WAB Series planetary gearbox

PRODUCT FEATURESS

- Planetary arm bracket and output shaft are one-piece constructed to ensure maximum torsional rigidity.
- **The gears adopt the full-needle design,in order to broaden the contact area and to increasing the structure rigidity and the output torque.**
- The mild-steel gears' hardness of adopting surface hardening technology is HRC62 ,so that the abrasion resistance and impact toughness can achieve best.
- Because adopting high technology to design the tooth profiles , the best gear tooth profiles are obtained and the noise are reduced.
- In case to gain power transmission,the maximum clamping force and zero backlash(ultra-precision) are obtained by adopting double-locked method between the gearbox input side and the motor shaft.

INDICATION FOR MODEL

SELECTION

W	AB	090	010	K	P1	Motor reference

Brand

Model
AB
AD
AE

Size
042
060
090
115
142
180
220

Ratio
3
4
5
6
7
8
10
15
20
25
35
40
50
60
70
80
100

K
K-Key

S
S-Smooth

Precision
PO
Precision backlash
P1
Reduced backlash
P2
Standard backlash

GENERAL NOTICES

- **Type, model and torque**
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

PLANETARY GEARBOX

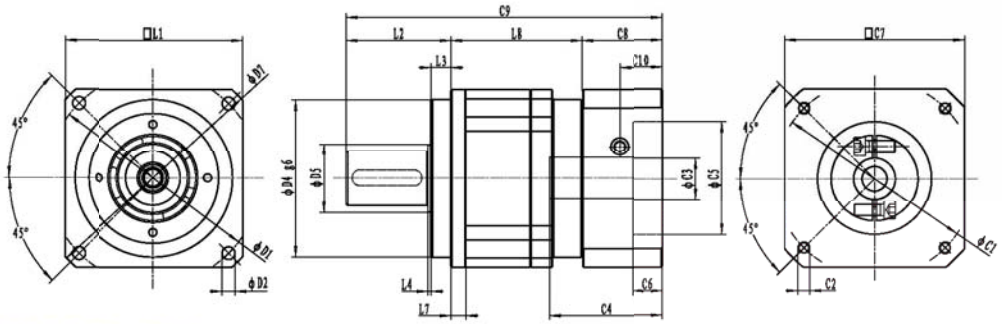
Performance

Specification		Stage	Ratio	WAB042	WAB060	WAB090	WAB115	WAB142	WAB180	WAB220
Rated output torque T_{2N}	Nm	1	3	20	55	130	208	342	588	1140
			4	19	50	140	290	542	1050	1700
			5	22	60	160	330	650	1200	2000
			6	20	55	150	310	600	1100	1900
			7	19	50	140	300	550	1100	1800
			8	17	45	120	260	500	1000	1600
			10	14	40	100	230	450	900	1500
		2	15	20	55	130	208	342	588	1140
			20	19	50	140	290	542	1050	1700
			25	22	60	160	330	650	1200	2000
			30	20	55	150	310	600	1100	1900
			35	19	50	140	300	550	1100	1800
			40	17	45	120	260	500	1000	1600
			50	22	60	160	330	650	1200	2000
			60	20	55	150	310	600	1100	1900
			70	19	50	140	300	550	1100	1800
			80	17	45	120	260	500	1000	1600
			100	14	40	100	230	450	900	1500
Emergency stop torque T_{2NOT}	Nm	1,2	3～100	Triple rated output torque						
Rated input speed n_{1N}	rpm	1,2	3～100	5000	5000	4000	4000	3000	3000	2000
Maximum iutput speed n_{1B}		1,2	3～100	10000	10000	8000	8000	6000	6000	4000
Precision backlash P0	arcmin	1	3～10	-	≤2	≤2	≤2	≤2	≤2	≤2
		-	-	-	-	-	-	-	-	-
Reduced backlash P1	arcmin	1	3～10	-	≤3	≤3	≤3	≤3	≤3	≤3
		2	15～100	-	≤5	≤5	≤5	≤5	≤5	≤5
Standard backlash P2	arcmin	1	3～10	≤5	≤5	≤5	≤5	≤5	≤5	≤5
		2	15～100	≤8	≤8	≤8	≤8	≤8	≤8	≤8
Torsional rigidity	Nm/arcmin	1,2	3～100	3	7	14	25	50	145	225
Allowable radial force F_{2aB}	N	1,2	3～100	780	1530	3250	6700	9400	14500	50000
Allowable axial force F_{2aB}	N	1,2	3～100	390	765	1625	3350	4700	7250	25000
Lifespan	hr	1,2	3～100	20000						
Efficiency	%	1	3～10	≥97%						
		2	15～100	≥94%						
Weight	kg	1	3～10	0.6	1.3	3.7	7.8	14.5	29	48
		2	15～100	0.8	1.5	4.1	9	17.5	33	60
Working temperature	℃	1,2	3～100	-10℃～90℃						
Lubricating		1,2		Synthetic lubricating grease						
IP Grade		1,2	3～100	IP65						
Installation direction		1,2	3～100	In any direction						
Noise value (n1=3000rpm,off load)	dB(A)	1,2	3～100	≤56	≤58	≤60	≤63	≤65	≤67	≤70

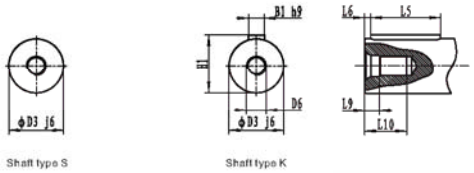
ROTATIONAL INERTIA OF REDUCER

Specification	Unit	Stage	Ratio	WAB042	WAB060	WAB090	WAB115	WAB142	WAB180	WAB220
Rotational inertia J1	kg • cm²	1	3	0.03	0.16	0.61	3.25	9.21	28.98	69.61
			4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
			5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
			6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
			7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
			8	0.03	0.13	0.44	2.58	7.07	22.59	50.84
			10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
		2	15	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			20	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			25	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			30	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			35	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			40	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			50	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			60	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			70	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			80	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			100	0.03	0.03	0.13	0.44	2.57	7.03	22.51

1. Ratio ($i=N_{in}/N_{out}$) 2. Maximum acceleration torque T_{2B} =60% of T_{2NOT} 3. Output speed100rpm,acting on the center of the output shaft

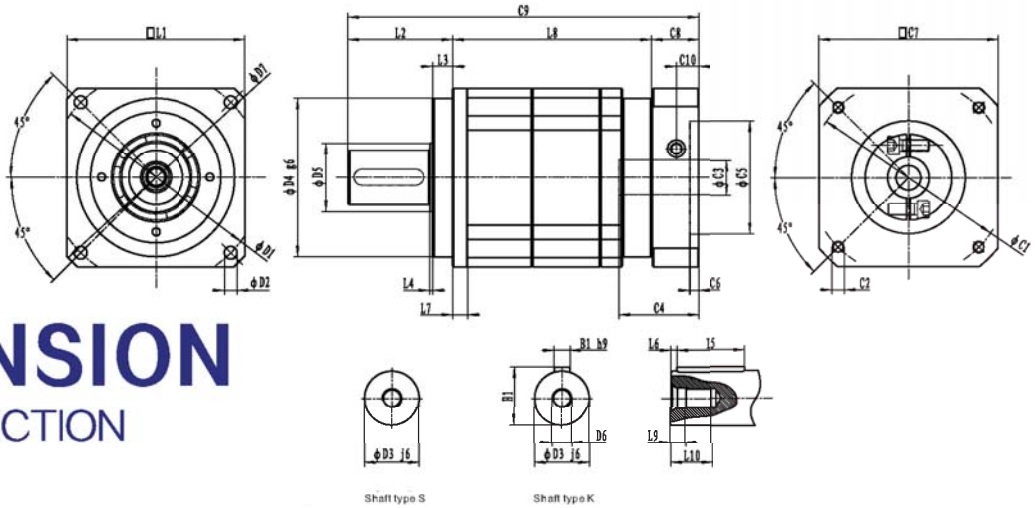


DIMENSION
SINGLE SECTION



Dimension(single stage,Ratio i=3~10)

Dimension	WAB042	WAB060	WAB090	WAB115	WAB142	WAB180	WAB220
D1	50	70	100	130	165	215	250
D2	3.5	5.5	6.6	9	11	13	17
D3 j6	13	16	22	32	40	55	75
D4 g6	35	50	80	110	130	160	180
D5	15	18	30	40	50	70	85
D6	M4*0.7P	M5*0.8P	M8*1.25P	M12*1.75P	M16*2.0P	M20*2.5P	M20*2.5P
D7	56	80	116	152	185	240	292
L1	42	60	90	115	142	180	220
L2	26	37	48	65	97	105	138
L3	5.5	7	10	12	15	20	30
L4	1	1.5	1.5	2	3	3	3
L5	16	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	4	6	8	10	12	15	20
L8	39.5	39.5	78.5	102	124.5	131.5	151.5
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
C1	46	70	90	145	200	200	235
C2	M4*0.7P	M4*0.7P	M5*0.8P	M8*1.25P	M12*1.75P	M12*1.75P	M12*1.75P
C3	8	≤14/≤16	≤19/≤24	≤28	≤35/≤42	≤42	≤42/≤55
C4	26	35	46.5	67	81	114	117
C5	30	50	70	110	114.3	114.3	200
C6	3.5	3.5	6	14	19	24	20
C7	42	60	80	130	180	180	220
C8	19.5	46	30	45.5	57.5	81.5	87.5
C9	86	122.5	156.5	212.5	279	318	377
C10	10.5	10.5	14.5	27	32	43.5	49.5
B1 h9	5	5	6	10	12	16	20
H1	15	18	24.5	35	43	59	79.5



Shaft type S Shaft type K

DIMENSION

DOUBLE SECTION

Dimension(double stage,Ratio i=15~100)

Dimension	WAB042	WAB060	WAB090	WAB115	WAB142	WAB180	WAB220
D1	50	70	100	130	165	215	250
D2	3.5	5.5	6.6	9	11	13	17
D3 j6	13	16	22	32	40	55	75
D4 g6	35	50	80	110	130	160	180
D5	15	18	30	40	50	70	85
D6	M4*0.7P	M5*0.8P	M8*1.25P	M12*1.75P	M16*2.0P	M20*2.5P	M20*2.5P
D7	56	80	116	152	185	240	292
L1	42	60	90	115	142	180	220
L2	26	37	48	65	97	105	138
L3	5.5	6	10	12	15	20	30
L4	1	1.5	1.5	2	3	3	3
L5	16	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	4	7	8	10	12	15	20
L8		71.5	116	147	185.5	200	220
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
C1	46	70	90	145	145	200	200
C2	M4*0.7P	M4*0.7P	M5*0.8P	M8*1.25P	M8*1.25P	M12*1.75P	M12*1.75P
C3	8	≤14/≤16	≤16/≤19	≤19/≤24	≤24/≤28	≤35	≤42
C4	26	35	46.5	67	66	80	114
C5	30	50	70	110	110	114.3	114.3
C6	3.5	3.5	6	14	10	9	24
C7	42	60	80	130	130	180	180
C8	19.5	48	30	45.5	42.5	47.5	81.5
C9	117.5	154.5	194	257.5	340	352.5	441.5
C10	10.5	10.5	14.5	27	27	22.5	43.5
B1 h9	5	5	6	10	12	16	20
H1	15	18	24.5	35	43	59	79.5