

WABR

 Series planetary gearbox

PRODUCT FEATURES

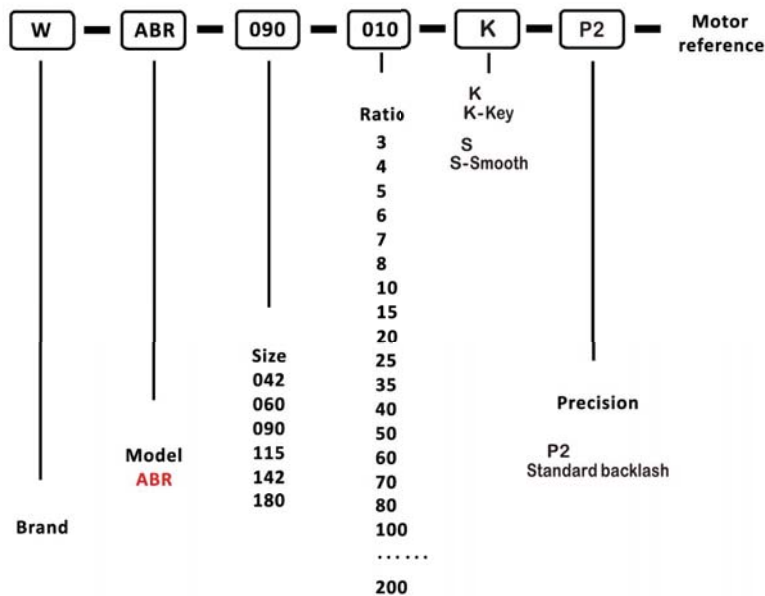
- » Planetary arm bracket and output shaft are one-piece constructed to ensure maximum torsional rigidity.
- » The gears adopt the full-needle design, in order to broaden the contact area and to increasing the structure rigidity and the output torque.
- » The mild-steel gears' hardness of adopting surface 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.
- » Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- » High tolerance input speed, more than 8 times higher than straight bevel gear input.
- » The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- » Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.



INDICATION FOR MODEL

SELECTION

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	Unit	Stage	Ratio	WABR042	WABR060	WABR090	WABR115	WABR142	WABR180			
Rated output torque T_{2N}	Nm	1	3	9	36	90	195	342	588			
			4	12	48	120	260	520	1040			
			5	15	60	150	325	650	1200			
			6	18	55	150	310	600	1100			
			7	19	50	140	300	550	1100			
			8	17	45	120	260	500	1000			
			10	14	40	100	230	450	900			
			12	18	55	150	310	600	1100			
			14	19	50	140	300	550	1100			
			20	14	40	100	230	450	900			
	Nm	2	2	15	15	60	150	325	650	1200		
				25	15	60	150	325	650	1200		
				30	20	55	150	310	600	1100		
				35	19	50	140	300	550	1100		
				40	17	45	120	260	500	1000		
				45	14	40	100	230	450	900		
				50	14	60	100	230	650	1200		
				60	20	55	150	310	600	1100		
				70	19	50	140	300	550	1100		
				80	17	45	120	260	500	1000		
Emergency stop torque T_{2NOT}	Nm	1,2	3~200	Triple rated output torque								
			Rated input speed Ω_{1N}	rpm	1,2	3~200	5000	5000	4000	4000	3000	3000
			Maximum output speed Ω_{1B}	rpm	1,2	3~200	10000	10000	8000	8000	6000	6000
			Standard backlash P_2	arcmin	1	3~20	≤8	≤8	≤8	≤8	≤8	≤8
					2	15~200	≤11	≤11	≤11	≤11	≤11	≤11
			Torsional rigidity	Nm/arcmin	1,2	3~200	3	7	14	25	50	145
			Allowable radial force F_{2aB}	N	1,2	3~200	780	1530	3250	6700	9400	14500
			Allowable axial force F_{2aB}	N	1,2	3~200	390	765	1625	3350	4700	7250
			Lifespan	hr	1,2	3~200	20000 *					
			Efficiency	%	1	3~20	95%					
2	25~200	92%										
Weight	kg	1	3~20	0.9	2.1	6.4	13	24.5	51			
		2	25~200	1.2	1.5	7.8	14.2	27.5	54			
Working temperature	°C	1,2	3~200	(-10° C +90° C)								
Lubricating				Synthetic lubricating grease								
IP Grade		1,2	3~200	IP65								
Installation direction		1,2	3~200	In any direction								
Noise value ($n_1=3000\text{rpm}$, off load)	dB(A)	1,2	3~200	≤61	≤63	≤65	≤68	≤70	≤72			

1. Ratio ($i=N_{in}/N_{out}$)

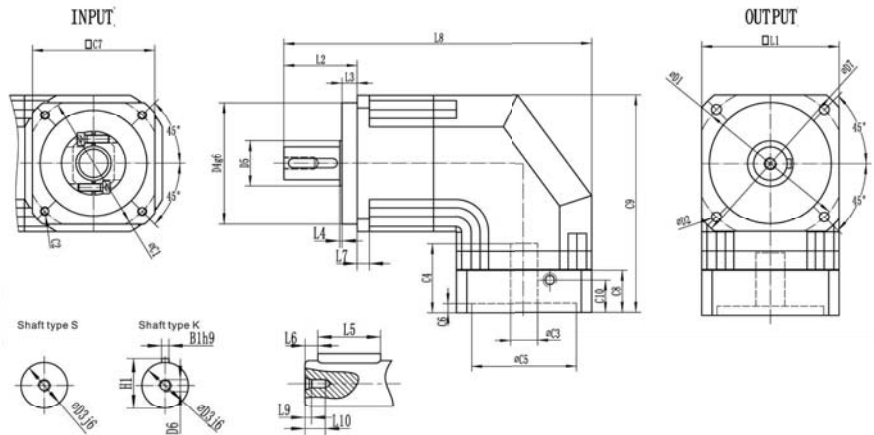
2. Maximum acceleration torque $T_{2B}=60\%$ of T_{2NOT}

3. Output speed 100rpm, acting on the center of the output shaft

● Rotational inertia

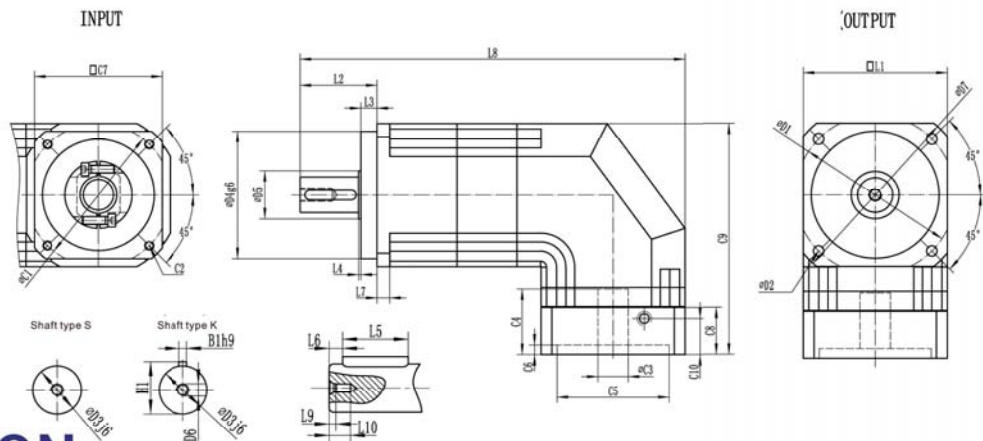
Specification	Unit	Stage	Ratio	WABR042	WABR060	WABR090	WABR115	WABR142	WABR180
Rotational inertia J1	kg.cm ²	1	3~10	0.09	0.35	2.25	6.84	23.4	68.9
			12、14	0.035	0.07	1.87	6.25	21.8	65.6
			20	0.03	0.07	1.87	6.25	21.8	65.6
		2	15	0.09	0.35	2.25	6.84	23.4	68.9
			25~100	0.09	0.09	0.35	2.25	6.84	23.4
			120~200	0.007	0.01	0.31	1.87	6.25	21.8

DIMENSION
SINGLE SECTION



● Dimension(single stage,Ratio i=3~20)

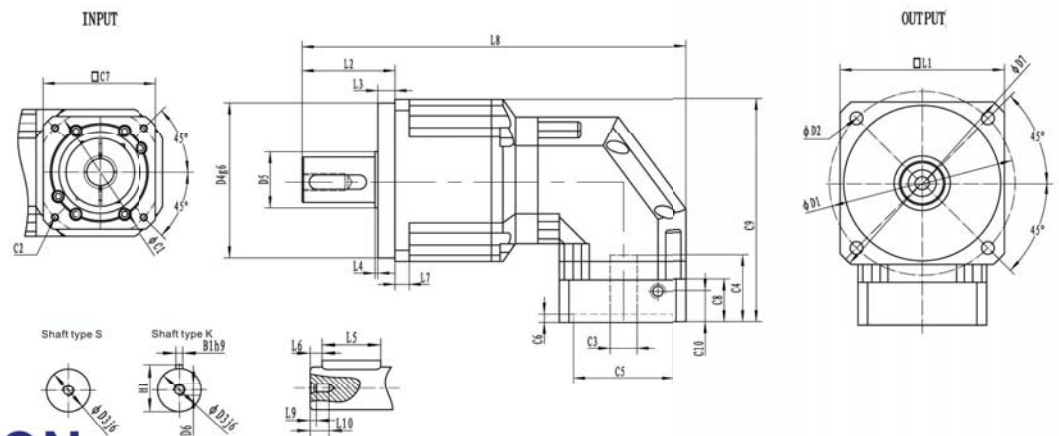
Dimension	WABR042	WABR060	WABR090	WABR115	WABR142	WABR180
D1	-	70	100	130	165	-
D2	-	5.5	6.6	9	11	-
D3j6	-	16	22	32	40	-
D4g6	-	50	80	110	130	-
D5	-	17.5	30	40	49.5	-
D6	-	M5	M8	M12	M16	-
D7	-	80	116	152	185	-
L1	-	60	90	115	142	-
L2	-	37	48	65	97	-
L3	-	7	10	12	15	-
L4	-	1.5	1.5	2	3	-
L5	-	25	32	40	63	-
L6	-	2	3	5	5	-
L7	-	6	8	10	12	-
L8	-	149.5	203	266.5	359	-
L9	-	4	6	10	16	-
L10	-	13	20	28	36	-
C1	-	70	90	145	200	-
C2	-	M4	M5	M8	M12	-
C3G6	-	14	19	24	35	-
C4	-	32.5	54	81	81	-
C5G6	-	50	70	110	114.3	-
C6	-	3.5	6	14	19	-
C7	-	60	80	130	180	-
C8	-	24.2	29.5	45.2	57	-
C9	-	100	145	189.5	246.5	-
C10	-	9.5	14.5	27	32	-
B1	-	5	6	10	12	-
H1	-	18	24.5	35	43	-



DIMENSION DOUBLE SECTION

- Dimension(double stage,Ratio i=15~200) TYPE I

Dimension	WABR042	WABR060	WABR090	WABR115	WABR142	WABR180
D1	-	70	100	130	165	-
D2	-	4 × φ 5.5	4 × φ 6.6	4 × φ 9	4 × φ 11	-
D3j6	-	16	22	32	40	-
D4g6	-	50	80	110	130	-
D5	-	17.5	30	40	49.5	-
D6	-	M5	M8	M12	M16	-
D7	-	80	116	152	185	-
L1	-	60	90	115	142	-
L2	-	37	48	65	97	-
L3	-	7	10	12	15	-
L4	-	1.5	1.5	2	3	-
L5	-	25	32	40	63	-
L6	-	2	3	5	5	-
L7	-	6	8	10	12	-
L8	-	181.5	240.5	290	420	-
L9	-	4	6	10	16	-
L10	-	13	20	28	36	-
C1	-	70	90	145	200	-
C2	-	4 × M4	4 × M5	4 × M8	4 × M12	-
C3G6	-	14	19	24	35	-
C4	-	32.5	54	54	81	-
C5G6	-	50	70	110	114.3	-
C6	-	3.5	6	11.5	19	-
C7	-	60	80	130	180	-
C8	-	24.2	29.5	43	57	-
C9	-	100	145	170.5	246.5	-
C10	-	9.5	14.5	27	32	-
B1	-	5	6	10	12	-
H1	-	18	24.5	35	43	-



DIMENSION DOUBLE SECTION

- Dimension(double stage,Ratio i=15~200) TYPE II

Dimension	WABR042	WABR060	WABR090	WABR115	WABR142	WABR180
D1	-	70	100	130	165	-
D2	-	4 × ϕ 5.5	4 × ϕ 6.6	4 × ϕ 9	4 × ϕ 11	-
D3j6	-	16	22	32	40	-
D4g6	-	50	80	110	130	-
D5	-	17.5	30	40	49.5	-
D6	-	M5	M8	M12	M16	-
D7	-	80	116	152	185	-
L1	-	60	90	115	142	-
L2	-	37	48	65	97	-
L3	-	7	10	12	15	-
L4	-	1.5	1.5	2	3	-
L5	-	25	32	40	63	-
L6	-	2	3	5	5	-
L7	-	6	8	10	12	-
L8	-	181.5	240.5	290	420	-
L9	-	4	6	10	16	-
L10	-	13	20	28	36	-
C1	-	70	90	145	200	-
C2	-	4 × M4	4 × M5	4 × M8	4 × M12	-
C3G6	-	14	19	24	35	-
C4	-	32.5	54	54	81	-
C5G6	-	50	70	110	114.3	-
C6	-	11	7	11.5	19	-
C7	-	60	80	130	180	-
C8	-	24.2	29.5	43	57	-
C9	-	100	145	170.5	246.5	-
C10	-	9.5	14.5	27	32	-
B1	-	5	6	10	12	-
H1	-	18	24.5	35	43	-