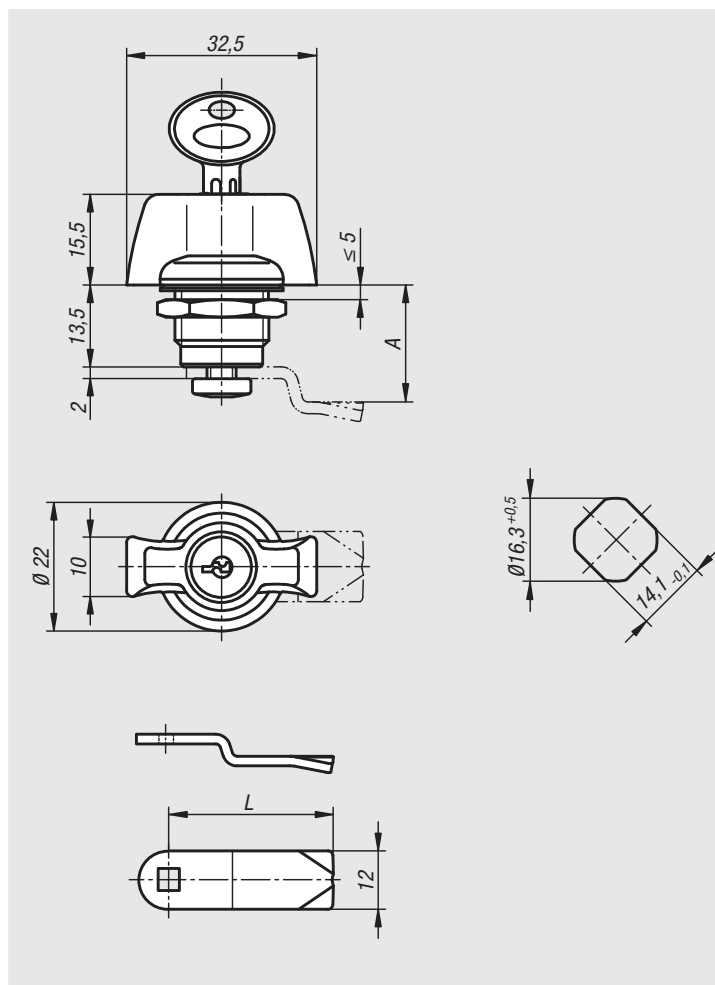
Water and dust proof as per IP65 through O-ring and flat seal.

The lockable quarter-turn locks are supplied with 2 keys. The key can be removed in both positions (opened and closed). The cylinder locks have a single key system i.e. the same key works in all locks (cylinder lock 2233).

Order the required tongue version separately. Every tongue can be combined with every housing.

## Accessories:

Lock key 05586



## Quarter-turn locks compact with wing grip

| Order No.   | Actuation     |
|-------------|---------------|
| 05562-30132 | grip          |
| 05562-31132 | lockable grip |

## Tongue for quarter-turn lock

| Order No.   | A             | L  |
|-------------|---------------|----|
| 05563-0124X | 7,5/13,5/19,5 | 24 |

# Quarter-turn locks compact

lockable



## Material:

Housing and actuator die-cast zinc.

Nut brass.

Tongue steel.

Key nickel silver.

## Version:

Housing and actuator trivalent passivated.

Nut and tongue electro zinc-plated.

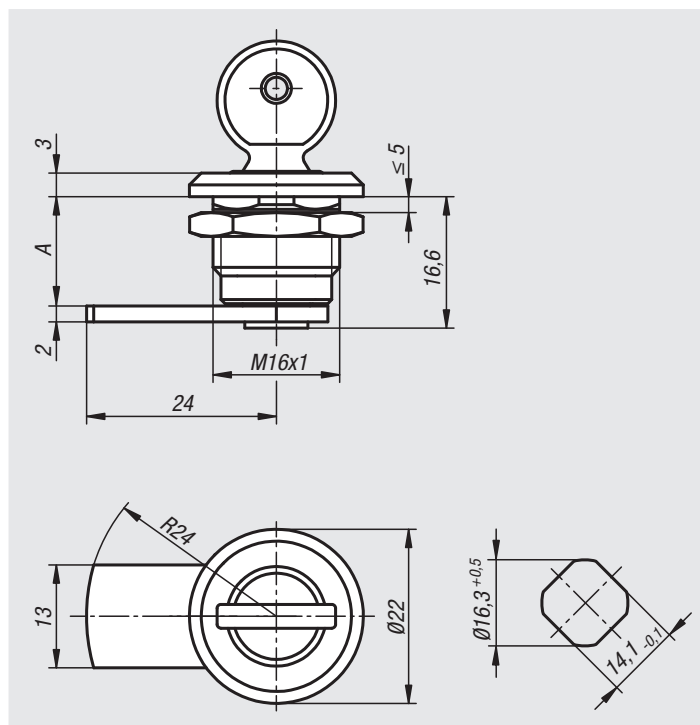
## Sample order:

nIm 05564-1135

## Note:

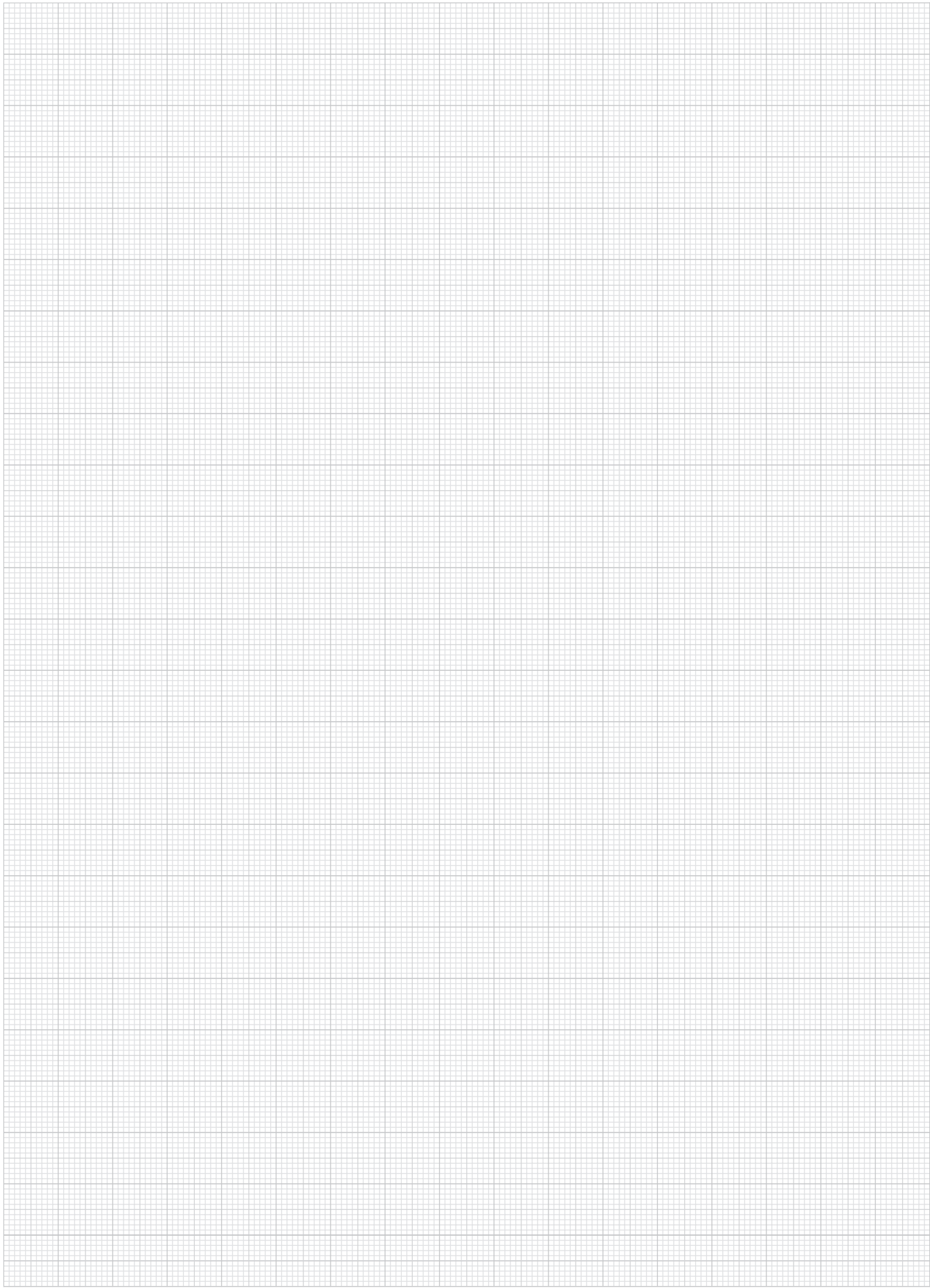
Lockable quarter-turn lock, right or left mounting with 90° closing. The quarter-turn lock can be installed pre-assembled.

These lockable quarter-turn locks are supplied with 2 keys. The key can be removed in both positions (open and closed). The cylinder locks have a single-key system i.e. the same key works in all locks (lock type 2233).



| Order No.  | Actuation | A    |
|------------|-----------|------|
| 05564-1075 | key       | 7,5  |
| 05564-1135 | key       | 13,5 |
| 05564-1195 | key       | 19,5 |

Notes



01000

02000

03000

04000

05000

06000

07000

08000

09000

10000

12000



## Quarter-turn locks



### Material:

Housing, actuator and nut die-cast zinc.  
O-ring NBR, flat seal PUR.  
Tongue steel.

### Version:

Housing and actuator, trivalent passivated or black powder-coated.  
Nut and tongue, electro zinc-plated.

### Sample order:

nIm Quarter-turn lock 05566-17181  
nIm Tongue 05570-145X040 (include tongue gap "A")

### Note:

Quarter-turn lock is vibration-resistant through a detent mechanism in the end position. Right or left mounting with 90° closing and internal rotation limit. The quarter-turn lock can be installed pre-assembled (limitations by small A-dimensions and thick doors). Tested according to DIN EN 60068-2-64 (vibration) and DIN EN 60068-2-27 (shock), test standard 61373. Vibration-proof as per rail applications category 1, class B (highest requirement). The fastening nut has claws allowing it to be used as an earthing nut.

Water and dust proof as per IP65 through O-ring and foamed-on PUR seal.

Order the required tongue version separately. Every tongue can be combined with every housing.

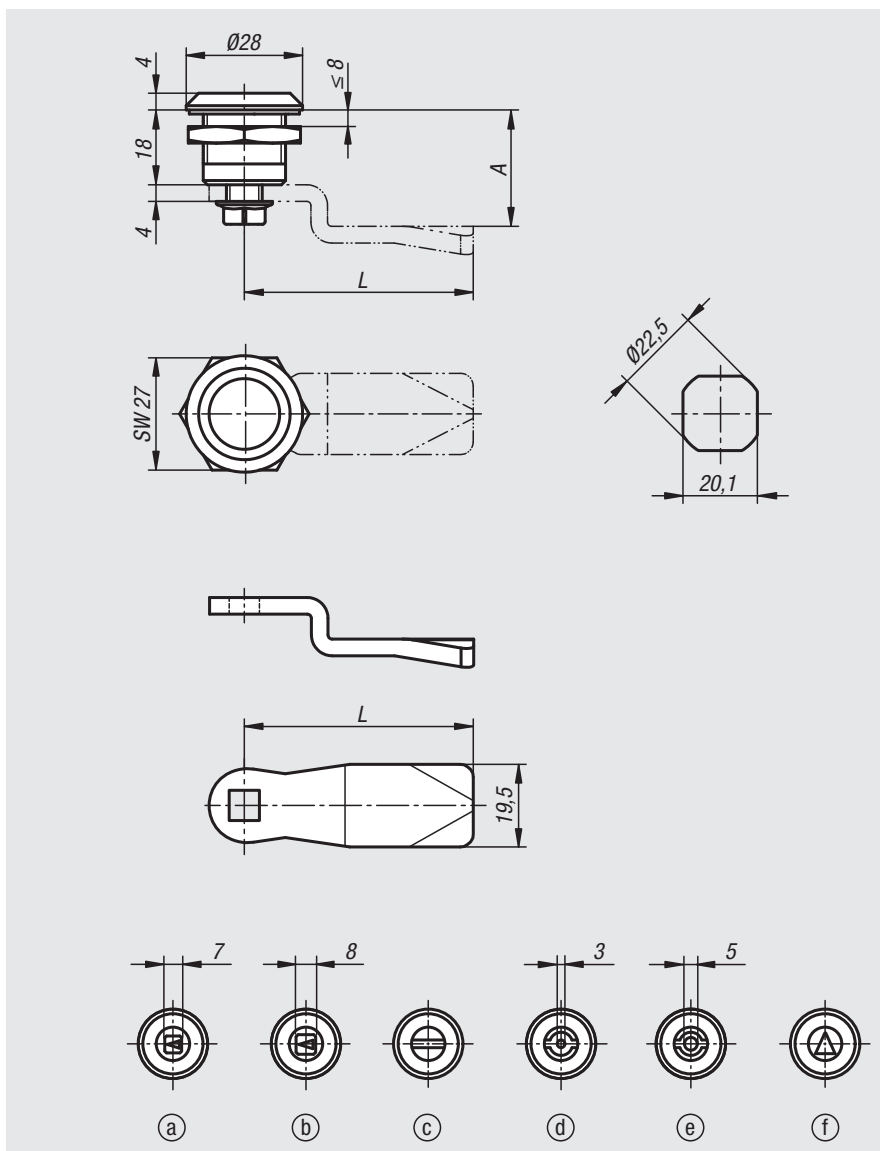
### Accessories:

Lock key 05586

### Drawing reference:

Actuation:

- a) square 7 mm
- b) square 8 mm
- c) slot
- d) double lug 3 mm
- e) double lug 5 mm
- f) triangle 8 mm

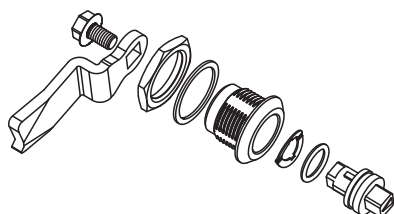


### Quarter-turn lock

| Order No.   | Order No.<br>black | Actuation       |
|-------------|--------------------|-----------------|
| 05566-17181 | 05566-17182        | square 7 mm     |
| 05566-18181 | 05566-18182        | square 8 mm     |
| 05566-20181 | 05566-20182        | slot            |
| 05566-43181 | 05566-43182        | double lug 3 mm |
| 05566-45181 | 05566-45182        | double lug 5 mm |
| 05566-88181 | 05566-88182        | triangle 8 mm   |

### Tongue for quarter-turn lock

| Order No.  | A                                                        | L  |
|------------|----------------------------------------------------------|----|
| 05570-145X | 4/6/8/10/12/14/16/18/20/22/24/26/28/30/32/34/36/38/40/42 | 45 |
| 05570-135X | 16/18/20/22/24                                           | 35 |



# Quarter-turn locks

stainless steel, small version



## Material:

Housing 1.4404 stainless steel.

Actuation and fastening nut 1.4404 stainless steel.

Tongue 1.4301 stainless steel.

## Version:

Bright.

## Sample order:

nIm Quarter turn lock 05566-03-1718

nIm Tongue 05566-07-450660

## Note:

The quarter turn lock can be installed pre-assembled.  
For right or left use. Water and dust protected acc. to IP65 from DIN EN 60529.

Please order required tongue version separately. Every tongue can be combined with every housing.

## Accessories:

Lock key 05586

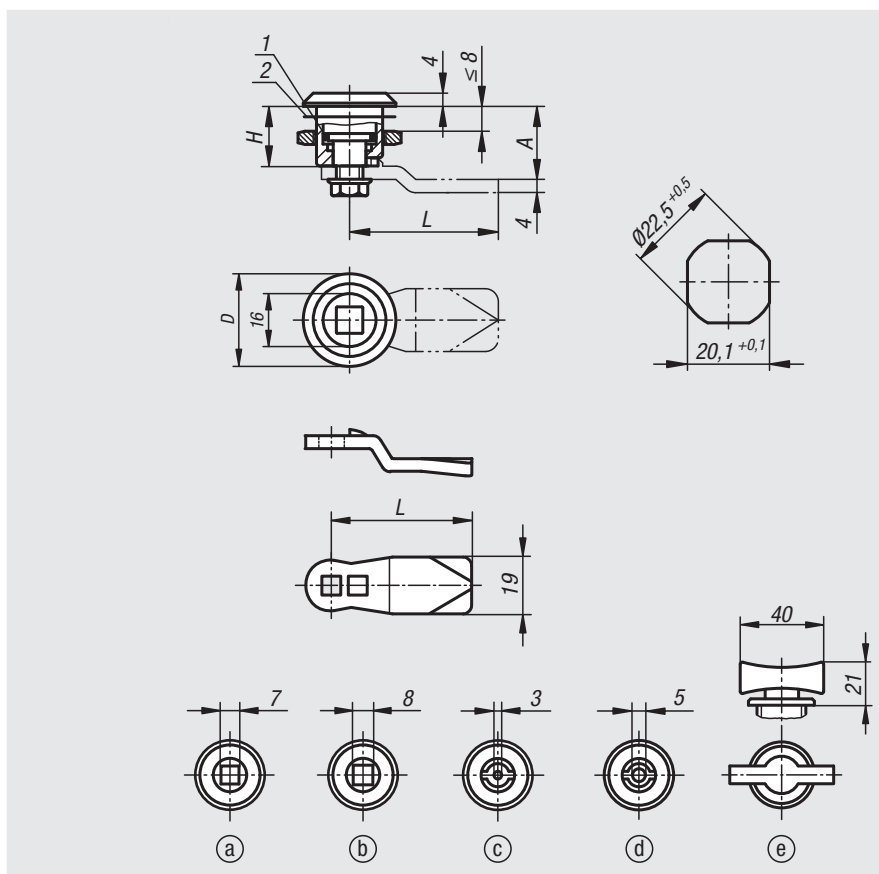
## Drawing reference:

Actuation:

- a) square 7 mm
- b) square 8 mm
- c) double lug 3 mm
- d) double lug 5 mm
- e) wing grip

1) O-ring

2) flat seal



## Quarter-turn locks, stainless steel, small version

| Order No.     | Actuation       | D  | H  |
|---------------|-----------------|----|----|
| 05566-03-1718 | square 7 mm     | 28 | 18 |
| 05566-03-1818 | square 8 mm     | 28 | 18 |
| 05566-03-4318 | double lug 3 mm | 28 | 18 |
| 05566-03-4518 | double lug 5 mm | 28 | 18 |
| 05566-03-0018 | grip            | 28 | 18 |

## Tongue for quarter-turn locks

| Order No.      | A  | L  |
|----------------|----|----|
| 05566-07-45060 | 6  | 45 |
| 05566-07-45080 | 8  | 45 |
| 05566-07-45100 | 10 | 45 |
| 05566-07-45140 | 14 | 45 |
| 05566-07-45160 | 16 | 45 |
| 05566-07-45180 | 18 | 45 |
| 05566-07-45200 | 20 | 45 |
| 05566-07-45220 | 22 | 45 |
| 05566-07-45240 | 24 | 45 |
| 05566-07-45260 | 26 | 45 |
| 05566-07-45280 | 28 | 45 |
| 05566-07-45320 | 32 | 45 |
| 05566-07-45500 | 50 | 45 |

# Quarter-turn locks, stainless steel

long version



## Material:

Housing 1.4305 stainless steel.

Actuation and fastening nut 1.4404 stainless steel.

Tongue 1.4301 stainless steel.

## Version:

Bright.

## Sample order:

nIm Quarter turn lock 05566-04-1730

Tongue 05566-07-450660

## Note:

The quarter turn lock can be installed pre-assembled. For right or left use. Water and dust protected acc. to IP65 from DIN EN 60529.

Please order required tongue version separately. Every tongue can be combined with every housing.

## Accessories:

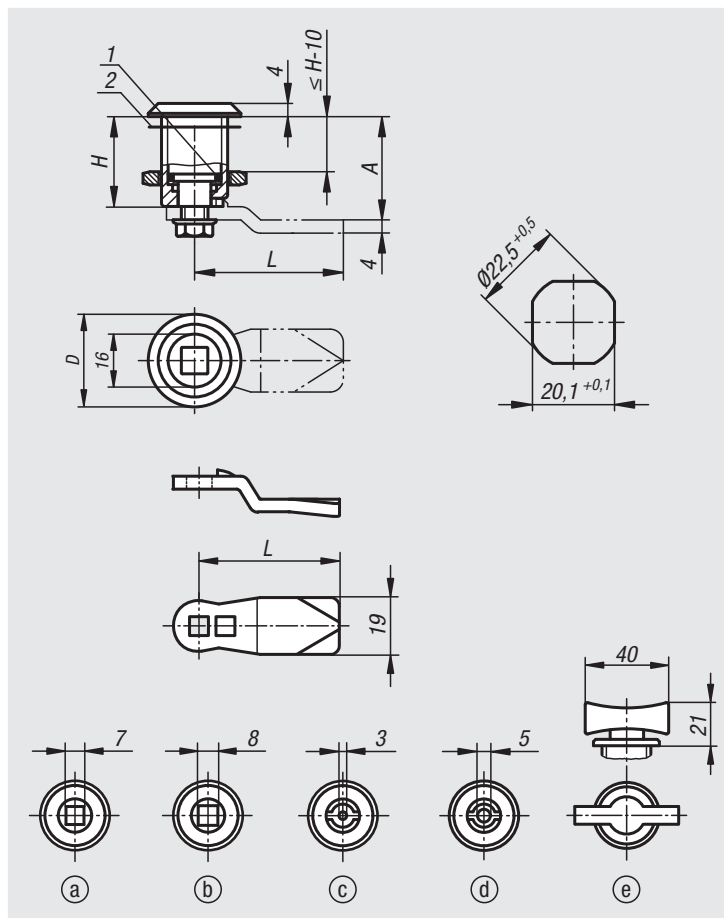
Lock key 05586

## Drawing reference:

Actuation:

- a) square 7 mm
- b) square 8 mm
- c) double lug 3 mm
- d) double lug 5 mm
- e) wing grip

- 1) O-ring
- 2) flat seal



# Quarter-turn locks, stainless steel

long version

## Quarter-turn locks, stainless steel, long version

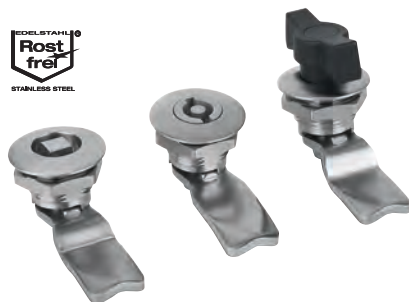
| Order No.     | Actuation       | D  | H  |
|---------------|-----------------|----|----|
| 05566-04-1730 | square 7 mm     | 28 | 30 |
| 05566-04-1736 | square 7 mm     | 28 | 36 |
| 05566-04-1740 | square 7 mm     | 28 | 40 |
| 05566-04-1750 | square 7 mm     | 28 | 50 |
| 05566-04-1760 | square 7 mm     | 28 | 60 |
| 05566-04-1830 | square 8 mm     | 28 | 30 |
| 05566-04-1836 | square 8 mm     | 28 | 36 |
| 05566-04-1840 | square 8 mm     | 28 | 40 |
| 05566-04-1850 | square 8 mm     | 28 | 50 |
| 05566-04-1860 | square 8 mm     | 28 | 60 |
| 05566-04-4330 | double lug 3 mm | 28 | 30 |
| 05566-04-4336 | double lug 3 mm | 28 | 36 |
| 05566-04-4340 | double lug 3 mm | 28 | 40 |
| 05566-04-4350 | double lug 3 mm | 28 | 50 |
| 05566-04-4360 | double lug 3 mm | 28 | 60 |
| 05566-04-4530 | double lug 5 mm | 28 | 30 |
| 05566-04-4536 | double lug 5 mm | 28 | 36 |
| 05566-04-4540 | double lug 5 mm | 28 | 40 |
| 05566-04-4550 | double lug 5 mm | 28 | 50 |
| 05566-04-4560 | double lug 5 mm | 28 | 60 |
| 05566-04-0030 | grip            | 28 | 30 |
| 05566-04-0036 | grip            | 28 | 36 |
| 05566-04-0040 | grip            | 28 | 40 |
| 05566-04-0050 | grip            | 28 | 50 |
| 05566-04-0060 | grip            | 28 | 60 |

## Tongue for quarter-turn locks

| Order No.      | A<br>for housing length<br>H=30 | A<br>for housing length<br>H=36 | A<br>for housing length<br>H=40 | A<br>for housing length<br>H=50 | A<br>for housing length<br>H=60 | L  |
|----------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----|
| 05566-07-45060 | 18                              | 24                              | 28                              | 38                              | 48                              | 45 |
| 05566-07-45080 | 20                              | 26                              | 30                              | 40                              | 50                              | 45 |
| 05566-07-45100 | 22                              | 28                              | 32                              | 42                              | 52                              | 45 |
| 05566-07-45140 | 26                              | 32                              | 36                              | 46                              | 56                              | 45 |
| 05566-07-45160 | 28                              | 34                              | 38                              | 48                              | 58                              | 45 |
| 05566-07-45180 | 30                              | 36                              | 40                              | 50                              | 60                              | 45 |
| 05566-07-45200 | 32                              | 38                              | 42                              | 52                              | 62                              | 45 |
| 05566-07-45220 | 34                              | 40                              | 44                              | 54                              | 64                              | 45 |
| 05566-07-45240 | 36                              | 42                              | 46                              | 56                              | 66                              | 45 |
| 05566-07-45260 | 38                              | 44                              | 48                              | 58                              | 68                              | 45 |
| 05566-07-45280 | 40                              | 46                              | 50                              | 60                              | 70                              | 45 |
| 05566-07-45320 | 44                              | 50                              | 54                              | 64                              | 74                              | 45 |
| 05566-07-45500 | 62                              | 68                              | 72                              | 82                              | 92                              | 45 |

# Quarter-turn locks

stainless steel, small version



## Material:

Housing and fastening nut 1.4404 stainless steel.

Actuator 1.4401.

O-ring NBR.

Tongue 1.4301 stainless steel.

## Version:

Bright.

## Sample order:

nIm Quarter turn lock 05566-05-1718

nIm Tongue 05566-07-450660

## Note:

The quarter turn lock can be installed pre-assembled.  
For right or left use.

Water and dust protected acc. to IP65 to DIN EN 60529.

Please order required tongue version separately. Every tongue can be combined with every housing.

## Accessories:

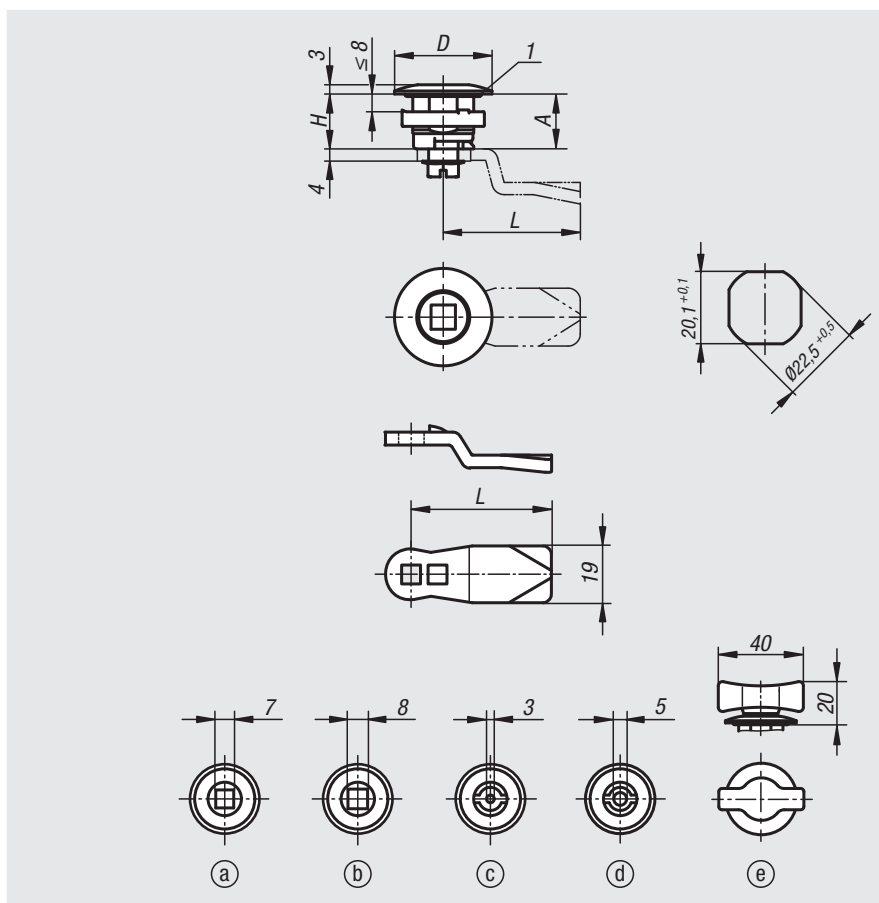
Lock key 05586

## Drawing reference:

Actuation:

- a) square 7 mm
- b) square 8 mm
- c) double lug 3 mm
- d) double lug 5 mm
- e) wing grip

- 1) O-ring



## Quarter-turn locks, stainless steel, small version

| Order No.     | Actuation       | D  | H  |
|---------------|-----------------|----|----|
| 05566-05-1718 | square 7 mm     | 32 | 18 |
| 05566-05-1818 | square 8 mm     | 32 | 18 |
| 05566-05-4318 | double lug 3 mm | 32 | 18 |
| 05566-05-4518 | double lug 5 mm | 32 | 18 |
| 05566-05-0018 | grip            | 32 | 18 |

## Tongue for quarter-turn locks

| Order No.      | A  | L  |
|----------------|----|----|
| 05566-07-45060 | 6  | 45 |
| 05566-07-45080 | 8  | 45 |
| 05566-07-45100 | 10 | 45 |
| 05566-07-45140 | 14 | 45 |
| 05566-07-45160 | 16 | 45 |
| 05566-07-45180 | 18 | 45 |
| 05566-07-45200 | 20 | 45 |
| 05566-07-45220 | 22 | 45 |
| 05566-07-45240 | 24 | 45 |
| 05566-07-45260 | 26 | 45 |
| 05566-07-45280 | 28 | 45 |
| 05566-07-45320 | 32 | 45 |
| 05566-07-45500 | 50 | 45 |

# Quarter-turn locks

lockable, stainless steel



## Material:

Quarter-turn lock 1.4401 stainless steel.

Tongue 1.4301 stainless steel.

## Version:

Bright.

## Sample order:

nIm Quarter turn lock 05566-06-18

nIm Tongue 05566-07-450660

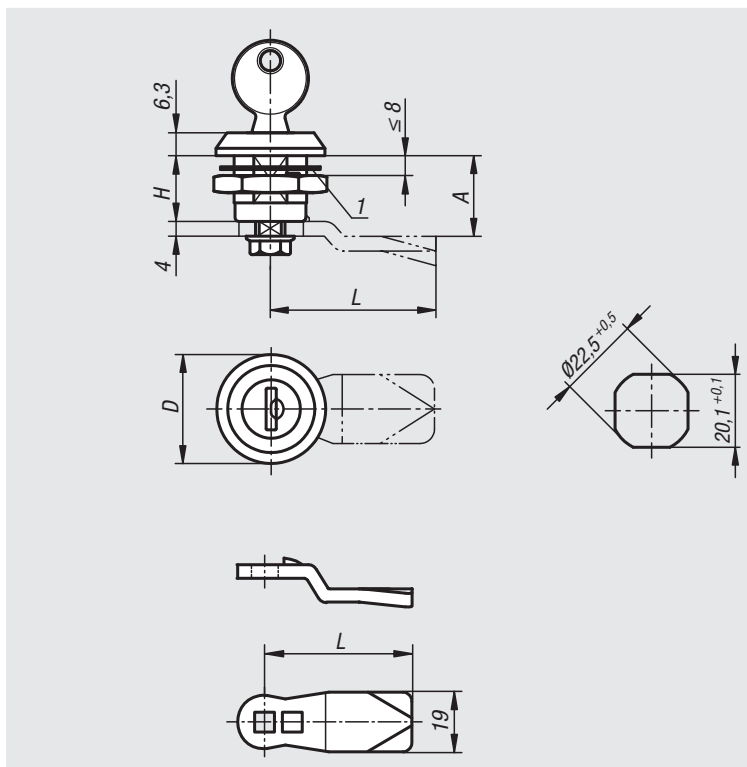
## Note:

The quarter turn lock can be installed pre-assembled. Housing with fastening nut and plate cylinder, same key locking, incl. 2 keys.

Please order required tongue version separately. Every tongue can be combined with every housing.

## Drawing reference:

1) flat seal



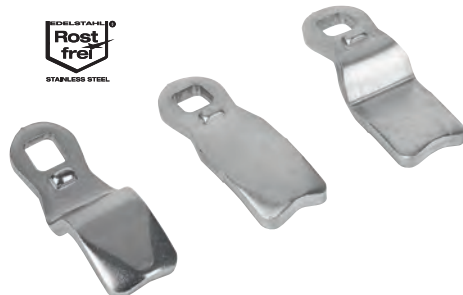
## Quarter-turn lock, lockable, stainless steel

| Order No.   | Actuation             | D  | H  |
|-------------|-----------------------|----|----|
| 05566-06-18 | key single-key system | 30 | 18 |

## Tongue for quarter-turn lock

| Order No.      | A  | L  |
|----------------|----|----|
| 05566-07-45060 | 6  | 45 |
| 05566-07-45080 | 8  | 45 |
| 05566-07-45100 | 10 | 45 |
| 05566-07-45140 | 14 | 45 |
| 05566-07-45160 | 16 | 45 |
| 05566-07-45180 | 18 | 45 |
| 05566-07-45200 | 20 | 45 |
| 05566-07-45220 | 22 | 45 |
| 05566-07-45240 | 24 | 45 |
| 05566-07-45260 | 26 | 45 |
| 05566-07-45280 | 28 | 45 |
| 05566-07-45320 | 32 | 45 |
| 05566-07-45500 | 50 | 45 |

# Tongue for quarter-turn lock

**Material:**

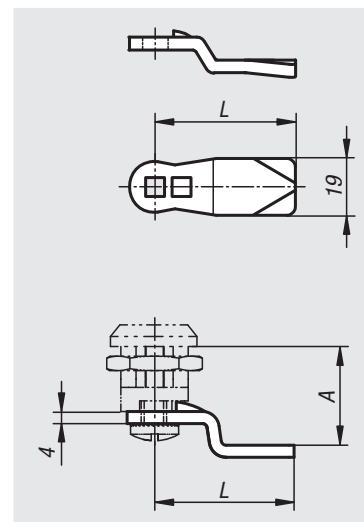
Stainless steel 1.4301.

**Version:**

Bright.

**Sample order:**

nlm 05566-07-45060



| Order No.      | A=tongue spacing | L  |
|----------------|------------------|----|
| 05566-07-45060 | 6                | 45 |
| 05566-07-45080 | 8                | 45 |
| 05566-07-45100 | 10               | 45 |
| 05566-07-45140 | 14               | 45 |
| 05566-07-45160 | 16               | 45 |
| 05566-07-45180 | 18               | 45 |
| 05566-07-45200 | 20               | 45 |
| 05566-07-45220 | 22               | 45 |
| 05566-07-45240 | 24               | 45 |
| 05566-07-45260 | 26               | 45 |
| 05566-07-45280 | 28               | 45 |
| 05566-07-45320 | 32               | 45 |
| 05566-07-45500 | 50               | 45 |

# Quarter-turn locks

polyamide



## Material:

Housing and actuator PA6 fibreglass reinforced plastic.  
Nut die-cast zinc.  
O-ring NBR, flat seal CR.  
Tongue steel.

## Version:

Housing and actuator black.  
Nut and tongue electro zinc-plated.

## Sample order:

nIm Quarter-turn lock 05567-17185  
nIm Tongue 05569-145X040 (include tongue gap "A")

## Note:

Quarter-turn lock with spring-loaded tongue. Right or left mounting with 90° closing. The quarter-turn lock can be installed pre-assembled (limitations by a small A-dimension and thick doors).

Water and dust proof as per IP65 through the O-ring and flat seal.

Order required tongue version separately. Every tongue can be combined with every housing.

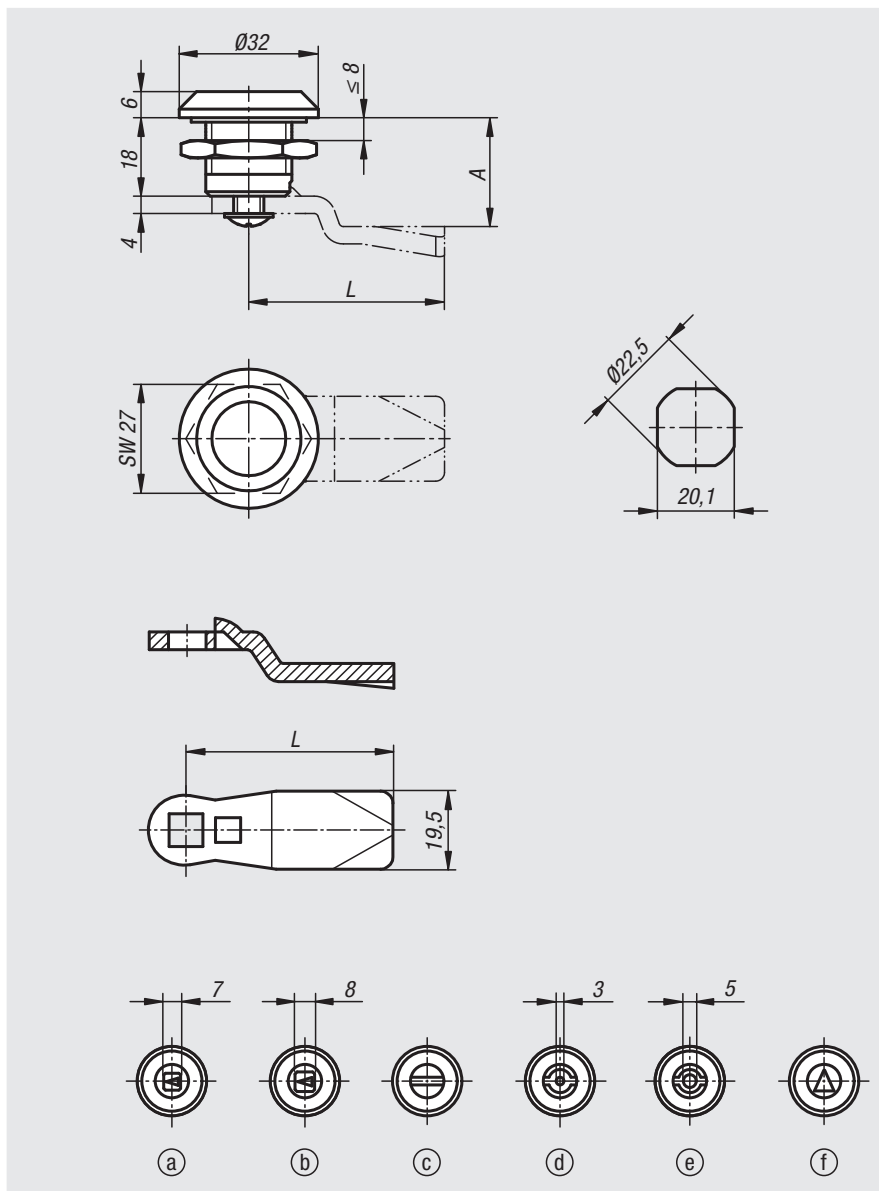
## Accessories:

Lock key 05586

## Drawing reference:

Actuation:

- a) square 7 mm
- b) square 8 mm
- c) slot
- d) double lug 3 mm
- e) double lug 5 mm
- f) triangle 8 mm

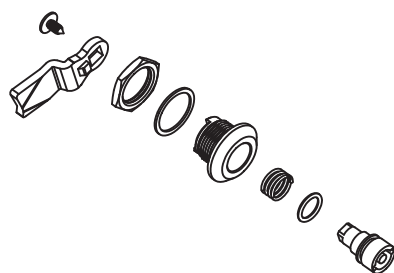


## Quarter-turn locks polyamide

| Order No.   | Actuation       |
|-------------|-----------------|
| 05567-17185 | square 7 mm     |
| 05567-18185 | square 8 mm     |
| 05567-20185 | slot            |
| 05567-43185 | double lug 3 mm |
| 05567-45185 | double lug 5 mm |
| 05567-88185 | triangle 8 mm   |

## Tongue for quarter-turn lock

| Order No.  | A<br>for housing length<br>H=18                          | L  |
|------------|----------------------------------------------------------|----|
| 05569-145X | 4/6/8/10/12/14/16/18/20/22/24/26/28/30/32/34/36/38/40/42 | 45 |
| 05569-135X | 16/18/20/22/24                                           | 35 |



# Quarter-turn locks

long version



## Material:

Housing and actuator die-cast zinc.  
Tongue steel.

## Version:

Housing and actuator trivalent passivated.  
Tongue electro zinc-plated.

## Sample order:

nIm Quarter-turn lock 05568-18301  
nIm Tongue 05569-145X040

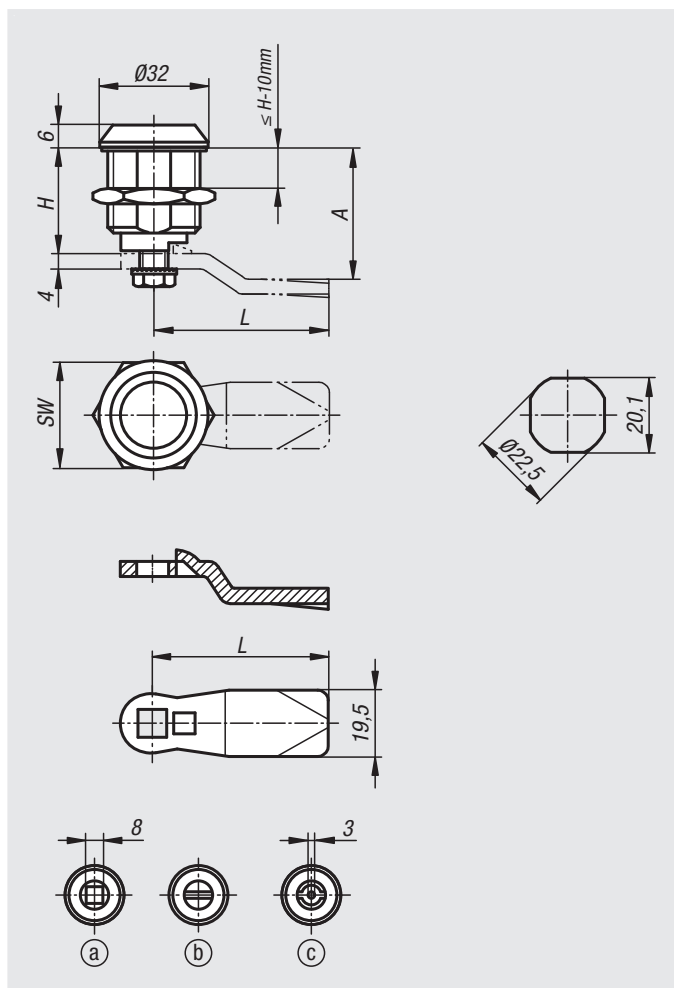
## Note:

Rating IP65. This is achieved using an additional O-ring underneath the actuator and a flat seal attached to the housing. The quarter-turn lock can be installed pre-assembled. Please order the required tongue separately. Every tongue can be combined with this housing.

## Drawing reference:

Actuation:

- a) square 8 mm
- b) slot
- c) double lug 3 mm



# Quarter-turn locks

long version

## Quarter-turn lock, long version

| Order No.   | H  | Actuation       | SW |
|-------------|----|-----------------|----|
| 05568-18301 | 30 | square 8 mm     | 27 |
| 05568-40301 | 30 | double lug 3 mm | 27 |
| 05568-20301 | 30 | slot            | 27 |
| 05568-18401 | 40 | square 8 mm     | 27 |
| 05568-40401 | 40 | double lug 3 mm | 27 |
| 05568-20401 | 40 | slot            | 27 |
| 05568-18501 | 50 | square 8 mm     | 27 |
| 05568-40501 | 50 | double lug 3 mm | 27 |
| 05568-20501 | 50 | slot            | 27 |

## Tongue for quarter-turn locks

| Order No.     | A<br>for housing length<br>H=30 | A<br>for housing length<br>H=40 | A<br>for housing length<br>H=50 | L  |
|---------------|---------------------------------|---------------------------------|---------------------------------|----|
| 05569-145X040 | 16                              | 26                              | 36                              | 45 |
| 05569-145X060 | 18                              | 28                              | 38                              | 45 |
| 05569-145X080 | 20                              | 30                              | 40                              | 45 |
| 05569-145X100 | 22                              | 32                              | 42                              | 45 |
| 05569-145X120 | 24                              | 34                              | 44                              | 45 |
| 05569-145X140 | 26                              | 36                              | 46                              | 45 |
| 05569-145X160 | 28                              | 38                              | 48                              | 45 |
| 05569-145X180 | 30                              | 40                              | 50                              | 45 |
| 05569-145X200 | 32                              | 42                              | 52                              | 45 |
| 05569-145X220 | 34                              | 44                              | 54                              | 45 |
| 05569-145X240 | 36                              | 46                              | 56                              | 45 |
| 05569-145X260 | 38                              | 48                              | 58                              | 45 |
| 05569-145X280 | 40                              | 50                              | 60                              | 45 |
| 05569-145X300 | 42                              | 52                              | 62                              | 45 |
| 05569-145X320 | 44                              | 54                              | 64                              | 45 |
| 05569-145X340 | 46                              | 56                              | 66                              | 45 |
| 05569-145X360 | 48                              | 58                              | 68                              | 45 |
| 05569-145X380 | 50                              | 60                              | 70                              | 45 |
| 05569-145X400 | 52                              | 62                              | 72                              | 45 |
| 05569-145X420 | 54                              | 64                              | 74                              | 45 |

# Quarter-turn locks

with wing grip



## Material:

Housing, actuator and nut die-cast zinc.  
O-ring NBR, flat seal CR.  
Tongue steel.

## Version:

Housing trivalent passivated.  
Actuator trivalent passivated or black powder-coated.  
Nut and tongue electro zinc-plated.

## Sample order:

nIm Quarter-turn lock 05571-1181  
nIm Tongue 05570-145X040 (include tongue gap "A")

## Note:

For right or left mounting with 90° closing and internal rotation limit. The quarter-turn lock can be installed pre-assembled (limitations by a small A-dimension and thick doors). The fastening nut is an earthing nut with teeth one side.

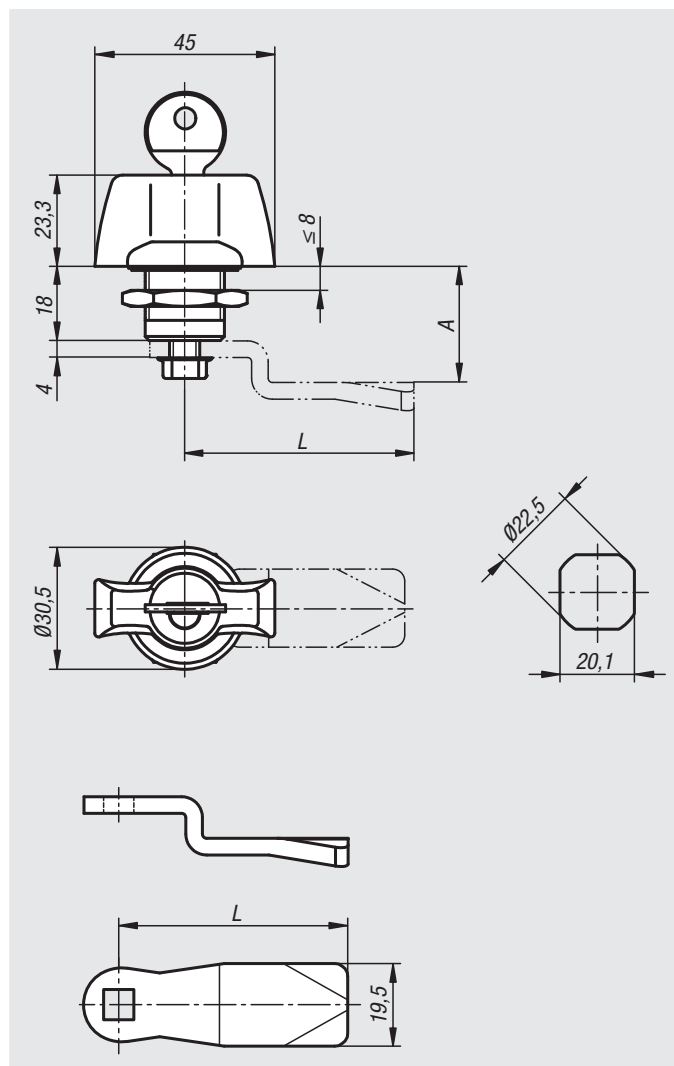
Dust and waterproof as per IP65 through an O-ring and flat seal.

The lockable quarter-turn locks are each supplied with 2 keys.  
The key can be removed in both positions (open and closed). The locks are keyed alike, i.e. they can all be opened using the same key (lock type 101 or 1333).

Please order required tongue version separately. Every tongue can be combined with every housing.

## Accessories:

Lock key 05586



## Quarter-turn locks with wing grip

| Order No.  | Finish              | Actuation     | Version   |
|------------|---------------------|---------------|-----------|
| 05571-1181 | chromed             | grip          | -         |
| 05571-2181 | chromed             | lockable grip | lock 101  |
| 05571-3181 | chromed             | lockable grip | lock 1333 |
| 05571-1182 | black powder-coated | grip          | -         |
| 05571-2182 | black powder-coated | lockable grip | lock 101  |
| 05571-3182 | black powder-coated | lockable grip | lock 1333 |

## Tongue for quarter-turn locks

| Order No.  | A                                                        | L  |
|------------|----------------------------------------------------------|----|
| 05570-145X | 4/6/8/10/12/14/16/18/20/22/24/26/28/30/32/34/36/38/40/42 | 45 |
| 05570-135X | 16/18/20/22/24                                           | 35 |

# Quarter-turn lock stainless steel

with wing grip



## Material:

Quarter-turn lock 1.4401 stainless steel.  
Tongue 1.4301 stainless steel.

## Version:

Bright.  
Grip polished.

## Sample order:

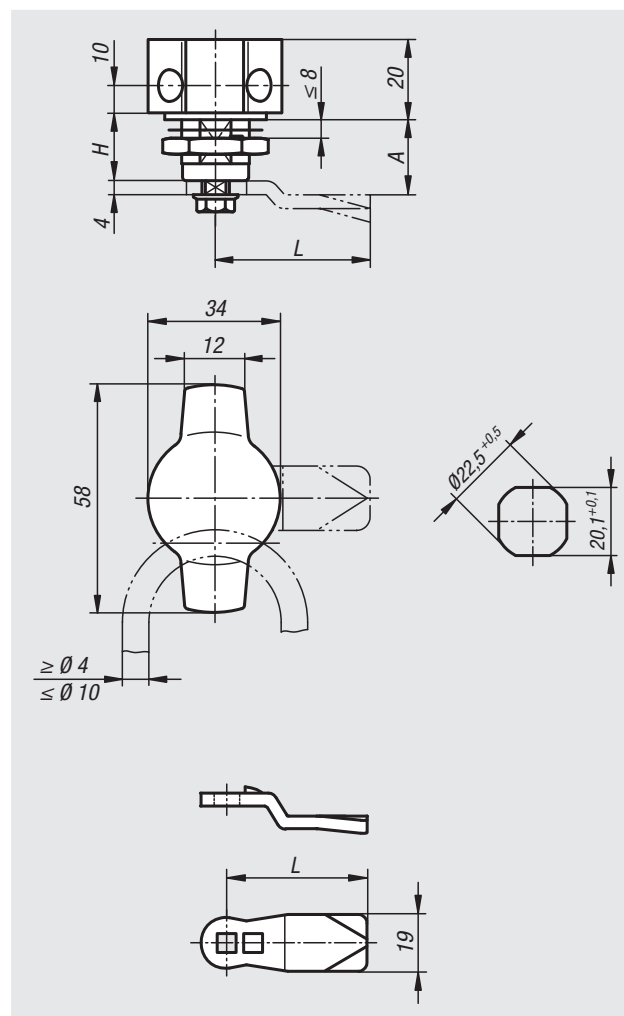
nIm Quarter turn lock 05571-02-18  
nIm Tongue 05566-07-450660

## Note:

Quarter-turn lock with wing grip. Right or left deployment.  
The lock can be installed pre-assembled.

Water and dust tight according to IP65.

Please order the desired tongue type separately. Every tongue can be combined with every housing.



## Quarter-turn lock, stainless steel with wing grip

| Order No.   | Actuation     | H  |
|-------------|---------------|----|
| 05571-02-18 | lockable grip | 18 |

## Tongue for quarter-turn lock

| Order No.      | A  | L  |
|----------------|----|----|
| 05566-07-45060 | 6  | 45 |
| 05566-07-45080 | 8  | 45 |
| 05566-07-45100 | 10 | 45 |
| 05566-07-45140 | 14 | 45 |
| 05566-07-45160 | 16 | 45 |
| 05566-07-45180 | 18 | 45 |
| 05566-07-45200 | 20 | 45 |
| 05566-07-45220 | 22 | 45 |
| 05566-07-45240 | 24 | 45 |
| 05566-07-45260 | 26 | 45 |
| 05566-07-45280 | 28 | 45 |
| 05566-07-45320 | 32 | 45 |
| 05566-07-45500 | 50 | 45 |

# Quarter-turn locks

with T-grip



## Material:

Housing, actuator and nut die-cast zinc.  
O-ring NBR, flat seal CR.  
Tongue steel.

## Version:

Housing trivalent passivated.  
Actuator black powder-coated.  
Nut and tongue electro zinc-plated.

## Sample order:

nIm Quarter-turn lock 05572-1182  
nIm Tongue 05569-145X040 (include tongue gap "A")

## Note:

Right or left mounting with 90° closing. The quarter-turn lock can be installed pre-assembled (limitations by a small A-dimension and thick doors). The fastening nut has claws allowing it to be used as an earthing nut.

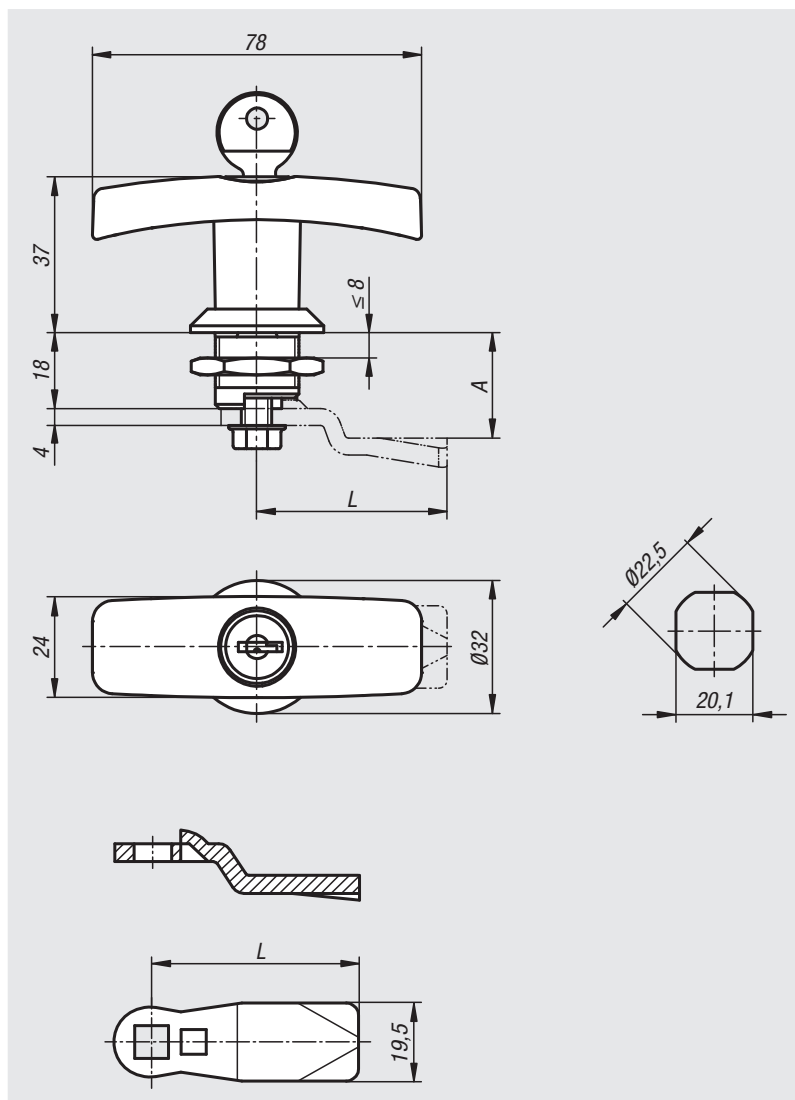
Water and dust proof as per IP65 through the O-ring and flat seal.

The lockable quarter-turn locks are supplied with 2 keys. The key can be removed in both positions (open and closed). The cylinder locks have a single-key system, i.e. the same key works in all locks (lock type 101 or 1333).

Order required tongue version separately. Every tongue can be combined with every housing.

## Accessories:

Lock key 05586



## Quarter-turn locks with T-grip

| Order No.  | Actuation       | Version   |
|------------|-----------------|-----------|
| 05572-1182 | T-Grip          | -         |
| 05572-2182 | lockable T-grip | lock 101  |
| 05572-3182 | lockable T-grip | lock 1333 |

## Tongue for quarter-turn lock

| Order No.  | A<br>for housing length<br>H=18                          | L  |
|------------|----------------------------------------------------------|----|
| 05569-145X | 4/6/8/10/12/14/16/18/20/22/24/26/28/30/32/34/36/38/40/42 | 45 |
| 05569-135X | 16/18/20/22/24                                           | 35 |

# Quarter-turn locks

with L-grip



## Material:

Housing, actuator and nut die-cast zinc.

O-ring NBR, flat seal CR.

Tongue steel.

## Version:

Housing and actuator, black, powder-coated.

Nut and tongue, electro zinc-plated.

## Sample order:

nIm Quarter-turn lock 05573-1182

nIm Tongue 05569-145X040 (include tongue gap "A")

## Note:

Right or left mounting with 90° closing. The quarter-turn lock can be installed pre-assembled (limitations by a small A-dimension and thick doors). The fastening nut has claws allowing it to be used as an earthing nut.

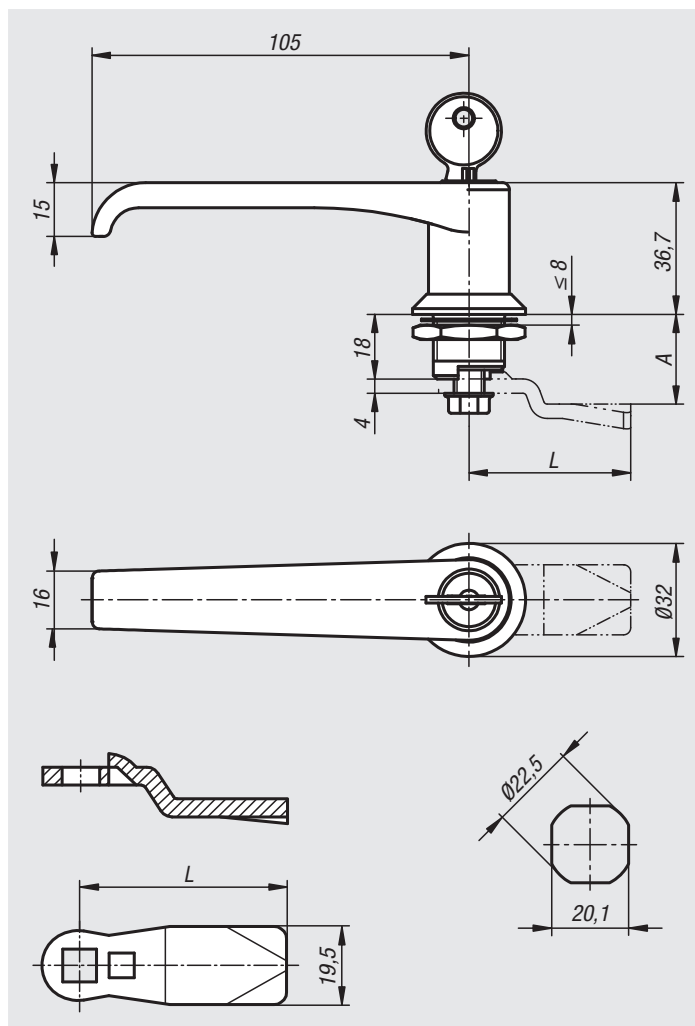
Water and dust proof as per IP65 through the O-ring and flat seal.

The lockable quarter-turn locks are supplied with 2 keys. The key can be removed in both positions (open and closed). The cylinder locks have a single-key system, i.e. the same key works in all locks (lock type 101 or 1333).

Order required tongue version separately. Every tongue can be combined with every housing.

## Accessories:

Lock key 05586



## Quarter-turn locks with L-grip

| Order No.  | Actuation       | Version   |
|------------|-----------------|-----------|
| 05573-1182 | L-grip          | -         |
| 05573-2182 | lockable L-grip | lock 101  |
| 05573-3182 | lockable L-grip | lock 1333 |

## Tongue for quarter-turn lock

| Order No.  | A<br>for housing length<br>H=18                          | L  |
|------------|----------------------------------------------------------|----|
| 05569-145X | 4/6/8/10/12/14/16/18/20/22/24/26/28/30/32/34/36/38/40/42 | 45 |
| 05569-135X | 16/18/20/22/24                                           | 35 |

## Compression latches


**Material:**

Housing, actuator and nut die-cast zinc.

Flat seal CR.

Tongue steel.

**Version:**

Housing and actuator trivalent passivated.

Nut and tongue electro zinc-plated.

**Sample order:**

nIm Quarter-turn lock 05574-18351

nIm Tongue 05570-145X040 (include tongue gap "A")

**Note:**

Compression quarter-turn locks are primarily used for doors and housings that require a higher pressure force on the seal. For right or left use. The locking process is always clockwise. The quarter-turn lock can be installed pre-assembled. Vibration-resistant thanks to spring-loaded detent mechanism in the „locked“ end position. Tested according to DIN EN 60068-2-64 (vibration) and DIN EN 60068-2-27 (shock), test standard 61373. Vibration-proof as per the requirements for rail applications category 1, class B (=highest requirement).

Water and dustproof as per IP65.

Please order required tongue version separately. Every tongue can be combined with every housing.

**Function:**

Turning the actuator clockwise rotates the tongue 90° and brings it into the closed position. A further 90° rotation pulls the tongue in, increasing the pressure on the frame. The axial travel is 6 mm. With marking on housing for „locked“ position.

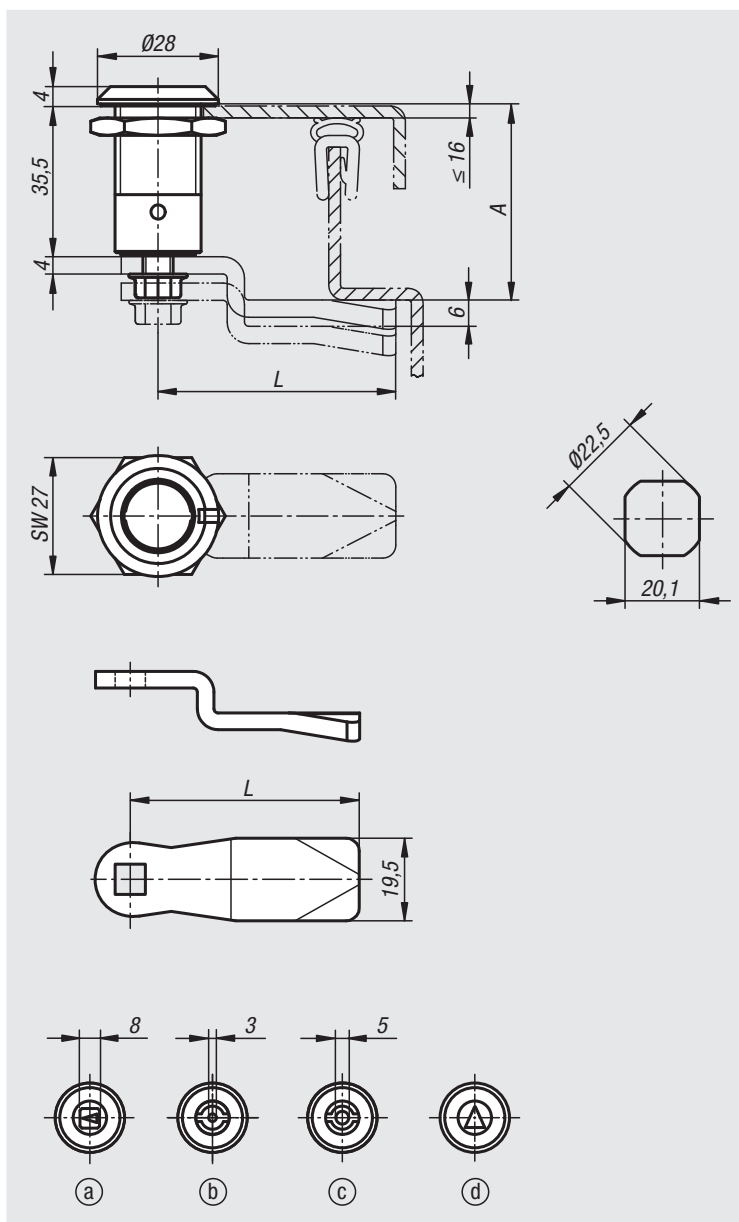
**Accessories:**

Lock key 05586

**Drawing reference:**

Actuation:

- a) square 8 mm
- b) double lug 3 mm
- c) double lug 5 mm
- d) triangle 8 mm



### Compression latches

| Order No.   | Actuation       |
|-------------|-----------------|
| 05574-18351 | square 8 mm     |
| 05574-43351 | double lug 3 mm |
| 05574-45351 | double lug 5 mm |
| 05574-88351 | triangle 8 mm   |

### Tongue for quarter-turn lock

| Order No.  | A<br>for housing length<br>H=35.5                                                                                       | L  |
|------------|-------------------------------------------------------------------------------------------------------------------------|----|
| 05570-145X | 21,5/23,5/25,5/27,5/29,5/31,5/33,5/35,5/37,5/39,5/41,5/43,5/45,5/47,5/49,5/51,5/53,5/55,5/57,5/59,5/61,5/63,5/65,5/67,5 | 45 |
| 05570-135X | 33,5/35,5/37,5/39,5/41,5                                                                                                | 35 |

# Compression latches

with adjustable tongue height



## Material:

Housing, actuator and nut die-cast zinc.  
Flat seal CR.  
Tongue steel.

## Version:

Housing and actuator trivalent passivated.  
Nut and tongue electro zinc-plated.

## Sample order:

nIm Quarter-turn lock 05575-18351  
nIm Tongue 05570-145X040 (include tongue gap "A")

## Note:

Compression quarter-turn locks are primarily used for doors and housings that require a higher pressure force on the seal. For right or left use. The locking process is always clockwise. The quarter-turn lock can be installed pre-assembled. Vibration-resistant thanks to spring-loaded detent mechanism in the „locked“ end position. Tested according to DIN EN 60068-2-64 (vibration) and DIN EN 60068-2-27 (shock), test standard 61373. Vibration-proof as per the requirements for rail applications category 1, class B (=highest requirement).

Water and dustproof as per IP65.

Please order required tongue version separately. Every tongue can be combined with every housing.

## Function:

Turning the actuator clockwise rotates the tongue 90° and brings it into the closed position. A further 90° rotation pulls the tongue in, increasing the pressure on the frame. The axial travel is 6 mm. With marking on housing for „locked“ position.

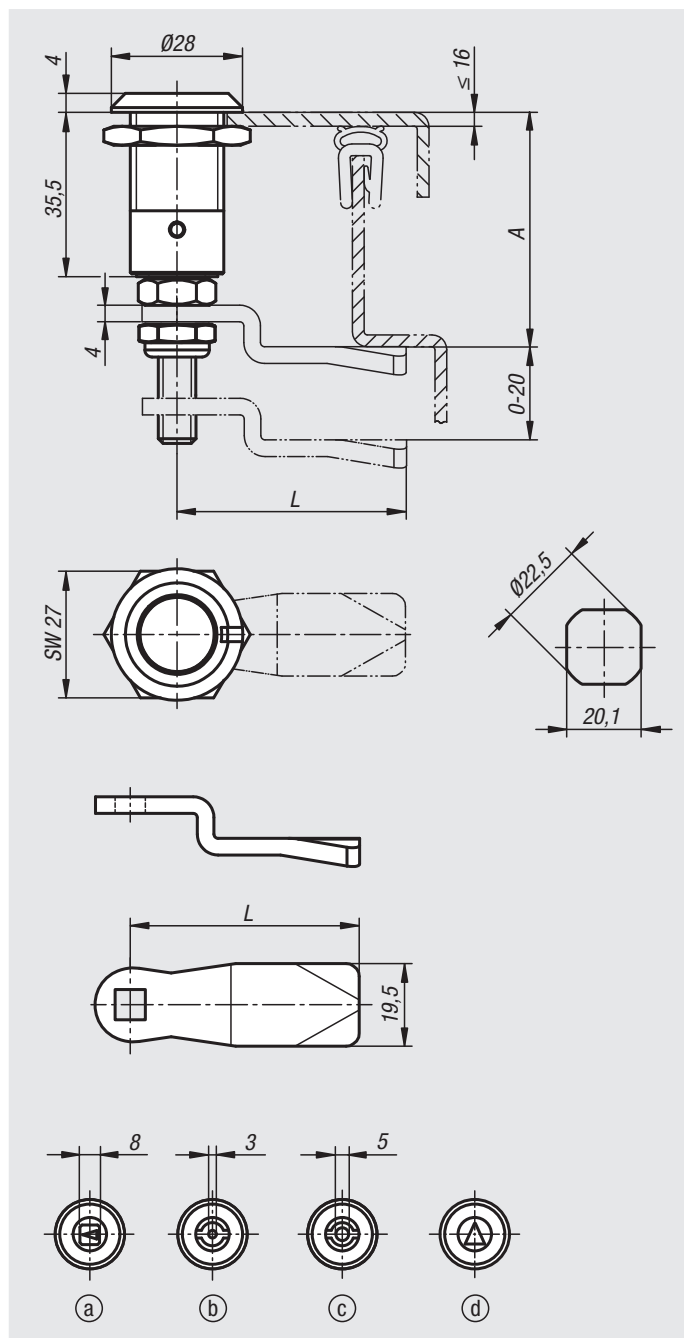
## Accessories:

Lock key 05586

## Drawing reference:

Actuation:

- a) square 8 mm
- b) double lug 3 mm
- c) double lug 5 mm
- d) triangle 8 mm



## Compression latches with adjustable tongue gap

| Order No.   | Actuation       |
|-------------|-----------------|
| 05575-18351 | square 8 mm     |
| 05575-43351 | double lug 3 mm |
| 05575-45351 | double lug 5 mm |
| 05575-88351 | triangle 8 mm   |

## Tongue for quarter-turn lock

| Order No.  | A<br>for housing length<br>H=35,5                                                                                       | L  |
|------------|-------------------------------------------------------------------------------------------------------------------------|----|
| 05570-145X | 21,5/23,5/25,5/27,5/29,5/31,5/33,5/35,5/37,5/39,5/41,5/43,5/45,5/47,5/49,5/51,5/53,5/55,5/57,5/59,5/61,5/63,5/65,5/67,5 | 45 |
| 05570-135X | 33,5/35,5/37,5/39,5/41,5                                                                                                | 35 |

# Quarter-turn locks

with cam tongue



## Material:

Housing, actuator and tongue die-cast zinc.

Nut steel.

Flat seal rubber.

## Version:

Housing and actuator trivalent passivated.

Tongue blank.

Nut electro zinc-plated.

## Sample order:

nlm 05576-17301

## Note:

Quarter-turn locks with stepped cam are primarily used for doors and housings that require a higher pressure force on the seal. For right or left use. The locking process is always clockwise. The compression gap can be increased incrementally up to 9.5 mm at a maximum turning angle of 270° by turning the actuator clockwise.

Protected from water and dust to IP65.

## Accessories:

Lock key 05586

## Drawing reference:

Actuation:

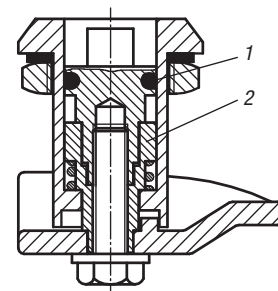
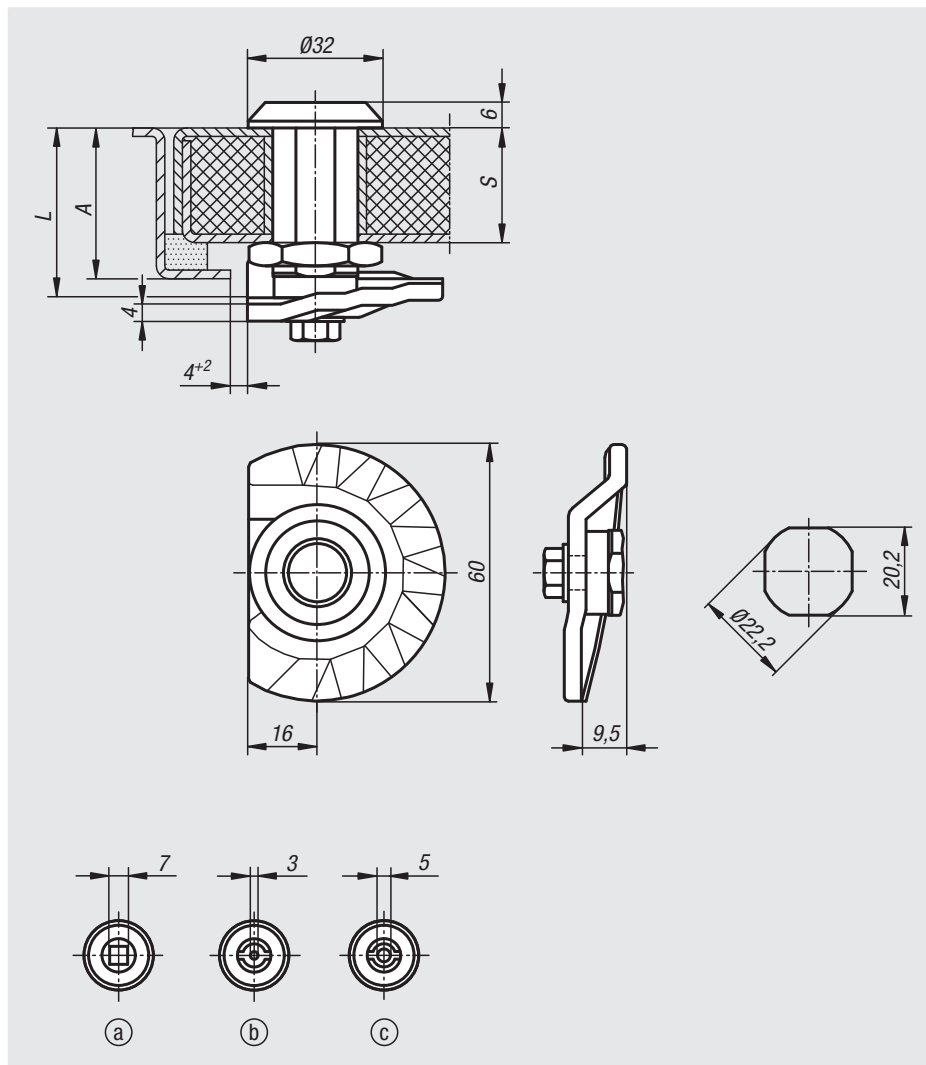
a) square 7 mm

b) double lug 3 mm

c) double lug 5 mm

1) O-ring

2) Adapter



| Order No.   | Actuation       | A       | L  | S max. |
|-------------|-----------------|---------|----|--------|
| 05576-17301 | square 7 mm     | 30 -9,5 | 30 | 20     |
| 05576-17401 | square 7 mm     | 40 -9,5 | 40 | 30     |
| 05576-17501 | square 7 mm     | 50 -9,5 | 50 | 40     |
| 05576-17601 | square 7 mm     | 60 -9,5 | 60 | 50     |
| 05576-43301 | double lug 3 mm | 30 -9,5 | 30 | 20     |
| 05576-43401 | double lug 3 mm | 40 -9,5 | 40 | 30     |
| 05576-43501 | double lug 3 mm | 50 -9,5 | 50 | 40     |
| 05576-43601 | double lug 3 mm | 60 -9,5 | 60 | 50     |
| 05576-45301 | double lug 5 mm | 30 -9,5 | 30 | 20     |
| 05576-45401 | double lug 5 mm | 40 -9,5 | 40 | 30     |
| 05576-45501 | double lug 5 mm | 50 -9,5 | 50 | 40     |
| 05576-45601 | double lug 5 mm | 60 -9,5 | 60 | 50     |

# Quarter-turn locks

free-turning



## Material:

Housing and actuator die-cast zinc.

Nut brass.

Tongue steel.

## Version:

Housing trivalent blue passivated.

Lever black KTL coated.

Tongue electro zinc-plated.

## Sample order:

nlm 05577-22224

## Note:

Particularly suitable for steel cabinets, lockers in changing rooms, schools, leisure facilities and industrial companies.

## Method of operation:

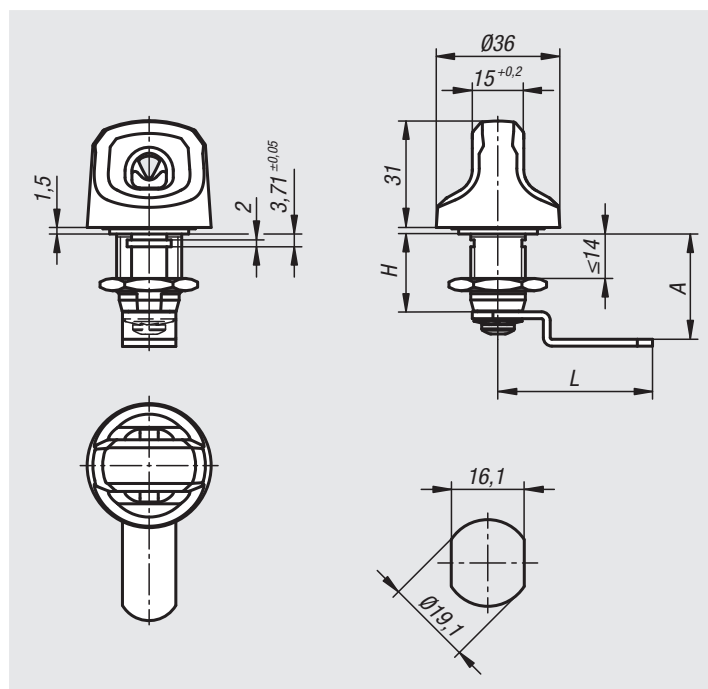
The integrated free-turning function provides higher security against violent actuation compared to conventional locks.

## Assembly:

The quarter-turn lock can be installed pre-assembled.

## Attention:

Optimum functionality is guaranteed with padlocks with a shackle diameter of  $\varnothing 6 - \varnothing 8$  mm.



| Order No.   | A    | L  | H    |
|-------------|------|----|------|
| 05577-22224 | 22,4 | 44 | 22,4 |
| 05577-22248 | 24,8 | 42 | 22,4 |
| 05577-22304 | 30,4 | 45 | 22,4 |
| 05577-22359 | 35,9 | 49 | 22,4 |
| 05577-22424 | 42,4 | 45 | 22,4 |

# Quarter-turn security locks, stainless steel


**Material:**

Quarter-turn lock 1.4401 stainless steel.  
Tongue 1.4301 stainless steel.

**Version:**

Bright.

**Sample order:**

nIm Quarter turn lock 05578-02-14518  
nIm Tongue 05566-07-450660

**Note:**

The secure quarter turn lock is shock and vibration-resistant acc. to DIN 43668 even under high pressing force due to a built-in restrictor element. Actuation without a suitable key is not possible. The key can be removed only in the locked position. quarter turn lock, pre-assembled. Right version = closes anti-clockwise. Left version = closes clockwise. Water and dust protected acc. to IP65 from DIN EN 60529.

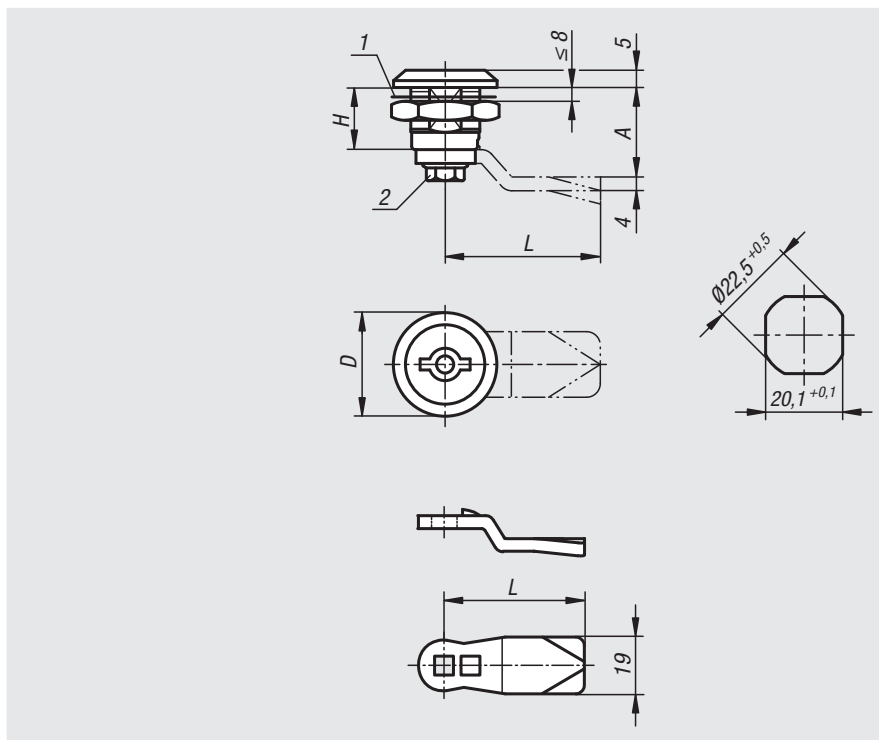
Please order required tongue version separately. Every tongue can be combined with every housing.

**Accessories:**

Lock key 05586

**Drawing reference:**

- 1) flat seal
- 2) self-locking screw



## Quarter-turn security locks, stainless steel

| Order No.      | Version 1 | Actuation       | D  | H  |
|----------------|-----------|-----------------|----|----|
| 05578-02-14518 | right     | double lug 5 mm | 30 | 18 |
| 05578-02-24518 | left      | double lug 5 mm | 30 | 18 |

## Tongue for quarter-turn locks

| Order No.      | A  | L  |
|----------------|----|----|
| 05566-07-45060 | 6  | 45 |
| 05566-07-45080 | 8  | 45 |
| 05566-07-45100 | 10 | 45 |
| 05566-07-45140 | 14 | 45 |
| 05566-07-45160 | 16 | 45 |
| 05566-07-45180 | 18 | 45 |
| 05566-07-45200 | 20 | 45 |
| 05566-07-45220 | 22 | 45 |
| 05566-07-45240 | 24 | 45 |
| 05566-07-45260 | 26 | 45 |
| 05566-07-45280 | 28 | 45 |
| 05566-07-45320 | 32 | 45 |
| 05566-07-45500 | 50 | 45 |

## Dust caps

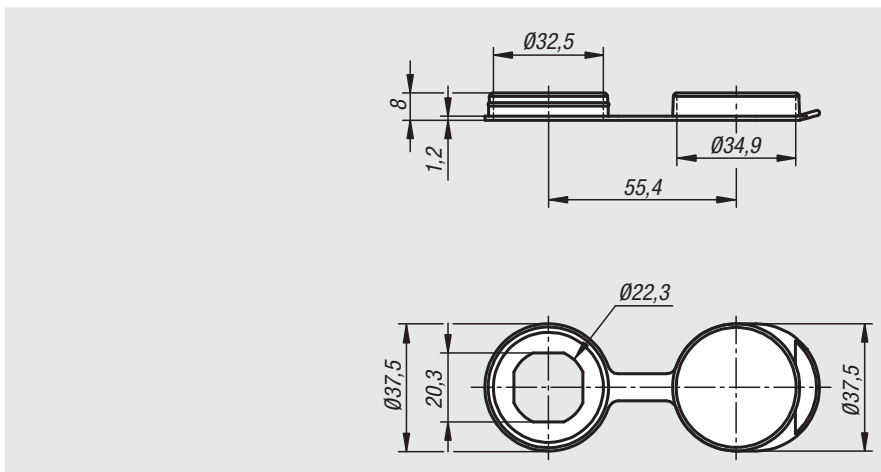


**Material:**  
Plastic PP.

**Version:**  
black.

**Sample order:**  
nlm 05584-202232

**Note:**  
Dust caps for compression latches with a head diameter up to max. 32 mm. It offers increased protection from dust and moisture. If the dust cap is used, dimension "A" of the compression latch is reduced by 1 mm.



| Order No.    | Item |
|--------------|------|
| 05584-202232 | Cap  |

## Opening grips

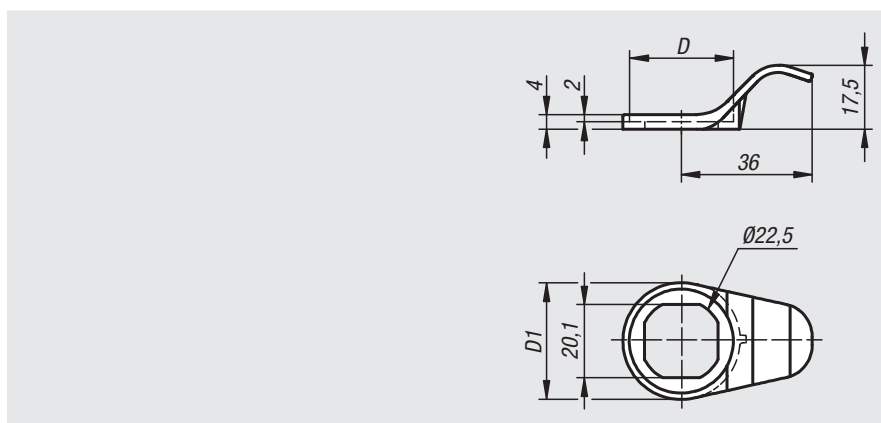


**Material:**  
Plastic PA6, fibreglass reinforced.

**Version:**  
black.

**Sample order:**  
nlm 05585-202228

**Note:**  
Practical opening handle for quarter-turn locks with a head diameter of max. 32 mm. Where the opening handle is used, dimension "A" of the quarter-turn lock is reduced by 2 mm.



| Order No.    | D max. | D1 |
|--------------|--------|----|
| 05585-202228 | 28,5   | 32 |
| 05585-202232 | 32,5   | 36 |

# Keys

for quarter-turn locks



## Material:

Form A and Form B die-cast zinc.

Form S steel.

## Version:

Form A and Form B electro zinc-plated.

Form S nickel-plated.

## Sample order:

nln 05586-16

## Note:

Keys for actuating quarter-turn locks.

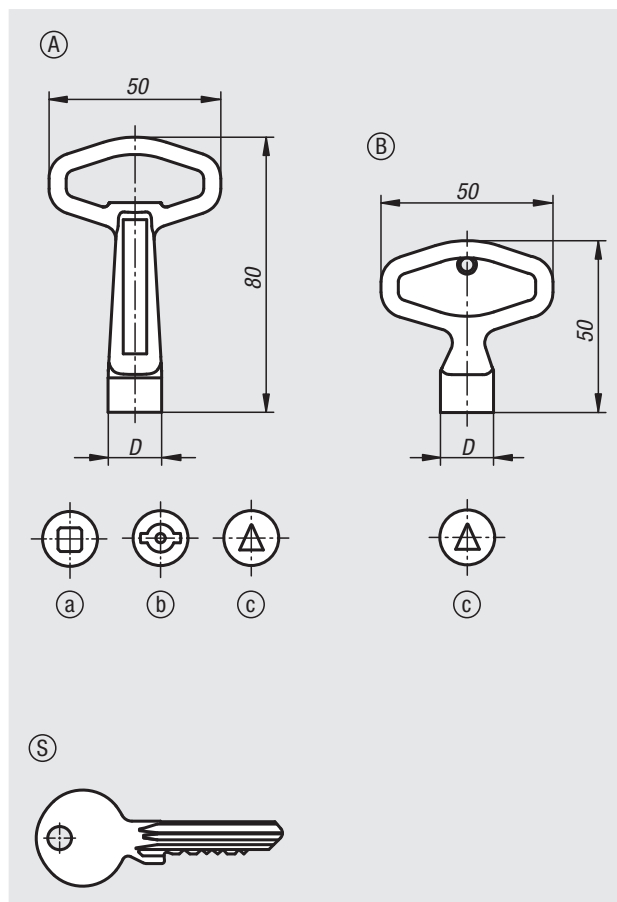
Form S are supplied in pairs.

## Drawing reference:

a) square

b) double lug

c) triangle



| Order No.  | Form | Version 1       | D    |
|------------|------|-----------------|------|
| 05586-16   | A    | square 6 mm     | 11,6 |
| 05586-17   | A    | square 7 mm     | 15,5 |
| 05586-18   | A    | square 8 mm     | 15,5 |
| 05586-88   | A    | triangle 8 mm   | 15,5 |
| 05586-43   | A    | double lug 3 mm | 15,5 |
| 05586-45   | A    | double lug 5 mm | 15,5 |
| 05586-865  | B    | triangle 6.5 mm | 11,6 |
| 05586-2233 | S    | lock 2233       | -    |
| 05586-1333 | S    | lock 1333       | -    |
| 05586-101  | S    | lock 101        | -    |

# Quarter-turn locks

stainless steel



## Material:

Quarter-turn lock 1.4305 stainless steel.

Tongue 1.4301 stainless steel.

## Version:

Bright.

## Sample order:

nIm Quarter turn lock 05587-40186

nIm Tongue 05569-245X180

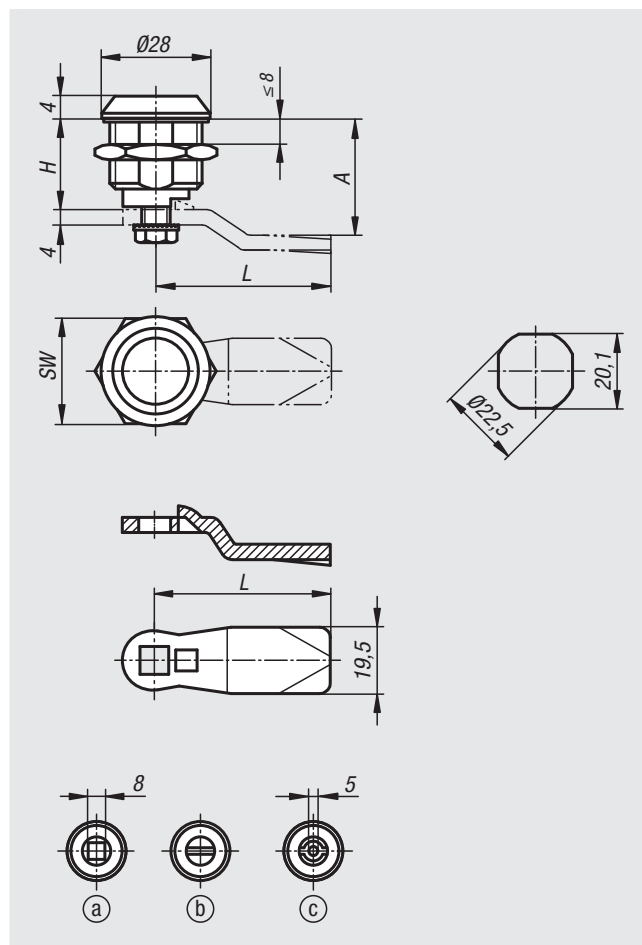
## Note:

Rating IP65. This is achieved using an additional O-ring underneath the actuator and a PUR seal foamed onto the housing. The quarter-turn lock can be installed pre-assembled. Please order the required tongue separately. Every tongue can be combined with this housing.

## Drawing reference:

Actuation:

- a) square 8 mm
- b) slot
- c) double lug 5 mm



## Quarter-turn locks, stainless steel

| Order No.   | Actuation       | H  | SW |
|-------------|-----------------|----|----|
| 05587-18186 | square 8 mm     | 18 | 27 |
| 05587-20186 | slot            | 18 | 27 |
| 05587-40186 | double lug 5 mm | 18 | 27 |

## Tongue for quarter-turn locks

| Order No.     | A<br>for housing length<br>H=18 | L  |
|---------------|---------------------------------|----|
| 05569-245X180 | 18                              | 45 |
| 05569-245X200 | 20                              | 45 |
| 05569-245X240 | 24                              | 45 |
| 05569-245X280 | 28                              | 45 |
| 05569-245X320 | 32                              | 45 |
| 05569-245X340 | 34                              | 45 |
| 05569-245X360 | 36                              | 45 |
| 05569-245X380 | 38                              | 45 |
| 05569-245X400 | 40                              | 45 |
| 05569-245X420 | 42                              | 45 |

# Quarter-turn locks

stainless steel, lockable



## Material:

Quarter-turn lock 1.4401 stainless steel.  
Tongue 1.4301 stainless steel.

## Version:

Bright.

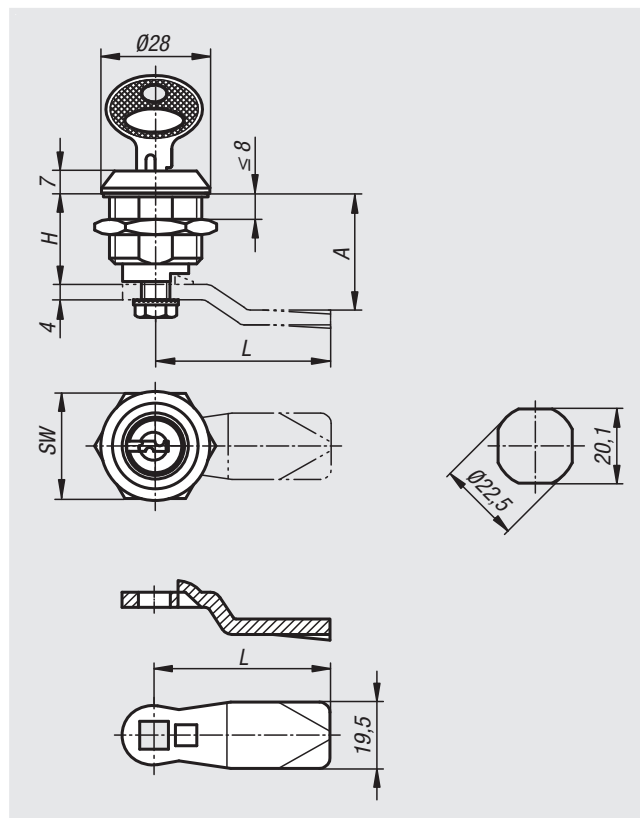
## Sample order:

nIm Quarter turn lock 05588-186  
nIm Tongue 05569-245X180

## Note:

Lockable quarter-turn lock for right or left mounting with 90° closing. The quarter-turn lock can be installed pre-assembled. Please order required tongue separately. Every tongue can be combined with this housing.

These lockable quarter-turn locks are each supplied with 2 keys. The key can be removed in both the closed and open position. The cylinder locks have a single-key system i.e. the same key works in all locks.



## Quarter-turn lock, stainless steel, lockable

| Order No. | Actuation             | H  | SW |
|-----------|-----------------------|----|----|
| 05588-186 | key single-key system | 18 | 27 |

## Tongue for quarter-turn lock

| Order No.     | A<br>for housing length<br>H=18 | L  |
|---------------|---------------------------------|----|
| 05569-245X180 | 18                              | 45 |
| 05569-245X200 | 20                              | 45 |
| 05569-245X240 | 24                              | 45 |
| 05569-245X280 | 28                              | 45 |
| 05569-245X320 | 32                              | 45 |
| 05569-245X340 | 34                              | 45 |
| 05569-245X360 | 36                              | 45 |
| 05569-245X380 | 38                              | 45 |
| 05569-245X400 | 40                              | 45 |
| 05569-245X420 | 42                              | 45 |

# Quarter-turn locks

stainless steel with wing grip



## Material:

Quarter-turn lock 1.4401 stainless steel.  
Tongue 1.4301 stainless steel.

## Version:

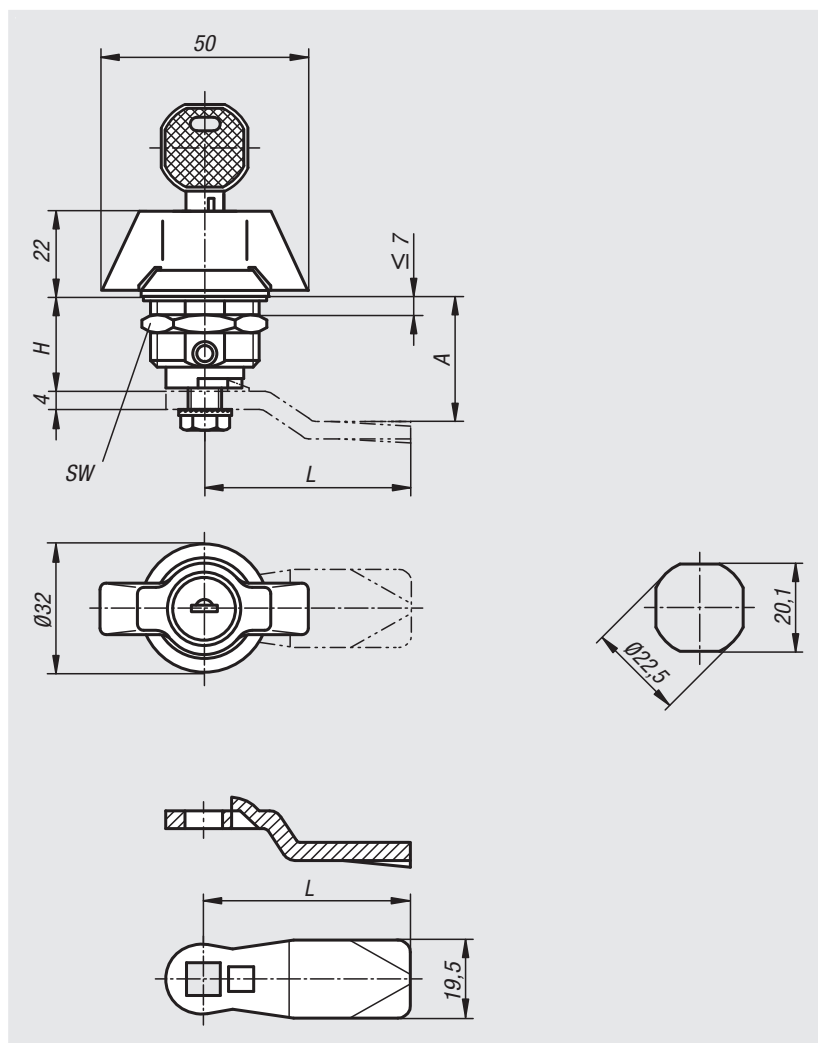
Bright.

## Sample order:

nIm Quarter turn lock 05589-1186  
nIm Tongue 05569-245X180

## Note:

Quarter-turn lock with wing grip. For right or left mounting with 90° closing. The quarter-turn lock can be installed pre-assembled. Supplied with standard stainless-steel nut. The lockable quarter-turn locks are each supplied with 2 keys. The key can be removed in both the closed and open position. The cylinder locks have a single-key system i.e. the same key works in all locks. Order the desired tongue separately. Every tongue can be combined with this housing.



## Quarter-turn locks, stainless steel with wing grip

| Order No.  | Actuation     | H  | SW |
|------------|---------------|----|----|
| 05589-1186 | grip          | 18 | 27 |
| 05589-2186 | lockable grip | 18 | 27 |

## Tongue for quarter-turn locks

| Order No.     | A<br>for housing length<br>H=18 | L  |
|---------------|---------------------------------|----|
| 05569-245X180 | 18                              | 45 |
| 05569-245X200 | 20                              | 45 |
| 05569-245X240 | 24                              | 45 |
| 05569-245X280 | 28                              | 45 |
| 05569-245X320 | 32                              | 45 |
| 05569-245X340 | 34                              | 45 |
| 05569-245X360 | 36                              | 45 |
| 05569-245X380 | 38                              | 45 |
| 05569-245X400 | 40                              | 45 |
| 05569-245X420 | 42                              | 45 |

# Quarter-turn locks

stainless steel with T-grip



## Material:

Grip and tongue 1.4301 stainless steel.  
Housing and nut 1.4305 stainless steel.

## Version:

Bright.

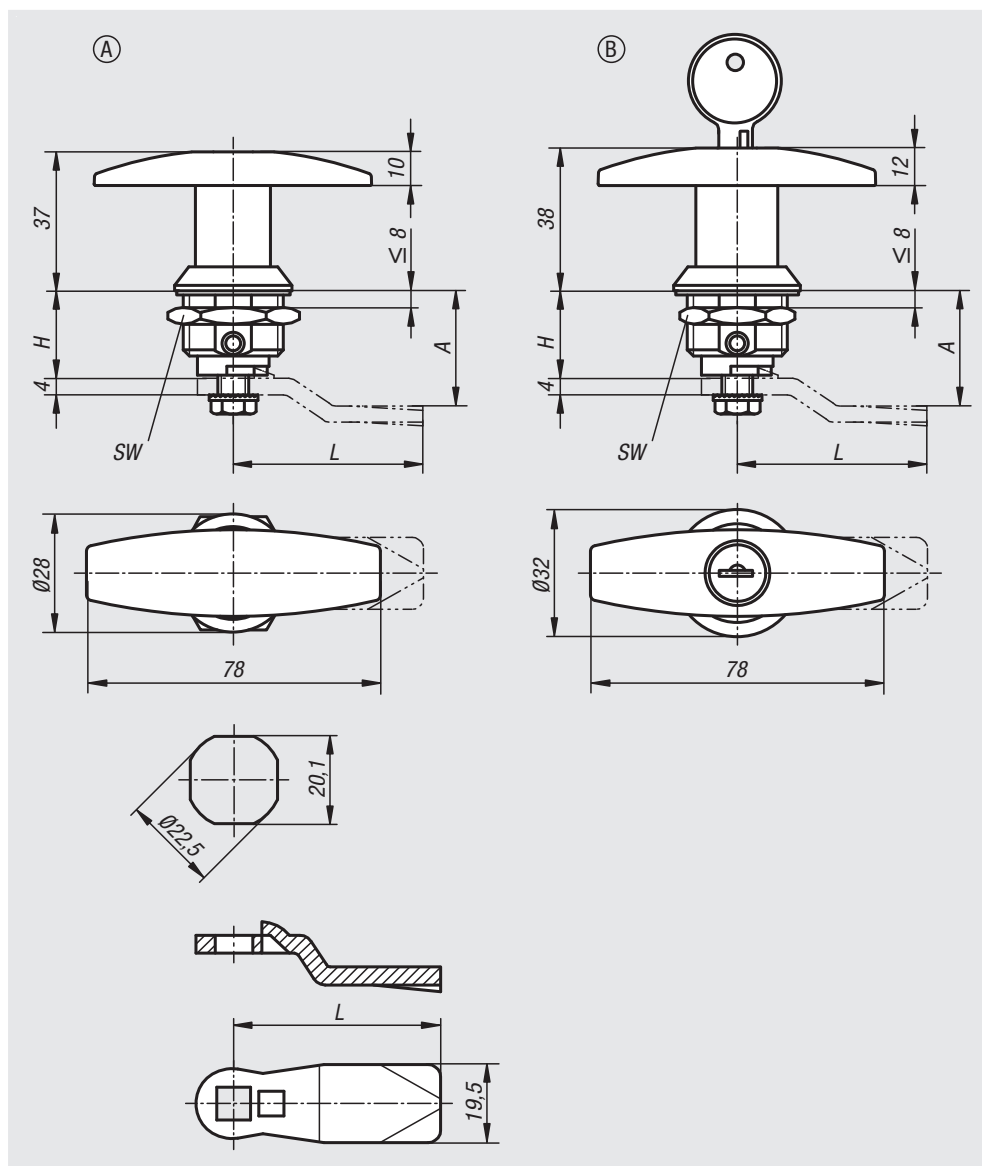
## Sample order:

nIm Quarter turn lock 05593-1186  
nIm Tongue 05569-245X180

## Note:

Quarter-turn lock with T-grip. For right or left mounting with 90° closing. The quarter-turn lock can be installed pre-assembled. Supplied with standard stainless-steel nut. The lockable quarter-turn locks are each supplied with 2 keys. Rating IP65. Please order required tongue version separately. Every tongue can be combined with this housing.

The key can be removed in both the closed and open position. The cylinder locks have a single-key system i.e. the same key works in all locks.



## Quarter-turn locks, stainless steel with T-grip

| Order No.  | Form | Actuation       | H  | SW |
|------------|------|-----------------|----|----|
| 05593-1186 | A    | T-Grip          | 18 | 27 |
| 05593-2186 | B    | lockable T-grip | 18 | 27 |

## Tongue for quarter-turn lock

| Order No.     | A<br>for housing length<br>H=18 | L  |
|---------------|---------------------------------|----|
| 05569-245X180 | 18                              | 45 |
| 05569-245X200 | 20                              | 45 |
| 05569-245X240 | 24                              | 45 |
| 05569-245X280 | 28                              | 45 |
| 05569-245X320 | 32                              | 45 |
| 05569-245X340 | 34                              | 45 |
| 05569-245X360 | 36                              | 45 |
| 05569-245X380 | 38                              | 45 |
| 05569-245X400 | 40                              | 45 |
| 05569-245X420 | 42                              | 45 |

# Quarter-turn locks

stainless steel with T-grip



## Material:

Quarter-turn lock 1.4401 stainless steel.  
Tongue 1.4301 stainless steel.

## Version:

Bright.  
Grip polished.

## Sample order:

nIm Quarter turn lock 05593-01-1186  
nIm Tongue 05566-07-450660

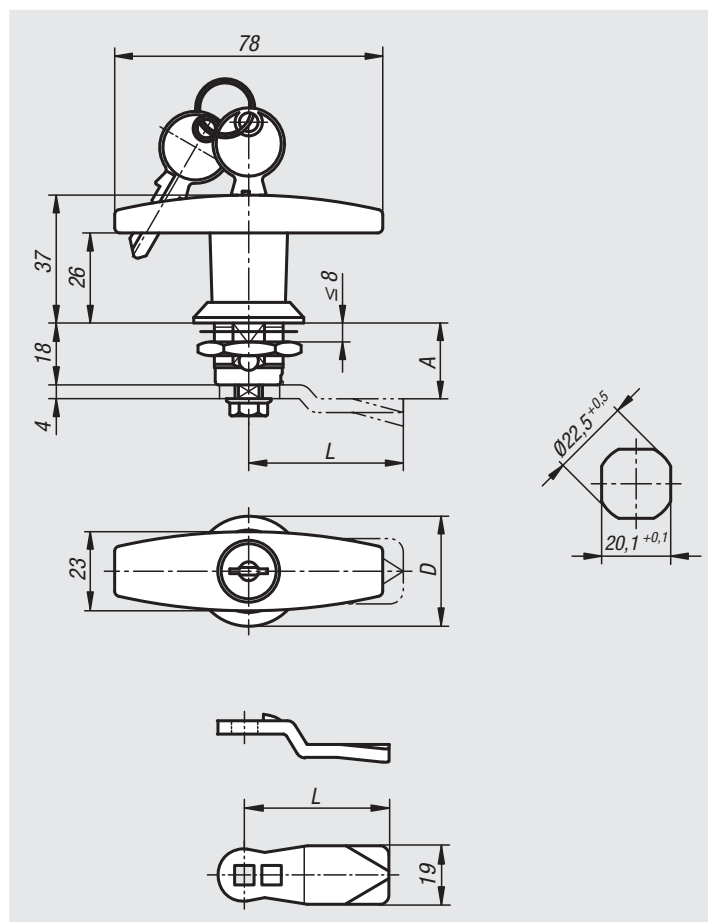
## Note:

Quarter-turn lock with T-grip. For right or left mounting with 90° closing. The quarter-turn lock can be installed pre-assembled. Supplied with standard stainless-steel nut. The lockable quarter-turn locks are each supplied with 2 keys. Rating IP65. Please order required tongue version separately. Every tongue can be combined with this housing.

The cylinder locks have a single-key system i.e. the same key works in all locks.

## On request:

Available for door thickness 20 and 40 mm.



## Quarter-turn locks, stainless steel with T-grip

| Order No.     | Actuation       | D  |
|---------------|-----------------|----|
| 05593-01-1186 | T-Grip          | 32 |
| 05593-01-2186 | lockable T-grip | 32 |

## Tongue for quarter-turn locks

| Order No.      | A  | L  |
|----------------|----|----|
| 05566-07-45060 | 6  | 45 |
| 05566-07-45080 | 8  | 45 |
| 05566-07-45100 | 10 | 45 |
| 05566-07-45140 | 14 | 45 |
| 05566-07-45160 | 16 | 45 |
| 05566-07-45180 | 18 | 45 |
| 05566-07-45200 | 20 | 45 |
| 05566-07-45220 | 22 | 45 |
| 05566-07-45240 | 24 | 45 |
| 05566-07-45260 | 26 | 45 |
| 05566-07-45280 | 28 | 45 |
| 05566-07-45320 | 32 | 45 |
| 05566-07-45500 | 50 | 45 |

# Quarter-turn locks in Hygienic DESIGN

with T-grip



## Material:

Housing and actuation: 1.4404.  
Earthing nut and ratchet screw: 1.4301.  
Seal: blue silicon, FDA conform.

## Version:

Bright.  
Grip polished.

## Sample order:

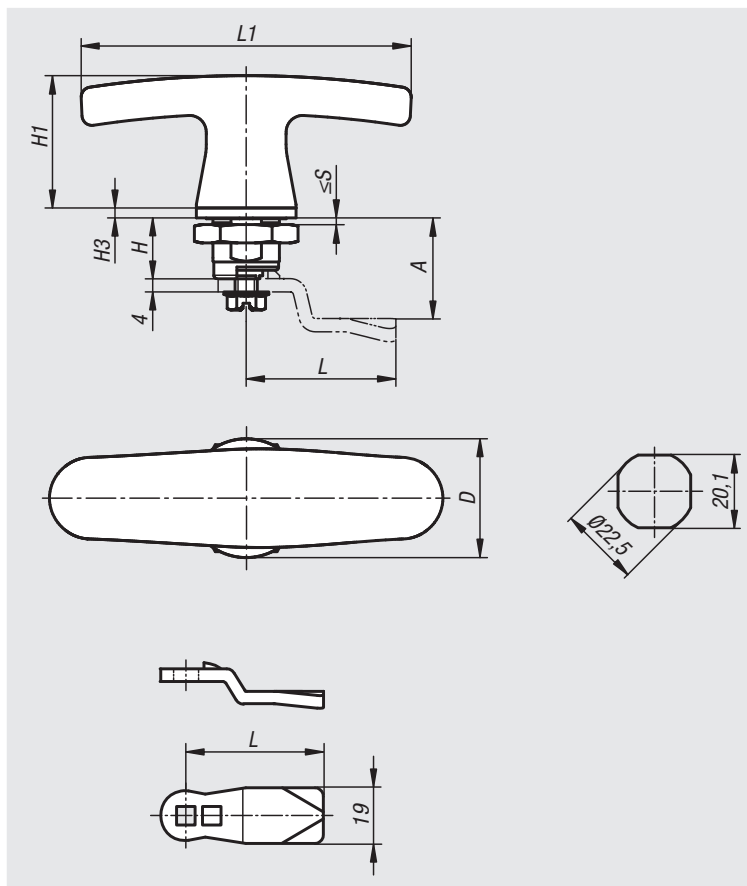
nln 05593-04-1188

## Note:

The hygienic stainless steel quarter turn lock prevents bacterial attack and fulfils the strict regulations of testing principles for foodstuff machinery and hygien.

The well conceived geometric form, the mirror polished stainless steel surface and the central circumferential seal reliably prevent dirt accumulation. Water, cleaning agents etc. can drain off fully and so prevent contamination.

Especially in processes where the resistance of the seal to cleaning and disinfection agents is very important, optimised control cabinets, terminal boxes and command panels are a must. Specifically designed after the principles of Hygienic DESIGN, the hygienic quarter turn lock HD fulfils the strict regulations of the foodstuff processing industry and passes therefore optimally in their professional hygienic applications.



The special seal is suitable for high pressure washing up to max. 100 bar and fulfils IP65/67. Furthermore, the seal is temperature stable up to 80°C and the blue colour satisfies FDA regulations (reliably prevents a confusion with foodstuffs).

Please order required tongue version separately. Every tongue can be combined with every housing.

## Quarter-turn locks in Hygienic DESIGN with T-grip

| Order No.     | D  | H  | H1 | H3 | L1  | S<br>max. |
|---------------|----|----|----|----|-----|-----------|
| 05593-04-1188 | 30 | 18 | 40 | 3  | 100 | 8         |

## Tongue for quarter-turn locks

| Order No.      | A  | L  |
|----------------|----|----|
| 05566-07-45060 | 6  | 45 |
| 05566-07-45080 | 8  | 45 |
| 05566-07-45100 | 10 | 45 |
| 05566-07-45140 | 14 | 45 |
| 05566-07-45160 | 16 | 45 |
| 05566-07-45180 | 18 | 45 |
| 05566-07-45200 | 20 | 45 |
| 05566-07-45220 | 22 | 45 |
| 05566-07-45240 | 24 | 45 |
| 05566-07-45260 | 26 | 45 |
| 05566-07-45280 | 28 | 45 |
| 05566-07-45320 | 32 | 45 |
| 05566-07-45500 | 50 | 45 |

# Quarter-turn locks

stainless steel with L-grip



## Material:

Grip and tongue 1.4301 stainless steel.  
Housing and nut 1.4305 stainless steel.

## Version:

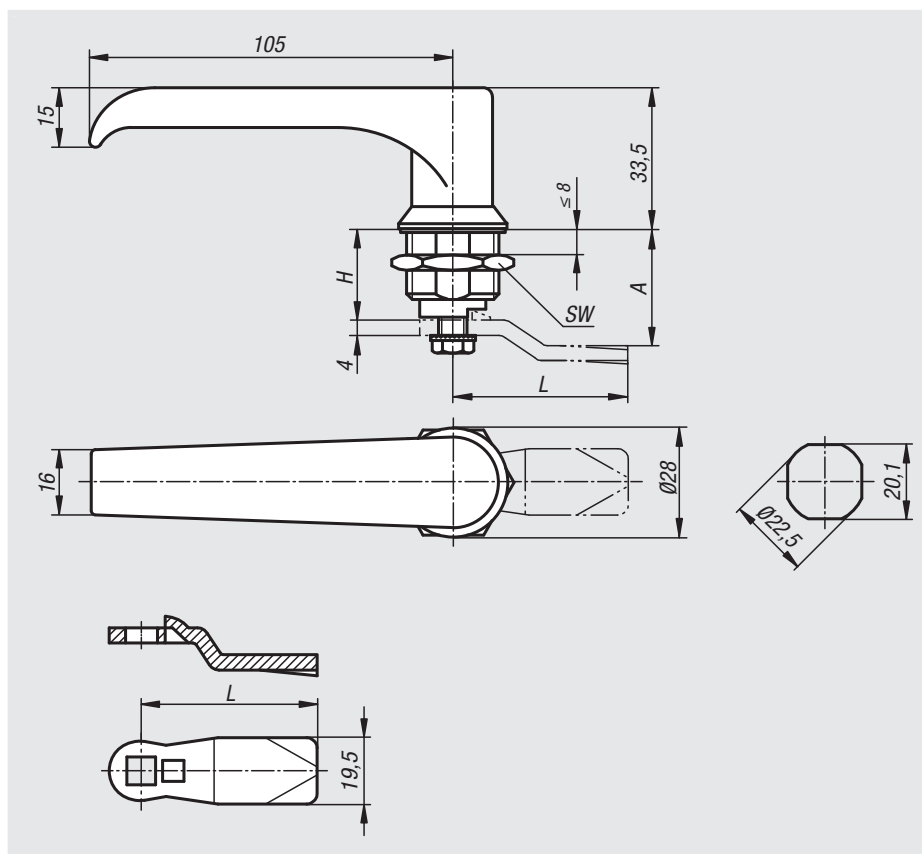
Bright.

## Sample order:

nIm Quarter turn lock 05594-1186  
nIm Tongue 05569-245X180

## Note:

Quarter-turn lock with L-grip. For right or left mounting with 90° closing. The quarter-turn lock can be installed pre-assembled. Supplied with standard stainless-steel nut. Rating IP65. Please order required tongue version separately. Every tongue can be combined with this housing.



## Quarter-turn lock, stainless steel with L-grip

| Order No.  | Actuation | H  | SW |
|------------|-----------|----|----|
| 05594-1186 | L-grip    | 18 | 27 |

## Tongue for quarter-turn lock

| Order No.     | A<br>for housing length<br>H=18 | L  |
|---------------|---------------------------------|----|
| 05569-245X180 | 18                              | 45 |
| 05569-245X200 | 20                              | 45 |
| 05569-245X240 | 24                              | 45 |
| 05569-245X280 | 28                              | 45 |
| 05569-245X320 | 32                              | 45 |
| 05569-245X340 | 34                              | 45 |
| 05569-245X360 | 36                              | 45 |
| 05569-245X380 | 38                              | 45 |
| 05569-245X400 | 40                              | 45 |
| 05569-245X420 | 42                              | 45 |

# Quarter-turn locks

stainless steel with L-grip



## Material:

Quarter-turn lock 1.4401 stainless steel.  
Tongue 1.4301 stainless steel.

## Version:

Bright.  
Grip polished.

## Sample order:

nIm Quarter turn lock 05594-02-118  
nIm Tongue 05566-07-450660

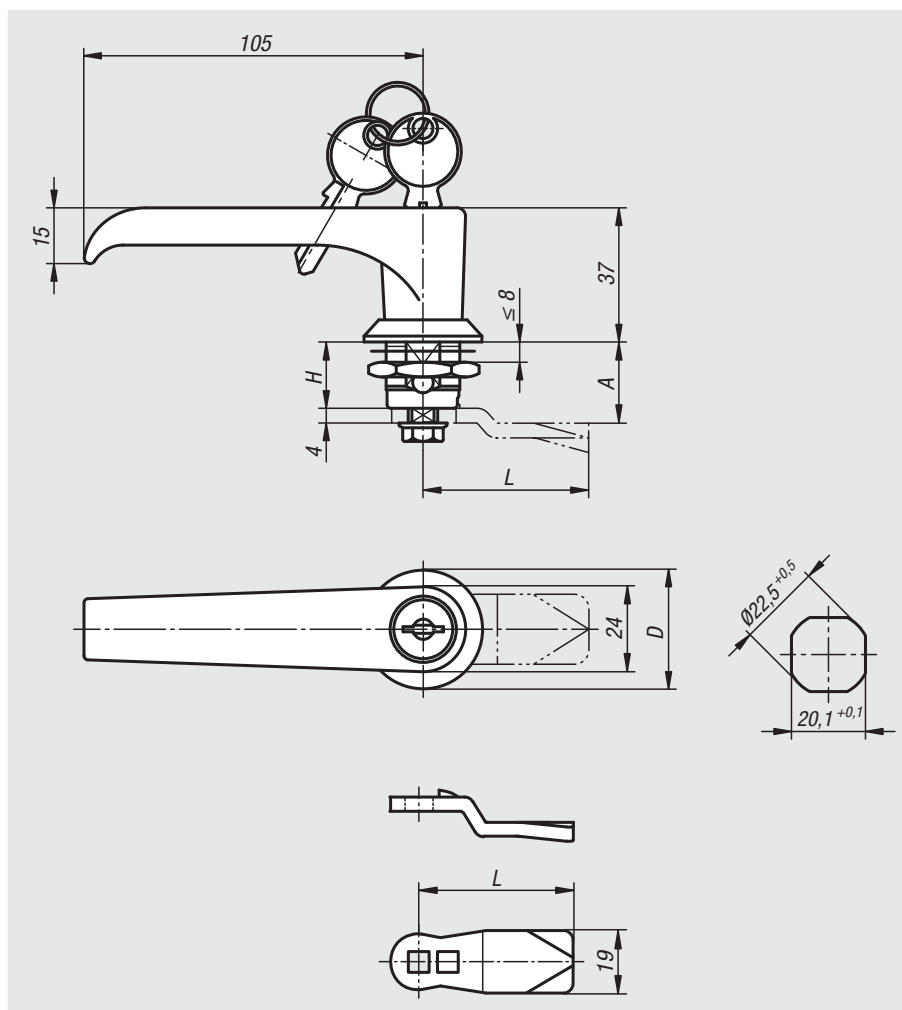
## Note:

Quarter-turn lock with L-grip. For right or left mounting with 90° closing. The quarter-turn lock can be installed pre-assembled. Rating IP65. Please order required tongue version separately. Every tongue can be combined with this housing.

The lockable quarter-turn locks are each supplied with 2 keys. The cylinder locks have a single-key system i.e. the same key works in all locks.

## On request:

Available for door thickness 20 and 40 mm.



## Quarter-turn locks, stainless steel with L-grip

| Order No.    | Actuation       | D  | H  |
|--------------|-----------------|----|----|
| 05594-02-218 | lockable L-grip | 32 | 18 |
| 05594-02-118 | L-grip          | 32 | 18 |

## Tongue for quarter-turn locks

| Order No.      | A  | L  |
|----------------|----|----|
| 05566-07-45060 | 6  | 45 |
| 05566-07-45080 | 8  | 45 |
| 05566-07-45100 | 10 | 45 |
| 05566-07-45140 | 14 | 45 |
| 05566-07-45160 | 16 | 45 |
| 05566-07-45180 | 18 | 45 |
| 05566-07-45200 | 20 | 45 |
| 05566-07-45220 | 22 | 45 |
| 05566-07-45240 | 24 | 45 |
| 05566-07-45260 | 26 | 45 |
| 05566-07-45280 | 28 | 45 |
| 05566-07-45320 | 32 | 45 |
| 05566-07-45500 | 50 | 45 |

# Quarter-turn locks

for sterile areas



## Material:

Quarter-turn lock 1.4305 stainless steel.

Tongue 1.4301 stainless steel.

## Version:

Bright.

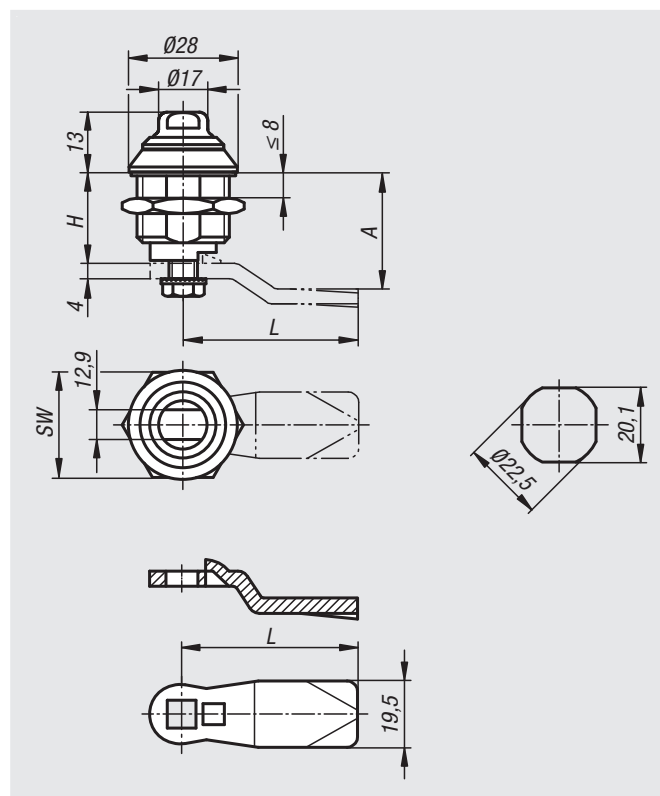
## Sample order:

nIm Quarter turn lock 05595-60186

nIm Tongue 05569-245X180

## Note:

Stainless steel quarter-turn lock with 13 mm AF actuator for applications with hygienic requirements as per EN ISO 14159, EN 1672-2:2009\*. Dust and waterproof as per IP69K. The rounded form and polished surfaces together with the material used make these locks insensitive to cleaning materials and resistant to dirt. The seal between the quarter-turn lock and the door is made using the captive PUR foam seal on the underside of the quarter-turn lock housing.



## Quarter-turn lock for sterile areas

| Order No.   | Actuation   | H  | SW |
|-------------|-------------|----|----|
| 05595-60186 | double flat | 18 | 27 |

## Tongue for quarter-turn lock

| Order No.     | A<br>for housing length<br>H=18 | L  |
|---------------|---------------------------------|----|
| 05569-245X180 | 18                              | 45 |
| 05569-245X200 | 20                              | 45 |
| 05569-245X240 | 24                              | 45 |
| 05569-245X280 | 28                              | 45 |
| 05569-245X320 | 32                              | 45 |
| 05569-245X340 | 34                              | 45 |
| 05569-245X360 | 36                              | 45 |
| 05569-245X380 | 38                              | 45 |
| 05569-245X400 | 40                              | 45 |
| 05569-245X420 | 42                              | 45 |

# Quarter-turn locks in Hygienic DESIGN



## Material:

Housing, actuation and fastening nut 1.4404 stainless steel.

O-rings red silicone, conforming to FDA.

Tongue 1.4301 stainless steel.

## Version:

Bright.

## Sample order:

nIm Quarter turn lock 05595-01-18

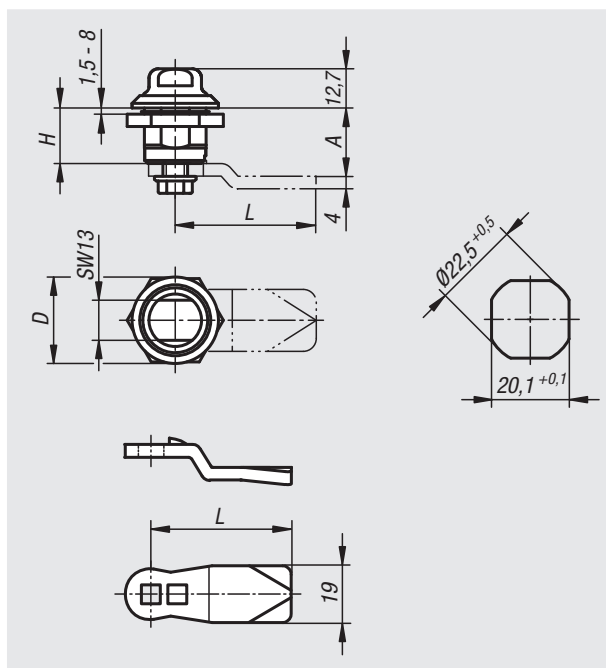
Tongue 05566-07-45060

## Note:

The quarter turn lock fulfills the hygienic requirements acc. to DIN EN 1672-2 and DIN EN 14159.

Especially suitable for the food and beverage industry.

Please order required tongue version separately. Every tongue can be combined with every housing.



## Quarter-turn locks in Hygienic DESIGN

| Order No.   | Actuation   | D  | H  |
|-------------|-------------|----|----|
| 05595-01-18 | double flat | 28 | 18 |

## Tongue for quarter-turn lock

| Order No.      | A  | L  |
|----------------|----|----|
| 05566-07-45060 | 6  | 45 |
| 05566-07-45080 | 8  | 45 |
| 05566-07-45100 | 10 | 45 |
| 05566-07-45140 | 14 | 45 |
| 05566-07-45160 | 16 | 45 |
| 05566-07-45180 | 18 | 45 |
| 05566-07-45200 | 20 | 45 |
| 05566-07-45220 | 22 | 45 |
| 05566-07-45240 | 24 | 45 |
| 05566-07-45260 | 26 | 45 |
| 05566-07-45280 | 28 | 45 |
| 05566-07-45320 | 32 | 45 |
| 05566-07-45500 | 50 | 45 |

# Quarter-turn locks in Hygienic DESIGN



## Material:

Housing and actuation: 1.4404.  
Earthing nut and ratchet screw: 1.4301.  
Seal: blue silicon, FDA conform.  
Tongue 1.4301.

## Version:

Bright.

## Sample order:

nlm Quarter turn lock 05595-02-18  
Tongue 05566-07-45060

## Note:

The hygienic stainless steel quarter turn lock prevents bacterial attack and fulfils the strict regulations of testing principles for foodstuff machinery and hygien. The well conceived geometric form, the mirror polished stainless steel surface and the central circumferential seal reliably prevent dirt accumulation. Water, cleaning agents etc. can drain off fully and so prevent contamination.

Especially in processes where the resistance of the seal to cleaning and disinfection agents is very important, optimised control cabinets, terminal boxes and command panels are a must. Specifically designed after the principles of Hygienic DESIGN, the hygienic quarter turn lock HD fulfils the strict regulations of the foodstuff processing industry and passes therefore optimally in their professional hygienic applications.

The special seal is suitable for high pressure washing up to max. 100 bar and fulfils IP65/67. Furthermore, the seal is temperature stable up to 80°C and the blue colour satisfies FDA regulations (reliably prevents a confusion with foodstuffs).

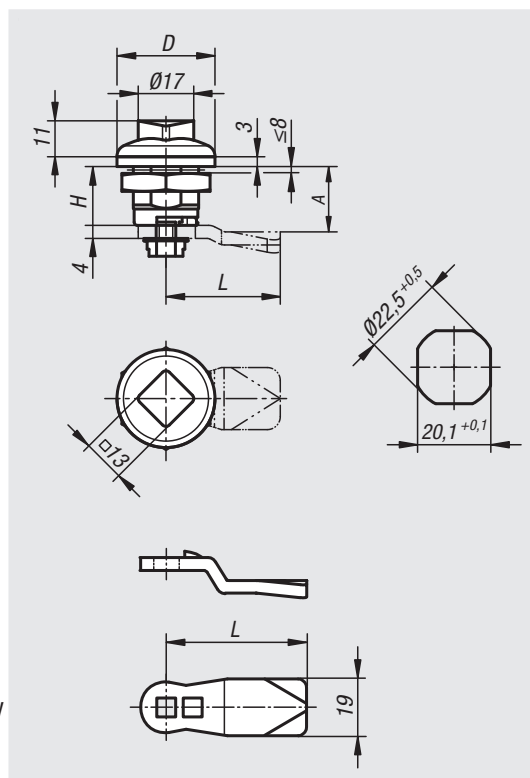
Please order required tongue version separately. Every tongue can be combined with every housing.

## Quarter-turn locks in Hygienic DESIGN

| Order No.   | Actuation | D  | H  |
|-------------|-----------|----|----|
| 05595-02-18 | square    | 30 | 18 |

## Tongue for quarter-turn lock

| Order No.      | A  | L  |
|----------------|----|----|
| 05566-07-45060 | 6  | 45 |
| 05566-07-45080 | 8  | 45 |
| 05566-07-45100 | 10 | 45 |
| 05566-07-45140 | 14 | 45 |
| 05566-07-45160 | 16 | 45 |
| 05566-07-45180 | 18 | 45 |
| 05566-07-45200 | 20 | 45 |
| 05566-07-45220 | 22 | 45 |
| 05566-07-45240 | 24 | 45 |
| 05566-07-45260 | 26 | 45 |
| 05566-07-45280 | 28 | 45 |
| 05566-07-45320 | 32 | 45 |
| 05566-07-45500 | 50 | 45 |



## Slam latches


**Material:**

Die cast aluminium.  
End caps plastic.

**Version:**

Black powder-coated.  
End caps black.

**Sample order:**

nln 05598-100561

**Note:**

For the simple and safe locking of doors and hatches.  
Installed from the front without mechanical processing  
using M6 cylinder-head or cheese-head screws.  
Secured to prevent removal when locked.

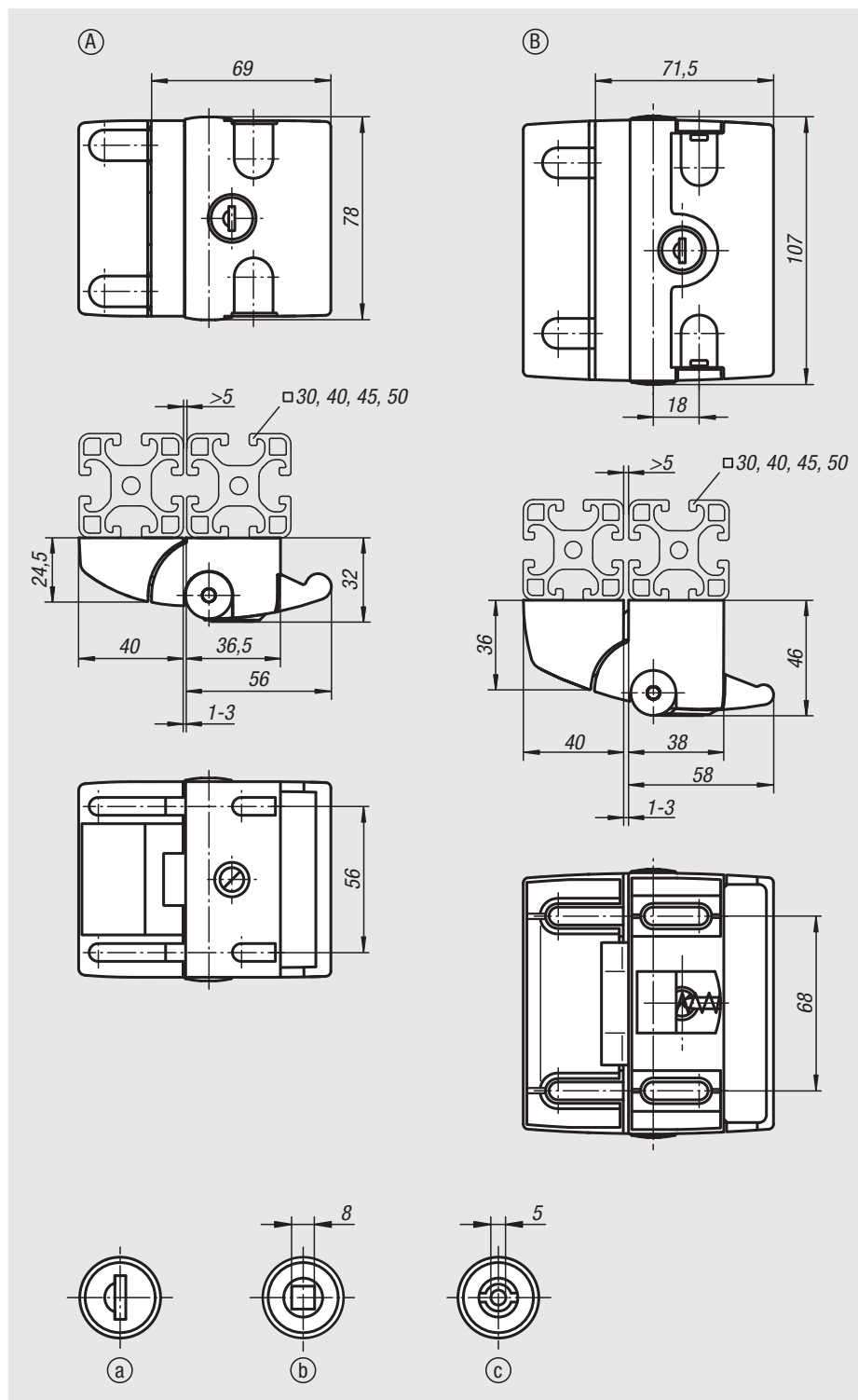
The key-operated version is supplied with 2 keys.  
The key can be removed in both positions (open and  
closed). The locks are keyed alike, i.e. they can all be  
opened using the same key (euro key 5333).

The double-lug version is supplied with a double lug  
key.

**Drawing reference:**

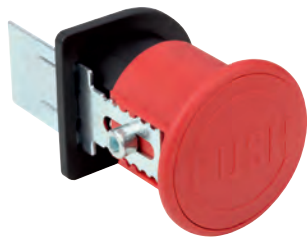
Actuation:

- a) single-key system
- b) square 8 mm
- c) double lug 5 mm



| Order No.    | Form | Slot width | Actuation       |
|--------------|------|------------|-----------------|
| 05598-100561 | A    | 8/10       | not lockable    |
| 05598-170561 | A    | 8/10       | key             |
| 05598-118561 | A    | 8/10       | square 8 mm     |
| 05598-145561 | A    | 8/10       | double lug 5 mm |
| 05598-200681 | B    | 8/10       | not lockable    |
| 05598-270681 | B    | 8/10       | key             |

## Emergency openers


**Material:**

Body plastic PA 6, fibreglass reinforced.

Push button plastic PA 6, fibreglass reinforced.

Release catch steel.

**Version:**

Body black.

Push button red.

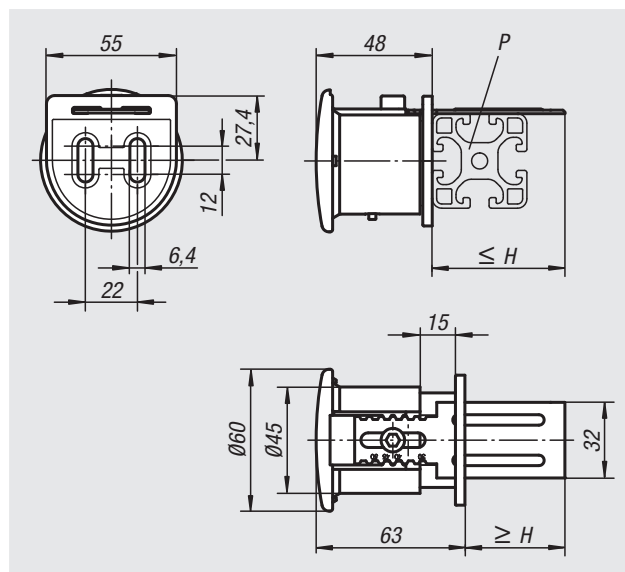
Release catch electro zinc-plated.

**Sample order:**

nIm 05599-93050

**Note:**

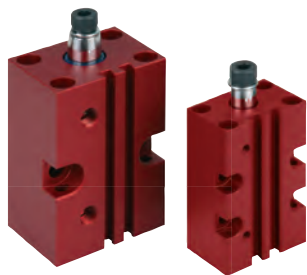
Rear-side emergency release for slam latches. Installation with two socket head screws (preferably DIN 912 M6x12), no machining required. Suitable for all slam latches.



| Order No.   | Slot width | H min. | H max. | P     |
|-------------|------------|--------|--------|-------|
| 05599-93050 | 8/10       | 30     | 50     | 30-50 |
| 05599-96080 | 8/10       | 60     | 80     | 60-80 |

# Swing clamps

pneumatic



## Material:

Body aluminium.

Double-acting piston rod stainless steel.

## Version:

Body, red anodised.

Double acting piston rod, polished.

## Sample order:

n1m 05610-112

## Note:

Swing clamps are used where low clamping forces suffice or where the clamping point must be free when mounting and removing the workpiece. The block form of the housing offers universal fastening possibilities. The magnetic piston is primed for electrical end position feedback.

Including screw and lock washer for fastening the clamping arms (accessories).

The swing action of the clamp should not be blocked.

F1 = at 6 bar (max. operating pressure).

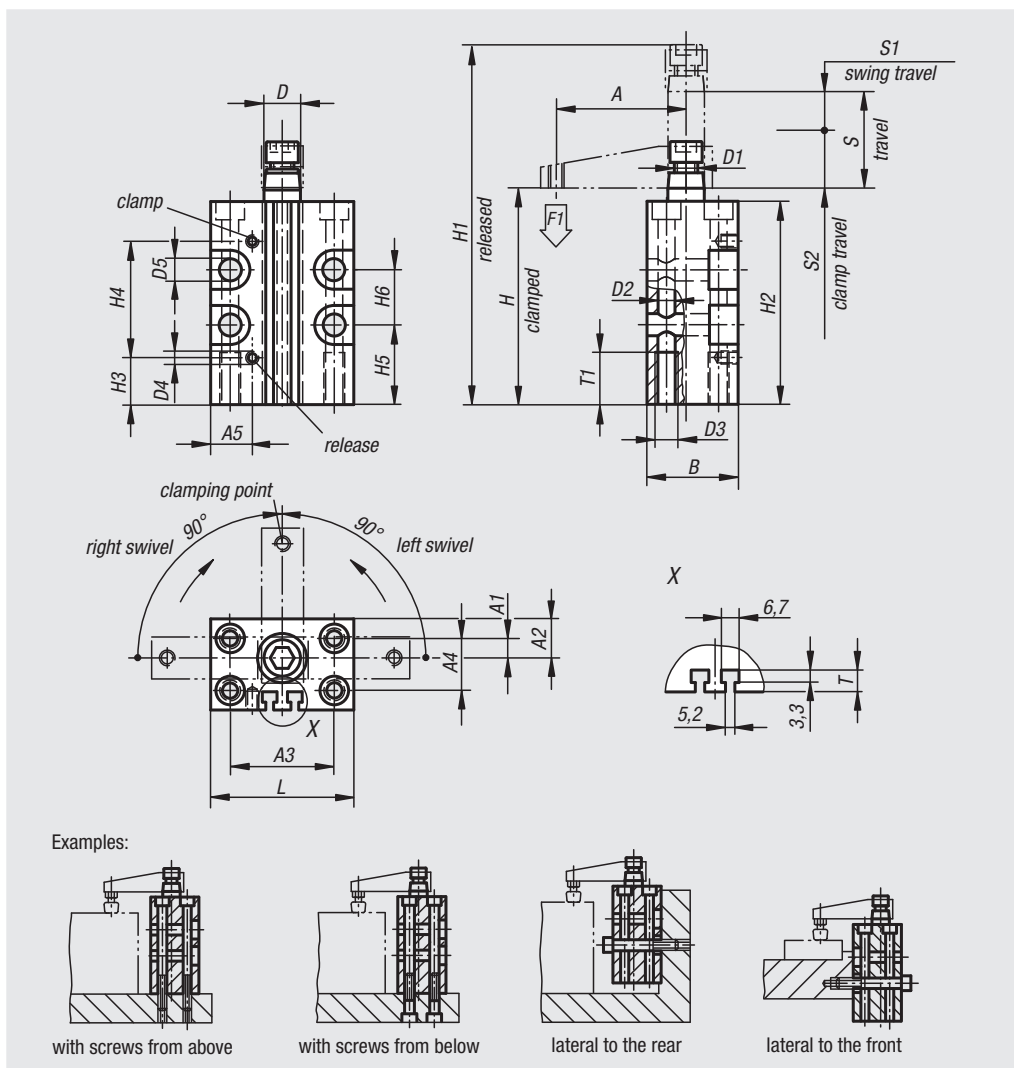
## On request:

Proximity switch.

## Accessories:

- Clamping arm 05620

- Adapter 05625



| Order No.<br>swivel to the right | Order No.<br>swivel to the left | Size | A  | A1   | A2   | A3 | A4 | A5   | B  | D  | D1  | D2   | D3  | Travel<br>S | S1 | S2 |
|----------------------------------|---------------------------------|------|----|------|------|----|----|------|----|----|-----|------|-----|-------------|----|----|
| 05610-112                        | 05610-212                       | 12   | 35 | 0    | 10   | 31 | -  | 20   | 24 | 8  | M5  | 4,3  | M5  | 16          | 7  | 9  |
| 05610-116                        | 05610-216                       | 16   | 41 | -2   | 11   | 31 | -  | 21   | 28 | 8  | M5  | 4,3  | M5  | 16          | 7  | 9  |
| 05610-120                        | 05610-220                       | 20   | 48 | 8    | 13   | 36 | 20 | 11,5 | 30 | 12 | M8  | 5,5  | M6  | 27          | 12 | 15 |
| 05610-125                        | 05610-225                       | 25   | 50 | 7,5  | 15   | 40 | 20 | 17   | 35 | 14 | M8  | 6,5  | M8  | 27          | 15 | 12 |
| 05610-132                        | 05610-232                       | 32   | 60 | 12,5 | 20   | 45 | 30 | 18   | 45 | 16 | M8  | 6,5  | M8  | 30          | 16 | 14 |
| 05610-140                        | 05610-240                       | 40   | 70 | 15,5 | 24,5 | 52 | 37 | 22   | 55 | 16 | M8  | 8,5  | M10 | 31          | 16 | 15 |
| 05610-150                        | 05610-250                       | 50   | 80 | 21,5 | 31   | 66 | 46 | 25   | 65 | 20 | M10 | 8,5  | M10 | 30          | 15 | 15 |
| 05610-163                        | 05610-263                       | 63   | 90 | 27,5 | 37,5 | 80 | 60 | 30   | 80 | 20 | M10 | 10,5 | M12 | 30          | 15 | 15 |

| Order No.<br>swivel to the right | Order No.<br>swivel to the left | Size | D4   | D5   | H   | H1  | H2  | H3 | H4   | H5 | H6 | L   | T   | T1 | F1<br>kN |
|----------------------------------|---------------------------------|------|------|------|-----|-----|-----|----|------|----|----|-----|-----|----|----------|
| 05610-112                        | 05610-212                       | 12   | M5   | 4,3  | 75  | 104 | 70  | 11 | 51   | 26 | 21 | 40  | 5   | 15 | 0,03     |
| 05610-116                        | 05610-216                       | 16   | M5   | 4,3  | 75  | 104 | 70  | 11 | 51   | 26 | 21 | 42  | 4,5 | 15 | 0,06     |
| 05610-120                        | 05610-220                       | 20   | M5   | 5,5  | 79  | 124 | 74  | 17 | 44,5 | 24 | 22 | 46  | 4,5 | 20 | 0,08     |
| 05610-125                        | 05610-225                       | 25   | M5   | 8,5  | 82  | 125 | 78  | 17 | 44,5 | 32 | -  | 55  | 5   | 20 | 0,17     |
| 05610-132                        | 05610-232                       | 32   | G1/8 | 8,5  | 96  | 145 | 90  | 22 | 50   | 43 | -  | 60  | 6,5 | 20 | 0,27     |
| 05610-140                        | 05610-240                       | 40   | G1/8 | 8,5  | 95  | 145 | 90  | 20 | 52   | 40 | -  | 70  | 8   | 25 | 0,45     |
| 05610-150                        | 05610-250                       | 50   | G1/8 | 10,5 | 106 | 162 | 100 | 25 | 53,5 | 45 | -  | 85  | 6,5 | 30 | 0,7      |
| 05610-163                        | 05610-263                       | 63   | G1/8 | 10,5 | 106 | 162 | 100 | 28 | 53,5 | 36 | -  | 100 | 8,5 | 30 | 1,1      |

## Clamping arm

for swing clamp


**Material:**

High-strength aluminium alloy

**Version:**

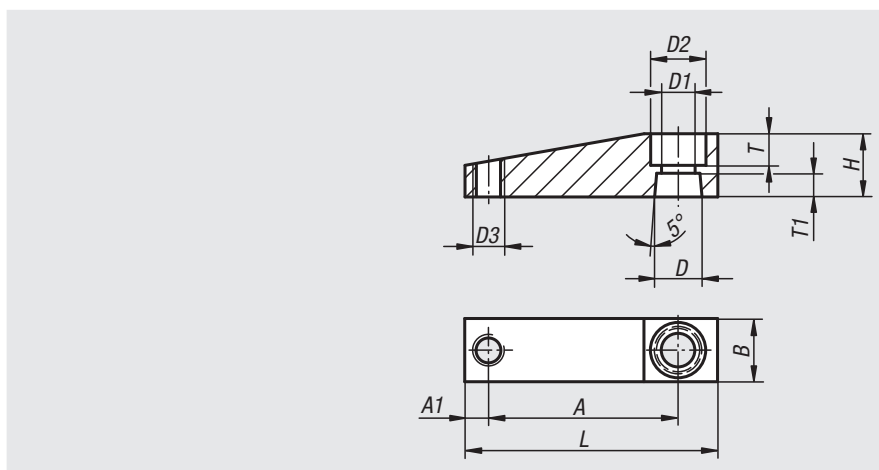
Coated with hart-coat®

**Sample order:**

nIm 05620-12

**Note:**

Hard wearing surface, repels welding particles.  
Suitable for pneumatic swing clamp 05610, in respective sizes.

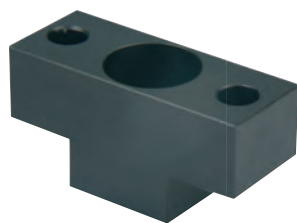


| Order No. | Size | A  | A1 | B  | D  | D1  | D2 | D3  | H  | L   | T | T1 |
|-----------|------|----|----|----|----|-----|----|-----|----|-----|---|----|
| 05620-12  | 12   | 35 | 4  | 12 | 8  | 5,5 | 9  | M4  | 12 | 45  | 5 | 5  |
| 05620-16  | 16   | 41 | 4  | 12 | 8  | 5,5 | 9  | M4  | 12 | 51  | 4 | 5  |
| 05620-20  | 20   | 48 | 6  | 16 | 12 | 8,5 | 14 | M6  | 16 | 64  | 8 | 6  |
| 05620-25  | 25   | 50 | 6  | 16 | 14 | 9   | 14 | M6  | 16 | 66  | 6 | 6  |
| 05620-32  | 32   | 60 | 9  | 20 | 16 | 9   | 14 | M8  | 20 | 80  | 7 | 9  |
| 05620-40  | 40   | 70 | 9  | 20 | 16 | 9   | 14 | M8  | 20 | 90  | 7 | 9  |
| 05620-50  | 50   | 80 | 10 | 25 | 20 | 11  | 17 | M12 | 25 | 105 | 9 | 10 |
| 05620-63  | 63   | 90 | 10 | 25 | 20 | 11  | 17 | M12 | 25 | 115 | 9 | 10 |

## 05625

## Adapters

for swing clamp


**Material:**

High-strength aluminium alloy

**Version:**

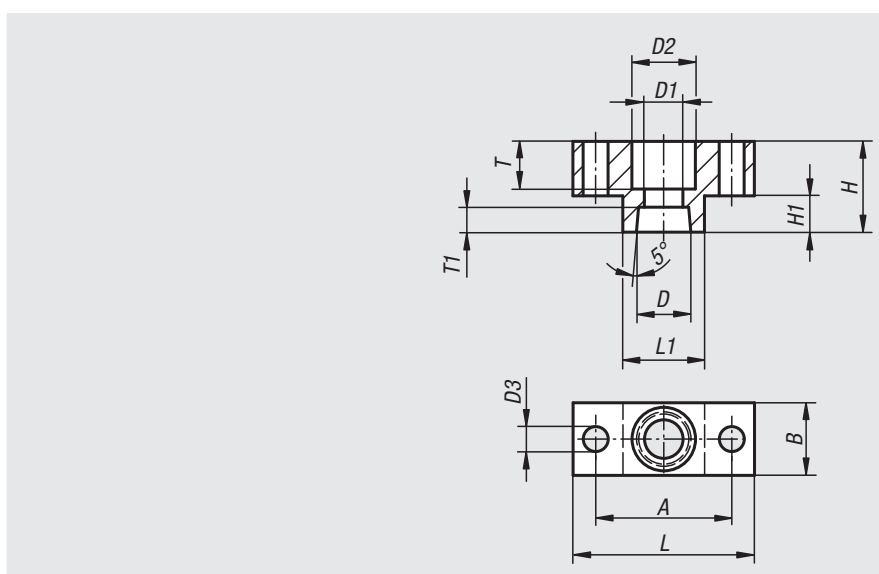
Coated with hart-coat®

**Sample order:**

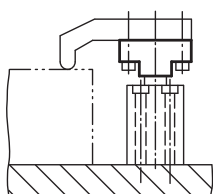
nIm 05625-1216

**Note:**

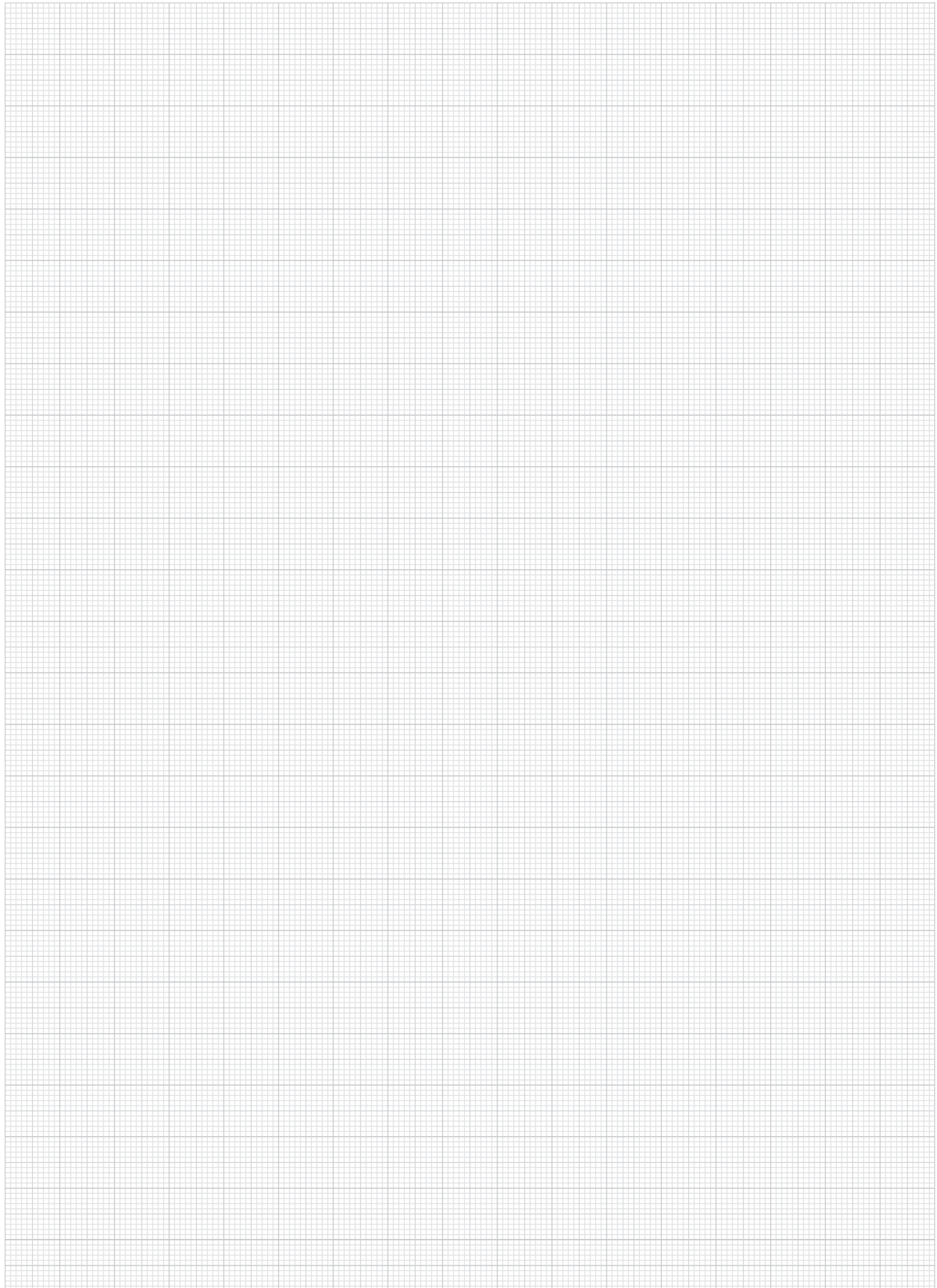
Hard wearing surface, repels welding particles.  
Holds matching clamping arms. Suitable for pneumatic swing clamp 05610 in respective sizes.



| Order No.  | Size  | A  | B  | D  | D1   | D2 | D3  | H  | H1 | L  | L1 | T    | T1  |
|------------|-------|----|----|----|------|----|-----|----|----|----|----|------|-----|
| 05625-1216 | 12/16 | 22 | 12 | 8  | 5,5  | 10 | 4,5 | 14 | 6  | 30 | 13 | 7    | 5   |
| 05625-2000 | 20    | 30 | 16 | 12 | 8,5  | 14 | 5,5 | 20 | 8  | 40 | 18 | 10,5 | 5,5 |
| 05625-2500 | 25    | 38 | 16 | 14 | 8,5  | 14 | 5,5 | 20 | 8  | 50 | 25 | 8    | 6,5 |
| 05625-3240 | 32/40 | 45 | 19 | 16 | 8,5  | 14 | 7   | 25 | 10 | 60 | 30 | 11   | 9   |
| 05625-5063 | 50/63 | 48 | 25 | 20 | 10,5 | 17 | 9   | 30 | 12 | 65 | 30 | 14   | 10  |



## Notes



# Pneumatic toggle lever clamps

## Tünkers system

Pneumatic toggle lever clamps are used for economic manufacturing in transfer lines, machine tools, fixtures and specialist machines.

### Functional principle:

High clamping forces are achieved at low air pressure and air consumption because of the knee-operated lever clamp. The clamping arm is laterally stable and solidly bearing-mounted against rotation, torsion and angular shift. The clamping forces engendered by the knee-operated lever are taken up by thrust bearings.

### Particular design features:

#### Clamp design:

Hardened bushes and guide rails, roller-mounted thrust bearings. Maintenance-free due to permanent lubrication and specialist bearing bushes.

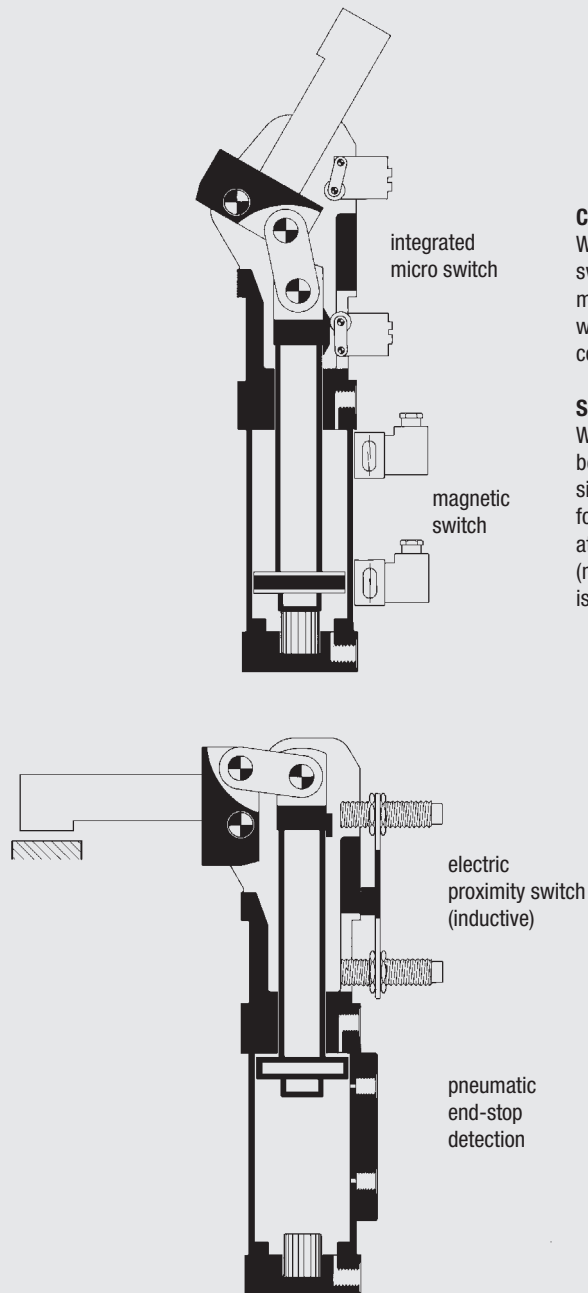
#### Retaining clamps:

Are completely self-inhibiting. The clamping force is safely guaranteed, even if the pressure is removed. Clip position in the top dead centre position:

#### Note:

The clamping arm can always be moved from the top dead centre position if the acting retention force does not exceed the clamping force created (e.g. by slippage of the clamped machined part).

### Determining the end position:



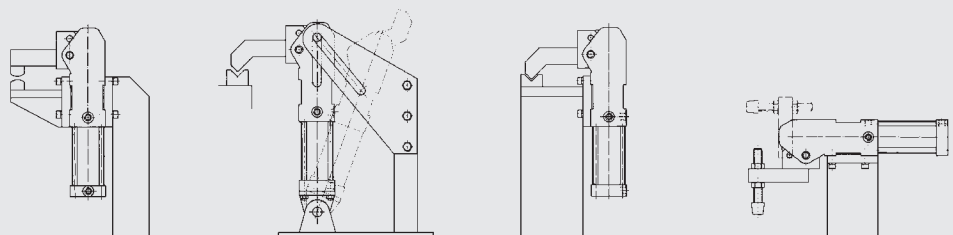
#### Control:

When constructing complete switches consult the known manufacturers of pneumatic valves, who also supply all the connecting components and fittings.

#### Selection criteria:

With pneumatic clamps, in order to be able to select the correct clamp size, in addition to the retention force, the possible clamping force at 5 bar air pressure (max. possible air pressure 8 bar) is also specified.

### mounting example



## Mini clamps


**Material:**

Casing high-tensile aluminium.  
Clamping arm steel.

**Version:**

Clamping arm black oxidised.

**Sample order:**

nIm 05650-0500111

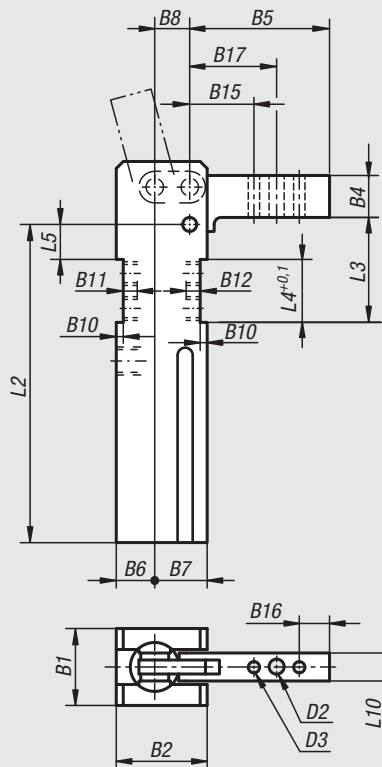
**Note:**

The mini clamp is characterised by its small dimensions, positioning accuracy of the clamping arm and light construction. Mini clamps are fully self-limiting. The clamping force is guaranteed even when the pressure is removed through the over dead-centre position of the toggle lever on the clamping arm. The permanent lubrication and special bearing bushings make the mini clamps maintenance-free. They can be operated using dry, oil-free air.

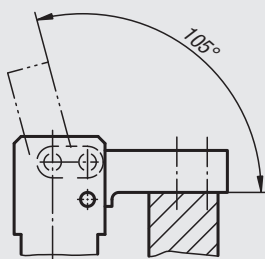
**On request:**

Clamping arm without holes.

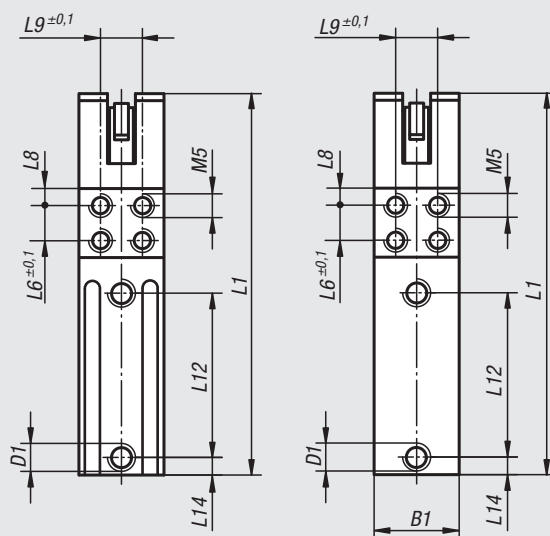
electronic end position feedback



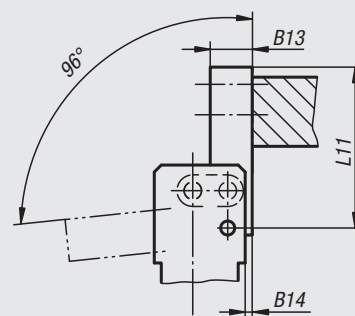
Form A  
vertical clamping force  
max. opening angle 105°



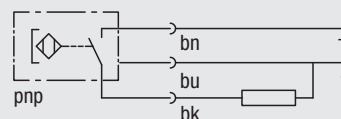
no end position feedback



Form B  
horizontal clamping force  
max. opening angle 96°



Electrical  
connection diagram



|                                            |             |
|--------------------------------------------|-------------|
| Connection type                            | PICO        |
| Operating voltage (V)                      | 10...30 VDC |
| Residual ripple (%)                        | ≤ 10        |
| Intrinsic current consumption (mA)         | ≤ 2,0       |
| Constant current (mA)                      | ≤ 120       |
| Switching hysteresis (mm)                  | ≤ 1         |
| Condition display                          | LED         |
| Permissible environmental temperature (°C) | -25...+70   |
| Protection class (DIN 40 050)              | IP 67       |

## Mini clamps

## Mini clamp with electronic end position feedback

| Order No.<br>Form A | Order No.<br>Form B | Size | Tightening torque<br>Nm<br>at 5 bar | Retaining<br>torque<br>Nm | Operating pressure<br>bar with<br>oil-free air | Max pressure<br>bar with<br>oil-free air | B1 | B2 | B4 | B5 | B6 | B7 | B8 | B10 | B11 | B12 | B13 | B14 |
|---------------------|---------------------|------|-------------------------------------|---------------------------|------------------------------------------------|------------------------------------------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 05650-0500111       | 05650-0500121       | 2    | 8                                   | 25                        | 5                                              | 6                                        | 26 | 32 | 15 | 50 | 14 | 18 | 12 | 2,5 | 5   | 7   | 12  | 2   |
| 05650-0900111       | 05650-0900121       | 3    | 15                                  | 54                        | 5                                              | 6                                        | 30 | 39 | 18 | 60 | 17 | 22 | 15 | 3   | 6   | 8   | 16  | 3   |
| 05650-1000111       | 05650-1000121       | 4    | 25                                  | 75                        | 5                                              | 6                                        | 35 | 45 | 22 | 75 | 20 | 25 | 18 | 4   | 6   | 8   | 18  | 4   |

| Order No.<br>Form A | Order No.<br>Form B | Size | B15 | B16 | B17  | D1    | D2  | D3 | L1  | L2  | L3   | L4 | L5  | L6 | L8 | L9 | L10 | L11 | L12 | L14  |
|---------------------|---------------------|------|-----|-----|------|-------|-----|----|-----|-----|------|----|-----|----|----|----|-----|-----|-----|------|
| 05650-0500111       | 05650-0500121       | 2    | 28  | 6   | 36   | M5    | 5,5 | 4  | 123 | 96  | 27,5 | 20 | 7,5 | 10 | 5  | 16 | 10  | 50  | 57  | 12   |
| 05650-0900111       | 05650-0900121       | 3    | 32  | 8   | 42   | G 1/8 | 6,5 | 5  | 158 | 120 | 40   | 25 | 14  | 15 | 5  | 20 | 12  | 60  | 69  | 15   |
| 05650-1000111       | 05650-1000121       | 4    | 40  | 10  | 52,5 | G 1/8 | 8,5 | 6  | 182 | 136 | 47   | 28 | 17  | 18 | 5  | 25 | 16  | 75  | 80  | 17,5 |

## Mini clamp without end position feedback

| Order No.<br>Form A | Order No.<br>Form B | Size | Tightening torque<br>Nm<br>at 5 bar | Retaining<br>torque<br>Nm | Operating pressure<br>bar with<br>oil-free air | Max pressure<br>bar with<br>oil-free air | B1 | B2 | B4 | B5 | B6 | B7 | B8 | B10 | B11 | B12 | B13 | B14 |
|---------------------|---------------------|------|-------------------------------------|---------------------------|------------------------------------------------|------------------------------------------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 05650-0500411       | 05650-0500421       | 2    | 8                                   | 25                        | 5                                              | 6                                        | 26 | 32 | 15 | 50 | 14 | 18 | 12 | 2,5 | 5   | 7   | 12  | 2   |
| 05650-0900411       | 05650-0900421       | 3    | 15                                  | 54                        | 5                                              | 6                                        | 30 | 39 | 18 | 60 | 17 | 22 | 15 | 3   | 6   | 8   | 16  | 3   |
| 05650-1000411       | 05650-1000421       | 4    | 25                                  | 75                        | 5                                              | 6                                        | 35 | 45 | 22 | 75 | 20 | 25 | 18 | 4   | 6   | 8   | 18  | 4   |

| Order No.<br>Form A | Order No.<br>Form B | Size | B15 | B16 | B17  | D1    | D2  | D3 | L1  | L2  | L3   | L4 | L5  | L6 | L8 | L9 | L10 | L11 | L12 | L14  |
|---------------------|---------------------|------|-----|-----|------|-------|-----|----|-----|-----|------|----|-----|----|----|----|-----|-----|-----|------|
| 05650-0500411       | 05650-0500421       | 2    | 28  | 6   | 36   | M5    | 5,5 | 4  | 123 | 96  | 27,5 | 20 | 7,5 | 10 | 5  | 16 | 10  | 50  | 57  | 12   |
| 05650-0900411       | 05650-0900421       | 3    | 32  | 8   | 42   | G 1/8 | 6,5 | 5  | 158 | 120 | 40   | 25 | 14  | 15 | 5  | 20 | 12  | 60  | 69  | 15   |
| 05650-1000411       | 05650-1000421       | 4    | 40  | 10  | 52,5 | G 1/8 | 8,5 | 6  | 182 | 136 | 47   | 28 | 17  | 18 | 5  | 25 | 16  | 75  | 80  | 17,5 |

# Mini clamp

manual operated



## Material:

Casing high-tensile aluminium.  
Clamping arm steel.

## Version:

Clamping arm black oxidised.

## Sample order:

nln 05652-081111

## Note:

The mini clamp is characterised by its small size, positioning accuracy of the clamping arm, and lightweight construction. Mini clamps are fully self-locking. The clamping force is guaranteed even when the pressure is removed through the over dead-centre position of the toggle lever on the clamping arm. The permanent lubrication and special bearing bushings make the mini clamps maintenance-free. They can be operated using dry, oil-free air.

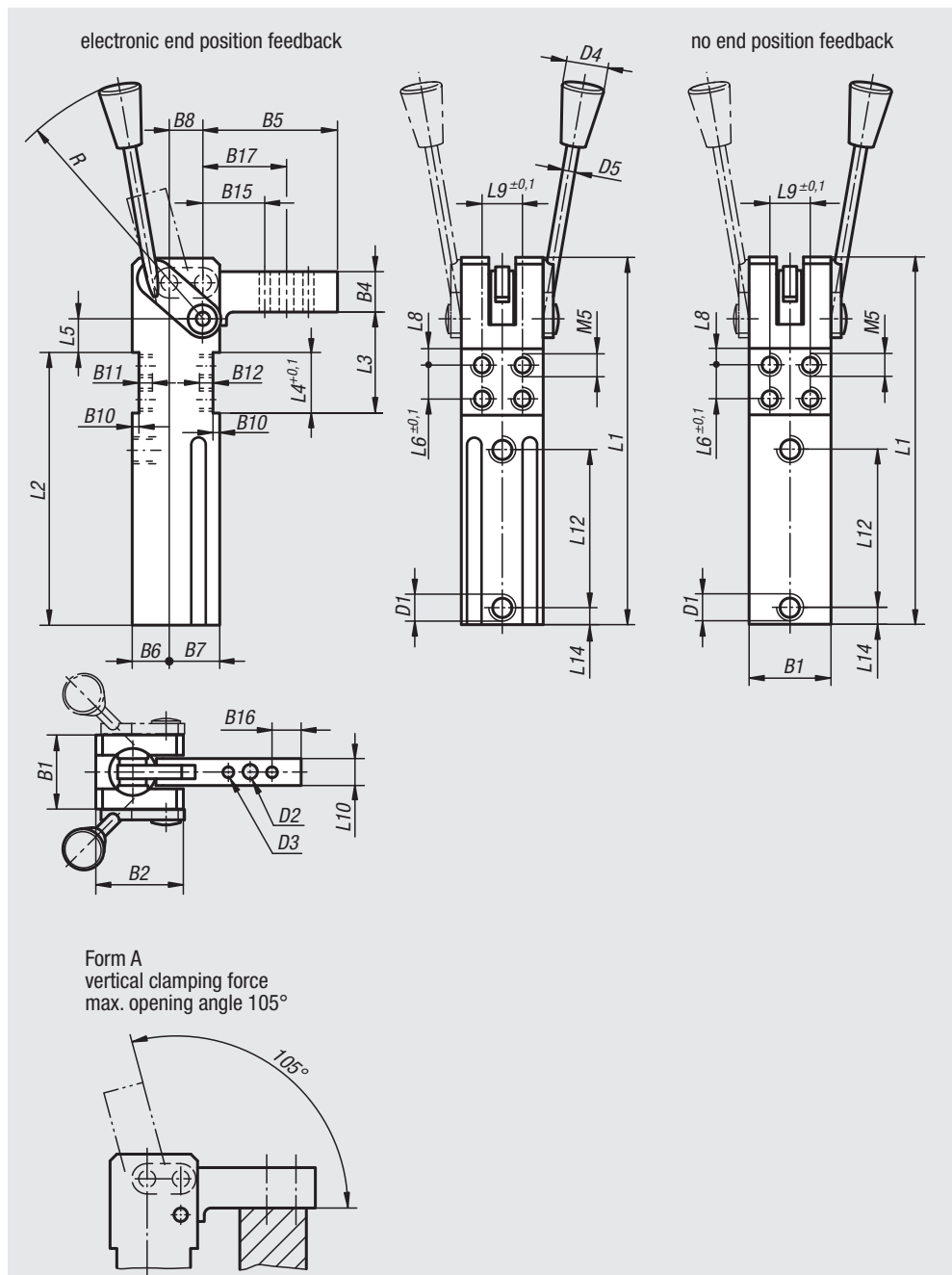
The manual closing and locking using the hand lever.

Pneumatic opening and closing.

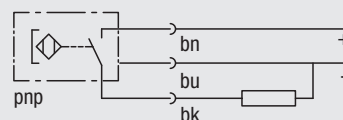
Attention: A 5/3-way valve is required, middle position vented.

## On request:

Clamping arm without holes.



## Electrical connection diagram



|                                            |             |
|--------------------------------------------|-------------|
| Connection type                            | PICO        |
| Operating voltage (V)                      | 10...30 VDC |
| Residual ripple (%)                        | ≤ 10        |
| Intrinsic current consumption (mA)         | ≤ 2,0       |
| Constant current (mA)                      | ≤ 120       |
| Switching hysteresis (mm)                  | ≤ 1         |
| Condition display                          | LED         |
| Permissible environmental temperature (°C) | -25...+70   |
| Protection class (DIN 40 050)              | IP 67       |

# Mini clamp

manual operated

## Mini clamp with electronic end position feedback

| Order No.    | Size | Tightening torque<br>Nm<br>at 5 bar |  | Retaining<br>torque<br>Nm | Operating pressure<br>bar with<br>oil-free air |  | Max pressure<br>bar with<br>oil-free air |  | B1 | B2 | B4 | B5 | B6 | B7 | B8 | B10 | B11 | B12 | B15 | B16 | B17  |
|--------------|------|-------------------------------------|--|---------------------------|------------------------------------------------|--|------------------------------------------|--|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|------|
| 05652-081111 | 2    | 8                                   |  | 25                        | 5                                              |  | 6                                        |  | 26 | 32 | 15 | 50 | 14 | 18 | 12 | 2,5 | 5   | 7   | 28  | 6   | 36   |
| 05652-081112 | 2    | 8                                   |  | 25                        | 5                                              |  | 6                                        |  | 26 | 32 | 15 | 50 | 14 | 18 | 12 | 2,5 | 5   | 7   | 28  | 6   | 36   |
| 05652-151111 | 3    | 15                                  |  | 54                        | 5                                              |  | 6                                        |  | 30 | 39 | 18 | 60 | 17 | 22 | 15 | 3   | 6   | 8   | 32  | 8   | 42   |
| 05652-151112 | 3    | 15                                  |  | 54                        | 5                                              |  | 6                                        |  | 30 | 39 | 18 | 60 | 17 | 22 | 15 | 3   | 6   | 8   | 32  | 8   | 42   |
| 05652-251111 | 4    | 25                                  |  | 75                        | 5                                              |  | 6                                        |  | 35 | 45 | 22 | 75 | 20 | 25 | 18 | 4   | 6   | 8   | 40  | 10  | 52,5 |
| 05652-251112 | 4    | 25                                  |  | 75                        | 5                                              |  | 6                                        |  | 35 | 45 | 22 | 75 | 20 | 25 | 18 | 4   | 6   | 8   | 40  | 10  | 52,5 |

| Order No.    | Size | D1    | D2  | D3 | D4 | D5 | L1  | L2  | L3   | L4 | L5  | L6 | L8 | L9 | L10 | L12 | L14  | R   | manual operated |
|--------------|------|-------|-----|----|----|----|-----|-----|------|----|-----|----|----|----|-----|-----|------|-----|-----------------|
| 05652-081111 | 2    | M5    | 5,5 | 4  | 20 | 9  | 123 | 96  | 27,5 | 20 | 7,5 | 10 | 5  | 16 | 10  | 57  | 12   | 135 | left            |
| 05652-081112 | 2    | M5    | 5,5 | 4  | 20 | 9  | 123 | 96  | 27,5 | 20 | 7,5 | 10 | 5  | 16 | 10  | 57  | 12   | 135 | right           |
| 05652-151111 | 3    | G 1/8 | 6,5 | 5  | 20 | 9  | 158 | 120 | 40   | 25 | 14  | 15 | 5  | 20 | 12  | 69  | 15   | 135 | left            |
| 05652-151112 | 3    | G 1/8 | 6,5 | 5  | 20 | 9  | 158 | 120 | 40   | 25 | 14  | 15 | 5  | 20 | 12  | 69  | 15   | 135 | right           |
| 05652-251111 | 4    | G 1/8 | 8,5 | 6  | 20 | 9  | 182 | 136 | 47   | 28 | 17  | 18 | 5  | 25 | 16  | 80  | 17,5 | 135 | left            |
| 05652-251112 | 4    | G 1/8 | 8,5 | 6  | 20 | 9  | 182 | 136 | 47   | 28 | 17  | 18 | 5  | 25 | 16  | 80  | 17,5 | 135 | right           |

## Mini clamp without end position feedback

| Order No.    | Size | Tightening torque<br>Nm<br>at 5 bar |  | Retaining<br>torque<br>Nm | Operating pressure<br>bar with<br>oil-free air |  | Max pressure<br>bar with<br>oil-free air |  | B1 | B2 | B4 | B5 | B6 | B7 | B8 | B10 | B11 | B12 | B15 | B16 | B17  |
|--------------|------|-------------------------------------|--|---------------------------|------------------------------------------------|--|------------------------------------------|--|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|------|
| 05652-084111 | 2    | 8                                   |  | 25                        | 5                                              |  | 6                                        |  | 26 | 32 | 15 | 50 | 14 | 18 | 12 | 2,5 | 5   | 7   | 28  | 6   | 36   |
| 05652-084112 | 2    | 8                                   |  | 25                        | 5                                              |  | 6                                        |  | 26 | 32 | 15 | 50 | 14 | 18 | 12 | 2,5 | 5   | 7   | 28  | 6   | 36   |
| 05652-154111 | 3    | 15                                  |  | 54                        | 5                                              |  | 6                                        |  | 30 | 39 | 18 | 60 | 17 | 22 | 15 | 3   | 6   | 8   | 32  | 8   | 42   |
| 05652-154112 | 3    | 15                                  |  | 54                        | 5                                              |  | 6                                        |  | 30 | 39 | 18 | 60 | 17 | 22 | 15 | 3   | 6   | 8   | 32  | 8   | 42   |
| 05652-254111 | 4    | 25                                  |  | 75                        | 5                                              |  | 6                                        |  | 35 | 45 | 22 | 75 | 20 | 25 | 18 | 4   | 6   | 8   | 40  | 10  | 52,5 |
| 05652-254112 | 4    | 25                                  |  | 75                        | 5                                              |  | 6                                        |  | 35 | 45 | 22 | 75 | 20 | 25 | 18 | 4   | 6   | 8   | 40  | 10  | 52,5 |

| Order No.    | Size | D1    | D2  | D3 | D4 | D5 | L1  | L2  | L3   | L4 | L5  | L6 | L8 | L9 | L10 | L12 | L14  | R   | manual operated |
|--------------|------|-------|-----|----|----|----|-----|-----|------|----|-----|----|----|----|-----|-----|------|-----|-----------------|
| 05652-084111 | 2    | M5    | 5,5 | 4  | 20 | 9  | 123 | 96  | 27,5 | 20 | 7,5 | 10 | 5  | 16 | 10  | 57  | 12   | 135 | left            |
| 05652-084112 | 2    | M5    | 5,5 | 4  | 20 | 9  | 123 | 96  | 27,5 | 20 | 7,5 | 10 | 5  | 16 | 10  | 57  | 12   | 135 | right           |
| 05652-154111 | 3    | G 1/8 | 6,5 | 5  | 20 | 9  | 158 | 120 | 40   | 25 | 14  | 15 | 5  | 20 | 12  | 69  | 15   | 135 | left            |
| 05652-154112 | 3    | G 1/8 | 6,5 | 5  | 20 | 9  | 158 | 120 | 40   | 25 | 14  | 15 | 5  | 20 | 12  | 69  | 15   | 135 | right           |
| 05652-254111 | 4    | G 1/8 | 8,5 | 6  | 20 | 9  | 182 | 136 | 47   | 28 | 17  | 18 | 5  | 25 | 16  | 80  | 17,5 | 135 | left            |
| 05652-254112 | 4    | G 1/8 | 8,5 | 6  | 20 | 9  | 182 | 136 | 47   | 28 | 17  | 18 | 5  | 25 | 16  | 80  | 17,5 | 135 | right           |

## Swing screws


**Material:**

Star grip thermoplastic.  
Bush steel.  
Washer steel 140 HV.  
Eye bolt steel grade 8.8.  
Hinge pin steel 1.1181.

**Version:**

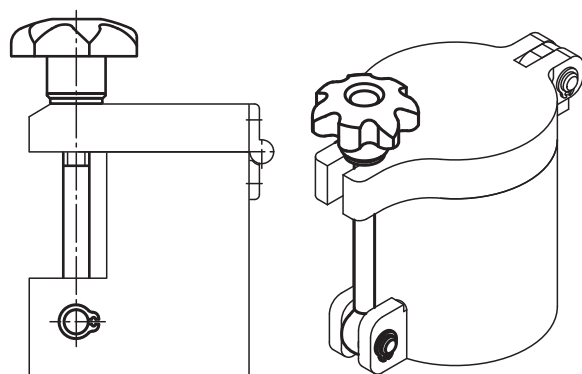
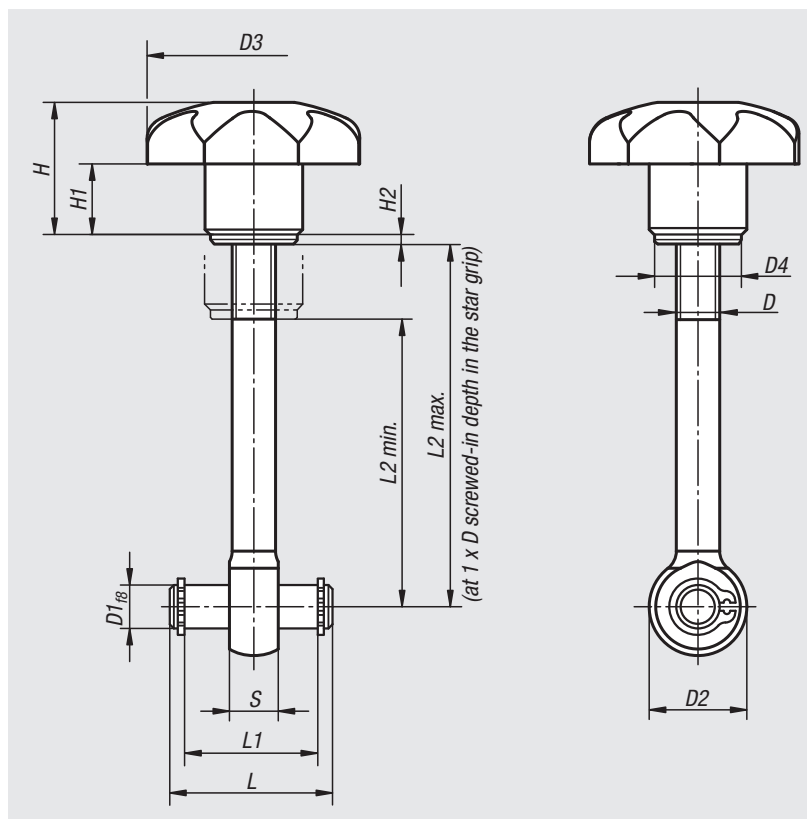
Star grip black.  
Bush trivalent blue passivated  
Washer bright.  
Eye bolt black oxidised.  
Hinge pins tempered, ground and bright.

**Sample order:**

nln 05660-06050

**Note:**

The swing screws are supplied unassembled.  
Suitable circlips are enclosed.



| Order No.   | D   | D1 | D2 | D3 | D4 | H  | H1 | H2  | L  | L1 | L2<br>min. | L2<br>max. | S  |
|-------------|-----|----|----|----|----|----|----|-----|----|----|------------|------------|----|
| 05660-06050 | M6  | 6  | 14 | 32 | 12 | 20 | 10 | 1,6 | 22 | 17 | 32         | 44         | 7  |
| 05660-06075 | M6  | 6  | 14 | 32 | 12 | 20 | 10 | 1,6 | 22 | 17 | 57         | 69         | 7  |
| 05660-08050 | M8  | 8  | 18 | 40 | 16 | 24 | 13 | 1,6 | 30 | 25 | 28         | 42         | 9  |
| 05660-08075 | M8  | 8  | 18 | 40 | 16 | 24 | 13 | 1,6 | 30 | 25 | 53         | 67         | 9  |
| 05660-10075 | M10 | 10 | 20 | 50 | 20 | 31 | 17 | 2   | 37 | 32 | 49         | 65         | 12 |
| 05660-10100 | M10 | 10 | 20 | 50 | 20 | 31 | 17 | 2   | 37 | 32 | 74         | 90         | 12 |

Notes

A large grid of graph paper for taking notes. The grid is composed of small squares, with larger squares forming a 20x20 pattern. The grid is intended for technical drawing or note-taking.

01000  
02000  
03000  
04000  
**05000**  
06000  
07000  
08000  
09000  
10000  
12000

# Mini clamp

for horizontal installation



## Material:

Casing high-tensile aluminium.  
Clamping arm steel.

## Version:

Clamping arm black oxidised.

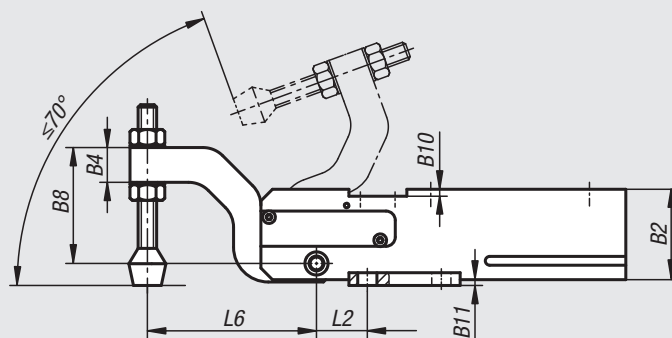
## Sample order:

nIm 05665-081

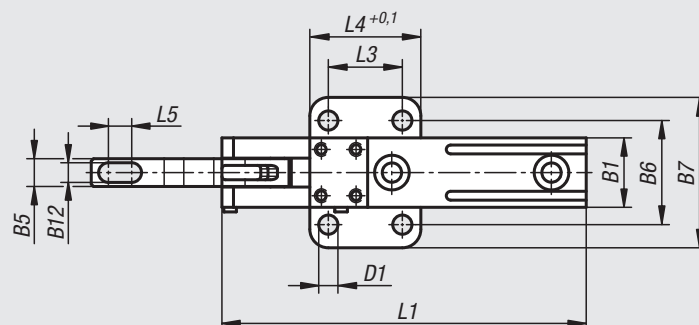
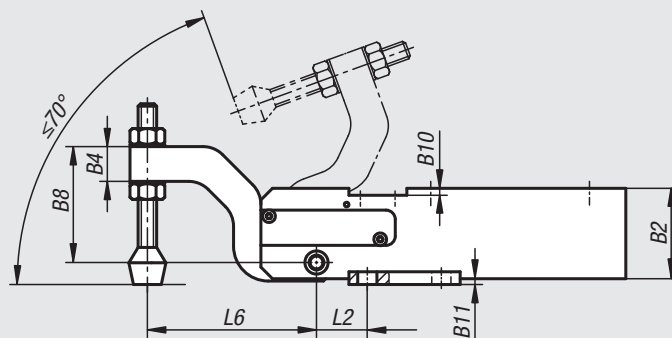
## Note:

The mini clamp is characterised by its small dimensions, positioning accuracy of the clamping arm and light construction. Mini clamps are fully self-limiting. The clamping force is guaranteed even when the pressure is removed through the over dead-centre position of the toggle lever on the clamping arm. The permanent lubrication and special bearing bushings make the mini clamps maintenance-free. They can be operated using dry, oil-free air.

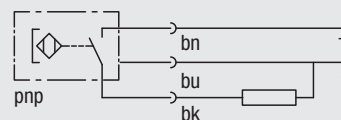
electronic end position feedback



no end position feedback



Electrical connection diagram



|                                            |             |
|--------------------------------------------|-------------|
| Connection type                            | PICO        |
| Operating voltage (V)                      | 10...30 VDC |
| Residual ripple (%)                        | ≤ 10        |
| Intrinsic current consumption (mA)         | ≤ 2,0       |
| Constant current (mA)                      | ≤ 120       |
| Switching hysteresis (mm)                  | ≤ 1         |
| Condition display                          | LED         |
| Permissible environmental temperature (°C) | -25...+70   |
| Protection class (DIN 40 050)              | IP 67       |

# Mini clamp

for horizontal installation

## Mini clamp with electronic end position feedback

| Order No. | Size | Tightening torque<br>Nm<br>at 5 bar | Retaining<br>torque<br>Nm | Operating pressure<br>bar with<br>oil-free air | Max pressure<br>bar with<br>oil-free air | B1 | B2 | B4 | B5 | B6 | B7 | B8 |
|-----------|------|-------------------------------------|---------------------------|------------------------------------------------|------------------------------------------|----|----|----|----|----|----|----|
| 05665-081 | 2    | 8                                   | 25                        | 5                                              | 6                                        | 26 | 32 | 12 | 10 | 45 | 65 | 33 |
| 05665-151 | 3    | 15                                  | 54                        | 5                                              | 6                                        | 30 | 39 | 15 | 12 | 45 | 65 | 50 |
| 05665-251 | 4    | 25                                  | 75                        | 5                                              | 6                                        | 35 | 45 | 12 | 16 | 50 | 70 | 52 |

| Order No. | Size | B10 | B11 | B12 | D1  | L1  | L2   | L3 | L4 | L5   | L6 | Connecting thread |
|-----------|------|-----|-----|-----|-----|-----|------|----|----|------|----|-------------------|
| 05665-081 | 2    | 2,5 | 3   | 6,5 | 5   | 123 | 16   | 32 | 48 | 4    | 50 | M05               |
| 05665-151 | 3    | 3   | 3   | 8,5 | 8,3 | 158 | 22   | 32 | 48 | 10,5 | 73 | G1/8              |
| 05665-251 | 4    | 4   | 4   | 8,5 | 8,3 | 182 | 26,5 | 45 | 64 | 19,5 | 80 | G1/8              |

## Mini clamp without end position feedback

| Order No. | Size | Tightening torque<br>Nm<br>at 5 bar | Retaining<br>torque<br>Nm | Operating pressure<br>bar with<br>oil-free air | Max pressure<br>bar with<br>oil-free air | B1 | B2 | B4 | B5 | B6 | B7 | B8 |
|-----------|------|-------------------------------------|---------------------------|------------------------------------------------|------------------------------------------|----|----|----|----|----|----|----|
| 05665-084 | 2    | 8                                   | 25                        | 5                                              | 6                                        | 26 | 32 | 12 | 10 | 45 | 65 | 33 |
| 05665-154 | 3    | 15                                  | 54                        | 5                                              | 6                                        | 30 | 39 | 15 | 12 | 45 | 65 | 50 |
| 05665-254 | 4    | 25                                  | 75                        | 5                                              | 6                                        | 35 | 45 | 12 | 16 | 50 | 70 | 52 |

| Order No. | Size | B10 | B11 | B12 | D1  | L1  | L2   | L3 | L4 | L5   | L6 | Connecting thread |
|-----------|------|-----|-----|-----|-----|-----|------|----|----|------|----|-------------------|
| 05665-084 | 2    | 2,5 | 3   | 6,5 | 5   | 123 | 16   | 32 | 48 | 4    | 50 | M05               |
| 05665-154 | 3    | 3   | 3   | 8,5 | 8,3 | 158 | 22   | 32 | 48 | 10,5 | 73 | G1/8              |
| 05665-254 | 4    | 4   | 4   | 8,5 | 8,3 | 182 | 26,5 | 45 | 64 | 19,5 | 80 | G1/8              |

# Manual clamp

vertical with hole pattern on the front



## Material:

Housing and clamping arm steel.

## Sample order:

nIm 05666-55

## Note:

Manual clamp with integrated toggle lever mechanism for over dead centre locking.

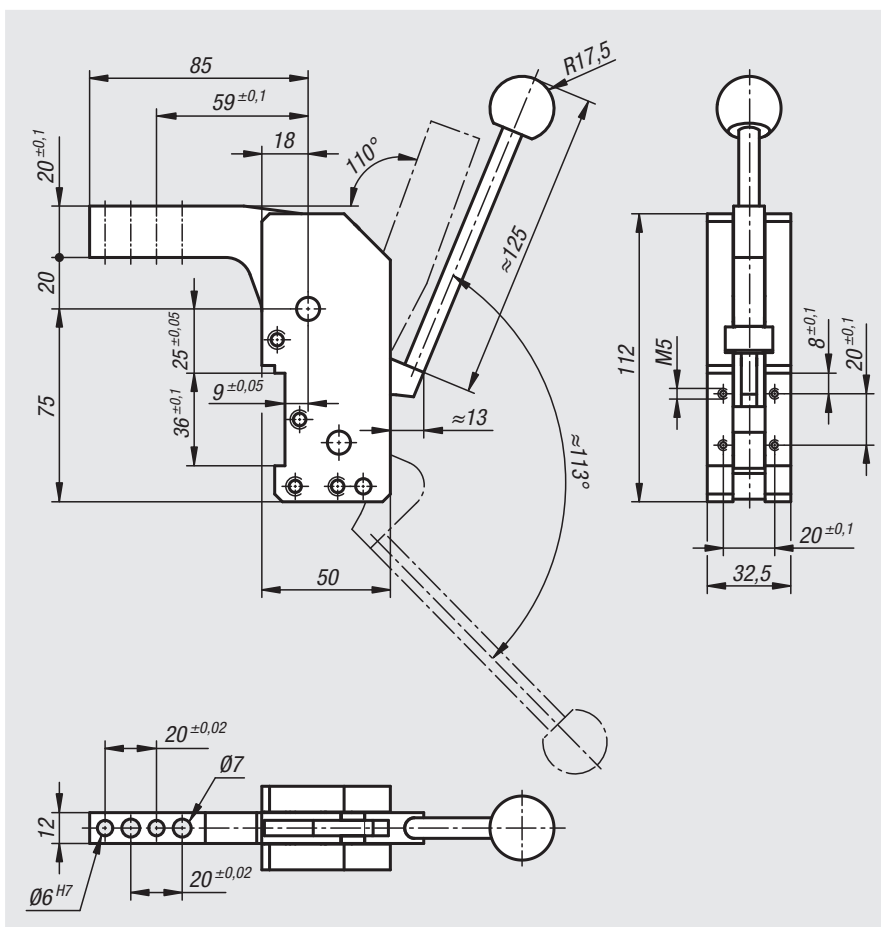
The clamping arm has a fixed stop for reproducible end positions.

The housing features a hole pattern at the front.

All hinge pins for the mechanics are in bushes.

The hand lever has an ergonomic ball grip.

The clamping arm has a hole pattern for mounting thrust pads.



Order No.

Clamping torque Mx  
Nm

Retaining  
torque  
Nm

05666-55

55

110

# Manual clamp

vertical with hole pattern on the front



## Material:

Housing and clamping arm steel.

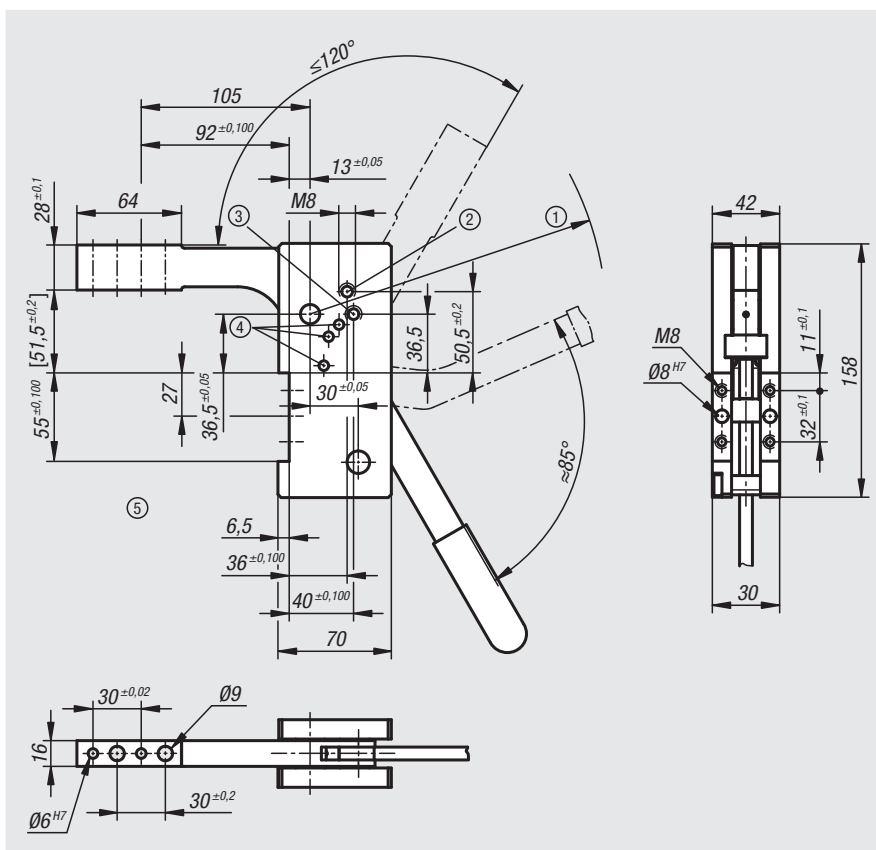
## Sample order:

nIm 05667-160

## Note:

Manual clamp with integrated toggle lever for over dead centre locking.  
The clamping arm is has a fixed stop for reproducible end positions.  
The housing features a hole pattern at the front.  
All hinge pins for the mechanics are in bushes.  
The hand lever has an ergonomic grip.  
The clamping arm has a hole pattern for mounting thrust pads.

- 1) Cantilever: max. R 300 mm
- 2) Ratchet stops for opening angles 45°–65°
- 3) Ratchet stops for opening angles 90°–120°
- 4) End stop for opening angle
- 5) For values [...] tolerances spaced at 80 mm from the fulcrum apply



Order No.

Clamping torque Mx  
Nm

Retaining  
torque  
Nm

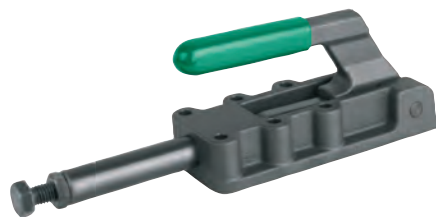
05667-160

160

320

# Push-pull clamps

heavy-duty version with handle



## Material:

Steel.

Body and handle ductile iron (SG iron)

## Version:

Phosphated, plastic handle oil-resistant

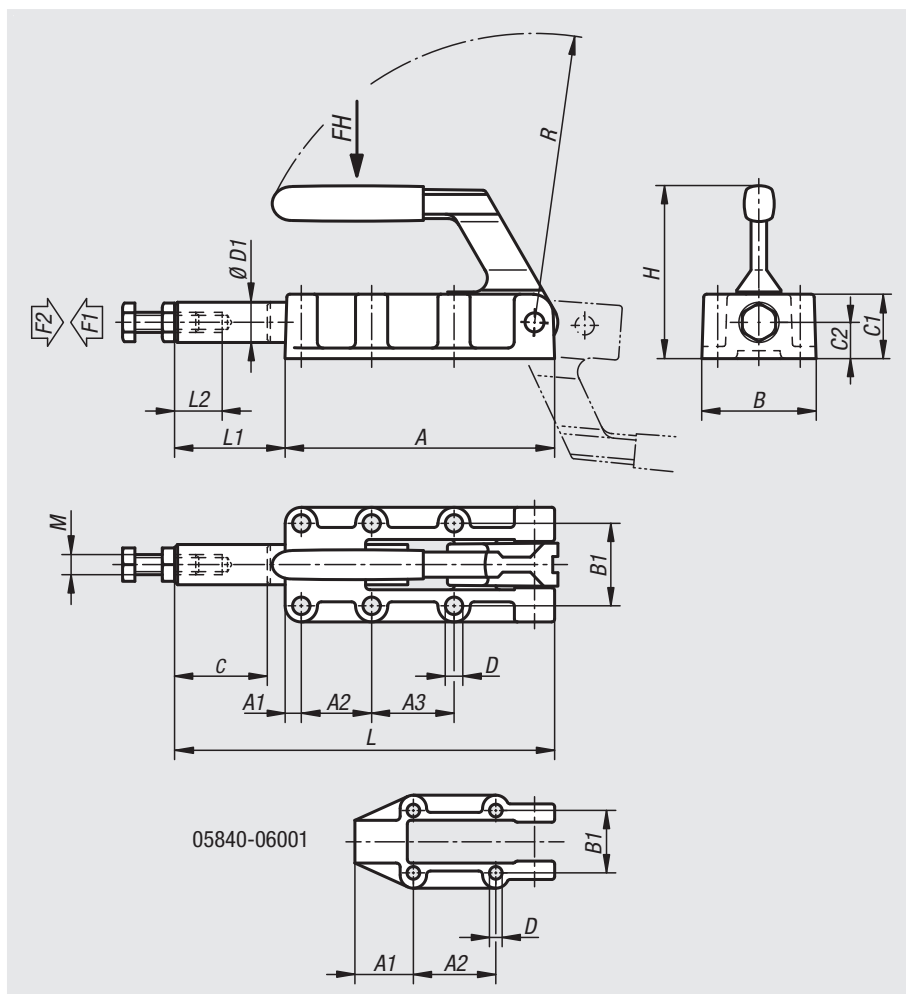
## Sample order:

nln 05840-25001

## Note:

The clamps lock in the open and closed handle positions. They can be used for thrust or tension clamping.

These clamps also have travel limitation for advance and retraction.



| Order No.   | Opening angle of handle | Hand force FH N | Retaining force F2 N | Clamping force F1 N |
|-------------|-------------------------|-----------------|----------------------|---------------------|
| 05840-06001 | 185°                    | 140             | 6000                 | 3000                |
| 05840-12001 | 185°                    | 150             | 12000                | 5000                |
| 05840-25001 | 185°                    | 170             | 25000                | 5000                |
| 05840-50001 | 185°                    | 200             | 50000                | 7000                |

| Order No.   | A   | A1 | A2   | A3 | B  | B1   | C1 | C2 | D    | D1 | H   | L   | L1  | L2 | M   | R   | C (travel) |
|-------------|-----|----|------|----|----|------|----|----|------|----|-----|-----|-----|----|-----|-----|------------|
| 05840-06001 | 89  | 25 | 36,5 | -  | 46 | 33,4 | 23 | 12 | 5,5  | 14 | 63  | 127 | 38  | 30 | M8  | 95  | 32         |
| 05840-12001 | 133 | 8  | 35   | 41 | 61 | 41   | 32 | 18 | 8,5  | 20 | 88  | 188 | 55  | 40 | M10 | 143 | 50         |
| 05840-25001 | 197 | 11 | 45   | 45 | 82 | 54   | 41 | 22 | 10,3 | 25 | 108 | 300 | 103 | 60 | M12 | 200 | 75         |
| 05840-50001 | 254 | 10 | 70   | 70 | 85 | 57   | 50 | 28 | 10,3 | 30 | 127 | 390 | 136 | 60 | M16 | 245 | 100        |

## Angle bracket

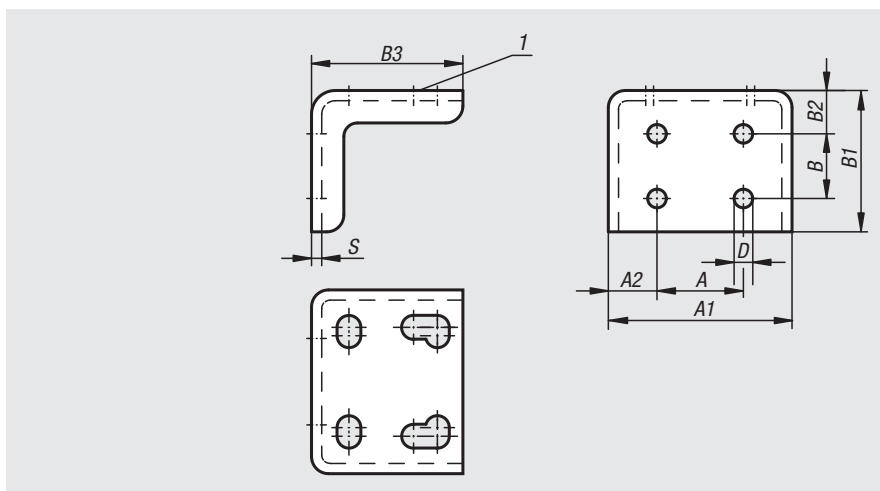


**Material:**  
Steel.

**Version:**  
Trivalent passivated.

**Sample order:**  
nlm 05880-02

**Drawing reference:**  
1) mount clamp on this face



| Order No. | A    | A1 | A2   | B  | B1   | B2   | B3   | D   | S |
|-----------|------|----|------|----|------|------|------|-----|---|
| 05880-02  | 18   | 43 | 12,5 | 15 | 36,5 | 13,5 | 29,5 | 5   | 2 |
| 05880-04  | 25,4 | 54 | 14,2 | 19 | 41,5 | 12,7 | 44,5 | 5,5 | 3 |
| 05880-06  | 44   | 76 | 16   | 32 | 62   | 21   | 66   | 8,6 | 4 |

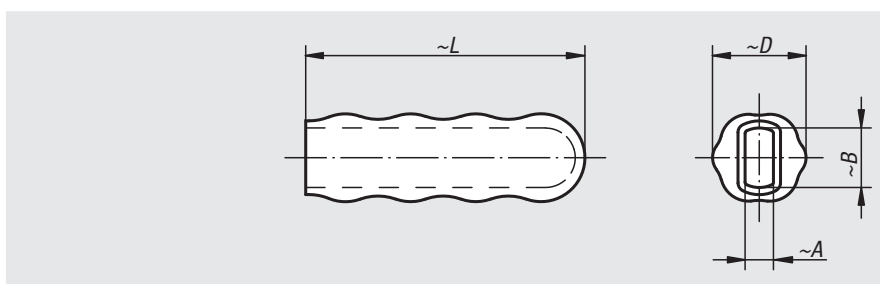
## Plastic grips



**Material:**  
Plastic

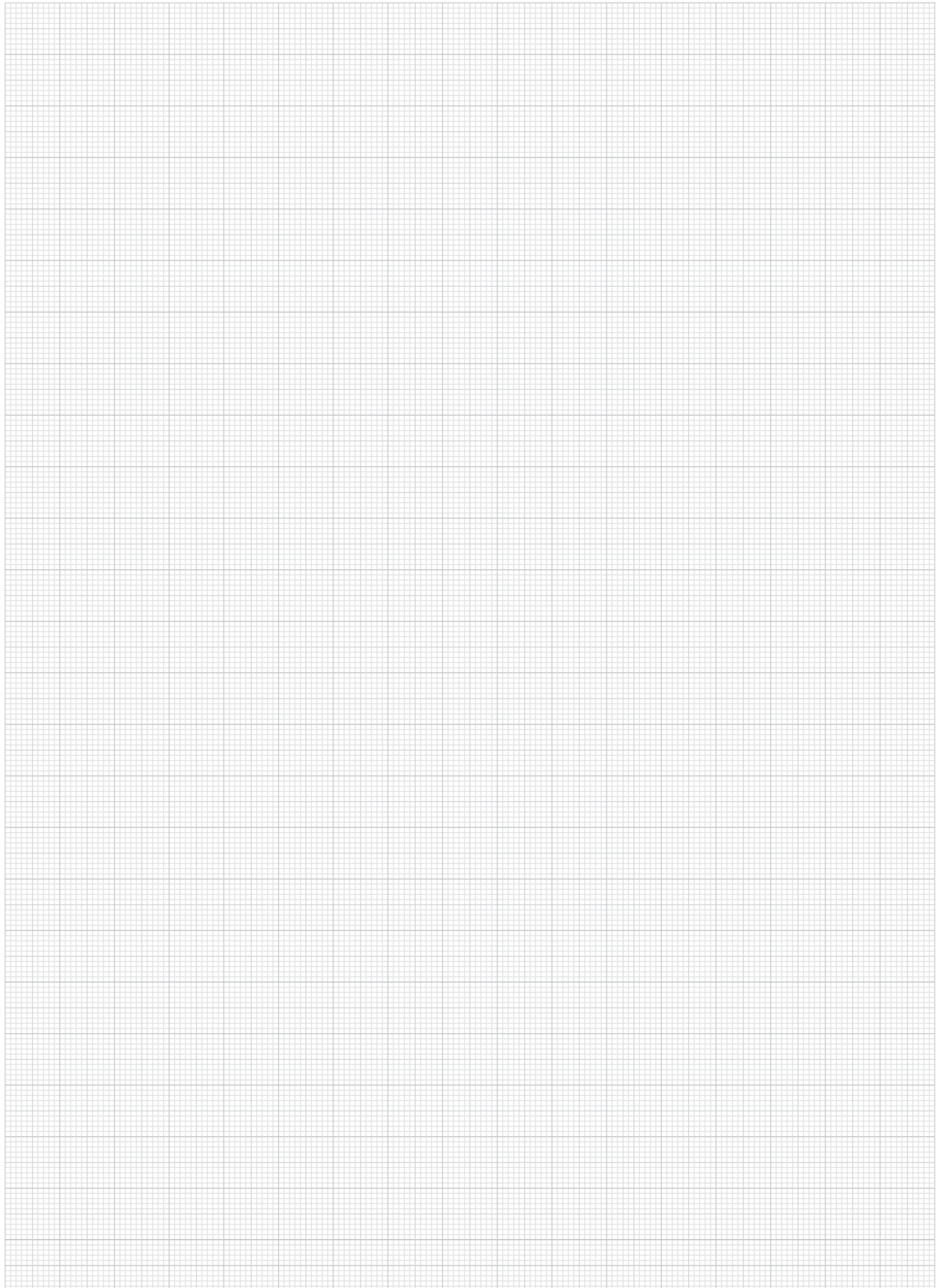
**Version:**  
Orange, oil-resistant

**Sample order:**  
nlm 05882-30



| Order No. | A  | B  | D  | L   |
|-----------|----|----|----|-----|
| 05882-16  | 4  | 8  | 15 | 45  |
| 05882-19  | 6  | 10 | 19 | 53  |
| 05882-20  | 5  | 10 | 20 | 60  |
| 05882-22  | 4  | 13 | 22 | 58  |
| 05882-23  | 5  | 13 | 22 | 60  |
| 05882-28  | 6  | 15 | 26 | 85  |
| 05882-30  | 8  | 17 | 31 | 105 |
| 05882-32  | 8  | 19 | 31 | 105 |
| 05882-33  | 8  | 22 | 32 | 115 |
| 05882-34  | 10 | 22 | 32 | 95  |
| 05882-35  | 10 | 25 | 35 | 120 |

## Notes



# Technical information

## Quick clamping - reliable fastening

### Durable and reliable

Now even more durable, more user-friendly and safer. This is the design aim that has been achieved in the new generation. You, the user, will notice the difference immediately: On first contact, the new toggle clamp has a good grip and is robust. It delivers fast, reliable and safe operation. High quality material ensures the necessary holding power.



### Advantages:

#### Impressively stable:

All models can easily withstand 300,000 clamping cycles

#### Durable:

High-quality bushings - without scoring

#### Extremely robust:

Corrosion-resistant NITROX COATING or stainless steel

#### Simple design

The fixed top nut eases spindle adjustment

#### Reliable:

Uniform force during opening and closing

#### Ideal where space is restricted:

Slim design supports safe operation

#### Optimum stability:

Conical clamping arm with U-profile

#### Safe application:

Nothing catches on the smooth edges

#### Fast and flexible:

Easy retrofitting thanks to a wide range of accessories

#### Ergonomic and slip-resistant:

Easy to operate when wearing work gloves

#### Non-reflecting

The NITROX-SURFACE is ideal for use with laser devices

#### Safe when opening:

More space between clamping arm and grip prevents pinching

#### Extremely compatible:

Oblong holes allows assembly on existing holes

### Secure fixation and locking with safety lock:

The inner locking system is a completely revolutionary development. Nothing gets caught or stuck. Operation is easy even when wearing work gloves.



### Operating principle of the safety locking mechanism:

Fig. 1:

Engaged.

No risk of injury thanks to revolutionary grip - no pinching or interfering contours.



Fig. 2:

Disengaged.

Pulling the grip releases the internal locking pin.



# Toggle clamps horizontal

with flat foot and adjustable clamping spindle



## Material:

Steel.

Grip polyamide.

## Version:

Carbonitrided and black oxidised.

## Sample order:

n1m 05900-004002

## Note:

Maintenance-free high quality link bushings.  
Sustainable constant use of force during opening and closing. Optimum stability through the conical, U-profile clamping arm.

## Accessories:

05280 Protective caps

05880 Angle brackets

07110 Ball-end thrust screws

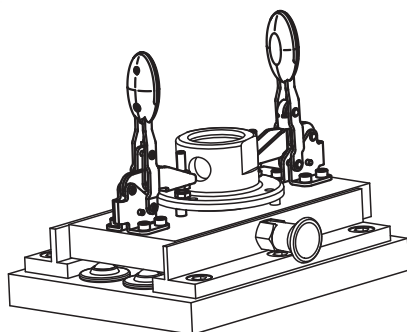
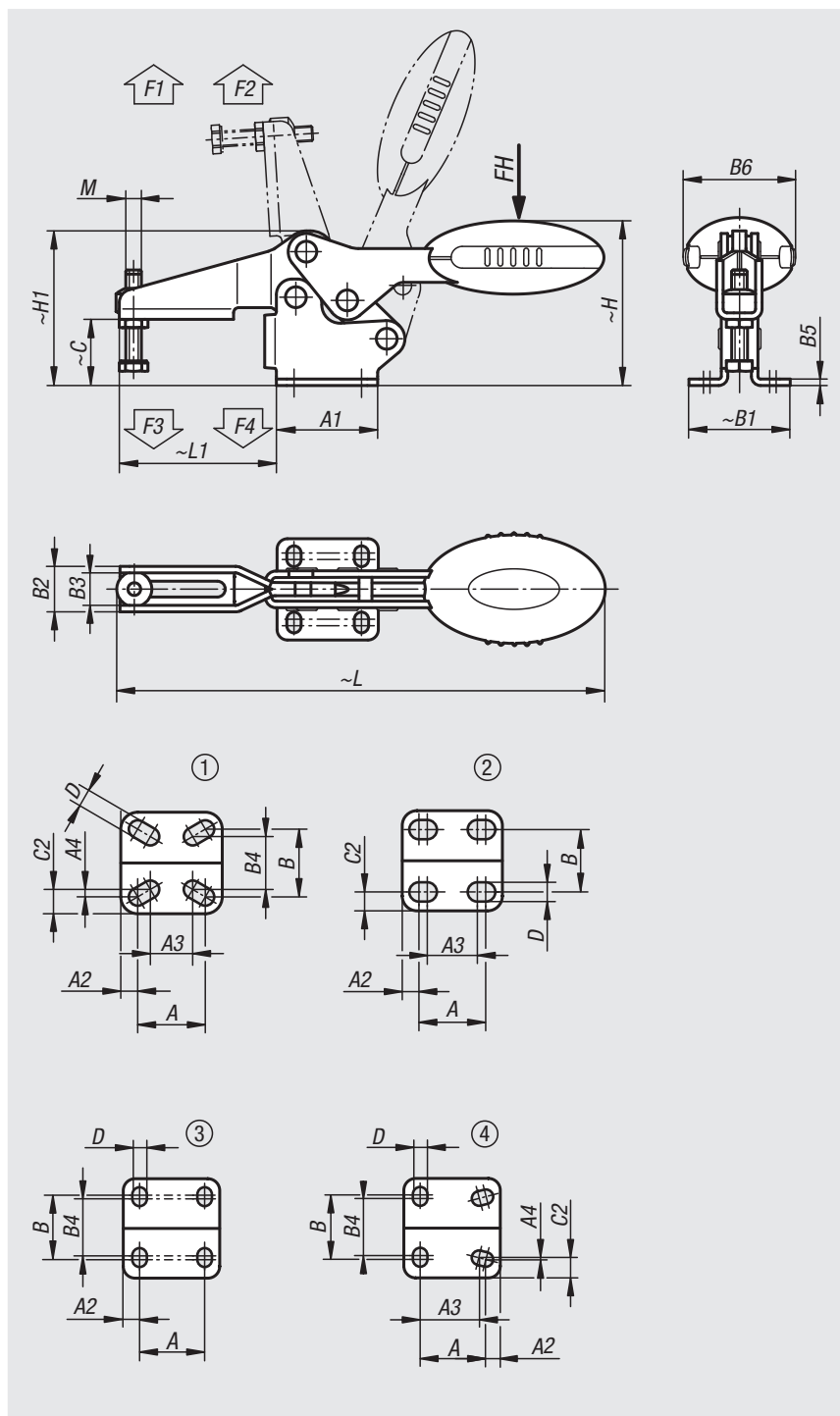
07117 Grippers, adjustable

07120 Grub screws with thrust point DIN 6332

07121 Grub screws with ball thrust point

07140 Thrust pads DIN 6311

07142 Thrust pads



# Toggle clamps horizontal

with flat foot and adjustable clamping spindle

| Order No.    | hole arrangement | Opening angle of holding arm | Opening angle of handle | Hand force FH N | Retaining force F1 N | Retaining force F2 N | Clamping force F3 N | Clamping force F4 N | Order No. Angle bracket |
|--------------|------------------|------------------------------|-------------------------|-----------------|----------------------|----------------------|---------------------|---------------------|-------------------------|
| 05900-004002 | 1                | 87°                          | 69°                     | 80              | 400                  | 500                  | 250                 | 300                 | 05880-02                |
| 05900-005002 | 2                | 86°                          | 67°                     | 100             | 650                  | 900                  | 550                 | 620                 | 05880-02                |
| 05900-006002 | 3                | 86°                          | 67°                     | 160             | 1350                 | 1900                 | 720                 | 1200                | 05880-04                |
| 05900-008002 | 3                | 86°                          | 67°                     | 200             | 2000                 | 2800                 | 830                 | 1400                | 05880-04                |
| 05900-010002 | 3                | 90°                          | 71°                     | 250             | 2200                 | 4500                 | 1200                | 2800                | 05880-06                |
| 05900-012002 | 4                | 88°                          | 68°                     | 280             | 2400                 | 5500                 | 1000                | 2800                | 05880-06                |

| Order No.    | M      | A    | A1 | A2  | A3   | A4   | B    | B1   | B2   | B3   | B4   | B5  | B6   | C    | C2   | D   | H     | H1    | L     | L1    |
|--------------|--------|------|----|-----|------|------|------|------|------|------|------|-----|------|------|------|-----|-------|-------|-------|-------|
| 05900-004002 | M4x16  | 16   | 24 | 4   | 12,8 | 0,95 | 16   | 24   | 10,2 | 7,2  | 12,5 | 1,5 | 20   | 11,7 | 4,95 | 4,2 | 28,7  | 26,3  | 91,8  | 23,7  |
| 05900-005002 | M5x25  | 18   | 27 | 4,5 | 13,5 | -    | 16,8 | 27,3 | 13,2 | 9,2  | -    | 2   | 22,5 | 17,2 | 5,25 | 5,5 | 43,4  | 38,9  | 125,7 | 41,8  |
| 05900-006002 | M6x35  | 26   | 39 | 6,5 | -    | -    | 28   | 39   | 17,5 | 12,5 | 23   | 2,5 | 43,5 | 25,4 | -    | 5,5 | 63,7  | 59,6  | 186,6 | 60,5  |
| 05900-008002 | M8x45  | 26   | 44 | 9   | -    | -    | 31   | 45   | 21   | 16   | 24   | 2,5 | 41,5 | 32,2 | -    | 6,2 | 73,9  | 70,1  | 223,1 | 74,9  |
| 05900-010002 | M10x55 | 41,5 | 59 | 9   | -    | -    | 43   | 59   | 26   | 19   | 39   | 3,5 | 47   | 40   | -    | 8,8 | 94,8  | 88    | 279,4 | 103,9 |
| 05900-012002 | M12x70 | 44   | 65 | 10  | 40   | 1    | 42   | 67   | 28   | 21   | 40   | 3,5 | 47   | 52,3 | 13,5 | 8,5 | 104,8 | 101,6 | 314,7 | 122   |

# Toggle clamps horizontal

with flat foot and adjustable clamping spindle, stainless steel



## Material:

Stainless steel.  
Grip polyamide.

## Version:

Bright.

## Sample order:

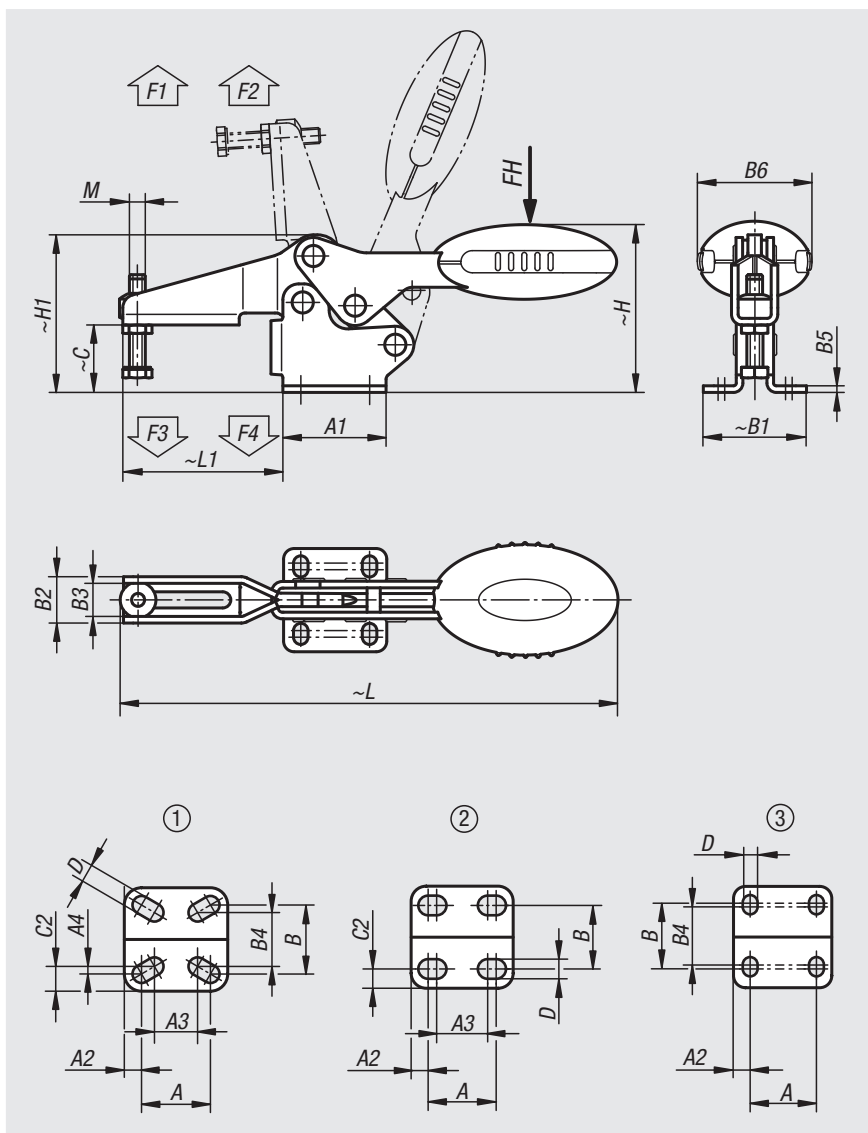
nIm 05900-104002

## Note:

Maintenance-free high quality link bushings. Sustainable constant use of force during opening and closing. Optimum stability through the conical, U-profile clamping arm.

## Accessories:

05280 Protective caps  
07111 Ball-end thrust screws, stainless steel  
07119 Thrust screws, stainless steel  
07120 Grub screws with thrust point DIN 6332  
07140 Thrust pads DIN 6311



| Order No.    | hole arrangement | Opening angle of holding arm | Opening angle of handle | Hand force FH N | Retaining force F1 N | Retaining force F2 N | Clamping force F3 N | Clamping force F4 N |
|--------------|------------------|------------------------------|-------------------------|-----------------|----------------------|----------------------|---------------------|---------------------|
| 05900-104002 | 1                | 87°                          | 69°                     | 80              | 400                  | 500                  | 250                 | 300                 |
| 05900-105002 | 2                | 86°                          | 67°                     | 100             | 650                  | 900                  | 550                 | 620                 |
| 05900-106002 | 3                | 86°                          | 67°                     | 160             | 1350                 | 1900                 | 720                 | 1200                |
| 05900-108002 | 3                | 86°                          | 67°                     | 200             | 2000                 | 2800                 | 830                 | 1400                |

| Order No.    | M     | A  | A1 | A2  | A3   | A4   | B    | B1   | B2   | B3   | B4   | B5  | B6   | C    | C2   | D   | H    | H1   | L     | L1   |
|--------------|-------|----|----|-----|------|------|------|------|------|------|------|-----|------|------|------|-----|------|------|-------|------|
| 05900-104002 | M4x16 | 16 | 24 | 4   | 12,8 | 0,95 | 16   | 24   | 10,2 | 7,2  | 12,5 | 1,5 | 20   | 11,7 | 4,95 | 4,2 | 28,7 | 26,3 | 91,8  | 23,7 |
| 05900-105002 | M5x25 | 18 | 27 | 4,5 | 13,5 | -    | 16,8 | 27,3 | 13,2 | 9,2  | -    | 2   | 22,5 | 17,2 | 5,25 | 5,5 | 43,4 | 38,9 | 125,7 | 41,8 |
| 05900-106002 | M6x35 | 26 | 39 | 6,5 | -    | -    | 28   | 39   | 17,5 | 12,5 | 23   | 2,5 | 43,5 | 25,4 | -    | 5,5 | 63,7 | 59,6 | 186,6 | 60,5 |
| 05900-108002 | M8x45 | 26 | 44 | 9   | -    | -    | 31   | 45   | 21   | 16   | 24   | 2,5 | 41,5 | 32,2 | -    | 6,2 | 73,9 | 70,1 | 223,1 | 74,9 |

# Toggle clamps horizontal with safety interlock

with flat foot and adjustable clamping spindle



## Material:

Steel.  
Grip polyamide.  
Unlocking bracket TPE.

## Version:

Carbonitrided and black oxidised.

## Sample order:

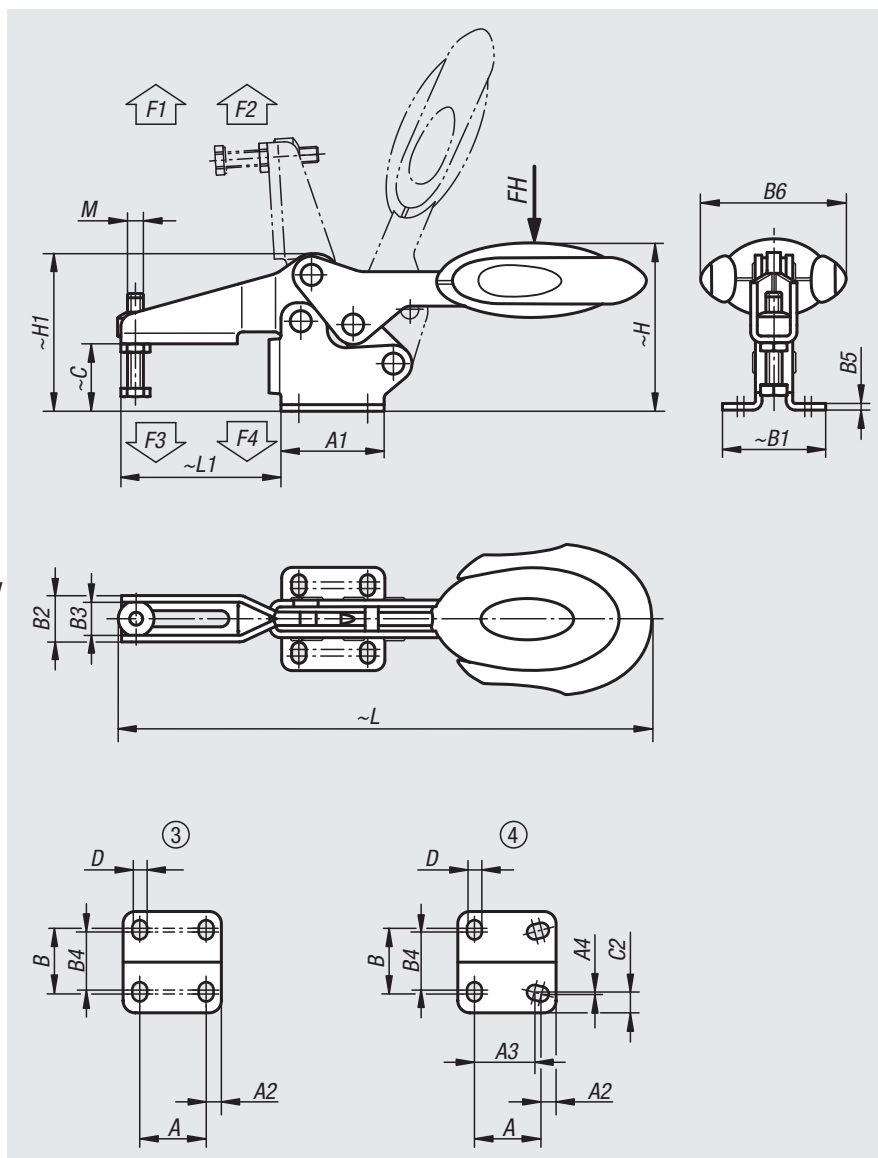
nlm 05900-006102

## Note:

Maintenance-free high quality link bushings. Sustainable constant force during opening and closing. Optimum stability through the conical, U-profile clamping arm. Including internal bar lock with automatic safety catch.

## Accessories:

05280 Protective caps  
05880 Angle brackets  
07110 Ball-end thrust screws  
07117 Grippers, adjustable  
07120 Grub screws with thrust point DIN 6332  
07121 Grub screws with ball thrust point  
07140 Thrust pads DIN 6311  
07142 Thrust pads



| Order No.    | hole arrangement | Opening angle of holding arm | Opening angle of handle | Hand force FH N | Retaining force F1 N | Retaining force F2 N | Clamping force F3 N | Clamping force F4 N | Order No. Angle bracket |
|--------------|------------------|------------------------------|-------------------------|-----------------|----------------------|----------------------|---------------------|---------------------|-------------------------|
| 05900-006102 | 3                | 86°                          | 67°                     | 160             | 1350                 | 1900                 | 720                 | 1200                | 05880-04                |
| 05900-008102 | 3                | 86°                          | 67°                     | 200             | 2000                 | 2800                 | 830                 | 1400                | 05880-04                |
| 05900-010102 | 3                | 90°                          | 71°                     | 250             | 2200                 | 4500                 | 1200                | 2800                | 05880-06                |
| 05900-012102 | 4                | 88°                          | 68°                     | 280             | 2400                 | 5500                 | 1000                | 2800                | 05880-06                |

| Order No.    | M      | A    | A1 | A2  | A3 | A4 | B  | B1 | B2   | B3   | B4 | B5  | B6   | C    | C2   | D   | H     | H1    | L     | L1    |
|--------------|--------|------|----|-----|----|----|----|----|------|------|----|-----|------|------|------|-----|-------|-------|-------|-------|
| 05900-006102 | M6x35  | 26   | 39 | 6,5 | -  | -  | 28 | 39 | 17,5 | 12,5 | 23 | 2,5 | 53,4 | 25,4 | -    | 5,5 | 63,7  | 59,6  | 193,3 | 60,5  |
| 05900-008102 | M8x45  | 26   | 44 | 9   | -  | -  | 31 | 45 | 21   | 16   | 24 | 2,5 | 51,1 | 32,2 | -    | 6,2 | 73,9  | 70,1  | 230,4 | 74,9  |
| 05900-010102 | M10x55 | 41,5 | 59 | 8,5 | -  | -  | 43 | 59 | 26   | 19   | 39 | 3,5 | 56,5 | 40   | -    | 8,8 | 94,8  | 88    | 286   | 103,9 |
| 05900-012102 | M12x70 | 44   | 65 | 10  | 40 | 1  | 42 | 67 | 28   | 21   | 40 | 3,5 | 56,5 | 52,3 | 13,5 | 8,5 | 104,8 | 101,6 | 321,3 | 122   |

# Toggle clamps horizontal with safety interlock

with flat foot and adjustable clamping spindle, stainless steel



## Material:

Stainless steel.  
Grip polyamide.  
Unlocking bracket TPE.

## Version:

Bright.

## Sample order:

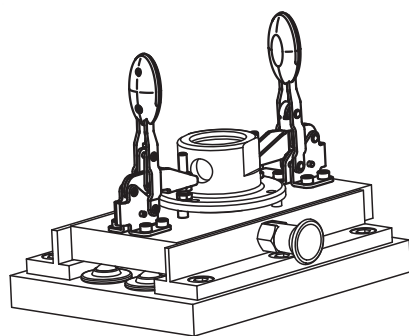
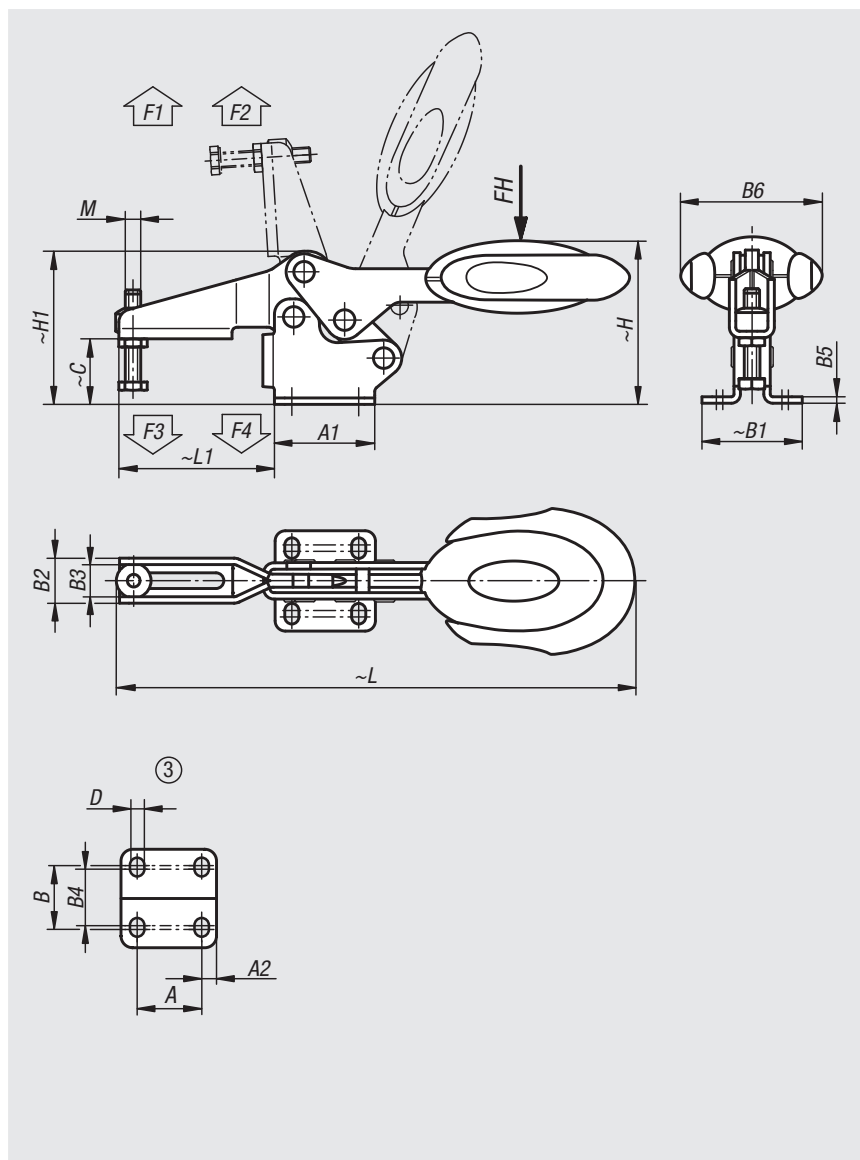
nln 05900-106102

## Note:

Maintenance-free high quality link bushings. Sustainable constant force during opening and closing. Optimum stability through the conical, U-profile clamping arm. Including internal bar lock with automatic safety catch.

## Accessories:

05280 Protective caps  
07111 Ball-end thrust screws, stainless steel  
07119 Thrust screws, stainless steel  
07120 Grub screws with thrust point DIN 6332  
07140 Thrust pads DIN 6311



| Order No.    | hole arrangement | Opening angle of holding arm | Opening angle of handle | Hand force FH N | Retaining force F1 N | Retaining force F2 N | Clamping force F3 N | Clamping force F4 N |
|--------------|------------------|------------------------------|-------------------------|-----------------|----------------------|----------------------|---------------------|---------------------|
| 05900-106102 | 3                | 86°                          | 67°                     | 160             | 1350                 | 1900                 | 720                 | 1200                |
| 05900-108102 | 3                | 86°                          | 67°                     | 200             | 2000                 | 2800                 | 830                 | 1400                |

| Order No.    | M     | A  | A1 | A2  | B  | B1 | B2   | B3   | B4 | B5  | B6   | C    | D   | H    | H1   | L     | L1   |
|--------------|-------|----|----|-----|----|----|------|------|----|-----|------|------|-----|------|------|-------|------|
| 05900-106102 | M6x35 | 26 | 39 | 6,5 | 28 | 39 | 17,5 | 12,5 | 23 | 2,5 | 53,4 | 25,4 | 5,5 | 63,7 | 59,6 | 193,3 | 60,5 |
| 05900-108102 | M8x45 | 26 | 44 | 9   | 31 | 45 | 21   | 16   | 24 | 2,5 | 51,1 | 32,2 | 6,2 | 73,9 | 70,1 | 230,4 | 74,9 |

# Toggle clamps horizontal

with straight foot and adjustable clamping spindle



## Material:

Steel.

Grip polyamide.

## Version:

Carbonitrided and black oxidised.

## Sample order:

nln 05904-005002

## Note:

Maintenance-free high quality link bushings.  
Sustainable constant use of force during opening and closing. Optimum stability through the conical, U-profile clamping arm.

## Accessories:

05280 Protective caps

07110 Ball-end thrust screws

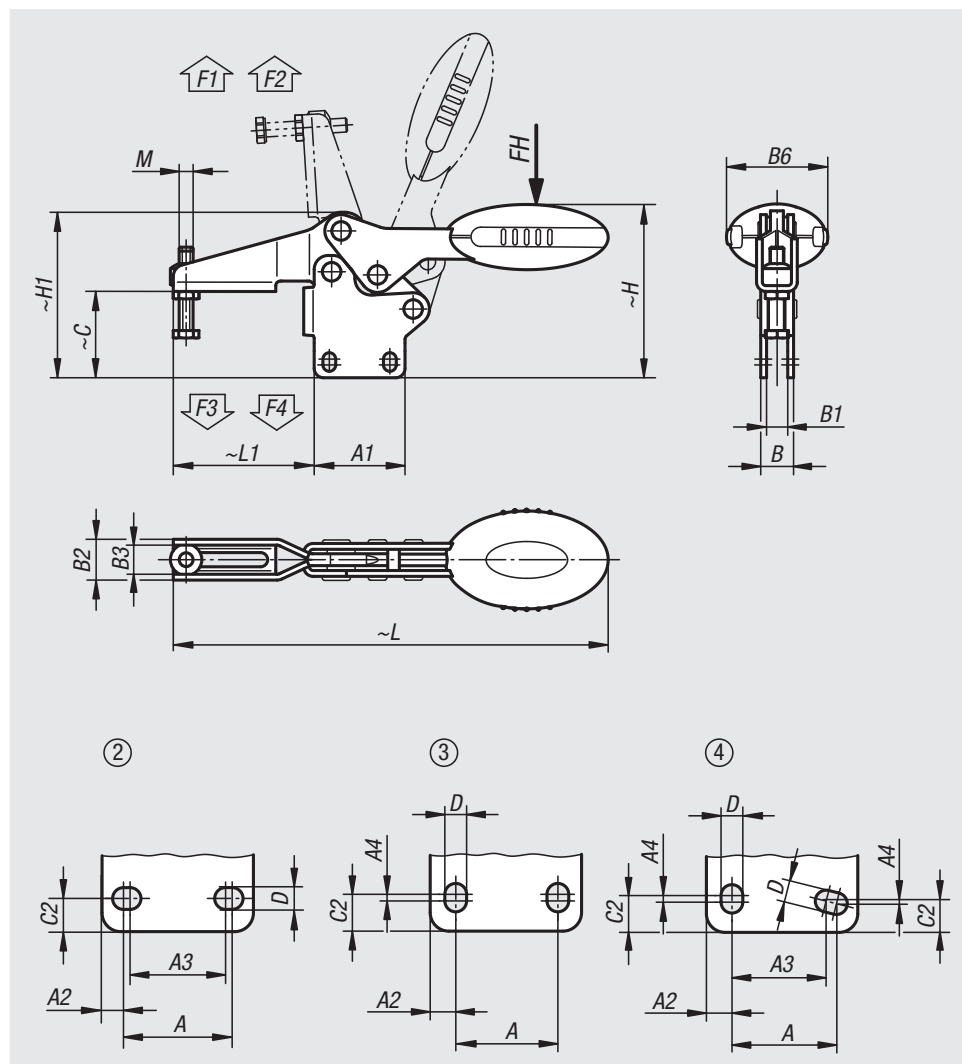
07117 Grippers, adjustable

07120 Grub screws with thrust point DIN 6332

07121 Grub screws with ball thrust point

07140 Thrust pads DIN 6311

07142 Thrust pads



| Order No.    | hole arrangement | Opening angle of holding arm | Opening angle of handle | Hand force FH N | Retaining force F1 N | Retaining force F2 N | Clamping force F3 N | Clamping force F4 N |
|--------------|------------------|------------------------------|-------------------------|-----------------|----------------------|----------------------|---------------------|---------------------|
| 05904-005002 | 2                | 86°                          | 67°                     | 100             | 650                  | 900                  | 550                 | 620                 |
| 05904-006002 | 3                | 86°                          | 67°                     | 160             | 1350                 | 1900                 | 720                 | 1200                |
| 05904-008002 | 3                | 86°                          | 67°                     | 200             | 2000                 | 2800                 | 830                 | 1400                |
| 05904-010002 | 3                | 90°                          | 71°                     | 250             | 2200                 | 4500                 | 1200                | 2800                |
| 05904-012002 | 4                | 88°                          | 68°                     | 280             | 2400                 | 5500                 | 1000                | 2800                |

| Order No.    | M      | A    | A1 | A2  | A3   | A4  | B    | B1  | B2   | B3   | B6   | C    | C2   | D   | H     | H1    | L     | L1    |
|--------------|--------|------|----|-----|------|-----|------|-----|------|------|------|------|------|-----|-------|-------|-------|-------|
| 05904-005002 | M5x25  | 18   | 27 | 4,5 | 13,5 | -   | 8,1  | 4,1 | 13,2 | 9,2  | 22,5 | 26,2 | 5,2  | 5,5 | 52,2  | 47,9  | 125,7 | 41,8  |
| 05904-006002 | M6x35  | 26   | 39 | 6,5 | -    | 2,5 | 14,1 | 9,1 | 17,5 | 12,5 | 43,5 | 36,9 | 8    | 5,5 | 75,2  | 71    | 186,6 | 60,5  |
| 05904-008002 | M8x45  | 26   | 44 | 9   | -    | 3,5 | 14,1 | 9,1 | 21   | 16   | 41,5 | 46,5 | 10,5 | 6,2 | 88,2  | 84,3  | 223,1 | 74,9  |
| 05904-010002 | M10x55 | 41,5 | 59 | 9   | -    | 2   | 16,2 | 9,2 | 26   | 19   | 47   | 59,6 | 10   | 8,8 | 114,3 | 107,5 | 279,4 | 103,9 |
| 05904-012002 | M12x70 | 44   | 65 | 11  | 40   | 1   | 16,2 | 9,2 | 28   | 21   | 47   | 75,9 | 13,5 | 8,5 | 128,4 | 125,2 | 314,7 | 122   |

# Toggle clamps horizontal

with straight foot and adjustable clamping spindle, stainless steel


**Material:**

Stainless steel.  
Grip polyamide.

**Version:**

Bright.

**Sample order:**

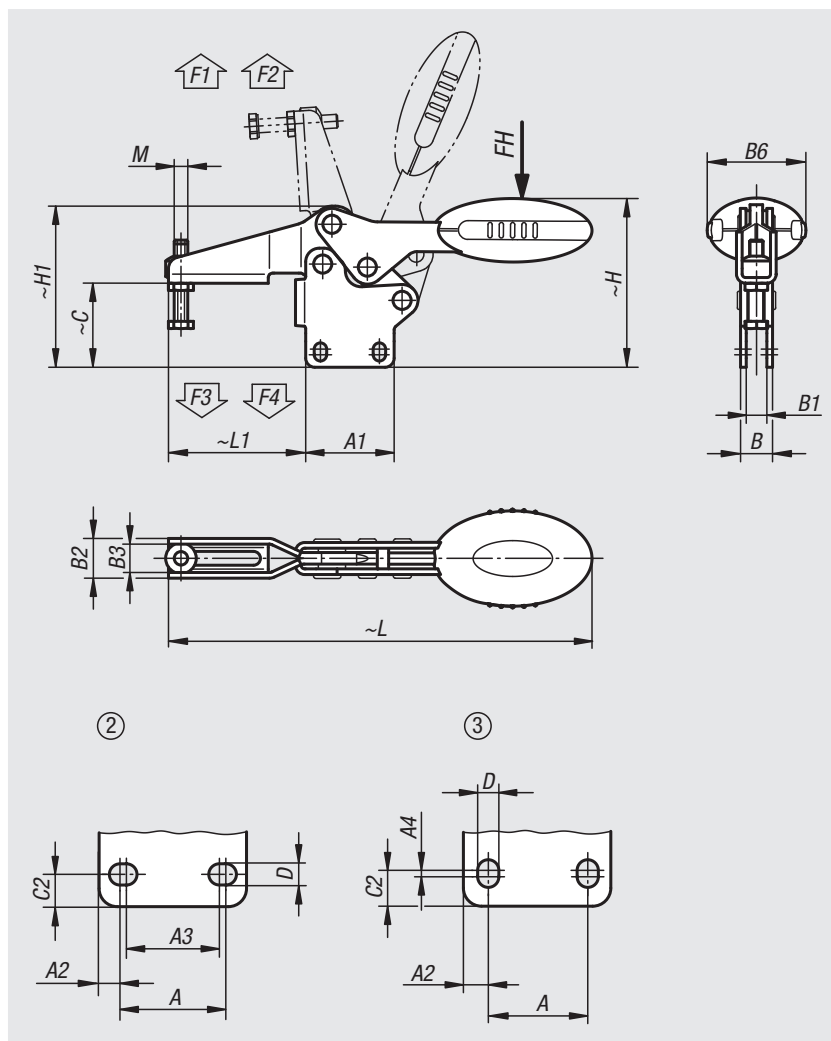
nln 05904-105002

**Note:**

Maintenance-free high quality link bushings. Sustainable constant use of force during opening and closing. Optimum stability through the conical, U-profile clamping arm.

**Accessories:**

05280 Protective caps  
07111 Ball-end thrust screws, stainless steel  
07119 Thrust screws, stainless steel  
07120 Grub screws with thrust point DIN 6332  
07140 Thrust pads DIN 6311



| Order No.    | hole arrangement | Opening angle of holding arm | Opening angle of handle | Hand force FH N | Retaining force F1 N | Retaining force F2 N | Clamping force F3 N | Clamping force F4 N |
|--------------|------------------|------------------------------|-------------------------|-----------------|----------------------|----------------------|---------------------|---------------------|
| 05904-105002 | 2                | 86°                          | 67°                     | 100             | 650                  | 900                  | 550                 | 620                 |
| 05904-106002 | 3                | 86°                          | 67°                     | 160             | 1350                 | 1900                 | 720                 | 1200                |
| 05904-108002 | 3                | 86°                          | 67°                     | 200             | 2000                 | 2800                 | 830                 | 1400                |

| Order No.    | M     | A  | A1 | A2  | A3   | A4  | B    | B1  | B2   | B3   | B6   | C    | C2   | D   | H    | H1   | L     | L1   |
|--------------|-------|----|----|-----|------|-----|------|-----|------|------|------|------|------|-----|------|------|-------|------|
| 05904-105002 | M5x25 | 18 | 27 | 4,5 | 13,5 | -   | 8,1  | 4,1 | 13,2 | 9,2  | 22,5 | 26,2 | 5,2  | 5,5 | 52,2 | 47,9 | 125,7 | 41,8 |
| 05904-106002 | M6x35 | 26 | 39 | 6,5 | -    | 2,5 | 14,1 | 9,1 | 17,5 | 12,5 | 43,5 | 36,9 | 8    | 5,5 | 75,2 | 71   | 186,6 | 60,5 |
| 05904-108002 | M8x45 | 26 | 44 | 9   | -    | 3,5 | 14,1 | 9,1 | 21   | 16   | 41,5 | 46,5 | 10,5 | 6,2 | 88,2 | 84,3 | 223,1 | 74,9 |

# Toggle clamps horizontal with safety interlock

with straight foot and adjustable clamping spindle



## Material:

Steel.  
Grip polyamide.  
Unlocking bracket TPE.

## Version:

Carbonitrided and black oxidised.

## Sample order:

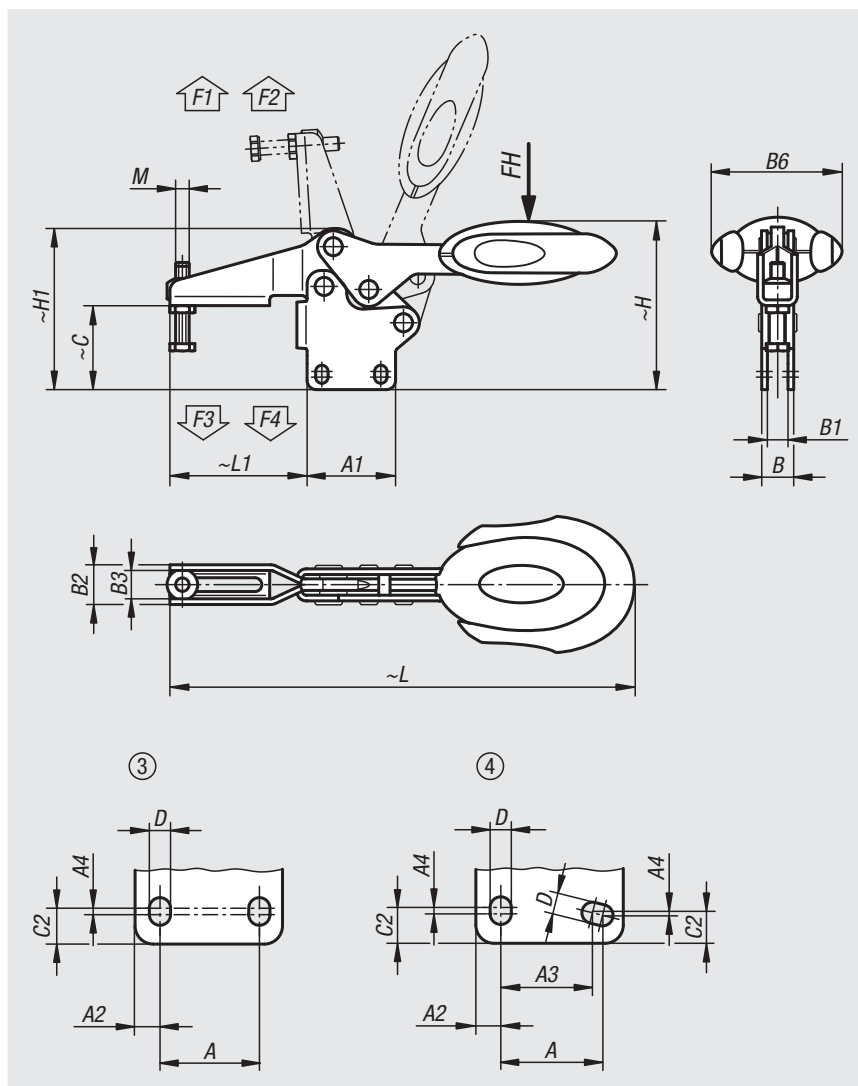
nln 05904-006102

## Note:

Maintenance-free high quality link bushings. Sustainable constant force during opening and closing. Optimum stability through the conical, U-profile clamping arm. Including internal bar lock with automatic safety catch.

## Accessories:

05280 Protective caps  
07110 Ball-end thrust screws  
07117 Grippers, adjustable  
07120 Grub screws with thrust point DIN 6332  
07121 Grub screws with ball thrust point  
07140 Thrust pads DIN 6311  
07142 Thrust pads



| Order No.    | hole arrangement | Opening angle of holding arm | Opening angle of handle | Hand force FH N | Retaining force F1 N | Retaining force F2 N | Clamping force F3 N | Clamping force F4 N |
|--------------|------------------|------------------------------|-------------------------|-----------------|----------------------|----------------------|---------------------|---------------------|
| 05904-006102 | 3                | 86°                          | 67°                     | 160             | 1350                 | 1900                 | 720                 | 1200                |
| 05904-008102 | 3                | 86°                          | 67°                     | 200             | 2000                 | 2800                 | 830                 | 1400                |
| 05904-010102 | 3                | 90°                          | 71°                     | 250             | 2200                 | 4500                 | 1200                | 2800                |
| 05904-012102 | 4                | 88°                          | 68°                     | 280             | 2400                 | 5500                 | 1000                | 2800                |

| Order No.    | M      | A    | A1 | A2  | A3 | A4  | B    | B1  | B2   | B3   | B6   | C    | C2   | D   | H     | H1    | L     | L1    |
|--------------|--------|------|----|-----|----|-----|------|-----|------|------|------|------|------|-----|-------|-------|-------|-------|
| 05904-006102 | M6x35  | 26   | 39 | 6,5 | -  | 2,5 | 14,1 | 9,1 | 17,5 | 12,5 | 53,4 | 36,9 | 8    | 5,5 | 75,2  | 71    | 193,3 | 60,5  |
| 05904-008102 | M8x45  | 26   | 44 | 9   | -  | 3,5 | 14,1 | 9,1 | 21   | 16   | 51,1 | 46,5 | 10,5 | 6,2 | 88,2  | 84,3  | 230,4 | 74,9  |
| 05904-010102 | M10x55 | 41,5 | 59 | 9   | -  | 2   | 16,2 | 9,2 | 26   | 19   | 56,5 | 59,6 | 10   | 8,8 | 114,3 | 107,5 | 286   | 103,9 |
| 05904-012102 | M12x70 | 44   | 65 | 11  | 40 | 1   | 16,2 | 9,2 | 28   | 21   | 56,5 | 75,9 | 13,5 | 8,5 | 128,4 | 125,2 | 321,3 | 122   |

# Toggle clamps horizontal with safety interlock

with straight foot and adjustable clamping spindle, stainless steel



## Material:

Stainless steel.  
Grip polyamide.  
Unlocking bracket TPE.

## Version:

Bright.

## Sample order:

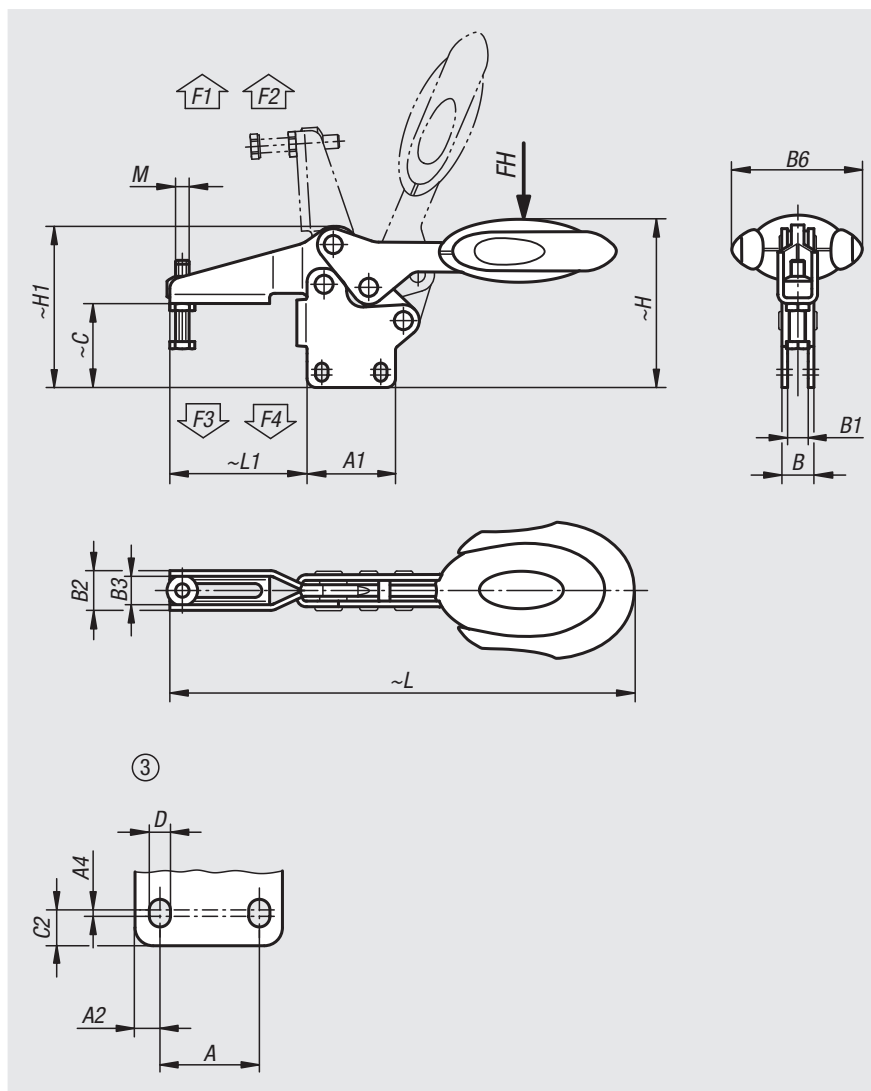
nlm 05904-106102

## Note:

Maintenance-free high quality link bushings. Sustainable constant force during opening and closing. Optimum stability through the conical, U-profile clamping arm. Including internal bar lock with automatic safety catch.

## Accessories:

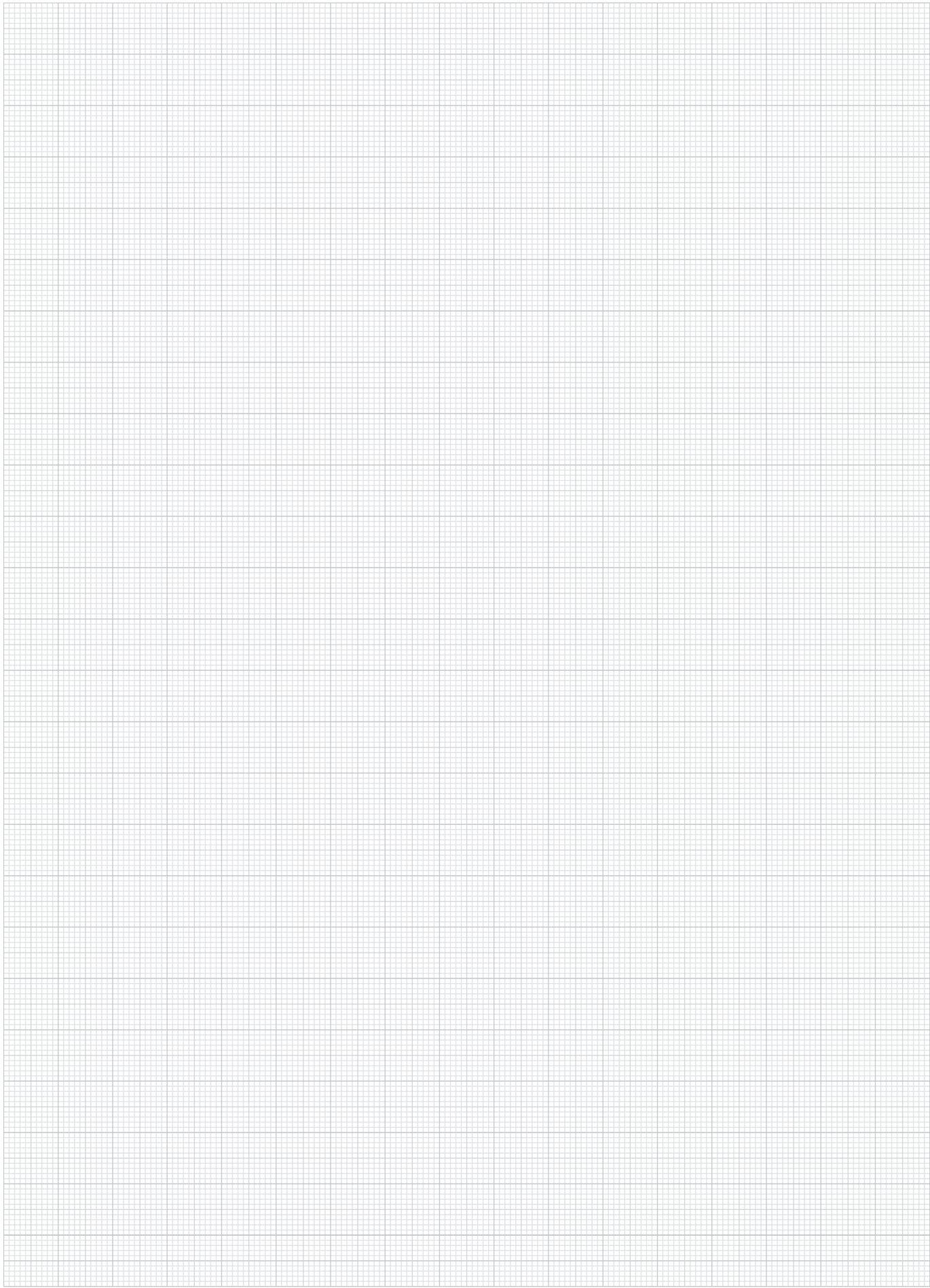
05280 Protective caps  
07111 Ball-end thrust screws, stainless steel  
07119 Thrust screws, stainless steel  
07120 Grub screws with thrust point DIN 6332  
07140 Thrust pads DIN 6311



| Order No.    | hole arrangement | Opening angle of holding arm | Opening angle of handle | Hand force FH N | Retaining force F1 N | Retaining force F2 N | Clamping force F3 N | Clamping force F4 N |
|--------------|------------------|------------------------------|-------------------------|-----------------|----------------------|----------------------|---------------------|---------------------|
| 05904-106102 | 3                | 86°                          | 67°                     | 160             | 1350                 | 1900                 | 720                 | 1200                |
| 05904-108102 | 3                | 86°                          | 67°                     | 200             | 2000                 | 2800                 | 830                 | 1400                |

| Order No.    | M     | A  | A1 | A2  | A4  | B    | B1  | B2   | B3   | B6   | C    | C2   | D   | H    | H1   | L     | L1   |
|--------------|-------|----|----|-----|-----|------|-----|------|------|------|------|------|-----|------|------|-------|------|
| 05904-106102 | M6x35 | 26 | 39 | 6,5 | 2,5 | 14,1 | 9,1 | 17,5 | 12,5 | 53,4 | 36,9 | 8    | 5,5 | 75,2 | 71   | 193,3 | 60,5 |
| 05904-108102 | M8x45 | 26 | 44 | 9   | 3,5 | 14,1 | 9,1 | 21   | 16   | 51,1 | 46,5 | 10,5 | 6,2 | 88,2 | 84,3 | 230,4 | 74,9 |

Notes



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02000

03000

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05000

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08000

09000

10000

12000

14000

# Toggle clamps vertical

with flat foot and adjustable clamping spindle



## Material:

Steel.

Grip polyamide.

## Version:

Carbonitrided and black oxidised.

## Sample order:

nIm 05908-005002

## Note:

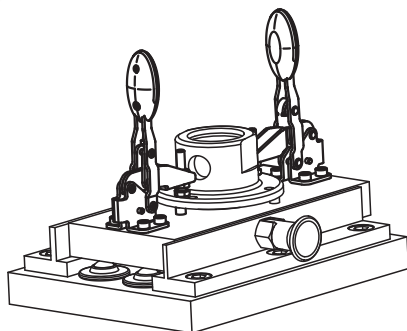
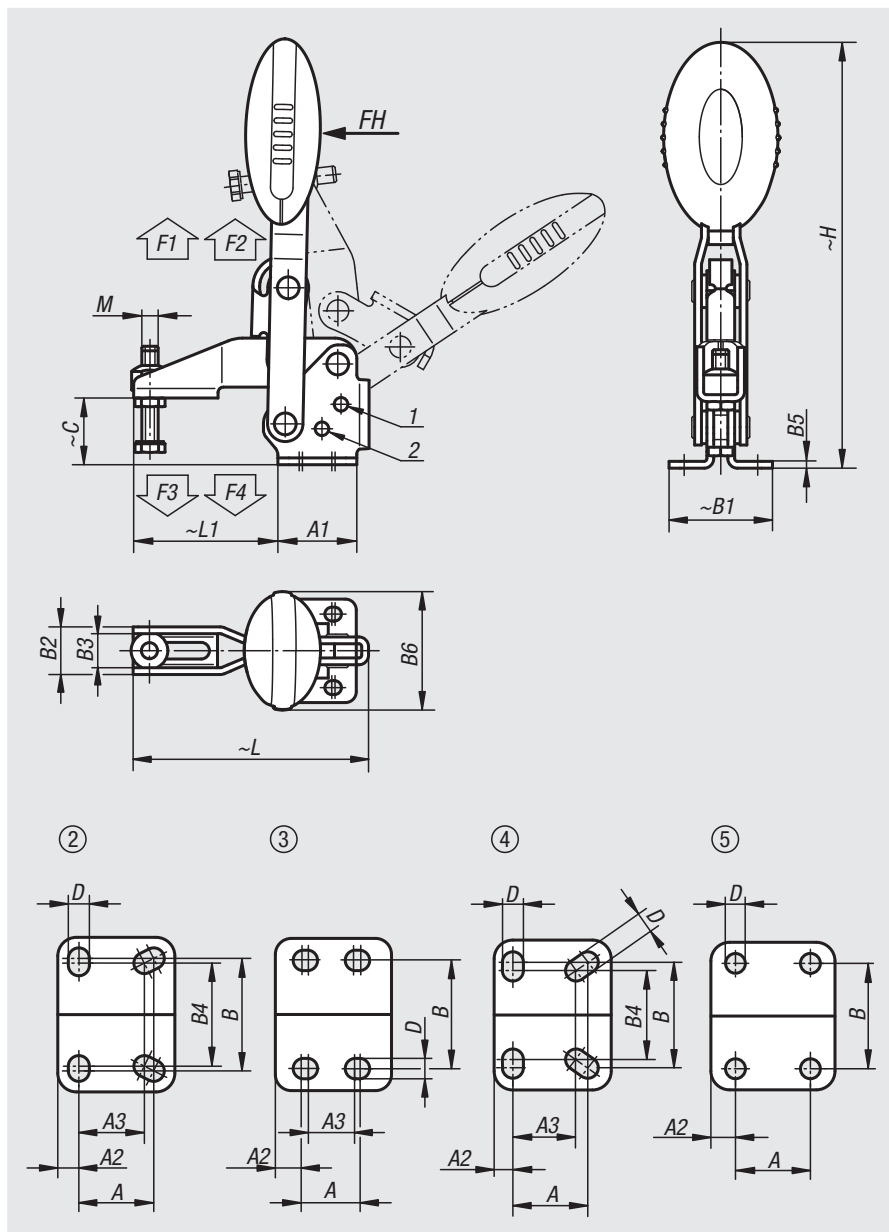
Maintenance-free high quality link bushings.  
Sustainable constant use of force during opening and closing. Optimum stability through the conical, U-profile clamping arm.

## Accessories:

05280 Protective caps  
05880 Angle brackets  
07110 Ball-end thrust screws  
07117 Grippers, adjustable  
07120 Grub screws with thrust point DIN 6332  
07121 Grub screws with ball thrust point  
07140 Thrust pads DIN 6311  
07142 Thrust pads

## Drawing reference:

1) stop pin position 1  
2) stop pin position 2



# Toggle clamps vertical

with flat foot and adjustable clamping spindle

| Order No.    | Opening angle<br>holding arm<br>position 1 | Opening angle<br>holding arm<br>position 2 | Opening angle<br>holding arm<br>stop pin removed | Opening angle<br>handle<br>position 1 | Opening angle<br>handle<br>position 2 | Opening angle<br>handle<br>stop pin removed |
|--------------|--------------------------------------------|--------------------------------------------|--------------------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------------|
| 05908-005002 | 100°                                       | -                                          | 147°                                             | 64°                                   | -                                     | 83°                                         |
| 05908-006002 | 56°                                        | 83°                                        | 152°                                             | 46°                                   | 56°                                   | 83°                                         |
| 05908-008002 | 13°                                        | 93°                                        | 158°                                             | 26°                                   | 61°                                   | 86°                                         |
| 05908-010002 | 6°                                         | 97°                                        | 176°                                             | 19°                                   | 59°                                   | 91°                                         |
| 05908-012002 | 11°                                        | 88°                                        | 164°                                             | 24°                                   | 60°                                   | 91°                                         |

| Order No.    | Hand<br>force<br>FH N | Retaining<br>force<br>F1 N | Retaining<br>force<br>F2 N | Clamping<br>force<br>F3 N | Clamping<br>force<br>F4 N | Order No.<br>Angle bracket |
|--------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|----------------------------|
| 05908-005002 | 100                   | 750                        | 1050                       | 620                       | 750                       | 05880-02                   |
| 05908-006002 | 160                   | 1350                       | 1650                       | 920                       | 1050                      | 05880-02                   |
| 05908-008002 | 190                   | 2000                       | 2800                       | 940                       | 1350                      | 05880-04                   |
| 05908-010002 | 250                   | 2500                       | 4500                       | 1500                      | 2800                      | 05880-06                   |
| 05908-012002 | 280                   | 3000                       | 5500                       | 1400                      | 2800                      | 05880-06                   |

| Order No.    | hole<br>arrangement | M      | A  | A1 | A2   | A3 | B  | B1 | B2   | B3   | B4 | B5  | B6   | C    | D   | H     | L     | L1    |
|--------------|---------------------|--------|----|----|------|----|----|----|------|------|----|-----|------|------|-----|-------|-------|-------|
| 05908-005002 | 2                   | M5x25  | 16 | 25 | 4,5  | 14 | 24 | 33 | 13,2 | 9,2  | 22 | 2   | 22,5 | 18   | 4,5 | 107,4 | 65,6  | 35    |
| 05908-006002 | 3                   | M6x35  | 14 | 29 | 7    | 12 | 27 | 38 | 17,5 | 12,5 | -  | 2,5 | 43,5 | 24,9 | 5,5 | 156,3 | 86,5  | 53    |
| 05908-008002 | 3                   | M8x45  | 21 | 39 | 9    | 19 | 32 | 45 | 20,6 | 15,6 | -  | 2,5 | 41,5 | 32,7 | 6,8 | 184,2 | 107   | 62    |
| 05908-010002 | 4                   | M10x55 | 32 | 50 | 8    | 27 | 45 | 64 | 25,5 | 18,5 | 38 | 3,5 | 47   | 38,7 | 9   | 223,9 | 153   | 95    |
| 05908-012002 | 5                   | M12x70 | 32 | 53 | 10,5 | -  | 45 | 63 | 28   | 21   | -  | 3,5 | 47   | 46,7 | 8,8 | 242,4 | 173,5 | 113,5 |

## Toggle clamps vertical

with flat foot and adjustable clamping spindle, stainless steel



**Material:**

Stainless steel.  
Grip polyamide.

**Version:**

Bright.

**Sample order:**

nlm 05908-105002

**Note:**

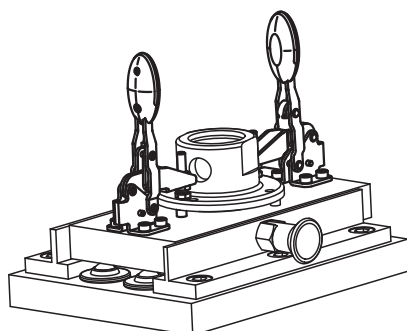
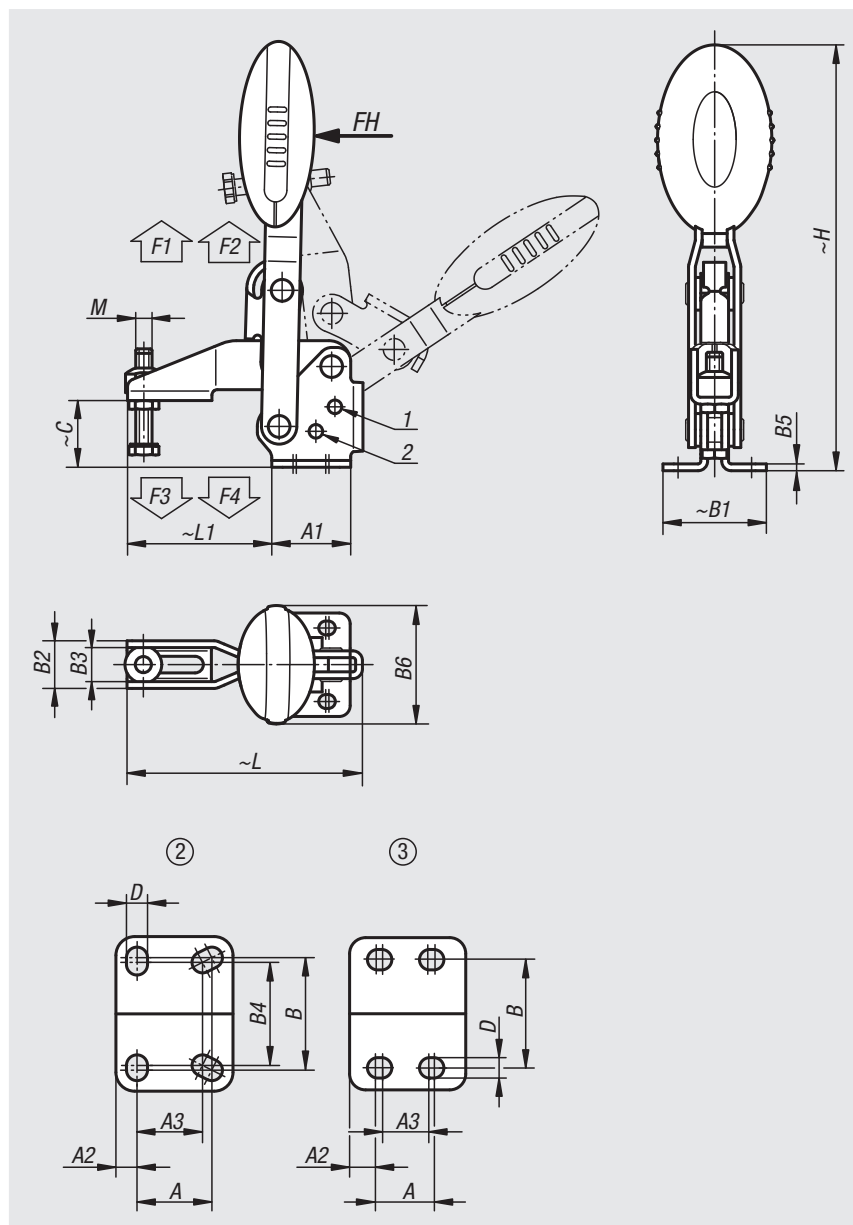
Maintenance-free high quality link bushings. Sustainable constant use of force during opening and closing. Optimum stability through the conical, U-profile clamping arm.

### Accessories:

05280 Protective caps  
07111 Ball-end thrust screws, stainless steel  
07119 Thrust screws, stainless steel  
07120 Grub screws with thrust point DIN 6332  
07140 Thrust pads DIN 6311

**Drawing reference:**

- 1) stop pin position 1
- 2) stop pin position 2



# Toggle clamps vertical

with flat foot and adjustable clamping spindle, stainless steel

| Order No.    | Opening angle<br>holding arm<br>position 1 | Opening angle<br>holding arm<br>position 2 | Opening angle<br>holding arm<br>stop pin removed | Opening angle<br>handle<br>position 1 | Opening angle<br>handle<br>position 2 | Opening angle<br>handle<br>stop pin removed |
|--------------|--------------------------------------------|--------------------------------------------|--------------------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------------|
| 05908-105002 | 100°                                       | -                                          | 147°                                             | 64°                                   | -                                     | 83°                                         |
| 05908-106002 | 56°                                        | 83°                                        | 152°                                             | 46°                                   | 56°                                   | 83°                                         |
| 05908-108002 | 13°                                        | 93°                                        | 158°                                             | 26°                                   | 61°                                   | 86°                                         |

| Order No.    | Hand<br>force<br>FH N | Retaining<br>force<br>F1 N | Retaining<br>force<br>F2 N | Clamping<br>force<br>F3 N | Clamping<br>force<br>F4 N |
|--------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|
| 05908-105002 | 100                   | 750                        | 1050                       | 620                       | 750                       |
| 05908-106002 | 160                   | 1350                       | 1650                       | 920                       | 1050                      |
| 05908-108002 | 190                   | 2000                       | 2800                       | 940                       | 1350                      |

| Order No.    | hole<br>arrangement | M     | A  | A1 | A2  | A3 | B  | B1 | B2   | B3   | B4 | B5  | B6   | C    | D   | H     | L    | L1 |
|--------------|---------------------|-------|----|----|-----|----|----|----|------|------|----|-----|------|------|-----|-------|------|----|
| 05908-105002 | 2                   | M5x25 | 16 | 25 | 4,5 | 14 | 24 | 33 | 13,2 | 9,2  | 22 | 2   | 22,5 | 18   | 4,5 | 107,4 | 65,6 | 35 |
| 05908-106002 | 3                   | M6x35 | 14 | 29 | 7   | 12 | 27 | 38 | 17,5 | 12,5 | -  | 2,5 | 43,5 | 24,9 | 5,5 | 156,3 | 86,5 | 53 |
| 05908-108002 | 3                   | M8x45 | 21 | 39 | 9   | 19 | 32 | 45 | 20,6 | 15,6 | -  | 2,5 | 41,5 | 32,7 | 6,8 | 184,2 | 107  | 62 |

# Toggle clamps vertical with safety interlock

with flat foot and adjustable clamping spindle



## Material:

Steel.  
Grip polyamide.  
Unlocking bracket TPE.

## Version:

Carbonitrided and black oxidised.

## Sample order:

nIm 05908-006102

## Note:

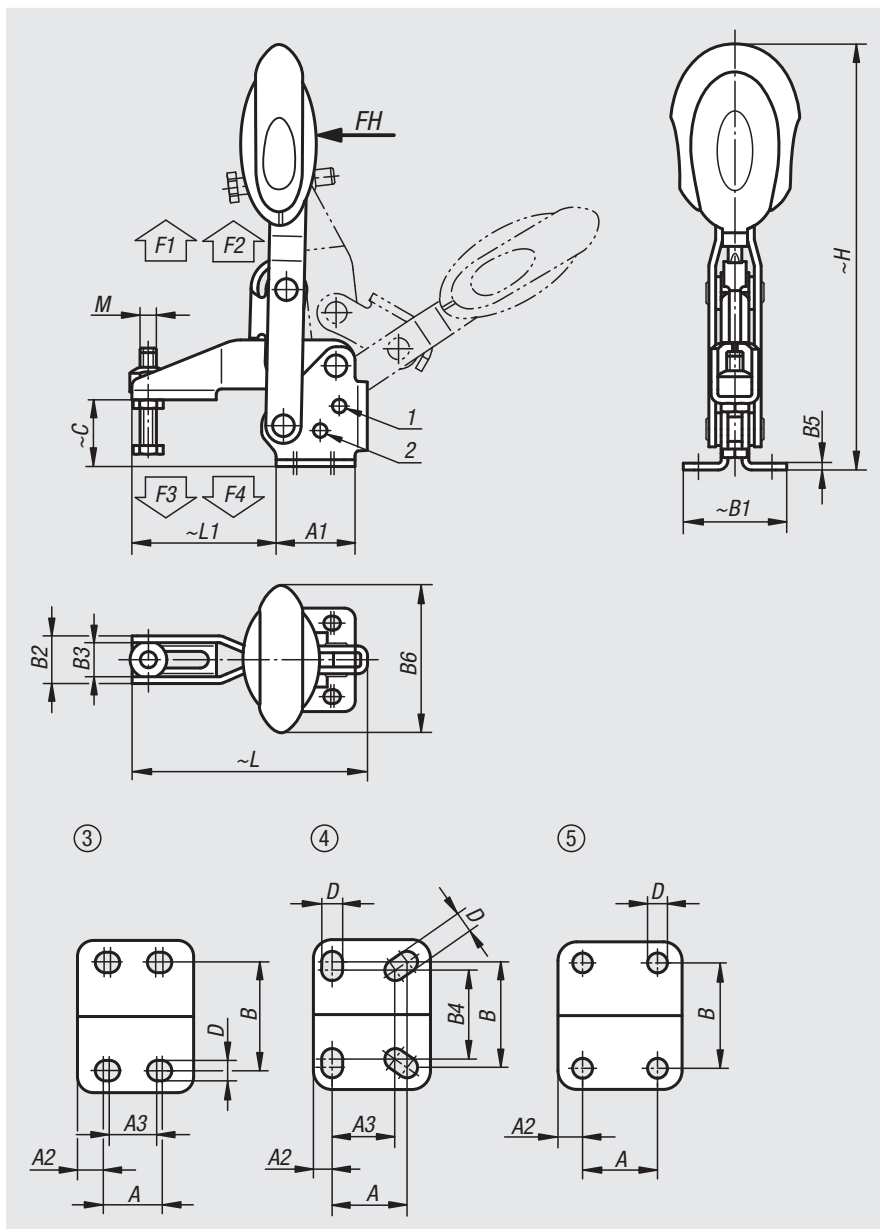
Maintenance-free high quality link bushings. Sustainable constant force during opening and closing. Optimum stability through the conical, U-profile clamping arm. Including internal bar lock with automatic safety catch.

## Accessories:

05280 Protective caps  
05880 Angle brackets  
07110 Ball-end thrust screws  
07117 Grippers, adjustable  
07120 Grub screws with thrust point DIN 6332  
07121 Grub screws with ball thrust point  
07140 Thrust pads DIN 6311  
07142 Thrust pads

## Drawing reference:

1) stop pin position 1  
2) stop pin position 2



# Toggle clamps vertical with safety interlock

with flat foot and adjustable clamping spindle

| Order No.    | Opening angle<br>holding arm<br>position 1 | Opening angle<br>holding arm<br>position 2 | Opening angle<br>holding arm<br>stop pin removed | Opening angle<br>handle<br>position 1 | Opening angle<br>handle<br>position 2 | Opening angle<br>handle<br>stop pin removed |
|--------------|--------------------------------------------|--------------------------------------------|--------------------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------------|
| 05908-006102 | 56°                                        | 83°                                        | 152°                                             | 46°                                   | 56°                                   | 83°                                         |
| 05908-008102 | 13°                                        | 93°                                        | 158°                                             | 26°                                   | 61°                                   | 86°                                         |
| 05908-010102 | 6°                                         | 97°                                        | 176°                                             | 19°                                   | 59°                                   | 91°                                         |
| 05908-012102 | 11°                                        | 88°                                        | 164°                                             | 24°                                   | 60°                                   | 91°                                         |

| Order No.    | Hand<br>force<br>FH N | Retaining<br>force<br>F1 N | Retaining<br>force<br>F2 N | Clamping<br>force<br>F3 N | Clamping<br>force<br>F4 N | Order No.<br>Angle bracket |
|--------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|----------------------------|
| 05908-006102 | 160                   | 1350                       | 1650                       | 920                       | 1050                      | 05880-02                   |
| 05908-008102 | 190                   | 2000                       | 2800                       | 940                       | 1350                      | 05880-04                   |
| 05908-010102 | 250                   | 2500                       | 4500                       | 1500                      | 2800                      | 05880-06                   |
| 05908-012102 | 280                   | 3000                       | 5500                       | 1400                      | 2800                      | 05880-06                   |

| Order No.    | hole<br>arrangement | M      | A  | A1 | A2   | A3 | B  | B1 | B2   | B3   | B4 | B5  | B6   | C    | D   | H     | L     | L1    |
|--------------|---------------------|--------|----|----|------|----|----|----|------|------|----|-----|------|------|-----|-------|-------|-------|
| 05908-006102 | 3                   | M6x35  | 14 | 29 | 7    | 12 | 27 | 38 | 17,5 | 12,5 | -  | 2,5 | 53,4 | 24,9 | 5,5 | 163   | 86,5  | 53    |
| 05908-008102 | 3                   | M8x45  | 21 | 39 | 9    | 19 | 32 | 45 | 20,6 | 15,6 | -  | 2,5 | 51,1 | 32,7 | 6,8 | 191,4 | 107   | 62    |
| 05908-010102 | 4                   | M10x55 | 32 | 50 | 8    | 27 | 45 | 64 | 25,5 | 18,5 | 38 | 3,5 | 56,5 | 38,7 | 9   | 230,5 | 153   | 95    |
| 05908-012102 | 5                   | M12x70 | 32 | 53 | 10,5 | -  | 45 | 63 | 28   | 21   | -  | 3,5 | 56,5 | 46,7 | 8,8 | 249,1 | 173,5 | 113,5 |

# Toggle clamps vertical with safety interlock

with flat foot and adjustable clamping spindle, stainless steel



## Material:

Stainless steel.  
Grip polyamide.  
Unlocking bracket TPE.

## Version:

Bright.

## Sample order:

nIm 05908-106102

## Note:

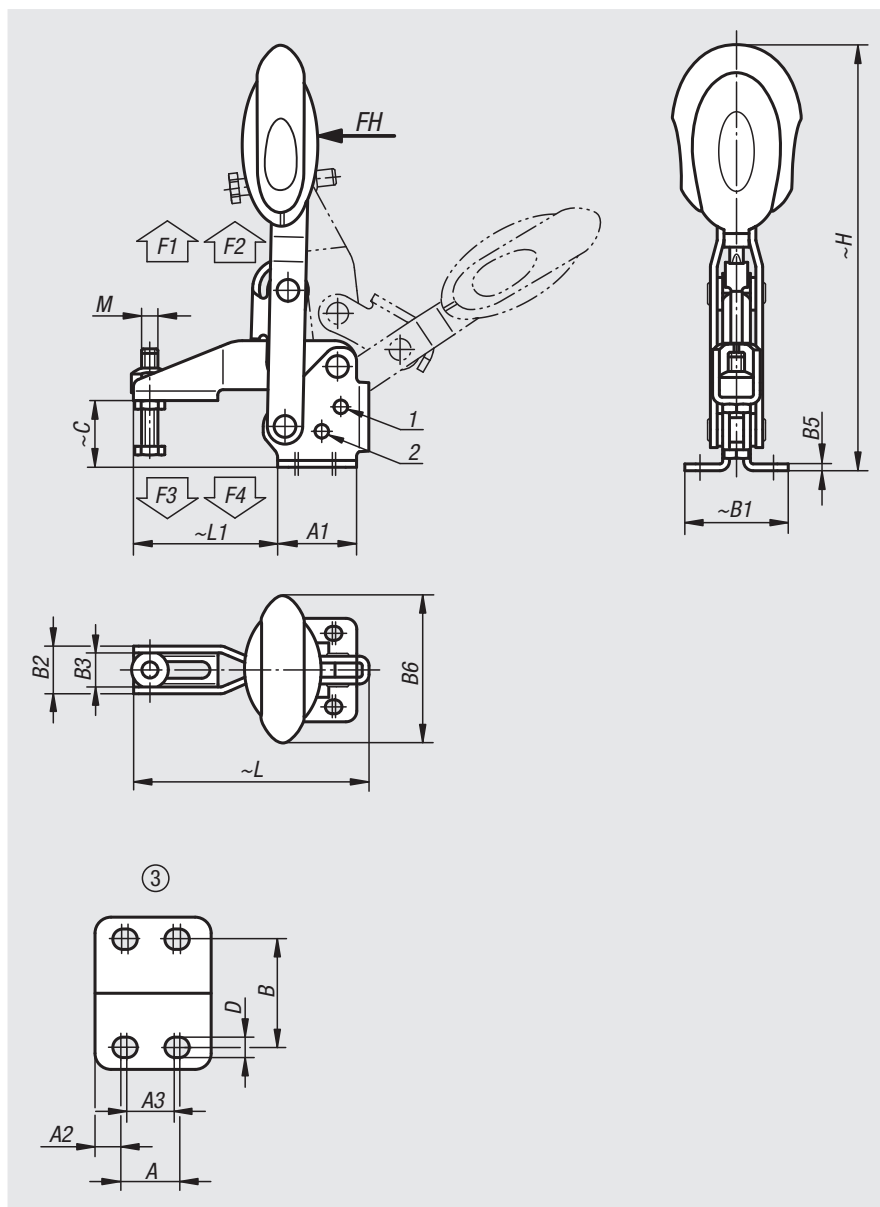
Maintenance-free high quality link bushings. Sustainable constant force during opening and closing. Optimum stability through the conical, U-profile clamping arm. Including internal bar lock with automatic safety catch.

## Accessories:

05280 Protective caps  
07111 Ball-end thrust screws, stainless steel  
07119 Thrust screws, stainless steel  
07120 Grub screws with thrust point DIN 6332  
07140 Thrust pads DIN 6311

## Drawing reference:

1) stop pin position 1  
2) stop pin position 2



# Toggle clamps vertical with safety interlock

with flat foot and adjustable clamping spindle, stainless steel

| Order No.    | Opening angle<br>holding arm<br>position 1 | Opening angle<br>holding arm<br>position 2 | Opening angle<br>holding arm<br>stop pin removed | Opening angle<br>handle<br>position 1 | Opening angle<br>handle<br>position 2 | Opening angle<br>handle<br>stop pin removed |
|--------------|--------------------------------------------|--------------------------------------------|--------------------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------------|
| 05908-106102 | 56°                                        | 83°                                        | 152°                                             | 46°                                   | 56°                                   | 83°                                         |
| 05908-108102 | 13°                                        | 93°                                        | 158°                                             | 26°                                   | 61°                                   | 86°                                         |

| Order No.    | Hand<br>force<br>FH N | Retaining<br>force<br>F1 N | Retaining<br>force<br>F2 N | Clamping<br>force<br>F3 N | Clamping<br>force<br>F4 N |
|--------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|
| 05908-106102 | 160                   | 1350                       | 1650                       | 920                       | 1050                      |
| 05908-108102 | 190                   | 2000                       | 2800                       | 940                       | 1350                      |

| Order No.    | hole<br>arrangement | M     | A  | A1 | A2 | A3 | B  | B1 | B2   | B3   | B5  | B6   | C    | D   | H     | L    | L1 |
|--------------|---------------------|-------|----|----|----|----|----|----|------|------|-----|------|------|-----|-------|------|----|
| 05908-106102 | 3                   | M6x35 | 14 | 29 | 7  | 12 | 27 | 38 | 17,5 | 12,5 | 2,5 | 53,4 | 24,9 | 5,5 | 163   | 86,5 | 53 |
| 05908-108102 | 3                   | M8x45 | 21 | 39 | 9  | 19 | 32 | 45 | 20,6 | 15,6 | 2,5 | 51,1 | 32,7 | 6,8 | 191,4 | 107  | 62 |

# Toggle clamps vertical

with straight foot and adjustable clamping spindle



## Material:

Steel.

Grip polyamide.

## Version:

Carbonitrided and black oxidised.

## Sample order:

n1m 05912-005002

## Note:

Maintenance-free high quality link bushings. Sustainable constant use of force during opening and closing. Optimum stability through the conical, U-profile clamping arm.

## Accessories:

05280 Protective caps

07110 Ball-end thrust screws

07117 Grippers, adjustable

07120 Grub screws with thrust point DIN 6332

07121 Grub screws with ball thrust point

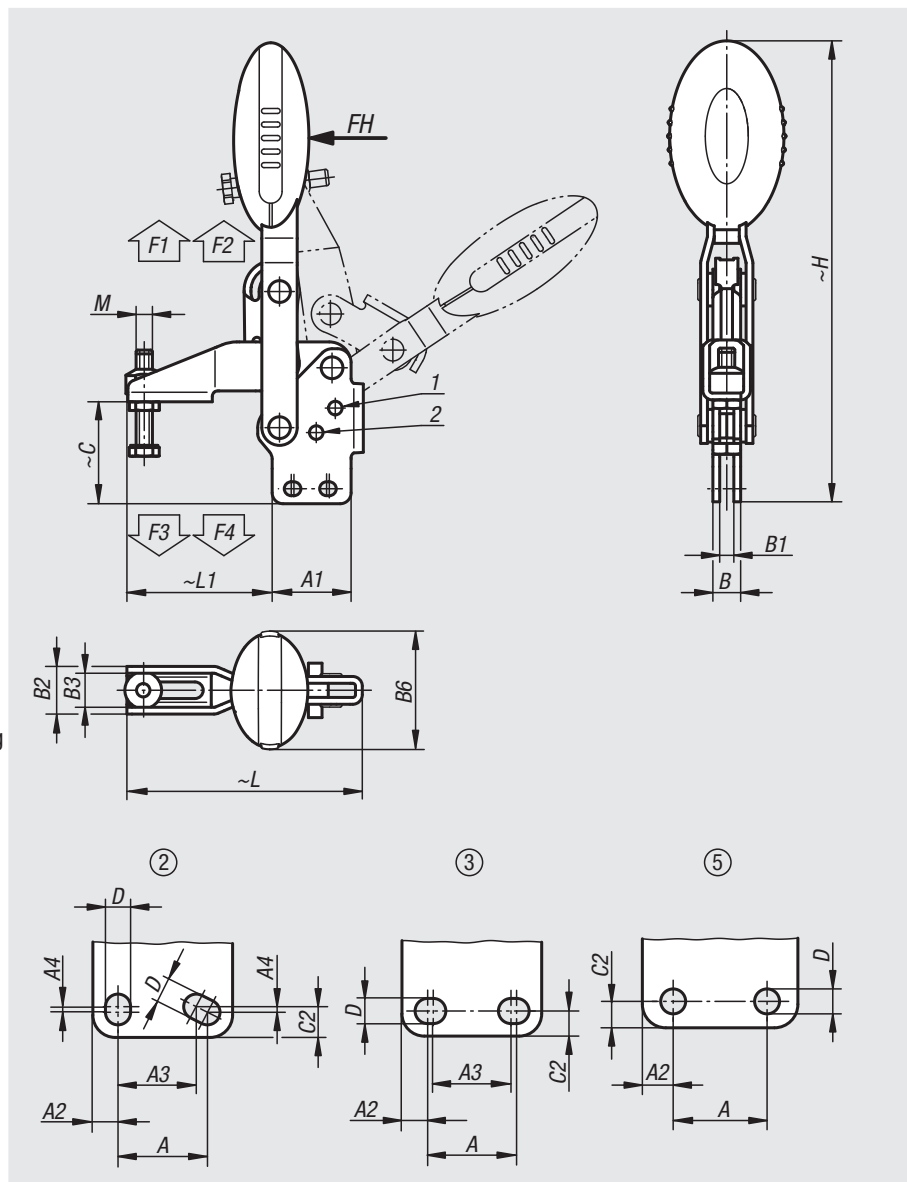
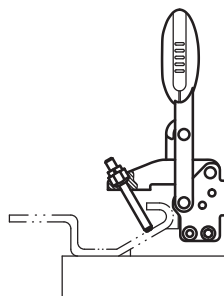
07140 Thrust pads DIN 6311

07142 Thrust pads

## Drawing reference:

1) stop pin position 1

2) stop pin position 2



| Order No.    | Opening angle<br>holding arm<br>position 1 | Opening angle<br>holding arm<br>position 2 | Opening angle<br>holding arm<br>stop pin removed | Opening angle<br>handle<br>position 1 | Opening angle<br>handle<br>position 2 | Hand<br>force<br>FH N | Retaining<br>force<br>F1 N | Retaining<br>force<br>F2 N | Clamping<br>force<br>F3 N | Clamping<br>force<br>F4 N |
|--------------|--------------------------------------------|--------------------------------------------|--------------------------------------------------|---------------------------------------|---------------------------------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|
| 05912-005002 | 100°                                       | -                                          | 129°                                             | 64°                                   | -                                     | 100                   | 750                        | 1050                       | 620                       | 750                       |
| 05912-006002 | 56°                                        | 83°                                        | 141°                                             | 46°                                   | 56°                                   | 160                   | 1350                       | 1650                       | 920                       | 1050                      |
| 05912-008002 | 13°                                        | 93°                                        | 158°                                             | 26°                                   | 61°                                   | 190                   | 2000                       | 2800                       | 940                       | 1350                      |
| 05912-010002 | 6°                                         | 97°                                        | 176°                                             | 19°                                   | 59°                                   | 250                   | 2500                       | 4500                       | 1500                      | 2800                      |
| 05912-012002 | 11°                                        | 88°                                        | 164°                                             | 24°                                   | 60°                                   | 280                   | 3000                       | 5500                       | 1400                      | 2800                      |

| Order No.    | hole<br>arrangement | M      | A  | A1 | A2   | A3 | A4  | B    | B1  | B2   | B3   | B6   | C    | C2  | D   | H     | L     | L1    |
|--------------|---------------------|--------|----|----|------|----|-----|------|-----|------|------|------|------|-----|-----|-------|-------|-------|
| 05912-005002 | 2                   | M5x25  | 16 | 25 | 4,5  | 14 | 1   | 8,1  | 4,1 | 13,2 | 9,2  | 22,5 | 29,8 | 5,5 | 4,5 | 119,2 | 65,6  | 35    |
| 05912-006002 | 3                   | M6x35  | 14 | 29 | 7    | 12 | -   | 10,2 | 5,2 | 17,5 | 12,5 | 43,5 | 37,6 | 5,5 | 5,5 | 169   | 86,5  | 53    |
| 05912-008002 | 3                   | M8x45  | 21 | 39 | 9    | 19 | -   | 10,2 | 5,2 | 20,6 | 15,6 | 41,5 | 49   | 6,5 | 6,8 | 200,4 | 107   | 62    |
| 05912-010002 | 2                   | M10x55 | 32 | 50 | 8    | 27 | 3,5 | 14,1 | 7,1 | 25,5 | 18,5 | 47   | 62,3 | 13  | 9   | 247,4 | 153   | 95    |
| 05912-012002 | 5                   | M12x70 | 32 | 53 | 10,5 | -  | -   | 14,1 | 7,1 | 28   | 21   | 47   | 69,8 | 9   | 8,8 | 265,5 | 173,5 | 113,5 |

# Toggle clamps vertical

with straight foot and adjustable clamping spindle, stainless steel



## Material:

Stainless steel.  
Grip polyamide.

## Version:

Bright.

## Sample order:

nIm 05912-105002

## Note:

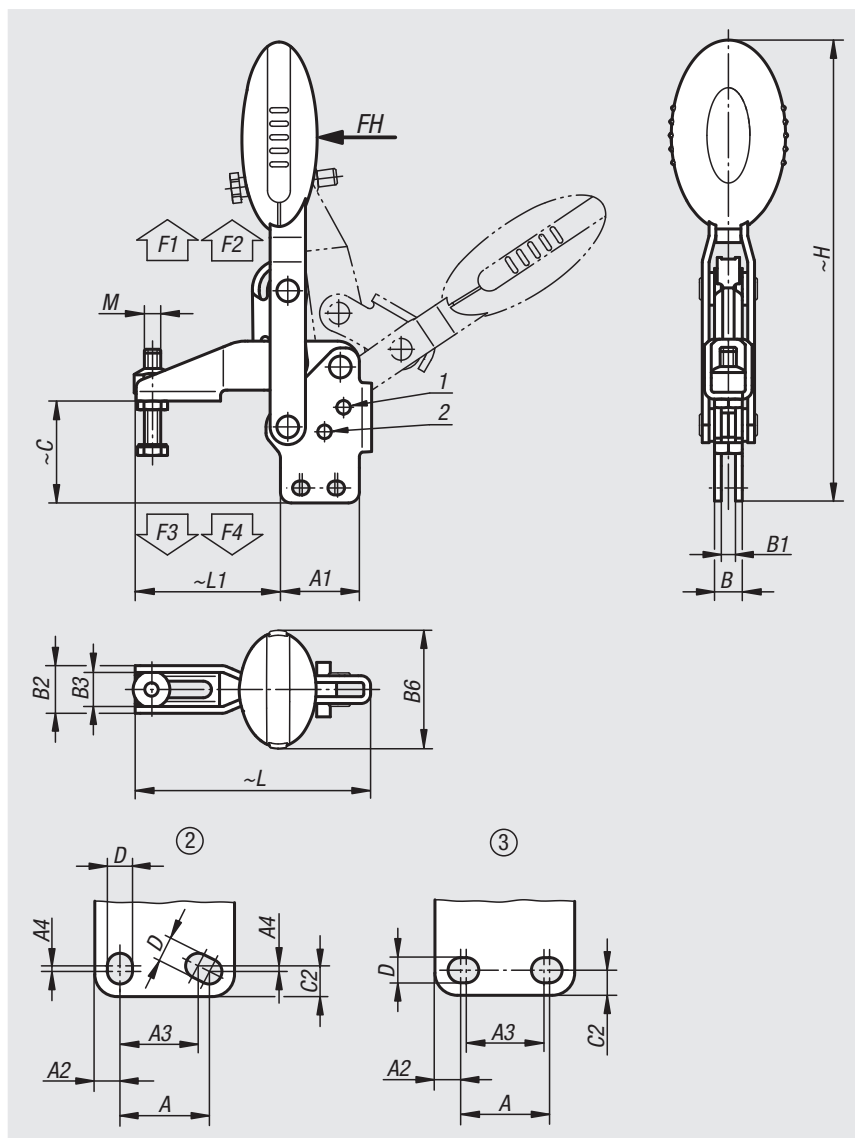
Maintenance-free high quality link bushings. Sustainable constant use of force during opening and closing. Optimum stability through the conical, U-profile clamping arm.

## Accessories:

05280 Protective caps  
07111 Ball-end thrust screws, stainless steel  
07119 Thrust screws, stainless steel  
07120 Grub screws with thrust point DIN 6332  
07140 Thrust pads DIN 6311

## Drawing reference:

1) stop pin position 1  
2) stop pin position 2



| Order No.    | Opening angle<br>holding arm<br>position 1 | Opening angle<br>holding arm<br>position 2 | Opening angle<br>holding arm<br>stop pin removed | Opening angle<br>handle<br>position 1 | Opening angle<br>handle<br>position 2 | Hand<br>force<br>FH N | Retaining<br>force<br>F1 N | Retaining<br>force<br>F2 N | Clamping<br>force<br>F3 N | Clamping<br>force<br>F4 N |
|--------------|--------------------------------------------|--------------------------------------------|--------------------------------------------------|---------------------------------------|---------------------------------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|
| 05912-105002 | 100°                                       | -                                          | 129°                                             | 64°                                   | -                                     | 100                   | 750                        | 1050                       | 620                       | 750                       |
| 05912-106002 | 56°                                        | 83°                                        | 141°                                             | 46°                                   | 56°                                   | 160                   | 1350                       | 1650                       | 920                       | 1050                      |
| 05912-108002 | 13°                                        | 93°                                        | 158°                                             | 26°                                   | 61°                                   | 190                   | 2000                       | 2800                       | 940                       | 1350                      |

| Order No.    | hole<br>arrangement | M     | A  | A1 | A2  | A3 | A4 | B    | B1  | B2   | B3   | B6   | C    | C2  | D   | H     | L    | L1 |
|--------------|---------------------|-------|----|----|-----|----|----|------|-----|------|------|------|------|-----|-----|-------|------|----|
| 05912-105002 | 2                   | M5x25 | 16 | 25 | 4,5 | 14 | 1  | 8,1  | 4,1 | 13,2 | 9,2  | 22,5 | 29,8 | 5,5 | 4,5 | 119,2 | 65,6 | 35 |
| 05912-106002 | 3                   | M6x35 | 14 | 29 | 7   | 12 | -  | 10,2 | 5,2 | 17,5 | 12,5 | 43,5 | 37,6 | 5,5 | 5,5 | 169   | 86,5 | 53 |
| 05912-108002 | 3                   | M8x45 | 21 | 39 | 9   | 19 | -  | 10,2 | 5,2 | 20,6 | 15,6 | 41,5 | 49   | 6,5 | 6,8 | 200,4 | 107  | 62 |

# Toggle clamps vertical with safety interlock

with straight foot and adjustable clamping spindle



## Material:

Steel.

Grip polyamide.

Unlocking bracket TPE.

## Version:

Carbonitrided and black oxidised.

## Sample order:

nIm 05912-006102

## Note:

Maintenance-free high quality link bushings.  
Sustainable constant force during opening and closing. Optimum stability through the conical, U-profile clamping arm. Including internal bar lock with automatic safety catch.

## Accessories:

05280 Protective caps

07110 Ball-end thrust screws

07117 Grippers, adjustable

07120 Grub screws with thrust point DIN 6332

07121 Grub screws with ball thrust point

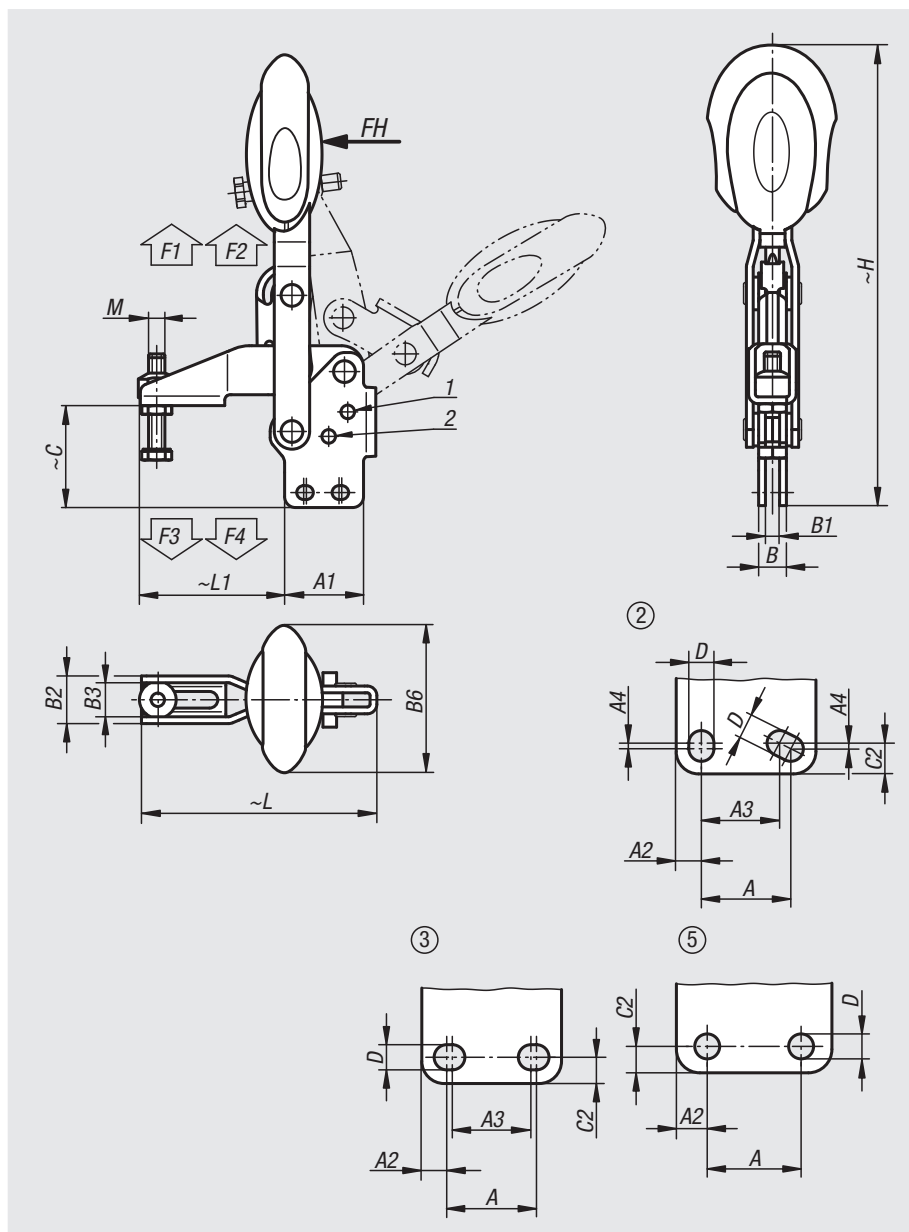
07140 Thrust pads DIN 6311

07142 Thrust pads

## Drawing reference:

1) stop pin position 1

2) stop pin position 2



| Order No.    | Opening angle<br>holding arm<br>position 1 | Opening angle<br>holding arm<br>position 2 | Opening angle<br>holding arm<br>stop pin removed | Opening angle<br>handle<br>position 1 | Opening angle<br>handle<br>position 2 | Hand<br>force<br>FH N | Retaining<br>force<br>F1 N | Retaining<br>force<br>F2 N | Clamping<br>force<br>F3 N | Clamping<br>force<br>F4 N |
|--------------|--------------------------------------------|--------------------------------------------|--------------------------------------------------|---------------------------------------|---------------------------------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|
| 05912-006102 | 56°                                        | 83°                                        | 141°                                             | 46°                                   | 56°                                   | 160                   | 1350                       | 1650                       | 920                       | 1050                      |
| 05912-008102 | 13°                                        | 93°                                        | 158°                                             | 26°                                   | 61°                                   | 190                   | 2000                       | 2800                       | 940                       | 1350                      |
| 05912-010102 | 6°                                         | 97°                                        | 176°                                             | 19°                                   | 59°                                   | 250                   | 2500                       | 4500                       | 1500                      | 2800                      |
| 05912-012102 | 11°                                        | 88°                                        | 164°                                             | 24°                                   | 60°                                   | 280                   | 3000                       | 5500                       | 1400                      | 2800                      |

| Order No.    | hole<br>arrangement | M      | A  | A1 | A2   | A3 | A4  | B    | B1  | B2   | B3   | B6   | C    | C2  | D   | H     | L     | L1    |
|--------------|---------------------|--------|----|----|------|----|-----|------|-----|------|------|------|------|-----|-----|-------|-------|-------|
| 05912-006102 | 3                   | M6x35  | 14 | 29 | 7    | 12 | -   | 10,2 | 5,2 | 17,5 | 12,5 | 53,4 | 37,6 | 5,5 | 5,5 | 175,7 | 86,5  | 53    |
| 05912-008102 | 3                   | M8x45  | 21 | 39 | 9    | 19 | -   | 10,2 | 5,2 | 20,6 | 15,6 | 51,1 | 49   | 6,5 | 6,8 | 207,6 | 107   | 62    |
| 05912-010102 | 2                   | M10x55 | 32 | 50 | 8    | 27 | 3,5 | 14,1 | 7,1 | 25,5 | 18,5 | 56,5 | 62,3 | 13  | 9   | 254   | 153   | 95    |
| 05912-012102 | 5                   | M12x70 | 32 | 53 | 10,5 | -  | -   | 14,1 | 7,1 | 28   | 21   | 56,5 | 69,8 | 9   | 8,8 | 272,1 | 173,5 | 113,5 |

# Toggle clamps vertical with safety interlock

with straight foot and adjustable clamping spindle, stainless steel



## Material:

Stainless steel.  
Grip polyamide.  
Unlocking bracket TPE.

## Version:

Bright.

## Sample order:

nIm 05912-106102

## Note:

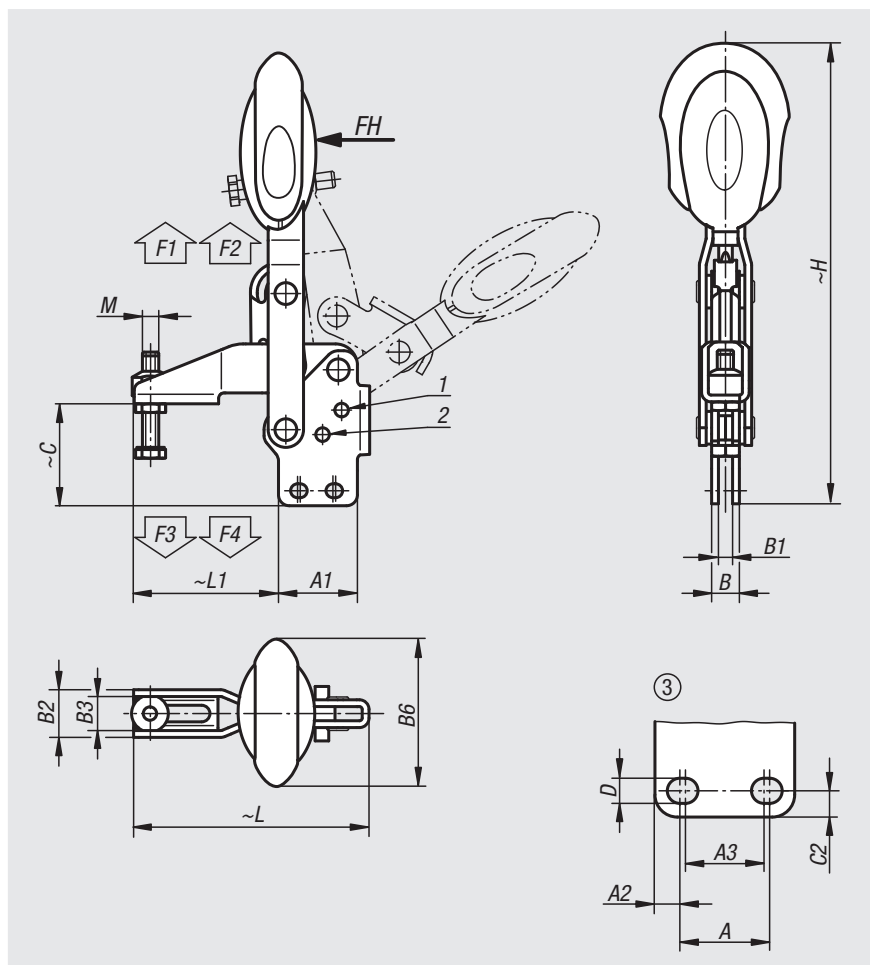
Maintenance-free high quality link bushings.  
Sustainable constant force during opening and closing. Optimum stability through the conical, U-profile clamping arm. Including internal bar lock with automatic safety catch.

## Accessories:

05280 Protective caps  
07111 Ball-end thrust screws, stainless steel  
07119 Thrust screws, stainless steel  
07120 Grub screws with thrust point DIN 6332  
07140 Thrust pads DIN 6311

## Drawing reference:

1) stop pin position 1  
2) stop pin position 2



| Order No.    | Opening angle<br>holding arm<br>position 1 | Opening angle<br>holding arm<br>position 2 | Opening angle<br>holding arm<br>stop pin removed | Opening angle<br>handle<br>position 1 | Opening angle<br>handle<br>position 2 | Hand<br>force<br>FH N | Retaining<br>force<br>F1 N | Retaining<br>force<br>F2 N | Clamping<br>force<br>F3 N | Clamping<br>force<br>F4 N |
|--------------|--------------------------------------------|--------------------------------------------|--------------------------------------------------|---------------------------------------|---------------------------------------|-----------------------|----------------------------|----------------------------|---------------------------|---------------------------|
| 05912-106102 | 56°                                        | 83°                                        | 141°                                             | 46°                                   | 56°                                   | 160                   | 1350                       | 1650                       | 920                       | 1050                      |
| 05912-108102 | 13°                                        | 93°                                        | 158°                                             | 26°                                   | 61°                                   | 190                   | 2000                       | 2800                       | 940                       | 1350                      |

| Order No.    | hole<br>arrangement | M     | A  | A1 | A2 | A3 | B    | B1  | B2   | B3   | B6   | C    | C2  | D   | H     | L    | L1 |
|--------------|---------------------|-------|----|----|----|----|------|-----|------|------|------|------|-----|-----|-------|------|----|
| 05912-106102 | 3                   | M6x35 | 14 | 29 | 7  | 12 | 10,2 | 5,2 | 17,5 | 12,5 | 53,4 | 37,6 | 5,5 | 5,5 | 175,7 | 86,5 | 53 |
| 05912-108102 | 3                   | M8x45 | 21 | 39 | 9  | 19 | 10,2 | 5,2 | 20,6 | 15,6 | 51,1 | 49   | 6,5 | 6,8 | 207,6 | 107  | 62 |

# Spherical seating nuts


**Material:**

Steel or stainless steel.

**Version:**

Steel black oxidised.

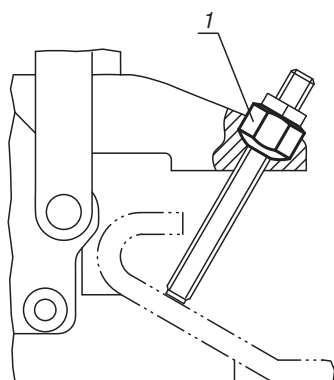
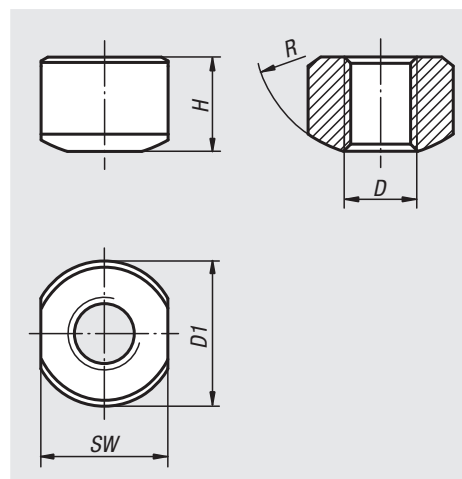
Stainless steel bright.

**Sample order:**

nln 05990-04

**Drawing reference:**

1) Weldable



| Order No.<br>steel | Order No.<br>stainless steel | D   | H    | D1   | SW   | R  |
|--------------------|------------------------------|-----|------|------|------|----|
| 05990-04           | 05990-104                    | M4  | 5,2  | 8    | 7    | 7  |
| 05990-05           | 05990-105                    | M5  | 6,7  | 10   | 9    | 9  |
| 05990-06           | 05990-106                    | M6  | 9,5  | 13,5 | 12,2 | 10 |
| 05990-08           | 05990-108                    | M8  | 12,8 | 18   | 15,3 | 12 |
| 05990-10           | -                            | M10 | 12,1 | 20   | 18,2 | 14 |
| 05990-12           | -                            | M12 | 14,8 | 23   | 20   | 16 |

# Status sensors, stainless steel with bracket

for toggle clamps



Status sensors with brackets are used to monitor the actuated status of toggle clamps. The sensor detects whether the toggle clamp is open or closed and enables this status information to be processed electronically. The sensor is attached to the toggle clamp via the bracket.

## Material:

Stainless steel

## Version:

Bright.

## Sample order:

nIm 05990-20-06111

## Note:

The status sensor and brackets are supplied unassembled.

## Assembly:

The status sensor is fastened to the bracket with the nuts and set to dimension L1.

The bracket is attached with the toggle clamp screws through holes between the foot and the mounting surface.

The switch point fine-tuning is carried out once the toggle clamp is mounted. The detailed procedure is described in the assembly instructions.

## Accessories:

05900

05908

10451

80140

## Technical data:

Inductive sensor:

Output circuit: PNP NO

Operating voltage: 10 - 30 V DC

Operating current: 100 mA

Contact gap: 0.8 mm

Switch frequency: 5000 Hz

Short-circuit proof: yes

Reverse polarity protection: yes

Rating: IP 67

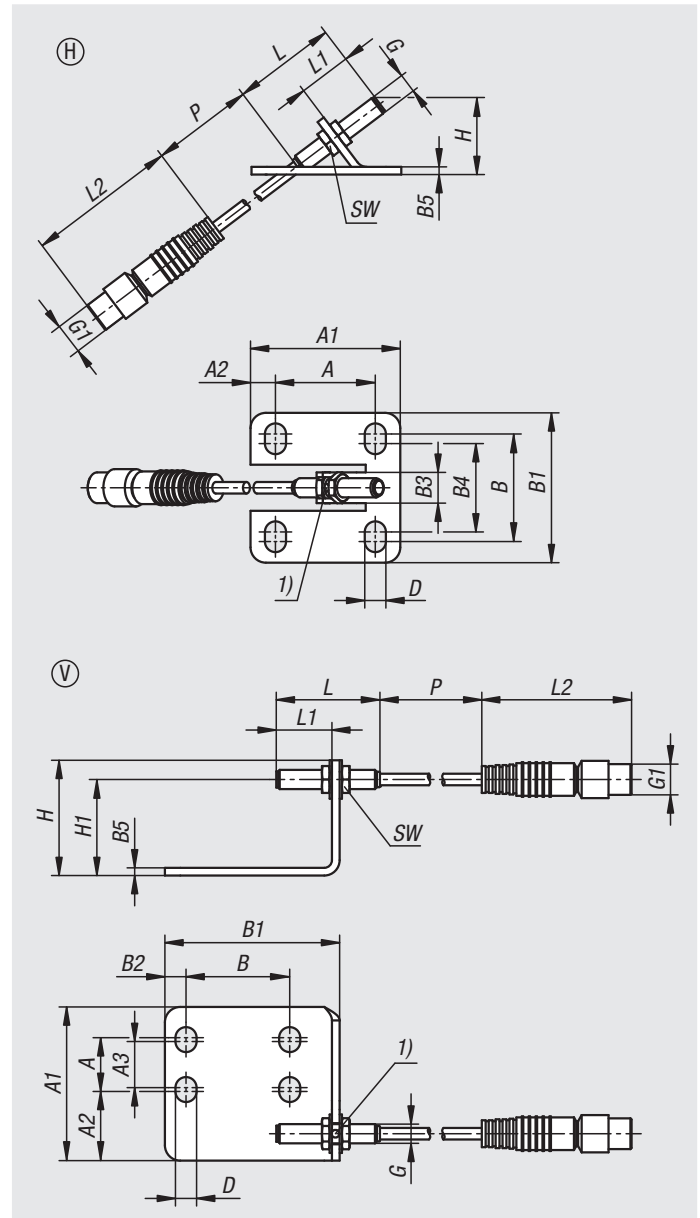
Connection type: 0.3 m cable, PUR with plug

Temperature range: -25 °C - +70 °C

Approvals: CE, c UL us, EAC

## Safety:

Status sensors are not suitable for protecting people.



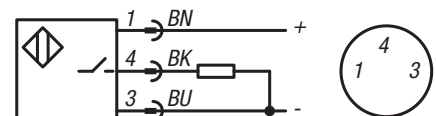
## Drawing reference:

1) LED-indicator

BN = brown

BK = black

BU = blue



| Order No.      | Form | A  | A1 | A2  | A3 | B  | B1   | B2  | B3 | B4 | B5 | D   | G      | G1   | H    | H1 | L  | L1   | L2 | P   | SW | matching toggle clamp | M     |
|----------------|------|----|----|-----|----|----|------|-----|----|----|----|-----|--------|------|------|----|----|------|----|-----|----|-----------------------|-------|
| 05990-20-06111 | H    | 26 | 39 | 6,5 | -  | 28 | 39   | -   | 8  | 23 | 2  | 5,5 | M5X0,5 | M8x1 | 20,1 | -  | 27 | 13,8 | 39 | 300 | 7  | 05900                 | M6x35 |
| 05990-20-08111 | H    | 26 | 44 | 9   | -  | 31 | 45   | -   | 8  | 24 | 2  | 6,2 | M5X0,5 | M8x1 | 27,3 | -  | 27 | 20,6 | 39 | 300 | 7  | 05900                 | M8x45 |
| 05990-20-06121 | V    | 14 | 40 | 18  | 12 | 27 | 45,5 | 5,5 | -  | -  | 2  | 5,5 | M5X0,5 | M8x1 | 30   | 25 | 27 | 14,5 | 39 | 300 | 7  | 05908                 | M6x35 |
| 05990-20-08121 | V    | 21 | 45 | 15  | 19 | 32 | 49   | 6,5 | -  | -  | 2  | 6,8 | M5X0,5 | M8x1 | 30   | 25 | 27 | 14,5 | 39 | 300 | 7  | 05908                 | M8x45 |

## Notes

