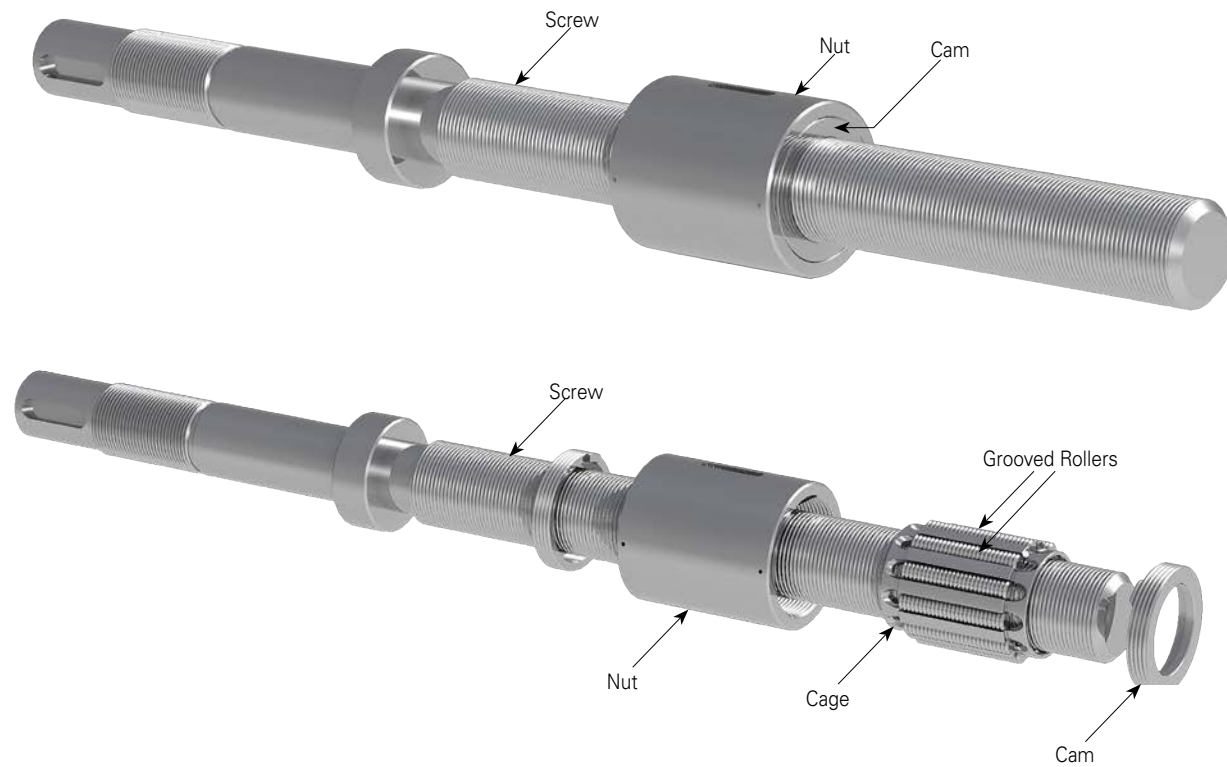


Recirculating Roller Screws



Recirculating Roller Screws (RRS)

Overview



Recirculating Roller Screw completes our range of Helix Roller Screws. They can have very fine leads for applications that require positioning with high resolution.

A step up from ball screws, the Helix Recirculating Roller Screw has many more contact points and offer higher load capacity and better rigidity.

Unlike planetary roller screws, the Recirculating Roller Screw allow rollers guides within a cage to recirculate inside the nut assembly thanks to cams.

This design is ideal for applications where long strokes with smaller leads are needed with high capacity in reduced envelopes. It is available with a cylindrical or flanged nut.

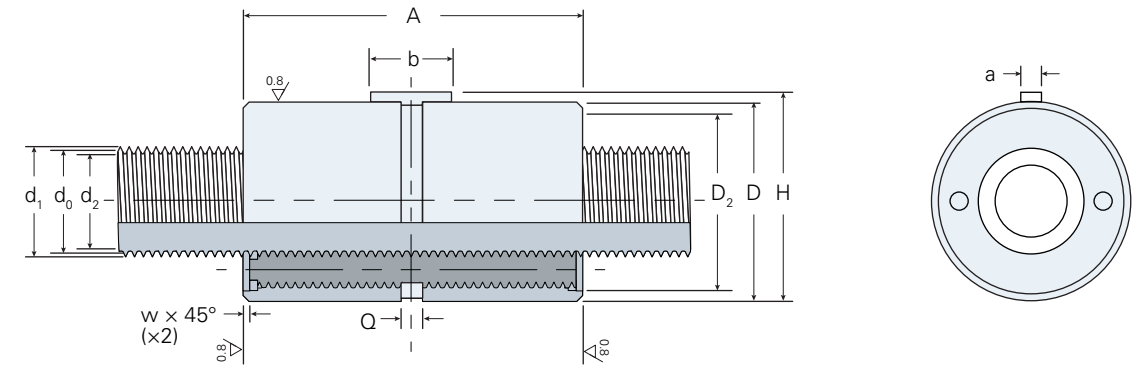
Recirculating Roller Screws (RRS)

Dynamic Load Ratings (kN)

Nominal Diameter (mm)	Lead (mm)				
	1	2	3	4	5
8	11.8	11.8			
10	14.1	14.1			
12	16.1	16.1			
16	19.4	19.4			
20	27.1	27.1			
25	39.7	39.7			
32	60.8	60.8	73.5		
36	73.8	73.8			
40	79.8	79.8		97.3	
50	134.1	139.9	160.0	168.2	
63		219.6	241.4	219.6	
80		374.6	414.2	440.6	
100			512.0	523.3	527.5
125					986.0

Recirculating Roller Screws with Cylindrical Nut

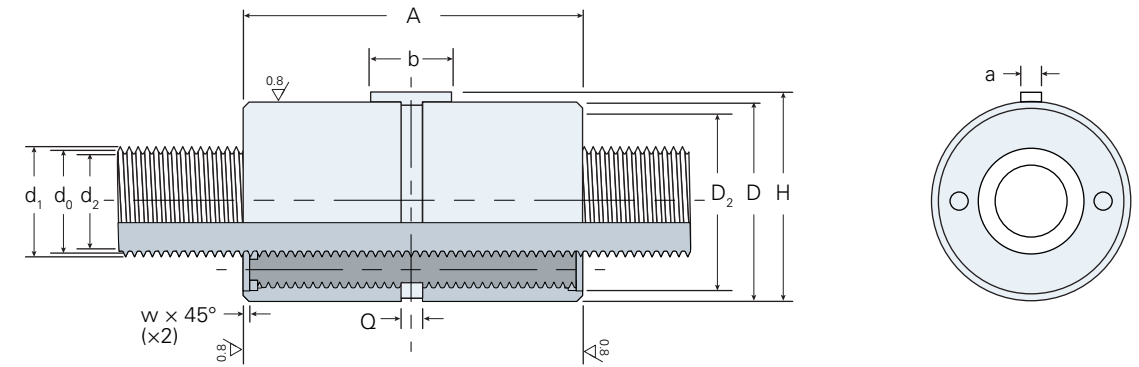
ø8 – ø36 mm



d_0 (mm)	P_h (mm)	N (mm)	C_a (kN)	C_{0a} (kN)	η	η'	S_0	T_0 (Nm)	m_n (kg)	m_s (kg/m)	I_s (kgmm ² /mm)	I_{nn}	I_{ns}	Z_n (mL)	Z_s (mL/m)	part number	d_0 (mm)	d_2 (mm)	D g6/H7 (mm)	A h12 w/ wiper recesses (mm)	A h12 w/o wiper recesses (mm)	w (mm)	a (mm)	b h9 (mm)	H (mm)	Q (mm)	D_2 (mm)
8	1	1	11.8	14.3	0.8	0.75	0.02	0.02	0.2	0.36	2.6	3.6	0.1	1.1	0.7	RRS 8x1 R-C	7.7	7.1	20	40	31	0.2	2	12	20.8	5	16.5
	2	2	11.8	14.3	0.79	0.73	0.02	0.03	0.2	0.36	2.6	3.6	0.1	1.2	0.7	RRS 8x2 R-C	7.7	7.1	20	40	31	0.2	2	12	20.8	5	16.5
10	1	1	14.1	17.8	0.8	0.75	0.02	0.03	0.2	0.57	6.7	5	0.1	1.3	0.8	RRS 10x1 R-C	9.7	9.1	22	40	31	0.2	2	12	22.8	5	18.5
	2	2	14.1	17.8	0.79	0.73	0.02	0.04	0.2	0.57	6.7	5	0.1	1.4	0.8	RRS 10x2 R-C	9.7	9.1	22	40	31	0.2	2	12	22.8	5	18.5
12	1	1	16.1	21.3	0.8	0.75	0.02	0.05	0.2	0.84	14.2	6.7	0.1	1.6	1	RRS 12x1 R-C	11.7	11.1	24	40	31	0.2	2	12	24.8	5	20.5
	2	2	16.1	21.3	0.79	0.73	0.02	0.06	0.2	0.84	14.2	6.7	0.1	1.7	1	RRS 12x2 R-C	11.7	11.1	24	40	31	0.2	2	12	24.8	5	20.5
16	1	1	19.4	28.2	0.8	0.75	0.02	0.06	0.3	1.51	46.2	14	0.3	2	1.3	RRS 16x1 R-C	15.7	15.1	29	40	31	0.5	3	12	30.2	5	25
	2	2	19.4	28.2	0.79	0.73	0.02	0.07	0.3	1.51	46.2	14	0.3	2.1	1.3	RRS 16x2 R-C	15.7	15.1	29	40	31	0.5	3	12	30.2	5	25
20	1	1	27.1	49.7	0.8	0.75	0.02	0.07	0.4	2.38	115	29.8	0.8	3.1	1.7	RRS 20x1 R-C	19.7	19.1	34	45	37	0.5	3	16	35.2	5	28.5
	2	2	27.1	49.7	0.79	0.73	0.02	0.08	0.4	2.38	115	29.8	0.8	3.2	1.7	RRS 20x2 R-C	19.7	19.1	34	45	37	0.5	3	16	35.2	5	28.5
25	1	1	39.7	85.2	0.8	0.75	0.02	0.09	0.6	3.75	285	79.3	2.5	3.3	2.1	RRS 25x1 R-C	24.7	24.1	42	54	44	0.5	4	20	43.5	5	36
	2	2	39.7	85.2	0.79	0.73	0.02	0.1	0.6	3.75	285	79.3	2.5	3.4	2.1	RRS 25x2 R-C	24.7	24.1	42	54	44	0.5	4	20	43.5	5	36
32	1	1	60.8	149	0.8	0.75	0.02	0.12	1.2	6.18	773	280	9.1	7	2.7	RRS 32x1 R-C	31.7	31.1	54	67	57	1	4	25	55.5	5	45
	2	2	60.8	149	0.79	0.73	0.02	0.13	1.2	6.18	773	280	9.1	7.1	2.7	RRS 32x2 R-C	31.7	31.1	54	67	57	1	4	25	55.5	5	45
	3	2	73.5	145	0.79	0.73	0.02	0.14	1.2	6.18	773	280	9.1	7.3	3.8	RRS 32x3 R-C	31.7	30.5	54	67	57	1	4	25	55.5	5	45
36	1	1	73.8	181	0.8	0.75	0.02	0.15	2.2	7.9	1286	682	13.5	7.6	3	RRS 36x1 R-C	35.7	35.1	61	75	62	1	6	28	63.5	5	53
	2	2	73.8	172	0.79	0.73	0.02	0.16	2.2	7.9	1286	682	13.5	7.7	3	RRS 36x2 R-C	35.7	35.1	61	75	62	1	6	28	63.5	5	53

Recirculating Roller Screws with Cylindrical Nut

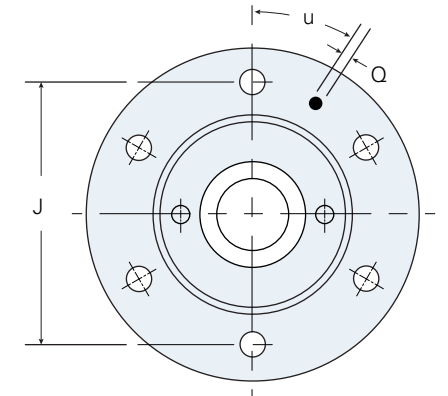
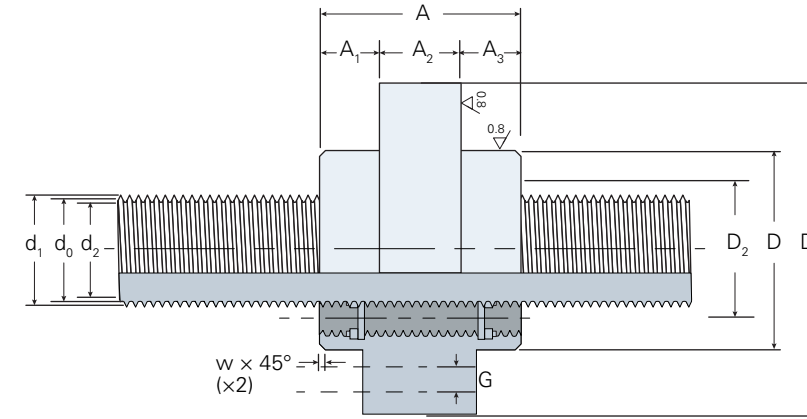
ø40 – ø125 mm



d_0 (mm)	P_n (mm)	N (mm)	C_a (kN)	C_{0a} (kN)	η	η'	S_0	T_0 (Nm)	m_n (kg)	m_s (kg/m)	I_s (kgmm ² /mm)	I_{nn}	I_{ns}	Z_n (mL)	Z_s (mL/m)	part number	d_0 (mm)	d_2 (mm)	D g6/H7 (mm)	A h12 w/ wiper recesses (mm)	A h12 w/o wiper recesses (mm)	w (mm)	a (mm)	b h9 (mm)	H (mm)	Q (mm)	D ₂ (mm)
40	1	1	79.8	207	0.8	0.75	0.02	0.17	2.1	9.69	1900	879	18.8	11.5	3.4	RRS 40x1 R-C	39.7	39.1	68	75	63	1	5	32	70	5	57
	2	2	79.8	207	0.79	0.73	0.02	0.18	2.1	9.69	1900	879	18.8	11.7	3.4	RRS 40x2 R-C	39.7	39.1	68	75	63	1	5	32	70	5	57
	4	2	97.3	199	0.78	0.72	0.04	0.19	2.1	9.69	1900	879	18.8	11.9	6.7	RRS 40x4 R-C	39.3	38.8	68	75	63	1	5	32	70	5	57
50	1	1	134	410	0.8	0.75	0.02	0.35	3.7	15	4550	2,190	76	19.1	4	RRS 50x1 R-C	49.7	49.1	82	101	85	1	6	32	84.5	8	70
	2	2	140	424	0.79	0.73	0.04	0.36	3.7	15	4550	2,190	76	19.2	5	RRS 50x2 R-C	49.5	48.7	82	101	85	1	6	32	84.5	8	70
	3	2	160	429	0.79	0.73	0.04	0.37	3.7	15	4550	2,190	76	19.4	7	RRS 50x3 R-C	49.3	48.6	82	101	85	1	6	32	84.5	8	70
	4	2	168	408	0.78	0.72	0.04	0.38	3.7	15	4550	2,190	76	19.6	8	RRS 50x4 R-C	49.3	48.2	82	101	85	1	6	32	84.5	8	70
63	2	2	220	563	0.79	0.73	0.04	0.53	6.4	23.9	11,600	6,460	230	22.5	6.3	RRS 63x2 R-C	62.4	61.2	103	120	104	1	6	40	105.5	8	94
	3	2	241	534	0.78	0.72	0.04	0.54	6.4	23.9	11,600	6,460	230	22.7	8.4	RRS 63x3 R-C	62.3	61.2	103	120	104	1	6	40	105.5	8	94
	4	2	220	563	0.79	0.73	0.04	0.55	6.4	23.9	11,600	6,460	230	22.8	10.6	RRS 63x4 R-C	62.3	61.1	103	120	104	1	6	40	105.5	8	94
80	2	2	375	1393	0.79	0.73	0.07	0.96	17.8	38.1	29,400	38,900	1,290	36.5	9.9	RRS 80x2 R-C	78.7	76.6	141	197	175	1	8	63	144	10	120
	3	2	414	1361	0.78	0.72	0.07	0.97	17.8	38.1	29,400	38,900	1,290	36.6	12.6	RRS 80x3 R-C	78.6	76.6	141	197	175	1	8	63	144	10	120
	4	2	441	1326	0.79	0.73	0.07	0.98	17.8	38.1	29,400	38,900	1,290	36.8	15.3	RRS 80x4 R-C	78.6	76.4	141	197	175	1	8	63	144	10	120
100	3	2	512	1577	0.78	0.72	0.07	1.17	33.1	59.5	71,800	108,000	4,000	103.2	15.7	RRS 100x3 R-C	98.6	95.7	175	237	205	2	10	80	178	10	150
	4	2	523	1548	0.78	0.72	0.07	1.18	33.1	59.5	71,800	108,000	4,000	103.4	19.1	RRS 100x4 R-C	98.3	95.6	175	237	205	2	10	80	178	10	150
	5	2	528	1520	0.77	0.7	0.07	1.19	33.1	59.5	71,800	108,000	4,000	103.6	22.5	RRS 100x5 R-C	98.3	95.5	175	237	205	2	10	80	178	10	150
125	5	2	986	3973	0.77	0.7	0.07	1.75	62.3	93.6	178,000	342,000	11,800	141.6	28.2	RRS 125x5 R-C	123.3	120.5	220	282	250	3	12	100	223	12	185

Recirculating Roller Screws with Flanged Nut

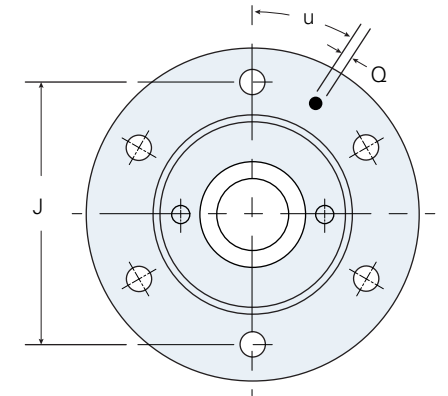
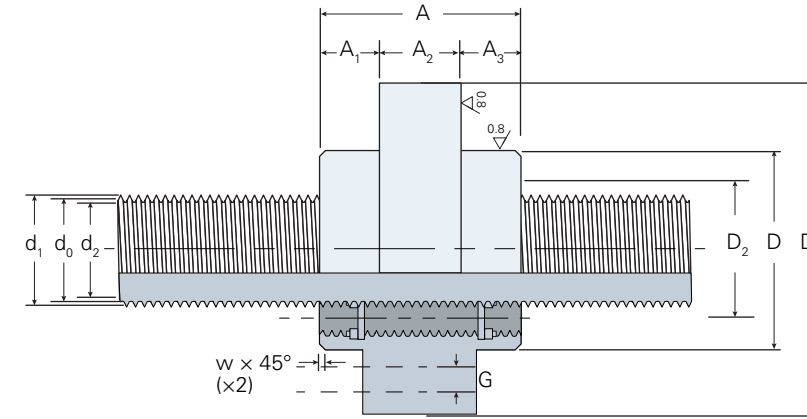
ø8 – ø36 mm



d_0 (mm)	P_h (mm)	N (mm)	C_a (kg)	C_{0a} (kg)	η	η'	S_0	T_0 (Nm)	m_n (kg)	m_s (kg/m)	I_s (kgmm ² /mm)	I_{nn}	I_{ns}	Z_n (mL)	Z_s (mL/m)	RRS	d_1 (mm)	d_2 (mm)	D (mm)	A_{h12} w/ wiper recesses (mm)	A_1 (mm)	A_2 (mm)	w (mm)	a (mm)	b (mm)	H (mm)	Q (mm)	D_2 (mm)	u
8	1	1	11.8	14.3	0.8	0.75	0.02	0.02	0.2	0.36	2.6	3.6	0.1	1.1	0.7	RRS 8x1 R-F	7.7	7.1	20	31	7.5	16	43	0.2	33	6xø4.5	M6	16.5	30°
	2	2	11.8	14.3	0.79	0.73	0.02	0.03	0.2	0.36	2.6	3.6	0.1	1.2	0.7	RRS 8x2 R-F	7.7	7.1	20	31	7.5	16	43	0.2	33	6xø4.5	M6	16.5	30°
10	1	1	14.1	17.8	0.8	0.75	0.02	0.03	0.2	0.57	6.7	5	0.1	1.3	0.8	RRS 10x1 R-F	9.7	9.1	22	31	7.5	16	43	0.2	33	6xø4.5	M6	18.5	30°
	2	2	14.1	17.8	0.79	0.73	0.02	0.04	0.2	0.57	6.7	5	0.1	1.4	0.8	RRS 10x2 R-F	9.7	9.1	22	31	7.5	16	43	0.2	33	6xø4.5	M6	18.5	30°
12	1	1	16.1	21.3	0.8	0.75	0.02	0.05	0.2	0.84	14.2	6.7	0.1	1.6	1	RRS 12x1 R-F	11.7	11.1	24	31	7.5	16	46	0.2	36	6xø4.5	M6	20.5	30°
	2	2	16.1	21.3	0.79	0.73	0.02	0.06	0.2	0.84	14.2	6.7	0.1	1.7	1	RRS 12x2 R-F	11.7	11.1	24	31	7.5	16	46	0.2	36	6xø4.5	M6	20.5	30°
16	1	1	19.4	28.2	0.8	0.75	0.02	0.06	0.3	1.51	46.2	14	0.3	2	1.3	RRS 16x1 R-F	15.7	15.1	29	31	7.5	16	51	0.5	41	6xø4.5	M6	25	30°
	2	2	19.4	28.2	0.79	0.73	0.02	0.07	0.3	1.51	46.2	14	0.3	2.1	1.3	RRS 16x2 R-F	15.7	15.1	29	31	7.5	16	51	0.5	41	6xø4.5	M6	25	30°
20	1	1	27.1	49.7	0.8	0.75	0.02	0.07	0.4	2.38	115	29.8	0.8	3.1	1.7	RRS 20x1 R-F	19.7	19.1	34	37	9.5	18	58	0.5	46	6xø6	M6	28.5	30°
	2	2	27.1	49.7	0.79	0.73	0.02	0.08	0.4	2.38	115	29.8	0.8	3.2	1.7	RRS 20x2 R-F	19.7	19.1	34	37	9.5	18	58	0.5	46	6xø6	M6	28.5	30°
25	1	1	39.7	85.2	0.8	0.75	0.02	0.09	0.6	3.75	285	79.3	2.5	3.3	2.1	RRS 25x1 R-F	24.7	24.1	42	44	13	18	68	0.5	56	6xø6	M6	36	30°
	2	2	39.7	85.2	0.79	0.73	0.02	0.1	0.6	3.75	285	79.3	2.5	3.4	2.1	RRS 25x2 R-F	24.7	24.1	42	44	13	18	68	0.5	56	6xø6	M6	36	30°
32	1	1	60.8	149	0.8	0.75	0.02	0.12	1.2	6.18	773	280	9.1	7	2.7	RRS 32x1 R-F	31.7	31.1	54	57	18.5	20	84	1	70	6xø7	M6	45	30°
	2	2	60.8	149	0.79	0.73	0.02	0.13	1.2	6.18	773	280	9.1	7.1	2.7	RRS 32x2 R-F	31.7	31.1	54	57	18.5	20	84	1	70	6xø7	M6	45	30°
	3	2	73.5	145	0.79	0.73	0.02	0.14	1.2	6.18	773	280	9.1	7.3	3.8	RRS 32x3 R-F	31.7	30.5	54	57	18.5	20	84	1	70	6xø7	M6	45	30°
36	1	1	73.8	181	0.8	0.75	0.02	0.15	2.2	7.9	1286	682	13.5	7.6	3	RRS 36x1 R-F	35.7	35.1	61	62	22.5	17	90	1	75	6xø7	M6	53	30°
	2	2	73.8	172	0.79	0.73	0.02	0.16	2.2	7.9	1286	682	13.5	7.7	3	RRS 36x2 R-F	35.7	35.1	61	62	22.5	17	90	1	75	6xø7	M6	53	30°

Recirculating Roller Screws with Flanged Nut

ø40 – ø125 mm



d ₀ (mm)	P _h (mm)	N (mm)	C _a (kg)	C _{0a} (kg)	η	η'	S ₀	T ₀ (Nm)	m _n (kg)	m _s (kg/m)	I _s (kgmm ² /mm)	I _{nn}	I _{ns}	Z _n (mL)	Z _s (mL/m)		d ₁ (mm)	d ₂ (mm)	D (mm)	A _{h12} w/ wiper recesses (mm)	A ₁ (mm)	A ₂ (mm)	w (mm)	a (mm)	b (mm)	H (mm)	Q (mm)	D ₂ (mm)	u
40	1	1	79.8	207	0.8	0.75	0.02	0.17	2.1	9.69	1,900	879	18.8	11.5	3.4	RRS 40x1 R-F	39.7	39.1	68	63	18	27	102	1	85	6xø9	M6	57	30°
	2	2	79.8	207	0.79	0.73	0.02	0.18	2.1	9.69	1,900	879	18.8	11.7	3.4	RRS 40x2 R-F	39.7	39.1	68	63	18	27	102	1	85	6xø9	M6	57	30°
	4	2	97.3	199	0.78	0.72	0.04	0.19	2.1	9.69	1,900	879	18.8	11.9	6.7	RRS 40x4 R-F	39.3	38.8	68	63	18	27	102	1	85	6xø9	M6	57	30°
50	1	1	134	410	0.8	0.75	0.02	0.35	3.7	15	4,550	2,190	76	19.1	4	RRS 50x1 R-F	49.7	49.1	82	85	26	33	124	1	102	6xø11	M6	70	30°
	2	2	140	424	0.79	0.73	0.04	0.36	3.7	15	4,550	2,190	76	19.2	5	RRS 50x2 R-F	49.5	48.7	82	85	26	33	124	1	102	6xø11	M6	70	30°
	3	2	160	429	0.79	0.73	0.04	0.37	3.7	15	4,550	2,190	76	19.4	7	RRS 50x3 R-F	49.3	48.6	82	85	26	33	124	1	102	6xø11	M6	70	30°
	4	2	168	408	0.78	0.72	0.04	0.38	3.7	15	4,550	2,190	76	19.6	8	RRS 50x4 R-F	49.3	48.2	82	85	26	33	124	1	102	6xø11	M6	70	30°
63	2	2	220	563	0.79	0.73	0.04	0.53	6.4	23.9	11,600	6,460	230	22.5	6.3	RRS 63x2 R-F	62.4	61.2	103	104	35.5	33	150	1	127	6xø13	M8x1	94	30°
	3	2	241	534	0.78	0.72	0.04	0.54	6.4	23.9	11,600	6,460	230	22.7	8.4	RRS 63x3 R-F	62.3	61.2	103	104	35.5	33	150	1	127	6xø13	M8x1	94	30°
	4	2	220	563	0.79	0.73	0.04	0.55	6.4	23.9	11,600	6,460	230	22.8	10.6	RRS 63x4 R-F	62.3	61.1	103	104	35.5	33	150	1	127	6xø13	M8x1	94	30°
80	2	2	375	1393	0.79	0.73	0.07	0.96	17.8	38.1	29,400	38,900	1,290	36.5	9.9	RRS 80x2 R-F	78.7	76.6	141	175	65	45	200	1	170	8xø17	M8x1	120	22.5°
	3	2	414	1361	0.78	0.72	0.07	0.97	17.8	38.1	29,400	38,900	1,290	37	12.6	RRS 80x3 R-F	78.6	76.6	141	175	65	45	200	1	170	8xø17	M8x1	120	22.5°
	4	2	441	1326	0.79	0.73	0.07	0.98	17.8	38.1	29,400	38,900	1,290	37	15.3	RRS 80x4 R-F	78.6	76.4	141	175	65	45	200	1	170	8xø17	M8x1	120	22.5°
100	3	2	512	1577	0.78	0.72	0.07	1.17	33.1	59.5	71,800	108,000	4,000	103.2	15.7	RRS 100x3 R-F	98.6	95.7	175	205	77.5	50	240	2	210	12xø17	M8x1	150	15°
	4	2	523	1548	0.78	0.72	0.07	1.18	33.1	59.5	71,800	108,000	4,000	103	19.1	RRS 100x4 R-F	98.3	95.6	175	205	77.5	50	240	2	210	12xø17	M8x1	150	15°
	5	2	528	1520	0.77	0.7	0.07	1.19	33.1	59.5	71,800	108,000	4,000	104	22.5	RRS 100x5 R-F	98.3	95.5	175	205	77.5	50	240	2	210	12xø17	M8x1	150	15°
125	5	2	986	3973	0.77	0.7	0.07	1.75	62.3	93.6	178,000	342,000	11,800	141.6	28.2	RRS 125x5 R-F	123.3	120.5	220	250	98	55	310	3	270	12xø19	M8x1	185	15°



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