

Technical information thermoplastic tube clamping system



The tube clamping system is characterised by the attractive design and a special reducing sleeve concept.

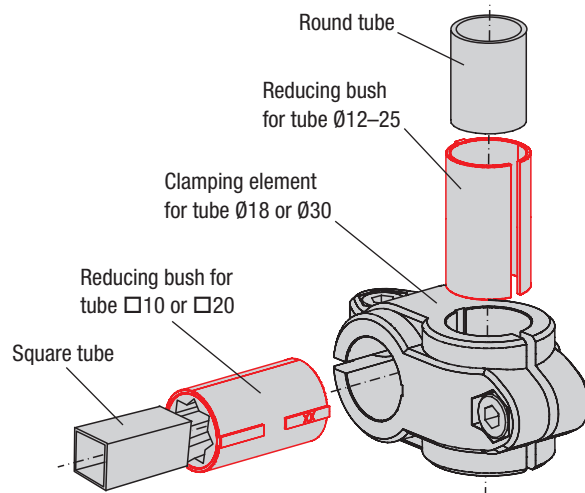
This unique concept and the associated clamping of different diameters and tube forms permit a flexibility never before achieved.

By simply exchanging a sleeve an existing tubular construction can be transformed into one with a different diameter or cross-section.

Benefits:

- Only one clamping element per construction type.
- Tube reduction (from $\varnothing 30-12$ or $25 \times 25-10 \times 10$) with different reducer sleeves for round or square tubes.
- Tube diameter marked on each reducer sleeve.
- Locking tab on the sleeves prevents rotation in the clamping element.

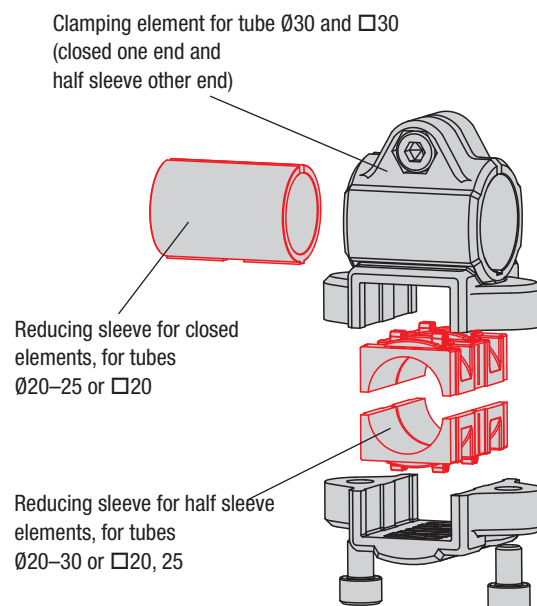
“Closed” system (one-piece basic form)



Half shell elements (two-piece basic form)

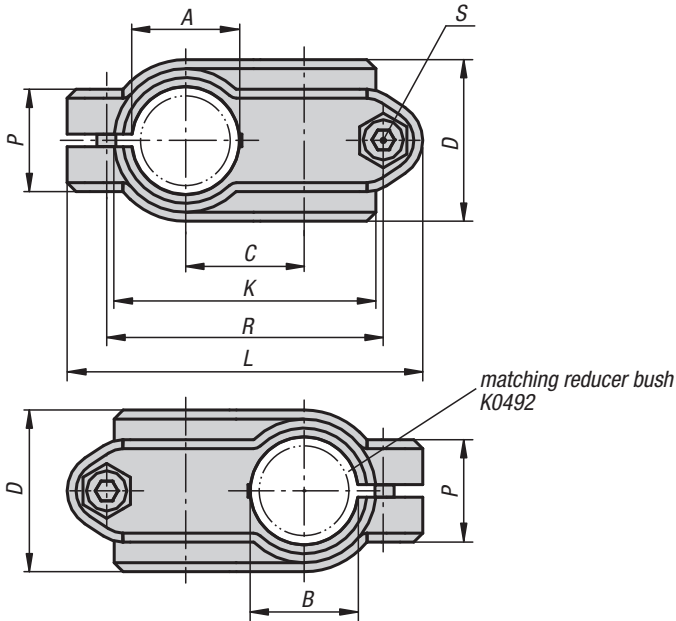
Note:

The clamping elements are supplied as standard with a DIN 7984 screw and a DIN 985 self-locking nut. Plastic clamp levers for locking available on request.



Tube clamps cross

plastic



KIPP Tube clamps cross, plastic

Order No.	A	B	C	D	K	L	P	R	S
K0472.1818	18	18	20	30	48	63	21	48	M6x18
K0472.3030	30	30	33	45	72	99	28,5	77	M8x25



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0472.1818

Note:

The standard size for round tubes is $\varnothing 18$ mm or $\varnothing 30$ mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:

Plastic levers for locking.

Accessories:

- Reducer sleeves K0492
- Round and square tubes K0493

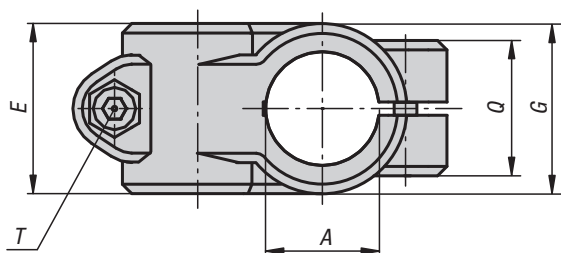
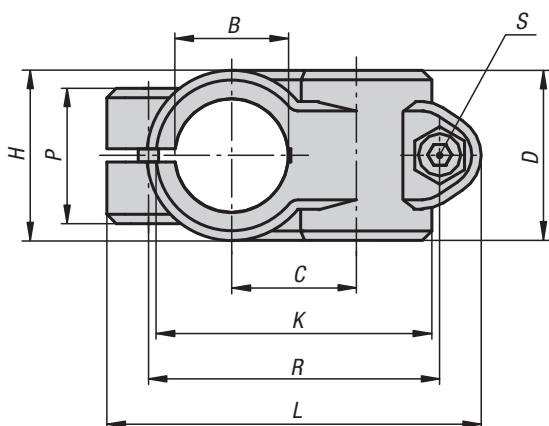


Application using tube clamps



Tube clamps cross

aluminium



Material:

Cast aluminium.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

K0472.51818

On request:

Levers for locking.

Accessories:

- Round and square tubes K0493

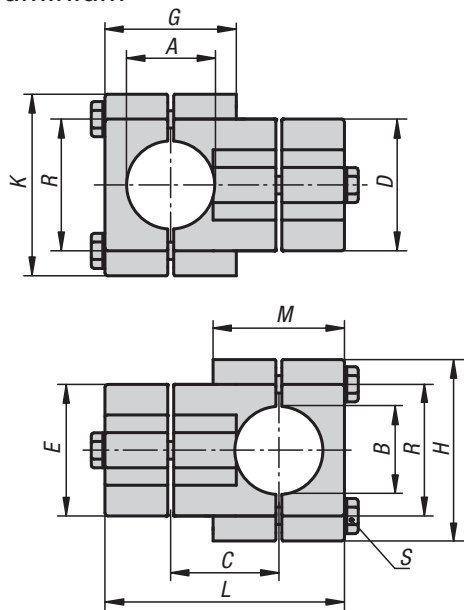
KIPP Tube clamps cross, aluminium

Order No.	A	B	C	D	E	G	H	K	L	P	Q	R	S	T
K0472.51212	12,1	12,1	20	25,5	25,5	-	-	43,5	66	23	23	51	M6x20	M6x20
K0472.51414	14,1	14,1	20	25,5	25,5	-	-	43,5	66	22	22	51	M6x20	M6x18
K0472.51515	15,1	15,1	20	25,5	25,5	-	-	43,5	66	22	22	51	M6x20	M6x18
K0472.51616	16,1	16,1	20	25,5	25,5	-	-	43,5	66	22	22	51	M6x20	M6x18
K0472.51818	18,1	18,1	20	25,5	25,5	-	-	43,5	66	23	23	51	M6x20	M6x18
K0472.52014	20,1	14,1	27	40	33	40	26	60	84	21	33	65	M8x25	M6x18
K0472.52020	20,1	20,1	33	40	40	-	-	73	99	33	33	78	M8x25	M8x25
K0472.52514	25,1	14,1	27	40	33	40	26	60	84	21	33	65	M8x25	M6x18
K0472.52525	25,1	25,1	33	40	40	-	-	73	99	33	33	78	M8x25	M8x25
K0472.53014	30,1	14,1	27	40	33	40	26	60	84	21	33	65	M8x25	M6x18
K0472.53030	30,1	30,1	33	40	40	-	-	73	99	33	33	78	M8x25	M8x25
K0472.54020	40,2	20,2	36	50	40	55	34,5	87	109	33	40	87	M10x30	M8x25
K0472.54030	40,2	30,1	45	65	65	65	49	98	137	44	44	109	M10x30	M10x30
K0472.54040	40,17	40,17	45	60	60	-	-	100	137	40	40	110	M10x30	M10x30
K0472.55030	50,2	30,1	45	65	65	65	49	98	137	44	44	109	M10x35	M10x35
K0472.55050	50,2	50,2	54	70	70	-	-	118	154	45	45	128	M10x35	M10x35



Tube clamps cross

aluminium



Material:
Cast aluminium.
Screws and nuts steel.

Version:
Vibratory ground.
Screws and nuts galvanized.

Sample order:
K0472.523030

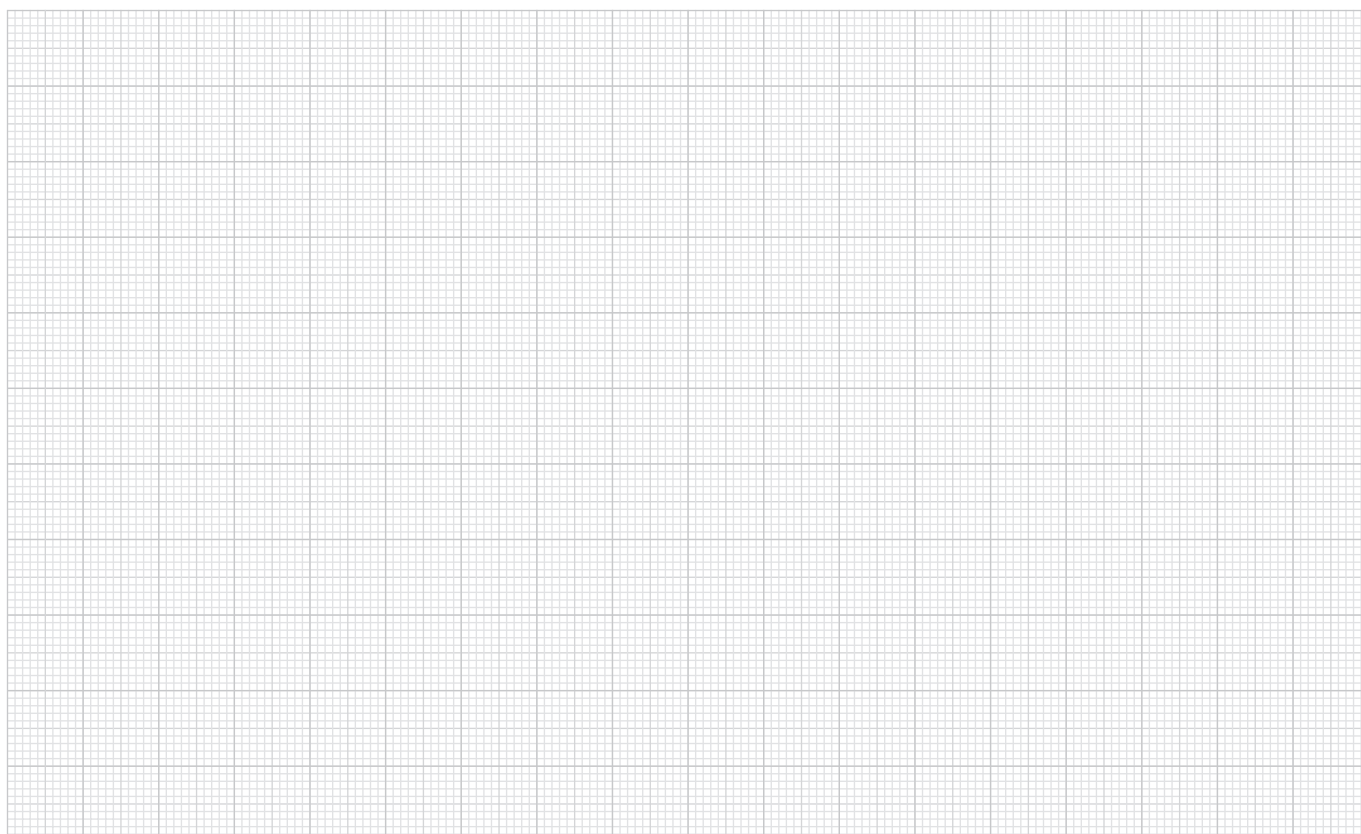
On request:
Levers for locking and other diameters.

Accessories:
- Round and square tubes K0493

KIPP Tube clamps cross, aluminium

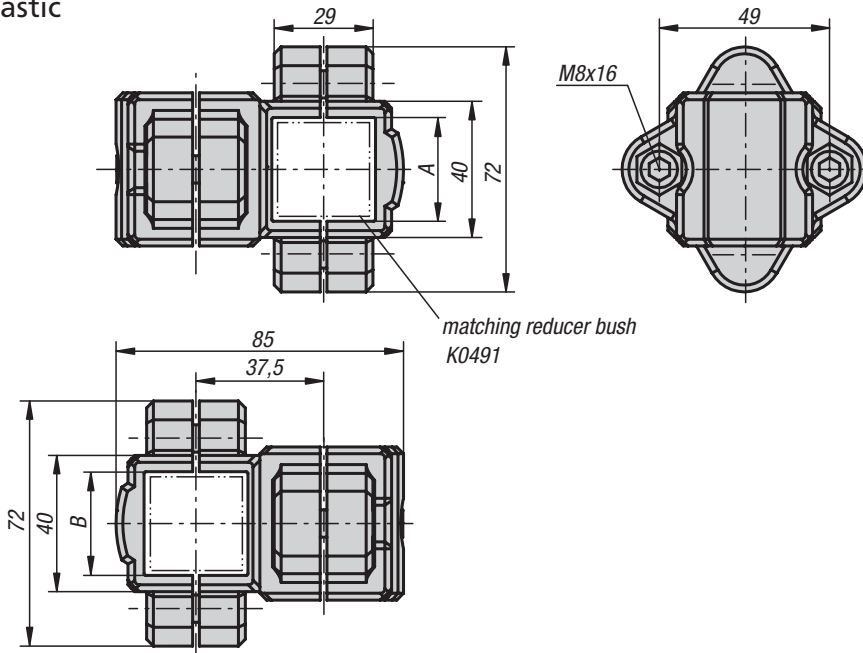
Order No.	A	B	C	D	E	G	H	K	L	M	R	S
K0472.523030	30,2	30,2	38	45	45	44	62	62	83	44	46	M8x45
K0472.524040	40,2	40,2	50	60	60	60	75	75	110	60	57	M8x60

Notes



Tube clamps cross

plastic



Material:
Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:
Black.
Screws and nuts galvanized.

Sample order:
K0473.3030

Note:
These cross clamps are for 30 mm square tubes.
Use reducer sleeves K0491 if smaller tubes are to be clamped or a conversion from square to round tubes is required.

KIPP Tube clamps cross, plastic

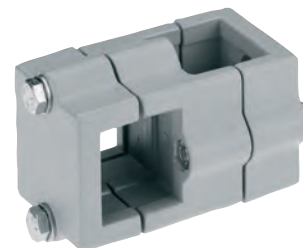
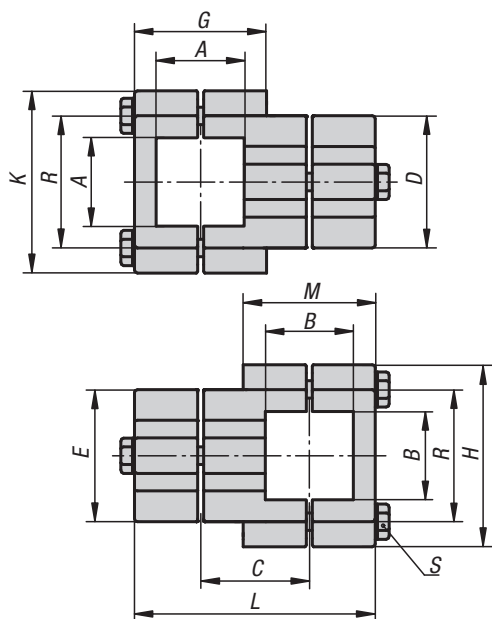
Order No.	A	B
K0473.3030	30	30

On request:
Plastic levers for locking.

Accessories:
- Reducer sleeves K0491
- Round and square tubes K0493

Tube clamps cross

aluminium



Material:
Cast aluminium.
Screws and nuts steel.

Version:
Vibratory ground.
Screws and nuts galvanized.

Sample order:
K0473.523030

On request:
Levers for locking and other sizes for square tube.

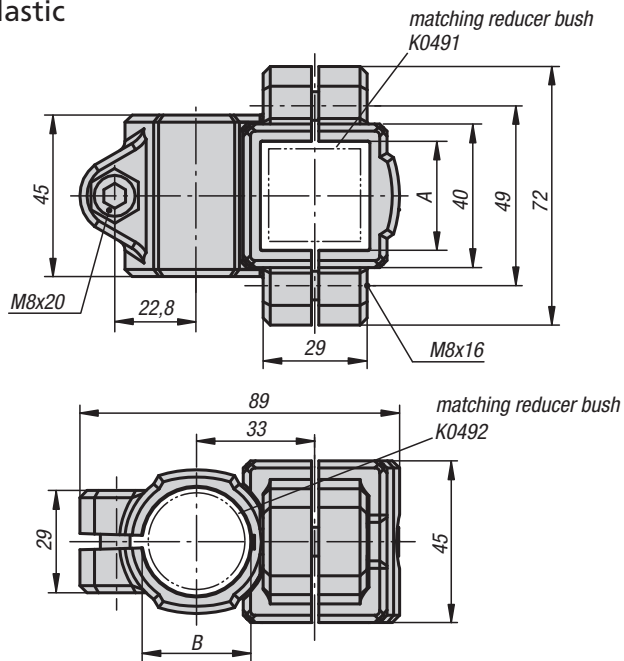
Accessories:
- Round and square tubes K0493

KIPP Tube clamps cross, aluminium

Order No.	A	B	C	D	E	G	H	K	L	M	R	S
K0473.523030	30,2	30,2	38	45	45	44	62	62	83	44	46	M8x45
K0473.524040	40,3	40,3	50	60	60	60	75	75	110	60	57	M8x60

Tube clamps cross

plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0474.3030

Note:

These cross clamps are for 30 mm square and round tubes. Use reducer sleeves K0491 or K0492 if smaller tubes are to be clamped or a conversion from round to square tubes „or vice versa“ is required.

KIPP Tube clamps cross, plastic

Order No.	A	B
K0474.3030	30	30

On request:

Plastic levers for locking.

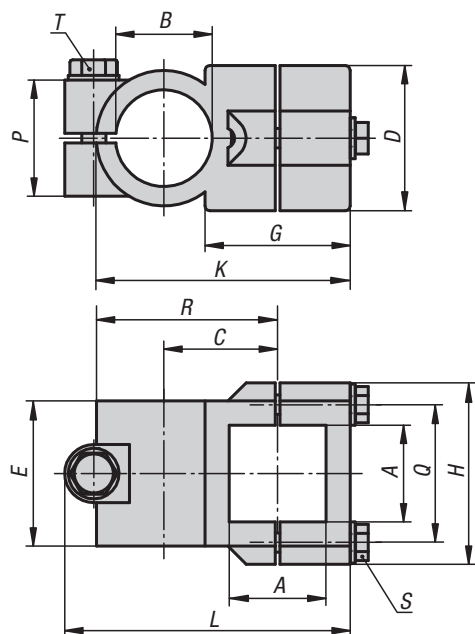
Accessories:

- Reducer sleeves K0491 and K0492
- Round and square tubes K0493



Tube clamps cross

aluminium



Material:

Cast aluminium.
Screws and nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

K0474.53030

On request:

Clamping levers for fastening and other diameters.

Accessories:

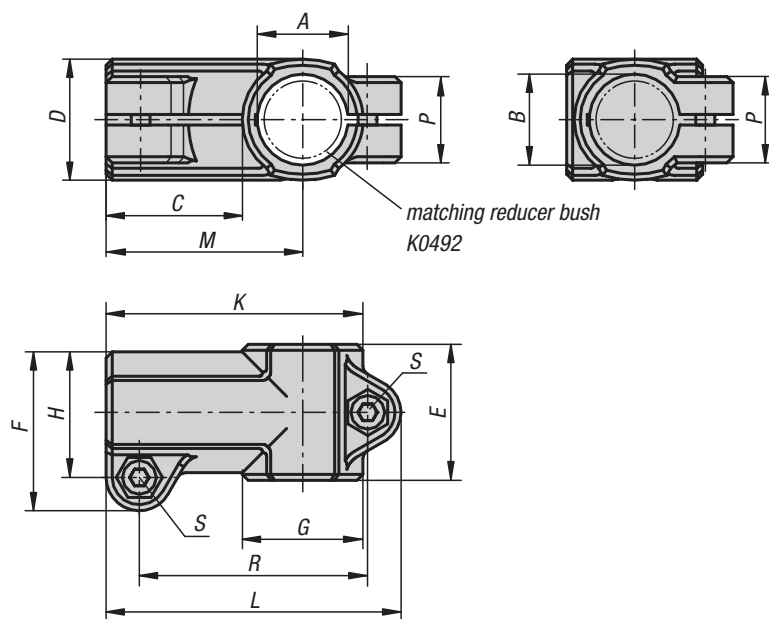
- Round and square tubes K0493

KIPP Tube clamps cross, aluminium

Order No.	A	B	C	D	E	G	H	K	L	P	Q	R	S	T
K0474.53030	30,2	30,1	33	45	45	40	62	74,5	85	33	46	55	M8x35	M8x35
K0474.54040	40,3	40,2	47	60	60	60	75	105	117	48	57	75	M8x45	M10x50

Tube clamps

T-angle plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0475.1818

Note:

The standard size for round tubes is Ø18 mm or Ø30 mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:

Plastic levers for locking.

Accessories:

- Reducer sleeves K0492
- Round and square tubes K0493

KIPP Tube clamps T-angle, plastic

Order No.	A	B	C	D	E	F	G	H	K	L	M	P	R	S
K0475.1818	18	18	30,5	25	30	34	25	26,5	55,5	64,5	43	21	49,5	M6x18
K0475.3030	30	30	45	40	45	52,5	40	41,5	85	97,5	65	28,5	75,5	M8x25

Tube clamps

T-angle aluminium



Material:

Cast aluminium.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

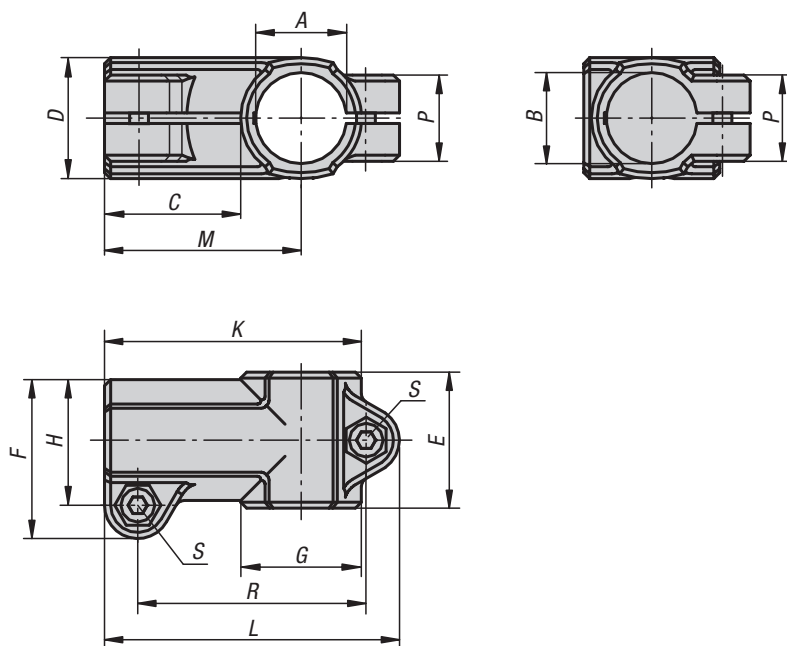
K0475.51818

On request:

Levers for locking and other diameters.

Accessories:

- Round and square tubes K0493

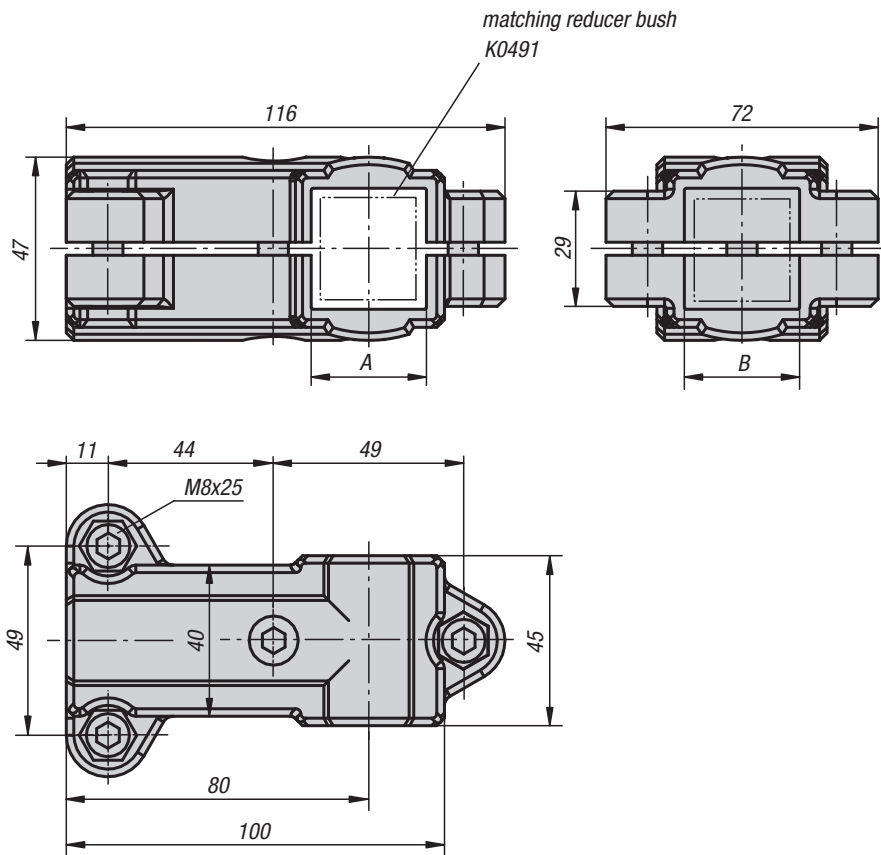


KIPP Tube clamps T-angle, aluminium

Order No.	A	B	C	D	E	F	G	H	K	L	M	P	R	S
K0475.51212	12,1	12,1	30	26	32	37,5	26	30	56	67,5	43	21	52	M6x20
K0475.51414	14,1	14,1	30	26	32	37,5	26	30	56	67,5	43	21	52	M6x20
K0475.51515	15,1	15,1	30	26	32	37,5	26	30	56	67,5	43	21	52	M6x20
K0475.51616	16,1	16,1	30	26	32	37,5	26	30	56	67,5	43	21	52	M6x20
K0475.51818	18,1	18,1	30	26	32	37,5	26	30	56	67,5	43	21	52	M6x20
K0475.52020	20,1	20,1	40	40	45	53	40	42,5	80	93	60	33	72,5	M8x25
K0475.52525	25,1	25,1	40	40	45	53	40	42,5	80	93	60	33	72,5	M8x25
K0475.53030	30,1	30,1	40	40	45	53	40	42,5	80	93	60	33	72,5	M8x25
K0475.54040	40,2	40,2	60	56	60	74	56	60	115	133	88	40	107	M10x30
K0475.55050	50,22	50,22	63	66	70	85	66	71	131	150	99	45	122	M10x35

Tube clamps

T-angle plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0476.3030

Note:

These T-clamps are for 30 mm square tubes. Use reducer sleeves K0491 if smaller tubes are to be clamped or a conversion from square to round tubes is required.

On request:

Plastic levers for locking.

Accessories:

- Reducer sleeves K0491
- Round and square tubes K0493

KIPP Tube clamps T-angle, plastic

Order No.	A	B
K0476.3030	30	30

Tube clamps

T-angle aluminium



Material:

Cast aluminium.
Screws and nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

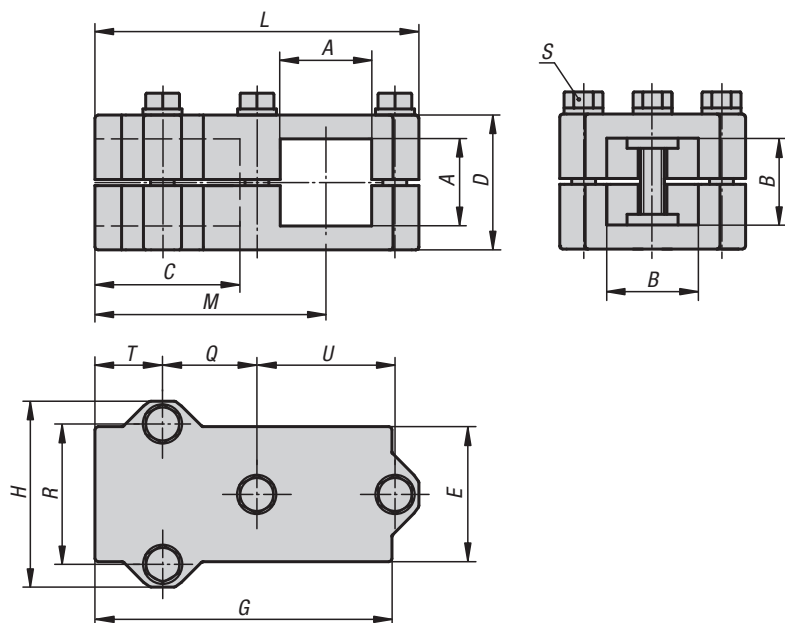
K0476.523030

On request:

Levers for locking and other sizes for square tube.

Accessories:

- Round and square tubes K0493

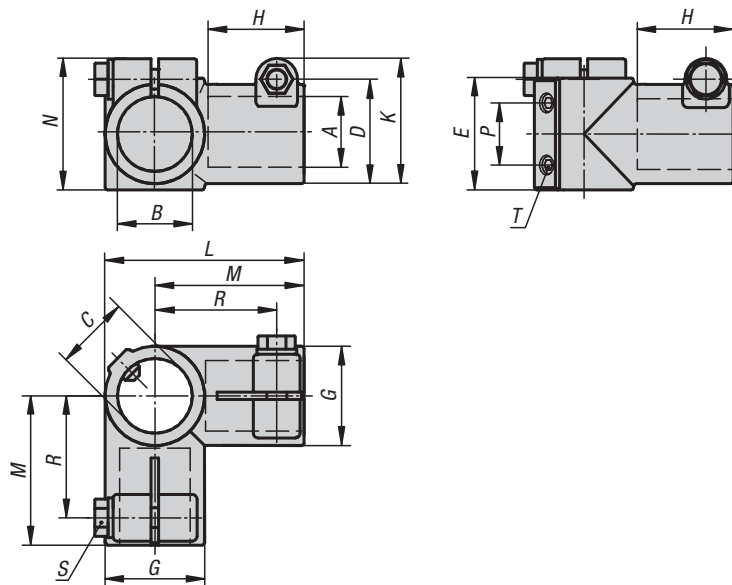


KIPP Tube clamps T-angle, aluminium

Order No.	A	B	C	D	E	G	H	L	M	Q	R	S	T	U
K0476.523030	30,3	30,3	46	45	45	100	62	108	77	31,5	46	M8x45	23	46
K0476.524040	40,4	40,4	60	60	60	129	75	136	99	40	57	M8x60	30	57

Tube clamps right-angle

aluminium



Material:

Cast aluminium.
Screws and nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

K0476.530

On request:

Levers for locking and other diameters.

Accessories:

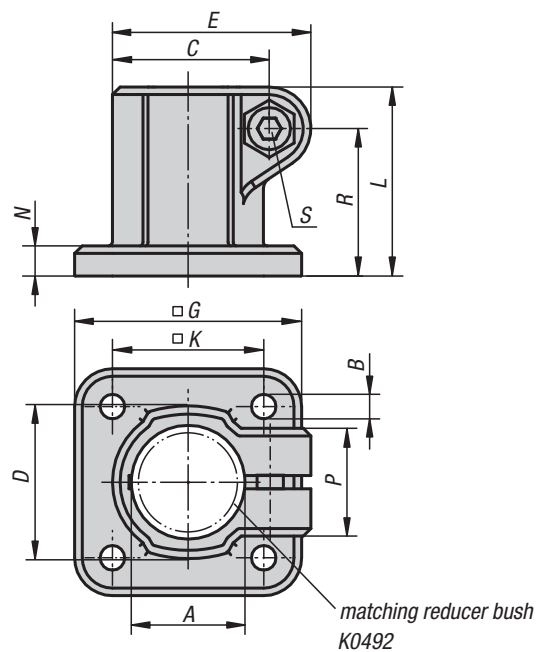
- Round and square tubes K0493

KIPP Tube clamps right-angle, aluminium

Order No.	A	B	C	D	E	G	H	K	L	M	N	P	R	S	T
K0476.530	30,1	30,1	30	40	45	40	35	51	80	60	53	25	49	M8x35	M8x15
K0476.540	40,2	40,2	40	56	60	56	58	71	116	88	73	35	75	M10x30	M8x10
K0476.550	50,2	50,2	50,2	66	70	66	70	78	136	108	80	40	90	M10x35	M10x12

Tube clamps base

plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0477.18

Note:

The standard size for round tubes is $\varnothing 18$ mm or $\varnothing 30$ mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:

Plastic levers for locking.

Accessories:

- Reducer sleeves K0492
- Round and square tubes K0493

KIPP Tube clamps base, plastic

Order No.	A	B	C	D	E	G	K	L	N	P	R	S
K0477.18	18	5,3	26,5	26	34	45	30	32	5	21	24,5	M6x18
K0477.30	30	6,5	41,5	42	52,5	60	40	50	8	28,5	39	M8x25

Tube clamps base

aluminium



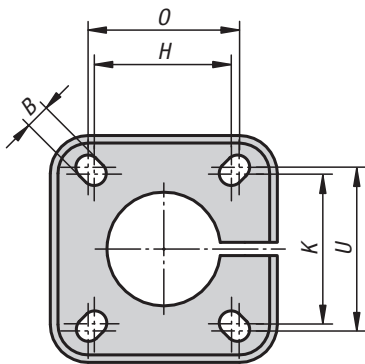
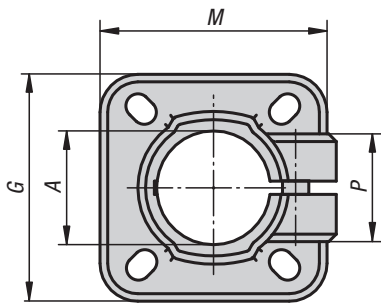
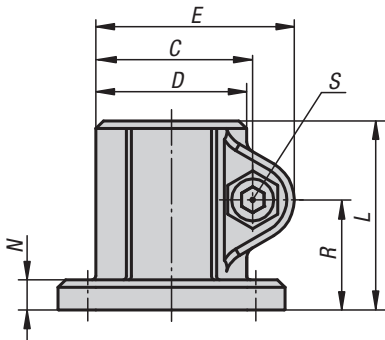
Material:
Cast aluminium.
DIN 7984 screws and DIN 985 nuts steel.

Version:
Vibratory ground.
Screws and nuts galvanized.

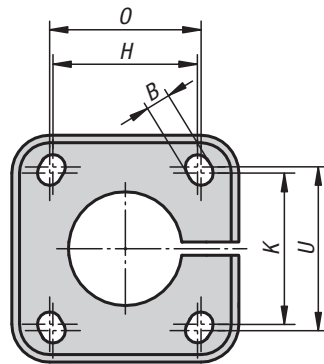
Sample order:
K0477.518

On request:
Levers for locking and other diameters.

Accessories:
- Round and square tubes K0493



hole arrangement 1



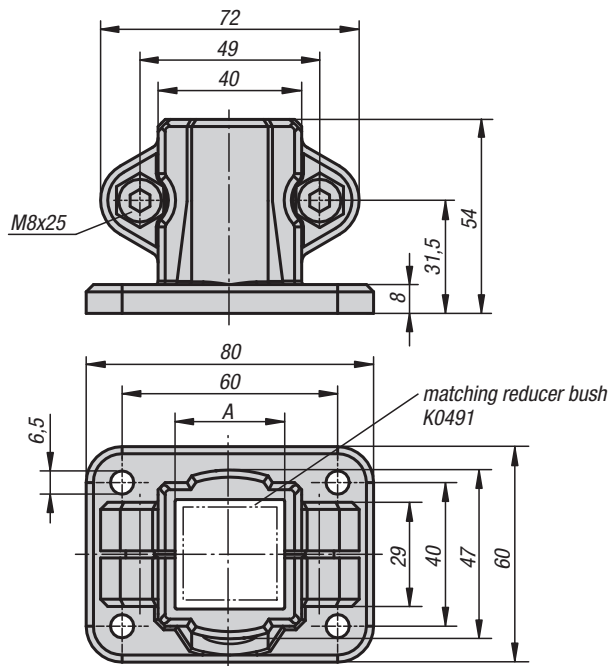
hole arrangement 2

KIPP Tube clamps base, aluminium

Order No.	hole arrangement	A	B	C	D	E	G	H	K	L	M	N	O	P	R	S	U
K0477.512	1	12,1	5,5	29,5	25	37,5	42	28	28	37	42	5	30	23	21	M6x20	30
K0477.514	1	14,1	5,5	29,5	25	37,5	42	28	28	37	42	5	30	23	21	M6x20	30
K0477.515	1	15,1	5,5	29,5	25	37,5	42	28	28	37	42	5	30	23	21	M6x20	30
K0477.516	1	16,1	5,5	29,5	25	37,5	42	28	28	37	42	5	30	23	21	M6x20	30
K0477.518	1	18,1	5,5	29,5	25	37,5	42	28	28	37	42	5	30	23	21	M6x20	30
K0477.520	2	20,1	6,5	42,5	40	53	60	40	42	50	60	8	42	33	29	M8x25	45
K0477.525	2	25,1	6,5	42,5	40	53	60	40	45	50	60	8	42	33	29	M8x25	45
K0477.530	2	30,1	6,5	42,5	40	53	60	40	45	50	60	8	42	33	29	M8x25	45
K0477.540	1	40,17	8,5	60	56	74	90	60	60	70	90	10	64	40	40	M10x30	64
K0477.550	1	50,22	10,5	70	66	85	105	74	74	85	105	14	80	45	49,5	M10x35	80

Tube clamps base

plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0478.30

Note:

These base clamps are for 30 mm square tubes. Use reducer sleeves K0491 if smaller tubes are to be clamped or a conversion from square to round tubes is required.

On request:

Plastic levers for locking.

Accessories:

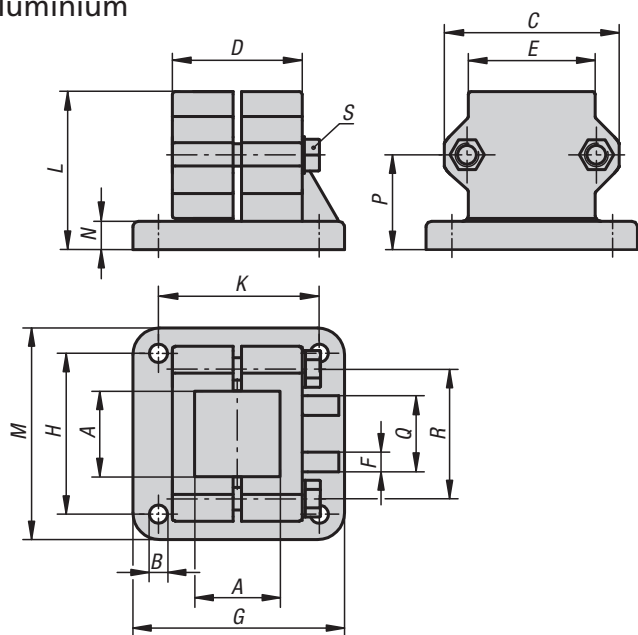
- Reducer sleeves K0491
- Round and square tubes K0493

KIPP Tube clamps base, plastic

Order No.	A
K0478.30	30

Tube clamps base

aluminium



Material:

Cast aluminium.
Screws and nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

K0478.5230

On request:

Levers for locking and other sizes for square tube.

Accessories:

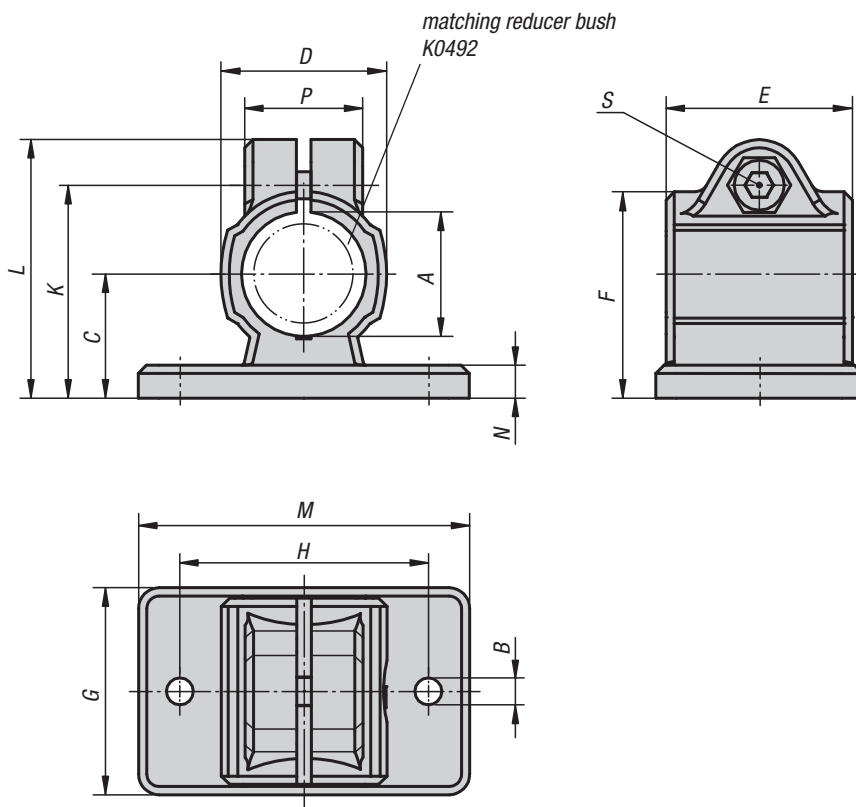
- Round and square tubes K0493

KIPP Tube clamps base, aluminium

Order No.	A	B	C	D	E	F	G	H	K	L	M	N	P	Q	R	S
K0478.5230	30,3	6,5	62	45	45	5	75	57	57	56	75	10	33,5	25	46	M8x45
K0478.5240	40,4	8,5	75	60	60	5	100	76	76	71	100	10	43	25	57	M8x60

Tube clamps flange

plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0479.18

Note:

The standard size for round tubes is $\varnothing 18$ mm or $\varnothing 30$ mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:

Plastic levers for locking.

Accessories:

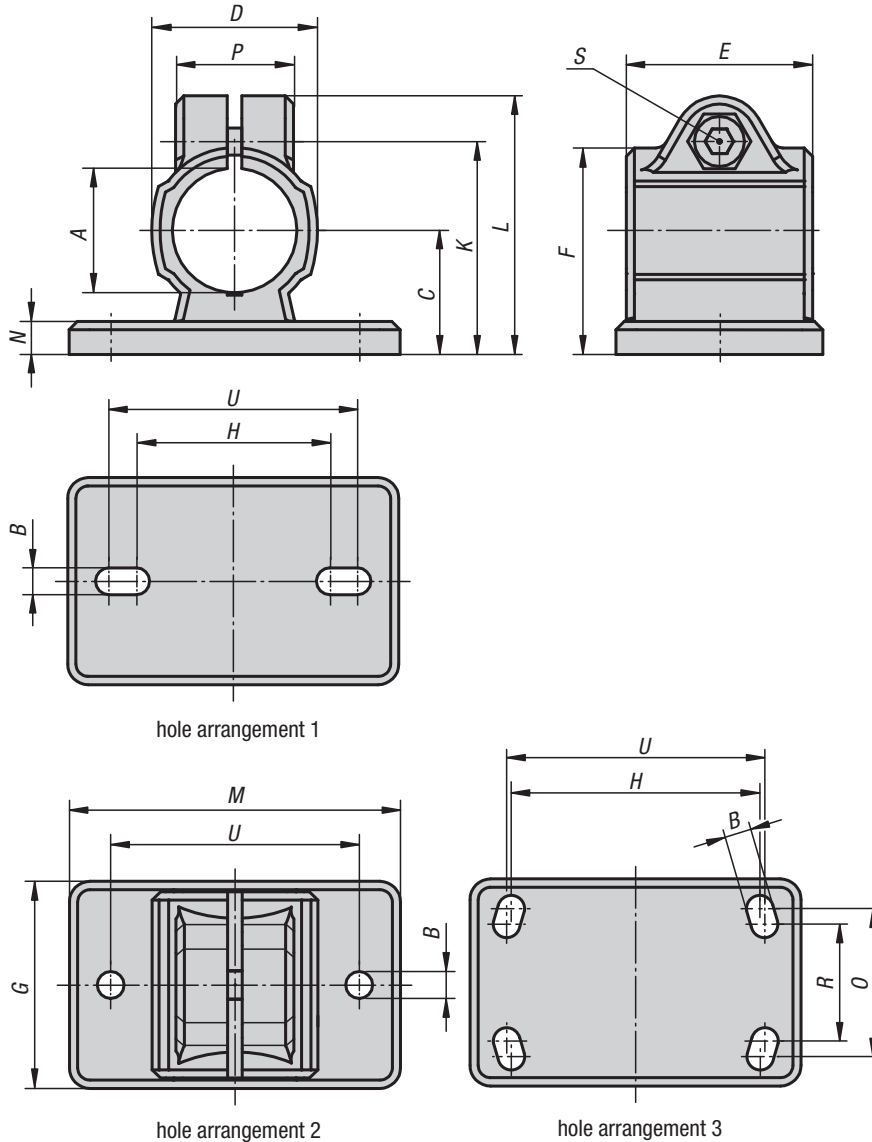
- Reducer sleeves K0492
- Round and square tubes K0493

KIPP Tube clamps, flange, plastic

Order No.	A	B	C	D	E	F	G	H	K	L	M	N	P	S
K0479.18	18	5,3	18	25	30	30,5	35	40	32	39,5	50	5	21	M6x18
K0479.30	30	6,5	30	40	45	50	50	60	51,5	62,5	80	8	28,5	M8x25

Tube clamps flange

aluminium



Material:
Cast aluminium.
DIN 7984 screws and DIN 985 nuts steel.

Version:
Vibratory ground.
Screws and nuts galvanized.

Sample order:
K0479.518

Note:
* Elongated hole

On request:
Levers for locking and other diameters.

Accessories:
- Round and square tubes K0493

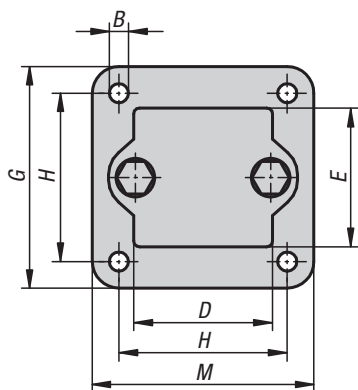
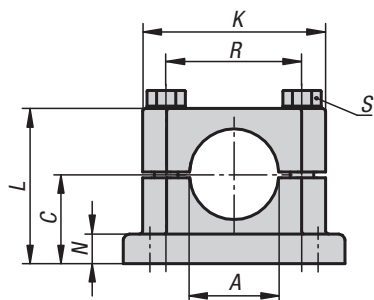


KIPP Tube clamps, flange, aluminium

Order No.	hole arrangement	A	B	C	D	E	F	G	H	K	L	M	N	O	P	R	S	U
K0479.512	1	12,1	5,5* (2x)	18	26	32	31	35	38	32,5	41	50	5	-	23	-	M6x20	40
K0479.514	2	14,1	5,5 (2x)	18	26	32	31	35	-	32,5	41	50	5	-	23	-	M6x20	40
K0479.515	2	15,1	5,5 (2x)	18	26	32	31	35	-	32,5	41	50	5	-	23	-	M6x20	40
K0479.516	1	16,1	5,5* (2x)	18	26	32	31	35	38	32,5	41	50	5	-	23	-	M6x20	40
K0479.518	2	18,1	5,5 (2x)	18	26	32	31	35	-	32,5	41	50	5	-	23	-	M6x20	40
K0479.520	1	20,1	6,5* (2x)	30	40	40	50	55	53	53	63	78	7	-	33	-	M8x25	60
K0479.525	1	25,1	6,5* (2x)	30	40	40	50	55	53	53	63	78	7	-	33	-	M8x25	60
K0479.530	1	30,1	6,5* (2x)	30	40	40	50	55	53	53	63	78	7	-	33	-	M8x25	60
K0479.540	3	40,17	8,5* (4x)	42	56	60	70	80	80	74	87	105	10	60	40	52	M10x30	82
K0479.550	3	50,17	10,5* (4x)	50	66	65	83	90	98	85	98	128	14	62	45	60	M10x35	100

Tube clamps flange

aluminium



Material:

Cast aluminium.
Screws and nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

K0479.5230

On request:

Levers for locking and other diameters.

Accessories:

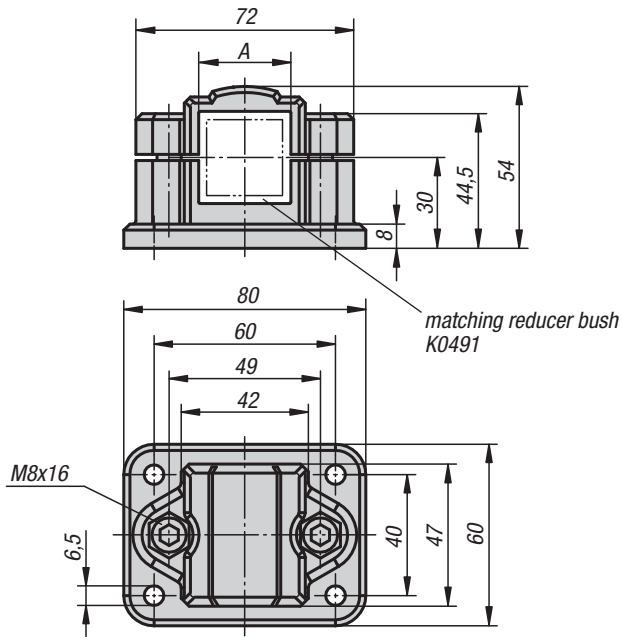
- Round and square tubes K0493

KIPP Tube clamps, flange, aluminium

Order No.	A	B	C	D	E	G	H	K	L	M	N	R	S
K0479.5220	20,2	6,5	30	45	45	75	57	62	52,5	75	10	46	M8x50
K0479.5225	25,2	6,5	30	45	45	75	57	62	52,5	75	10	46	M8x50
K0479.5230	30,2	6,5	30	45	45	75	57	62	52,5	75	10	46	M8x50
K0479.5240	40,2	8,5	40	60	60	100	76	75	70	100	10	57	M8x70

Tube clamps flange

plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0480.30

Note:

These flange clamps are for 30 mm square tubes. Use reducer sleeves K0491 if smaller tubes are to be clamped or a conversion from square to round tubes is required.

KIPP Tube clamps flange, plastic

Order No.	A
K0480.30	30

On request:

Plastic levers for locking.

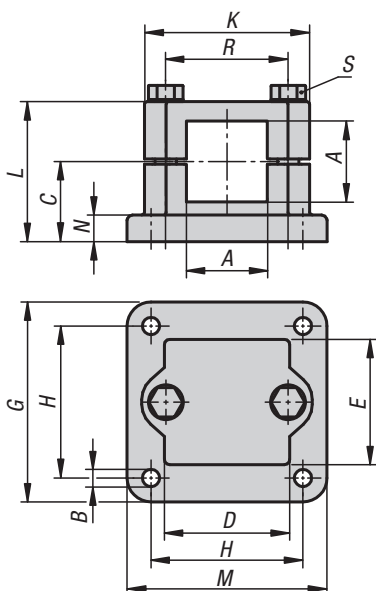
Accessories:

- Reducer sleeves K0491
- Round and square tubes K0493



Tube clamps flange

aluminium



Material:

Cast aluminium.
Screws and nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

K0480.5230

On request:

Levers for locking and other sizes for square tube.

Accessories:

- Round and square tubes K0493

KIPP Tube clamps flange, aluminium

Order No.	A	B	C	D	E	G	H	K	L	M	N	R	S
K0480.5225	25,3	6,5	30	45	45	75	57	62	52,5	75	10	46	M8x50
K0480.5230	30,3	6,5	30	45	45	75	57	62	52,5	75	10	46	M8x50
K0480.5240	40,4	8,5	40	60	60	100	76	75	70	100	10	57	M8x70

Tube clamps straight

plastic



Material:
Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

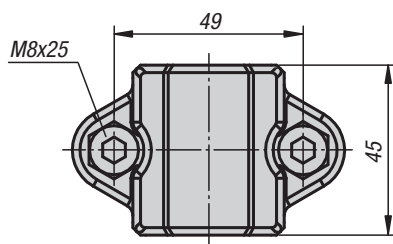
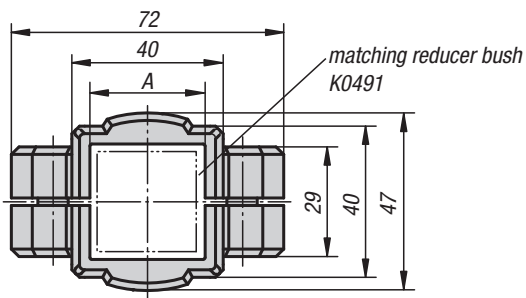
Version:
Black.
Screws and nuts galvanized.

Sample order:
K0481.30

Note:
These straight clamps are for 30 mm square tubes. Use reducer sleeves K0491 if smaller tubes are to be clamped or a conversion from square to round tubes is required.

On request:
Plastic levers for locking.

Accessories:
- Reducer sleeves K0491
- Round and square tubes K0493



KIPP Tube clamps straight, plastic

Order No.	A
K0481.30	30

K0483

Tube clamps straight

plastic



Material:
Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

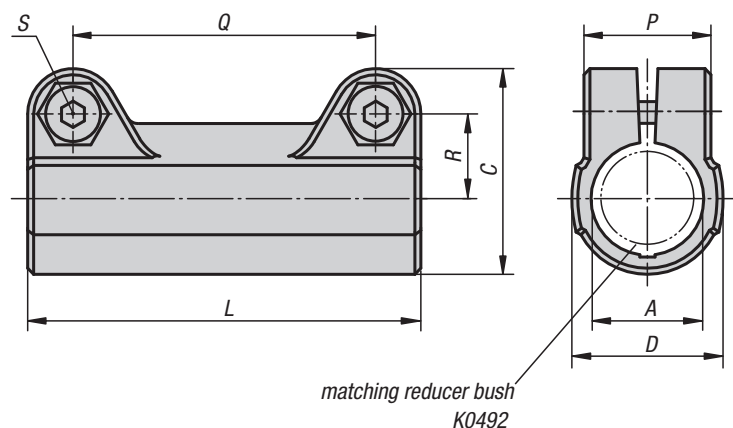
Version:
Black.
Screws and nuts galvanized.

Sample order:
K0483.18

Note:
The standard size for round tubes is Ø18 mm or Ø30 mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:
Plastic levers for locking.

Accessories:
- Reducer sleeves K0492
- Round and square tubes K0493

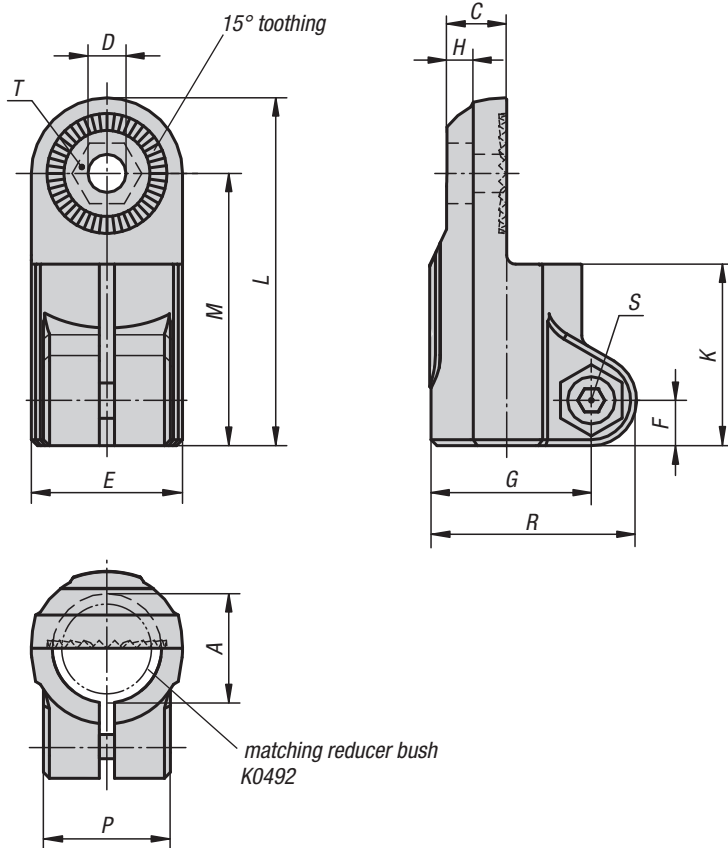


KIPP Tube clamps straight, plastic

Order No.	A	C	D	L	P	Q	R	S
K0483.18	18	34	25	65	21	50	14	M6x18
K0483.30	30	52,5	40	95	28,5	73	22,8	M8x25

Tube clamps swivel half

sunken teeth plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0484.18

Note:

Swivel half clamps with sunken teeth can be combined with swivel half clamps with raised teeth (K0485) to make a complete swivel clamp.

The standard size for round tubes is Ø18 mm or Ø30 mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:

Plastic levers for locking.

Accessories:

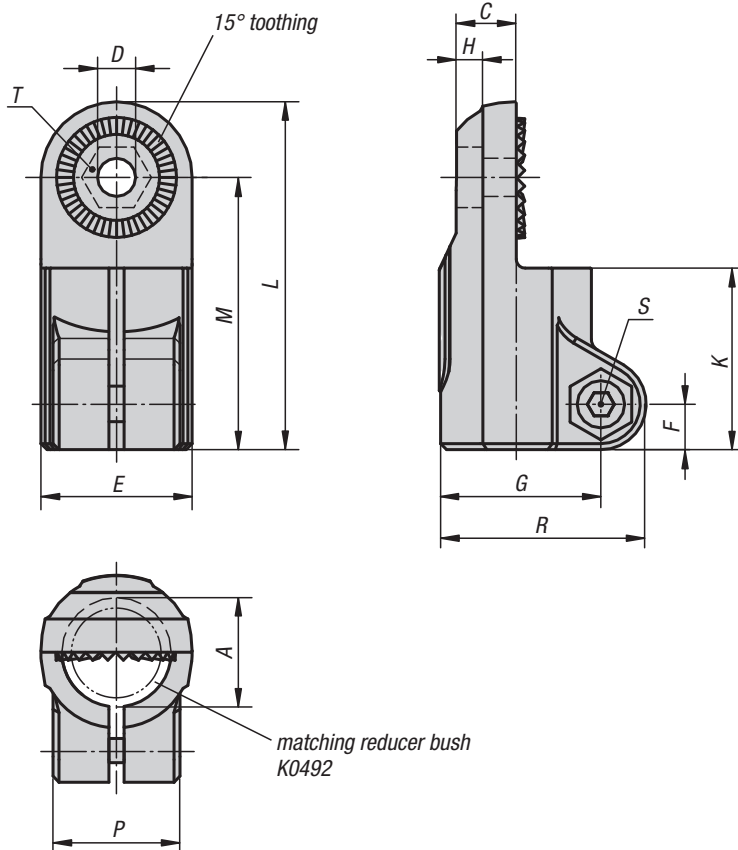
- Reducer sleeves K0492
- Round and square tubes K0493

KIPP Tube clamps swivel half, sunken teeth, plastic

Order No.	A	C	D	E	F	G	H	K	L	M	P	R	S	T
K0484.18	18	9,9	6,1	25	7,5	26,5	5,9	30	57,5	45	21	34	M6x18	M6-DIN 985
K0484.30	30	16,5	8,1	40	11	41,5	6,5	45	88	68	28,5	52,5	M8x25	M8-DIN 985

Tube clamps swivel half

raised teeth, plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0485.18

Note:

Swivel half clamps with raised teeth can be combined with swivel half clamps with sunken teeth (K0484, K0486 or K0487) to make a complete swivel clamp. The standard size for round tubes is Ø18 mm or Ø30 mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:

Plastic levers for locking.

Accessories:

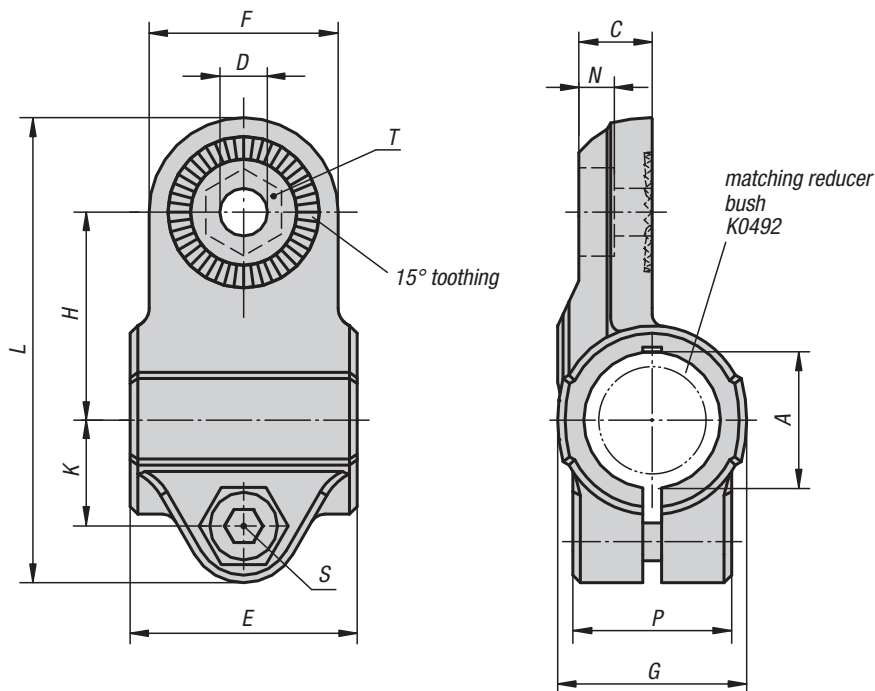
- Reducer sleeves K0492
- Round and square tubes K0493

KIPP Tube clamps swivel half, raised teeth, plastic

Order No.	A	C	D	E	F	G	H	K	L	M	P	R	S	T
K0485.18	18	9,9	6,1	25	7,5	26,5	5,9	30	57,5	45	21	34	M6x18	M6-DIN 985
K0485.30	30	16,5	8,1	40	11	41,5	6,5	45	88	68	28,5	52,5	M8x25	M8-DIN 985

Tube clamps swivel half

sunken teeth, plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0486.18

Note:

Swivel half clamps with sunken teeth can be combined with swivel half clamps with raised teeth (K0485) to make a complete swivel clamp.

The standard size for round tubes is Ø18 mm or Ø30 mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:

Plastic levers for locking.

Accessories:

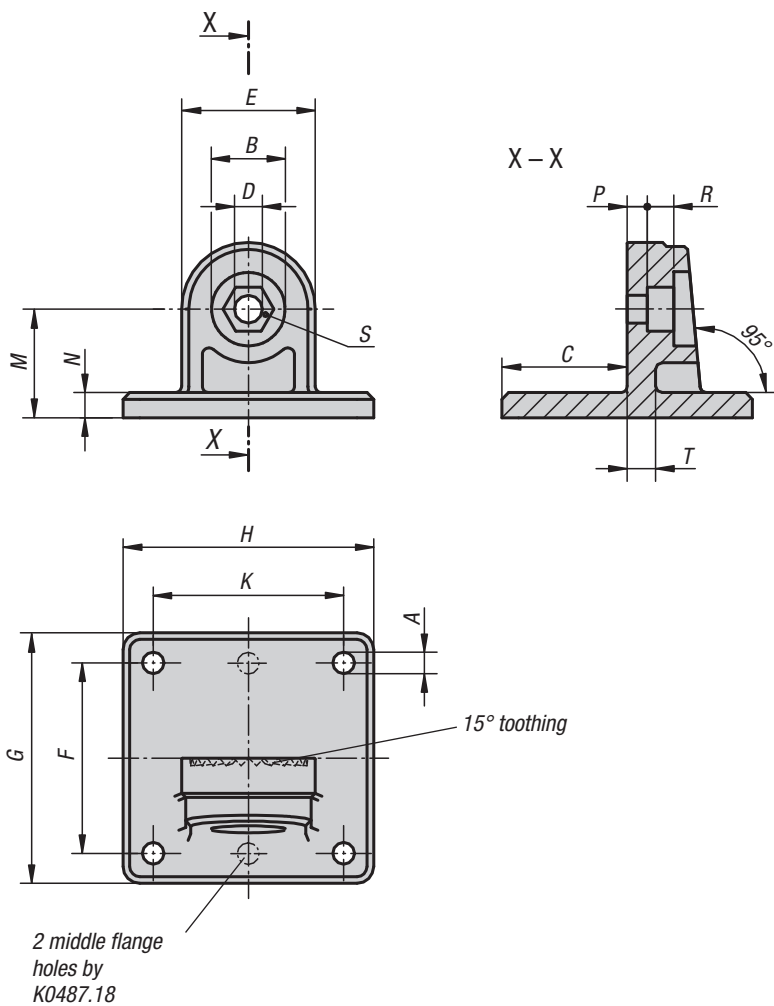
- Reducer sleeves K0492
- Round and square tubes K0493

KIPP Tube clamps swivel half, sunken teeth, plastic

Order No.	A	C	D	E	F	G	H	K	L	N	P	S	T
K0486.18	18	9,7	6,1	30	25	25	27,5	14	61,5	5,7	21	M6x18	M6-DIN 985
K0486.30	30	16,5	8,1	45	40	40	43	22,5	95,5	6,5	28,5	M8x25	M8-DIN 985

Tube clamps swivel base

sunken teeth, plastic



Material:
Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:
Black.
Screws and nuts galvanized.

Sample order:
K0487.18

Note:
Swivel clamp bases can be combined with swivel half clamps with raised teeth (K0485) to make a complete swivel clamp.

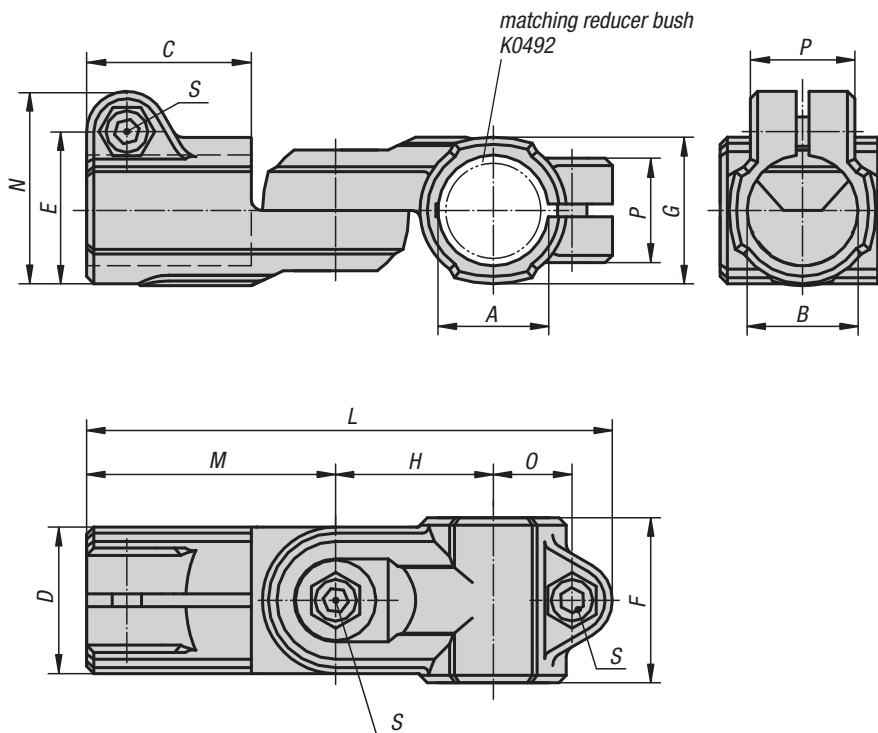
On request:
Plastic levers for locking.

KIPP Tube clamps swivel base, sunken teeth, plastic

Order No.	A	B	C	D	E	F	G	H	K	M	N	P	R	S	T
K0487.18	5,3 (2x)	15	25	6,1	25	40	50	35	-	20	5	4,5	5,5	M6-DIN 985	5
K0487.30	6,5 (4x)	22	37,5	8,1	40	60	75	75	60	32,5	7,5	6,6	8,2	M8-DIN 985	7

Tube clamps swivel

plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0488.18

Note:

Tube swivel clamps can be seamlessly rotated through 180°.

The standard size for round tubes is Ø18 mm or Ø30 mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:

Plastic levers for locking.

Accessories:

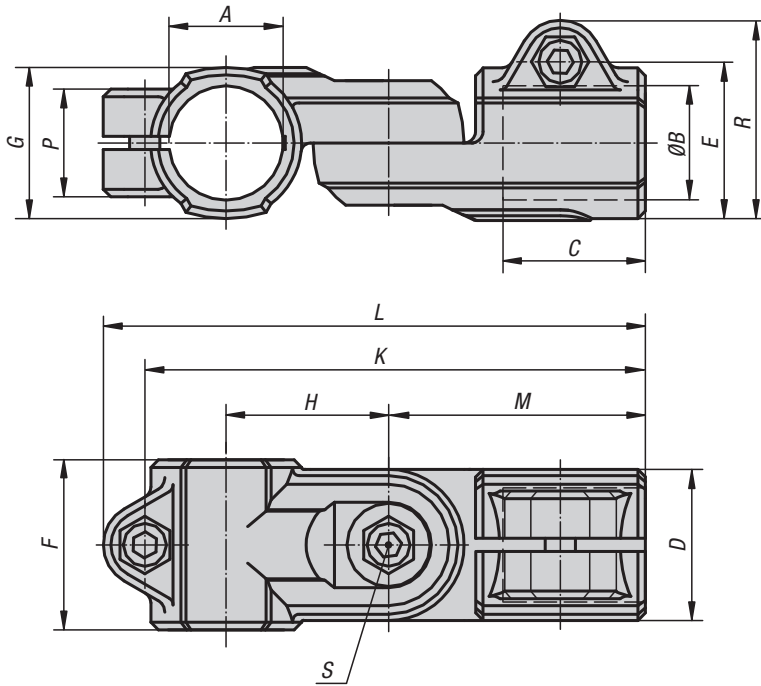
- Reducer sleeves K0492
- Round and square tubes K0493

KIPP Tube clamps swivel, plastic

Order No.	A	B	C	D	E	F	G	H	L	M	N	O	P	S
K0488.18	18	18	30	25	26,5	30	25	27,5	94	45	34	14	21	M6x18
K0488.30	30	30	45	40	41,5	45	40	43	143,5	68	52,5	22,5	28,5	M8x25

Tube clamps swivel

aluminium



Material:

Cast aluminium.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

K0488.518

Note:

Tube swivel clamps can be seamlessly rotated through 180°.

On request:

Levers for locking and other diameters.

Accessories:

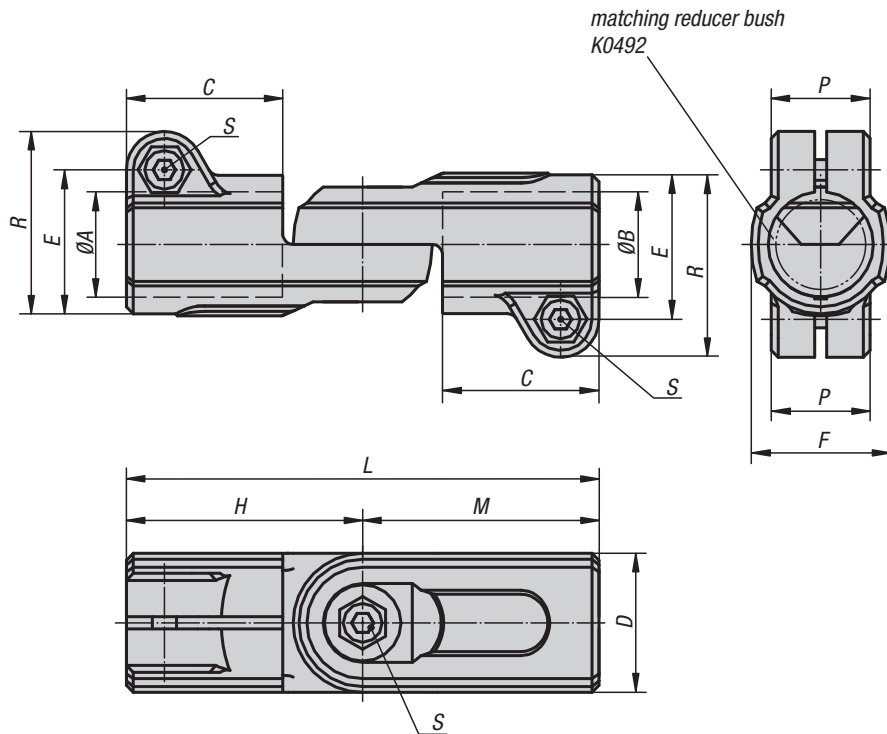
- Round and square tubes K0493

KIPP Tube clamps swivel, aluminium

Order No.	A	B	C	D	E	F	G	H	K	L	M	P	R	S
K0488.512	12,1	12,1	25	26	29,4	30	26	27	84	95,5	44	21	37,5	M6x16
K0488.514	14,1	14,1	25	26	29,4	30	26	27	84	95,5	44	21	37,5	M6x16
K0488.516	16,1	16,1	25	26	29,4	30	26	27	84	95,5	44	21	37,5	M6x16
K0488.518	18,1	18,1	25	26	29,4	30	26	27	84	95,5	44	21	37,5	M6x16
K0488.520	20,1	20,1	45	40	40	-	40	43	136	146	73	33	51	M8x35
K0488.525	25,1	25,1	45	40	40	-	40	43	136	146	73	33	51	M8x35
K0488.530	30,1	30,1	45	40	40	-	40	43	136	146	73	33	51	M8x35
K0488.540	40,2	40,2	60	56	56	-	56	60	188	200	100	48	70	M10x50

Tube clamps swivel

plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0489.18

Note:

Tube swivel clamps can be seamlessly rotated through 180°.

The standard size for round tubes is Ø18 mm or Ø30 mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:

Plastic levers for locking.

Accessories:

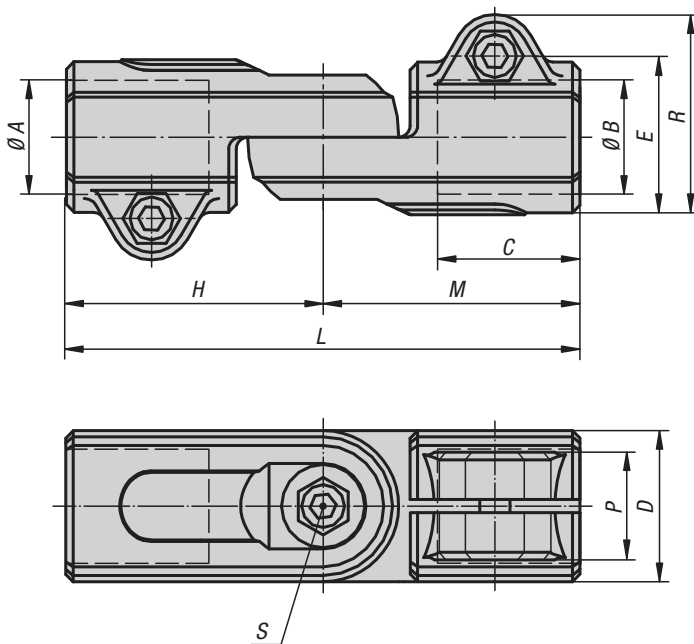
- Reducer sleeves K0492
- Round and square tubes K0493

KIPP Tube clamps swivel, plastic

Order No.	A	B	C	D	E	F	H	L	M	P	R	S
K0489.18	18	18	30	25	26,5	25	45	90	45	21	34	M6x18
K0489.30	30	30	45	40	41,5	40	68	136	68	28,5	52,5	M8x25

Tube clamps swivel

aluminium



Material:

Cast aluminium.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

K0489.540

Note:

Tube swivel clamps can be seamlessly rotated through 180°.

On request:

Levers for locking and other diameters.

Accessories:

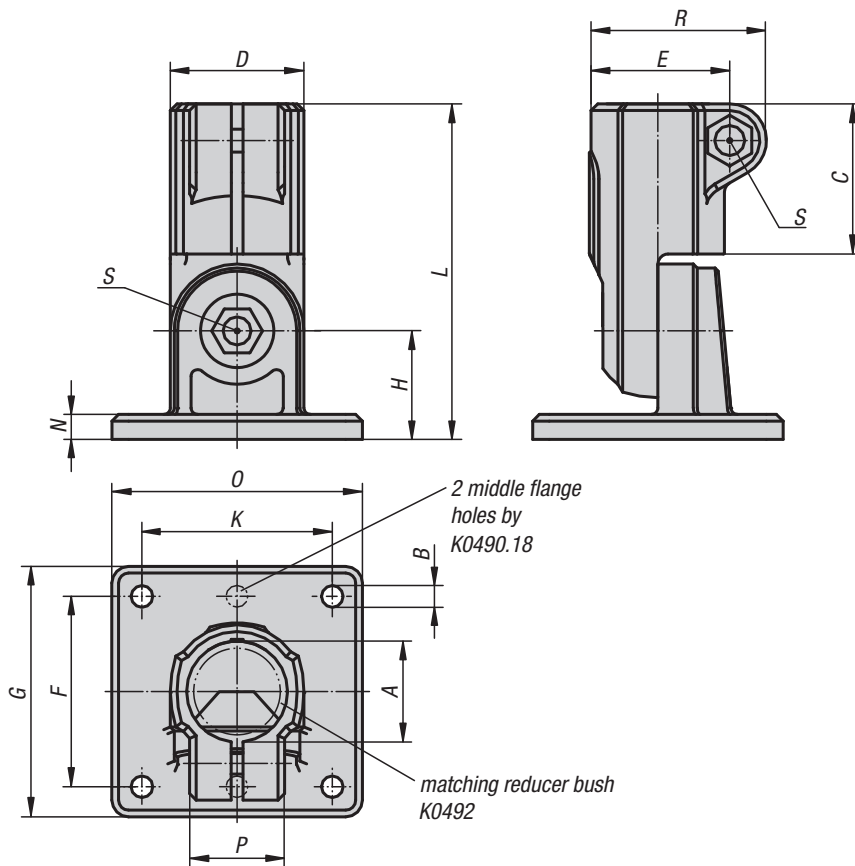
- Round and square tubes K0493

KIPP Tube clamps swivel, aluminium

Order No.	A	B	C	D	E	H	L	M	P	R	S
K0489.512	12,1	12,1	25	26	29,4	44	88	44	21	37,5	M6x16
K0489.514	14,1	14,1	25	26	29,4	44	88	44	21	37,5	M6x16
K0489.516	16,1	16,1	25	26	29,4	44	88	44	21	37,5	M6x16
K0489.518	18,1	18,1	25	26	29,4	44	88	44	21	37,5	M6x16
K0489.520	20	20	45	40	40	73	146	73	33	51	M8x35
K0489.525	25,1	25,1	45	40	40	73	146	73	33	51	M8x35
K0489.530	30,1	30,1	43	40	40	73	146	73	33	51	M8x35
K0489.540	40,15	40,15	59	56	58	100	200	100	48	70	M10x50

Tube clamps swivel base

plastic



Material:

Thermoplastic.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Black.
Screws and nuts galvanized.

Sample order:

K0490.18

Note:

Tube swivel clamps can be seamlessly rotated through 180°. The standard size for round tubes is Ø18 mm or Ø30 mm. Use reducer sleeves K0492 if smaller tubes are to be clamped or a conversion from round to square tubes is required.

On request:

Plastic levers for locking.

Accessories:

- Reducer sleeves K0492
- Round and square tubes K0493

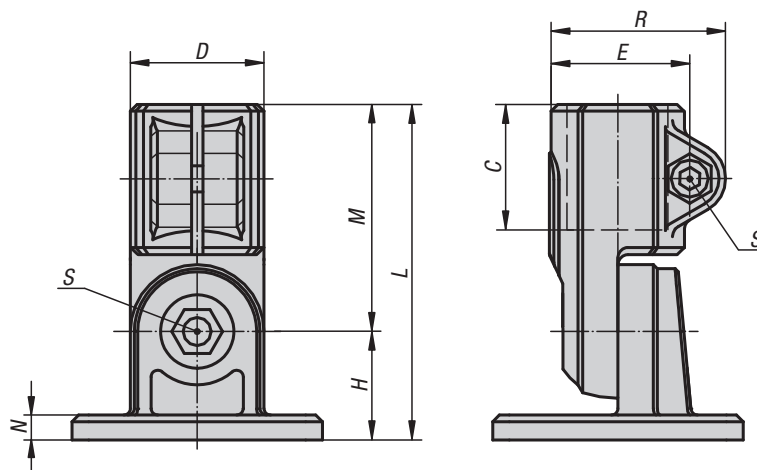


KIPP Tube clamps swivel base, plastic

Order No.	A	B	C	D	E	F	G	H	K	L	N	O	P	R	S
K0490.18	18	5,3 (2x)	30	25	26,5	40	50	20	-	65	5	35	21	34	M6x18
K0490.30	30	6,5 (4x)	45	40	41,5	60	75	32,5	60	100,5	7,5	75	28,5	52,5	M8x25

Tube clamps swivel base

aluminium



Material:

Cast aluminium.
DIN 7984 screws and DIN 985 nuts steel.

Version:

Vibratory ground.
Screws and nuts galvanized.

Sample order:

K0490.518

Note:

Tube swivel clamps can be seamlessly rotated through 180°.

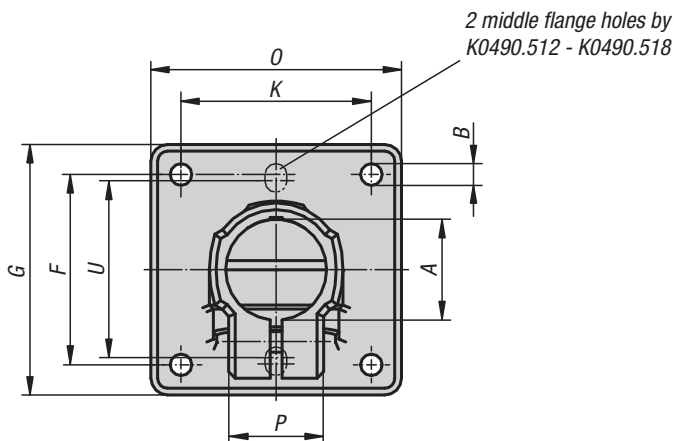
* Elongated hole

On request:

Levers for locking and other diameters.

Accessories:

- Round and square tubes K0493

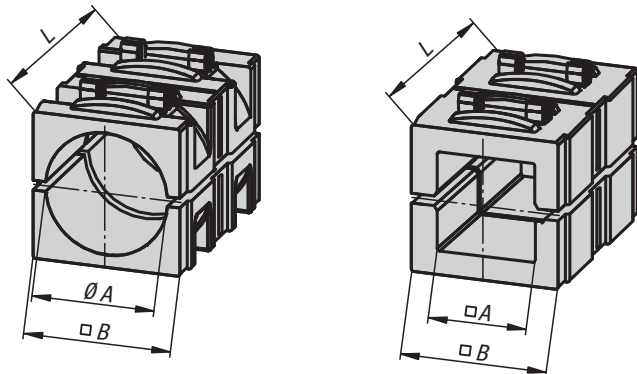
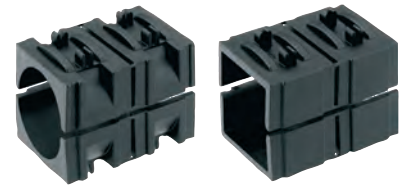


KIPP Tube clamps swivel base, aluminium

Order No.	A	B	C	D	E	F	G	H	K	L	M	N	O	P	R	S	U
K0490.512	12,1	5,3* (2x)	25	26	29,4	40	50	20	-	64	44	5	35	21	37,5	M6x16	38
K0490.514	14,1	5,3* (2x)	25	26	29,4	40	50	20	-	64	44	5	35	21	37,5	M6x16	38
K0490.516	16,1	5,3* (2x)	25	26	29,4	40	50	20	-	64	44	5	35	21	37,5	M6x16	38
K0490.518	18,1	5,3* (2x)	25	26	29,4	40	50	20	-	64	44	5	35	21	37,5	M6x16	38
K0490.520	20	6,5 (4x)	45	40	40	57	75	33	57	106	73	7	75	33	51	M8x35	-
K0490.525	25,1	6,5 (4x)	45	40	40	57	75	33	57	106	73	7	75	33	51	M8x35	-
K0490.530	30,1	6,5 (4x)	45	40	40	57	75	33	57	106	73	7	75	33	51	M8x35	-
K0490.540	40,2	8,5 (4x)	60	56	56	76	100	44	76	144	100	10	100	48	68	M10x50	-

Reducer sleeves

square



Material:
Thermoplastic.

Version:
black.

Sample order:
K0491.03020

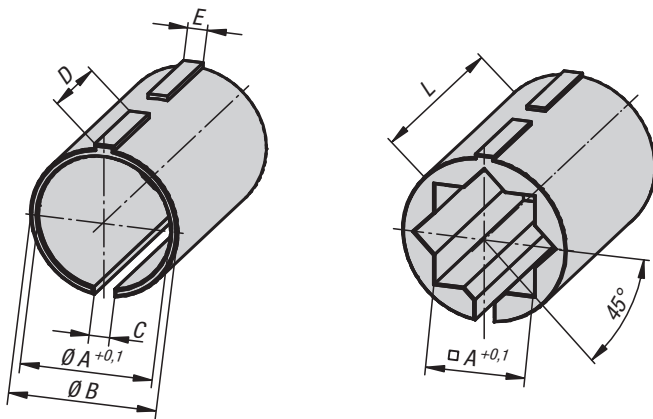
Note:
Reducer sleeves are for clamping smaller tubes or where a conversion of square to round tubes is required.

KIPP Reducer sleeves, square

Order No.	Version	A	B	L
K0491.03020	for round tubes	Ø 20,25	30,3	45
K0491.03025	for round tubes	Ø 25,25	30,3	45
K0491.03030	for round tubes	Ø 30,25	30,3	45
K0491.13020	for square tubes	20,5	30,3	45
K0491.13025	for square tubes	25,5	30,3	45

Reducer sleeves

round



Material:
Thermoplastic.

Version:
black.

Sample order:
K0492.03020

Note:
Reducer sleeves are for clamping smaller tubes or where a conversion of round to square tubes is required.

KIPP Reducer sleeves, round

Order No.	Version	A	B	C	D	E	L
K0492.01812	for round tubes	12,25	18	2,5	11,9	2,4	30
K0492.01814	for round tubes	14,25	18	2,5	11,9	2,4	30
K0492.01815	for round tubes	15,25	18	2,5	11,9	2,4	30
K0492.01816	for round tubes	16,25	18	2,5	11,9	2,4	30
K0492.03020	for round tubes	20,25	30	3,5	18,9	3,4	45
K0492.03025	for round tubes	25,25	30	3,5	18,9	3,4	45
K0492.11810	for square tubes	10,25	18	2,5	11,9	2,4	30
K0492.13020	for square tubes	20,25	30	3,5	18,9	3,4	45

Round and square tubes



Material:
Steel 1.0037.
Aluminium EN AW-6060.

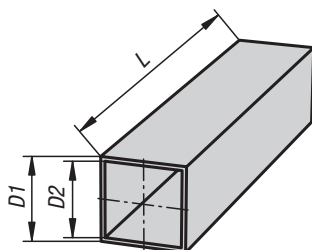
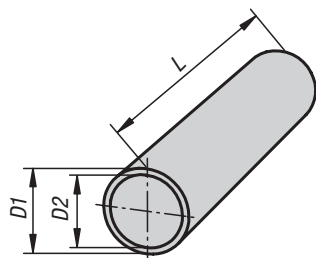
Version:
Steel galvanized.
Aluminium clear anodized.

Sample order:
K0493.01 12X500 (include length L)

Note:
The machining tolerances of these round and square tubes are specially suited to the tube clamping system.

* solid bar.

On request:
- stainless steel tubes
- aluminium tubes, black anodized
- customer specific lengths



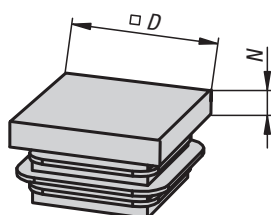
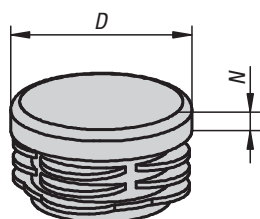
KIPP Round tubes

Order No.	Version	Material	Description	D1	D2	L
K0493.0112X	round tubes	steel	Ø12 x 1,5	12 ±0,1	9	500/1000/2000
K0493.0114X	round tubes	steel	Ø14 x 1,5	14 ±0,1	11	500/1000/2000
K0493.0115X	round tubes	steel	Ø15 x 1,5	15 ±0,1	12	500/1000/2000
K0493.0116X	round tubes	steel	Ø16 x 1,5	16 ±0,1	13	500/1000/2000
K0493.0118X	round tubes	steel	Ø18 x 1,5	18 ±0,1	15	500/1000/2000
K0493.0120X	round tubes	steel	Ø20 x 2	20 ±0,1	16	500/1000/2000
K0493.0125X	round tubes	steel	Ø25 x 2	25 ±0,1	21	500/1000/2000
K0493.0130X	round tubes	steel	Ø30 x 2	30 ±0,1	26	500/1000/2000
K0493.0140X	round tubes	steel	Ø40 x 4	40 ±0,15	32	500/1000/2000
K0493.0150X	round tubes	steel	Ø50 x 4	50 ±0,2	42	500/1000/2000
K0493.0220X	round tubes	aluminium	Ø20 x 3	20	14	500/1000/2000
K0493.0225X	round tubes	aluminium	Ø25 x 2	25	21	500/1000/2000
K0493.0230X	round tubes	aluminium	Ø30 x 2	30 ±0,1	26	500/1000/2000
K0493.0240X	round tubes	aluminium	Ø40 x 3	40 ±0,15	34	500/1000/2000
K0493.0250X	round tubes	aluminium	Ø50 x 3	50 ±0,2	44	500/1000/2000

KIPP Square tubes

Order No.	Version	Material	Description	D1	D2	L
K0493.4120X	square tubes	steel	20 x 20 x 1	20 ±0,3	18	500/1000/2000
K0493.4125X	square tubes	steel	25 x 25 x 1,5	25 ±0,3	22	500/1000/2000
K0493.4130X	square tubes	steel	30 x 30 x 2	30 ±0,3	26	500/1000/2000
K0493.4140X	square tubes	steel	40 x 40 x 3	40 ±0,4	34	500/1000/2000
K0493.4210X	square tubes	aluminium	10 x 10	10*	-	500/1000/2000
K0493.4220X	square tubes	aluminium	20 x 20 x 1,5	20 ±0,2	17	500/1000/2000
K0493.4230X	square tubes	aluminium	30 x 30 x 2	30 ±0,2	26	500/1000/2000
K0493.4240X	square tubes	aluminium	40 x 40 x 4	40 ±0,3	32	500/1000/2000

Tube end plugs



Material:
Thermoplastic.

Version:
black.

Sample order:
K0494.025200

Note:
These plugs are for corner protection and plugging the tube ends. They can be pushed in by hand or tapped in with a plastic hammer.



KIPP Tube end plugs

Order No.	Version	D	N	Suitable for
K0494.018150	for round tubes	18	5	Ø18 x 1,5
K0494.020200	for round tubes	20	5	Ø20 x 2
K0494.025200	for round tubes	25	5	Ø25 x 2
K0494.030200	for round tubes	30	5	Ø30 x 2
K0494.040300	for round tubes	40	5	Ø40 x 3
K0494.040400	for round tubes	40	5	Ø40 x 4
K0494.050400	for round tubes	50	5	Ø50 x 3 / Ø50 x 4
K0494.420100	for square tubes	20	5	20 x 20 x 1
K0494.425150	for square tubes	25	5	25 x 25 x 1,5
K0494.430200	for square tubes	30	5	30 x 30 x 2
K0494.440300	for square tubes	40	5	40 x 40 x 3
K0494.440400	for square tubes	40	5	40 x 40 x 4

Technical information on linear actuators



These linear actuators are efficient, economical and universally applicable. They ideally combine high rigidity, low deflection, high loads and easy handling. Four sizes are available for different applications and loads (tube sizes from Ø18 mm to Ø50 mm).

Features:

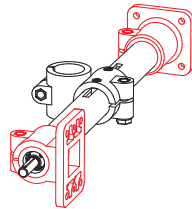
- Standard travel over 2000 mm possible
- Position accuracy up to ± 0.2 mm / 300 mm
- Travel speed up to 1.5 m/min
- Drive by trapezoid thread spindle
- Mounting position optional

Technical description:

In a tube, a threaded spindle mounted on bearings with guide nut converts a rotation into linear movement of a carriage. The nut has a carrier key to prevent it turning.

Mounting the linear actuator:

Depending on the mounting position and application, linear actuators can be mounted using our tube clamping elements.



Speed:

n = required spindle r.p.m.

max. spindle rpm with:
plain bearing 80 rpm.
ball bearing 250 rpm.

Type E	Pitch mm
18	2
30	3
40	4
50	4

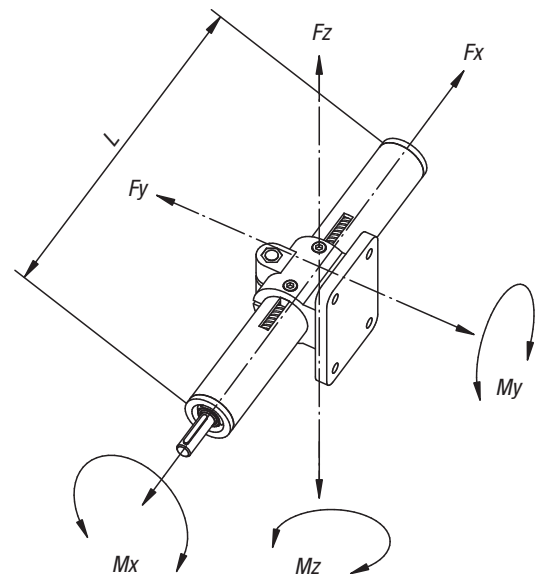
$$n [\text{r.p.m.}] = \frac{\text{Speed [m/min]} \times 1000[\text{mm}]}{\text{Spindle pitch [mm]}}$$

Load data*:

F force [N]

M moment [Nm]

I geom. moment of inertia [cm⁴]



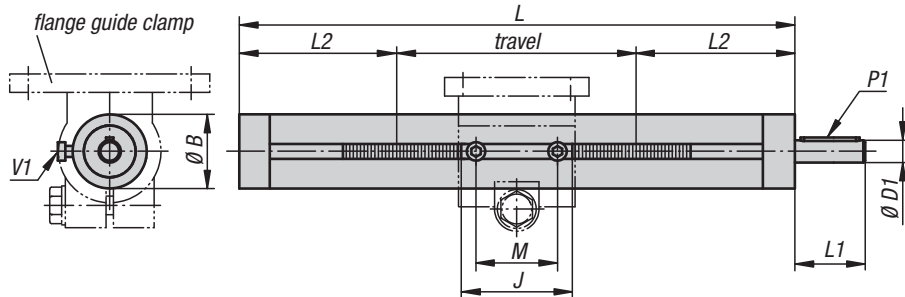
Length	Fx	Fy	Fz
	500	500 / 1000 / 1500	500 / 1000 / 1500
Type E 18	400	90 / 10 / -	60 / 8 / -
Type E 30	800	500 / 60 / 10	500 / 50 / 9
Type E 40	1000	2100 / 250 / 60	1900 / 140 / 50
Type E 50	1700	3000 / 600 / 140	3000 / 600 / 140

No-load torques:

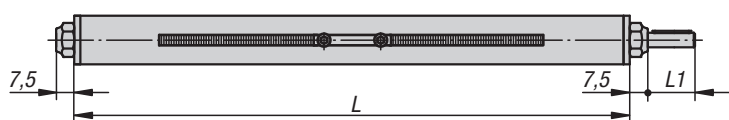
Type E	Spindle with slide bearing [Nm]	Spindle with ball bearings [Nm]
18	-	0,20
30	0,45	0,35
40	0,65	0,50
50	1,20	0,90

Type E	Mx	My	Mz	Iy	Iz
18	1,5	4	4	0,22	0,27
30	6	15	15	1,34	1,56
40	14	40	40	4,58	5,24
50	30	65	65	11,31	12,32

* refers to guides (guide element deflection $f = 0.5$ mm, static, end elements supported)



Linear actuator
K0495.18...



Material, version:

Precision tube DIN EN 10305, stainless steel 1.4301.

For type E 18, galvanized steel.

Trapezoid thread spindle steel, RH thread, rolled.

Sample order:

K0495.300001X500

Note:

Medium speed range, self-locking.

On request:

LH thread, stainless steel, 2 drive pins, other travel lengths, handwheels.

Accessories:

- Guide clamps K0496, K0497, K0498, K0499
- Tube clamps from our tube clamping system

Functional principle:

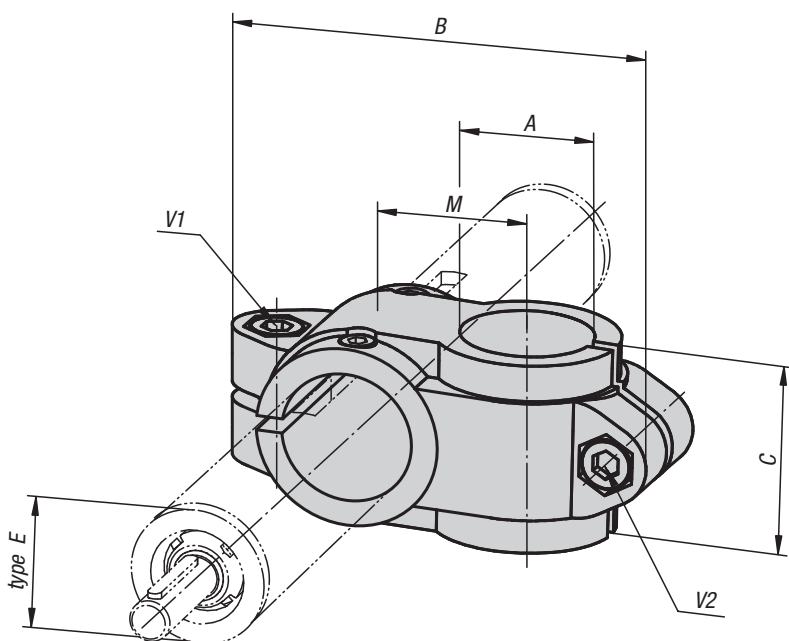
A rotating movement of the threaded spindle is converted into a linear movement of the guide carriage.

KIPP Linear actuators

Order No.	Version	Type E	Spindle	L Standard length	Travel	B	D1	J	L1	L2	M	P1 parallel key DIN 6885	V1
K0495.300001X300	plain bearing	30	Tr 14x3	300	100	30	8 h8	38	26	100	28	2 x 2 x 20	M4x8
K0495.300001X500	plain bearing	30	Tr 14x3	500	300	30	8 h8	38	26	100	28	2 x 2 x 20	M4x8
K0495.300001X800	plain bearing	30	Tr 14x3	800	600	30	8 h8	38	26	100	28	2 x 2 x 20	M4x8
K0495.400001X300	plain bearing	40	Tr 20x4	300	91	40	12 h8	55	38	104,5	44	4 x 4 x 32	M6x10
K0495.400001X500	plain bearing	40	Tr 20x4	500	291	40	12 h8	55	38	104,5	44	4 x 4 x 32	M6x10
K0495.400001X800	plain bearing	40	Tr 20x4	800	591	40	12 h8	55	38	104,5	44	4 x 4 x 32	M6x10
K0495.400001X1000	plain bearing	40	Tr 20x4	1000	791	40	12 h8	55	38	104,5	44	4 x 4 x 32	M6x10
K0495.500001X500	plain bearing	50	Tr 20x4	500	265	50	12 h8	63	38	117,5	44	4 x 4 x 32	M6x10
K0495.500001X800	plain bearing	50	Tr 20x4	800	565	50	12 h8	63	38	117,5	44	4 x 4 x 32	M6x10
K0495.500001X1000	plain bearing	50	Tr 20x4	1000	765	50	12 h8	63	38	117,5	44	4 x 4 x 32	M6x10
K0495.180101X300	ball bearing	18	Tr 10x2	300	145	18	6 h9	24	17	77,5	18	2 x 2 x 12	M3x5
K0495.180101X500	ball bearing	18	Tr 10x2	500	345	18	6 h9	24	17	77,5	18	2 x 2 x 12	M3x5
K0495.300101X300	ball bearing	30	Tr 14x3	300	100	30	8 h8	38	26	100	28	2 x 2 x 20	M4x8
K0495.300101X500	ball bearing	30	Tr 14x3	500	300	30	8 h8	38	26	100	28	2 x 2 x 20	M4x8
K0495.300101X800	ball bearing	30	Tr 14x3	800	600	30	8 h8	38	26	100	28	2 x 2 x 20	M4x8
K0495.400101X300	ball bearing	40	Tr 20x4	300	91	40	12 h8	55	38	104,5	44	4 x 4 x 32	M6x10
K0495.400101X500	ball bearing	40	Tr 20x4	500	291	40	12 h8	55	38	104,5	44	4 x 4 x 32	M6x10
K0495.400101X800	ball bearing	40	Tr 20x4	800	591	40	12 h8	55	38	104,5	44	4 x 4 x 32	M6x10
K0495.400101X1000	ball bearing	40	Tr 20x4	1000	791	40	12 h8	55	38	104,5	44	4 x 4 x 32	M6x10
K0495.500101X500	ball bearing	50	Tr 20x4	500	265	50	12 h8	63	38	117,5	44	4 x 4 x 32	M6x10
K0495.500101X800	ball bearing	50	Tr 20x4	800	565	50	12 h8	63	38	117,5	44	4 x 4 x 32	M6x10
K0495.500101X1000	ball bearing	50	Tr 20x4	1000	765	50	12 h8	63	38	117,5	44	4 x 4 x 32	M6x10

Linear actuator connector clamps

cross



Material:
Cast aluminium.
DIN 7984 screws and DIN 985 nuts steel.

Version:
Black powder-coated.
Screws and nuts galvanized.

Sample order:
K0496.1818

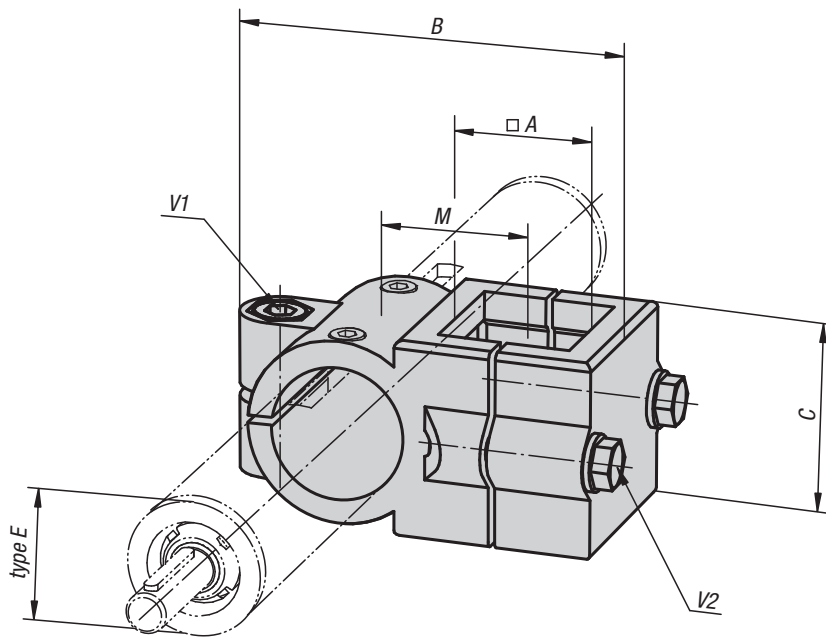
On request:
Levers for locking.

KIPP Linear actuator connector clamps cross

Order No.	Type E	A	B	C	M	V1	V2
K0496.1818	18	18	66	25,5	20	M6x16	M6x16
K0496.3020	30	20	99	40	33	M8x25	M8x25
K0496.3030	30	30	99	40	33	M8x25	M8x25
K0496.4020	40	20	109	40	36	M10x30	M8x25
K0496.4040	40	40	137	60	45	M10x30	M10x30
K0496.5040	50	40	154	70	54	M10x35	M10x35
K0496.5050	50	50	154	70	54	M10x35	M10x35

Linear actuator connector clamps

cross



Material:

Cast aluminium.
Clamping screws and nuts steel.

Version:

Black powder-coated.
Clamping screws and nuts galvanized.

Sample order:

K0497.4040

On request:

Levers for locking.

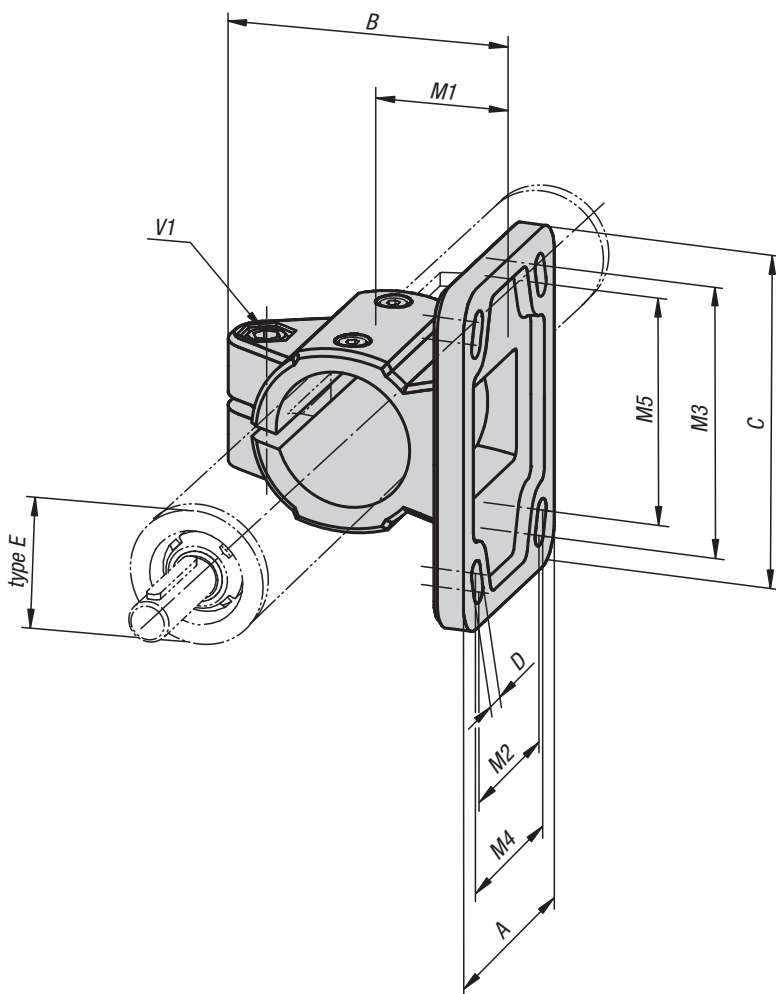


KIPP Linear actuator connector clamps cross

Order No.	Type E	A	B	C	M	V1	V2
K0497.3030	30	30	86	45	33	M8x35	M8x35
K0497.4040	40	40	117	60	47	M10x50	M8x45
K0497.5050	50	50	126	86	53	M8x50	M8x50

Linear actuator connector clamps

flange



Material:
Cast aluminium.
DIN 7984 screws and DIN 985 nuts steel.

Version:
Black powder-coated.
Screws and nuts galvanized.

Sample order:
K0498.50

Note:
* Elongated hole

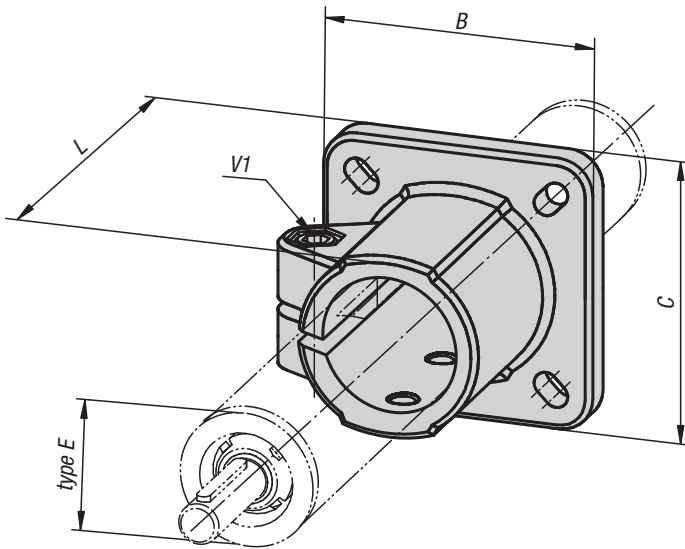
On request:
Levers for locking.

KIPP Linear actuator connector clamps flange

Order No.	Type E	A	B	C	D	M1	M2	M3	M4	M5	V1
K0498.18	18	37	42,5	50	5,5 (2x)	18	-	40	-	-	M6x16
K0498.30	30	55	63	78	6,5* (2x)	30	-	60	-	53	M8x25
K0498.40	40	80	87	105	8,5* (4x)	42	52	82	60	80	M10x30
K0498.50	50	92	100	130	10,5* (4x)	50	60	100	62	98	M10x35

Linear actuator connector clamps

base



Material:

Cast aluminium.
DIN 7984 screws and DIN 985 nuts steel.

Version:

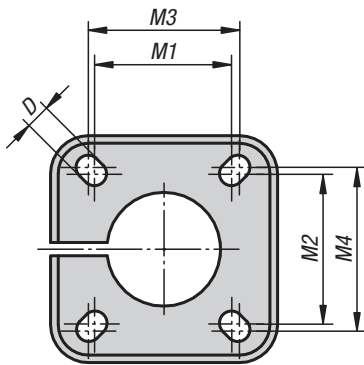
Black powder-coated.
Screws and nuts galvanized.

Sample order:

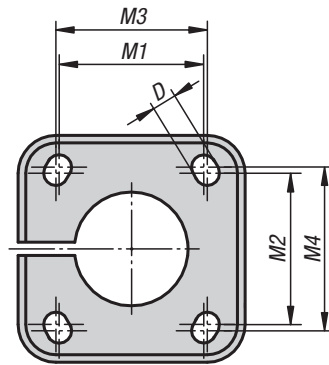
K0499.30

On request:

Levers for locking.



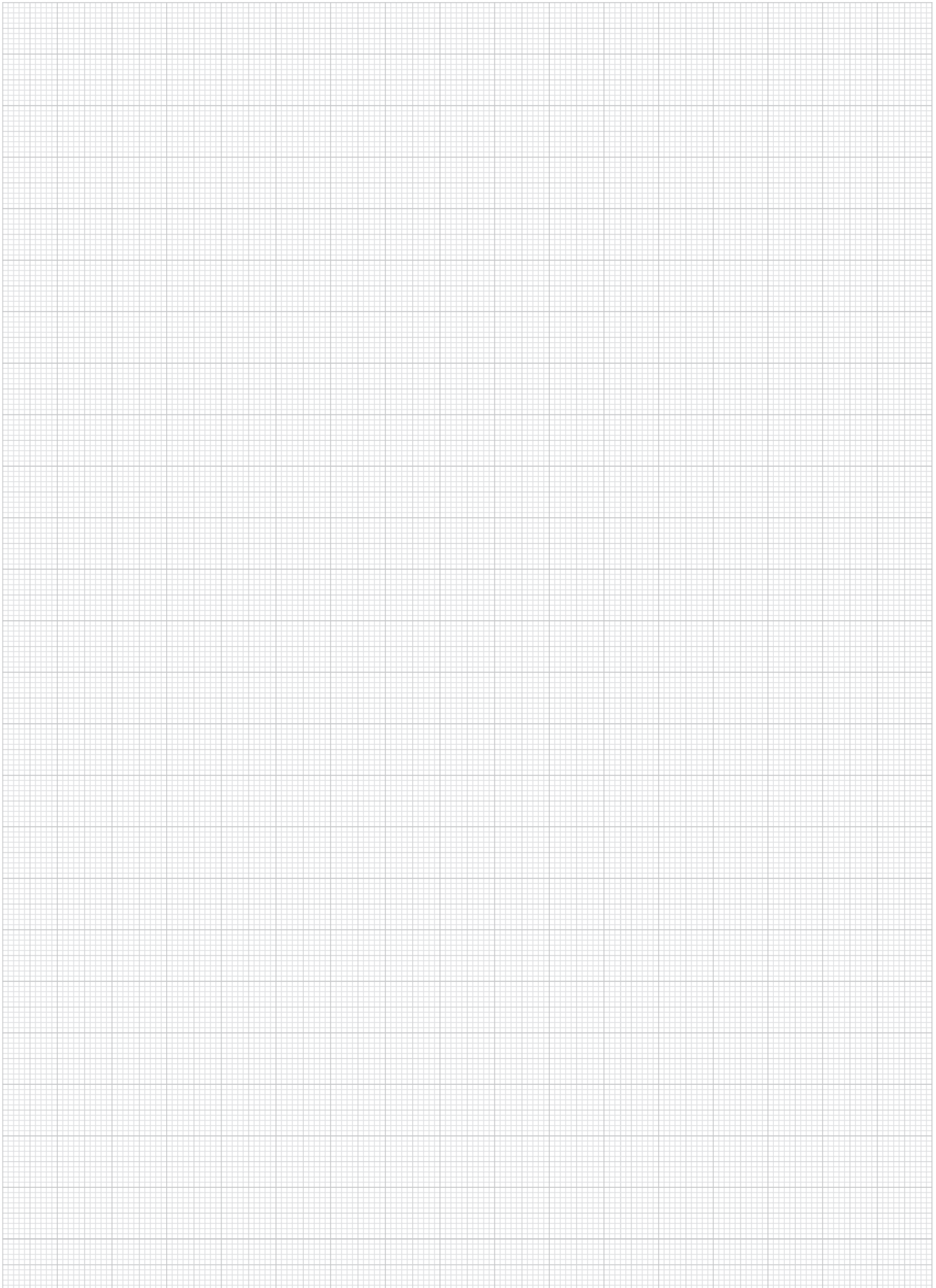
hole arrangement 1



hole arrangement 2

KIPP Linear actuator connector clamps base

Order No.	hole arrangement	Type E	B	C	D	L	M1	M2	M3	M4	V1
K0499.18	1	18	42	42	5,5	37	28	28	30	30	M6x20
K0499.30	2	30	60	60	6,5	50	40	42	42	45	M8x25
K0499.40	1	40	90	90	8,5	70	60	60	64	64	M10x30
K0499.50	1	50	105	105	10,5	85	74	74	80	80	M10x35



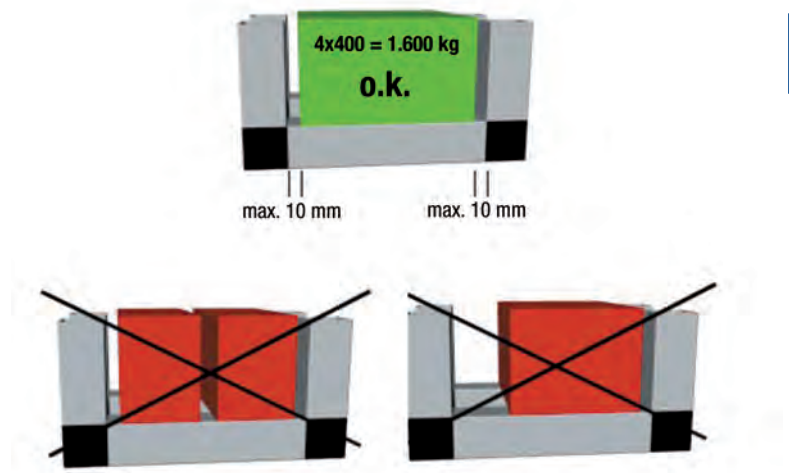
High quality plastic tube connectors with steel core for joining square tubing

Creative use of these square tube connectors together with the specially developed aluminium profiles leads to unlimited construction possibilities. The system can be combined with many different materials e.g. laminated chipboard, glass or plastic plates. No screws required, the connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly. If removal should be prevented the connectors can be secured by gluing, screws or rivets.

Loading of square tube connectors

25x25x1.5 and 30x30x2 square tube connectors with steel core have a compressive strength of max. 400 kg per horizontal spigot under the following conditions:

- the spacing between the exterior wall of the vertical tube and the outer edge of the load must not exceed 10 mm.
- the underside of the load is rigid enough that the applied force occurs only at the load corners (see diagram).
- the load is static i.e. no dynamic stress due to moving loads.

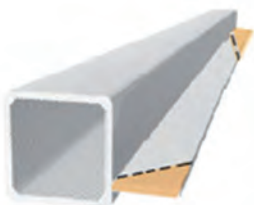


Note:

Using items such as adjustable glides, screw plugs and swivel feet with the tube connectors can decrease the load values for the entire unit.

Mitre Cuts

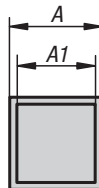
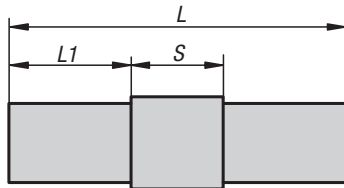
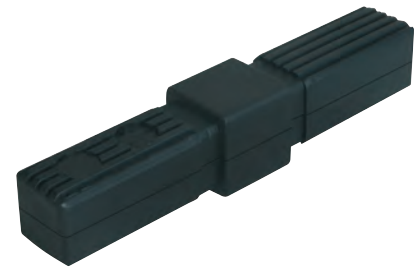
Mitre cuts are required when finned square tubes are joined together with tube connectors at an angle. We can supply our finned square pre-cut with mitre cut on request.



By mitre cuts the tube end is cut at 90° and a cut of 45° is made on the fin. Anodizing on the tube occurs prior to the cut, so cut edges are not anodized.

Square tube connectors

straight



Material, version:
Polyamide PA, black.
Core galvanized steel.

Sample order:
K0615.1201512

Note:
No screws required. The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly.

Accessories:
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connectors, straight

Order No.	A	A1	L	L1	S	Suitable for square tubes
K0615.1201512	20	17	95	45	5	20 x 20 x 1,5
K0615.1251512	25	22	133	54	25	25 x 25 x 1,5
K0615.1302012	30	26	122	46	30	30 x 30 x 2

Square tube connectors

two-way

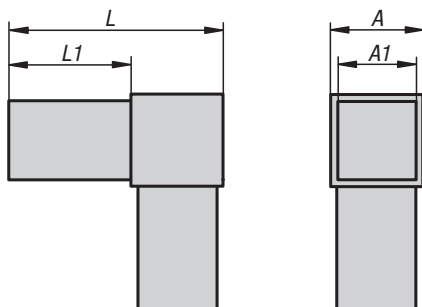


Material, version:
Polyamide PA, black.
Core galvanized steel.

Sample order:
K0616.1201512

Note:
No screws required. The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly.

Accessories:
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connectors, two-way

Order No.	A	A1	L	L1	Suitable for square tubes
K0616.1201512	20	17	56	36	20 x 20 x 1,5
K0616.1251512	25	22	77	52	25 x 25 x 1,5
K0616.1302012	30	26	77	47	30 x 30 x 2

Square tube connectors

three-way, flat

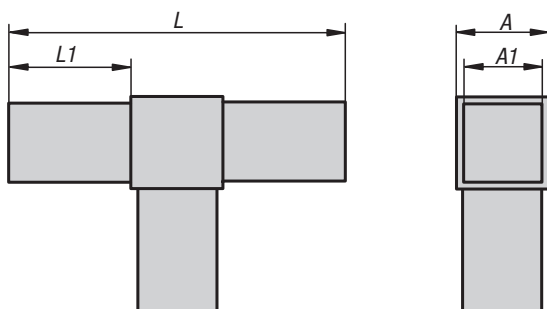


Material, version:
Polyamide PA, black.
Core galvanized steel.

Sample order:
K0617.1201512

Note:
No screws required. The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly.

Accessories:
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connectors, three-way, flat

Order No.	A	A1	L	L1	Suitable for square tubes
K0617.1201512	20	17	92	36	20 x 20 x 1,5
K0617.1251512	25	22	127	51	25 x 25 x 1,5
K0617.1302012	30	26	124	47	30 x 30 x 2

Square tube connectors

four-way, flat

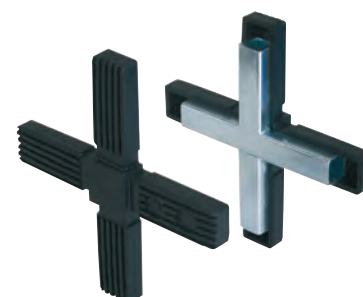
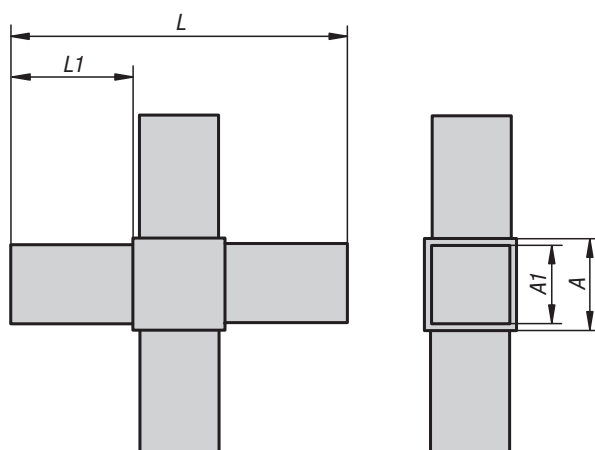


Material, version:
Polyamide PA, black.
Core galvanized steel.

Sample order:
K0618.1201512

Note:
No screws required. The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly.

Accessories:
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connectors, four-way, flat

Order No.	A	A1	L	L1	Suitable for square tubes
K0618.1201512	20	17	92	36	20 x 20 x 1,5
K0618.1251512	25	22	127	51	25 x 25 x 1,5
K0618.1302012	30	26	124	47	30 x 30 x 2

Square tube connectors

three-way

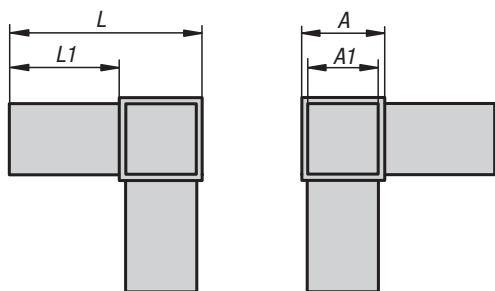


Material, version:
Polyamide PA, black.
Core galvanized steel.

Sample order:
K0619.1201512

Note:
No screws required. The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly.

Accessories:
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connector, three-way

Order No.	A	A1	L	L1	Suitable for square tubes
K0619.1201512	20	17	56	36	20 x 20 x 1,5
K0619.1251512	25	22	77	52	25 x 25 x 1,5
K0619.1302012	30	26	77	47	30 x 30 x 2

Square tube connectors

four-way

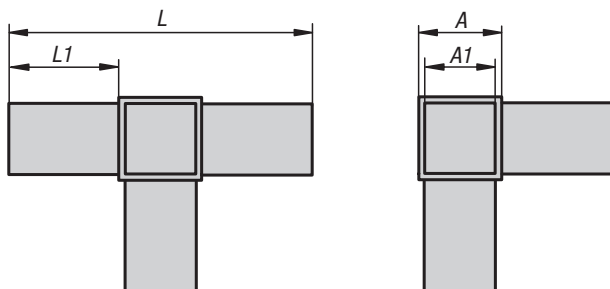


Material, version:
Polyamide PA, black.
Core galvanized steel.

Sample order:
K0620.1201512

Note:
No screws required. The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly.

Accessories:
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connectors, four-way

Order No.	A	A1	L	L1	Suitable for square tubes
K0620.1201512	20	17	92	36	20 x 20 x 1,5
K0620.1251512	25	22	129	52	25 x 25 x 1,5
K0620.1302012	30	26	124	47	30 x 30 x 2

Square tube connectors

five-way

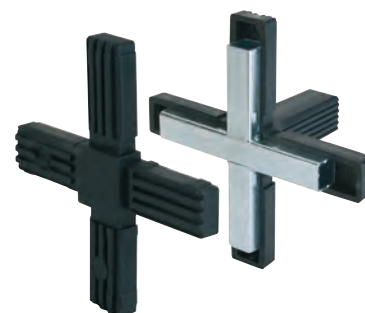
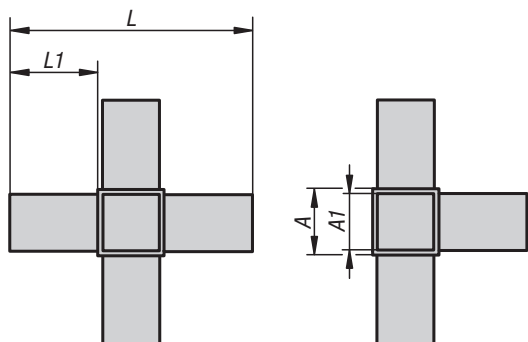


Material, version:
Polyamide PA, black.
Core galvanized steel.

Sample order:
K0621.1201512

Note:
No screws required. The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly.

Accessories:
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connectors, five-way

Order No.	A	A1	L	L1	Suitable for square tubes
K0621.1201512	20	17	92	36	20 x 20 x 1,5
K0621.1251512	25	22	133	54	25 x 25 x 1,5
K0621.1302012	30	26	124	47	30 x 30 x 2

Square tube connectors

six-way

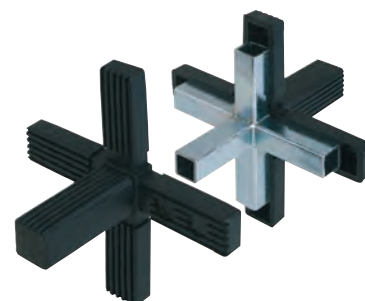
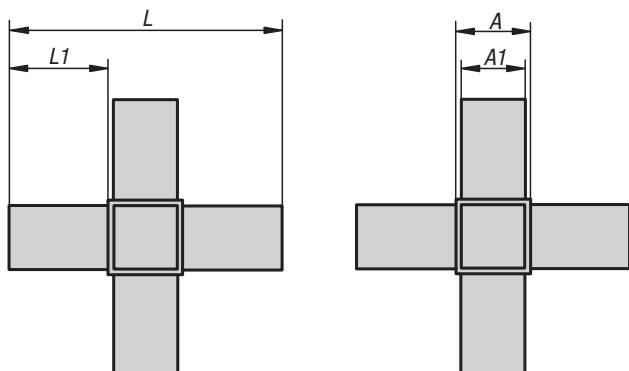


Material, version:
Polyamide PA, black.
Core galvanized steel.

Sample order:
K0622.1201512

Note:
No screws required. The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly.

Accessories:
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connectors, six-way

Order No.	A	A1	L	L1	Suitable for square tubes
K0622.1201512	20	17	92	36	20 x 20 x 1,5
K0622.1251512	25	22	129	52	25 x 25 x 1,5
K0622.1302012	30	26	124	47	30 x 30 x 2

Square tube connectors

three-way with tapped hole

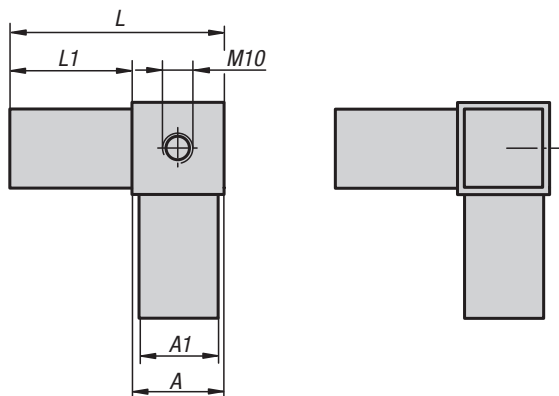


Material, version:
Polyamide PA, black.
Core galvanized steel.

Sample order:
K0623.125151210

Note:
No screws required. The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly. For installing swivel feet, casters etc.

Accessories:
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connectors, three-way with tapped hole

Order No.	A	A1	L	L1	Suitable for square tubes
K0623.125151210	25	22	77	52	25 x 25 x 1,5
K0623.130201210	30	26	77	47	30 x 30 x 2

Square tube connectors

four-way with tapped hole

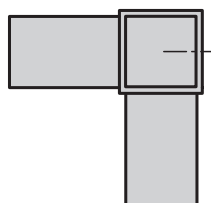
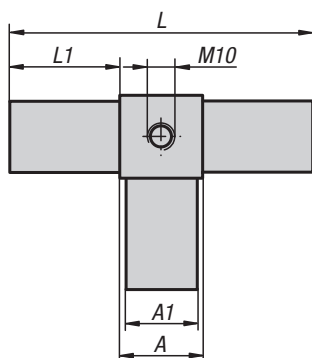


Material, version:
Polyamide PA, black.
Core galvanized steel.

Sample order:
K0624.125151210

Note:
No screws required. The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly. For installing swivel feet, casters etc.

Accessories:
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connectors, four-way with tapped hole

Order No.	A	A1	L	L1	Suitable for square tubes
K0624.125151210	25	22	129	52	25 x 25 x 1,5
K0624.130201210	30	26	124	47	30 x 30 x 2

Square tube connectors

two-way swivel



Material, version:

Polyamide PA, black.

DIN 6912 screws and DIN 934 nuts galvanized steel.

Sample order:

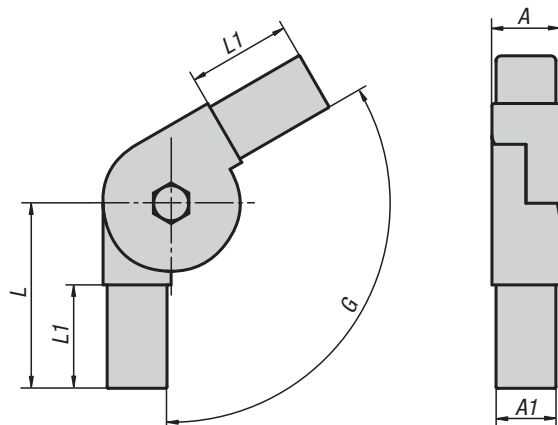
K0625.1251511

Note:

The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly. The swivel angle can be seamlessly adjusted.

Accessories:

- Square tubes K0627
- Finned square tubes K0628

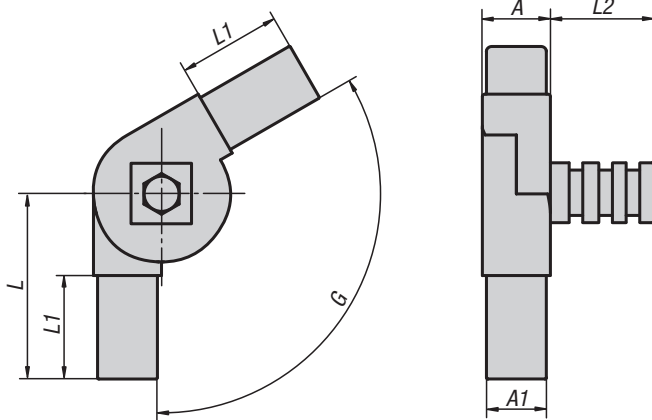


KIPP Square tube connectors, two-way swivel

Order No.	A	A1	L	L1	G	Suitable for square tubes
K0625.1251511	25	22	68	38	0° - 190°	25 x 25 x 1,5
K0625.1251512	25	22	59	38	45° - 195°	25 x 25 x 1,5

Square tube connectors

three-way swivel



Material, version:

Polyamide PA, black.

DIN 6912 screws and DIN 934 nuts galvanized steel.

Sample order:

K0626.1251511

Note:

The tube connectors are simply pushed into the appropriate square tubing. They can be dismantled and reused repeatedly. The swivel angle can be seamlessly adjusted. The third spigot can be revolved around its own axis.

Accessories:

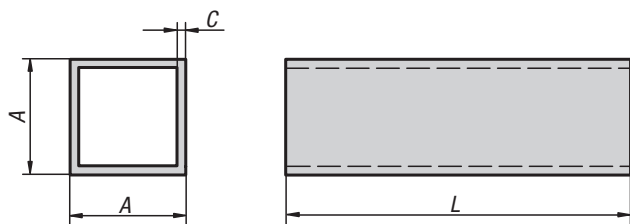
- Square tubes K0627
- Finned square tubes K0628



KIPP Square tube connectors, three-way swivel

Order No.	A	A1	L	L1	L2	G	Suitable for square tubes
K0626.1251511	25	22	68	38	42	0° - 190°	25 x 25 x 1,5
K0626.1251512	25	22	59	38	42	45° - 195°	25 x 25 x 1,5

Square tubes



Material:

Aluminium profile.

Version:

Silver anodized.

Sample order:

K0627.120152X2000

Note:

These square tubes are designed to suit our tube connectors.

On request:

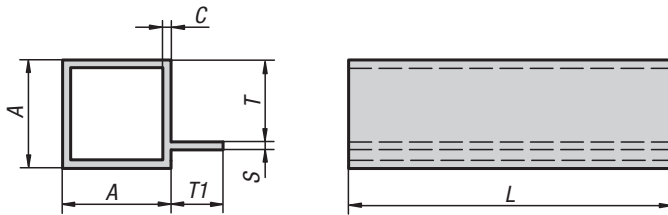
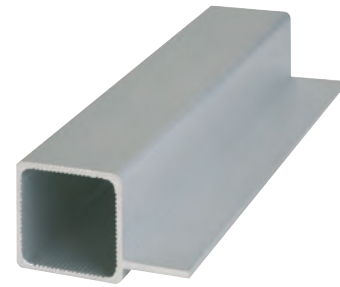
- Other lengths (L max. 4000 mm)

KIPP Square tubes

Order No.	A	C	L
K0627.120152X2000	20	1,5	2000
K0627.125152X2000	25	1,5	2000
K0627.130202X2000	30	2	2000

Square tubes

finned



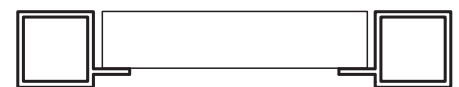
Material:
Aluminium profile.

Version:
Silver anodized.

Sample order:
K0628.125152X2000

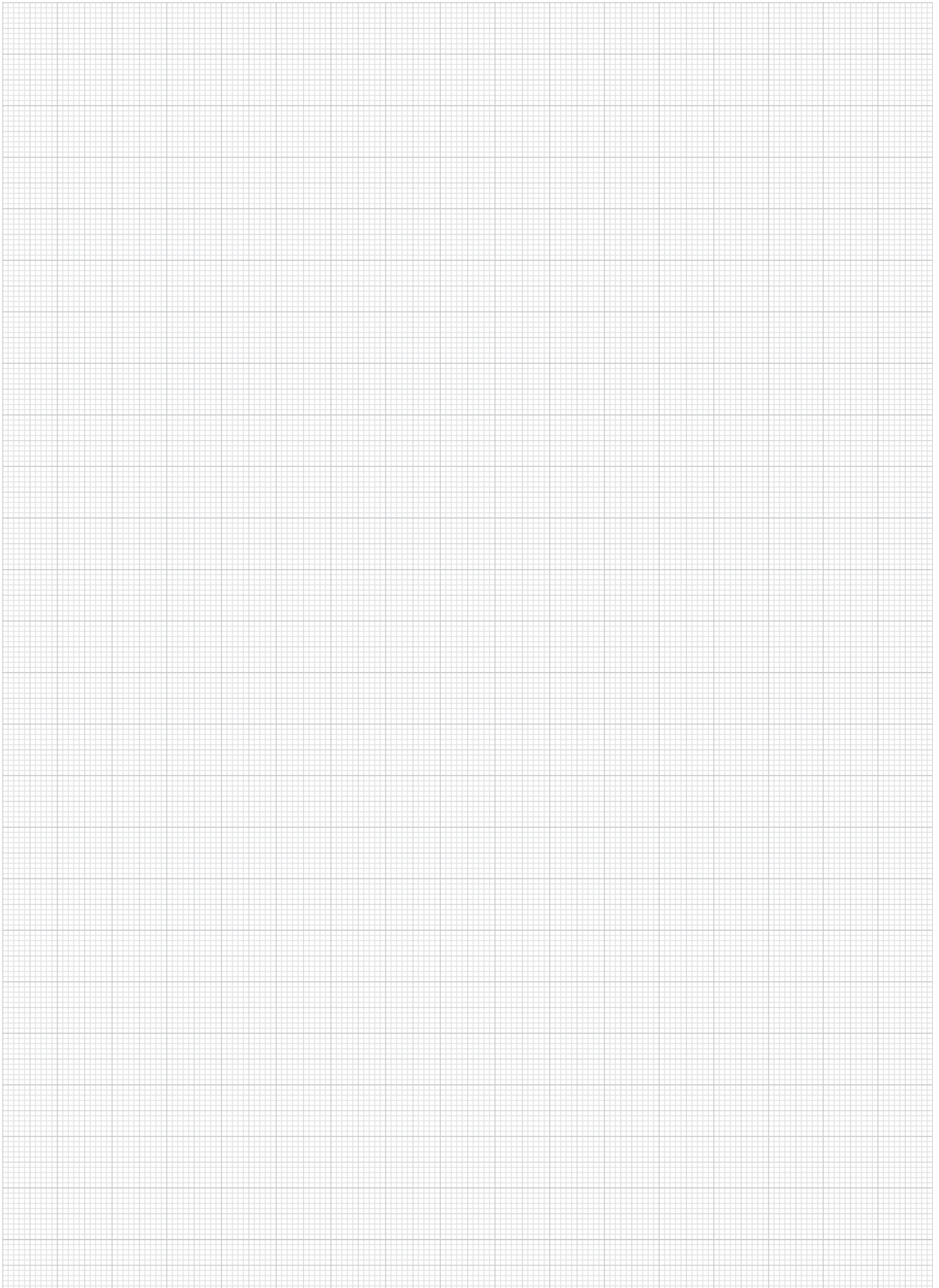
Note:
These square tubes are designed to suit our tube connectors.

On request:
- Other lengths (L max. 4000 mm)
- Mitre cuts



KIPP Square tubes with web

Order No.	A	C	L	S	T	T1
K0628.125152X2000	25	1,5	2000	2	19	15



Straps

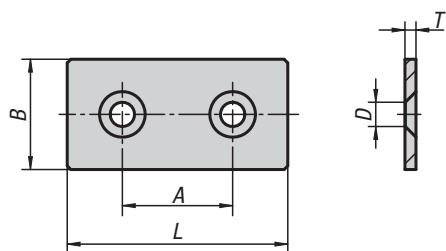


Material:
Steel.

Version:
black powder-coated.

Sample order:
K1042.06

Note:
Universal fastening element for a rigid connection and linkage of profiles, panel elements or lightweight shelving.



KIPP Straps

Order No.	Type	Slot width	A	B	D for screw	L	T
K1042.061	I	6	30	30	M6	60	3
K1042.081	B & I	8 / 10	40	40	M8	80	5
K1042.101	B	8 / 10	45	45	M8	90	5

K1043

Angles

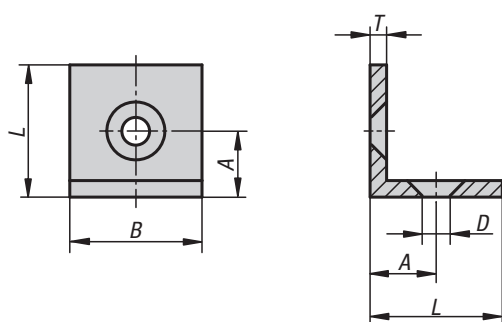


Material:
Steel.

Version:
black powder-coated.

Sample order:
K1043.06

Note:
Universal fastening element for a rigid connection and linkage of profiles, panel elements or lightweight shelving.



KIPP Angles

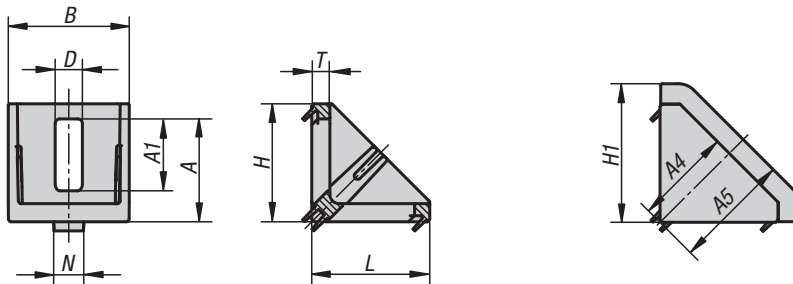
Order No.	Type	Slot width	A	B	D for screw	L	T
K1043.061	I	6	15	30	M6	30	3
K1043.081	I	8 / 10	20	40	M8	40	5

Angle sets

Type I



30x30 / 40x40



Material:

Angle die-cast zinc.
Screws and slot nuts steel.
End cap polyamide, fibreglass reinforced.

Version:

Angle painted aluminium tone.
Screws and slot nuts galvanized.
End cap black.

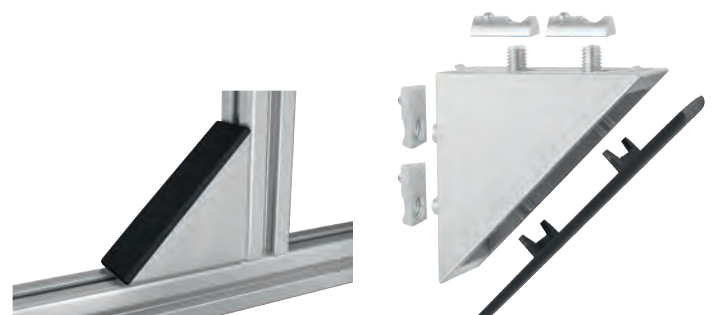
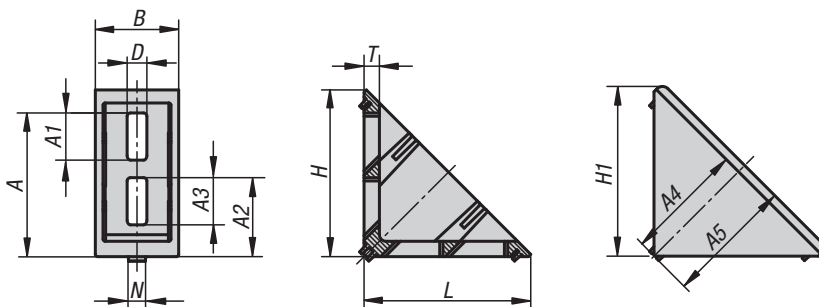
Sample order:

K1045.063030

Note:

Suitable for reinforcing profile constructions and for frictional connection of profiles with each other without machining. Can also be used as fastening element (e.g. bracket) for any components. The angles have centring lugs for accurate and twist-proof mounting. The centring lugs can be removed if necessary by breaking the off i.e. for mounting plates. The open side can be closed off with the end cap.

40x80

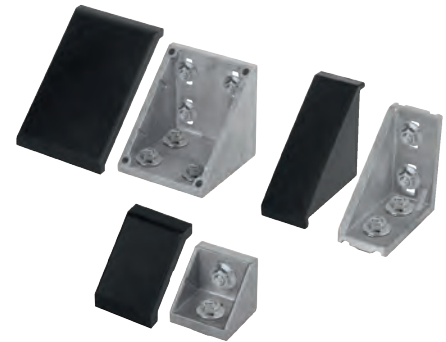


KIPP Angle sets Type I

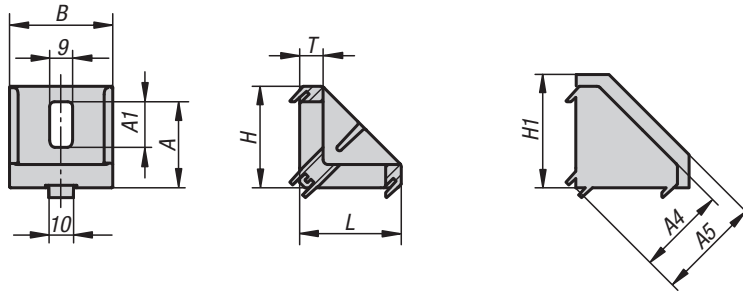
Order No.	Type	Slot width	Version	A	A1	A2	A3	A4	A5	B	D	H	H1	L	N	T
K1045.063030	I	6	30x30	22,5	11	-	-	23	27	28	6,5	28	32	28	6	4
K1045.084040	I	8	40x40	34	24	-	-	32,5	39	40	9	39	46	39	8	6
K1045.088080	I	8	40x80	65,5	21,5	36	21,5	54,5	58,5	38	9	76	78	76	8	7

Angle sets

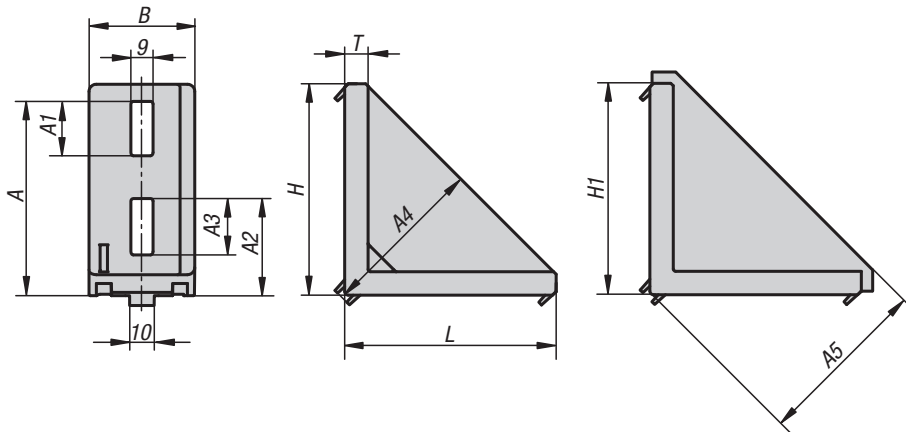
Type B



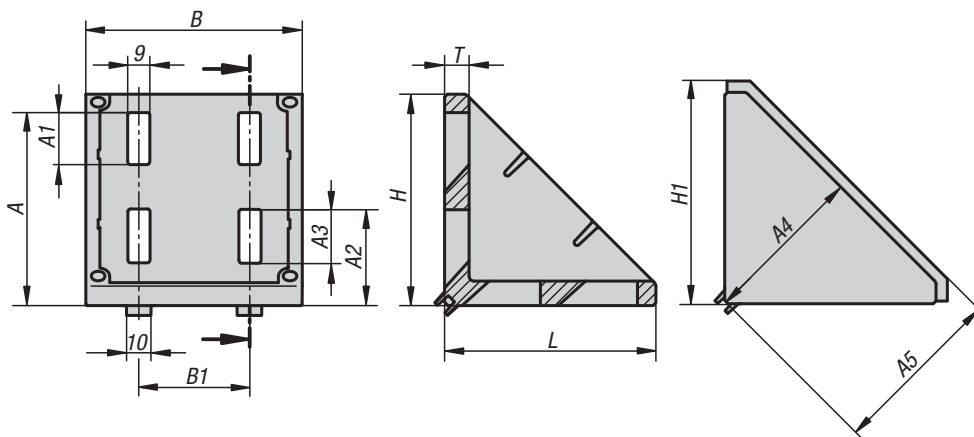
40x40 / 45x45



40x80 / 45x90



80x80 / 90x90



Material:

Angle die-cast aluminium.

Screws and slot nuts steel.

End cap polyamide, fibreglass reinforced.

Version:

Angle bright.

Screws and slot nuts galvanized.

End cap black.

Sample order:

K1046.104040

Note:

Suitable for reinforcing profile constructions and for frictional connection of profiles with each other without machining. Can also be used as fastening element (e.g. bracket) for any components.

The angles have centring lugs for accurate and twist-proof mounting. The centring lugs can be removed if necessary by breaking the off i.e. for mounting plates. The open side can be closed off with the end cap.

KIPP Angle sets Type B

Order No.	Type	Slot width	Version	A	A1	A2	A3	A4	A5	B	B1	H	H1	L	T
K1046.104040	B	10	40x40	29,5	20,5	-	-	29,5	36,5	38	-	36	41,5	36	5,5
K1046.104545	B	10	45x45	35	18,5	-	-	35	44,5	42	-	41	50,5	41	9,5
K1046.104080	B	10	40x80	68	20	35	23	59	64	38	-	76	80	76	8,5
K1046.104590	B	10	45x90	79	22	39,5	23	67	72	43	-	86	90	86	9,5
K1046.108080	B	10	80x80	68,5	20	35	20	58,5	65	74	40	76	82,5	76	8
K1046.109090	B	10	90x90	78,5	21	39	22	67	75	88	45	86	94,5	86	10

Angle elements T1

Type I

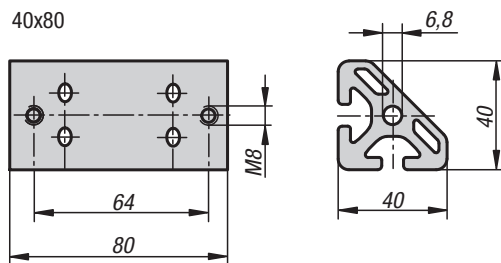
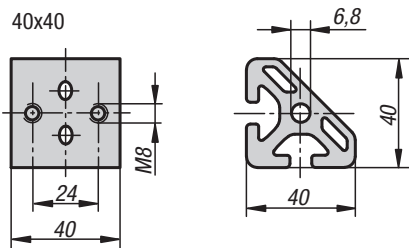
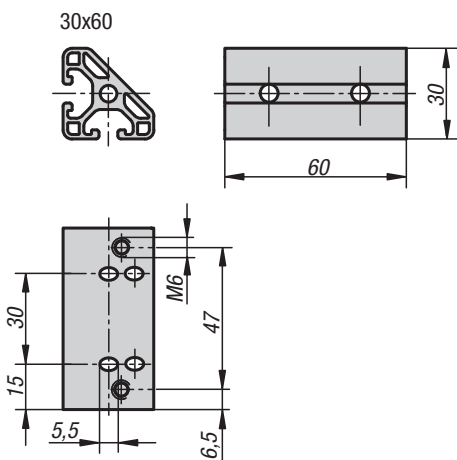
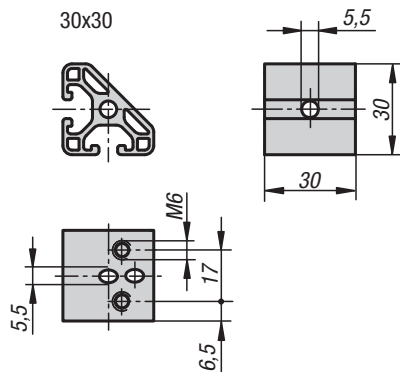


Material:
Aluminium.

Version:
anodized.

Sample order:
K1047.063030

Note:
Angle element for fastening a profile at a 45° angle and for making struts or ties.
The angle element can be fastened with a universal connector set (remove rotation lock) and with ISO 7380 round-head screws.

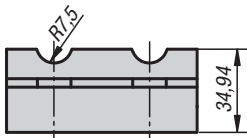
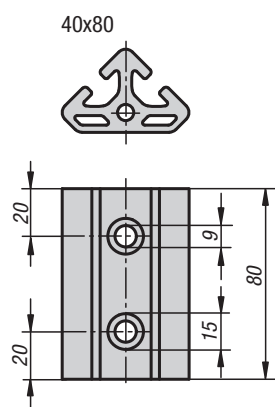
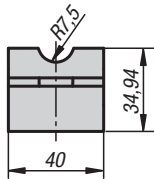
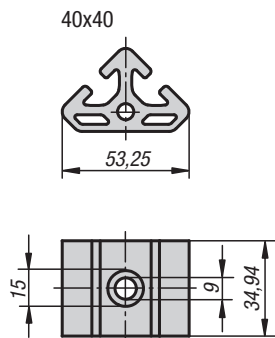
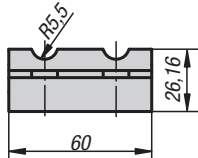
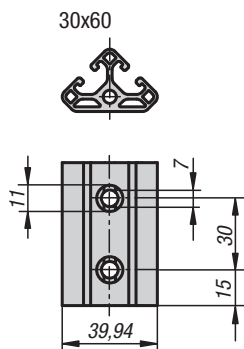
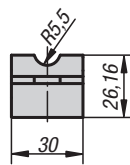
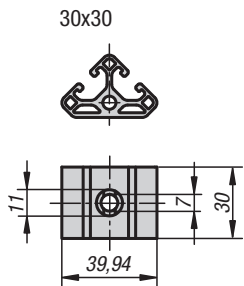


KIPP Angle elements, T1 Type I

Order No.	Type	Slot width	Version
K1047.063030	I	6	30x30
K1047.063060	I	6	30x60
K1047.084040	I	8	40x40
K1047.084080	I	8	40x80

Angle elements T2

Type I



Material:
Aluminium.

Version:
anodized.

Sample order:
K1048.063030

Note:
Angle element for fastening two profiles at a 45° angle and for making struts or ties.
The angle element can be fastened with universal connector sets and ISO 7380 round-head screws.



KIPP Angle elements, T2 Type I

Order No.	Type	Slot width	Version
K1048.063030	I	6	30x30
K1048.063060	I	6	30x60
K1048.084040	I	8	40x40
K1048.084080	I	8	40x80

Clamping angles

Type I



Material:

Clamping angle die-cast zinc.

Version:

Clamping angle painted aluminium tone.

Sample order:

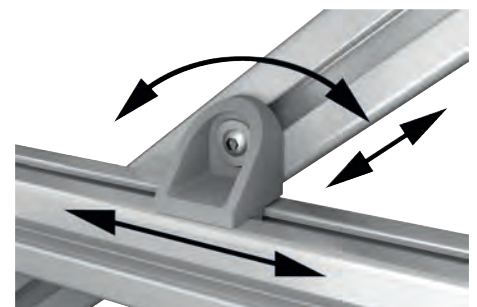
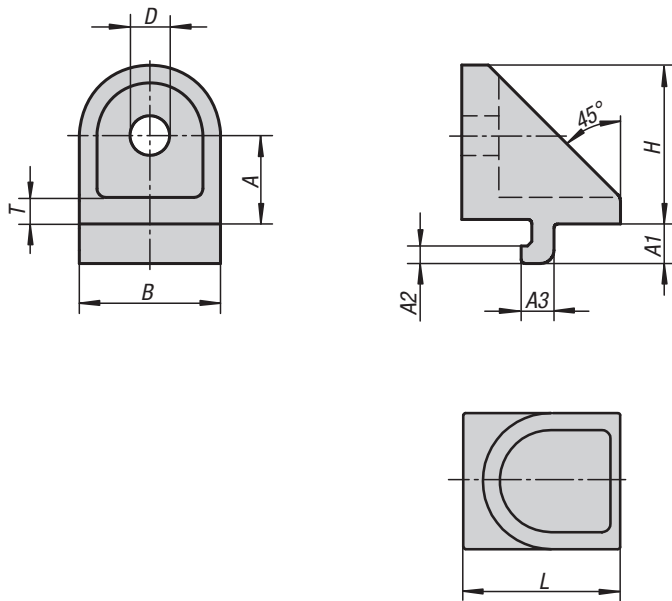
K1049.06

Note:

The clamping angles are used for connecting two profiles of the same series that have contact on the side faces and cross at any angle.

Loosening the screw releases both clamps allowing free rotation and sliding along the slots.

The clamping angles are generally used in pairs or in combination with a joint angle.

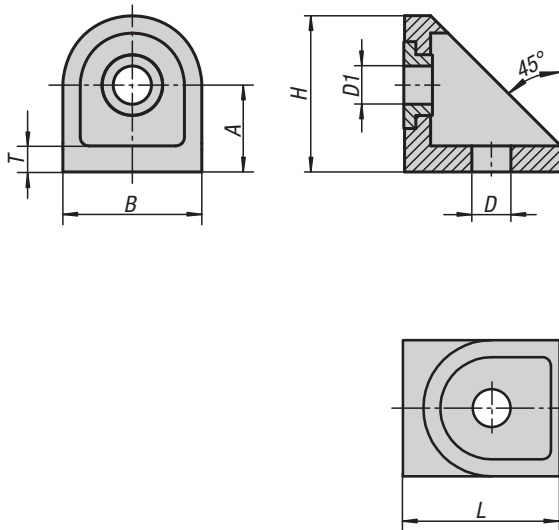


KIPP Clamping angles Type I

Order No.	Type	Slot width	A	A1	A2	A3	B	D	H	L	T
K1049.06	I	6	15	6,3	3	5,7	24	7	27	27	5
K1049.08	I	8	20	9	4	7,5	32	9	36	36	6

Joint angle

Type I



Material:

Joint angle die-cast zinc.
Pivot bush steel.

Version:

Joint angle painted aluminium tone.
Pivot bush galvanized.

Sample order:

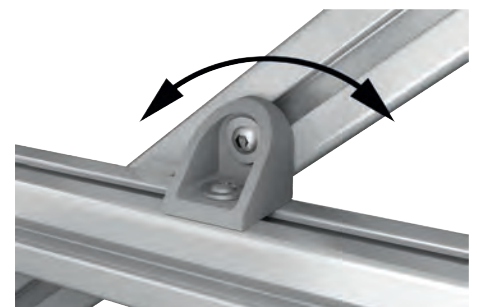
K1050.06

Note:

The joint angles are used for connecting two profiles of the same series that have contact on the side faces and cross at any angle.

The joint angle acts as a fixed pivot point for the crossed profiles. When the screw is tightened the profile can still be freely rotated around the pivot bush.

The joint angles are generally used in combination with a clamping angle.



KIPP Joint angle Type I

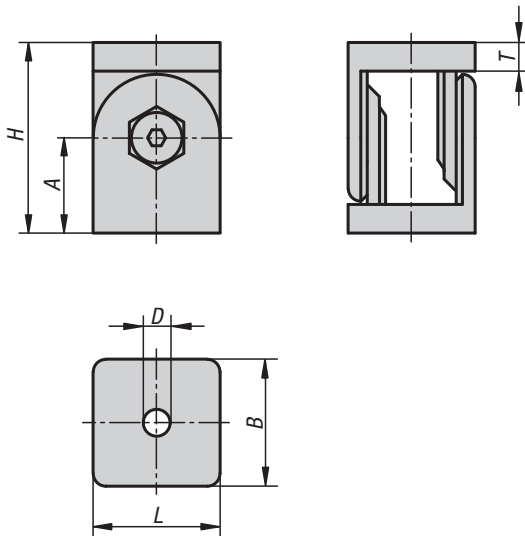
Order No.	Type	Slot width	A	B	D	D1	H	L	T
K1050.06	I	6	15	24	7	6,5	27	27	5
K1050.08	I	8	20	32	9	8,8	35,2	36	5,5

Joints

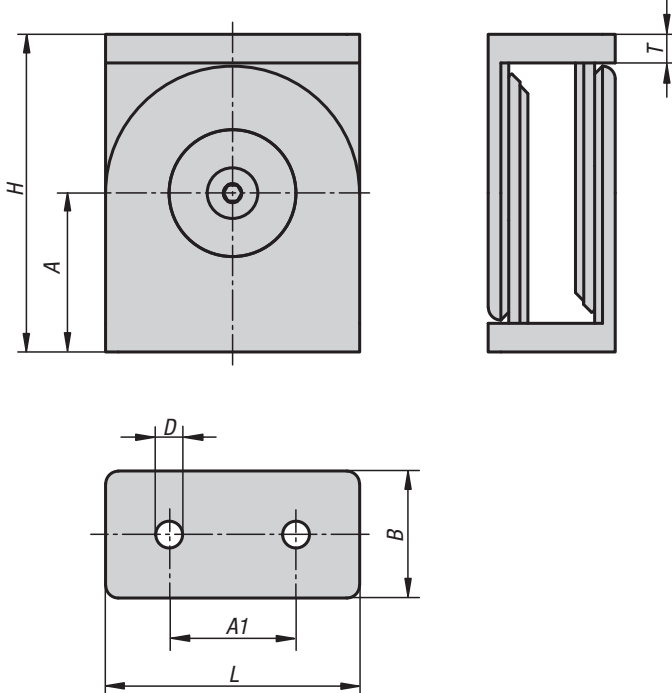
Type B and Type I



Form A



Form B



Material:

Joint die-cast zinc.
Fasteners die-cast zinc.
Spacer rings stainless steel.
Tapped bush and countersunk screws steel.

Version:

Joint painted aluminium tone.
Fasteners galvanized.
Spacer rings bright.
Tapped bushes and countersunk screws galvanized.

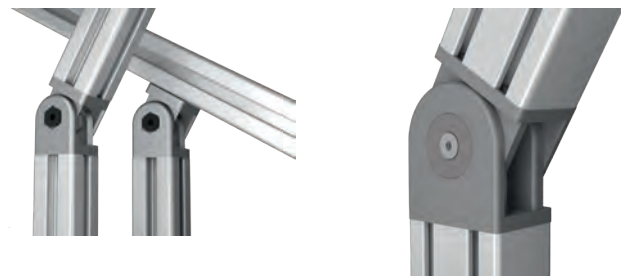
Sample order:

K1051.063030

Note:

Joints for connecting two profiles at any angle.
The adjustment range is 0° to 180°. The joint can also be used as a heavy hinge.

When the spacer rings are inserted, the joint can move freely. When these are removed, the joint can be used as a rigid angle element. The joints are particularly suitable for use as adjustable brackets, swivel arms or similar applications.

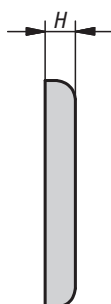
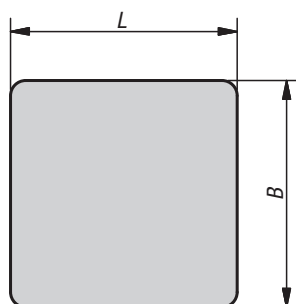


KIPP Joints Type B and Type I

Order No.	Type	Slot width	Form	A	A1	B	D	H	L	T
K1051.063030	I	6	A	22,5	-	30	6,4	45	30	7
K1051.084040	I	8	A	30	-	40	8,4	60	40	9
K1051.084080	I	8	B	50	40	40	8,4	100	80	9
K1051.104545	B	10	A	30	-	45	8,5	60	45	8
K1051.104590	B	10	B	50	45	45	8,5	100	90	9

End caps

Type B and Type I



Material:
Polyamide fibreglass reinforced.

Version:
black.

Sample order:
K1053.06303011

Note:
Round edged covers with rotation lock for covering the profile ends. Prevents dirt from penetrating and avoids injuries. Simple clip-on mounting.



KIPP End caps Type B and Type I

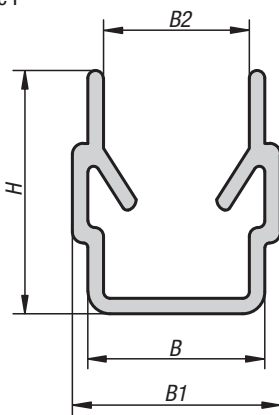
Order No.	Type	Slot width	Profile	B	L	H
K1053.06303011	I	6	30x30	30	30	3
K1053.06306011	I	6	30x60	30	60	3
K1053.06606011	I	6	60x60	60	60	3
K1053.08164011	I	8	16x40	16	40	4
K1053.08404011	I	8	40x40	40	40	4
K1053.08408011	I	8	40x80	40	80	4
K1053.08808011	I	8	80x80	80	80	4
K1053.10404021	B	10	40x40	40	40	4
K1053.10408021	B	10	40x80	40	80	4
K1053.10454521	B	10	45x45	45	45	4
K1053.10456021	B	10	45x60	45	60	4
K1053.10459021	B	10	45x90	45	90	4
K1053.10909021	B	10	90x90	90	90	4

Cover and adapter profiles

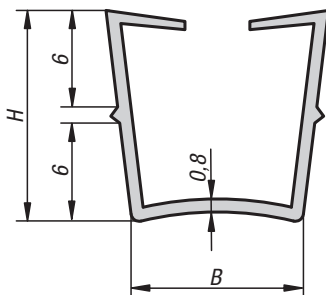
Type B and Type I



Type I



Type B



Material:

Type I polypropylene.
Type B polypropylene + TPE.

Version:

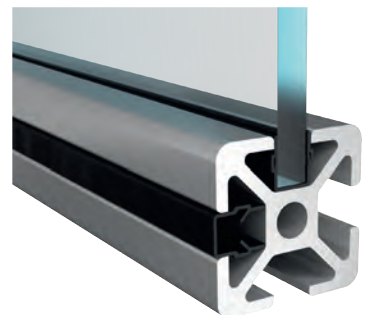
black or bright.

Sample order:

K1054.06120351

Note:

The cover and adapter profile made of flexible plastic are used for two different applications. As a cover profile it seals the profile slots against dust and dirt. As an adapter profile with the open side facing out it is used to hold panel elements.



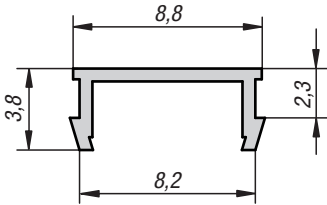
KIPP Cover and adapter profiles Type B and Type I

Order No.	Colour	Type	Slot width	B	B1	B2	H	Length	Panel element
K1054.06120351	black	I	6	6	7	4,4	9,1	2000	2,0 - 3,5
K1054.06120350	natural	I	6	6	7	4,4	9,1	2000	2,0 - 3,5
K1054.08120601	black	I	8	8	9,4	6,6	9,1	2000	2,0 - 6,0
K1054.08140601	black	I	8	8	9,4	6,6	11	2000	4,0 - 6,0
K1054.08140600	natural	I	8	8	9,4	6,6	11	2000	4,0 - 6,0
K1054.10220601	black	B	10	10	-	-	13	2000	2,0 - 6,0

K1055

Cover profile

Type I



Material:
PVC.

Version:
black.

Sample order:
K1055.0811

Note:
The cover profile made of flexible plastic is used as a cover for the profile slots to protect against dust and dirt.

KIPP Cover profile Type I

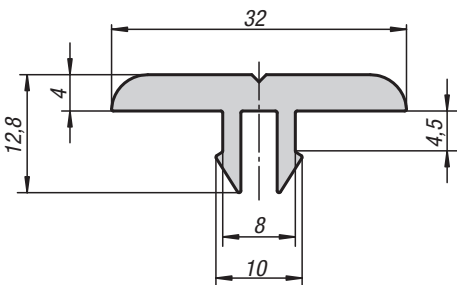
Order No.	Type	Slot width	Length
K1055.0811	I	8	2000



K1056

Slide rail

Type I



Material:
Polyethylene-HD.

Version:
black.

Sample order:
K1056.0811

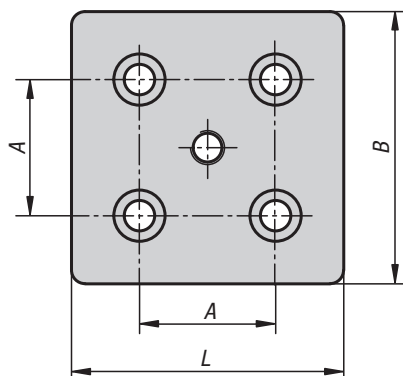
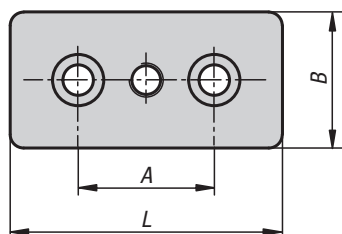
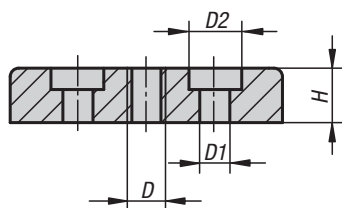
Note:
Low-wear slide rail with low slide friction for easy handling of goods. Slide rails can also be used as cover protection, impact protection and guide rails.

KIPP Slide rail Type I

Order No.	Type	Slot width	Length
K1056.081321	I	8	2000

Foot plates

Type B and Type I



Material:

Die-cast zinc.

Version:

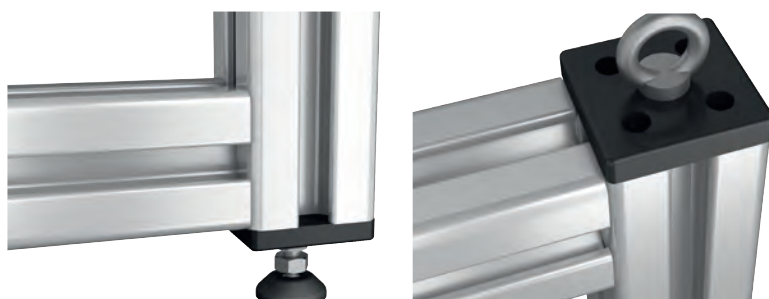
bright or black powder-coated.

Sample order:

K1057.0630601081

Note:

To hold levelling feet, rollers, lifting eye bolts and other elements. With slot nuts the foot plates can also be screwed to the profiles sideways.



Foot plates

Type B and Type I

KIPP Foot plates Type B and Type I

Order No.	Version	Type	Slot width	Profile	B	L	H	A	D	D1	D2
K1057.0840801080	galvanized	I	8	40x80	40	80	16	40	M8	9	15
K1057.0840801100	galvanized	I	8	40x80	40	80	16	40	M10	9	15
K1057.0840801120	galvanized	I	8	40x80	40	80	16	40	M12	9	15
K1057.0840801160	galvanized	I	8	40x80	40	80	16	40	M16	9	15
K1057.0880801080	galvanized	I	8	80x80	80	80	16	40	M8	9	15
K1057.0880801100	galvanized	I	8	80x80	80	80	16	40	M10	9	15
K1057.0880801120	galvanized	I	8	80x80	80	80	16	40	M12	9	15
K1057.0880801160	galvanized	I	8	80x80	80	80	16	40	M16	9	15
K1057.1040802080	galvanized	B	10	40x80	40	80	16	40	M8	14,5	20
K1057.1040802100	galvanized	B	10	40x80	40	80	16	40	M10	14,5	20
K1057.1040802120	galvanized	B	10	40x80	40	80	16	40	M12	14,5	20
K1057.1040802160	galvanized	B	10	40x80	40	80	16	40	M16	14,5	20
K1057.1045902100	galvanized	B	10	45x90	45	90	16	45	M10	14,5	20
K1057.1045902120	galvanized	B	10	45x90	45	90	16	45	M12	14,5	20
K1057.1045902140	galvanized	B	10	45x90	45	90	16	45	M14	14,5	20
K1057.1045902160	galvanized	B	10	45x90	45	90	16	45	M16	14,5	20
K1057.1045902200	galvanized	B	10	45x90	45	90	16	45	M20	14,5	20
K1057.1090902100	galvanized	B	10	90x90	90	90	16	45	M10	14,5	20
K1057.1090902120	galvanized	B	10	90x90	90	90	16	45	M12	14,5	20
K1057.1090902140	galvanized	B	10	90x90	90	90	16	45	M14	14,5	20
K1057.1090902160	galvanized	B	10	90x90	90	90	16	45	M16	14,5	20
K1057.1090902200	galvanized	B	10	90x90	90	90	16	45	M20	14,5	20
K1057.0630601081	black powder-coated	I	6	30x60	30	60	12	30	M8	6,6	11
K1057.0630601101	black powder-coated	I	6	30x60	30	60	12	30	M10	6,6	11
K1057.0630601121	black powder-coated	I	6	30x60	30	60	12	30	M12	6,6	11
K1057.0630601161	black powder-coated	I	6	30x60	30	60	12	30	M16	6,6	11
K1057.0660601081	black powder-coated	I	6	60x60	60	60	12	30	M8	6,6	11
K1057.0660601101	black powder-coated	I	6	60x60	60	60	12	30	M10	6,6	11
K1057.0660601121	black powder-coated	I	6	60x60	60	60	12	30	M12	6,6	11
K1057.0660601161	black powder-coated	I	8	60x60	60	60	16	40	M16	9	15
K1057.0840801081	black powder-coated	I	8	40x80	40	80	16	40	M8	9	15
K1057.0840801101	black powder-coated	I	8	40x80	40	80	16	40	M10	9	15
K1057.0840801121	black powder-coated	I	8	40x80	40	80	16	40	M12	9	15
K1057.0840801161	black powder-coated	I	8	40x80	40	80	16	40	M16	9	15
K1057.0880801081	black powder-coated	I	8	80x80	80	80	16	40	M8	9	15
K1057.0880801101	black powder-coated	I	8	80x80	80	80	16	40	M10	9	15
K1057.0880801121	black powder-coated	I	8	80x80	80	80	16	40	M12	9	15
K1057.0880801161	black powder-coated	I	8	80x80	80	80	16	40	M16	9	15
K1057.1045902101	black powder-coated	B	10	45x90	45	90	16	45	M10	14,5	20
K1057.1045902121	black powder-coated	B	10	45x90	45	90	16	45	M12	14,5	20
K1057.1045902141	black powder-coated	B	10	45x90	45	90	16	45	M14	14,5	20
K1057.1045902161	black powder-coated	B	10	45x90	45	90	16	45	M16	14,5	20
K1057.1045902201	black powder-coated	B	10	45x90	45	90	16	45	M20	14,5	20
K1057.1090902101	black powder-coated	B	10	90x90	90	90	16	45	M10	14,5	20
K1057.1090902121	black powder-coated	B	10	90x90	90	90	16	45	M12	14,5	20
K1057.1090902141	black powder-coated	B	10	90x90	90	90	16	45	M14	14,5	20
K1057.1090902161	black powder-coated	B	10	90x90	90	90	16	45	M16	14,5	20
K1057.1090902201	black powder-coated	B	10	90x90	90	90	16	45	M20	14,5	20



