



Changzhou Speed reducer Machine Co.,Ltd

B/X Series Cycloid Reducer





1. Use range of cycloid pin wheel reducer:

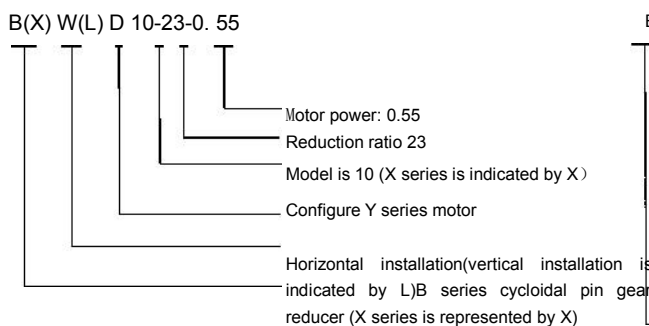
Cycloidal pin gear reducer adopts the principle of cycloid pin-tooth meshing and planetary transmission, so it is usually also called planetary cycloid reducer. The machine is divided into horizontal, vertical, double-shaft and direct-connected assembly methods. It is the first choice equipment for metallurgy, mining, construction, chemical, textile, light industry and other industries.

2. The main features of cycloidal pinwheel reducer:

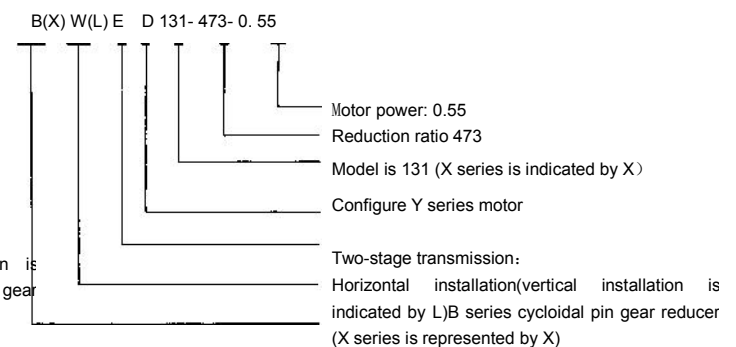
- a. Large reduction ratio and high efficiency: the reduction ratio of the first-stage transmission is 9-87, the reduction ratio of the two-stage transmission is 121-7569, the multi-stage combination can reach tens of thousands, and the pin tooth meshing system has rolling friction, and the meshing surface has no Relative sliding, so the first-level deceleration efficiency reaches 94%.
b. Stable operation and low noise: During the operation, the number of teeth contacted at the same time is large, the coincidence is large, the operation is stable, the overload capacity is strong, and the vibration and noise are low. The noise of models of various specifications is below 85dB (A).
c. Reliable use and long service life: The main parts are made of high-carbon alloy steel quenched (HRC58-62), and then finely ground, and the cycloid teeth and needle teeth are transmitted to the needle teeth to form rolling friction. The coefficient is small, so that there is no relative sliding in the meshing area, and the wear is extremely small, so it is durable.
d. Compact structure and small volume: Compared with other reducers of the same power, the weight and volume are smaller than 1/3. Because it is a planetary transmission, the input shaft and output shaft are on the same axis to obtain the smallest possible size.

3. Model calibration method of cycloid pin wheel reducer:

Single-stage transmission:



Two-stage transmission:



Note: The letter D in the model notation represents the configuration of Y series motors, please refer to this catalog for other special motor code representations



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Cycloidal pinwheel reducer model comparison table (Carrying capacity)

Reducer Series	Model Comparison										
X Series	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
B Serie Various models	B10	B11	B12	B13	B14		B15	B16	B17	B18	B19
	B0	B1	B2	B3	B4		B5	B6	B7	B8	B9
	B12	B15	B18	B22	B27		B33	B39	B45	B55	B65
	B120	B150	B180	B220	B270		B330	B390	B450	B550	B650

BW、BWD、XW、XWD type(Single stage) shape and installation dimensions

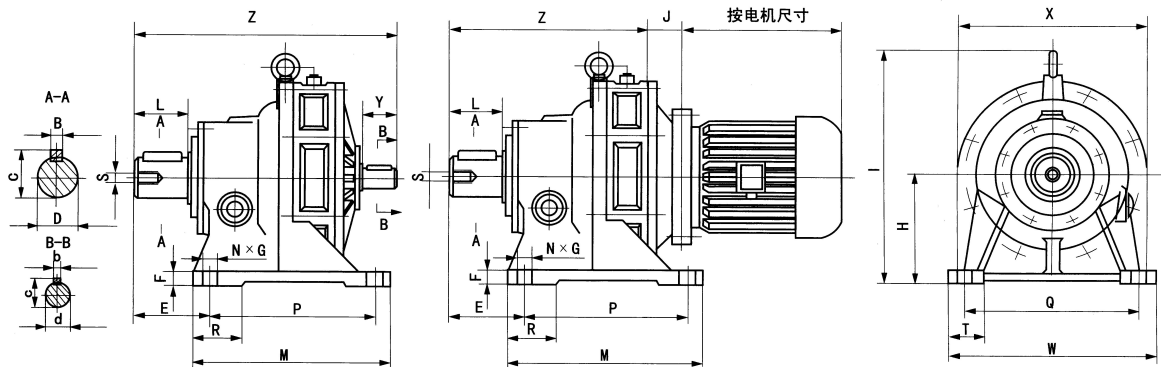


Figure 1-1 Appearance of single-stage horizontal cycloid pinwheel planetary reducer

NO.	Dimensions						Installation size										Shaft end size						weight				
	M	W	Z		1	X	J	H	E	F	P	Q	R	S	T	N	G	B	C	D	L	b	C	d	Y	BW	BWD (≈)
			BW	BW																							

BW、BWD10-19 No.

B10	120	185	214	165	190	168	附 表	100	93	15	90	150		M8	35	4	11	8	33	30	35	5	17	15	22	15	BW weight + motor weight
11	160	280	263	194	250	200		120	125	15	110	240		M8	55	4	13	10	38	35	56	6	20.5	18	35	22	
12	200	320	320	246	296	240		140	144	20	150	280		M8	60	4	13	14	48.5	45	68	6	24.5	22	40	40	
13	250	390	390	294	355	300		160	159	25	200	340		M12	75	4	17	16	59	55	80	8	33	30	55	73	
14	380	400	465	356	430	340		200	153	25	320	340	65	M12	80	4	22	20	74.5	70	100	10	38	35	62	120	
15	440	470	544	431	513	420		240	155	32	380	420	100	M16	80	4	22	25	95	90	116	14	48.5	45	70	185	
16	520	560	668	528	605	500		280	199	35	440	500	150	M20	90	4	26	28	106	100	139	14	53.5	50	80	380	
17	600	690	791	594	706	616		325	230	40	500	630		M24	105	6	26	28	116	110	150	16	59	55	90	580	
18	810	880	1065	814	880	740		420	324	50	660	800		M30	160	6	32	32	137	130	202	20	74.5	70	120	1200	
19	1040	1160	1462	1151	1160	1000		540	485	60	840	1050		M42	200	6	45	45	190	180	330	25	95	90	150	2500	



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XW, XWD2—12No.

X2	120	210	209	161	190	168	附 表	100	101	15	90	180	M8	45	4	12	8	28	25	34	5	17	15	22	15	BW weight + motor weight
3	150	290	263	194	270	200		140	151	20	100	250	M8	55	4	16	10	38	35	56	6	20.5	18	35	30	
4	195	330	320	246	316	240		150	169	22	145	290	M8	65	4	16	14	48.5	45	72	6	24.5	22	40	43	
5	260	420	426	330	356	300		160	206	25	150	370	M12	75	4	16	16	59	55	91	8	33	30	55	85	
6	335	430	484	375	425	340		200	125	30	275	380	M12	75	4	22	18	69	65	89	10	38	35	62	125	
7	380	470	512	404	484	420		220	145	30	320	420	M16	95	4	22	22	85	80	109	12	43	40	65	190	
8	440	530	583	470	514	420		250	155	35	380	480	M16	120	4	22	25	95	90	120	14	48.5	45	70	240	
9	560	620	723	571	614	500		290	186	40	480	560	M20	120	4	26	28	106	100	141	14	53.5	50	80	390	
10	600	690	791	594	706	616		325	230	40	500	630	M24	105	6	26	28	116	110	150	16	59	55	90	580	
11	810	880	1065	814	880	740		420	324	50	660	800	M30	160	6	32	32	137	130	202	20	74.5	70	120	1200	
12	1040	1160	1462	1151	1160	1000		540	485	60	840	1050	M42	200	6	45	45	190	180	330	25	95	90	150	2500	

BL, BLD, XL, XLD type (single stage) outline and installation dimensions

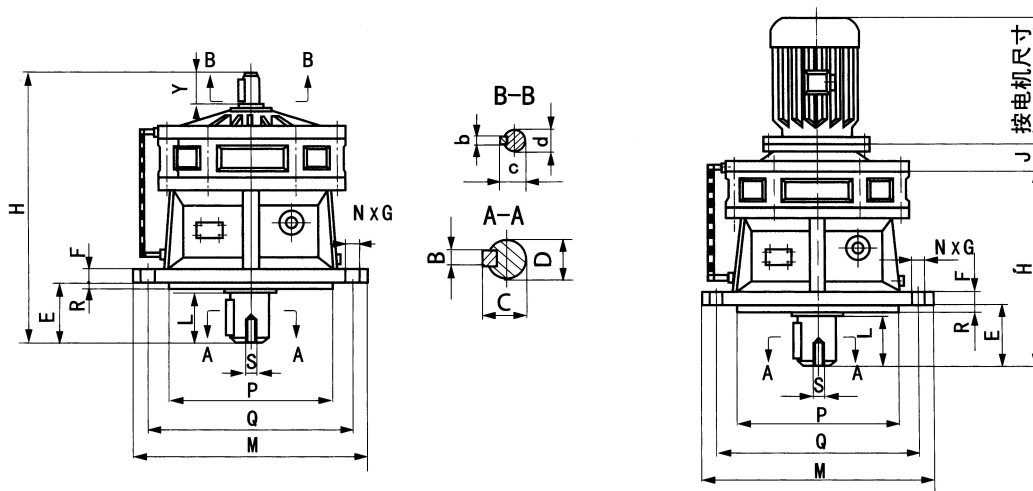


Figure 1-2 Appearance of single-stage vertical cycloid pinwheel planetary reducer

NO.	Dimensions				Installation size								Shaft end size							weight		
	H		M	J	E	F	G	N	P	Q	R	S	B	C	D	L	b	C	d	Y	BL	BLD (≈)
	BL	BLD																				

BL, BLD10—19No.

B10	214	165	190	附 表	39	10	11	4	140	160	3	M8	8	33	30	35	5	17	15	22	15	BL weight + motor weight
11	263	194	230		61	12	11	6	170	200	4	M8	10	38	35	46	6	20.5	18	35	22	
12	320	246	260		70	15	11	6	200	230		M8	14	48.5	45	60		24.5	22	40	43	
13	390	294	340		80	20	13	6	270	310	5	M12	16	59	55	74	8	33	30	55	79	
14	465	356	400		101	22	15	8	320	360	5	M12	20	74.5	70	92	10	38	35	62	127	
15	544	431	490		120	30	18	12	400	450	5	M16	25	95	90	113	14	48.5	45	70	200	
16	668	528	580		139	35	22	12	460	520	8	M20	28	106	100	130	14	53.5	50	80	400	
17	791	594	650		182	40	22	12	520	590	10	M24	28	116	110	142	16	59	55	90	620	
18	1065	814	880		210	50	38	12	680	800	10	M30	32	137	130	202	20	74.5	70	120	1220	
19	1462	1151	1160		370	60	39	12	900	1020	10	M42	45	190	180	330	25	95	90	150	2500	



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XL、XLD2—12No.

X2	209	159	180	附 表	42	12	12	6	130	160	3	M8	8	28	25	34	5	17	15	22	15	BL weight + motor weight
3	263	194	230		51	15	12	6	170	200	4	M8	10	38	35	46	6	20.5	18	35	30	
4	324	250	260		79	15	12	6	200	230	4	M8	14	48.5	45	64	6	24.5	22	40	43	
5	427	331	340		93	20	12	6	270	310	4	M12	16	59	55	85	8	33	30	55	88	
6	484	377	400		92	22	16	8	316	360	5	M12	18	69	65	81	10	38	35	62	130	
7	514	406	430		114	22	18	8	345	390	5	M16	22	85	80	96	12	43	40	65	195	
8	585	472	490		112	30	18	12	400	450	6	M16	25	95	90	110	14	48.5	45	70	245	
9	723	571	580		170	35	22	12	455	520	8	M20	28	106	100	132	14	53.5	50	80	395	
10	791	594	650		182	40	22	12	520	590	10	M24	28	116	110	142	16	59	55	90	620	
11	1065	814	880		210	50	38	12	680	800	10	M30	32	137	130	202	20	74.5	70	120	1220	
12	1462	1151	1160		370	60	39	12	900	1020	10	M42	45	190	180	330	25	95	90	150	2500	

BWE, BWED, XWE, XWED (two-stage) outline and installation dimensions

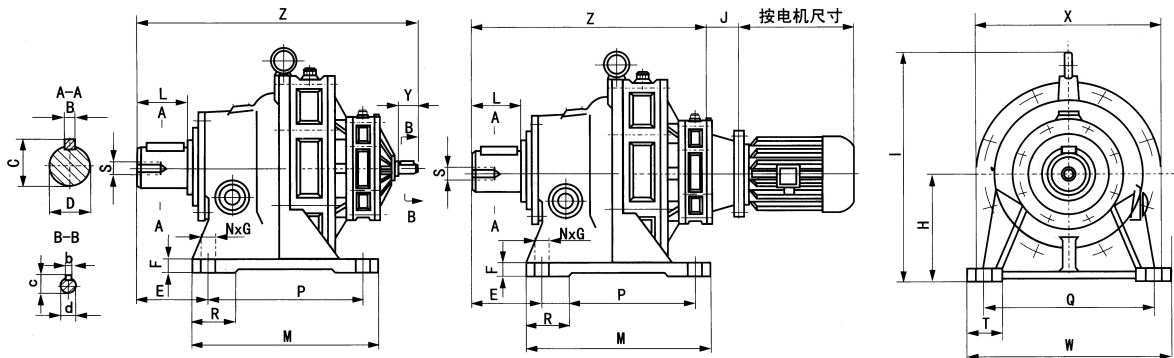


Figure 1-3 Appearance of a two-stage horizontal cycloid pinwheel planetary reducer

NO.	Dimensions				Installation size											Shaft end size					weight						
	M	W	Z		1	X	J	H	E	F	P	Q	R	S	T	N	G	B	C	D	L	b	C	d	Y	BW E	BWE D (≈)
			BW	BW																							

BWE、BWED120-195No.

B120	200	320	368	319	306	240	附 表	140	144	20	150	280		M8	60	4	13	14	48.5	45	68	5	17	15	22	50	BWED weight + motor weight
130	250	390	417	368	356	300		160	159	25	200	340		M12	75	4	17	16	59	55	80	5	17	15	22	82	
131	250	390	443	373	356	300		160	159	25	200	340	65	M12	75	4	17	16	59	55	80	6	20.5	18	35	90	
141	380	400	505	435	425	340		200	153	25	320	340	65	M12	80	4	22	20	74.5	70	100	6	20.5	18	35	140	
142	380	400	534	459	425	340		200	153	25	320	340	100	M12	80	4	22	20	74.5	70	100	6	24.5	22	40	155	
152	440	470	635	535	504	400		240	155	32	380	420		M16	80	4	22	25	95	90	116	6	24.5	22	40	240	
153	440	470	643	547	504	400		240	155	32	380	420		M16	80	4	22	25	95	90	116	8	33	30	55	260	
163	520	560	741	645	605	500		280	199	35	440	500		M20	90	4	26	28	106	100	139	8	33	30	55	460	
174	600	690	863	754	706	616		325	230	40	500	630		M24	105	6	26	28	116	110	150	10	38	35	62	680	
185	810	880	1113	983	880	760		420	324	50	660	800		M30	160	6	32	32	137	130	202	14	48.5	45	70	1320	
195	1040	1160	1502	1350	1160	1000		540	485	60	840	1050		M42	200	6	45	45	190	180	330	14	48.5	45	70		



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XWE、XWED42—128No.

X42	195	330	372	319	316	240	附 表	150	169	22	145	290	M8	65	4	16	14	48.5	45	72	5	17	15	22	50	XBWE D weight + motor weight
53	260	420	479	409	356	300		160	206	25	150	370	M12	75	4	16	16	59	55	91	6	20.5	18	35	110	
63	335	430	524	454	425	340		200	125	30	275	380	M12	75	4	22	18	69	65	89	6	20.5	18	35	150	
64	335	430	552	478	425	340		200	125	30	275	380	M12	75	4	22	18	69	65	89	6	24.5	22	40	160	
74	380	470	582	508	484	400		220	145	30	320	420	M16	95	4	22	22	85	80	109	6	24.5	22	40	230	
84	440	530	648	574	514	400		250	155	35	380	480	M16	120	4	22	25	95	90	120	6	24.5	22	40	260	
85	440	530	682	586	514	400		250	155	35	380	480	M16	120	4	22	25	95	90	120	8	33	30	55	290	
95	560	620	784	688	614	500		290	186	40	480	560	M20	120	4	26	28	106	100	141	8	33	30	55	470	
106	600	690	863	754	706	616		325	230	40	500	630	M24	105	6	26	28	116	110	150	10	38	35	62	680	
117	810	880	1108	983	880	760		420	324	50	660	800	M30	160	6	32	32	137	130	202	12	43	40	65	1320	
128	1040	1160	1502	1350	1160	1000		540	485	60	840	1050	M42	200	6	45	45	190	180	330	14	48.5	45	70		

BLE, BLED, XLE, XLED (two-stage) outline and installation dimensions

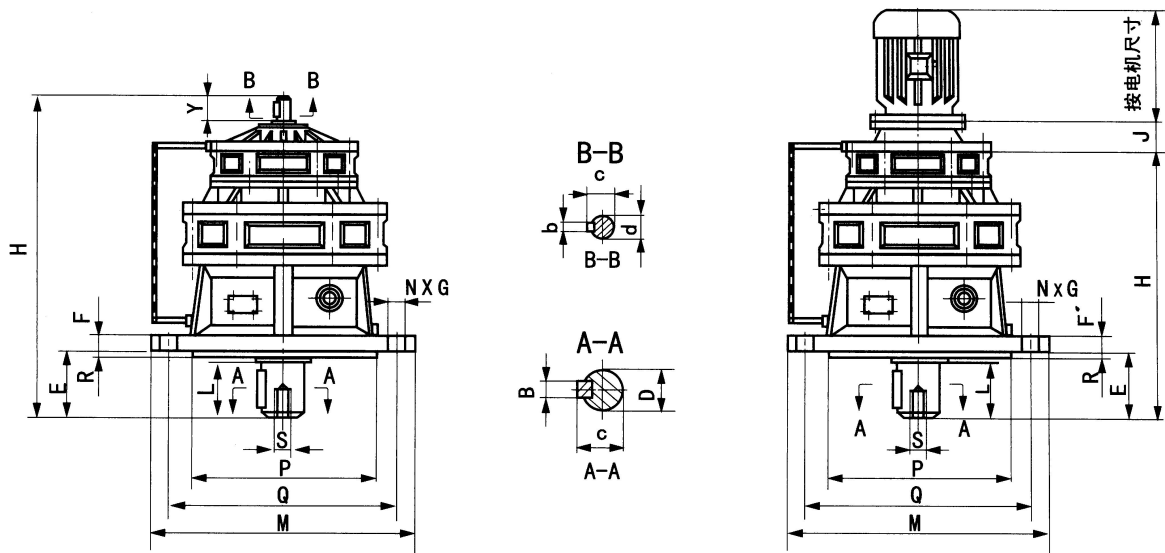


Figure 1-4 Appearance of a two-stage vertical cycloid pinwheel planetary reducer

NO.	Dimensions		Installation size											Shaft end size					weight			
	H		M	J	E	F	G	N	P	Q	R	S	B	C	D	L	b	c	d	Y	BLE	BLED
	BLE	BLED																				(≈)

BLE、BLED120—195No.

B120	368	319	260	附 表	70	15	11	6	200	230	4	M8	14	48.5	45	60	5	17	15	22	50	BLED weight + motor weight
130	417	368	340		80	20	13	6	270	310	5	M12	16	59	55	74	5	17	15	22	85	
131	443	373	340		80	20	13	6	270	310	5	M12	16	59	55	74	6	20.5	18	35	95	
141	505	435	400		101	22	15	8	320	360	5	M12	20	74.5	70	92	6	20.5	18	35	145	
142	534	459	400		101	22	15	8	320	360	5	M12	20	74.5	70	92	6	24.5	22	40	160	
152	635	535	490		120	30	18	12	400	450	5	M16	25	95	90	113	6	24.5	22	40	240	
153	643	547	490		120	30	18	12	400	450	5	M16	25	95	90	113	8	33	30	55	260	
163	741	645	580		139	35	22	12	460	520	8	M20	28	106	100	130	8	33	30	55	460	
174	863	754	650		182	40	22	12	520	590	10	M24	28	116	110	142	10	38	35	62	690	
185	1113	983	880		210	50	38	12	680	800	10	M30	32	137	130	202	14	48.5	45	70	1340	



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195	1502	1350	1160	370	50	39	12	900	1020	10	M42	45	190	180	330	14	48.5	45	70	
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XLE、XLED42-128No.

X42	376	323	260	附 表	79	20	12	6	200	230	4	M8	14	48.5	45	64	5	17	15	22	50
53	480	410	340		93	22	12	6	270	310	4	M12	16	59	55	85	6	20.5	18	35	110
63	526	456	400		92	22	16	8	316	360	5	M12	18	69	65	81	6	20.5	18	35	155
64	554	480	400		92	22	16	8	316	360	5	M12	18	69	65	81	6	24.5	22	40	170
74	585	511	430		114	22	18	8	345	390	5	M16	22	85	80	96	6	24.5	22	40	230
84	650	576	490		112	30	18	12	400	450	6	M16	25	95	90	110	6	24.5	22	40	260
85	684	588	490		112	30	18	12	400	450	6	M16	25	95	90	110	8	33	30	55	280
95	784	686	580		170	35	22	12	455	520	8	M20	28	106	100	132	8	33	30	55	480
106	863	754	650		182	40	22	12	520	590	10	M24	28	116	110	142	10	38	35	62	690
117	1108	983	880		210	50	38	12	680	800	10	M30	32	137	130	202	12	43	40	65	1340
128	1502	1350	1160		370	60	39	12	900	1020	10	M42	45	190	180	330	14	48.5	45	70	

BLED
weight
+ motor
weight

Two-stage motor direct-coupled cycloid pinwheel reducer rated input power meter

NO.	Allowable torque N-M	Transmission ratio																
		121	187	289	391	473	595	731	841	1003	1225	1505	1849	2065	2537	3481	4189	5133
Output speed 1500rpm																		
XE42 BE20	540	0.7 5	0.55 0.37	0.37	0.25	0.25	0.25											
XE53 BE131	1275	2.2 1.5	1.1 0.75	0.75 0.55	0.75 0.55	0.55												
XE63 BE141	2255	2.2	2.2	1.5	1.1	0.75	0.75											
XE74	2650	4 3	3 2.2	2.2	1.5	1.1	0.75	0.55	0.55	0.55	0.55							
XE85 BE153	4510	7.5 5.5	5.5 4	4	3	2.2	2.2		1.5	1.5	1.1							
XE95 BE163	8820	7.5	7.5	5.5	5.5	4	3	2.2	1.5	1.5	1.1							
XE106 BE174	11760		11	11	7.5	5.5	4	3										
XE117 BE185	21560		7.5	7.5	5.5	4	3	2.2	2.2	2.2								
XE128 BE195	29400		15	15	11	11	7.5	5.5	5.5									

Note: Under the strictly limited allowable torque, the input power at the place can be the minimum rated input power under the machine number in the table



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Single-stage motor

Cycloidal pinwheel reducer rated input power meter

unit KW

model	11	17	23	29	35	43	59	71	87
X2	0.75	0.							
B10	55	0.55	0.37	0.25					
X3	2.2								
B11	1.5	1.5	1.1	1.1	0.75	0.55			
X4					1.5	1.1	0.		
B12	4	3	2.2	1.5	1.1	0.75	75		
X5	7.5		5.5	4	3	2.2			
B13	5.5		4	3	2.2	1.5		1.5	
X6				7.5	5.5	4	3		
B14	11	7.5		5.5	4	3	2.2	2.2	
X7	15	11			7.5	5.5		4	
			11	7.5	5.5	4			
X8		18.5		15	11	7.5			
B15		15		11	7.5	5.5		5.5	
X9	22		18.5		15				
B16	18.5		15		11			11	
X10		37	37	30		22	18.5		1
B17			30	20		18.5	15		5
X11									22
B18			55		45	37	22		18.5
X12					45	37	2	2	
B19			55		37	22	2	2	
Output speed rpm	Output speed 1500rpm								
	136	8	65	51	42	34	25	2	1
	Output speed 1000rpm								
	91	5	43	34	29	23	17	1	1

Allowable torque table of single-stage reducer output shaft

NO.	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
	B10	B11	B12	B13	B4		B15	B16	B17	B18	B19
Allowable torque of output shaft N - M											
Ratio	Output speed 1500 rpm						1000 rpm				
11	48.3	141.7	257.6	483	708.3	965.9	1787	2125	4346	-	-
17	74.6	149.3	398.1	746.4	1094.7	1492	2761	3284	6717	8210	11196
23	53.9	202.0	296.2	740.5	1481.8	1481	3736	3736	8079	11109	15148
29	67.9	186.7	373.5	933.7	1867.4	1867	2546	4711	7639	14007	19100
35	82	225.4	307.4	819.6	1536.7	2253	3673	5686	6761	12294	23051
43	100.7	151.0	377.6	755.2	1384.5	1887	2768	3775	8307	15104	20768
59		207.2	380	759.9	1381.5	1899	2590	3799	9585	15543	23315
71		166.3	332.5	623.5	1246.9	1662	2286	4572	11534	13717	18705
87			280.1	764	1120.5	2037	2801	7639	7640	16808	22920

Configuration power of direct-connected reducer Source code

Configure power source	Code
Ordinary motor	D
Explosion-proof motors	B
DC motor	Z
Speed motor	T
Brake motor	N

Dimension J table equipped with Y series motor

Motor Power	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15
Motor Poles	4-Poles										
X2, B10	71	71									
X3, B11	83	83	83	83	96	96					
X4, B12	89	89	89	89	89	89	89				
X5, B13			81	81	96	96	96	120	120		
X6, B14					125	125	125	125	140	140	
X7,X8, B15						80	100	100	130	130	

Motor Power	15	18.5	7.5	11	15	18.5	22	30	37	45	55
	4-Poles						6-Poles				
X7,8, B15	130	130									
X9, B16			105	135	135	135	135				
X10, B17			130	130	130	130	162	162			
X11, B18					203	203	233	233	233	233	
X12, B19					215	215	255	255	255	255	

Note: J size may vary when other motors are configured



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一、 Conditions of use:

1. Cycloidal pinwheel reducer is allowed to be used in the continuous working system, and it is allowed to run in both forward and reverse directions.
2. The rated rotation speed of the input shaft is 1500 rpm. When the input power is greater than 18.5 kWh, a 960 rpm 6-pole motor is recommended.
3. The working position of the horizontal installation cycloidal pin gear reducer is horizontal. The maximum horizontal tilt angle during installation is generally less than 15 °. When it exceeds 15 °, other measures should be adopted to ensure sufficient lubrication and prevent oil leakage.
4. The output shaft of the cycloid pin gear reducer cannot be subjected to large axial and radial forces. When there are large axial and radial forces, other measures must be taken.

二、 lubricating:

1. The horizontal cycloid reducer adopts oil pool lubrication under normal conditions, and the oil level can only be maintained in the middle of the sight window. Cyclic lubrication can be used when the working conditions are harsh and the ambient temperature is high.
2. Cycloidal pin gear reducer is usually lubricated with 40 # or 50 # mechanical oil at normal temperature. In order to improve the performance of the reducer and extend the service life of the cycloid pin gear reducer, it is recommended to use 70 # or 90 # extreme pressure gear. Oil, when working at high and low temperature, you should also reconsider the lubricating oil.
3. Vertical installation of planetary cycloid pin gear reducer must prevent oil pump from cutting off oil to avoid damage to the reducer components.
4. When refueling, you can turn the ventilation cap on the upper part of the base to refuel. When draining the oil, turn the drain plug on the bottom of the base to drain the dirty oil. The reducer is delivered without lubricant inside.
5. The new oil should be replaced for 100 hours during the first refueling operation, and the internal dirty oil should be flushed out. Then continue to work, and replace it every six months (8-hour work system). If the working conditions are bad, the oil change time can be shortened appropriately. Practice has proven that frequent cleaning and oil change of the reducer (such as 3-6 months) has an important role in extending the life of the reducer. Lubricants should be replenished frequently during use.
6. The newly issued reducer has been lubricated and replaced every six months. The grease uses aluminum disulfide-2 # or 2L-2 # lithium-based lubricating grease.

三、 Installation:

1. The direct knocking method is not allowed when installing couplings, belt pulleys, sprocket wheels and other coupling parts on the output shaft of the cycloid reducer, because the output shaft structure of the reducer cannot withstand the axial striking force, The coupling piece can be pressed in by screwing in the screw at the end of the shaft.
2. The shaft diameter of the output shaft and input shaft is selected with GB1568-79.
3. The ring screw on the reducer is only used to lift the reducer.



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4. When the reducer is installed on the foundation, the installation centerline elevation, levelness and related dimensions of the connected reducer should be calibrated. The concentricity of the calibration loading shaft should not exceed the allowable range of the coupling.
5. When calibrating the reducer, steel pads or cast iron pads can be used. The height of the pads can be no more than three, and it can also be performed with iron. But after the reducer is calibrated, it should be replaced with flat pads.
6. The configuration of the spacer should avoid deformation of the body, and should be arranged symmetrically on both sides of the foundation bolts, and the distance between them can be sufficient to allow the free circulation of water slurry during irrigation.
7. Cement slurry irrigation should be dense and free of air bubbles, voids and other defects.

Summary: Our company would like to remind you that, for your own benefit, when choosing a cycloid pinwheel reducer, you must choose a quality reducer from an old high-quality company with excellent quality, high reputation and perfect after-sales service, so as not to bring you Unnecessary troubles and losses.