



Tube Clamp Connectors Linear Actuators



Standard Machine Elements Worldwide



Tube clamp connectors, Linear actuators



GN 131
Two-way
connector clamps
Aluminium

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GN 131-NI
Two-way
connector clamps
Stainless Steel

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GN 132
Two-way
connector clamps
Aluminium

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GN 133
Two-way
connector clamps
Aluminium

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GN 134
Two-way
connector clamps
Aluminium

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GN 141
Flanged two-way
connector clamps
Aluminium

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GN 145
Flanged
connector clamps
Aluminium

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Flanged
connector clamps
Stainless Steel

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GN 146
Flanged
connector clamps
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GN 146.3
Flanged
connector clamps
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GN 147
Flanged
connector clamps
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Base plate
connector clamps
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Base plate
connector clamps
Stainless Steel

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GN 163
Base plate
connector clamps
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GN 165
Base plate
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GN 166
Off-set base plate
connector clamps
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Wide base plate
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Flanged base plate
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T-Angle
connector clamps
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GN 191-NI
T-Angle
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T-Angle
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Tube clamp connectors, Linear actuators

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Tube clamp connectors, Linear actuators



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connectors
Aluminium

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GN 162.1
Base plate
linear actuator
connectors
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GN 147.1
Flanged
linear actuator
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GN 131.1-NI
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INOX
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GN 162.1-NI
Base plate
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INOX
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GN 134.1
Two-way
linear actuator
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GN 131.2
Linear actuator
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GN 163.1
Base plate
linear actuator
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GN 165.1
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Linear actuator
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GN 191.1
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GN 923.18
Handwheel for
linear actuator
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GN 132.1
Linear actuator
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GN 191.1-NI
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GN 923.30
Handwheel for
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GN 192.1
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GN 923.40
Handwheel for
linear actuator
Ø 40 and Ø 40

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GN 145.1
Flanged
linear actuator
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GN 273.1
Swivel clamp
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GN 924.40
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linear actuator
Ø 40 and Ø 40

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GN 145.1-NI
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linear actuator
connectors
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GN 274.1
Swivel clamp
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GN 924.50
Handwheel for
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GN 291.1
Square
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GN 924.60
Handwheel for
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Tube clamp connectors, Linear actuators



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for position
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GN 299
Longitudinal
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Transfer units
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GN 391-NI
Transfer units
Stainless Steel

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GN 297
Bevel gear wheels
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GN 298
Housings
for angular gears /
T-gears
Aluminium

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Tube clamp connectors / Linear actuators

Tube clamp connectors are clamping components which offer the facility for simply and rapidly constructing jigs, fixtures and operating systems using standard round and square section tubings.

The vast range of clamp connectors in split monoblock or multi-part form offer almost unlimited possibilities.

Split monoblock clamp connectors give very robust and sturdy tubular constructions. For this purpose only precision tubings DIN 2391, with an outside diameter which lies within relatively tight tolerances, should be used (construction tubings GN 990, see page 103).

Multi-part clamp connectors (consisting of two or more separate parts) are not tied to tight tolerances as they can also be used with square section tubings thus allowing incorporation into already existing systems.

As clamping screws there is a choice of either cap head screws to DIN 912 or adjustable clamping kits GN 911 if repeated removal and re-installation is required. As for nuts, hexagon nuts DIN 985 (ISO 10511) which are self-locking with polyamide ring are recommended.

The clamping points are provided on both sides with sockets, cast in the component, which give a free choice for positioning hexagon nuts and clamping connectors.

Linear actuators consist of a guide tube, a threaded internal spindle i.e. lead screw and a follower nut.

Within the tube clamp connectors range there are numerous clamping components available to mount the linear actuators in a static position for the linear actuator connectors to perform operations which require a linear movement. Linear actuators are designed for manual operation (handwheels).

Further details about tube clamp connectors and linear actuators are given on the separate standards sheets.

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**Base plate
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**T-angle
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**Tube
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**Swivel
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**Swivel clamp
connector joints**
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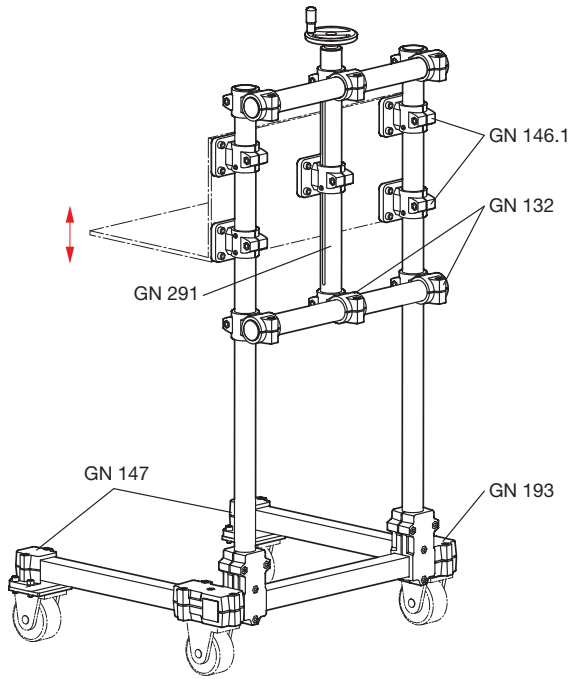
Sensor holders
page 100

Linear actuators
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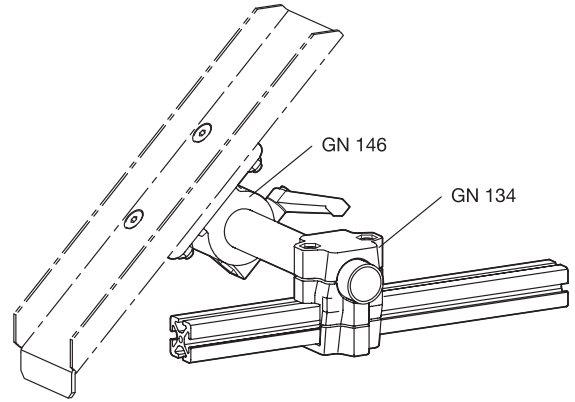
Design shapes of tube clamp connectors / linear actuators



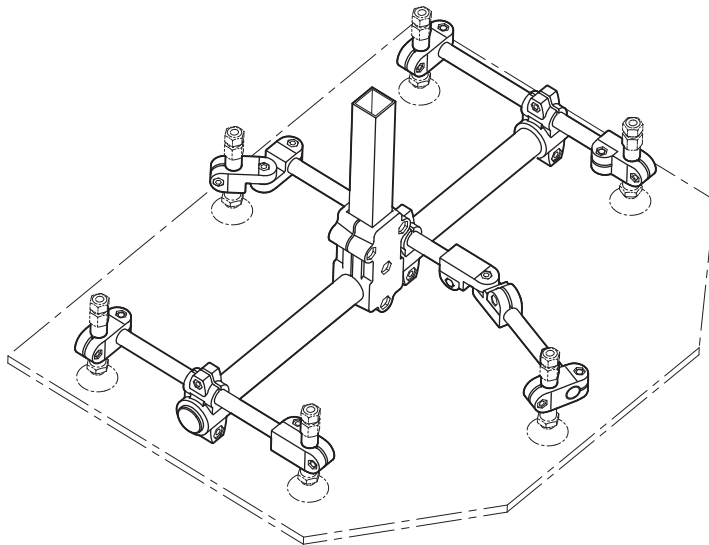
Installation examples of tube clamp connectors



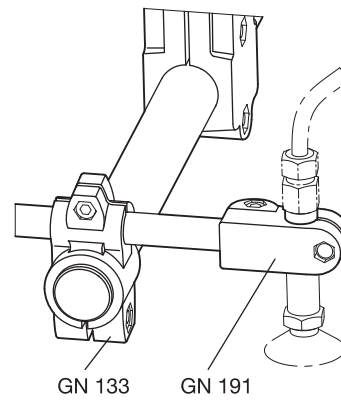
Mobile lifting table



Workpiece chute
Transfer to aluminium profile section system

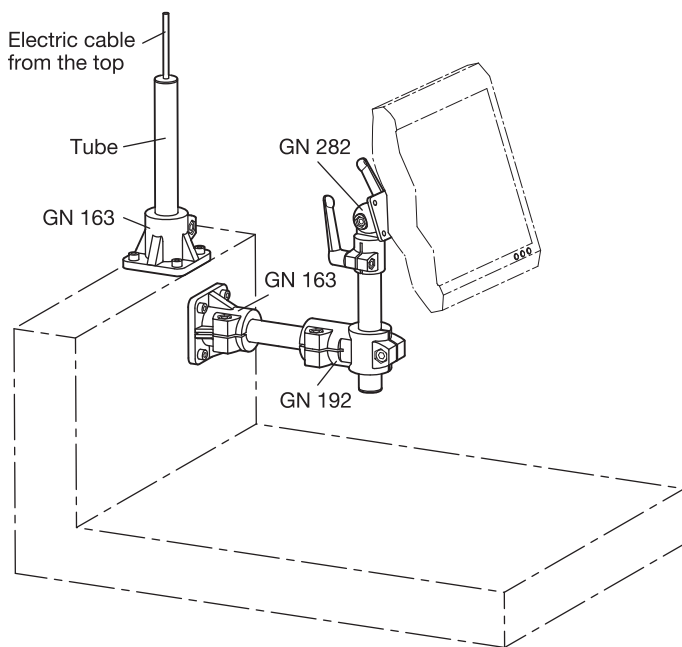


Vacuum gripper

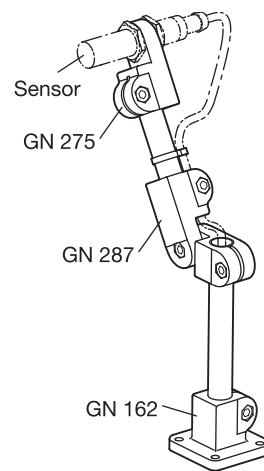


GN 133 GN 191

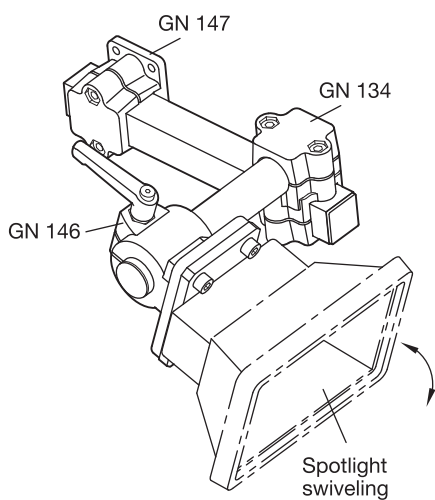
Installation examples of tube clamp connectors



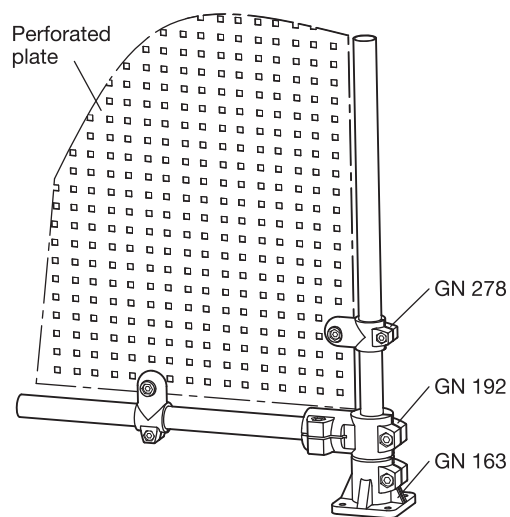
Assembly desk with screen holder



Sensor holder



Holder for spotlight



Safety fence

GN 131

Two-way connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

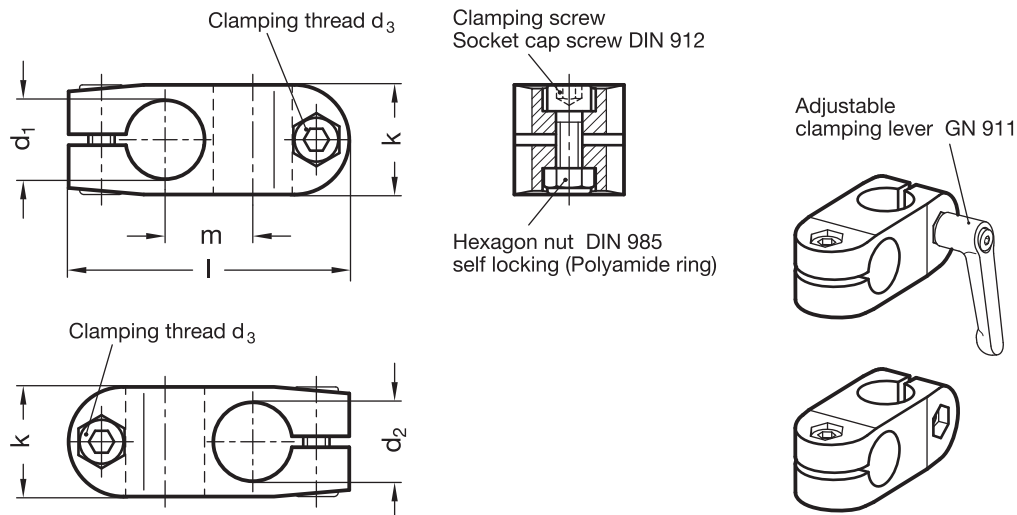
The clamping bores of the two-way connector clamps GN 131 are machined and designed for tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing see page 110).

Special executions on request (For sufficient quantities)

Different combinations of bores d_1/d_2 .



Standard Elements	Main dimensions						Clamping kits for d_3	g
	d_1	d_2	k Clamping length	d_3	l	m		
GN 131-B10-B10-1-*	B10	B10	25	M6	64	20	GN 911-M6-22	85
GN 131-B12-B12-1-*	B12	B12	25	M6	64	20	GN 911-M6-22	80
GN 131-B14-B14-1-*	B14	B14	25	M6	64	20	GN 911-M6-22	79
GN 131-B15-B15-1-*	B15	B15	25	M6	64	20	GN 911-M6-22	76
GN 131-B16-B16-1-*	B16	B16	25	M6	64	20	GN 911-M6-22	70
GN 131-B18-B18-1-*	B18	B18	25	M6	64	20	GN 911-M6-22	68
GN 131-B10-B10-2-*	B10	B10	25	M6	64	20	GN 911-M6-22	85
GN 131-B12-B12-2-*	B12	B12	25	M6	64	20	GN 911-M6-22	80
GN 131-B14-B14-2-*	B14	B14	25	M6	64	20	GN 911-M6-22	79
GN 131-B15-B15-2-*	B15	B15	25	M6	64	20	GN 911-M6-22	76
GN 131-B16-B16-2-*	B16	B16	25	M6	64	20	GN 911-M6-22	70
GN 131-B18-B18-2-*	B18	B18	25	M6	64	20	GN 911-M6-22	68

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Two-way connector clamps



•Material

AISI CF-8 stainless steel **NI**, matte polished.

•Clamping screws

Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

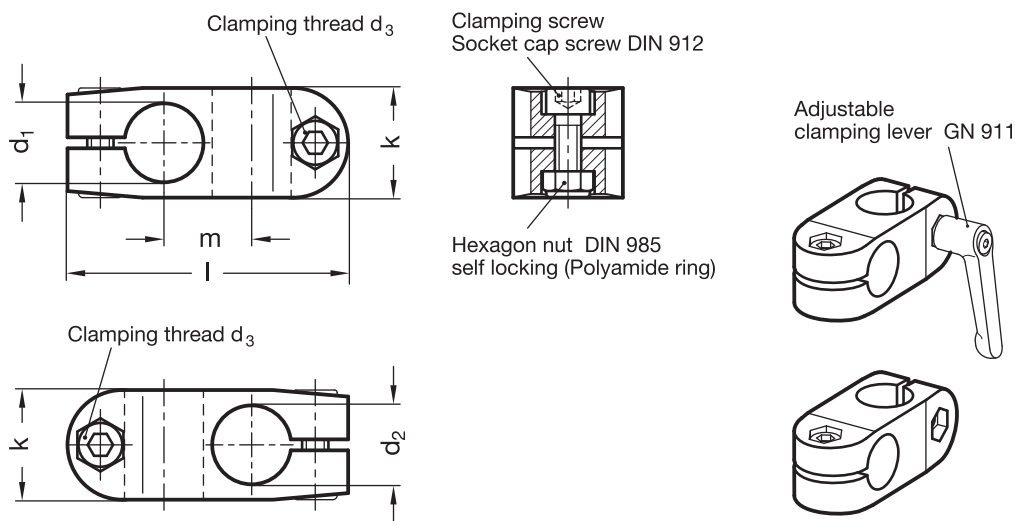
The clamping bores of the two-way connector clamps GN 131-NI are machined and designed for tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

Special executions on request (For sufficient quantities)

Different combinations of bores d_1/d_2 .



Standard Elements	Main dimensions						Clamping kits for d_3	△△ g
	d_1	d_2	k Clamping length	d_3	l	m		
GN 131-B12-B12-2-NI	B12	B12	25	M6	64	20	GN 911-M6-22	203
GN 131-B14-B14-2-NI	B14	B14	25	M6	64	20	GN 911-M6-22	190
GN 131-B16-B16-2-NI	B16	B16	25	M6	64	20	GN 911-M6-22	170
GN 131-B18-B18-2-NI	B18	B18	25	M6	64	20	GN 911-M6-22	148
GN 131-B20-B20-2-NI	B20	B20	25	M6	64	20	GN 911-M6-22	144

GN 132

Two-way connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the two-way connector clamps GN 132 are machined and designed for tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

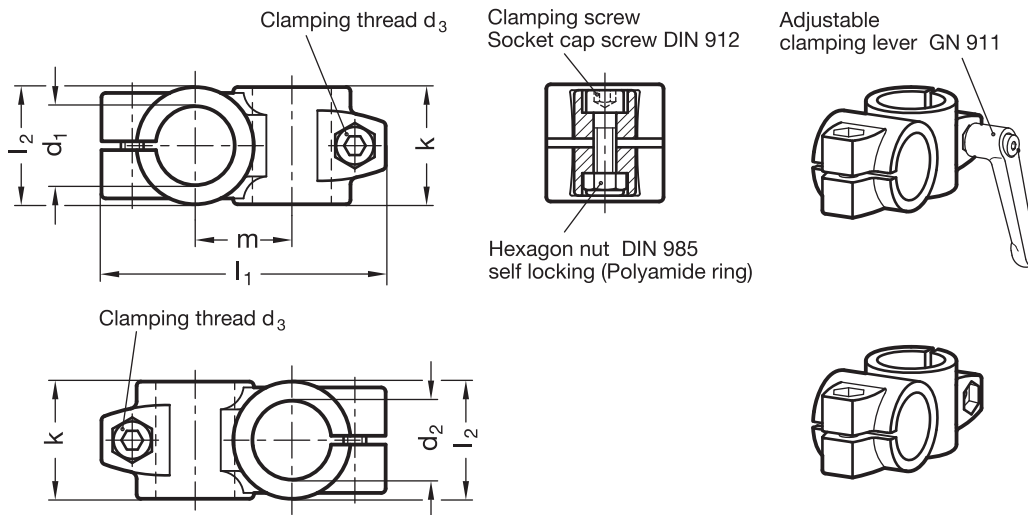
Special executions on request (For sufficient quantities)

Different combinations of bores d_1/d_2 .



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Tube clamp connectors, Linear actuators



Standard Elements Description	Main dimensions							Clamping kits for d ₃	g
	d ₁	d ₂	k Clamping length	d ₃	l ₁	l ₂	m		
GN 132-B20-B20-40-1-*	B20	B20	40	M8	97	40	33	GN 911-M8-32	215
GN 132-B25-B25-40-1-*	B25	B25	40	M8	97	40	33	GN 911-M8-32	192
GN 132-B30-B30-40-1-*	B30	B30	40	M8	97	40	33	GN 911-M8-32	170
GN 132-B30-B30-56-1-*	B30	B30	56	M10	125	56	45	GN 911-M10-40	570
GN 132-B32-B32-56-1-*	B32	B32	56	M10	125	56	45	GN 911-M10-40	535
GN 132-B35-B35-56-1-*	B35	B35	56	M10	125	56	45	GN 911-M10-40	500
GN 132-B40-B40-56-1-*	B40	B40	56	M10	125	56	45	GN 911-M10-40	417
GN 132-B40-B40-65-1-*	B40	B40	65	M10	143	65	53	GN 911-M10-55	835
GN 132-B42-B42-65-1-*	B42	B42	65	M10	143	65	53	GN 911-M10-55	780
GN 132-B45-B45-65-1-*	B45	B45	65	M10	143	65	53	GN 911-M10-55	732
GN 132-B48-B48-65-1-*	B48	B48	65	M10	143	65	53	GN 911-M10-55	670
GN 132-B50-B50-65-1-*	B50	B50	65	M10	143	65	53	GN 911-M10-55	630
GN 132-B50-B50-80-1-*	B50	B50	80	M10	169	80	65	GN 911-M10-55	1460
GN 132-B55-B55-80-1-*	B55	B55	80	M10	169	80	65	GN 911-M10-55	1260
GN 132-B60-B60-80-1-*	B60	B60	80	M10	169	80	65	GN 911-M10-55	1060
GN 132-B20-B20-40-2-*	B20	B20	40	M8	97	40	33	GN 911-M8-32	215
GN 132-B25-B25-40-2-*	B25	B25	40	M8	97	40	33	GN 911-M8-32	192
GN 132-B30-B30-40-2-*	B30	B30	40	M8	97	40	33	GN 911-M8-32	170
GN 132-B30-B30-56-2-*	B30	B30	56	M10	125	56	45	GN 911-M10-40	570
GN 132-B32-B32-56-2-*	B32	B32	56	M10	125	56	45	GN 911-M10-40	535
GN 132-B35-B35-56-2-*	B35	B35	56	M10	125	56	45	GN 911-M10-40	500
GN 132-B40-B40-56-2-*	B40	B40	56	M10	125	56	45	GN 911-M10-40	417
GN 132-B40-B40-65-2-*	B40	B40	65	M10	143	65	53	GN 911-M10-55	835
GN 132-B42-B42-65-2-*	B42	B42	65	M10	143	65	53	GN 911-M10-55	780
GN 132-B45-B45-65-2-*	B45	B45	65	M10	143	65	53	GN 911-M10-55	732
GN 132-B48-B48-65-2-*	B48	B48	65	M10	143	65	53	GN 911-M10-55	670
GN 132-B50-B50-65-2-*	B50	B50	65	M10	143	65	53	GN 911-M10-55	630
GN 132-B50-B50-80-2-*	B50	B50	80	M10	169	80	65	GN 911-M10-55	1460
GN 132-B55-B55-80-2-*	B55	B55	80	M10	169	80	65	GN 911-M10-55	1260
GN 132-B60-B60-80-2-*	B60	B60	80	M10	169	80	65	GN 911-M10-55	1060

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 133

Two-way connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the two-way connector clamps GN 133 are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

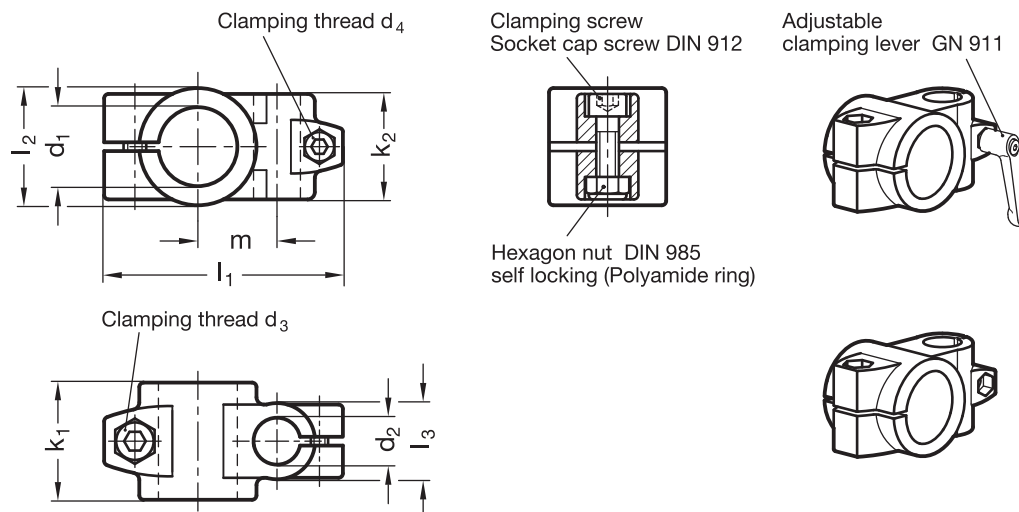
Special executions on request (For sufficient quantities)

Different combinations of bores d_1/d_2 .



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Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions										Clamping kits		g
	d_1	d_2	d_3	d_4	k_1	k_2	l_1	l_2	l_3	m	for d_3	for d_4	
GN 133-B20-B12-1-*	B20	B12	M8	M6	40	36	81.5	40	26	27	GN 911-M8-32	GN 911-M6-25	177
GN 133-B20-B14-1-*	B20	B14	M8	M6	40	36	81.5	40	26	27	GN 911-M8-32	GN 911-M6-25	174
GN 133-B20-B16-1-*	B20	B16	M8	M6	40	36	81.5	40	26	27	GN 911-M8-32	GN 911-M6-25	169
GN 133-B20-B18-1-*	B20	B18	M8	M6	40	36	81.5	40	26	27	GN 911-M8-32	GN 911-M6-25	165
GN 133-B25-B12-1-*	B25	B12	M8	M6	40	36	81.5	40	26	27	GN 911-M8-32	GN 911-M6-25	160
GN 133-B25-B14-1-*	B25	B14	M8	M6	40	36	81.5	40	26	27	GN 911-M8-32	GN 911-M6-25	156
GN 133-B25-B16-1-*	B25	B16	M8	M6	40	36	81.5	40	26	27	GN 911-M8-32	GN 911-M6-25	151
GN 133-B25-B18-1-*	B25	B18	M8	M6	40	36	81.5	40	26	27	GN 911-M8-32	GN 911-M6-25	136

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions										Clamping kits		△△ g	
	Description	d1	d2	d3	d4	k1	k2	l1	l2	l3	m	for d3		for d4
GN 133-B30-B12-1.*	B30	B12	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	135
GN 133-B30-B14-1.*	B30	B14	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	133
GN 133-B30-B16-1.*	B30	B16	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	128
GN 133-B30-B18-1.*	B30	B18	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	124
GN 133-B40-B20-1.*	B40	B20	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	640
GN 133-B40-B25-1.*	B40	B25	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	601
GN 133-B40-B30-1.*	B40	B30	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	569
GN 133-B42-B20-1.*	B42	B20	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	603
GN 133-B42-B25-1.*	B42	B25	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	578
GN 133-B42-B30-1.*	B42	B30	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	547
GN 133-B45-B20-1.*	B45	B20	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	567
GN 133-B45-B25-1.*	B45	B25	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	542
GN 133-B45-B30-1.*	B45	B30	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	511
GN 133-B48-B20-1.*	B48	B20	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	533
GN 133-B48-B25-1.*	B48	B25	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	508
GN 133-B48-B30-1.*	B48	B30	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	477
GN 133-B50-B20-1.*	B50	B20	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	506
GN 133-B50-B25-1.*	B50	B25	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	481
GN 133-B50-B30-1.*	B50	B30	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	450
GN 133-B20-B12-2.*	B20	B2	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	180
GN 133-B20-B14-2.*	B20	B14	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	174
GN 133-B20-B16-2.*	B20	B16	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	170
GN 133-B20-B18-2.*	B20	B18	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	170
GN 133-B25-B12-2.*	B25	B12	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	159
GN 133-B25-B14-2.*	B25	B14	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	155
GN 133-B25-B16-2.*	B25	B16	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	150
GN 133-B25-B18-2.*	B25	B18	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	147
GN 133-B30-B12-2.*	B30	B12	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	135
GN 133-B30-B14-2.*	B30	B14	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	128
GN 133-B30-B16-2.*	B30	B16	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	128
GN 133-B30-B18-2.*	B30	B18	M8	M6	40	36	81.5	40	26	27		GN 911-M8-32	GN 911-M6-25	124
GN 133-B40-B20-2.*	B40	B20	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	640
GN 133-B40-B25-2.*	B40	B25	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	601
GN 133-B40-B30-2.*	B40	B30	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	570
GN 133-B42-B20-2.*	B42	B20	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	600
GN 133-B42-B25-2.*	B42	B25	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	600
GN 133-B42-B30-2.*	B42	B30	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	600
GN 133-B45-B20-2.*	B45	B20	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	510
GN 133-B45-B25-2.*	B45	B25	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	510
GN 133-B45-B30-2.*	B45	B30	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	510
GN 133-B48-B20-2.*	B48	B20	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	475
GN 133-B48-B25-2.*	B48	B25	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	475
GN 133-B48-B30-2.*	B48	B30	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	475
GN 133-B50-B20-2.*	B50	B20	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	505
GN 133-B50-B25-2.*	B50	B25	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	480
GN 133-B50-B30-2.*	B50	B30	M10	M8	65	59	122	65	40	45		GN 911-M10-55	GN 911-M8-32	450

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 134

Two-way connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with four clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with four AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the two-way connector clamps GN 134 are not machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Within the same nominal size the two-way connector clamps can be supplied with the bores d_1 and d_2 and square bores s_1 and s_2 i.e. in combination with d_1 and s_2 or s_1 and d_2 .

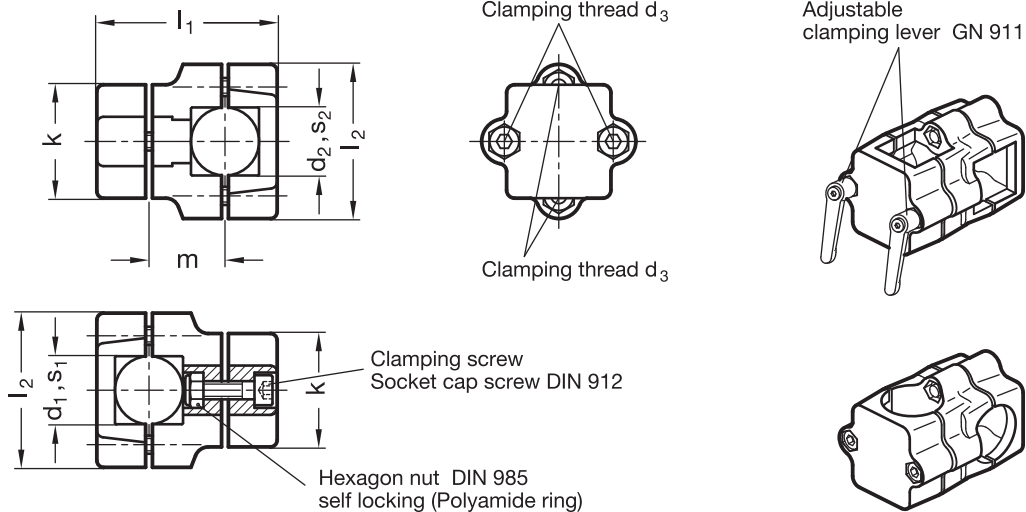
Accessories


- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



16

Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions									Clamping kits for d3	
Description	d1	s1	d2	s2	k Clamping length	d3	l1	l2	m		g
GN 134-B20-B20-50-1-*	B20	-	B20	-	50	M8	79.5	68	33.5	GN 911-M8-35	355
GN 134-B25-B25-50-1-*	B25	-	B25	-	50	M8	79.5	68	33.5	GN 911-M8-35	340
GN 134-B30-B30-50-1-*	B30	-	B30	-	50	M8	79.5	68	33.5	GN 911-M8-35	325
GN 134-B30-B30-60-1-*	B30	-	B30	-	60	M8	109	79	50	GN 911-M8-55	690
GN 134-B32-B32-60-1-*	B32	-	B32	-	60	M8	109	79	50	GN 911-M8-55	670
GN 134-B35-B35-60-1-*	B35	-	B35	-	60	M8	109	79	50	GN 911-M8-55	670
GN 134-B40-B40-60-1-*	B40	-	B40	-	60	M8	109	79	50	GN 911-M8-55	610
GN 134-B40-B40-76-1-*	B40	-	B40	-	76	M10	125	98	55	GN 911-M10-63	975
GN 134-B42-B42-76-1-*	B42	-	B42	-	76	M10	125	98	55	GN 911-M10-63	945
GN 134-B45-B45-76-1-*	B45	-	B45	-	76	M10	125	98	55	GN 911-M10-63	930
GN 134-B48-B48-76-1-*	B48	-	B48	-	76	M10	125	98	55	GN 911-M10-63	915
GN 134-B50-B50-76-1-*	B50	-	B50	-	76	M10	125	98	55	GN 911-M10-63	885
GN 134-B20-V20-50-1-*	B20	-	-	V20	50	M8	79.5	68	33.5	GN 911-M8-35	350
GN 134-B25-V25-50-1-*	B25	-	-	V25	50	M8	79.5	68	33.5	GN 911-M8-35	330
GN 134-B30-V30-50-1-*	B30	-	-	V30	50	M8	79.5	68	33.5	GN 911-M8-35	310
GN 134-B30-V30-60-1-*	B30	-	-	V30	60	M8	109	79	50	GN 911-M8-55	680
GN 134-B35-V35-60-1-*	B35	-	-	V35	60	M8	109	79	50	GN 911-M8-55	640
GN 134-B40-V40-60-1-*	B40	-	-	V40	60	M8	109	79	50	GN 911-M8-55	580
GN 134-B40-V40-76-1-*	B40	-	-	V40	76	M10	125	98	55	GN 911-M10-63	890
GN 134-B45-V45-76-1-*	B45	-	-	V45	76	M10	125	98	55	GN 911-M10-63	835
GN 134-B50-V50-76-1-*	B50	-	-	V50	76	M10	125	98	55	GN 911-M10-63	770
GN 134-V20-V20-50-1-*	-	V20	-	V20	50	M8	79.5	68	33.5	GN 911-M8-35	351
GN 134-V25-V25-50-1-*	-	V25	-	V25	50	M8	79.5	68	33.5	GN 911-M8-35	325
GN 134-V30-V30-50-1-*	-	V30	-	V30	50	M8	79.5	68	33.5	GN 911-M8-35	300
GN 134-V30-V30-60-1-*	-	V30	-	V30	60	M8	109	79	50	GN 911-M8-55	660
GN 134-V35-V35-60-1-*	-	V35	-	V35	60	M8	109	79	50	GN 911-M8-55	620
GN 134-V40-V40-60-1-*	-	V40	-	V40	60	M8	109	79	50	GN 911-M8-55	560
GN 134-V40-V40-76-1-*	-	V40	-	V40	76	M10	125	98	55	GN 911-M10-63	945
GN 134-V45-V45-76-1-*	-	V45	-	V45	76	M10	125	98	55	GN 911-M10-63	895
GN 134-V50-V50-76-1-*	-	V50	-	V50	76	M10	125	98	55	GN 911-M10-63	825
GN 134-V20-B20-50-1-*	-	V20	B20	-	50	M8	79.5	68	33.5	GN 911-M8-35	350
GN 134-V25-B25-50-1-*	-	V25	B25	-	50	M8	79.5	68	33.5	GN 911-M8-35	330
GN 134-V30-B30-50-1-*	-	V30	B30	-	50	M8	79.5	68	33.5	GN 911-M8-35	310
GN 134-V30-B30-60-1-*	-	V30	B30	-	60	M8	109	79	50	GN 911-M8-55	680
GN 134-V35-B35-60-1-*	-	V35	B35	-	60	M8	109	79	50	GN 911-M8-55	640
GN 134-V40-B40-60-1-*	-	V40	B40	-	60	M8	109	79	50	GN 911-M8-55	580
GN 134-V40-B40-76-1-*	-	V40	B40	-	76	M10	125	98	55	GN 911-M10-63	890
GN 134-V45-B45-76-1-*	-	V45	B45	-	76	M10	125	98	55	GN 911-M10-63	835
GN 134-V50-B50-76-1-*	-	V50	B50	-	76	M10	125	98	55	GN 911-M10-63	770

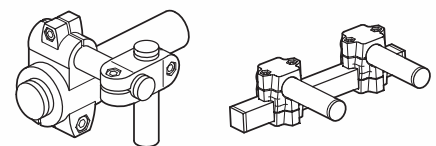
* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions									Clamping kits for d3	Δ
Description	d1 Bore B	s1 Square V	d2 Bore B	s2 Square V	k Clamping length	d3	l1	l2	m		g
GN 134-B20-B20-50-2-*	B20	-	B20	-	50	M8	79.5	68	33.5	GN 911-M8-35	355
GN 134-B25-B25-50-2-*	B25	-	B25	-	50	M8	79.5	68	33.5	GN 911-M8-35	330
GN 134-B30-B30-50-2-*	B30	-	B30	-	50	M8	79.5	68	33.5	GN 911-M8-35	320
GN 134-B30-B30-60-2-*	B30	-	B30	-	60	M8	109	79	50	GN 911-M8-55	700
GN 134-B32-B32-60-2-*	B32	-	B32	-	60	M8	109	79	50	GN 911-M8-55	690
GN 134-B35-B35-60-2-*	B35	-	B35	-	60	M8	109	79	50	GN 911-M8-55	680
GN 134-B40-B40-60-2-*	B40	-	B40	-	60	M8	109	79	50	GN 911-M8-55	620
GN 134-B40-B40-76-2-*	B40	-	B40	-	76	M10	125	98	55	GN 911-M10-63	890
GN 134-B42-B42-76-2-*	B42	-	B42	-	76	M10	125	98	55	GN 911-M10-63	945
GN 134-B45-B45-76-2-*	B45	-	B45	-	76	M10	125	98	55	GN 911-M10-63	915
GN 134-B48-B48-76-2-*	B48	-	B48	-	76	M10	125	98	55	GN 911-M10-63	915
GN 134-B50-B50-76-2-*	B50	-	B50	-	76	M10	125	98	55	GN 911-M10-63	885
GN 134-V20-V20-50-2-*	-	V20	-	V20	50	M8	79.5	68	33.5	GN 911-M8-35	350
GN 134-V25-V25-50-2-*	-	V25	-	V25	50	M8	79.5	68	33.5	GN 911-M8-35	325
GN 134-V30-V30-50-2-*	-	V30	-	V30	50	M8	79.5	68	33.5	GN 911-M8-35	300
GN 134-V30-V30-60-2-*	-	V30	-	V30	60	M8	109	79	50	GN 911-M8-55	660
GN 134-V35-V35-60-2-*	-	V35	-	V35	60	M8	109	79	50	GN 911-M8-55	620
GN 134-V40-V40-60-2-*	-	V40	-	V40	60	M 8	109	79	50	GN 911-M8-55	560
GN 134-V40-V40-76-2-*	-	V40	-	V40	76	M 10	125	98	55	GN 911-M10-63	945
GN 134-V45-V45-76-2-*	-	V45	-	V45	76	M 10	125	98	55	GN 911-M10-63	825
GN 134-V50-V50-76-2-*	-	V50	-	V50	76	M 10	125	98	55	GN 911-M10-63	825
GN 134-V20-B20-50-2-*	-	V20	B20	-	50	M 8	79.5	68	33.5	GN 911-M8-35	350
GN 134-V25-B25-50-2-*	-	V25	B25	-	50	M 8	79.5	68	33.5	GN 911-M8-35	330
GN 134-V30-B30-50-2-*	-	V30	B30	-	50	M 8	79.5	68	33.5	GN 911-M8-35	310
GN 134-V30-B30-60-2-*	-	V30	B30	-	60	M 8	109	79	50	GN 911-M8-55	680
GN 134-V35-B35-60-2-*	-	V35	B35	-	60	M 8	109	79	50	GN 911-M8-55	640
GN 134-V40-B40-60-2-*	-	V40	B40	-	60	M 8	109	79	50	GN 911-M8-55	580
GN 134-V40-B40-76-2-*	-	V40	B40	-	76	M 10	125	98	55	GN 911-M10-63	890
GN 134-V45-B45-76-2-*	-	V45	B45	-	76	M 10	125	98	55	GN 911-M10-63	835
GN 134-V50-B50-76-2-*	-	V50	B50	-	76	M 10	125	98	55	GN 911-M10-63	840

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).



- Two-way connector clamps GN 131 (see page 10)
- Stainless Steel-Two-way connector clamps GN 131 (see page 11)
- Two-way connector clamps GN 132 (see page 12)
- Two-way connector clamps GN 133 (see page 14)
- Two-way connector clamps GN 134 (see page 16)
- Flanged two-way connector clamps GN 141 (see page 20)



GN 141

Flanged two-way connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with four clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with four AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

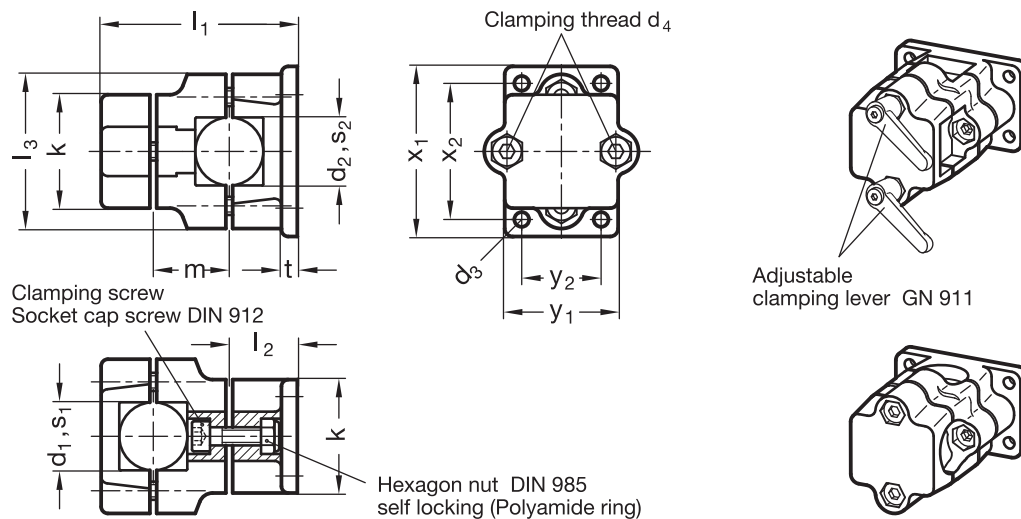
Features and applications

The clamping bores of the flanged two-way connector clamps GN 141 are not machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Within the same nominal size the flanged two-way connector clamps can be supplied with the bores d1 and d2 and square bores s1 and s2 i.e. in combination with d1 and s2 or s1 and d2.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions																Clamping kits for d4	g
	d1	s1	d2	s2	d3	d4	k		l1	l2	l3	m	t	x1	x2	y1			y2
GN 141-B20-B20-1-*	B20	-	B20	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	402
GN 141-B25-B25-1-*	B25	-	B25	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	386
GN 141-B30-B30-1-*	B30	-	B30	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	368
GN 141-B40-B40-1-*	B40	-	B40	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1118
GN 141-B42-B42-1-*	B42	-	B42	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1094
GN 141-B45-B45-1-*	B45	-	B45	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1074
GN 141-B48-B48-1-*	B48	-	B48	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1059
GN 141-B50-B50-1-*	B50	-	B50	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1031

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions																Clamping kits for d4	g
	Description	d1	s1	d2	s2	d3	d4	k Clamping length	l1	l2	l3	m	t	x1	x2	y1			y2
GN 141-B20-V20-1-*	B20	-	-	V20	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	395
GN 141-B25-V25-1-*	B25	-	-	V25	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	374
GN 141-B30-V30-1-*	B30	-	-	V30	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	355
GN 141-B40-V40-1-*	B40	-	-	V40	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1002
GN 141-B45-V45-1-*	B45	-	-	V45	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	946
GN 141-B50-V50-1-*	B50	-	-	V50	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	922
GN 141-V20-V20-1-*	-	V20	-	V20	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	392
GN 141-V25-V25-1-*	-	V25	-	V25	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	368
GN 141-V30-V30-1-*	-	V30	-	V30	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	339
GN 141-V40-V40-1-*	-	V40	-	V40	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1091
GN 141-V45-V45-1-*	-	V45	-	V45	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1040
GN 141-V50-V50-1-*	-	V50	-	V50	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	975
GN 141-V20-B20-1-*	-	V20	B20	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	396
GN 141-V25-B25-1-*	-	V25	B25	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	375
GN 141-V30-B30-1-*	-	V30	B30	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	356
GN 141-V40-B40-1-*	-	V40	B40	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1034
GN 141-V45-B45-1-*	-	V45	B45	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	980
GN 141-V50-B50-1-*	-	V50	B50	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	959
GN 141-B20-B20-2-*	B20	-	B20	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	402
GN 141-B25-B25-2-*	B25	-	B25	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	386
GN 141-B30-B30-2-*	B30	-	B30	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	368
GN 141-B40-B40-2-*	B40	-	B40	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1118
GN 141-B42-B42-2-*	B42	-	B42	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1094
GN 141-B45-B45-2-*	B45	-	B45	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1074
GN 141-B48-B48-2-*	B48	-	B48	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1059
GN 141-B50-B50-2-*	B50	-	B50	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1031
GN 141-B20-V20-2-*	B20	-	-	V20	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	395
GN 141-B25-V25-2-*	B25	-	-	V25	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	374
GN 141-B30-V30-2-*	B30	-	-	V30	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	355
GN 141-B40-V40-2-*	B40	-	-	V40	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1002
GN 141-B45-V45-2-*	B45	-	-	V45	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	946
GN 141-B50-V50-2-*	B50	-	-	V50	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	922
GN 141-V20-V20-2-*	-	V20	-	V20	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	392
GN 141-V25-V25-2-*	-	V25	-	V25	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	368
GN 141-V30-V30-2-*	-	V30	-	V30	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	339
GN 141-V40-V40-2-*	-	V40	-	V40	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1091
GN 141-V45-V45-2-*	-	V45	-	V45	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1040
GN 141-V50-V50-2-*	-	V50	-	V50	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	975
GN 141-V20-B20-2-*	-	V20	B20	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	396
GN 141-V25-B25-2-*	-	V25	B25	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	375
GN 141-V30-B30-2-*	-	V30	B30	-	6.5	M8	50	89	30	68	36	7	75	60	50	35	GN 911-M8-35	356
GN 141-V40-B40-2-*	-	V40	B40	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	1034
GN 141-V45-B45-2-*	-	V45	B45	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	980
GN 141-V50-B50-2-*	-	V50	B50	-	11	M10	76	136	46	98	55	14	115	90	76	50	GN 911-M10-63	959

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 145

Flanged connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

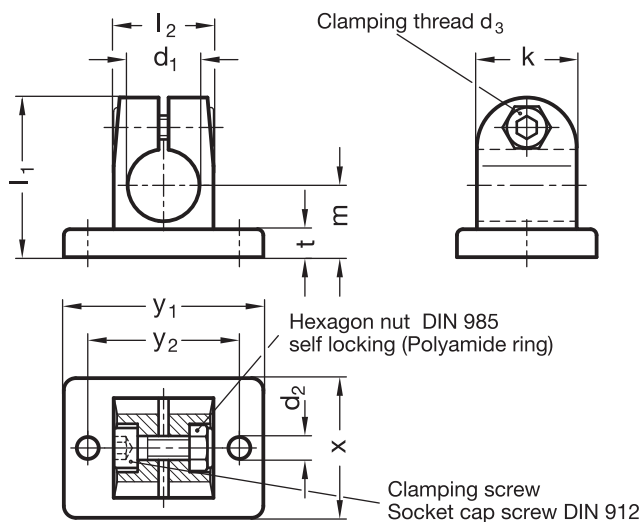
The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

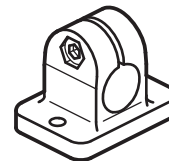
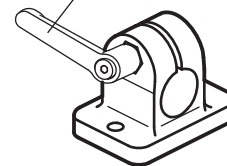
The clamping bores of the flanged connector clamps GN 145 are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 1093ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Adjustable clamping lever GN 911



Standard Elements	Main dimensions											Clamping kits for d ₃	△
Description	d ₁	d ₂	d ₃	k Clamping length	l ₁	l ₂	m	t	x	y ₁	y ₂		g
GN 145-B10-1-*	B10	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	71
GN 145-B12-1-*	B12	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	69
GN 145-B14-1-*	B14	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	67
GN 145-B15-1-*	B15	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	65
GN 145-B16-1-*	B16	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	64
GN 145-B18-1-*	B18	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	60
GN 145-B10-2-*	B10	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	71
GN 145-B12-2-*	B12	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	69
GN 145-B14-2-*	B14	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	67
GN 145-B15-2-*	B15	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	67
GN 145-B16-2-*	B16	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	64
GN 145-B18-2-*	B18	5.5	M 6	25	40	25	18	7	35	50	38	GN 911-M6-22	60

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Flanged connector clamps



•Material

AISI CF-8 stainless steel **NI**, matte polished.

•Clamping screw

Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

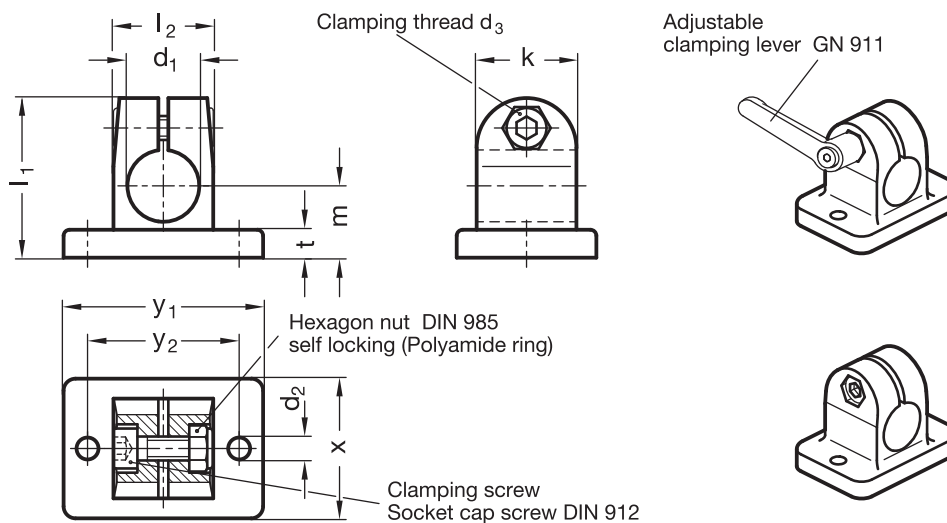
The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the flanged connector clamps GN 145-NI are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions											Clamping kits for d ₃	△ g
	d ₁	d ₂	d ₃	k Clamping length	l ₁	l ₂	m	t	x	y ₁	y ₂		
GN 145-B12-2-NI	B12	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	177
GN 145-B14-2-NI	B14	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	170
GN 145-B15-2-NI	B15	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	170
GN 145-B16-2-NI	B16	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	164
GN 145-B18-2-NI	B18	5.5	M6	25	40	25	18	7	35	50	38	GN 911-M6-22	159

GN 146

Flanged connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the flanged connector clamps GN 146 are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

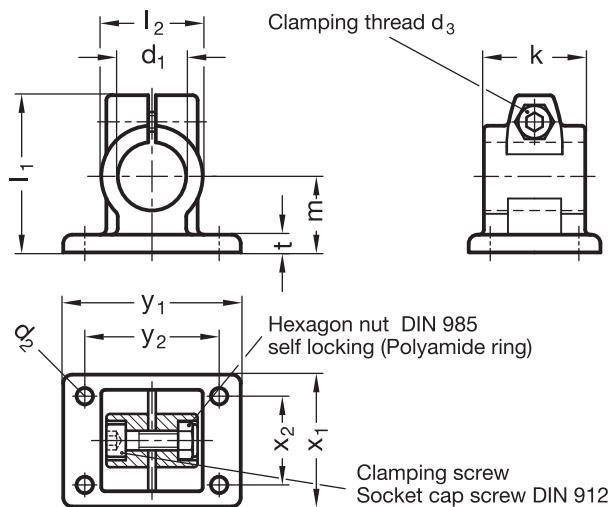
Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

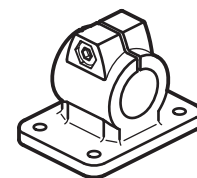
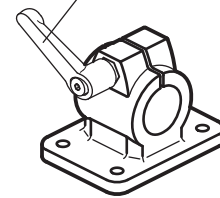


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Tube clamp connectors, Linear actuators



Adjustable clamping lever GN 911



Standard Elements Description	Main dimensions												Clamping kits for d3	g
	d1	k Clamping length	d2	d3	l1	l2	m	t	x1	x2	y1	y2		
GN 146-B20-40-1-*	B20	40	6.5	M8	62	40	30	7	52	35	70	53	GN 911-M8-32	194
GN 146-B25-40-1-*	B25	40	6.5	M8	62	40	30	7	52	35	70	53	GN 911-M8-32	179
GN 146-B30-40-1-*	B30	40	6.5	M8	62	40	30	7	52	35	70	53	GN 911-M8-32	159
GN 146-B30-56-1-*	B30	56	8.5	M10	83	56	42	10	78	52	108	82	GN 911-M10-40	511
GN 146-B32-56-1-*	B32	56	8.5	M10	83	56	42	10	78	52	108	82	GN 911-M10-40	476
GN 146-B35-56-1-*	B35	56	8.5	M10	83	56	42	10	78	52	108	82	GN 911-M10-40	480
GN 146-B40-56-1-*	B40	56	8.5	M10	83	56	42	10	78	52	108	82	GN 911-M10-40	438
GN 146-B40-65-1-*	B40	65	11	M10	95	65	50	14	92	62	128	98	GN 911-M10-55	794
GN 146-B42-65-1-*	B42	65	11	M10	95	65	50	14	92	62	128	98	GN 911-M10-55	764
GN 146-B45-65-1-*	B45	65	11	M10	95	65	50	14	92	62	128	98	GN 911-M10-55	736
GN 146-B48-65-1-*	B48	65	11	M10	95	65	50	14	92	62	128	98	GN 911-M10-55	694
GN 146-B50-65-1-*	B50	65	11	M10	95	65	50	14	92	62	128	98	GN 911-M10-55	683
GN 146-B50-80-1-*	B50	80	11	M10	112	80	60	14	110	74	154	118	GN 911-M10-55	1320
GN 146-B55-80-1-*	B55	80	11	M10	112	80	60	14	110	74	154	118	GN 911-M10-55	1220
GN 146-B60-80-1-*	B60	80	11	M10	112	80	60	14	110	74	154	118	GN 911-M10-55	1120
GN 146-B20-40-2-*	B20	40	6.5	M8	62	40	30	7	52	35	70	53	GN 911-M8-32	194
GN 146-B25-40-2-*	B25	40	6.5	M8	62	40	30	7	52	35	70	53	GN 911-M8-32	179
GN 146-B30-40-2-*	B30	40	6.5	M8	62	40	30	7	52	35	70	53	GN 911-M8-32	159
GN 146-B30-56-2-*	B30	56	8.5	M10	83	56	42	10	78	52	108	82	GN 911-M10-40	510
GN 146-B32-56-2-*	B32	56	8.5	M10	83	56	42	10	78	52	108	82	GN 911-M10-40	476
GN 146-B35-56-2-*	B35	56	8.5	M10	83	56	42	10	78	52	108	82	GN 911-M10-40	480
GN 146-B40-56-2-*	B40	56	8.5	M10	83	56	42	10	78	52	108	82	GN 911-M10-40	435
GN 146-B40-65-2-*	B40	65	11	M10	95	65	50	14	92	62	128	98	GN 911-M10-55	794
GN 146-B42-65-2-*	B42	65	11	M10	95	65	50	14	92	62	128	98	GN 911-M10-55	760
GN 146-B45-65-2-*	B45	65	11	M10	95	65	50	14	92	62	128	98	GN 911-M10-55	736
GN 146-B48-65-2-*	B48	65	11	M10	95	65	50	14	92	62	128	98	GN 911-M10-55	694
GN 146-B50-65-2-*	B50	65	11	M10	95	65	50	14	92	62	128	98	GN 911-M10-55	680
GN 146-B50-80-2-*	B50	80	11	M10	112	80	60	14	110	74	154	118	GN 911-M10-55	1320
GN 146-B55-80-2-*	B55	80	11	M10	112	80	60	14	110	74	154	118	GN 911-M10-55	1120
GN 146-B60-80-2-*	B60	80	11	M10	112	80	60	14	110	74	154	118	GN 911-M10-55	1120

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 146.3

Flanged connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

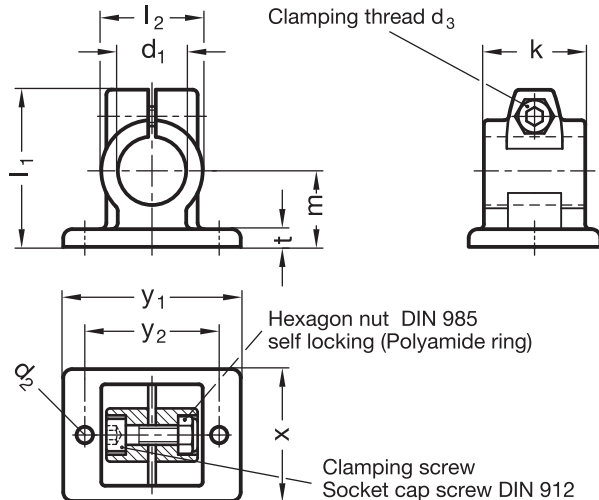
The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

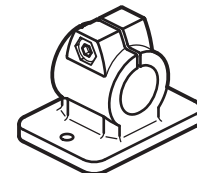
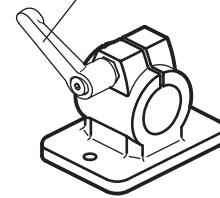
The clamping bores of the flanged connector clamps GN 146.3 are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Adjustable clamping lever GN 911

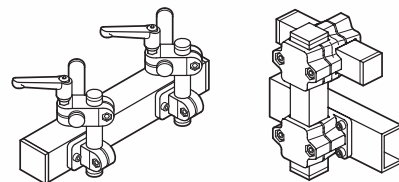


Standard Elements	Main dimensions											Clamping kits for d_3	△ g
	d_1	k Clamping length	d_2	d_3	l_1	l_2	m	t	x	y_1	y_2		
GN 146.3-B20-40-1.*	B20	40	6.5	M8	62	40	30	7	52	70	53	GN 911-M8-32	180
GN 146.3-B25-40-1.*	B25	40	6.5	M8	62	40	30	7	52	70	53	GN 911-M8-32	180
GN 146.3-B30-40-1.*	B30	40	6.5	M8	62	40	30	7	52	70	53	GN 911-M8-32	160
GN 146.3-B30-56-1.*	B30	56	8.5	M10	83	56	42	10	78	108	82	GN 911-M10-40	510
GN 146.3-B32-56-1.*	B32	56	8.5	M10	83	56	42	10	78	108	82	GN 911-M10-40	480
GN 146.3-B35-56-1.*	B35	56	8.5	M10	83	56	42	10	78	108	82	GN 911-M10-40	480
GN 146.3-B40-56-1.*	B40	56	8.5	M10	83	56	42	10	78	108	82	GN 911-M10-40	440
GN 146.3-B20-40-2.*	B20	40	6.5	M8	62	40	30	7	52	70	53	GN 911-M8-32	180
GN 146.3-B25-40-2.*	B25	40	6.5	M8	62	40	30	7	52	70	53	GN 911-M8-32	180
GN 146.3-B30-40-2.*	B30	40	6.5	M8	62	40	30	7	52	70	53	GN 911-M8-32	160
GN 146.3-B30-56-2.*	B30	56	8.5	M10	83	56	42	10	78	108	82	GN 911-M10-40	510
GN 146.3-B32-56-2.*	B32	56	8.5	M10	83	56	42	10	78	108	82	GN 911-M10-40	480
GN 146.3-B35-56-2.*	B35	56	8.5	M10	83	56	42	10	78	108	82	GN 911-M10-40	480
GN 146.3-B40-56-2.*	B40	56	8.5	M10	83	56	42	10	78	108	82	GN 911-M10-40	440

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).



Flanged connector clamps GN 145 (see page 22)
 Stainless-Steel-Flanged connector clamps GN 145 (see page 22)
 Flanged connector clamps GN 146 (see page 24)
 Flanged connector clamps GN 146.3 (see page 26)
 Flanged connector clamps GN 147 (see page 28)



GN 147

Flanged connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the flanged connector clamps GN 147 are not machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

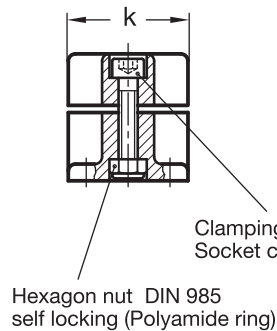
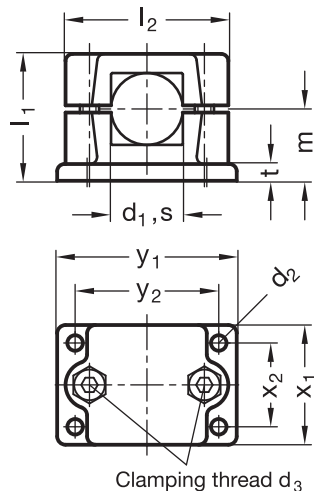
Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

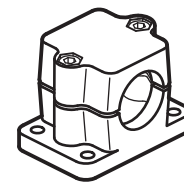
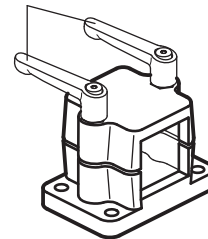


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Tube clamp connectors, Linear actuators



Adjustable clamping lever GN 911



Standard Elements	Main dimensions													Clamping kits for d ₃	△△
Description	d ₁	s	d ₂	d ₃	k Clamping length	l ₁	l ₂	m	t	x ₁	x ₂	y ₁	y ₂		g
GN 147-B20-1-*	B20	-	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	247
GN 147-B25-1-*	B25	-	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	240
GN 147-B30-1-*	B30	-	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	232
GN 147-B40-1-*	B40	-	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	665
GN 147-B42-1-*	B42	-	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	680
GN 147-B45-1-*	B45	-	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	640
GN 147-B48-1-*	B48	-	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	631
GN 147-B50-1-*	B50	-	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	620
GN 147-V20-1-*	-	V20	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	242
GN 147-V25-1-*	-	V25	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	233
GN 147-V30-1-*	-	V30	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	221
GN 147-V40-1-*	-	V40	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	643
GN 147-V45-1-*	-	V45	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	625
GN 147-V50-1-*	-	V50	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	595
GN 147-B20-2-*	B20	-	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	245
GN 147-B25-2-*	B25	-	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	240
GN 147-B30-2-*	B30	-	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	188
GN 147-B40-2-*	B40	-	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	665
GN 147-B42-2-*	B42	-	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	650
GN 147-B45-2-*	B45	-	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	640
GN 147-B48-2-*	B48	-	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	631
GN 147-B50-2-*	B50	-	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	620
GN 147-V20-2-*	-	V20	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M10-70	242
GN 147-V25-2-*	-	V25	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	230
GN 147-V30-2-*	-	V30	6.5	M8	50	53	68	30	7	50	35	75	60	GN 911-M8-45	221
GN 147-V40-2-*	-	V40	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	643
GN 147-V45-2-*	-	V45	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	625
GN 147-V50-2-*	-	V50	11	M10	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	595

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 162

Base plate connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

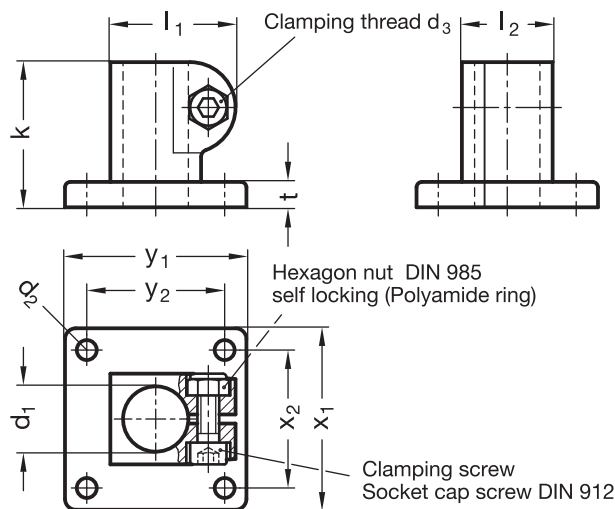
The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

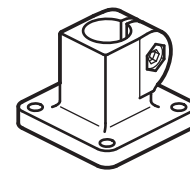
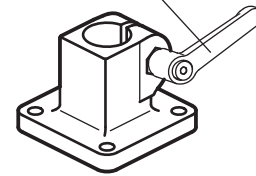
The clamping bores of the base plate connector clamps GN 162 are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Adjustable clamping lever GN 911



Standard Elements	Main dimensions											Clamping kits for d ₃	g
	d ₁	d ₂	d ₃	k Clamping length	l ₁	l ₂	t	x ₁	x ₂	y ₁	y ₂		
GN 162-B10-1-*	B10	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	97
GN 162-B12-1-*	B12	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	93
GN 162-B14-1-*	B14	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	89
GN 162-B15-1-*	B15	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	87
GN 162-B16-1-*	B16	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	85
GN 162-B18-1-*	B18	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	80
GN 162-B10-2-*	B10	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	97
GN 162-B12-2-*	B12	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	93
GN 162-B14-2-*	B14	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	89
GN 162-B15-2-*	B15	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	87
GN 162-B16-2-*	B16	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	85
GN 162-B18-2-*	B18	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	80

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Base plate connector clamps



•Material

AISI CF-8 stainless steel **NI**, matte polished.

•Clamping screws

Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

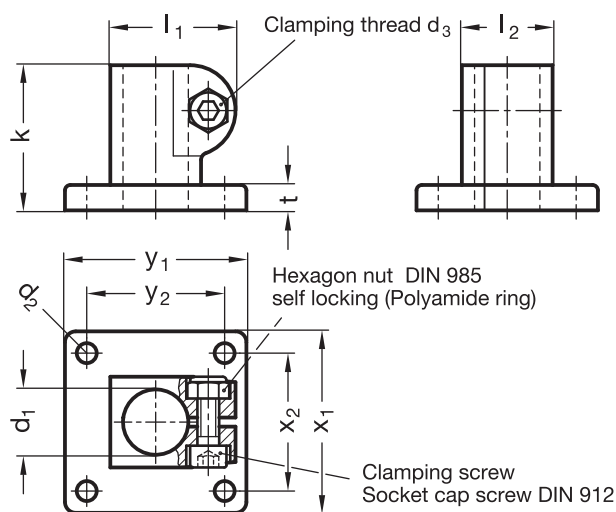
The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

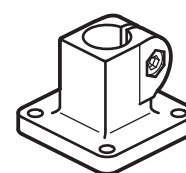
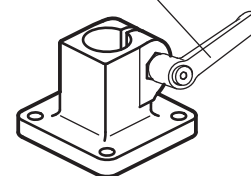
The clamping bores of the base plate connector clamps GN 162-NI are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Adjustable clamping lever GN 911



Standard Elements	Main dimensions											Clamping kits for d ₃	g
	d ₁	d ₂	d ₃	k Clamping length	l ₁	l ₂	t	x ₁	x ₂	y ₁	y ₂		
GN 162-B12-2-NI	B12	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	238
GN 162-B14-2-NI	B14	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	227
GN 162-B16-2-NI	B16	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	213
GN 162-B18-2-NI	B18	5.5	M6	40	34.5	25	7	50	38	50	38	GN 911-M6-22	207

GN 163

Base plate connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

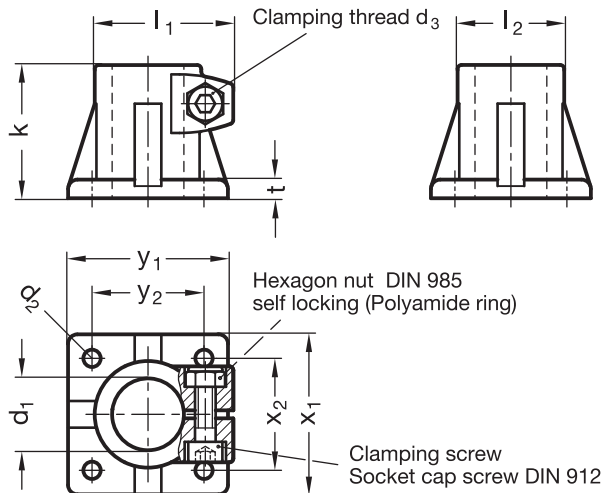
The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

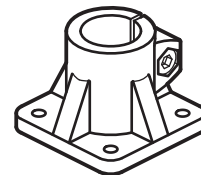
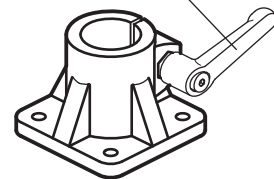
The clamping bores of the base plate connector clamps GN 163 are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Adjustable
clamping lever GN 911



Standard Elements	Main dimensions											Clamping kits for d3	\triangle/\triangle
Description	d1	k Clamping length	d2	d3	l1	l2	t	x1	x2	y1	y2		g
GN 163-B20-50-1-*	B20	50	6.5	M8	52	40	7	60	42	60	42	GN 911-M8-32	199
GN 163-B25-50-1-*	B25	50	6.5	M8	52	40	7	60	42	60	42	GN 911-M8-32	176
GN 163-B30-50-1-*	B30	50	6.5	M8	52	40	7	60	42	60	42	GN 911-M8-32	149
GN 163-B30-70-1-*	B30	70	8.5	M10	68	56	10	90	64	90	64	GN 911-M10-40	530
GN 163-B32-70-1-*	B32	70	8.5	M10	68	56	10	90	64	90	64	GN 911-M10-40	507
GN 163-B35-70-1-*	B35	70	8.5	M10	68	56	10	90	64	90	64	GN 911-M10-40	484
GN 163-B40-70-1-*	B40	70	8.5	M10	68	56	10	90	64	90	64	GN 911-M10-40	437
GN 163-B40-85-1-*	B40	85	11	M10	77.5	65	14	105	74	105	74	GN 911-M10-55	850
GN 163-B42-85-1-*	B42	85	11	M10	77.5	65	14	105	74	105	74	GN 911-M10-55	829
GN 163-B45-85-1-*	B45	85	11	M10	77.5	65	14	105	74	105	74	GN 911-M10-55	777
GN 163-B48-85-1-*	B48	85	11	M10	77.5	65	14	105	74	105	74	GN 911-M10-55	740
GN 163-B50-85-1-*	B50	85	11	M10	77.5	65	14	105	74	105	74	GN 911-M10-55	711
GN 163-B55-100-1-*	B55	100	11	M10	92	80	14	125	89	125	89	GN 911-M10-55	1020
GN 163-B60-100-1-*	B60	100	11	M10	92	80	14	125	89	125	89	GN 911-M10-55	710
GN 163-B20-50-2-*	B20	50	6.5	M8	52	40	7	60	42	60	42	GN 911-M8-32	199
GN 163-B25-50-2-*	B25	50	6.5	M8	52	40	7	60	42	60	42	GN 911-M8-32	176
GN 163-B30-50-2-*	B30	50	6.5	M8	52	40	7	60	42	60	42	GN 911-M8-32	149
GN 163-B30-70-2-*	B30	70	8.5	M10	68	56	10	90	64	90	64	GN 911-M10-40	530
GN 163-B32-70-2-*	B32	70	8.5	M10	68	56	10	90	64	90	64	GN 911-M10-40	505
GN 163-B35-70-2-*	B35	70	8.5	M10	68	56	10	90	64	90	64	GN 911-M10-40	484
GN 163-B40-70-2-*	B40	70	8.5	M10	68	56	10	90	64	90	64	GN 911-M10-40	437
GN 163-B40-85-2-*	B40	85	11	M10	77.5	65	14	105	74	105	74	GN 911-M10-55	850
GN 163-B42-85-2-*	B42	85	11	M10	77.5	65	14	105	74	105	74	GN 911-M10-55	829
GN 163-B45-85-2-*	B45	85	11	M10	77.5	65	14	105	74	105	74	GN 911-M10-55	775
GN 163-B48-85-2-*	B48	85	11	M10	77.5	65	14	105	74	105	74	GN 911-M10-55	740
GN 163-B50-85-2-*	B50	85	11	M10	77.5	65	14	105	74	105	74	GN 911-M10-55	710
GN 163-B55-100-2-*	B55	100	11	M10	92	80	14	125	89	125	89	GN 911-M10-55	1020
GN 163-B60-100-2-*	B60	100	11	M10	92	80	14	125	89	125	89	GN 911-M10-55	710

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 165

Base plate connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the base plate connector clamps GN 165 are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

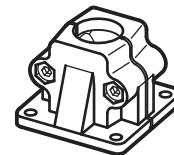
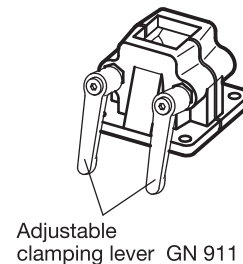
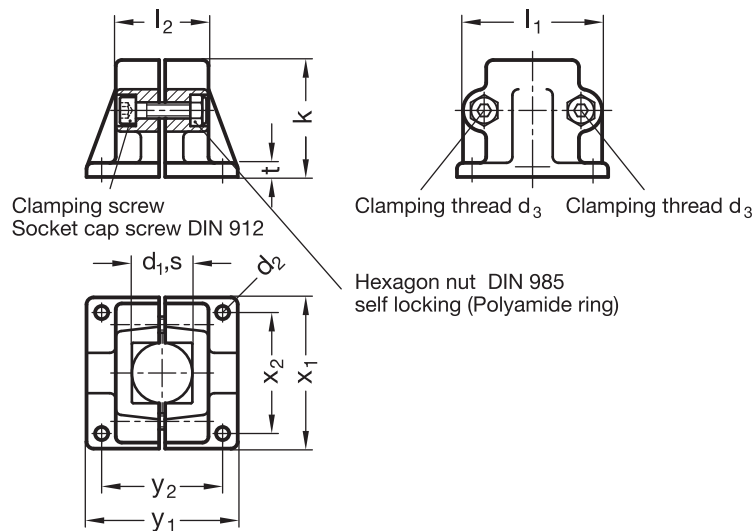
Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



34

Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions												Clamping kits for d ₃	△△
Description	d ₁	s	d ₂	d ₃	k Clamping length	l ₁	l ₂	t	x ₁	x ₂	y ₁	y ₂		g
GN 165-B20-1-*	B20	-	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	304
GN 165-B25-1-*	B25	-	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	296
GN 165-B30-1-*	B30	-	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	282
GN 165-B40-1-*	B40	-	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	946
GN 165-B42-1-*	B42	-	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	904
GN 165-B45-1-*	B45	-	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	878
GN 165-B48-1-*	B48	-	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	844
GN 165-B50-1-*	B50	-	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	810
GN 165-V20-1-*	-	V20	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	298
GN 165-V25-1-*	-	V25	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	286
GN 165-V30-1-*	-	V30	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	270
GN 165-V40-1-*	-	V40	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	920
GN 165-V45-1-*	-	V45	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	886
GN 165-V50-1-*	-	V50	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	840
GN 165-B20-2-*	B20	-	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	300
GN 165-B25-2-*	B25	-	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	296
GN 165-B30-2-*	B30	-	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	282
GN 165-B40-2-*	B40	-	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	945
GN 165-B42-2-*	B42	-	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	905
GN 165-B45-2-*	B45	-	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	878
GN 165-B48-2-*	B48	-	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	840
GN 165-B50-2-*	B50	-	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	810
GN 165-V20-2-*	-	V20	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	298
GN 165-V25-2-*	-	V25	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	286
GN 165-V30-2-*	-	V30	7	M8	58	69	46	7	75	60	75	60	GN 911-M8-40	270
GN 165-V40-2-*	-	V40	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	920
GN 165-V45-2-*	-	V45	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	885
GN 165-V50-2-*	-	V50	11	M10	91	98	70	14	115	90	119	90	GN 911-M10-63	840

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 166

Off-set base plate connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

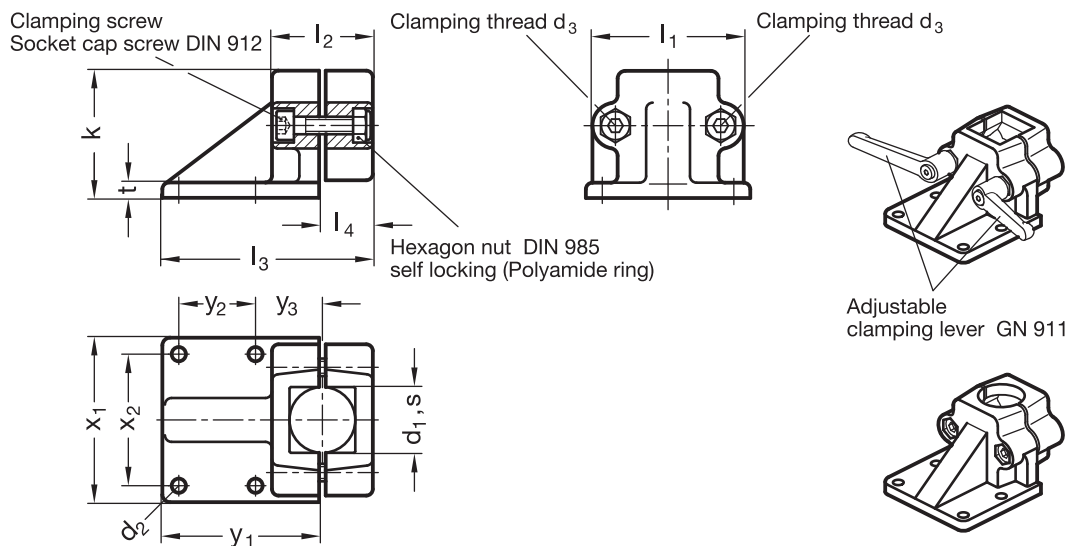
The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the off-set base plate connector clamps GN 166 are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions															Clamping kits for d3	△△
Description	d1	s	d2	d3	k Clamping length	l1	l2	l3	l4	t	x1	x2	y1	y2	y3		g
GN 166-B20-1-*	B20	-	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	297
GN 166-B25-1-*	B25	-	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	291
GN 166-B30-1-*	B30	-	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	286
GN 166-B40-1-*	B40	-	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	873
GN 166-B42-1-*	B42	-	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	850
GN 166-B45-1-*	B45	-	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	840
GN 166-B48-1-*	B48	-	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	830
GN 166-B50-1-*	B50	-	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	815
GN 166-V20-1-*	-	V20	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	291
GN 166-V25-1-*	-	V25	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	281
GN 166-V30-1-*	-	V30	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	273
GN 166-V40-1-*	-	V40	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	839
GN 166-V45-1-*	-	V45	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	816
GN 166-V50-1-*	-	V50	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	776
GN 166-B20-2-*	B20	-	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	297
GN 166-B25-2-*	B25	-	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	291
GN 166-B30-2-*	B30	-	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	286
GN 166-B40-2-*	B40	-	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	873
GN 166-B42-2-*	B42	-	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	850
GN 166-B45-2-*	B45	-	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	840
GN 166-B48-2-*	B48	-	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	830
GN 166-B50-2-*	B50	-	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	815
GN 166-V20-2-*	-	V20	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	291
GN 166-V25-2-*	-	V25	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	281
GN 166-V30-2-*	-	V30	7	M8	58	69	46	96	23	7	75	60	72	35	30	GN 911-M8-40	273
GN 166-V40-2-*	-	V40	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	839
GN 166-V45-2-*	-	V45	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	816
GN 166-V50-2-*	-	V50	11	M10	91	98	70	145	35	14	115	90	108	50	45	GN 911-M10-63	776

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 167

Wide base plate connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

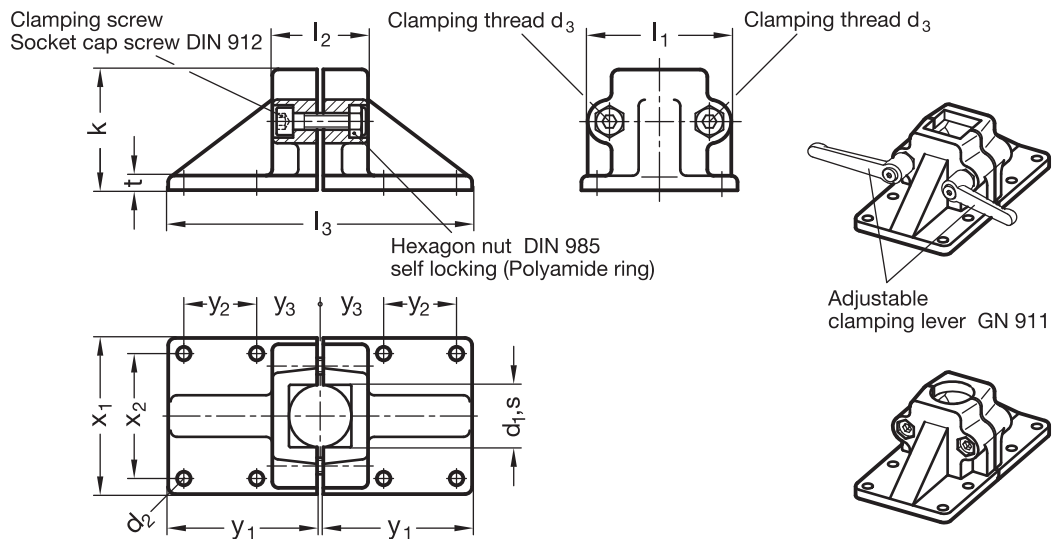
The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the wide base plate connector clamps GN 167 are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions														Clamping kits for d ₃	\triangle/\triangle
Description	d ₁	s	d ₂	d ₃	k Clamping length	l ₁	l ₂	l ₃	t	x ₁	x ₂	y ₁	y ₂	y ₃		g
GN 167-B20-1-*	B20	-	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	394
GN 167-B25-1-*	B25	-	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	388
GN 167-B30-1-*	B30	-	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	384
GN 167-B40-1-*	B40	-	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1222
GN 167-B42-1-*	B42	-	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1194
GN 167-B45-1-*	B45	-	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1182
GN 167-B48-1-*	B48	-	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1172
GN 167-B50-1-*	B50	-	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1154
GN 167-V20-1-*	-	V20	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	980
GN 167-V25-1-*	-	V25	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	374
GN 167-V30-1-*	-	V30	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	368
GN 167-V40-1-*	-	V40	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1176
GN 167-V45-1-*	-	V45	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1148
GN 167-V50-1-*	-	V50	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1094
GN 167-B20-2-*	B20	-	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	394
GN 167-B25-2-*	B25	-	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	388
GN 167-B30-2-*	B30	-	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	384
GN 167-B40-2-*	B40	-	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1222
GN 167-B42-2-*	B42	-	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1194
GN 167-B45-2-*	B45	-	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1182
GN 167-B48-2-*	B48	-	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1172
GN 167-B50-2-*	B50	-	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1154
GN 167-V20-2-*	-	V20	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	398
GN 167-V25-2-*	-	V25	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	374
GN 167-V30-2-*	-	V30	7	M 8	58	69	46	146	7	75	60	72	35	30	GN 911-M8-40	368
GN 167-V40-2-*	-	V40	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1176
GN 167-V45-2-*	-	V45	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1148
GN 167-V50-2-*	-	V50	11	M 10	91	98	70	218	14	115	90	108	50	45	GN 911-M10-63	1094

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 171

Flanged base plate connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screw DIN 912 and nuts DIN 985, zinc plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screw DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the flanged base plate connector clamps GN 171 are not machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

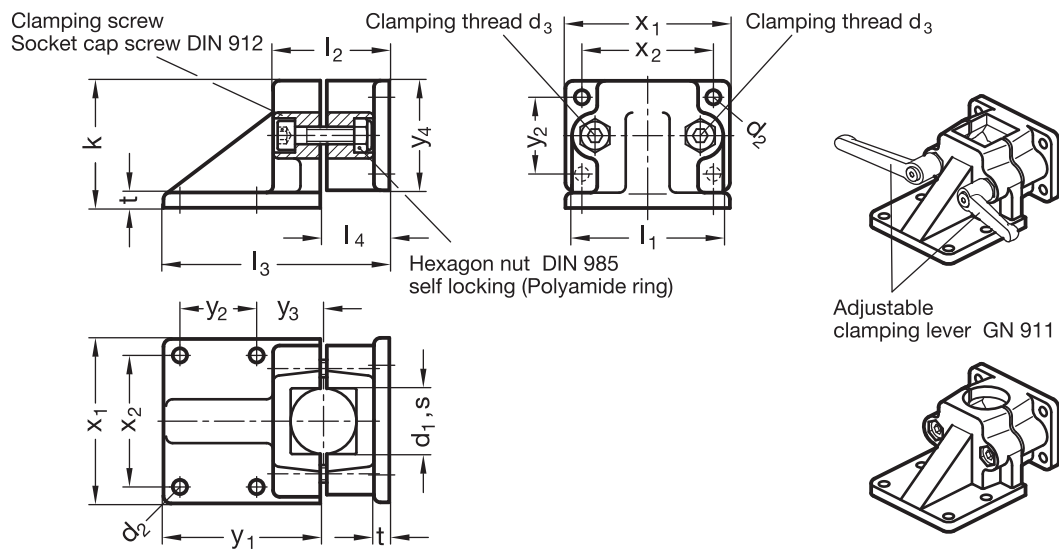
Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



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Tube clamp connectors, Linear actuators

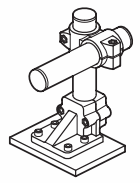
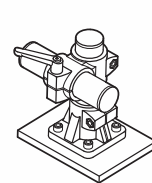


Standard Elements	Main dimensions																Clamping kits for d3	△△
Description	d1	s	d2	d3	k Clamping length	l1	l2	l3	l4	t	x1	x2	y1	y2	y3	y4		g
GN 171-B20-1-*	B20	-	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	344
GN 171-B25-1-*	B25	-	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	337
GN 171-B30-1-*	B30	-	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	330
GN 171-B40-1-*	B40	-	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	1014
GN 171-B42-1-*	B42	-	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	995
GN 171-B45-1-*	B45	-	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	982
GN 171-B48-1-*	B48	-	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	973
GN 171-B50-1-*	B50	-	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	959
GN 171-V20-1-*	-	V20	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	343
GN 171-V25-1-*	-	V25	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	326
GN 171-V30-1-*	-	V30	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	316
GN 171-V40-1-*	-	V40	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	981
GN 171-V45-1-*	-	V45	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	958
GN 171-V50-1-*	-	V50	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	918
GN 171-B20-2-*	B20	-	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	344
GN 171-B25-2-*	B25	-	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	337
GN 171-B30-2-*	B30	-	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	330
GN 171-B40-2-*	B40	-	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	1014
GN 171-B42-2-*	B42	-	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	995
GN 171-B45-2-*	B45	-	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	982
GN 171-B48-2-*	B48	-	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	973
GN 171-B50-2-*	B50	-	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	959
GN 171-V20-2-*	-	V20	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	343
GN 171-V25-2-*	-	V25	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	326
GN 171-V30-2-*	-	V30	7	M8	58	69	53	103	30	7	75	60	72	35	30	50	GN 911-M8-45	316
GN 171-V40-2-*	-	V40	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	981
GN 171-V45-2-*	-	V45	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	958
GN 171-V50-2-*	-	V50	11	M10	91	98	82	156	47	14	115	90	108	50	45	76	GN 911-M10-70	918

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

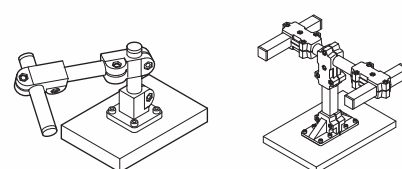


- Base plate connector clamps GN 162 (see page 30)
- Stainless Steel-Base plate connector clamps GN 162 (see page 31)
- Base plate connector clamps GN 163 (see page 32)
- Base plate connector clamps GN 165 (see page 34)
- Off-set base plate connector clamps GN 166 (see page 36)
- Wide base plate connector clamps GN 167 (see page 38)
- Flanged base plate connector clamps GN 171 (see page 40)





- T-angle connector clamps GN 191 (see page 44)
- Stainless Steel-T-angle connector clamps GN 191 (see page 45)
- T-angle connector clamps GN 192 (see page 46)
- T-angle connector clamps GN 193 (see page 48)
- T-angle connector clamps GN 194 (see page 51)
- T-angle connector clamps GN 195 (see page 54)



GN 191

T-angle connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

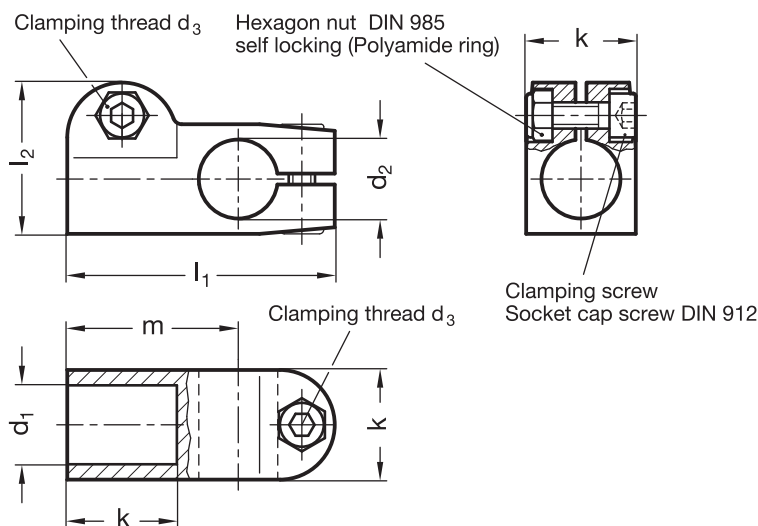
The clamping bores of the T-angle connector clamps GN 191 are machined and designed for tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

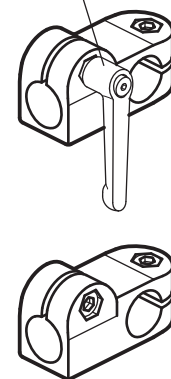
- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

Special executions on request (For sufficient quantities)

Different combinations of bores d_1/d_2 .



Adjustable clamping lever GN 911



Standard Elements	Main dimensions							Clamping kits for d_3	⚖ g
	d_1	d_2	d_3	k Clamping length	l_1	l_2	m		
GN 191-B10-B10-1-*	B10	B10	M6	25	61	34.5	39	GN 911-M6-22	97
GN 191-B12-B12-1-*	B12	B12	M6	25	61	34.5	39	GN 911-M6-22	93
GN 191-B14-B14-1-*	B14	B14	M6	25	61	34.5	39	GN 911-M6-22	89
GN 191-B15-B15-1-*	B15	B15	M6	25	61	34.5	39	GN 911-M6-22	86
GN 191-B16-B16-1-*	B16	B16	M6	25	61	34.5	39	GN 911-M6-22	84
GN 191-B18-B18-1-*	B18	B18	M6	25	61	34.5	39	GN 911-M6-22	81
GN 191-B10-B10-2-*	B10	B10	M6	25	61	34.5	39	GN 911-M6-22	97
GN 191-B12-B12-2-*	B12	B12	M6	25	61	34.5	39	GN 911-M6-22	93
GN 191-B14-B14-2-*	B14	B14	M6	25	61	34.5	39	GN 911-M6-22	89
GN 191-B15-B15-2-*	B15	B15	M6	25	61	34.5	39	GN 911-M6-22	86
GN 191-B16-B16-2-*	B16	B16	M6	25	61	34.5	39	GN 911-M6-22	84
GN 191-B18-B18-2-*	B18	B18	M6	25	61	34.5	39	GN 911-M6-22	81

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

T-angle connector clamps



•Material

AISI CF-8 stainless steel **NI**, matte polished.

•Clamping screws

Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

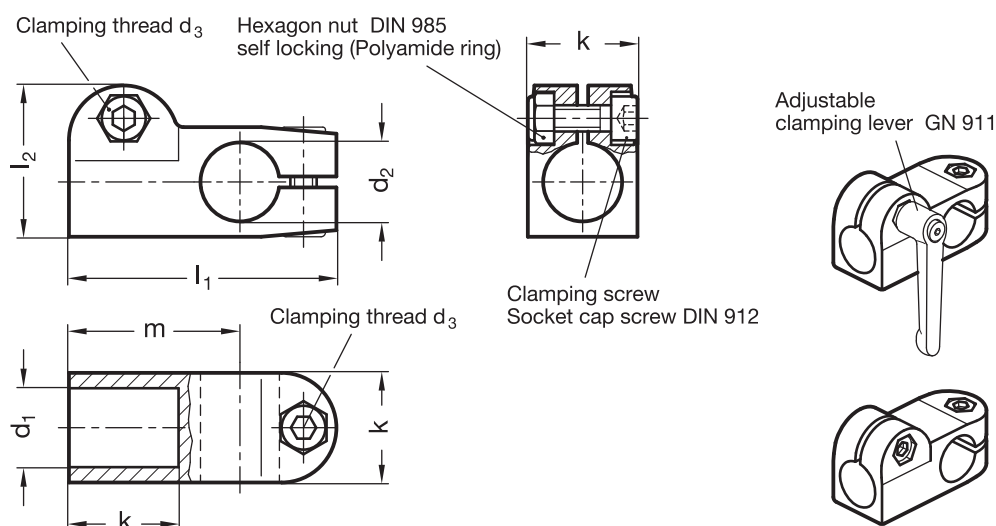
The clamping bores of the T-angle connector clamps GN 191-NI are machined and designed for tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

Special executions on request (For sufficient quantities)

Different combinations of bores d_1/d_2 .



Standard Elements	Main dimensions							Clamping kits for d_3	g
	d_1	d_2	d_3	k Clamping length	l_1	l_2	m		
GN 191-B12-B12-2-NI	B12	B12	M6	25	61	34.5	39	GN 911-M6-22	240
GN 191-B14-B14-2-NI	B14	B14	M6	25	61	34.5	39	GN 911-M6-22	220
GN 191-B16-B16-2-NI	B16	B16	M6	25	61	34.5	39	GN 911-M6-22	200
GN 191-B18-B18-2-NI	B18	B18	M6	25	61	34.5	39	GN 911-M6-22	175

GN 192

T-angle connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the T-angle connector clamps GN 192 are machined and designed for tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

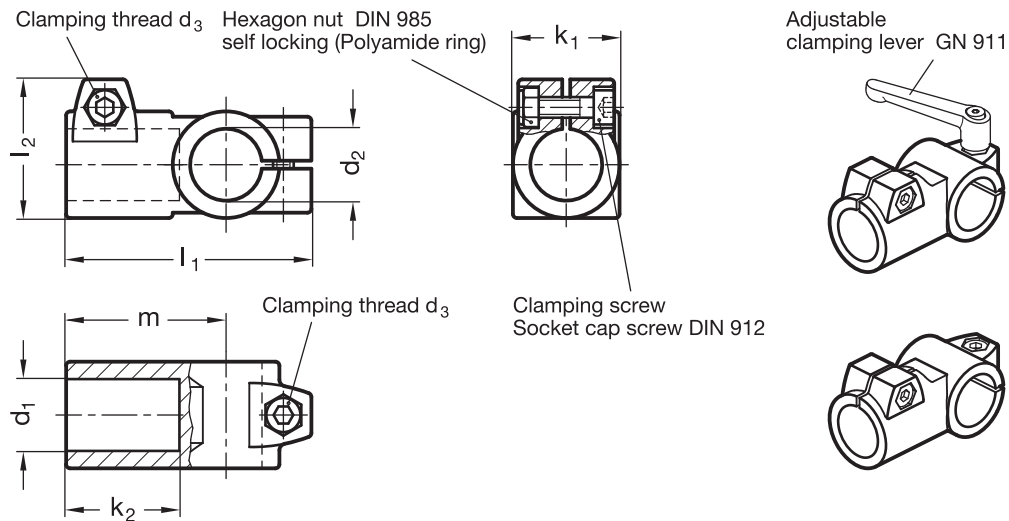
Special executions on request (For sufficient quantities)

Different combinations of bores d_1/d_2 .



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Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions								Clamping kits for d3	Δ
Description	d1	d2	k1	d3	k2	l1	l2	m	g	
GN 192-B20-B20-40-1-*	B20	B20	40	M8	42.5	92	52	60	GN 911-M8-32	267
GN 192-B25-B25-40-1-*	B25	B25	40	M8	42.5	92	52	60	GN 911-M8-32	231
GN 192-B30-B30-40-1-*	B30	B30	40	M8	42.5	92	52	60	GN 911-M8-32	186
GN 192-B30-B30-56-1-*	B30	B30	56	M10	62	129	69	88	GN 911-M10-40	661
GN 192-B32-B32-56-1-*	B32	B32	56	M10	62	129	69	88	GN 911-M10-40	619
GN 192-B35-B35-56-1-*	B35	B35	56	M10	62	129	69	88	GN 911-M10-40	570
GN 192-B40-B40-56-1-*	B40	B40	56	M10	62	129	69	88	GN 911-M10-40	481
GN 192-B40-B40-65-1-*	B40	B40	65	M10	75	148	77.5	103	GN 911-M10-55	922
GN 192-B42-B42-65-1-*	B42	B42	65	M10	75	148	77.5	103	GN 911-M10-55	889
GN 192-B45-B45-65-1-*	B45	B45	65	M10	75	148	77.5	103	GN 911-M10-55	874
GN 192-B48-B48-65-1-*	B48	B48	65	M10	75	148	77.5	103	GN 911-M10-55	732
GN 192-B50-B50-65-1-*	B50	B50	65	M10	75	148	77.5	103	GN 911-M10-55	676
GN 192-B50-B50-80-1-*	B50	B50	80	M10	80	177	92	125	GN 911-M10-55	1660
GN 192-B55-B55-80-1-*	B55	B55	80	M10	80	177	92	125	GN 911-M10-55	1460
GN 192-B60-B60-80-1-*	B60	B60	80	M10	80	177	92	125	GN 911-M10-55	1260
GN 192-B20-B20-40-2-*	B20	B20	40	M8	42.5	92	52	60	GN 911-M8-32	267
GN 192-B25-B25-40-2-*	B25	B25	40	M8	42.5	92	52	60	GN 911-M8-32	231
GN 192-B30-B30-40-2-*	B30	B30	40	M8	42.5	92	52	60	GN 911-M8-32	186
GN 192-B30-B30-56-2-*	B30	B30	56	M10	62	129	69	88	GN 911-M10-40	661
GN 192-B32-B32-56-2-*	B32	B32	56	M10	62	129	69	88	GN 911-M10-40	619
GN 192-B35-B35-56-2-*	B35	B35	56	M10	62	129	69	88	GN 911-M10-40	570
GN 192-B40-B40-56-2-*	B40	B40	56	M10	62	129	69	88	GN 911-M10-40	481
GN 192-B40-B40-65-2-*	B40	B40	65	M10	75	148	11.5	103	GN 911-M10-55	922
GN 192-B42-B42-65-2-*	B42	B42	65	M10	75	148	77.5	103	GN 911-M10-55	889
GN 192-B45-B45-65-2-*	B45	B45	65	M10	75	148	77.5	103	GN 911-M10-55	874
GN 192-B48-B48-65-2-*	B48	B48	65	M10	75	148	77.5	103	GN 911-M10-55	732
GN 192-B50-B50-65-2-*	B50	B50	65	M10	75	148	77.5	103	GN 911-M10-55	676
GN 192-B50-B50-80-2-*	B50	B50	80	M10	80	177	92	125	GN 911-M10-55	1660
GN 192-B55-B55-80-2-*	B55	B55	80	M10	80	177	92	125	GN 911-M10-55	1460
GN 192-B60-B60-80-2-*	B60	B60	80	M10	80	177	92	125	GN 911-M10-55	1260

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 193

T-angle connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

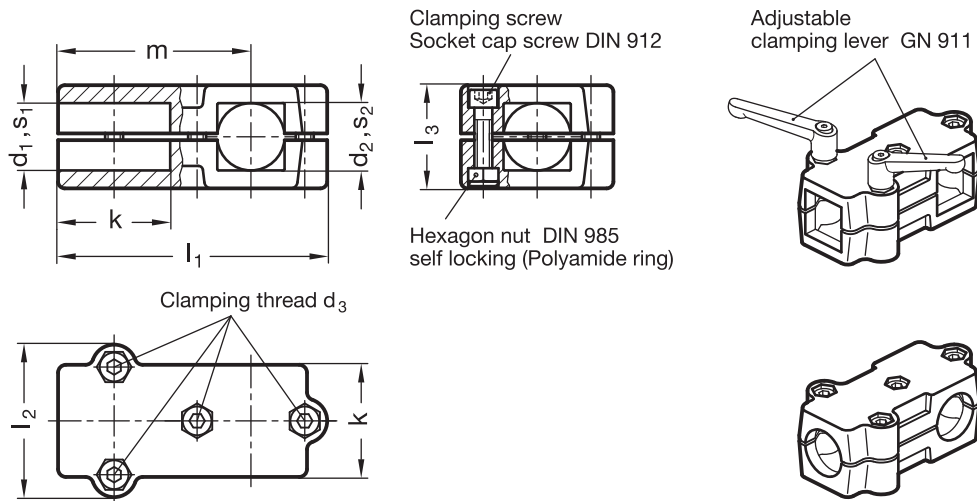
Features and applications

The clamping bores of the T-angle connector clamps GN 193 are not machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Within the same nominal size the T-angle connector clamp bores can be supplied with the bores d_1 and d_2 and square bores s_1 and s_2 i.e. in combination with d_1 and s_2 or s_1 and d_2 .


Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions										Clamping kits for d3	g
	Description	d1 Bore B	s1 Square V	d2 Bore B	s2 Square V	k Clamping length	d3	l1	l2	l3			m
GN 193-B20-B20-50-1-*	B20	-	B20	-	50	M8	120	68	46	85	GN 911-M8-40	446
GN 193-B25-B25-50-1-*	B25	-	B25	-	50	M8	120	68	46	85	GN 911-M8-40	436
GN 193-B30-B30-50-1-*	B30	-	B30	-	50	M8	120	68	46	85	GN 911-M8-40	422
GN 193-B30-B30-60-1-*	B30	-	B30	-	60	M8	141	79	59	101.5	GN 911-M8-55	742
GN 193-B32-B32-60-1-*	B32	-	B32	-	60	M8	141	79	59	101.5	GN 911-M8-55	730
GN 193-B35-B35-60-1-*	B35	-	B35	-	60	M8	141	79	59	101.5	GN 911-M8-55	696
GN 193-B40-B40-60-1-*	B40	-	B40	-	60	M8	141	79	59	101.5	GN 911-M8-55	684
GN 193-B40-B40-76-1-*	B40	-	B40	-	76	M10	176	98	70	126	GN 911-M10-63	1198
GN 193-B42-B42-76-1-*	B42	-	B42	-	76	M10	176	98	70	126	GN 911-M10-63	1188
GN 193-B45-B45-76-1-*	B45	-	B45	-	76	M10	176	98	70	126	GN 911-M10-63	1164
GN 193-B48-B48-76-1-*	B48	-	B48	-	76	M10	176	98	70	126	GN 911-M10-63	1134
GN 193-B50-B50-76-1-*	B50	-	B50	-	76	M10	176	98	70	126	GN 911-M10-63	1104
GN 193-B20-V20-50-1-*	B20	-	-	V20	50	M8	120	68	46	85	GN 911-M8-40	476
GN 193-B25-V25-50-1-*	B25	-	-	V25	50	M8	120	68	46	85	GN 911-M8-40	452
GN 193-B30-V30-50-1-*	B30	-	-	V30	50	M8	120	68	46	85	GN 911-M8-40	428
GN 193-B30-V30-60-1-*	B30	-	-	V30	60	M8	141	79	59	101.5	GN 911-M8-55	728
GN 193-B35-V35-60-1-*	B35	-	-	V35	60	M8	141	79	59	101.5	GN 911-M8-55	692
GN 193-B40-V40-60-1-*	B40	-	-	V40	60	M8	141	79	59	101.5	GN 911-M8-55	638
GN 193-B40-V40-76-1-*	B40	-	-	V40	76	M10	176	98	70	126	GN 911-M10-63	1118
GN 193-B45-V45-76-1-*	B45	-	-	V45	76	M10	176	98	70	126	GN 911-M10-63	1138
GN 193-B50-V50-76-1-*	B50	-	-	V50	76	M10	176	98	70	126	GN 911-M10-63	1086
GN 193-V20-V20-50-1-*	-	V20	-	V20	50	M8	120	68	46	85	GN 911-M8-40	430
GN 193-V25-V25-50-1-*	-	V25	-	V25	50	M8	120	68	46	85	GN 911-M8-40	420
GN 193-V30-V30-50-1-*	-	V30	-	V30	50	M8	120	68	46	85	GN 911-M8-40	410
GN 193-V30-V30-60-1-*	-	V30	-	V30	60	M8	141	79	59	101.5	GN 911-M8-55	728
GN 193-V35-V35-60-1-*	-	V35	-	V35	60	M8	141	79	59	101.5	GN 911-M8-55	692
GN 193-V40-V40-60-1-*	-	V40	-	V40	60	M8	141	79	59	101.5	GN 911-M8-55	638
GN 193-V40-V40-76-1-*	-	V40	-	V40	76	M10	176	98	70	126	GN 911-M10-63	1158
GN 193-V45-V45-76-1-*	-	V45	-	V45	76	M10	176	98	70	126	GN 911-M10-63	1104
GN 193-V50-V50-76-1-*	-	V50	-	V50	76	M10	176	98	70	126	GN 911-M10-63	1054
GN 193-V20-B20-50-1-*	-	V20	B20	-	50	M8	120	68	46	85	GN 911-M8-40	450
GN 193-V25-B25-50-1-*	-	V25	B25	-	50	M8	120	68	46	85	GN 911-M8-40	430
GN 193-V30-B30-50-1-*	-	V30	B30	-	50	M8	120	68	46	85	GN 911-M8-40	410
GN 193-V30-B30-60-1-*	-	V30	B30	-	60	M8	141	79	59	101.5	GN 911-M8-55	728
GN 193-V35-B35-60-1-*	-	V35	B35	-	60	M8	141	79	59	101.5	GN 911-M8-55	692
GN 193-V40-B40-60-1-*	-	V40	B40	-	60	M8	141	79	59	101.5	GN 911-M8-55	638
GN 193-V40-B40-76-1-*	-	V40	B40	-	76	M10	176	98	70	126	GN 911-M10-63	1150
GN 193-V45-B45-76-1-*	-	V45	B45	-	76	M10	176	98	70	126	GN 911-M10-63	1100
GN 193-V50-B50-76-1-*	-	V50	B50	-	76	M10	176	98	70	126	GN 911-M10-63	1070

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions										Clamping kits for d3	
Description	d1 Bore B	s1 Square V	d2 Bore B	s2 Square V	k Clamping length	d3	l1	l2	l3	m		g
GN 193-B20-B20-50-2-*	B20	-	B20	-	50	M8	120	68	46	85	GN 911-M8-40	446
GN 193-B25-B25-50-2-*	B25	-	B25	-	50	M8	120	68	46	85	GN 911-M8-40	436
GN 193-B30-B30-50-2-*	B30	-	B30	-	50	M8	120	68	46	85	GN 911-M8-40	422
GN 193-B30-B30-60-2-*	B30	-	B30	-	60	M8	141	79	59	101.5	GN 911-M8-55	742
GN 193-B32-B32-60-2-*	B32	-	B32	-	60	M8	141	79	59	101.5	GN 911-M8-55	730
GN 193-B35-B35-60-2-*	B35	-	B35	-	60	M8	141	79	59	101.5	GN 911-M8-55	696
GN 193-B40-B40-60-2-*	B40	-	B40	-	60	M8	141	79	59	101.5	GN 911-M8-55	684
GN 193-B40-B40-76-2-*	B40	-	B40	-	76	M10	176	98	70	126	GN 911-M10-63	1198
GN 193-B42-B42-76-2-*	B42	-	B42	-	76	M10	176	98	70	126	GN 911-M10-63	1188
GN 193-B45-B45-76-2-*	B45	-	B45	-	76	M10	176	98	70	126	GN 911-M10-63	1164
GN 193-B48-B48-76-2-*	B48	-	B48	-	76	M10	176	98	70	126	GN 911-M10-63	1134
GN 193-B50-B50-76-2-*	B50	-	B50	-	76	M10	176	98	70	126	GN 911-M10-63	1104
GN 193-B20-V20-50-2-*	B20	-	-	V20	50	M8	120	68	46	85	GN 911-M8-40	476
GN 193-B25-V25-50-2-*	B25	-	-	V25	50	M8	120	68	46	85	GN 911-M8-40	452
GN 193-B30-V30-50-2-*	B30	-	-	V30	50	M8	120	68	46	85	GN 911-M8-40	540
GN 193-B30-V30-60-2-*	B30	-	-	V30	60	M8	141	79	59	101.5	GN 911-M10-55	728
GN 193-B35-V35-60-2-*	B35	-	-	V35	60	M8	141	79	59	101.5	GN 911-M10-55	696
GN 193-B40-V40-60-2-*	B40	-	-	V40	60	M8	141	79	59	101.5	GN 911-M10-55	638
GN 193-B40-V40-76-2-*	B40	-	-	V40	76	M10	176	98	70	126	GN 911-M10-63	1118
GN 193-B45-V45-76-2-*	B45	-	-	V45	76	M10	176	98	70	126	GN 911-M10-63	1138
GN 193-B50-V50-76-2-*	B50	-	-	V50	76	M10	176	98	70	126	GN 911-M10-63	1086
GN 193-V20-V20-50-2-*	-	V20	-	V20	50	M8	120	68	46	85	GN 911-M8-40	430
GN 193-V25-V25-50-2-*	-	V25	-	V25	50	M8	120	68	46	85	GN 911-M8-40	420
GN 193-V30-V30-50-2-*	-	V30	-	V30	50	M8	120	68	46	85	GN 911-M8-40	410
GN 193-V30-V30-60-2-*	-	V30	-	V30	60	M8	141	79	59	101.5	GN 911-M8-55	728
GN 193-V35-V35-60-2-*	-	V35	-	V35	60	M8	141	79	59	101.5	GN 911-M8-55	692
GN 193-V40-V40-60-2-*	-	V40	-	V40	60	M8	141	79	59	101.5	GN 911-M8-55	638
GN 193-V40-V40-76-2-*	-	V40	-	V40	76	M10	176	98	70	126	GN 911-M10-63	1158
GN 193-V45-V45-76-2-*	-	V45	-	V45	76	M10	176	98	70	126	GN 911-M10-63	1104
GN 193-V50-V50-76-2-*	-	V50	-	V50	76	M10	176	98	70	126	GN 911-M10-63	1054
GN 193-V20-B20-50-2-*	-	V20	B20	-	50	M8	120	68	46	85	GN 911-M8-40	450
GN 193-V25-B25-50-2-*	-	V25	B25	-	50	M8	120	68	46	85	GN 911-M8-40	430
GN 193-V30-B30-50-2-*	-	V30	B30	-	50	M8	120	68	46	85	GN 911-M8-40	410
GN 193-V30-B30-60-2-*	-	V30	B30	-	60	M8	141	79	59	101.5	GN 911-M8-55	728
GN 193-V35-B35-60-2-*	-	V35	B35	-	60	M8	141	79	59	101.5	GN 911-M8-55	692
GN 193-V40-B40-60-2-*	-	V40	B40	-	60	M8	141	79	59	101.5	GN 911-M8-55	638
GN 193-V40-B40-76-2-*	-	V40	B40	-	76	M10	176	98	70	126	GN 911-M10-63	1150
GN 193-V45-B45-76-2-*	-	V45	B45	-	76	M10	176	98	70	126	GN 911-M10-63	1100
GN 193-V50-B50-76-2-*	-	V50	B50	-	76	M10	176	98	70	126	GN 911-M10-63	1070

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 194

T-angle connector clamps



•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

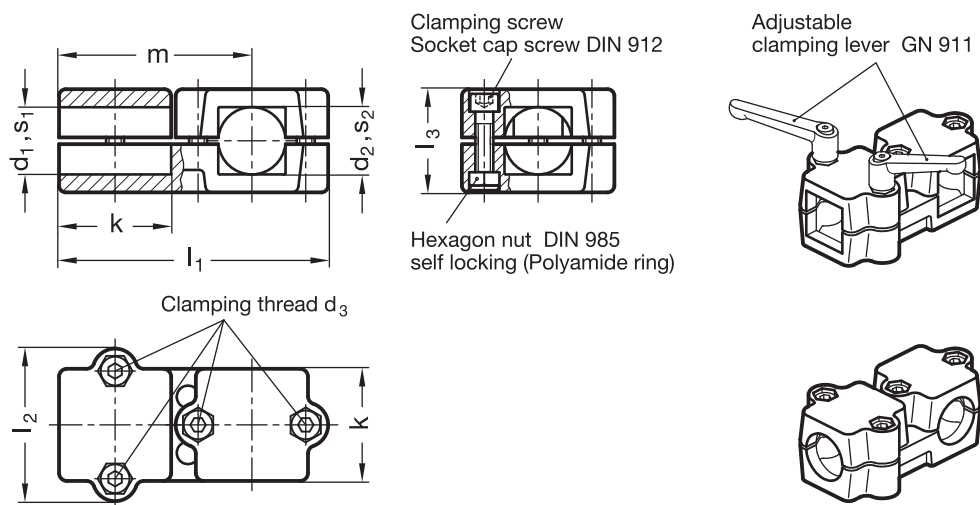
Features and applications

The clamping bores of the T-angle connector clamps GN 194 are not machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Within the same nominal size the T-angle connector clamp bores can be supplied with the bores d_1 and d_2 and square bores s_1 and s_2 i.e. in combination with d_1 and s_2 or s_1 and d_2 .


Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions										Clamping kits for d3	⚖
Description	d1	s1	d2	s2	k Clamping length	d3	l1	l2	l3	m		g
GN 194-B20-B20-50-1-*	B20	-	B20	-	50	M8	120	68	46	85	GN 911-M8-40	423
GN 194-B25-B25-50-1-*	B25	-	B25	-	50	M8	120	68	46	85	GN 911-M8-40	412
GN 194-B30-B30-50-1-*	B30	-	B30	-	50	M8	120	68	46	85	GN 911-M8-40	399
GN 194-B30-B30-60-1-*	B30	-	B30	-	60	M8	141	79	59	101.5	GN 911-M8-55	758
GN 194-B32-B32-60-1-*	B32	-	B32	-	60	M8	141	79	59	101.5	GN 911-M8-55	734
GN 194-B35-B35-60-1-*	B35	-	B35	-	60	M8	141	79	59	101.5	GN 911-M8-55	704
GN 194-B40-B40-60-1-*	B40	-	B40	-	60	M8	141	79	59	101.5	GN 911-M8-55	688
GN 194-B40-B40-76-1-*	B40	-	B40	-	76	M10	176	98	70	126	GN 911-M10-63	1123
GN 194-B42-B42-76-1-*	B42	-	B42	-	76	M10	176	98	70	126	GN 911-M10-63	1100
GN 194-B45-B45-76-1-*	B45	-	B45	-	76	M10	176	98	70	126	GN 911-M10-63	1080
GN 194-B48-B48-76-1-*	B48	-	B48	-	76	M10	176	98	70	126	GN 911-M10-63	1055
GN 194-B50-B50-76-1-*	B50	-	B50	-	76	M10	176	98	70	126	GN 911-M10-63	1028
GN 194-B20-V20-50-1-*	B20	-	-	V20	50	M8	120	68	46	85	GN 911-M8-40	423
GN 194-B25-V25-50-1-*	B25	-	-	V25	50	M8	120	68	46	85	GN 911-M8-40	395
GN 194-B30-V30-50-1-*	B30	-	-	V30	50	M8	120	68	46	85	GN 911-M8-40	342
GN 194-B30-V30-60-1-*	B30	-	-	V30	60	M8	141	79	59	101.5	GN 911-M8-55	746
GN 194-B35-V35-60-1-*	B35	-	-	V35	60	M8	141	79	59	101.5	GN 911-M8-55	713
GN 194-B40-V40-60-1-*	B40	-	-	V40	60	M8	141	79	59	101.5	GN 911-M8-55	700
GN 194-B40-V40-76-1-*	B40	-	-	V40	76	M10	176	98	70	126	GN 911-M10-63	1100
GN 194-B45-V45-76-1-*	B45	-	-	V45	76	M10	176	98	70	126	GN 911-M10-63	1065
GN 194-B50-V50-76-1-*	B50	-	-	V50	76	M10	176	98	70	126	GN 911-M10-63	1015
GN 194-V20-V20-50-1-*	-	V20	-	V20	50	M8	120	68	46	85	GN 911-M8-40	419
GN 194-V25-V25-50-1-*	-	V25	-	V25	50	M8	120	68	46	85	GN 911-M8-40	398
GN 194-V30-V30-50-1-*	-	V30	-	V30	50	M8	120	68	46	85	GN 911-M8-40	376
GN 194-V30-V30-60-1-*	-	V30	-	V30	60	M8	141	79	59	101.5	GN 911-M8-55	734
GN 194-V35-V35-60-1-*	-	V35	-	V35	60	M8	141	79	59	101.5	GN 911-M8-55	692
GN 194-V40-V40-60-1-*	-	V40	-	V40	60	M8	141	79	59	101.5	GN 911-M8-55	628
GN 194-V40-V40-76-1-*	-	V40	-	V40	76	M10	176	98	70	126	GN 911-M10-63	1079
GN 194-V45-V45-76-1-*	-	V45	-	V45	76	M10	176	98	70	126	GN 911-M10-63	1036
GN 194-V50-V50-76-1-*	-	V50	-	V50	76	M10	176	98	70	126	GN 911-M10-63	975
GN 194-V20-B20-50-1-*	-	V20	B20	-	50	M8	120	68	46	85	GN 911-M8-40	436
GN 194-V25-B25-50-1-*	-	V25	B25	-	50	M8	120	68	46	85	GN 911-M8-40	417
GN 194-V30-B30-50-1-*	-	V30	B30	-	50	M8	120	68	46	85	GN 911-M8-40	397
GN 194-V30-B30-60-1-*	-	V30	B30	-	60	M8	141	79	59	101.5	GN 911-M8-55	746
GN 194-V35-B35-60-1-*	-	V35	B35	-	60	M8	141	79	59	101.5	GN 911-M8-55	713
GN 194-V40-B40-60-1-*	-	V40	B40	-	60	M8	141	79	59	101.5	GN 911-M8-55	658
GN 194-V40-B40-76-1-*	-	V40	B40	-	76	M10	176	98	70	126	GN 911-M10-63	1100
GN 194-V45-B45-76-1-*	-	V45	B45	-	76	M10	176	98	70	126	GN 911-M10-63	1060
GN 194-V50-B50-76-1-*	-	V50	B50	-	76	M10	176	98	70	126	GN 911-M10-63	1005

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions										Clamping kits for d3	
Description	d1	s1	d2	s2	k Clamping length	d3	l1	l2	l3	m		g
GN 194-B20-B20-50-2-*	B20	-	B20	-	50	M8	120	68	46	85	GN 911-M8-40	423
GN 194-B25-B25-50-2-*	B25	-	B25	-	50	M8	120	68	46	85	GN 911-M8-40	412
GN 194-B30-B30-50-2-*	B30	-	B30	-	50	M8	120	68	46	85	GN 911-M8-40	399
GN 194-B30-B30-60-2-*	B30	-	B30	-	60	M8	141	79	59	101.5	GN 911-M8-55	758
GN 194-B32-B32-60-2-*	B32	-	B32	-	60	M8	141	79	59	101.5	GN 911-M8-55	734
GN 194-B35-B35-60-2-*	B35	-	B35	-	60	M8	141	79	59	101.5	GN 911-M8-55	704
GN 194-B40-B40-60-2-*	B40	-	B40	-	60	M8	141	79	59	101.5	GN 911-M8-55	688
GN 194-B40-B40-76-2-*	B40	-	B40	-	76	M10	176	98	70	126	GN 911-M10-63	1123
GN 194-B42-B42-76-2-*	B42	-	B42	-	76	M10	176	98	70	126	GN 911-M10-63	1100
GN 194-B45-B45-76-2-*	B45	-	B45	-	76	M10	176	98	70	126	GN 911-M10-63	1080
GN 194-B48-B48-76-2-*	B48	-	B48	-	76	M10	176	98	70	126	GN 911-M10-63	1050
GN 194-B50-B50-76-2-*	B50	-	B50	-	76	M10	176	98	70	126	GN 911-M10-63	1028
GN 194-B20-V20-50-2-*	B20	-	-	V20	50	M8	120	68	46	85	GN 911-M8-40	423
GN 194-B25-V25-50-2-*	B25	-	-	V25	50	M8	120	68	46	85	GN 911-M8-40	395
GN 194-B30-V30-50-2-*	B30	-	-	V30	50	M8	120	68	46	85	GN 911-M8-40	342
GN 194-B30-V30-60-2-*	B30	-	-	V30	60	M8	141	79	59	101.5	GN 911-M10-55	746
GN 194-B35-V35-60-2-*	B35	-	-	V35	60	M8	141	79	59	101.5	GN 911-M10-55	713
GN 194-B40-V40-60-2-*	B40	-	-	V40	60	M8	141	79	59	101.5	GN 911-M10-55	700
GN 194-B40-V40-76-2-*	B40	-	-	V40	76	M10	176	98	70	126	GN 911-M10-63	1100
GN 194-B45-V45-76-2-*	B45	-	-	V45	76	M10	176	98	70	126	GN 911-M10-63	1065
GN 194-B50-V50-76-2-*	B50	-	-	V50	76	M10	176	98	70	126	GN 911-M10-63	1015
GN 194-V20-V20-50-2-*	-	V20	-	V20	50	M8	120	68	46	85	GN 911-M8-40	419
GN 194-V25-V25-50-2-*	-	V25	-	V25	50	M8	120	68	46	85	GN 911-M8-40	398
GN 194-V30-V30-50-2-*	-	V30	-	V30	50	M8	120	68	46	85	GN 911-M8-40	376
GN 194-V30-V30-60-2-*	-	V30	-	V30	60	M8	141	79	59	101.5	GN 911-M8-55	734
GN 194-V35-V35-60-2-*	-	V35	-	V35	60	M8	141	79	59	101.5	GN 911-M8-55	692
GN 194-V40-V40-60-2-*	-	V40	-	V40	60	M8	141	79	59	101.5	GN 911-M8-55	628
GN 194-V40-V40-76-2-*	-	V40	-	V40	76	M10	176	98	70	126	GN 911-M10-63	1079
GN 194-V45-V45-76-2-*	-	V45	-	V45	76	M10	176	98	70	126	GN 911-M10-63	1036
GN 194-V50-V50-76-2-*	-	V50	-	V50	76	M10	176	98	70	126	GN 911-M10-63	975
GN 194-V20-B20-50-2-*	-	V20	B20	-	50	M8	120	68	46	85	GN 911-M8-40	436
GN 194-V25-B25-50-2-*	-	V25	B25	-	50	M8	120	68	46	85	GN 911-M8-40	417
GN 194-V30-B30-50-2-*	-	V30	B30	-	50	M8	120	68	46	85	GN 911-M8-40	397
GN 194-V30-B30-60-2-*	-	V30	B30	-	60	M8	141	79	59	101.5	GN 911-M8-55	746
GN 194-V35-B35-60-2-*	-	V35	B35	-	60	M8	141	79	59	101.5	GN 911-M8-55	713
GN 194-V40-B40-60-2-*	-	V40	B40	-	60	M8	141	79	59	101.5	GN 911-M8-55	658
GN 194-V40-B40-76-2-*	-	V40	B40	-	76	M10	176	98	70	126	GN 911-M10-63	1100
GN 194-V45-B45-76-2-*	-	V45	B45	-	76	M10	176	98	70	126	GN 911-M10-63	1060
GN 194-V50-B50-76-2-*	-	V50	B50	-	76	M10	176	98	70	126	GN 911-M10-63	1005

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 195

T-angle connector clamps

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with six clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with six AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the T-angle connector clamps GN 195 are not machined and designed for tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

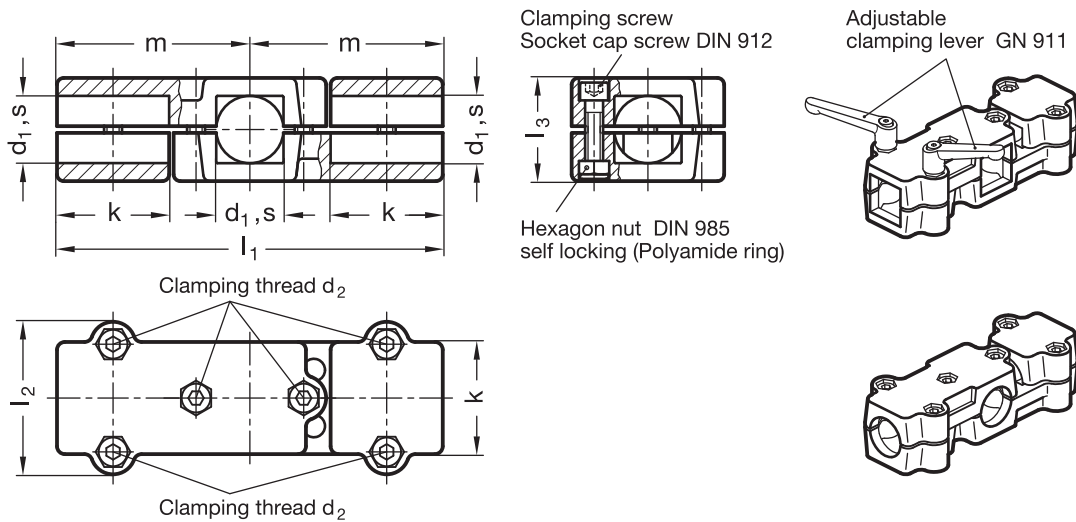
Accessories


- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



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Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions								Clamping kits for d ₂	
Description	d ₁	s	k Clamping length	d ₂	l ₁	l ₂	l ₃	m		g
GN 195-B20-50-1-*	B20	-	50	M8	172	68	46	86	GN 911-M8-40	600
GN 195-B25-50-1-*	B25	-	50	M8	172	68	46	86	GN 911-M8-40	585
GN 195-B30-50-1-*	B30	-	50	M8	172	68	46	86	GN 911-M8-40	565
GN 195-B30-60-1-*	B30	-	60	M8	203	79	59	101.5	GN 911-M8-55	1128
GN 195-B32-60-1-*	B32	-	60	M8	203	79	59	101.5	GN 911-M8-55	1100
GN 195-B35-60-1-*	B35	-	60	M8	203	79	59	101.5	GN 911-M8-55	1038
GN 195-B40-60-1-*	B40	-	60	M8	203	79	59	101.5	GN 911-M8-55	950
GN 195-B40-76-1-*	B40	-	76	M10	254	98	70	127	GN 911-M10-63	1612
GN 195-B42-76-1-*	B42	-	76	M10	254	98	70	127	GN 911-M10-63	1586
GN 195-B45-76-1-*	B45	-	76	M10	254	98	70	127	GN 911-M10-63	1552
GN 195-B48-76-1-*	B48	-	76	M10	254	98	70	127	GN 911-M10-63	1510
GN 195-B50-76-1-*	B50	-	76	M10	254	98	70	127	GN 911-M10-63	1470
GN 195-V20-50-1-*	-	V20	50	M8	172	68	46	86	GN 911-M8-40	600
GN 195-V25-50-1-*	-	V25	50	M8	172	68	46	86	GN 911-M8-40	565
GN 195-V30-50-1-*	-	V30	50	M8	172	68	46	86	GN 911-M8-40	530
GN 195-V30-60-1-*	-	V30	60	M8	203	79	59	101.5	GN 911-M8-55	1098
GN 195-V35-60-1-*	-	V35	60	M8	203	79	59	101.5	GN 911-M8-55	1038
GN 195-V40-60-1-*	-	V40	60	M8	203	79	59	101.5	GN 911-M8-55	950
GN 195-V40-76-1-*	-	V40	76	M10	254	98	70	127	GN 911-M10-63	1550
GN 195-V45-76-1-*	-	V45	76	M10	254	98	70	127	GN 911-M10-63	1480
GN 195-V50-76-1-*	-	V50	76	M10	254	98	70	127	GN 911-M10-63	1390
GN 195-B20-50-2-*	B20	-	50	M8	172	68	46	86	GN 911-M8-40	600
GN 195-B25-50-2-*	B25	-	50	M8	172	68	46	86	GN 911-M8-40	585
GN 195-B30-50-2-*	B30	-	50	M8	172	68	46	86	GN 911-M8-40	565
GN 195-B30-60-2-*	B30	-	60	M8	203	79	59	101.5	GN 911-M8-55	1128
GN 195-B32-60-2-*	B32	-	60	M8	203	79	59	101.5	GN 911-M8-55	1100
GN 195-B35-60-2-*	B35	-	60	M8	203	79	59	101.5	GN 911-M8-55	1038
GN 195-B40-60-2-*	B40	-	60	M8	203	79	59	101.5	GN 911-M8-55	950
GN 195-B40-76-2-*	B40	-	76	M10	254	98	70	127	GN 911-M10-63	565
GN 195-B42-76-2-*	B42	-	76	M10	254	98	70	127	GN 911-M10-63	1586
GN 195-B45-76-2-*	B45	-	76	M10	254	98	70	127	GN 911-M10-63	1550
GN 195-B48-76-2-*	B48	-	76	M10	254	98	70	127	GN 911-M10-63	1510
GN 195-B50-76-2-*	B50	-	76	M10	254	98	70	127	GN 911-M10-63	1470
GN 195-V20-50-2-*	-	V20	50	M8	172	68	46	86	GN 911-M8-40	600
GN 195-V25-50-2-*	-	V25	50	M8	172	68	46	86	GN 911-M8-40	565
GN 195-V30-50-2-*	-	V30	50	M8	172	68	46	86	GN 911-M8-40	530
GN 195-V30-60-2-*	-	V30	60	M8	203	79	59	101.5	GN 911-M8-55	1098
GN 195-V35-60-2-*	-	V35	60	M8	203	79	59	101.5	GN 911-M8-55	1038
GN 195-V40-60-2-*	-	V40	60	M8	203	79	59	101.5	GN 911-M8-55	950
GN 195-V40-76-2-*	-	V40	76	M10	254	98	70	127	GN 911-M10-63	1550
GN 195-V45-76-2-*	-	V45	76	M10	254	98	70	127	GN 911-M10-63	1480
GN 195-V50-76-2-*	-	V50	76	M10	254	98	70	127	GN 911-M10-63	1390

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 231

Tube supports

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the tube supports GN 231 are machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

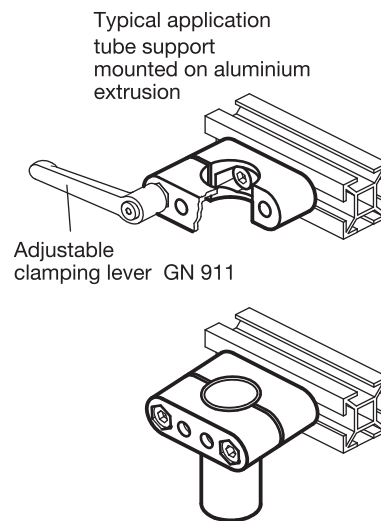
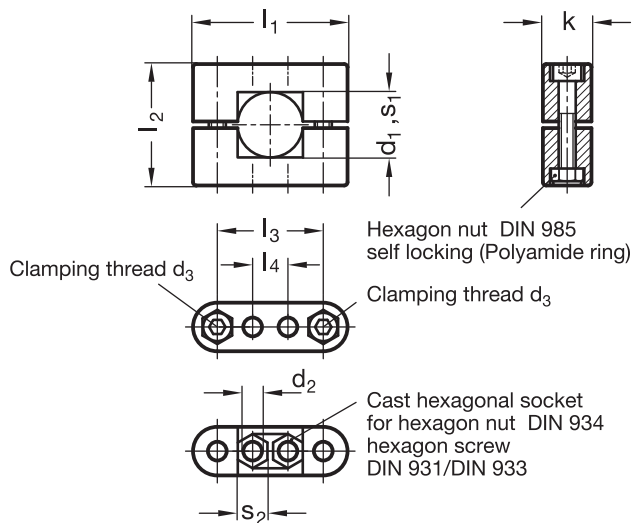
Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



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Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions										Clamping kits for d3	\triangle
Description	d1	s1	d2	d3	k Clamping length	l1	l2	l3	l4	s2		g
GN 231-B20-1-*	B20	-	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	170
GN 231-B25-1-*	B25	-	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	165
GN 231-B30-1-*	B30	-	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	160
GN 231-B40-1-*	B40	-	11	M10	27	100	80	73	30	17	GN 911-M10-70	385
GN 231-B42-1-*	B42	-	11	M10	27	100	80	73	30	17	GN 911-M10-70	380
GN 231-B45-1-*	B45	-	11	M10	27	100	80	73	30	17	GN 911-M10-70	375
GN 231-B48-1-*	B48	-	11	M10	27	100	80	73	30	17	GN 911-M10-70	370
GN 231-B50-1-*	B50	-	11	M10	27	100	80	73	30	17	GN 911-M10-70	360
GN 231-B55-1-*	B55	-	11	M10	27	100	90	73	30	17	GN 911-M10-80	400
GN 231-B60-1-*	B60	-	11	M10	27	100	90	73	30	17	GN 911-M10-80	385
GN 231-V20-1-*	-	V20	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	170
GN 231-V25-1-*	-	V25	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	165
GN 231-V30-1-*	-	V30	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	155
GN 231-V40-1-*	-	V40	11	M10	27	100	80	73	30	17	GN 911-M10-70	380
GN 231-V45-1-*	-	V45	11	M10	27	100	80	73	30	17	GN 911-M10-70	365
GN 231-V50-1-*	-	V50	11	M10	27	100	80	73	30	17	GN 911-M10-70	350
GN 231-V55-1-*	-	V55	11	M10	27	100	90	73	30	17	GN 911-M10-80	358
GN 231-V60-1-*	-	V60	11	M10	27	100	90	73	30	17	GN 911-M10-80	342
GN 231-B20-2-*	B20	-	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	170
GN 231-B25-2-*	B25	-	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	166
GN 231-B30-2-*	B30	-	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	160
GN 231-B40-2-*	B40	-	11	M10	27	100	80	73	30	17	GN 911-M10-70	384
GN 231-B42-2-*	B42	-	11	M10	27	100	80	73	30	17	GN 911-M10-70	375
GN 231-B45-2-*	B45	-	11	M10	27	100	80	73	30	17	GN 911-M10-70	375
GN 231-B48-2-*	B48	-	11	M10	27	100	80	73	30	17	GN 911-M10-70	362
GN 231-B50-2-*	B50	-	11	M10	27	100	80	73	30	17	GN 911-M10-70	408
GN 231-B55-2-*	B55	-	11	M10	27	100	90	73	30	17	GN 911-M10-80	400
GN 231-B60-2-*	B60	-	11	M10	27	100	90	73	30	17	GN 911-M10-80	385
GN 231-V20-2-*	-	V20	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	170
GN 231-V25-2-*	-	V25	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	170
GN 231-V30-2-*	-	V30	8.5	M8	22	70	55	48	16	13	GN 911-M8-50	156
GN 231-V40-2-*	-	V40	11	M10	27	100	80	73	30	17	GN 911-M10-70	378
GN 231-V45-2-*	-	V45	11	M10	27	100	80	73	30	17	GN 911-M10-70	364
GN 231-V50-2-*	-	V50	11	M10	27	100	80	73	30	17	GN 911-M10-70	348
GN 231-V55-2-*	-	V55	11	M10	27	100	90	73	30	17	GN 911-M10-80	358
GN 231-V60-2-*	-	V60	11	M10	27	100	90	73	30	17	GN 911-M10-80	342

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 241

Tube connectors

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

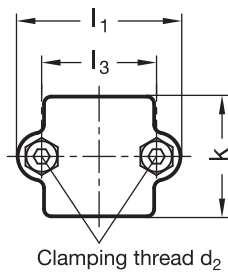
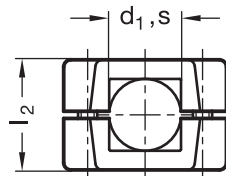
The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

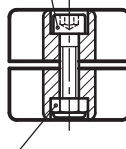
The clamping bores of the tube connectors GN 241 are not machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

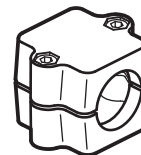
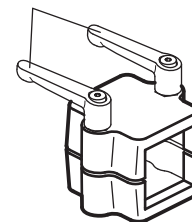



Clamping screw
Socket cap screw DIN 912



Hexagon nut DIN 985
self locking (Polyamide ring)

Adjustable
clamping lever GN 911



Standard Elements	Main dimensions							Clamping kits for d ₂	
Description	d ₁	s	k Clamping length	d ₂	l ₁	l ₂	l ₃		g
GN 241-B20-50-1-*	B20	-	50	M8	68	46	48	GN 911-M8-40	200
GN 241-B25-50-1-*	B25	-	50	M8	68	46	48	GN 911-M8-40	195
GN 241-B30-50-1-*	B30	-	50	M8	68	46	48	GN 911-M8-40	190
GN 241-B30-60-1-*	B30	-	60	M8	79	59	58	GN 911-M8-55	190
GN 241-B32-60-1-*	B32	-	60	M8	79	59	58	GN 911-M8-55	190
GN 241-B35-60-1-*	B35	-	60	M8	79	59	58	GN 911-M8-55	190
GN 241-B40-60-1-*	B40	-	60	M8	79	59	58	GN 911-M8-55	190
GN 241-B40-76-1-*	B40	-	76	M10	98	70	73	GN 911-M10-63	525
GN 241-B42-76-1-*	B42	-	76	M10	98	70	73	GN 911-M10-63	505
GN 241-B45-76-1-*	B45	-	76	M10	98	70	73	GN 911-M10-63	500
GN 241-B48-76-1-*	B48	-	76	M10	98	70	73	GN 911-M10-63	490
GN 241-B50-76-1-*	B50	-	76	M10	98	70	73	GN 911-M10-63	475
GN 241-V20-50-1-*	-	V20	50	M8	68	46	48	GN 911-M8-40	195
GN 241-V25-50-1-*	-	V25	50	M8	68	46	48	GN 911-M8-40	190
GN 241-V30-50-1-*	-	V30	50	M8	68	46	48	GN 911-M8-40	180
GN 241-V30-60-1-*	-	V30	60	M8	79	59	58	GN 911-M8-55	180
GN 241-V35-60-1-*	-	V35	60	M8	79	59	58	GN 911-M8-55	180
GN 241-V40-60-1-*	-	V40	60	M8	79	59	58	GN 911-M8-55	180
GN 241-V40-76-1-*	-	V40	76	M10	98	70	73	GN 911-M10-63	450
GN 241-V45-76-1-*	-	V45	76	M10	98	70	73	GN 911-M10-63	450
GN 241-V50-76-1-*	-	V50	76	M10	98	70	73	GN 911-M10-63	450
GN 241-B20-50-2-*	B20	-	50	M8	68	46	48	GN 911-M8-40	200
GN 241-B25-50-2-*	B25	-	50	M8	68	46	48	GN 911-M8-40	195
GN 241-B30-50-2-*	B30	-	50	M8	68	46	48	GN 911-M8-40	190
GN 241-B30-60-2-*	B30	-	60	M8	79	59	58	GN 911-M8-55	190
GN 241-B32-60-2-*	B32	-	60	M8	79	59	58	GN 911-M8-55	190
GN 241-B35-60-2-*	B35	-	60	M8	79	59	58	GN 911-M8-55	190
GN 241-B40-60-2-*	B40	-	60	M8	79	59	58	GN 911-M8-55	190
GN 241-B40-76-2-*	B40	-	76	M10	98	70	73	GN 911-M10-63	525
GN 241-B42-76-2-*	B42	-	76	M10	98	70	73	GN 911-M10-63	505
GN 241-B45-76-2-*	B45	-	76	M10	98	70	73	GN 911-M10-63	500
GN 241-B48-76-2-*	B48	-	76	M10	98	70	73	GN 911-M10-63	490
GN 241-B50-76-2-*	B50	-	76	M10	98	70	73	GN 911-M10-63	475
GN 241-V20-50-2-*	-	V20	50	M8	68	46	48	GN 911-M8-40	195
GN 241-V25-50-2-*	-	V25	50	M8	68	46	48	GN 911-M8-40	190
GN 241-V30-50-2-*	-	V30	50	M8	68	46	48	GN 911-M8-40	180
GN 241-V30-60-2-*	-	V30	60	M8	79	59	58	GN 911-M8-55	180
GN 241-V35-60-2-*	-	V35	60	M8	79	59	58	GN 911-M8-55	180
GN 241-V40-60-2-*	-	V40	60	M8	79	59	58	GN 911-M8-55	180
GN 241-V40-76-2-*	-	V40	76	M10	98	70	73	GN 911-M10-63	450
GN 241-V45-76-2-*	-	V45	76	M10	98	70	73	GN 911-M10-63	450
GN 241-V50-76-2-*	-	V50	76	M10	98	70	73	GN 911-M10-63	450

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 242

Tube connectors

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The clamping bores of the tube connectors GN 242 are not machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

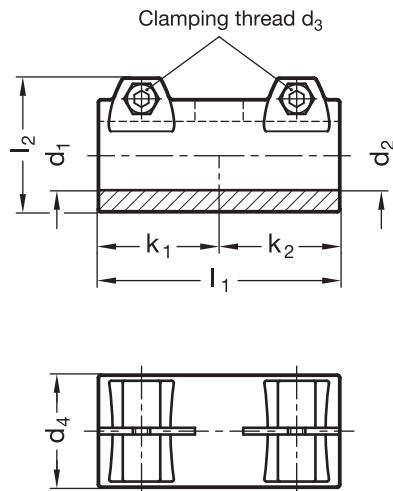
Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

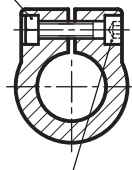


60

Tube clamp connectors, Linear actuators

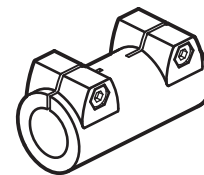
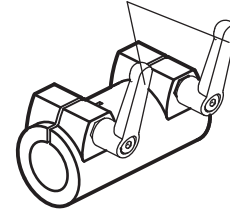



Hexagon nut DIN 985 self locking (Polyamide ring)



Clamping screw Socket cap screw DIN 912

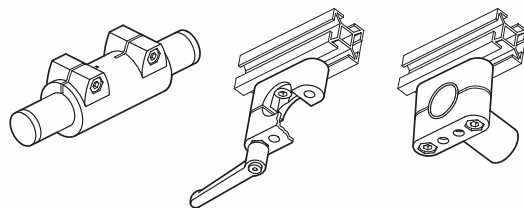
Adjustable clamping lever GN 911



Standard Elements	Main dimensions								Clamping kits for d ₃	
Description	d ₁	d ₂	d ₃	d ₄	k ₁	k ₂	l ₁	l ₂		g
GN 242-B20-B20-1-SW	B20	B20	M8	40	45	45	90	52	GN 911-M8-32	240
GN 242-B20-B20-1-BL	B20	B20	M8	40	45	45	90	52	GN 911-M8-32	240
GN 242-B25-B25-1-SW	B25	B25	M8	40	45	45	90	52	GN 911-M8-32	204
GN 242-B25-B25-1-BL	B25	B25	M8	40	45	45	90	52	GN 911-M8-32	204
GN 242-B30-B30-1-SW	B30	B30	M8	40	45	45	90	52	GN 911-M8-32	156
GN 242-B30-B30-1-BL	B30	B30	M8	40	45	45	90	52	GN 911-M8-32	196
GN 242-B40-B40-1-SW	B40	B40	M10	65	70	70	140	77.5	GN 911-M10-50	922
GN 242-B40-B40-1-BL	B40	B40	M10	65	70	70	140	77.5	GN 911-M10-50	940
GN 242-B42-B42-1-SW	B42	B42	M10	65	70	70	140	77.5	GN 911-M10-50	865
GN 242-B42-B42-1-BL	B42	B42	M10	65	70	70	140	77.5	GN 911-M10-50	865
GN 242-B45-B45-1-SW	B45	B45	M10	65	70	70	140	77.5	GN 911-M10-50	812
GN 242-B45-B45-1-BL	B45	B45	M10	65	70	70	140	77.5	GN 911-M10-50	812
GN 242-B48-B48-1-SW	B48	B48	M10	65	70	70	140	77.5	GN 911-M10-50	748
GN 242-B48-B48-1-BL	B48	B48	M10	65	70	70	140	77.5	GN 911-M10-50	748
GN 242-B50-B50-1-SW	B50	B50	M10	65	70	70	140	77.5	GN 911-M10-50	682
GN 242-B50-B50-1-BL	B50	B50	M10	65	70	70	140	77.5	GN 911-M10-50	682
GN 242-B20-B20-2-SW	B20	B20	M8	40	45	45	90	52	GN 911-M8-32	240
GN 242-B20-B20-2-BL	B20	B20	M8	40	45	45	90	52	GN 911-M8-32	240
GN 242-B25-B25-2-SW	B25	B25	M8	40	45	45	90	52	GN 911-M8-32	204
GN 242-B25-B25-2-BL	B25	B25	M8	40	45	45	90	52	GN 911-M8-32	204
GN 242-B30-B30-2-SW	B30	B30	M8	40	45	45	90	52	GN 911-M8-32	156
GN 242-B30-B30-2-BL	B30	B30	M8	40	45	45	90	52	GN 911-M8-32	156
GN 242-B40-B40-2-SW	B40	B40	M10	65	70	70	140	77.5	GN 911-M10-50	922
GN 242-B40-B40-2-BL	B40	B40	M10	65	70	70	140	77.5	GN 911-M10-50	922
GN 242-B42-B42-2-SW	B42	B42	M10	65	70	70	140	77.5	GN 911-M10-50	865
GN 242-B42-B42-2-BL	B42	B42	M10	65	70	70	140	77.5	GN 911-M10-50	865
GN 242-B45-B45-2-SW	B45	B45	M10	65	70	70	140	77.5	GN 911-M10-50	812
GN 242-B45-B45-2-BL	B45	B45	M10	65	70	70	140	77.5	GN 911-M10-50	812
GN 242-B48-B48-2-SW	B48	B48	M10	65	70	70	140	77.5	GN 911-M10-50	748
GN 242-B48-B48-2-BL	B48	B48	M10	65	70	70	140	77.5	GN 911-M10-50	748
GN 242-B50-B50-2-SW	B50	B50	M10	65	70	70	140	77.5	GN 911-M10-50	682
GN 242-B50-B50-2-BL	B50	B50	M10	65	70	70	140	77.5	GN 911-M10-50	682



Tube supports GN 231 (see page 56)
Tube connectors GN 241 (see page 58)
Tube connectors GN 242 (see page 60)



GN 271

Swivel clamp connector bases



• **Material**

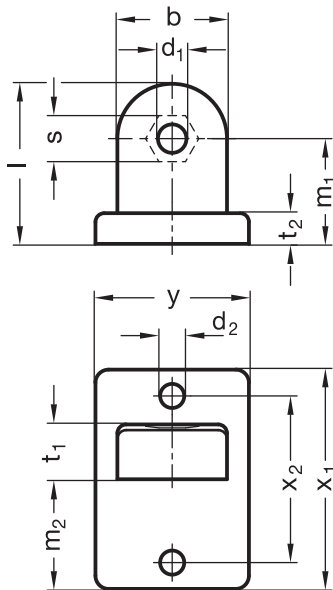
Aluminium.

• **Finish**

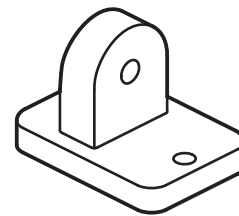
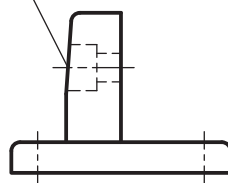
- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

Features and applications

Swivel clamp connector bases GN 271 can be assembled with the swivel clamp connectors GN 273, GN 275 or GN 277 to create swivel clamp connector joints.



Cast hexagonal socket for hexagon nut d_3



Standard Elements	Main dimensions													Δ
Description	b Swivel width	d1	d2	d3	l	m1	m2	t1	t2	s	x1	x2	y	g
GN 271-25-SW	25	6.5	5.5	M6	36.5	24	25	12.5	7	10	50	38	35	44
GN 271-25-BL	25	6.5	5.5	M6	36.5	24	25	12.5	7	10	50	38	35	44

GN 272

Swivel clamp connector bases

•Material

Aluminium.

•Finish

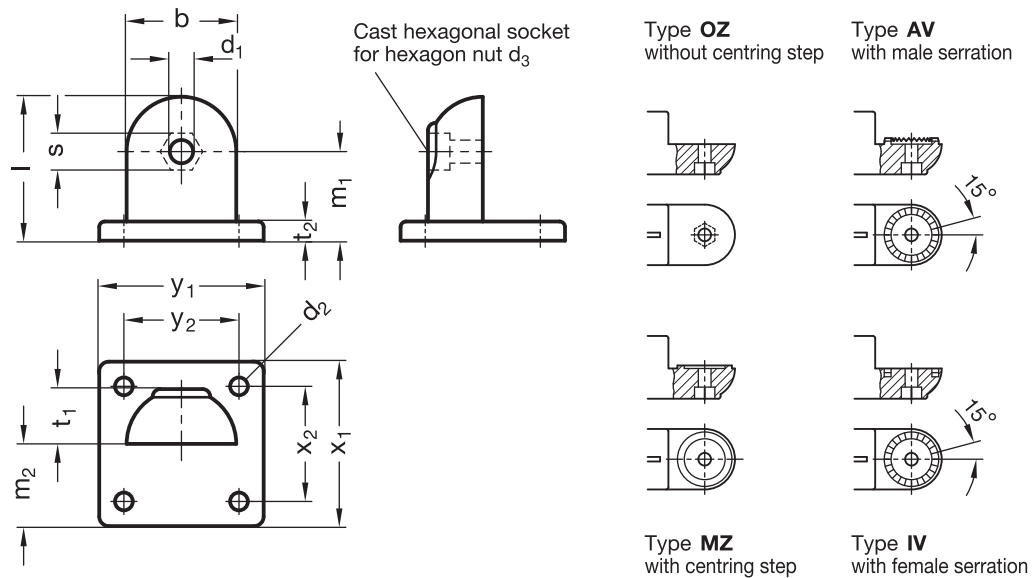
- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Types

- Type **OZ**: without centring step.
- Type **MZ**: with centring step.
- Type **AV**: with male serration.
- Type **IV**: with female serration.

Features and applications

Swivel clamp connector bases GN 272 can be assembled with the swivel clamp connectors GN 274, GN 276 or GN 278 to create swivel clamp connector joints.



Standard Elements	Main dimensions														Δ
Description	b Swivel width	d1	d2	d3	l	m1	m2	t1	t2	s	x1	x2	y1	y2	g
GN 272-40-OZ-SW	40	8.5	6.5	M8	52.5	32.5	30	20	7	13	60	42	60	42	120
GN 272-40-OZ-BL	40	8.5	6.5	M8	52.5	32.5	30	20	7	13	60	42	60	42	120
GN 272-40-MZ-SW	40	8.5	6.5	M8	52.5	32.5	30	20	7	13	60	42	60	42	120
GN 272-40-MZ-BL	40	8.5	6.5	M8	52.5	32.5	30	20	7	13	60	42	60	42	120
GN 272-40-AV-SW	40	8.5	6.5	M8	52.5	32.5	30	20	7	13	60	42	60	42	120
GN 272-40-AV-BL	40	8.5	6.5	M8	52.5	32.5	30	20	7	13	60	42	60	42	120
GN 272-40-IV-SW	40	8.5	6.5	M8	52.5	32.5	30	20	7	13	60	42	60	42	110
GN 272-40-IV-BL	40	8.5	6.5	M8	52.5	32.5	30	20	7	13	60	42	60	42	110
GN 272-65-OZ-SW	65	10.2	11	M10	84.5	52	52.5	32.5	14	17	105	74	105	74	555
GN 272-65-OZ-BL	65	10.2	11	M10	84.5	52	52.5	32.5	14	17	105	74	105	74	555
GN 272-65-MZ-SW	65	10.2	11	M10	84.5	52	52.5	32.5	14	17	105	74	105	74	555
GN 272-65-MZ-BL	65	10.2	11	M10	84.5	52	52.5	32.5	14	17	105	74	105	74	555
GN 272-65-AV-SW	65	10.2	11	M10	84.5	52	52.5	32.5	14	17	105	74	105	74	555
GN 272-65-AV-BL	65	10.2	11	M10	84.5	52	52.5	32.5	14	17	105	74	105	74	555
GN 272-65-IV-SW	65	10.2	11	M10	84.5	52	52.5	32.5	14	17	105	74	105	74	535
GN 272-65-IV-BL	65	10.2	11	M10	84.5	52	52.5	32.5	14	17	105	74	105	74	535

GN 273

Swivel clamp connectors



•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

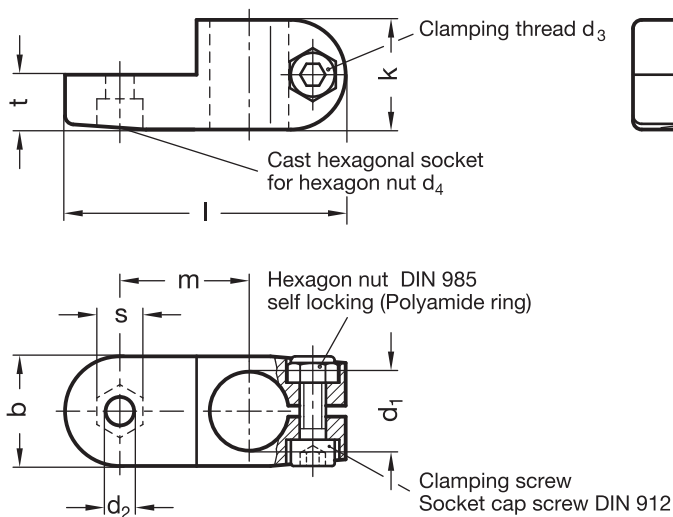
Features and applications

Swivel clamp connectors GN 273 can be assembled with swivel clamp connectors GN 271, GN 275 or GN 277 to create swivel clamp connector joints.

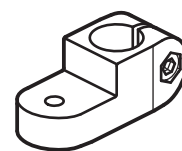
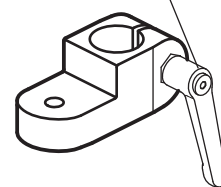
The clamping bore of the swivel clamp connectors GN 273 is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Adjustable clamping lever GN 911



Standard Elements	Main dimensions										Clamping kits for d ₃	⚖ g
	d ₁	b Swivel width	d ₂	d ₃	d ₄	k	l	m	s	t		
GN 273-B12-1-*	B12	25	6.5	M6	M 6	25	64	29.5	10	12.5	GN 911-M6-22	65
GN 273-B14-1-*	B14	25	6.5	M6	M 6	25	64	29.5	10	12.5	GN 911-M6-22	62
GN 273-B16-1-*	B16	25	6.5	M6	M 6	25	64	29.5	10	12.5	GN 911-M6-22	60
GN 273-B18-1-*	B18	25	6.5	M6	M 6	25	64	29.5	10	12.5	GN 911-M6-22	55
GN 273-B12-2-*	B12	25	6.5	M6	M 6	25	64	29.5	10	12.5	GN 911-M6-22	65
GN 273-B14-2-*	B14	25	6.5	M6	M 6	25	64	29.5	10	12.5	GN 911-M6-22	62
GN 273-B16-2-*	B16	25	6.5	M6	M 6	25	64	29.5	10	12.5	GN 911-M6-22	60
GN 273-B18-2-*	B18	25	6.5	M6	M 6	25	64	29.5	10	12.5	GN 911-M6-22	55

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 274

Swivel clamp connectors

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Types

- Type **OZ**: without centring step.
- Type **MZ**: with centring step.
- Type **AV**: with male serration.
- Type **IV**: with female serration.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

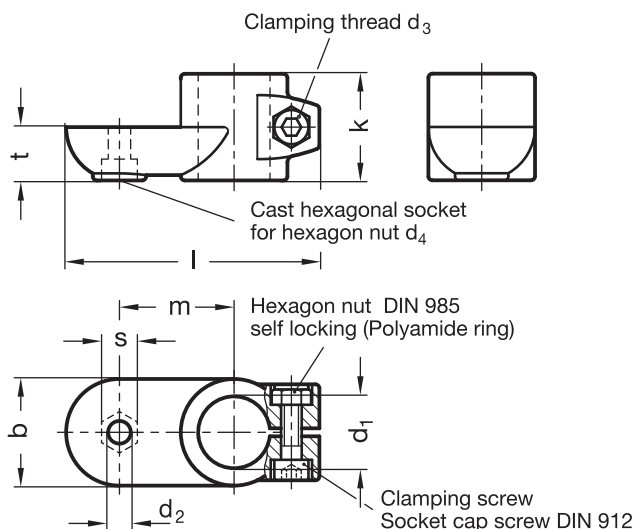
Features and applications

Swivel clamp connectors GN 274 can be assembled with swivel clamp connectors GN 272, GN 276 or GN 278 to create swivel clamp connector joints.

The clamping bore of the swivel clamp connectors GN 274 is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

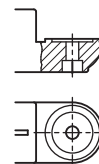
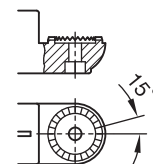
- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



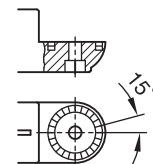
Type **OZ**
without centring step




Type **AV**
with male serration




Type **MZ**
with centring step



Type **IV**
with female serration

Standard Elements	Main dimensions										Clamping kits for d3	
Description	d1	b Swivel width	d2	d3	d4	k	l	m	s	t		g
GN 274-B20-OZ-1-*	B20	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	190
GN 274-B25-OZ-1-*	B25	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	170
GN 274-B30-OZ-1-*	B30	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	150
GN 274-B40-OZ-1-*	B40	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	710
GN 274-B42-OZ-1-*	B42	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	685
GN 274-B45-OZ-1-*	B45	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	650
GN 274-B48-OZ-1-*	B48	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	610
GN 274-B50-OZ-1-*	B50	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	585
GN 274-B20-MZ-1-*	B20	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	190
GN 274-B25-MZ-1-*	B25	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	170
GN 274-B30-MZ-1-*	B30	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	150
GN 274-B40-MZ-1-*	B40	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	700
GN 274-B42-MZ-1-*	B42	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	690
GN 274-B45-MZ-1-*	B45	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	655
GN 274-B48-MZ-1-*	B48	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	615
GN 274-B50-MZ-1-*	B50	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	585
GN 274-B20-AV-1-*	B20	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	185
GN 274-B25-AV-1-*	B25	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	170
GN 274-B30-AV-1-*	B30	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	150
GN 274-B40-AV-1-*	B40	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	710
GN 274-B42-AV-1-*	B42	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	690
GN 274-B45-AV-1-*	B45	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	655
GN 274-B48-AV-1-*	B48	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	620
GN 274-B50-AV-1-*	B50	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	585
GN 274-B20-IV-1-*	B20	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	180
GN 274-B25-IV-1-*	B25	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	160
GN 274-B30-IV-1-*	B30	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	140
GN 274-B40-IV-1-*	B40	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	690
GN 274-B42-IV-1-*	B42	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	665
GN 274-B45-IV-1-*	B45	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	635
GN 274-B48-IV-1-*	B48	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	600
GN 274-B50-IV-1-*	B50	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	570

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions										Clamping kits for d ₃	
Description	d ₁ Bore B	b Swivel width	d ₂	d ₃	d ₄	k	Length l	m	s	t		g
GN 274-B20-OZ-2-*	B20	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	190
GN 274-B25-OZ-2-*	B25	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	170
GN 274-B30-OZ-2-*	B30	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	150
GN 274-B40-OZ-2-*	B40	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	710
GN 274-B42-OZ-2-*	B42	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	685
GN 274-B45-OZ-2-*	B45	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	650
GN 274-B48-OZ-2-*	B48	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	610
GN 274-B50-OZ-2-*	B50	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	585
GN 274-B20-MZ-2-*	B20	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	190
GN 274-B25-MZ-2-*	B25	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	170
GN 274-B30-MZ-2-*	B30	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	150
GN 274-B40-MZ-2-*	B40	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	700
GN 274-B42-MZ-2-*	B42	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	690
GN 274-B45-MZ-2-*	B45	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	655
GN 274-B48-MZ-2-*	B48	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	615
GN 274-B50-MZ-2-*	B50	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	585
GN 274-B20-AV-2-*	B20	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	185
GN 274-B25-AV-2-*	B25	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	170
GN 274-B30-AV-2-*	B30	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	150
GN 274-B40-AV-2-*	B40	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	710
GN 274-B42-AV-2-*	B42	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	690
GN 274-B45-AV-2-*	B45	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	655
GN 274-B48-AV-2-*	B48	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	620
GN 274-B50-AV-2-*	B50	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	585
GN 274-B20-IV-2-*	B20	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	180
GN 274-B25-IV-2-*	B25	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	160
GN 274-B30-IV-2-*	B30	40	8.5	M8	M8	40	95	43	13	20	GN 911-M8-32	140
GN 274-B40-IV-2-*	B40	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	690
GN 274-B42-IV-2-*	B42	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	665
GN 274-B45-IV-2-*	B45	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	635
GN 274-B48-IV-2-*	B48	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	600
GN 274-B50-IV-2-*	B50	65	10.5	M10	M10	65	148	70	17	32.5	GN 911-M10-55	570

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).



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GN 275

Swivel clamp connectors



•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

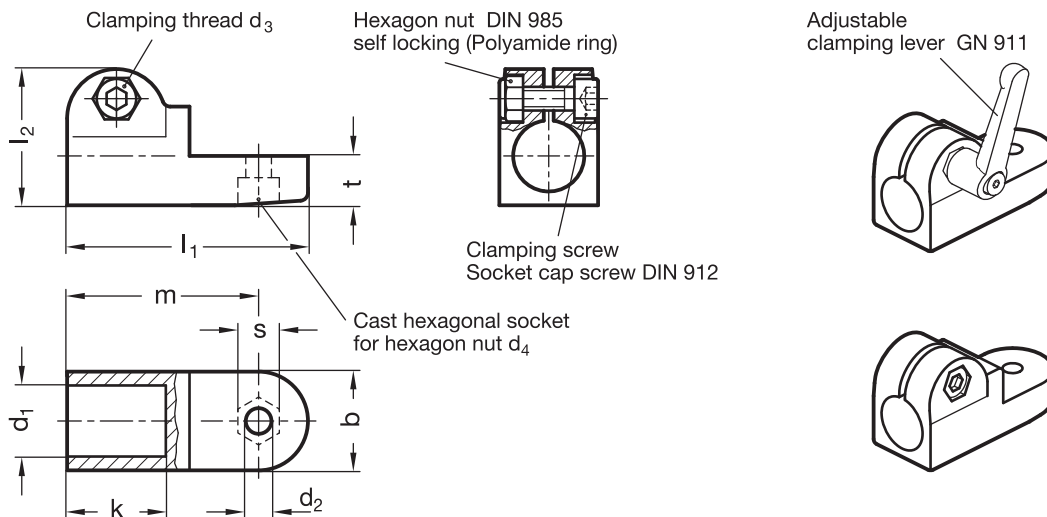
Features and applications

Swivel clamp connectors GN 275 can be assembled with swivel clamp connectors GN 271, GN 273 or GN 277 to create swivel clamp connector joints.

The clamping bore of the swivel clamp connectors GN 275 is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions											Clamping kits for d ₃	△ g
Description	d ₁	b Swivel width	d ₂	d ₃	d ₄	k	l ₁	l ₂	m	s	t		
GN 275-B12-1-*	B12	25	6.5	M6	M6	25	61	34.5	48.5	10	12.5	GN 911-M6-22	74
GN 275-B14-1-*	B14	25	6.5	M6	M6	25	61	34.5	48.5	10	12.5	GN 911-M6-22	70
GN 275-B16-1-*	B16	25	6.5	M6	M6	25	61	34.5	48.5	10	12.5	GN 911-M6-22	68
GN 275-B18-1-*	B18	25	6.5	M6	M6	25	61	34.5	48.5	10	12.5	GN 911-M6-22	64
GN 275-B12-2-*	B12	25	6.5	M6	M6	25	61	34.5	48.5	10	12.5	GN 911-M6-22	74
GN 275-B14-2-*	B14	25	6.5	M6	M6	25	61	34.5	48.5	10	12.5	GN 911-M6-22	70
GN 275-B16-2-*	B16	25	6.5	M6	M6	25	61	34.5	48.5	10	12.5	GN 911-M6-22	68
GN 275-B18-2-*	B18	25	6.5	M6	M6	25	61	34.5	48.5	10	12.5	GN 911-M6-22	64

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 276

Swivel clamp connectors

70

Tube clamp connectors, Linear actuators

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Types

- Type **OZ**: without centring step.
- Type **MZ**: with centring step.
- Type **AV**: with male serration.
- Type **IV**: with female serration.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

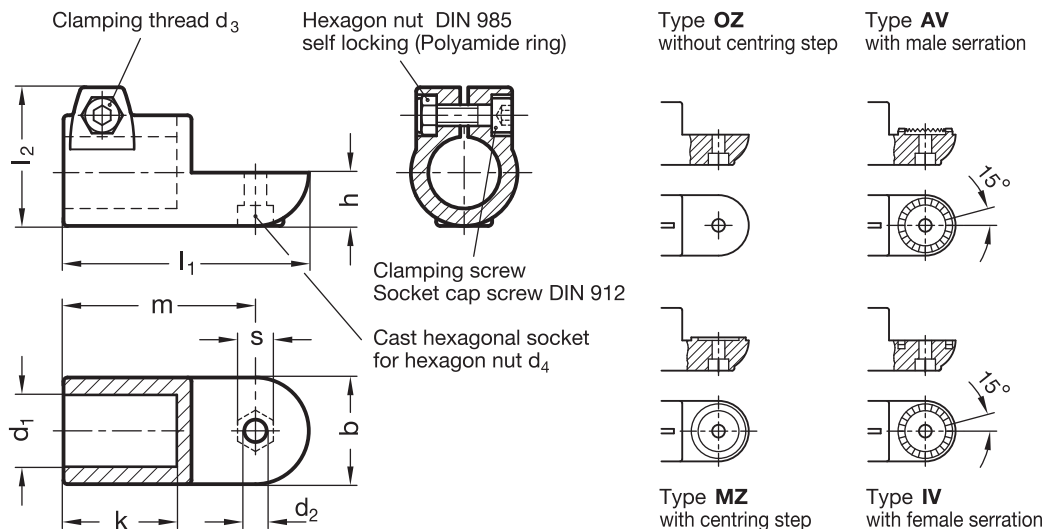
Features and applications


Swivel clamp connectors GN 276 can be assembled with swivel clamp connectors GN 272, GN 274 or GN 278 to create swivel clamp connector joints.

The clamping bore of the swivel clamp connectors GN 276 is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.


Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions											Clamping kits for d3	
Description	d1	b Swivel width	d2	d3	d4	h	k	l1	l2	m	s		g
GN 276-B20-OZ-1-*	B20	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	210
GN 276-B25-OZ-1-*	B25	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	185
GN 276-B30-OZ-1-*	B30	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	160
GN 276-B40-OZ-1-*	B40	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	775
GN 276-B42-OZ-1-*	B42	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	750
GN 276-B45-OZ-1-*	B45	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	725
GN 276-B48-OZ-1-*	B48	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	675
GN 276-B50-OZ-1-*	B50	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	650
GN 276-B20-MZ-1-*	B20	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	210
GN 276-B25-MZ-1-*	B25	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	190
GN 276-B30-MZ-1-*	B30	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	160
GN 276-B40-MZ-1-*	B40	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	765
GN 276-B42-MZ-1-*	B42	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	755
GN 276-B45-MZ-1-*	B45	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	705
GN 276-B48-MZ-1-*	B48	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	665
GN 276-B50-MZ-1-*	B50	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	630
GN 276-B20-AV-1-*	B20	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	210
GN 276-B25-AV-1-*	B25	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	190
GN 276-B30-AV-1-*	B30	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	165
GN 276-B40-AV-1-*	B40	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	770
GN 276-B42-AV-1-*	B42	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	755
GN 276-B45-AV-1-*	B45	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	715
GN 276-B48-AV-1-*	B48	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	665
GN 276-B50-AV-1-*	B50	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	660
GN 276-B20-IV-1-*	B20	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	200
GN 276-B25-IV-1-*	B25	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	180
GN 276-B30-IV-1-*	B30	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	155
GN 276-B40-IV-1-*	B40	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	760
GN 276-B42-IV-1-*	B42	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	740
GN 276-B45-IV-1-*	B45	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	700
GN 276-B48-IV-1-*	B48	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	655
GN 276-B50-IV-1-*	B50	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	650

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions											Clamping kits for d3	
Description	d1 Bore B	b Swivel width	d2	d3	d4	h	k	l1	l2	m	s		g
GN 276-B20-OZ-2-*	B20	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	210
GN 276-B25-OZ-2-*	B25	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	185
GN 276-B30-OZ-2-*	B30	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	160
GN 276-B40-OZ-2-*	B40	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	775
GN 276-B42-OZ-2-*	B42	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	750
GN 276-B45-OZ-2-*	B45	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	725
GN 276-B48-OZ-2-*	B48	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	675
GN 276-B50-OZ-2-*	B50	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	650
GN 276-B20-MZ-2-*	B20	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	210
GN 276-B25-MZ-2-*	B25	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	190
GN 276-B30-MZ-2-*	B30	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	160
GN 276-B40-MZ-2-*	B40	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	765
GN 276-B42-MZ-2-*	B42	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	755
GN 276-B45-MZ-2-*	B45	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	705
GN 276-B48-MZ-2-*	B48	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	665
GN 276-B50-MZ-2-*	B50	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	630
GN 276-B20-AV-2-*	B20	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	210
GN 276-B25-AV-2-*	B25	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	190
GN 276-B30-AV-2-*	B30	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	165
GN 276-B40-AV-2-*	B40	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	770
GN 276-B42-AV-2-*	B42	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	755
GN 276-B45-AV-2-*	B45	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	715
GN 276-B48-AV-2-*	B48	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	665
GN 276-B50-AV-2-*	B50	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	660
GN 276-B20-IV-2-*	B20	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	200
GN 276-B25-IV-2-*	B25	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	180
GN 276-B30-IV-2-*	B30	40	8.5	M8	M8	20	42.5	92	52	72	13	GN 911-M8-32	155
GN 276-B40-IV-2-*	B40	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	760
GN 276-B42-IV-2-*	B42	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	740
GN 276-B45-IV-2-*	B45	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	700
GN 276-B48-IV-2-*	B48	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	655
GN 276-B50-IV-2-*	B50	65	10.5	M10	M10	32.5	74	148	78	115	17	GN 911-M10-55	650

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 277

Swivel clamp connectors



•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

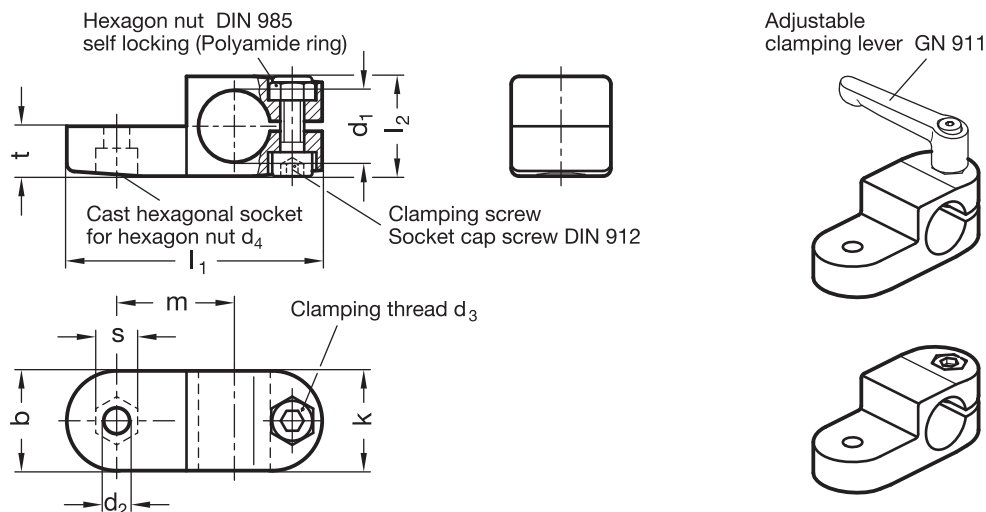
Features and applications

Swivel clamp connectors GN 277 can be assembled with swivel clamp connectors GN 271, GN 273 or GN 275 to create swivel clamp connector joints.

The clamping bore of the swivel clamp connectors GN 277 is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions											Clamping kits for d ₃	⚖ g
	d ₁	b Swivel width	d ₂	d ₃	d ₄	k	l ₁	l ₂	m	s	t		
GN 277-B12-1-*	B12	25	6.5	M6	M6	25	64	25	29.5	10	12.5	GN 911-M6-22	63
GN 277-B14-1-*	B14	25	6.5	M6	M6	25	64	25	29.5	10	12.5	GN 911-M6-22	62
GN 277-B16-1-*	B16	25	6.5	M6	M6	25	64	25	29.5	10	12.5	GN 911-M6-22	59
GN 277-B18-1-*	B18	25	6.5	M6	M6	25	64	25	29.5	10	12.5	GN 911-M6-22	56
GN 277-B12-2-*	B12	25	6.5	M6	M6	25	64	25	29.5	10	12.5	GN 911-M6-22	63
GN 277-B14-2-*	B14	25	6.5	M6	M6	25	64	25	29.5	10	12.5	GN 911-M6-22	62
GN 277-B16-2-*	B16	25	6.5	M6	M6	25	64	25	29.5	10	12.5	GN 911-M6-22	59
GN 277-B18-2-*	B18	25	6.5	M6	M6	25	64	25	29.5	10	12.5	GN 911-M6-22	56

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 278

Swivel clamp connectors

74

Tube clamp connectors, Linear actuators

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Types

- Type **OZ**: without centring step.
- Type **MZ**: with centring step.
- Type **AV**: with male serration.
- Type **IV**: with female serration.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

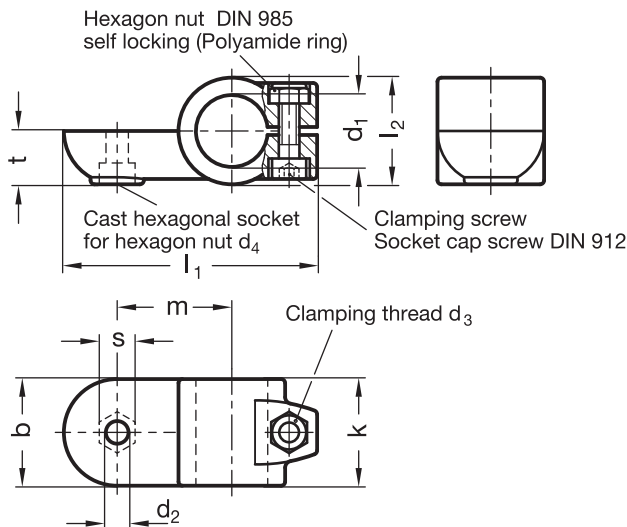
Features and applications

Swivel clamp connectors GN 278 can be assembled with swivel clamp connectors GN 272, GN 274 or GN 276 to create swivel clamp connector joints.

The clamping bore of the swivel clamp connectors GN 278 is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

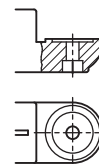
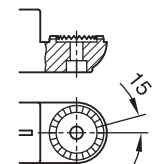
- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



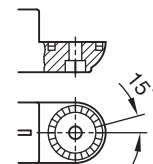
Type **OZ**
without centring step




Type **AV**
with male serration




Type **MZ**
with centring step



Type **IV**
with female serration

Standard Elements	Main dimensions											Clamping kits for d3	
Description	d1	b Swivel width	d2	d3	d4	k	l1	l2	m	s	t		g
GN 278-B20-OZ-1-*	B20	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	185
GN 278-B25-OZ-1-*	B25	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	170
GN 278-B30-OZ-1-*	B30	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	145
GN 278-B40-OZ-1-*	B40	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	705
GN 278-B42-OZ-1-*	B42	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	675
GN 278-B45-OZ-1-*	B45	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	645
GN 278-B48-OZ-1-*	B48	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	610
GN 278-B50-OZ-1-*	B50	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	585
GN 278-B20-MZ-1-*	B20	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	185
GN 278-B25-MZ-1-*	B25	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	170
GN 278-B30-MZ-1-*	B30	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	145
GN 278-B40-MZ-1-*	B40	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	695
GN 278-B42-MZ-1-*	B42	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	675
GN 278-B45-MZ-1-*	B45	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	645
GN 278-B48-MZ-1-*	B48	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	605
GN 278-B50-MZ-1-*	B50	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	575
GN 278-B20-AV-1-*	B20	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	190
GN 278-B25-AV-1-*	B25	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	170
GN 278-B30-AV-1-*	B30	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	150
GN 278-B40-AV-1-*	B40	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	690
GN 278-B42-AV-1-*	B42	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	675
GN 278-B45-AV-1-*	B45	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	640
GN 278-B48-AV-1-*	B48	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	600
GN 278-B50-AV-1-*	B50	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	580
GN 278-B20-IV-1-*	B20	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	180
GN 278-B25-IV-1-*	B25	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	160
GN 278-B30-IV-1-*	B30	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	140
GN 278-B40-IV-1-*	B40	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	685
GN 278-B42-IV-1-*	B42	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	665
GN 278-B45-IV-1-*	B45	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	620
GN 278-B48-IV-1-*	B48	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	585
GN 278-B50-IV-1-*	B50	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	565

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions											Clamping kits for d ₃	
Description	d ₁ Bore B	b Swivel width	d ₂	d ₃	d ₄	k	l ₁	l ₂	m	s	t		g
GN 278-B20-OZ-2-*	B20	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	185
GN 278-B25-OZ-2-*	B25	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	170
GN 278-B30-OZ-2-*	B30	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	145
GN 278-B40-OZ-2-*	B40	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	705
GN 278-B42-OZ-2-*	B42	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	675
GN 278-B45-OZ-2-*	B45	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	645
GN 278-B48-OZ-2-*	B48	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	610
GN 278-B50-OZ-2-*	B50	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	585
GN 278-B20-MZ-2-*	B20	40	8.5	M8	M 8	40	95	40	43	13	20	GN 911-M8-32	185
GN 278-B25-MZ-2-*	B25	40	8.5	M8	M 8	40	95	40	43	13	20	GN 911-M8-32	170
GN 278-B30-MZ-2-*	B30	40	8.5	M8	M 8	40	95	40	43	13	20	GN 911-M8-32	145
GN 278-B40-MZ-2-*	B40	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	695
GN 278-B42-MZ-2-*	B42	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	675
GN 278-B45-MZ-2-*	B45	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	645
GN 278-B48-MZ-2-*	B48	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	605
GN 278-B50-MZ-2-*	B50	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	575
GN 278-B20-AV-2-*	B20	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	190
GN 278-B25-AV-2-*	B25	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	170
GN 278-B30-AV-2-*	B30	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	150
GN 278-B40-AV-2-*	B40	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	690
GN 278-B42-AV-2-*	B42	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	675
GN 278-B45-AV-2-*	B45	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	640
GN 278-B48-AV-2-*	B48	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	600
GN 278-B50-AV-2-*	B50	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	580
GN 278-B20-IV-2-*	B20	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	180
GN 278-B25-IV-2-*	B25	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	160
GN 278-B30-IV-2-*	B30	40	8.5	M8	M8	40	95	40	43	13	20	GN 911-M8-32	140
GN 278-B40-IV-2-*	B40	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	685
GN 278-B42-IV-2-*	B42	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	665
GN 278-B45-IV-2-*	B45	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	620
GN 278-B48-IV-2-*	B48	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	585
GN 278-B50-IV-2-*	B50	65	10.5	M10	M10	65	148	65	70	17	32.5	GN 911-M10-55	565

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 281



Swivel clamp connector joints

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

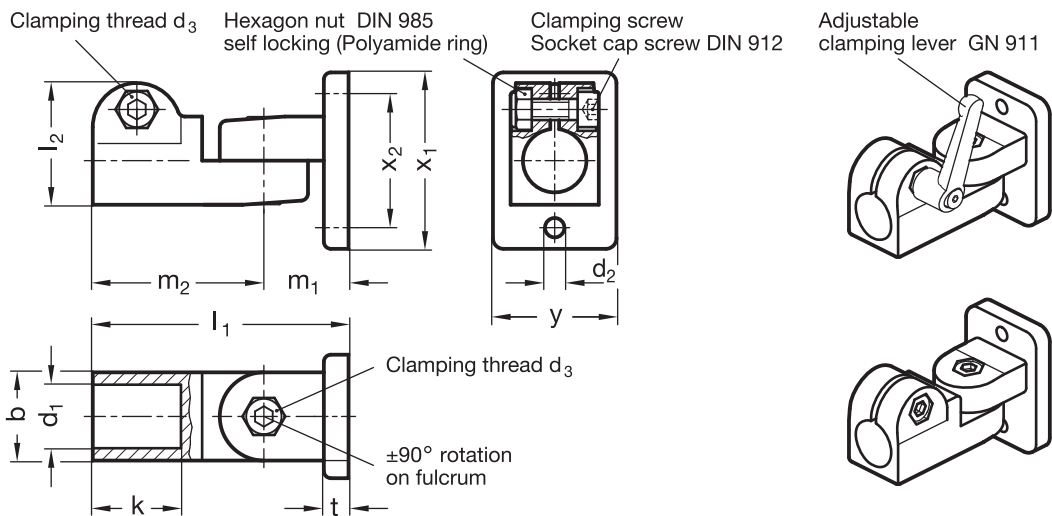
Features and applications

Swivel clamp connector joints GN 281 are an assembly of the swivel clamp connectors GN 271 and GN 275.

The clamping bore is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 or DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions												Clamping kits for d3	⚖ g	
	d1	b Swivel width	d2	d3	k	l1	l2	m1	m2	t	x1	x2			y
GN 281-B12-1-*	B12	25	5.5	M6	25	72.5	34.5	24	48.5	7	50	38	35	GN 911-M6-22	126
GN 281-B14-1-*	B14	25	5.5	M6	25	72.5	34.5	24	48.5	7	50	38	35	GN 911-M6-22	122
GN 281-B16-1-*	B16	25	5.5	M6	25	72.5	34.5	24	48.5	7	50	38	35	GN 911-M6-22	120
GN 281-B18-1-*	B18	25	5.5	M6	25	72.5	34.5	24	48.5	7	50	38	35	GN 911-M6-22	116
GN 281-B12-2-*	B12	25	5.5	M6	25	72.5	34.5	24	48.5	7	50	38	35	GN 911-M6-22	126
GN 281-B14-2-*	B14	25	5.5	M6	25	72.5	34.5	24	48.5	7	50	38	35	GN 911-M6-22	122
GN 281-B16-2-*	B16	25	5.5	M6	25	72.5	34.5	24	48.5	7	50	38	35	GN 911-M6-22	120
GN 281-B18-2-*	B18	25	5.5	M6	25	72.5	34.5	24	48.5	7	50	38	35	GN 911-M6-22	116

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).



Variations of swivel clamp connectors
and swivel clamp connector joints (see page 63ff.)



GN 282

Swivel clamp connector joints

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Types

- Type **S**: steppless adjustment.
- Type **T**: adjustment by 15°-division (serration).

•Clamping screws

- Identification no. **1**: with three clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with three AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The swivel clamp connector joints GN 282 are an assembly of the swivel clamp connectors GN 272 and GN 276.

For the type with steppless adjustment (Type S) swivel clamp connectors with a centring step are used.

The clamping bore is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

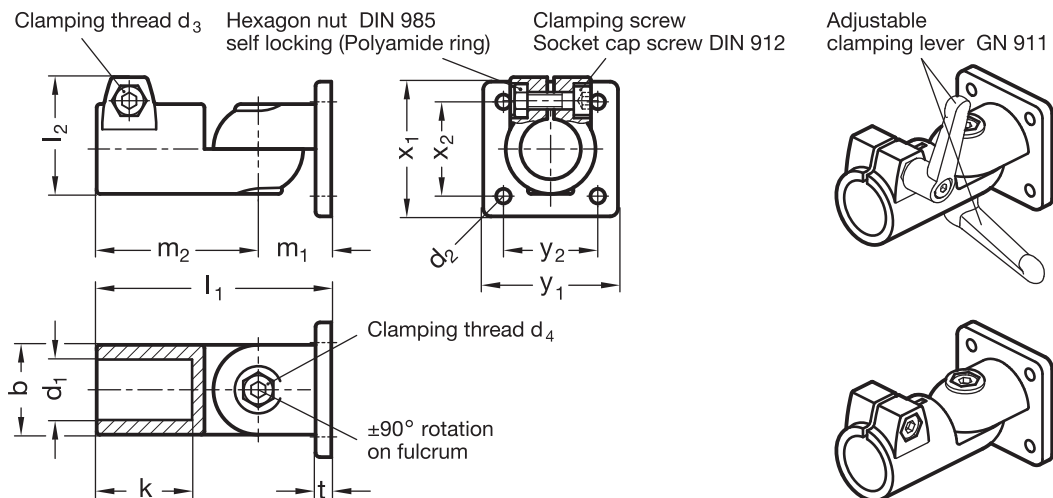
Accessories


- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



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Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions															Clamping kits		
Description	d1 Bore B	b	d2	d3	d4	k	l1	l2	m1	m2	t	x1	x2	y1	y2	for d3	for d4	g
GN 282-B20-S-1-*	B20	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	242
GN 282-B25-S-1-*	B25	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	310
GN 282-B30-S-1-*	B30	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	200
GN 282-B40-S-1-*	B40	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1355
GN 282-B42-S-1-*	B42	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1340
GN 282-B45-S-1-*	B45	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1300
GN 282-B48-S-1-*	B48	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1255
GN 282-B50-S-1-*	B50	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1245
GN 282-B20-T-1-*	B20	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	279
GN 282-B25-T-1-*	B25	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	310
GN 282-B30-T-1-*	B30	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	330
GN 282-B40-T-1-*	B40	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1365
GN 282-B42-T-1-*	B42	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1345
GN 282-B45-T-1-*	B45	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1310
GN 282-B48-T-1-*	B48	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1265
GN 282-B50-T-1-*	B50	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1255
GN 282-B20-S-2-*	B20	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	242
GN 282-B25-S-2-*	B25	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	275
GN 282-B30-S-2-*	B30	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	200
GN 282-B40-S-2-*	B40	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1260
GN 282-B42-S-2-*	B42	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1340
GN 282-B45-S-2-*	B45	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1300
GN 282-B48-S-2-*	B48	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1255
GN 282-B50-S-2-*	B50	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1245
GN 282-B20-T-2-*	B20	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	279
GN 282-B25-T-2-*	B25	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	310
GN 282-B30-T-2-*	B30	40	6.5	M8	M8	42.5	104.5	52	32.5	72	7	60	42	60	42	GN 911-M8-32	GN 911-M8-35	235
GN 282-B40-T-2-*	B40	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	300
GN 282-B42-T-2-*	B42	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1345
GN 282-B45-T-2-*	B45	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1310
GN 282-B48-T-2-*	B48	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1265
GN 282-B50-T-2-*	B50	65	11	M10	M10	74	167	77.5	52	115	14	105	74	105	74	GN 911-M10-55	GN 911-M10-63	1255

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 283

Swivel clamp connector joints

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with three clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with three AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The swivel clamp connector joints GN 283 are an assembly of the swivel clamp connectors GN 273 and GN 275. Since the swivel clamp connectors have an identical swivel width "b", all bores "d1/d2" can be combined as required.

The clamping bore is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

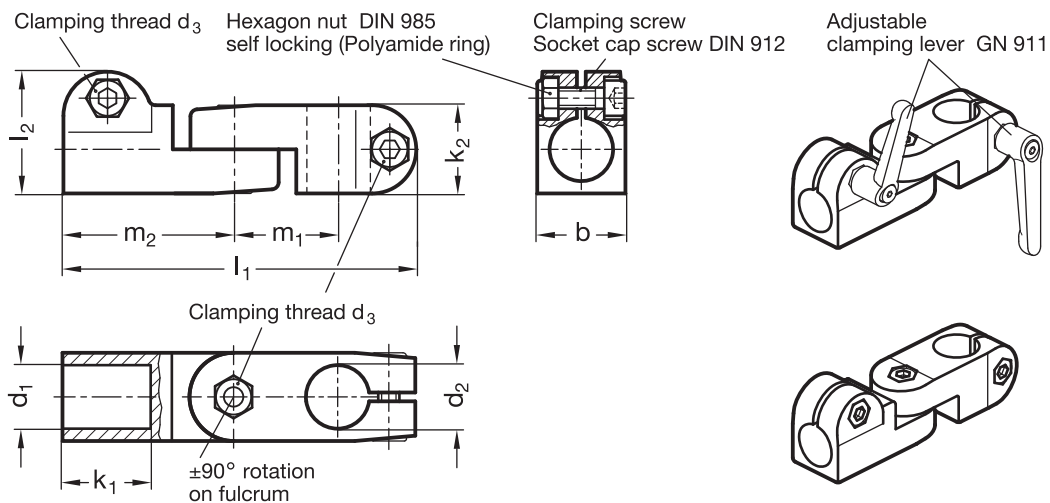
Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



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Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions										Clamping kits for d3	g
Description	d1	d2	b Swivel width	d3	k1	k2	l1	l2	m1	m2		
GN 283-B12-B12-1.*	B12	B12	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	146
GN 283-B12-B14-1.*	B12	B14	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	146
GN 283-B12-B16-1.*	B12	B16	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	146
GN 283-B12-B18-1.*	B12	B18	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	146
GN 283-B14-B12-1.*	B14	B12	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	140
GN 283-B14-B14-1.*	B14	B14	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	140
GN 283-B14-B16-1.*	B14	B16	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	140
GN 283-B14-B18-1.*	B14	B18	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	140
GN 283-B16-B12-1.*	B16	B12	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	135
GN 283-B16-B14-1.*	B16	B14	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	135
GN 283-B16-B16-1.*	B16	B16	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	135
GN 283-B16-B18-1.*	B16	B18	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	135
GN 283-B18-B12-1.*	B18	B12	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	127
GN 283-B18-B14-1.*	B18	B14	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	127
GN 283-B18-B16-1.*	B18	B16	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	127
GN 283-B18-B18-1.*	B18	B18	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	127
GN 283-B12-B12-2.*	B12	B12	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	156
GN 283-B12-B14-2.*	B12	B14	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	156
GN 283-B12-B16-2.*	B12	B16	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	156
GN 283-B12-B18-2.*	B12	B18	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	156
GN 283-B14-B12-2.*	B14	B12	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	135
GN 283-B14-B14-2.*	B14	B14	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	140
GN 283-B14-B16-2.*	B14	B16	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	140
GN 283-B14-B18-2.*	B14	B18	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	140
GN 283-B16-B12-2.*	B16	B12	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	135
GN 283-B16-B14-2.*	B16	B14	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	135
GN 283-B16-B16-2.*	B16	B16	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	135
GN 283-B16-B18-2.*	B16	B18	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	135
GN 283-B18-B12-2.*	B18	B12	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	127
GN 283-B18-B14-2.*	B18	B14	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	127
GN 283-B18-B16-2.*	B18	B16	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	127
GN 283-B18-B18-2.*	B18	B18	25	M6	25	25	100	34.5	29.5	48.5	GN 911-M6-22	127

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 284

Swivel clamp connector joints

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Types

- Type **S**: steppless adjustment.
- Type **T**: adjustment by 15°-division (serration).

•Clamping screws

- Identification no. **1**: with three clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with three AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

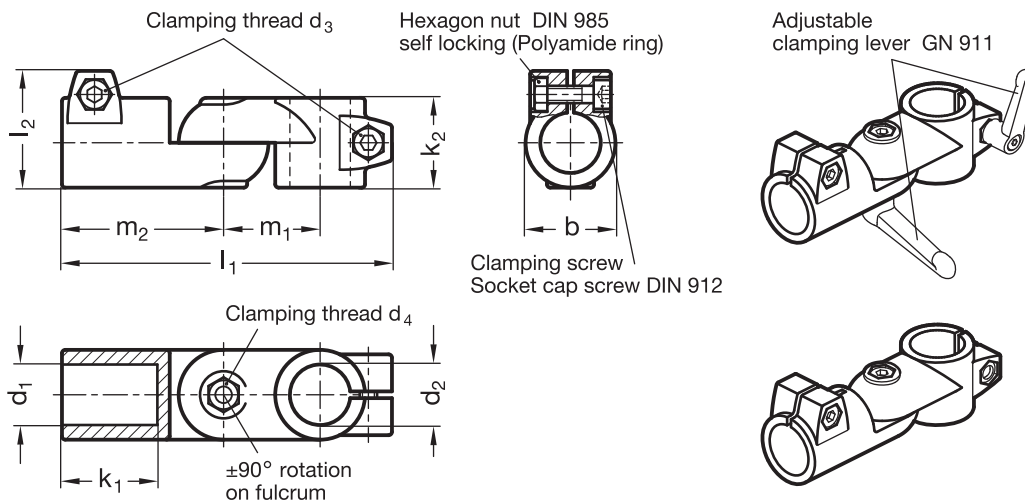
Features and applications

The swivel clamp connector joints GN 284 are an assembly of the two swivel clamp connectors GN 274 and GN 276.

For the type with a stepless adjustment (Type S) swivel clamp connectors with a centring step are used. Since the latter have an identical swivel width "b", all bores "d1/d2" can be combined as required. The clamping bore is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.


Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions											Clamping kits		g
	Description	d1 Bore B	d2 Bore B	b Swivel width	d3	d4	k1	k2	l1	l2	m1	m2	for d3		for d4
GN 284-B20-B20-S-1-*	B20	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B20-B25-S-1-*	B20	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B20-B30-S-1-*	B20	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B25-B20-S-1-*	B25	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B25-B25-S-1-*	B25	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	375
GN 284-B25-B30-S-1-*	B25	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B20-S-1-*	B30	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B25-S-1-*	B30	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B30-S-1-*	B30	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	325
GN 284-B40-B40-S-1-*	B40	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B42-S-1-*	B40	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B45-S-1-*	B40	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B48-S-1-*	B40	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B50-S-1-*	B40	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B42-B40-S-1-*	B42	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1485
GN 284-B42-B42-S-1-*	B42	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1470
GN 284-B42-B45-S-1-*	B42	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1435
GN 284-B42-B48-S-1-*	B42	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 284-B42-B50-S-1-*	B42	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1370
GN 284-B45-B40-S-1-*	B45	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B45-B42-S-1-*	B45	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B45-B45-S-1-*	B45	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B45-B48-S-1-*	B45	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1355
GN 284-B45-B50-S-1-*	B45	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B48-B40-S-1-*	B48	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B48-B42-S-1-*	B48	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B48-B45-S-1-*	B48	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B48-B48-S-1-*	B48	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1350
GN 284-B48-B50-S-1-*	B48	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B50-B40-S-1-*	B50	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B42-S-1-*	B50	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B45-S-1-*	B50	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B48-S-1-*	B50	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B50-S-1-*	B50	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 284-B20-B20-T-1-*	B20	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	410
GN 284-B20-B25-T-1-*	B20	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B20-B30-T-1-*	B20	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B25-B20-T-1-*	B25	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B25-B25-T-1-*	B25	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	380
GN 284-B25-B30-T-1-*	B25	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B20-T-1-*	B30	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B25-T-1-*	B30	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B30-T-1-*	B30	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	330
GN 284-B40-B40-T-1-*	B40	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1510

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions											Clamping kits		
Description	d1	d2	b Swivel width	d3	d4	k1	k2	l1	l2	m1	m2	for d3	for d4	g
GN 284-B40-B42-T-1-*	B40	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B45-T-1-*	B40	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B48-T-1-*	B40	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B50-T-1-*	B40	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B42-B40-T-1-*	B42	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1373
GN 284-B42-B42-T-1-*	B42	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1480
GN 284-B42-B45-T-1-*	B42	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1435
GN 284-B42-B48-T-1-*	B42	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 284-B42-B50-T-1-*	B42	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1370
GN 284-B45-B40-T-1-*	B45	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B45-B42-T-1-*	B45	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B45-B45-T-1-*	B45	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 284-B45-B48-T-1-*	B45	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B45-B50-T-1-*	B45	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B48-B40-T-1-*	B48	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B48-B42-T-1-*	B48	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B48-B45-T-1-*	B48	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B48-B48-T-1-*	B48	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1360
GN 284-B48-B50-T-1-*	B48	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B40-T-1-*	B50	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B42-T-1-*	B50	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B45-T-1-*	B50	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B48-T-1-*	B50	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B50-T-1-*	B50	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1280
GN 284-B20-B20-S-2-*	B20	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B20-B25-S-2-*	B20	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B20-B30-S-2-*	B20	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B25-B20-S-2-*	B25	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B25-B25-S-2-*	B25	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	375
GN 284-B25-B30-S-2-*	B25	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B20-S-2-*	B30	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B25-S-2-*	B30	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B30-S-2-*	B30	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	325
GN 284-B40-B40-S-2-*	B40	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B42-S-2-*	B40	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B45-S-2-*	B40	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B48-S-2-*	B40	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B50-S-2-*	B40	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B42-B40-S-2-*	B42	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1485
GN 284-B42-B42-S-2-*	B42	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1470
GN 284-B42-B45-S-2-*	B42	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1435
GN 284-B42-B48-S-2-*	B42	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 284-B42-B50-S-2-*	B42	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1370
GN 284-B45-B40-S-2-*	B45	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B45-B42-S-2-*	B45	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B45-B45-S-2-*	B45	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements Description	Main dimensions											Clamping kits		g
	d1	d2	b Swivel width	d3	d4	k1	k2	l1	l2	m1	m2	for d3	for d4	
GN 284-B45-B48-S-2-*	B45	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1355
GN 284-B45-B50-S-2-*	B45	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B48-B40-S-2-*	B48	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B48-B42-S-2-*	B48	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B48-B45-S-2-*	B48	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B48-B48-S-2-*	B48	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1350
GN 284-B48-B50-S-2-*	B48	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B50-B40-S-2-*	B50	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B42-S-2-*	B50	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B45-S-2-*	B50	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B48-S-2-*	B50	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B50-S-2-*	B50	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 284-B20-B20-T-2-*	B20	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	410
GN 284-B20-B25-T-2-*	B20	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B20-B30-T-2-*	B20	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B25-B20-T-2-*	B25	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B25-B25-T-2-*	B25	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	380
GN 284-B25-B30-T-2-*	B25	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B20-T-2-*	B30	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B25-T-2-*	B30	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	405
GN 284-B30-B30-T-2-*	B30	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	330
GN 284-B40-B40-T-2-*	B40	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1510
GN 284-B40-B42-T-2-*	B40	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B45-T-2-*	B40	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B48-T-2-*	B40	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B40-B50-T-2-*	B40	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 284-B42-B40-T-2-*	B42	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1485
GN 284-B42-B42-T-2-*	B42	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1480
GN 284-B42-B45-T-2-*	B42	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1435
GN 284-B42-B48-T-2-*	B42	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 284-B42-B50-T-2-*	B42	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1370
GN 284-B45-B40-T-2-*	B45	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B45-B42-T-2-*	B45	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B45-B45-T-2-*	B45	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 284-B45-B48-T-2-*	B45	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B45-B50-T-2-*	B45	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B48-B40-T-2-*	B48	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B48-B42-T-2-*	B48	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B48-B45-T-2-*	B48	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B48-B48-T-2-*	B48	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1360
GN 284-B48-B50-T-2-*	B48	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 284-B50-B40-T-2-*	B50	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B42-T-2-*	B50	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B45-T-2-*	B50	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B48-T-2-*	B50	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1380
GN 284-B50-B50-T-2-*	B50	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1280

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 285

Swivel clamp connector joints

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with three clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with three AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

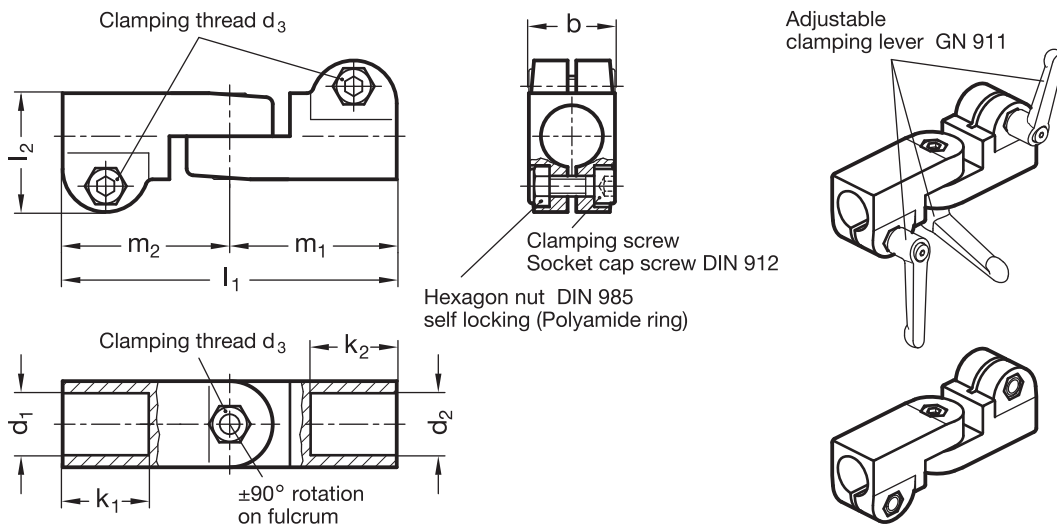
The swivel clamp connector joints GN 285 are an assembly of two swivel clamp connectors GN 275.

Since the swivel clamp connectors have an identical swivel width "b", all bores "d1/d2" can be combined as required.

The clamping bore is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions										Clamping kits for d3	g
Description	d1	d2	b Swivel width	d3	k1	k2	l1	l2	m1	m2		
GN 285-B12-B12-1-*	B12	B12	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	156
GN 285-B12-B14-1-*	B12	B14	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B12-B16-1-*	B12	B16	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B12-B18-1-*	B12	B18	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B14-B12-1-*	B14	B12	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B14-B14-1-*	B14	B14	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	148
GN 285-B14-B16-1-*	B14	B16	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B14-B18-1-*	B14	B18	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B16-B12-1-*	B16	B12	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B16-B14-1-*	B16	B14	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B16-B16-1-*	B16	B16	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	144
GN 285-B16-B18-1-*	B16	B18	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B18-B12-1-*	B18	B12	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B18-B14-1-*	B18	B14	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B18-B16-1-*	B18	B16	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B18-B18-1-*	B18	B18	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	136
GN 285-B12-B12-2-*	B12	B12	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	156
GN 285-B12-B14-2-*	B12	B14	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B12-B16-2-*	B12	B16	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B12-B18-2-*	B12	B18	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B14-B12-2-*	B14	B12	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B14-B14-2-*	B14	B14	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	148
GN 285-B14-B16-2-*	B14	B16	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B14-B18-2-*	B14	B18	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B16-B12-2-*	B16	B12	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B16-B14-2-*	B16	B14	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B16-B16-2-*	B16	B16	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	144
GN 285-B16-B18-2-*	B16	B18	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B18-B12-2-*	B18	B12	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B18-B14-2-*	B18	B14	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B18-B16-2-*	B18	B16	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	146
GN 285-B18-B18-2-*	B18	B18	25	M6	25	25	97	34.5	48.5	48.5	GN 911-M6-22	136

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 286

Swivel clamp connector joints

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Types

- Type **S**: steppless adjustment.
- Type **T**: adjustment by 15°-division (serration).

•Clamping screws

- Identification no. **1**: with three clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with three AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

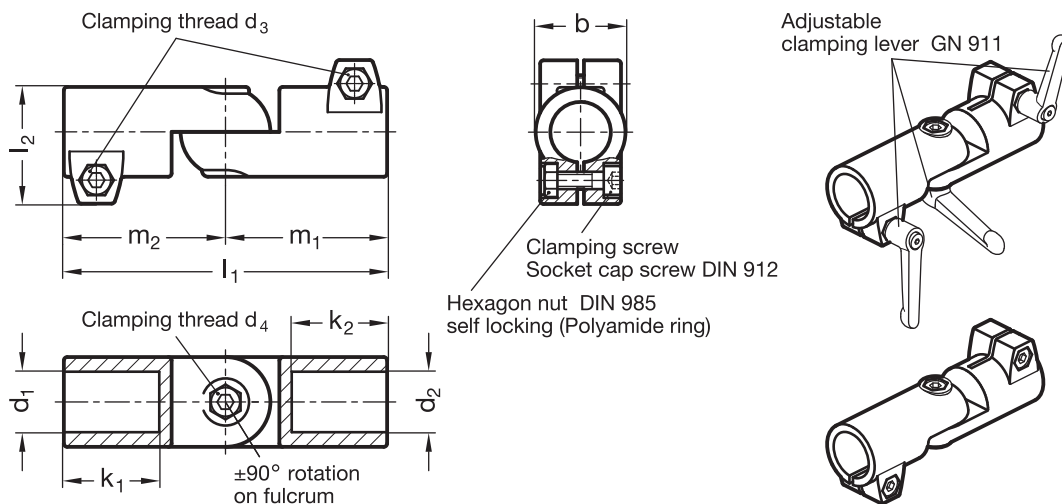
The swivel clamp connector joints GN 286 are an assembly of two swivel clamp connectors GN 276.

For the type with a steppless adjustment (Type S) swivel clamp connectors with a centring step are used. Since the latter have an identical swivel width "b", all bores "d1/d2" can be combined as required.

The clamping bore is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions											Clamping kits		g
	Description	d1 Bore B	d2 Bore B	b Swivel width	d3	d4	k1	k2	l1	l2	m1	m2	for d3		for d4
GN 286-B20-B20-S-1-*	B20	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B20-B25-S-1-*	B20	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B20-B30-S-1-*	B20	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	435
GN 286-B25-B20-S-1-*	B25	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	435
GN 286-B25-B25-S-1-*	B25	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	390
GN 286-B25-B30-S-1-*	B25	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B20-S-1-*	B30	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B25-S-1-*	B30	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B30-S-1-*	B30	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	340
GN 286-B40-B40-S-1-*	B40	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1575
GN 286-B40-B42-S-1-*	B40	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1558
GN 286-B40-B45-S-1-*	B40	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1355
GN 286-B40-B48-S-1-*	B40	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1355
GN 286-B40-B50-S-1-*	B40	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1355
GN 286-B42-B40-S-1-*	B42	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1560
GN 286-B42-B42-S-1-*	B42	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1540
GN 286-B42-B45-S-1-*	B42	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1500
GN 286-B42-B48-S-1-*	B42	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1460
GN 286-B42-B50-S-1-*	B42	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1435
GN 286-B45-B40-S-1-*	B45	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1520
GN 286-B45-B42-S-1-*	B45	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1500
GN 286-B45-B45-S-1-*	B45	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1460
GN 286-B45-B48-S-1-*	B45	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1420
GN 286-B45-B50-S-1-*	B45	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1395
GN 286-B48-B40-S-1-*	B48	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B42-S-1-*	B48	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B45-S-1-*	B48	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B48-S-1-*	B48	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1375
GN 286-B48-B50-S-1-*	B48	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1370
GN 286-B50-B40-S-1-*	B50	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B42-S-1-*	B50	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B45-S-1-*	B50	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B48-S-1-*	B50	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B50-S-1-*	B50	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1390
GN 286-B20-B20-T-1-*	B20	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	435
GN 286-B20-B25-T-1-*	B20	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	435
GN 286-B20-B30-T-1-*	B20	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	435
GN 286-B25-B20-T-1-*	B25	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B25-B25-T-1-*	B25	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	400
GN 286-B25-B30-T-1-*	B25	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	410
GN 286-B30-B20-T-1-*	B30	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B25-T-1-*	B30	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B30-T-1-*	B30	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	350
GN 286-B40-B40-T-1-*	B40	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1590

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions											Clamping kits		\triangle
Description	d1 Bore B	d2 Bore B	b Swivel width	d3	d4	k1	k2	l1	l2	m1	m2	for d3	for d4	g
GN 286-B40-B42-T-1-*	B40	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1558
GN 286-B40-B45-T-1-*	B40	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1558
GN 286-B40-B48-T-1-*	B40	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1558
GN 286-B40-B50-T-1-*	B40	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1558
GN 286-B42-B40-T-1-*	B42	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1570
GN 286-B42-B42-T-1-*	B42	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1555
GN 286-B42-B45-T-1-*	B42	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1520
GN 286-B42-B48-T-1-*	B42	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1475
GN 286-B42-B50-T-1-*	B42	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1460
GN 286-B45-B40-T-1-*	B45	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1530
GN 286-B45-B42-T-1-*	B45	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1515
GN 286-B45-B45-T-1-*	B45	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1475
GN 286-B45-B48-T-1-*	B45	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1430
GN 286-B45-B50-T-1-*	B45	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1420
GN 286-B48-B40-T-1-*	B48	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B42-T-1-*	B48	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B45-T-1-*	B48	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B48-T-1-*	B48	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1390
GN 286-B48-B50-T-1-*	B48	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B40-T-1-*	B50	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B42-T-1-*	B50	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B45-T-1-*	B50	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B48-T-1-*	B50	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B50-T-1-*	B50	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1365
GN 286-B20-B20-S-2-*	B20	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B20-B25-S-2-*	B20	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B20-B30-S-2-*	B20	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	435
GN 286-B25-B20-S-2-*	B25	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B25-B25-S-2-*	B25	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	390
GN 286-B25-B30-S-2-*	B25	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B20-S-2-*	B30	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B25-S-2-*	B30	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B30-S-2-*	B30	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	340
GN 286-B40-B40-S-2-*	B40	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1575
GN 286-B40-B42-S-2-*	B40	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1558
GN 286-B40-B45-S-2-*	B40	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1355
GN 286-B40-B48-S-2-*	B40	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1355
GN 286-B40-B50-S-2-*	B40	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1355
GN 286-B42-B40-S-2-*	B42	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1560
GN 286-B42-B42-S-2-*	B42	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1575
GN 286-B42-B45-S-2-*	B42	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1500
GN 286-B42-B48-S-2-*	B42	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1460
GN 286-B42-B50-S-2-*	B42	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1435
GN 286-B45-B40-S-2-*	B45	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1500
GN 286-B45-B42-S-2-*	B45	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1500
GN 286-B45-B45-S-2-*	B45	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1575

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions											Clamping kits		g
	Description	d1 Bore B	d2 Bore B	b Swivel width	d3	d4	k1	k2	l1	l2	m1	m2	for d3		for d4
GN 286-B45-B48-S-2-*	B45	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1420
GN 286-B45-B50-S-2-*	B45	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1395
GN 286-B48-B40-S-2-*	B48	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B42-S-2-*	B48	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B45-S-2-*	B48	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B48-S-2-*	B48	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1575
GN 286-B48-B50-S-2-*	B48	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1370
GN 286-B50-B40-S-2-*	B50	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B42-S-2-*	B50	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B45-S-2-*	B50	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B48-S-2-*	B50	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B50-S-2-*	B50	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1575
GN 286-B20-B20-T-2-*	B20	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	400
GN 286-B20-B25-T-2-*	B20	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	435
GN 286-B20-B30-T-2-*	B20	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	435
GN 286-B25-B20-T-2-*	B25	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B25-B25-T-2-*	B25	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	400
GN 286-B25-B30-T-2-*	B25	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B20-T-2-*	B30	B20	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B25-T-2-*	B30	B25	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	430
GN 286-B30-B30-T-2-*	B30	B30	40	M8	M8	42.5	42.5	144	52	72	72	GN 911-M8-32	GN 911-M8-35	350
GN 286-B40-B40-T-2-*	B40	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1590
GN 286-B40-B42-T-2-*	B40	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1558
GN 286-B40-B45-T-2-*	B40	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1558
GN 286-B40-B48-T-2-*	B40	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1558
GN 286-B42-B40-T-2-*	B42	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1560
GN 286-B40-B50-T-2-*	B40	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1558
GN 286-B42-B42-T-2-*	B42	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1590
GN 286-B42-B45-T-2-*	B42	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1520
GN 286-B42-B48-T-2-*	B42	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1475
GN 286-B42-B50-T-2-*	B42	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B45-B40-T-2-*	B45	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B45-B42-T-2-*	B45	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B45-B45-T-2-*	B45	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1590
GN 286-B45-B48-T-2-*	B45	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1430
GN 286-B45-B50-T-2-*	B45	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B40-T-2-*	B48	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B42-T-2-*	B48	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B45-T-2-*	B48	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B48-B48-T-2-*	B48	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1590
GN 286-B48-B50-T-2-*	B48	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1370
GN 286-B50-B40-T-2-*	B50	B40	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B42-T-2-*	B50	B42	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B45-T-2-*	B50	B45	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B48-T-2-*	B50	B48	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1510
GN 286-B50-B50-T-2-*	B50	B50	65	M10	M10	74	74	230	77.5	115	115	GN 911-M10-55	GN 911-M10-63	1590

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 287

Swivel clamp connector joints

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Clamping screws

- Identification no. **1**: with three clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with three AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

The swivel clamp connector joints GN 287 are an assembly of the swivel clamp connectors GN 275 and GN 277. Since the swivel clamp connectors have an identical swivel width "b", all bores "d1/d2" can be combined as required.

The clamping bore is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

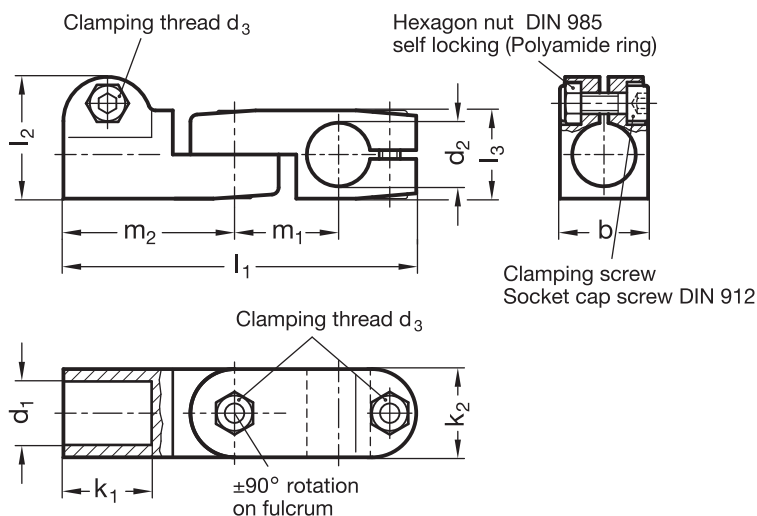
Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

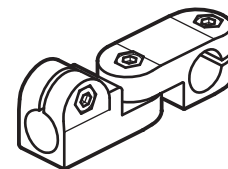
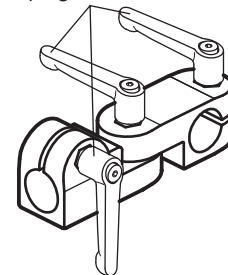



94

Tube clamp connectors, Linear actuators



Adjustable clamping lever GN 911



Standard Elements	Main dimensions											Clamping kits for d3	
Description	d1	d2	b Swivel width	d3	k1	k2	l1	l2	l3	m1	m2		g
GN 287-B12-B12-1.*	B12	B12	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	145
GN 287-B12-B14-1.*	B12	B14	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	145
GN 287-B12-B16-1.*	B12	B16	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	145
GN 287-B12-B18-1.*	B12	B18	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	145
GN 287-B14-B12-1.*	B14	B12	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	140
GN 287-B14-B14-1.*	B14	B14	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	140
GN 287-B14-B16-1.*	B14	B16	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	140
GN 287-B14-B18-1.*	B14	B18	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	140
GN 287-B16-B12-1.*	B16	B12	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B16-B14-1.*	B16	B14	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B16-B16-1.*	B16	B16	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B16-B18-1.*	B16	B18	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B18-B12-1.*	B18	B12	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B18-B14-1.*	B18	B14	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B18-B16-1.*	B18	B16	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B18-B18-1.*	B18	B18	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B12-B12-2.*	B12	B12	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	145
GN 287-B12-B14-2.*	B12	B14	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	145
GN 287-B12-B16-2.*	B12	B16	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	145
GN 287-B12-B18-2.*	B12	B18	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	145
GN 287-B14-B12-2.*	B14	B12	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B14-B14-2.*	B14	B14	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B14-B16-2.*	B14	B16	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B14-B18-2.*	B14	B18	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B16-B12-2.*	B16	B12	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B16-B14-2.*	B16	B14	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B16-B16-2.*	B16	B16	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B16-B18-2.*	B16	B18	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B18-B12-2.*	B18	B12	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B18-B14-2.*	B18	B14	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B18-B16-2.*	B18	B16	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130
GN 287-B18-B18-2.*	B18	B18	25	M6	25	25	100	34.5	25	29.5	48.5	GN 911-M6-22	130

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 288

Swivel clamp connector joints

•Material

Aluminium.

•Finish

- Version **SW**: RAL 9005 black colour, matte finish, epoxy resin coating.
- Version **BL**: blank, matte shot-blasted.

•Types

- Type **S**: steppless adjustment.
- Type **T**: adjustment by 15°-division (serration).

•Clamping screws

- Identification no. **1**: with three clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with three AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

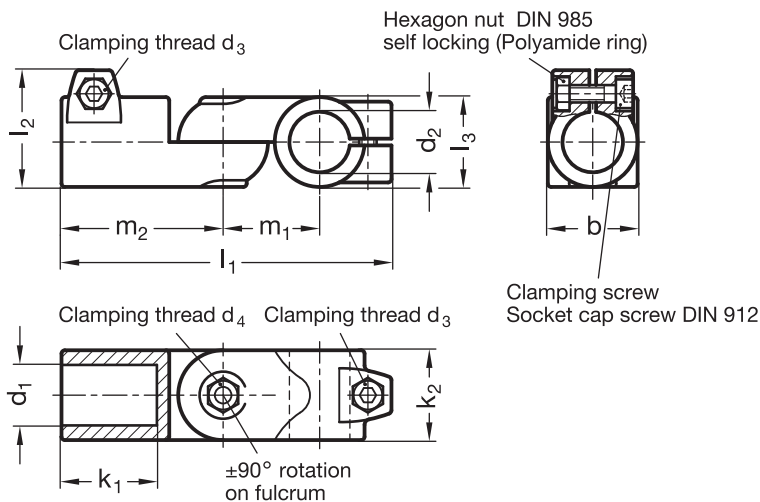
The swivel clamp connector joints GN 288 are an assembly of swivel clamp connectors GN 276 and GN 278.

For the type with a stepless adjustment (Type S) swivel clamp connectors with a centring step are used. Since the latter have an identical swivel width "b", all bores "d1/d2" can be combined as required.

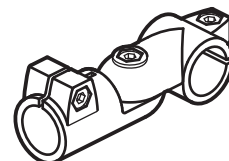
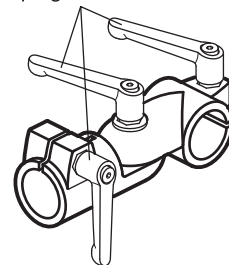
The clamping bore is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.


Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Adjustable clamping lever GN 911




Standard Elements	Main dimensions											Clamping kits		
Description	d1	d2	b Swivel width	d3	d4	k1	k2	l1	l2	m1	m2	for d3	for d4	g
GN 288-B20-B20-S-1-*	B20	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	410
GN 288-B20-B25-S-1-*	B20	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	410
GN 288-B20-B30-S-1-*	B20	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	345
GN 288-B25-B20-S-1-*	B25	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	375
GN 288-B25-B25-S-1-*	B25	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	375
GN 288-B25-B30-S-1-*	B25	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	375
GN 288-B30-B20-S-1-*	B30	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	325
GN 288-B30-B25-S-1-*	B30	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	340
GN 288-B30-B30-S-1-*	B30	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	325
GN 288-B40-B40-S-1-*	B40	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 288-B40-B42-S-1-*	B40	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1510
GN 288-B40-B45-S-1-*	B40	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 288-B40-B48-S-1-*	B40	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 288-B40-B50-S-1-*	B40	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1490
GN 288-B42-B40-S-1-*	B42	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1470
GN 288-B42-B42-S-1-*	B42	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1465
GN 288-B42-B45-S-1-*	B42	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1460
GN 288-B42-B48-S-1-*	B42	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1455
GN 288-B42-B50-S-1-*	B42	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1450
GN 288-B45-B40-S-1-*	B45	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 288-B45-B42-S-1-*	B45	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 288-B45-B45-S-1-*	B45	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 288-B45-B48-S-1-*	B45	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1395
GN 288-B45-B50-S-1-*	B45	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1390
GN 288-B48-B40-S-1-*	B48	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 288-B48-B42-S-1-*	B48	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1265
GN 288-B48-B45-S-1-*	B48	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1260
GN 288-B48-B48-S-1-*	B48	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1300
GN 288-B48-B50-S-1-*	B48	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1295
GN 288-B50-B40-S-1-*	B50	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1275
GN 288-B50-B42-S-1-*	B50	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 288-B50-B45-S-1-*	B50	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 288-B50-B48-S-1-*	B50	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1265
GN 288-B50-B50-S-1-*	B50	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1275
GN 288-B20-B20-T-1-*	B20	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	420
GN 288-B20-B25-T-1-*	B20	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	410
GN 288-B20-B30-T-1-*	B20	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	420
GN 288-B25-B20-T-1-*	B25	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	380
GN 288-B25-B25-T-1-*	B25	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	380
GN 288-B25-B30-T-1-*	B25	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	375
GN 288-B30-B20-T-1-*	B30	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	325
GN 288-B30-B25-T-1-*	B30	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	340
GN 288-B30-B30-T-1-*	B30	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	330

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions											Clamping kits		g
	Description	d1 Bore B	d2 Bore B	b Swivel width	d3	d4	k1	k2	l1	l2	m1	m2	for d3		for d4
GN 288-B40-B40-T-1-*	B40	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1510
GN 288-B40-B42-T-1-*	B40	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1510
GN 288-B40-B45-T-1-*	B40	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 288-B40-B48-T-1-*	B40	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 288-B40-B50-T-1-*	B40	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1490
GN 288-B42-B40-T-1-*	B42	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1470
GN 288-B42-B42-T-1-*	B42	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1475
GN 288-B42-B45-T-1-*	B42	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1460
GN 288-B42-B48-T-1-*	B42	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1455
GN 288-B42-B50-T-1-*	B42	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1450
GN 288-B45-B40-T-1-*	B45	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 288-B45-B42-T-1-*	B45	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1405
GN 288-B45-B45-T-1-*	B45	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 288-B45-B48-T-1-*	B45	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1395
GN 288-B45-B50-T-1-*	B45	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1390
GN 288-B48-B40-T-1-*	B48	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 288-B48-B42-T-1-*	B48	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1265
GN 288-B48-B45-T-1-*	B48	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1260
GN 288-B48-B48-T-1-*	B48	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1315
GN 288-B48-B50-T-1-*	B48	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1295
GN 288-B50-B40-T-1-*	B50	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1275
GN 288-B50-B42-T-1-*	B50	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1275
GN 288-B50-B45-T-1-*	B50	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 288-B50-B48-T-1-*	B50	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1265
GN 288-B50-B50-T-1-*	B50	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1285
GN 288-B20-B20-S-2-*	B20	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	410
GN 288-B20-B25-S-2-*	B20	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	410
GN 288-B20-B30-S-2-*	B20	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	345
GN 288-B25-B20-S-2-*	B25	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	375
GN 288-B25-B25-S-2-*	B25	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	375
GN 288-B25-B30-S-2-*	B25	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	375
GN 288-B30-B20-S-2-*	B30	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	325
GN 288-B30-B25-S-2-*	B30	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	340
GN 288-B30-B30-S-2-*	B30	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	325
GN 288-B40-B40-S-2-*	B40	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 288-B40-B42-S-2-*	B40	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1510
GN 288-B40-B45-S-2-*	B40	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 288-B40-B48-S-2-*	B40	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 288-B40-B50-S-2-*	B40	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1490
GN 288-B42-B40-S-2-*	B42	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1470
GN 288-B42-B42-S-2-*	B42	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1465
GN 288-B42-B45-S-2-*	B42	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1460
GN 288-B42-B48-S-2-*	B42	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1455
GN 288-B42-B50-S-2-*	B42	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1450
GN 288-B45-B40-S-2-*	B45	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 288-B45-B42-S-2-*	B45	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1405
GN 288-B45-B45-S-2-*	B45	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

Standard Elements	Main dimensions											Clamping kits		
Description	d1 Bore B	d2 Bore B	b Swivel width	d3	d4	k1	k2	l1	l2	m1	m2	for d3	for d4	g
GN 288-B45-B48-S-2-*	B45	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1395
GN 288-B45-B50-S-2-*	B45	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1390
GN 288-B48-B40-S-2-*	B48	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 288-B48-B42-S-2-*	B48	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1265
GN 288-B48-B45-S-2-*	B48	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1260
GN 288-B48-B48-S-2-*	B48	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1300
GN 288-B48-B50-S-2-*	B48	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1295
GN 288-B50-B40-S-2-*	B50	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1275
GN 288-B50-B42-S-2-*	B50	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1275
GN 288-B50-B45-S-2-*	B50	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 288-B50-B48-S-2-*	B50	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1265
GN 288-B50-B50-S-2-*	B50	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1275
GN 288-B20-B20-T-2-*	B20	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	420
GN 288-B20-B25-T-2-*	B20	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	410
GN 288-B20-B30-T-2-*	B20	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	420
GN 288-B25-B20-T-2-*	B25	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	380
GN 288-B25-B25-T-2-*	B25	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	380
GN 288-B25-B30-T-2-*	B25	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	380
GN 288-B30-B20-T-2-*	B30	B20	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	325
GN 288-B30-B25-T-2-*	B30	B25	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	340
GN 288-B30-B30-T-2-*	B30	B30	40	M8	M8	42.5	40	147	52	43	72	GN 911-M8-32	GN 911-M8-35	330
GN 288-B40-B40-T-2-*	B40	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1510
GN 288-B40-B42-T-2-*	B40	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1510
GN 288-B40-B45-T-2-*	B40	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 288-B40-B48-T-2-*	B40	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1500
GN 288-B40-B50-T-2-*	B40	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1490
GN 288-B42-B40-T-2-*	B42	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1470
GN 288-B42-B42-T-2-*	B42	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1475
GN 288-B42-B45-T-2-*	B42	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1460
GN 288-B42-B48-T-2-*	B42	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1455
GN 288-B42-B50-T-2-*	B42	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1450
GN 288-B45-B40-T-2-*	B45	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1410
GN 288-B45-B42-T-2-*	B45	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1405
GN 288-B45-B45-T-2-*	B45	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1400
GN 288-B45-B48-T-2-*	B45	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1395
GN 288-B45-B50-T-2-*	B45	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1390
GN 288-B48-B40-T-2-*	B48	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 288-B48-B42-T-2-*	B48	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1265
GN 288-B48-B45-T-2-*	B48	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1260
GN 288-B48-B48-T-2-*	B48	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1315
GN 288-B48-B50-T-2-*	B48	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1295
GN 288-B50-B40-T-2-*	B50	B40	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1275
GN 288-B50-B42-T-2-*	B50	B42	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1275
GN 288-B50-B45-T-2-*	B50	B45	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1270
GN 288-B50-B48-T-2-*	B50	B48	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1265
GN 288-B50-B50-T-2-*	B50	B50	65	M10	M10	74	65	230	77.5	70	115	GN 911-M10-55	GN 911-M10-63	1285

* Complete the description of the standard item needed by adding the finish of the connector clamps: BL (blank) or SW (black).

GN 271.4

Sensor holders

•Material

Aluminium.

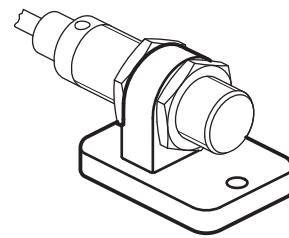
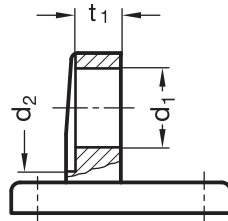
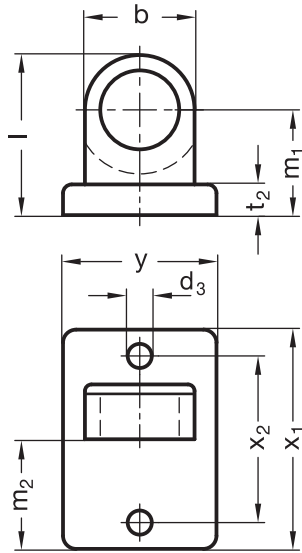
•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.



100

Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions												⚖
Description	d1 for sensor	b Swivel width	d2	d3	l	m1	m2	t1 -0.5	t2	x1	x2	y	g
GN 271.4-B12-25-SW	B12	25	30	5.5	36.5	24	25	11.5	7	50	38	35	40
GN 271.4-B18-25-SW	B18	25	30	5.5	36.5	24	25	11.5	7	50	38	35	38

GN 272.4

Sensor holders



• **Material**

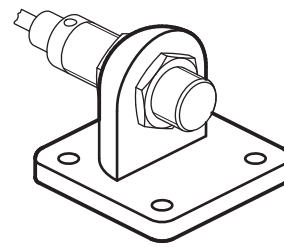
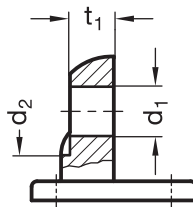
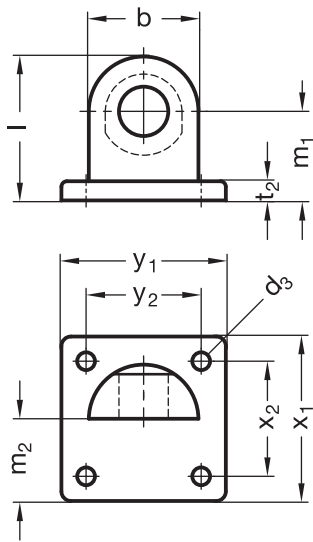
Aluminium.

• **Finish**

RAL 9005 black colour, matte finish, epoxy resin coating.

101

Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions													△△
Description	d1 for sensor	b Swivel width	d2	d3	l	m1	m2	t1 -0.5	t2	x1	x2	y1	y2	g
GN 272.4-B18-40-SW	B18	40	50	6.5	52.5	32.5	30	10	7	60	42	60	42	110
GN 272.4-B30-40-SW	B30	40	50	6.5	52.5	32.5	30	10	7	60	42	60	42	100

GN 273.4

Sensor holders

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screws

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

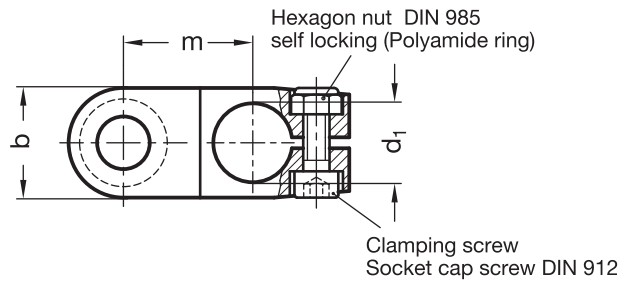
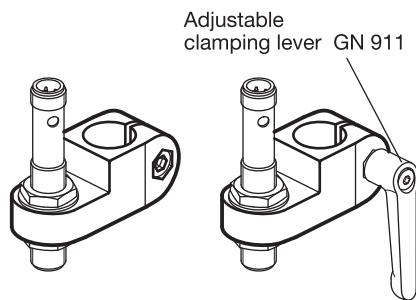
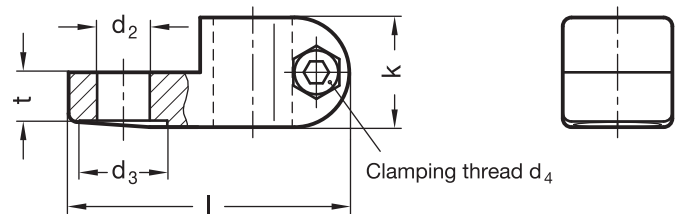
Features and applications

The aluminium design guarantees a highly safe and secure clamping action and safe positioning.

The clamping bore of the sensor holders GN 273.4 is machined and designed for construction tubings GN 990 or DIN 2391, DIN 2395 and DIN 2462 respectively.

Accessories

- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions									Clamping kits for d ₄	⚖ g
	d ₁	d ₂ for sensor	b Swivel width	d ₃	d ₄	k	l	m	t - 0.5		
GN 273.4-B12-B12-1-SW	B12	B12	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B14-B12-1-SW	B14	B12	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B16-B12-1-SW	B16	B12	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B18-B12-1-SW	B18	B12	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B12-B18-1-SW	B12	B18	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B14-B18-1-SW	B14	B18	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B16-B18-1-SW	B16	B18	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B18-B18-1-SW	B18	B18	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B12-B12-2-SW	B12	B12	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B14-B12-2-SW	B14	B12	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B16-B12-2-SW	B16	B12	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B18-B12-2-SW	B18	B12	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B12-B18-2-SW	B12	B18	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B14-B18-2-SW	B14	B18	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B16-B18-2-SW	B16	B18	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60
GN 273.4-B18-B18-2-SW	B18	B18	25	20	M6	25	64	29.5	11.5	GN 911-M6-22	60

Construction tubings

•Material

AISI 304 stainless steel **NI**, blank BL untreated.

Features and applications

Construction tubings GN 990-NI can be supplied in any length up to 3000 mm.

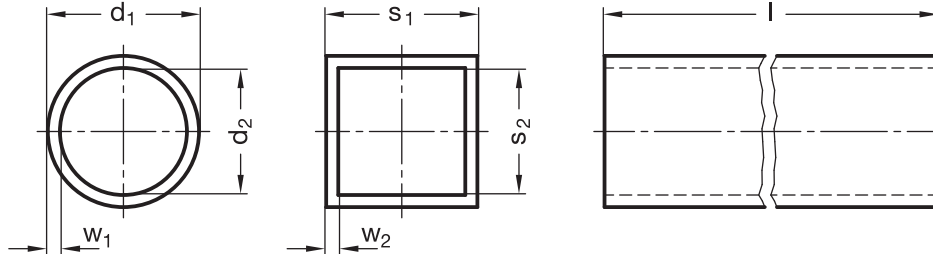
The tolerances specified for the outside diameter of the round construction tubings comply with the requirements for split mono-block connector clamps. Otherwise the tolerances comply with DIN 2391, DIN 2395 and DIN 2462.

Two-piece connector clamps allow obviously larger tolerances on round and square construction tubings.

Accessories

- Tube end plugs GN 991 (see page 106).

- Insert bushes GN 992 (see page 108).



Standard Elements	Main dimensions							
Description	d1	s1	l ±0.5	d2	s2	w1	w2	g
GN 990-NI-D10-100-BL	D10 ±0.1	-	100	7	-	1.5	-	32
GN 990-NI-D12-100-BL	D12 ±0.1	-	100	9	-	1.5	-	40
GN 990-NI-D14-100-BL	D14 ±0.1	-	100	11	-	1.5	-	47
GN 990-NI-D15-100-BL	D15 ±0.1	-	100	12	-	1.5	-	52
GN 990-NI-D16-100-BL	D16 ±0.1	-	100	13	-	1.5	-	54
GN 990-NI-D18-100-BL	D18 ±0.1	-	100	15	-	1.5	-	61
GN 990-NI-D20-100-BL	D20 ±0.1	-	100	16	-	2	-	89
GN 990-NI-D25-100-BL	D25 ±0.1	-	100	21	-	2	-	114
GN 990-NI-D30-100-BL	D30 ±0.1	-	100	26	-	2	-	139
GN 990-NI-D32-100-BL	D32 ±0.15	-	100	28	-	2	-	149
GN 990-NI-D35-100-BL	D35 ±0.15	-	100	31	-	2	-	164
GN 990-NI-D40-100-BL	D40 ±0.15	-	100	34	-	3	-	276
GN 990-NI-D50-100-BL	D50 ±0.2	-	100	44	-	3	-	350
GN 990-NI-D60-100-BL	D60 ±0.25	-	100	52	-	4	-	550
GN 990-NI-V20-100-BL	-	V20	100	-	16	-	2	113
GN 990-NI-V25-100-BL	-	V25	100	-	21	-	2	145
GN 990-NI-V30-100-BL	-	V30	100	-	26	-	2	176
GN 990-NI-V40-100-BL	-	V40	100	-	34	-	3	335
GN 990-NI-V45-100-BL	-	V45	100	-	39	-	3	382
GN 990-NI-V50-100-BL	-	V50	100	-	44	-	3	431

GN 990

Construction tubings

•Material

- Steel **ST**, zinc-plated ZB, blue anodised.
- Aluminium **AL**, blank BL, untreated.
- Aluminium **AL**, anodised EL, natural colour.

Features and applications

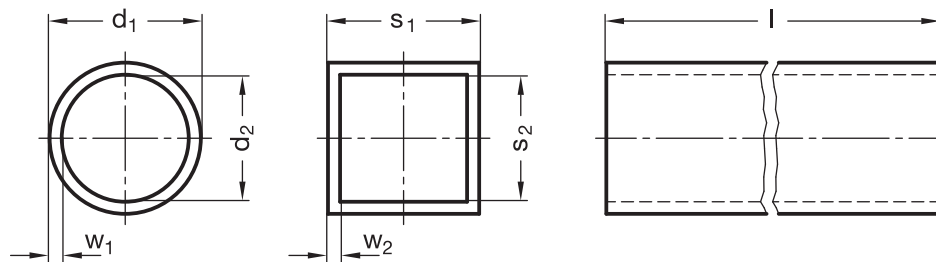
Construction tubings GN 990 can be supplied in any length up to 3000 mm.

The tolerances specified for the outside diameter of the round construction tubings comply with the requirements for split mono-block connector clamps. Otherwise the tolerances comply with DIN 2391, DIN 2395 and DIN 2462.

Two-piece connector clamps allow obviously larger tolerances on round and square construction tubings.

Accessories


- Tube end plugs GN 991 (see page 106).
- Insert bushes GN 992 (see page 108).



104

Tube clamp connectors, Linear actuators

Standard Elements	Main dimensions							g
	d1	s1 Square V	l ±0.5	d2	s2	w1	w2	
GN 990-ST-D10-100-ZB	D10 ±0.1	-	100	7	-	1.5	-	31
GN 990-ST-D12-100-ZB	D12 ±0.1	-	100	9	-	1.5	-	40
GN 990-ST-D14-100-ZB	D14 ±0.1	-	100	11	-	1.5	-	46
GN 990-ST-D15-100-ZB	D15 ±0.1	-	100	12	-	1.5	-	52
GN 990-ST-D16-100-ZB	D16 ±0.1	-	100	13	-	1.5	-	54
GN 990-ST-D18-100-ZB	D18 ±0.1	-	100	15	-	1.5	-	61
GN 990-ST-D20-100-ZB	D20 ±0.1	-	100	16	-	2	-	89
GN 990-ST-D25-100-ZB	D25 ±0.1	-	100	21	-	2	-	113
GN 990-ST-D30-100-ZB	D30 ±0.1	-	100	26	-	2	-	138
GN 990-ST-D32-100-ZB	D32 ±0.15	-	100	28	-	2	-	148
GN 990-ST-D35-100-ZB	D35 ±0.15	-	100	31	-	2	-	163
GN 990-ST-D40-100-ZB	D40 ±0.15	-	100	34	-	3	-	274
GN 990-ST-D42-100-ZB	D42 ±0.2	-	100	36	-	3	-	288
GN 990-ST-D45-100-ZB	D45 ±0.2	-	100	39	-	3	-	312
GN 990-ST-D48-100-ZB	D48 ±0.2	-	100	42	-	3	-	334
GN 990-ST-D50-100-ZB	D50 ±0.2	-	100	44	-	3	-	348
GN 990-ST-D55-100-ZB	D55 ±0.25	-	100	47	-	4	-	506
GN 990-ST-D60-100-ZB	D60 ±0.25	-	100	52	-	4	-	550

Standard Elements	Main dimensions							
Description	d1	s1 Square V	l ±0,5	d2	s2	w1	w2	g
GN 990-ST-V20-100-ZB	-	V20	100	-	16	-	2	112
GN 990-ST-V25-100-ZB	-	V25	100	-	21	-	2	144
GN 990-ST-V30-100-ZB	-	V30	100	-	26	-	2	175
GN 990-ST-V35-100-ZB	-	V35	100	-	31	-	2	206
GN 990-ST-V40-100-ZB	-	V40	100	-	34	-	3	333
GN 990-ST-V45-100-ZB	-	V45	100	-	39	-	3	380
GN 990-ST-V50-100-ZB	-	V50	100	-	44	-	3	428
GN 990-AL-D10-100-*	D10 ±0.1	-	100	7	-	1.5	-	11
GN 990-AL-D12-100-*	D12 ±0.1	-	100	9	-	1.5	-	14
GN 990-AL-D14-100-*	D14 ±0.1	-	100	11	-	1.5	-	16
GN 990-AL-D15-100-*	D15 ±0.1	-	100	12	-	1.5	-	18
GN 990-AL-D16-100-*	D16 ±0.1	-	100	13	-	1.5	-	18
GN 990-AL-D18-100-*	D18 ±0.1	-	100	15	-	1.5	-	21
GN 990-AL-D20-100-*	D20 ±0.1	-	100	16	-	2	-	31
GN 990-AL-D25-100-*	D25 ±0.1	-	100	21	-	2	-	39
GN 990-AL-D30-100-*	D30 ±0.1	-	100	26	-	2	-	48
GN 990-AL-D32-100-*	D32 ±0.15	-	100	28	-	2	-	51
GN 990-AL-D35-100-*	D35 ±0.15	-	100	31	-	2	-	56
GN 990-AL-D40-100-*	D40 ±0.15	-	100	34	-	3	-	94
GN 990-AL-D42-100-*	D42 ±0.2	-	100	36	-	3	-	99
GN 990-AL-D45-100-*	D45 ±0.2	-	100	39	-	3	-	107
GN 990-AL-D48-100-*	D48 ±0.2	-	100	42	-	3	-	115
GN 990-AL-D50-100-*	D50 ±0.2	-	100	44	-	3	-	120
GN 990-AL-D60-100-*	D60 ±0.25	-	100	52	-	4	-	188
GN 990-AL-V10-100-*	-	V10	100	-	8	-	1.5	10
GN 990-AL-V12-100-*	-	V12	100	-	10	-	1.5	12
GN 990-AL-V16-100-*	-	V16	100	-	14	-	1.5	16
GN 990-AL-V20-100-*	-	V20	100	-	16	-	2	39
GN 990-AL-V25-100-*	-	V25	100	-	21	-	2	50
GN 990-AL-V30-100-*	-	V30	100	-	26	-	2	61
GN 990-AL-V35-100-*	-	V35	100	-	31	-	2	71
GN 990-AL-V40-100-*	-	V40	100	-	34	-	3	120
GN 990-AL-V45-100-*	-	V45	100	-	39	-	3	136
GN 990-AL-V50-100-*	-	V50	100	-	44	-	3	152

* Complete the description of the standard item needed by adding the finish of the aluminium construction tubings: BL (blank) or EL (anodized).

GN 991

Tube end plugs

•Material

Polyamide based (PA) technopolymer.

•Colour

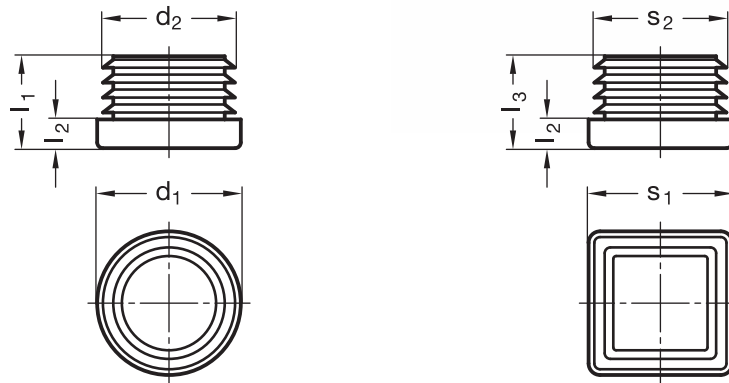
Black, matte finish.

Features and applications

Tube end plugs GN 991 have been designed for sealing tube ends for safety or optical reasons. They are inserted into the tube end either by hand or with a mallet.

Accessories

- Construction tubings GN 990 (see page 103ff.).
- Insert bushes GN 992 (see page 108).



Standard Elements	Main dimensions							△△
	d1	s1	d2 ≈	s2 ≈	l1 ≈	l2 ≈	l3		g
GN 991-D10	D10	-	9	-	15	3	-	1
GN 991-D12	D12	-	11	-	14	4	-	1
GN 991-D14	D14	-	13	-	13	4	-	1
GN 991-D15	D15	-	14	-	16	4	-	1
GN 991-D16	D16	-	14.5	-	15	5	-	1
GN 991-D18	D18	-	17	-	16	5	-	2
GN 991-D20	D20	-	19	-	16	5	-	2
GN 991-D25	D25	-	23.5	-	16	5	-	3
GN 991-D30	D30	-	29	-	16	5	-	3
GN 991-D32	D32	-	30.5	-	16	5	-	4
GN 991-D35	D35	-	34	-	16	5	-	5
GN 991-D40	D40	-	35	-	17	5	-	6
GN 991-D42	D42	-	38.5	-	17	5	-	6
GN 991-D45	D45	-	44	-	16	5	-	7
GN 991-D48	D48	-	45	-	20	5	-	9
GN 991-D50	D50	-	45.5	-	23	5	-	11
GN 991-D55	D55	-	53	-	19	5	-	11
GN 991-D60	D60	-	58	-	22	4	-	15
GN 991-V20	-	V20	-	19	-	5	17	2
GN 991-V25	-	V25	-	24	-	5	17	4
GN 991-V30	-	V30	-	29	-	5	17	5
GN 991-V40	-	V40	-	36	-	5	20	9
GN 991-V45	-	V45	-	44	-	5	20	10
GN 991-V50	-	V50	-	46	-	5	24	15



Levelling elements GN 343.2 (see main catalogue page 724ff.)

Levelling elements LS.A (see main catalogue page 716ff.)

Levelling elements LV.A (see main catalogue page 730ff.)
with insert bushes.

for construction tubings GN 990 (see page 103ff.)

in Technopolymer NDX.Q (see main catalogue page 760)

in Technopolymer ND.Q (see main catalogue page 762)

in Aluminium GN 992 (see page 108)

GN 992

Insert bushes

•Material

Aluminium, blank.

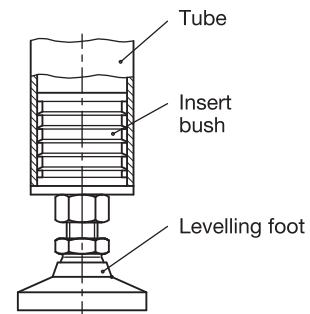
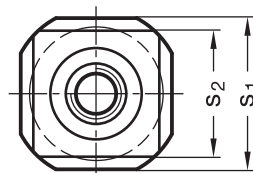
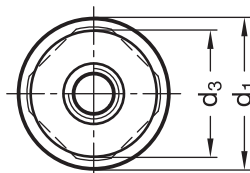
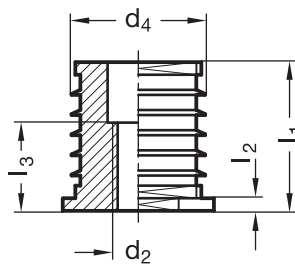
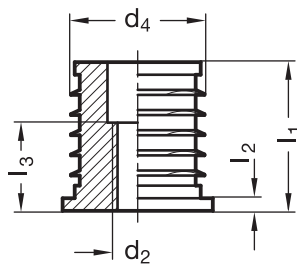
Features and applications


Insert bushes GN 992 serve as end plugs in tubing which offer the additional facility for fitting threaded levelling feet.

Insert bushes can bridge an internal diameter tolerance on both round as well as square tube of $\pm 0,5$ mm. For this purpose lamellas are available. Insert bushes are fitted with a mallet.

Accessories

Construction tubings GN 990 (see page 103ff.).



Standard Elements	Main dimensions									
Description	d1	s1	d2	d3	d4	l1	l2	l3 +0.5	s2 Internal square	g
GN 992-D20-M8	D20	-	M8	16	16.5	29.5	2.5	16	-	10
GN 992-D25-M8	D25	-	M8	21	21.5	33.5	2.5	16	-	22
GN 992-D25-M10	D25	-	M10	21	21.5	33.5	2.5	16	-	22
GN 992-D30-M8	D30	-	M8	26	26.5	33.5	2.5	18	-	34
GN 992-D30-M10	D30	-	M10	26	26.5	33.5	2.5	18	-	45
GN 992-D32-M8	D32	-	M8	28	28.5	33.5	2.5	18	-	50
GN 992-D32-M10	D32	-	M10	28	28.5	33.5	2.5	18	-	50
GN 992-D35-M10	D35	-	M10	31	31.5	37.5	2.5	24	-	55
GN 992-D35-M12	D35	-	M12	31	31.5	37.5	2.5	24	-	55
GN 992-D40-M10	D40	-	M10	34	34.5	41.5	2.5	24	-	78
GN 992-D40-M12	D40	-	M12	34	34.5	41.5	2.5	24	-	78
GN 992-D42-M10	D42	-	M10	36	36.5	41.5	2.5	24	-	90
GN 992-D42-M12	D42	-	M12	36	36.5	41.5	2.5	24	-	90
GN 992-D45-M12	D45	-	M12	39	39.5	45.5	2.5	30	-	110
GN 992-D45-M16	D45	-	M16	39	39.5	45.5	2.5	30	-	110
GN 992-D48-M12	D48	-	M12	42	42.5	45.5	2.5	30	-	130
GN 992-D48-M16	D48	-	M16	42	42.5	45.5	2.5	30	-	130
GN 992-D50-M12	D50	-	M12	44	44.5	45.5	2.5	30	-	145
GN 992-D50-M16	D50	-	M16	44	44.5	45.5	2.5	30	-	145
GN 992-V20-M8	-	V20	M8	-	16.5	29.5	2.5	16	16	11
GN 992-V25-M8	-	V25	M8	-	21.5	33.5	2.5	16	21	22
GN 992-V25-M10	-	V25	M10	-	21.5	33.5	2.5	16	21	22
GN 992-V30-M8	-	V30	M8	-	26.5	33.5	2.5	18	26	52
GN 992-V30-M10	-	V30	M10	-	26.5	33.5	2.5	18	26	52
GN 992-V40-M10	-	V40	M10	-	34.5	41.5	2.5	24	34	115
GN 992-V40-M12	-	V40	M12	-	34.5	41.5	2.5	24	34	88
GN 992-V45-M12	-	V45	M12	-	39.5	45.5	2.5	30	39	165
GN 992-V45-M16	-	V45	M16	-	39.5	45.5	2.5	30	39	165
GN 992-V50-M12	-	V50	M12	-	44.5	45.5	2.5	30	44	215
GN 992-V50-M16	-	V50	M16	-	44.5	45.5	2.5	30	44	215

Clamping kits

•Lever body

Zinc alloy die-cast, epoxy resin coating.

•Colour

RAL 9006 silver.

•Clamping element

AISI 303 stainless steel with threaded hole and toothed element for coupling to the lever body, AISI 303 stainless steel screw and AISI 301 stainless steel return spring.

•Locking nut

AISI 304 stainless steel.

•Distance bushing

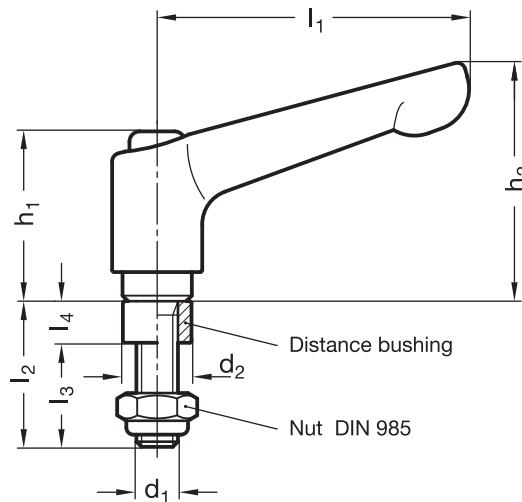
AISI 303 stainless steel.

Features and applications

The clamping kit is an adjustable handle for clamp connectors.

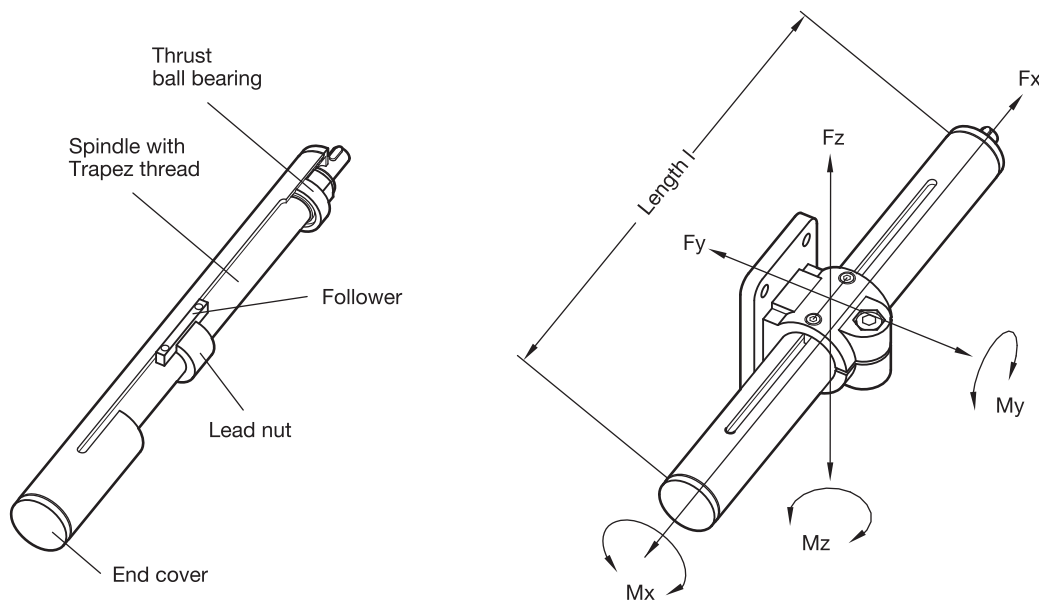
The clamping kits GN 911 can be used instead of the hexagon socket cap screws DIN 912 for connector clamps.

The table of the connector clamps shows the corresponding clamping kit for each clamping point.



Standard Elements	Main dimensions								△
Description	d1	d2	l1	l2	l3	l4	h1	h2	g
GN 911-M6-22	M6	9.9	45	22	19	3	24.5	35	40
GN 911-M6-25	M6	9.9	45	25	22	3	24.5	35	41
GN 911-M8-32	M8	12.9	63	32	27.5	4.5	31	45	61
GN 911-M8-35	M8	12.9	63	35	30.5	4.5	31	45	61
GN 911-M8-40	M8	12.9	63	40	35.5	4.5	31	45	61
GN 911-M8-45	M8	12.9	63	45	40.5	4.5	31	45	61
GN 911-M8-50	M8	12.9	63	50	45.5	4.5	31	45	61
GN 911-M8-55	M8	12.9	63	55	50.5	4.5	31	45	62
GN 911-M10-40	M10	16.9	78	40	34.5	5.5	36	55	146
GN 911-M10-50	M10	16.9	78	50	44.5	5.5	36	55	152
GN 911-M10-55	M10	16.9	78	55	49.5	5.5	36	55	155
GN 911-M10-63	M10	16.9	78	63	57.5	5.5	36	55	159
GN 911-M10-70	M10	16.9	78	70	64.5	5.5	36	55	140
GN 911-M10-80	M10	16.9	78	80	74.5	5.5	36	55	200

Technical data and load data of linear actuators



Ø Linear actuator	Fx in N	Fy in N			Fz in N			Mx in Nm	My in Nm	Mz in Nm
		l = 500	l = 1000	l = 1500	l = 500	l = 1000	l = 1500			
18	400	80	15	-	65	10	-	1.5	4.5	4.5
30	850	500	70	15	550	55	10	6.5	15	15
40	1100	2150	250	65	1900	150	50	15	42	42
50	1750	3100	650	150	3100	650	150	29	69	69
60	2600	4550	1500	400	4550	1400	350	45	125	125

The load data are applicable to linear actuators GN 291, GN 292, GN 293 Steel (SCR) or Stainless Steel (NI). At the values indicated above, a temporary linear tube deformation of approximately 0.5 mm will occur.

Description

The lead screw with a trapezoidal thread mounted on a thrust ball bearing at both ends is fitted with a follower nut. The follower nut carries an adaptor bar that protrudes through the tube slot thus preventing the follower nut from rotating. The adaptor bar is linked to sliding units. Linear actuators have been designed for hand operation (handwheel).

The positioning accuracy is 0.2 mm at 300 mm travel.

Guide tubes are available in chrome plated steel (SCR) or Stainless Steel (NI). They are produced within the tolerance band of precision steel tubes DIN 2391 and DIN 2462 respectively.

Within the extensive range of tube clamping connectors, there are numerous components available for constructing jigs and fixtures which are designed to perform linear operations.

In addition digital position indicators (DD52R / DD51) can be added to monitor the movement and positioning.

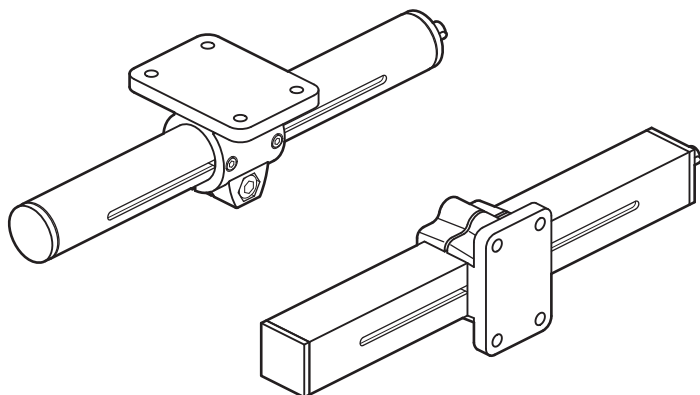
For applications with high torsional moments M_x it is recommended to use square linear actuators.

For this type there are also a numerous components within the tube clamp connectors range available. The slide units of the square linear actuators are built of split elements. Therefore there are no special requirements regarding the tolerance of the square tubes.

Assembly examples of linear actuators

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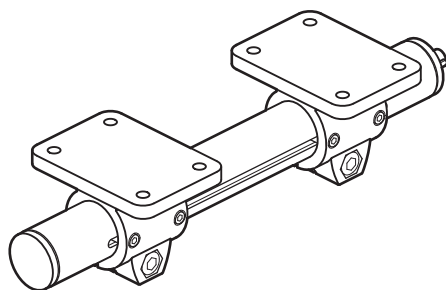
Tube clamp connectors, Linear actuators



Description

Linear actuators GN 291 (see page 113ff.) are available with left or right hand thread, with protruding shaft at either one or both ends with one linear actuator connector GN 146.1 (see page 127ff.).

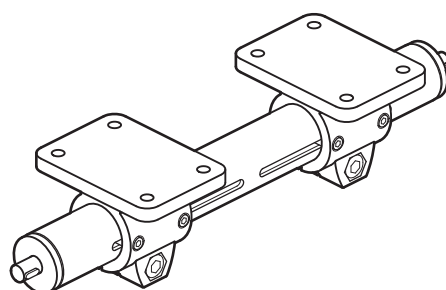
Square linear actuators GN 291.1 (standard sheet page 140ff.) is available with left or right hand thread, with protruding shaft at either one or both ends with one linear actuator connector GN 147.1 (see page 131).



Description

Linear actuators GN 292 (standard sheet page 70) are available with left and right hand thread, with protruding shaft at either one or both ends and two linear actuator connectors GN 146.1 (see page 75).

Square linear actuators GN 292.1 on request.



Description

Linear actuators GN 293 (see page 71) are available with two separate spindles with left or right hand thread, or alternatively two left or two right hand threads with protruding shaft ends and two linear actuator connectors GN 146.1 (see page 75).

Square linear actuators GN 293.1 on request.

GN 291

Linear actuators



• Guide tube

Precision steel tube, chrome-plated **SCR**, DIN 2391.

• Trapezoidal thread on shaft

Steel thrust ball bearings.

• Follower nut

Gun metal.

• End caps

Plastic.

• Types

- Type **R1**: Right hand thread, single shaft end only.
- Type **R2**: Right hand thread, two shaft ends.
- Type **L1**: Left hand thread, single shaft end only.
- Type **L2**: Left hand thread, two shaft ends.

• Assembly

Sliders, connector clamps and accessories have to be ordered separately.

Features and applications

In addition to the standard travel lengths specified in the above table for linear actuator GN 291 any length inside the maximum length is available.

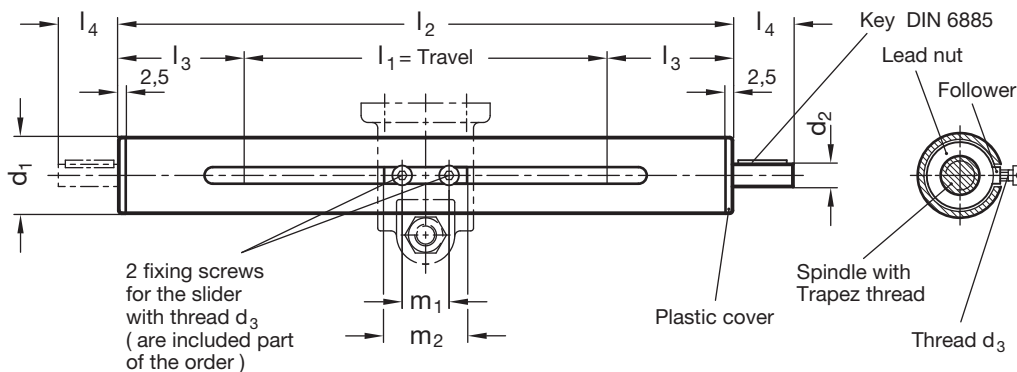
Besides the extensive range of tube clamp connectors there are a number of additional components for mounting on the linear actuator to build slider units. In order to measure the movement and positioning of the sliders, digital as well as analogue position indicators can be added.

Accessories


- Housings GN 298 (see page 159).
- Bevel gear wheels GN 297 (see page 160).
- Installation kits for linear actuators GN 295 (see page 153).
- Longitudinal scales GN 299 (see page 154).

Special executions on request (For sufficient quantities)

Guide tube, precision AISI 303 stainless steel **NI**, DIN 2462 (all types).



Standard Elements	Main dimensions											Shaft key spring DIN 6885	g
	d1	l1 Travel (standard lengths)	max. travel	Shaft thread	d2 f7	d3	l2 Total length	l3	l4	m1	m2		
GN 291-18-65-R1-SCR	18	65	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	230
GN 291-18-165-R1-SCR	18	165	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	330
GN 291-18-265-R1-SCR	18	265	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	430
GN 291-30-100-R1-SCR	30	100	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	780
GN 291-30-150-R1-SCR	30	150	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	890
GN 291-30-200-R1-SCR	30	200	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	1000
GN 291-30-300-R1-SCR	30	300	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	1210
GN 291-40-70-R1-SCR	40	70	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	1640
GN 291-40-170-R1-SCR	40	170	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2080
GN 291-40-220-R1-SCR	40	220	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2310
GN 291-40-270-R1-SCR	40	270	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2530
GN 291-40-320-R1-SCR	40	320	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2750

Standard Elements	Main dimensions											Shaft key spring DIN 6885	
Description	d1	l1 Travel (standard lengths)	max. travel	Shaft thread	d2 f7	d3	l2 Total length	l3	l4	m1	m2		g
GN 291-50-65-R1-SCR	50	65	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	4620
GN 291-50-115-R1-SCR	50	115	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	2720
GN 291-50-215-R1-SCR	50	215	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3360
GN 291-50-265-R1-SCR	50	265	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3670
GN 291-50-315-R1-SCR	50	315	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3990
GN 291-60-220-R1-SCR	60	220	2700	TR24x4	14	M8	l1+280	142.5	19	50	70	A5x5x16	5300
GN 291-60-720-R1-SCR	60	720	2700	TR24x4	14	M8	l1+280	142.5	19	50	70	A5x5x16	9920
GN 291-18-65-L1-SCR	18	65	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	230
GN 291-18-165-L1-SCR	18	165	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	330
GN 291-18-265-L1-SCR	18	265	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	430
GN 291-30-100-L1-SCR	30	100	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	780
GN 291-30-150-L1-SCR	30	150	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	890
GN 291-30-200-L1-SCR	30	200	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	1000
GN 291-30-300-L1-SCR	30	300	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	1210
GN 291-40-70-L1-SCR	40	70	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	1640
GN 291-40-170-L1-SCR	40	170	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2080
GN 291-40-220-L1-SCR	40	220	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2310
GN 291-40-270-L1-SCR	40	270	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2530
GN 291-40-320-L1-SCR	40	320	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2750
GN 291-50-65-L1-SCR	50	65	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	4620
GN 291-50-115-L1-SCR	50	115	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	2720
GN 291-50-215-L1-SCR	50	215	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3360
GN 291-50-265-L1-SCR	50	265	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3670
GN 291-50-315-L1-SCR	50	315	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3990
GN 291-60-220-L1-SCR	60	220	2700	TR24x4	14	M8	l1+280	142.5	19	50	70	A5x5x16	5300
GN 291-60-720-L1-SCR	60	720	2700	TR24x4	14	M8	l1+280	142.5	19	50	70	A5x5x16	9920
GN 291-18-65-R2-SCR	18	65	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	230
GN 291-18-165-R2-SCR	18	165	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	330
GN 291-18-265-R2-SCR	18	265	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	430
GN 291-30-100-R2-SCR	30	100	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	780
GN 291-30-150-R2-SCR	30	150	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	890
GN 291-30-200-R2-SCR	30	200	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	1000
GN 291-30-300-R2-SCR	30	300	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	1210
GN 291-40-70-R2-SCR	40	70	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	1640
GN 291-40-170-R2-SCR	40	170	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2080
GN 291-40-220-R2-SCR	40	220	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2310
GN 291-40-270-R2-SCR	40	270	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2530
GN 291-40-320-R2-SCR	40	320	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2750
GN 291-50-65-R2-SCR	50	65	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	4620
GN 291-50-115-R2-SCR	50	115	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	2720
GN 291-50-215-R2-SCR	50	215	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3360
GN 291-50-265-R2-SCR	50	265	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3670
GN 291-50-315-R2-SCR	50	315	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3990
GN 291-60-220-R2-SCR	60	220	2700	TR24x4	14	M8	l1+280	142.5	19	50	70	A5x5x16	5300
GN 291-60-720-R2-SCR	60	720	2700	TR24x4	14	M8	l1+280	142.5	19	50	70	A5x5x16	9920



Linear actuators GN 291 (see page 113)
 Linear actuators GN 292 (see page 116)
 Linear actuators GN 293 (see page 117)
 Longitudinal scales GN 299 (see page 154ff.)
 Linear actuator connectors GN 145.1 (see page 128)
 Linear actuator connectors GN 146.1 (see page 130)

Standard Elements	Main dimensions											Shaft key spring DIN 6885	g
	d1	l1 Travel (standard lengths)	max. travel	Shaft thread	d2 t7	d3	l2 Total length	l3	l4	m1	m2		
GN 291-18-65-L2-SCR	18	65	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	230
GN 291-18-165-L2-SCR	18	165	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	330
GN 291-18-265-L2-SCR	18	265	350	TR10x3	6	M3	l1+140	70	16	17	24	A2x2x12	430
GN 291-30-100-L2-SCR	30	100	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	780
GN 291-30-150-L2-SCR	30	150	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	890
GN 291-30-200-L2-SCR	30	200	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	1000
GN 291-30-300-L2-SCR	30	300	1250	TR14x4	8	M4	l1+205	102.5	16	23	38	A2x2x12	1210
GN 291-40-70-L2-SCR	40	70	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	1640
GN 291-40-170-L2-SCR	40	170	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2080
GN 291-40-220-L2-SCR	40	220	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2310
GN 291-40-270-L2-SCR	40	270	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2530
GN 291-40-320-L2-SCR	40	320	1800	TR20x4	12	M5	l1+235	117.5	17	42	54	A4x4x12	2750
GN 291-50-65-L2-SCR	50	65	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	4620
GN 291-50-115-L2-SCR	50	115	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	2720
GN 291-50-215-L2-SCR	50	215	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3360
GN 291-50-265-L2-SCR	50	265	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3670
GN 291-50-315-L2-SCR	50	315	2300	TR20x4	12	M6	l1+240	120	18	42	54	A4x4x12	3990
GN 291-60-220-L2-SCR	60	220	2700	TR24x4	14	M8	l1+280	142.5	19	50	70	A5x5x16	5300
GN 291-60-720-L2-SCR	60	720	2700	TR24x4	14	M8	l1+280	142.5	19	50	70	A5x5x16	9920

GN 292

Linear actuators

•Guide tube

Precision steel tube, chrome-plated **SCR**, DIN 2391.

•Trapezoidal thread on shaft

Steel thrust ball bearings.

•Follower nut

Gun metal.

•End caps

Plastic.

•Types

- Type **RL1**: Shaft end protruding at one end only.
- Type **RL2**: Shaft end protruding at both ends.

•Assembly

Sliders, connector clamps and accessoires have to be ordered separately.



Features and applications

In addition to the standard travel lengths specified in the above table for linear actuator GN 292 any length inside the maximum length is available.

Besides the extensive range of tube clamp connectors there are a number of additional components for mounting on the linear actuator to build slider units.

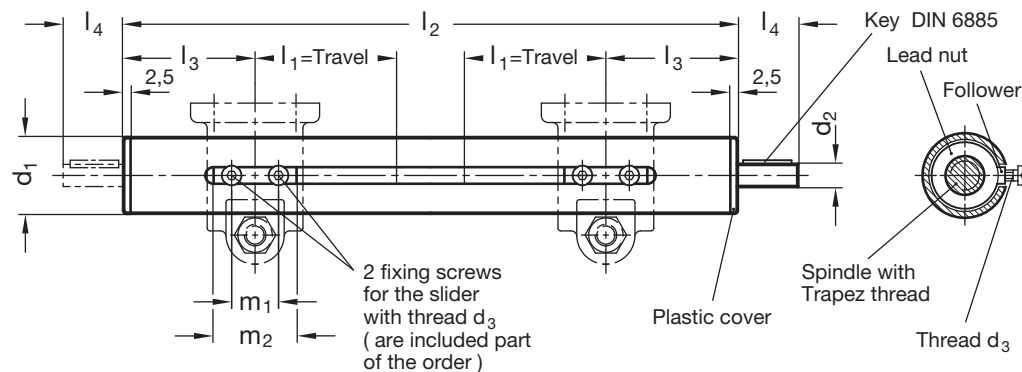
In order to measure the movement and positioning of the sliders, digital as well as analogue position indicators can be added and furthermore the guide tube can be provided with a longitudinal scale along the slot.

Accessories

- Installation kits for linear actuators GN 295 (see page 153).
- Longitudinal scales GN 299 (see page 154).

Special executions on request (For sufficient quantities)

Guide tube, precision AISI 303 stainless steel **NI**, DIN 2462 (all types).



Standard Elements	Main dimensions											Shaft key spring DIN 6885	⚖ g
	d1	l1 Travel (standard lengths)	max. travel	Shaft thread	d2 f7	d3	l2 Total length	l3	l4	m1	m2		
GN 292-18-120-RL1-SCR	18	120	for every 140	TR10x3	6	M3	2x l1+165	70	16	17	24	A2x2x12	440
GN 292-30-130-RL1-SCR	30	130	for every 600	TR14x4	8	M4	2x l1+245	102.5	16	23	38	A2x2x12	1250
GN 292-40-205-RL1-SCR	40	205	for every 900	TR20x4	12	M5	2x l1+295	117.5	17	42	54	A4x4x12	3560
GN 292-40-255-RL1-SCR	40	255	for every 900	TR20x4	12	M5	2x l1+295	117.5	17	42	54	A4x4x12	3700
GN 292-50-300-RL1-SCR	50	300	for every 1150	TR20x4	12	M6	2x l1+305	120	18	42	54	A4x4x12	6400
GN 292-50-350-RL1-SCR	50	350	for every 1150	TR20x4	12	M6	2x l1+305	120	18	42	54	A4x4x12	6700
GN 292-60-300-RL1-SCR*	60	300*	for every 1280	TR24x5	14	M8	2x l1+360	142.5	23.5	50	70	A5x5x16	-
GN 292-18-120-RL2-SCR	18	120	for every 140	TR10x3	6	M3	2x l1+165	70	16	17	24	A2x2x12	440
GN 292-30-130-RL2-SCR	30	130	for every 600	TR14x4	8	M4	2x l1+245	102.5	16	23	38	A2x2x12	1250
GN 292-40-205-RL2-SCR	40	205	for every 900	TR20x4	12	M5	2x l1+295	117.5	17	42	54	A4x4x12	3560
GN 292-40-255-RL2-SCR	40	255	for every 900	TR20x4	12	M5	2x l1+295	117.5	17	42	54	A4x4x12	3700
GN 292-50-350-RL2-SCR	50	350	for every 1150	TR20x4	12	M6	2x l1+305	120	18	42	54	A4x4x12	6700
GN 292-60-300-RL2-SCR*	60	300*	for every 1280	TR24x5	14	M8	2x l1+360	142.5	23.5	50	70	A5x5x16	-

* This sizes are usually not on stock.

GN 293

Linear actuators



- **Guide tube**
Precision steel tube, chrome-plated **SCR**, DIN 2391.
- **Trapezoidal thread on shaft**
Steel thrust ball bearings.
- **Follower nut**
Gun metal.
- **End caps**
Plastic.
- **Types**
 - Type **RL2**: one shaft right hand thread and one shaft left hand thread.
 - Type **RR2**: both shafts right hand thread.
 - Type **LL2**: both shafts left hand thread.
- **Assembly**
Sliders, connector clamps and accessoires have to be ordered separately.

Features and applications

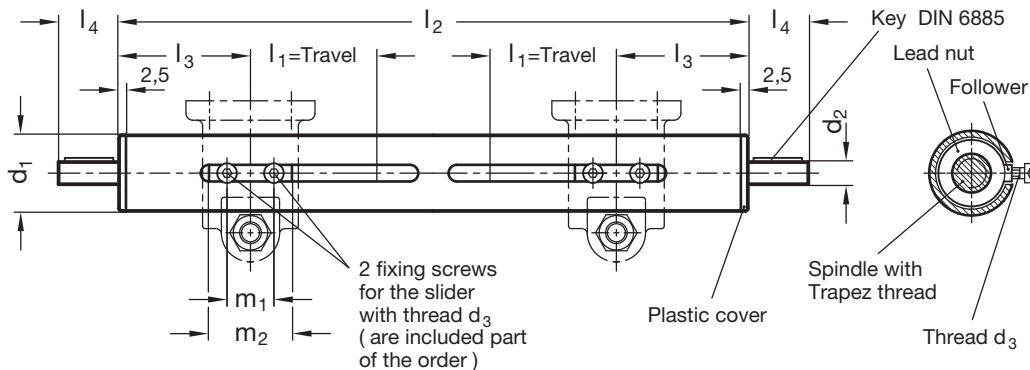
In addition to the standard travel lengths specified in the above table for linear actuator GN 293 any length inside the maximum length is available. Besides the extensive range of tube clamp connectors there are a number of additional components for mounting on the linear actuator to build slider units. In order to measure the movement and positioning of the sliders, digital as well as analogue position indicators can be added and furthermore the guide tube can be provided with a longitudinal scale along the slot.

Accessories

- Installation kits for linear actuators GN 295 (see page 153).
- Longitudinal scales GN 299 (see page 154).

Special executions on request (For sufficient quantities)

Guide tube, precision AISI 303 stainless steel **NI**, DIN 2462 (all types).



Standard Elements	Main dimensions											Shaft key spring DIN 6885
	Description	d1	l1 Travel (standard lengths)	max. travel	Shaft thread	d2 f7	d3	l2 Total length	l3	l4	m1		m2
GN 293-30-100-RL2-SCR*	30	100*	for every 600	TR14x4	8	M4	2xli+255	102.5	16	23	38	A2x2x12
GN 293-40-170-RL2-SCR*	40	170*	for every 900	TR20x4	12	M5	2xli+300	117.5	17	42	54	A4x4x12
GN 293-50-200-RL2-SCR*	50	200*	for every 1150	TR20x4	12	M6	2xli+310	120	18	42	54	A4x4x12
GN 293-60-250-RL2-SCR*	60	250*	for every 1280	TR24x5	14	M8	2xli+360	142.5	23.5	50	70	A5x5x16
GN 293-30-100-RR2-SCR*	30	100*	for every 600	TR14x4	8	M4	2xli+255	102.5	16	23	38	A2x2x12
GN 293-40-170-RR2-SCR*	40	170*	for every 900	TR20x4	12	M5	2xli+300	117.5	17	42	54	A4x4x12
GN 293-50-200-RR2-SCR*	50	200*	for every 1150	TR20x4	12	M6	2xli+310	120	18	42	54	A4x4x12
GN 293-60-250-RR2-SCR*	60	250*	for every 1280	TR24x5	14	M8	2xli+360	142.5	23.5	50	70	A5x5x16
GN 293-30-100-LL2-SCR*	30	100*	for every 600	TR14x4	8	M4	2xli+255	102.5	16	23	38	A2x2x12
GN 293-40-170-LL2-SCR*	40	170*	for every 900	TR20x4	12	M5	2xli+300	117.5	17	42	54	A4x4x12
GN 293-50-200-LL2-SCR*	50	200*	for every 1150	TR20x4	12	M6	2xli+310	120	18	42	54	A4x4x12
GN 293-60-250-LL2-SCR*	60	250*	for every 1280	TR24x5	14	M8	2xli+360	142.5	23.5	50	70	A5x5x16

* This sizes are usually not on stock.



Variations of linear actuators
and linear actuator connectors (see page 113ff.)



GN 131.1

Linear actuator connectors

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Linear actuator connectors GN 131.1 for single system are normally supplied only in connection with a **mounted** linear actuator and for function control. By means of the clamping screw on the guide bores d_1/d_2 the movement can either be set or the slider can be clamped (after setting of final adjustment).

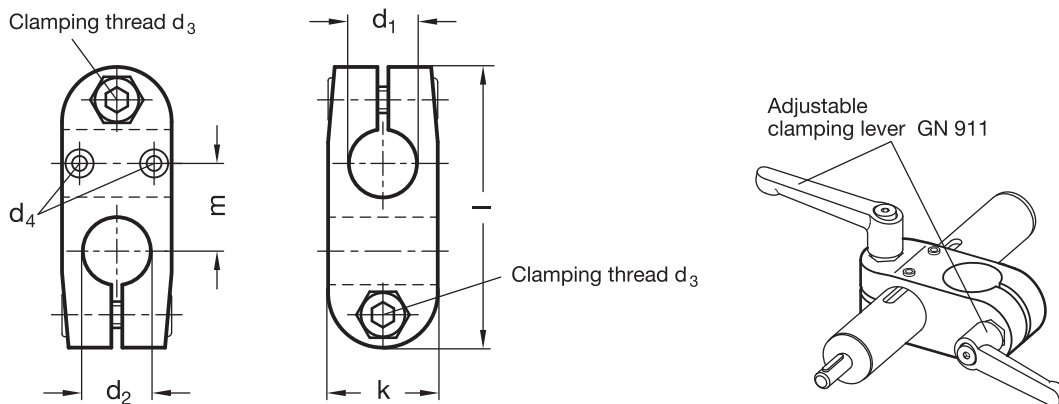
Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



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Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions								Clamping kits for d_3	⚖ g
	d_1 without slider bush	d_1 with slider bush	d_2 without slider bush	d_3	d_4 Mounting screw on the follower	k Clamping length	l	m		
GN 131.1-B18-B18-1-SW	B18	-	B18	M6	M3	25	64	20	GN 911-M6-22	66
GN 131.1-G18-B18-1-SW	-	G18	B18	M6	M3	25	64	20	GN 911-M6-22	64
GN 131.1-B18-B18-2-SW	B18	-	B18	M6	M3	25	64	20	GN 911-M6-22	66
GN 131.1-G18-B18-2-SW	-	G18	B18	M6	M3	25	64	20	GN 911-M6-22	64



Linear actuator connectors

•Material

AISI CF-8 stainless steel **NI**, matte polished.

•Clamping screws

Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

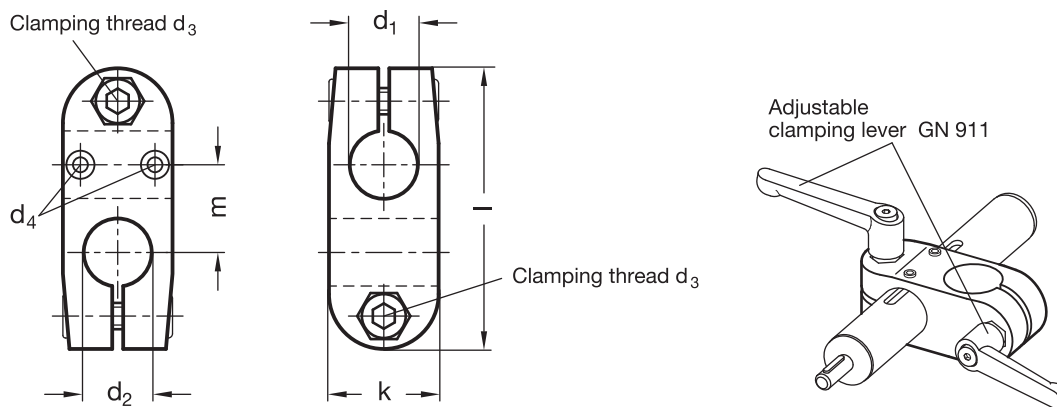
The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Linear actuator connectors GN 131.1-NI for single system are normally supplied only in connection with a **mounted** linear actuator and for function control. By means of the clamping screw on the guide bores d_1/d_2 the movement can either be set or the slider can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions							Clamping kits for d_3	g
Description	d_1 with slider bush	d_2 without slider bush	d_3	d_4 Mounting screw on the follower	k Clamping length	l	m		
GN 131.1-G18-B18-2-NI	G18	B18	M6	M3	25	64	20	GN 911-M6-22	142

GN 131.2

Linear actuator connectors

122

Tube clamp connectors, Linear actuators

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

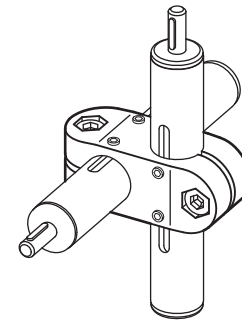
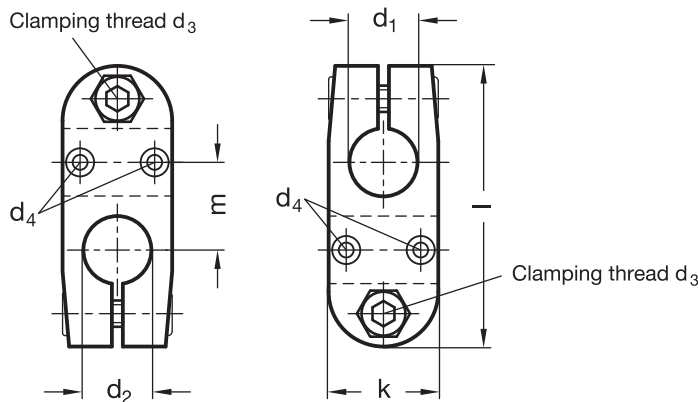
Features and applications

Linear actuator connectors GN 131.2 for two-way system are normally supplied only in connection with a **mounted** linear actuator and for function control.

By means of the clamping screw on the guide bores d_1/d_2 the movement can either be set or the slider can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions										Clamping kits for d_3	Δ g
	d_1 without slider bush	d_1 with slider bush	d_2 without slider bush	d_2 with slider bush	d_3	d_4 Mounting screw on the follower	k Clamping length	l	m			
GN 131.2-B18-B18-1-SW	B18	-	B18	-	M6	M3	25	64	20	GN 911-M6-22	66	
GN 131.2-B18-G18-1-SW	B18	-	-	G18	M6	M3	25	64	20	GN 911-M6-22	64	
GN 131.2-G18-B18-1-SW	-	G18	B18	-	M6	M3	25	64	20	GN 911-M6-22	64	
GN 131.2-B18-B18-2-SW	B18	-	B18	-	M6	M3	25	64	20	GN 911-M6-22	62	
GN 131.2-B18-G18-2-SW	B18	-	-	G18	M6	M3	25	64	20	GN 911-M6-22	64	
GN 131.2-G18-B18-2-SW	-	G18	B18	-	M6	M3	25	64	20	GN 911-M6-22	62	



Linear actuator connectors

•Material

AISI CF-8 stainless steel **NI**, matte polished.

•Clamping screws

Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

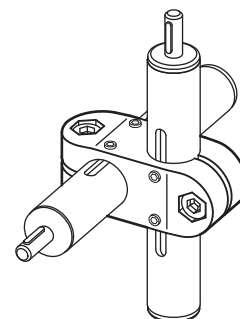
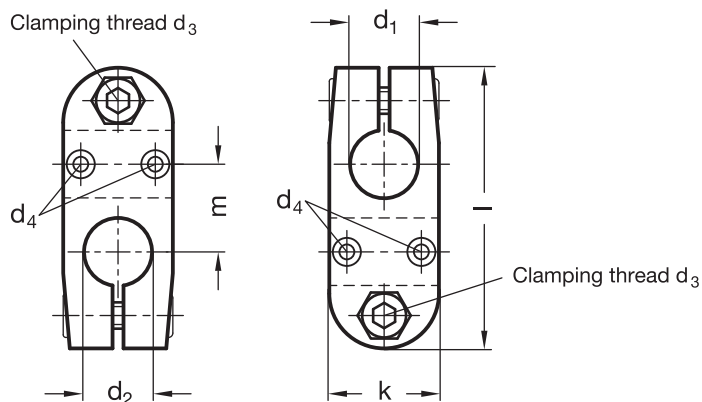
Features and applications

Linear actuator connectors GN 131.2-NI for two-way system are normally supplied only in connection with a **mounted** linear actuator and for function control.

By means of the clamping screw on the guide bores d_1/d_2 the movement can either be set or the slider can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions							Clamping kits for d_3	Δ
	d_1 without slider bush	d_2 without slider bush	d_3	d_4 Mounting screw on the follower	k Clamping length	l	m		g
GN 131.2-G18-G18-2-NI	G18	G18	M6	M3	25	64	20	GN 911-M6-22	148

GN 132.1

Linear actuator connectors

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Linear actuator connectors GN 132.1 for single system are normally supplied only in connection with a **mounted** linear actuator and for function control.

By means of the clamping screw on the guide bores d_1/d_2 the movement can either be set or the slider can be clamped (after setting of final adjustment).

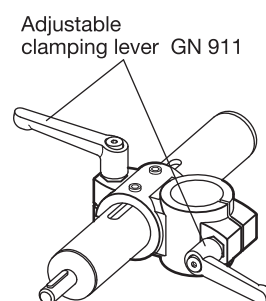
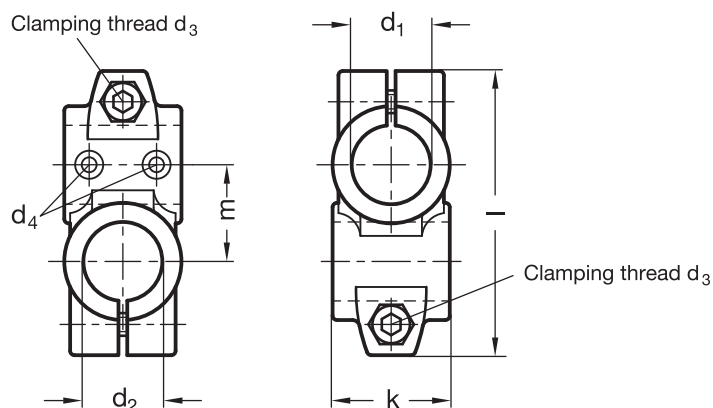
Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 to 293 (see page 113ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



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Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions									Clamping kits for d ₃	g
	Description	d ₁ without slider bush	d ₁ with slider bush	d ₂ without slider bush	d ₂ with slider bush	d ₃	d ₄ Mounting screw on the follower	k Clamping length	l			m
GN 132.1-B30-B30-1-SW	B30	-	B30	-	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.1-B30-G30-1-SW	B30	-	-	G30	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.1-G30-B30-1-SW	-	G30	B30	-	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.1-G30-G30-1-SW	-	G30	-	G30	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.1-B40-B40-1-SW	B40	-	B40	-	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.1-B40-G40-1-SW	B40	-	-	G40	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.1-G40-B40-1-SW	-	G40	B40	-	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.1-G40-G40-1-SW	-	G40	-	G40	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.1-B50-B50-1-SW	B50	-	B50	-	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.1-B50-G50-1-SW	B50	-	-	G50	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.1-G50-B50-1-SW	-	G50	B50	-	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.1-G50-G50-1-SW	-	G50	-	G50	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.1-B60-B60-1-SW	B60	-	B60	-	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.1-B60-G60-1-SW	B60	-	-	G60	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.1-G60-B60-1-SW	-	G60	B60	-	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.1-G60-G60-1-SW	-	G60	-	G60	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.1-B30-B30-2-SW	B30	-	B30	-	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.1-B30-G30-2-SW	B30	-	-	G30	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.1-G30-B30-2-SW	-	G30	B30	-	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.1-G30-G30-2-SW	-	G30	-	G30	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.1-B40-B40-2-SW	B40	-	B40	-	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.1-B40-G40-2-SW	B40	-	-	G40	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.1-G40-B40-2-SW	-	G40	B40	-	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.1-G40-G40-2-SW	-	G40	-	G40	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.1-B50-B50-2-SW	B50	-	B50	-	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.1-B50-G50-2-SW	B50	-	-	G50	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.1-G50-B50-2-SW	-	G50	B50	-	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.1-G50-G50-2-SW	-	G50	-	G50	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.1-B60-B60-2-SW	B60	-	B60	-	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.1-B60-G60-2-SW	B60	-	-	G60	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.1-G60-B60-2-SW	-	G60	B60	-	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.1-G60-G60-2-SW	-	G60	-	G60	M10	M8	80	169	65	GN 911-M10-55	1000

GN 132.2

Linear actuator connectors

126

Tube clamp connectors, Linear actuators

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screws

- Identification no. **1**: with two clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with two AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

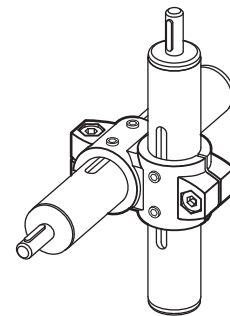
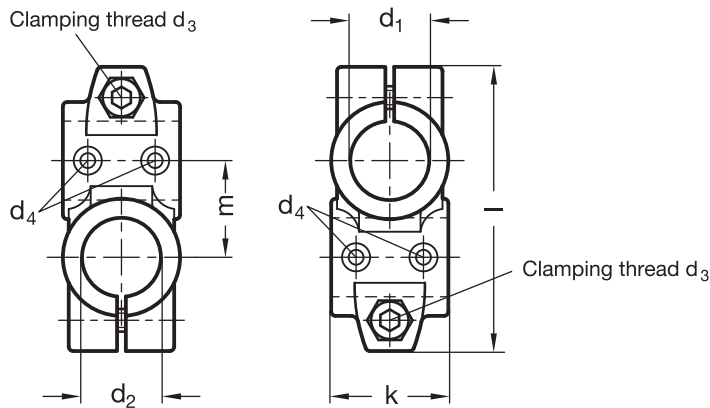
Features and applications

Linear actuator connectors GN 132.2 for two-way system are normally supplied only in connection with a **mounted** linear actuator and for function control.

By means of the clamping screw on the guide bores d_1/d_2 the movement can either be set or the slider can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 to 293 (see page 113ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions									Clamping kits for d ₃	g
	Description	d ₁ without slider bush	d ₁ with slider bush	d ₂ without slider bush	d ₂ with slider bush	d ₃	d ₄ Mounting screw on the follower	k Clamping length	l			m
GN 132.2-B30-B30-1-SW	B30	-	B30	-	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.2-B30-G30-1-SW	B30	-	-	G30	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.2-G30-B30-1-SW	-	G30	B30	-	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.2-G30-G30-1-SW	-	G30	-	G30	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.2-B40-B40-1-SW	B40	-	B40	-	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.2-B40-G40-1-SW	B40	-	-	G40	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.2-G40-B40-1-SW	-	G40	B40	-	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.2-G40-G40-1-SW	-	G40	-	G40	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.2-B50-B50-1-SW	B50	-	B50	-	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.2-B50-G50-1-SW	B50	-	-	G50	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.2-G50-B50-1-SW	-	G50	B50	-	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.2-G50-G50-1-SW	-	G50	-	G50	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.2-B60-B60-1-SW	B60	-	B60	-	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.2-B60-G60-1-SW	B60	-	-	G60	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.2-G60-B60-1-SW	-	G60	B60	-	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.2-G60-G60-1-SW	-	G60	-	G60	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.2-B30-B30-2-SW	B30	-	B30	-	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.2-B30-G30-2-SW	B30	-	-	G30	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.2-G30-B30-2-SW	-	G30	B30	-	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.2-G30-G30-2-SW	-	G30	-	G30	M8	M4	40	97	33	GN 911-M8-32	170
GN 132.2-B40-B40-2-SW	B40	-	B40	-	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.2-B40-G40-2-SW	B40	-	-	G40	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.2-G40-B40-2-SW	-	G40	B40	-	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.2-G40-G40-2-SW	-	G40	-	G40	M10	M5	56	125	45	GN 911-M10-40	410
GN 132.2-B50-B50-2-SW	B50	-	B50	-	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.2-B50-G50-2-SW	B50	-	-	G50	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.2-G50-B50-2-SW	-	G50	B50	-	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.2-G50-G50-2-SW	-	G50	-	G50	M10	M6	65	143	53	GN 911-M10-55	600
GN 132.2-B60-B60-2-SW	B60	-	B60	-	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.2-B60-G60-2-SW	B60	-	-	G60	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.2-G60-B60-2-SW	-	G60	B60	-	M10	M8	80	169	65	GN 911-M10-55	1000
GN 132.2-G60-G60-2-SW	-	G60	-	G60	M10	M8	80	169	65	GN 911-M10-55	1000

GN 145.1

Flanged linear actuator connectors

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Linear actuator connectors GN 145.1 are normally supplied only in connection with a **mounted** linear actuator and for function control.

By means of the clamping screw on the guide bore d_1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

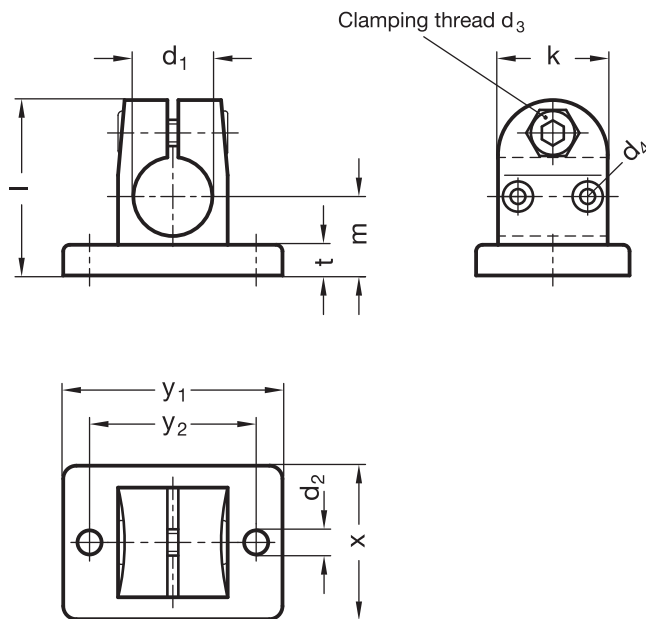
Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

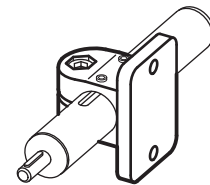
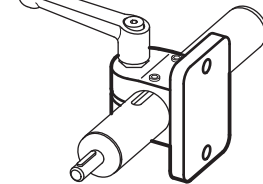


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Tube clamp connectors, Linear actuators



Adjustable clamping lever GN 911



Standard Elements	Main dimensions												Clamping kits for d_3	Δ g
	d_1 without slider bush	d_1 with slider bush	d_2	d_3	d_4 Mounting screw on the follower	k Clamping length	l	m	t	x	y1	y2		
GN 145.1-B18-1-SW	B18	-	5.5	M6	M3	25	40	18	7	35	50	38	GN 911-M6-22	60
GN 145.1-G18-1-SW	-	G18	5.5	M6	M3	25	40	18	7	35	50	38	GN 911-M6-22	57
GN 145.1-B18-2-SW	B18	-	5.5	M6	M3	25	40	18	7	35	50	38	GN 911-M6-22	60
GN 145.1-G18-2-SW	-	G18	5.5	M6	M3	25	40	18	7	35	50	38	GN 911-M6-22	57

Flanged linear actuator connectors



•Material

AISI CF-8 stainless steel **NI**, matte polished.

•Clamping screw

Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

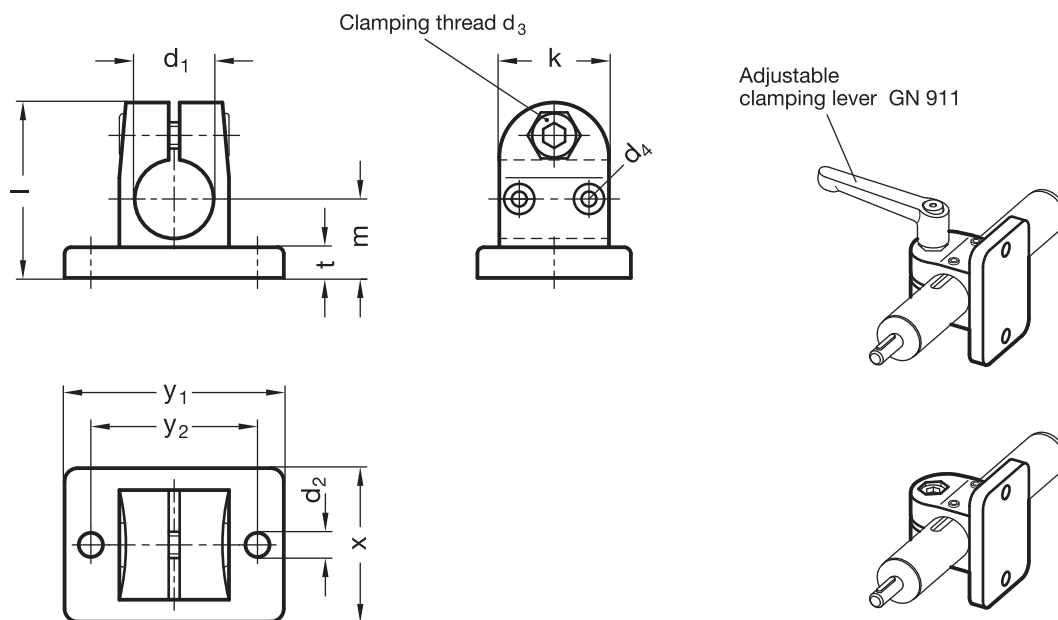
Features and applications

Linear actuator connectors GN 145.1-NI are normally supplied only in connection with a **mounted** linear actuator and for function control.

By means of the clamping screw on the guide bore d_1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing see page 110).



Standard Elements	Main dimensions											△△	
Description	d1 with slider bush	d2	d3	d4 Mounting screw on the follower	k Clamping length	l	m	t	x	y1	y2	Clamping kits for d3	g
GN 145.1-G18-2-NI	G18	5.5	M6	M3	25	40	18	7	35	50	38	GN 911-M6-22	145

GN 146.1

Flanged linear actuator connectors

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screws

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Linear actuator connectors GN 146.1 are normally supplied only in connection with a **mounted** linear actuator and for function control.

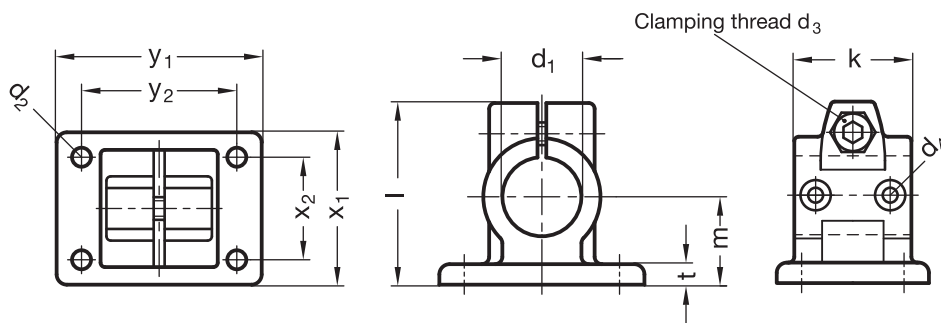
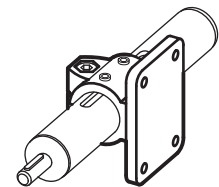
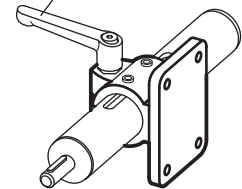
By means of the clamping screw on the guide bore d_1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 to 293 (see page 113ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Adjustable clamping lever GN 911



Standard Elements	Main dimensions													Clamping kits for d_3	△ g
	d_1 without slider bush	d_1 with slider bush	d_2	d_3	d_4 Mounting screw on the follower	k Clamping length	l	m	t	x_1	x_2	y_1	y_2		
GN 146.1-B30-1-SW	B30	-	6.5	M8	M4	40	62	30	7	52	35	70	53	GN 911-M8-32	155
GN 146.1-G30-1-SW	-	G30	6.5	M8	M4	40	62	30	7	52	35	70	53	GN 911-M8-32	140
GN 146.1-B40-1-SW	B40	-	8.5	M10	M5	56	83	42	10	78	52	108	82	GN 911-M10-40	430
GN 146.1-G40-1-SW	-	G40	8.5	M10	M5	56	83	42	10	78	52	108	82	GN 911-M10-40	400
GN 146.1-B50-1-SW	B50	-	11	M10	M6	65	95	50	14	92	62	128	98	GN 911-M10-55	675
GN 146.1-G50-1-SW	-	G50	11	M10	M6	65	95	50	14	92	62	128	98	GN 911-M10-55	625
GN 146.1-B60-1-SW	B60	-	11	M10	M8	80	102	60	14	110	74	154	118	GN 911-M10-55	1130
GN 146.1-G60-1-SW	-	G60	11	M10	M8	80	102	60	14	110	74	154	118	GN 911-M10-55	1130
GN 146.1-B30-2-SW	B30	-	6.5	M8	M4	40	62	30	7	52	35	70	53	GN 911-M8-32	155
GN 146.1-G30-2-SW	-	G30	6.5	M8	M4	40	62	30	7	52	35	70	53	GN 911-M8-32	140
GN 146.1-B40-2-SW	B40	-	8.5	M10	M5	56	83	42	10	78	52	108	82	GN 911-M10-40	430
GN 146.1-G40-2-SW	-	G40	8.5	M10	M5	56	83	42	10	78	52	108	82	GN 911-M10-40	400
GN 146.1-B50-2-SW	B50	-	11	M10	M6	65	95	50	14	92	62	128	98	GN 911-M10-55	675
GN 146.1-G50-2-SW	-	G50	11	M10	M6	65	95	50	14	92	62	128	98	GN 911-M10-55	625
GN 146.1-B60-2-SW	B60	-	11	M10	M8	80	102	60	14	110	74	154	118	GN 911-M10-55	1130
GN 146.1-G60-2-SW	-	G60	11	M10	M8	80	102	60	14	110	74	154	118	GN 911-M10-55	1130

GN 162.1

Base plate linear actuator connectors



•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Linear actuator connectors GN 162.1 are normally supplied only in connection with a mounted linear actuator and for function control.

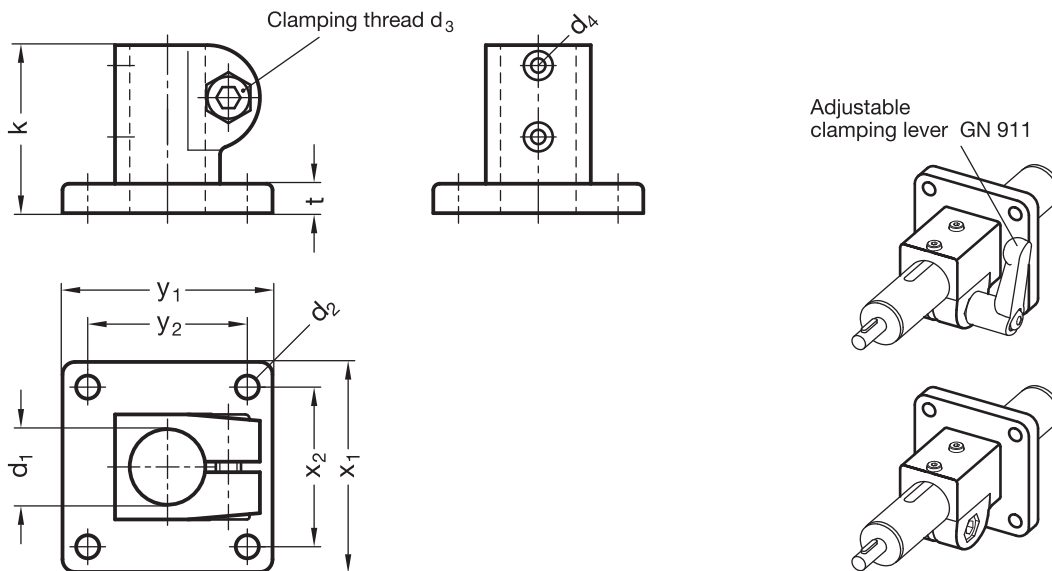
By means of the clamping screw on the guide bore d_1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing see page 110).

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Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions											Clamping kits for d_3	△ g
	d_1 without slider bush	d_1 with slider bush	d_2	d_3	d_4 Mounting screw on the follower	k Clamping length	t	x_1	x_2	y_1	y_2		
GN 162.1-B18-1-SW	B18	-	5.5	M6	M3	40	7	50	38	50	38	GN 911-M6-22	75
GN 162.1-G18-1-SW	-	G18	5.5	M6	M3	40	7	50	38	50	38	GN 911-M6-22	70
GN 162.1-B18-2-SW	B18	-	5.5	M6	M3	40	7	50	38	50	38	GN 911-M6-22	75
GN 162.1-G18-2-SW	-	G18	5.5	M6	M3	40	7	50	38	50	38	GN 911-M6-22	70

Base plate linear actuator connectors

•Material

AISI CF-8 stainless steel **NI**, matte polished.

•Clamping screw

Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Base plate linear actuator connectors GN 162.1 are normally supplied only in connection with a **mounted** linear actuator and for function control.

By means of the clamping screw on the guide bore d1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

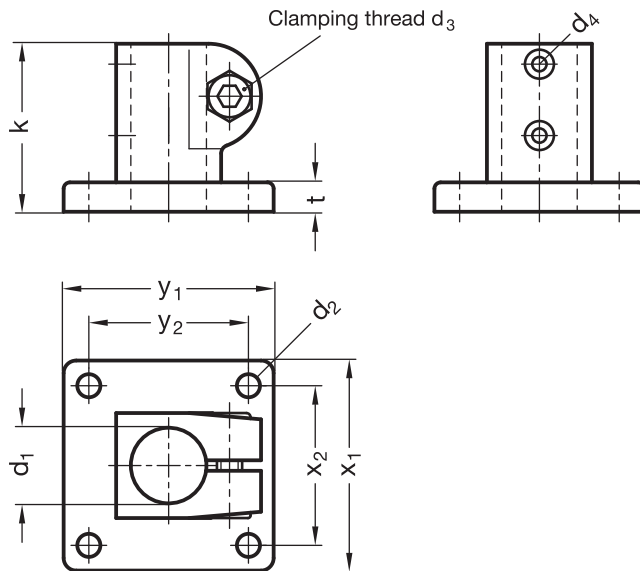
Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing see page 110).

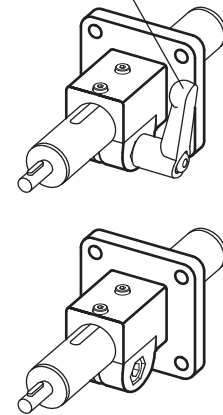


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Tube clamp connectors, Linear actuators



Adjustable clamping lever GN 911



Standard Elements	Main dimensions											Clamping kits for d3	g
	d1 with slider bush	d2	d3	d4 Mounting screw on the follower	k Clamping length	t	x1	x2	y1	y2	g		
GN 162.1-G18-2-NI	G18	5.5	M6	M3	40	7	50	38	50	38	GN 911-M6-22	70	

GN 163.1

Base plate linear actuator connectors



• Material

Aluminium.

• Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

• Clamping screws

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.

- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

• Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Base plate linear actuator connectors GN 163.1 are normally supplied only in connection with a **mounted** linear actuator and for function control.

By means of the clamping screw on the guide bore d_1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

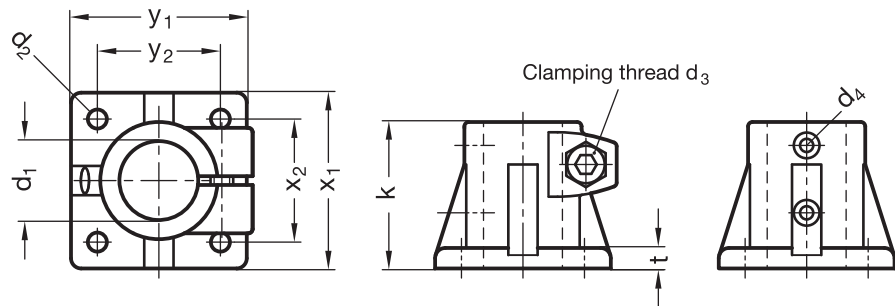
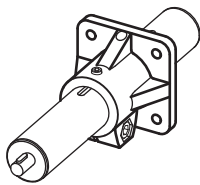
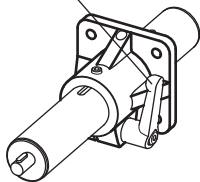
Accessories

- Tubings GN 990 (see page 103ff.).

- Linear actuators GN 291 to 293 (see page 113ff.).

- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

Adjustable clamping lever GN 911



Standard Elements	Main dimensions											Clamping kits for d_3	\triangle g
	d_1 without slider bush	d_1 with slider bush	d_2	d_3	d_4 Mounting screw on the follower	Clamping length k	t	x_1	x_2	y_1	y_2		
GN 163.1-B30-1-SW	B30	-	6.5	M8	M4	50	7	60	42	60	42	GN 911-M8-32	145
GN 163.1-G30-1-SW	-	G30	6.5	M8	M4	50	7	60	42	60	42	GN 911-M8-32	130
GN 163.1-B40-1-SW	B40	-	8.5	M10	M5	70	10	90	64	90	64	GN 911-M10-40	430
GN 163.1-G40-1-SW	-	G40	8.5	M10	M5	70	10	90	64	90	64	GN 911-M10-40	400
GN 163.1-B50-1-SW	B50	-	11	M10	M6	85	14	105	74	105	74	GN 911-M10-55	700
GN 163.1-G50-1-SW	-	G50	11	M10	M6	85	14	105	74	105	74	GN 911-M10-55	650
GN 163.1-B60-1-SW	B60	-	11	M10	M8	100	14	125	89	125	89	GN 911-M10-55	1020
GN 163.1-G60-1-SW	-	G60	11	M10	M8	100	14	125	89	125	89	GN 911-M10-55	1020
GN 163.1-B30-2-SW	B30	-	6.5	M8	M4	50	7	60	42	60	42	GN 911-M8-32	145
GN 163.1-G30-2-SW	-	G30	6.5	M8	M4	50	7	60	42	60	42	GN 911-M8-32	130
GN 163.1-B40-2-SW	B40	-	8.5	M10	M5	70	10	90	64	90	64	GN 911-M10-40	430
GN 163.1-G40-2-SW	-	G40	8.5	M10	M5	70	10	90	64	90	64	GN 911-M10-40	400
GN 163.1-B50-2-SW	B50	-	11	M10	M6	85	14	105	74	105	74	GN 911-M10-55	700
GN 163.1-G50-2-SW	-	G50	11	M10	M6	85	14	105	74	105	74	GN 911-M10-55	650
GN 163.1-B60-2-SW	B60	-	11	M10	M8	100	14	125	89	125	89	GN 911-M10-55	1020
GN 163.1-G60-2-SW	-	G60	11	M10	M8	100	14	125	89	125	89	GN 911-M10-55	1020

GN 191.1

T-angle linear actuator connectors

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

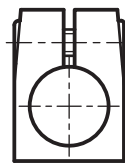
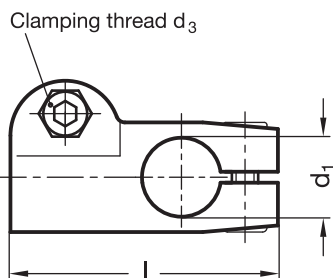
Features and applications

T-angle linear actuator connectors GN 191.1 are normally supplied only in connection with a **mounted** linear actuator and for function control.

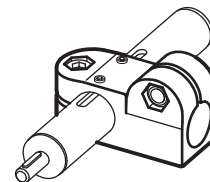
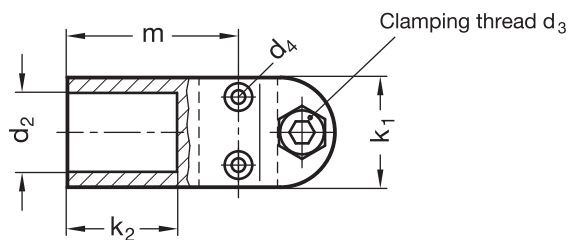
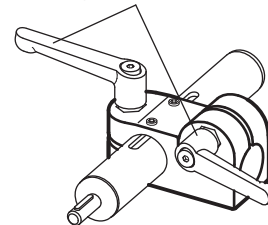
By means of the clamping screw on the guide bore d_1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Adjustable clamping lever GN 911



Standard Elements	Main dimensions									Clamping kits for d_3	\triangle
Description	d_1 without slider bush	d_1 with slider bush	d_2	d_3	d_4 Mounting screw on the follower	k_1	k_2	l	m		g
GN 191.1-B18-B18-1-SW	B18	-	B18	M6	M3	25	25	61	39	GN 911-M6-22	80
GN 191.1-G18-B18-1-SW	-	G18	B18	M6	M3	25	25	61	39	GN 911-M6-22	77
GN 191.1-B18-B18-2-SW	B18	-	B18	M6	M3	25	25	61	39	GN 911-M6-22	80
GN 191.1-G18-B18-2-SW	-	G18	B18	M6	M3	25	25	61	39	GN 911-M6-22	77

T-angle linear actuator connectors



•Material

AISI CF-8 stainless steel **NI**, matte polished.

•Clamping screw

Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

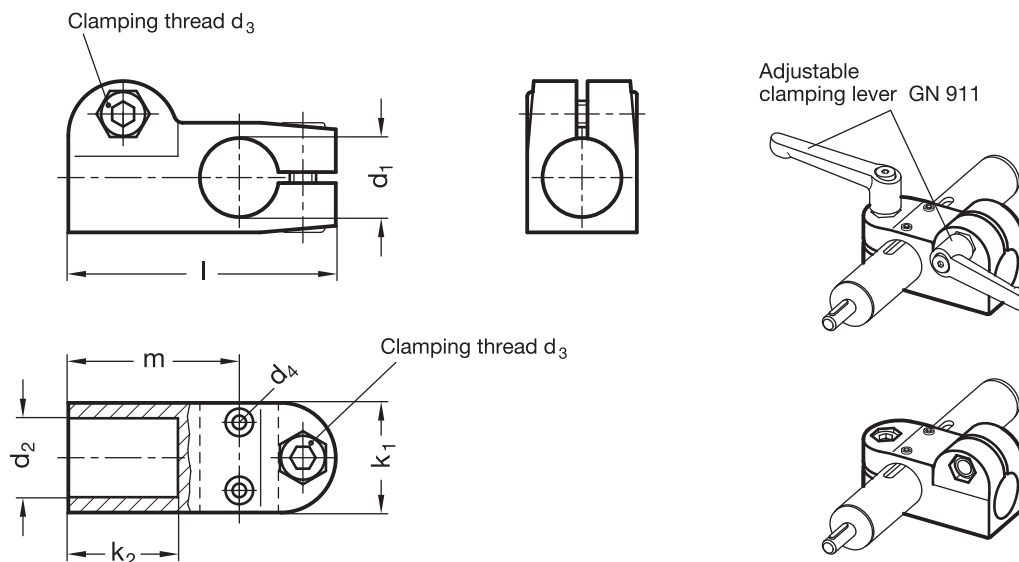
Features and applications

Tangle linear actuator connectors GN 191.1-NI are normally supplied only in connection with a **mounted** linear actuator and for function control.

By means of the clamping screw on the guide bore d_1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Standard Elements	Main dimensions								Clamping kits for d_3	g
	d_1 with slider bush	d_2	d_3	d_4 Mounting screw on the follower	k_1	k_2	l	m		
GN 191.1-G18-B18-2-SW	G18	B18	M6	M3	25	25	61	39	GN 911-M6-22	77

GN 192.1

T-angle linear actuator connectors

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.

- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

T-angle linear actuator connectors GN 192.1 are normally supplied only in connection with a **mounted** linear actuator and for function control.

By means of the clamping screw on the guide bore d_1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

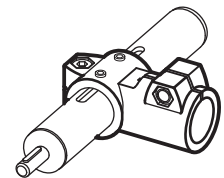
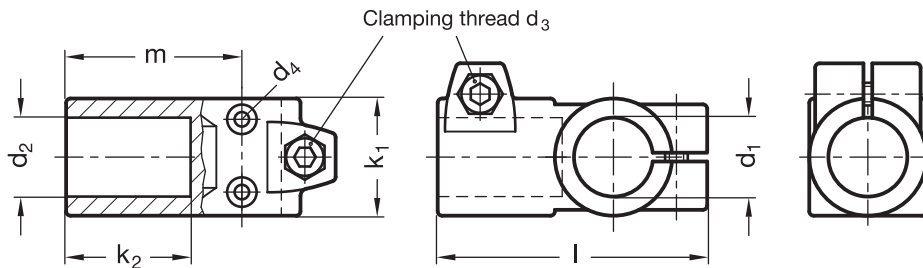
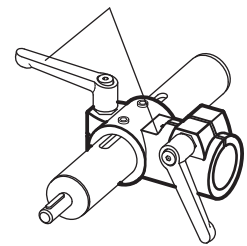
- Tubings GN 990 (see page 103ff.).

- Linear actuators GN 291 to 293 (see page 113ff.).

- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.



Adjustable clamping lever GN 911



Standard Elements	Main dimensions										Clamping kits for d_3	△ g
	d_1 without slider bush	d_1 with slider bush	d_2	d_3	d_4 Mounting screw on the follower	k_1	k_2	l	m			
GN 192.1-B30-B30-1-SW	B30	-	B30	M8	M4	40	42.5	92	60	GN 911-M8-32	185	
GN 192.1-G30-B30-1-SW	-	G30	B30	M8	M4	40	42.5	92	60	GN 911-M8-32	185	
GN 192.1-B40-B40-1-SW	B40	-	B40	M10	M5	56	62	129	88	GN 911-M10-40	480	
GN 192.1-G40-B40-1-SW	-	G40	B40	M10	M5	56	62	129	88	GN 911-M10-40	480	
GN 192.1-B50-B50-1-SW	B50	-	B50	M10	M6	65	75	148	103	GN 911-M10-55	670	
GN 192.1-G50-B50-1-SW	-	G50	B50	M10	M6	65	75	148	103	GN 911-M10-55	670	
GN 192.1-B60-B60-1-SW	B60	-	B60	M10	M8	80	80	177	125	GN 911-M10-55	1260	
GN 192.1-G60-B60-1-SW	-	G60	B60	M10	M8	80	80	177	125	GN 911-M10-55	1260	
GN 192.1-B30-B30-2-SW	B30	-	B30	M8	M4	40	42.5	92	60	GN 911-M8-32	185	
GN 192.1-G30-B30-2-SW	-	G30	B30	M8	M4	40	42.5	92	60	GN 911-M8-32	185	
GN 192.1-B40-B40-2-SW	B40	-	B40	M10	M5	56	62	129	88	GN 911-M10-40	480	
GN 192.1-G40-B40-2-SW	-	G40	B40	M10	M5	56	62	129	88	GN 911-M10-40	480	
GN 192.1-B50-B50-2-SW	B50	-	B50	M10	M6	65	75	148	103	GN 911-M10-55	670	
GN 192.1-G50-B50-2-SW	-	G50	B50	M10	M6	65	75	148	103	GN 911-M10-55	670	
GN 192.1-B60-B60-2-SW	B60	-	B60	M10	M8	80	80	177	125	GN 911-M10-55	1260	
GN 192.1-G60-B60-2-SW	-	G60	B60	M10	M8	80	80	177	125	GN 911-M10-55	1260	

GN 273.1

Swivel clamp linear actuator connectors



•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Swivel clamp linear actuator connectors GN 273.1 are normally supplied only in connection with a **mounted** linear actuator and for function control.

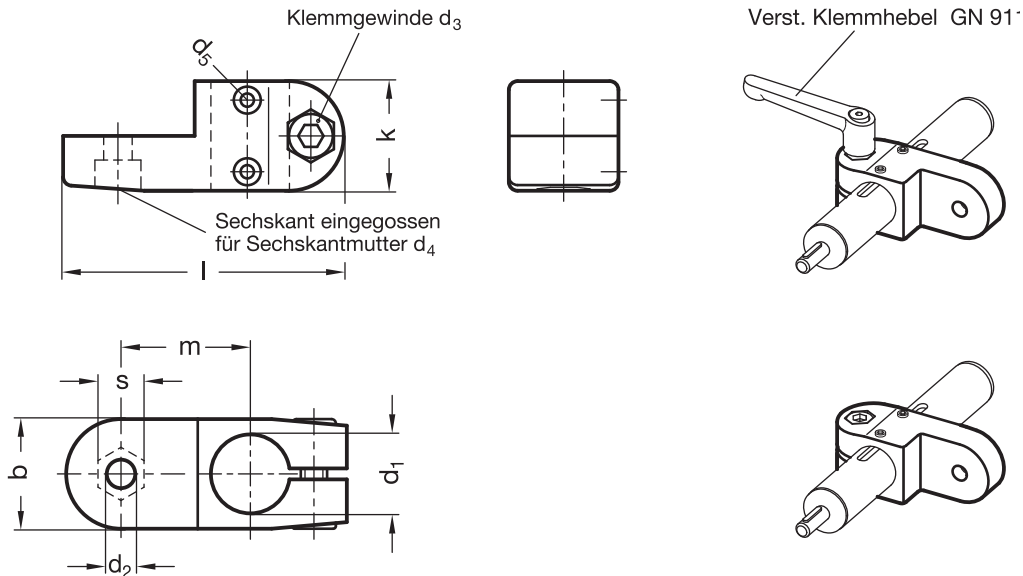
By means of the clamping screw on the guide bore d_1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.

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Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions											Clamping kits for d_3	△ g
	d_1 without slider bush	d_1 with slider bush	b Swivel width	d_2	d_3	d_4	d_5 Mounting screw on the follower	k Clamping length	l	m	s		
GN 273.1-B18-1-SW	B18	-	25	6.5	M6	M6	M3	25	64	29.5	10	GN 911-M6-22	55
GN 273.1-G18-1-SW	-	G18	25	6.5	M6	M6	M3	25	64	29.5	10	GN 911-M6-22	52
GN 273.1-B18-2-SW	B18	-	25	6.5	M6	M6	M3	25	64	29.5	10	GN 911-M6-22	55
GN 273.1-G18-2-SW	-	G18	25	6.5	M6	M6	M3	25	64	29.5	10	GN 911-M6-22	53

GN 274.1

Swivel clamp linear actuator connectors

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Tube clamp connectors, Linear actuators

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screw

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

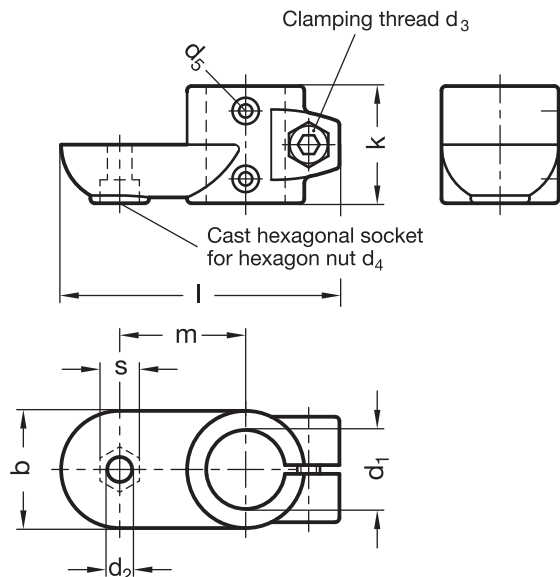
Features and applications

Swivel clamp linear actuator connectors GN 274.1 are normally supplied only in connection with a **mounted** linear actuator and for function control.

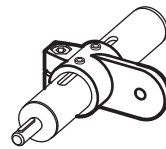
By means of the clamping screw on the guide bore d_1 the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.).
- Linear actuators GN 291 to 293 (see page 113ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing see page 110).



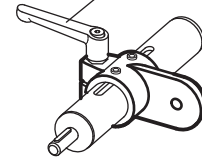
Adjustable clamping lever GN 911



Type **OZ**
without centring step



Type **MZ**
with centring step



Type **AV**
with male serration



Type **IV**
with female serration

Standard Elements	Main dimensions											Clamping kits	\triangle
Description	d1 without slider bush	d1 with slider bush	b Swivel width	d2	d3	d4	d5 Mounting screw on the follower	k Clamping length	l	m	s	for d3	g
GN 274.1-B30-OZ-1-SW	B30	-	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	145
GN 274.1-G30-OZ-1-SW	-	G30	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	130
GN 274.1-B40-OZ-1-SW	B40	-	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	700
GN 274.1-G40-OZ-1-SW	-	G40	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	670
GN 274.1-B50-OZ-1-SW	B50	-	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	630
GN 274.1-G50-OZ-1-SW	-	G50	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	580
GN 274.1-B30-MZ-1-SW	B30	-	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	145
GN 274.1-G30-MZ-1-SW	-	G30	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	130
GN 274.1-B40-MZ-1-SW	B40	-	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	700
GN 274.1-G40-MZ-1-SW	-	G40	65	10.5	M10	M10	M5	65	148	43	17	GN 911-M10-55	670
GN 274.1-B50-MZ-1-SW	B50	-	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	630
GN 274.1-G50-MZ-1-SW	-	G50	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	580
GN 274.1-B30-AV-1-SW	B30	-	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	145
GN 274.1-G30-AV-1-SW	-	G30	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	130
GN 274.1-B40-AV-1-SW	B40	-	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	700
GN 274.1-G40-AV-1-SW	-	G40	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	670
GN 274.1-B50-AV-1-SW	B50	-	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	630
GN 274.1-G50-AV-1-SW	-	G50	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	580
GN 274.1-B30-IV-1-SW	B30	-	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	145
GN 274.1-G30-IV-1-SW	-	G30	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	130
GN 274.1-B40-IV-1-SW	B40	-	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	700
GN 274.1-G40-IV-1-SW	-	G40	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	670
GN 274.1-B50-IV-1-SW	B50	-	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	630
GN 274.1-G50-IV-1-SW	-	G50	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	580
GN 274.1-B30-OZ-2-SW	B30	-	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	145
GN 274.1-G30-OZ-2-SW	-	G30	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	130
GN 274.1-B40-OZ-2-SW	B40	-	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	700
GN 274.1-G40-OZ-2-SW	-	G40	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	670
GN 274.1-B50-OZ-2-SW	B50	-	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	630
GN 274.1-G50-OZ-2-SW	-	G50	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	580
GN 274.1-B30-MZ-2-SW	B30	-	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	145
GN 274.1-G30-MZ-2-SW	-	G30	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	130
GN 274.1-B40-MZ-2-SW	B40	-	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	700
GN 274.1-G40-MZ-2-SW	-	G40	65	10.5	M10	M10	M5	65	148	43	17	GN 911-M10-55	670
GN 274.1-B50-MZ-2-SW	B50	-	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	630
GN 274.1-G50-MZ-2-SW	-	G50	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	580
GN 274.1-B30-AV-2-SW	B30	-	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	145
GN 274.1-G30-AV-2-SW	-	G30	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	130
GN 274.1-B40-AV-2-SW	B40	-	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	700
GN 274.1-G40-AV-2-SW	-	G40	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	670
GN 274.1-B50-AV-2-SW	B50	-	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	630
GN 274.1-G50-AV-2-SW	-	G50	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	580
GN 274.1-B30-IV-2-SW	B30	-	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	145
GN 274.1-G30-IV-2-SW	-	G30	40	8.5	M8	M8	M4	40	95	43	13	GN 911-M8-32	130
GN 274.1-B40-IV-2-SW	B40	-	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	700
GN 274.1-G40-IV-2-SW	-	G40	65	10.5	M10	M10	M5	65	148	70	17	GN 911-M10-55	670
GN 274.1-B50-IV-2-SW	B50	-	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	630
GN 274.1-G50-IV-2-SW	-	G50	65	10.5	M10	M10	M6	65	148	70	17	GN 911-M10-55	580

GN 291.1

Square linear actuators

• Square tube

Precision steel tube, chrome-plated **SCR**, DIN 2391.

• Trapezoidal thread on shaft

Steel thrust ball bearings.

• Follower nut

Gun metal.

• End caps

Plastic.

• Types

- Type **R1**: Right hand thread, single shaft end only.

- Type **R2**: Right hand thread, two shaft ends.

- Type **L1**: Left hand thread, single shaft end only.

- Type **L2**: Left hand thread, two shaft ends.

• Assembly

Sliders, connector clamps and accessoires have to be ordered separately.

Features and applications

Square linear actuators GN 291.1 are used if the linear actuator connectors are exposed to high torsion forces.

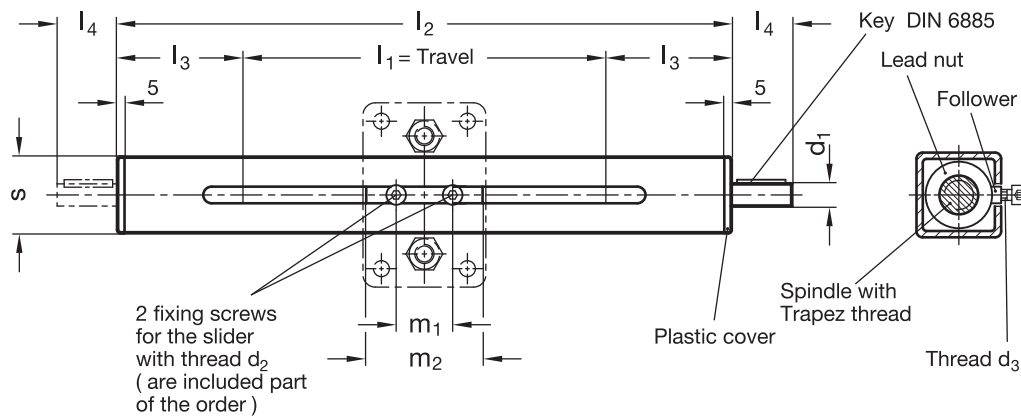
Besides the extensive range of tube clamp connectors there are a number of additional components for mounting on the linear actuator to build slider units.

The two-part tube clamp connectors range includes a wide variety of different components for fixing linear actuators and for setting up linear actuator connectors.

In order to measure the movement and positioning of the linear actuator connectors, the square tube can be fitted with a longitudinal scale.

Special executions on request (For sufficient quantities)

Guide tube, precision AISI 303 stainless steel **NI**, DIN 2462 (all types).



Standard Elements	Main dimensions											Shaft key spring DIN 6885	g
	s	l ₁ Travel (standard lengths)	max. travel	Shaft thread	d ₁ f7	d ₂	l ₂ Total length	l ₃	l ₄	m ₁	m ₂		
GN 291.1-30-100-R1-SCR	30	100	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	825
GN 291.1-30-150-R1-SCR	30	150	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	948
GN 291.1-30-200-R1-SCR	30	200	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	1260
GN 291.1-30-300-R1-SCR	30	300	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	1300
GN 291.1-40-170-R1-SCR	40	70	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	1685
GN 291.1-40-170-R1-SCR	40	170	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	-
GN 291.1-40-220-R1-SCR	40	220	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	-
GN 291.1-40-270-R1-SCR	40	270	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	2709
GN 291.1-40-320-R1-SCR	40	320	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	2940

Standard Elements	Main dimensions											Shaft key spring DIN 6885	\triangle
Description	s	l ₁ Travel (standard lengths)	max. travel	Shaft thread	d ₁ f ₇	d ₂	l ₂ Total length	l ₃	l ₄	m ₁	m ₂	g	
GN 291.1-50-65-R1-SCR	50	65	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	-
GN 291.1-50-115-R1-SCR	50	115	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	2820
GN 291.1-50-215-R1-SCR	50	215	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	3100
GN 291.1-50-265-R1-SCR	50	265	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	3830
GN 291.1-50-315-R1-SCR	50	315	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	4190
GN 291.1-30-100-R2-SCR	300	100	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	825
GN 291.1-30-150-R2-SCR	300	150	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	948
GN 291.1-30-200-R2-SCR	30	200	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	1260
GN 291.1-30-300-R2-SCR	30	300	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	1300
GN 291.1-40-70-R2-SCR	40	70	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	1685
GN 291.1-40-170-R2-SCR	40	170	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	-
GN 291.1-40-220-R2-SCR	40	220	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	-
GN 291.1-40-270-R2-SCR	40	270	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	2709
GN 291.1-40-320-R2-SCR	40	320	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	2940
GN 291.1-50-65-R2-SCR	50	65	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	-
GN 291.1-50-115-R2-SCR	50	115	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	2820
GN 291.1-50-215-R2-SCR	50	215	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	3100
GN 291.1-50-265-R2-SCR	50	265	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	3830
GN 291.1-50-315-R2-SCR	50	315	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	4190
GN 291.1-30-100-L1-SCR	30	100	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	825
GN 291.1-30-150-L1-SCR	30	150	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	948
GN 291.1-30-200-L1-SCR	30	200	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	1260
GN 291.1-30-300-L1-SCR	30	300	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	1300
GN 291.1-40-70-L1-SCR	40	70	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	1685
GN 291.1-40-170-L1-SCR	40	170	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	-
GN 291.1-40-220-L1-SCR	40	220	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	-
GN 291.1-40-270-L1-SCR	40	270	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	2709
GN 291.1-40-320-L1-SCR	40	320	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	2940
GN 291.1-50-65-L1-SCR	50	65	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	-
GN 291.1-50-115-L1-SCR	50	115	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	2820
GN 291.1-50-215-L1-SCR	50	215	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	3100
GN 291.1-50-265-L1-SCR	50	265	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	3830
GN 291.1-50-315-L1-SCR	50	315	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	4190
GN 291.1-30-100-L2-SCR	30	100	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	825
GN 291.1-30-150-L2-SCR	30	150	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	948
GN 291.1-30-200-L2-SCR	30	200	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	1260
GN 291.1-30-300-L2-SCR	30	300	1250	TR14x4	8	M4	l ₁ +210	105	16	23	38	A2x2x12	1300
GN 291.1-40-70-L2-SCR	40	70	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	1685
GN 291.1-40-170-L2-SCR	40	170	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	-
GN 291.1-40-220-L2-SCR	40	220	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	-
GN 291.1-40-270-L2-SCR	40	270	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	2709
GN 291.1-40-320-L2-SCR	40	320	1800	TR20x4	12	M5	l ₁ +240	120	17	42	54	A4x4x12	2940
GN 291.1-50-65-L2-SCR	50	65	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	-
GN 291.1-50-115-L2-SCR	50	115	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	2820
GN 291.1-50-215-L2-SCR	50	215	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	3100
GN 291.1-50-265-L2-SCR	50	265	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	3830
GN 291.1-50-315-L2-SCR	50	315	2300	TR20x4	12	M6	l ₁ +245	122,5	18	42	54	A4x4x12	4190



Square linear actuators GN 291.1 (see page 140)
Linear actuator connectors GN 147.1 (see page 143)
Linear actuator connectors GN 134.1 (see page 144)
Linear actuator connectors GN 165.1 (see page 145)

GN 147.1

Linear actuator connectors



•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screws

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Linear actuator connectors GN 147.1 are normally supplied only in connection with a mounted square linear actuator and for function control.

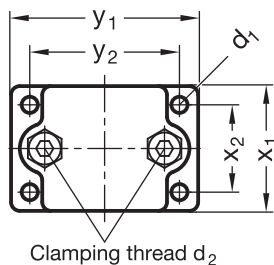
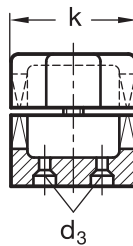
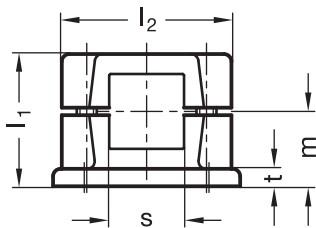
By means of the clamping screw and self-locking hexagonal nut (polyamide ring) the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

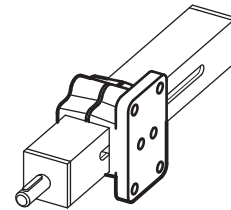
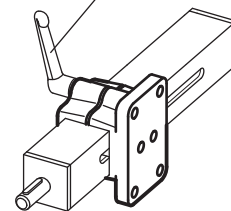
- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.
- Linear actuators GN 291.1 (see page 140).

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Tube clamp connectors, Linear actuators



Adjustable clamping lever GN 911



Standard Elements	Main dimensions													Clamping kits for d ₃	△ g
	s	d ₁	d ₂	d ₃ Mounting screw on the follower	k Clamping length	l ₁	l ₂	m	t	x ₁	x ₂	y ₁	y ₂		
GN 147.1-V30-1-SW	V30	6.5	M8	M4	50	53	68	30	7	50	35	75	60	GN 911-M8-45	221
GN 147.1-V40-1-SW	V40	11	M10	M5	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	643
GN 147.1-V50-1-SW	V50	11	M10	M6	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	595
GN 147.1-V30-2-SW	V30	6.5	M8	M4	50	53	68	30	7	50	35	75	60	GN 911-M8-45	221
GN 147.1-V40-2-SW	V40	11	M10	M5	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	643
GN 147.1-V50-2-SW	V50	11	M10	M6	76	81.5	98	46.5	14	76	50	115	90	GN 911-M10-70	595

GN 134.1

Linear actuator connectors

•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screws

- Identification no. **1**: with four clamping screws DIN 912 and nuts DIN 985, zinc-plated.
- Identification no. **2**: with four AISI 304 stainless steel-clamping screws DIN 912 and nuts DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).



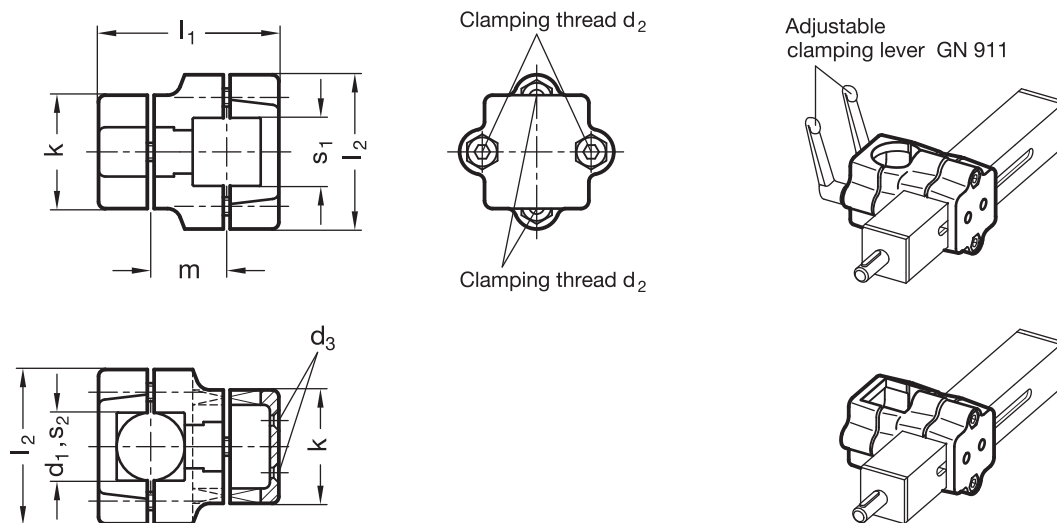
Features and applications

Linear actuator connectors GN 134.1 are normally supplied in connection with a mounted square linear actuator and for function control.

By means of the clamping screw and self-locking hexagonal nut (polyamide ring) the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

- Tubings GN 990 (see page 103ff.) .
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.
- Linear actuators GN 291.1 (see page 140).



Standard Elements	Main dimensions										Clamping kit for d ₂	Δ _g
	s ₁	s ₂	d ₁	d ₂	d ₃ Mounting screw on the follower	k Clamping length	l ₁	l ₂	m	g		
GN 134.1-V30-V30-1-SW	V30	V30	-	M8	M 4	50	79.5	68	33.5	GN 911-M8-32	300	
GN 134.1-V40-V40-1-SW	V40	V40	-	M10	M 5	76	125	98	55	GN 911-M10-55	946	
GN 134.1-V50-V50-1-SW	V50	V50	-	M10	M 6	76	125	98	55	GN 911-M10-55	826	
GN 134.1-V30-B30-1-SW	V30	-	B30	M8	M 4	50	79.5	68	33.5	GN 911-M8-32	300	
GN 134.1-V40-B40-1-SW	V40	-	B40	M10	M 5	76	125	98	55	GN 911-M10-55	946	
GN 134.1-V50-B50-1-SW	V50	-	B50	M10	M 6	76	125	98	55	GN 911-M10-55	826	
GN 134.1-V30-V30-2-SW	V30	V30	-	M8	M 4	50	79.5	68	33.5	GN 911-M8-32	300	
GN 134.1-V40-V40-2-SW	V40	V40	-	M10	M 5	76	125	98	55	GN 911-M10-55	946	
GN 134.1-V50-V50-2-SW	V50	V50	-	M10	M 6	76	125	98	55	GN 911-M10-55	826	
GN 134.1-V30-B30-2-SW	V30	-	B30	M8	M 4	50	79.5	68	33.5	GN 911-M8-32	300	
GN 134.1-V40-B40-2-SW	V40	-	B40	M10	M 5	76	125	98	55	GN 911-M10-55	946	
GN 134.1-V50-B50-2-SW	V50	-	B50	M10	M 6	76	125	98	55	GN 911-M10-55	826	

GN 165.1

Linear actuator connectors



•Material

Aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Clamping screws

- Identification no. **1**: with clamping screw DIN 912 and nut DIN 985, zinc-plated.
- Identification no. **2**: with AISI 304 stainless steel-clamping screw DIN 912 and nut DIN 985.

•Assembly

The standard clamping bolts are socket cap screws DIN 912, supplied assembled. They can be replaced by clamping kits GN 911 (description see table of dimensions).

Features and applications

Linear actuator connectors GN 165.1 are normally supplied only in connection with a **mounted** square linear actuator and for function control.

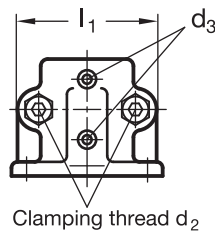
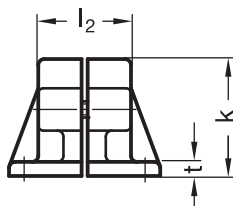
By means of the clamping screw and self-locking hexagonal nut (polyamide ring) the movement can either be set or the linear actuator connector can be clamped (after setting of final adjustment).

Accessories

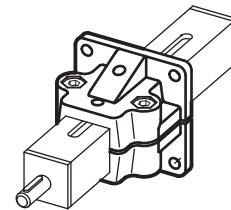
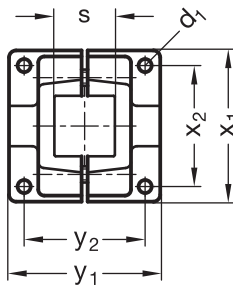
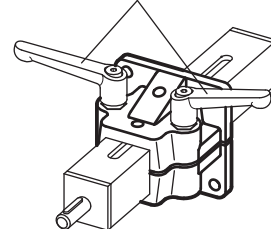
- Tubings GN 990 (see page 103ff.).
- Clamping kits GN 911 (clamping handles GN 300.1 with distance bushing) see page 110.
- Linear actuators GN 291.1 (see page 140).

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Tube clamp connectors, Linear actuators



Adjustable clamping lever GN 911



Standard Elements	Main dimensions												Clamping kits for d ₂	△ g
	s	d ₁	d ₂	d ₃ Mounting screw on the follower	k Clamping length	l ₁	l ₂	t	x ₁	x ₂	y ₁	y ₂		
GN 165.1-V30-1-SW	V30	6.5	M8	M 4	58	69	46	7	75	60	75	60	GN 911-M8-45	221
GN 165.1-V40-1-SW	V40	11	M10	M 5	91	98	70	14	115	90	119	90	GN 911-M10-70	643
GN 165.1-V50-1-SW	V50	11	M10	M 6	91	98	70	14	115	90	119	90	GN 911-M10-70	595
GN 165.1-V30-2-SW	V30	6.5	M8	M 4	58	69	46	7	75	60	75	60	GN 911-M8-45	221
GN 165.1-V40-2-SW	V40	11	M10	M 5	91	98	70	14	115	90	119	90	GN 911-M10-70	643
GN 165.1-V50-2-SW	V50	11	M10	M 6	91	98	70	14	115	90	119	90	GN 911-M10-70	595



Linear actuators GN 291 (see page 113) with position indicators DD52R
Handwheel VAD.I (see main catalogue page 484ff.)
with position indicators GA11 (see main catalogue page 467)
and linear actuator connectors GN 132.1 (see main catalogue page 124ff.)
Square linear actuator connectors GN 291.1 (page 140ff.)
and linear actuator connectors GN 147.1 (page 143)

GN 923.18

Handwheel for linear actuators Ø 18



- **Material**

Cast aluminium.

- **Finish**

RAL 9005 black colour, matte finish, epoxy resin coating.

- **Assembly**

Hub with H7 reamed hole with keyway in compliance with DIN 6885/1 P9 tolerance.

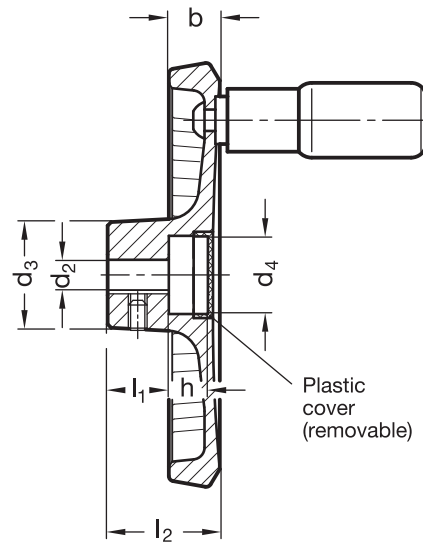
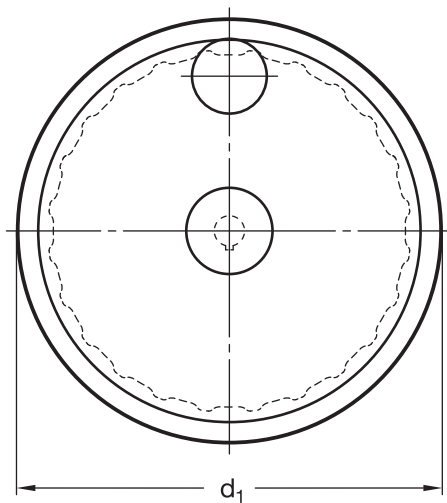
For fixing handwheels GN 923.18 on shafts by a grub screw see technical data page A2.

- **Revolving handle**

Type GN 798 polyamide based (PA) technopolymer, black colour, matte finish. Resistant to solvents, oils, greases and other chemical agents. The two-volume special design of the handle provides the operator's hand with a safe and ergonomic grip when turning the handwheel.

- **Accessories**

- Drive units GN 391 (see page 157ff.).
- Transfer units GN 391 (see page 157ff.).
- Linear actuators GN 291 (see page 113).
- Linear actuators GN 292 (see page 116).



Standard Elements	Main dimensions						Bore		Handle	\triangle/\triangle
Description	d1	l2	b	h	d3	d4	d2 H7	l1	Ø	g
GN 923.18-80-K6-R	80	26	13	7	26	17	6	16	16	150

GN 923.30

Handwheel for linear actuators Ø 30

•Material

Cast aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Assembly

Hub with H7 reamed hole with keyway in compliance with DIN 6885/1 P9 tolerance.

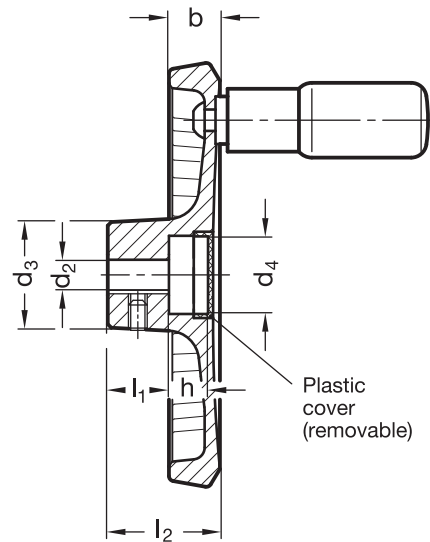
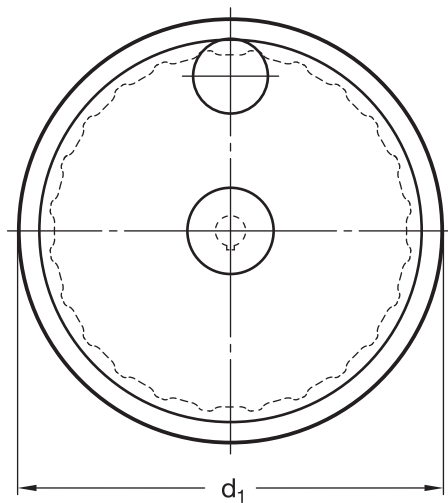
For fixing handwheels GN 923.30 on shafts by a grub screw see technical data page A2.

•Revolving handle

Type GN 798 polyamide based (PA) technopolymer, black colour, matte finish. Resistant to solvents, oils, greases and other chemical agents. The two-volume special design of the handle provides the operator's hand with a safe and ergonomic grip when turning the handwheel.

Accessories

- Drive units GN 391 (see page 157ff.).
- Transfer units GN 391 (see page 157ff.).
- Linear actuators GN 291 to GN 293 (see page 113ff.).
- Square linear actuators GN 291.1 (see page 140).



Standard Elements	Main dimensions						Bore		Handle	\triangle/\triangle
	d1	l2	b	h	d3	d4	d2 H7	l1	Ø	g
GN 923.30-100-K8-R	100	30	14	9.5	28	22	8	17	18	190



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GN 923.40

Handwheel for linear actuators Ø 40



•Material

Cast aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Assembly

Hub with H7 reamed hole with keyway in compliance with DIN 6885/1 P9 tolerance.

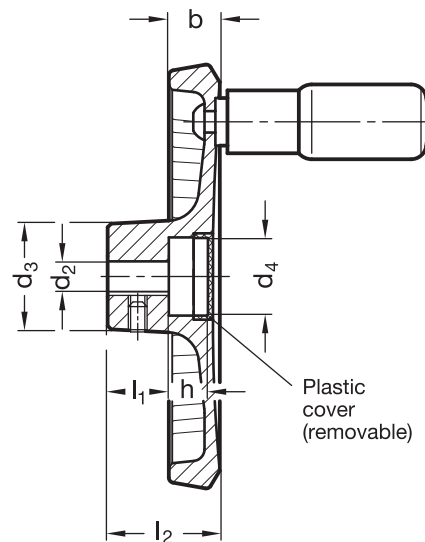
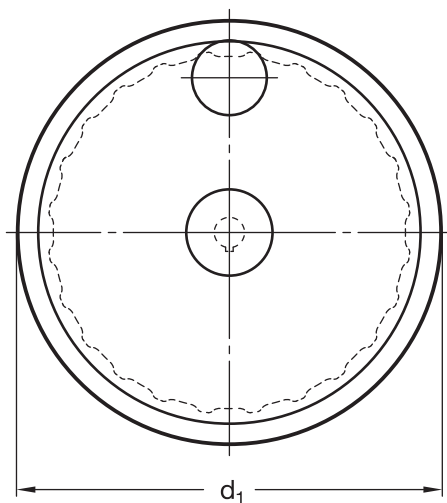
For fixing handwheels GN 923.40 on shafts by a grub screw see technical data page A2.

•Revolving handle

Type GN 798 polyamide based (PA) technopolymer, black colour, matte finish. Resistant to solvents, oils, greases and other chemical agents. The two-volume special design of the handle provides the operator's hand with a safe and ergonomic grip when turning the handwheel.

Accessories

- Drive units GN 391 (see page 157ff.).
- Transfer units GN 391 (see page 157ff.).
- Linear actuators GN 291 to GN 293 (see page 113ff.).
- Square linear actuators GN 291.1 (see page 140).



Standard Elements	Main dimensions						Bore		Handle	△△
Description	d ₁	l ₂	b	h	d ₃	d ₄	d ₂ H7	l ₁	Ø	g
GN 923.40-100-K12-R	100	30	14	9.5	28	22	12	17	18	190

GN 924.40

Handwheel for linear actuators Ø 40

•Material

Cast aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Assembly

Hub with H7 reamed hole with keyway in compliance with DIN 6885/1 P9 tolerance.

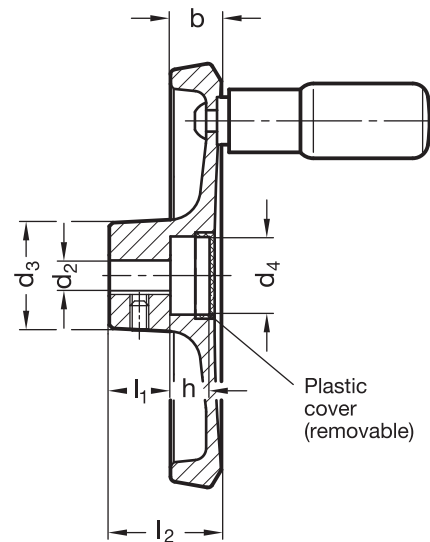
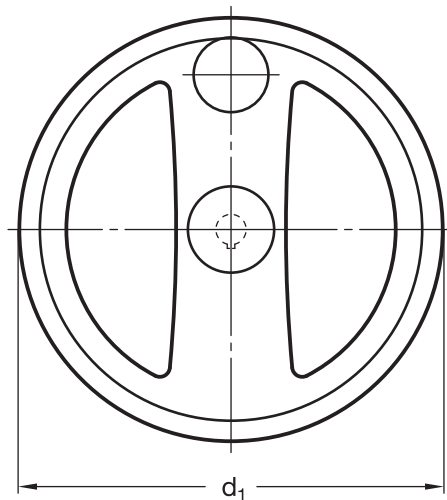
For fixing handwheels GN 924.40 on shafts by a grub screw see technical data page A2.

•Revolving handle

Type GN 798 polyamide based (PA) technopolymer, black colour, matte finish. Resistant to solvents, oils, greases and other chemical agents. The two-volume special design of the handle provides the operator's hand with a safe and ergonomic grip when turning the handwheel.

Accessories

- Drive units GN 391 (see page 157ff.).
- Transfer units GN 391 (see page 157ff.).
- Linear actuators GN 291 to GN 293 (see page 113ff.).
- Square linear actuators GN 291.1 (see page 140).



Standard Elements	Main dimensions						Bore		Handle	
Description	d1	l2	b	h	d3	d4	d2 H7	l1	Ø	g
GN 924.40-125-K12-R	125	33,5	15	11	31	23	12	18	22	400

GN 924.50

Handwheel for linear actuators Ø 50



- **Material**

Cast aluminium.

- **Finish**

RAL 9005 black colour, matte finish, epoxy resin coating.

- **Assembly**

Hub with H7 reamed hole with keyway in compliance with DIN 6885/1 P9 tolerance.

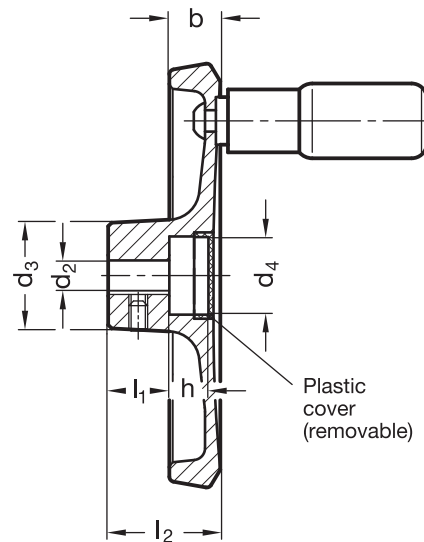
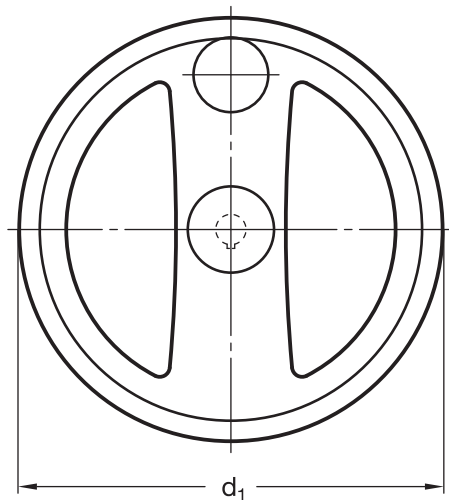
For fixing handwheels GN 924.50 on shafts by a grub screw see technical data page A2.

- **Revolving handle**

Type GN 798 polyamide based (PA) technopolymer, black colour, matte finish. Resistant to solvents, oils, greases and other chemical agents. The two-volume special design of the handle provides the operator's hand with a safe and ergonomic grip when turning the handwheel.

- **Accessories**

- Drive units GN 391 (see page 157ff.).
- Transfer units GN 391 (see page 157ff.).
- Linear actuators GN 291 to GN 293 (see page 113ff.).
- Square linear actuators GN 291.1 (see page 140).



Standard Elements	Main dimensions						Bore		Handle	⚖
Description	d ₁	l ₂	b	h	d ₃	d ₄	d ₂ H7	l ₁	Ø	g
GN 924.50-140-K12-R	140	36,5	16.5	13	36	28,5	12	19	24	560

GN 924.60

Handwheel for linear actuators Ø 60

•Material

Cast aluminium.

•Finish

RAL 9005 black colour, matte finish, epoxy resin coating.

•Assembly

Hub with H7 reamed hole with keyway in compliance with DIN 6885/1 P9 tolerance.

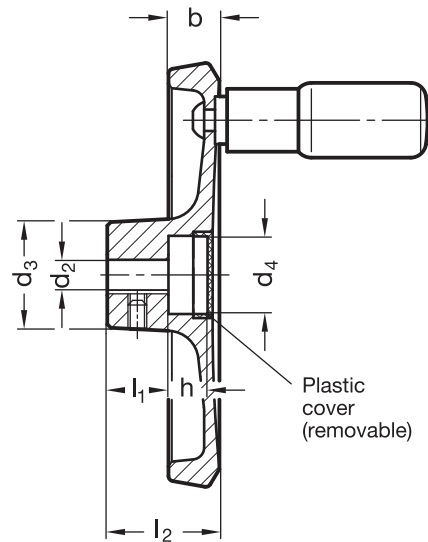
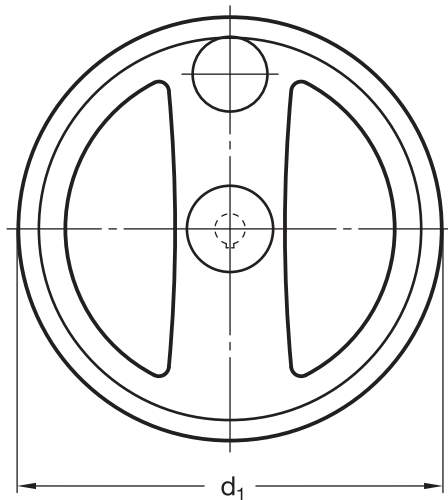
For fixing handwheels GN 924.60 on shafts by a grub screw see technical data page A2.

•Revolving handle

Type GN 798 polyamide based (PA) technopolymer, black colour, matte finish. Resistant to solvents, oils, greases and other chemical agents. The two-volume special design of the handle provides the operator's hand with a safe and ergonomic grip when turning the handwheel.

Accessories

Linear actuators GN 291 to GN 293 (see page 113ff.).



Standard Elements	Main dimensions						Bore		Handle	△△
Description	d ₁	l ₂	b	h	d ₃	d ₄	d ₂ H7	l ₁	Ø	g
GN 924.60-160-K14-R	160	39,5	18	14,5	36	28,5	14	20	24	560

GN 295

Installation kits



- **Adapter shaft**
Steel, blackened.
- **Torque limiting contact block**
Aluminium, black anodised.
- **Assembly**
An installation kit comprises an adaptor shaft and a torque limiting contact block.

Features and applications

With the installation kits GN 295 the linear actuators can be fitted with a position indicator.

Retrofitting is possible. Remove the wheel, mount the kit and put the wheel back in place. For linear actuator units $\varnothing 60$, the plastic cover on the attachment side must be removed before assembly.

As a rule a counter is chosen which matches the pitch of the trapeze thread on the lead spindle to show the read-out required per complete revolution.

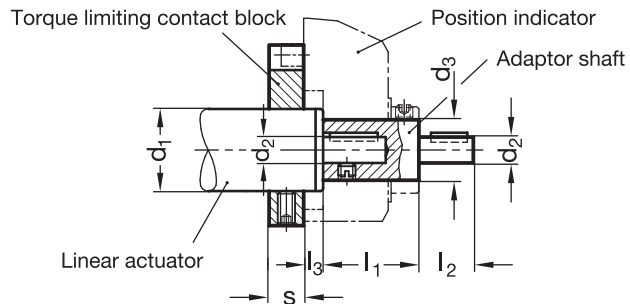
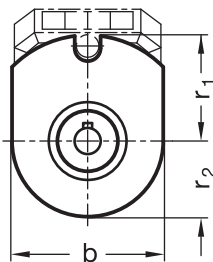
Accessories

- Position indicators GN DD51 (see main catalogue page 488).
- Position indicators GN DD52R (see main catalogue page 494).
- Linear actuators GN 291 to GN 293 (see page 113ff.).

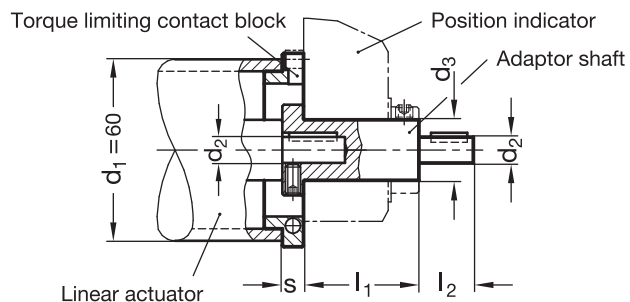
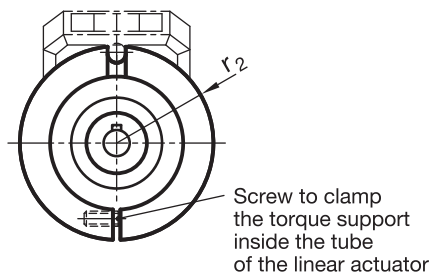
Special executions on request

(For sufficient quantities)
Position indicators GA11/GA12 (see main catalogue page 467) and the necessary special handwheels.

Execution for linear actuators $\varnothing 18, 30, 40, 50$



Execution for linear actuator $\varnothing 60$



Standard Elements	Main dimensions										For position indicators	\triangle
Description	d1 <small>Ø Linear actuator</small>	d2 H7 / f7	b	d3	l1	l2	l3	r1	r2	s		g
GN 295-18-6	18	6	35	14	30	16	4.5	24.5	17.5	8	DD51	50
GN 295-30-8	30	8	35	14	35	15	-	24.5	17.5	10	DD51	60
GN 295-40-12	40	12	47	20	40	16	-	32	24.5	10	DD52R	120
GN 295-50-12	50	12	58	20	40	17	-	32	29	10	DD52R	118
GN 295-60-14	60	14	-	20	39	18	-	-	32	7	DD52R	-

GN 299

Longitudinal scales

• Specification

The longitudinal scales (for standard travel lengths l_1 of the linear actuator) are engraved by precision laser.

• Assembly

Longitudinal scales have to be ordered together with the linear actuators.

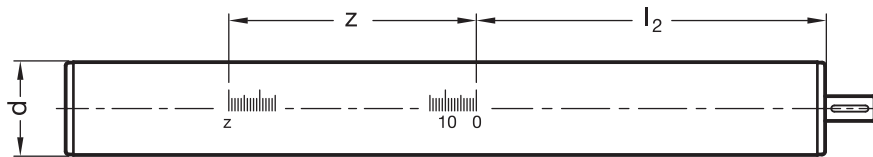
Features and applications

The longitudinal scales GN 299 of Forms A and B are normally used in connection with the linear actuator units GN 291 and GN 291.1, the scales of Forms C and D are normally used for the linear actuator units GN 292 and GN 293.



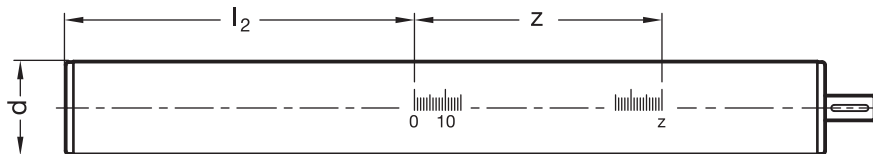
154

Tube clamp connectors, Linear actuators



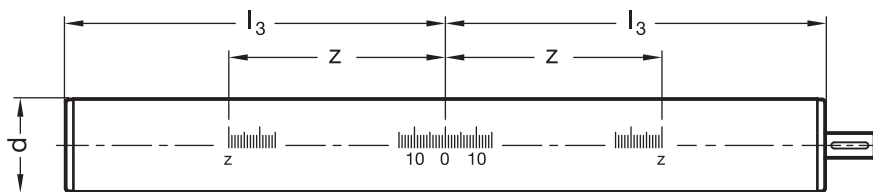
Type A

Scale numbers ascending towards the left



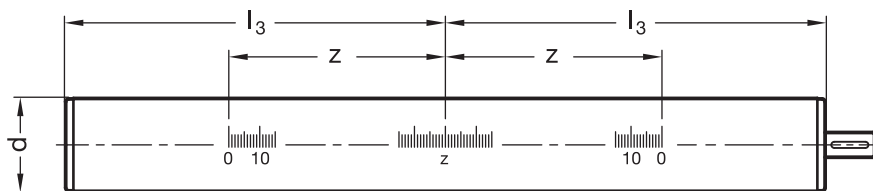
Type B

Scale numbers ascending towards the right



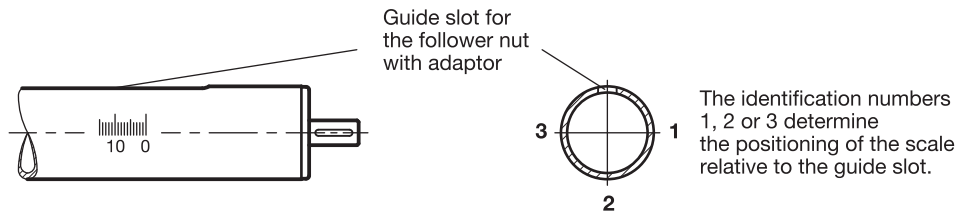
Type C

Scale numbers decreasing towards centre



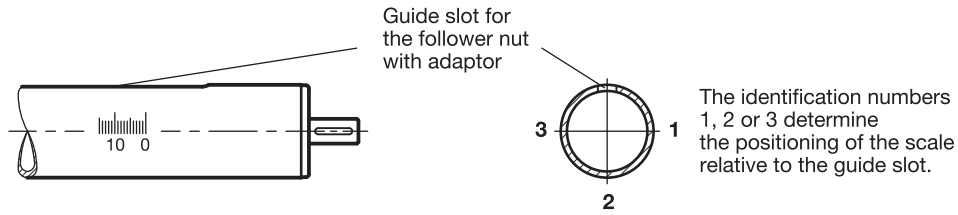
Type D

Scale numbers ascending towards centre



Standard Elements	Main dimensions				
	do Ø Linear actuator	l ₁ Travel (Standard lengths)	l ₂	l ₃	z Scale length or highest figure
GN 299-18-65-A-*	18	65	82.5	147.5	90
GN 299-18-165-A-*	18	165	82.5	247.5	190
GN 299-18-265-A-*	18	265	82.5	347.5	290
GN 299-30-100-A-*	30	100	122.5	222.5	120
GN 299-30-150-A-*	30	150	122.5	272.5	170
GN 299-30-200-A-*	30	200	122.5	322.5	220
GN 299-30-300-A-*	30	300	122.5	422.5	320
GN 299-40-70-A-*	40	70	142.5	217.5	90
GN 299-40-170-A-*	40	170	142.5	317.5	190
GN 299-40-220-A-*	40	220	142.5	367.5	240
GN 299-40-270-A-*	40	270	142.5	417.5	290
GN 299-40-320-A-*	40	320	142.5	467.5	340
GN 299-50-65-A-*	50	65	147.5	217.5	90
GN 299-50-115-A-*	50	115	147.5	267.5	140
GN 299-50-215-A-*	50	215	147.5	367.5	240
GN 299-50-265-A-*	50	265	147.5	417.5	290
GN 299-50-315-A-*	50	315	147.5	467.5	340
GN 299-60-220-A-*	60	220	182.5	402.5	240
GN 299-60-720-A-*	60	720	182.5	902.5	740
GN 299-18-65-B-*	18	65	82.5	147.5	90
GN 299-18-165-B-*	18	165	82.5	247.5	190
GN 299-18-265-B-*	18	265	82.5	347.5	290
GN 299-30-100-B-*	30	100	122.5	222.5	120
GN 299-30-150-B-*	30	150	122.5	272.5	170
GN 299-30-200-B-*	30	200	122.5	322.5	220
GN 299-30-300-B-*	30	300	122.5	422.5	320
GN 299-40-70-B-*	40	70	142.5	217.5	90
GN 299-40-170-B-*	40	170	142.5	317.5	190
GN 299-40-220-B-*	40	220	142.5	367.5	240
GN 299-40-270-B-*	40	270	142.5	417.5	290
GN 299-40-320-B-*	40	320	142.5	467.5	340
GN 299-50-65-B-*	50	65	147.5	217.5	90
GN 299-50-115-B-*	50	115	147.5	267.5	140
GN 299-50-215-B-*	50	215	147.5	367.5	240
GN 299-50-265-B-*	50	265	147.5	417.5	290
GN 299-50-315-B-*	50	315	147.5	467.5	340
GN 299-60-220-B-*	60	220	182.5	402.5	240
GN 299-60-720-B-*	60	720	182.5	902.5	740

* Complete the description of the standard item needed by adding the identification number of the scale (see drawing).



Standard Elements	Main dimensions				
Description	do Ø Linear actuator	l ₁ Travel (Standard lengths)	l ₂	l ₃	z Scale length or highest figure
GN 299-18-65-C-*	18	65	82.5	147.5	90
GN 299-18-165-C-*	18	165	82.5	247.5	190
GN 299-18-265-C-*	18	265	82.5	347.5	290
GN 299-30-100-C-*	30	100	122.5	222.5	120
GN 299-30-150-C-*	30	150	122.5	272.5	170
GN 299-30-200-C-*	30	200	122.5	322.5	220
GN 299-30-300-C-*	30	300	122.5	422.5	320
GN 299-40-70-C-*	40	70	142.5	217.5	90
GN 299-40-170-C-*	40	170	142.5	317.5	190
GN 299-40-220-C-*	40	220	142.5	367.5	240
GN 299-40-270-C-*	40	270	142.5	417.5	290
GN 299-40-320-C-*	40	320	142.5	467.5	340
GN 299-50-65-C-*	50	65	147.5	217.5	90
GN 299-50-115-C-*	50	115	147.5	267.5	140
GN 299-50-215-C-*	50	215	147.5	367.5	240
GN 299-50-265-C-*	50	265	147.5	417.5	290
GN 299-50-315-C-*	50	315	147.5	467.5	340
GN 299-60-220-C-*	60	220	182.5	402.5	240
GN 299-60-720-C-*	60	720	182.5	902.5	740
GN 299-18-65-D-*	18	65	82.5	147.5	90
GN 299-18-165-D-*	18	165	82.5	247.5	190
GN 299-18-265-D-*	18	265	82.5	347.5	290
GN 299-30-100-D-*	30	100	122.5	222.5	120
GN 299-30-150-D-*	30	150	122.5	272.5	170
GN 299-30-200-D-*	30	200	122.5	322.5	220
GN 299-30-300-D-*	30	300	122.5	422.5	320
GN 299-40-70-D-*	40	70	142.5	217.5	90
GN 299-40-170-D-*	40	170	142.5	317.5	190
GN 299-40-220-D-*	40	220	142.5	367.5	240
GN 299-40-270-D-*	40	270	142.5	417.5	290
GN 299-40-320-D-*	40	320	142.5	467.5	340
GN 299-50-65-D-*	50	65	147.5	217.5	90
GN 299-50-115-D-*	50	115	147.5	267.5	140
GN 299-50-215-D-*	50	215	147.5	367.5	240
GN 299-50-265-D-*	50	265	147.5	417.5	290
GN 299-50-315-D-*	50	315	147.5	467.5	340
GN 299-60-220-D-*	60	220	182.5	402.5	240
GN 299-60-720-D-*	60	720	182.5	902.5	740

* Complete the description of the standard item needed by adding the identification number of the scale (see drawing).

GN 391



Drive units

- **Guide tube**
Precision steel tube, chrome-plated SCR, DIN 2391.
- **Spindle**
Steel thrust ball bearings.
- **End caps**
Plastic.
- **Assembly**
Bevel-gear wheels / handwheels, tube clamp connectors and accessories are to be ordered separately.

Features and applications

Transfer units GN 391 are normally used in connection with linear actuators (GN 291, GN 292, GN 293). They are designed to translate the rotary movement for operating the linear actuators to another point or position. The transfer unit in the standard length l_1 is a special design: it is designed to turn the operating axis for the linear actuators (handwheel) by 90° together with an angular gear drive.

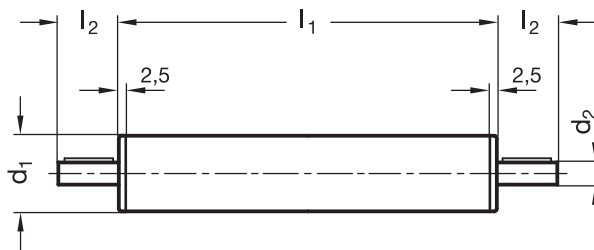
As in linear actuators, digital position indicators can be fitted.

Accessories

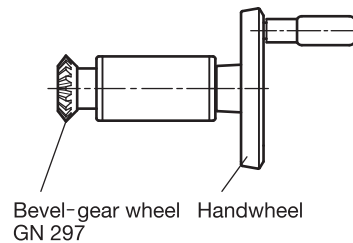
- Housings GN 298 (see page 160).
- Bevel gear wheels GN 297 (see page 159).
- Position indicators GN DD51 (see main catalogue page 488).
- Position indicators GN DD52R (see main catalogue page 494).
- Installation kits for linear actuators GN 295 (see page 153).

Special executions on request (For sufficient quantities)

Transfer units GN 391 according to customer's requirement (e.g. GN 391-50-500-SCR)

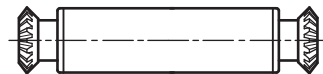


Drive unit with bevel-gear wheel and handwheel



Bevel-gear wheel Handwheel GN 297

Transfer unit



Standard Elements	Main dimensions					△/△
Description	d1	l1 Standard lengths of the drive units	l1 Standard lengths of the transfer units	d2 f7	l2	g
GN 391-18-47-SCR	18	47	*	6	16	60
GN 391-30-60-SCR	30	60	*	8	16	180
GN 391-40-93-SCR1	40	93	*	12	17	500
GN 391-50-93-SCR	50	93	*	12	18	780

* Length according to customer's requirement.

Drive units

158

Tube clamp connectors, Linear actuators

- **Guide tube**

Precision AISI 301 stainless steel tube, DIN 2462.

- **Spindle**

Stainless steel thrust ball bearings.

- **End caps**

Plastic.

- **Assembly**

Bevel-gear wheels / handwheels, tube clamp connectors and accessoires are to be ordered separately.



Features and applications

Transfer units GN 391-NI are normally used in connection with linear actuators (GN 291, GN 292, GN 293). They are designed to translate the rotary movement for operating the linear actuators to another point or position.

The transfer unit in the standard length l_1 is a special design: it is designed to turn the operating axis for the linear actuators (handwheel) by 90° together with an angular gear drive.

As in linear actuators, digital position indicators can be fitted.

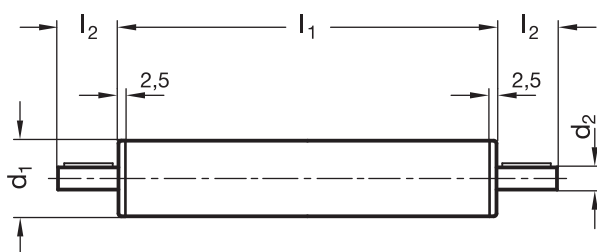
Accessories

- Housings GN 298 (see page 160).
- Bevel gear wheels GN 297 (see page 159).
- Position indicators GN DD51 (see main catalogue page 488).
- Position indicators GN DD52R (see main catalogue page 494).
- Installation kits for linear actuators GN 295 (see page 153).

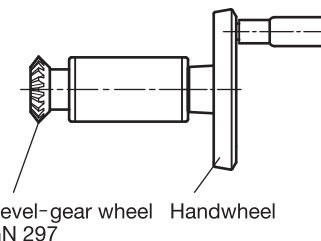
Special executions on request

(For sufficient quantities)

Transfer units GN 391 according to customer's requirement (e.g. GN 391-50-500-NI)

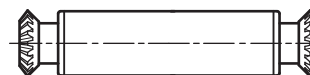


Drive unit with bevel-gear wheel and handwheel



Bevel-gear wheel Handwheel
GN 297

Transfer unit



Standard Elements	Main dimensions					g
	d1	l1 Standard lengths of the drive units	l1 Standard lengths of the transfer units	d2 f7	l2	
GN 391-18-47-NI	18	47	*	6	16	60
GN 391-30-60-NI	30	60	*	8	16	180
GN 391-40-93-NI	40	93	*	12	17	500
GN 391-50-93-NI	50	93	*	12	18	780

* Length according to customer's requirement.

GN 297

Bevel gear wheels



•Material

Steel blackened, teeth milled.

Features and applications

Bevel-gear wheels GN 297 are used for angular / T-gears in connection with linear actuators / transfers units and housings GN 298.

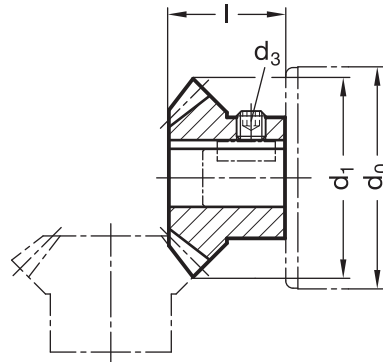
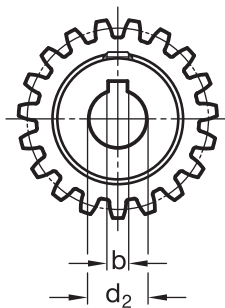
Two bevel-gear wheels are required for an angular gear, three for a T-gear. The transmission ratio is always 1:1.

Accessories

- Housings GN 298 (see page 160).
- Drive units GN 391 (see page 157ff.).
- Transfer units GN 391 (see page 157ff.).
- Linear actuators GN 291 to GN 293 (see page 113ff.).

159

Tube clamp connectors, Linear actuators



Standard Elements	Main dimensions						$\Delta \triangle$
Description	d0 Ø Linear actuator Ø Transfer unit GN 391	d1	d2 H7 Bore with keyway	b	d3	Length l	g
GN 297-17-K6	18	17	K6	2	M4	11	9
GN 297-26-K8	30	26	K8	2	M6	19	36
GN 297-34-K12	40	34	K12	4	M6	23.5	59
GN 297-40-K12	50	40	K12	4	M6	24	85

GN 298

Housings

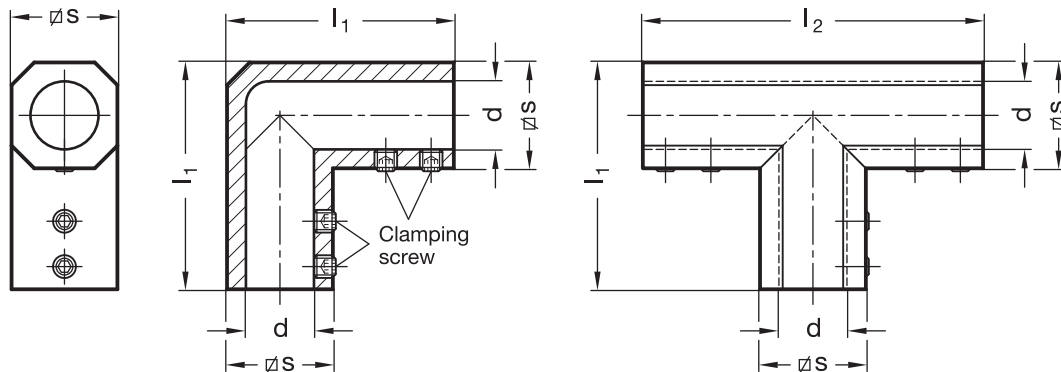
- **Housing**
Aluminium gravity die-cast.
- **Clamping screws**
Stainless Steel
- **Finish**
RAL 9005 black, matte finish, epoxy resin coating.
- **Types**
 - Type **W**: for angular gears.
 - Type **T**: for T-gears.

Features and applications

Housings GN 298 for angular gears / T-gears are used in connection with bevel-gear wheels GN 297 and linear actuators / transfer units: the angular gears / T-gears are designed to deflect the rotary movement of a linear actuator / transfer unit by 90°.

Accessories

- Bevel gear wheels GN 297 (see page 159).
- Drive units GN 391 (see page 157ff.).
- Transfer units GN 391 (see page 157ff.).
- Linear actuators GN 291 to GN 293 (see page 113ff.).

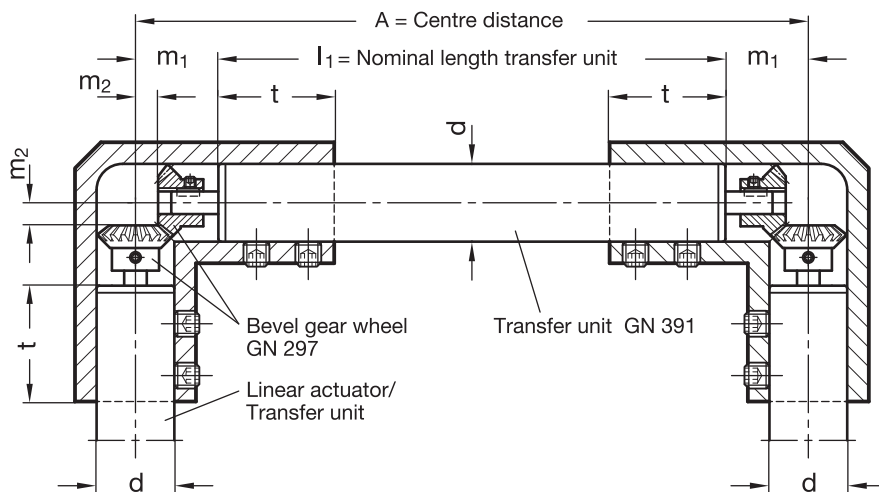


Standard Elements	Main dimensions				\triangle
Description	s	d Bore for Linear actuator Transfer unit	l ₁	l ₂	g
GN 298-28-B18-W-SW	28	B18	60	90	107
GN 298-40-B30-W-SW	40	B30	84	126	219
GN 298-50-B40-W-SW	50	B40	108	162	434
GN 298-60-B50-W-SW	60	B50	128	190	692
GN 298-28-B18-T-SW	28	B18	60	90	139
GN 298-40-B30-T-SW	40	B30	84	126	280
GN 298-50-B40-T-SW	50	B40	108	162	542
GN 298-60-B50-T-SW	60	B50	128	190	851

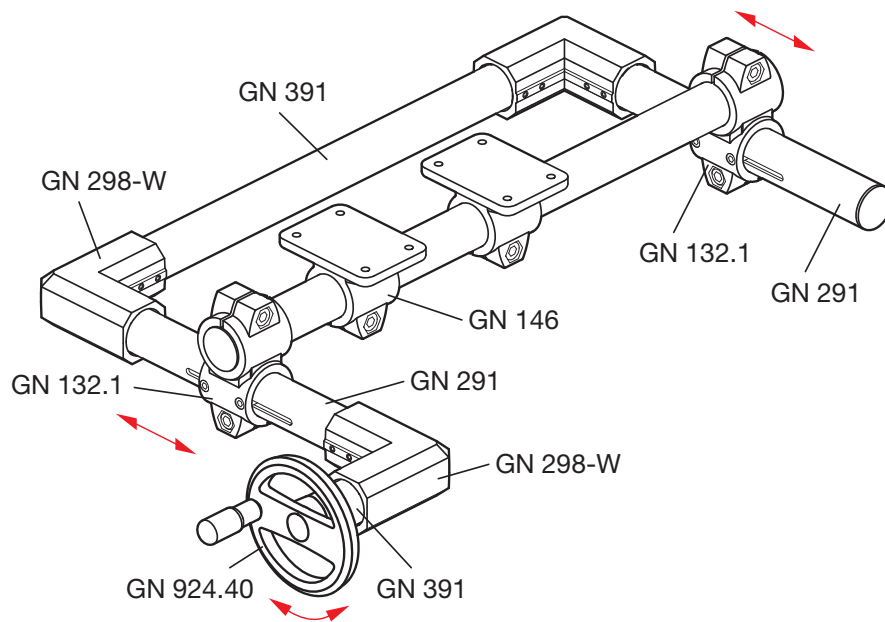


Bevel gear wheels and linear actuator/transfer unit assembled.

Assembly of linear actuators / transfer units with bevel gear wheels in housings GN 298

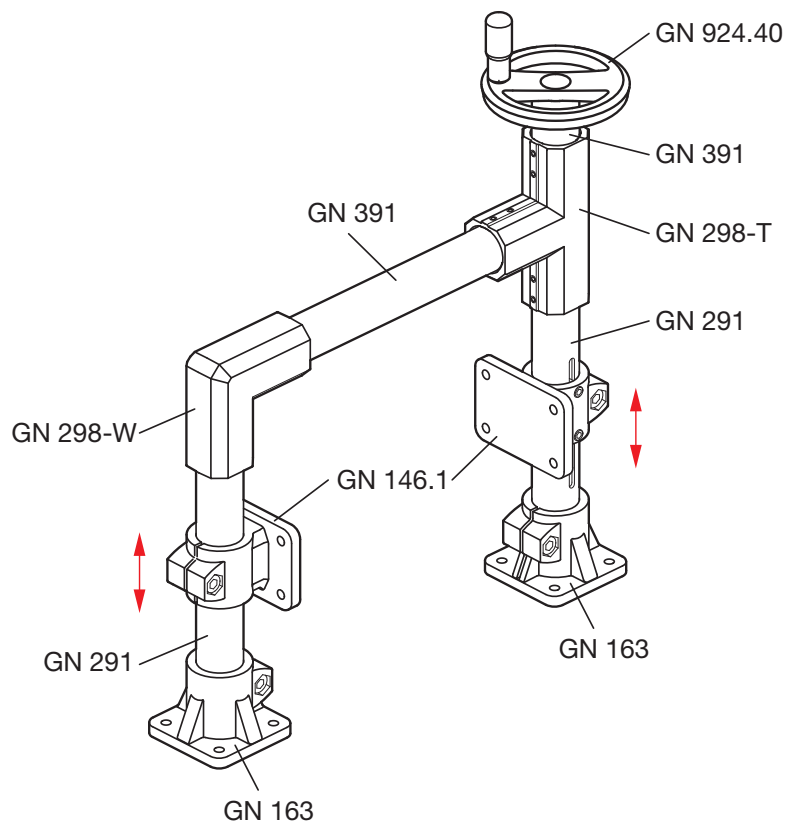


d_1 Ø Linear actuator Ø Transfer unit GN 391	m_1	m_2	Bevel gear wheel	Housing	Length of the transfer unit
18	19.5	22	GN 297-17-K6	GN 298-28-B18-W/T-SW	$l_1 = A - 2 \times m_1$
30	26	35	GN 297-26-K8	GN 298-40-B30-W/T-SW	
40	26	44	GN 297-34-K12	GN 298-50-B40-W/T-SW	
50	33.5	56	GN 297-40-K12	GN 298-60-B50-W/T-SW	



Two parallel sliding linear actuators are connected with a transfer unit GN 391.

The angular housing GN 298-W including the bevel gear wheels GN 297 and another transfer unit GN 391 connect the handwheel with the system. The handwheel is placed in a rectangular position to the moving axes.



Two linear actuators GN 291 are connected with a transfer unit GN 391 and so two flanged linear actuator connectors GN 146.1 will be moved in parallel.

The T- and angular gears GN 298-T/-W including the assembled bevel gear wheels GN 297 and another transfer unit GN 391 connect the handwheel with the system. The handwheel is (placed) in a parallel position to the moving axes.

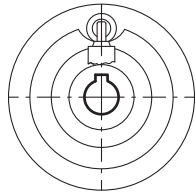
Technical data



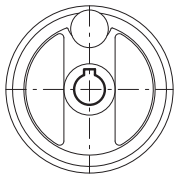
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Technical Data

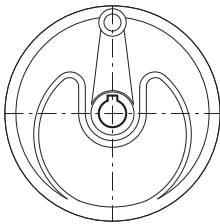
Orientation of keyways



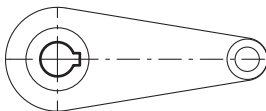
Solid handwheels



Spoked handwheels



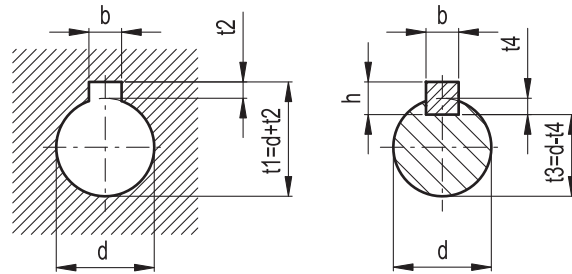
Monospoke handwheels



Crank handles

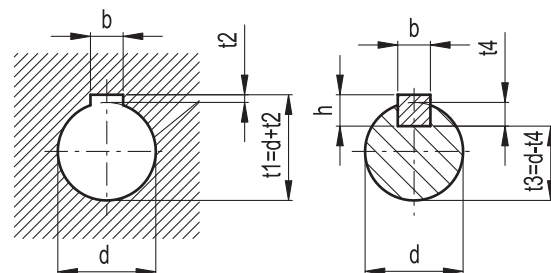
DIN 6885/1 KEYWAYS					
d	b P9/JS9 Hub keyway	b P9/N9 Shaft-keyway	h	t2	t4
from 6 to 8	2	2	2	1 +0.1	1.2 +0.1
over 8 to 10	3	3	3	1.4 +0.1	1.8 +0.1
over 10 to 12	4	4	4	1.8 +0.1	2.5 +0.1
over 12 to 17	5	5	5	2.3 +0.1	3 +0.1
over 17 to 22	6	6	6	2.8 +0.1	3.5 +0.1
over 22 to 30	8	8	7	3.3 +0.2	4 +0.2
over 30 to 38	10	10	8	3.3 +0.2	5 +0.2
over 38 to 44	12	12	8	3.3 +0.2	5 +0.2
over 44 to 50	14	14	9	3.8 +0.2	5.5 +0.2

Width of keyway:
 P9 tight fit (standard design)
 JS or N9 loose fit (requires agreement in writing)



DIN 6885/2 KEYWAYS					
d	b P9/JS9 Hub keyway	b P9/N9 Shaft-keyway	h	t2	t4
from 10 to 12	4	4	4	1.1 +0.1	3 +0.1
over 12 to 17	5	5	5	1.3 +0.1	3.8 +0.1
over 17 to 22	6	6	6	1.7 +0.1	4.4 +0.1
over 22 to 30	8	8	7	1.7 +0.2	5.4 +0.2
over 30 to 38	10	10	8	2.1 +0.2	6 +0.2
over 38 to 44	12	12	8	2.1 +0.2	6 +0.2
over 44 to 50	14	14	9	2.6 +0.2	6.5 +0.2

Width of keyway:
 P9 tight fit (standard design)
 JS or N9 loose fit (requires agreement in writing)



This ISO Standard represents the basic for a system of nominal dimensions and sizes whereby the table mirrors the calculated values of basic tolerances relating to basic dimensions.

The use of this table is limited to smooth circular cylindrical workpieces or such with two parallel fitting planes or contact areas.

The values attributed to an ISO tolerance grade (IT) specify the tolerance value and hence the tolerance area. With ascending numbers, the size of the tolerance increases.

For identification purpose of the position of the tolerance area in relation to the nominal dimension (zero), the number chosen as tolerance grade IT is preceded by a letter.

Tolerance area H is the most common value for bores. It specifies that the minimum dimension of the bore corresponds to the nominal dimension.

The permissible maximum dimension corresponds to the nominal dimension plus the IT tolerance.

Examples:

bore 20 H7 = 20 +0.021/0 bore 8 H11 = 8 +0.090/0
 min. dimens.: 20.000 min. dimens.: 8.000
 max. dimens.: 20.021 min. dimens.: 8.090

ISO-Fundamental tolerance series DIN ISO 286													
Tol. (µm)	Nominal sizes												
	-	>3	>6	>10	>18	>30	>50	>80	>120	>180	>250	>315	>400
Grades	... 3	... 6	... 10	... 18	... 30	... 50	... 80	... 120	... 180	... 250	... 315	... 400	... 500
IT	...	...	...	...	...	...	...	...	...	...	...	...	...
01	0.3	0.4	0.4	0.5	0.6	0.6	0.8	1	1.2	2	2.5	3	4
0	0.5	0.6	0.6	0.8	1	1	1.2	1.5	2	3	4	5	6
1	0.8	1	1	1.2	1.5	1.5	2	2.5	3.5	4.5	6	7	8
2	1.2	1.5	1.5	2	2.5	2.5	3	4	5	7	8	9	10
3	2	2.5	2.5	3	4	4	5	6	8	10	12	13	15
4	3	4	4	5	6	7	8	10	12	14	16	18	20
5	4	5	6	8	9	11	13	15	18	20	23	25	27
6	6	8	9	11	13	16	19	22	25	29	32	36	40
7	10	12	15	18	21	25	30	35	40	46	52	57	63
8	14	18	22	27	33	39	46	54	63	72	81	89	97
9	25	30	36	43	52	62	74	87	100	115	130	140	155
10	40	48	58	70	84	100	120	140	160	185	210	230	250
11	60	75	90	110	130	160	190	220	250	290	320	360	400
12	100	120	150	180	210	250	300	350	400	460	520	570	630
13	140	180	220	270	330	390	460	540	630	720	810	890	970
14	250	300	360	430	520	620	740	870	1000	1150	1300	1400	1550
15	400	480	580	700	840	1000	1200	1400	1600	1850	2100	2300	2500
16	600	750	900	1100	1300	1600	1900	2200	2500	2900	3200	3600	4000
17	1000	1200	1500	1800	2100	2500	3000	3500	4000	4600	5200	5700	6300
18	1400	1800	2200	2700	3300	3900	4600	5400	6300	7200	8100	8900	9700

Tol. (µm)	Nominal sizes												
	...	>3	>6	>10	>18	>30	>50	>80	>120	>180	>250	>315	>400
classes for bore	...	>3	>6	>10	>18	>30	>50	>80	>120	>180	>250	>315	>400
D9	+45	+60	+76	+93	+117	+142	+174	+207	+245	+285	+330	+375	+420
D12	+120	+150	+190	+230	+275	+330	+400	+470	+545	+630	+720	+810	+900
E8	+28	+38	+47	+59	+73	+89	+106	+126	+148	+172	+200	+225	+255
G6	+8	+12	+14	+17	+20	+25	+29	+34	+39	+44	+50	+55	+60
G7	+2	+4	+5	+6	+7	+9	+10	+12	+14	+15	+17	+19	+21
H7	+10	+12	+15	+18	+21	+25	+30	+35	+40	+46	+52	+58	+63
H8	+14	+18	+22	+27	+33	+39	+46	+54	+63	+72	+81	+90	+97
H9	+25	+30	+36	+43	+52	+62	+74	+87	+100	+115	+130	+140	+155
H11	+60	+75	+90	+110	+130	+160	+190	+220	+250	+290	+320	+360	+400
H12	+100	+120	+150	+180	+210	+250	+300	+350	+400	+460	+520	+570	+630
H13	+140	+180	+220	+270	+330	+390	+460	+540	+630	+720	+810	+890	+970
H14	+250	+300	+360	+430	+520	+620	+740	+870	+1000	+1150	+1300	+1400	+1550
JS9	±12.5	±15	±18	±21.5	±26	±31	±37	±43.5	±50	±57.5	±63	±70	±75
N9	-4	0	0	0	0	0	0	0	0	0	0	0	0
P9	-29	-30	-36	-43	-52	-62	-74	-87	-100	-115	-130	-140	-155
P9	-6	-12	-15	-18	-22	-26	-32	-37	-43	-50	-57	-63	-70
P9	-31	-42	-51	-61	-74	-88	-106	-124	-143	-165	-185	-200	-215
for shaft													
f7	-6	-10	-13	-16	-20	-25	-30	-36	-43	-50	-57	-63	-70
h6	-16	-22	-28	-34	-41	-50	-60	-71	-83	-96	-110	-125	-140
h7	0	0	0	0	0	0	0	0	0	0	0	0	0
h7	-6	-8	-9	-11	-13	-16	-19	-22	-25	-29	-33	-37	-41
h7	0	0	0	0	0	0	0	0	0	0	0	0	0
h8	-10	-12	-15	-18	-21	-25	-30	-35	-40	-46	-52	-58	-63
h8	0	0	0	0	0	0	0	0	0	0	0	0	0
h8	-14	-18	-22	-27	-33	-39	-46	-54	-63	-72	-81	-90	-97
h9	0	0	0	0	0	0	0	0	0	0	0	0	0
h9	-25	-30	-36	-43	-52	-62	-74	-87	-100	-115	-130	-140	-155
h11	0	0	0	0	0	0	0	0	0	0	0	0	0
h11	-60	-75	-90	-110	-130	-160	-190	-220	-250	-290	-320	-360	-400
h13	0	0	0	0	0	0	0	0	0	0	0	0	0
h13	-140	-180	-220	-270	-330	-390	-460	-540	-630	-720	-810	-890	-970
h14	0	0	0	0	0	0	0	0	0	0	0	0	0
h14	-250	-300	-360	-430	-520	-620	-740	-870	-1000	-1150	-1300	-1400	-1550
js14	±125	±150	±180	±215	±260	±310	±370	±435	±500	±575	±630	±700	±750
n6	+10	+16	+19	+23	+28	+33	+39	+45	+52	+60	+67	+75	+80
p6	+4	+8	+10	+12	+15	+17	+20	+23	+27	+31	+35	+39	+41
p6	+12	+20	+24	+29	+35	+42	+51	+59	+68	+79	+89	+97	+105
p6	+6	+12	+15	+18	+22	+26	+32	+37	+43	+50	+57	+63	+70



PROPERTIES OF METAL MATERIALS STAINLESS STEELS



**A
4**
Technical data

Description	AISI 303	AISI 304+Cu	AISI 304	AISI 316	AISI 316 LHC	AISI 301	AISI 302	AISI CF-8
Designation in accordance with EN 10088-1-2-3 EN 10283 (AISI CF-8) SINT C40 (AISI 316 LMC)	X 8 CrNiS 18-9	X 3 CrNiCu 18-9-4	X 5 CrNi 18-10	X 5 CrNiMo 17-12	Sint C40 X 2 CrNiMo 17-12-2	EN 100088-1;-2;-3 X10CrNi 18-8	X 10 CrNi 18-09	EN 10283 GX5CrNi 19-10
% components of alloy	C ≤ 0.10 Si ≤ 1.0 Mn ≤ 2.0 P ≤ 0.045 S ≤ 0.15 ÷ 0.35 Cr 17.0 ÷ 19.0 Ni 8.0 ÷ 10.0	C ≤ 0.04 Si ≤ 1.0 Mn ≤ 2.0 P ≤ 0.045 S ≤ 0.030 Cr 17.0 ÷ 19.0 Ni 8.5 ÷ 10.5	C ≤ 0.07 Si ≤ 1.0 Mn ≤ 2.0 P ≤ 0.045 S ≤ 0.030 Cr 17.0 ÷ 19.5 Ni 8.0 ÷ 10.5	C ≤ 0.08 Si ≤ 1.0 Mn ≤ 2.0 P ≤ 0.045 S ≤ 0.030 Cr 16.0 ÷ 18.5 Ni 10.0 ÷ 13.0	C ≤ 0.08 Si ≤ 0.9 Mn ≤ 0.1 Mo ≤ 2.0 ÷ 4.0 Cr 16.0 ÷ 19.0 Ni 10.0 ÷ 14.0	C ≤ 0.05 ÷ 0.15 Si ≤ 2.0 Mn ≤ 2.0 P ≤ 0.045 S ≤ 0.015 Cr 16.0 ÷ 19.0 Mo ≤ 0.8 Ni 6.0 ÷ 9.5	C ≤ 0.08 Si ≤ 0.6 Mn ≤ 1.2 Cr 18.0 Ni 9.0	C ≤ 0.07Si ≤ 2.0 Si ≤ 1.5 Mn ≤ 1.5 P ≤ 0.04 S ≤ 0.03 Cr 18.0 ÷ 20.0 Ni 8.0 ÷ 11.0
Minimum load at breakage Rm N/mm ²	500 - 700	450 - 650	500 - 700	500 - 700	330	500 - 750	600 - 800	440 - 640
Yield point Rp 0.2 n/mm ²	≥ 190	≥ 175	≥ 190	≥ 205	≥ 250	≥ 195	≥ 210	≥ 175
Machinability	Very good	Excellent	Fair	Fair	-	Poor	Good	Medium
Forgeability	Poor	Good	Good	Good	-	Good	Poor	-
Suitability for welding	Poor	Very good	Excellent	Good	-	Good	Poor	Good
Special features	Non-magnetic structure Excellent for machining on automatic machines	Non-magnetic structure suitable for low temperatures	Non-magnetic structure suitable for low temperatures may be used at up to 700 °C	Magnetic structure suitable for low temperatures	Non-magnetic structure	Austenitic structure	Magnetic structure suitable for low temperatures	Antimagnetic, austenitic structure
Corrosion resistance	Fair Due to sulphur content, use in environments containing acids or chlorides should be avoided.	Very good Resistant to corrosion in natural environments: water, urban or country climates with no significant concentrations of chlorides, in the food industry.	Good Resistant to corrosion in natural environments: water, urban or country climates with no significant concentrations of chlorides, in the food industry.	Excellent Resistant to corrosion also in marine environments or wet environments and in the presence of acids.	Medium By virtue of its coarser porosity the corrosion resistance is in general reduced as compared with stainless steel. Reservations especially in acid and salty environment.	Good Corrosion resistant in a natural environment; water, rural, urban and industrial atmosphere.	Fair	Good Corrosion resistant. Material is to a large extent comparable with AISI 304
Main fields of application	Construction of vehicles. Electronics. Furniture finishings.	Food, chemical and pharmaceutical industries. Agriculture. Construction of machines. Electronics. Shipping. Furniture finishings	Food, chemical and pharmaceutical industries. Agriculture. Construction of vehicles and machines. Building. Furniture finishings.	Food and chemical industries. Ship building and manufacture of components for marine environments or use in highly corrosive conditions.	Chemical, cellulose and paper industry. Paint, oil, soap and textile industry. Daires. Breweries.	Springs for temperature up to 300 °C. Tools (knives). Sheet metal for vehicles automotive industry. Chemical and food industry.	Used for the manufacture of springs in various fields of application.	Food, beverage and packing industry. Armatures. Pumps. Mixers.

The characteristics described should be treated as guidelines only. No guarantee is made.
The user is responsible for checking the exact operating conditions.

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