

Index Plungers • with hexagon collar

EH 22120.

2



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.

Material

Body

- Free cutting steel, blackened
- Stainless steel 1.4305

Locking pin

- Steel, hardened
- Stainless steel 1.4305, nickel-plated

Knob

- Thermoplastic PA 6, black, dull

Assembly

The screw length can be adapted by distance collars for index plungers (EH 22120.).

MORE INFORMATION

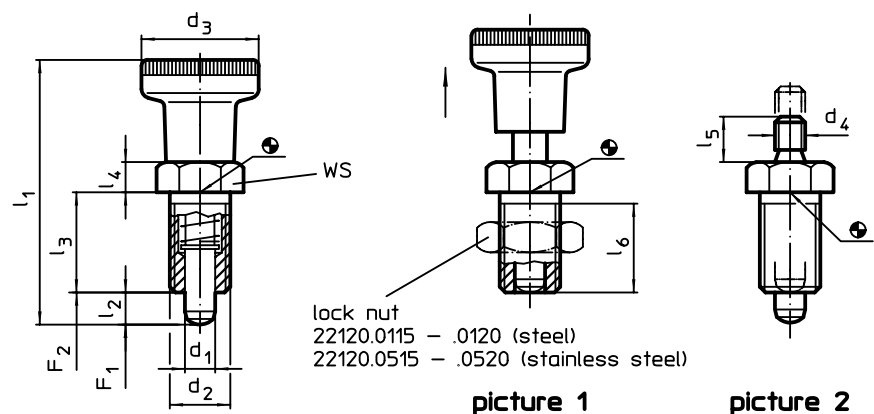
Notes

Knob not removable.
Lock nuts have to be purchased separately.

Further products

Mounting Blocks, for index bolts and index plungers, die-cast. → p. 115
Locating Bushings, for index bolts and index plungers → p. 116
Distance Collars, for index plungers → p. 129

DRAWING



ORDER INFORMATION

Dimensions										WS	Spring load ¹⁾		Temperature		Weight	Art. No.	
d ₁	d ₂	d ₃	d ₄	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆		F ₁	F ₂	min.	max.		Free cutting steel	Stainless steel
-0.02 -0.05				~	min.				min.		[N]		[°C]		[g]		
[mm]																	
with knob – picture 1																	
5	M10 x 1	21	–	45.0	5	17	5	–	15	12	6.0	14	-30	80	19	22120.0005	22120.0405
6	M12 x 1,5	25	–	54.5	6	20	6	–	17	14	6.5	19	-30	80	29	22120.0006	22120.0406
8	M16 x 1,5	31	–	69.0	8	26	8	–	23	19	11.5	28	-30	80	71	22120.0008	22120.0408
10	M20 x 1,5	31	–	80.0	10	33	10	–	30	22	23.0	54	-30	80	119	22120.0010	22120.0410
without knob – picture 2																	
5	M10 x 1	–	M5	–	5	17	5	6	15	12	6.0	14	–	250	14	22120.0025	22120.0425
6	M12 x 1,5	–	M6	–	6	20	6	10	17	14	6.5	19	–	250	23	22120.0026	22120.0426
8	M16 x 1,5	–	M8	–	8	26	8	12	23	19	11.5	28	–	250	54	22120.0028	22120.0428
10	M20 x 1,5	–	M8	–	10	33	10	12	30	22	23.0	54	–	250	97	22120.0030	22120.0430

¹⁾ statistical average value

ACCESSORIES

	Dimensions	Wrench size	Weight	Art. No.	
	d ₂			Steel	Stainless steel
	[mm]	[mm]	[g]		
lock nuts ISO 8675 (DIN 439)					
	M10 x 1	16	5.2	22120.0115	22120.0515
	M12 x 1,5	18	7.5	22120.0116	22120.0516
	M16 x 1,5	24	15.0	22120.0118	22120.0518
	M20 x 1,5	30	32.0	22120.0120	22120.0520

Index Plungers • with hexagon collar, stainless steel

EH 22120.



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.

Material

Body

- Stainless steel 1.4305

Locking pin

- Stainless steel 1.4305, nickel-plated

Knob

- Stainless steel 1.4305

Assembly

The screw length can be adapted by distance collars for index plungers (EH 22120.).

MORE INFORMATION

Notes

Knob not removable.

Lock nuts have to be purchased separately.

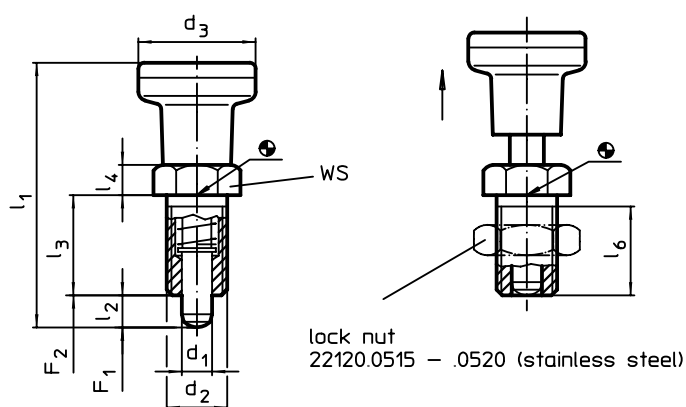
Further products

Mounting Blocks, for index bolts and

index plungers, die-cast. → p. 115

Distance Collars, for index plungers . . . → p. 129

DRAWING



ORDER INFORMATION

Dimensions								WS	Spring load ¹⁾		max.		Art. No.
d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	l ₄	l ₆		F ₁	F ₂			Stainless steel
-0.02 -0.05			~	min.			min.		~	~	[°C]	[g]	
			[mm]					[mm]	[N]				
5	M10 x 1	21	45.0	5	17	5	15	12	6.0	14	250	43	22120.0485
6	M12 x 1,5	25	54.5	6	20	6	17	14	6.5	19	250	65	22120.0486
8	M16 x 1,5	31	69.0	8	26	8	23	19	11.5	28	250	132	22120.0488
10	M20 x 1,5	31	80.0	10	33	10	30	22	23.0	54	250	179	22120.0490

¹⁾ statistical average value

ACCESSORIES

Dimensions		Wrench size		Art. No.
d ₂				Stainless steel
	[mm]	[mm]	[g]	
lock nuts ISO 8675 (DIN 439)				
	M10 x 1	16	5.2	22120.0515
	M12 x 1,5	18	7.5	22120.0516
	M16 x 1,5	24	15.0	22120.0518
	M20 x 1,5	30	32.0	22120.0520

Index Plungers • with hexagon collar and locking

EH 22120.



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.

Material

Body

- Free cutting steel, blackened
- Stainless steel 1.4305

Locking pin

- Steel, hardened
- Stainless steel 1.4305, nickel-plated

Knob

- Thermoplastic PA 6, black, dull

Assembly

The screw length can be adapted by distance collars for index plungers (EH 22120.).

Operation

The knob is pulled-out, turned 90° and secured by a notched catch (when locking pin should not overhang).

MORE INFORMATION

Notes

Knob not removable.

Lock nuts have to be purchased separately.

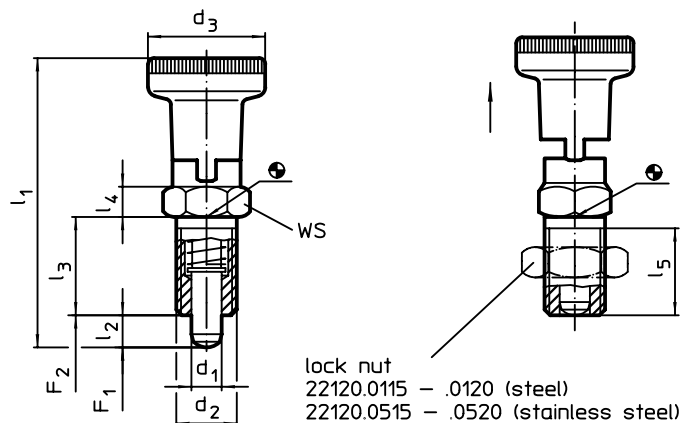
Further products

Mounting Blocks, for index bolts and index plungers, die-cast. → p. 115

Locating Bushings, for index bolts and index plungers. → p. 116

Distance Collars, for index plungers . . . → p. 129

DRAWING



ORDER INFORMATION

Dimensions								WS	Spring load ¹⁾					Art. No.	
d ₁ -0.02 -0.05	d ₂	d ₃	l ₁ ~	l ₂ min.	l ₃	l ₄	l ₅ min.		F ₁ ~	F ₂ ~	min.	max.		Free cutting steel	Stainless steel
[mm]								[mm]	[N]		[°C]		[g]		
5	M10 x 1	21	51.0	5	17	5	15	12	6.0	14	-30	80	21	22120.0205	22120.0605
6	M12 x 1,5	25	61.0	6	20	6	17	14	6.5	19	-30	80	36	22120.0206	22120.0606
8	M16 x 1,5	31	75.5	7	26	8	23	19	11.5	28	-30	80	79	22120.0208	22120.0608
10	M20 x 1,5	31	91.0	10	33	10	30	22	28.0	54	-30	80	134	22120.0210	22120.0610

¹⁾ statistical average value

ACCESSORIES

	Dimensions	Wrench size		Art. No.	
	d ₂			Steel	Stainless steel
	[mm]	[mm]	[g]		
lock nuts ISO 8675 (DIN 439)					
	M10 x 1	16	5.2	22120.0115	22120.0515
	M12 x 1,5	18	7.5	22120.0116	22120.0516
	M16 x 1,5	24	15.0	22120.0118	22120.0518
	M20 x 1.5	30	32.0	22120.0120	22120.0520

Index Plungers • with hexagon collar and locking, stainless steel

EH 22120.



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.

Material

Body

- Stainless steel 1.4305

Locking pin

- Stainless steel 1.4305, nickel-plated

Knob

- Stainless steel 1.4305

Assembly

The screw length can be adapted by distance collars for index plungers (EH 22120.).

Operation

The knob is pulled-out, turned 90° and secured by a notched catch (when locking pin should not overhang).

MORE INFORMATION

Notes

Knob not removable.

Lock nuts have to be purchased separately.

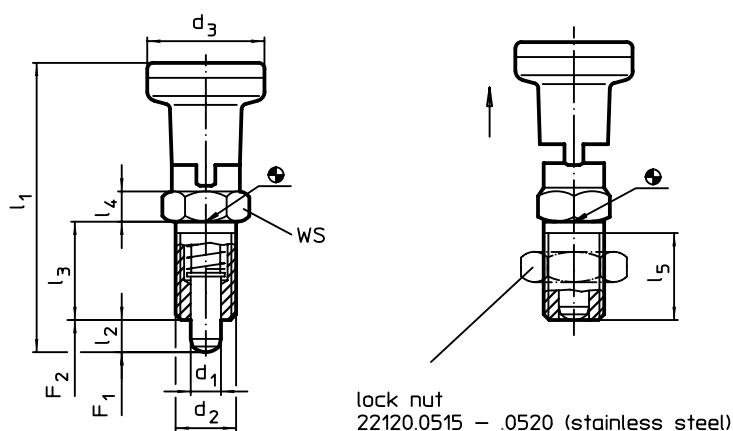
Further products

Mounting Blocks, for index bolts and

index plungers, die-cast. → p. 115

Distance Collars, for index plungers . . . → p. 129

DRAWING



ORDER INFORMATION

Dimensions								WS	Spring load ¹⁾		max.		Art. No.
d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	l ₄	l ₅		F ₁	F ₂			Stainless steel
-0.02 -0.05			~	min.			min.		~	~	max.	[g]	
			[mm]					[mm]	[N]		[°C]		
5	M10 x 1	21	51.0	5	17	5	15	12	6.0	14	250	43	22120.0615
6	M12 x 1,5	25	61.0	6	20	6	17	14	6.5	19	250	71	22120.0616
8	M16 x 1,5	31	75.5	7	26	8	23	19	11.5	28	250	144	22120.0618
10	M20 x 1,5	31	91.0	10	33	10	30	22	28.0	54	250	203	22120.0620

¹⁾ statistical average value

ACCESSORIES

Dimensions		Wrench size		Art. No.
d ₂				Stainless steel
[mm]		[mm]	[g]	
lock nuts ISO 8675 (DIN 439)				
	M10 x 1	16	5.2	22120.0515
	M12 x 1,5	18	7.5	22120.0516
	M16 x 1,5	24	15.0	22120.0518
	M20 x 1,5	30	32.0	22120.0520

Index Plungers • with hexagon collar, stainless steel A4

EH 22120.



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.
The stainless steel A4 version ensures maximum corrosion resistance.

Material

Body

- Stainless steel 1.4401

Locking pin

- Stainless steel 1.4401 nickel-plated

Knob

- Thermoplastic PA 6, black-grey, matt

- Stainless steel 1.4401

Lock nut

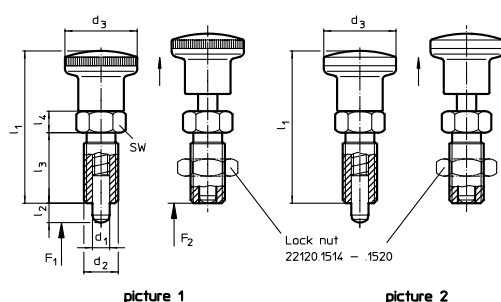
- Stainless steel 1.4401

MORE INFORMATION

Notes

Knob not removable.
Lock nuts have to be purchased separately.

DRAWING



ORDER INFORMATION

Dimensions							Spring load ¹⁾		min. max.	[°C]	[g]	Art. No.
d ₁	d ₂	l ₂	d ₃	l ₁	l ₃	l ₄	F ₁	F ₂				
-0.02 -0.05		min.					~	~				
[mm]												
[N]												
with knob of thermoplastic – picture 1												
4	M 8 x 1	4	16	35.0	16	5	3.5	11	-30	80	10	22120.1044
		6	16	35.0	16	5	3.0	11	-30	80	11	22120.1064
5	M10 x 1	5	19	40.0	18	6	3.0	12	-30	80	18	22120.1045
		8	19	40.0	18	6	3.0	14	-30	80	18	22120.1065
6	M12 x 1,5	6	23	48.0	22	6	4.5	16	-30	80	30	22120.1046
		9	23	48.0	22	6	4.0	20	-30	80	30	22120.1066
8	M16 x 1,5	8	28	58.0	26	8	6.0	23	-30	80	66	22120.1068
		12	28	58.0	26	8	7.0	26	-30	80	63	22120.1048
10	M16 x 1,5	12	28	58.0	26	8	7.5	32	-30	80	64	22120.1080
12	M20 x 1,5	15	33	71.5	33	10	9.0	32	-30	80	129	22120.1082
with knob from stainless steel – picture 2												
4	M 8 x 1	8	16	35.0	16	5	3.5	11	–	100	20	22120.1054
		6	16	35.0	16	5	3.0	11	–	100	20	22120.1074
5	M10 x 1	5	18	40.0	18	6	3.0	12	–	100	32	22120.1055
		8	18	40.0	18	6	3.0	14	–	100	32	22120.1075
6	M12 x 1,5	6	22	48.0	22	6	4.5	16	–	100	63	22120.1056
		9	22	48.0	22	6	4.0	20	–	100	56	22120.1076
8	M16 x 1,5	8	27	58.0	26	8	6.0	20	–	100	107	22120.1078
		12	27	58.0	26	8	7.0	26	–	100	109	22120.1058
10	M16 x 1,5	12	27	58.0	26	8	7.5	32	–	100	111	22120.1090
12	M20 x 1,5	15	32	71.5	33	10	9.0	32	–	100	203	22120.1092

¹⁾ statistical average value

ACCESSORIES

	Dimensions	Wrench size		Art. No. Stainless steel 1.4401
	d ₂ [mm]	[mm]	[g]	
lock nuts ISO 8675 (DIN 439)				
	M 8 x 1	13	2.8	22120.1514
	M10 x 1	16	5.4	22120.1515
	M12 x 1,5	18	7.6	22120.1516
	M16 x 1,5	24	18.0	22120.1518
	M20 x 1.5	30	33.0	22120.1520

Index Plungers • with hexagon collar and locking, stainless steel A4

EH 22120.



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.

The stainless steel A4 version ensures maximum corrosion resistance.

Material

Body

- Stainless steel 1.4401

Locking pin

- Stainless steel 1.4401 nickel-plated

Knob

- Thermoplastic PA 6, black-grey, matt

- Stainless steel 1.4401

Lock nut

- Stainless steel 1.4401

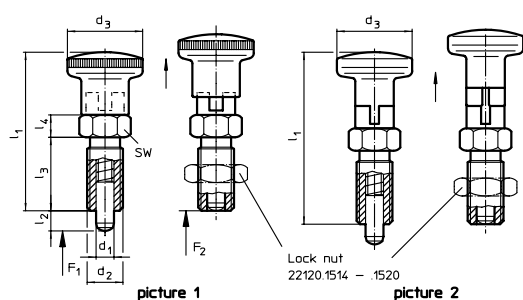
MORE INFORMATION

Notes

Knob not removable.

Lock nuts have to be purchased separately.

DRAWING



ORDER INFORMATION

Dimensions							Spring load ¹⁾				Art. No.	
d ₁ -0.02 -0.05	d ₂	l ₂ min.	d ₃	l ₁	l ₃	l ₄	F ₁ ~	F ₂ ~	min.	max.		
[mm]							[N]		[°C]		[g]	
with knob of thermoplastic – picture 1												
4	M 8 x 1	4	16	35.0	16	5	3.5	11	-30	80	12	22120.1144
		6	16	35.0	22	6	4.5	16	-30	80	11	22120.1164
5	M10 x 1	5	19	35.0	16	5	3.0	11	-30	80	20	22120.1145
		8	19	48.0	22	6	4.0	20	-30	80	18	22120.1165
6	M12 x 1,5	6	23	40.0	18	6	3.0	12	-30	80	33	22120.1146
		9	23	58.0	26	8	6.0	23	-30	80	33	22120.1166
8	M16 x 1,5	8	28	58.0	26	8	7.0	26	-30	80	67	22120.1168
		12	28	40.0	18	6	3.0	14	-30	80	70	22120.1148
10	M16 x 1,5	12	28	58.0	26	8	7.5	32	-30	80	70	22120.1180
12	M20 x 1,5	15	33	71.5	33	10	9.0	32	-30	80	141	22120.1182
with knob from stainless steel – picture 2												
4	M 8 x 1	4	16	35.0	16	5	3.5	11	–	100	21	22120.1154
		6	16	35.0	16	5	3.0	11	–	100	22	22120.1174
5	M10 x 1	5	18	40.0	18	6	3.0	12	–	100	36	22120.1155
		8	18	40.0	18	6	3.0	14	–	100	37	22120.1175
6	M12 x 1,5	6	22	48.0	22	6	4.5	16	–	100	60	22120.1156
		9	22	48.0	22	6	4.0	20	–	100	63	22120.1176
8	M16 x 1,5	8	27	58.0	26	8	6.0	23	–	100	117	22120.1178
		12	27	58.0	26	8	7.0	26	–	100	118	22120.1158
10	M16 x 1,5	12	27	58.0	26	8	7.5	32	–	100	135	22120.1190
12	M20 x 1,5	15	32	71.5	33	10	9.0	32	–	100	229	22120.1192

¹⁾ statistical average value

ACCESSORIES

	Dimensions d ₂ [mm]	Wrench size [mm]		Art. No. Stainless steel 1.4401
			[g]	
lock nuts ISO 8675 (DIN 439)				
	M 8 x 1	13	2.8	22120.1514
	M12 x 1,5	18	7.6	22120.1516
	M10 x 1	16	5.4	22120.1515
	M16 x 1,5	24	18.0	22120.1518
	M20 x 1,5	30	33.0	22120.1520

Index Plungers • without hexagon collar

EH 22120.



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.

Material

Body

- Free cutting steel, blackened
- Stainless steel 1.4305

Locking pin

- Steel, hardened
- Stainless steel 1.4305, nickel-plated

Knob

- Thermoplastic PA 6, black

Assembly

Suitable mounting tools are available.

MORE INFORMATION

Notes

Knob not removable.

Lock nuts have to be purchased separately.

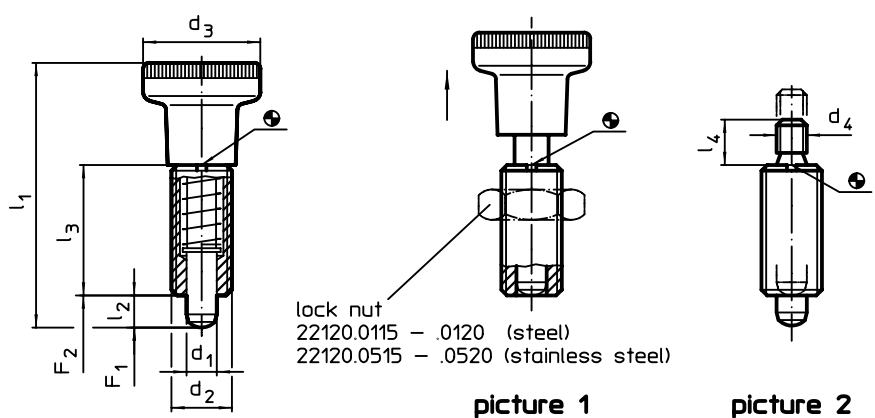
Further products

Mounting Blocks, for index bolts and index plungers, die-cast. → p. 115

Locating Bushings, for index bolts and index plungers. → p. 116

Distance Collars, for index plungers .. → p. 129

DRAWING



picture 1

picture 2

ORDER INFORMATION

Dimensions								Spring load ¹⁾					Art. No.	
d ₁ -0.02 -0.05	d ₂	d ₃	d ₄	l ₁ ~	l ₂ min.	l ₃	l ₄	F ₁ ~	F ₂ ~	min.	max.		Free cutting steel	Stainless steel
[mm]								[N]		[°C]		[g]		
with knob – picture 1														
5	M10 x 1	21	–	45.0	5	22	–	6.0	14	-30	80	17	22120.0045	22120.0445
6	M12 x 1,5	25	–	54.5	6	26	–	6.5	19	-30	80	27	22120.0046	22120.0446
8	M16 x 1,5	31	–	69.0	8	34	–	11.5	28	-30	80	63	22120.0048	22120.0448
10	M20 x 1,5	31	–	80.0	10	41	–	23.0	54	-30	80	104	22120.0050	22120.0450
without knob – picture 2														
5	M10 x 1	–	M5	–	5	22	6	6.0	14	–	250	12	22120.0065	22120.0465
6	M12 x 1,5	–	M6	–	6	26	10	6.5	19	–	250	19	22120.0066	22120.0466
8	M16 x 1,5	–	M8	–	8	34	12	11.5	28	–	250	46	22120.0068	22120.0468
10	M20 x 1,5	–	M8	–	10	43	12	23.0	54	–	250	87	22120.0070	22120.0470

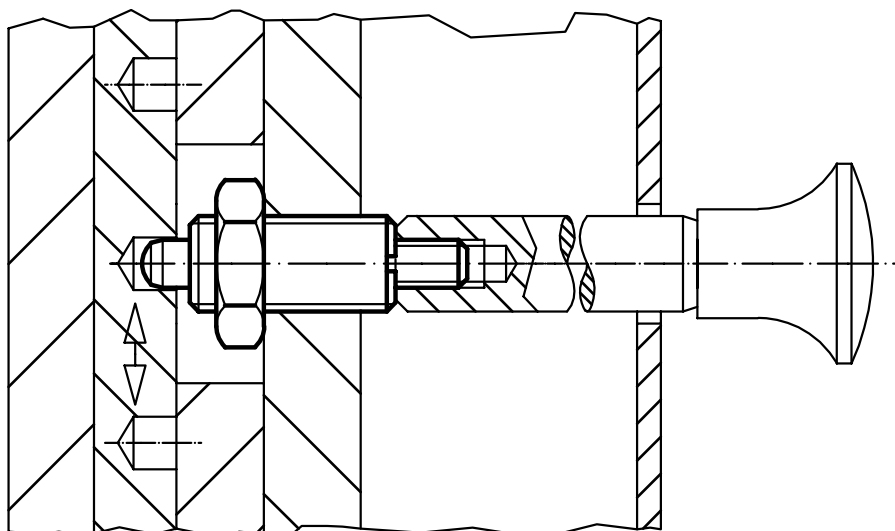
¹⁾ statistical average value

ACCESSORIES

	Dimensions	Wrench size		Art. No.	
	d ₂			Steel	Stainless steel
	[mm]	[mm]	[g]		
lock nuts ISO 8675 (DIN 439)					
	M10 x 1	16	5.2	22120.0115	22120.0515
	M12 x 1,5	18	7.5	22120.0116	22120.0516
	M16 x 1,5	24	15.0	22120.0118	22120.0518
	M20 x 1,5	30	32.0	22120.0120	22120.0520

	Dimensions	Wrench size		Art. No.	
	d ₂			Steel	Stainless steel
	[mm]	[mm]	[g]		
assembly tool					
	M10 x 1	–	9.3	22120.0955	–
	M12 x 1,5	–	14.0	22120.0956	–
	M16 x 1,5	–	25.0	22120.0958	–
	M20 x 1,5	–	27.0	22120.0960	–

APPLICATION EXAMPLE



Index Plungers • without hexagon collar, stainless steel

EH 22120.



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.

Material

Body

- Stainless steel 1.4305

Locking pin

- Stainless steel 1.4305, nickel-plated

Knob

- Stainless steel 1.4305

Assembly

Suitable mounting tools are available.

MORE INFORMATION

Notes

Knob not removable.

Lock nuts have to be purchased separately.

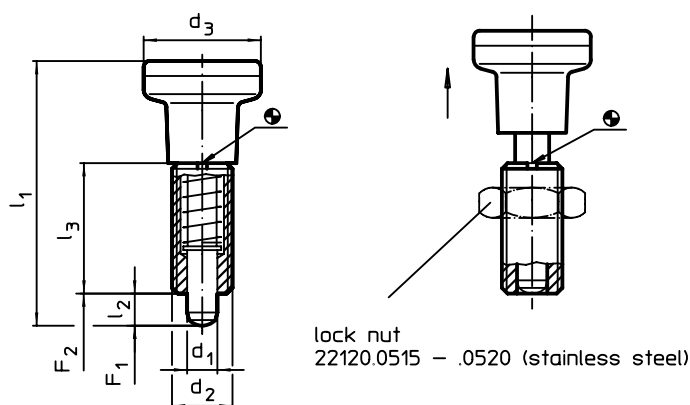
Further products

Mounting Blocks, for index bolts and

index plungers, die-cast. → p. 115

Distance Collars, for index plungers . . . → p. 129

DRAWING



ORDER INFORMATION

Dimensions						Spring load ¹⁾				Art. No.
d ₁ -0.02 -0.05	d ₂	d ₃	l ₁ ~	l ₂ min.	l ₃	F ₁ ~	F ₂ ~	max.		Stainless steel
[mm]						[N]		[°C]	[g]	
5	M10 x 1	21	45.0	5	22	6.0	14	250	36	22120.0475
6	M12 x 1,5	25	54.5	6	26	6.5	19	250	62	22120.0476
8	M16 x 1,5	31	69.0	8	34	11.5	28	250	124	22120.0478
10	M20 x 1,5	31	80.0	10	41	23.0	54	250	165	22120.0480

¹⁾ statistical average value

ACCESSORIES

	Dimensions	Wrench size		Art. No.	
	d ₂ [mm]	[mm]	[g]	Stainless steel	Steel
lock nuts ISO 8675 (DIN 439)					
	M10 x 1	16	5.2	22120.0515	—
	M12 x 1,5	18	7.5	22120.0516	—
	M16 x 1,5	24	15.0	22120.0518	—
	M20 x 1,5	30	32.0	22120.0520	—
assembly tool					
	M10 x 1	—	9.3	—	22120.0955
	M12 x 1,5	—	14.0	—	22120.0956
	M16 x 1,5	—	25.0	—	22120.0958
	M20 x 1,5	—	27.0	—	22120.0960

Index Plungers • threadless, weldable

EH 22120.



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.

Material

Body

- Steel, blackened, weldable

Locking pin

- Steel, hardened

Knob

- Thermoplastic PA 6, black

Assembly

Attached by welding or glueing.

MORE INFORMATION

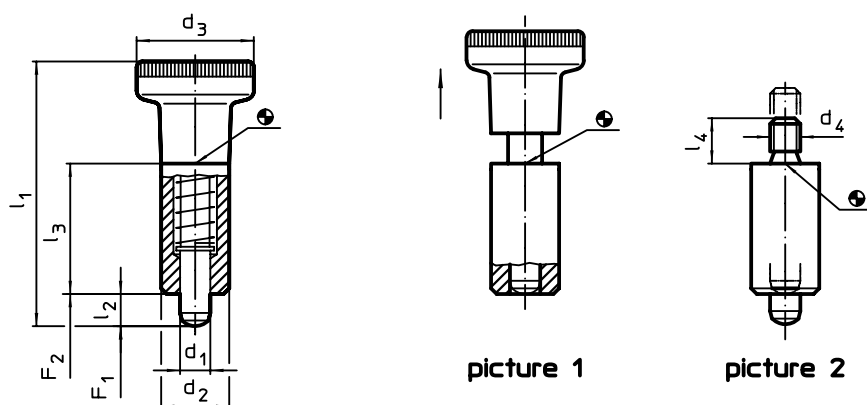
Notes

Knob not removable.

Further products

Locating Bushings, for index bolts and index plungers → p. 116

DRAWING

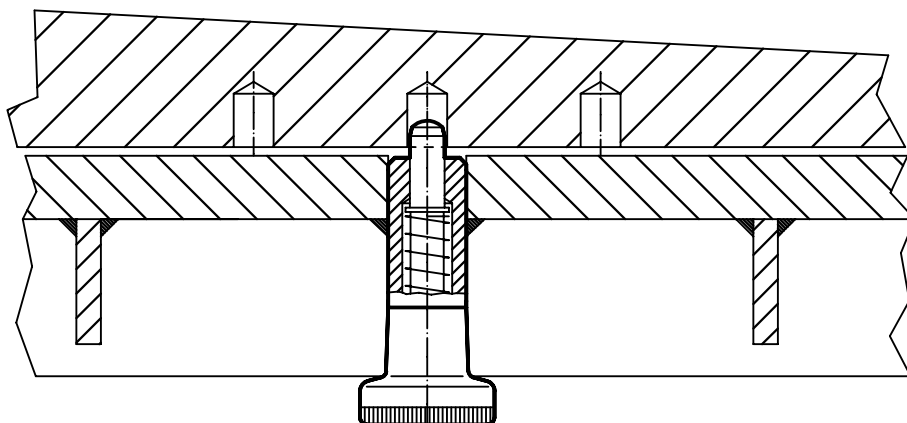


ORDER INFORMATION

Dimensions								Spring load ¹⁾				Art. No.	
d ₁ -0.02 -0.05	d ₂ h9	d ₃	d ₄	l ₁ ~	l ₂ min.	l ₃	l ₄	F ₁ ~	F ₂ ~	min.	max.		
[mm]								[N]		[°C]			[g]
with knob – picture 1													
5	12	21	–	45.0	5	22	–	7.0	16	-30	80	25	22120.0805
6	14	25	–	54.5	6	26	–	6.5	15	-30	80	40	22120.0806
8	18	31	–	69.0	8	34	–	12.0	31	-30	80	84	22120.0808
without knob – picture 2													
5	12	–	M5	–	5	22	6	7.0	16	–	250	19	22120.0825
6	14	–	M6	–	6	26	10	6.5	15	–	250	32	22120.0826
8	18	–	M8	–	8	34	12	12.0	31	–	250	67	22120.0828

¹⁾ statistical average value

APPLICATION EXAMPLE



Index Plungers • with hexagon collar, short

EH 22120.



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.
The small dimensions are a feature of these index plungers.

Material

Body

- Free cutting steel, blackened
- Stainless steel 1.4305

Locking pin

- Steel, hardened
- Stainless steel 1.4305, nickel-plated

Knob

- Thermoplastic PA 6, black, dull

Operation

When using locking index plungers, the knob is pulled-out, turned 90° and secured by a notched catch (when locking pin should not overhang).

MORE INFORMATION

Notes

Knob not removable.
Lock nuts have to be purchased separately.

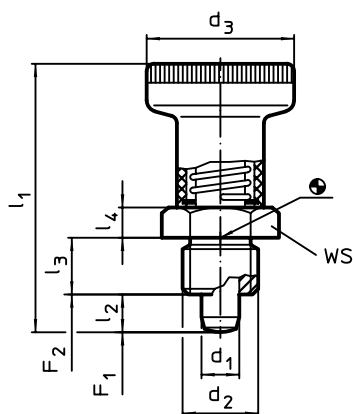
Further products

Locating Bushings, for index bolts and index plungers ... → p. 116
Distance Collars, for index plungers ... → p. 129

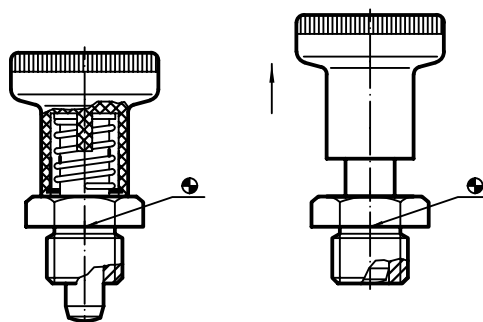
Assembly

The screw length can be adapted by distance collars for index plungers (EH 22120.).

DRAWING



picture 1



picture 2 with locking

ORDER INFORMATION

Dimensions							WS	Spring load ¹⁾		min.	max.	[g]	Art. No.	
d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	l ₄		F ₁	F ₂				Free cutting steel	Stainless steel
-0.02 -0.05			~	min.	-0.15		[mm]	~	~	[°C]				
without locking – picture 1														
6	M12 x 1,5	25	45	6	10	5	17	7	19	-30	80	35	22120.0226	22120.0246
8	M16 x 1,5	31	54	8	12	6	19	14	24	-30	80	62	22120.0228	22120.0248
with locking – picture 2														
6	M12 x 1,5	25	45	6	10	5	17	7	19	-30	80	35	22120.0236	22120.0256
8	M16 x 1,5	31	54	8	12	6	19	14	24	-30	80	60	22120.0238	22120.0258

¹⁾ statistical average value

ACCESSORIES

	Dimensions	Wrench size		Art. No.	
	d ₂			Steel	Stainless steel
	[mm]	[mm]	[g]		
lock nuts ISO 8675 (DIN 439)					
 	M12 x 1,5	18	7.5	22120.0116	22120.0516
	M16 x 1,5	24	15.0	22120.0118	22120.0518

Distance Collars • for index plungers

EH 22120.



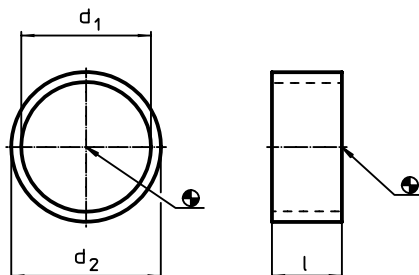
PRODUCT DESCRIPTION

Distance collars adapt the thread of index plungers to different thread reaches.

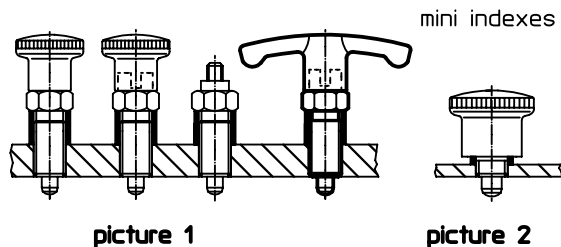
Material

- Stainless steel 1.4305

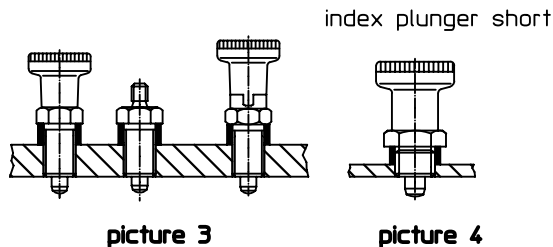
DRAWING



EH 22110.



EH 22120.



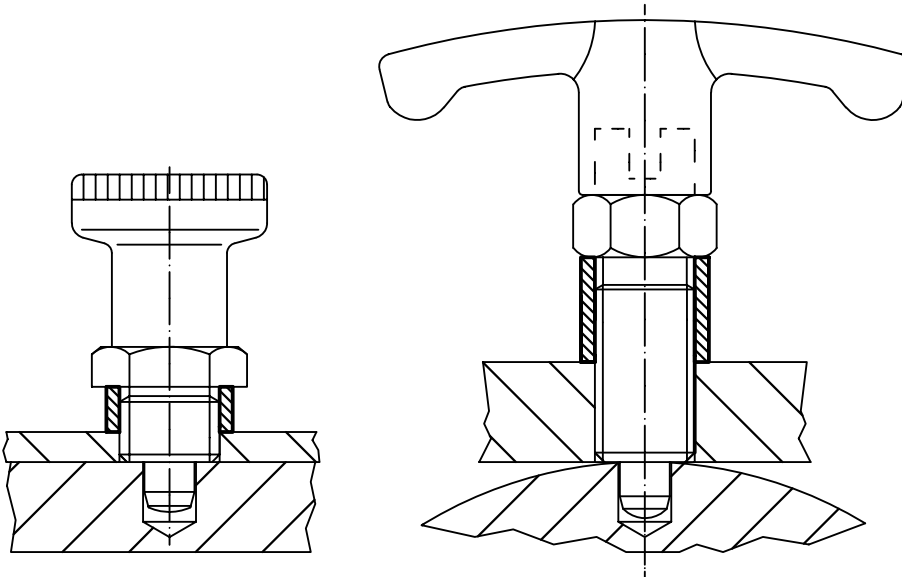
ORDER INFORMATION

Dimensions			For index plungers size	For finish picture	max.	[g]	Art. No.
d_1 H12	l ± 0.1 [mm]	d_2 -0.1	[mm]		[°C]		
8	2	10	M 8	1/2	250	0.4	22120.0632
	3	10	M 8	1	250	0.8	22120.0633
	4	10	M 8	1	250	0.9	22120.0634
	6	10	M 8	1	250	1.2	22120.0636
	8	10	M 8	1	250	2.0	22120.0638
	10	10	M 8	1	250	2.0	22120.0640
10	2	12	M10	1/2/3	250	0.6	22120.0642
	4	12	M10	1/2/3	250	1.1	22120.0644
	6	12	M10	1/3	250	1.6	22120.0646
	8	12	M10	1/3	250	2.1	22120.0648
	10	12	M10	1/3	250	2.7	22120.0650
12	12	12	M10	1/3	250	3.0	22120.0652
	2	14	M12	1	250	0.6	22120.0662
	4	14	M12	1	250	2.5	22120.0664
	6	14	M12	1	250	1.9	22120.0666
	8	14	M12	1	250	2.4	22120.0668
	2	17	M12	3/4	250	2.0	22120.0672
	4	17	M12	3/4	250	3.4	22120.0674
	5	17	M12	3/4	250	4.4	22120.0675

→

d ₁ H12	Dimensions		For index plungers size [mm]	For finish picture	 max. [°C]	 [g]	Art. No.
	l ±0.1 [mm]	d ₂ -0.1					
16	4	17	M16	1	250	0.9	22120.0676
	6	17	M16	1	250	1.2	22120.0677
	8	17	M16	1	250	1.4	22120.0678
	10	17	M16	1	250	2.0	22120.0679
	12	17	M16	1	250	2.1	22120.0680
	2	19	M16	3/4	250	1.3	22120.0682
	4	19	M16	3/4	250	2.8	22120.0684
	6	19	M16	3/4	250	3.8	22120.0686
	8	19	M16	3/4	250	4.8	22120.0688
	10	19	M16	3	250	6.1	22120.0690
20	12	19	M16	3	250	7.3	22120.0692
	6	22	M20	1/3	250	3.0	22120.0693
	8	22	M20	1/3	250	4.0	22120.0694
	10	22	M20	1/3	250	4.9	22120.0695
	12	22	M20	1/3	250	5.9	22120.0696
	14	22	M20	1/3	250	6.9	22120.0697
	16	22	M20	1/3	250	9.3	22120.0698
	18	22	M20	1/3	250	9.0	22120.0699

APPLICATION EXAMPLE



Index Plungers • with mounting flange

EH 22120.

2



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.
For fixing onto thin walled parts.
The small dimensions are a feature of these index plungers.

Material

Flange

- Zinc die-cast, zinc-plated by galvanization

Locking pin

- Steel, hardened
- Stainless steel 1.4305, nickel-plated

Knob

- Thermoplastic PA 6, black, dull

Operation

When using locking index plungers the knob is pulled out and turned 90°.

MORE INFORMATION

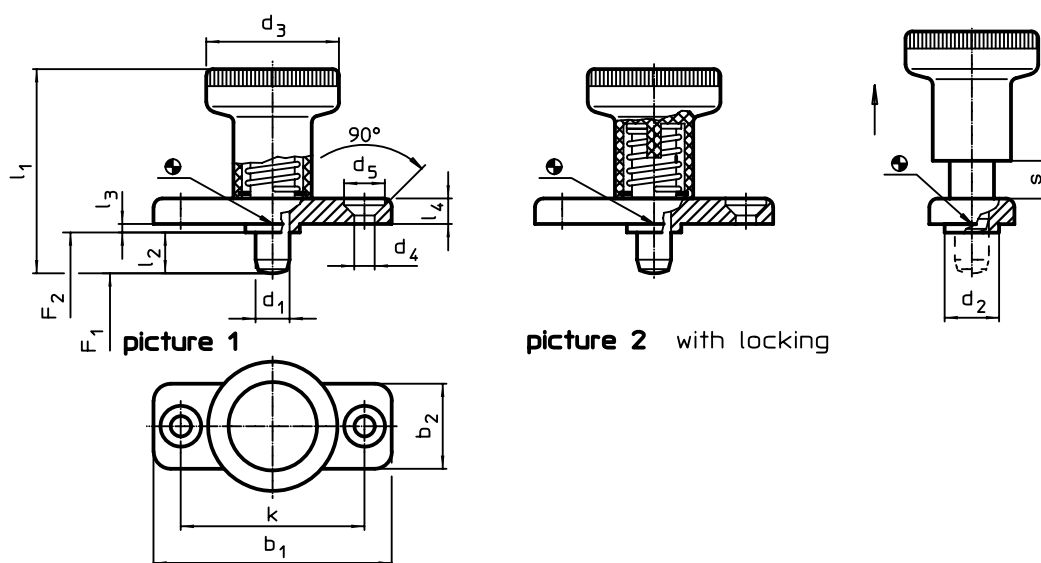
Notes

Knob not removable.

Further products

Locating Bushings, for index bolts and index plungers → p. 116

DRAWING



ORDER INFORMATION

Dimensions													Spring load ¹⁾		min. max.	[g]	Art. No.	
d_1	l_2	b_1	b_2	d_2	d_3	d_4	d_5	k	l_1	l_3	l_4	s	F_1	F_2			Steel	Stainless steel
-0.02 -0.05				-0.02 -0.1						-0.15			[N]		[°C]			
without locking – picture 1																		
6	6	40	18	10	25	4.3	8.3	30	37	2.5	4.5	6	8.5	22	-30	80	36	22120.0926 22120.0966
	14	40	18	10	25	4.3	8.3	30	45	2.5	4.5	6	8.5	22	-30	80	37	22120.0927 ²⁾ 22120.0967 ²⁾
8	8	46	20	12	31	5.3	10.4	34	44	2.5	5.5	8	15.5	28	-30	80	60	22120.0928 22120.0968
	18	46	20	12	31	5.3	10.4	34	54	2.5	5.5	8	15.5	28	-30	80	63	22120.0929 ²⁾ 22120.0969 ²⁾
with locking – picture 2																		
6	6	40	18	10	25	4.3	8.3	30	37	2.5	4.5	6	8.5	22	-30	80	36	22120.0936 22120.0976
	14	40	18	10	25	4.3	8.3	30	45	2.5	4.5	6	8.5	22	-30	80	38	22120.0937 ²⁾ 22120.0977 ²⁾
8	8	46	20	12	31	5.3	10.4	34	44	2.5	5.5	8	15.5	28	-30	80	60	22120.0938 22120.0978
	18	46	20	12	31	5.3	10.4	34	54	2.5	5.5	8	15.5	28	-30	80	63	22120.0939 ²⁾ 22120.0979 ²⁾

¹⁾ statistical average value

²⁾ Locking pin is not completely retractable

Index Plungers • simple finish

EH 22120.

2



PRODUCT DESCRIPTION

Application is limited to cases not requiring a precise positioning.
Simple finish with very small dimensions.

Material

Body

- Steel, zinc-plated by galvanization
- Stainless steel 1.4305

Locking pin

- Stainless steel 1.4305

Knob

- Thermoplastic PA 6, black, dull

Pull-ring

- Stainless steel 1.4310

Operation

When using locking index plungers, the knob is pulled-out, turned 90° and secured by a notched catch (when locking pin should not overhang).

MORE INFORMATION

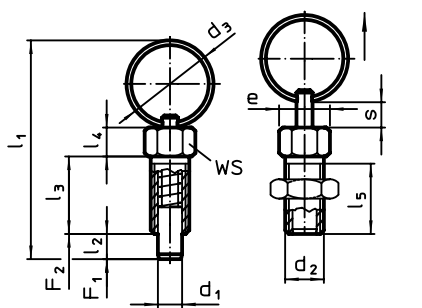
Notes

Lock nuts have to be purchased separately.

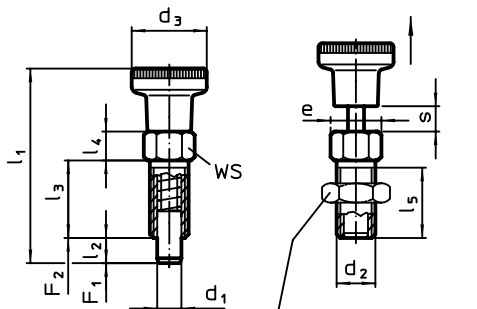
Further products

Locating Bushings, for index bolts and index plungers → p. 116

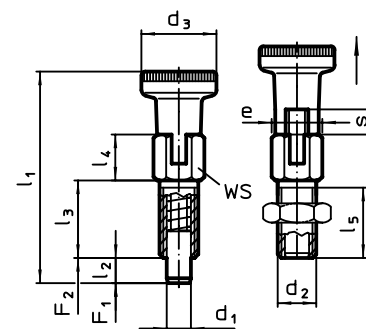
DRAWING



picture 1



picture 2



picture 3

lock nut
22120.0704 – .0708 (Steel)
22120.0714 – .0718 (Stainless steel)

ORDER INFORMATION

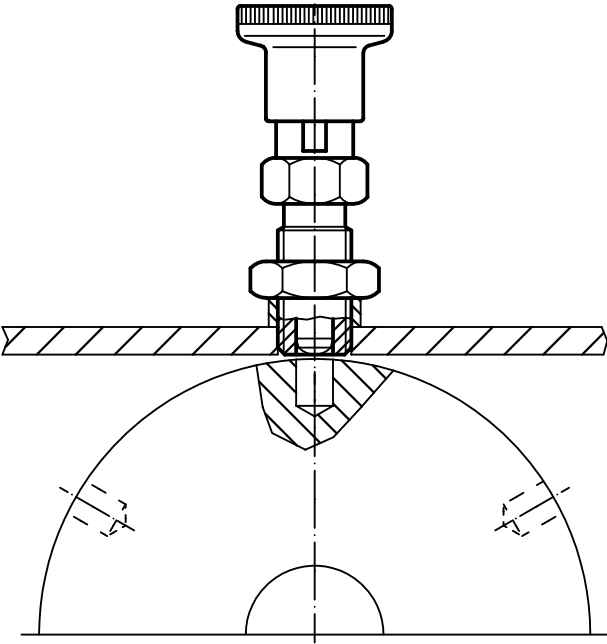
Dimensions										WS [mm]	Tight- ening torque max. [Nm]	Spring load ¹⁾				 [g]	Art. No.	
d ₁ -0.05	d ₂	d ₃	e	l ₁	l ₂ min.	l ₃	l ₄	l ₅	s min.			F ₁ ~	F ₂ ~	min.	max.		Steel	Stainless steel
[mm]												[N]		[°C]				
with pull-ring, without locking – picture 1																		
3	M 6	14	6.9	34.0	3.5	12	4.5	10.0	3.5	6	2	3	12	–	250	3.2	22120.0723	22120.0773
4	M 6	14	6.9	34.5	4.0	12	4.5	10.0	4.0	6	2	3	12	–	250	3.6	22120.0724	22120.0774
5	M 8	18	9.2	45.0	5.0	16	6.0	13.5	5.0	8	7	5	24	–	250	8.4	22120.0725	22120.0775
6	M10	24	11.5	57.5	6.0	20	7.5	17.0	6.0	10	15	5	21	–	250	17.0	22120.0726	22120.0776
8	M12	30	13.8	71.0	8.0	24	9.0	20.5	8.0	12	20	6	22	–	250	31.0	22120.0728	22120.0778
with knob, without locking – picture 2																		
3	M 6	12	6.9	30.0	3.5	12	4.5	10.0	3.5	6	2	3	12	-30	80	3.6	22120.0743	22120.0783
4	M 6	12	6.9	30.5	4.0	12	4.5	10.0	4.0	6	2	3	12	-30	80	3.8	22120.0744	22120.0784
5	M 8	16	9.2	40.0	5.0	16	6.0	13.5	5.0	8	7	5	24	-30	80	9.2	22120.0745	22120.0785
6	M10	18	11.5	49.0	6.0	20	7.5	17.0	6.0	10	15	5	21	-30	80	18.0	22120.0746	22120.0786
8	M12	21	13.8	59.0	8.0	24	9.0	20.5	8.0	12	20	6	22	-30	80	31.0	22120.0748	22120.0788
with knob and locking – picture 3																		
3	M 6	12	6.9	32.5	3.5	12	7.0	10.0	3.5	6	2	3	12	-30	80	3.8	22120.0763	22120.0793
4	M 6	12	6.9	33.0	4.0	12	7.0	10.0	4.0	6	2	3	12	-30	80	4.2	22120.0764	22120.0794
5	M 8	16	9.2	43.5	5.0	16	9.5	13.5	5.0	8	7	5	24	-30	80	9.8	22120.0765	22120.0795
6	M10	18	11.5	52.0	6.0	20	10.5	17.0	6.0	10	15	5	21	-30	80	18.0	22120.0766	22120.0796
8	M12	21	13.8	63.5	8.0	24	13.5	20.5	8.0	12	20	6	22	-30	80	33.0	22120.0768	22120.0798

¹⁾ statistical average value

ACCESSORIES

	Dimensions	Wrench size	 [g]	Art. No.	
	d ₂ [mm]	[mm]		Steel	Stainless steel
	M 6	10	1.3	22120.0704	22120.0714
	M 8	13	2.8	22120.0705	22120.0715
	M10	16	5.3	22120.0706	22120.0716
	M12	18	7.6	22120.0708	22120.0718

APPLICATION EXAMPLE



Index Plungers • for thin-walled pieces

EH 22120.



PRODUCT DESCRIPTION

Index plungers with throughgoing bore for thin-walled pieces.

Material

Body

- Steel, zinc-plated by galvanization

Locking pin

- Stainless steel 1.4305, nickel-plated

Knob

- Thermoplastic PA 6, black, dull

Assembly

By means of a fastening collet, the index plungers can be mounted into pieces having a wall thickness of 1-5 mm.

Operation

When using the self-locking type, the knob is pulled-out, turned 90° and secured by a notched catch. Depending on the clamping length, the bolt may overhang.

MORE INFORMATION

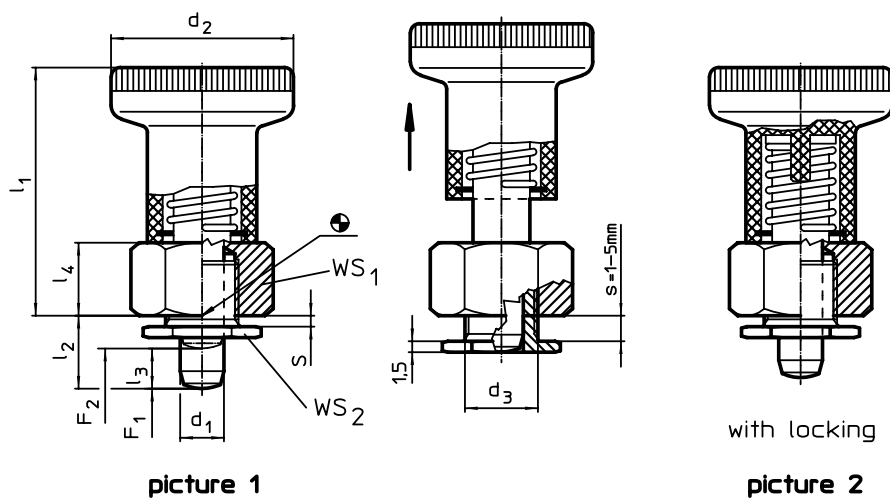
Notes

Knob not removable.

Further products

Locating Bushings, for index bolts and index plungers → p. 116

DRAWING



picture 1

picture 2

ORDER INFORMATION

Dimensions								WS ₁	WS ₂	Spring load ¹⁾		min. max.			Art. No.
d ₁	l ₂	d ₂	d ₃	l ₁	l ₃	l ₄	s			F ₁	F ₂				
-0.02 -0.05								[mm]	[mm]	[N]	[N]	[°C]		[g]	
without locking – picture 1															
6	8.5	25	10	34	6.0	10	1 – 5	17	14	8.5	22	-30	80	39	22120.0266
	10.5	25	10	34	6.0	10	1 – 5	17	14	8.5	22	-30	80	40	22120.0267
8	10.0	31	12	40	7.5	12	1 – 5	19	16	15.5	28	-30	80	63	22120.0268
	12.0	31	12	40	7.5	12	1 – 5	19	16	15.5	28	-30	80	63	22120.0269
with locking – picture 2															
6	8.5	25	10	34	6.0	10	1 – 5	17	14	8.5	22	-30	80	39	22120.0286
	10.5	25	10	34	6.0	10	1 – 5	17	14	8.5	22	-30	80	39	22120.0287
8	10.0	31	12	40	7.5	12	1 – 5	19	16	15.5	28	-30	80	61	22120.0288
	12.0	31	12	40	7.5	12	1 – 5	19	16	15.5	28	-30	80	62	22120.0289

¹⁾ statistical average value

ACCESSORIES

		Art. No.
		
ring spanner, flat	26	22120.0299

Index Plungers • with pull-ring

EH 22120.



PRODUCT DESCRIPTION

Index plungers are used for indexing bores.

Material

Body

- Steel, blackened
- Stainless steel 1.4305

Locking pin

- Stainless steel 1.4305, nickel-plated

Pull-ring

- Stainless steel 1.4310

Assembly

Lock nuts have to be purchased separately.

Operation

When using the model with locking mechanism, you turn the pull-ring by 90° after retracting the locking pin and secure the ring using the notched catch (if the locking pin should not overhang).

MORE INFORMATION

Further products

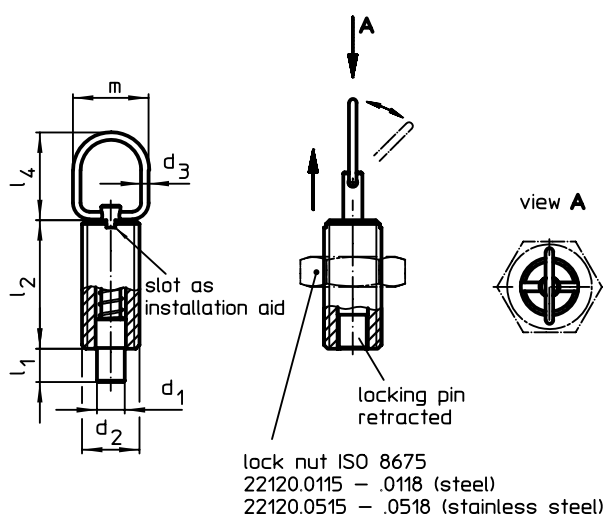
Mounting Blocks, for index bolts and index plungers, die-cast. → p. 115

Locating Bushings, for index bolts and index plungers. → p. 116

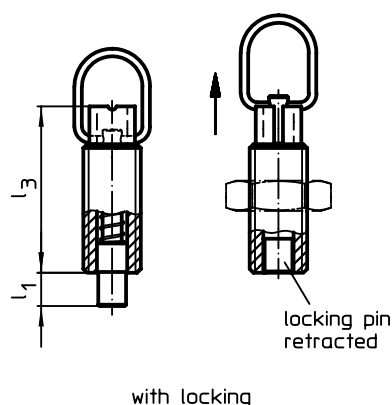
Distance Collars, for index plungers. → p. 129

Mounting Blocks, for index bolts and index plungers. → p. 143

DRAWING



picture 1



with locking

picture 2

ORDER INFORMATION

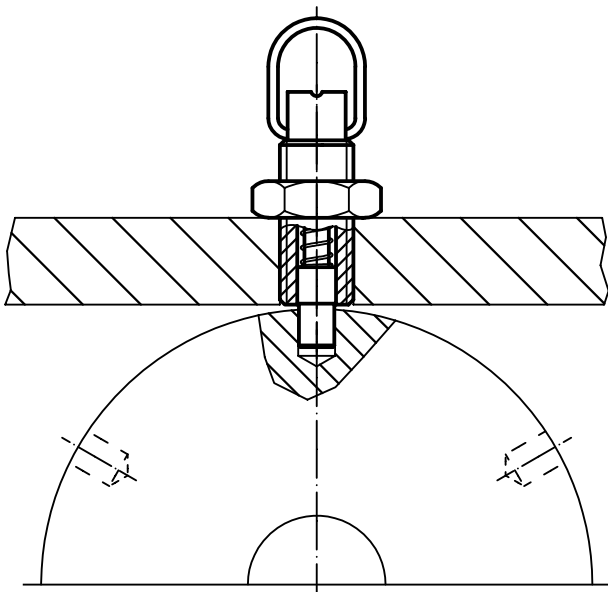
Dimensions								Stroke s	Spring load ¹⁾		 max.	 [g]	Art. No.	
d ₁ -0.05 -0.1	d ₂	d ₃	l ₁ min.	l ₂	l ₃	l ₄	m		F ₁ ~	F ₂ ~			Steel	Stainless steel
[mm]								[mm]	[N]		[°C]			
without locking – picture 1														
5	M10	1.5	5	22	28	23	18	5	5	15	250	11	22120.1310	22120.1410
	M10 x 1	1.5	5	22	28	23	18	5	5	15	250	12	22120.1312	22120.1412
6	M12	2.0	6	24	31	25	22	6	6	21	250	18	22120.1314	22120.1414
	M12 x 1,5	2.0	6	24	31	25	22	6	6	21	250	18	22120.1316	22120.1416
8	M16	2.0	9	34	44	25	22	9	7	27	250	43	22120.1318	22120.1418
	M16 x 1,5	2.0	9	34	44	25	22	9	7	27	250	45	22120.1320	22120.1420
10	M16	2.0	9	34	44	25	22	9	7	27	250	45	22120.1322	22120.1422
	M16 x 1,5	2.0	9	34	44	25	22	9	7	27	250	47	22120.1324	22120.1424
with locking – picture 2														
5	M10	1.5	5	22	28	23	18	5	5	15	250	12	22120.1340	22120.1440
	M10 x 1	1.5	5	22	28	23	18	5	5	15	250	13	22120.1342	22120.1442
6	M12	2.0	6	24	31	25	22	6	6	21	250	19	22120.1344	22120.1444
	M12 x 1,5	2.0	6	24	31	25	22	6	6	21	250	20	22120.1346	22120.1446
8	M16	2.0	9	34	44	25	22	9	7	27	250	48	22120.1348	22120.1448
	M16 x 1,5	2.0	9	34	44	25	22	9	7	27	250	51	22120.1350	22120.1450
10	M16	2.0	9	34	44	25	22	9	7	27	250	50	22120.1352	22120.1452
	M16 x 1,5	2.0	9	34	44	25	22	9	7	27	250	53	22120.1354	22120.1454

¹⁾ statistical average value

ACCESSORIES

	Dimensions	Wrench size		Art. No.	
	d ₂			Steel	Stainless steel
	[mm]	[mm]	[g]		
lock nuts ISO 4035					
	M10	16	5.3	22120.0706	22120.0716
	M12	18	7.6	22120.0708	22120.0718
	M16	24	18.0	22120.0710	22120.0720
lock nuts ISO 8675 (DIN 439)					
	M10 x 1	16	5.2	22120.0115	22120.0515
	M12 x 1,5	18	7.5	22120.0116	22120.0516
	M16 x 1,5	24	15.0	22120.0118	22120.0518

APPLICATION EXAMPLE



Index Bolts

EH 22120.

2



PRODUCT DESCRIPTION

Index bolts are used for indexing purposes.
Plastic cover for grip allows better handling.

Material

Body

- Free cutting steel, blackened
- Stainless steel 1.4305

Locking pin

- Steel, hardened
- Stainless steel 1.4305, nickel-plated

Catch

- Free cutting steel, blackened
- Dry powdered metal 1.4404

Plastic cap

- Thermoplastic, black, dull

Operation

By turning the index bolt 180° the locking pin will be pulled-in and secured by a notched catch (when locking pin should not overhang).

MORE INFORMATION

Notes

Lock nuts have to be purchased separately.

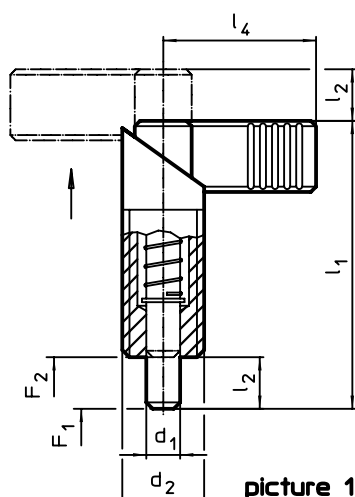
Further products

Mounting Blocks, for index bolts and index plungers, die-cast. → p. 115

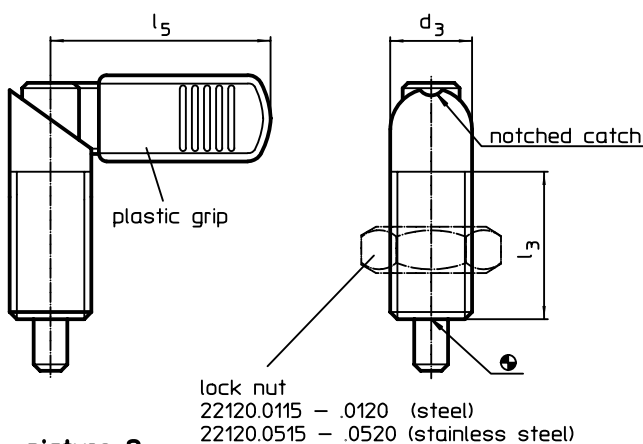
Locating Bushings, for index bolts and index plungers. → p. 116

Mounting Blocks, for index bolts and index plungers. → p. 143

DRAWING



picture 1



picture 2

lock nut
22120.0115 – .0120 (steel)
22120.0515 – .0520 (stainless steel)

ORDER INFORMATION

Dimensions								Spring load ¹⁾		min. max.		[g]	Art. No.	
d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	l ₄	l ₅	F ₁	F ₂				Free cutting steel	Stainless steel
-0.02 -0.04														
[mm]														
without plastic cover for grip – picture 1														
4	M10 x 1	10	37.5	6	19	21	–	7.0	20.0	–	250	17	22120.0302	22120.0308
5	M10 x 1	10	37.5	6	19	21	–	7.0	20.0	–	250	18	22120.0304	22120.0310
6	M10 x 1	10	37.5	6	19	21	–	7.0	20.0	–	250	18	22120.0306	22120.0312
5	M12 x 1,5	12	47.0	8	26	26	–	8.5	19.5	–	250	29	22120.0313	22120.0323
6	M12 x 1,5	12	47.0	8	26	26	–	8.5	19.5	–	250	29	22120.0314	22120.0324
	M16 x 1,5	16	56.0	10	30	32	–	11.5	30.5	–	250	75	22120.0316	22120.0326
	M12 x 1,5	12	47.0	8	26	26	–	8.5	19.5	–	250	30	22120.0315	22120.0325
8	M16 x 1,5	16	56.0	10	30	32	–	11.5	30.5	–	250	61	22120.0317	22120.0327
	M20 x 1,5	20	69.0	12	36	37	–	21.0	57.5	–	250	121	22120.0318	22120.0328
10	M16 x 1,5	16	56.0	10	30	32	–	11.5	30.5	–	250	64	22120.0319	22120.0329
	M20 x 1,5	20	69.0	12	36	37	–	21.0	57.5	–	250	128	22120.0320	22120.0330
12	M20 x 1,5	20	69.0	12	36	37	–	21.0	57.5	–	250	127	22120.0322	22120.0332

¹⁾ statistical average value

→

Dimensions								Spring load ¹⁾					Art. No.	
d ₁ -0.02 -0.04	d ₂	d ₃	l ₁	l ₂	l ₃	l ₄	l ₅	F ₁ ~	F ₂ ~	min.	max.		Free cutting steel	Stainless steel
[mm]								[N]		[°C]		[g]		
with plastic cover for grip – picture 2														
5	M12 x 1,5	12	47.0	8	26	–	32	8.5	19.5	-30	80	30	22120.0353	22120.0363
6	M12 x 1,5	12	47.0	8	26	–	32	8.5	19.5	-30	80	30	22120.0354	22120.0364
	M16 x 1,5	16	56.0	10	30	–	42	11.5	30.5	-30	80	61	22120.0356	22120.0366
8	M12 x 1,5	12	47.0	8	26	–	32	8.5	19.5	-30	80	32	22120.0355	22120.0365
	M16 x 1,5	16	56.0	10	30	–	42	11.5	30.5	-30	80	63	22120.0357	22120.0367
	M20 x 1,5	20	69.0	12	36	–	52	21.0	57.5	-30	80	124	22120.0358	22120.0368
10	M16 x 1,5	16	56.0	10	30	–	42	11.5	30.5	-30	80	66	22120.0359	22120.0369
	M20 x 1,5	20	69.0	12	36	–	52	21.0	57.5	-30	80	128	22120.0360	22120.0370
12	M20 x 1,5	20	69.0	12	36	–	52	21.0	57.5	-30	80	131	22120.0362	22120.0372

¹⁾ statistical average value

ACCESSORIES

	Dimensions	Wrench size		Art. No.	
	d ₂			Steel	Stainless steel
	[mm]	[mm]	[g]		
lock nuts ISO 8675 (DIN 439)					
	M10 x 1	16	5.2	22120.0115	22120.0515
	M12 x 1,5	18	7.5	22120.0116	22120.0516
	M16 x 1,5	24	15.0	22120.0118	22120.0518
	M20 x 1,5	30	32.0	22120.0120	22120.0520

Mounting Blocks • for index bolts and index plungers

EH 22120.



PRODUCT DESCRIPTION

Assembly support and extended applications for index bolts.
Also usable for index plungers size 6, 8 and 10.

Material

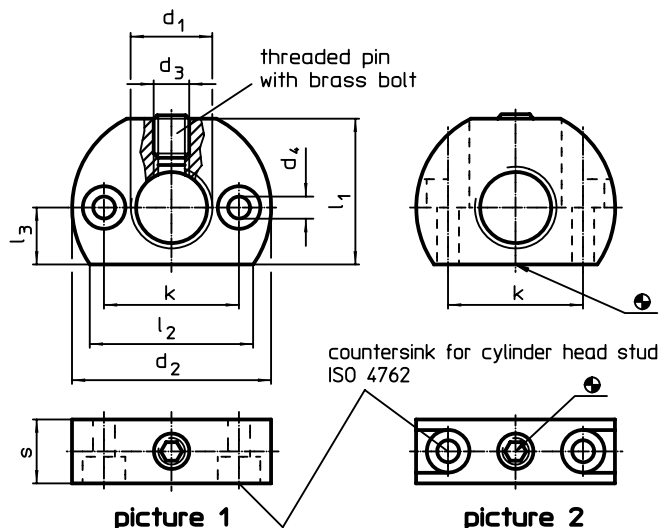
Grub Screw

- Steel, blackened, with brass pad
- Stainless steel, with brass pad

Body

- Steel, blackened
- Stainless steel 1.4305

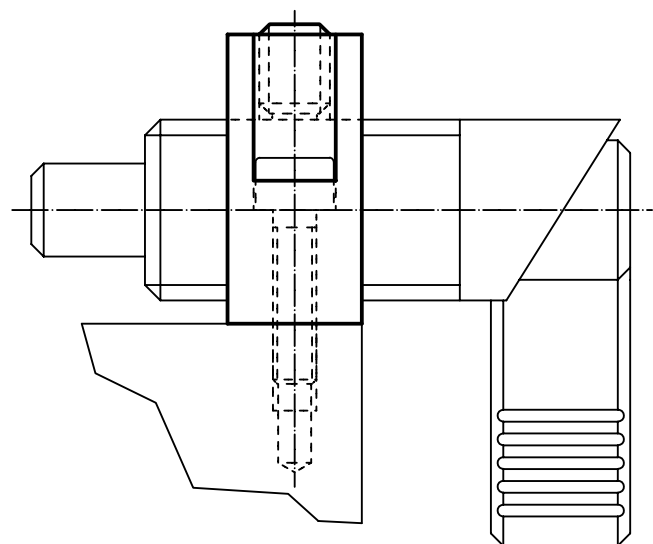
DRAWING



ORDER INFORMATION

Dimensions											Art. No.	
d ₁	d ₂	d ₃	d ₄	k ±0.1	l ₁	l ₂ ~	l ₃	s	max.		Steel	Stainless steel
[mm]									[°C]	[g]		
mounting hole parallel to index bolt and index plunger – picture 1												
M12 x 1,5	32	M5	4.5	21	22	26.5	9	12	250	43	22120.0345	22120.0545
M16 x 1,5	46	M8	5.5	32	33	38.0	13	15	250	122	22120.0346	22120.0546
M20 x 1,5	46	M8	5.5	32	33	38.0	13	15	250	109	22120.0350	22120.0550
mounting hole vertical to index bolt and index plunger – picture 2												
M12 x 1,5	32	M5	4.5	21	22	26.5	9	12	250	37	22120.0347	22120.0547
M16 x 1,5	46	M8	5.5	32	33	38.0	13	15	250	106	22120.0348	22120.0548
M20 x 1,5	46	M8	5.5	32	33	38.0	13	15	250	94	22120.0352	22120.0552

APPLICATION EXAMPLE



Index Bolts • with mounting flange

EH 22120.



PRODUCT DESCRIPTION

Index bolts are used for indexing purposes.
Plastic cover for grip allows better handling.

Material

Body

- Steel, blackened

Locking pin

- Steel, nitrided, black

Plastic cap

- Thermoplastic, black, dull

Assembly

Right and left mounting is possible due to countersinks on both sides.

Index bolt for lateral fastening.

Operation

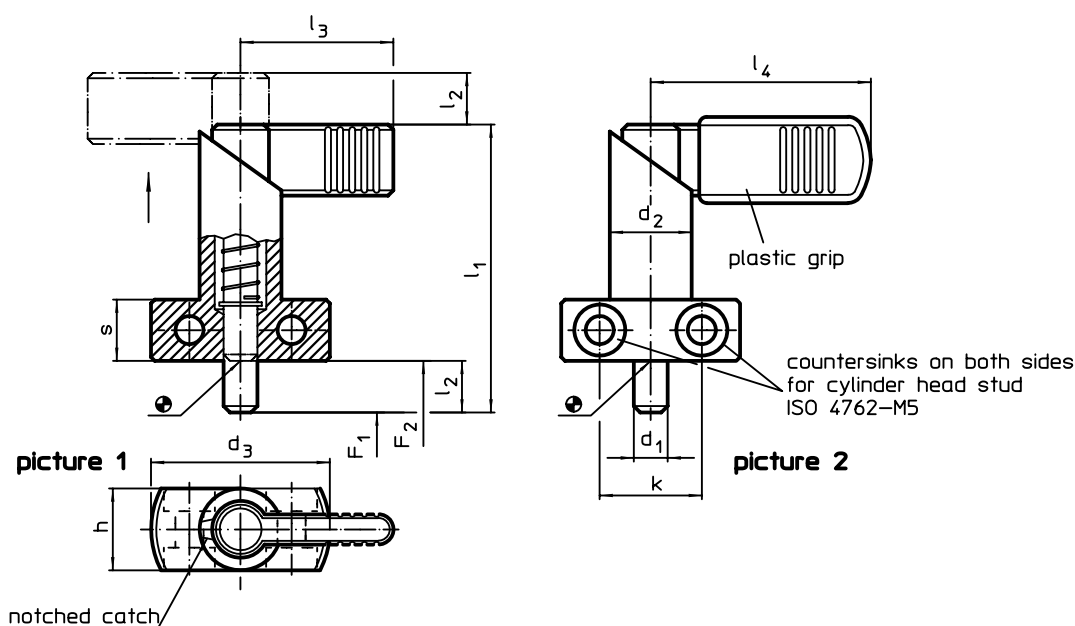
By turning the index bolt 180° the locking pin will be pulled-in and secured by a notched catch (when locking pin should not overhang).

MORE INFORMATION

Further products

Locating Bushings, for index bolts and index plungers → p. 116

DRAWING



ORDER INFORMATION

Dimensions										Spring load ¹⁾				Art. No.	
d ₁ 0 -0.05	l ₂	d ₂	d ₃	h	k	l ₁	l ₃	l ₄	s	F ₁ ~	F ₂ ~	min.	max.		
[mm]										[N]		[°C]		[g]	
without plastic cover for grip – picture 1															
6	10	16	35	16	20	56	32	–	12	12	32	–	250	82	22120.0376
8	10	16	35	16	20	56	32	–	12	12	32	–	250	85	22120.0378
	12	20	40	20	22	69	37	–	15	21	58	–	250	163	22120.0379
10	10	16	35	16	20	56	32	–	12	12	32	–	250	85	22120.0381
	12	20	40	20	22	69	37	–	15	21	58	–	250	171	22120.0382
12	12	20	40	20	22	69	37	–	15	21	58	–	250	174	22120.0384
with plastic cover for grip – picture 2															
6	10	16	35	16	20	56	–	42	12	12	32	-30	80	83	22120.0386
8	10	16	35	16	20	56	–	42	12	12	32	-30	80	85	22120.0388
	12	20	40	20	22	69	–	52	15	21	58	-30	80	169	22120.0389
10	10	16	35	16	20	56	–	42	12	12	32	-30	80	86	22120.0391
	12	20	40	20	22	69	–	52	15	21	58	-30	80	171	22120.0392
12	12	20	40	20	22	69	–	52	15	21	58	-30	80	171	22120.0394

¹⁾ statistical average value

Index Bolts • with mounting flange, horizontal

EH 22120.



PRODUCT DESCRIPTION

Index bolts are used for indexing purposes.

Material

Housing

- Zinc die-cast, plastic coated, black

Locking pin

- Steel, zinc-plated by galvanization

Catch

- Plastic

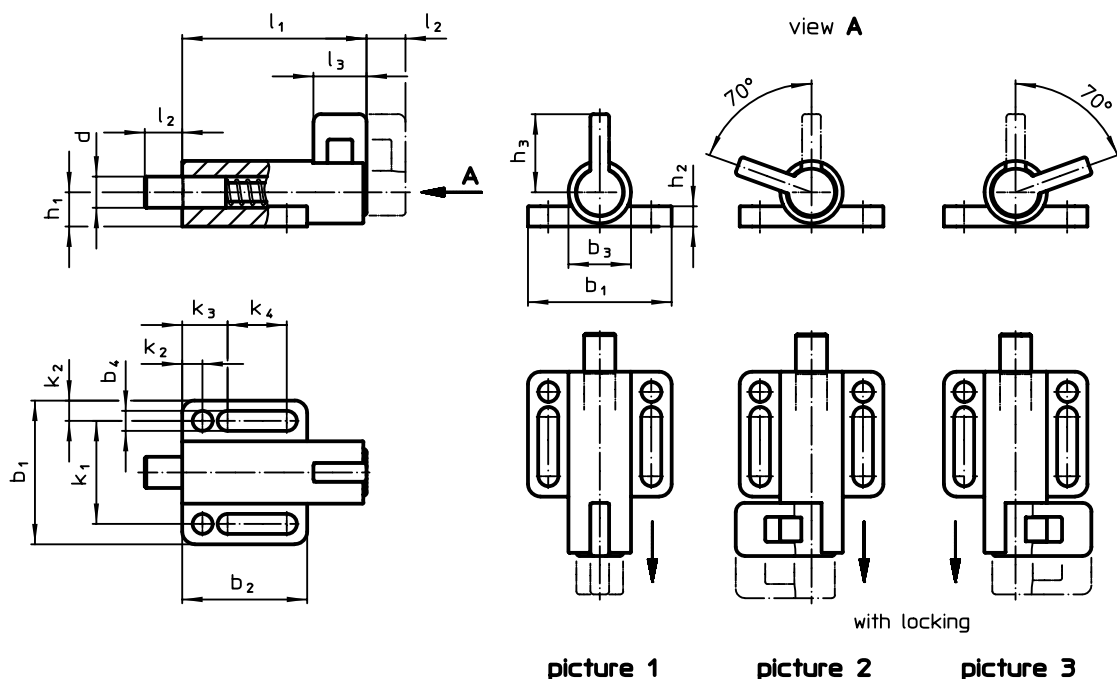
Assembly

Assembly by means of washers ISO 7092.

Operation

When using the model with locking mechanism, you pull out the bolt, turn it by 70° and secure it using the notched catch (if the locking pin should not overhang).

DRAWING



ORDER INFORMATION

Dimensions															Spring load ¹⁾					Art. No.
d	l ₂	b ₁	b ₂	b ₃	b ₄	h ₁	h ₂	h ₃	k ₁	k ₂	k ₃	k ₄	l ₁	l ₃	F ₁	F ₂	min.	max.		
-0.05	min.																			
[mm]															[N]		[°C]		[g]	
without locking – picture 1																				
6	10	38	32	16	5.4	8.5	6	23	27	5.5	12.0	14.5	57	14	21	27	-30	80	68	22120.1016
8	10	38	32	16	5.4	8.5	6	23	27	5.5	12.0	14.5	57	14	21	27	-30	80	69	22120.1020
	12	46	40	20	6.4	11.0	6	29	33	6.5	14.5	19.0	71	17	25	38	-30	80	131	22120.1024
10	10	38	32	16	5.4	8.5	6	23	27	5.5	12.0	14.5	57	14	21	27	-30	80	72	22120.1028
	12	46	40	20	6.4	11.0	6	29	33	6.5	14.5	19.0	71	17	25	38	-30	80	133	22120.1032
12	12	46	40	20	6.4	11.0	6	29	33	6.5	14.5	19.0	71	17	25	38	-30	80	137	22120.1036
with locking, left – picture 2																				
6	10	38	32	16	5.4	8.5	6	23	27	5.5	12.0	14.5	57	14	21	27	-30	80	67	22120.1116
8	10	38	32	16	5.4	8.5	6	23	27	5.5	12.0	14.5	57	14	21	27	-30	80	69	22120.1120
	12	46	40	20	6.4	11.0	6	29	33	6.5	14.5	19.0	71	17	25	38	-30	80	130	22120.1124
10	10	38	32	16	5.4	8.5	6	23	27	5.5	12.0	14.5	57	14	21	27	-30	80	71	22120.1128
	12	46	40	20	6.4	11.0	6	29	33	6.5	14.5	19.0	71	17	25	38	-30	80	133	22120.1132
12	12	46	40	20	6.4	11.0	6	29	33	6.5	14.5	19.0	71	17	25	38	-30	80	136	22120.1136
with locking, right – picture 3																				
6	10	38	32	16	5.4	8.5	6	23	27	5.5	12.0	14.5	57	14	21	27	-30	80	67	22120.1216
8	10	38	32	16	5.4	8.5	6	23	27	5.5	12.0	14.5	57	14	21	27	-30	80	69	22120.1220
	12	46	40	20	6.4	11.0	6	29	33	6.5	14.5	19.0	71	17	25	38	-30	80	130	22120.1224
10	10	38	32	16	5.4	8.5	6	23	27	5.5	12.0	14.5	57	14	21	27	-30	80	71	22120.1228
	12	46	40	20	6.4	11.0	6	29	33	6.5	14.5	19.0	71	17	25	38	-30	80	132	22120.1232
12	12	46	40	20	6.4	11.0	6	29	33	6.5	14.5	19.0	71	17	25	38	-30	80	136	22120.1236

¹⁾ statistical average value