

# WVRBR

 Series planetary gearbox

## PRODUCT FEATURES

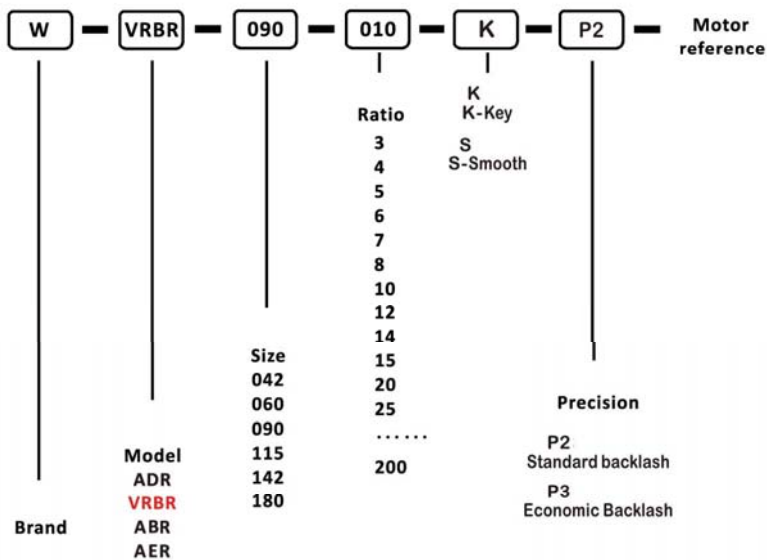
- » Planetary arm bracket and output shaft are one-piece constructed to ensure maximum torsional rigidity.
- » The gears adopt the full-needle design, in order to broaden the contact area and to increase the structure rigidity and the output torque.
- » The mild-steel gears' hardness of adopting surface 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 is 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

● Performance

Specification	Unit	Stage	Ratio	WVRBR042	WVRBR060	WVRBR090	WVRBR115	WVRBR140	WVRBR180
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
		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						
			3~200						
Rated input speed $\Pi_{1N}$	rpm	1,2	3~200	5000	5000	4000	4000	3000	3000
Maximum output speed $\Pi_{1B}$	rpm	1,2	3~200	10000	10000	8000	8000	6000	6000
Standard backlash $P_2$	arcmin	1	3~20	$\leq 8$	$\leq 8$	$\leq 8$	$\leq 8$	$\leq 8$	$\leq 8$
		2	15~200	$\leq 11$	$\leq 11$	$\leq 11$	$\leq 11$	$\leq 11$	$\leq 11$
Economic backlash $P_3$	arcmin	1	3~20	$\leq 13$	$\leq 13$	$\leq 13$	$\leq 13$	$\leq 13$	$\leq 13$
		2	15~100	$\leq 18$	$\leq 18$	$\leq 18$	$\leq 18$	$\leq 18$	$\leq 18$
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 ( $n_1=3000rpm, off load$ )	dB(A)	1,2	3~200	$\leq 61$	$\leq 63$	$\leq 65$	$\leq 68$	$\leq 70$	$\leq 72$

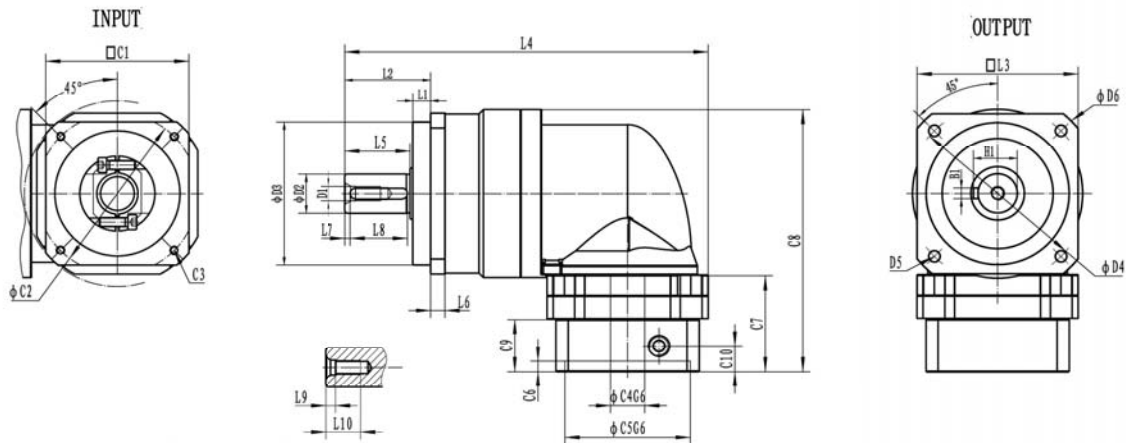
1. Ratio (  $i = N_{in}/N_{out}$  )

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	WVRBR042	WVRBR060	WVRBR090	WVRBR115	WVRBR140	WVRBR180
Rotational inertia $J_1$	kg.cm <sup>2</sup>	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

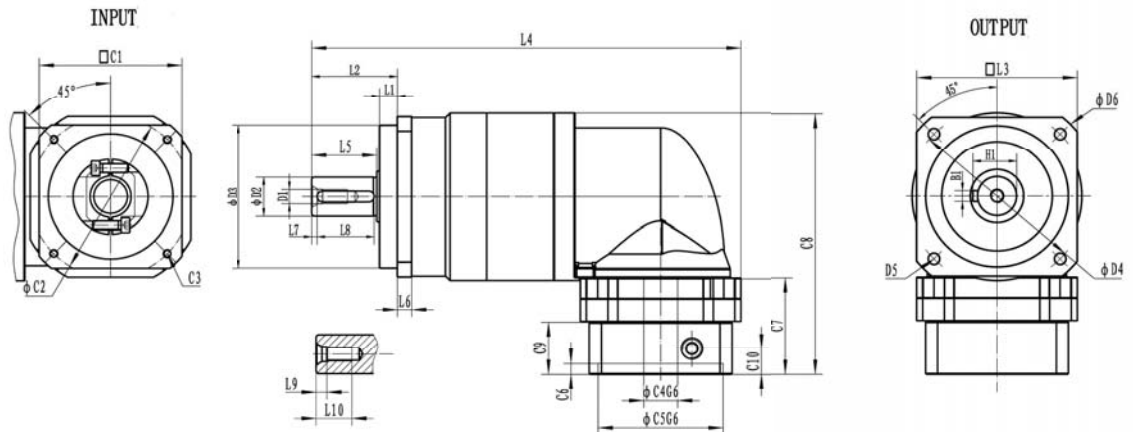


# DIMENSION

## DOUBLE SECTION

- Dimension(single stage, Ratio  $i=3\sim 20$ )

Dimension	WVRBR042	WVRBR060	WVRBR090	WVRBR115	WVRBR140	WVRBR180
D1	-	M5	M8	M12	M16	-
D2 <sub>φ6</sub>	-	16	22	32	40	-
D3 <sub>φ6</sub>	-	50	80	110	130	-
D4	-	70	100	130	165	-
D5	-	4 × φ 5.5	4 × φ 6.6	4 × φ 9	4 × φ 11	-
D6	-	80	116	152	185	-
L1	-	7	10	7	13	-
L2	-	37	48	60	95	-
L3	-	60	90	115	140	-
L4	-	149.5	203	266.5	359	-
L5	-	28.5	36.5	51	79	-
L6	-	6	8	10	12	-
L7	-	3	3	5	5	-
L8	-	25.3	32	40	63	-
L9	-	4	6	10	16	-
L10	-	13	20	28	36	-
C1	-	60	80	130	180	-
C2	-	70	90	145	200	-
C3	-	4 × M4	4 × M5	4 × M8	4 × M12	-
C4 <sub>φ6</sub>	-	14	19	24	35	-
C5 <sub>φ6</sub>	-	50	70	110	114.3	-
C6	-	3.5	6	14	19	-
C7	-	35	54	81	81	-
C8	-	104.5	147	194.5	250.5	-
C9	-	24.2	29.5	45	57	-
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)

Dimension	WVRBR042	WVRBR060	WVRBR090	WVRBR115	WVRBR140	WVRBR180
D1	-	M5	M8	M12	M16	-
D2	-	16	22	32	40	-
D3	-	50	80	110	130	-
D4	-	70	100	130	165	-
D5	-	4 × φ 5.5	4 × φ 6.6	4 × φ 9	4 × φ 11	-
D6	-	80	116	152	185	-
L1	-	7	10	7	13	-
L2	-	37	48	60	95	-
L3	-	60	90	115	140	-
L4	-	181.5	240.5	290	431	-
L5	-	28.5	36.5	51	79	-
L6	-	6	8	10	12	-
L7	-	3	3	5	5	-
L8	-	25.3	32	40	63	-
L9	-	4	6	10	16	-
L10	-	13	20	28	36	-
C1	-	60	80	130	180	-
C2	-	70	90	145	200	-
C3	-	4 × M4	4 × M5	4 × M8	4 × M12	-
C4 <sub>G6</sub>	-	14	19	24	35	-
C5 <sub>G6</sub>	-	50	70	110	114.3	-
C6	-	3.5	6	11.5	19	-
C7	-	35	54	67	81	-
C8	-	104.5	147	175.5	250.5	-
C9	-	24.2	29.5	42.5	57	-
C10	-	9.5	14.5	27	32	-
B1	-	5	6	10	12	-
H1	-	18	24.5	35	43	-