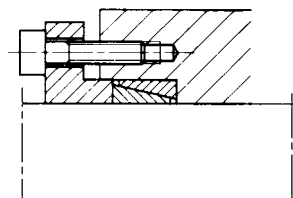
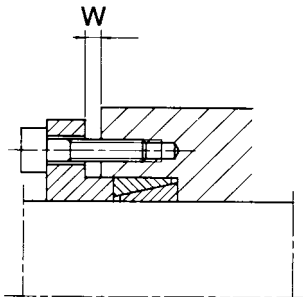
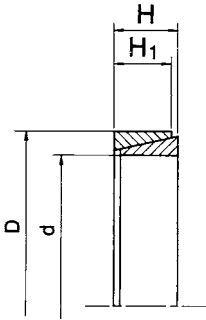
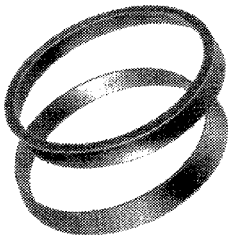


# Self Locking Ring Elements

## Locking Ring



Part No. Type- Ød / ØD	H	H <sub>1</sub>	F <sub>1</sub> daN	F <sub>2</sub> daN	Performance		Number of Rings Sets in Series				Surface Pressure	
					T daNm	F daN	1 W	2 W	3 W	4 W	Ps daN/mm <sup>2</sup>	Ph daN/mm <sup>2</sup>
R6/9	4.5	3.7	--	380	0.25	84	2.5	2.5	3	4	11.5	7.5
R7/10	4.5	3.7	--	390	0.30	86	2.5	2.5	3	4	10.5	7
R8/11	4.5	3.7	--	530	0.47	117	2.5	2.5	3	4	12	9
R9/12	4.5	3.7	765	1,560	0.79	176	2.5	2.5	3	4	14	10.5
R10/13	4.5	3.7	700	1,560	0.95	191	2.5	2.5	3	4	13.5	10.5
R12/15	4.5	3.7	700	1,560	1.14	191	2.5	2.5	3	4	11.5	9
R13/16	4.5	3.7	650	1,560	1.31	202	2.5	2.5	3	4	11	9
R14/18	6.3	5.3	1,100	2,540	2.23	318	3.5	3.5	4.5	5.5	11.5	9
R15/19	6.3	5.3	1,080	2,540	2.43	324	3.5	3.5	4.5	5.5	11	8.5
R16/20	6.3	5.3	1,000	2,540	2.73	342	3.5	3.5	4.5	5.5	10.5	8.5
R17/21	6.3	5.3	960	2,540	2.98	351	3.5	3.5	4.5	5.5	10.5	8.5
R18/22	6.3	5.3	915	2,540	3.24	361	3.5	3.5	4.5	5.5	10	8
R19/24	6.3	5.3	1,250	3,600	4.9	522	3.5	3.5	4.5	5.5	14	11
R20/25	6.3	5.3	1,200	3,600	5.3	533	3.5	3.5	4.5	5.5	13.5	10.5
R22/26	6.3	5.3	900	3,600	6.6	600	3.5	3.5	4.5	5.5	13.5	11.5
R24/28	6.3	5.3	840	3,600	7.3	613	3.5	3.5	4.5	5.5	13	11
R25/30	6.3	5.3	1,000	3,600	7.2	577	3.5	3.5	4.5	5.5	11.5	9.5
R28/32	6.3	5.3	750	3,600	8.6	633	3.5	3.5	4.5	5.5	11.5	10
R30/35	6.3	5.3	860	3,600	9.1	608	3.5	3.5	4.5	5.5	10	8.5
R32/36	6.3	5.3	790	4,500	13.1	824	3.5	3.5	4.5	5.5	13	11.5
R35/40	7	6	1,000	5,400	17.1	977	3.5	3.5	4.5	5.5	12.5	11
R36/42	7	6	1,170	5,400	16.9	939	3.5	3.5	4.5	5.5	11.5	10
R38/44	7	6	1,100	5,400	18.1	955	3.5	3.5	4.5	5.5	11	9.5
R40/45	8	6.6	1,390	6,600	23.1	1,157	3.5	4.5	5.5	6.5	11.5	10.5
R42/48	8	6.6	1,550	6,600	23.5	1,122	3.5	4.5	5.5	6.5	11	9.5
R45/52	10	8.6	2,830	9,900	35.3	1,571	3.5	4.5	5.5	6.5	10.5	9.5
R48/55	10	8.6	2,470	13,200	57.2	2,384	3.5	4.5	5.5	6.5	15.5	13.5
R50/57	10	8.6	2,360	13,200	60.2	2,408	3.5	4.5	5.5	6.5	15	13
R55/62	10	8.6	2,170	13,200	67	2,435	3.5	4.5	5.5	6.5	14	12.5
R56/64	12	10.4	2,950	15,720	79	2,820	3.5	4.5	5.5	7	13	11.5
R60/68	12	10.4	2,750	15,720	86	2,860	3.5	4.5	5.5	7	12.5	11
R63/71	12	10.4	2,650	15,720	91	2,880	3.5	4.5	5.5	7	12	10.5
R65/73	12	10.4	2,550	15,720	95	2,920	3.5	4.5	5.5	7	11.5	10
R70/79	14	12.2	3,100	20,960	138	3,940	3.5	5	6.5	7.5	12.5	11
R71/80	14	12.2	3,100	20,960	140	3,940	3.5	5	6.5	7.5	12	11
R75/84	14	12.2	3,470	20,960	145	3,860	3.5	5	6.5	7.5	11.5	10
R80/91	17	15	4,800	29,000	220	5,500	4	6	6.5	8	12.5	10.5
R85/96	17	15	4,550	30,500	240	5,640	4	6	6.5	8	12	10.5
R90/101	17	15	4,360	32,000	273	6,050	4	6	6.5	8	12	10.5
R95/106	17	15	4,130	33,000	305	6,420	4	6	6.5	8	12	11
R100/114	21	18.7	6,100	44,500	420	8,400	5	6	7	9	12	10.5
R110/124	21	18.7	6,600	48,500	515	9,360	5	6	7	9	12	10.5
R120/134	21	18.7	6,030	51,000	605	10,080	5	6	7	9	12	10.5
R130/148	28	25.3	9,630	76,500	960	14,760	5	7	9	11	12	10.5
R140/158	28	25.3	8,900	80,050	1,100	15,850	6	7	9	11	12	10.5
R150/168	28	25.3	8,500	86,000	1,290	17,200	6	7	8	11	12	10.5

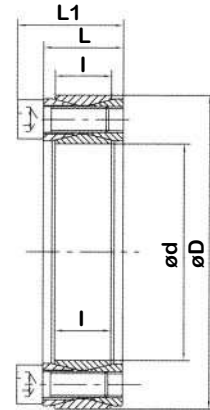
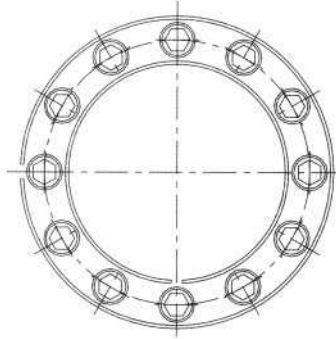
Comprising two tapered rings, must always be mounted with a tightening flange.  
Operates with low torque values; not self-centering.

Inch sizes available upon request.

S daNm Screw tightening torque  
T daNm Transmitted torque  
F daN Transmitted axial force

Ps daN/mm<sup>2</sup> Shaft surface pressure  
Ph daN/mm<sup>2</sup> Hub surface pressure  
F<sub>1</sub> daN Min. axial force required for assembly  
F<sub>2</sub> daN Total axial force

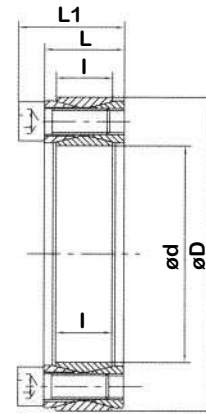
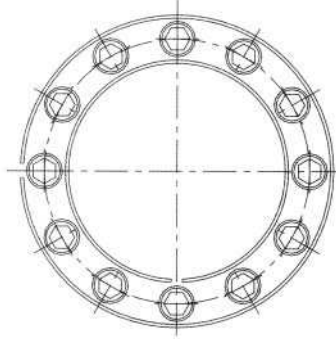
# Locking Ring Type 1 (Metric)



## LA1

Part No. Ød x ØD	Fundamental Dimensions			Internal Hexagon Headed Bolt		Rated Load		Pf N / mm <sup>2</sup>	MA N M	G kg
	I	L	L1	Sizes	Qty	Ft KN	Mt KN M			
LA1-19/47	17	20	27.5	M6 x 18	8	26	0.27	210	14	0.2
LA1-20/47	17	20	27.5	M6 x 18	8	27	0.27	210	14	0.24
LA1-22/47	17	20	27.5	M6 x 18	8	27	0.30	195	14	0.23
LA1-24/50	-	-	-	-	-	-	-	-	-	-
LA1-25/50	17	20	27.5	M6 x 18	9	30	0.38	190	14	0.25
LA1-28/55	17	20	27.5	M6 x 18	10	33	0.47	185	14	0.3
LA1-30/55	17	20	27.5	M6 x 18	10	33	0.50	175	14	0.29
LA1-32/60	-	-	-	-	-	-	-	-	-	-
LA1-35/60	17	20	27.5	M6 x 18	12	40	0.70	180	14	0.32
LA1-38/65	17	20	27.5	M6 x 18	14	46	0.88	185	14	0.33
LA1-40/65	17	20	27.5	M6 x 18	14	46	0.92	180	14	0.34
LA1-42/75	20	24	33.5	M8 x 22	12	65	1.36	200	35	0.48
LA1-45/75	20	24	33.5	M8 x 22	12	72	1.62	210	35	0.57
LA1-48/80	-	-	-	-	-	-	-	-	-	-
LA1-50/80	20	24	33.5	M8 x 22	12	71	1.77	190	35	0.6
LA1-55/85	20	24	33.5	M8 x 22	14	83	2.27	200	35	0.63
LA1-60/90	20	24	33.5	M8 x 22	14	83	2.47	180	35	0.69
LA1-65/95	20	24	33.5	M8 x 22	16	93	3.04	190	35	0.73
LA1-70/110	24	28	39.5	M10 x 25	14	132	4.60	210	70	1.26
LA1-75/115	24	28	39.5	M10 x 25	14	131	4.90	195	70	1.33
LA1-80/120	24	28	39.5	M10 x 25	14	131	5.20	180	70	1.4
LA1-85/125	24	28	39.5	M10 x 25	16	148	6.30	195	70	1.49
LA1-90/130	24	28	39.5	M10 x 25	16	147	6.30	180	70	1.53
LA1-95/135	24	28	39.5	M10 x 25	18	167	7.90	195	70	1.62
LA1-100/145	29	33	47	M12 x 30	14	192	9.60	195	125	2.01
LA1-110/155	29	33	47	M12 x 30	14	191	10.50	180	125	2.15
LA1-120/165	29	33	47	M12 x 30	16	218	13.10	185	125	2.35
LA1-130/180	34	38	52	M12 x 35	20	272	17.60	165	125	3.51
LA1-140/190	34	38	52	M12 x 35	22	298	20.90	165	125	3.85
LA1-150/200	34	38	52	M12 x 35	24	324	24.20	170	125	4.07
LA1-160/210	34	38	52	M12 x 35	26	350	28.00	170	125	4.3
LA1-170/225	38	44	60	M14 x 40	22	386	32.90	160	190	5.78
LA1-180/235	38	44	60	M14 x 40	24	420	37.80	165	190	6.05
LA1-190/250	46	52	68	M14 x 45	28	490	46.50	150	190	8.25
LA1-200/260	46	52	68	M14 x 45	30	525	52.50	150	190	8.65

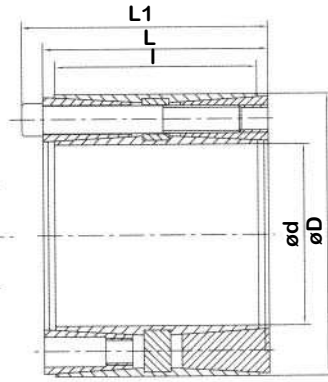
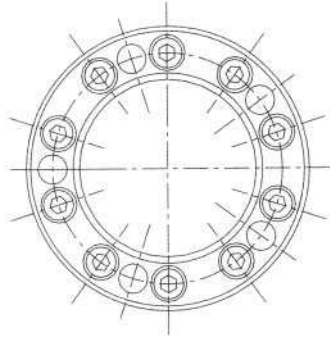
# Locking Ring Type 1X (Inch)



## LA1X

Inch Series Inches			Inches			Mt ft-lb	Axial force lb	pw psi	pn psi	Locking Screw	
Part No.	d	D	I	L	L1					No.x type	Ms ft-lb
LA1X-3/4	0.750	1.850	0.669	0.787	1.083	202	6525	32010	13520	8xM6	11
LA1X-1	1.000	1.969	0.669	0.787	1.083	289	7200	28450	14230	8xM6	11
LA1X-1-1/8	1.125	2.165	0.669	0.787	1.083	361	8100	28450	14230	10xM6	11
LA1X-1-3/16	1.188	2.159	0.669	0.787	1.083	383	8100	26320	14230	10xM6	11
LA1X-1-1/4	1.250	2.362	0.669	0.787	1.083	492	9450	29170	15650	12xM6	11
LA1X-1-3/8	1.375	2.365	0.669	0.787	1.083	542	9675	27030	15650	12xM6	11
LA1X-1-7/16	1.438	2.559	0.669	0.787	1.083	672	11025	28450	16360	14xM6	11
LA1X-1-1/2	1.500	2.559	0.669	0.787	1.083	709	11025	27030	16360	14xM6	11
LA1X-1-5/8	1.625	2.953	0.787	0.945	1.319	1143	16875	33430	18500	12xM8	27
LA1X-1-11/16	1.688	2.953	0.787	0.945	1.319	1166	16875	32720	18500	12xM8	27
LA1X-1-3/4	1.750	2.953	0.787	0.945	1.319	1230	17100	31300	18500	12xM8	27
LA1X-1-7/8	1.875	3.150	0.787	0.945	1.319	1295	16650	29880	17070	12xM8	27
LA1X-1-15/16	1.938	3.150	0.787	0.945	1.319	1353	16875	28450	17070	12xM8	27
LA1X-2	2.000	3.346	0.787	0.945	1.319	1597	16875	32300	19210	14xM8	27
LA1X-2-1/8	2.125	3.346	0.787	0.945	1.319	1729	19800	29880	19210	14xM8	27
LA1X-2-3/16	2.188	3.543	0.787	0.945	1.319	1748	19800	29170	17790	14xM8	27
LA1X-2-1/4	2.250	3.543	0.787	0.945	1.319	1798	19800	28450	17790	14xM8	27
LA1X-2-3/8	2.375	3.531	0.787	0.945	1.319	1888	19800	27030	17790	14xM8	27
LA1X-2-7/16	2.438	3.740	0.787	0.945	1.319	2212	19800	29800	19210	16xM8	27
LA1X-2-1/2	2.500	3.740	0.787	0.945	1.319	2269	19800	29170	19210	16xM8	27
LA1X-2-9/16	2.562	3.737	0.787	0.945	1.319	2322	22050	28450	19210	16xM8	27
LA1X-2-5/8	2.625	4.331	0.945	1.102	1.555	3169	22050	31300	18500	14xM10	51
LA1X-2-11/16	2.688	4.331	0.945	1.102	1.555	3241	22050	30590	18500	14xM10	51
LA1X-2-3/4	2.750	4.337	0.945	1.102	1.555	3328	29700	29880	18500	14xM10	51
LA1X-2-7/8	2.875	4.528	0.945	1.102	1.555	3451	29700	28450	17790	14xM10	51
LA1X-2-15/16	2.938	4.528	0.945	1.102	1.555	3545	29475	27740	17790	14xM10	51
LA1X-3	3.000	4.724	0.945	1.102	1.555	3581	29475	27030	17070	14xM10	51
LA1X-3-1/8	3.125	4.724	0.945	1.102	1.555	3762	29475	25610	17070	14xM10	51
LA1X-3-1/4	3.250	4.921	0.945	1.102	1.555	4421	29475	29170	18500	16xM10	51
LA1X-3-3/8	3.375	4.921	0.945	1.102	1.555	4558	33300	27740	18500	16xM10	51
LA1X-3-7/16	3.438	5.118	0.945	1.102	1.555	4630	33300	26320	17790	16xM10	51
LA1X-3-1/2	3.500	5.118	0.945	1.102	1.555	4775	33075	25610	17790	16xM10	51
LA1X-3-3/4	3.750	5.305	0.945	1.102	1.555	5716	37575	27740	19210	18xM10	51
LA1X-3-15/16	3.938	5.709	1.024	1.299	1.850	7054	43875	27740	19210	14xM12	92
LA1X-4	4.000	5.843	1.024	1.299	1.850	7112	43875	27740	18500	14xM12	92
LA1X-4-7/16	4.438	6.496	1.024	1.299	1.850	9044	43650	28450	19210	16xM12	92
LA1X-4-1/2	4.500	6.496	1.024	1.299	1.850	9623	49725	26320	19210	16xM12	92
LA1X-4-15/16	4.938	7.087	1.339	1.436	2.047	12445	49725	24900	16360	20xM12	92
LA1X-5	5.000	7.087	1.339	1.436	2.047	12916	62100	23480	16360	20xM12	92
LA1X-5-7/16	5.438	7.480	1.339	1.436	2.047	15123	62100	24190	17790	22xM12	92
LA1X-5-1/2	5.500	7.492	1.339	1.436	2.047	15340	67950	23480	17790	22xM12	92
LA1X-6	6.000	8.268	1.339	1.436	2.047	20549	79875	24190	18500	26xM12	92
LA1X-6-7/16	6.438	8.858	1.496	1.732	2.362	23371	79875	24900	17070	22xM14	142
LA1X-6-1/2	6.500	8.858	1.496	1.732	2.362	24312	89100	23480	17070	22xM14	142
LA1X-6-15/16	6.938	9.252	1.496	1.732	2.362	27351	89100	24900	18500	24xM14	142
LA1X-7	7.000	9.252	1.496	1.732	2.362	28002	96975	24190	18500	24xM14	142
LA1X-7-1/2	7.500	9.823	1.811	2.047	2.677	32344	112950	22050	17070	28xM14	142
LA1X-7-7/8	7.875	10.236	1.811	2.047	2.677	38712	121050	22050	17070	30xM14	142

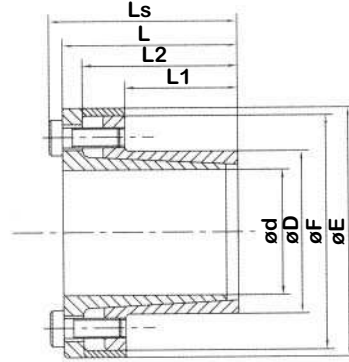
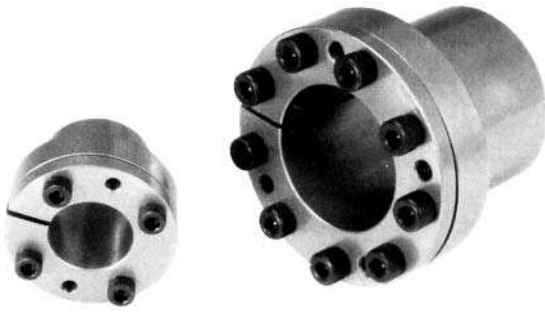
# Locking Ring Type 2 (Metric)



## LA2

Part No. Ød x ØD	Fundamental Dimensions			Internal Hexagon Headed Bolt		Rated Load		Pf (N/mm <sup>2</sup> )	MA (N M)	kg
	I	L	L1	Sizes	Qty	Ft KN	Mt KN M			
LA2-25/55	-	-	-	-	-	-	-	-	-	-
LA2-28/55	-	-	-	-	-	-	-	-	-	-
LA2-30/55	-	-	-	-	-	-	-	-	-	-
LA2-35/60	-	-	-	-	-	-	-	-	-	-
LA2-38/75	-	-	-	-	-	-	-	-	-	-
LA2-40/75	-	-	-	-	-	-	-	-	-	-
LA2-42/75	-	-	-	-	-	-	-	-	-	-
LA2-45/75	56	64	72	M8x50	9	170	3.90	179	40.2	1.25
LA2-48/80	56	64	72	M8x50	9	170	4.15	168	40.2	1.41
LA2-50/80	56	64	72	M8x50	9	170	4.30	162	40.2	1.35
LA2-55/85	56	64	72	M8x50	9	170	4.70	147	40.2	1.45
LA2-60/90	56	64	72	M8x50	11	208	6.30	165	40.2	1.55
LA2-65/95	56	64	72	M8x50	11	208	6.90	130	40.2	1.92
LA2-70/110	70	78	88	M10x70	11	330	11.80	179	81.3	3.11
LA2-75/115	70	78	88	M10x70	11	330	12.60	167	81.3	3.28
LA2-80/120	70	78	88	M10x70	12	360	14.70	171	81.3	3.45
LA2-85/125	70	78	88	M10x70	12	360	15.60	161	81.3	3.63
LA2-90/130	70	78	88	M10x70	13	390	17.90	165	81.3	3.8
LA2-95/135	70	78	88	M10x70	13	390	18.90	156	81.3	3.97
LA2-100/145	90	100	112	M12x90	12	467	23.30	181	145	6.8
LA2-110/155	90	100	112	M12x90	13	553	30.40	190	145	7.5
LA2-120/165	90	100	112	M12x90	15	617	37.00	195	145	8.6
LA2-130/180	104	116	130	M14x90	13	759	49.00	180	230	11.1
LA2-140/190	104	116	130	M14x90	15	843	59.00	186	230	11.8
LA2-150/200	104	116	130	M14x90	16	897	67.00	185	230	12.6
LA2-160/210	104	116	130	M14x90	17	950	76.00	183	230	13.4
LA2-170/225	134	146	162	M16x120	15	1223	104.00	172	355	19.6
LA2-180/235	134	146	162	M16x120	16	1289	116.00	172	355	20.6
LA2-190/250	134	146	162	M16x120	17	1363	130.00	172	355	23.8
LA2-200/260	134	146	162	M16x120	17	1438	143.70	172	355	24.9
LA2-220/285	134	146	162	M16x120	20	1582	174.00	172	355	29.6

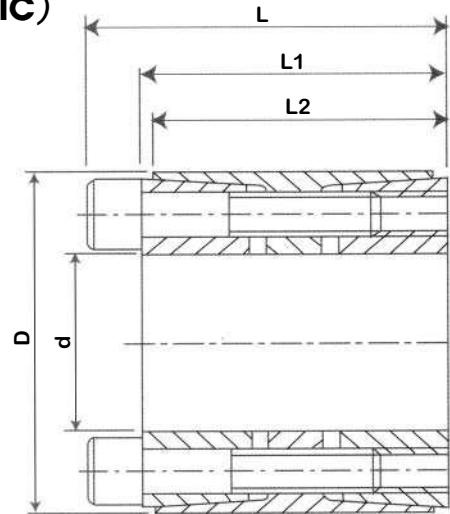
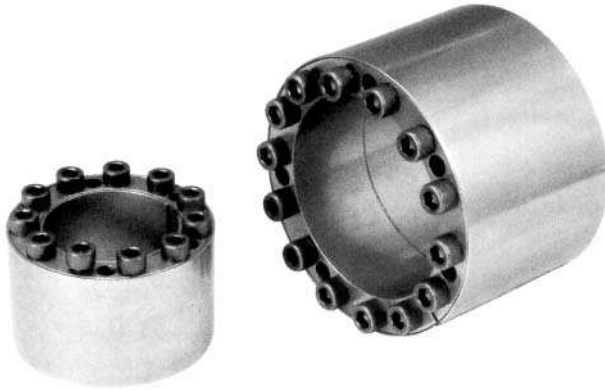
# Locking Ring Type 3 (Metric)



## LA3

Part No.	Fundamental Dimensions						Internal Hexagon Headed Bolt		Rated Load		Pf N/mm <sup>2</sup>	MA N M	G kg
	E	F	L2	L1	L	Ls	Sizes	Qty	Ft KN	Mt KN M			
LA3-6/14	25	23	18.5	10	21	24	M3x8	3	4.2	0.012	185	2.2	0.15
LA3-7/15	27	24	22	12	25	29	M4x10	3	7.4	0.025	235	4.9	0.15
LA3-8/15	27	24	22	12	25	29	M4x10	3	7.4	0.029	205	4.9	0.16
LA3-9/16	28	25	23	14	26	30	M4x10	3	9.4	0.044	205	4.9	0.16
LA3-10/16	28	25	23	14	26	30	M4x10	4	9.8	0.049	185	4.9	0.17
LA3-11/18	32	28	23	14	26	30	M4x10	4	9.8	0.053	170	4.9	0.17
LA3-12/18	32	28	23	14	26	30	M4x10	4	9.8	0.058	160	4.9	0.18
LA3-13/23	38	33	23	14	26	30	M4x10	4	9.8	0.063	140	4.9	0.19
LA3-14/23	38	33	23	14	26	30	M4x10	4	9.8	0.068	130	4.9	0.20
LA3-15/24	45	40	29	16	36	42	M6x15	3	17	0.127	185	17	0.21
LA3-16/24	45	40	29	16	36	42	M6x15	3	17	0.136	175	17	0.23
LA3-17/26	47	42	31	18	38	44	M6x15	4	22	0.180	190	17	0.25
LA3-18/26	47	42	31	18	38	44	M6x15	4	22	0.200	180	17	0.27
LA3-19/27	49	43	31	18	38	44	M6x15	4	22	0.210	170	17	0.29
LA3-20/28	50	44	31	18	38	44	M6x15	4	22	0.220	160	17	0.30
LA3-22/32	54	48	38	25	45	51	M6x15	4	22	0.250	115	17	0.38
LA3-24/34	56	50	38	25	45	51	M6x15	4	22	0.270	105	17	0.41
LA3-25/34	56	50	38	25	45	51	M6x15	4	22	0.280	100	17	0.45
LA3-28/39	61	55	38	25	45	51	M6x15	4	22	0.310	90	17	0.47
LA3-30/41	62	57	38	25	45	51	M6x15	4	22	0.340	85	17	0.48
LA3-32/43	65	59	38	25	45	51	M6x15	4	22	0.360	80	17	0.52
LA3-35/47	69	62	45	32	52	58	M6x15	8	45	0.790	105	17	0.63
LA3-38/50	72	66	45	32	52	58	M6x15	8	45	0.860	100	17	0.67
LA3-40/53	75	69	45	32	52	58	M6x15	8	45	0.900	95	17	0.73
LA3-42/55	78	71	45	32	52	58	M6x15	8	45	0.950	90	17	0.78
LA3-45/59	86	80	62	45	70	78	M8x18	8	84	1.890	110	41	1.23
LA3-48/62	87	81	62	45	70	78	M8x18	8	84	2.010	105	41	1.24
LA3-50/65	92	86	62	45	70	78	M8x18	8	84	2.100	100	41	1.40
LA3-55/71	98	92	72	55	80	88	M8x18	9	94	2.600	85	41	1.70
LA3-60/77	104	98	72	55	80	88	M8x18	9	94	2.840	75	41	1.90
LA3-65/84	111	105	86	55	80	88	M8x18	9	94	3.070	70	41	2.21
LA3-70/90	119	113	86	65	96	106	M10x25	9	150	5.250	90	83	3.05
LA3-75/95	126	119	86	65	96	106	M10x25	9	150	5.600	80	83	3.32
LA3-80/100	131	125	86	65	96	106	M10x25	12	200	8.020	100	83	3.50
LA3-85/106	137	131	86	65	96	106	M10x25	12	200	8.500	85	83	3.81
LA3-90/112	144	137	86	65	96	106	M10x25	12	200	9.000	90	83	4.20
LA3-95/120	149	142	86	65	96	106	M10x25	12	230	11.000	100	83	4.75
LA3-100/125	154	147	86	65	96	106	M10x25	12	300	15.000	120	83	5.46
LA3-110/140	180	172	114	90	128	140	M12x30	12	290	16.000	80	145	6.06
LA3-120/155	198	187	114	90	128	140	M12x30	12	290	17.500	70	145	7.18
LA3-130/165	208	197	144	90	128	140	M12x30	16	384	25.000	90	145	8.03

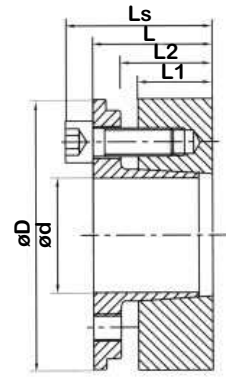
# Locking Ring Type 4 (Metric)



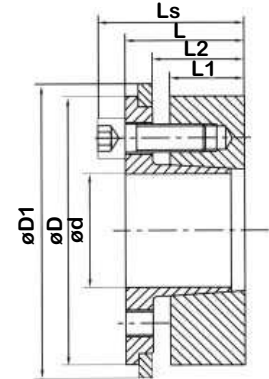
## LA4

Part No.	Fundamental Dimensions			Internal Hexagon Headed Bolt		Rated Load		Pf N/mm <sup>2</sup>	MA N M	G kg
	L	L1	L2	Sizes	Qty	Ft KN	Mt KN M			
LA4-25/55	46	40	32	M6x35	6	70	1.30	130	18	1.28
LA4-28/55	46	40	32	M6x35	6	70	1.45	120	18	1.35
LA4-30/55	46	40	32	M6x35	6	70	1.60	120	18	1.47
LA4-35/60	60	54	44	M6x50	7	80	1.78	90	18	1.55
LA4-38/75	62	54	44	M8x50	7	130	1.98	120	42	1.58
LA4-40/75	62	54	44	M8x50	7	130	2.15	140	42	1.68
LA4-42/75	62	54	44	M8x50	7	130	2.38	120	42	1.76
LA4-45/75	62	54	44	M8x50	7	130	2.65	120	42	1.85
LA4-48/80	62	54	44	M8x50	8	150	2.95	30	42	1.96
LA4-50/80	72	64	56	M8x60	8	150	3.26	110	42	2.04
LA4-55/85	72	64	56	M8x60	9	170	3.63	110	42	2.15
LA4-60/90	72	64	56	M8x60	10	180	4.03	120	42	2.25
LA4-65/95	72	64	56	M8x60	10	190	4.55	110	42	2.39
LA4-70/110	88	78	70	M10x70	10	310	5.10	130	85	2.48
LA4-75/115	88	78	70	M10x70	10	320	6.10	120	85	2.62
LA4-80/120	88	78	70	M10x70	12	340	6.55	130	85	2.76
LA4-85/125	88	78	70	M10x70	12	380	7.70	40	85	2.9
LA4-90/130	88	78	70	M10x70	12	380	8.10	130	85	3.04
LA4-95/135	88	78	70	M10x70	12	380	8.60	130	85	3.18
LA4-100/145	112	100	90	M12x90	12	510	9.10	120	145	5.44
LA4-110/155	112	100	90	M12x90	12	530	10.00	130	145	6.00
LA4-120/165	112	100	90	M12x90	14	650	13.10	140	145	6.88
LA4-130/180	130	116	104	M14x100	12	770	20.70	130	235	8.88
LA4-140/190	130	116	104	M14x100	14	870	22.30	140	235	9.44
LA4-150/200	130	116	104	M14x100	16	940	23.90	140	235	10.08
LA4-160/210	130	116	104	M14x100	16	1000	29.80	150	235	10.72
LA4-170/225	164	148	134	M16x130	14	1220	36.20	130	360	15.68
LA4-180/235	164	148	134	M16x130	16	1290	38.30	130	360	16.48
LA4-190/250	164	148	134	M16x130	16	1360	45.50	130	360	19.04
LA4-200/260	164	148	134	M16x130	16	1350	47.90	130	360	19.92

# Locking Ring Type 5 (Metric)



LA5A



LA5B

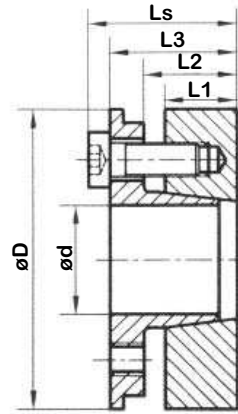
## LA5 (A&B)

ød/øD	Fundamental Dimensions					Internal Hexagon Headed Bolt		Rated Load		Pf N/mm <sup>2</sup>	MA N M	G kg
	L1	L	L2	Ls	D1	Sizes	Qty	Ft KN	Mt KN M			
19/47	26	39	30	45	53	M6x25	6	54	0.54	260	17	0.35
20/47	26	39	30	45	53	M6x25	6	54	0.60	250	17	0.36
22/47	26	39	30	45	53	M6x25	6	54	0.60	230	17	0.44
24/50	26	39	30	45	56	M6x25	6	54	0.65	210	17	0.47
25/50	26	39	30	45	56	M6x25	6	54	0.68	200	17	0.48
28/55	26	39	30	45	61	M6x25	6	54	0.78	180	17	0.55
30/55	26	39	30	45	61	M6x25	6	54	0.82	170	17	0.76
32/60	26	39	30	45	66	M6x25	9	82	1.31	235	17	0.79
35/60	26	39	30	45	66	M6x25	9	82	1.44	215	17	0.81
38/65	26	39	30	45	71	M6x25	9	82	1.56	200	17	0.87
40/65	26	39	30	45	71	M6x25	9	82	1.64	190	17	0.94
42/75	30	47	35	55	81	M8x30	6	101	2.13	215	41	1.02
45/75	30	47	35	55	81	M8x30	6	101	2.28	200	41	1.06
48/80	30	47	35	55	86	M8x30	6	101	2.43	190	41	1.7
50/80	30	47	35	55	86	M8x30	6	101	2.53	180	41	1.79
55/85	30	47	35	55	91	M8x30	9	152	4.18	245	41	1.89
60/90	30	47	35	55	96	M8x30	9	152	4.56	225	41	1.98
65/95	30	47	35	55	101	M8x30	9	152	4.94	210	41	2.15
70/110	40	67	46	77	116	M10x40	7	186	6.50	175	83	2.24
75/115	40	67	46	77	121	M10x40	7	186	7.00	165	83	3.07
80/120	40	67	46	77	126	M10x40	7	186	7.40	155	83	3.35
85/125	40	67	46	77	131	M10x40	8	213	9.00	170	83	3.59
90/130	40	67	46	77	136	M10x40	8	213	9.60	160	83	5.04
95/135	40	67	46	77	141	M10x40	10	267	12.60	185	83	5.38
100/145	46	77	52	89	151	M12x50	7	270	13.30	160	145	5.81
110/155	46	77	52	89	161	M12x50	7	270	14.70	140	145	6.67
120/165	46	77	52	89	171	M12x50	8	309	18.40	150	145	7.61
130/180	46	77	52	89	186	M12x50	10	388	25.10	175	145	8.05

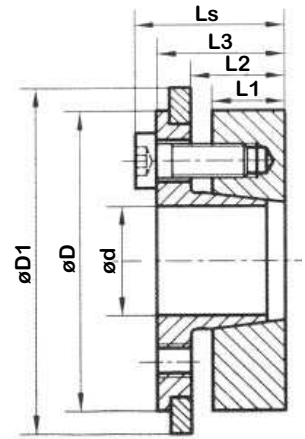
Ordering Example: LA5A-19/47

LA5A = Type  
19 = ød  
47 = øD

# Locking Ring Type 5X (Inch)



LA5XA



LA5XB

## LA5X (A&B)

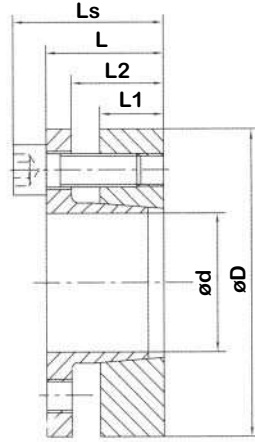
Inch Series Inches			Inches				Mt ft-lb	Axial force lb	pw psi	pn psi	Locking Screw	
Size	d	D	L1	L2	L3	Ls					No.x type	Ms ft-lb
3/4	0.750	1.850	1.024	1.142	1.654	1.890	400	12150	36250	15225	6xM6	13
7/8	0.875	1.850	1.024	1.142	1.654	1.890	444	12150	33350	15225	6xM6	13
1	1.000	1.969	1.024	1.142	1.654	1.890	503	12150	29000	14500	6xM6	13
1 1/8	1.125	2.165	1.024	1.142	1.654	1.890	562	12150	26100	13775	6xM6	13
1 3/16	1.188	2.165	1.024	1.142	1.654	1.890	607	12150	24650	13775	6xM6	13
1 1/4	1.250	2.362	1.024	1.142	1.654	1.890	969	18450	34075	18125	9xM6	13
1 3/8	1.375	2.362	1.024	1.142	1.654	1.890	1066	18450	31175	18125	9xM6	13
1 7/16	1.438	2.559	1.024	1.142	1.654	1.890	1154	18450	29000	16675	9xM6	13
1 1/2	1.500	2.559	1.024	1.142	1.654	1.890	1213	18450	27550	16675	9xM6	13
1 5/8	1.625	2.953	1.181	1.354	2.008	2.323	1550	22725	31712	17400	6xM8	30
1 11/16	1.688	2.953	1.181	1.354	2.008	2.323	1576	22725	31175	17400	6xM8	30
1 3/4	1.750	2.953	1.181	1.354	2.008	2.323	1687	22725	29000	17400	6xM8	30
1 7/8	1.875	3.150	1.181	1.354	2.008	2.323	1798	22725	27550	16675	6xM8	30
1 15/16	1.938	3.150	1.181	1.354	2.008	2.323	1872	22725	26100	16675	6xM8	30
2	2.000	3.150	1.181	1.354	2.008	2.323	1900	22725	25284	16675	6xM8	30
2 1/8	2.125	3.346	1.181	1.354	2.008	2.323	3093	34200	35525	23200	9xM8	30
2 3/16	2.188	3.346	1.181	1.354	2.008	2.323	3125	34200	34500	23200	9xM8	30
2 1/4	2.250	3.543	1.181	1.354	2.008	2.323	3214	34200	34438	21750	9xM8	30
2 3/8	2.375	3.543	1.181	1.354	2.008	2.323	3374	34200	32625	21750	9xM8	30
2 7/16	2.438	3.740	1.181	1.354	2.008	2.323	3480	34200	32005	21025	9xM8	30
2 1/2	2.500	3.740	1.181	1.354	2.008	2.323	3570	34200	31205	21025	9xM8	30
2 9/16	2.562	3.740	1.181	1.354	2.008	2.323	3655	34200	30450	21025	9xM8	30
2 11/16	2.688	4.331	1.575	1.772	2.205	2.598	4690	41850	25375	15950	7xM10	61
2 3/4	2.750	4.331	1.575	1.772	2.205	2.598	4810	41850	25375	15950	7xM10	61
2 7/8	2.875	4.528	1.575	1.772	2.205	2.598	5043	41850	25375	15950	7xM10	61
2 15/16	2.938	4.528	1.575	1.772	2.205	2.598	5180	41850	23925	15950	7xM10	61
3	3.000	4.724	1.575	1.772	2.205	2.598	5215	41850	23925	15950	7xM10	61
3 1/4	3.250	4.921	1.575	1.772	2.205	2.598	5476	41850	22475	14500	7xM10	61
3 3/8	3.375	4.921	1.575	1.772	2.205	2.598	6660	47925	24650	16675	8xM10	61
3 7/16	3.438	5.118	1.575	1.772	2.205	2.598	6892	47925	23620	15225	8xM10	61
3 1/2	3.500	5.118	1.575	1.772	2.205	2.598	7104	47925	23200	15225	8xM10	61
3 3/4	3.750	5.315	1.575	1.772	2.205	2.598	9324	60750	26825	18850	10xM10	61
3 15/16	3.938	5.709	1.811	2.047	2.559	3.031	9842	60750	23200	15225	7xM12	107
4	4.000	5.709	1.811	2.047	2.559	3.031	10000	60750	23200	15225	7xM12	107

Ordering Example: LA5XA-3/4

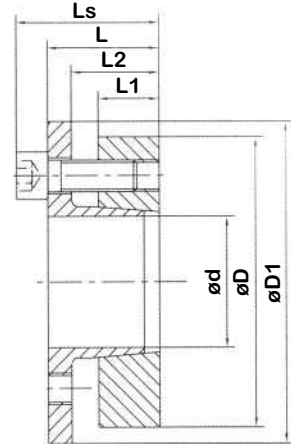
LA5XA = Type  
3/4 = size



# Locking Ring Type 6 and 7 (Metric)



LA6



LA7

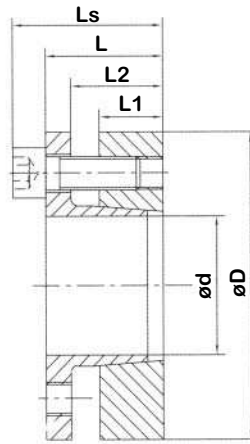
## LA6 & LA7

ød x øD	L1	Fundamental Dimensions				Internal Hexagon Headed Bolt		Rated Load		Pf N/mm <sup>2</sup>	MA N M	G kg
		L	L2	Ls	D1	Sizes	Qty	Ft KN	Mt KN M			
18/47	17	28	22	34	56	M6x20	5	38.0	0.35	270	14	0.26
19/47	17	28	22	34	56	M6x20	5	38.0	0.37	280	14	0.27
20/47	17	28	22	34	56	M6x20	5	38.0	0.38	295	14	0.27
22/47	17	28	22	34	56	M6x20	5	38.0	0.41	245	14	0.28
24/50	17	28	22	34	59	M6x20	5	38.0	0.45	285	14	0.29
25/50	17	28	22	34	59	M6x20	6	45.6	0.57	255	14	0.29
28/55	17	28	22	34	64	M6x20	6	45.6	0.63	235	14	0.35
30/55	17	28	22	34	64	M6x20	6	45.6	0.66	295	14	0.36
32/60	17	28	22	34	69	M6x20	8	60.6	0.97	270	14	0.44
35/60	17	28	22	34	69	M6x20	8	60.6	1.06	250	14	0.47
38/65	17	28	22	34	74	M6x20	8	60.6	1.15	235	14	0.48
40/65	17	28	22	34	74	M6x20	8	60.6	1.21	300	14	0.55
42/75	20	33	25	41	84	M8x25	7	98.0	2.05	295	35	0.76
45/75	20	33	25	41	84	M8x25	7	98.0	2.20	270	35	0.78
48/80	20	33	25	41	89	M8x25	7	98.0	2.35	260	35	0.81
50/80	20	33	25	41	89	M8x25	7	98.0	2.45	270	35	0.87
55/85	20	33	25	41	94	M8x25	8	112.0	3.08	245	35	0.94
60/90	20	33	25	41	99	M8x25	8	112.0	3.36	255	35	1.00
65/95	20	33	25	41	104	M8x25	9	126.0	4.09	250	35	1.70
70/110	24	40	30	50	119	M10x30	8	179.0	6.30	250	70	1.79
75/115	24	40	30	50	124	M10x30	8	179.0	6.70	260	70	1.89
80/120	24	40	30	50	129	M10x30	8	179.0	7.15	250	70	1.98
85/125	24	40	30	50	134	M10x30	9	200.0	8.50	260	70	2.15
90/130	24	40	30	50	139	M10x30	9	200.0	9.10	260	70	2.24
95/135	24	40	30	50	144	M10x30	10	224.0	10.60	260	70	3.07
100/145	26	44	32	56	154	M12x30	8	268.0	13.40	270	125	3.35
110/155	26	44	32	56	164	M12x30	8	268.0	14.60	240	125	3.59
120/165	26	44	32	56	174	M12x30	9	298.0	17.90	250	125	5.04
130/180	34	54	40	68	189	M12x30	12	400.0	26.00	240	125	5.33
140/190	-	-	-	-	-	-	-	-	-	-	-	-
150/200	-	-	-	-	-	-	-	-	-	-	-	-

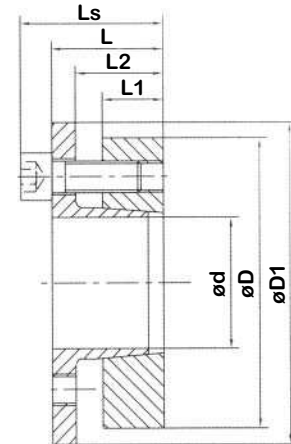
Ordering Example: LA6-18/47

LA6 = Type  
18 = ød  
47 = øD

# Locking Ring Type 6X (Inch)



LA6



LA6B

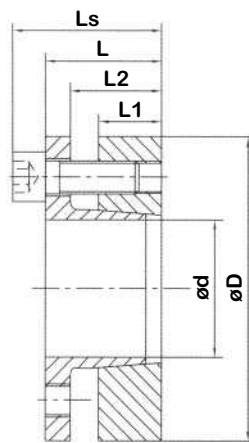
## LA6X (A & B)

Inch Series Inches			Inches				Mt ft-lb	Axial force lb	pw psi	pn psi	Locking Screw	
Size	d	D	L1	L2	L	Ls					No.x type	Ms ft-lb
3/4	0.750	1.850	0.669	0.866	1.102	1.339	274	8550	41970	17790	5xM6	11
7/8	0.875	1.850	0.669	0.866	1.102	1.339	296	8550	38410	17790	5xM6	11
1	1.000	1.969	0.669	0.866	1.102	1.339	412	10350	40550	19920	6xM6	11
1 1/8	1.125	2.165	0.669	0.866	1.102	1.339	455	10350	36280	18500	6xM6	11
1 3/16	1.188	2.165	0.669	0.866	1.102	1.339	477	10350	33430	18500	6xM6	11
1 1/4	1.250	2.362	0.669	0.866	1.102	1.339	694	13500	46950	22050	8xM6	11
1 3/8	1.375	2.362	0.669	0.866	1.102	1.339	767	13500	41970	22050	8xM6	11
1 7/16	1.438	2.559	0.669	0.866	1.102	1.339	795	13500	42680	20630	8xM6	11
1 1/2	1.500	2.559	0.669	0.866	1.102	1.339	875	13500	38410	20630	8xM6	11
1 5/8	1.625	2.953	0.787	0.984	1.299	1.614	1461	22050	44960	24190	7xM8	26
1 11/16	1.688	2.953	0.787	0.984	1.299	1.614	1512	22050	43390	24190	7xM8	26
1 3/4	1.750	2.953	0.787	0.984	1.299	1.614	1591	22050	41260	24190	7xM8	26
1 7/8	1.875	3.150	0.787	0.984	1.299	1.614	1685	22050	39120	22760	7xM8	26
1 15/16	1.938	3.150	0.787	0.984	1.299	1.614	1772	22050	36990	22760	7xM8	26
2	2.000	3.150	0.787	0.984	1.299	1.614	1801	22050	36420	22760	7xM8	26
2 1/8	2.125	3.346	0.787	0.984	1.299	1.614	2228	25200	38410	24900	8xM8	26
2 3/16	2.188	3.346	0.787	0.984	1.299	1.614	2250	25200	37990	24900	8xM8	26
2 1/4	2.250	3.543	0.787	0.984	1.299	1.614	2315	25200	36990	23480	8xM8	26
2 3/8	2.375	3.543	0.787	0.984	1.299	1.614	2431	25200	34860	23480	8xM8	26
2 7/16	2.438	3.740	0.787	0.984	1.299	1.614	2818	28350	38130	24900	9xM8	26
2 1/2	2.500	3.740	0.787	0.984	1.299	1.614	2887	28350	37700	24900	9xM8	26
2 9/16	2.562	3.740	0.787	0.984	1.299	1.614	2959	28350	36280	24900	9xM8	26
2 11/16	2.688	4.331	0.945	1.181	1.575	1.969	4442	40275	41260	25610	8xM10	51
2 3/4	2.750	4.331	0.945	1.181	1.575	1.969	4558	40275	39830	25610	8xM10	51
2 7/8	2.875	4.528	0.945	1.181	1.575	1.969	4717	40275	38410	24190	8xM10	51
2 15/16	2.938	4.528	0.945	1.181	1.575	1.969	4848	40275	36990	24190	8xM10	51
3	3.000	4.724	0.945	1.181	1.575	1.969	4920	40275	37700	25180	8xM10	51
3 1/4	3.250	4.921	0.945	1.181	1.575	1.969	5173	40275	35570	24190	8xM10	51
3 3/8	3.375	4.921	0.945	1.181	1.575	1.969	6150	45000	36990	25610	9xM10	51
3 7/16	3.438	5.118	0.945	1.181	1.575	1.969	6389	45000	36990	24190	9xM10	51
3 1/2	3.500	5.118	0.945	1.181	1.575	1.969	6584	45000	35570	24190	9xM10	51
3 3/4	3.750	5.315	0.945	1.181	1.575	1.969	7670	50400	36690	18500	10xM10	51
3 15/16	3.938	5.709	1.024	1.260	1.732	2.205	9696	60300	38410	27030	8xM12	91
4	4.000	5.709	1.024	1.260	1.732	2.205	9848	60300	37840	27030	8xM12	91
4 7/16	4.438	6.102	1.024	1.260	1.732	2.205	10564	60300	34140	25610	8xM12	91
4 3/4	4.750	6.496	1.024	1.260	1.732	2.205	12952	67050	35570	25610	9xM12	91
4 15/16	4.938	7.087	1.339	1.575	2.126	2.598	18813	90000	34140	24190	12xM12	91
5 7/16	5.438	7.480	1.339	1.575	2.126	2.677	19536	86400	29880	21340	9xM14	138
5 15/16	5.938	7.874	1.339	1.575	2.126	2.677	23878	99000	32720	24190	10xM14	138
6 7/16	6.438	8.858	1.732	1.969	2.520	3.071	32561	119250	25610	18500	12xM14	138
6 15/16	6.938	9.252	1.732	1.969	2.520	3.071	34008	119250	24190	18500	12xM14	138
7 7/16	7.438	9.843	1.732	1.969	2.520	3.071	45513	148500	29880	21340	15xM14	138
7 15/16	7.938	10.236	1.732	1.969	2.520	3.071	47756	148500	27030	21340	15xM14	138

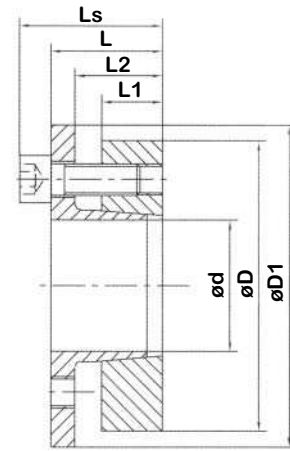
Ordering Example: LA6X-3/4

LA6X = Type  
3/4 = Size

# Locking Ring Type 8 (Metric)



LA8A



LA8(B)

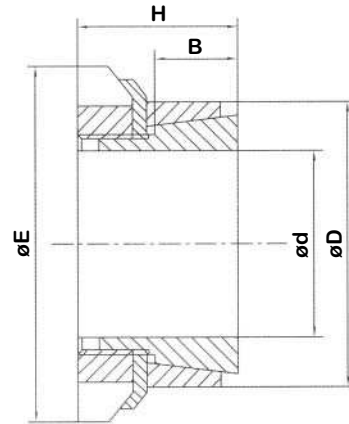
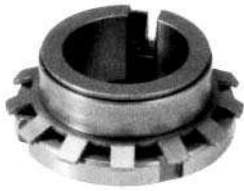
## LA8 (A & B)

$\varnothing d \times \varnothing D$	Fundamental Dimensions					Internal Hexagon Headed Bolt		Rated Load		Pf N/mm <sup>2</sup>	MA N M	G kg
	L1	L	L2	Ls	D1	Sizes	Qty	Ft KN	Mt KN M			
14/55	17	30	22	38	62	M8 x 25	3	18.0	0.127	208	25	0.81
16/55	17	30	22	38	62	M8 x 25	3	18.0	0.142	181	25	0.87
18/55	17	30	22	38	62	M8 x 25	3	18.0	0.157	161	25	0.94
19/55	17	30	22	38	62	M8 x 25	3	18.0	0.165	152	25	1.02
20/55	17	30	22	38	62	M8 x 25	3	18.0	0.172	145	25	1.06
22/55	17	30	22	38	62	M8 x 25	3	25.5	0.285	186	35	1.70
24/55	17	30	22	38	62	M8 x 25	3	25.5	0.307	170	35	1.79
25/55	17	30	22	38	62	M8 x 25	3	25.5	0.315	163	35	1.89
28/55	17	30	22	38	62	M8 x 25	3	31.5	0.435	175	41	1.98
30/55	17	30	22	38	62	M8 x 25	3	31.5	0.472	163	41	2.15
24/65	17	30	22	38	72	M8 x 25	5	37.4	0.440	244	30	0.94
25/65	17	30	22	38	72	M8 x 25	5	37.4	0.460	234	30	1.02
28/65	17	30	22	38	72	M8 x 25	5	43.6	0.600	243	35	1.06
30/65	17	30	22	38	72	M8 x 25	5	43.6	0.640	227	35	1.70
32/65	17	30	22	38	72	M8 x 25	5	43.6	0.690	213	35	1.79
35/65	17	30	22	38	72	M8 x 25	5	52.5	0.910	234	41	1.89
38/65	17	30	22	38	72	M8 x 25	5	52.5	1.050	216	41	1.98
40/65	17	30	22	38	72	M8 x 25	5	52.5	1.150	205	41	2.15
30/80	20	33	25	41	87	M8 x 25	7	52.5	0.780	232	30	1.70
32/80	20	33	25	41	87	M8 x 25	7	52.5	0.830	218	30	1.79
35/80	20	33	25	41	87	M8 x 25	7	61.0	1.060	232	35	1.89
38/80	20	33	25	41	87	M8 x 25	7	61.0	1.150	214	35	1.98
40/80	20	33	25	41	87	M8 x 25	7	61.0	1.220	203	41	2.15
42/80	20	33	25	41	87	M8 x 25	7	73.5	1.540	233	41	2.24
45/80	20	33	25	41	87	M8 x 25	7	73.5	1.650	217	41	3.07
48/80	20	33	25	41	87	M8 x 25	7	73.5	1.760	203	41	3.35
50/80	20	33	25	41	87	M8 x 25	7	73.5	1.830	195	41	3.59

Ordering Example: LA8A-14/55

LA8A = Type  
14 =  $\varnothing d$   
55 =  $\varnothing D$

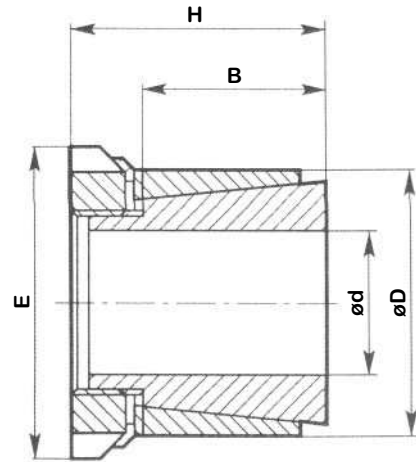
# Locking Ring Type 9 (Metric)



## LA9

Part No.	Fundamental Dimensions			Internal Hexagon Headed Bolt		Rated Load		Pf N/mm <sup>2</sup>	MA N M	G kg
	E	H	B	Sizes	Qty	Ft KN	Mt KN M			
LA9-14/25	32	16.5	6.5	M20 x 1	1	5.10	0.038	200	95	0.06
LA9-15/25	32	16.5	6.5	M20 x 1	1	5.50	0.041	185	95	0.06
LA9-16/25	32	16.5	6.5	M20 x 1	1	5.45	0.043	174	95	0.06
LA9-17/26	32	16.5	6.5	M20 x 1	1	5.50	0.047	164	95	0.07
LA9-18/26	32	16.5	6.5	M22 x 1	1	5.40	0.049	155	95	0.07
LA9-18/30	38	16.5	6.5	M25 x 1.5	1	6.60	0.058	185	160	0.07
LA9-19/30	38	18	6.5	M25 x 1.5	1	6.60	0.062	176	160	0.08
LA9-20/30	38	18	6.5	M25 x 1.5	1	6.60	0.066	167	160	0.08
LA9-22/32	38	18	6.5	M25 x 1.5	1	6.60	0.073	152	160	0.09
LA9-24/35	45	18	6.5	M30 x 1.5	1	8.75	0.105	185	220	0.09
LA9-25/35	45	18	6.5	M30 x 1.5	1	8.80	0.110	178	220	0.09
LA9-28/36	45	18	6.5	M32 x 1.5	1	8.55	0.120	159	220	0.14
LA9-28/40	52	19.5	7	M35 x 1.5	1	10.60	0.149	188	340	0.15
LA9-30/40	52	19.5	7	M35 x 1.5	1	10.60	0.160	164	340	0.14
LA9-32/45	52	21.5	8	M36 x 1.5	1	10.60	0.170	154	340	0.16
LA9-35/45	58	21.5	8	M40 x 1.5	1	13.10	0.230	153	480	0.17
LA9-36/45	58	21.5	8	M40 x 1.5	1	13.30	0.240	149	480	0.16
LA9-38/48	58	21.5	8	M42 x 1.5	1	13.10	0.250	141	480	0.27
LA9-38/50	58	21.5	8	M42 x 1.5	1	13.10	0.250	141	480	0.28
LA9-40/50	65	24.5	10	M42 x 1.5	1	15.50	0.310	124	680	0.24
LA9-40/52	65	24.5	10	M45 x 1.5	1	15.50	0.310	120	680	0.26
LA9-42/55	65	24.5	10	M48 x 1.5	1	15.20	0.320	114	680	0.28
LA9-45/55	70	25.5	10	M50 x 1.5	1	17.70	0.400	122	870	0.30
LA9-45/57	70	25.5	10	M50 x 1.5	1	17.70	0.400	122	870	0.30
LA9-48/60	75	25.5	10	M55 x 2	1	20.80	0.500	135	970	0.36
LA9-50/60	75	25.5	10	M55 x 2	1	20.80	0.520	130	970	0.32
LA9-50/62	75	25.5	10	M55 x 2	1	20.80	0.520	130	970	0.32
LA9-55/65	80	27.5	12	M60 x 2	1	22.00	0.610	103	1100	0.38
LA9-55/68	80	27.5	12	M60 x 2	1	22.00	0.610	103	1100	0.38
LA9-56/68	80	27.5	12	M60 x 2	1	22.00	0.620	101	1100	0.39
LA9-60/70	85	30	12	M65 x 2	1	26.60	0.800	113	1300	0.43
LA9-60/73	85	28.5	12	M65 x 2	1	26.60	0.800	113	1300	0.43
LA9-63/79	92	30.5	14	M70 x 2	1	31.10	0.980	107	1600	0.47
LA9-65/79	92	30.5	14	M70 x 2	1	31.10	1.010	104	1600	0.50
LA9-70/84	98	31.5	14	M75 x 2	1	35.40	1.240	110	2000	0.65

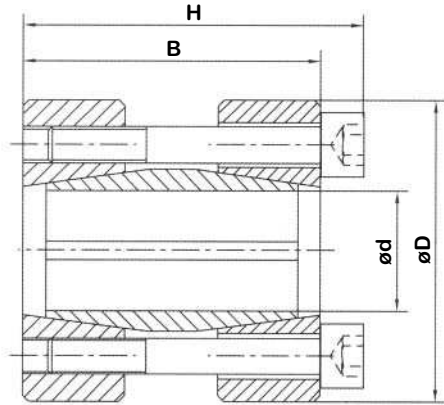
# Locking Ring Type 9L (Long - Metric)



## LA9L

Part No.	Fundamental Dimensions			Internal Hexagon Headed Bolt		Rated Load		Pf N/mm <sup>2</sup>	MA N M	G kg
	E	H	B	Sizes	Qty	Ft KN	Mt KN M			
LA9L-14/25	32	30	20	M20 x 1	1	9.0	0.064	85	95	0.11
LA9L-15/25	32	30	20	M20 x 1	1	9.0	0.070	80	95	0.11
LA9L-16/25	32	30	20	M20 x 1	1	9.0	0.073	75	95	0.11
LA9L-17/25	32	32	20	M20 x 1	1	9.0	0.080	70	95	0.13
LA9L-18/30	32	32	20	M25 x 1.5	1	9.0	0.083	65	95	0.13
LA9L-19/30	38	32	20	M25 x 1.5	1	11.0	0.105	75	160	0.13
LA9L-20/30	38	32	25	M25 x 1.5	1	11.0	0.112	70	160	0.15
LA9L-22/35	45	36	25	M25 x 1.5	1	14.0	0.163	70	220	0.15
LA9L-24/35	45	36	25	M30 x 1.5	1	14.0	0.178	65	220	0.17
LA9L-25/35	45	36	25	M30 x 1.5	1	14.0	0.185	60	220	0.17
LA9L-28/40	52	42	30	M35 x 1.5	1	17.0	0.250	55	340	0.17
LA9L-30/40	52	42	30	M35 x 1.5	1	17.0	0.270	50	340	0.26
LA9L-32/45	58	44	30	M40 x 1.5	1	21.0	0.350	60	480	0.26
LA9L-35/45	58	44	30	M40 x 1.5	1	21.0	0.390	55	480	0.26
LA9L-38/50	65	45	30	M42 x 1.5	1	26.0	0.500	60	680	0.30
LA9L-40/50	65	45	30	M42 x 1.5	1	26.0	0.520	55	680	0.33
LA9L-42/55	70	46	30	M48 x 1.5	1	30.0	0.630	65	870	0.38
LA9L-45/55	70	46	30	M50 x 1.5	1	30.0	0.680	60	870	0.45
LA9L-48/60	75	46	30	M55 x 2	1	35.0	0.840	60	970	0.51
LA9L-50/60	75	46	30	M55 x 2	1	35.0	0.880	60	970	0.66
LA9L-55/65	80	46	30	M60 x 2	1	37.0	1.030	60	1100	0.72
LA9L-60/70	85	52	30	M60 x 2	1	45.0	1.360	65	1300	0.80

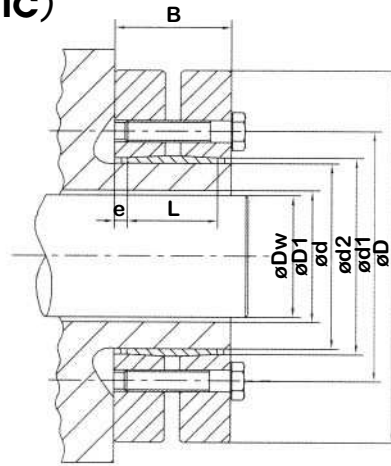
# Locking Ring Type 10 (Metric)



## LA10

Part No.	Fundamental Dimensions		Internal Hexagon Headed Bolt		Rated Load		Pf N/mm <sup>2</sup>	MA N M	G kg
	B	H	Sizes	Qty	Ft KN	Mt KN M			
LA10-15/45	50	56	M6 x 40	4	16.8	0.126	127	17	0.40
LA10-16/45	50	56	M6 x 40	4	16.8	0.134	119	17	0.40
LA10-17/45	50	56	M6 x 40	4	16.8	0.142	112	17	0.40
LA10-17/50	-	-	-	-	-	-	-	-	-
LA10-18/50	50	56	M6 x 40	4	16.8	0.151	105	17	0.50
LA10-19/50	50	56	M6 x 40	4	16.8	0.159	100	17	0.50
LA10-20/50	50	56	M6 x 40	4	16.8	0.168	95	17	0.50
LA10-22/55	60	66	M6 x 50	4	25.2	0.277	103	17	0.70
LA10-24/55	60	66	M6 x 50	4	25.2	0.302	95	17	0.73
LA10-25/55	60	66	M6 x 50	6	25.2	0.315	91	17	0.77
LA10-28/60	60	66	M6 x 50	6	25.2	0.327	87	17	0.91
LA10-30/60	60	66	M6 x 50	6	25.2	0.352	81	17	0.81
LA10-32/63	60	66	M6 x 50	6	31.2	0.378	76	17	0.80
LA10-35/75	75	83	M8 x 55	4	31.2	0.499	80	42	1.30
LA10-38/75	75	83	M8 x 55	4	31.2	0.546	73	42	1.20
LA10-40/75	75	83	M8 x 55	4	31.2	0.592	67	42	1.40
LA10-42/78	75	83	M8 x 55	4	46.8	0.624	64	42	1.33
LA10-45/85	85	93	M8 x 70	6	46.8	0.982	74	42	2.30
LA10-48/90	85	93	M8 x 70	6	46.8	1.053	69	42	2.30
LA10-50/90	85	93	M8 x 70	6	46.8	1.123	65	42	2.50
LA10-55/94	85	93	M8 x 70	8	62.4	1.170	62	42	2.40
LA10-60/100	85	93	M8 x 70	8	62.4	1.171	58	42	3.00
LA10-65/105	85	93	M8 x 70	8	62.4	1.870	53	42	3.30
LA10-70/115	100	110	M10 x 80	6	62.4	2.020	49	84	4.10
LA10-75/120	100	110	M10 x 80	6	98.4	2.120	47	84	3.80
LA10-80/125	100	110	M10 x 80	8	98.4	3.440	66	84	5.20

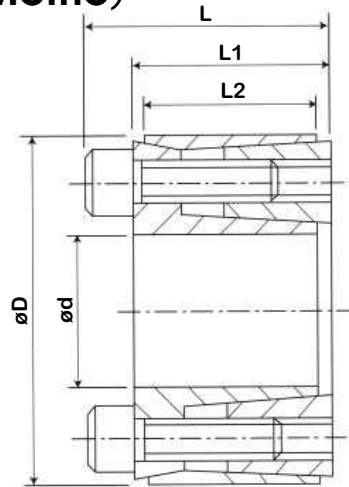
# Locking Ring Type 11 (Metric)



## LA11

Part No.	Fundamental Dimensions						Internal Hexagon Headed Bolt		Rated Load		Pf N/mm <sup>2</sup>	MA N M	G kg
	DW	L	B	d1	d2	E	Sizes	Qty	Ft KN	Mt KN M			
LA11-24/50	19-21	14	19.5	36	26	2.75	M5 x18	6	20.6	0.205	314	4.9	0.2
LA11-30/60	24-26	16	21.5	44	32	2.75	M5 x18	7	23.7	0.297	254	4.9	0.3
LA11-36/72	28-31	18	23.5	52	38	2.75	M6 x 20	5	38.0	0.570	271	11.8	0.4
LA11-44/80	34-36	20	25.5	61	47	2.75	M6 x 20	7	49.0	0.857	278	11.8	0.6
LA11-50/90	38-42	22	27.5	70	53	2.75	M6 x 25	8	58.8	1.180	258	11.8	0.8
LA11-55/100	42-48	23	30.5	75	58	3.75	M6 x 25	8	61.7	1.390	226	11.8	1.1
LA11-62/110	48-52	23	30.5	86	66	3.75	M6 x 25	10	83.1	2.080	249	11.8	1.3
LA11-68/115	50-60	23	30.5	86	72	3.75	M6 x 25	10	80.9	2.230	229	11.8	1.4
LA11-75/138	55-65	25	32.5	100	79	3.75	M8 x 30	7	111.0	3.310	253	29.4	1.7
LA11-80/145	60-70	25	32.5	100	84	3.75	M8 x 30	7	115.0	3.720	239	29.4	1.9
LA11-90/155	65-75	30	39.0	114	94	4.50	M8 x 35	10	160.0	5.600	255	29.4	3.3
LA11-100/170	70-80	34	44.0	124	104	5.00	M8 x 35	12	182.0	6.840	242	29.4	4.7
LA11-110/185	75-85	39	50.0	136	114	5.50	M10 x 40	9	207.0	8.250	226	57.8	5.9
LA11-125/215	85-95	42	54.0	160	137	6.00	M10 x 40	12	262.0	11.800	240	57.8	8.3
LA11-140/230	95-105	46	60.5	175	146	7.25	M12 x 45	10	331.0	16.600	242	98.0	10.0
LA11-155/265	105-115	50	64.5	192	165	7.25	M12 x 45	12	392.0	21.600	237	98.0	15.0
LA11-165/290	115-125	56	71.0	210	175	7.50	M16 x 55	8	544.0	32.600	259	245.0	22.0
LA11-175/300	125-135	56	71.0	220	185	7.50	M16 x 55	8	552.0	35.900	246	245.0	22.0
LA11-185/330	135-145	71	86.0	236	195	7.50	M16 x 65	10	702.0	49.100	228	245.0	37.0

# Locking Ring Type 12 (Metric)



## LA12

Part No.	Fundamental Dimensions			Screw Bolt	Rated Load		Ps MPA	Ph MPA	Ms N M	G kg
	L	L1	L2	Sizes	Mt N M	Ft KN				
LA12-16/32	21.5	17.5	11	M4 x 4	0.08	9.0	150	75	5	0.07
LA12-18/40	24.5	18.5	12	M6 x 5	0.21	23.0	260	115	17	0.12
LA12-19/41	24.5	18.5	12	M6 x 5	0.22	23.0	255	115	17	0.12
LA12-20/42	24.5	18.5	12	M6 x 6	0.24	25.5	280	130	17	0.13
LA12-22/42	24.5	18.5	12	M6 x 6	0.26	25.5	260	130	17	0.14
LA12-24/46	24.5	18.5	12	M6 x 6	0.31	25.5	230	120	17	0.15
LA12-25/47	24.5	18.5	12	M6 x 6	0.33	25.5	230	120	17	0.16
LA12-28/50	24.5	18.5	12	M6 x 8	0.49	35.0	270	150	17	0.17
LA12-30/52	24.5	18.5	12	M6 x 8	0.53	35.0	250	140	17	0.18
LA12-32/54	24.5	18.5	12	M6 x 8	0.56	35.0	230	130	17	0.19
LA12-35/57	28	22	15	M6 x 9	0.68	38.0	200	120	17	0.25
LA12-36/58	28	22	15	M6 x 9	0.71	38.0	190	115	17	0.25
LA12-38/60	28	22	15	M6 x 10	0.83	43.5	200	125	17	0.26
LA12-40/62	28	22	15	M6 x 10	0.87	43.5	190	120	17	0.27
LA12-42/70	36	28	18	M8 x 8	1.36	64.0	225	135	41	0.51
LA12-45/73	36	28	18	M8 x 8	1.45	64.0	210	130	41	0.52
LA12-48/76	36	28	18	M8 x 8	1.55	64.0	195	125	41	0.55
LA12-50/78	36	28	18	M8 x 8	1.61	64.0	190	120	41	0.57
LA12-55/83	36	28	18	M8 x 9	2.01	72.5	195	130	41	0.63
LA12-60/88	36	28	18	M8 x 10	2.42	80.5	195	135	41	0.65
LA12-65/93	36	28	18	M8 x 10	2.62	80.5	180	125	41	0.69
LA12-70/105	45	35	22	M10 x 9	4.02	114.0	200	130	83	1.20
LA12-75/110	45	35	22	M10 x 10	4.81	128.0	205	135	83	1.26
LA12-80/115	45	35	22	M10 x 10	5.12	128.0	190	130	83	1.35
LA12-85/120	45	35	22	M10 x 10	5.45	128.0	180	125	83	1.40
LA12-90/125	45	35	22	M10 x 12	6.91	153.0	205	155	83	1.46
LA12-95/130	-	-	-	-	-	-	-	-	-	-
LA12-100/138	45	35	22	M10 x 12	8.26	168.0	159	115	83	1.75



# Locking Ring Elements (For Inch and Metric)

Part No.	Fundamental Dimensions		Rated Load Pf=100N/mm <sup>2</sup>		G kg
	L	I	Ft KN	Mt KN M	
R6/9	-	-	-	-	-
R7/10	-	-	-	-	-
R8/11	-	-	-	-	-
R9/12	-	-	-	-	-
R10/13	4.5	3.7	1.4	0.01	0.002
R12/15	4.5	3.7	1.7	0.01	0.002
R13/16	4.5	3.7	1.8	0.01	0.002
R14/18	6.3	5.3	2.8	0.02	0.005
R15/19	6.3	5.3	3.0	0.02	0.005
R16/20	6.3	5.3	3.2	0.03	0.006
R17/21	6.3	5.3	3.4	0.03	0.006
R18/22	6.3	5.3	3.6	0.03	0.008
R19/24	6.3	5.3	3.8	0.04	0.008
R20/25	6.3	5.3	4.0	0.04	0.010
R22/26	6.3	5.3	4.5	0.05	0.010
R24/28	6.3	5.3	4.8	0.06	0.010
R25/30	6.3	5.3	5.0	0.06	0.010
R28/32	6.3	5.3	5.6	0.78	0.010
R30/35	6.3	5.3	6.0	0.09	0.010
R32/36	6.3	5.3	6.4	0.10	0.015
R35/40	7.0	6.0	7.9	0.14	0.020
R36/42	7.0	6.0	8.1	0.15	0.020
R38/44	7.0	6.0	8.6	0.16	0.020
R40/45	8.0	6.6	9.9	0.20	0.025
R42/48	8.0	6.6	10.5	0.22	0.040
R45/52	10.0	8.6	14.6	0.33	0.043
R48/55	10.0	8.6	15.6	0.38	0.045
R50/57	10.0	8.6	16.2	0.40	0.050
R55/62	10.0	8.6	17.8	0.49	0.060
R56/64	12.0	10.4	22.0	0.62	0.074
R60/68	12.0	10.4	23.5	0.70	0.074
R63/71	12.0	10.4	25.5	0.83	0.080
R65/73	12.0	10.4	25.6	0.93	0.080
R70/79	14.0	12.2	32.0	1.12	0.110
R71/80	14.0	12.2	32.7	1.16	0.120
R75/84	14.0	12.2	34.4	1.29	0.120
R80/91	17.0	15.0	45.0	1.81	0.190
R85/96	17.0	15.0	48.0	2.04	0.200
R90/101	17.0	15.0	51.0	2.29	0.220
R95/106	17.0	15.0	54.0	2.55	0.230
R100/114	21.0	18.7	70.0	3.50	0.380
R110/124	21.0	18.7	77.0	4.25	0.410
R120/134	21.0	18.7	84.0	5.05	0.450
R130/148	28.0	25.3	124.0	8.05	0.850
R140/158	28.0	25.3	134.0	9.35	0.910
R150/168	28.0	25.3	143.0	10.70	0.970

