

Static Toolholders DIN 69880

WTO
Higher Productivity

ISO 9001



High Precision and Rigidity

Higher Productivity



WTO's strategy is to constantly build on excellence in technology and quality to serve our customers.

As recognized pioneer and leader in its industry, WTO has always set the benchmarks for driven tool technology with inventions and new developments.

Our products are used worldwide in the metal cutting industry where high precision parts are manufactured with efficiency.

In 1994 WTO became the first manufacturer of driven precision tooling to achieve ISO 9001 certification.

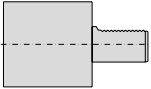
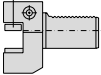
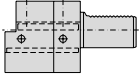
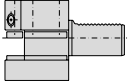
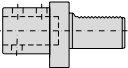
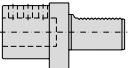
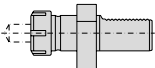

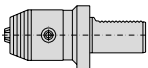
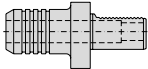
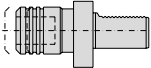
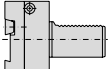


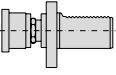
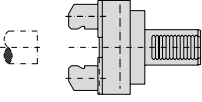

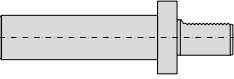

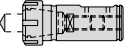



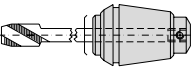

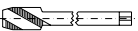
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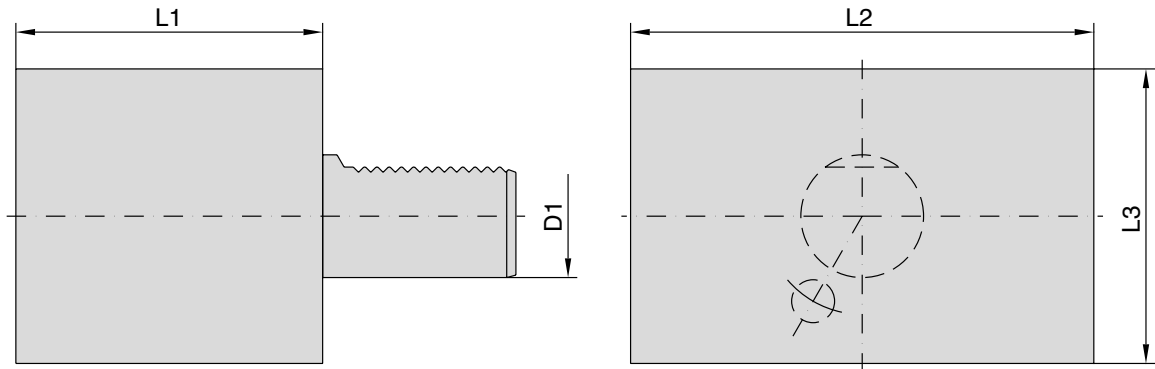


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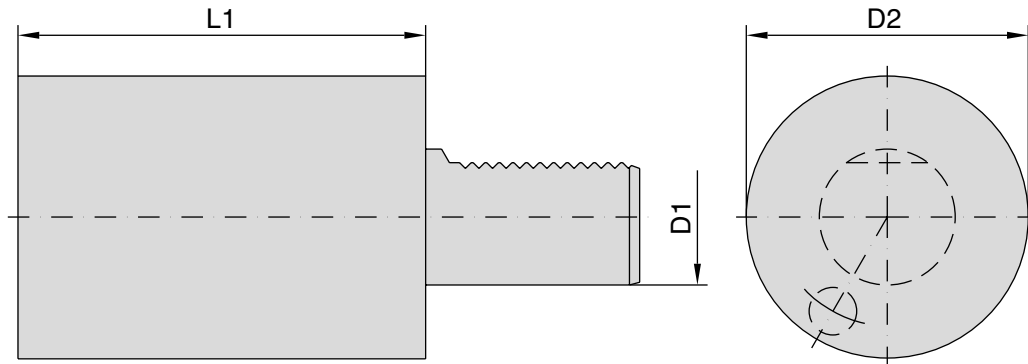
Toolholder Blank, rectangular, Form A1



48-A1-...

Item No.	D1	L1	L2	L3
48-A1-16x44	16	44	78	44
48-A1-20x65	20	65	100	60
48-A1-25x75	25	75	100	60
48-A1-30x85	30	85	130	76
48-A1-40x100	40	100	151	96
48-A1-50x125	50	125	160	120
48-A1-60x160	60	160	165	125

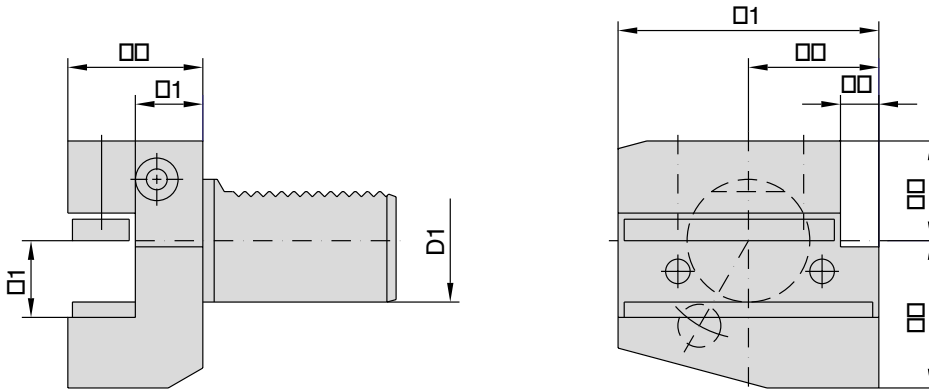
Toolholder Blank, round, Form A2



48-A2-...

Item No.	D1	D2	L1
48-A2-16x60	16	40	60
48-A2-20x70	20	50	70
48-A2-25x80	25	58	80
48-A2-25x200	25	58	200
48-A2-30x100	30	68	100
48-A2-30x240	30	68	240
48-A2-40x120	40	83	120
48-A2-40x320	40	83	320
48-A2-50x135	50	98	135
48-A2-50x400	50	98	400
48-A2-60x150	60	123	150
48-A2-60x480	60	123	480

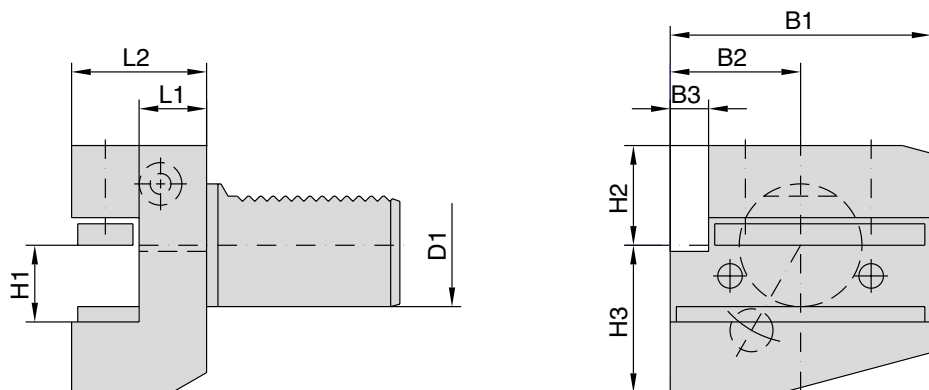
Radial Square Toolholder, right hand, short, Form B1



48-B1-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-B1-16x12	16	12	42	23	5	20	22	13	24
48-B1-16x12x34	16	12	42	23	5	20	22	23	34
48-B1-20x16	20	16/12	55	30	7	25	30	16	30
48-B1-20x16x40	20	16/12	55	30	7	25	30	26	40
48-B1-25x16	25	16/12	55	30	7	25	30	16	30
48-B1-25x16x40	25	16/12	55	30	7	25	30	26	40
48-B1-30x20	30	20/16	70	35	10	28	38	22	40
48-B1-30x20x60	30	20/16	70	35	10	28	38	42	60
48-B1-40x25	40	25/20	85	42.5	12.5	32.5	48	22	44
48-B1-50x32	50	32/25	100	50	16	35	60	30	55
48-B1-60x32	60	32/25	125	62.5	16	42.5	62.5	30	60

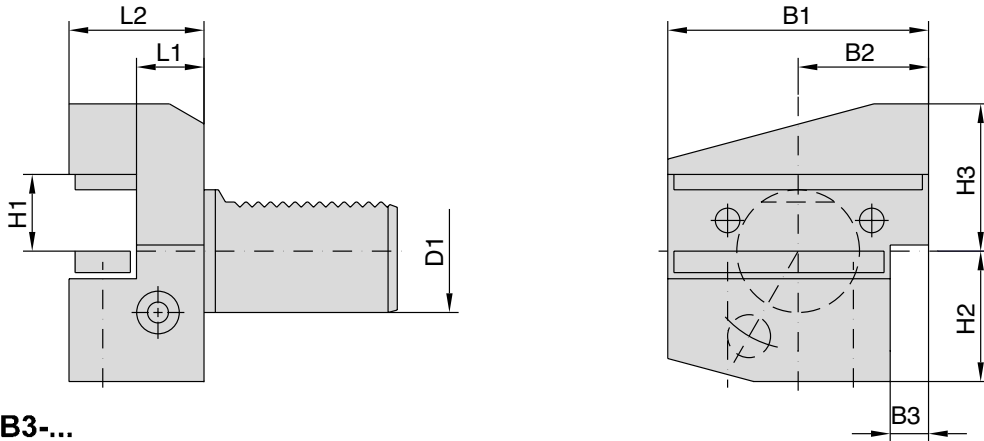
Radial Square Toolholder, left hand, short, Form B2



48-B2-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-B2-16x12	16	12	42	23	5	20	22	13	24
48-B2-16x12x34	16	12	42	23	5	20	22	23	34
48-B2-20x16	20	16/12	55	30	7	25	30	16	30
48-B2-20x16x40	20	16/12	55	30	7	25	30	26	40
48-B2-25x16	25	16/12	55	30	7	25	30	16	30
48-B2-25x16x40	25	16/12	55	30	7	25	30	26	40
48-B2-30x20	30	20/16	70	35	10	28	38	22	40
48-B2-30x20x60	30	20/16	70	35	10	28	38	42	60
48-B2-40x25	40	25/20	85	42.5	12.5	32.5	48	22	44
48-B2-50x32	50	32/25	100	50	16	35	60	30	55
48-B2-60x32	60	32/25	125	62.5	16	42.5	62.5	30	60

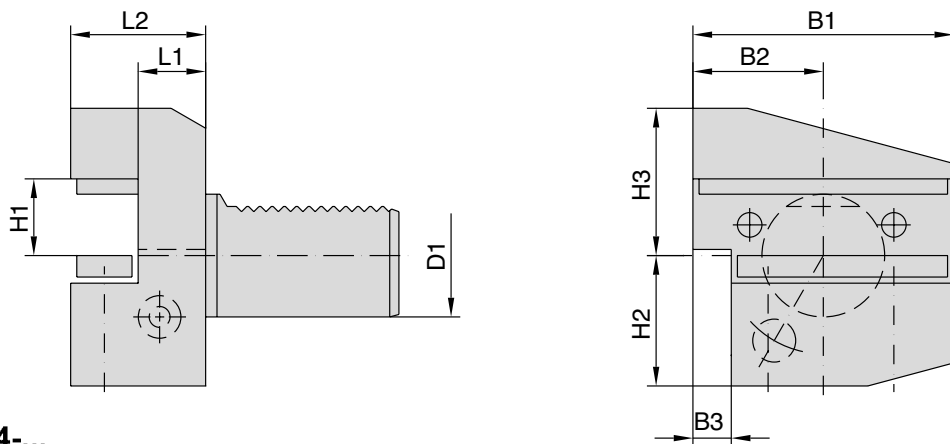
Radial Square Toolholder, right hand inverted, short, **Form B3**



48-B3-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-B3-16x12	16	12	42	23	5	20	22	13	24
48-B3-16x12x34	16	12	42	23	5	20	22	23	34
48-B3-20x16	20	16/12	55	30	7	25	30	16	30
48-B3-20x16x40	20	16/12	55	30	7	25	30	26	40
48-B3-25x16	25	16/12	55	30	7	25	30	16	30
48-B3-25x16x40	25	16/12	55	30	7	25	30	26	40
48-B3-30x20	30	20/16	70	35	10	35	38	22	40
48-B3-30x20x60	30	20/16	70	35	10	35	38	42	60
48-B3-40x25	40	25/20	85	42.5	12.5	42.5	48	22	44
48-B3-50x32	50	32/25	100	50	16	50	60	30	55
48-B3-60x32	60	32/25	125	62.5	16	62.5	62.5	30	60

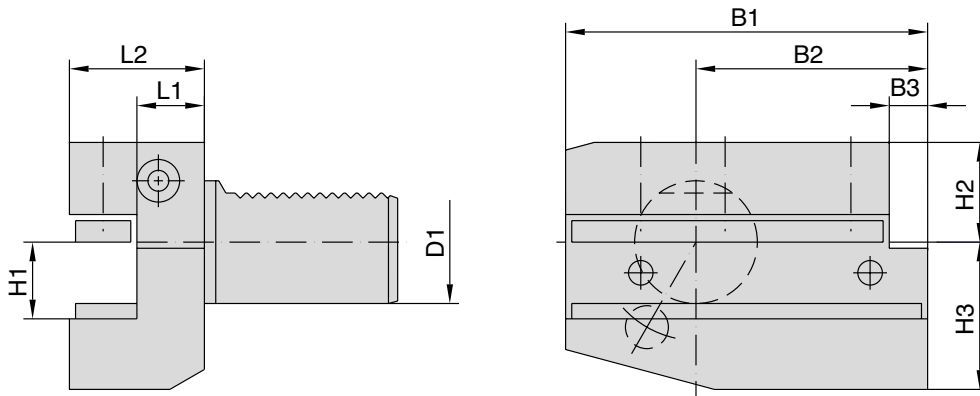
Radial Square Toolholder, left hand inverted, short, **Form B4**



48-B4-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-B4-16x12	16	12	42	23	5	20	22	13	24
48-B4-16x12x34	16	12	42	23	5	20	22	23	34
48-B4-20x16	20	16/12	55	30	7	25	30	16	30
48-B4-20x16x40	20	16/12	55	30	7	25	30	26	40
48-B4-25x16	25	16/12	55	30	7	25	30	16	30
48-B4-25x16x40	25	16/12	55	30	7	25	30	26	40
48-B4-30x20	30	20/16	70	35	10	35	38	22	40
48-B4-30x20x60	30	20/16	70	35	10	35	38	42	60
48-B4-40x25	40	25/20	85	42.5	12.5	42.5	48	22	44
48-B4-50x32	50	32/25	100	50	16	50	60	30	55
48-B4-60x32	60	32/25	125	62.5	16	62.5	62.5	30	60

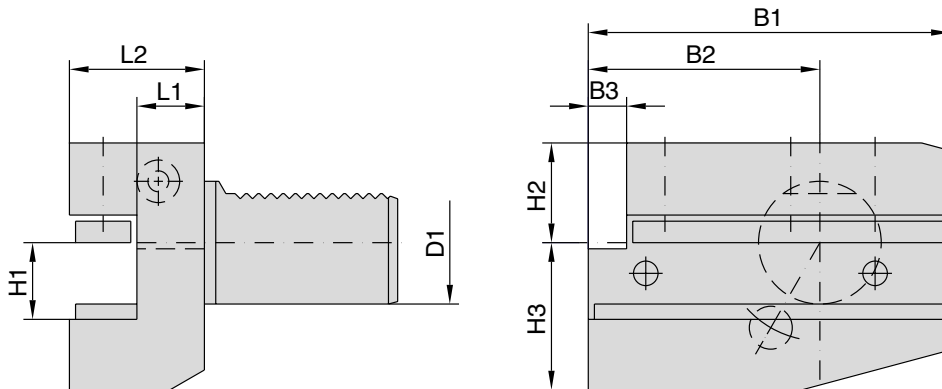
Radial Square Toolholder, right hand, long, Form B5



48-B5-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-B5-16x12	16	12	58	39	5	20	22	13	24
48-B5-16x12x34	16	12	58	39	5	20	22	23	34
48-B5-20x16	20	16/12	75	50	7	25	30	16	30
48-B5-20x16x40	20	16/12	75	50	7	25	30	26	40
48-B5-25x16	25	16/12	75	50	7	25	30	16	30
48-B5-25x16x40	25	16/12	75	50	7	25	30	26	40
48-B5-30x20	30	20/16	100	65	10	28	38	22	40
48-B5-30x20x60	30	20/16	100	65	10	28	38	42	60
48-B5-40x25	40	25/20	118	75.5	12.5	32.5	48	22	44
48-B5-50x32	50	32/25	130	80	16	35	60	30	55
48-B5-60x32	60	32/25	145	82.5	16	42.5	62.5	30	60

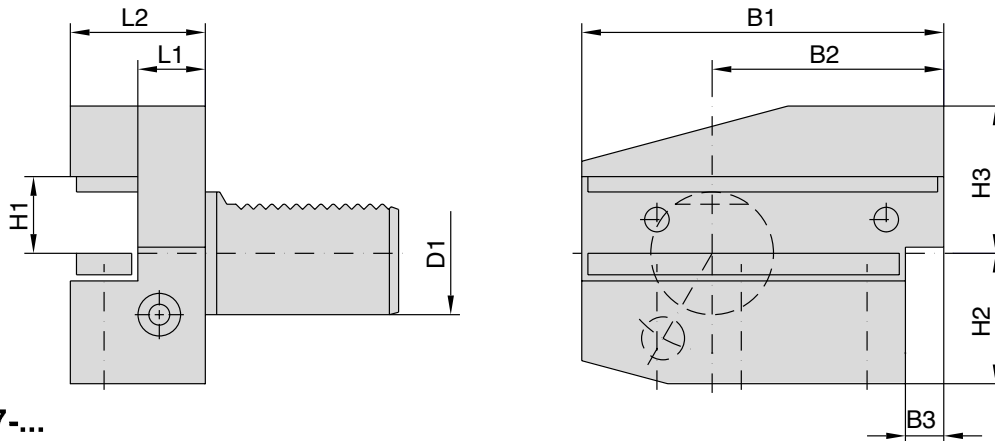
Radial Square Toolholder, left hand, long, Form B6



48-B6-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-B6-16x12	16	12	58	39	5	20	22	13	24
48-B6-16x12x34	16	12	58	39	5	20	22	23	34
48-B6-20x16	20	16/12	75	50	7	25	30	16	30
48-B6-20x16x40	20	16/12	75	50	7	25	30	26	40
48-B6-25x16	25	16/12	75	50	7	25	30	16	30
48-B6-25x16x40	25	16/12	75	50	7	25	30	26	40
48-B6-30x20	30	20/16	100	65	10	28	38	22	40
48-B6-30x20x60	30	20/16	100	65	10	28	38	42	60
48-B6-40x25	40	25/20	118	75.5	12.5	32.5	48	22	44
48-B6-50x32	50	32/25	130	80	16	35	60	30	55
48-B6-60x32	60	32/25	145	82.5	16	42.5	62.5	30	60

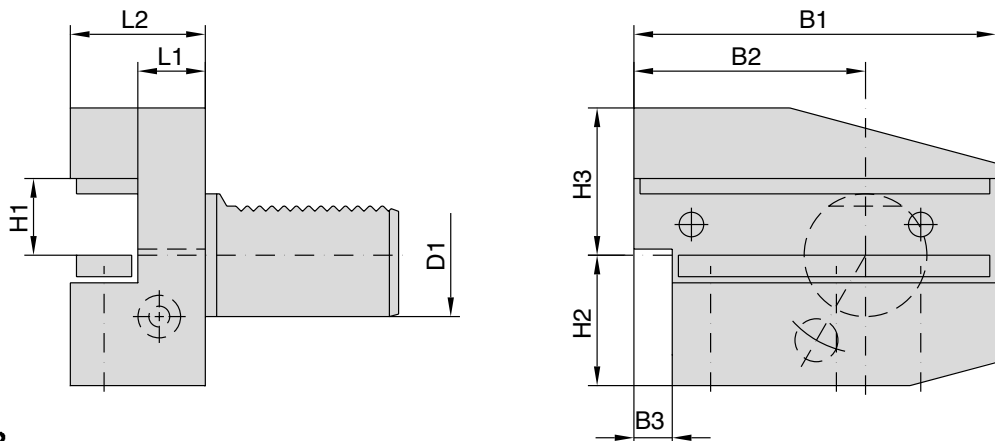
Radial Square Toolholder, right hand inverted, long, **Form B7**



48-B7-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-B7-16x12	16	12	58	39	5	20	22	13	24
48-B7-16x12x34	16	12	58	39	5	20	22	23	34
48-B7-20x16	20	16/12	75	50	7	25	30	16	30
48-B7-20x16x40	20	16/12	75	50	7	25	30	26	40
48-B7-25x16	25	16/12	75	50	7	25	30	16	30
48-B7-25x16x40	25	16/12	75	50	7	25	30	26	40
48-B7-30x20	30	20/16	100	65	10	35	38	22	40
48-B7-30x20x60	30	20/16	100	65	10	35	38	42	60
48-B7-40x25	40	25/20	118	75.5	12.5	42.5	48	22	44
48-B7-50x32	50	32/25	130	80	16	50	60	30	55
48-B7-60x32	60	32/25	145	82.5	16	62.5	62.5	30	60

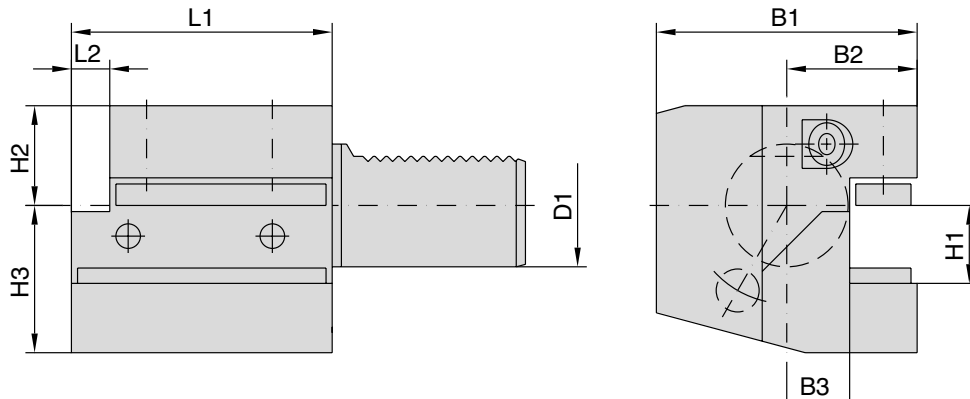
Radial Square Toolholder, left hand inverted, long, **Form B8**



48-B8-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-B8-16x12	16	12	58	39	5	20	22	13	24
48-B8-16x12x34	16	12	58	39	5	20	22	23	34
48-B8-20x16	20	16/12	75	50	7	25	30	16	30
48-B8-20x16x40	20	16/12	75	50	7	25	30	26	40
48-B8-25x16	25	16/12	75	50	7	25	30	16	30
48-B8-25x16x40	25	16/12	75	50	7	25	30	26	40
48-B8-30x20	30	20/16	100	65	10	35	38	22	40
48-B8-30x20x60	30	20/16	100	65	10	35	38	42	60
48-B8-40x25	40	25/20	118	75.5	12.5	42.5	48	22	44
48-B8-50x32	50	32/25	130	80	16	50	60	30	55
48-B8-60x32	60	32/25	145	82.5	16	62.5	62.5	30	60

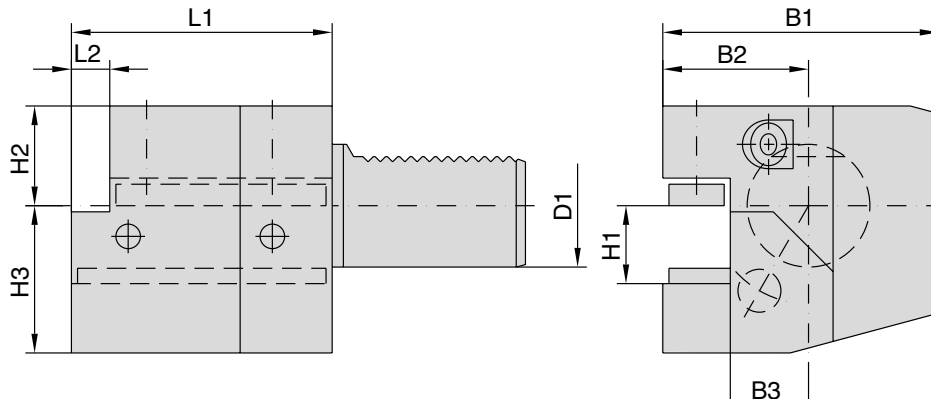
Axial Square Toolholder, right hand, Form C1



48-C1-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-C1-16x12	16	12	43	24	13	20	22	44	5
48-C1-20x16	20	16/12	65	40	26	25	30	50	-
48-C1-25x16	25	16/12	58	33	19	25	30	55	7
48-C1-30x20	30	20/16	70	35	17	28	38	70	10
48-C1-40x25	40	25/20	85	42.5	21	32.5	48	85	12.5
48-C1-50x32	50	32/25	100	50	26	35	60	100	16
48-C1-60x32	60	32/25	125	62.5	33	42.5	62.5	125	16

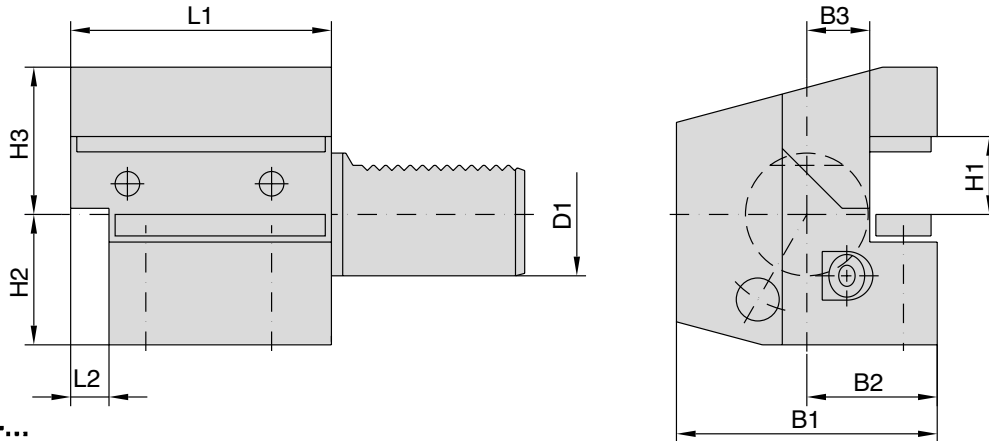
Axial Square Toolholder, left hand, Form C2



48-C2-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-C2-16x12	16	12	43	24	13	20	22	44	5
48-C2-20x16	20	16/12	65	40	26	25	30	50	-
48-C2-25x16	25	16/12	58	33	19	25	30	55	7
48-C2-30x20	30	20/16	76	41	23	28	38	70	10
48-C2-40x25	40	25/20	90	47.5	25.5	32.5	48	85	12.5
48-C2-50x32	50	32/25	105	55	30.5	35	60	100	16
48-C2-60x32	60	32/25	125	62.5	33	42.5	62.5	125	16

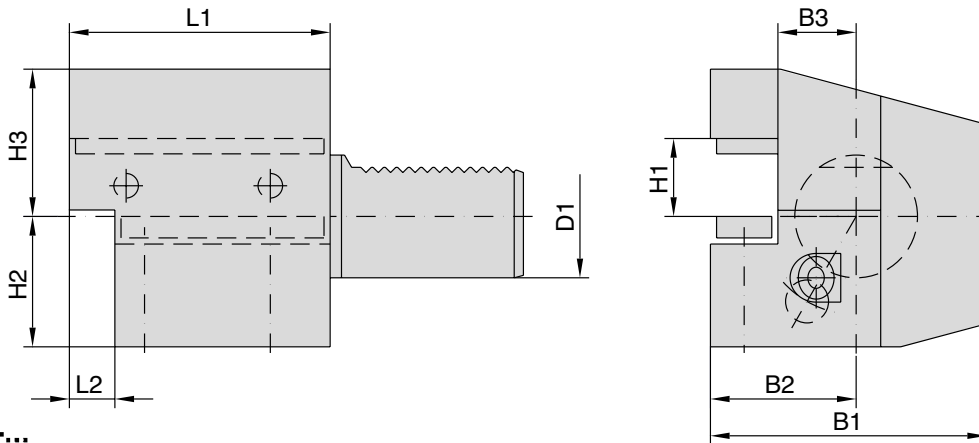
Axial Square Toolholder, right hand inverted, **Form C3**



48-C3-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-C3-16x12	16	12	43	24	13	20	22	44	5
48-C3-20x16	20	16/12	65	40	26	25	30	50	-
48-C3-25x16	25	16/12	58	33	19	25	30	55	7
48-C3-30x20	30	20/16	70	35	17	35	38	70	10
48-C3-40x25	40	25/20	85	42.5	21	42.5	48	85	12.5
48-C3-50x32	50	32/25	100	50	26	50	60	100	16
48-C3-60x32	60	32/25	125	62.5	33	62.5	62.5	125	16

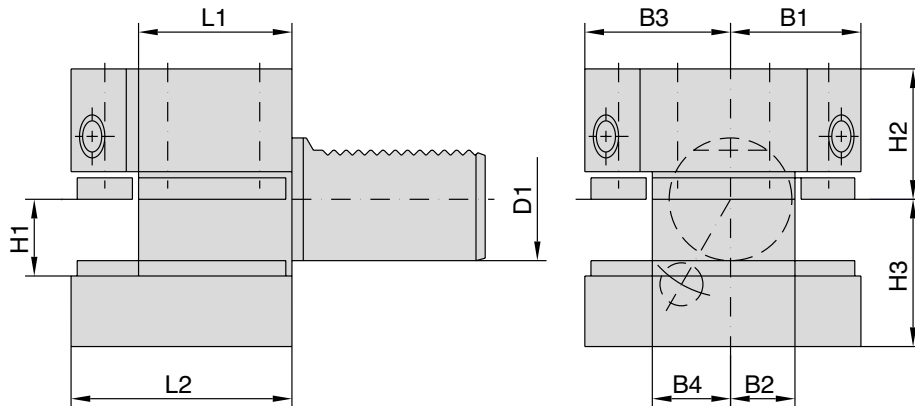
Axial Square Toolholder, left hand inverted, **Form C4**



48-C4-...

Item No.	D1	H1	B1	B2	B3	H2	H3	L1	L2
48-C4-16x12	16	12	43	24	13	20	22	44	5
48-C4-20x16	20	16/12	65	40	26	25	30	50	-
48-C4-25x16	25	16/12	58	33	19	25	30	55	7
48-C4-30x20	30	20/16	76	41	23	35	38	70	10
48-C4-40x25	40	25/20	90	47.5	25.5	42.5	48	85	12.5
48-C4-50x32	50	32/25	105	55	30.5	50	60	100	16
48-C4-60x32	60	32/25	125	62.5	33	62.5	62.5	125	16

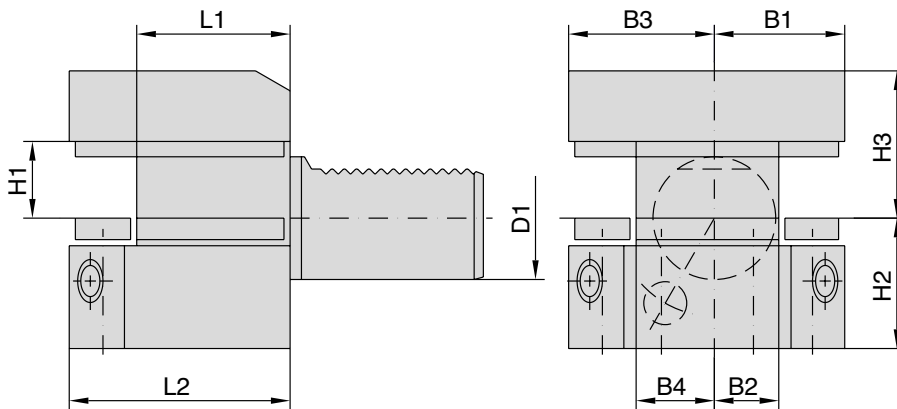
Universal Square Toolholder, Form D1



48-D1-...

Item No.	D1	H1	B1	B2	B3	B4	H2	H3	L1	L2
48-D1-25x16	25	16/12	33	19	33	19	25	30	34	48
48-D1-30x20	30	20/16	35	17	41	23	28	38	42	60
48-D1-40x25	40	25/20	42.5	21	47.5	25.5	32.5	48	50	72
48-D1-50x32	50	32/25	50	26	55	30.5	35	60	60	85
48-D1-60x32	60	32/25	57.5	33	57.5	33	42.5	62.5	85	110

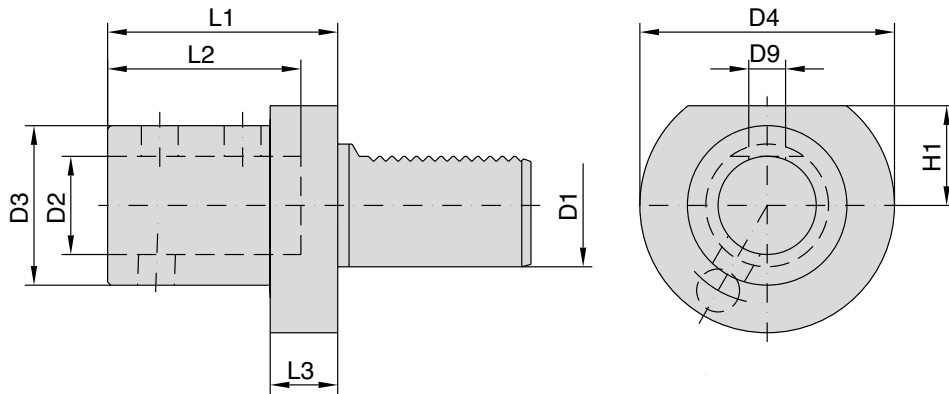
Universal Square Toolholder, inverted, Form D2



48-D2-...

Item No.	D1	H1	B1	B2	B3	B4	H2	H3	L1	L2
48-D2-25x16	25	16/12	33	19	33	19	25	30	34	48
48-D2-30x20	30	20/16	35	17	41	23	35	38	42	60
48-D2-40x25	40	25/20	42.5	21	47.5	25.5	42.5	48	50	72
48-D2-50x32	50	32/25	50	26	55	30.5	50	60	60	85
48-D2-60x32	60	32/25	57.5	33	57.5	33	62.5	62.5	85	110

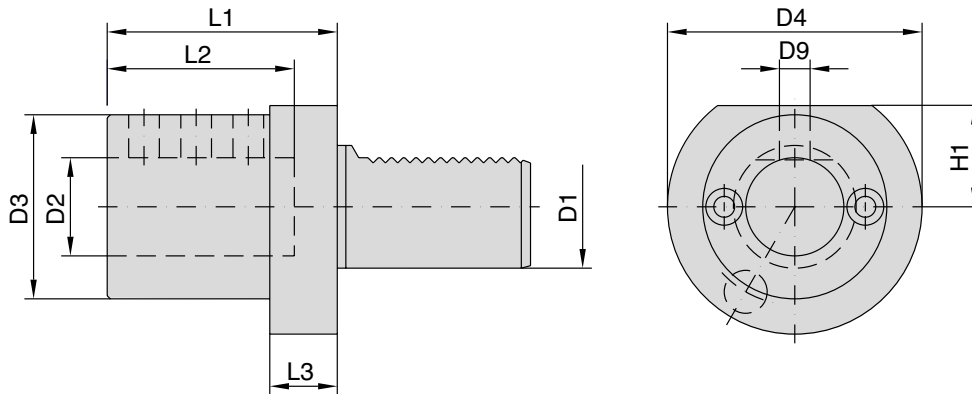
Holder for Indexable Insert Drills, internal coolant supply, **Form E1**



48-E1-...

Item No.	D1	D2	D3	D4	H1	L1	L2	L3	D9
48-E1-20x16	20	16	36	50	-	67	54	18	M10x1x11
48-E1-20x20	20	20	40	50	-	67	54	18	M10x1x11
48-E1-20x25	20	25	45	50	-	71	59	18	M12x1x12
48-E1-25x16	25	16	36	58	25	67	54	18	M10x1x11
48-E1-25x20	25	20	40	58	25	67	54	18	M10x1x11
48-E1-25x25	25	25	45	58	25	71	59	18	M12x1x12
48-E1-25x32	25	32	52	58	25	75	63	18	M12x1x12
48-E1-30x16	30	16	36	68	28	67	54	22	M10x1x11
48-E1-30x20	30	20	40	68	28	67	54	22	M10x1x11
48-E1-30x25	30	25	45	68	28	71	59	22	M12x1x12
48-E1-30x32	30	32	52	68	28	75	63	22	M12x1x12
48-E1-40x16	40	16	36	83	32.5	67	54	22	M10x1x11
48-E1-40x20	40	20	40	83	32.5	67	54	22	M10x1x11
48-E1-40x25	40	25	45	83	32.5	75	59	22	M12x1x12
48-E1-40x32	40	32	52	83	32.5	75	63	22	M12x1x12
48-E1-40x40	40	40	65	83	32.5	90	73	22	M16x1x13
48-E1-50x16	50	16	36	98	35	80	54	30	M10x1x11
48-E1-50x20	50	20	40	98	35	80	54	30	M10x1x11
48-E1-50x25	50	25	45	98	35	80	59	30	M12x1x12
48-E1-50x32	50	32	52	98	35	80	63	30	M12x1x12
48-E1-50x40	50	40	65	98	35	90	73	30	M16x1x13
48-E1-50x50	50	50	75	98	35	100	83	30	M16x1x13
48-E1-60x16	60	16	36	123	42.5	80	54	30	M10x1x11
48-E1-60x20	60	20	40	123	42.5	80	54	30	M10x1x11
48-E1-60x25	60	25	45	123	42.5	80	59	30	M12x1x12
48-E1-60x32	60	32	52	123	42.5	80	63	30	M12x1x12
48-E1-60x40	60	40	65	123	42.5	90	73	30	M16x1x13
48-E1-60x50	60	50	75	123	42.5	100	83	30	M16x1x13

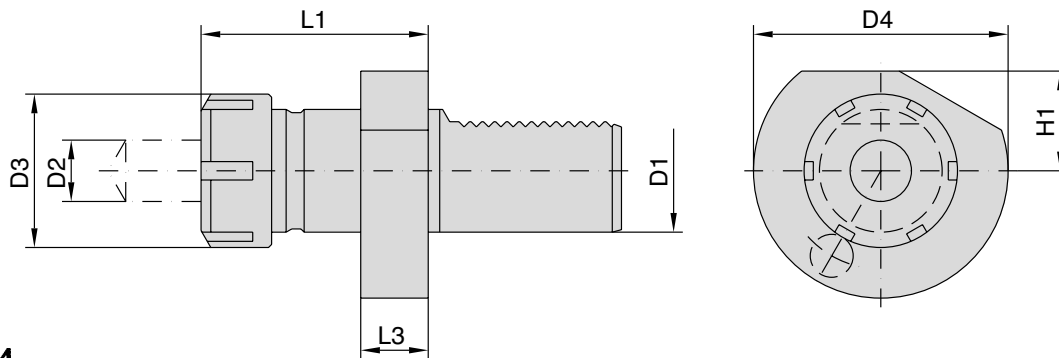
Boring Bar Holder, internal and external coolant supply, Form E2



48-E2-...

Item No.	D1	D2	D3	D4	H1	L1	L2	L3	D9
48-E2-16x6	16	6	32	40	18	44	34	13	M6x16
48-E2-16x8	16	8	32	40	18	44	34	13	M6x12
48-E2-16x10	16	10	32	40	18	44	34	13	M6x12
48-E2-16x12	16	12	40	40	18	44	34	13	M8x12
48-E2-16x16	16	16	40	40	18	44	34	13	M8x12
48-E2-20x8	20	8	40	50	23	50	42	18	M6x16
48-E2-20x10	20	10	40	50	23	50	42	18	M8x16
48-E2-20x12	20	12	40	50	23	50	42	18	M8x16
48-E2-20x16	20	16	40	50	23	50	42	18	M8x12
48-E2-20x20	20	20	49	50	23	50	42	18	M8x12
48-E2-20x25	20	25	49	50	23	60	52	18	M8x10
48-E2-25x8	25	8	40	58	25	50	41	18	M6x25
48-E2-25x10	25	10	40	58	25	50	41	18	M6x25
48-E2-25x12	25	12	40	58	25	50	41	18	M8x16
48-E2-25x16	25	16	40	58	25	50	41	18	M8x16
48-E2-25x20	25	20	58	58	25	50	41	18	M8x16
48-E2-25x25	25	25	58	58	25	60	51	18	M8x16
48-E2-30x8	30	8	55	68	28	60	43	22	M6x25
48-E2-30x10	30	10	55	68	28	60	43	22	M6x25
48-E2-30x12	30	12	55	68	28	60	43	22	M8x20
48-E2-30x16	30	16	55	68	28	60	54	22	M8x20
48-E2-30x20	30	20	55	68	28	60	54	22	M8x20
48-E2-30x25	30	25	55	68	28	60	54	22	M8x16
48-E2-30x30	30	30	67	68	28	75	61	22	M8x16
48-E2-30x32	30	32	67	68	28	75	61	22	M8x16
48-E2-40x8	40	8	55	83	32.5	75	43	22	M8x25
48-E2-40x10	40	10	55	83	32.5	75	43	22	M8x25
48-E2-40x12	40	12	55	83	32.5	75	58	22	M8x25
48-E2-40x16	40	16	55	83	32.5	75	61	22	M10x25
48-E2-40x20	40	20	55	83	32.5	75	61	22	M10x20
48-E2-40x25	40	25	55	83	32.5	75	61	22	M10x20
48-E2-40x30	40	30	82	83	32.5	75	61	22	M10x20
48-E2-40x32	40	32	82	83	32.5	75	61	22	M10x20
48-E2-40x40	40	40	82	83	32.5	90	76	22	M10x16
48-E2-50x12	50	12	68	98	35	90	71	30	M8x30
48-E2-50x16	50	16	68	98	35	90	76	30	M10x30
48-E2-50x20	50	20	68	98	35	90	76	30	M12x25
48-E2-50x25	50	25	68	98	35	90	76	30	M12x25
48-E2-50x30	50	30	68	98	35	90	76	30	M12x20
48-E2-50x32	50	32	68	98	35	90	76	30	M12x20
48-E2-50x40	50	40	98	98	35	90	76	30	M12x16
48-E2-50x50	50	50	98	98	35	100	86	30	M12x12
48-E2-60x16	60	16	68	123	42.5	90	76	30	M10x30
48-E2-60x20	60	20	68	123	42.5	90	76	30	M12x25
48-E2-60x25	60	25	68	123	42.5	90	76	30	M12x25
48-E2-60x32	60	32	68	123	42.5	90	76	30	M12x20
48-E2-60x40	60	40	98	123	42.5	90	76	30	M12x20
48-E2-60x50	60	50	98	123	42.5	100	86	30	M12x16

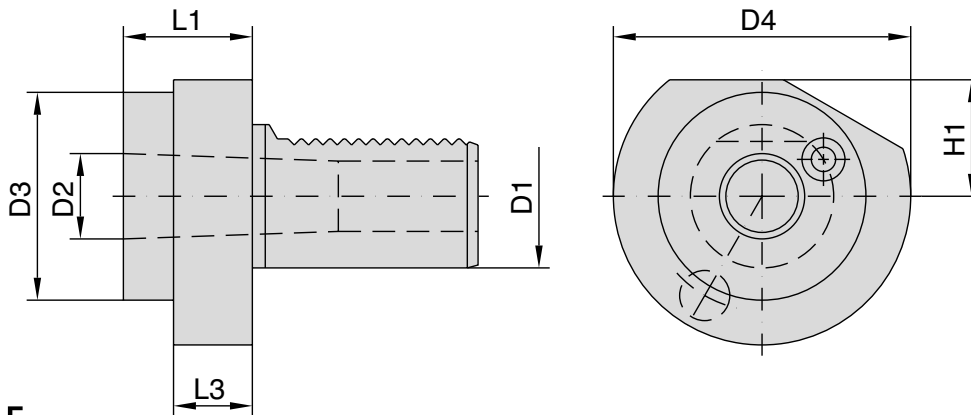
ER Collet Chuck Holder, Form E4



48-E4-...

Item No.	D1	Collet Size	D2 (clamping range)	D3	D4	H1	L1	L3
48-E4-16x16	16	ER-16	0.5-10	32	40	18	44	13
48-E4-16x20	16	ER-20	1-13	35	40	18	44	13
48-E4-20x25	20	ER-25	1-16	42	50	-	65	18
48-E4-20x32	20	ER-32	2-20	50	50	-	67	18
48-E4-25x25	25	ER-25	1-16	42	58	25	58	18
48-E4-25x32	25	ER-32	2-20	50	58	25	63	18
48-E4-30x25	30	ER-25	1-16	42	68	28	57	22
48-E4-30x32	30	ER-32	2-20	50	68	28	78	22
48-E4-30x40	30	ER-40	3-26	63	68	28	80	22
48-E4-40x25	40	ER-25	1-16	42	83	32.5	57	22
48-E4-40x32	40	ER-32	2-20	50	83	32.5	78	22
48-E4-40x40	40	ER-40	3-26	63	83	32.5	80	22
48-E4-50x32	50	ER-32	2-20	50	98	35	93	30
48-E4-50x40	50	ER-40	3-26	63	98	35	80	30
48-E4-60x32	60	ER-32	2-20	50	123	42.5	78	30
48-E4-60x40	60	ER-40	3-26	63	123	42.5	80	30

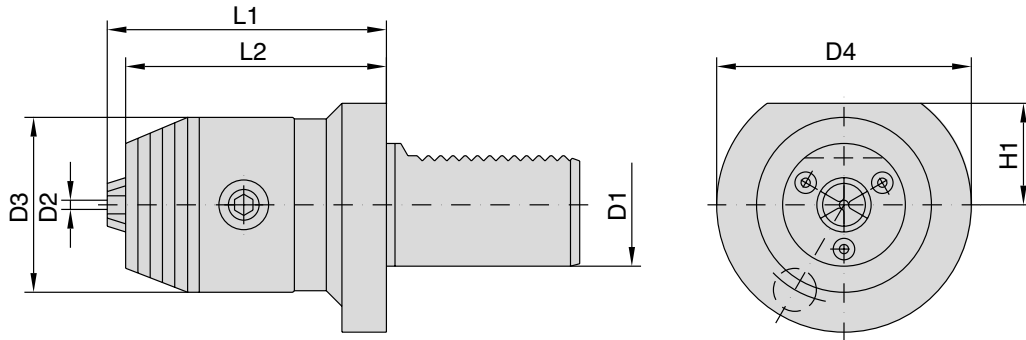
Morse Taper Holder, Form F



48-F-...

Item No.	D1	D2 (MK)	D3	D4	H1	L1	L3
48-F-16xMK1	16	1	-	40	-	61	-
48-F-16xMK2	16	2	-	42	-	72	-
48-F-20xMK1	20	1	-	50	-	23	-
48-F-20xMK2	20	2	45	50	-	41	22
48-F-25xMK1	25	1	45	58	25	23	18
48-F-25xMK2	25	2	45	58	25	34	18
48-F-25xMK3	25	3	49	58	25	91	18
48-F-30xMK1	30	1	-	68	28	27	-
48-F-30xMK2	30	2	55	68	28	36	27
48-F-30xMK3	30	3	55	68	28	66	41
48-F-40xMK2	40	2	55	83	32.5	36	22
48-F-40xMK3	40	3	58	83	32.5	36	22
48-F-40xMK4	40	4	68	83	32.5	80	22
48-F-50xMK2	50	2	55	98	35	36	30
48-F-50xMK3	50	3	58	98	35	45	30
48-F-50xMK4	50	4	68	98	35	55	30
48-F-50xMK5	50	5	75	98	35	72	30
48-F-60xMK2	60	2	55	123	42.5	35	30
48-F-60xMK3	60	3	58	123	42.5	45	30
48-F-60xMK4	60	4	68	123	42.5	55	30
48-F-60xMK5	60	5	88	123	42.5	63	30

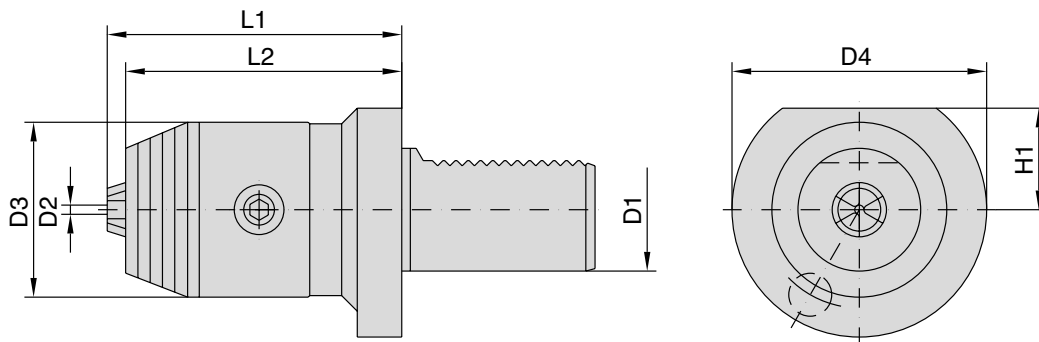
Precision Drill Chuck, external coolant supply



48-BE-...

Item No.	D1	D2 (clamping range)	D3	D4	H1	L1	L2
48-BE-16x8	16	0.5-8	40	40	18	63	60
48-BE-20x8	20	0.5-8	40	50	23	63	60
48-BE-20x13	20	1-13	57	57	-	88	82
48-BE-25x8	25	0.5-8	40	58	25	63	60
48-BE-30x8	30	0.5-8	40	68	28	63	60
48-BE-30x13	30	1-13	57	68	-	88	82
48-BE-30x16	30	3-16	57	68	-	93	82
48-BE-40x8	40	0.5-8	40	83	32.5	68	65
48-BE-40x13	40	1-13	57	83	32.5	91	85
48-BE-40x16	40	3-16	57	83	32.5	96	85
48-BE-50x13	50	1-13	57	98	35	91	85
48-BE-50x16	50	3-16	57	98	35	96	85
48-BE-60x16	60	3-16	57	123	42.5	103	92.5

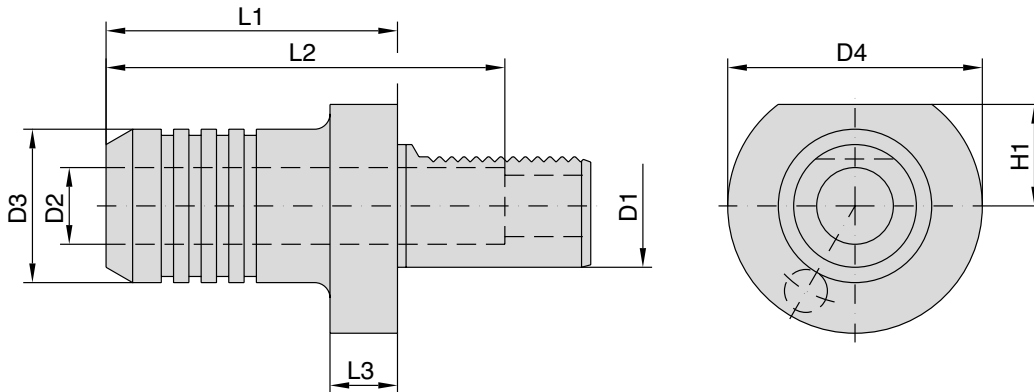
Precision Drill Chuck, internal coolant supply



48-BI-...

Item No.	D1	D2 (clamping range)	D3	D4	H1	L1	L2
48-BI-16x8	16	0.5-8	36	40	18	71	68
48-BI-20x8	20	0.5-8	36	50	23	71	68
48-BI-20x13	20	1-13	50	57	-	96	90
48-BI-25x8	25	0.5-8	36	58	25	71	68
48-BI-30x8	30	0.5-8	36	68	28	71	68
48-BI-30x13	30	1-13	50	68	28	96	90
48-BI-30x16	30	3-16	57	68	-	101	90
48-BI-40x8	40	0.5-8	36	83	32.5	71	68
48-BI-40x13	40	1-13	50	83	32.5	96	90
48-BI-40x16	40	3-16	57	83	32.5	101	90
48-BI-50x13	50	1-13	50	98	35	96	90
48-BI-50x16	50	3-16	57	98	35	101	90
48-BI-60x16	60	3-16	57	123	42.5	101	90

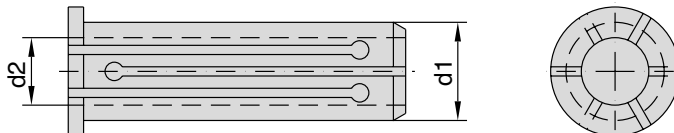
Hydraulic Chuck



48-HS-...

Item No.	D1	D2	D3	D4	H1	L1	L2	L3
48-HS-30x20	30	20	42	68	28	89	130	16
48-HS-30x25	30	25	50	68	28	94	95	16
48-HS-30x32	30	32	60	68	28	94	95	16
48-HS-40x20	40	20	42	83	32.5	95	130	22
48-HS-40x25	40	25	50	83	32.5	95	130	22
48-HS-40x32	40	32	60	83	32.5	95	95	17

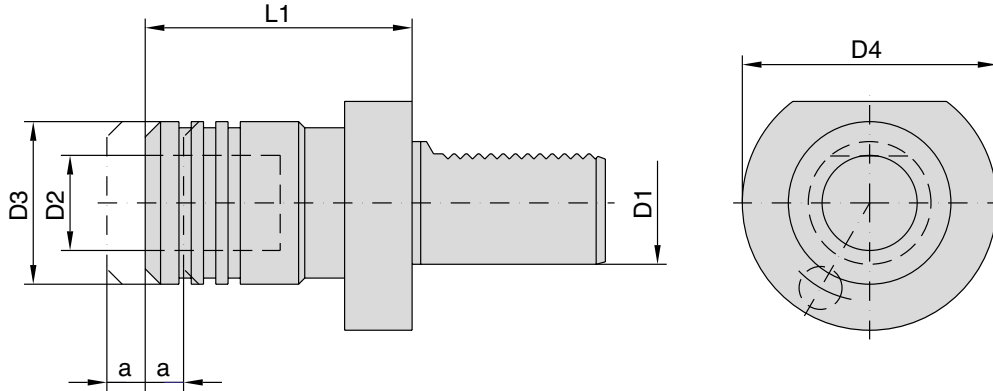
Reducing Sleeve for Hydraulic Chuck



2440...

Item No.	d1	d2
244020003	20	3
244020004	20	4
244020005	20	5
244020006	20	6
244020008	20	8
244020010	20	10
244020012	20	12
244020014	20	14
244020016	20	16
244032006	32	6
244032008	32	8
244032010	32	10
244032012	32	12
244032014	32	14
244032016	32	16
244032020	32	20
244032026	32	25

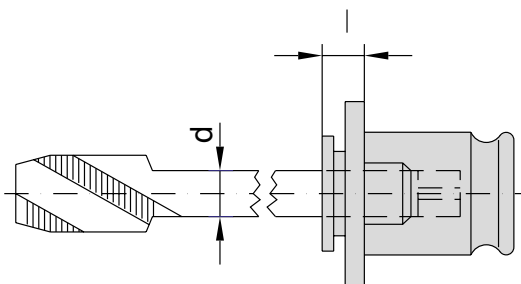
Quick Change Tapping Head



48-GS-... with tension and compression

Item No.	D1	D2 (clamping range)	D3	D4	L1	a	Corresponding Adaptor
48-GS-16x1	16	M3-M12	36	40	52	7.5	WE-1 (170012...)
48-GS-20x1	20	M3-M12	36	50	58	7.5	WE-1 (170012...)
48-GS-26x1	25	M3-M12	36	58	50	7.5	WE-1 (170012...)
48-GS-30x1	30	M3-M12	36	68	62.5	7.5	WE-1 (170012...)
48-GS-30x2	30	M8-M20	53	68	87	12.5	WE-2 (170020...)
48-GS-40x1	40	M3-M12	36	83	62.5	7.5	WE-1 (170012...)
48-GS-40x2	40	M6-M20	53	83	87	12.5	WE-2 (170020...)
48-GS-40x3	40	M14-M33	78	83	122	20	WE-3 (170033...)
48-GS-50x1	50	M3-M12	36	98	70.5	7.5	WE-1 (170012...)
48-GS-50x2	50	M6-M20	53	98	104	12.5	WE-2 (170020...)
48-GS-50x3	50	M14-M33	78	98	108	20	WE-3 (170033...)
48-GS-50x4	50	M22-M48	96	98	122	22.5	WE-4 (170048...)
48-GS-60x2	60	M6-M20	53	123	104	12.5	WE-2 (170020...)
48-GS-60x3	60	M14-M33	78	123	108	20	WE-3 (170033...)
48-GS-60x4	60	M22-M48	96	123	119	22.5	WE-4 (170048...)

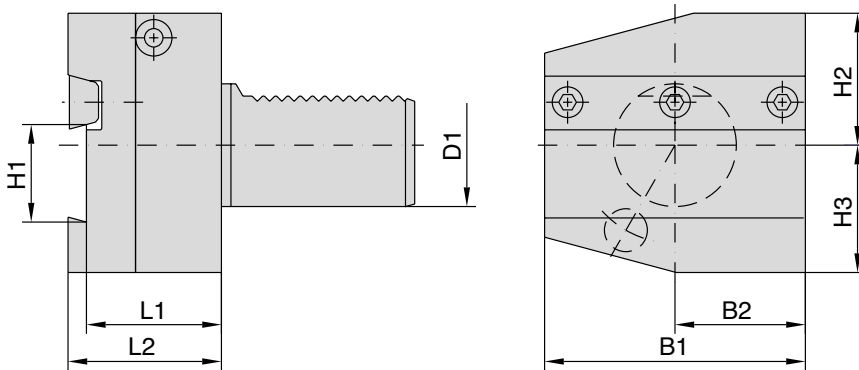
Adaptors for Quick Change Tapping Head



1700...

Item No.	Size	Range	Tap shank dia. ∅	l
170010...[d*10]	WE-0	M1-M10	2.5/2.8/3.5/4/4.5/5/5.5/6/7/8	7
170012...[d*10]	WE-1	M3-M12	2.8/3.5/4/4.5/5.5/6/7/8/9/10/11	7
170020...[d*10]	WE-2	M8-M20	7/8/9/10/11/12/14/16	11
170033...[d*10]	WE-3	M14-M33	11/12/14/16/18/20/22/25	14
170048...[d*10]	WE-4	M22-M48	18/20/22/25/28/32/36	42

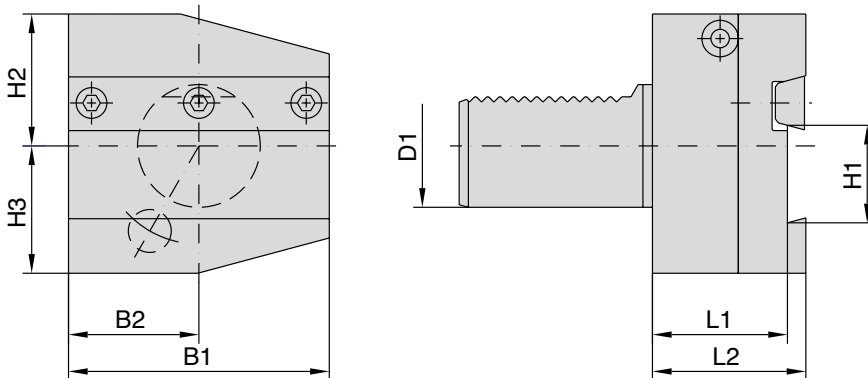
Cut-Off Holder, adjustable height, right hand



48-AR-...

Item No.	D1	H1	B1	B2	H2	H3	L1	L2
48-AR-25x26	25	26	60	30	28	36	44	50
48-AR-30x26	30	26	70	35	32	39	44	50
48-AR-40x26	40	26	85	42.5	43	41.5	44	50
48-AR-40x32	40	32	85	42.5	43	41.5	44	50
48-AR-50x26	50	26	100	50	43	45	44	50
48-AR-50x32	50	32	100	50	43	45	44	50
48-AR-60x32	60	32	125	62.5	48	55	44	50

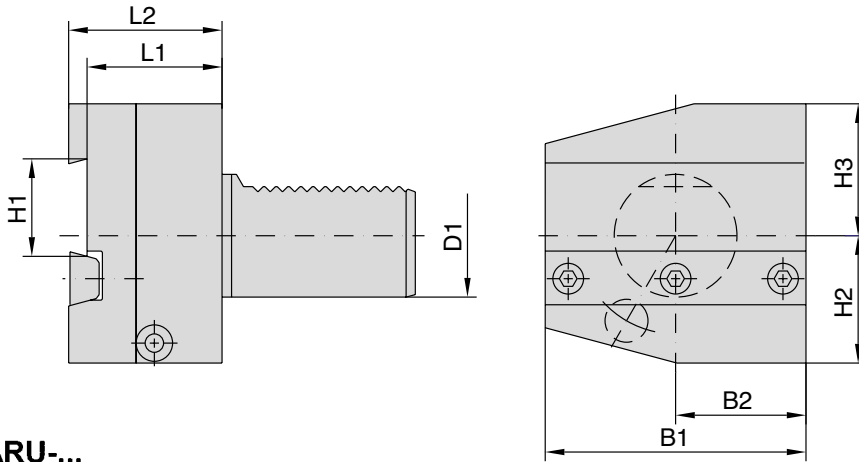
Cut-Off Holder, adjustable height, left hand



48-AL-...

Item No.	D1	H1	B1	B2	H2	H3	L1	L2
48-AL-25x26	25	26	60	30	28	36	44	50
48-AL-30x26	30	26	70	35	32	39	44	50
48-AL-40x26	40	26	85	42.5	43	41.5	44	50
48-AL-40x32	40	32	85	42.5	43	41.5	44	50
48-AL-50x26	50	26	100	50	43	45	44	50
48-AL-50x32	50	32	100	50	43	45	44	50
48-AL-60x32	60	32	125	62.5	48	55	44	50

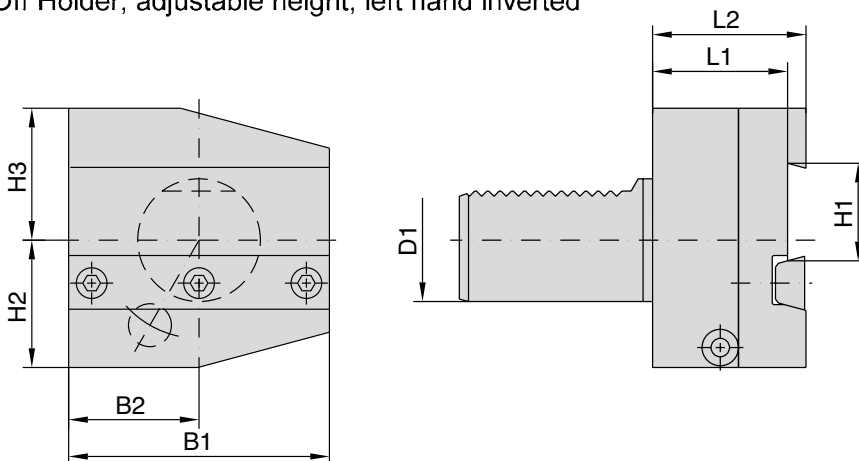
Cut-Off Holder, adjustable height, right hand inverted



48-ARU-...

Item No.	D1	H1	B1	B2	H2	H3	L1	L2
48-ARU-25x26	25	26	60	30	28	36	44	50
48-ARU-30x26	30	26	70	35	35	38	44	50
48-ARU-40x26	40	26	85	42.5	41.5	43	44	50
48-ARU-40x32	40	32	85	42.5	41.5	43	44	50
48-ARU-50x26	50	26	100	50	45	43	44	50
48-ARU-50x32	50	32	100	50	45	43	44	50
48-ARU-60x32	60	32	125	62.5	55	48	44	50

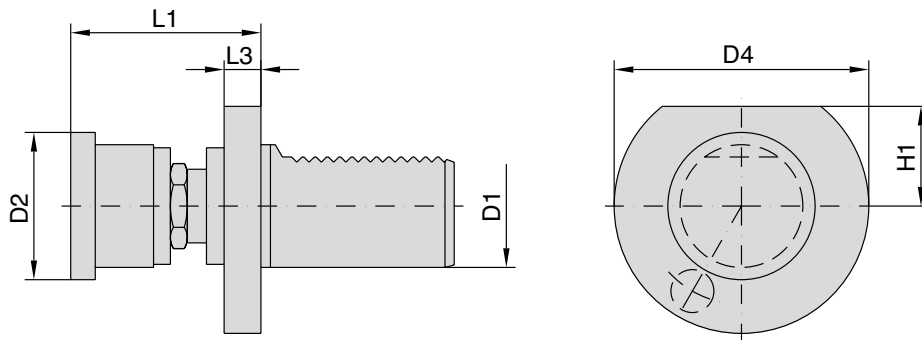
Cut-Off Holder, adjustable height, left hand inverted



48-ALU-...

Item No.	D1	H1	B1	B2	H2	H3	L1	L2
48-ALU-25x26	25	26	60	30	28	36	44	50
48-ALU-30x26	30	26	70	35	32	38	44	50
48-ALU-40x26	40	26	85	42.5	43	41.5	44	50
48-ALU-40x32	40	32	85	42.5	43	41.5	44	50
48-ALU-50x26	50	26	100	50	45	43	44	50
48-ALU-50x32	50	32	100	50	45	43	44	50
48-ALU-60x32	60	32	125	62.5	55	48	44	50

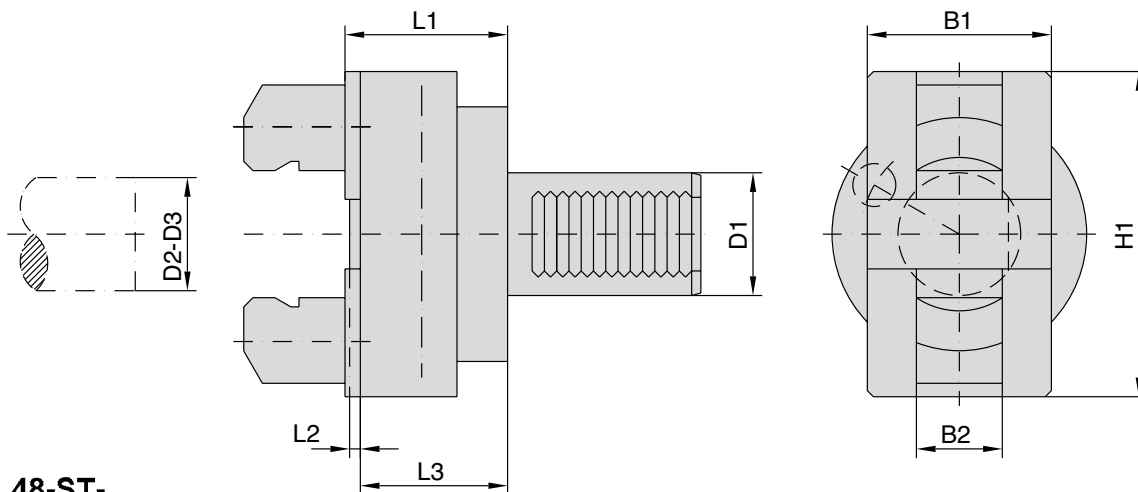
Rotating Bar Stop



48-WA-...

Item No.	D1	D2	D4	H1	L1	L3
48-WA-20x34	20	32	50	23	60-85	18
48-WA-20x42	20	42	50	23	60-85	18
48-WA-30x42	30	42	68	28	84-102	22
48-WA-30x56	30	58	68	28	84-102	22
48-WA-40x42	40	42	83	32.5	84-102	22
48-WA-40x56	40	58	83	32.5	84-102	22

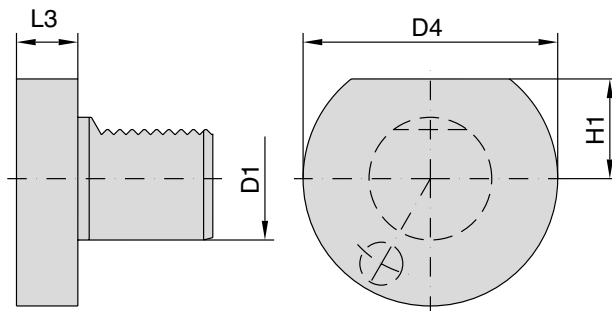
Bar Puller



48-ST-...

Item No.	D1	D2	D3	B1	B2	H1	L1	L2	L3
48-ST-20x66	20	6-56	54-110	50	28	72	51	4	46
48-ST-25x66	25	6-56	54-110	50	28	72	51	4	46
48-ST-30x66	30	6-56	54-110	50	28	72	51	4	46
48-ST-40x60	40	10-60	54-110	60	28	110	53	4	48
48-ST-60x75	50	10-75	62-125	65	28	130	73	5	67
48-ST-60x75	60	10-75	62-125	65	28	130	73	5	67

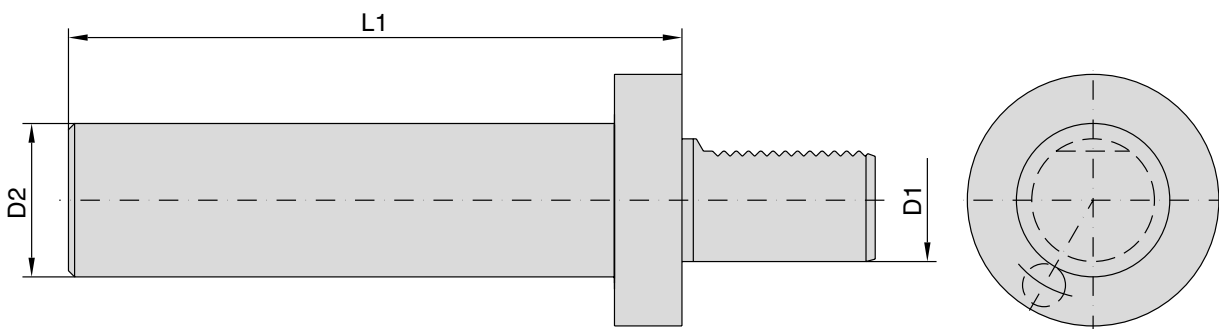
Plug, Form Z2



48-Z2-...

Item No.	D1	D4	H1	L3	Material
48-Z2-16-S/P	16	40	18	16	S=Steel / P=Plastic
48-Z2-20-S/P	20	50	23	16	S=Steel / P=Plastic
48-Z2-25-S	25	58	25	16	S=Steel
48-Z2-30-S/P	30	68	28	16	S=Steel / P=Plastic
48-Z2-40-S/P	40	83	32.5	20	S=Steel / P=Plastic
48-Z2-60-S/P	50	98	35	20	S=Steel / P=Plastic
48-Z2-60-S/P	60	123	42.5	20	S=Steel / P=Plastic

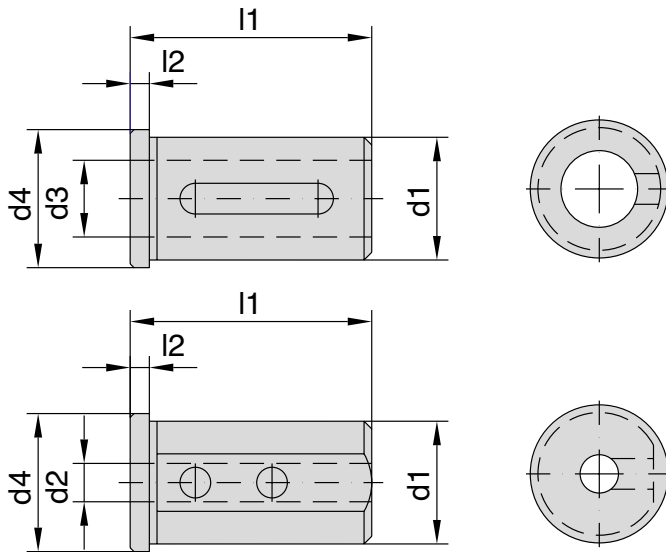
Test Bar



48-PD-...

Item No.	D1	D2	L1
48-PD-16x26	16	25	200
48-PD-20x30	20	30	220
48-PD-25x30	25	30	220
48-PD-30x40	30	40	230
48-PD-40x60	40	50	300
48-PD-60x60	50	50	300
48-PD-60x60	60	60	300

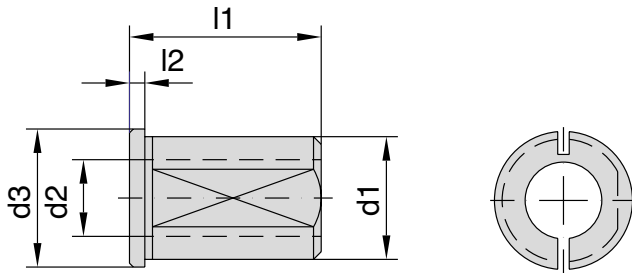
Bushings for Boring Bar Holders, internal and external coolant



2400...

Item No.	d1	d2	d3	d4	l1	l2
240026006	25	6	-	29	50	4
240026008	25	8	-	29	50	4
240026010	25	10	-	29	50	4
240026012	25	12	-	29	50	4
240026016	25	-	16	29	50	4
240026020	25	-	20	29	50	4
240032006	32	6	-	36	63	5
240032008	32	8	-	36	63	5
240032010	32	10	-	36	63	5
240032012	32	12	-	36	63	5
240032016	32	-	16	36	63	5
240032020	32	-	20	36	63	5
240032025	32	-	25	36	63	5
240040008	40	8	-	44	58	5
240040010	40	10	-	44	58	5
240040012	40	12	-	44	58	5
240040016	40	-	16	44	58	5
240040020	40	-	20	44	58	5
240040025	40	-	25	44	58	5
240040032	40	-	32	44	58	5
240060012	50	12	-	54	75	5
240060016	50	-	16	54	75	5
240060020	50	-	20	54	75	5
240060025	50	-	25	54	75	5
240060032	50	-	32	54	75	5
240060010	50	-	40	54	75	5

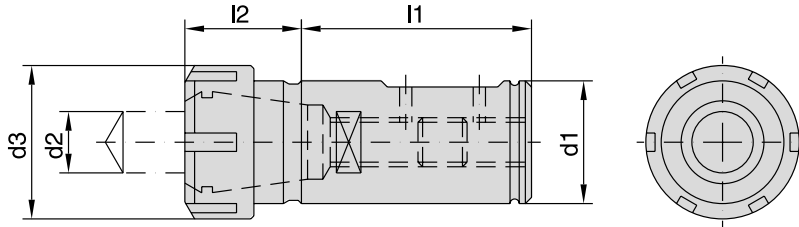
Bushings with slot for Boring Bar Holders



2401...

Item No.	d1	d2	d3	l1	L2
240120006	20	6	24	30	4
240120008	20	8	24	30	4
240120010	20	10	24	30	4
240120012	20	12	24	30	4
240120015	20	15	24	30	4
240120016	20	16	24	30	4
240125006	25	6	29	40	4
240125008	25	8	29	40	4
240125010	25	10	29	40	4
240125012	25	12	29	40	4
240125015	25	15	29	40	4
240125016	25	16	29	40	4
240125020	25	20	29	40	4
240130008	30	8	34	50	4
240130010	30	10	34	50	4
240130012	30	12	34	50	4
240130015	30	15	34	50	4
240130016	30	16	34	50	4
240130020	30	20	34	50	4
240130025	30	25	34	50	4
240132008	32	8	36	50	4
240132010	32	10	36	50	4
240132012	32	12	36	50	4
240132015	32	15	36	50	4
240132016	32	16	36	50	4
240132020	32	20	36	50	4
240132025	32	25	36	50	4
240140010	40	10	44	78	4
240140012	40	12	44	78	4
240140015	40	15	44	78	4
240140016	40	16	44	78	4
240140020	40	20	44	78	4
240140025	40	25	44	78	4
240140032	40	32	44	78	4
240150020	50	20	64	88	4
240150025	50	25	64	88	4
240150032	50	32	64	88	4
240150040	50	40	64	88	4

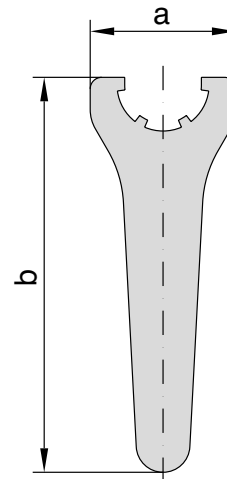
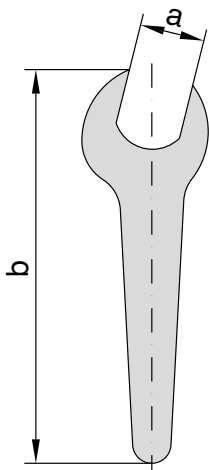
ER Collet Chuck with cylindrical shank



2410...

Item No.	d1	d2 (clamping range)	d3	l1	l2	Corresponding collet
241026016	25	1-16	42	40	31	ER-25 (190025...)
241032016	32	1-16	42	60	32	ER-25 (190025...)
241032020	32	2-20	50	60	38	ER-32 (190032...)
241040020	40	2-20	50	75	38	ER-32 (190032...)
241040026	40	3-26	63	75	55	ER-40 (190040...)

Wrenches for ER Collet Chuck

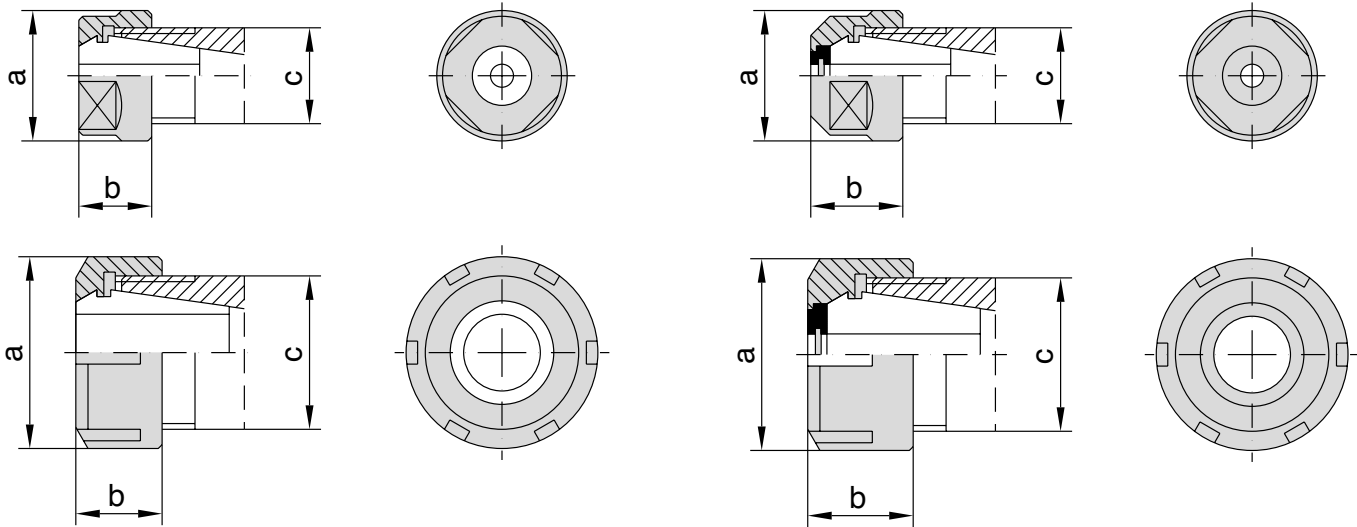


1075...

Item No.	Size	a	b
107511000	ER-11	17	95
107516000	ER-16	25	144
107520000	ER-20	30	172

Item No.	Size	a	b
107525000	ER-25	65	210
107532000	ER-32	75	250
107540000	ER-40	90	290
107550000	ER-50	110	350

Clamping Nuts for ER Collet Chuck



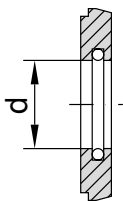
2000... for external coolant supply

Item No.	Size	a	b	c
200011000	ER-11	19	11.3	M14x0.75
200016000	ER-16	28	17.5	M22x1.5
200020000	ER-20	34	19	M25x1.5
200025000	ER-25	42	20	M32x1.5
200032000	ER-32	50	22.5	M40x1.5
200040000	ER-40	63	25.5	M50x1.5
200050000	ER-50	78	35.3	M64x2.0

2050... for internal coolant supply

Item No.	Size	a	b	c
205016000	ER-16	28	22.5	M22x1.5
205020000	ER-20	34	24	M25x1.5
205025000	ER-25	42	25	M32x1.5
205032000	ER-32	50	27.5	M40x1.5
205040000	ER-40	63	30.5	M50x1.5

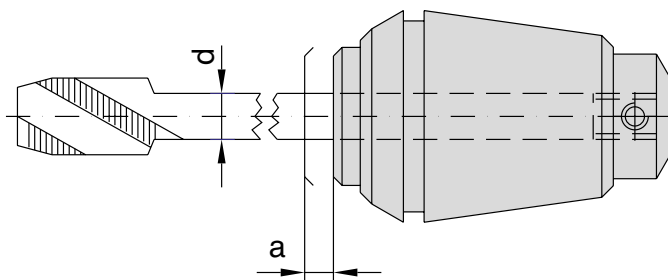
Sealing Washers for Clamping Nuts with internal coolant supply



2101...

Item No. unit	Item No. complete set	Size	d	Range per washer	Order Example
210116...[d*10]	210116000	ER-16	3.5-10	0.5	210116040 is suitable for shank dia. = 4-3.5
210120...[d*10]	210120000	ER-20	3.5-13	0.5	210120120 is suitable for shank dia. = 12-11.5
210125...[d*10]	210125000	ER-25	3.5-16	0.5	
210132...[d*10]	210132000	ER-32	3.5-20	0.5	
210140...[d*10]	210140000	ER-40	3.5-26	0.5	

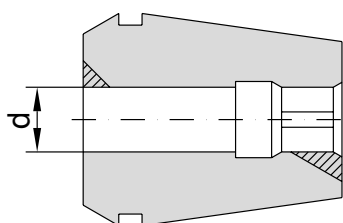
Tapping Collets, type ET-1, with tension



1800...

Item No.	Type	Size	Range	d Shank	a
180012...[d*10]	ET-1-12	ER-11	M1-M5	1.4/1.6/1.8/2.0/2.2/2.24/2.5/2.8/3.15/3.5/3.55	5.5
180016...[d*10]	ET-1-16	ER-16	M1-M8	1.4/1.6/1.8/2.0/2.2/2.24/2.5/2.8/3.15/3.5/3.55/4/4.5/5/5.5/6/6.2	7
180020...[d*10]	ET-1-20	ER-20	M1-M10	2.2/2.24/2.5/2.8/3.15/3.5/3.55/4/4.5/5/5.5/6/6.2/6.3/7	7
180026...[d*10]	ET-1-25	ER-25	M1-M10	2.5/2.8/3/3.15/3/3.5/3.55/4/4.5/5/5.5/6/6.2/6.3/7/7.10/8/8.5/9/10	8
180032...[d*10]	ET-1-32	ER-32	M4.5-M16	4.5/5/5.5/6/6.2/6.3/7/7.10/8/8.5/9/10/10.5/11/11.2/12/12.5	10
180040...[d*10]	ET-1-40	ER-40	M4.5-M22	6/6.2/6.3/7/7.10/8/8.5/9/10/10.5/11/11.2/12/12.5/14/15/16	13

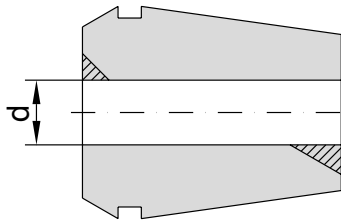
ER Tapping Collets, type ER-GB, for rigid tapping



1810...

Item No.	Type	Size	Range	d Shank
181016...[d*10]	ER-16-GB	ER-16	M3.5-M9	4/4.5/5/5.5/6/6.2/6.3/7/7.1/8/8.5/9
181020...[d*10]	ER-20-GB	ER-20	M3.5-M14	4/4.5/5/5.5/6/6.2/6.3/7/7.1/8/8.5/9/10/10.5/11/11.2/12/12.5/14/15/16
181026...[d*10]	ER-25-GB	ER-25	M3.5-M22	4/4.5/5/5.5/6/6.2/6.3/7/7.1/8/8.5/9/10/10.5/11/11.2/12/12.5/14/15/16
181032...[d*10]	ER-32-GB	ER-32	M3.5-M27	4/4.5/5/5.5/6/6.2/6.3/7/7.1/8/8.5/9/10/10.5/11/11.2/12/12.5/14/15/16/17/18/20
181040...[d*10]	ER-40-GB	ER-40	M4.5-M30	6/6.2/6.3/7/7.1/8/8.5/9/10/10.5/11/11.2/12/12.5/14/15/16/17/18/20/22

ER Collets (ER/ESX), High Precision

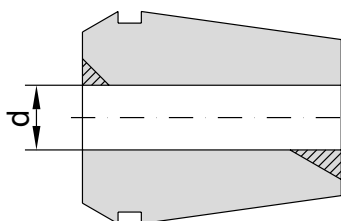


1900...

Item No. unit	Item No. complete set	Size	d	Range per collet	Run-out tolerance*	Order example
190011...[d*10]	190011000	ER-11	7-0.5	0.5	0.01	190011010 for shank dia. = 1-0.5
190016010		ER-16	1-0.5	0.5	0.01	
190016...[d*10]		ER-16	10-1	1	0.01	190016020 for shank dia. = 2-1
	190016000	ER-16	10-0.5	-	0.01	
190020...[d*10]	190020000	ER-20	13-1	1	0.01	190020020 for shank dia. = 2-1
190025...[d*10]	190025000	ER-25	16-1	1	0.01	190025020 for shank dia. = 2-1
190032...[d*10]	190032000	ER-32	20-2	1	0.01	190032030 for shank dia. = 3-2
190040...[d*10]	190040000	ER-40	26-3	1	0.01	190040040 for shank dia. = 4-3
190050...[d*10]	190050000	ER-50	34-10	2	0.015	190050120 for shank dia. = 12-10

*with test mandrel according DIN 6499

ER Collets DIN 6499B (ER-UP), Ultra Precision

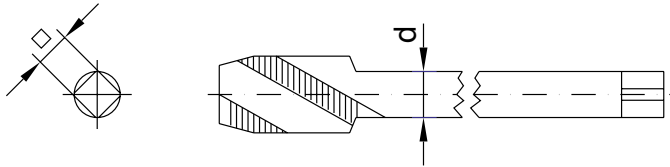


1901...

Item No. unit	Item No. complete set	Size	d	Range per collet	Run-out tolerance*	Order example
190111...[d*10]	190111000	ER-11	7-0.5	0.5	0.005	190111010 for shank dia. = 1-0.5
190116010		ER-16	1-0.5	0.5	0.005	
190116...[d*10]		ER-16	10-1	1	0.005	190116020 for shank dia. = 2-1
	190116000	ER-16	10-0.5	-	0.005	
190120...[d*10]	190120000	ER-20	13-1	1	0.005	190120020 for shank dia. = 2-1
190125...[d*10]	190125000	ER-25	16-1	1	0.005	190125020 for shank dia. = 2-1
190132...[d*10]	190132000	ER-32	20-2	1	0.005	190132030 for shank dia. = 3-2
190140...[d*10]	190140000	ER-40	26-3	1	0.005	190140040 for shank dia. = 4-3
190150...[d*10]	190150000	ER-50	34-10	2	0.01	190150120 for shank dia. = 12-10

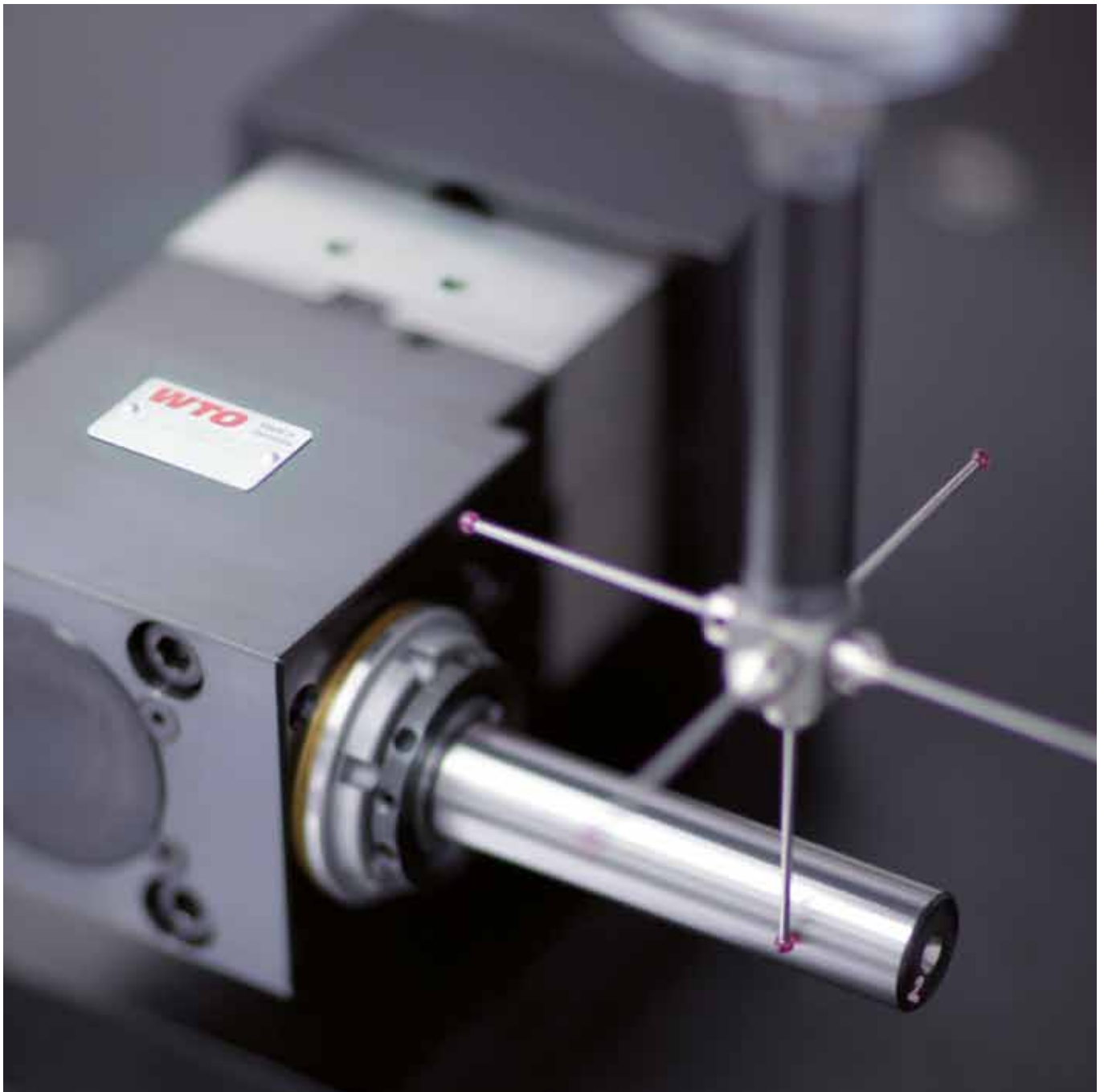
*with test mandrel according DIN 6499

Tap Shank Diameters



Thread		ISO 529		ISO 2283		DIN 371		DIN 357 / 376		DIN 352		Japan JIS		US Standard	
[mm]	[inch]	[dØ]	[.]	[dØ]	[.]	[dØ]	[.]	[dØ]	[.]	[dØ]	[.]	[dØ]	[.]	[dØ]"	[.]"
M 1.0		2.50	2.10	-	-	2.50	2.10	-	-	2.50	2.10	3.00	2.50	-	-
M 1.1		2.50	2.10	-	-	2.50	2.10	-	-	2.50	2.10	3.00	2.50	-	-
M 1.2		2.50	2.10	-	-	2.50	2.10	-	-	2.50	2.10	3.00	2.50	-	-
M 1.4		2.50	2.10	-	-	2.50	2.10	-	-	2.50	2.10	3.00	2.50	-	-
M 1.6	1/16	2.50	2.10	-	-	2.50	2.10	-	-	2.50	2.10	3.00	2.50	0.141	0.110
M 1.7		2.50	2.10	-	-	2.50	2.10	-	-	2.50	2.10	3.00	2.50	-	-
M 1.8		2.50	2.10	-	-	2.50	2.10	-	-	2.50	2.10	3.00	2.50	0.141	0.110
M 2.0		2.80	2.10	2.50	2.00	2.50	2.10	-	-	2.80	2.10	3.00	2.50	0.141	0.110
M 2.2		2.80	2.10	2.80	2.24	2.50	2.10	-	-	2.80	2.10	3.00	2.50	0.141	0.110
M 2.3		2.80	2.10	2.80	2.24	2.50	2.10	-	-	2.80	2.10	3.00	2.50	-	-
M 2.5	3/32	2.80	2.10	2.80	2.24	2.50	2.10	-	-	2.80	2.10	3.00	2.50	0.141	0.110
M 2.6		2.80	2.10	2.80	2.24	2.50	2.10	-	-	2.80	2.10	3.00	2.50	-	-
M 3.0	1/18	3.15	2.50	3.15	2.50	3.50	2.70	3.00	-	3.50	2.70	4.00	3.00	0.141	0.110
M 3.5		3.55	2.80	3.55	2.80	4.00	3.00	2.50	2.10	4.00	3.00	4.00	3.00	0.141	0.110
M 4.0	5/32	4.00	3.15	-	-	4.50	3.40	2.80	2.10	4.50	3.40	5.00	4.00	0.168	0.131
M 4.5	3/16	4.50	3.55	-	-	6.00	4.90	3.50	2.70	6.00	4.90	5.00	4.00	0.194	0.152
M 5.0		5.00	4.00	-	-	6.00	4.90	3.50	2.70	6.00	4.90	5.50	4.50	0.194	0.152
M 6.0	1/4	6.30	5.00	-	-	6.00	4.90	4.50	3.40	6.00	4.90	6.00	4.50	0.255	0.191
M 7.0	5/16	7.10	5.60	-	-	7.00	5.50	5.50	4.30	6.00	4.90	6.20	5.00	0.318	0.238
M 8.0		8.00	6.30	-	-	8.00	6.20	6.00	4.90	6.00	4.90	6.20	5.00	0.318	0.238
M 9.0		9.00	7.10	-	-	9.00	7.00	7.00	5.50	7.00	5.50	7.00	5.50	0.381	0.286
M 10.0	3/8	10.00	8.00	-	-	10.00	8.00	7.00	5.50	7.00	5.50	7.00	5.50	0.381	0.286
M 11.0		8.00	6.30	-	-	-	-	8.00	6.20	8.00	6.20	8.00	6.20	0.381	0.286
M 12.0	1/2	9.00	7.10	9.00	-	-	-	9.00	7.00	9.00	7.00	8.50	6.50	0.367	0.275
M 14.0	9/16	11.20	9.00	11.20	-	-	-	11.00	9.00	11.00	9.00	10.50	8.00	0.429	0.322
M 16.0	5/8	12.50	10.00	12.50	-	-	-	12.00	9.00	12.00	9.00	12.50	10.00	0.480	0.360
M 18.0	11/16	14.00	11.20	14.00	-	-	-	14.00	11.00	14.00	11.00	14.00	11.00	0.542	0.406
M 20.0	13/16	14.00	11.20	14.00	-	-	-	16.00	12.00	16.00	12.00	15.00	12.00	0.652	0.489
M 22.0	7/8	16.00	12.50	16.00	-	-	-	18.00	14.50	18.00	14.50	17.00	13.00	0.697	0.523
M 24.0	15/16	18.00	14.00	18.00	-	-	-	18.00	14.50	18.00	14.50	19.00	15.00	0.760	0.570
M 27.0	1 1/16	20.00	16.00	20.00	-	-	-	20.00	16.00	20.00	16.00	20.00	15.00	0.896	0.672
M 30.0	1 3/16	20.00	16.00	20.00	-	-	-	22.00	18.00	22.00	18.00	23.00	23.17	1.021	0.766

All sizes in mm (except US Standard in inch)



Quality without compromise.

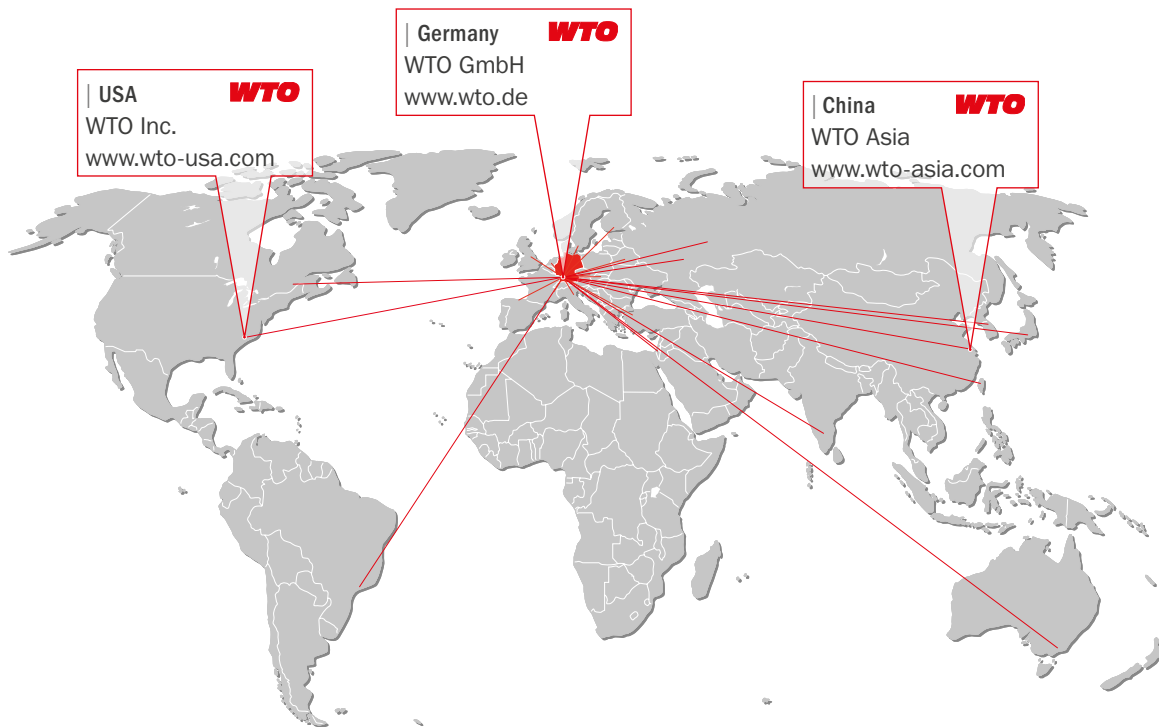
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