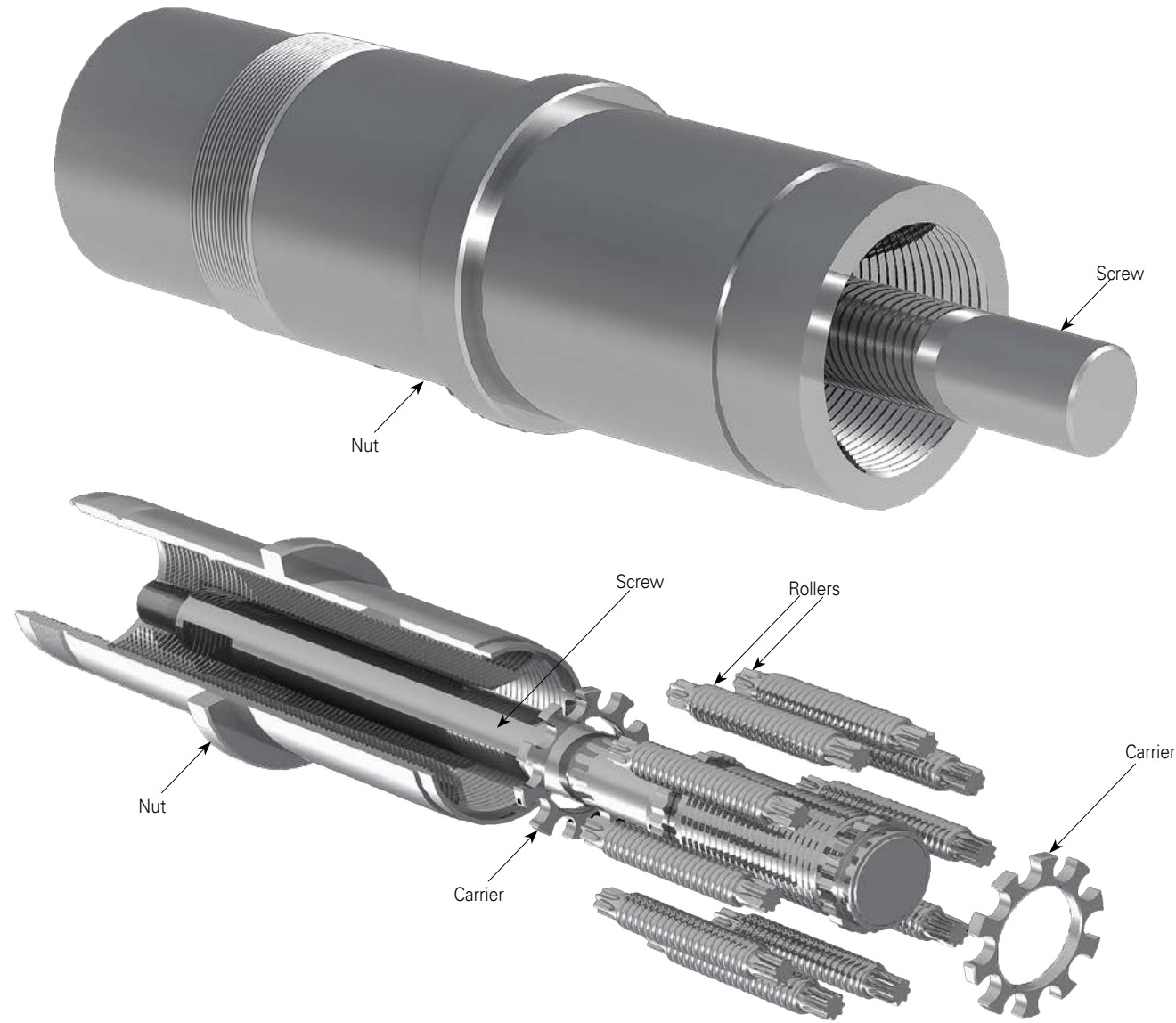


Inverted Roller Screws



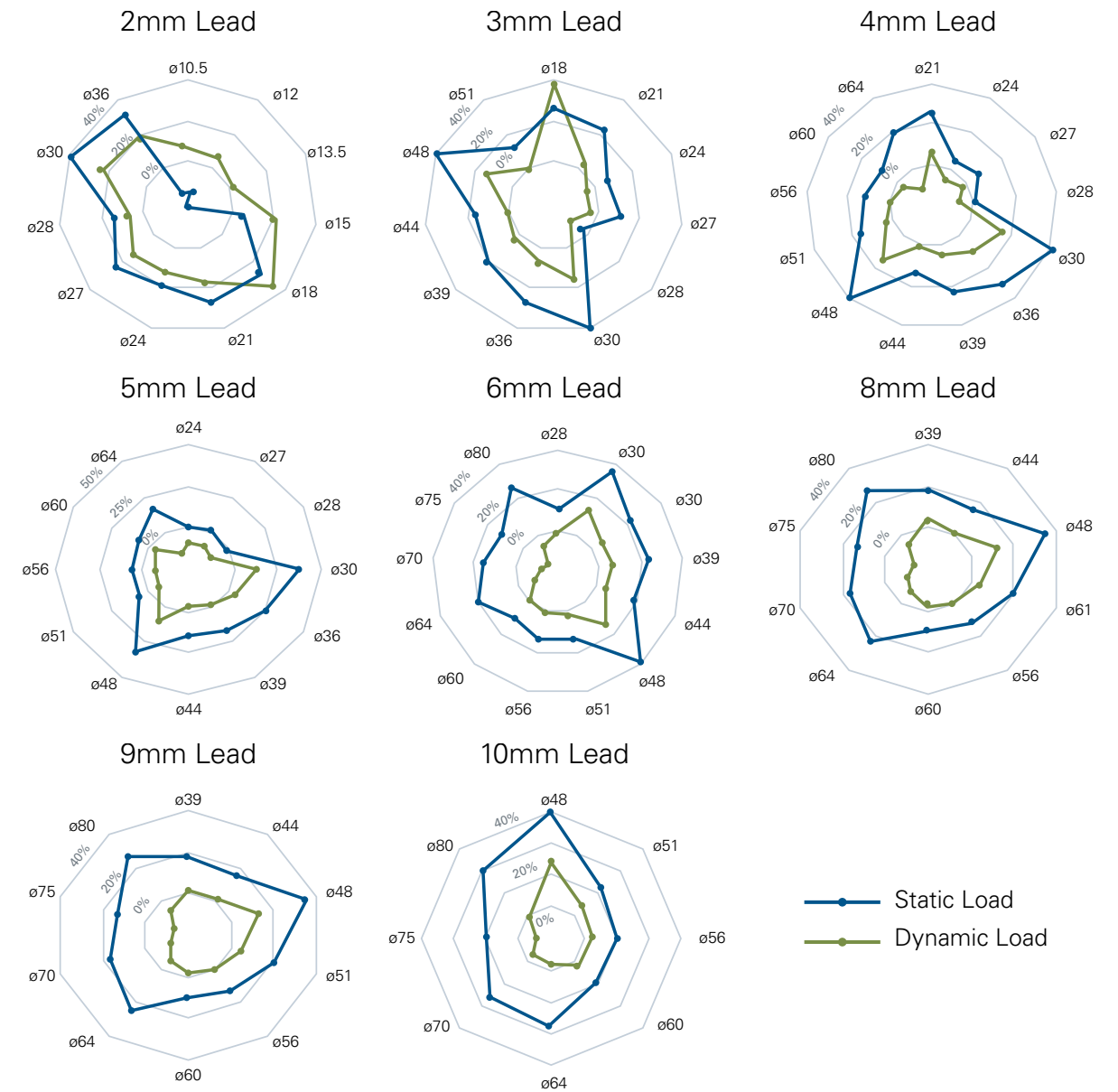
Inverted Roller Screws (IRS)

Overview



Inverted Roller Screws (IRS)

Load Capacity Charts



The Inverted Roller Screw (IRS) is the exact inverse of the standard roller screw (SRS). The screw shaft together with the rollers translates internally along the nut. It exhibits higher load capacities in the same envelop

thanks to its geometric settings. This type of planetary roller screw can only be preloaded using rollers as for backlash elimination with rollers. Normally the nut and the screw are customized to fit application needs.

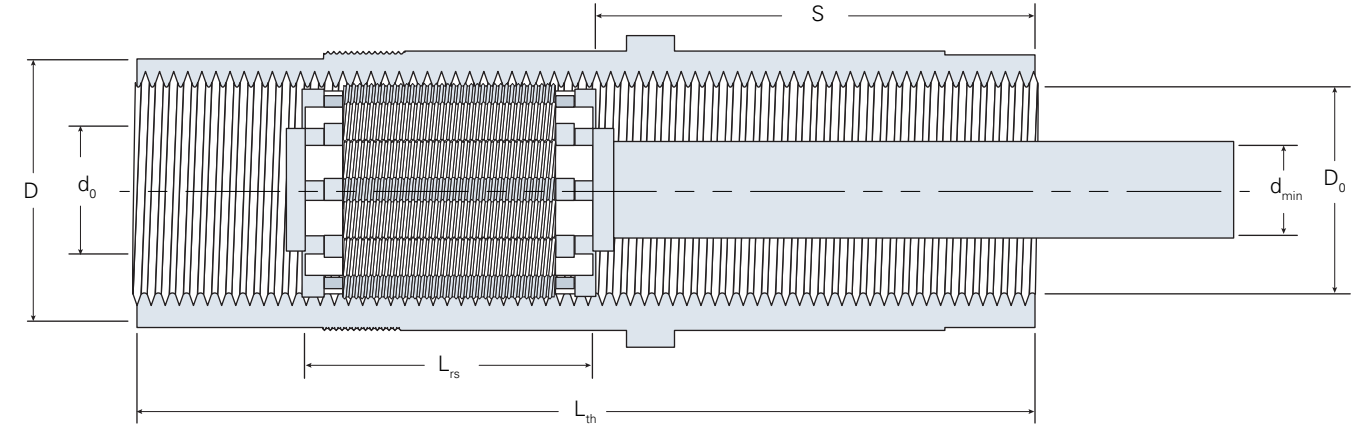
Inverted Roller Screws (IRS)

Dynamic Load Ratings (kN)

Nominal diameter (mm)	Lead (mm)						Lead (mm)								
	1	2	2,4	3	4	5	6	7	8	9	10	12	14	15	16
9	14														
12	16	18													
14	16	19													
15	27	32		33											
18	42	49	51	54											
21		63	66	70	75										
24		82	86	91	96	102									
27		90		100	106	111									
28		66		72	78	80	86								
30		120	125	133	142	149	155								
36		103		113	122	127	130	136							
39			176	185	200	209	219	227	232						
44			155		166	176	183	187	193	200					
48			256	270	290	305	320	329	339	346	355				
51				300	321	338	352	366	380	392	394				
56					248	262	274	285	291	300	310	324			
60					278	295	307	317	326	339	344	363			
64					297	313	329	341	356	361	371	389	409		
70							274		294		314	324	342	346	
75							306		330		344	367	381	387	
80							421		454		483	505	505	524	609

Inverted Roller Screws

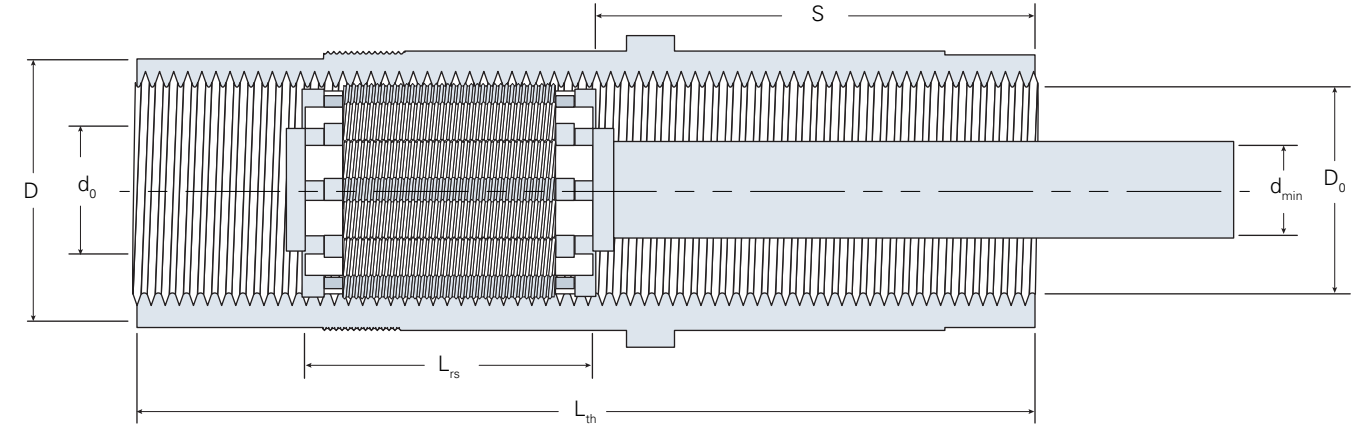
ø10.5 – ø21 mm



d_0 (mm)	D_0 (mm)	P_h (mm)	N (mm)	C_a (kN)	C_{0a} (kN)	η	η'	Z_n (mL)	Z_s (mL/m)	part number	Max axial play S_0	Minimum push tube outer diameter d_{min} (mm)	Recommended minimum nut outer diameter $D_{g6/H7}$ (mm)	Threaded length of the nut L_{th} (mm)	Standard Stroke S_{max} (mm)	Length of Roller Set L_{rs} (mm)
10.5	18	2	3	14	18	0.79	0.8	1.1	0.4	IRS 10.5x2 R	0.02	8	24	87	61	26
12	20	1	3	16	24	0.78	0.78	0.8	0.5	IRS 12x1 R	0.02	10	26	99	70	29
	20	2	3	18	24	0.79	0.78	1.2	0.5	IRS 12x2 R	0.02	10	26	99	70	29
13.5	23	1	3	16	24	0.78	0.78	0.9	0.6	IRS 13.5x1 R	0.02	12	30	112	84	28
	23	2	3	19	24	0.78	0.78	1.4	0.6	IRS 13.5x2 R	0.02	12	30	112	84	28
15	25	1	3	27	54	0.78	0.78	1	0.7	IRS 15x1 R	0.02	12	32	124	86	38
	25	2	3	32	54	0.78	0.78	1.5	0.7	IRS 15x2 R	0.02	12	32	111	86	38
	25	3	3	33	48	0.79	0.78	2.1	0.9	IRS 15x3 R	0.02	12	32	124	86	38
18	30	1	3	42	97	0.78	0.77	1.2	1.2	IRS 18x1 R	0.02	16	38	149	99	50
	30	2	3	49	98	0.78	0.78	1.8	1.2	IRS 18x2 R	0.02	16	38	149	99	50
	30	2.4	3	51	96	0.78	0.78	2.1	1.2	IRS 18x2.4 R	0.02	16	38	149	99	50
	30	3	3	54	98	0.79	0.78	2.5	1.3	IRS 18x3 R	0.02	16	38	149	99	50
	30	4	3	57	96	0.79	0.79	3.2	1.3	IRS 18x4 R	0.02	16	38	149	99	50
	30	5	3	60	96	0.79	0.79	4.4	1.4	IRS 18x5 R	0.04	16	38	149	99	50
	30	6	3	64	99	0.8	0.79	5.2	1.5	IRS 18x6 R	0.04	16	38	149	99	50
21	35	2	3	63	134	0.78	0.78	2.1	1.5	IRS 21x2 R	0.02	18	45	174	118	56
	35	2.4	3	66	134	0.78	0.78	2.5	1.6	IRS 21x2.4 R	0.02	18	45	174	118	56
	35	3	3	70	135	0.78	0.78	2.9	1.6	IRS 21x3 R	0.02	18	45	174	118	56
	35	4	3	75	135	0.79	0.78	3.7	1.7	IRS 21x4 R	0.02	18	45	174	118	56
	35	5	3	79	135	0.79	0.79	5.1	1.9	IRS 21x5 R	0.04	18	45	174	118	56
	35	6	3	82	136	0.79	0.79	5.9	2	IRS 21x6 R	0.04	18	45	174	118	56

Inverted Roller Screws

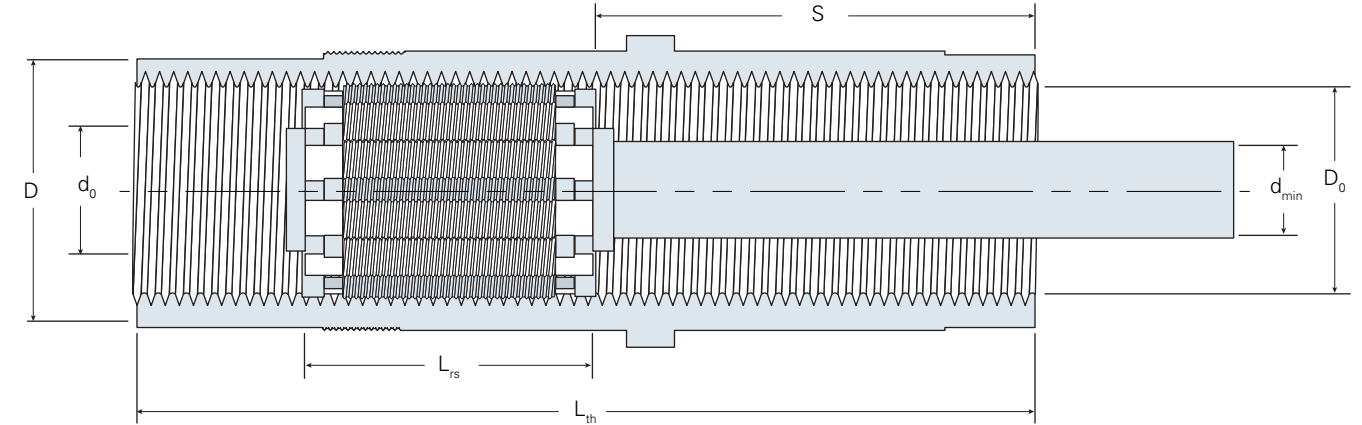
ø24 – ø30 mm



d_0 (mm)	D_0 (mm)	P_h (mm)	N (mm)	C_a (kN)	C_{0a} (kN)	η	η'	Z_n (mL)	Z_s (mL/m)	part number	Max axial play S_0	Minimum push tube outer diameter d_{min} (mm)	Recommended minimum nut outer diameter $D_{g6/H7}$ (mm)	Threaded length of the nut L_{th} (mm)	Standard Stroke S_{max} (mm)	Length of Roller Set L_{rs} (mm)
24	40	2	3	82	191	0.78	0.78	2.4	1.9	IRS 24x2 R	0.02	21	50	199	134	65
	40	2.4	3	86	191	0.78	0.78	2.8	2	IRS 24x2.4 R	0.02	21	50	199	134	65
	40	3	3	91	193	0.78	0.78	3.4	2.1	IRS 24x3 R	0.02	21	50	199	134	65
	40	4	3	96	188	0.79	0.78	4.3	2.2	IRS 24x4 R	0.02	21	50	199	134	65
	40	5	3	102	190	0.79	0.78	5.8	2.4	IRS 24x5 R	0.04	21	50	199	134	65
	40	6	3	106	189	0.79	0.79	6.7	2.6	IRS 24x6 R	0.04	21	50	199	134	65
27	45	2	3	90	210	0.78	0.78	2.8	2.3	IRS 27x2 R	0.02	24	55	224	162	62
	45	3	3	100	210	0.78	0.78	3.8	2.4	IRS 27x3 R	0.02	24	55	224	162	62
	45	4	3	106	207	0.78	0.78	4.8	2.5	IRS 27x4 R	0.02	24	55	224	162	62
	45	5	3	111	205	0.79	0.78	6.5	2.9	IRS 27x5 R	0.04	24	55	224	162	62
28	42	2	4	66	156	0.84	0.83	2.1	1.9	IRS 28x2 R	0.02	25	52	209	157	52
	42	3	4	72	157	0.84	0.83	2.8	1.9	IRS 28x3 R	0.02	25	52	209	157	52
	42	4	4	78	157	0.84	0.83	3.5	2	IRS 28x4 R	0.02	25	52	209	157	52
	42	5	4	80	152	0.84	0.83	4.9	2.2	IRS 28x5 R	0.04	25	52	209	157	52
	42	6	4	86	158	0.85	0.83	5	2.1	IRS 28x6 R	0.02	27	52	209	157	52
30	50	2	3	120	312	0.78	0.78	3.1	2.9	IRS 30x2 R	0.02	27	60	249	174	75
	50	2.4	3	125	310	0.78	0.78	3.5	2.9	IRS 30x2.4 R	0.02	27	60	249	174	75
	50	3	3	133	315	0.78	0.78	4.2	3	IRS 30x3 R	0.02	27	60	249	174	75
	50	4	3	142	313	0.78	0.78	5.3	3.2	IRS 30x4 R	0.02	27	60	249	174	75
	50	5	3	149	311	0.79	0.78	7.3	3.7	IRS 30x5 R	0.04	27	60	249	174	75
	50	6	3	155	309	0.79	0.78	8.4	3.9	IRS 30x6 R	0.04	27	60	249	174	75

Inverted Roller Screws

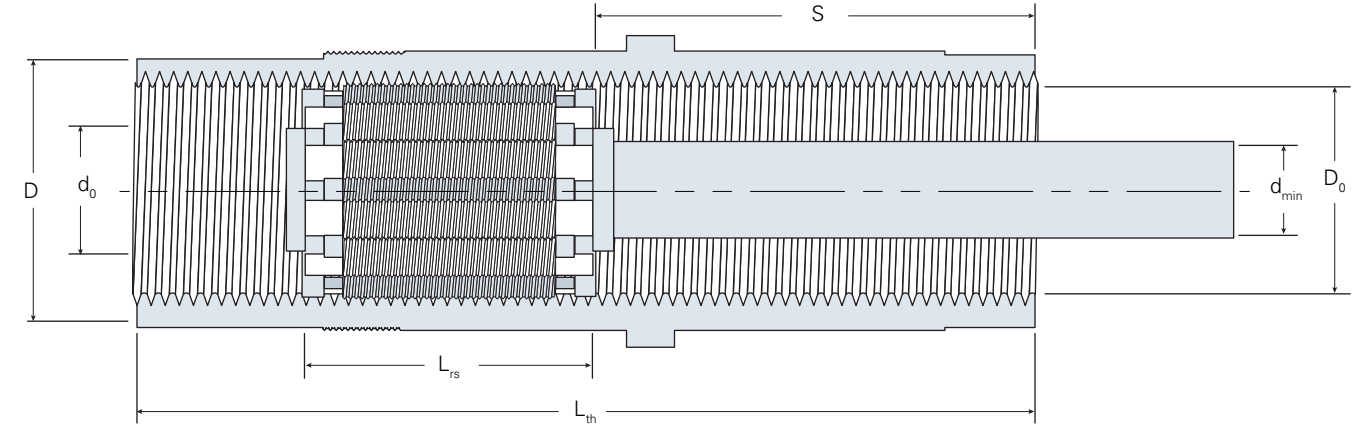
ø36 – ø44 mm



d ₀ (mm)	D ₀ (mm)	P _h (mm)	N (mm)	C _a (kN)	C _{0a} (kN)	η	η'	Z _n (mL)	Z _s (mL/m)	part number	Max axial play	Minimum push tube outer diameter	Recommended minimum nut outer diameter	Threaded length of the nut	Standard Stroke	Length of Roller Set
											S ₀	d _{min} (mm)	D _{g6/H7} (mm)	L _{th} (mm)	S _{max} (mm)	L _{rs} (mm)
36	54	2	4	103	284	0.82	0.81	2.7	2.8	IRS 36x2 R	0.02	33	64	269	206	63
	54	3	4	113	280	0.82	0.81	3.6	2.9	IRS 36x3 R	0.02	33	64	269	206	63
	54	4	4	122	285	0.83	0.81	4.5	3	IRS 36x4 R	0.02	33	64	269	206	63
	54	5	4	127	279	0.83	0.82	6.3	3.4	IRS 36x5 R	0.04	33	64	269	206	63
	54	6	4	130	270	0.83	0.82	6.4	3.4	IRS 36x6 R	0.02	33	64	269	206	63
	54	7	4	136	274	0.83	0.82	8.2	3.8	IRS 36x7 R	0.04	33	64	269	206	63
39	65	2.4	3	176	473	0.76	0.76	4.6	5.1	IRS 39x2.4 R	0.02	36	75	324	234	90
	65	3	3	185	470	0.76	0.76	5.5	5.3	IRS 39x3 R	0.02	36	75	324	234	90
	65	4	3	200	477	0.76	0.76	6.9	5.6	IRS 39x4 R	0.02	36	75	324	234	90
	65	5	3	209	472	0.76	0.76	9.4	6.3	IRS 39x5 R	0.04	36	75	324	234	90
	65	6	3	219	472	0.77	0.77	10.9	6.6	IRS 39x6 R	0.04	36	75	324	234	90
	65	7	3	227	473	0.77	0.77	12.4	6.9	IRS 39x7 R	0.04	36	75	324	234	90
44	66	3	4	155	420	0.82	0.81	4.4	4.8	IRS 44x3 R	0.02	40	76	329	253	76
	66	4	4	166	420	0.82	0.81	5.5	5	IRS 44x4 R	0.02	40	76	329	253	76
	66	5	4	176	426	0.83	0.81	7.7	5.6	IRS 44x5 R	0.04	40	76	329	253	76
	66	6	4	183	422	0.83	0.82	8.8	5.7	IRS 44x6 R	0.04	40	76	329	253	76
	66	7	4	187	412	0.83	0.82	10	5.9	IRS 44x7 R	0.04	40	76	329	253	76
	66	8	4	193	413	0.83	0.82	11.1	6	IRS 44x8 R	0.04	40	76	329	253	76
	66	9	4	200	416	0.83	0.82	12.2	6.2	IRS 44x9 R	0.04	40	76	329	253	76

Inverted Roller Screws

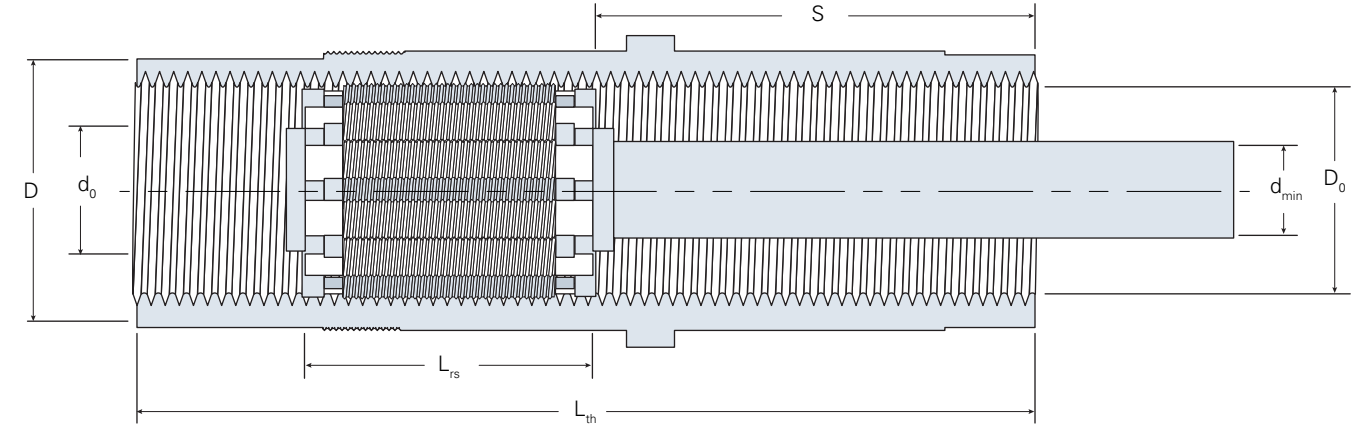
ø48 – ø56 mm



d ₀ (mm)	D ₀ (mm)	P _h (mm)	N (mm)	C _a (kN)	C _{0a} (kN)	η	η'	Z _n (mL)	Z _s (mL/m)	part number	Max axial play	Minimum push tube outer diameter	Recommended minimum nut outer diameter	Threaded length of the nut	Standard Stroke	Length of Roller Set
											S ₀	d _{min} (mm)	D _{g6/H7} (mm)	L _{th} (mm)	S _{max} (mm)	L _{rs} (mm)
48	80	2.4	3	256	776	0.78	0.77	5.6	8.1	IRS 48x2.4 R	0.02	44	90	399	285	114
	80	3	3	270	777	0.78	0.77	6.7	8.4	IRS 48x3 R	0.02	44	90	399	285	114
	80	4	3	290	778	0.78	0.78	8.5	8.8	IRS 48x4 R	0.02	44	90	399	285	114
	80	5	3	305	775	0.78	0.78	10.4	9.3	IRS 48x5 R	0.02	44	90	399	285	114
	80	6	3	320	780	0.78	0.78	13.4	10.5	IRS 48x6 R	0.04	44	90	399	285	114
	80	7	3	329	769	0.78	0.78	15.3	10.9	IRS 48x7 R	0.04	44	90	399	285	114
	80	8	3	339	767	0.79	0.78	17.1	11.4	IRS 48x8 R	0.04	44	90	399	285	114
	80	9	3	346	760	0.79	0.78	18.9	11.8	IRS 48x9 R	0.04	44	90	399	285	114
	80	10	3	355	761	0.79	0.78	20.7	12.3	IRS 48x10 R	0.04	44	90	399	285	114
	51	85	3	3	300	892	0.78	0.77	7.1	9.3	IRS 51x3 R	0.02	47	99	424	303
85		4	3	321	889	0.78	0.78	9.1	9.8	IRS 51x4 R	0.02	47	99	424	303	121
85		5	3	338	886	0.78	0.78	12.3	11.2	IRS 51x5 R	0.04	47	99	424	303	121
85		6	3	352	883	0.78	0.78	14.3	11.7	IRS 51x6 R	0.04	47	99	424	303	121
85		7	3	366	884	0.78	0.78	16.2	12.2	IRS 51x7 R	0.04	47	99	424	303	121
85		8	3	380	893	0.78	0.78	18.1	12.7	IRS 51x8 R	0.04	47	99	424	303	121
85		9	3	392	898	0.79	0.78	20.1	13.3	IRS 51x9 R	0.04	47	99	424	303	121
85		10	3	394	871	0.79	0.78	22	13.8	IRS 51x10 R	0.04	47	99	424	303	121
56	84	4	4	248	711	0.82	0.81	7	7.5	IRS 56x4 R	0.02	52	98	419	323	96
	84	5	4	262	712	0.82	0.81	9.8	8.5	IRS 56x5 R	0.04	52	98	419	323	96
	84	6	4	274	713	0.82	0.81	11.2	8.8	IRS 56x6 R	0.04	52	98	419	323	96
	84	7	4	285	717	0.83	0.82	12.7	9.1	IRS 56x7 R	0.04	52	98	419	323	96
	84	8	4	291	702	0.83	0.82	14.1	9.4	IRS 56x8 R	0.04	52	98	419	323	96
	84	9	4	300	706	0.83	0.82	15.5	9.7	IRS 56x9 R	0.04	52	98	419	323	96
	84	10	4	310	716	0.83	0.82	17	9.9	IRS 56x10 R	0.04	52	98	419	323	96
	84	12	4	324	718	0.83	0.82	19.9	10.5	IRS 56x12 R	0.04	52	98	419	323	96

Inverted Roller Screws

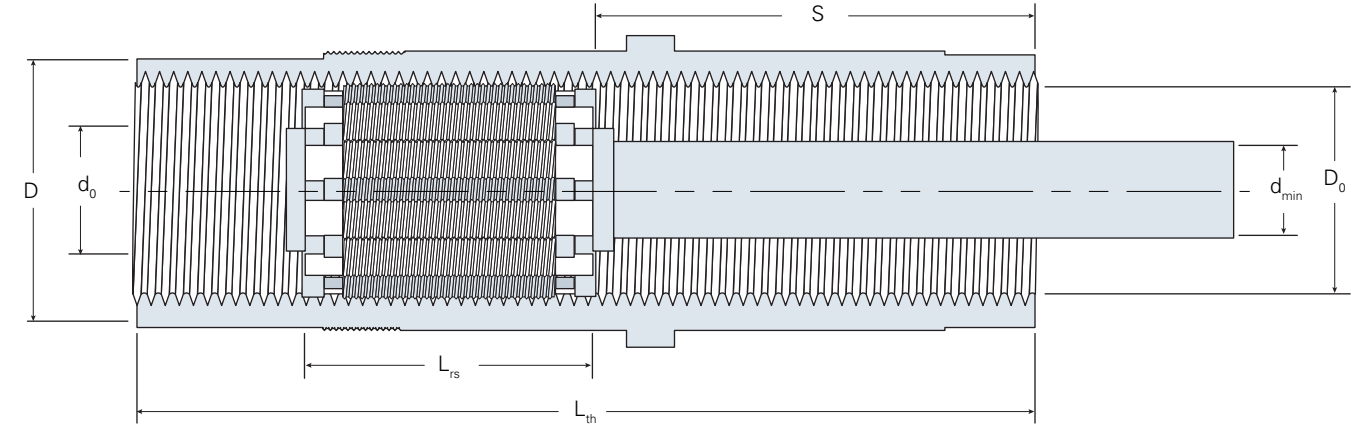
ø60 – ø70 mm



d_o (mm)	D_o (mm)	P_h (mm)	N (mm)	C_a (kN)	C_{0a} (kN)	η	η'	Z_n (mL)	Z_s (mL/m)	part number	Max axial play S_o	Minimum push tube outer diameter d_{min} (mm)	Recommended minimum nut outer diameter $D_{g6/H7}$ (mm)	Threaded length of the nut L_{th} (mm)	Standard Stroke S_{max} (mm)	Length of Roller Set L_{rs} (mm)
60	90	4	4	278	825	0.82	0.81	7.6	8.5	IRS 60x4 R	0.02	56	108	449	347	102
	90	5	4	295	829	0.82	0.81	10.5	9.6	IRS 60x5 R	0.04	56	108	449	347	102
	90	6	4	307	827	0.82	0.81	12	9.9	IRS 60x6 R	0.04	56	108	449	347	102
	90	7	4	317	821	0.83	0.82	13.6	10.3	IRS 60x7 R	0.04	56	108	449	347	102
	90	8	4	326	815	0.83	0.82	15.1	10.6	IRS 60x8 R	0.04	56	108	449	347	102
	90	9	4	339	830	0.83	0.82	16.7	11	IRS 60x9 R	0.04	56	108	449	347	102
	90	10	4	344	817	0.83	0.82	18.2	11.3	IRS 60x10 R	0.04	56	108	449	347	102
	90	12	4	363	832	0.83	0.82	21.3	12	IRS 60x12 R	0.04	56	108	449	347	102
64	96	4	4	297	1021	0.82	0.81	8.1	10.5	IRS 64x4 R	0.02	60	114	479	365	114
	96	5	4	313	1011	0.82	0.81	11.2	11.8	IRS 64x5 R	0.04	60	114	479	365	114
	96	6	4	329	1016	0.82	0.81	12.8	12.2	IRS 64x6 R	0.04	60	114	479	365	114
	96	7	4	341	1009	0.82	0.81	14.5	12.7	IRS 64x7 R	0.04	60	114	479	365	114
	96	8	4	356	1025	0.83	0.82	16.1	13.1	IRS 64x8 R	0.04	60	114	479	365	114
	96	9	4	361	996	0.83	0.82	17.8	13.5	IRS 64x9 R	0.04	60	114	479	365	114
	96	10	4	371	997	0.83	0.82	19.4	13.9	IRS 64x10 R	0.04	60	114	479	365	114
	96	12	4	389	999	0.83	0.82	22.7	14.7	IRS 64x12 R	0.04	60	114	479	365	114
70	96	14	4	409	1016	0.83	0.82	28.3	16.9	IRS 64x14 R	0.07	60	114	479	365	114
	98	6	5	274	892	0.89	0.87	11.1	10.2	IRS 70x6 R	0.04	66	120	489	393	96
	98	8	5	294	887	0.89	0.88	13.8	10.7	IRS 70x8 R	0.04	66	120	489	393	96
	98	10	5	314	902	0.89	0.88	16.5	11.3	IRS 70x10 R	0.04	66	120	489	393	96
	98	12	5	324	878	0.89	0.88	19.1	11.8	IRS 70x12 R	0.04	66	120	489	393	96
	98	14	5	342	898	0.89	0.88	24.1	13.6	IRS 70x14 R	0.07	66	120	489	393	96
	98	15	5	346	890	0.89	0.88	25.5	13.9	IRS 70x15 R	0.07	66	120	489	393	96

Inverted Roller Screws

ø75 – ø80 mm



d ₀ (mm)	D ₀ (mm)	P _h (mm)	N (mm)	C _a (kN)	C _{0a} (kN)	η	η'	Z _n (mL)	Z _s (mL/m)	part number	Max axial play	Minimum push tube outer diameter	Recommended minimum nut outer diameter	Threaded length of the nut	Standard Stroke	Length of Roller Set
											S ₀	d _{min} (mm)	D _{g6/H7} (mm)	L _{th} (mm)	S _{max} (mm)	L _{rs} (mm)
75	105	6	5	306	1034	0.89	0.87	11.9	11.4	IRS 75x6 R	0.04	70	127	524	422	102
	105	8	5	330	1036	0.89	0.87	14.8	12.1	IRS 75x8 R	0.04	70	127	524	422	102
	105	10	5	344	1010	0.89	0.88	17.6	12.7	IRS 75x10 R	0.04	70	127	524	422	102
	105	12	5	367	1039	0.89	0.88	20.5	13.4	IRS 75x12 R	0.04	70	127	524	422	102
	105	14	5	381	1034	0.89	0.88	25.9	15.4	IRS 75x14 R	0.07	70	127	524	422	102
	105	15	5	387	1031	0.89	0.88	27.3	15.8	IRS 75x15 R	0.07	70	127	524	422	102
80	120	6	4	421	1358	0.82	0.81	16	17.3	IRS 80x6 R	0.04	75	142	599	473	126
	120	8	4	454	1361	0.82	0.81	20.1	18.5	IRS 80x8 R	0.04	75	142	599	473	126
	120	10	4	483	1372	0.83	0.82	24.2	19.7	IRS 80x10 R	0.04	75	142	599	473	126
	120	12	4	505	1365	0.83	0.82	28.3	20.8	IRS 80x12 R	0.04	75	142	599	473	126
	120	14	4	524	1359	0.83	0.82	35.3	24	IRS 80x14 R	0.07	75	142	599	473	126
	120	16	4	609	1556	0.83	0.82	39.4	25.2	IRS 80x16 R	0.07	75	142	599	473	126



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