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ISO9001:2008 质量体系认证

十字轴式万向联轴器 Universal Joint Shaft

► SWF
► SWC
► SWP
► JXC

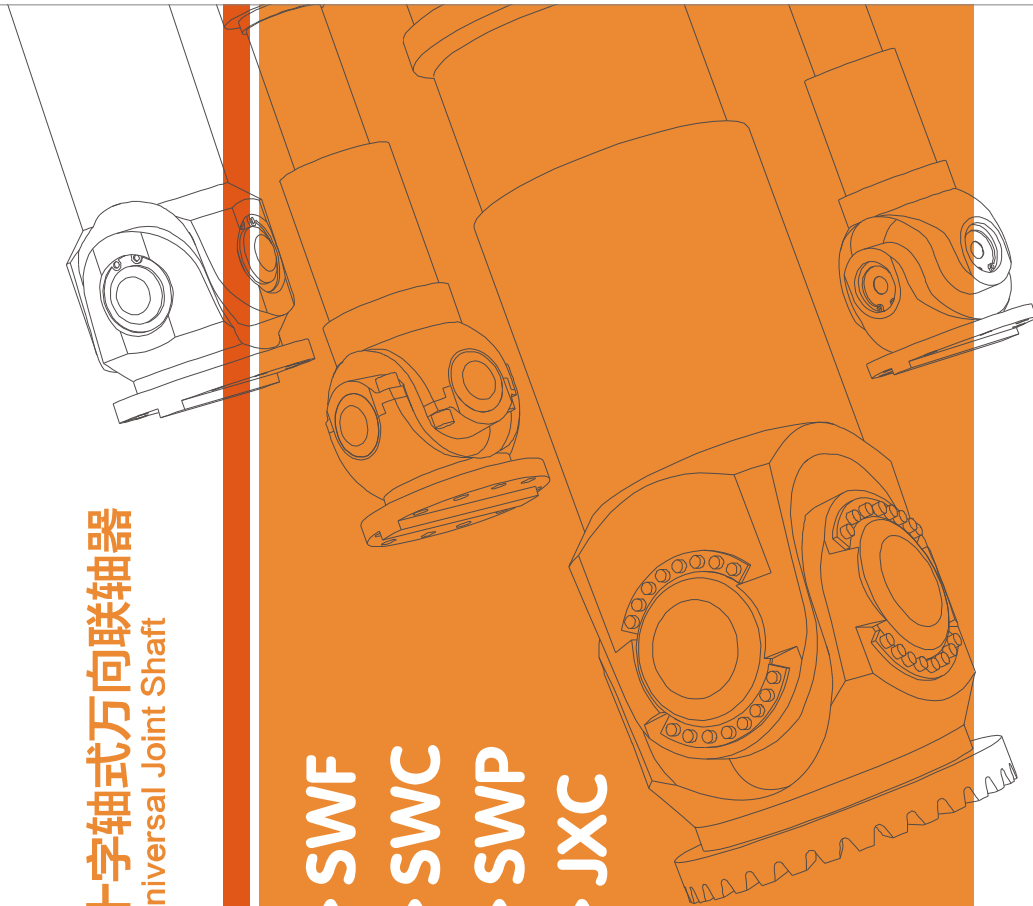
乐清市三丰传动有限公司
YUEQING SANFENG TRANSMISSION CO.,LTD
(乐清市三丰传动件厂)
YUEQING SANFENG TRANSMISSION PARTS FACTORY

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编制日期: 2012年3月
Originally constructed in March, 2012

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* Our products are advanced regularly, the final products maybe a little differ with this catalogue, any questions, please contact us.

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中国酒泉航天工程，海南（筹）航天工程均由“三丰”提供SWF十字轴式万向联轴器。
SWF Series universal joint shafts are supplied to Jiuquan Aerospace Engineering and Hainan Aerospace Engineering of China.

YUEQING SANFENG TRANSMISSION CO.,LTD
COMPANY INTRODUCTION
乐清市三丰传动有限公司 简介

乐清市三丰传动创建于上世纪八十年代中期，得益于改革开放的好形势下快速发展，乐清三丰拥有一批高素质的专业团队和完善的生检测程序，凭自己的实力开发及生产了具有国际先进水平的SWF十字轴式万向联轴器。目前乐清三丰在人均产值和亩产值的指标上均排在全国同行最前列，经过多年不断的技术和工艺改进与升级，已拥有SWF十字轴式万向联轴器的多项知识产权。企业早已通过ISO9001质量管理体系认证，长期大批产品供应各领域重大工程，获得了专家和用户的一致认可。乐清三丰成功为中国酒泉航天工程和海南（筹）航天工程提供较大规格的SWF十字轴式万向联轴器，为中国航天事业尽自己的微薄之力，希望更好、更多的为新老客户服务,期待您来乐清三丰作技术及业务洽谈。

诚信务实，是我们生存的基石；
卓越品质，是我们获得市场的基本保证；
开拓创新，是我们不断发展的动力。

“三丰”的成功也得益于广大专家和用户的真诚支持，在此深表谢意。一段时间以来一些人竟不负责任的仿冒“三丰”的产品，把一些劣质产品销往市场，给用户造成严重损失，同时影响损害了“三丰”的声誉，敬请您认真的甄别。



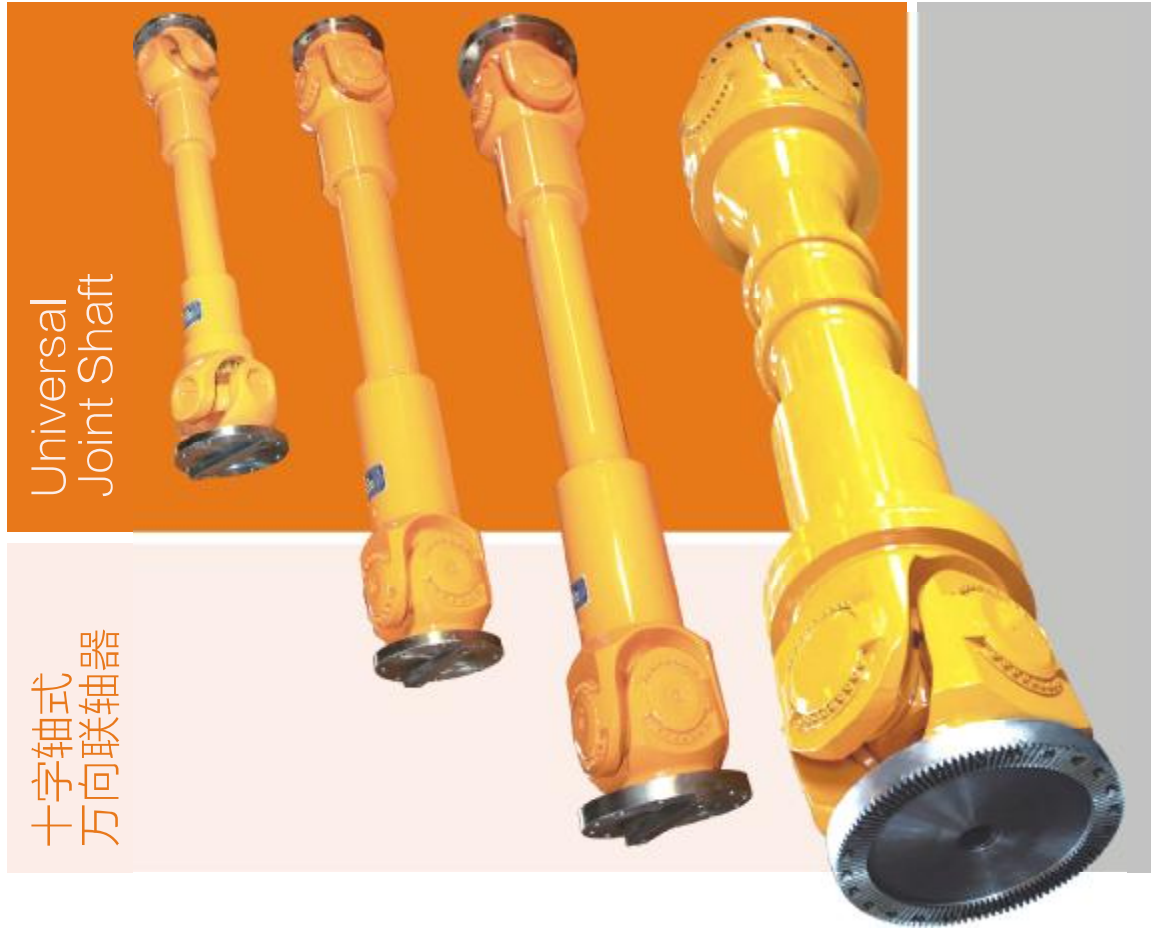
Yueqing Sanfeng Transmission Co., Ltd. was founded in the middle of 1980s, developed rapidly with the advantage of the reform and opening-up policy of China. It specializes in producing SWF Series universal joint shaft which reach the international advanced level by virtue of its professional team and perfect production testing procedures. At present, the output values per mu and per person of our company are the highest among the same industries in China. Through many years of reach & development, innovation and improvement, the company has owned many independent intellectual property rights of SWF Series products. In addition, it has smoothly passed the ISO9001 quality system certification, and also has established long-term cooperation relationship with many important heavy industries companies. Our products gained highly commended by customers and experts for their excellent performance and quality. Moreover, most large sizes universal joint shafts of for Jiuquan astronautical engineering projects and Hainan astronautical engineering projects of China are also supplied from us. In order to service you more and better, we welcome you to our company for technical communication and business negotiations.

Good faith and practice are the foundation for us to survive;
First-rank quality is our essential guarantee to win the market;
Exploitation and innovation are our continuous development power.

Sanfeng is indebted concern and sustain by many customers and experts, We thank you for your sincere support and trust! By the way, there are some counterfeit products on the market, they imitate ours, but their products are of bad quality, so please identify it very carefully.

十字轴式 万向联轴器

Universal Joint Shaft



性能特点

目前由于各厂家往往选用不同的计算方法,因而导致结果数据无法公平比较,这次是我们采用国际通用的计算方法对各种系列产品的允许转矩加以全面统一计算而得出的结果。

SWP系列: 是早期产品,因叉头轴承孔是剖分的,所以把有限的叉头空间尺寸占用的太多,该部位的可靠性也较差,在相同的回转直径下转矩较小,属落后产品。

SWC系列: 属整体叉头结构,是SWP系列的改进替代型。原设计为了更好的利用有限的叉头空间尺寸,将轴承设计成主、副轴承结构。实践证明,主、副轴承很难达到预期效果,轴承轴向定位用滑动垫片磨损也较大。轴承轴向限位采用弹性挡圈结构,使用中容易损坏,造成事故,我们一般也不推荐该系列产品。

JXC系列: 属轻型系列,基本结构类似SWC系列,但没有副轴承结构,都是较小规格,所以弹性挡圈在使用中还是比较可靠。优点是回转角度可设计的较大,造价相对较低。

SWF系列: 是乐清三丰开发的优秀结构系列,完全能替代SWP系列和SWC系列,拥有多项知识产权,属整体叉头结构,充分利用了有限的叉头空间尺寸,用独创的可靠卡板替代弹性挡圈,巧妙的在十字轴端部装有滚动止推轴承,该系列产品能承载大的转矩,转动平稳,磨损最小,使用寿命长,特别适合繁重工况条件,使之更加突出其优势。

Performance characteristics

There are different calculation methods in different manufacturers for the technical parameters, as a result, it is difficult to compare them. So for a better understanding, the international current calculation method is used by us to calculate the allowed torque for universal joint shafts of different series.

SWP Series: It is an old style product. The bearing hole of the fork head is division, so the space of the fork head is wasted too much. The reliability of this part is also bad. In the same diameter, the bearing diameter is too small that the carrying capacity is relatively small. It has been passed out gradually.

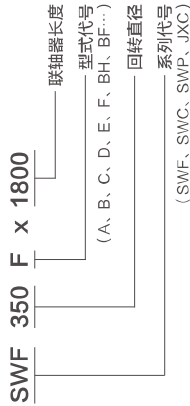
SWC Series: As a whole fork head bearing hole, it is an improved style from SWP Series. It uses the main bearing, supplementary bearing in order to take the advantages of the valuable space of fork head. But it has been found in practice that it is difficult to reach the expected effect. The sliding gasket for axial orientation of bearing is attrited too much. In addition, the circlip which used to fix the bearing's axial position is not very reliable. So the product of this Series is not recommended.

JXC Series: Light duty series. The basic structure is similar like SWC Series. They are small sizes universal joint shafts, no supplementary bearing. The circlip is reliable. Large rotary angle and cheap.

SWF Series: Yueqing Sanfeng Transmission Co., Ltd. has many intellectual property rights for this product. The whole bearing hole of fork head structure, it take full advantage of the space of fork head. With the original reliable card board to instead circlip. Equipped with rolling thrust bearing at the end of cross shaft. This series product is of excellent structure. They can bear large torque, turning with steady rotation, minimum wear and very long service life. Its advantages will be highlighted clearly during heavy working condition.

订货说明

型号标注说明



订货时请用户先提供十字轴式万向联轴器工作转矩、最大瞬时转矩、冲击系数、工况条件、是否带负载正反转、使用转速、使用轴夹角、总长度、伸缩量、两端配合尺寸及其它特殊要求，以便我方协助用户选型。

与十字轴式万向联轴器法兰连接的轴接套和连接法兰所需的高强度螺栓组一般由用户自备，但也可由需方提供轴接套图纸，由我方一并供货。

选用说明

※ 起重机电机万向联轴器的选用见我公司2012年3月版《专用于起重机电机》样本。

1、强度验算：

$$T_c = K_1 \cdot K_2 \cdot T \leq T_m$$

或： $T_c \leq T_p$ 在脉动交变载荷时

或： $T_c \leq T_f$ 在对称交变载荷时

$$T_c - \text{计算转矩} (kN \cdot m)$$

$$T - \text{理论转矩} (kN \cdot m)$$

$$N - \text{电机额定功率} (kW)$$

$$n - \text{联轴器转速} (r/min)$$

$$T_m、T_p、T_f - \text{见性能表}$$

K₁ - 冲击系数，见下表

K₂ - 电机最大过载系数，取2.5或按实际过载系数。

负荷性质	K ₁
轻、中冲击负荷	1.0~1.2
重冲击负荷	> 1.2~1.5
特重冲击负荷	> 1.5

安装使用维护说明

为满足正常使用和装卸方便，推荐与联轴器相连接法兰凸出口采用H8配合，其端面键槽采用H8配合。安装时各法兰面须清除干净，连接法兰的高强度螺栓须按规定预紧并防松。如将花键轴装入花键套时，须注意两端叉头上的轴承孔中心线须在同一平面内，否则将降低联轴器使用性能。使用中如发现异常声音或跳动，应及时由专业人员检查。

十字轴式万向联轴器在出厂时各处已注7029A牌黄油，用户可用相应牌号清洁的润滑油按情况注油（一般1~3个月），每次注油后须拧好油堵。

同步所需条件

同时满足下列三条条件时才能同步，即输入轴、输出轴、与联轴器轴线形成的夹角相等；输入轴、输出轴和联轴器三轴线在同一平面内；中间轴两端叉头轴承中心线在同一平面内。

2、轴承寿命计算：

$$L_h = \frac{1.5 \times 10^7}{n \times \alpha} \left(\frac{A}{T \times K_d} \right)^{10/3}$$

$$L_h - \text{净工作寿命} (h)$$

$$\alpha - \text{轴夹角} (^\circ), \alpha < 3^\circ \text{时取} 3^\circ$$

A - 见性能表

K_d - 工况系数，见下表

工况	K _d
满载率低，工作较平稳，工作条件较好	1.1~1.3
较易过载，冲击较大，工作条件较差	> 1.3~1.5
经常过载，冲击极大，工作条件很差	> 1.5

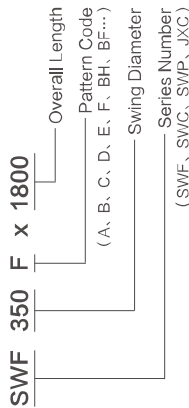
3、转动灵活性验算：

对D ≤ 500的联轴器以下式进行验算：

$$n \times \alpha < 18000$$

Ordering Instructions

Model Example:



When ordering, please provide accordingly rated torque, the maximum instantaneous torque, shaft angle, rotating speed, impact conditions, with or without load rotating, overall length and fitting dimension for both ends and other specific requirements in order to assist the user to make a proper choice.

The high strength bolts for connecting flanges can be prepared by users themselves or supplied by us (please supply the drawing of your shaft sleeve).

Selection description

*Crane universal joint shaft please check another sample for crane published in March of 2012.

1.Strength checking:

$$T_c = K_1 \cdot K_2 \cdot T \leq T_m$$

Or $T_c \leq T_p$ In pulse amplitude load

Or $T_c \leq T_f$ In symmetrical alternating load

$$T_c - \text{Computed Torque} (kN \cdot m)$$

$$T - \text{Rated torque} (kN \cdot m)$$

$$N - \text{Motor rated power} (kW)$$

$$n - \text{Speed} (r/min)$$

$$T_m、T_p、T_f - \text{Please check the form}$$

K₁ - Impact coefficient, please check the form

K₂ - Maximum overload coefficient, please

Check 2.5 or according to the real coefficient.

Load class	K ₁
Light and medium impact load	1.0~1.2
Heavy impact load	> 1.2~1.5
Very heavy impact load	> 1.5

Installing and Maintenance Instructions

In order to use it easily, we recommend cooperation H8 for outshot of flange and cooperation H8 for keyway of end surface key. Keep the flange surface clean when installing and check the connecting bolts regularly, and tighten them with a stipulated pre-tightening force. If there is abnormal sound or move up and down, please examine it in time by professional.

The universal joint shaft is lubricated with urea-based grease 7029A after production. Users can use other grease for replacement. (Please lubricate it each time in one or three months, then twist greasy blockage.)

Synchronization Conditions

Only when the following three conditions are all satisfied that it can be synchronized, that is, the included angles of input axis and output axis, and axis of universal joint shaft, should be equal; input axis, output axis and axis of universal joint shaft should be in the same plane; bearing's centerlines of double end fork head of intermediate axis should be in the same plane.

2.Bearing life calculation:

$$L_h = \frac{1.5 \times 10^7}{n \times \alpha} \left(\frac{A}{T \times K_d} \right)^{10/3}$$

$$L_h - \text{Working life} (h)$$

$$\alpha - \text{Shaft axis (degree)}, \text{when } \alpha < 3^\circ, \text{ make it as } 3^\circ$$

A - Performance Form

K_d - Working condition, please check the form

working condition	K _d
Shaft fully loaded, work stably, good condition	1.1~1.3
Easily overload, big impact, bad condition	> 1.3~1.5
Overload often, bigger impact, very bad condition	> 1.5

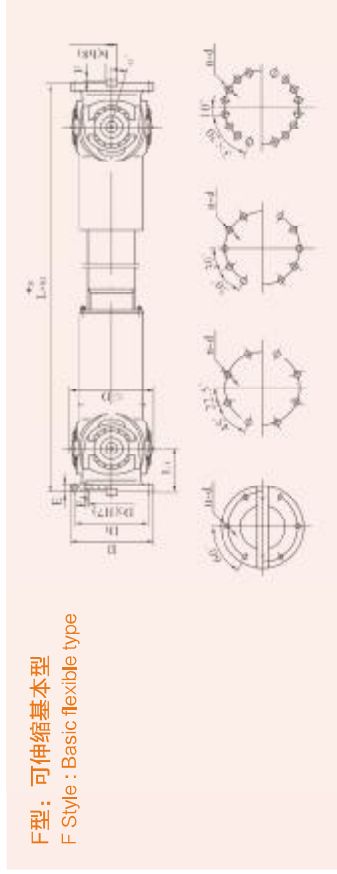
3. Turn flexibility:

When D ≤ 500:

$$n \times \alpha < 18000$$

SWF系列 SWF Series

F型：可伸缩基本型
F Style : Basic flexible type



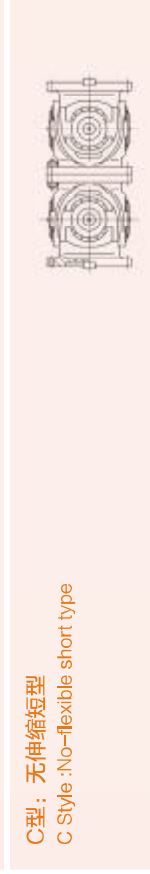
A型：可伸缩长型
A Style :Flexible long type



B型：可伸缩短型
B Style: Flexible short type



C型：无伸缩短型
C Style :No-flexible short type



D型：无伸缩长型
D Style: No-flexible long type



E型：大伸缩量型
E Style: Long flexible type



主要性能及尺寸 The main performance and sizes

型号 Style	Tm	Tp	Tf	A	α	L1	D	D1	D2	n-d	b	F	E	E1	S	S1
	kN · m				°	mm										
SWF225	51	42	29	10.64	15°	130	225	196	135	8-φ17.5	32	9	20	5	40	25
SWF250	59	51	34	13.8		140	250	218	150	8-φ20	40	12.5	25	6	40	30
SWF285	96	82	54	19		160	285	245	170	8-φ22	40	15	27	7	50	35
SWF315	139	117	78	26		180	315	280	185	10-φ24	40	15	32	8	55	35
SWF350	220	188	125	36.6		195	350	310	210	10-φ24	50	16	35	8	60	40
SWF380	285	242	162	49.6	12°	215	390	345	235	10-φ26	70	18	40	8	60	40
SWF435	470	390	272	72.3		245	435	385	255	16-φ29.5	80	20	42	10	75	45
SWF490	575	485	320	95.4		270	490	435	275	16-φ33	90	22.5	47	12	85	55
SWF550	827	703	408	137.5		305	550	492	320	16-φ33	100	25	50	12	95	60
SWF620	1133	1000	582	193.5		340	620	565	320	16-φ33	100	25	55	13	105	65
SWF680	1900	1600	1000	250	12°	335	680	615	400	16-φ39	120	30	65	15	105	65
SWF780	2950	2500	1550	390		375	780	715	400	16-φ39	120	30	65	15	120	85
SWF840	3500	2900	1840	480		405	840	765	430	16-φ45	150	38	80	18	120	85
SWF920	4600	3900	2400	630		440	920	830	430	16-φ51	150	38	80	18	150	100
SWF1000	5700	4800	3000	800		485	1000	900	450	16-φ55	180	45	100	22	150	100
SWF1100	8000	6800	4200	1050	12°	530	1100	995	470	16-φ59	180	45	100	22	180	120
SWF1200	11000	9300	5800	1360		590	1200	1080	500	16-φ67	200	50	120	25	180	120

注：1.Tm、Tp、Tf——分别为最大允许静转矩、允许脉动疲劳转矩及允许连续疲劳转矩。 2.A——反映疲劳强度的值。

Note: 1.Tm, Tp, Tf – Represent the maximum allowed static torque, allowed pulse fatigue torque and allowed symmetric fatigue torque.

2.A—Represent the value of bearing capacity.

长度、重量及转动惯量 Length, weight and moment of inertia

	SWF		225	250	285	315	350	380	435	490	550	620
	Lmin	mm	980	1070	1220	1380	1510	1690	1880	2080	2385	2830
F	Go	kg	187	251	367	517	677	1010	1477	2009	2875	4296
	G100	kg	7.78	9.68	12.15	15.87	20.09	24.8	30	35.7	48.6	63.49
	Io	kgm ²	0.71	1.2	2	3.4	5.8	11.8	21.1	26.46	47.36	154
	I100	kgm ²	0.017	0.019	0.027	0.037	0.1	0.12	0.15	0.17	0.25	0.81
A	Lmin	mm	998	1095	1235	1400	1545	1705	1910	2100	2405	2710
	Go	kg	175	233	342	479	623	936	1378	1880	2570	3910
	G100	kg	7.65	9.08	11.1	14.15	18.7	25.7	35.96	48.5	65.8	99.5
	Io	kgm ²	0.75	1.2	2.6	4.6	8.0	13.2	25.5	44.3	73.5	145.2
B	Lmin	mm	700	780	890	1000	1120	1240	1400	1580	1810	2050
	Go	kg	143	197	289	405	568	755	1088	1513	2179	3143
	Io	kgm ²	0.71	1.3	2.4	4.4	7.5	12.1	23.7	44.5	69.5	142.6
	Lmin	mm	520	550	640	720	780	860	980	1080	1220	1360
C	Go	kg	110	146	216	297	397	544	788	1077	1532	2171
	Io	kgm ²	0.63	1.16	2.35	3.6	5.73	10.8	21.7	35.5	61.8	128.3
D	Lmin	mm	600	660	760	860	920	1020	1160	1280	1420	1600
	Go	kg	115	152	228	315	419	579	843	1153	1620	2299
	G100	kg	8.4	10.6	13	17.1	21.7	27.9	35.8	43.5	55.9	69.8
	Io	kgm ²	0.64	1.1	2.3	4.1	6.42	12.6	22.3	38.0	61.8	143
E	Lmin	mm	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
	Io	kgm ²	0.03	0.04	0.08	0.12	0.20	0.28	0.44	0.74	1.12	1.78

注：1.E型的参数均按表尺寸而定。SWF680及以上大规格的参数用户应单独提供。 2.Lmin——公称最小长度。

3.Go、Io——分别为最短长度Lmin时的自重及转动惯量。 4.G100、I100——分别为长度增加100mm时的重量、转动惯量的增量。

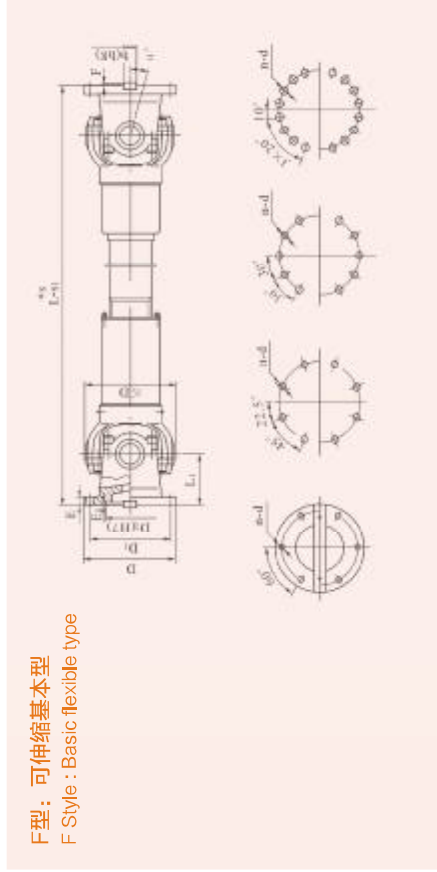
Note: 1.The parameter of E Style is according to dimension of sleeve. Parameters for above SWF 680 should be supplied from users.

2.Lmin – Nominal shortest length. 3.Go, Io – Represent weight and moment of inertia during the shortest length.

4.G100, I100 – Represent incremental weight and moment of inertia when the length is added by 100mm.

SWP系列 SWP Series

F型：可伸缩基本型
F Style : Basic flexible type



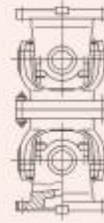
A型：可伸缩长型
A Style: Flexible long type



B型：可伸缩短型
B Style : Flexible short type



C型：无伸缩短型
C Style ; No-flexible short type



D型：无伸缩长型
D Style : No-flexible long type



主要性能及尺寸 The main performance and sizes

型号 Style	Tm	Tp	Tf	A	α	L1	D	D1	D2	n-d	b	F	E	E1	S	S1
	kN·m				°	mm										
SWP160	10.4	8.8	5.8	2.69	≤°	85	160	140	95	6-φ13	20	6	15	4	25	15
SWP180	13.9	11.8	7.7	4.05		95	180	155	105	6-φ15.5	24	7	15	4	30	20
SWP200	19.1	16.3	10.7	5.53		110	200	175	125	8-φ15.5	28	8	17	5	35	20
SWP225	28.6	24.3	15.9	7.86		130	225	196	135	8-φ17.5	32	9	20	5	40	25
SWP250	38	32.2	21.1	11.1		135	250	218	150	8-φ20	40	12.5	25	5	40	30
SWP285	63.9	54.3	35.4	16.0	10°	150	285	245	170	8-φ22	40	15	27	7	50	35
SWP315	98	83	54	22.3		170	315	280	185	10-φ24	40	15	32	7	55	35
SWP350	131	111	72	29.3		185	350	310	210	10-φ24	50	16	35	8	60	40
SWP390	166	141	92	39.2		205	390	345	235	10-φ26	70	18	40	8	60	40
SWP435	313	266	173	54.3		235	435	385	255	16-φ29.5	80	20	42	10	75	45
SWP480	434	366	239	73.8		265	480	425	275	16-φ33	90	22.5	47	12	85	55
SWP550	658	559	364	99.4		290	550	492	320	16-φ33	100	22.5	50	12	95	60

注：1、Tm、Tp、Tf——分别为最大允许静转矩、允许脉动疲劳转矩及允许对称疲劳转矩。2、A——反映轴容量的值。
Note: 1、Tm、Tp、Tf – Represent the maximum allowed static torque, allowed pulse fatigue torque and allowed symmetric fatigue torque.
2、A—Represent the value of bearing capacity.

长度、重量及转动惯量 Length, weight and moment of inertia

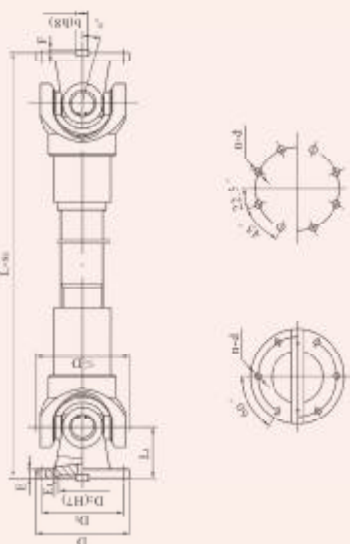
	SWP																				
	Lmin	mm	Go	kg	G100	kg	Io	kgm ²	I100	kgm ²	Lmin	mm	Go	kg	G100	kg	Io	kgm ²	I100	kgm ²	
F		610	700	780	928	958	1103	1240	1400	1480	1740	1940	2125								
		62	78.1	108	159	213	308	436	547	794	1275	1691	2205								
		kg	3.8	4.8	6.4	6.4	9.6	12.1	15.8	21.7	28.1	37.1	48.6								
		0.13	0.22	0.31	0.61	1.08	1.83	2.95	5.18	9.41	17.52	28.69	47.36								
		0.0029	0.0046	0.0076	0.0159	0.0159	0.0225	0.0370	0.0805	0.1228	0.1806	0.2643									
A		660	752	823	933	978	1133	1250	1380	1495	1710	1910	2135								
		59	75.9	102.3	143	206	293	407	516	754	1159	1611	2126								
		kg	2.3	3.1	4.6	5.4	7.6	9	12.7	14.3	18.8	25.5	27.3								
		0.13	0.22	0.37	0.63	1.02	1.17	3.86	6.86	11.53	21.81	38.04	61.28								
		0.0057	0.0069	0.0096	0.0222	0.031	0.0502	0.0886	0.1526	0.22	0.34	0.5647	0.9279								
C		455	510	580	670	710	790	915	1000	1070	1230	1380	1510								
		50	65	87	129	183	254	356	449	656	1025	1413	1830								
		0.14	0.23	0.36	0.61	0.98	2.12	3.80	6.60	10.5	22.4	38.2	61								
		kg	340	380	440	520	540	600	680	740	820	940	1060	1160							
		Go	kg	39.6	52.8	74.8	105	167	218	293	362	576	855	1126	1595						
D		0.11	0.17	0.29	0.51	0.93	1.88	2.88	4.59	8.64	17.41	28.25	49.49								
		430	474	544	636	680	760	860	940	1060	1180	1360	1460								
		Go	kg	44	59.4	84.7	124	196	251	343	428	668	1026	1095	1935						
		G100	kg	2.6	2.7	3.4	5.4	6	8.5	9.8	13.6	15.3	19.9	23.7	29.1						
		0.09	0.16	0.28	0.53	0.91	1.91	3.39	5.35	10.54	18.56	31.69	51.46								
	0.0071	0.0085	0.0114	0.025	0.035	0.0655	0.098	0.165	0.2356	0.365	0.614	0.934									

注：1、Lmin——公称最短长度。2、Go、Io——分别为最短长度Lmin时的重量及转动惯量。
3、G100、I100——分别为长度增加100mm时的重量、转动惯量的增量。
Note: 1、Lmin – Nominal shortest length. 2、Go、Io – Represent weight and moment of inertia during the shortest length.
3、G100、I100 – Represent incremental weight and moment of inertia when the length is added by 100mm.

JXC系列 JXC Series

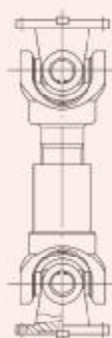
F型：可伸缩基本型

F Style ; Basic flexible type



B型: 可伸缩短型

B Style : Flexible short type



C型: 无伸缩短型

C Style ; No-flexible short type



D型：无伸缩长型

D Style : No-flexible long type



主要性能及尺寸

[illegible]

注: 1. T_m 、 T_p 、 T_f ——分别为最大允许静转矩、允许脉动疲劳转矩及允许对称疲劳转矩。2. A ——反映轴承容量的值。

Note: 1. T_m , T_f – Represent the maximum allowed static torque, allowed pulse fatigue torque and allowed symmetric fatigue torque.
2. A – Represent the value of bearing capacity.

长度、重量及转动惯量 Length, weight and moment of inertia

型 式		JXC110	JXC140	JXC160	JXC180	JXC200	JXC225
F	L _{min} mm	405	495	590	620	670	780
	Go kg	15.5	31	50	60	70	128
	G ₁₀₀ kg	1.68	2.38	3.21	3.21	4.17	6.45
	lo kgm ²	0.014	0.035	0.06	0.1	0.25	0.36
	I ₁₀₀ kgm ²	0.0008	0.001	0.004	0.007	0.013	0.016
B	L _{min} mm	310	395	455	480	520	585
	Go kg	12	22	32	43	58	93
	lo kgm ²	0.01	0.025	0.042	0.07	0.18	0.25
C	L _{min} mm	220	280	320	340	380	440
	Go kg	8	15	27	30	44	69
	lo kgm ²	0.008	0.02	0.033	0.055	0.14	0.2
D	L _{min} mm	380	470	550	570	640	740
	Go kg	13	23	39	42	61	123
	G ₁₀₀ kg	1.68	2.38	3.21	3.21	4.17	6.45
	lo kgm ²	0.012	0.03	0.05	0.085	0.21	0.31
	I ₁₀₀ kgm ²	0.0008	0.001	0.004	0.007	0.013	0.016

注: 1.L/min——公称最长长度。 2.Go、lo——分别为最短长度Lmin时的自重及转动惯量。

Note: 1. $L_{\min}$ – Nominal shortest length. 2. $G_{\text{a}}, I_{\text{a}}$ – Represent weight and moment of inertia during the shortest length. 3. $G_{\text{a}}, I_{\text{a}}$ – Represent incremental weight and moment of inertia when the length is added by 100mm.



攀成阳无缝钢管机组
Pangang Group Chengdu Steel & Vanadium Co.,Ltd.Seamless Steel Pipe Unit



480/100t 铸造起重机
480/100t Ladle Crane



450t 铸造起重机
450t Ladle Crane



板坯连铸驱动部分
Slab Continuous Casting Machine Drive Part



480t钢包车驱动
480t Boggy Ladle Drive



轧钢机驱动
Rolling Mill Drive



薄板轧机驱动
Sheet Rolling Mill Drive



矫直机主驱动
Straightening Machine Masterdrive



步进加热炉驱动
Step Heating Furnace Drive

部份客户列表 List of Some Customers

海南航天工程	发射装置	Hainan Aerospace Engineering	Launcher
酒泉航天工程	发射装置	Jiuquan Aerospace Engineering	Launcher
攀成钢无缝	720 穿孔机组	Pancheng Steel Tube	720# Perforation Unit
西姆莱特钢管	250 穿孔机组	Ximulaite Steel	250# Perforation Unit
磐石钢管	100 穿孔机组	Panshi Gangguan	100# Perforation Unit
衡阳钢管	108 穿孔机组	Hengyang Gangguan	108# Perforation Unit
江阴兴澄钢铁	棒材轧机	Xincheng Steel	Bar Material Rolling Mill
华菱涟源钢铁	热轧板厂	VALIN LYSTEEEL	Hot Rolling Mill
南京钢铁股份	棒材分厂	Nanjing Steel Group	Bar Plant
首钢总公司	棒材厂	Shougang Corporation	Bar Plant
河北邯钢钢铁	2120 板坯连铸机	Hebei Handan Steel	2120# Slab Continuous Casting Machine
首钢京唐	1650 板坯连铸机	Shougang Jingtang	1650# Slab Continuous Casting Machine
天铁集团	1650 板坯连铸机	Tiantie Group	1650# Slab Continuous Casting Machine
吉林钢铁	1300 板坯连铸机	Jilin Steel	1300# Slab Continuous Casting Machine
首钢京唐	480t 钢包车	Shougang Jingtang	480t Ladle Crane
马钢股份	480t 钢包车	Magang	480t Ladle Crane
河北宣钢	400t 钢包车	Hebei Xuangang	400t Ladle Crane
宝钢股份	350t 钢包车	Baosteel	350t Ladle Crane
太钢股份	350t 钢包车	Taiyuan Iron & Steel Co., Ltd	350t Ladle Crane
天铁集团	320t 钢包车	Tiantie Group	320t ladle Crane
大连重工	450t 钢包车	Dalian Heavy Industry	450t Ladle Crane
无锡巨力	480t 钢包车	Juli Heavy Industry	480t Ladle Crane
秦冶重工	350t 钢包车	Qinye Heavy Industry	350t Ladle Crane
东方冶金车辆	300t 钢包车	Oriental metallurgy vehicle	300t Ladle Crane
宝钢股份	矫直机	Baosteel	Straightener
舞阳新钢铁	矫直机	Wuyang New Steel	Straightener
柳钢钢铁	矫直机	Hanbao Steel	Straightener

螺纹紧固件预紧力矩推荐值
Recommended value of preloaded torque of thread fasteners

螺纹规格 d×P Thread Specification	8.8级 8.8 class	10.9级 10.9 class	12.9级 12.9 class
M6	6	8	10
M8x1	14	20	25
M10x1	45	65	80
M12x1.5	80	110	130
M14x1.5	130	180	220
M16x1.5	195	275	330
M18x1.5	280	400	480
M20x1.5	400	570	680
M22x1.5	520	735	880
M24x2	650	920	1100
M27x2	940	1340	1600
M30x2	1350	1900	2280
M33x2	1700	2440	2930
M36x2	2200	3150	3800

注：螺栓的机械性能应符合GB/T5785的规定，螺母的机械性能应符合GB/T6176的规定。
Note: The mechanical capacity of bolts should be accored with GB/T5785 and the mechanical capacity of nuts should be accored with GB/T6176.

