

Chain product manual

The chain is the basis of pieces of machinery, widely used in agricultural machinery, transportation, textile industry, metallurgy, mining machinery and instruments industry etc.. Chain transmission is composed of driving sprocket, a driven sprocket and a closed chain, it relies on the meshing between the chain and the chain gear to transmit motion and power

一、 Classification

There are many types of chains, according to use can be divided into transmission chain, lifting chain and a traction chain. Lifting chain and a traction chain used for hoisting machinery and transportation machinery. In the general machinery, is the most commonly used transmission chain. The main types of transmission chain is short pitch precision roller chain (referred to as the roller chain) and the tooth shape chain, of which the most widely used roller chain. This paper mainly discussed the related problems of roller chain drive.

二、 Design of roller chain

1、 Roller chain is composed of inner chain plate, outer chain plate, pin shaft, sleeve and roller. Between the inner chain plate and bush, the outer chain plate and the pin shaft, they are interference fit. Between the sleeve and the pin shaft are in clearance fit, form a movable connection. When in work, between the inner, outer chain link can be relatively flexible, sleeve around the pin shaft rotate freely. In order to reduce the wear between the pin shaft and the sleeve, should be filling of lubricating oil in between them. Roller movably sheathed in the outside of the sleeve, When clench the teeth, chain roller along the sprocket tooth profile rolling, In order to reduce the wear between the chain and sprocket teeth. The inner, outer chain plate are made of 8 word shape, the tensile strength of each cross section of the chain plate is basically the same, and reduce the weight and inertia force of the chain.

2、 Two adjacent pin shaft between the axis lines distance is called the pitch, with P said, it is the main parameter of the chain. Pitch a larger P , each element of the chain size larger, higher bearing capacity, but also increase the weight, shock and vibration is increased. Therefore, transmission power is larger, In order to reduce the overall outline size of chain transmission, reduce the impact and

vibration, can be multi row chain using relatively small pitch. Transmission chain of more than four columns, can be made in consultation with the manufacturer.

3、Transmission roller chain has been standardized, divided into A, B two series, our country mainly A series (used for design and export, B series used for export and repair), the following table lists the basic parameters and dimensions of several commonly used A series roller chain.

DIN ISO 链号	ANSI 链号	节距		滚子 直径	内节内 宽	销轴 直径	销轴长度		内链 板高 度	链板 厚度	极限 拉伸 载荷	每米长重
		P		d1 max	b1 min	d2 max	L min	Lc max	h2 max	T max	Q min	q [≈]
		mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	kN
*03C-1	*15	4.7625	3/16"	2.48	2.38	1.62	6.10	6.90	4.30	0.60	1.80	0.08
*04C-1	*25	6.35	1/4"	3.30	3.18	2.31	7.90	8.40	6.00	0.80	3.50	0.15
*06C-1	*35	9.525	3/8"	5.08	4.77	3.58	12.40	13.17	9.00	1.30	7.90	0.33
085-1	41	12.70	1/2"	7.77	6.25	3.58	13.75	15.00	9.91	1.30	6.67	0.41
08A-1	40	12.70	1/2"	7.95	7.85	3.96	16.6	17.8	12.00	1.5	14.10	0.62
10A-1	50	15.875	5/8"	10.16	9.40	5.08	20.70	22.20	15.09	2.03	22.20	1.02
12A-1	60	19.050	3/4"	11.91	12.57	5.94	25.90	27.70	18.00	2.42	31.80	1.50
16A-1	80	25.40	1"	15.88	15.75	7.92	32.7	35.00	24.00	3.25	56.70	2.60
20A-1	100	31.75	5/4"	19.05	18.90	9.53	40.40	44.70	30.00	4.00	88.50	3.91
24A-1	120	38.100	3/2"	22.23	25.22	11.10	50.30	54.30	35.70	4.80	127.00	5.62
28A-1	140	44.450	7/4"	25.40	25.22	12.70	54.40	59.00	41.00	5.60	172.40	7.50
32A-1	160	50.800	2"	28.58	31.55	14.27	64.80	69.60	47.80	6.40	226.80	10.10
36A-1	180	57.150	9/4"	35.71	35.48	17.46	72.80	78.60	53.60	7.20	280.20	13.45
40A-1	200	63.500	5/2"	39.68	37.85	19.85	80.30	87.20	60.00	8.00	353.80	16.15
48A-1	240	76.20	3"	47.63	47.35	23.81	95.50	103.00	72.39	9.50	510.30	23.20

三、The manufacturing process of roller chain

1, Processing the inner, outer chain plate : First, steel plate by

punching machines, stamping forming the shape and size required. Then through the hexagonal drum ,removing burr on chain plate above, then through heat treatment and use of engine oil quenching, Finally, the use of alkali and water and industrial sand, cleaning the oil stain of chain plate surface after spare.

2, Processing the sleeve, roller and pin shaft. Raw materials of the sleeve and the roller, through the reel pipe processing equipment, raw materials of pin shaft ,through a shaft pin machine processing, made of shape and size needed, Then through the hexagonal drum,removing burr on the above, then through heat treatment and use of water quenching. Finally,cleaning the oil stain of surface after spare.

3, The internal and external chain plate, sleeve, the roller and the pin shaft parts tempering, then assembly forming, stretching correction, after passing through the test is finished.

四、 Installation and maintenance of the chain:

1, The correct installation of the chain, the new chain is too long or use after elongation, difficult to adjust, can remove the link, but must be an even number. Links should be from the back through the chain, the lock sheet is inserted in the outside lateral, lock sheet opening direction and rotation direction is opposite.

2, Chain tightness should be appropriate, too tight power consumption is increased, the bearing is easy to wear;too loose chain easy to jump and take off the chain. The tightness of the chain:Mention or press down the middle of the chain, between the two sprocket center distance of about 2% - 3%.

3, Sprocket wear serious, should be replaced at the same time the new sprocket and chain, in order to guarantee a good clench the teeth. You can't only replacement the one of them, Otherwise it will cause clench the teeth is not good, accelerate new chains or sprocket wear new. Sprocket tooth wear to a certain degree should be promptly after the turnover use (If possible). In order to extend the use of time.

4,Can not put the old chain and the new chain mixed use, otherwise easily produce impact force ,in the transmission process, tension fracture the chain.

5, The chain in the work should be timely filling of lubricating oil. the lubricating oil must be entered in the clearance of roller and inner sleeve, so as to improve working conditions, reduce wear.