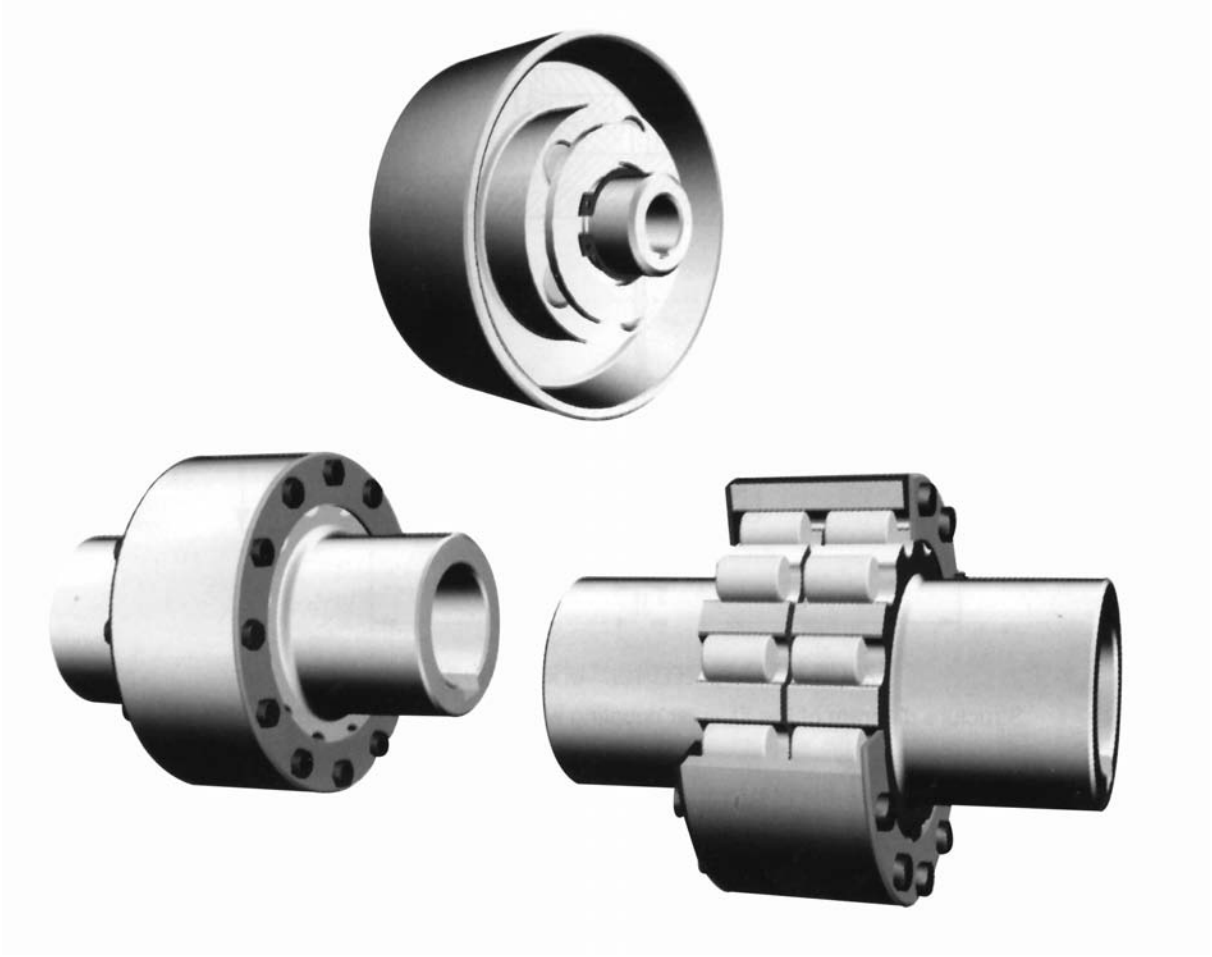
弹性柱销齿式联轴器(GB/T5015–85) Gear coupling with elastic pins



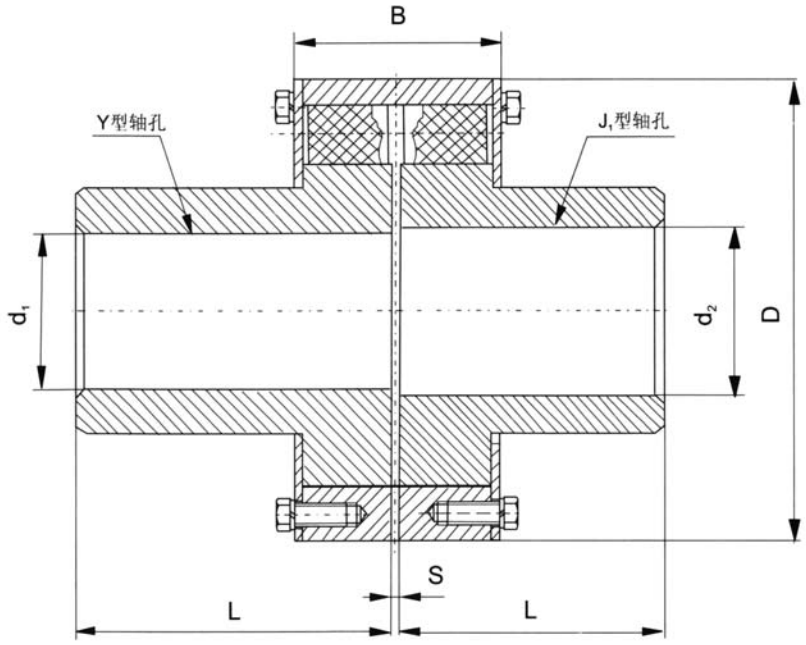
弹性柱销齿式联轴器是利用若干非金属弹性材料制成的柱销，置于两半联轴器凸缘孔中，通过柱销实现两半联轴器的联接，该联轴器结构简单，制造容易，拆装更换弹性元件比较方便，不用移动两半联轴器。

弹性元件(柱销)的材料一般选用尼龙，有微量补偿两轴线偏移的能力，弹性元件工作时受剪切，仅适用于要求很低的中速传动系统，不适用于工作可靠性要求过高的工况，不宜用于低速重载及具有强烈冲击和震动较大的传动系统，同时对于径向、角向偏移较大的传动轴系也不宜采用此结构的联轴器。

Gear coupling with elastic pins is a connection mode that a number of pins made from nonmetal elastic material，are put into the flange holes of two half-–couplings，which realize connecting the two half—couplings by those pins. It has the features of simple structure and easy manufacture，and replaces the elastic components conveniently and does not move half–coupling.

Nylon which has the capacity for slight compensation the offset in two axial directions，is gerally chosen as the material of elastic components(pins).Elastic cells are sheared when working，only applicable to intermediate speed drive systems whose demands are quite low，not acceptable for the operating conditions that the requirement of operational reliability is outrgeous，and inappropriate to the drive systems that is low speed，heavy load，sharp pounding，and largely shocking. Besides，this kind of coupling are unsuitable to the transmission shafting whose offsets in radial and angular directions are relatively large.

ZL型弹性柱销齿式联轴器 Gear coupling with elastic pins type ZL



ZL(基本型)弹性柱销齿式联轴器结构图
Structure diaphragm of the ZL gear coupling with elastic pins（basic model）

弹性柱销齿式联轴器主要参数及基本尺寸（GB/T5015–85）

Basic parameters and main dimensions of gear coupling with elastic pins（GB/T5015–85）

型号 Model number	公称扭矩 Tn（N*m）Nominal torque Tn N*m	许用转速 r/min Allowable rotating speed（n r/min）	轴孔直径mm Shaft hole diameters (mm) d1、d2	轴孔长度Length of shaft hole(mm) Y型 / J_1型 L	D	D1	B	S	转动惯量 moment of inertial kg*m²	质量 Mass m kg
					mm					
ZL1	112	5000	12~24	27~52	76	40	42	2.5	0.001	1.67
ZL2	250	5000	16~32	44~82	90	50	50	2.5	0.003	3.00
ZL3	630	4500	25~42	44~112	118	65	70	3.0	0.012	7.31
ZL4	1800	4200	40~60	84~142	158	90	90	4	0.045	16.20
ZL5	4500	4000	50~80	84~172	192	120	90	4	0.108	27.02
ZL6	8000	3300	60~95	107~172	230	130	112	5	0.242	40.89
ZL7	11200	2900	70~110	107~212	260	160	112	5	0.443	59.60
ZL8	18000	2500	80~130	132~252	300	190	128	6	0.908	94.67
ZL9	25000	2300	90~150	132~252	335	220	150	7	1.733	138.1

弹性柱销齿式联轴器主要参数及基本尺寸（GB/T5015–85）

Basic parameters and main dimensions of gear coupling with elastic pins（GB/T5015–85）

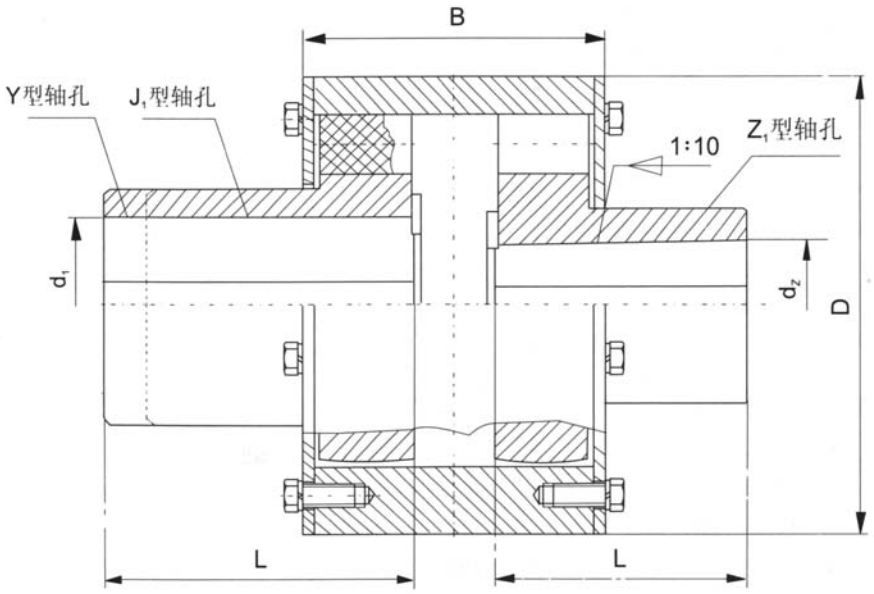
型号 Model number	公称扭矩 Tn（N*m） Nominal torque Tn N*m	许用转速 r/min Allowable rotating speed（n r/min）	轴孔直径mm Shaft hole diameters (mm) d1、d2	轴孔长度Length of shaft hole(mm) Y型 J_1型 L	D	D1	B	S	转动惯量 moment of inertial $kg*m^2$	质量 Mass m kg
					mm					
ZL10	31500	2100	100~170	167~302	355	245	152	8	2.422	169.3
ZL11	40000	2000	110~180	167~302	380	260	172	8	3.369	203.1
ZL12	63000	1700	130~200	202~352	445	290	182	8	6.524	296.6
ZL13	100000	1500	150~240	202~410	515	345	218	8	14.19	496.2
ZL14	125000	1400	170~260	242~410	560	390	218	8	21.67	621.7
ZL15	160000	1300	190~300	282~470	590	420	240	10	29.52	730.5
ZL16	250000	1000	220~340	282~550	695	490	265	10	62.47	1144
ZL17	355000	950	240~380	330~550	770	550	285	10	106.0	1557
ZL18	450000	850	250~420	330~650	860	605	300	13	175.4	2062
ZL19	630000	750	280~450	380~650	970	695	322	14	323.2	3068
ZL20	1120000	650	320~500	380~650	1160	800	355	15	669.4	4715
ZL21	1800000	530	380~630	450~800	1440	1020	360	18	1880	8699
ZL22	2240000	500	720~750	540~800	1520	1100	405	19	2596	9473
ZL23	2800000	460	480~850	540~880	1640	1240	440	20	3982	12095

注：1：重量、转动惯量是按Y/J1轴孔组合形式2和最小轴孔的计算值。
2：短时过载不得超过公称扭矩Tn值得2倍。

ZLD型圆锥形轴孔弹性柱销齿式联轴器

ZLD gear coupling with elastic pins and tapered shaft hole

与基本型相似，主要用于圆锥轴孔联接的场合。
The gear coupling with elastic pins and tapered shaft hole is similar to the basic model coupling，and is used in the connection of tapered shaft hole.



ZLD型联轴器结构图
Structure diaphragm of the ZLD coupling

ZLD型弹性柱销齿式联轴器基本参数及主要尺寸（GB/T5015–85）

Basic parameters and main dimensions of ZLD gear coupling with elastic pins（GB/T5015–85）

型号 Model number	公称扭矩 Tn（N*m） Nominal torque Tn N*m	许用转速 r/min Allowable rotating speed（n r/min）	轴孔直径mm Shaft hole diameters (mm) d1、d2	轴孔长度Length of shaft hole(mm) Y型 L	轴孔长度Length of shaft hole(mm) J_1,Z_1型 L	D	D1	B	S	转动惯量 moment of inertial kg*m^2	质量 Mass m kg
						mm					
ZLD1	112	5000	16~19	30~42		76	40	65	14.5	0.002	2.30
			20~24	38~52				70	16.5		
			25~28	44~62				75	20.5		
ZLD2	250	5000	25~28	44~62		92	50	88	20.5	0.004	3.98
			30~32	60~82				92	24.5		
ZLD3	630	4500	30~38	60~82		118	65	115	25	0.016	10.30
			40~42	84~112				125	31		
ZLD4	1800	4200	40~56	84~112		158	90	145	32	0.061	22.46
			60	107~142				152	39		

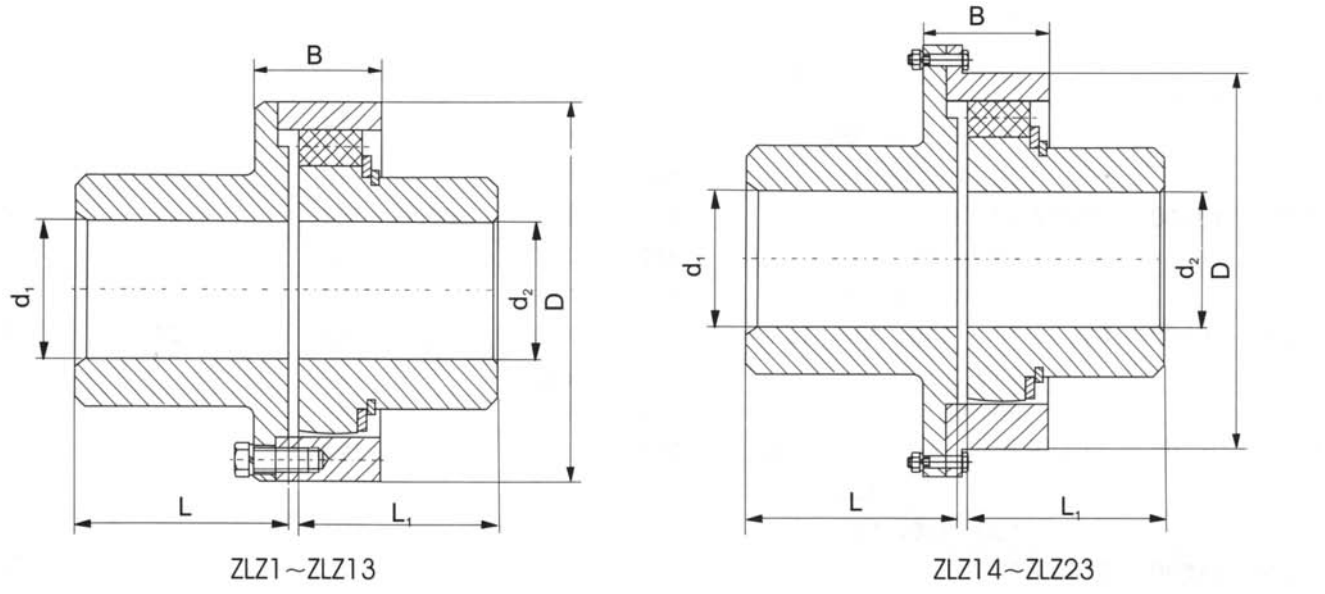
型号 Model number	公称扭矩 Tn（N*m） Nominal torque Tn N*m	许用转速 r/min Allowable rotating speed （n r/min）	轴孔直径mm Shaft hole diameters (mm) d1、d2	轴孔长度Length of shaft hole(mm) Y型 J_1,Z_1型 L	D	D1	B	S	转动惯量 moment of inertial $kg*m^2$	质量 Mass m kg
					mm					
ZLD5	4500	4000	50~56	84~112	192	120	145	32	0.143	31.71
			60~75	107~142			152	39		
			80	132~172			158	44		
ZLD6	8000	3300	60~75	107~142	230	130	175	40	0.312	48.16
			80~95	132~172			178	45		
ZLD7	11200	2900	70~75	107~142	260	160	178	40	0.570	69.42
			80~95	132~172			182	45		
			100~110	167~212			188	50		
ZLD8	18000	2500	80~95	132~172	300	190	202	46	1.105	108.8
			100~125	167~212			208	51		
			130	202~252			212	56		
ZLD9	25000	2300	90~95	132~172	335	220	232	47	2.157	157.5
			100~125	167~212			238	52		
			130~150	202~252			242	57		
ZLD10	31500	2100	100~125	167~212	355	245	240	53	2.926	188.5
			130~150	202~252			245	58		
			160~170	242~302			255	68		
ZLD11	40000	2000	110~125	167~212	380	260	260	53	4.021	225.0
			130~150	202~252			265	58		
			160~180	242~302			275	68		
ZLD12	63000	1700	130~150	202~252	445	290	282	58	8.051	335.2
			160~180	242~302			292	68		
			190~200	282~352			302	78		
ZLD13	100000	1500	150	202~252	515	345	313	58	16.514	524.5
			160~180	242~302			323	68		
			190~220	282~352			332	78		

注：1：重量、转动惯量是按Y/J1轴孔组合形式2和最小轴孔的计算值。
2：短时过载不得超过公称扭矩Tn值得2倍。

ZLZ型接中间轴弹性柱销齿式联轴器

ZLZ gear coupling with elastic pins and intermediate shaft

适用于需要长距离功率传递的场合，中间可接轴。无柱销端为主动轴，有柱销端为从动轴，工作温度：–20℃~70℃
The ZLZ coupling can be applied to the occasion that needs long distance power transfer. Shaft can be connected between the two half–couplings. The side with pin is drive shaft and the other side is driven shaft. Working temperature is between –20℃and70℃.



ZLZ型联轴器结构图
Structure diaphragm of the ZLZ coupling

ZLZ型接中间轴弹性柱销齿式联轴器（GB/T5015–85）

Basic parameters and main dimensions of ZLZ gear coupling with elastic pins and intermediate shaft（GB/T5015–85）

型号 Model number	公称扭矩 Tn（N*m） Nominal torque Tn N*m	许用转速 r/min Allowable rotating speed（n r/min）	轴孔直径mm Shaft hole diameters (mm) d1,d2	轴孔长度Length of shaft hole(mm) Y型 J1型 L	D	D1	B	S	转动惯量 moment of inertial kg*m²	质量 Mass m kg
					mm					
ZLZ1	112	4500	12~28	27~62	84	40	38	2.5	0.002	1.90
ZLZ2	250	4500	16~38	30~82	98	50	42	2.5	0.003	3.18
ZLZ3	630	4000	25~48	44~112	124	65	54	3.0	0.011	6.68
ZLZ4	1800	4000	40~70	84~142	166	90	72	4	0.047	15.98
ZLZ5	4500	3600	55~90	84~172	214	120	72	4	0.137	29.50
ZLZ6	8000	3200	60~95	107~172	240	130	86	5	0.241	39.80
ZLZ7	11200	2700	70~120	107~212	280	160	90	5	0.511	62.82

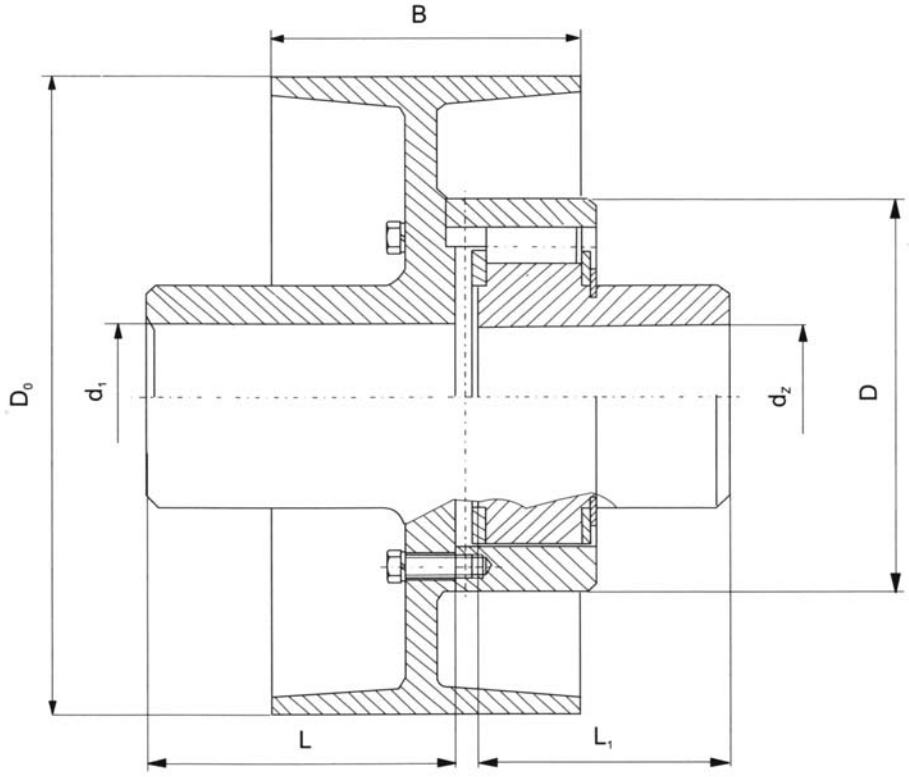
型号 Model number	公称扭矩 Tn（N*m） Nominal torque Tn N*m	许用转速 r/min Allowable rotating speed （n r/min）	轴孔直径mm Shaft hole diameters (mm) d1,d2	轴孔长度Length of shaft hole(mm) Y型 J_1型 L	D	D1	B	S	转动惯量 moment of inertial $kg*m^2$	质量 Mass m kg
					mm					
ZLZ8	18000	2300	80~130	132~252	330	190	100	6	1.1	101.44
ZLZ9	25000	2000	90~150	132~252	380	220	115	7	2.253	152.5
ZLZ10	31500	1900	100~170	167~302	400	245	115	8	3.031	185.0
ZLZ11	40000	1750	110~180	167~302	435	260	130	8	4.499	229.3
ZLZ12	63000	1600	130~200	202~352	480	290	145	8	7.504	313.3
ZLZ13	100000	1400	150~250	202~410	545	345	165	8	14.86	484.9
ZLZ14	125000	1270	170~260	242~352	600	390	170	8	23.98	646.9
ZLZ15	160000	1200	190~300	282~470	630	420	190	10	32.92	767.5
ZLZ16	250000	1020	220~340	282~550	745	490	205	10	69.47	1210
ZLZ17	355000	920	240~380	330~550	825	550	225	10	118.3	1635
ZLZ18	450000	830	250~420	330~650	920	605	240	13	196.2	2168
ZLZ19	630000	730	280~450	380~650	1040	695	255	14	358.1	3205
ZLZ20	1120000	610	320~600	380~800	1240	800	285	15	766.6	4923
ZLZ21	1800000	490	380~710	450~800	1540	1020	310	18	2143	9212
ZLZ22	2240000	460	420~750	540~800	1640	1100	330	19	2937	11191
ZLZ23	2800000	430	450~850	540~880	1760	1240	360	20	4477	14544

注：1：重量、转动惯量是按Y/J1轴孔组合形式2和最小轴孔的计算值。
2：短时过载不得超过公称扭矩Tn值得2倍。

ZLL型带制动轮弹性柱销齿式联轴器

ZLL gear coupling with elastic pins and brake wheel

衍生形式之一，主要用在有制动要求的场合，制动轮一般都安装在从动端。
The ZLL coupling is one of the derived forms and mainly used in the occasion that needs brake. Brake wheel is generally installed in the driven end.



ZLL型联轴器结构图
Structure diaphragm of the ZLL coupling

ZLL型带制动轮弹性柱销齿式联轴器基本参数与尺寸（GB/T5015–85）

Basic parameters and main dimensions of ZLL gear coupling with elastic pins and brake wheel（GB/T5015–85）

型号 Model number	公称扭矩 Tn（N*m） Nominal torque Tn N*m	许用转速 r/min Allowable rotating speed（n r/min）	轴孔直径mm Shaft hole diameters(mm)		轴孔长度Length of shaft hole(mm)	D0	D	D1	D2	B	B1	S	转动惯量 moment of inertial kg*m^2	质量 Mass m kg
			d_1	d_2	Y型 J_1型 L									
ZLL1	250	4000	16~19		42	160	98	50	56	70	9	2	0.018	6.64
			20~24		38~52						19			
			25~28		44~62						29			
			30~32		60~82						49			
			–	35~38										
ZLL2	630	3800	25~28		62	200	124	65	70	85	30	2	0.053	12.04
			30~38		60~82						50			
			40~42		84~112						80			
			–	45~48										

型号 Model number	公称扭矩 Tn（N*m） Nominal torque Tn N*m	许用转速 r/min Allowable rotating speed（n r/min）	轴孔直径mm Shaft hole diameters(mm)		轴孔长度Length of shaft hole(mm)	D0	D	D1	D2	B	B1	S	转动惯量 moment of inertial kg*m^2	质量 Mass m kg
			d_1	d_2	Y型 J_1型 L									
ZLL3	1800	3000	40~56		84~112	250	166	90	105	105	48.5	3	0.183	28.09
			60		107~142						78.5			
			–	63~70										
ZLL4	4500	2450	50~56		84~112	315	214	120	130	135	40	3	0.547	214
			60~75		107~142						70			
			80		132~172						100			
			–	85~90										
ZLL5	8000	1900	60~75		107~142	400	240	130	145	170	44	3	1.413	76.61
			80~90		132~172						74			
			–	95										
ZLL6	11200	1500	70~75		107~142	500	280	160	170	210	40	4	3.865	130.61
			80~95		132~172						70			
			100~110		167~212						110			
			–	120										
ZLL7	18000	1200	80~95		132~172	630	330	190	200	265	72	4	10.753	222.63
			100~125		167~212						82			
			130		202~252						112			
ZLL8	25000	1050	90~95		132~172	710	380	220	220	300	5	4	19.156	307.92
			100~125		167~212						45			
			130~150		202~252						85			
ZLL9	31500	950	100~125		167~212	800	400	245	245	340	40	5	33.446	405.88
			130~150		202~252						80			
			160~180		242~302						130			

注：1：重量、转动惯量是按Y/J1轴孔组合形式2和最小轴孔的计算值。
2：短时过载不得超过公称扭矩Tn值得2倍。

ZLL型带制动轮弹性柱销齿式联轴器

附表（Attached list）

ZL型、ZLD型弹性柱销齿式联轴器许用补偿量

Permissible compensation dosages of ZL and ZLD gear coupling with elastic pins

		轴向△X Aixal direction	径向△Y Radial direction	角向△a Angular direction
		mm		
ZL1–ZL3	ZLD1–ZLD3	±1.5	0.3	0.5°
ZL4–ZL7	ZLD4–ZLD7		0.4	
ZL8–ZL13	ZLD8–ZLD13	±2.5	0.6	
ZL14–ZL17			1.0	
ZL18–ZL21		±5.0		
ZL22–ZL23			1.5	

ZLZ型弹性柱销齿式联轴器许用补偿量

Permissible compensation dosages of ZLZ gear coupling with elastic pins

型号 Model number	轴向△X Aixal direction	径向△Y Radial direction	角向△a Angular direction
	mm		
ZLZ1–ZLZ3	+1	0.15	0.5°
ZLZ4–ZLZ6	+3	0.2	1°
ZLZ7–ZLZ8	+5		1.5°
ZLZ9–ZLZ0	+10	0.3	2°
ZLZ11–ZLZ15	+15		
ZLZ16–ZLZ19		0.5	2.5°
ZLZ20–ZLZ23	+20	0.75	

ZLL型弹性柱销齿式联轴器许用补偿量

Permissible compensation dosages of ZLL gear coupling with elastic pins

型号 Model number	轴向△X Aixal direction	径向△Y Radial direction	角向△a Angular direction
	mm		
ZLL1–ZLL2	+1	0.15	0.5°
ZLL3–ZLL5	+3	0.20	
ZLL6–ZLL7	+5		
ZLL8–ZLL9	+10	0.30	

注： 1、径向补偿量的测量部位在半联轴器最大外圆宽度1/2处
2、各表中所列补偿量是指由于冲击、振动、机座变形、热膨胀等因素而形成的两轴线相对偏移量，不是允许的安装误差，安装误差应小于表中的数值。

Note：1、The measuring point of radius compensation is at the 1/2 maximum excircle width of the half–coupling.
2、The compensation dosages listed in the table indicate relative offsets of double shaft lines caused by the factors of vibration, distorsion of machine base and thermal expansion etc. They are not allowable installation error, which should be smaller than the value in the table.