

STÜWE®

INTERNAL LOCKING UNIT TYPE IS



INTERNAL LOCKING UNIT TYPE IS – GENERAL INFORMATION

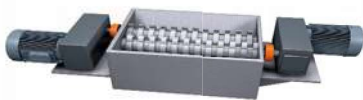
Application Description

Internal locking units are examples of shaft-hub connections. They achieve a frictional and backlash-free connection between a shaft and a hub hole. Due to the locking unit which grips from the inside no additional installation space is taken up by external components outside the hub and slim design is thus permitted. Each type offers the following benefits as a result: It has self-locking taper angles, is self-centring and thus achieves an increase in concentricity through pre-centring.

Areas of Use



Driveline
technology



Crushing
equipment



Steel- &
rolling mill equipment



Agitation &
mixing equipment

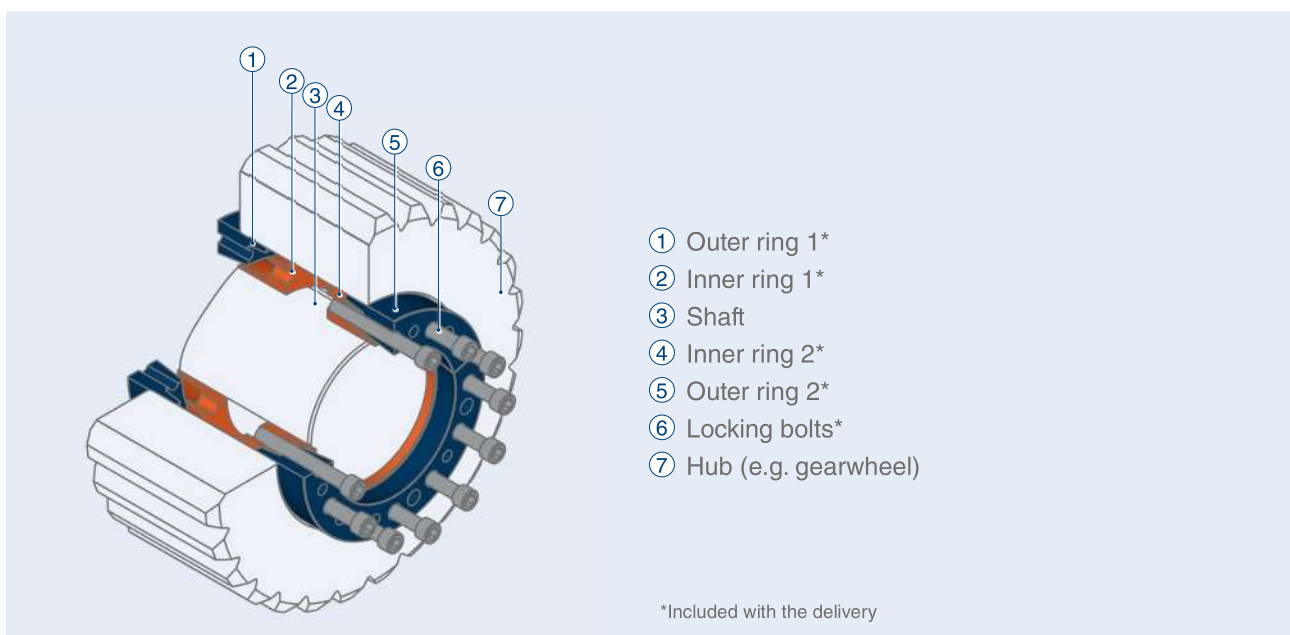


Conveying
equipment

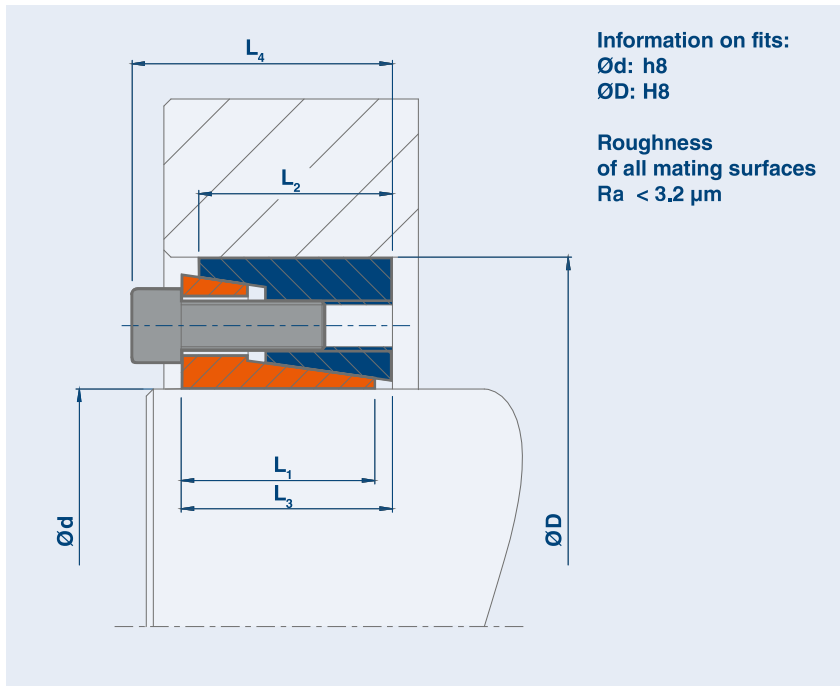
INTERNAL LOCKING UNIT TYPE IS – SERIES

Description	Shaft diameter	Transmissible torques*	Features
IS1	20 - 500 mm	0.3 - 880 kNm	Small installation space Sliding of the hub when tensioning
ISN1	20 - 500 mm	0.3 - 723 kNm	Axial fixing No sliding of the hub when tensioning
IS2	70 - 600 mm	7.3 - 1258.5 kNm	For high torques, no sliding of the hub when tensioning
IS3	45 - 600 mm	3.1 - 1458.6 kNm	For extremely high torques, no sliding of the hub when tensioning
IS4	70 - 600 mm	0.9 - 1266 kNm	For high torques, no sliding of the hub when tensioning
IS4.1	100 - 600 mm	11 - 903 kNm	Reduced surface pressure Especially suited for conveyor pulleys No sliding of the hub when tensioning

*all torques are based on an assumed coefficient of friction of 0.12



STÜWE® Internal locking unit Type IS – Series IS 1



Code

- M_t Maximum transmissible torque of a locking unit for $P_{ax} = 0$
- P_{ax} Maximum transmissible axial load of a locking unit for $M_t = 0$
- M_a Required tightening torque of the locking bolts
- P_w Surface pressure between locking unit and shaft
- P_n Surface pressure between locking unit and hub

Dimensions L_3 and L_4 apply to untightened units.

Internal locking unit Type IS – Series IS 1

Type	d	x	D	M_t kNm	P_{ax} kN	L_1 mm	L_2 mm	L_3 mm	L_4 mm	B* Grade 12.9	M_a Nm	P_w N/mm ²	P_n	kg
IS1	20	x	47	0.3	34	20	17	23	29	5 x M6	17	242	121	0.2
IS1	22	x	47	0.4	34	20	17	23	29	5 x M6	17	220	121	0.2
IS1	24	x	50	0.4	34	20	17	23	29	5 x M6	17	202	114	0.2
IS1	25	x	50	0.4	34	20	17	23	29	5 x M6	17	194	114	0.2
IS1	28	x	55	0.6	43	20	17	23	29	6 x M6	17	208	124	0.3
IS1	30	x	55	0.6	43	20	17	23	29	6 x M6	17	194	124	0.3
IS1	35	x	60	0.9	51	20	17	23	29	7 x M6	17	194	133	0.3
IS1	40	x	65	1.0	51	20	17	23	29	8 x M6	17	194	140	0.3
IS1	45	x	75	1.8	80	24	20	28	36	6 x M8	41	198	142	0.6
IS1	50	x	80	2.3	92	24	20	28	36	7 x M8	41	208	156	0.6
IS1	55	x	85	2.9	105	24	20	28	36	8 x M8	41	216	167	0.7
IS1	60	x	90	3.2	107	24	20	28	36	8 x M8	41	198	158	0.7
IS1	65	x	95	3.8	117	24	20	28	36	9 x M8	41	205	169	0.8
IS1	70	x	110	6.0	171	29	24	35	45	8 x M10	83	223	172	1.3
IS1	75	x	115	6.4	171	29	24	35	45	8 x M10	83	208	164	1.4
IS1	80	x	120	6.8	170	29	24	35	45	8 x M10	83	195	157	1.5
IS1	85	x	125	8.1	191	29	24	35	45	9 x M10	83	207	170	1.6
IS1	90	x	130	9.6	213	29	24	35	45	10 x M10	83	217	181	1.7
IS1	95	x	135	10.1	213	29	24	35	45	10 x M10	83	206	175	1.7
IS1	100	x	145	11.2	224	33	28	38	50	8 x M12	145	200	163	2.3
IS1	110	x	155	13.9	252	33	28	39	51	9 x M12	145	205	171	2.5

*Locking bolts DIN EN ISO 4762: Grade 12.9

When ordering please state: (Type x Ød x ØD) e.g. IS 1 100 x 145

Internal locking unit Type IS – Series IS 1

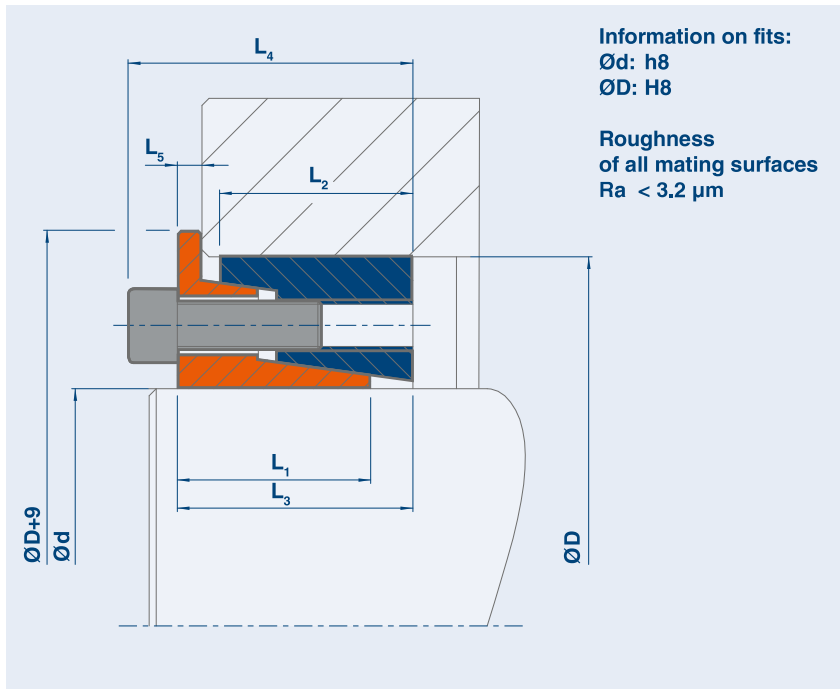
Type	d	x	D	M _t kNm	P _{ax} kN	L ₁ mm	L ₂ mm	L ₃ mm	L ₄ mm	B* Grade 12.9	M _a Nm	P _w N/mm ²	P _n	kg
IS1	120	x	165	16.8	280	33	28	39	51	10 x M12	145	209	179	2.8
IS1	130	x	180	23.1	355	38	33	43	55	12 x M12	145	201	167	4.0
IS1	140	x	190	23.5	336	38	33	43	55	12 x M12	145	186	158	4.1
IS1	150	x	200	30.4	406	38	33	43	55	14 x M12	145	203	175	4.2
IS1	160	x	210	34.8	435	38	33	43	55	15 x M12	145	204	179	4.5
IS1	170	x	225	41.5	488	43	38	49	63	12 x M14	230	186	159	6.0
IS1	180	x	235	51.2	569	43	38	50	64	14 x M14	230	205	178	6.3
IS1	190	x	250	61.1	643	51	46	58	72	16 x M14	230	187	158	8.5
IS1	200	x	260	71.6	716	51	46	57	71	18 x M14	230	200	171	9.3
IS1	220	x	285	99.5	905	55	50	62	78	16 x M16	355	207	175	12
IS1	240	x	305	108.0	900	55	50	62	78	16 x M16	355	189	164	13
IS1	260	x	325	129.5	996	55	50	62	78	18 x M16	355	197	173	15
IS1	280	x	355	169.7	1212	65	60	73	91	18 x M18	485	188	161	20
IS1	300	x	375	199.8	1332	65	60	73	91	20 x M18	485	195	169	22
IS1	320	x	405	274.5	1716	77	72	86	106	18 x M20	690	198	167	31
IS1	340	x	425	289.8	1705	77	72	88	108	20 x M20	690	187	160	33
IS1	360	x	455	384.7	2137	89	84	100	122	20 x M22	930	190	159	44
IS1	380	x	475	430.0	2263	89	84	99	121	21 x M22	930	189	160	46
IS1	400	x	495	449.7	2249	89	84	99	121	21 x M22	930	180	154	48
IS1	420	x	515	545.5	2597	89	84	100	122	24 x M22	930	196	169	51
IS1	440	x	545	659.9	3000	101	96	114	138	24 x M24	1200	190	161	66
IS1	460	x	565	689.9	3000	101	96	113	137	24 x M24	1200	182	156	69
IS1	480	x	585	719.9	3000	101	96	114	138	24 x M24	1200	174	150	71
IS1	500	x	605	880.4	3522	101	96	113	137	28 x M24	1200	195	170	75

Further sizes on request, subject to technical changes.

*Locking bolts DIN EN ISO 4762: Grade 12.9

When ordering please state: (Type x Ød x ØD) e.g. IS 1 200 x 260

STÜWE® Internal locking unit Type IS – Series ISN 1



Code

- M_t Maximum transmissible torque of a locking unit for $P_{ax} = 0$
- P_{ax} Maximum transmissible axial load of a locking unit for $M_t = 0$
- M_a Required tightening torque of the locking bolts
- P_w Surface pressure between locking unit and shaft
- P_n Surface pressure between locking unit and hub

Dimensions L_3 and L_4 apply to untightened units.

Internal locking unit Type IS – Series ISN 1

Type	d	x	D	M_t kNm	P_{ax} kN	L_1 mm	L_2 mm	L_3 mm	L_4 mm	L_5 mm	B* Grade 12.9	M_a Nm	P_w N/mm ²	P_n	kg
ISN 1	20	x	47	0.3	28	20	17	23	29	3	6 x M6	17	185	93	0.2
ISN 1	22	x	47	0.3	28	20	17	23	29	3	6 x M6	17	168	93	0.2
ISN 1	24	x	50	0.3	28	20	17	23	29	3	6 x M6	17	154	87	0.3
ISN 1	25	x	50	0.3	28	20	17	23	29	3	6 x M6	17	148	87	0.3
ISN 1	28	x	55	0.5	37	20	17	23	29	3	8 x M6	17	176	105	0.3
ISN 1	30	x	55	0.6	37	20	17	23	29	3	8 x M6	17	164	105	0.3
ISN 1	35	x	60	0.7	42	20	17	23	29	3	9 x M6	17	158	109	0.3
ISN 1	40	x	65	0.9	46	20	17	23	29	3	10 x M6	17	154	112	0.4
ISN 1	45	x	75	1.6	69	24	20	28	36	4	8 x M8	41	168	121	0.6
ISN 1	50	x	80	2.0	80	24	20	28	36	4	9 x M8	41	170	127	0.7
ISN 1	55	x	85	2.4	87	24	20	28	36	4	10 x M8	41	171	133	0.7
ISN 1	60	x	90	2.6	87	24	20	28	36	4	10 x M8	41	157	126	0.8
ISN 1	65	x	95	3.4	105	24	20	28	36	4	12 x M8	41	174	143	0.8
ISN 1	70	x	110	4.8	137	29	24	35	45	5	10 x M10	83	177	136	1.4
ISN 1	75	x	115	5.1	137	29	24	35	45	5	10 x M10	83	166	130	1.4
ISN 1	80	x	120	6.1	151	29	24	34	44	5	10 x M10	83	171	138	1.5
ISN 1	85	x	125	7.0	165	29	24	35	45	5	12 x M10	83	175	144	1.7
ISN 1	90	x	130	7.4	165	29	24	34	44	5	12 x M10	83	166	138	1.8
ISN 1	95	x	135	8.0	163	29	24	35	45	5	12 x M10	83	157	133	1.9
ISN 1	100	x	145	10	196	33	28	39	51	5	11 x M12	145	175	142	2.5
ISN 1	110	x	155	11	196	33	28	39	51	5	11 x M12	145	159	133	2.7

*Locking bolts DIN EN ISO 4762: Grade 12.9

When ordering please state: (Type x $\varnothing d$ x $\varnothing D$) e.g. ISN 1 110 x 155

Internal locking unit Type IS – Series ISN 1

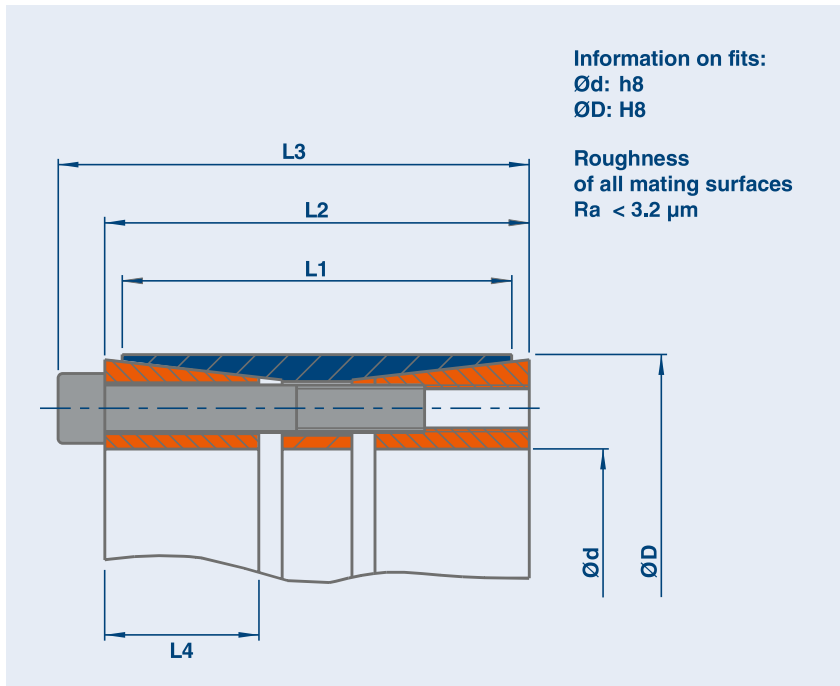
Type	d	x	D	M _t kNm	P _{ax} kN	L ₁ mm	L ₂ mm	L ₃ mm	L ₄ mm	L ₅ mm	B* Grade 12.9	M _a Nm	P _w N/mm ²	P _n	kg
ISN 1	120	x	165	16	264	33	28	39	51	5	12 x M12	145	186	159	2.9
ISN 1	130	x	180	20	301	38	33	43	55	5	16 x M12	145	170	142	3.9
ISN 1	140	x	190	21	301	38	33	43	55	5	16 x M12	145	158	134	4.2
ISN 1	150	x	200	25	332	38	33	43	55	5	18 x M12	145	166	143	4.4
ISN 1	160	x	210	27	339	38	33	43	55	5	18 x M12	145	156	137	4.7
ISN 1	170	x	225	35	414	44	38	50	64	6	16 x M14	230	158	135	6.0
ISN 1	180	x	235	42	465	44	38	50	64	6	18 x M14	230	168	145	6.6
ISN 1	190	x	250	51	537	52	46	58	72	6	21 x M14	230	156	132	9.0
ISN 1	200	x	260	62	620	52	46	58	72	6	24 x M14	230	170	145	9.1
ISN 1	220	x	285	79	719	57	50	64	80	7	21 x M16	355	164	139	12
ISN 1	240	x	305	92	763	57	50	64	80	7	21 x M16	355	158	137	13
ISN 1	260	x	325	112	863	57	50	64	80	7	24 x M16	355	167	147	14
ISN 1	280	x	355	145	1039	70	60	78	96	10	24 x M18	485	159	136	21
ISN 1	300	x	375	175	1168	72	60	80	91	12	24 x M18	485	167	145	23
ISN 1	320	x	405	242	1510	87	72	95	105	15	24 x M20	690	170	144	32
ISN 1	340	x	425	257	1510	87	72	96	106	15	24 x M20	690	160	137	35
ISN 1	360	x	455	338	1879	99	84	110	122	15	24 x M22	930	156	130	47
ISN 1	380	x	475	357	1879	99	84	110	122	15	24 x M22	930	147	125	46
ISN 1	400	x	495	438	2192	99	84	110	122	15	28 x M22	930	163	140	48
ISN 1	420	x	515	493	2349	99	84	110	122	15	30 x M22	930	167	144	51
ISN 1	440	x	545	566	2573	111	96	123	137	15	30 x M24	1200	161	137	67
ISN 1	460	x	565	592	2573	111	96	123	137	15	33 x M24	1200	154	132	70
ISN 1	480	x	585	617	2571	111	96	123	137	15	33 x M24	1200	148	128	73
ISN 1	500	x	605	723	2892	111	96	123	137	15	36 x M24	1200	160	139	80

Further sizes on request, subject to technical changes.

*Locking bolts DIN EN ISO 4762: Grade 12.9

When ordering please state: (Type x Ød x ØD) e.g. ISN 1 200 x 260

STÜWE® Internal locking unit Type IS – Series IS 2



Code

- M_t Maximum transmissible torque of a locking unit for $P_{ax} = 0$
- P_{ax} Maximum transmissible axial load of a locking unit for $M_t = 0$
- M_a Required tightening torque of the locking bolts
- P_w Surface pressure between locking unit and shaft
- P_n Surface pressure between locking unit and hub

Dimensions L_2 and L_3 apply to untightened units.

Internal locking unit Type IS – Series IS 2

Type	d x D	M_t kNm	P_{ax} kN	L_1 mm	L_2 mm	L_3 mm	L_4 mm	B* Grade 12.9	M_a Nm	P_w N/mm ²	P_n	kg
IS 2	70 x 110	7.3	208	50	60	70	21	8 x M10	83	187	100	2.2
IS 2	80 x 120	10.6	264	50	60	70	21	9 x M10	83	209	117	2.5
IS 2	85 x 125	11.0	260	50	60	70	21	10 x M10	83	193	110	2.6
IS 2	90 x 130	11.7	260	50	60	70	21	10 x M10	83	182	106	2.7
IS 2	95 x 135	12.3	260	50	60	70	21	10 x M10	83	173	102	2.8
IS 2	100 x 145	19.0	379	60	70	82	25	10 x M12	145	201	116	4.1
IS 2	110 x 155	20.9	379	60	70	82	25	10 x M12	145	183	108	4.4
IS 2	120 x 165	25.0	417	60	70	82	25	11 x M12	145	184	112	4.7
IS 2	130 x 180	29.6	455	65	79	91	27	12 x M12	145	172	103	6.2
IS 2	140 x 190	36.0	514	65	79	91	27	12 x M12	145	180	110	6.6
IS 2	150 x 200	39.8	531	65	79	91	27	14 x M12	145	174	108	7.0
IS 2	160 x 210	42.5	531	65	79	91	27	14 x M12	145	163	103	7.4
IS 2	170 x 225	61.6	725	78	92	106	32	14 x M14	230	177	110	10.4
IS 2	180 x 235	65.2	725	78	92	106	32	14 x M14	230	167	105	10.9
IS 2	190 x 250	78.7	828	88	102	116	36	16 x M14	230	161	100	14.3
IS 2	200 x 260	93.7	937	88	102	116	36	16 x M14	230	173	109	14.9
IS 2	220 x 285	118.3	1075	96	108	124	40	15 x M16	355	162	104	19.4
IS 2	240 x 305	137.6	1147	96	108	124	40	16 x M16	355	158	104	20.9
IS 2	260 x 325	167.7	1290	96	108	124	40	18 x M16	355	165	110	22.4
IS 2	280 x 355	219.6	1569	96	110	130	40	14 x M20	690	186	122	28.1
IS 2	300 x 375	252.1	1681	96	110	130	40	15 x M20	690	186	124	29.8

Further sizes on request, subject to technical changes.

*Locking bolts to DIN EN ISO 4762; grade 12.9

When ordering please state: (Type x Ød x ØD) e.g. IS 2 x 500 x 595

Internal locking unit Type IS – Series IS 2

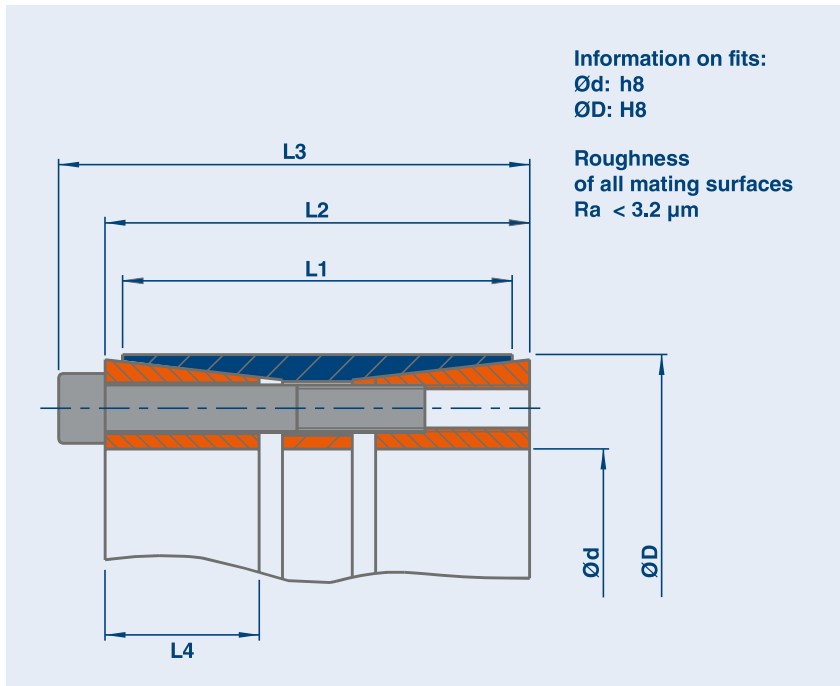
Type	d x D	M _t kNm	P _{ax} kN	L ₁ mm	L ₂ mm	L ₃ mm	L ₄ mm	B* Grade 12.9	M _a Nm	P _w N/mm ²	P _n	kg
IS 2	320 x 405	322.7	2017	124	136	156	52	18 x M20	690	161	107	46.9
IS 2	340 x 425	361.9	2129	124	136	156	52	19 x M20	690	160	107	49.5
IS 2	360 x 455	453.0	2517	140	155	177	58	18 x M22	930	160	105	66.7
IS 2	380 x 475	504.8	2657	140	155	177	58	19 x M22	930	160	106	69.8
IS 2	400 x 495	559.3	2797	140	155	177	58	20 x M22	930	160	107	73.1
IS 2	420 x 515	616.6	2936	140	155	177	58	21 x M22	930	160	108	76.4
IS 2	440 x 535	676.8	3076	140	155	177	58	22 x M22	930	160	109	79.6
IS 2	460 x 555	739.7	3216	140	155	177	58	23 x M22	930	160	110	82.9
IS 2	480 x 575	805.4	3356	140	155	177	58	24 x M22	930	160	111	86.2
IS 2	500 x 595	873.9	3496	140	155	177	58	25 x M22	930	160	111	89.4
IS 2	520 x 615	945.2	3636	140	155	177	58	26 x M22	930	160	112	92.7
IS 2	540 x 635	1019.4	3775	140	155	177	58	27 x M22	930	160	113	96.0
IS 2	560 x 655	1096.3	3915	140	155	177	58	28 x M22	930	160	113	99.2
IS 2	580 x 675	1176.0	4055	140	155	177	58	29 x M22	930	160	114	102.5
IS 2	600 x 695	1258.5	4195	140	155	177	58	30 x M22	930	160	114	105.8

Further sizes on request, subject to technical changes.

*Locking bolts to DIN EN ISO 4762; grade 12.9

When ordering please state: (Type x Ød x ØD) e.g. IS 2 x 500 x 595

STÜWE® Internal locking unit Type IS – Series IS 3



Code

- M_t** Maximum transmissible torque of a locking unit for $P_{ax} = 0$
- P_{ax}** Maximum transmissible axial load of a locking unit for $M_t = 0$
- M_a** Required tightening torque of the locking bolts
- P_w** Surface pressure between locking unit and shaft
- P_n** Surface pressure between locking unit and hub

Dimensions L_2 and L_3 apply to untightened units.

Internal locking unit Type IS – Series IS 3

Type	d x D	M_t kNm	P_{ax} kN	L_1 mm	L_2 mm	L_3 mm	L_4 mm	B* Grade 12.9	M_a Nm	P_w N/mm ²	P_n	kg
IS 3	45 x 75	3.1	139	56	64	72	23	7 x M8	41	179	88	1.2
IS 3	50 x 80	3.9	155	56	64	72	23	8 x M8	41	179	92	1.3
IS 3	55 x 85	4.8	175	56	64	72	23	9 x M8	41	183	97	1.4
IS 3	60 x 90	5.8	194	56	64	72	23	9 x M8	41	187	102	1.5
IS 3	65 x 95	6.3	194	56	65	72	23	9 x M8	41	173	97	1.7
IS 3	70 x 110	10.8	309	70	78	88	30	9 x M10	83	195	107	3.1
IS 3	75 x 115	10.4	278	70	78	88	30	9 x M10	83	164	92	3.3
IS 3	80 x 120	12.4	309	70	78	88	30	10 x M10	83	171	98	3.4
IS 3	85 x 125	13.1	309	70	78	88	30	10 x M10	83	161	94	3.6
IS 3	90 x 130	15.3	340	70	82	92	30	11 x M10	83	167	99	3.8
IS 3	95 x 135	16.1	340	70	82	92	30	12 x M10	83	158	95	4.0
IS 3	100 x 145	22.5	451	90	100	112	36	10 x M12	145	166	92	6.1
IS 3	110 x 155	27.3	496	90	100	112	36	11 x M12	145	166	94	6.6
IS 3	120 x 165	32.4	541	90	100	112	36	12 x M12	145	166	97	7.1
IS 3	130 x 180	44.0	677	104	116	130	43	12 x M14	230	164	96	9.9
IS 3	140 x 190	54.5	778	104	116	130	42	12 x M14	230	176	104	10.5
IS 3	150 x 200	55.4	739	104	116	130	42	12 x M14	230	155	94	11.2
IS 3	160 x 210	67.5	843	104	116	130	42	13 x M14	230	166	102	11.8
IS 3	170 x 225	91.6	1077	134	146	162	53	12 x M16	355	159	95	17.9
IS 3	180 x 235	100.7	1119	134	146	162	55	13 x M16	355	156	94	18.8
IS 3	190 x 250	113.3	1193	134	146	162	55	14 x M16	355	157	94	21.7

Further sizes on request, subject to technical changes.

*Locking bolts to DIN EN ISO 4762; grade 12.9

When ordering please state: (Type x Ød x ØD) e.g. IS 3 x 500 x 595

Internal locking unit Type IS – Series IS 3

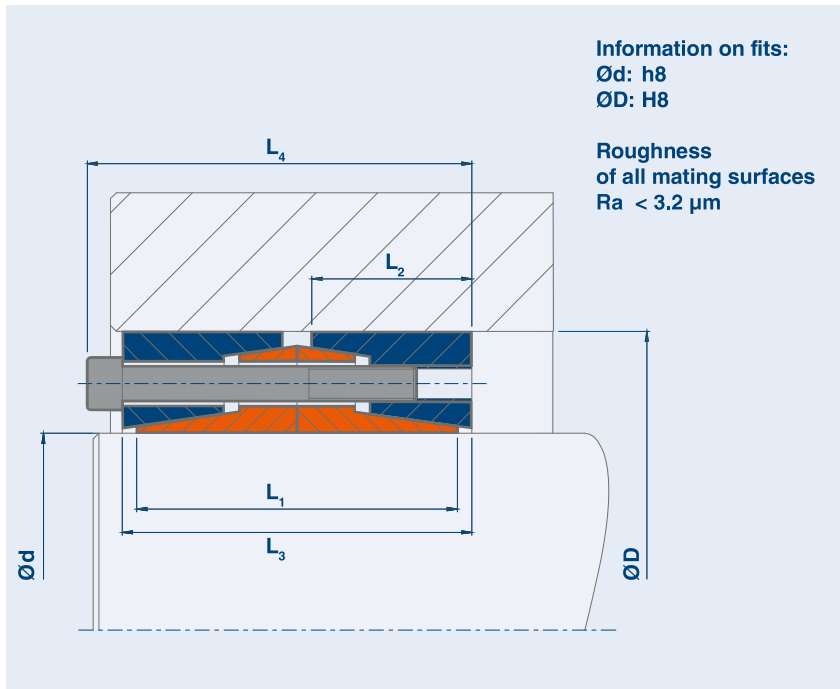
Type	d x D	M _t kNm	P _{ax} kN	L ₁ mm	L ₂ mm	L ₃ mm	L ₄ mm	B* Grade 12.9	M _a Nm	P _w N/mm ²	P _n	kg
IS 3	200 x 260	119.3	1193	134	150	166	55	14 x M16	355	149	91	22.7
IS 3	220 x 285	149.9	1363	134	146	162	53	16 x M16	355	155	95	27.0
IS 3	240 x 305	173.8	1448	134	146	162	55	18 x M16	355	151	94	29.2
IS 3	260 x 325	199.3	1533	134	146	162	53	18 x M16	355	148	93	31.3
IS 3	280 x 355	298.3	2131	165	177	197	69	16 x M20	690	146	96	48.3
IS 3	300 x 375	339.6	2264	165	177	197	69	17 x M20	690	145	97	51.3
IS 3	32 x 405	383.6	2397	165	177	197	69	18 x M20	690	144	95	62.5
IS 3	340 x 425	430.2	2530	165	177	197	69	19 x M20	690	143	96	65.9
IS 3	360 x 455	538.5	2992	190	206	228	82	18 x M22	930	157	92	90.4
IS 3	380 x 475	585.0	3079	190	206	228	82	19 x M22	930	154	91	94.8
IS 3	400 x 495	648.3	3241	190	206	228	82	20 x M22	930	154	91	99.2
IS 3	420 x 515	714.7	3403	190	206	228	82	21 x M22	930	154	92	103.7
IS 3	440 x 535	784.4	3565	190	206	228	83	24 x M22	930	154	93	108.1
IS 3	460 x 555	857.3	3727	190	206	228	83	24 x M22	930	154	94	112.5
IS 3	480 x 575	933.5	3890	190	206	228	83	24 x M22	930	154	94	117.0
IS 3	500 x 595	1012.9	4052	190	206	228	83	25 x M22	930	154	95	121.4
IS 3	520 x 615	1095.5	4214	190	206	228	83	26 x M22	930	154	96	125.8
IS 3	540 x 635	1211.7	4488	190	206	228	83	28 x M22	930	157	99	130.3
IS 3	560 x 655	1270.6	4538	190	206	228	83	28 x M22	930	154	97	134.7
IS 3	580 x 675	1363.0	4700	190	206	228	83	29 x M22	930	154	97	139.1
IS 3	600 x 695	1458.6	4862	190	206	228	83	30 x M22	930	154	98	143.6

Further sizes on request, subject to technical changes.

*Locking bolts to DIN EN ISO 4762; grade 12.9

When ordering please state: (Type x Ød x ØD) e.g. IS 3 x 500 x 595

STÜWE® Internal locking unit Type IS – Series IS 4



Code

- M_t Maximum transmissible torque of a locking unit for $P_{ax} = 0$
- P_{ax} Maximum transmissible axial load of a locking unit for $M_t = 0$
- M_a Required tightening torque of the locking bolts
- P_w Surface pressure between locking unit and shaft
- P_n Surface pressure between locking unit and hub

Dimensions L_3 and L_4 apply to untightened units.

Internal locking unit Type IS – Series IS 4

Type	d	x	D	M_t kNm	P_{ax} kN	L_1 mm	L_2 mm	L_3 mm	L_4 mm	B* Grade 12.9	M_a Nm	P_w N/mm ²	P_n	kg
IS 4	30	x	55	0.9	60	40	17	46	52	6 x M6	17	132	85	0.5
IS 4	35	x	60	1.2	71	40	17	46	52	7 x M6	17	135	93	0.6
IS 4	40	x	65	1.5	75	40	17	46	52	8 x M6	17	125	90	0.6
IS 4	45	x	75	2.5	111	48	20	56	64	6 x M8	41	136	98	1.1
IS 4	50	x	80	3.0	120	48	20	56	64	7 x M8	41	133	100	1.1
IS 4	55	x	85	3.8	138	48	20	56	64	8 x M8	41	139	108	1.2
IS 4	60	x	90	4.3	143	48	20	56	64	8 x M8	41	132	106	1.3
IS 4	65	x	95	5.3	163	48	20	56	64	9 x M8	41	139	114	1.4
IS 4	70	x	110	7.6	217	58	24	70	80	8 x M10	83	142	109	2.6
IS 4	75	x	115	8.2	219	58	24	70	80	8 x M10	83	133	105	2.7
IS 4	80	x	120	8.7	217	58	24	70	80	8 x M10	83	124	100	2.8
IS 4	85	x	125	10.4	245	58	24	70	80	9 x M10	83	132	108	3.0
IS 4	90	x	130	12	272	58	24	70	80	10 x M10	83	138	116	3.1
IS 4	95	x	135	13	271	58	24	70	80	10 x M10	83	131	111	3.3
IS 4	100	x	145	16	317	66	28	76	88	8 x M12	145	127	104	4.5
IS 4	110	x	155	19	340	66	28	78	90	9 x M12	145	124	104	4.8
IS 4	120	x	165	23	377	66	28	78	90	10 x M12	145	126	108	5.2
IS 4	130	x	180	29	453	76	33	86	98	12 x M12	145	122	101	7.2
IS 4	140	x	190	32	453	76	33	86	98	12 x M12	145	113	96	7.7
IS 4	150	x	200	40	528	76	33	86	98	14 x M12	145	123	106	8.2
IS 4	160	x	210	45	566	76	33	86	98	15 x M12	145	123	108	8.6

*Locking bolts DIN EN ISO 4762: Grade 12.9

When ordering please state: (Type x $\text{Ø}d$ x $\text{Ø}D$) e.g. IS 4 x 100 x 145

Internal locking unit Type IS – Series IS 4

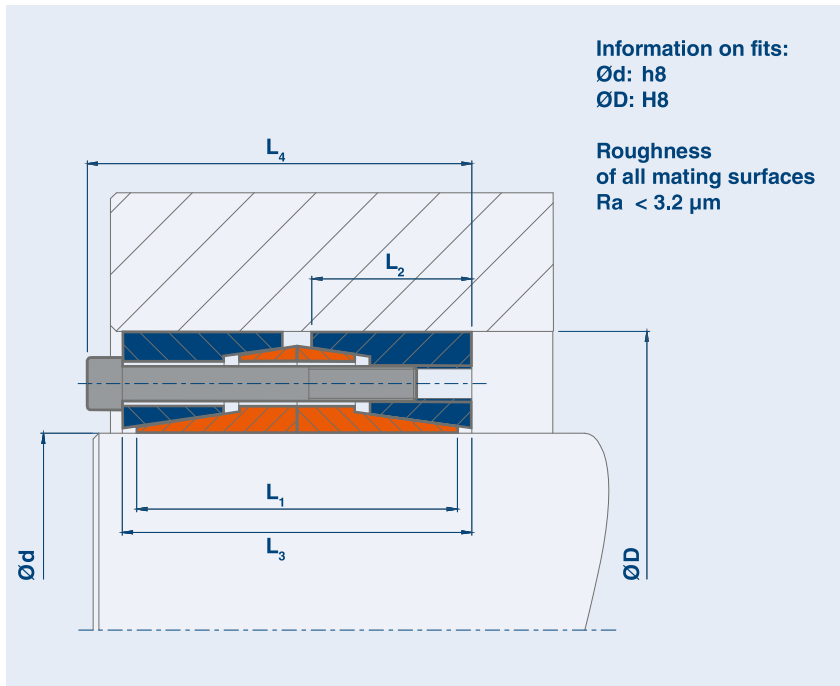
Type	d	x	D	M _t kNm	P _{ax} kN	L ₁ mm	L ₂ mm	L ₃ mm	L ₄ mm	B* Grade 12.9	M _a Nm	P _w N/mm ²	P _n	kg
IS 4	170	x	225	53	622	86	38	98	112	12 x M14	230	113	96	11
IS 4	180	x	235	65	726	86	38	98	112	14 x M14	230	124	108	12
IS 4	190	x	250	79	829	102	46	114	128	16 x M14	230	114	96	17
IS 4	200	x	260	93	933	102	46	114	128	18 x M14	230	121	103	17
IS 4	220	x	285	126	1141	110	50	124	140	16 x M16	355	125	106	22
IS 4	240	x	305	137	1141	110	50	124	140	16 x M16	355	115	99	24
IS 4	260	x	325	167	1284	110	50	124	140	18 x M16	355	119	106	26
IS 4	280	x	355	219	1562	130	60	146	164	18 x M18	485	114	97	38
IS 4	300	x	375	260	1735	130	60	146	164	18 x M18	485	118	102	40
IS 4	320	x	405	357	2230	154	72	172	192	18 x M20	690	120	101	58
IS 4	340	x	425	379	2230	154	72	176	196	20 x M20	690	113	97	62
IS 4	360	x	455	501	2784	178	84	200	222	18 x M22	930	115	97	85
IS 4	380	x	475	555	2923	178	84	198	220	20 x M22	930	115	97	89
IS 4	400	x	495	585	2923	178	84	198	220	20 x M22	930	109	93	93
IS 4	420	x	515	658	3132	178	84	200	222	22 x M22	930	111	96	97
IS 4	440	x	545	796	3616	202	96	220	244	22 x M24	1200	108	92	128
IS 4	460	x	565	832	3616	202	96	226	250	22 x M24	1200	103	88	134
IS 4	480	x	585	868	3616	202	96	228	252	24 x M24	1200	99	85	139
IS 4	500	x	605	984	3938	202	96	226	250	26 x M24	1200	103	90	144
IS 4	520	x	630	1024	3938	202	96	226	250	25 x M24	1200	99	86	157
IS 4	540	x	650	1063	3938	202	96	226	250	26 x M24	1200	96	84	162
IS 4	560	x	670	1181	4219	202	96	226	250	27 x M24	1200	99	87	168
IS 4	580	x	690	1224	4219	202	96	226	250	27 x M24	1200	96	84	173
IS 4	600	x	710	1266	4219	202	96	226	250	27 x M24	1200	92	82	179

Further sizes on request, subject to technical changes.

*Locking bolts DIN EN ISO 4762: Grade 12.9

When ordering please state: (Type x Ød x ØD) e.g. IS 4 200 x 260

STÜWE® Internal locking unit Type IS – Series IS 4.1



Code

- M_t** Maximum transmissible torque of a locking unit for $P_{ax} = 0$
- P_{ax}** Maximum transmissible axial load of a locking unit for $M_t = 0$
- M_a** Required tightening torque of the locking bolts
- P_w** Surface pressure between locking unit and shaft
- P_n** Surface pressure between locking unit and hub

Dimensions L_3 and L_4 apply to untightened units.

Internal locking unit Type IS – Series IS 4.1

Type	d	x	D	M _t kNm	P _{ax} kN	L ₁ mm	L ₂ mm	L ₃ mm	L ₄ mm	B* Grade 12.9	M _a Nm	P _w N/mm ²	P _n	kg
IS 4.1	100	x	145	11	224	66	28	76	86	8 x M10	83	90	73	4
IS 4.1	110	x	155	13	240	66	28	78	88	9 x M10	83	88	73	5
IS 4.1	120	x	165	16	267	66	28	78	88	10 x M10	83	89	77	5
IS 4.1	130	x	180	20	312	76	33	86	96	12 x M10	83	84	70	7
IS 4.1	140	x	190	22	320	76	33	86	96	12 x M10	83	80	68	8
IS 4.1	150	x	200	27	364	76	33	86	96	14 x M10	83	85	73	8
IS 4.1	160	x	210	31	390	76	33	86	96	15 x M10	83	85	75	9
IS 4.1	170	x	225	38	449	86	38	98	110	12 x M12	145	82	70	11
IS 4.1	180	x	235	47	524	86	38	98	110	14 x M12	145	90	78	12
IS 4.1	190	x	250	57	599	102	46	114	126	16 x M12	145	82	69	17
IS 4.1	200	x	260	67	674	102	46	114	126	18 x M12	145	88	75	17
IS 4.1	220	x	285	91	828	110	50	124	138	16 x M14	230	91	77	22
IS 4.1	240	x	305	99	822	110	50	124	138	16 x M14	230	83	72	24
IS 4.1	260	x	325	122	937	110	50	124	138	18 x M14	230	87	76	26
IS 4.1	280	x	355	181	1294	130	60	146	162	18 x M16	355	94	81	38
IS 4.1	300	x	375	215	1431	130	60	146	162	20 x M16	355	97	84	40
IS 4.1	320	x	405	276	1725	154	72	172	190	18 x M18	485	93	78	58
IS 4.1	340	x	425	294	1732	154	72	176	194	20 x M18	485	88	75	62
IS 4.1	360	x	455	372	2065	178	84	200	218	22 x M18	485	85	72	85
IS 4.1	380	x	475	393	2068	178	84	198	216	22 x M18	485	81	69	89
IS 4.1	400	x	495	414	2068	178	84	198	216	24 x M18	485	77	66	93

*Locking bolts DIN EN ISO 4762: Grade 12.9

When ordering please state: (Type x Ød x ØD) e.g. IS 4.1 170 x 225

Internal locking unit Type IS – Series IS 4.1

Type	d	x	D	M _t kNm	P _{ax} kN	L ₁ mm	L ₂ mm	L ₃ mm	L ₄ mm	B* Grade 12.9	M _a Nm	P _w N/mm ²	P _n	kg
IS 4.1	420	x	515	507	2412	178	84	200	218	26 x M18	485	86	74	97
IS 4.1	440	x	545	530	2409	202	96	228	248	24 x M20	690	72	61	128
IS 4.1	460	x	565	554	2409	202	96	226	246	22 x M20	690	69	59	134
IS 4.1	480	x	585	578	2409	202	96	228	248	24 x M20	690	66	57	139
IS 4.1	500	x	605	703	2811	202	96	226	246	26 x M20	690	74	64	144
IS 4.1	520	x	630	731	2811	202	96	226	246	26 x M20	690	71	62	157
IS 4.1	540	x	650	759	2811	202	96	226	246	26 x M20	690	68	60	162
IS 4.1	560	x	670	843	3012	202	96	226	246	30 x M20	690	71	62	168
IS 4.1	580	x	690	873	3012	202	96	226	246	30 x M20	690	68	60	173
IS 4.1	600	x	710	903	3012	202	96	226	246	30 x M20	690	66	59	179

Further sizes on request, subject to technical changes.

*Locking bolts DIN EN ISO 4762: Grade 12.9

When ordering please state: (Type x Ød x ØD) e.g. IS 4.1 420 x 515

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INTERNAL LOCKING UNIT TYPE IS – SPECIAL SOLUTIONS

STÜWE® Individual locking unit

Four-part internal locking unit for small installation spaces

