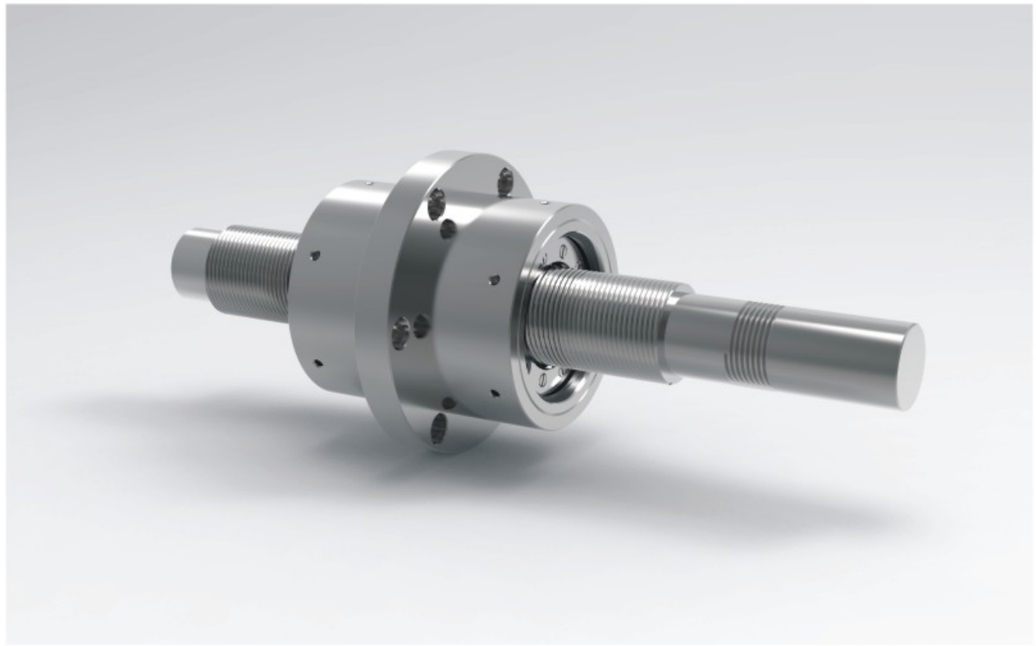
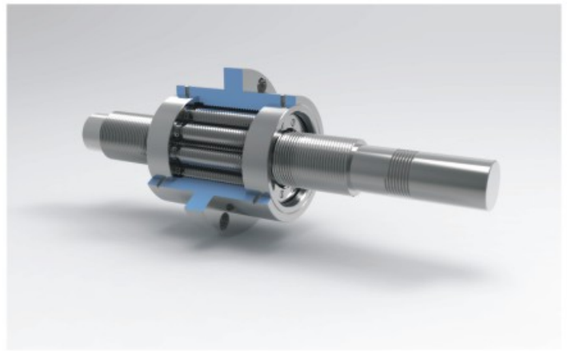
HPL series Planetary Roller Screw



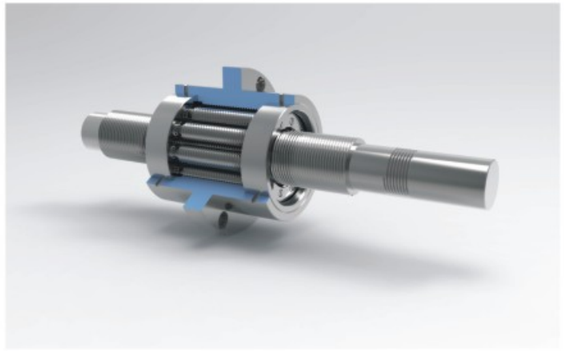




HPL Planetary Roller Screw is a strengthened design of PL series and is used for application with higher requirement in load bearing and service lifetime. Based on the optimal design of PL series, more contact points can be added, the thread design can be better and the nut can be longer than the standard size of PL series. HPL series aims at providing larger diameter and greater load bearing capacity. Therefore, this series doesn't apply to pre- fastened nut or internal pre- fastening (0 interval). It can only provide standard interval or narrowed interval.

Planetary Roller Screws-HPL Series (Enhanced)

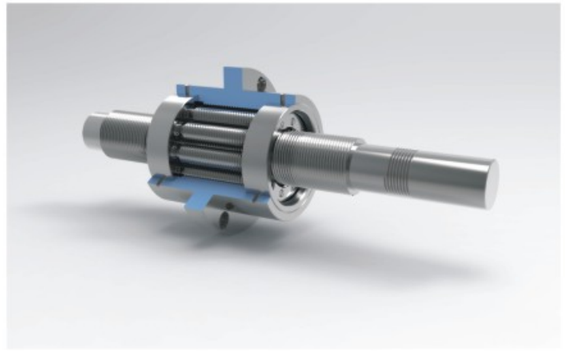
	Model			HPL													
	Nominal diameter	D	mm	60		75			87				99				
	Lead	P	mm	15	20	15	20	25	15	20	25	30	15	20	25	30	35
	Number of starts of thread	N		5		5			5				5				
	Lead angle		°	4.55	6.06	3.64	4.85	6.06	3.14	4.19	5.23	6.26	2.76	3.68	4.6	5.51	6.42
Single nut	Rated dynamic load	Ca	kN	654.8	655.7	842.4	861.9	866.8	1073.9	1086.9	1106.2	1099.6	1300.9	1323.8	1329.4	1354.6	1347.2
	Rated dead load	Coa	kN	1512.3	1497.9	2449.5	2480.2	2461.9	3531.6	3510.2	3545.8	3467.4	4707.9	4716	4658.8	4732	4642.3
	Stiffness coefficient	Fk	N2/3um	88.8	76.3	108.8	94.9	84.3	127.8	110.1	99	89	145	124.8	111.1	102.1	93.3
	Axial clearance	*	mm	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05
	Forward efficiency			0.87	0.88	0.86	0.87	0.88	0.85	0.87	0.88	0.88	0.84	0.86	0.87	0.88	0.88
	Inversion efficiency			0.86	0.87	0.84	0.86	0.87	0.83	0.85	0.86	0.87	0.81	0.84	0.86	0.86	0.87





Planetary Roller Screws-HPL Series (Enhanced)

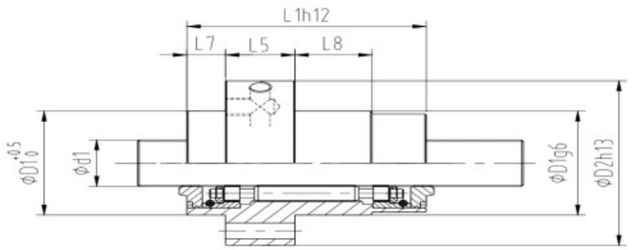
	Model			HPL															
	Nominal diameter	D	mm	112				120						135					
	Lead	P	mm	15	20	25	30	15	20	25	30	35	40	15	20	25	30	35	40
	Number of starts of thread	N		5				5						5					
	Lead angle		°	2.43	3.24	4.05	4.85	2.28	3.04	3.79	4.55	5.3	6.06	2.03	2.7	3.37	4.05	4.72	5.39
Single nut	Rated dynamic load	Ca	kN	1440.7	1460.4	1480	1482.9	1598.8	1633.9	1656.1	1648.1	1668.6	1673.7	2061.6	1968	1988.5	2030	2054.7	2049.6
	Rated dead load	Coa	kN	5442.6	5415.5	5424.9	5361.4	6370.2	6419.4	6429.4	6283	6331.9	6302.7	9351.7	8494.8	8461.6	8605.8	8661.1	8539
	Stiffness coefficient	Fk	N2/3um	153.2	131.3	117.2	106.5	164.2	141.5	126.2	114	105.9	98.6	198.2	160.3	142.3	130.7	121.6	112.8
	Axial clearance	*	mm	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.07	0.07	0.07	0.07	0.07	0.07
	Forward efficiency			0.83	0.85	0.87	0.87	0.82	0.85	0.86	0.87	0.88	0.88	0.81	0.84	0.85	0.87	0.87	0.88
	Inversion efficiency			0.79	0.83	0.85	0.86	0.78	0.82	0.84	0.86	0.86	0.87	0.76	0.81	0.83	0.85	0.86	0.86

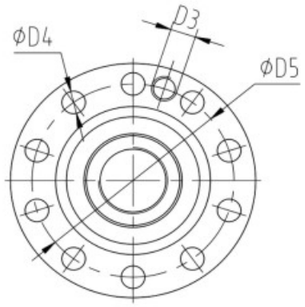




Planetary Roller Screws-HPL Series (Enhanced)

	Model			HPL															
	Nominal diameter	D	mm	150							180				210				
	Lead	P	mm	15	20	25	30	35	40	50	20	30	40	50	30	40	50		
	Number of starts of thread	N		5							5				5				
	Lead angle		°	1.82	2.43	3.04	3.64	4.25	4.85	6.06	2.03	3.04	4.05	5.05	2.6	3.47	4.33		
Single nut	Rated dynamic load	Ca	kN	2235.8	2155.3	2164.7	2181.8	2215.6	2218.3	2216.2	3244.2	3101.1	3115.1	3155.2	3893.3	3683.6	3752.9		
	Rated dead load	Coa	kN	10488.4	9675.8	9542.4	9506.4	9616.1	9531.4	9362.3	17553.3	16100.7	16249.8	16278.7	22704.6	20709	20743.3		
	Stiffness coefficient	Fk	N2/3um	206.3	168.7	148.7	135.1	125.8	117.2	103.6	224.9	171.7	148.3	132.9	201.9	163.4	146.2		
	Axial clearance	*	mm	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
	Forward efficiency			0.79	0.83	0.85	0.86	0.87	0.87	0.88	0.81	0.85	0.87	0.88	0.83	0.86	0.87		
	Inversion efficiency			0.74	0.79	0.82	0.84	0.85	0.86	0.87	0.76	0.82	0.85	0.86	0.8	0.84	0.85		





Model	D	P	Roller Screw d1	Roller Screw d0	Roller Screw d2	Nut D1	Nut D2	Nut D3	Nut D4	Nut D5	Nut L1	Nut L5	Nut L7	Nut L8
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
HPL	60	15	61.0	60	58.6	122	180	M8X1	17.5	150	171	30	20	40
		20	61.2		58.0									
	75	15	76.0	75	73.6	150	210	M8X1	17.5	180	213	35	25	40
		20	76.3		73.1									
		25	76.6		72.5									
	87	15	88.0	87	85.6	175	235	M8X1	17.5	200	245	40	25	40
		20	88.3		85.1									
		25	88.6		84.6									
		30	88.9		84.1									
	99	15	100.0	99	97.6	200	245	M8X1	17.5	224	280	50	25	40
		20	100.3		97.1									
		25	100.6		96.6									
		30	100.9		96.1									
		35	101.2		95.6									
	112	15	113.5	112	111.1	230	285	M10X1	17.5	260	300	50	30	60
		20	113.8		110.6									
		25	114.1		110.1									
		30	114.4		109.6									
		35	114.7		109.1									
	120	15	121.1	120	118.6	240	300	M10X1	17.5	270	346	55	40	60
		20	121.4		118.1									
		25	121.7		117.6									
		30	122.0		117.1									
		35	122.3		116.6									
		40	122.5		116.1									
	135	15	136.1	135	133.6	280	345	M12	20	315	370	60	35	80
		20	136.4		133.1									
		25	136.7		132.7									
		30	137.0		132.1									
		35	137.3		131.6									
		40	137.6		131.1									
	150	15	151.1	150	148.6	320	385	M12	20	355	412	70	50	80
		20	151.4		148.2									
		25	151.7		147.7									
		30	152.0		147.2									
		35	152.3		146.7									
		40	152.7		146.1									
		50	153.2		145.1									
	180	20	181.4	180	178.2	390	470	M12	24	433	528	90	55	100
		30	182.1		177.2									
		40	182.7		176.2									
		50	183.3		175.2									
	210	30	212.1	210	207.2	440	530	M12	26	490	570	100	55	100
		40	212.7		206.2									
		50	213.3		205.2									