



YOSO German quality, Industrie 4.0 best platform



High efficiency

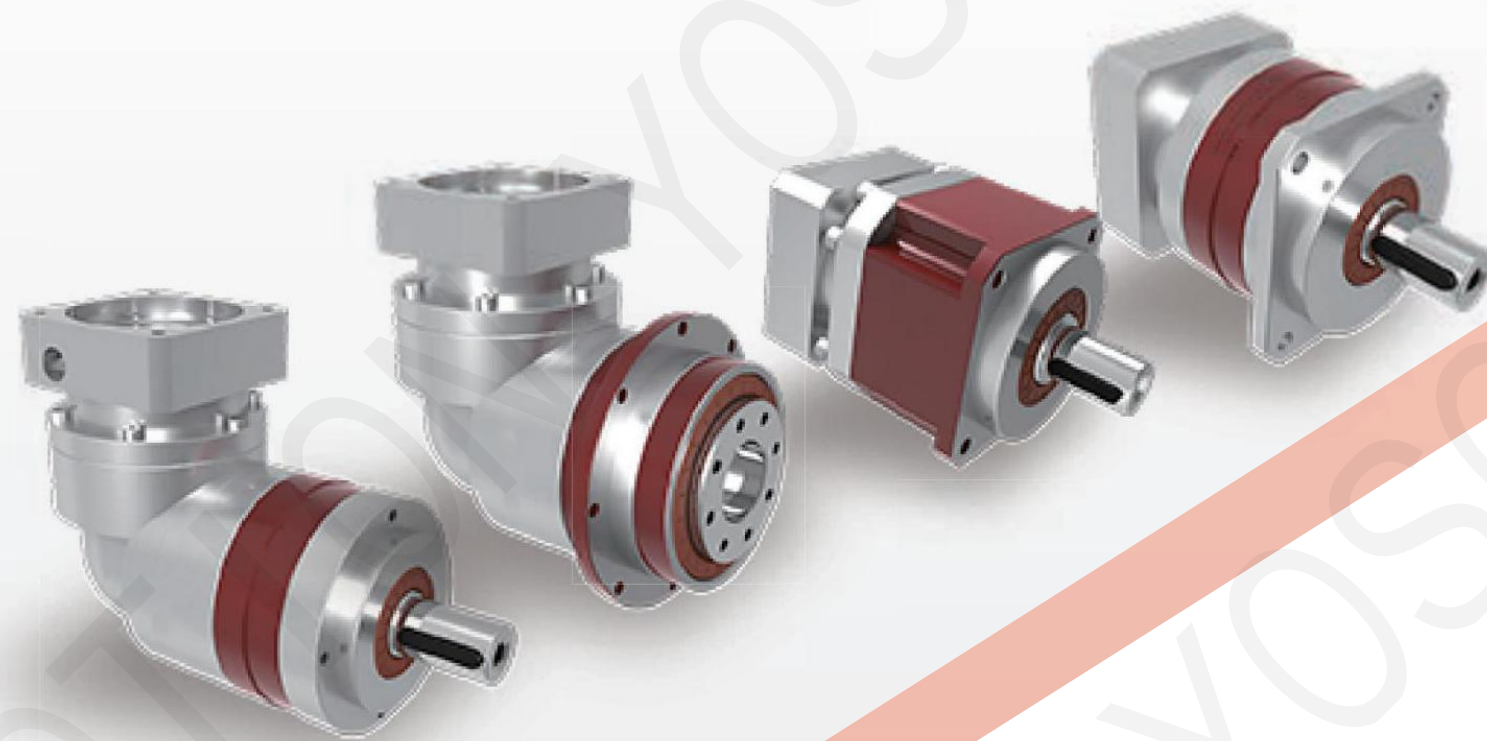


High torque



Low backlash

Focus on the research and development and production of precision planetary gear reducers.



PLANETARY GEAR REDUCER

Jingpeng Machinery Equipment (Shanghai) Co., Ltd.

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Whatsapp

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Helical Teeth Series

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ZPD Serie 020

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ZBS Serie 081

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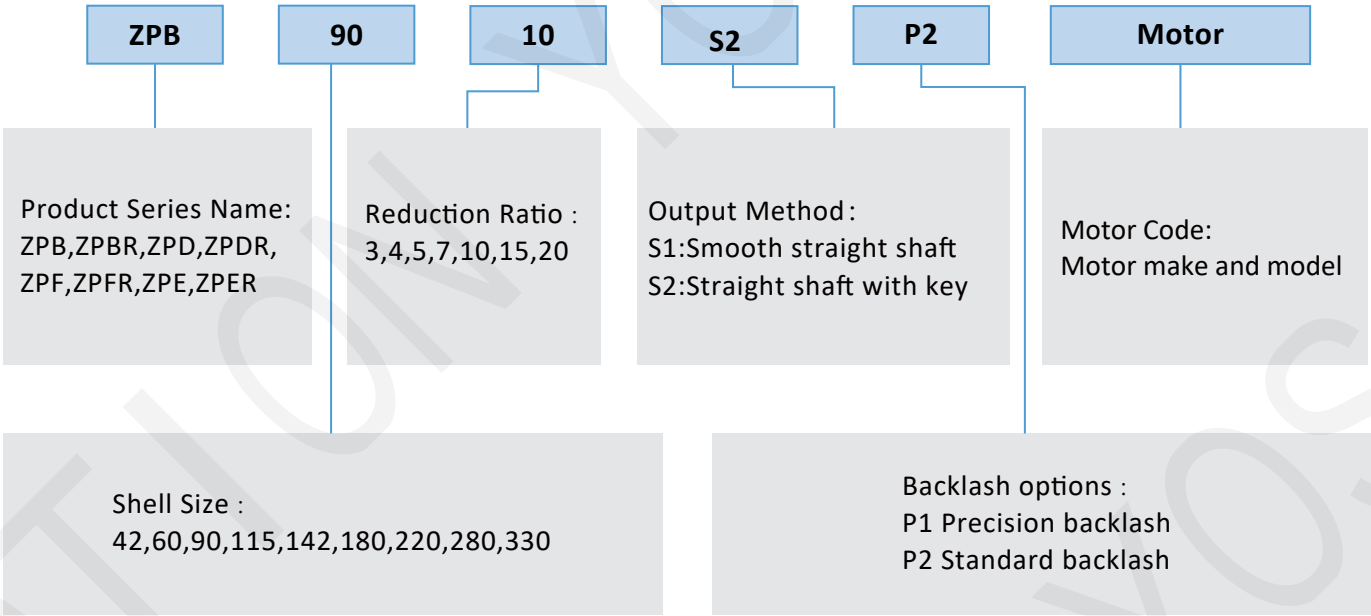
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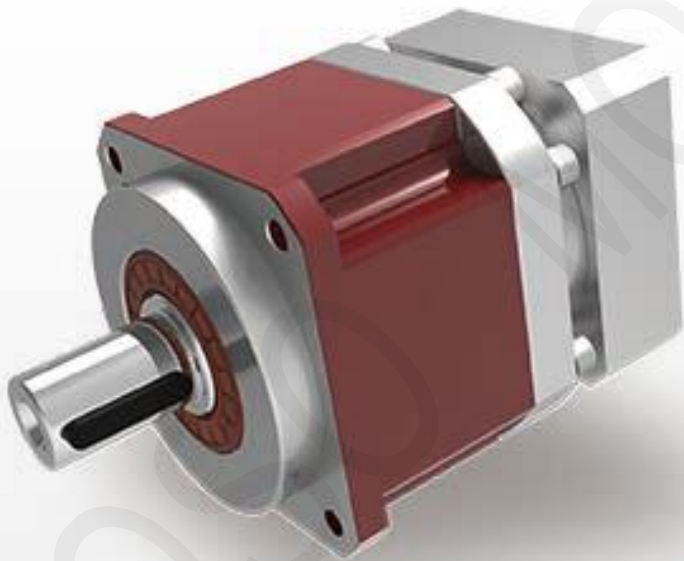
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Coding Rules



ZPB SERIES

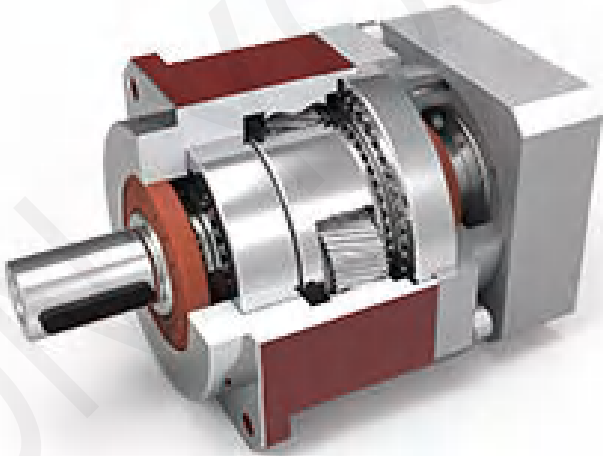


ZPB Series Performance Table

Model	Unit	Stage	Ratio	ZPB042	ZPB060	ZPB090	ZPB115	ZPB142	ZPB180	ZPB220
Rated output torqueT _{2N}	Nm	1	3	20	35	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	12	20	55	160	290	542	1050	1700
			15	20	55	140	208	342	588	1140
			16	20	55	140	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
				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 η_{1N}	rpm	1,2	3-100	5000	5000	4000	4000	3000	3000	2000
Maximum input speed η_{1B}		1,2	3-100	10000	10000	8000	8000	6000	6000	4000
Precision backlashP ₁	arcmin	1	3-10	≤3	≤3	≤3	≤3	≤3	≤3	≤3
		2	12-100	≤5	≤5	≤5	≤5	≤5	≤5	≤5
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
Sevice life	hrs	1,2	3-100	20000						
Efficiency	%	1	3-10	≥97%						
		2	12-100	≥94%						
Gross weight	kg	1	3-10	0.6	1.3	3.7	7.8	14.5	29	48
		2	12-100	0.8	1.5	4.1	9	17.5	33	60
Working temperature	°C	1,2	3-100	-10°C~90°C						
Lubricating		1,2	3-100	Synthetic lubricating grease						
IP Grade		1,2	3-100	IP65						
Installation direction		1,2	3-100	In any direction						
Noise level ($\eta_1=3000rpm, off\ load$)	dB	1,2	3-100	≤60	≤63	≤65	≤68	≤70	≤73	≤75

FUTURE

- Extremely low-backlash
- Highest torsional rigidity
- Extremely output torque
- High efficiency
- Low noise
- Maintenance-free grease lubrication

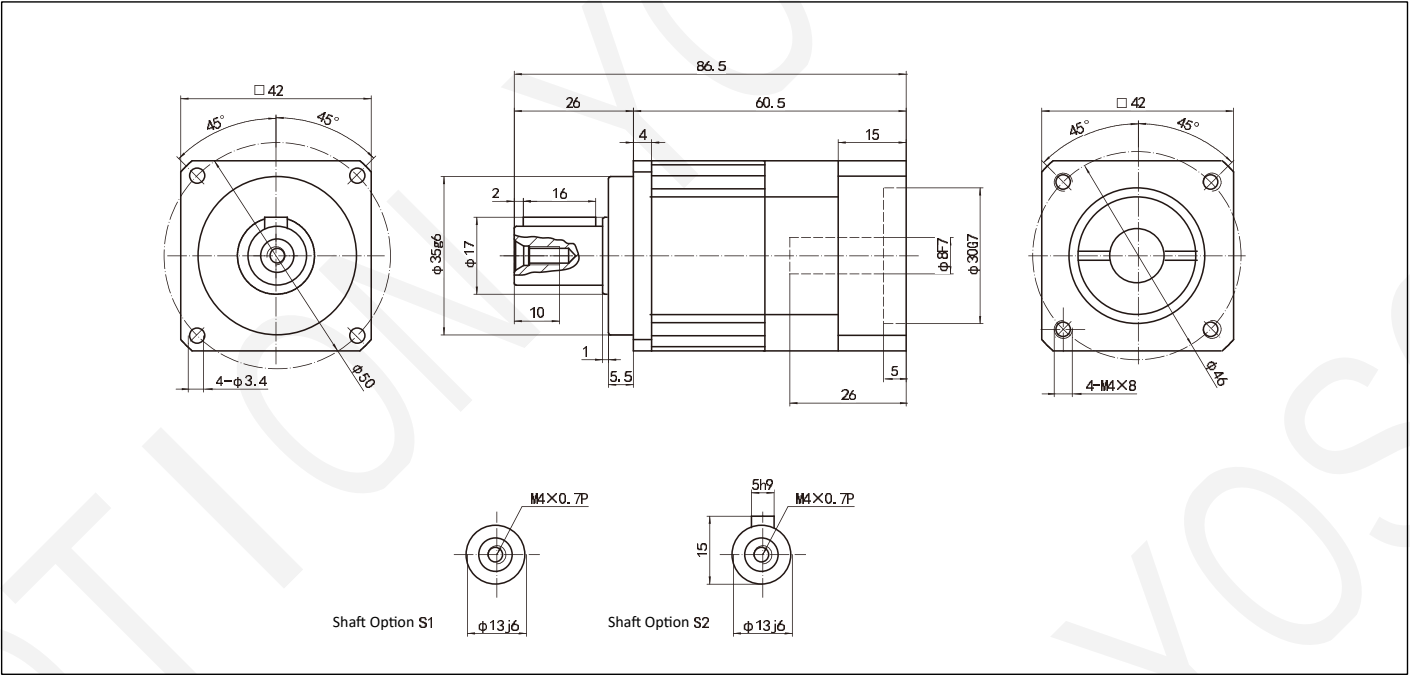


YOSO MOTION Planetary Gear Reducer

Helical Tooth with Moment of Inertia

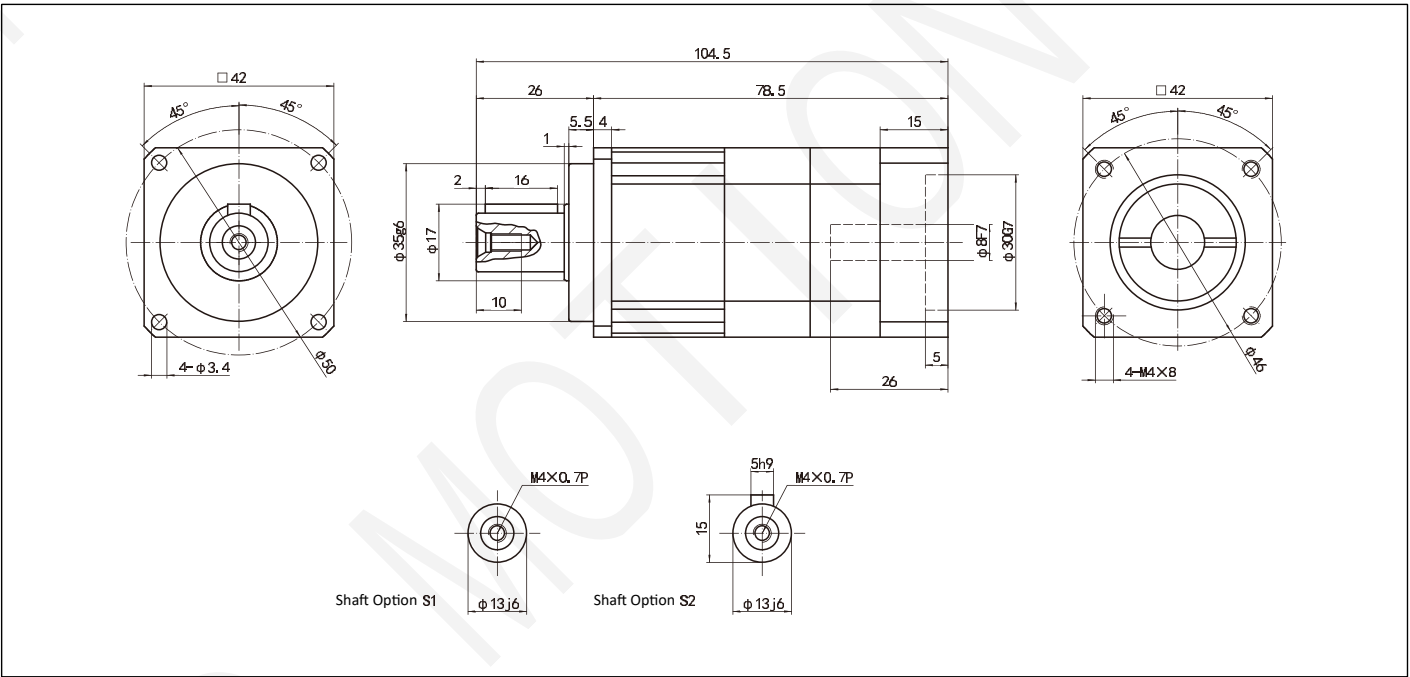
Model	Unit	Stage	Ratio	ZPB042	ZPB060	ZPB090	ZPB115	ZPB142	ZPB180	ZPB220
Moment of Inertia J ₁	kg.cm ²	1	3	0.03	0.16	0.61	3.25	9.21	28.98	69.61
			4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
			5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
			6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
			7	0.03	0.13	0.45	2.62	7.14	22.48	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	7.04	22.51	50.63
		2	12	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			15	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			16	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	0.44	2.71	7.42	23.29
			40	0.03	0.03	0.13	0.44	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

ZPB042-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

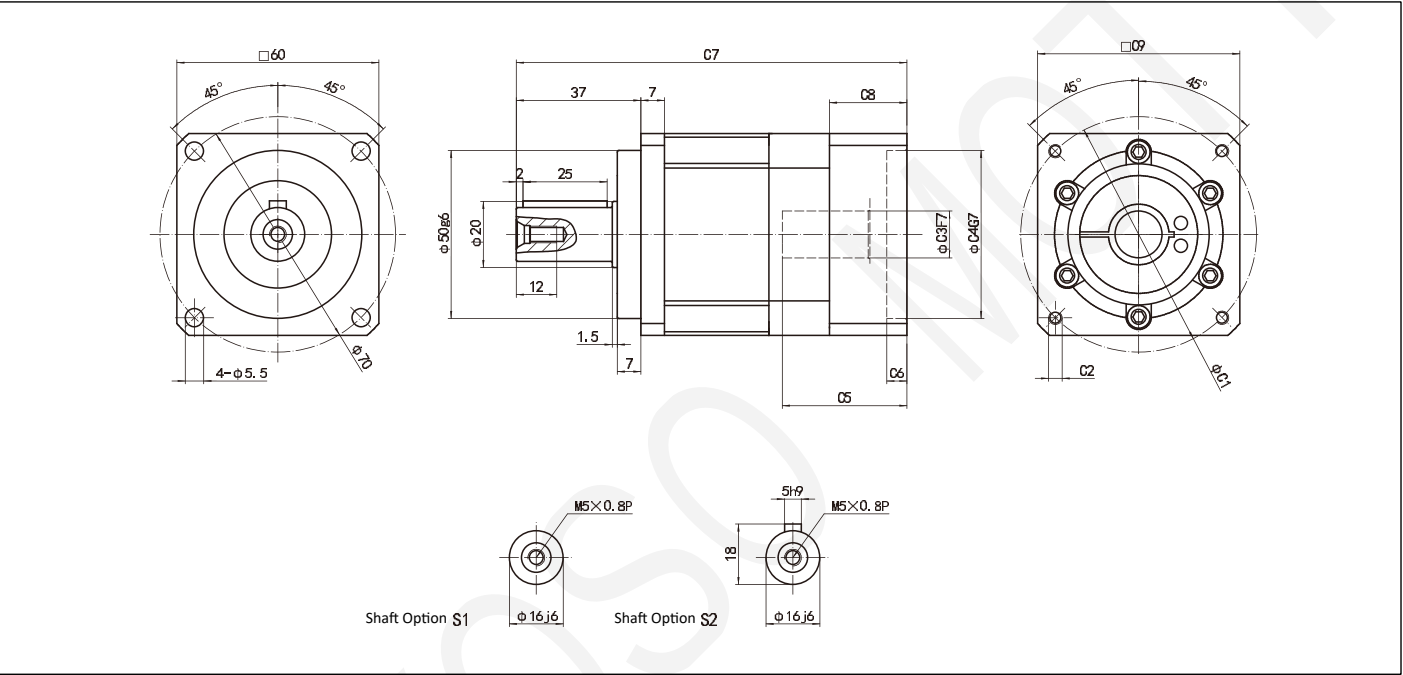
ZPB042-L2 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

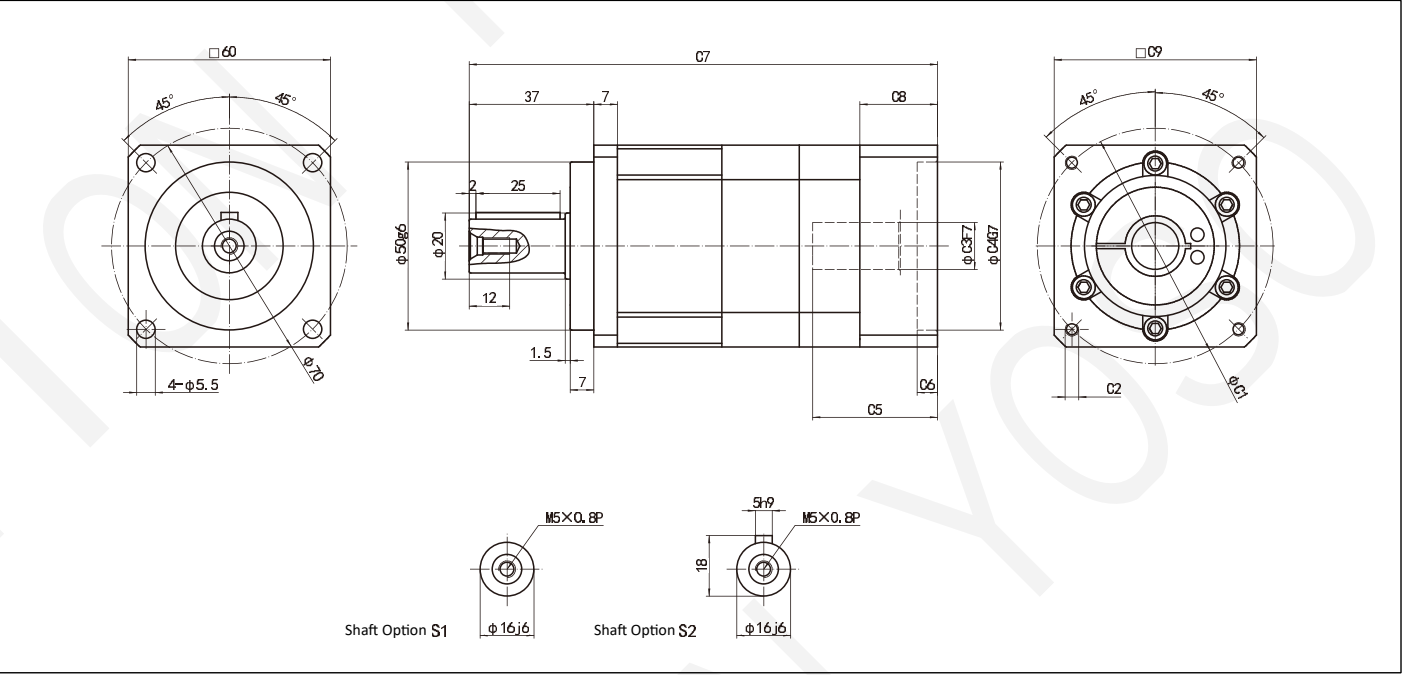
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ZPB060-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPB060-L2 Profile

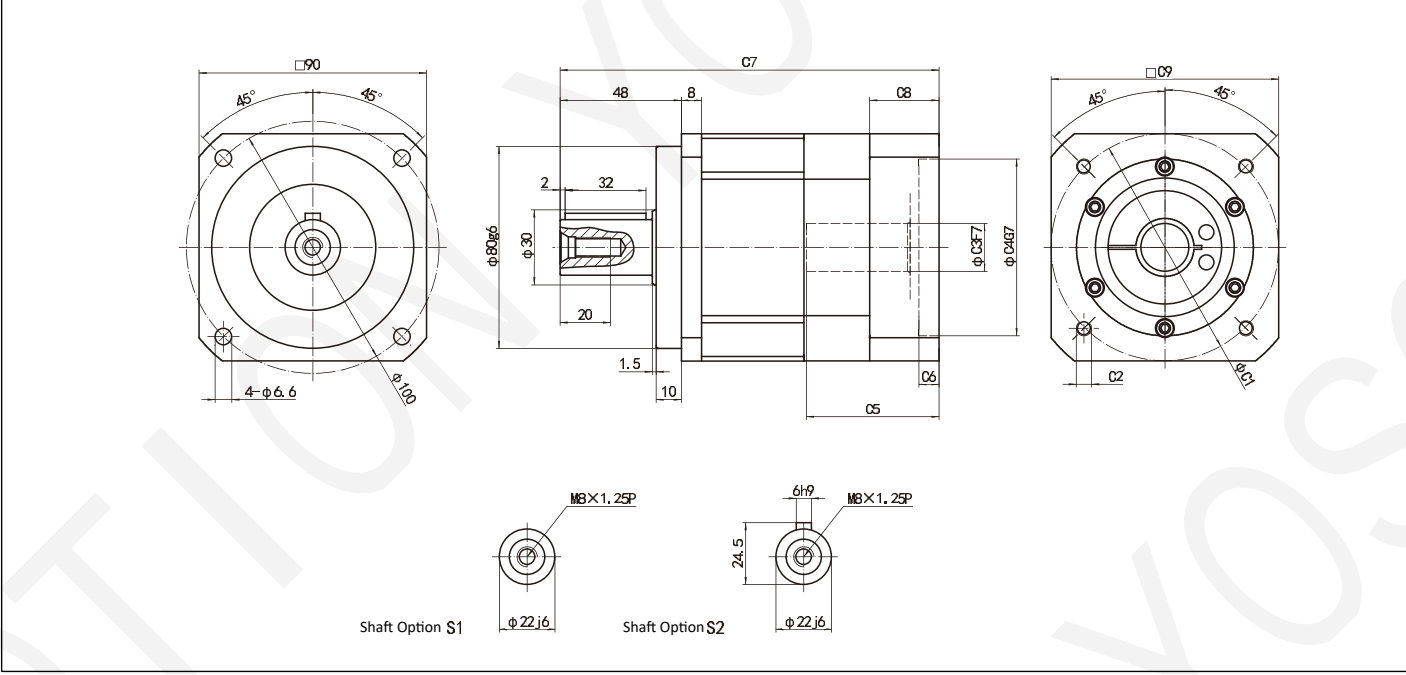


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

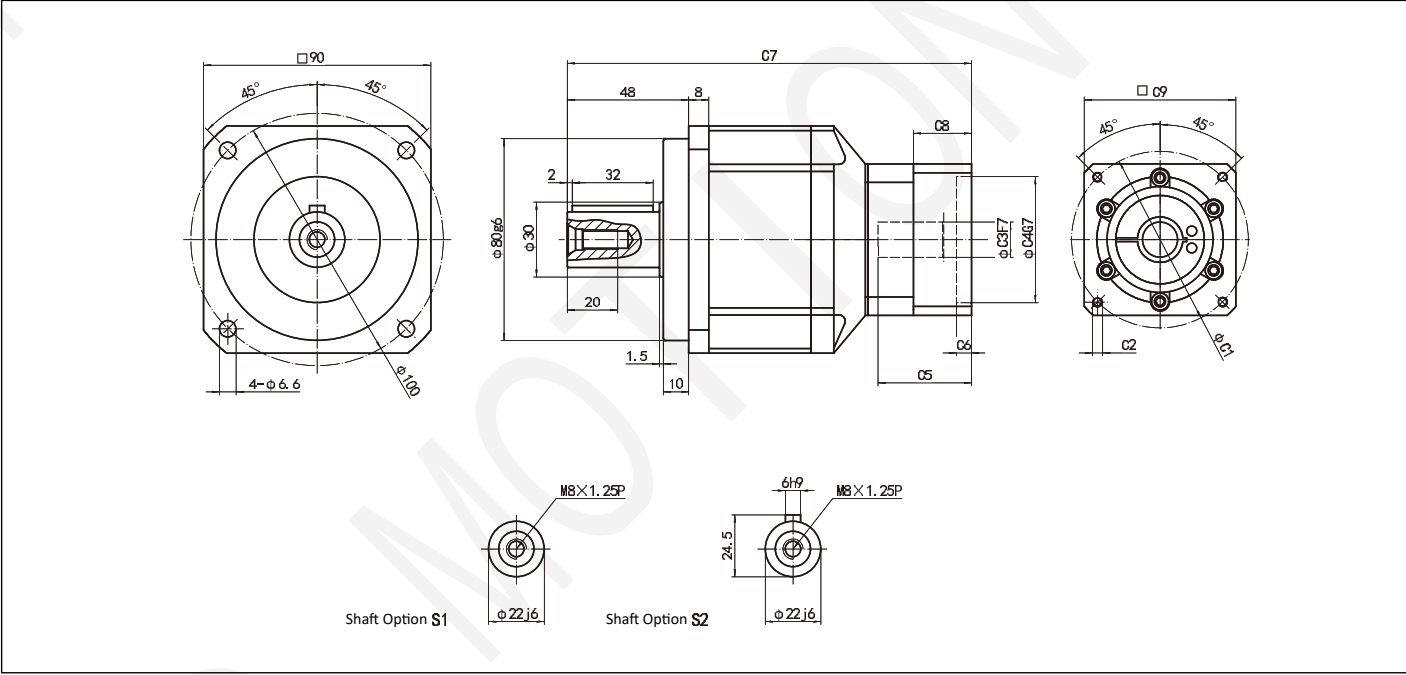
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPB-060-L1	70	4-M4×10	≤14/≤16	50	37	6	116	23	60
ZPB-060-L2	70	4-M4×10	≤14/≤16	50	37	6	139	23	60

ZPB090-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPB090-L2 Profile



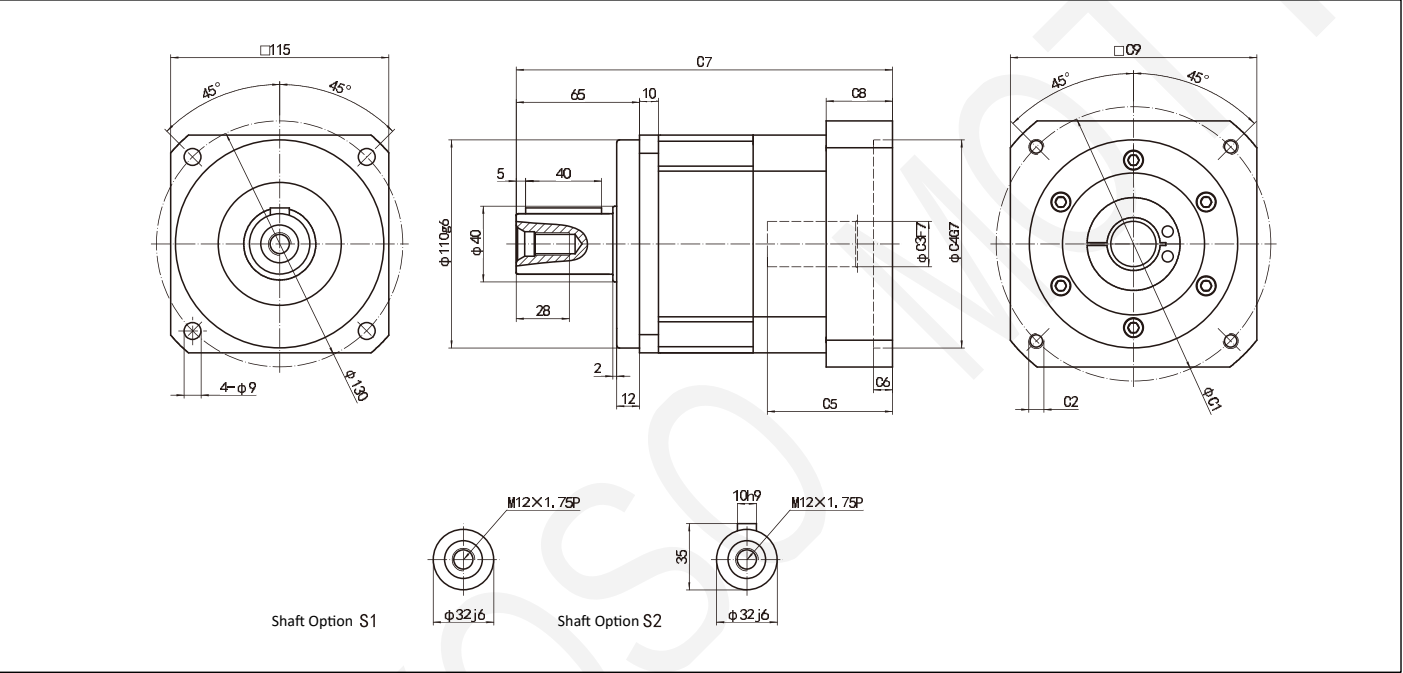
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPB-090-L1	90	4-M5×12	≤19/≤24	70	50	8	150	27.5	90
ZPB-090-L2	70	4-M4×10	≤16	50	37	8	160	23	60

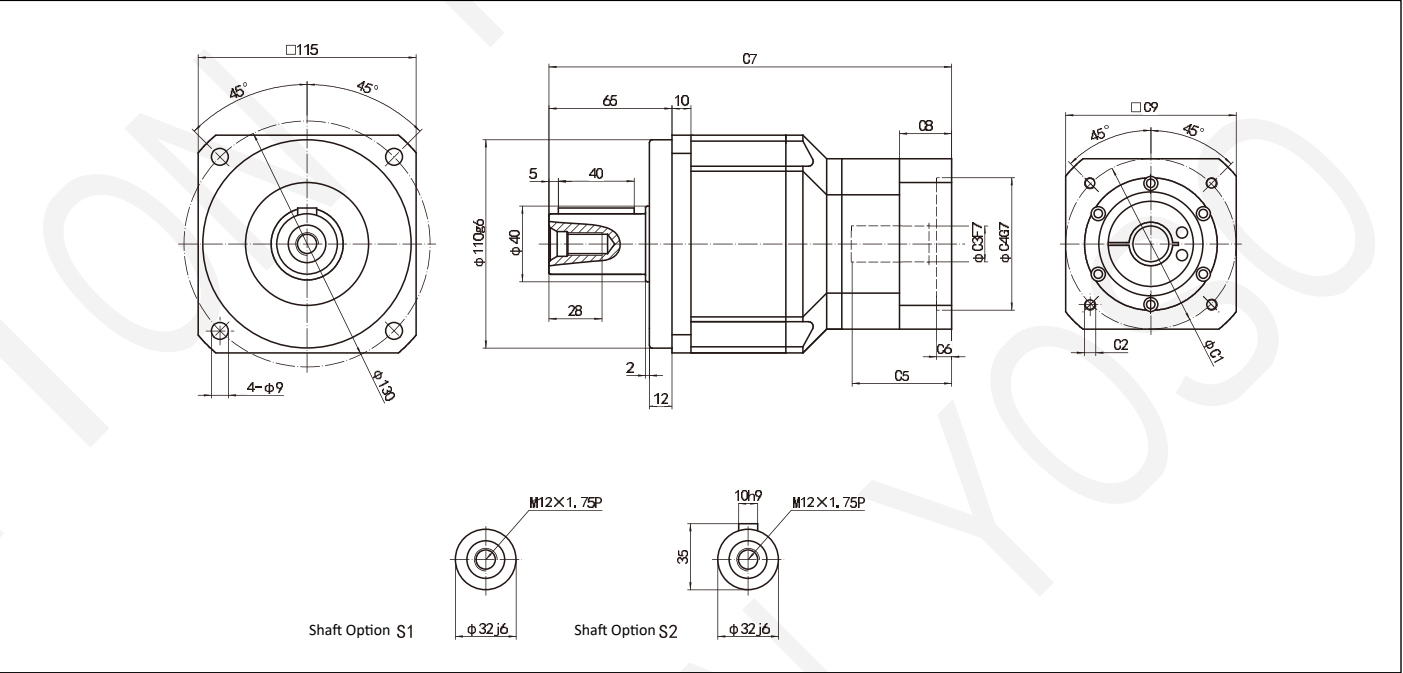
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ZPB115-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPB115-L2 Profile

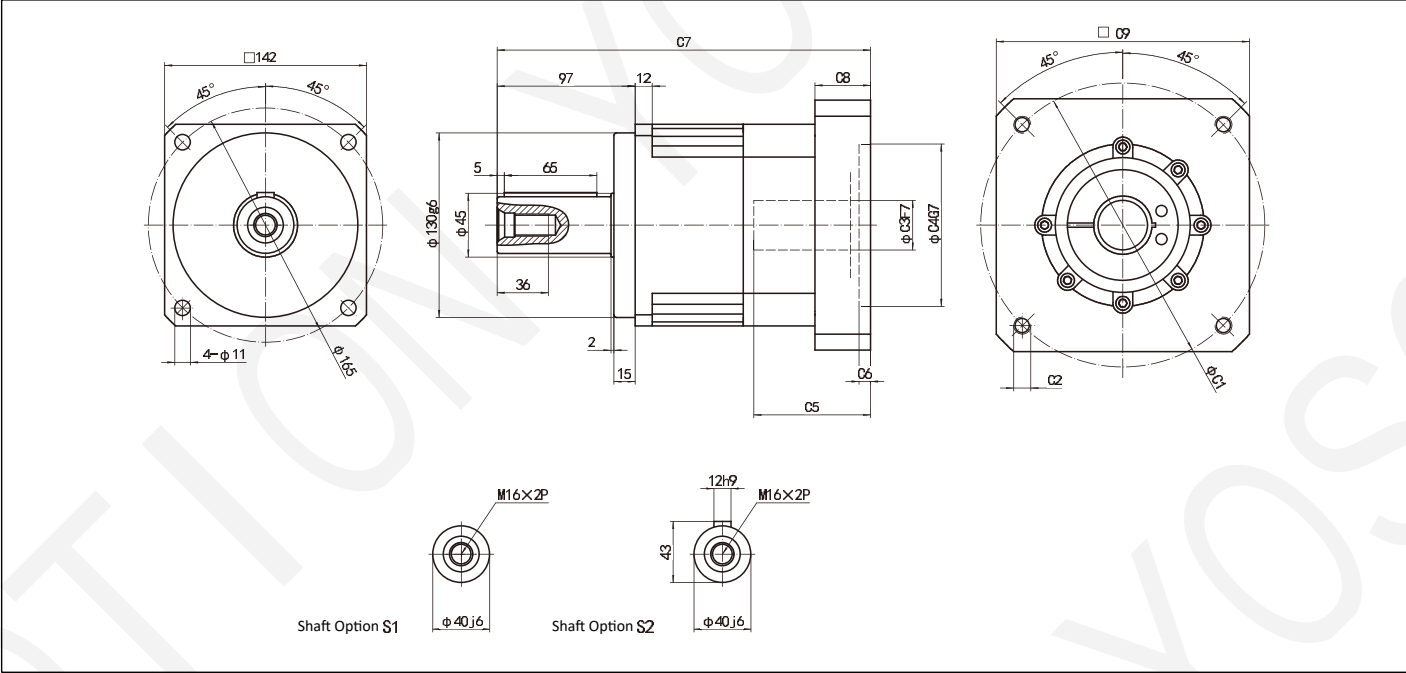


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

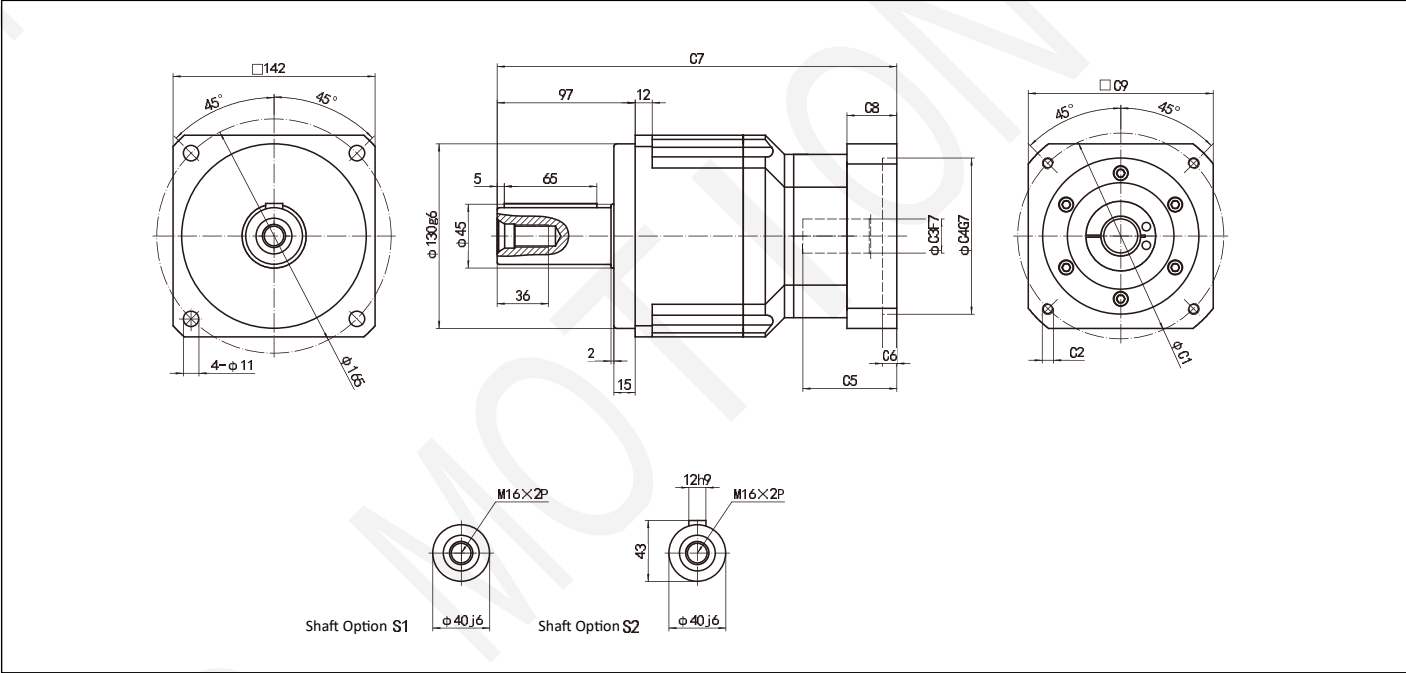
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPB-115-L1	145	4-M8×20	≤35	110	60	8	198.5	35	130
ZPB-115-L2	90	4-M5×12	≤24	70	50	8	212.5	27.5	90

ZPB142-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPB142-L2 Profile



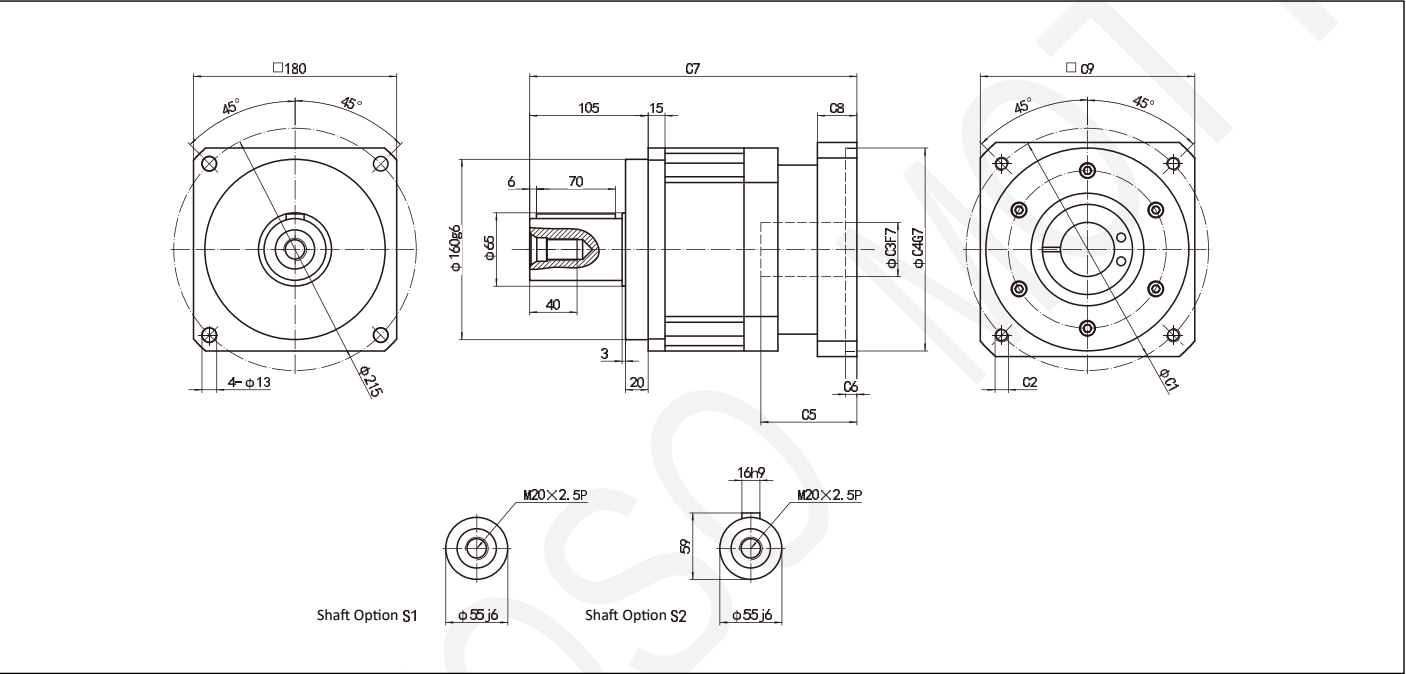
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPB-142-L1	200	4-M12×25	≤42	114.3	82	8	262.5	39	178
ZPB-142-L2	145	4-M8×20	≤35	110	60	8	281	35	130

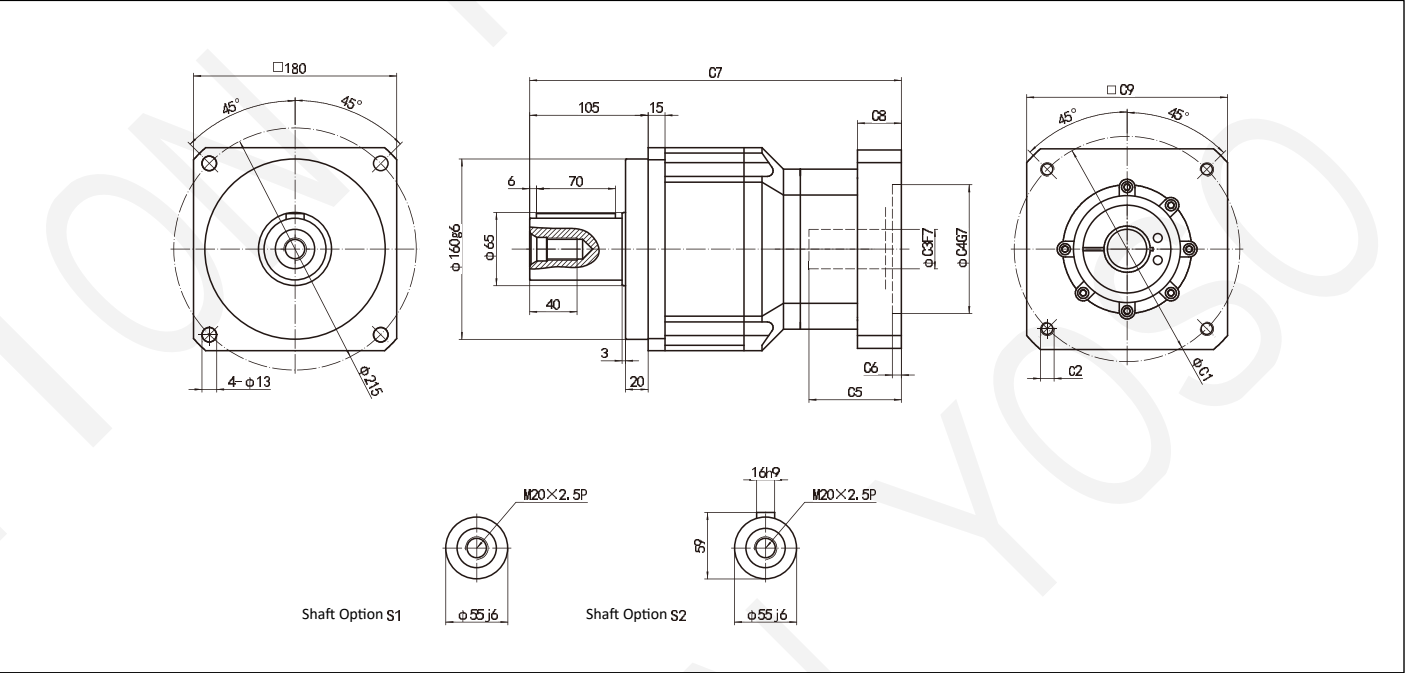
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ZPB180-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPB180-L2 Profile

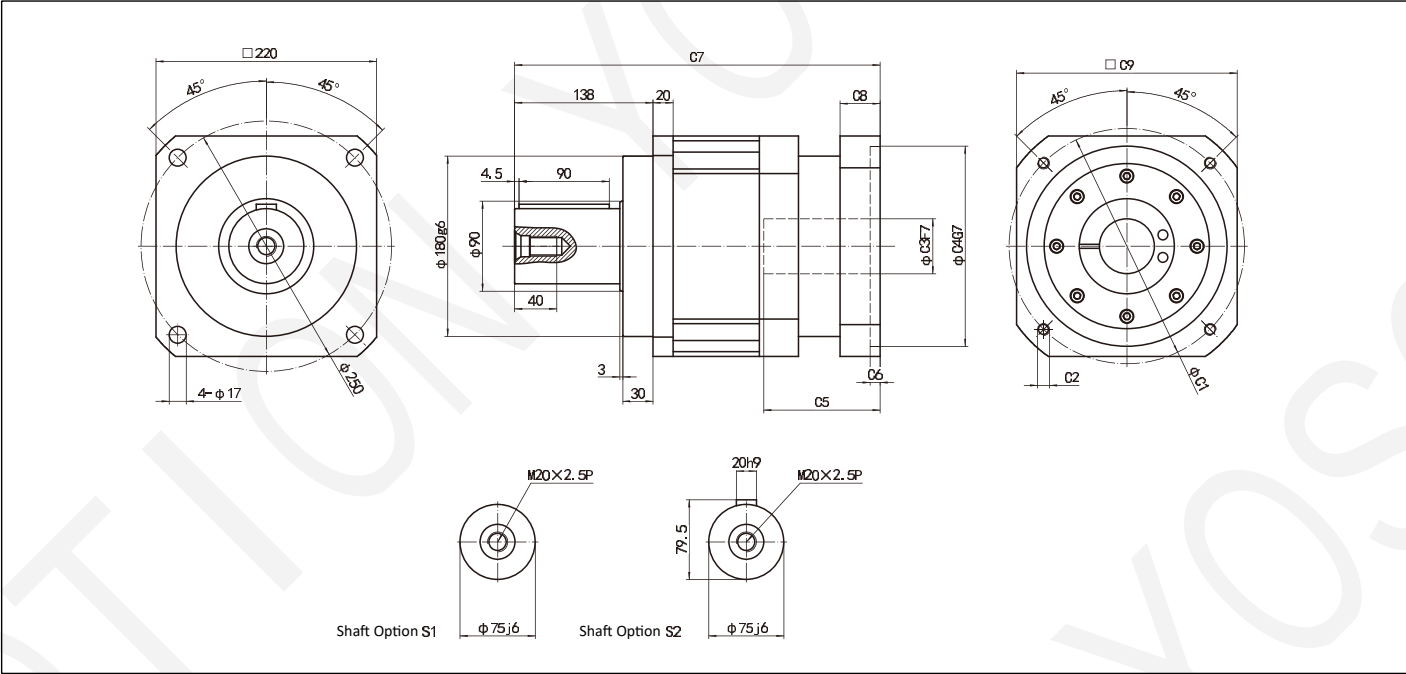


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

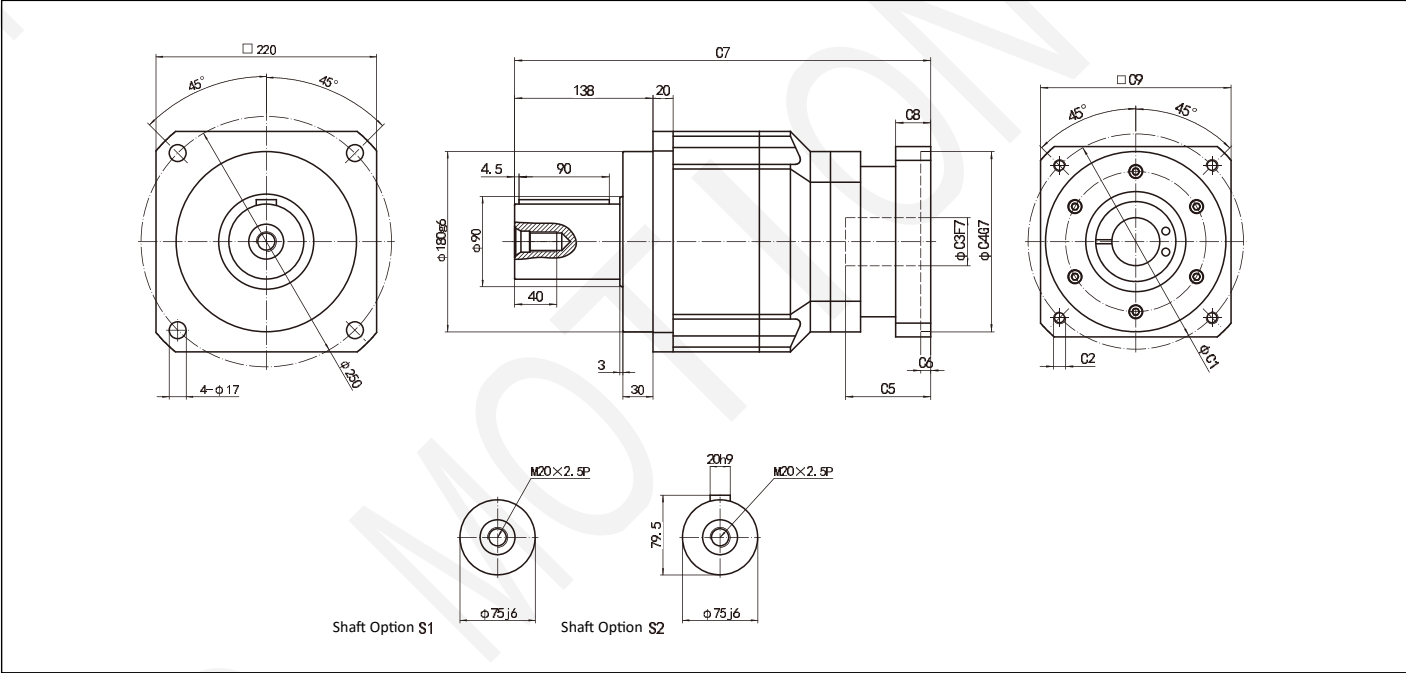
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPB-180-L1	215	4-M12×25	≤48	180	82	8	290	35	190
ZPB-180-L2	200	4-M12×25	≤42	114.3	82	8	329.5	39	178

ZPB220-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPB220-L2 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

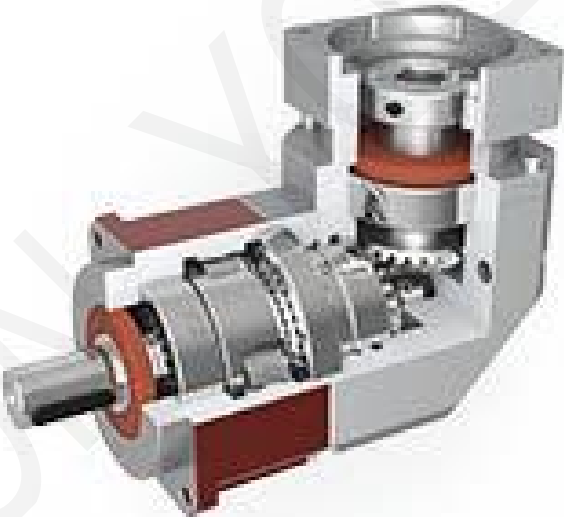
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPB-220-L1	235	4-M12×25	≤55	200	116	8	364.5	40	220
ZPB-220-L2	215	4-M12×25	≤48	180	82	8	415	35	190

ZPBR SERIES



FUTURE

- Extremely low-backlash
- Highest torsional rigidity
- Extremely output torque
- High efficiency
- Low noise
- Maintenance-free grease lubrication
- Transmission diversity



ZPBR Series Performance Table

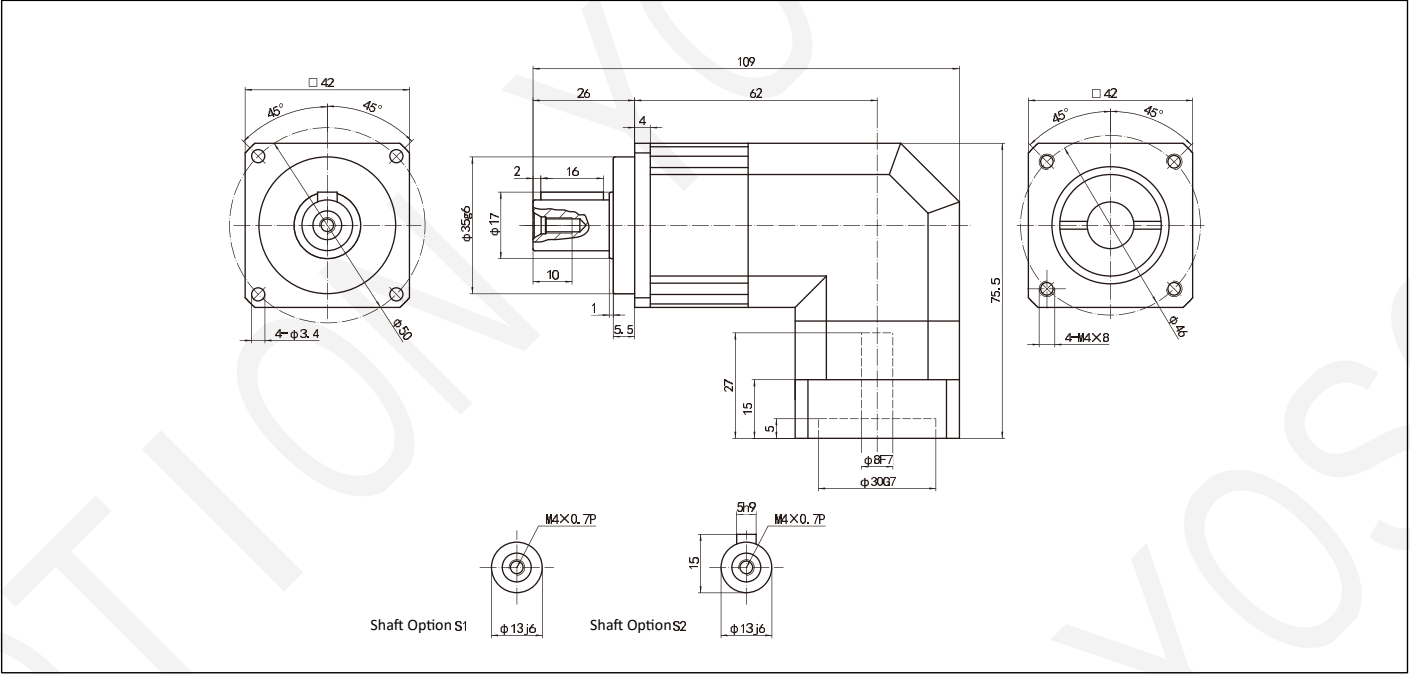
Model	Unit	Stage	Ratio	ZPBR042	ZPBR060	ZPBR090	ZPBR115	ZPBR142	ZPBR180
Rated output torqueT _{2N}	Nm	1	3	20	35	130	208	342	588
			4	19	50	140	290	542	1050
			5	22	60	160	330	650	1200
			6	20	55	150	310	600	1100
			7	19	50	140	300	550	1100
			8	17	45	120	260	500	1000
			10	14	40	100	230	450	900
		2	12	20	55	160	290	542	1050
			15	20	55	140	208	342	588
			16	20	55	140	208	342	588
			20	19	50	140	290	542	1050
			25	22	60	160	330	650	1200
			30	20	55	150	310	600	1100
			35	19	50	140	300	550	1100
			40	17	45	120	260	500	1000
			50	22	60	160	330	650	1200
			60	20	55	150	310	600	1100
			70	19	50	140	300	550	1100
			80	17	45	120	260	500	1000
			100	14	40	100	230	450	900
Emergency stop torque T _{2NOT}	Nm	1,2	3-100	Triple rated output torque					
Rated input speed η _{1N}	rpm	1,2	3-100	5000	5000	4000	4000	3000	3000
Maximum input speed η _{1B}		1,2	3-100	10000	10000	8000	8000	6000	6000
Precision backlashP1	arcmin	1	3-10	≤5	≤5	≤5	≤5	≤5	≤5
		2	12-100	≤7	≤7	≤7	≤7	≤7	≤7
Torsional rigidity	Nm/arcmin	1,2	3-100	3	7	14	25	50	145
Allowable radial force F _{2aB}	N	1,2	3-100	780	1530	3250	6700	9400	14500
Allowable axial force F _{2aB}	N	1,2	3-100	390	765	1625	3350	4700	7250
Sevice life	hrs	1,2	3-100	20000					
Efficiency	%	1	3-10	≥95%					
		2	12-100	≥92%					
Gross weight	kg	1	3-10	0.9	2.1	6.4	13	24.5	51
		2	12-100	1.2	1.5	7.8	14.2	27.5	54
Working temperature	°C	1,2	3-100	-10°C~90°C					
Lubricating		1,2	3-100	Synthetic lubricating grease					
IP Grade		1,2	3-100	IP65					
Installation direction		1,2	3-100	In any direction					
Noise level (η ₁ =3000rpm,off load)	dB	1,2	3-100	≤63	≤65	≤67	≤70	≤72	≤75

YOSO MOTION Planetary Gear Reducer

Helical Tooth with Moment of Inertia

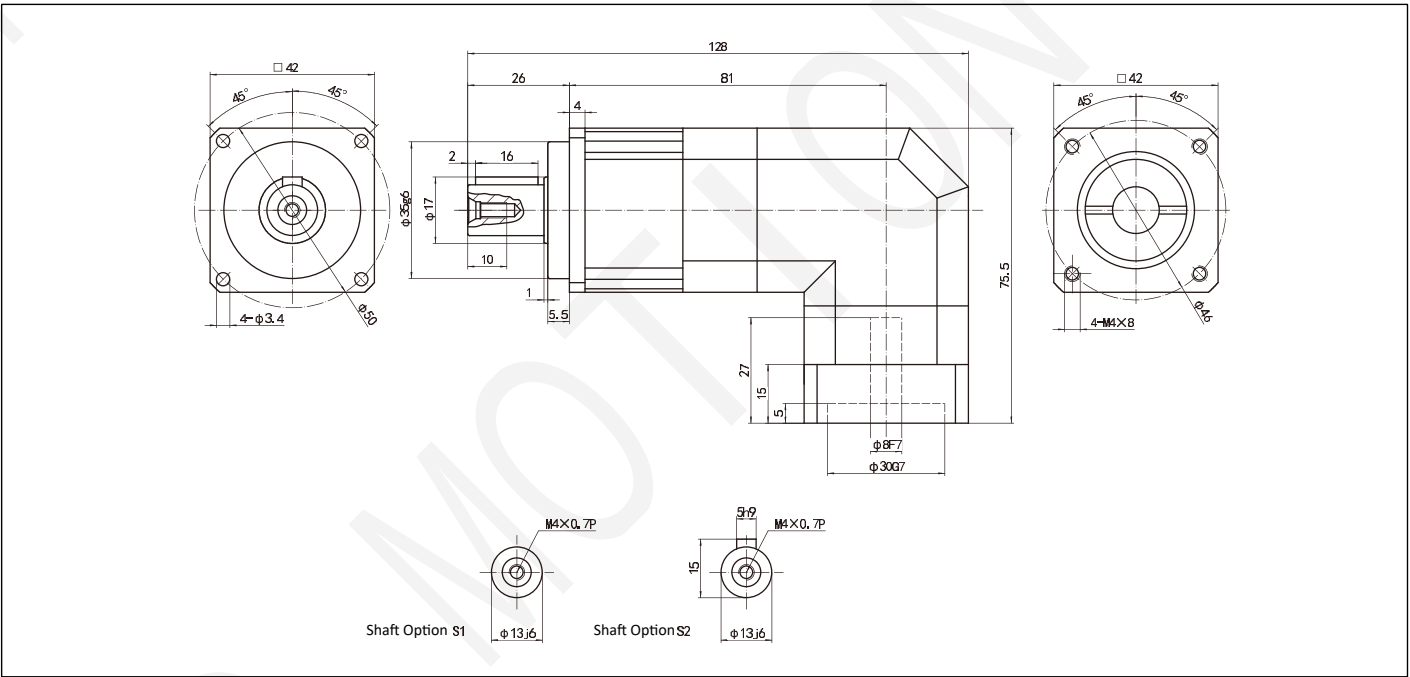
Model	Unit	Stage	Ratio	ZPBR042	ZPBR060	ZPBR090	ZPBR115	ZPBR142	ZPBR180
Moment of Inertia J ₁	kg.cm ²	1	3	0.03	0.16	0.61	3.25	9.21	28.98
			4	0.03	0.14	0.48	2.74	7.54	23.67
			5	0.03	0.13	0.47	2.71	7.42	23.29
			6	0.03	0.13	0.45	2.65	7.25	22.75
			7	0.03	0.13	0.45	2.62	7.14	22.48
			8	0.03	0.13	0.44	2.58	7.07	22.59
			10	0.03	0.13	0.44	2.57	7.04	22.51
		2	12	0.03	0.03	0.13	0.47	2.71	7.42
			15	0.03	0.03	0.13	0.47	2.71	7.42
			16	0.03	0.03	0.13	0.47	2.71	7.42
			20	0.03	0.03	0.13	0.47	2.71	7.42
			25	0.03	0.03	0.13	0.47	2.71	7.42
			30	0.03	0.03	0.13	0.47	2.71	7.42
			35	0.03	0.03	0.13	0.44	2.71	7.42
			40	0.03	0.03	0.13	0.44	2.71	7.42
			50	0.03	0.03	0.13	0.44	2.57	7.03
			60	0.03	0.03	0.13	0.44	2.57	7.03
			70	0.03	0.03	0.13	0.44	2.57	7.03
			80	0.03	0.03	0.13	0.44	2.57	7.03
			100	0.03	0.03	0.13	0.44	2.57	7.03

ZPBR042-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

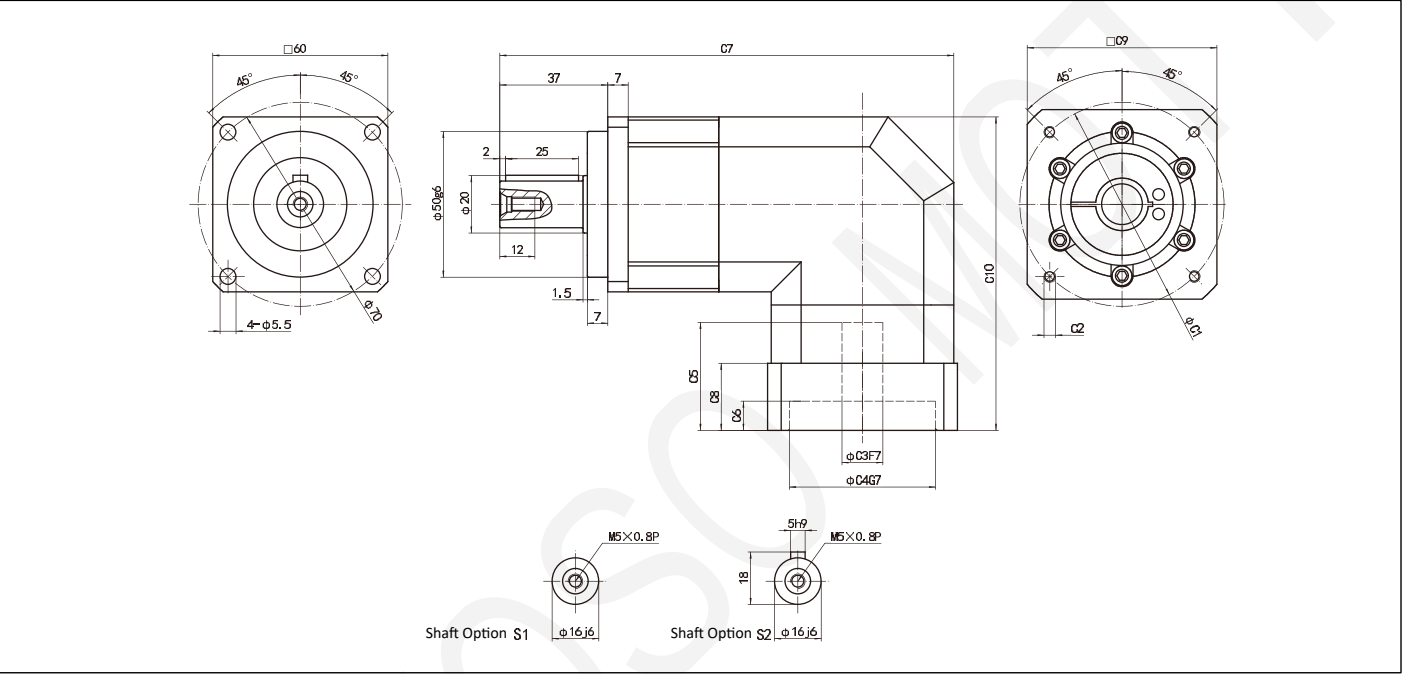
ZPBR042-L2 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

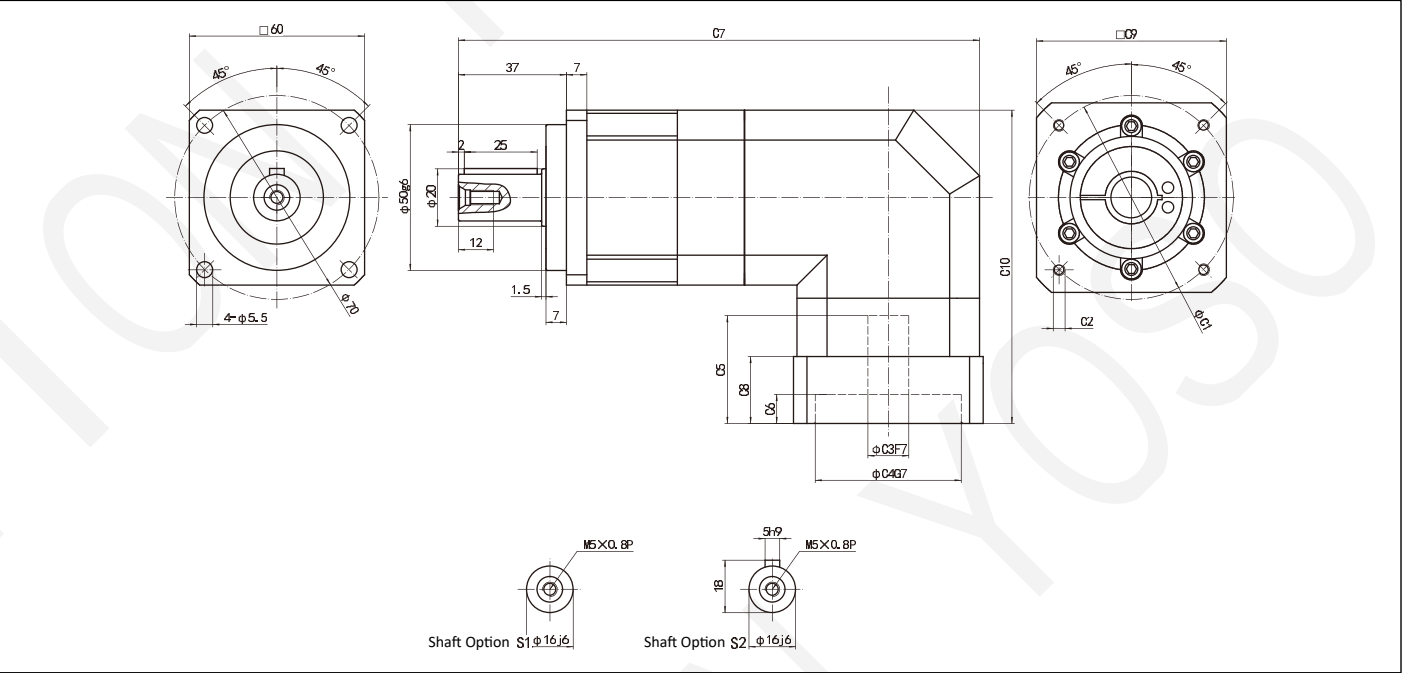
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ZPBR060-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPBR060-L2 Profile

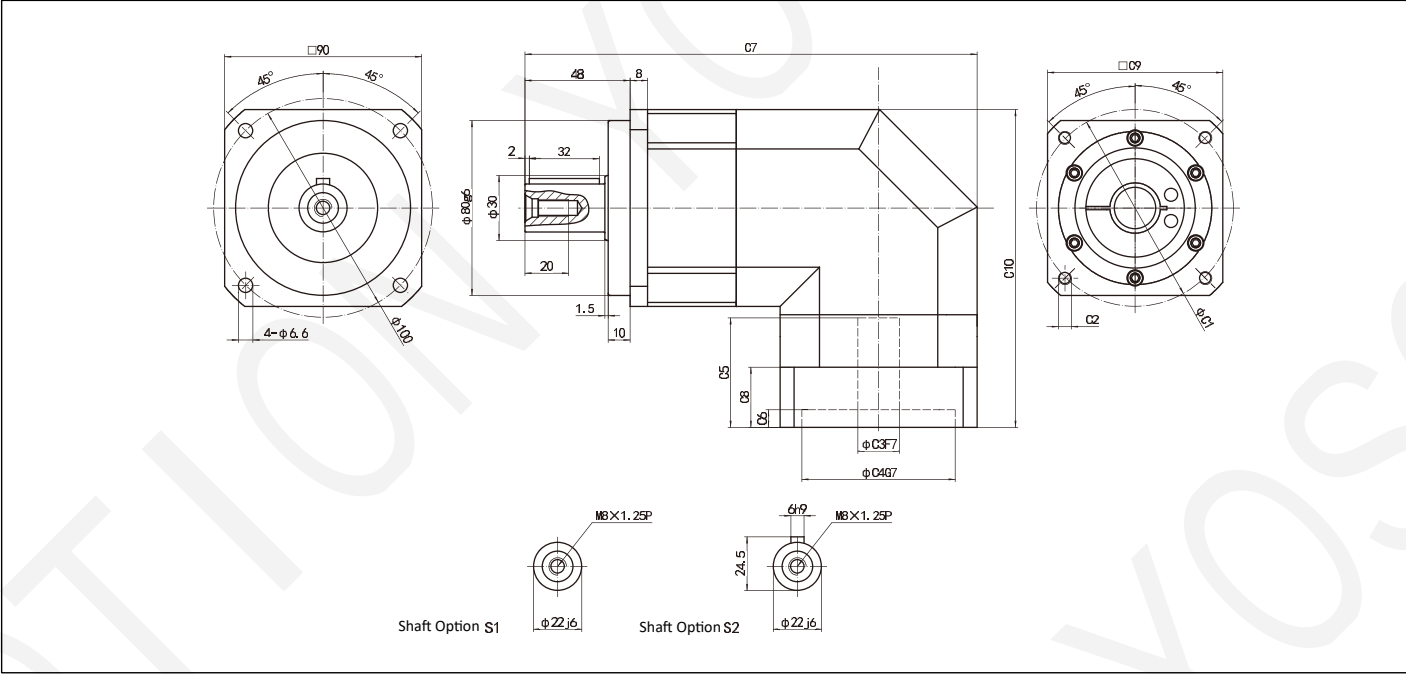


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

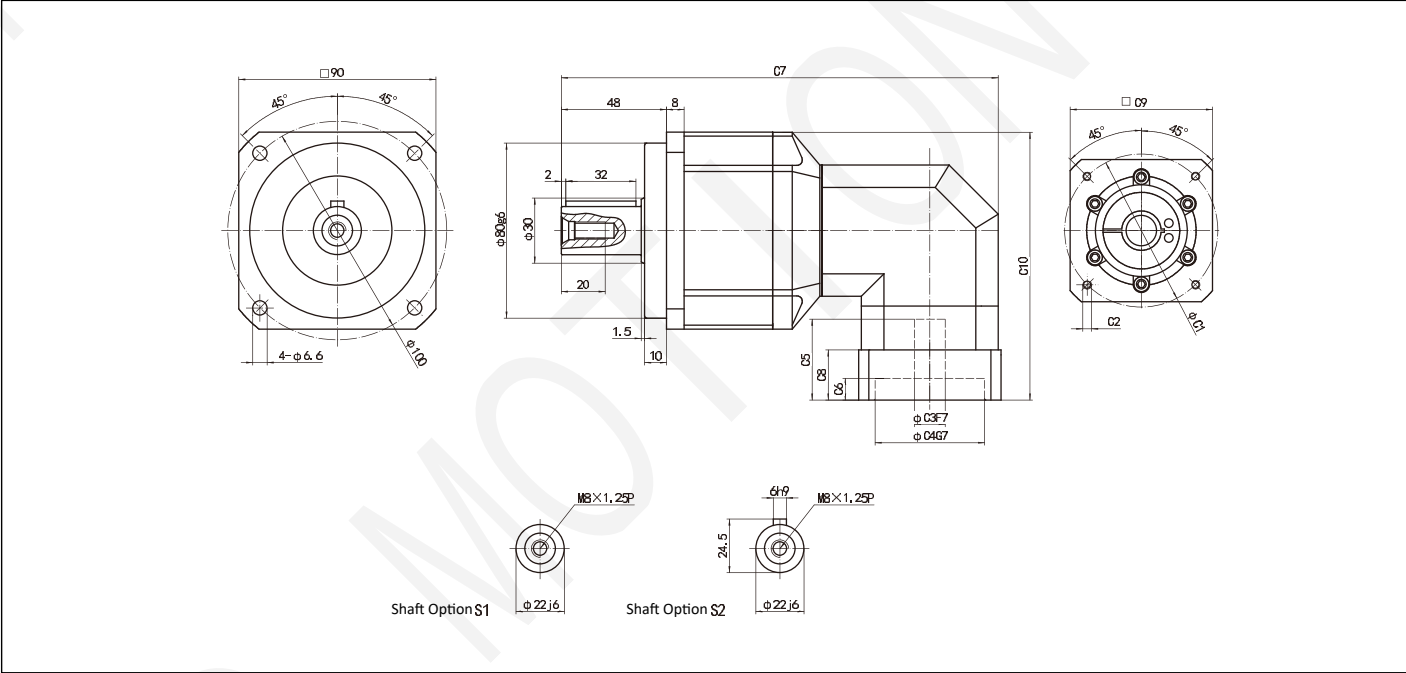
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPBR-060-L1	70	4-M4×10	≤16	50	37	8	151	23	65	110
ZPBR-060-L2	70	4-M4×10	≤14	50	37	8	174	23	65	117.5

ZPBR090-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPBR090-L2 Profile



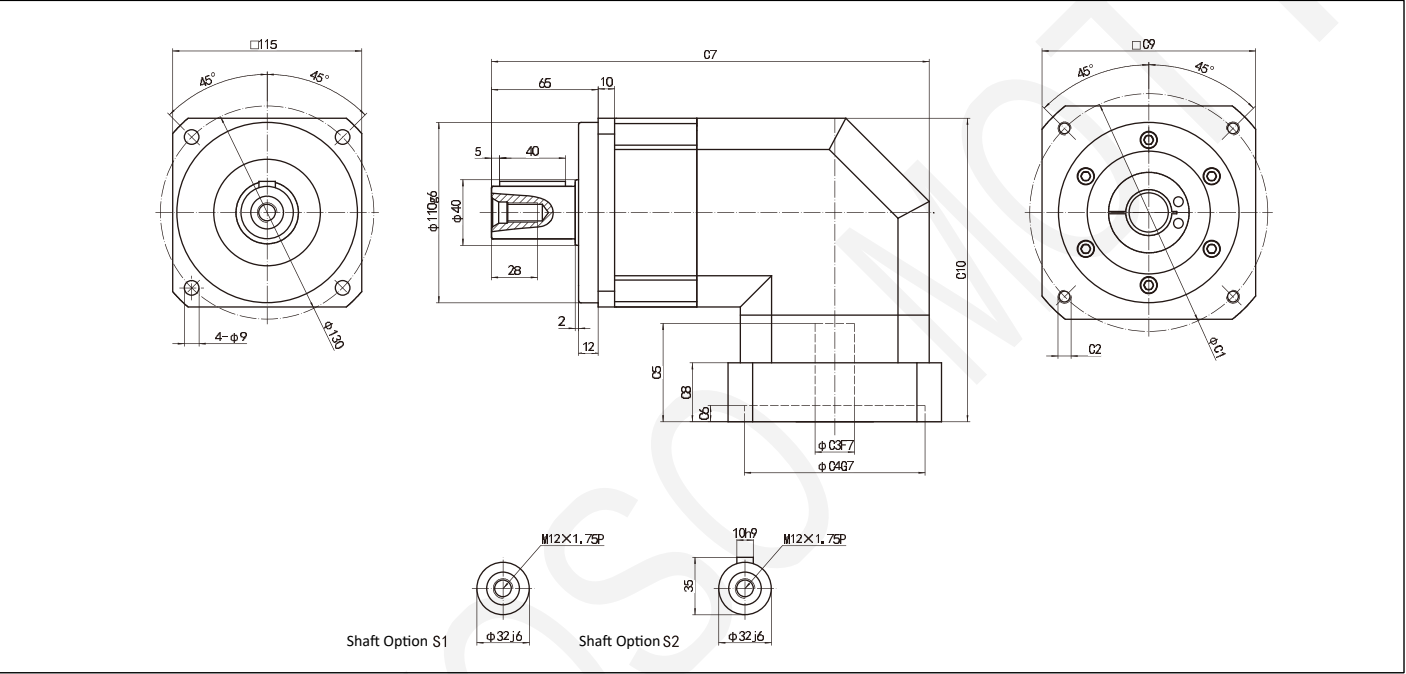
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPBR-090-L1	90	4-M5×12	≤19/≤24	70	50	8	201.5	27.5	90	142.5
ZPBR-090-L2	70	4-M4×10	≤16	50	37	8	199.5	23	60	125.5

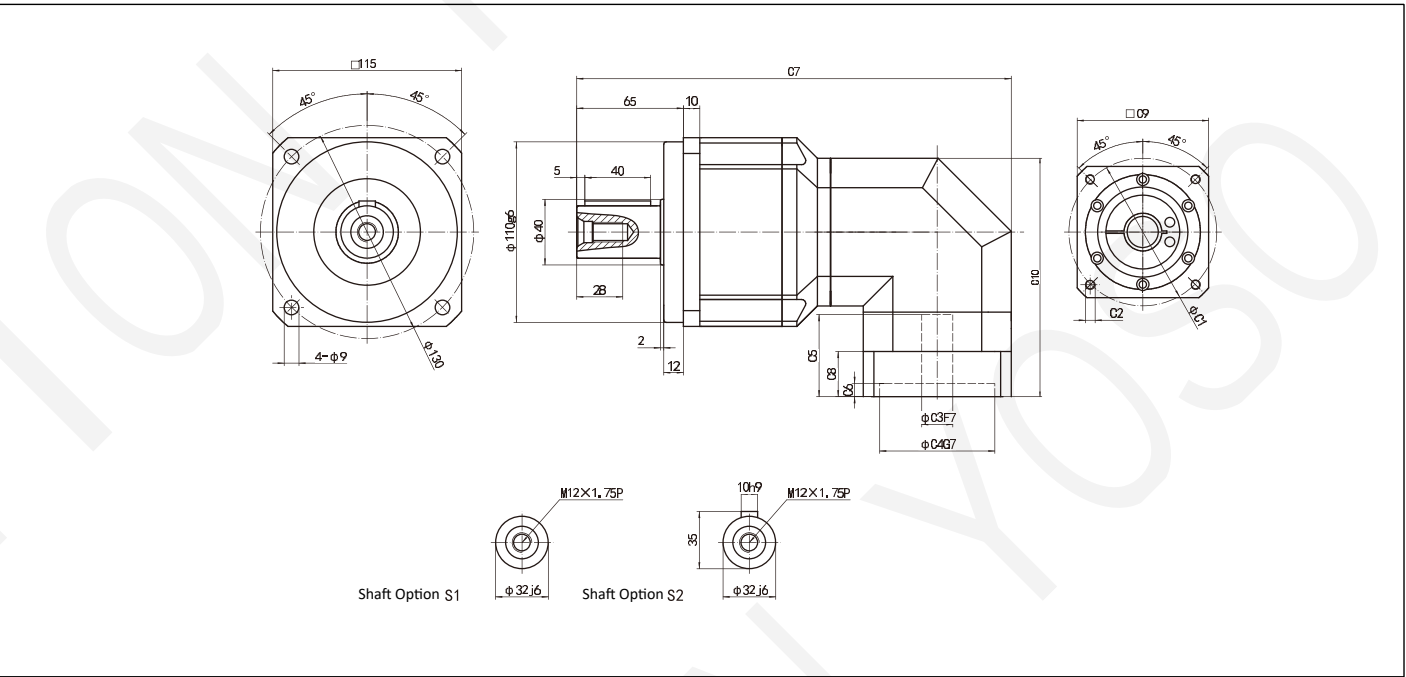
YOSO MOTION Planetary Gear Reducer

● ZPBR115-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

● ZPBR115-L2 Profile

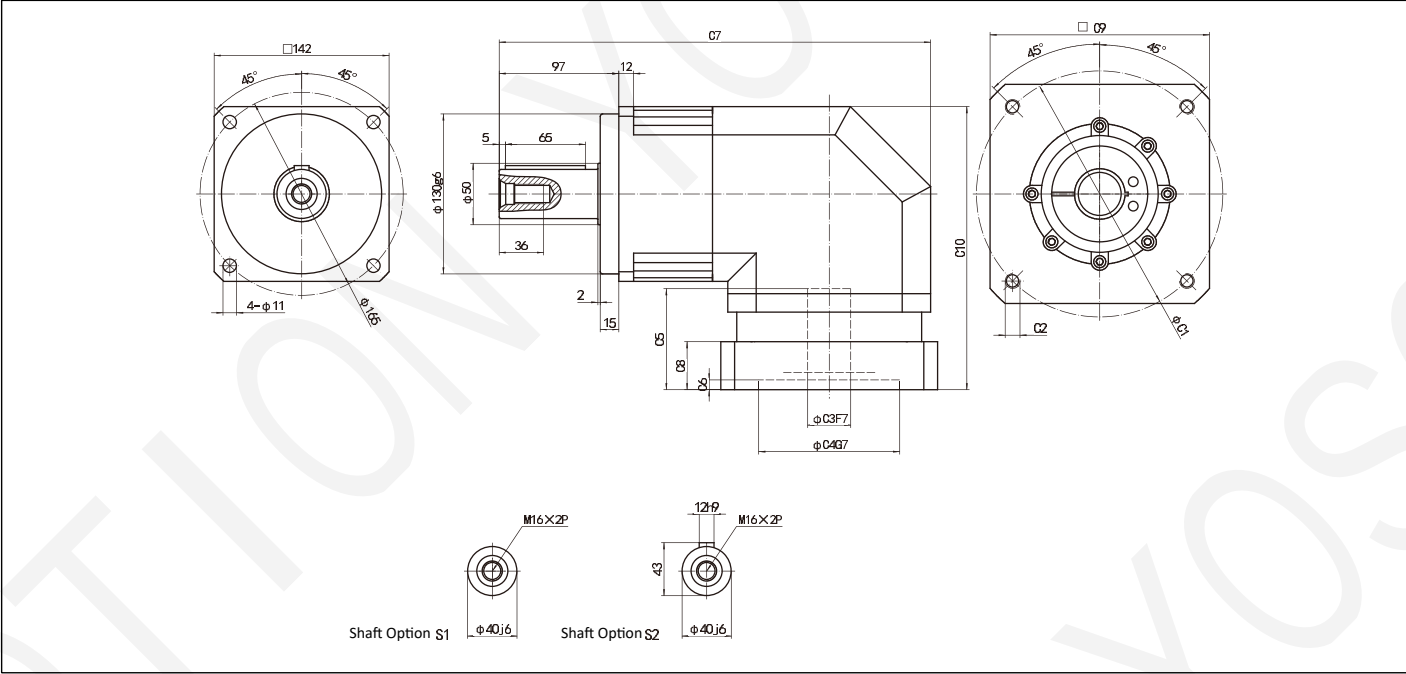


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

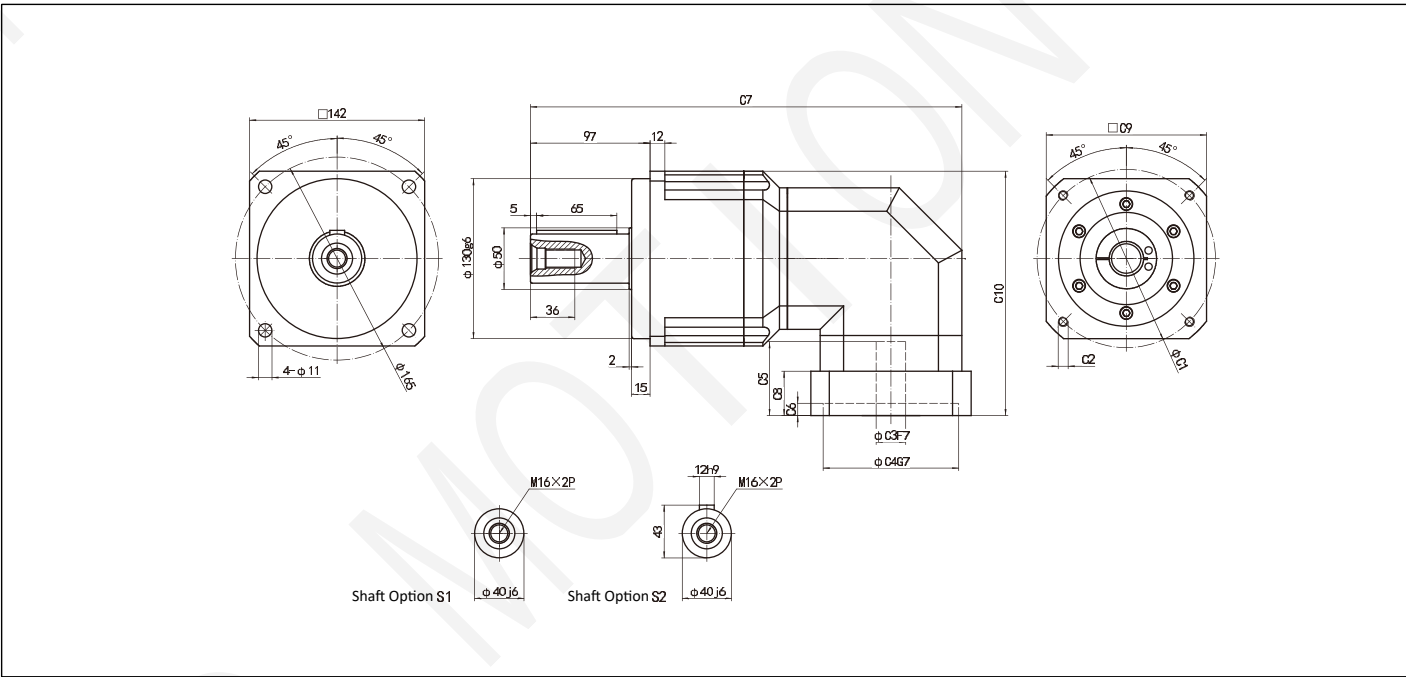
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPBR-115-L1	145	4-M8×20	≤35	110	60	8	270	35	130	192
ZPBR-115-L2	90	4-M5×12	≤24	70	50	8	264.5	27.5	90	157.5

● ZPBR142-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

● ZPBR142-L2 Profile



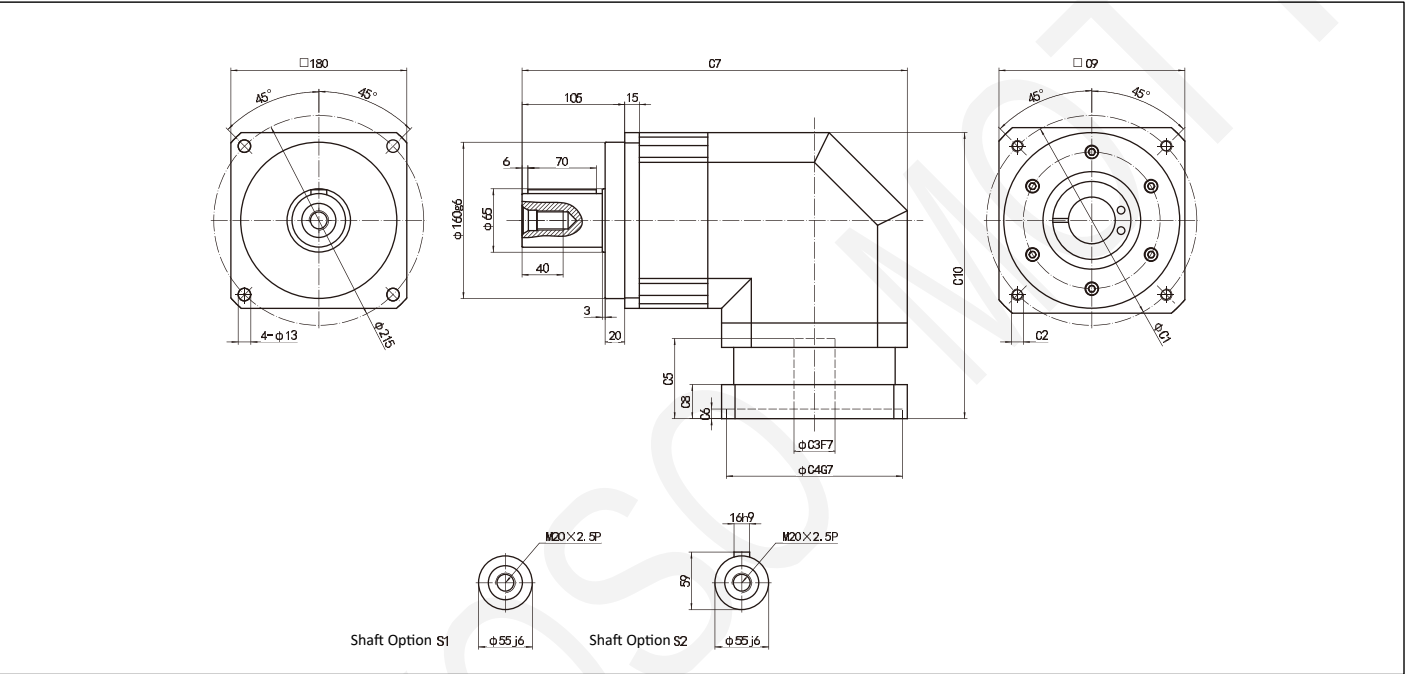
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPBR-142-L1	200	4-M12×25	≤42	114.3	82	8	340.5	39	178	230
ZPBR-142-L2	145	4-M8×20	≤35	110	60	8	350	35	130	198.5

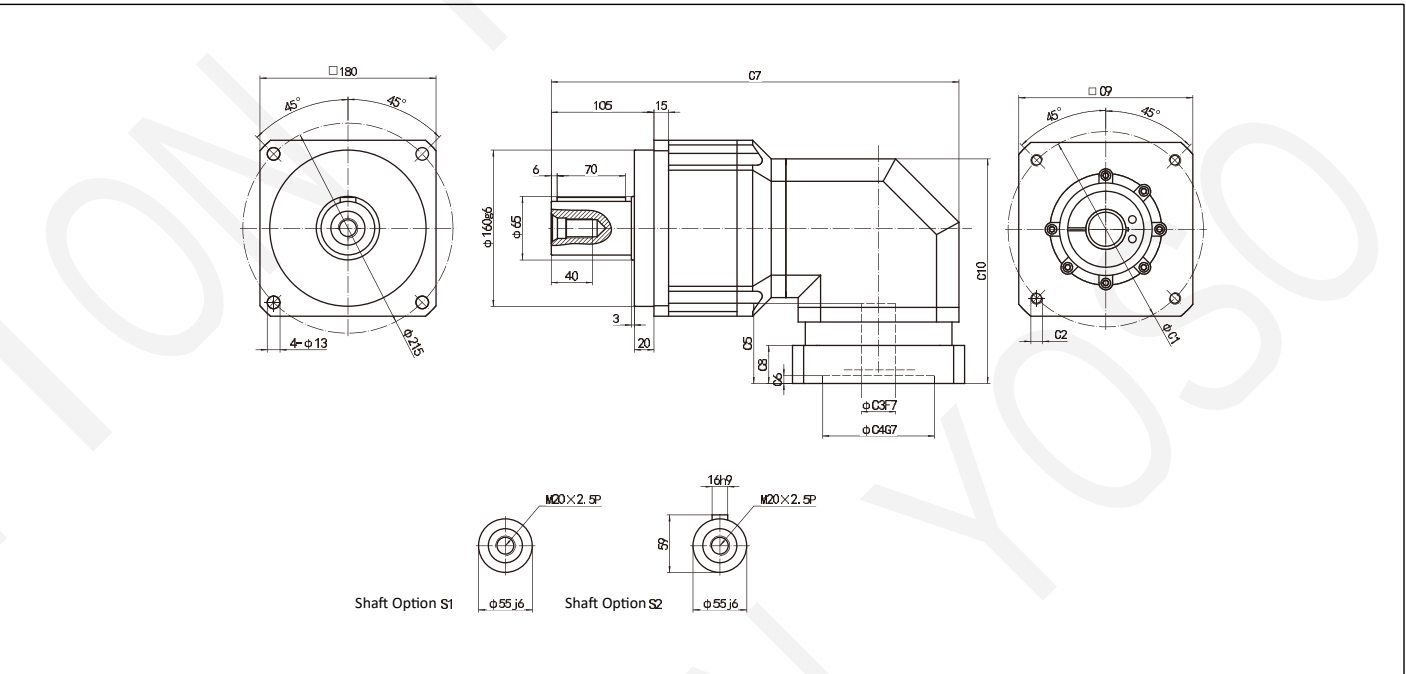
YOSO MOTION Planetary Gear Reducer

ZPBR180-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPBR180-L2 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

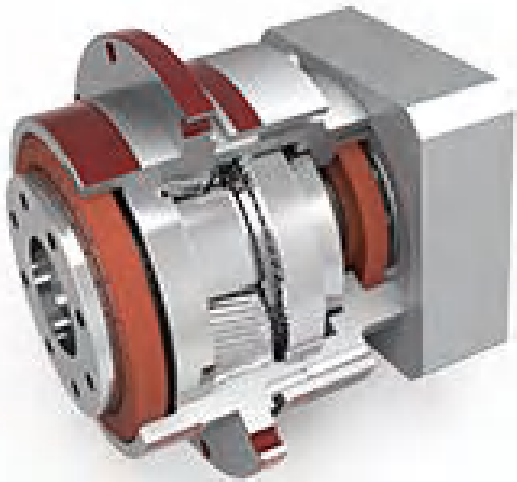
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPBR-180-L1	215	4-M12×25	≤48	180	82	8	384	35	190	293
ZPBR-180-L2	200	4-M12×25	≤42	114.3	82	8	417	39	178	249

ZPD SERIES



FUTURE

- Extremely low-backlash
- Higher torsional rigidity
- High output torque
- High efficiency
- Low noise
- Maintenance-free grease lubrication
- Small installation space



YOSO MOTION Planetary Gear Reducer

ZPD Series Performance Table

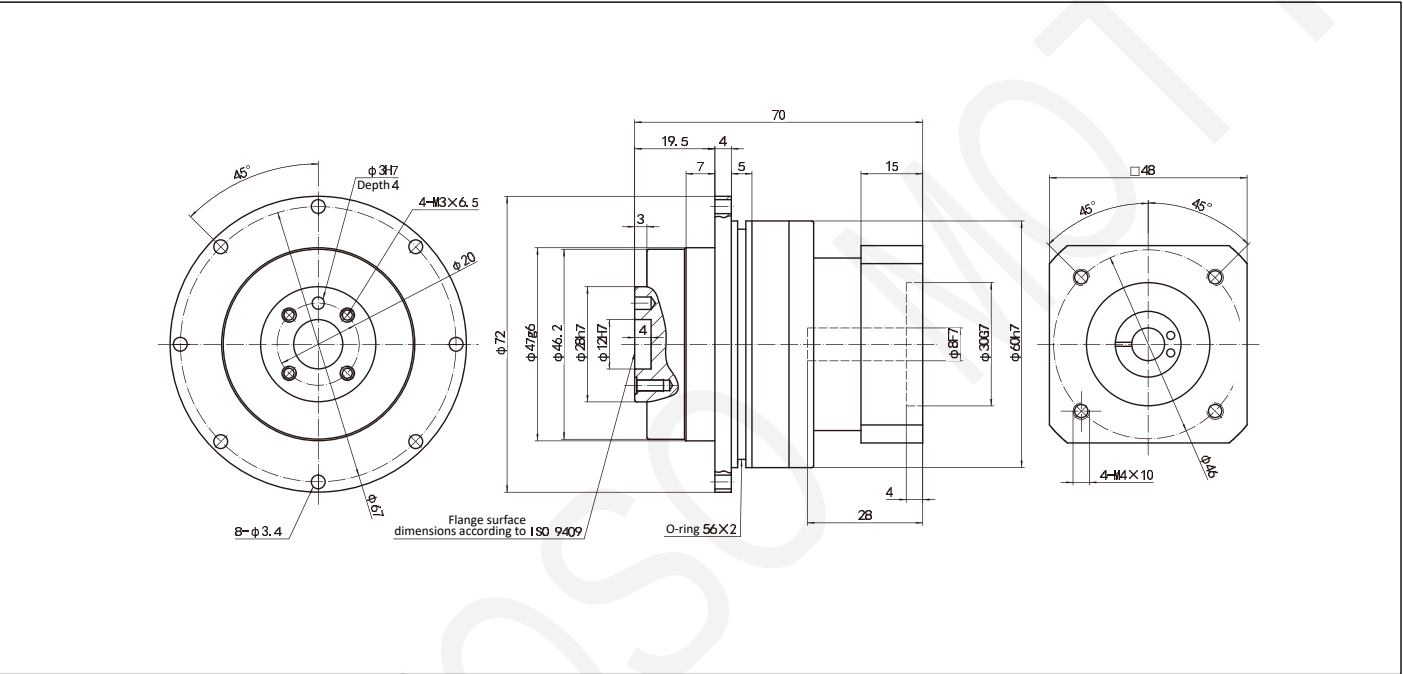
Model	Unit	Stage	Ratio	ZPD047	ZPD064	ZPD090	ZPD110	ZPD140	ZPD200	ZPD255
Rated output torqueT2N	Nm	1	4	19	50	140	290	542	1050	1700
			5	22	60	160	330	650	1200	2000
			6	20	55	150	310	600	1100	1900
			7	19	50	140	300	550	1100	1800
			8	17	45	120	260	500	1000	1600
			10	14	40	100	230	450	900	1500
		2	16	20	55	140	208	342	588	1140
			20	19	50	140	290	542	1050	1700
			25	22	60	160	330	650	1200	2000
			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 T2NOT	Nm	1,2	4-100	Triple rated output torque						
Rated input speed η_{1N}	rpm	1,2	4-100	5000	5000	4000	4000	3000	3000	2000
Maximum input speed η_{1B}		1,2	4-100	10000	10000	8000	8000	6000	6000	4000
Precision backlashP1	arcmin	1	4-10	≤3	≤3	≤3	≤3	≤3	≤3	≤3
		2	16-100	≤5	≤5	≤5	≤5	≤5	≤5	≤5
Torsional rigidity	Nm/arcmin	1,2	4-100	7	13	31	82	151	450	1023
Allowable radial force F2aB	N	1,2	4-100	780	1530	3250	6700	12000	18500	27000
Allowable axial force F2aB	N	1,2	4-100	500	765	1625	3350	8100	15000	24000
Sevice life	hrs	1,2	4-100	20000						
Efficiency	%	1	4-10	≥97%						
		2	16-100	≥94%						
Gross weight	kg	1	4-10	0.6	1.3	3.7	7.8	14.5	29	48
		2	16-100	0.8	1.5	4.1	9	17.5	33	60
Working temperature	°C	1,2	4-100	-10°C~90°C						
Lubricating		1,2	4-100	Synthetic lubricating grease						
IP Grade		1,2	4-100	IP65						
Installation direction		1,2	4-100	In any direction						
Noise level ($\eta_1=3000rpm, off\ load$)	dB	1,2	4-100	≤60	≤63	≤65	≤68	≤70	≤73	≤75

Helical Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZPD042	ZPD064	ZPD090	ZPD110	ZPD140	ZPD200	ZPD255
Moment of Inertia J1	kg.cm²	1	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	7.04	22.51	50.63
		2	16	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
			35	0.03	0.03	0.13	0.44	2.71	7.42	23.29
			40	0.03	0.03	0.13	0.44	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

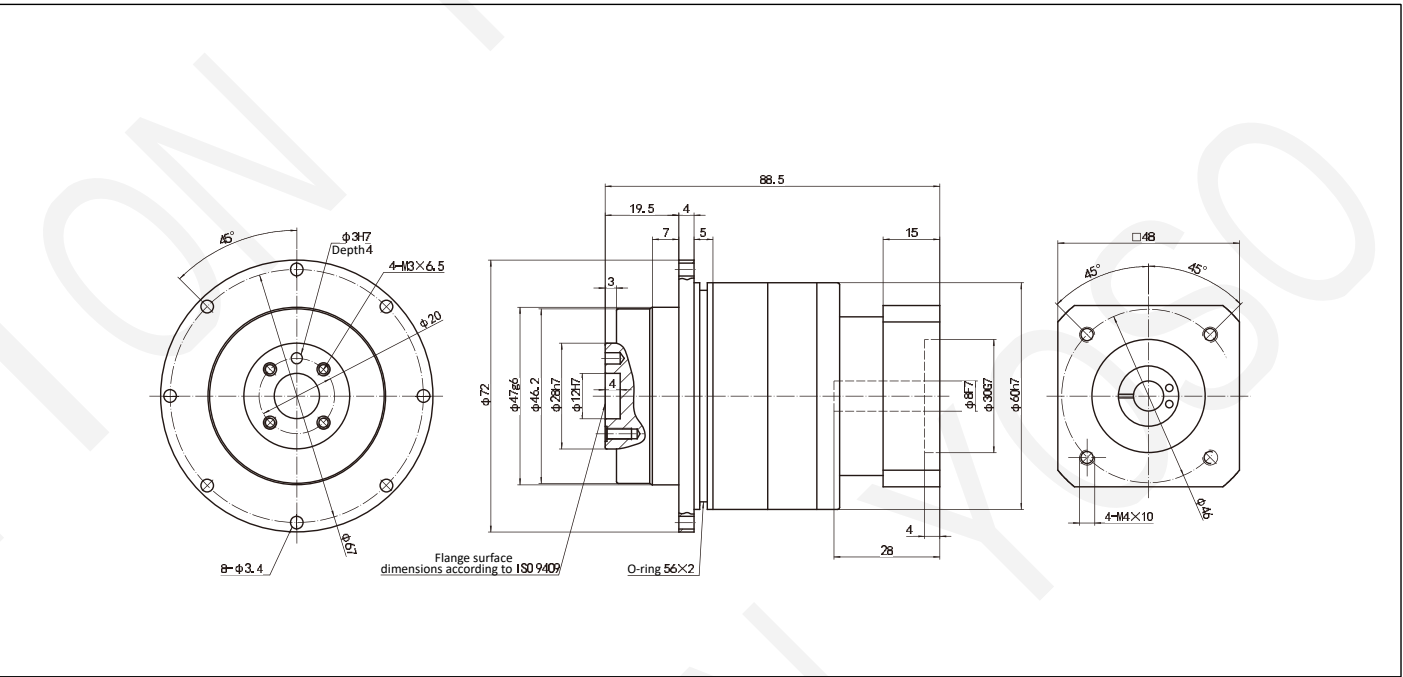
YOSO MOTION Planetary Gear Reducer

ZPD-047-L1 Profile



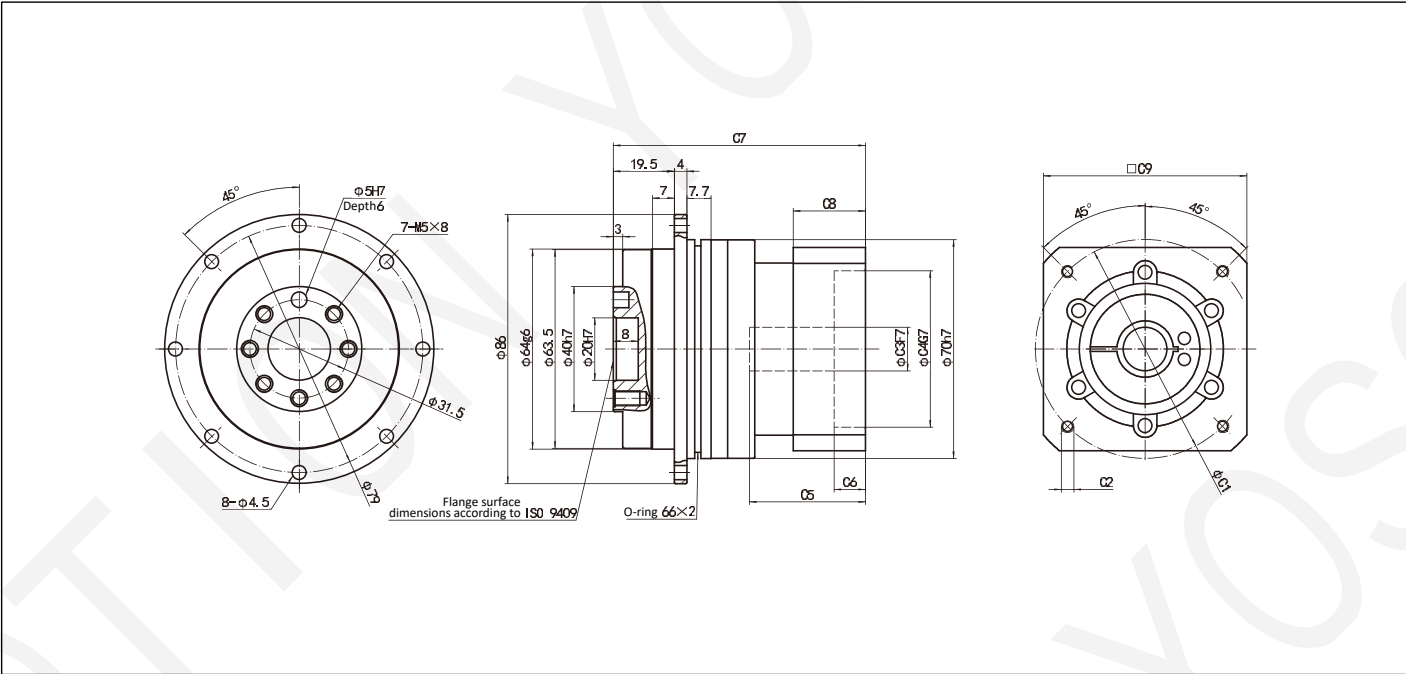
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPD-047-L2 Profile



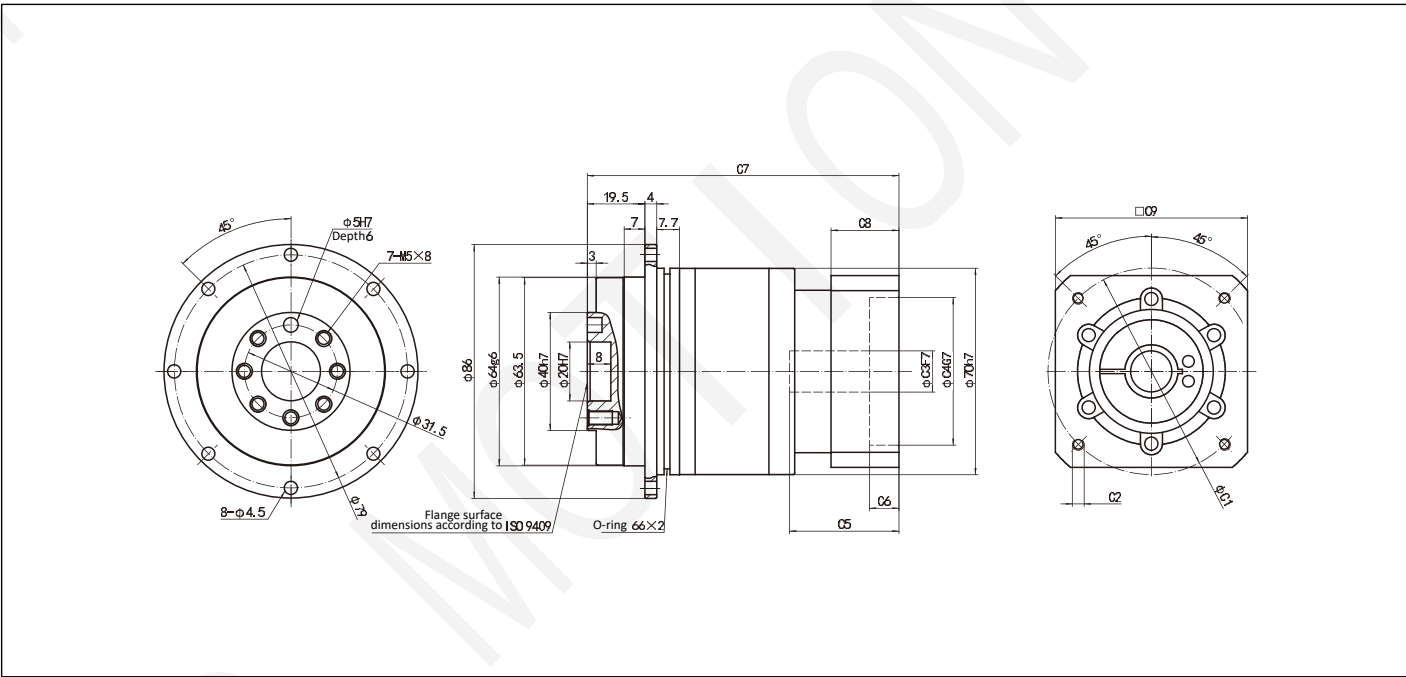
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPD-064-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPD-064-L2 Profile



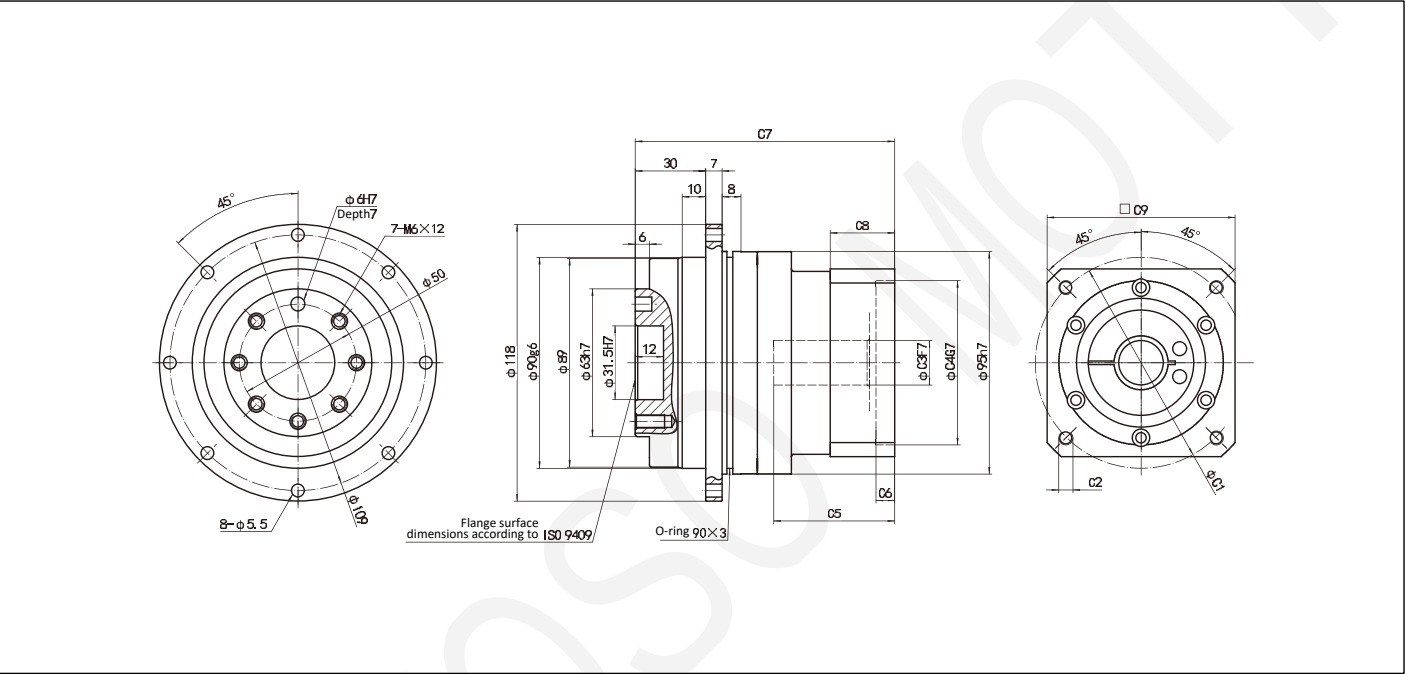
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPD-064-L1	70	4-M4×10	≤14/≤16	50	37	8	80.5	23	65
ZPD-064-L2	70	4-M4×10	≤14/≤16	50	37	8	105.5	23	65

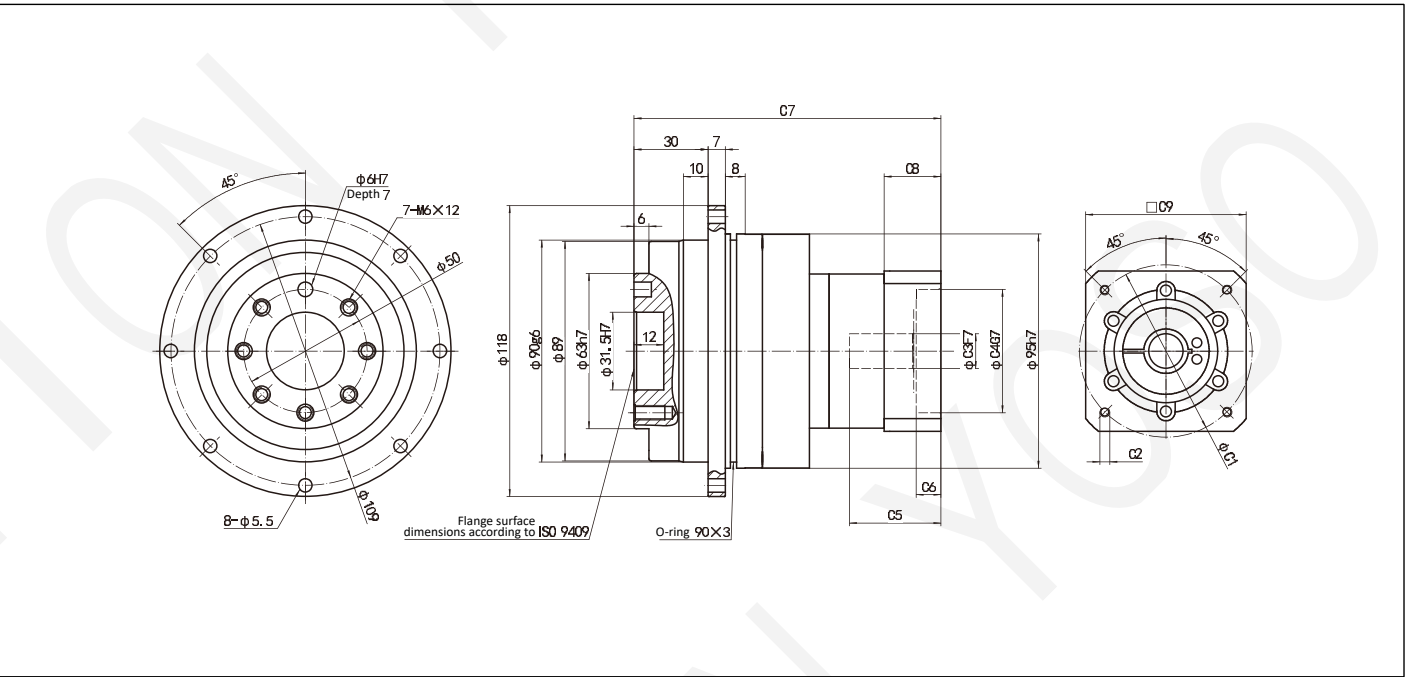
YOSO MOTION Planetary Gear Reducer

ZPD-090-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPD-090-L2 Profile

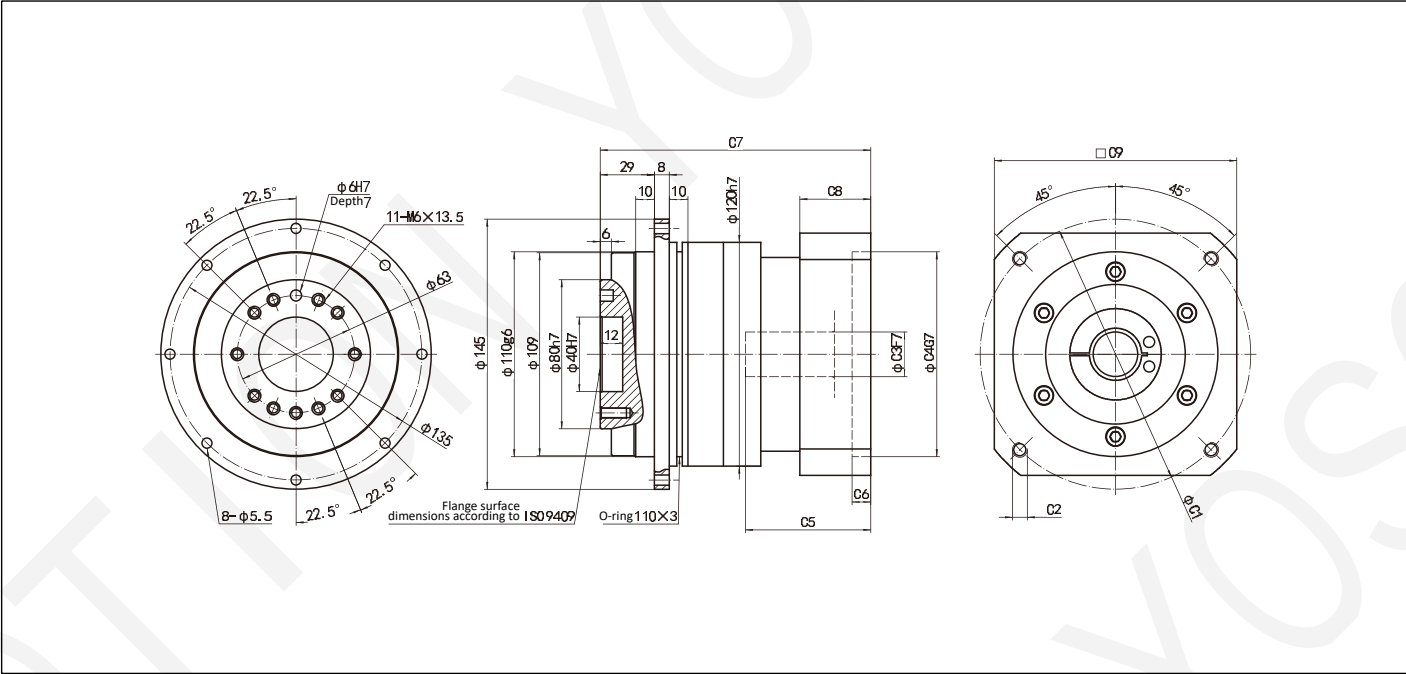


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

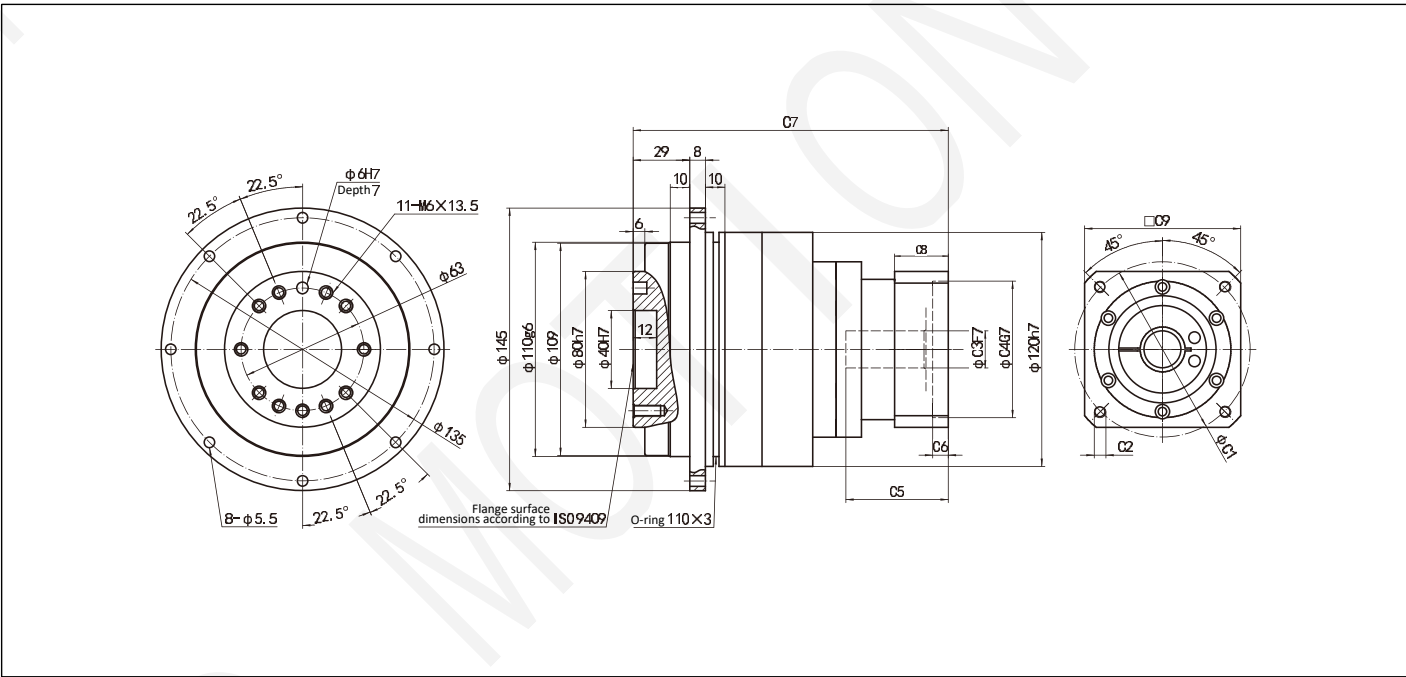
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPD-090-L1	90	4-M5×12	≤19/≤24	70	50	8	110.5	27.5	90
ZPD-090-L2	70	4-M4×10	≤16	50	37	8	124.5	23	62.5

ZPD-110-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPD-110-L2 Profile



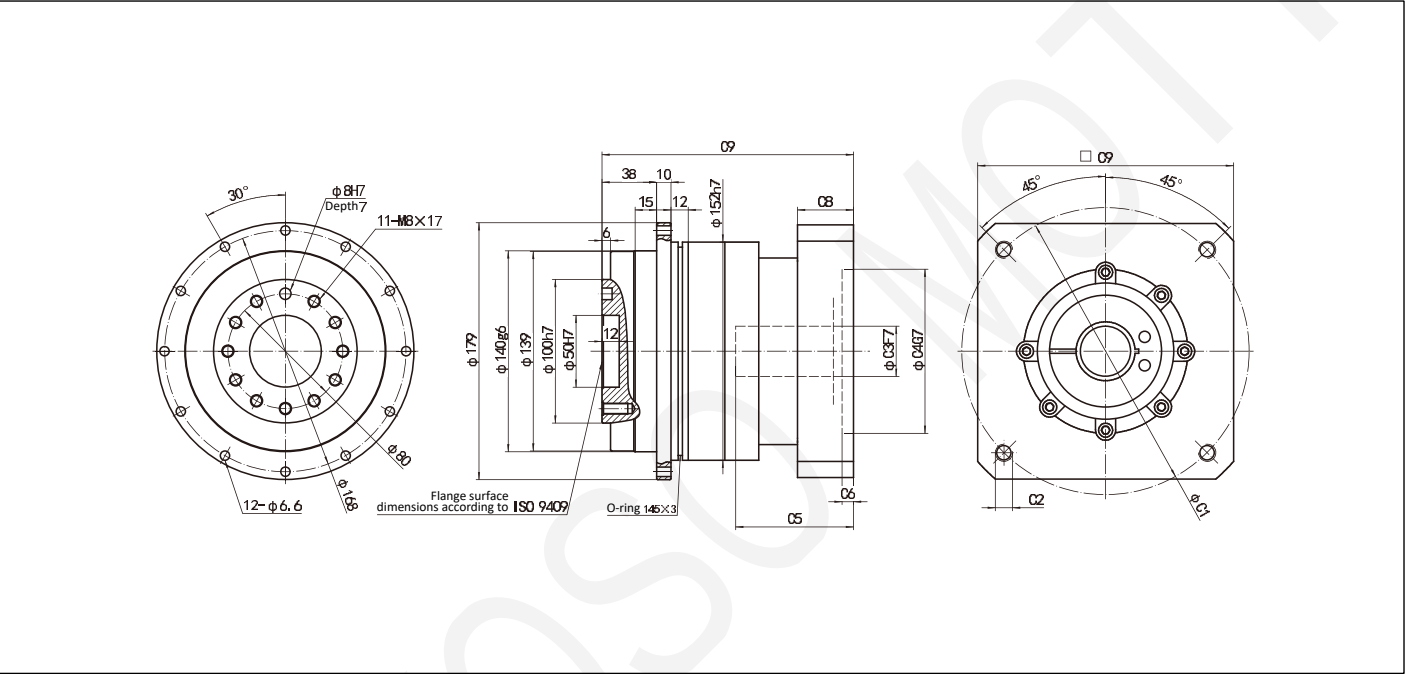
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPD-110-L1	145	4-M8×10	≤35	110	60	8	145	35	130
ZPD-110-L2	90	4-M5×12	≤24	70	50	8	161.5	27.5	90

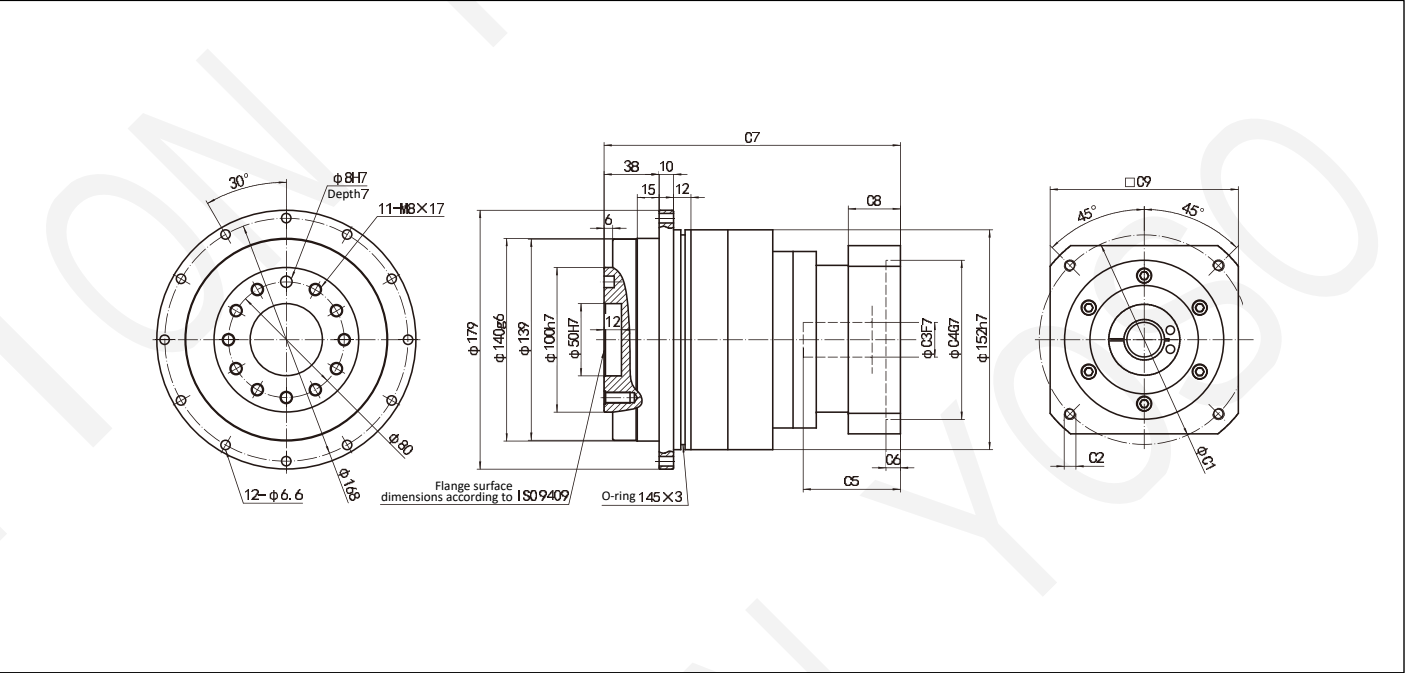
YOSO MOTION Planetary Gear Reducer

ZPD-140-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPD-140-L2 Profile

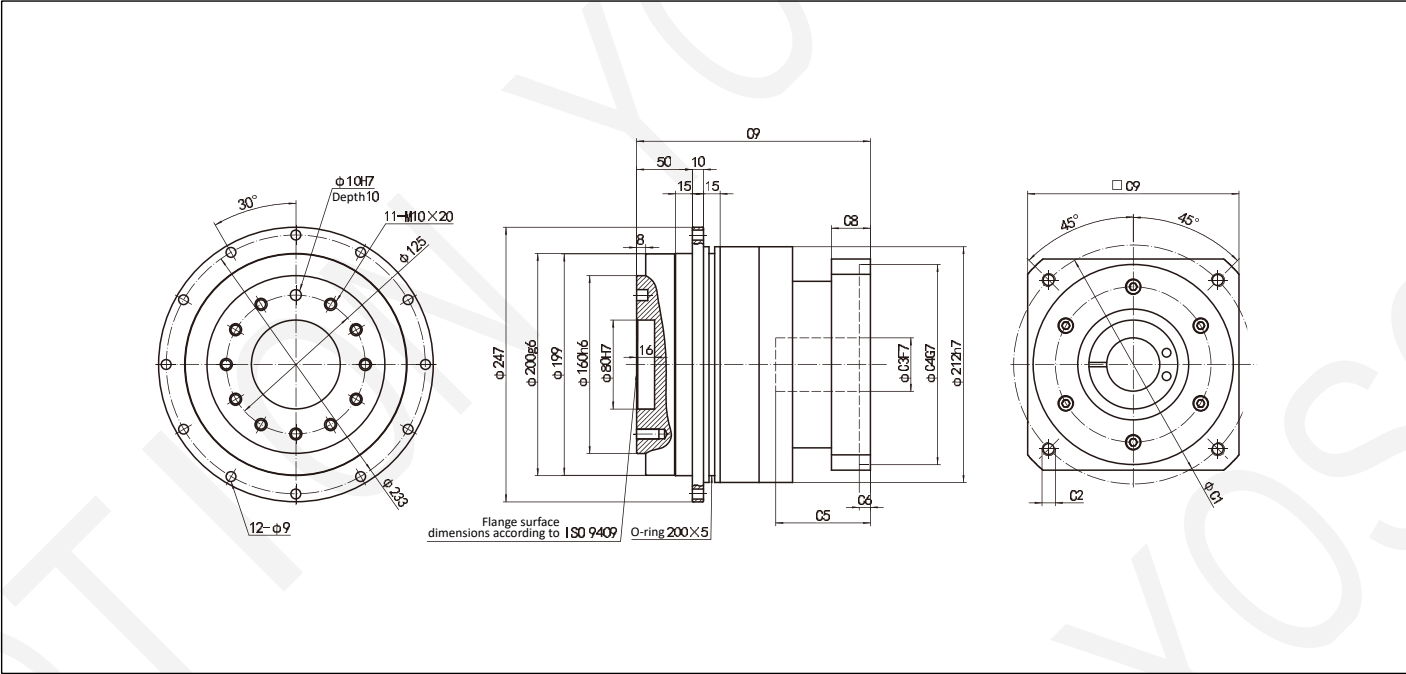


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

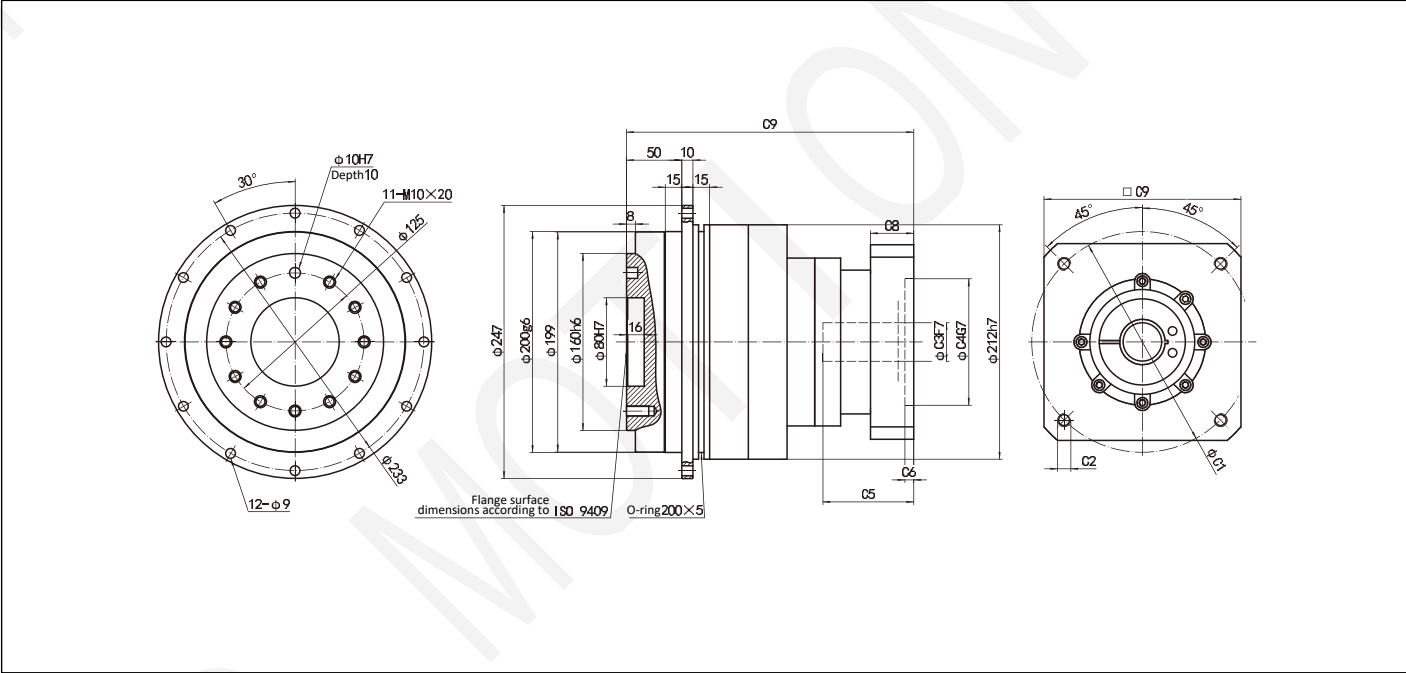
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPD-140-L1	200	4-M12×25	≤42	114.3	82	8	175	39	178
ZPD-140-L2	145	4-M8×20	≤35	110	60	8	204.5	35	130

ZPD-200-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPD-200-L2 Profile



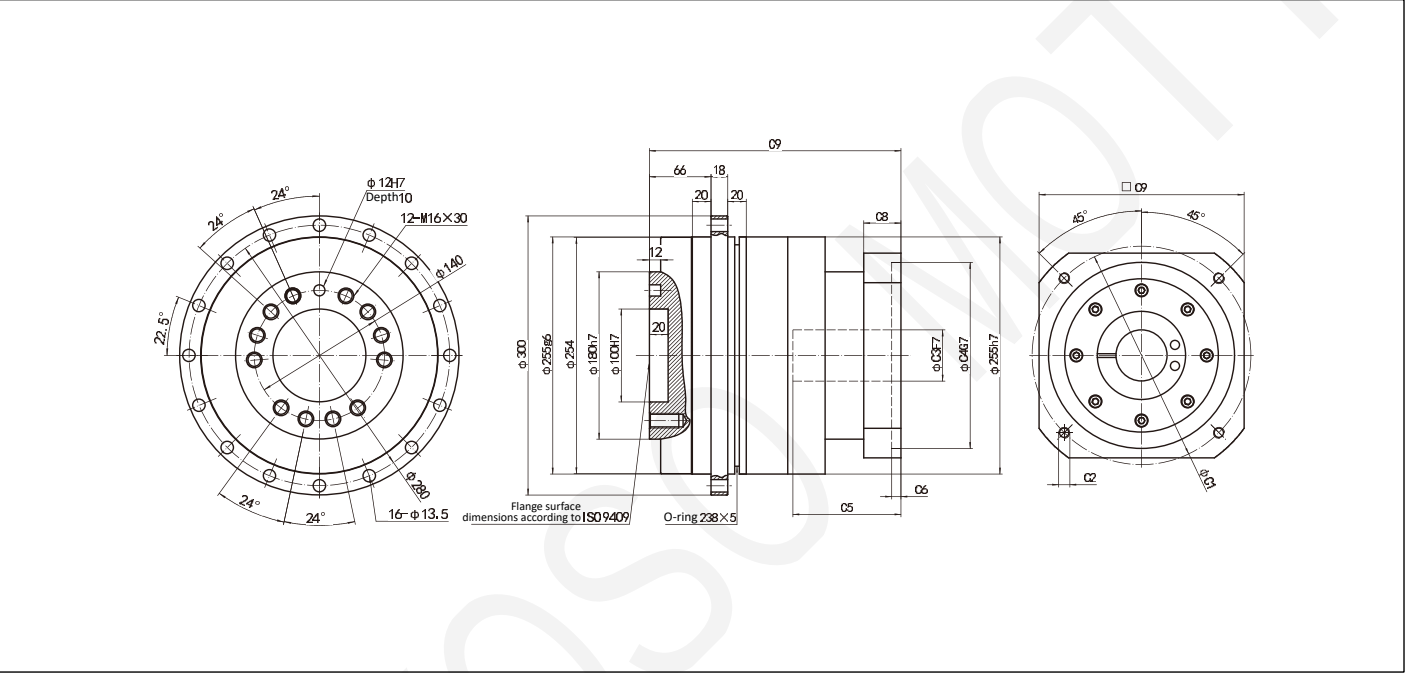
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPD-200-L1	215	4-M12×25	≤48	180	82	8	210	35	190
ZPD-200-L2	200	4-M12×25	≤42	114.3	82	8	259.5	39	178

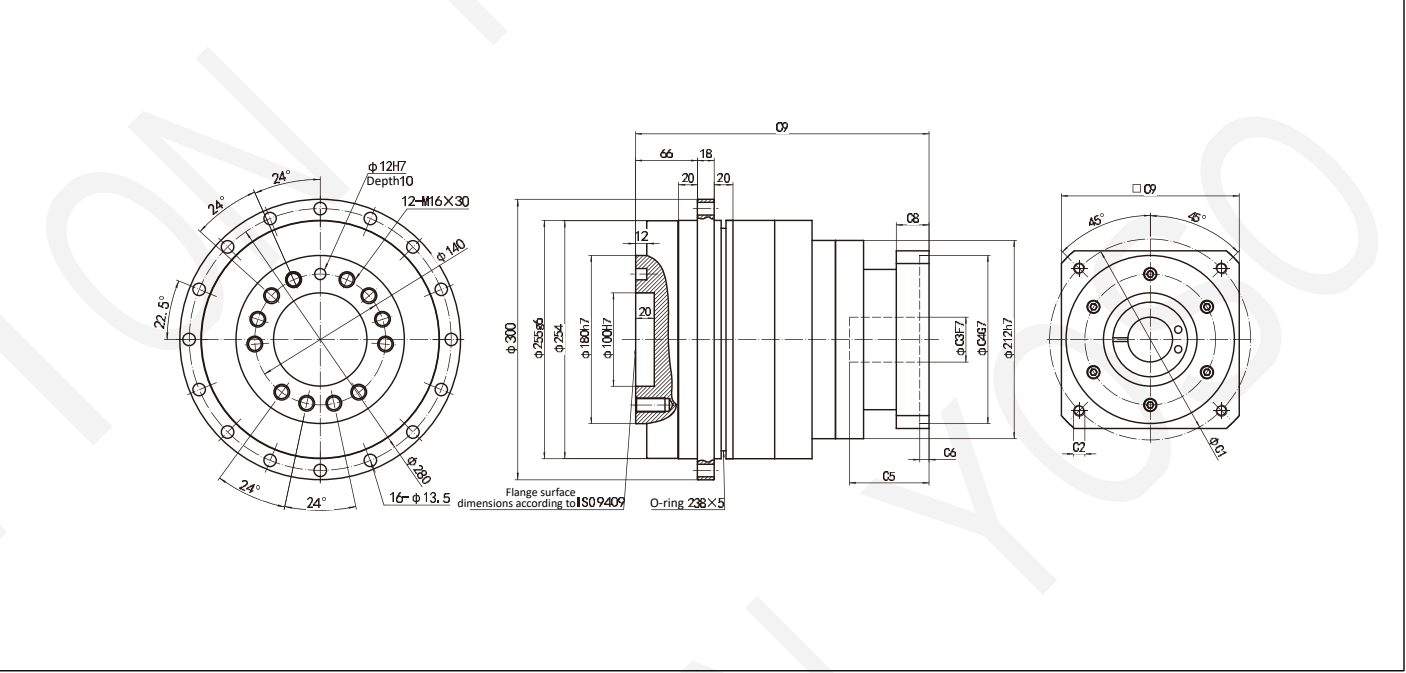
YOSO MOTION Planetary Gear Reducer

ZPD-255-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPD-255-L2 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

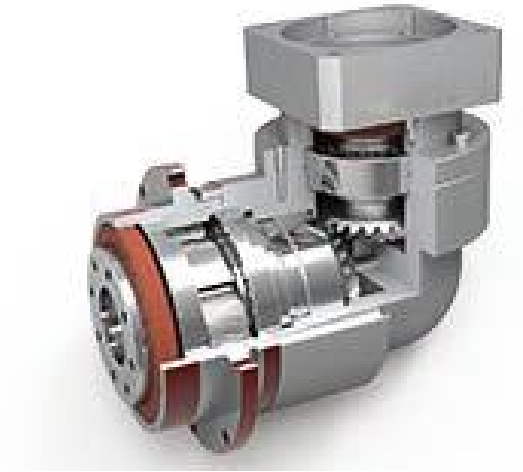
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPD-255-L1	235	4-M12×25	≤55	200	116	8	364.5	40	270
ZPD-255-L2	215	4-M14×25	≤48	180	82	8	415	35	315.5

ZPDR SERIES



FUTURE

- Extremely low-backlash
- Higher torsional rigidity
- High output torque
- High efficiency
- Low noise
- Maintenance-free grease lubrication
- Small installation space
- Transmission diversity



YOSO MOTION Planetary Gear Reducer

■ ZPDR Series Performance Table

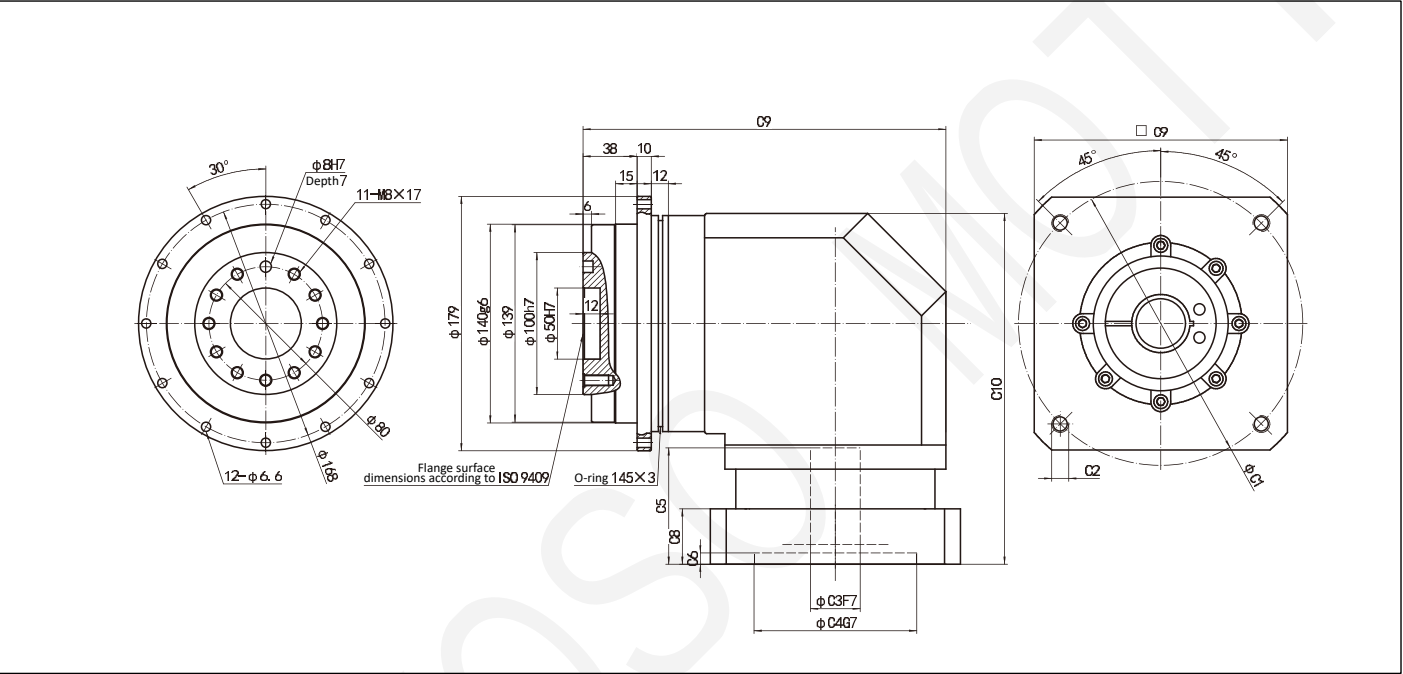
Model	Unit	Stage	Ratio	ZPDR047	ZPDR064	ZPDR090	ZPDR110	ZPDR140	ZPDR200
Rated output torqueT2N	Nm	1	4	19	50	140	290	542	1050
			5	22	60	160	330	650	1200
			6	20	55	150	310	600	1100
			7	19	50	140	300	550	1100
			8	17	45	120	260	500	1000
			10	14	40	100	230	450	900
		2	16	20	55	140	208	342	588
			20	19	50	140	290	542	1050
			25	22	60	160	330	650	1200
			35	19	50	140	300	550	1100
			40	17	45	120	260	500	1000
			50	22	60	160	330	650	1200
			60	20	55	150	310	600	1100
			70	19	50	140	300	550	1100
			80	17	45	120	260	500	1000
			100	14	40	100	230	450	900
Emergency stop torque T2NOT	Nm	1,2	4-100	Triple rated output torque					
Rated input speed η_{1N}	rpm	1,2	4-100	5000	5000	4000	4000	3000	3000
Maximum input speed η_{1B}		1,2	4-100	10000	10000	8000	8000	6000	6000
Precision backlashP1	arcmin	1	4-10	≤5	≤5	≤5	≤5	≤5	≤5
		2	16-100	≤7	≤7	≤7	≤7	≤7	≤7
Torsional rigidity	Nm/arcmin	1,2	4-100	7	13	31	82	151	450
Allowable radial force F2aB	N	1,2	4-100	780	1530	3250	6700	12000	18500
Allowable axial force F2aB	N	1,2	4-100	500	765	1625	3350	8100	15000
Sevice life	hrs	1,2	4-100	20000					
Efficiency	%	1	4-10	≥95%					
		2	16-100	≥92%					
Gross weight	kg	1	4-10	1.1	2.1	5.9	10.5	21.9	50.9
		2	16-100	1.4	1.9	4.5	9.8	20.1	45.4
Working temperature	°C	1,2	4-100	-10°C~90°C					
Lubricating		1,2	4-100	Synthetic lubricating grease					
IP Grade		1,2	4-100	IP65					
Installation direction		1,2	4-100	In any direction					
Noise level (η_1 =3000rpm,off load)	dB	1,2	4-100	≤63	≤65	≤67	≤70	≤72	≤75

■ Helical Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZPDR042	ZPDR064	ZPDR090	ZPDR110	ZPDR140	ZPDR200
Moment of Inertia J1	kg.cm²	1	4	0.03	0.14	0.48	2.74	7.54	23.67
			5	0.03	0.13	0.47	2.71	7.42	23.29
			6	0.03	0.13	0.45	2.65	7.25	22.75
			7	0.03	0.13	0.45	2.62	7.14	22.48
			8	0.03	0.13	0.44	2.58	7.07	22.59
			10	0.03	0.13	0.44	2.57	7.04	22.51
		2	16	0.03	0.03	0.13	0.47	2.71	7.42
			20	0.03	0.03	0.13	0.47	2.71	7.42
			25	0.03	0.03	0.13	0.47	2.71	7.42
			35	0.03	0.03	0.13	0.44	2.71	7.42
			40	0.03	0.03	0.13	0.44	2.71	7.42
			50	0.03	0.03	0.13	0.44	2.57	7.03
			60	0.03	0.03	0.13	0.44	2.57	7.03
			70	0.03	0.03	0.13	0.44	2.57	7.03
			80	0.03	0.03	0.13	0.44	2.57	7.03
			100	0.03	0.03	0.13	0.44	2.57	7.03

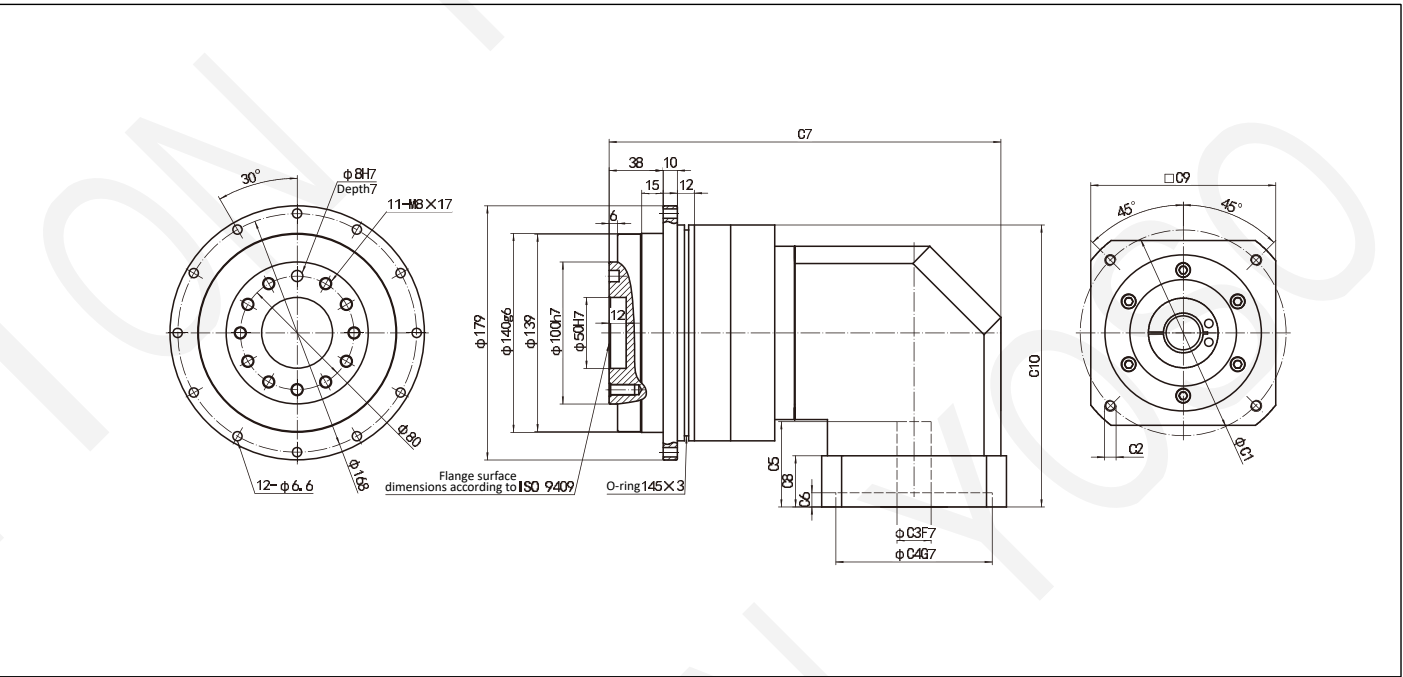
YOSO MOTION Planetary Gear Reducer

● ZPDR-140-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

● ZPDR-140-L2 Profile

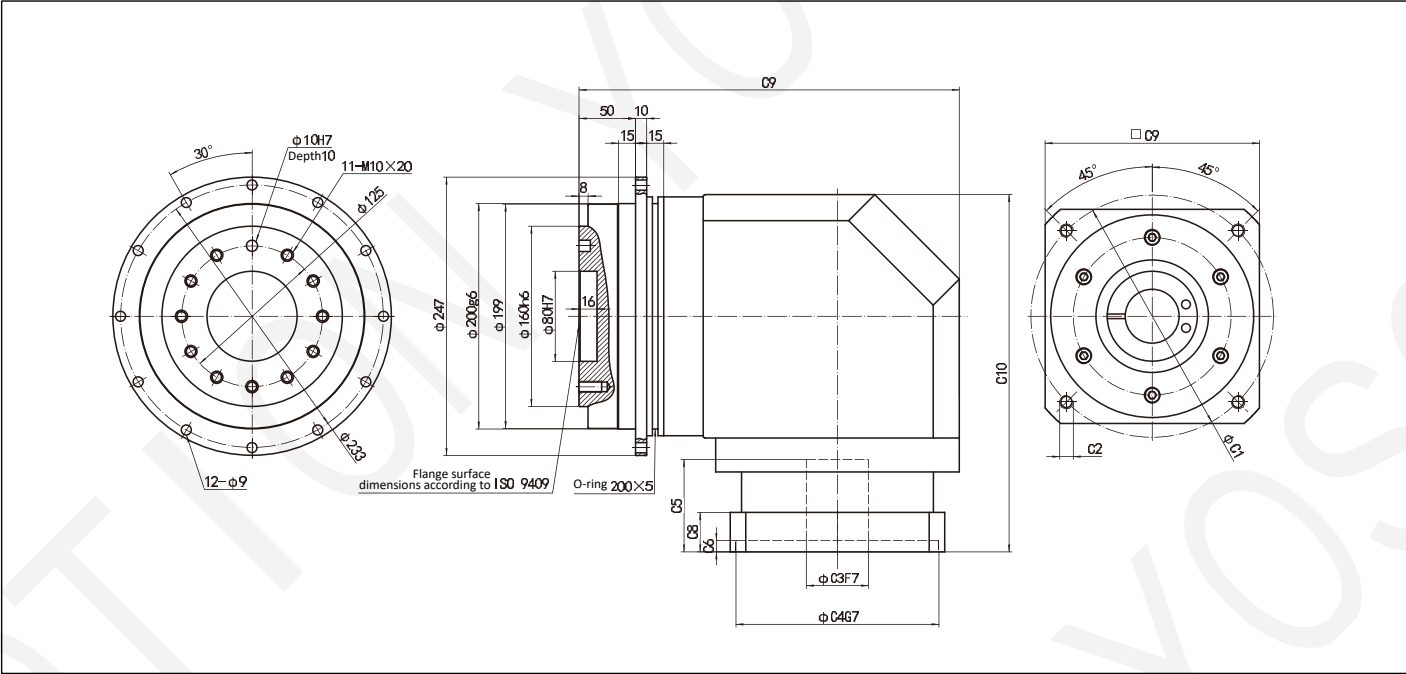


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

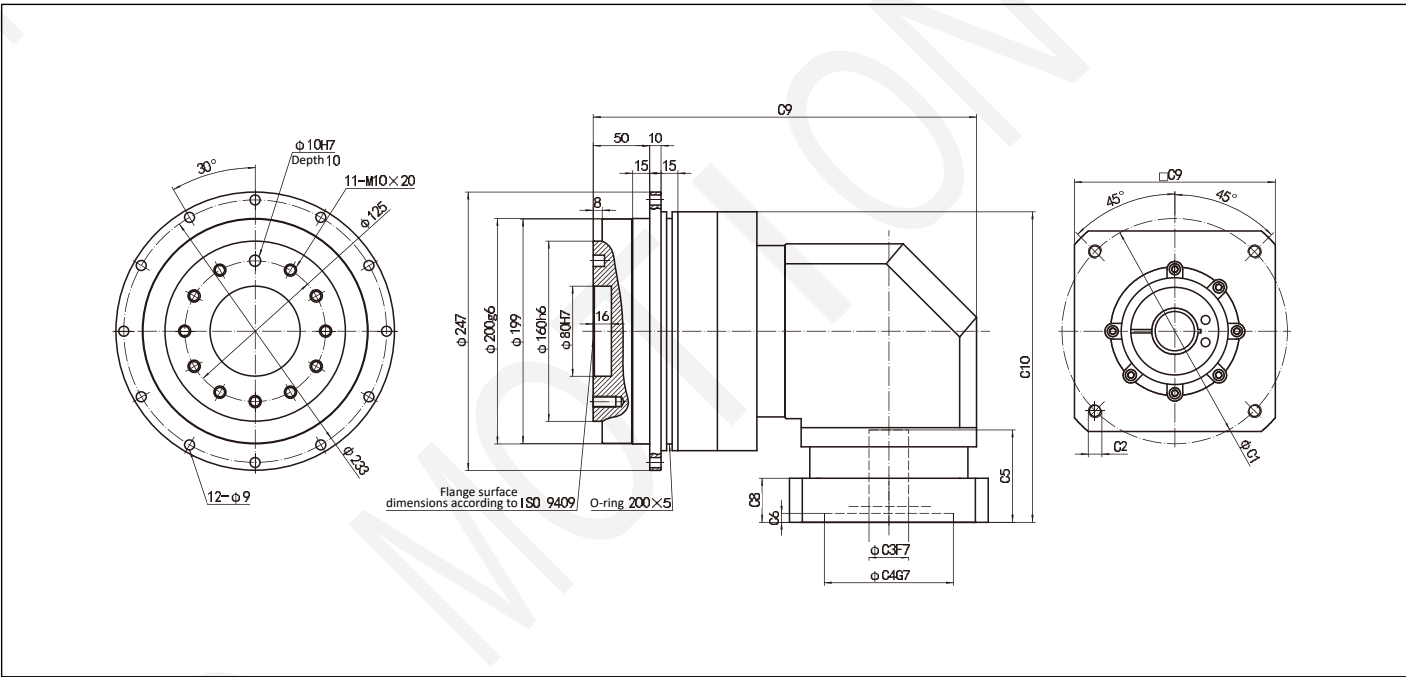
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPDR-140-L1	200	4-M12×25	≤42	114.3	82	8	255	39	178	247
ZPDR-140-L2	145	4-M8×20	≤35	110	60	8	275.5	35	130	198.5

● ZPDR-200-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

● ZPDR-200-L2 Profile



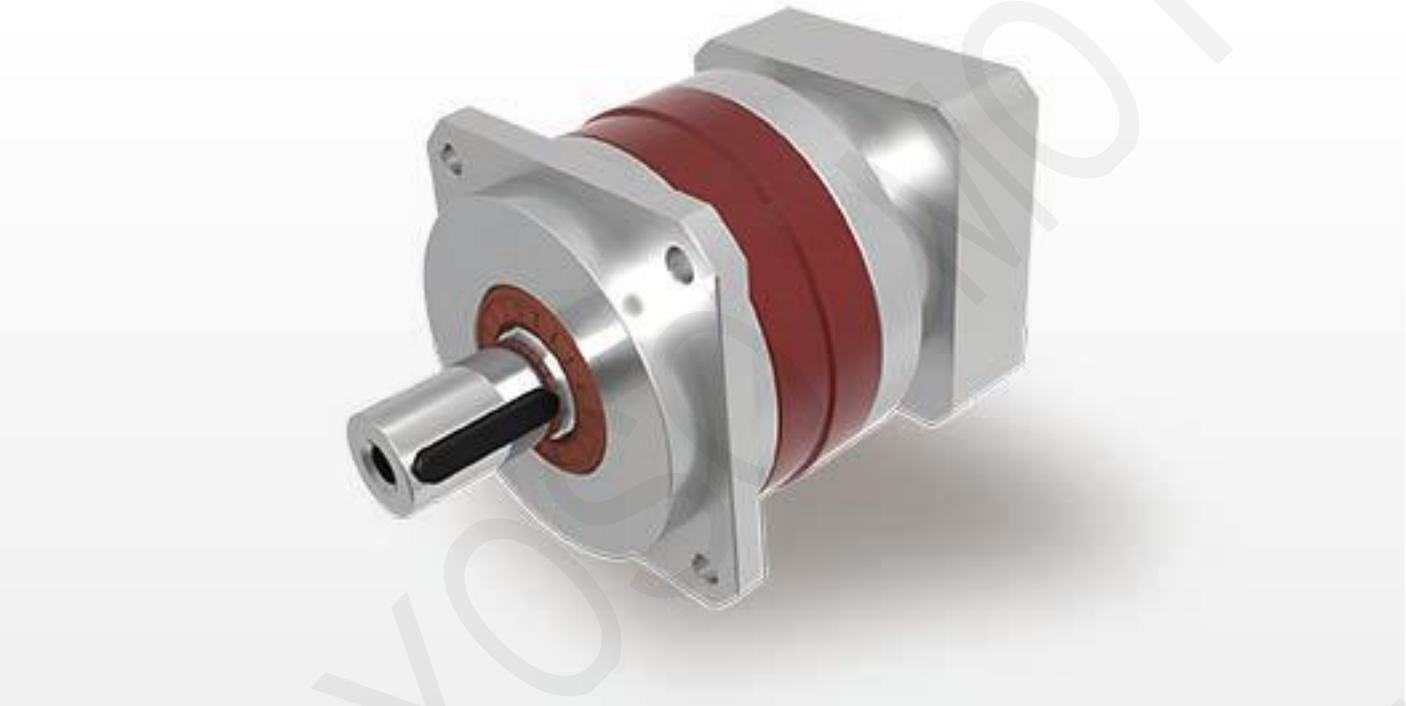
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPDR-200-L1	215	4-M12×25	≤48	180	82	8	337	35	190	317
ZPDR-200-L2	200	4-M12×25	≤42	114.3	82	8	340	39	178	275.5

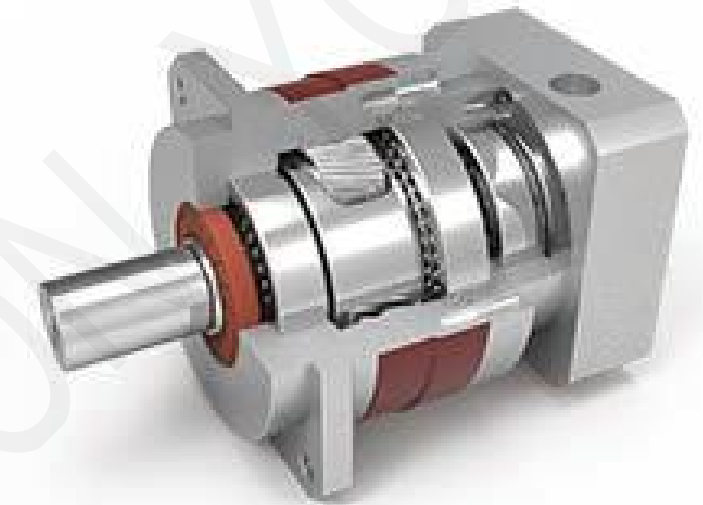
YOSO MOTION Planetary Gear Reducer

ZPF SERIES



FUTURE

- Low backlash
- High torque
- High efficiency
- Low noise
- Easy installation
- Maintenance-free grease lubrication



ZPF Series Performance Table

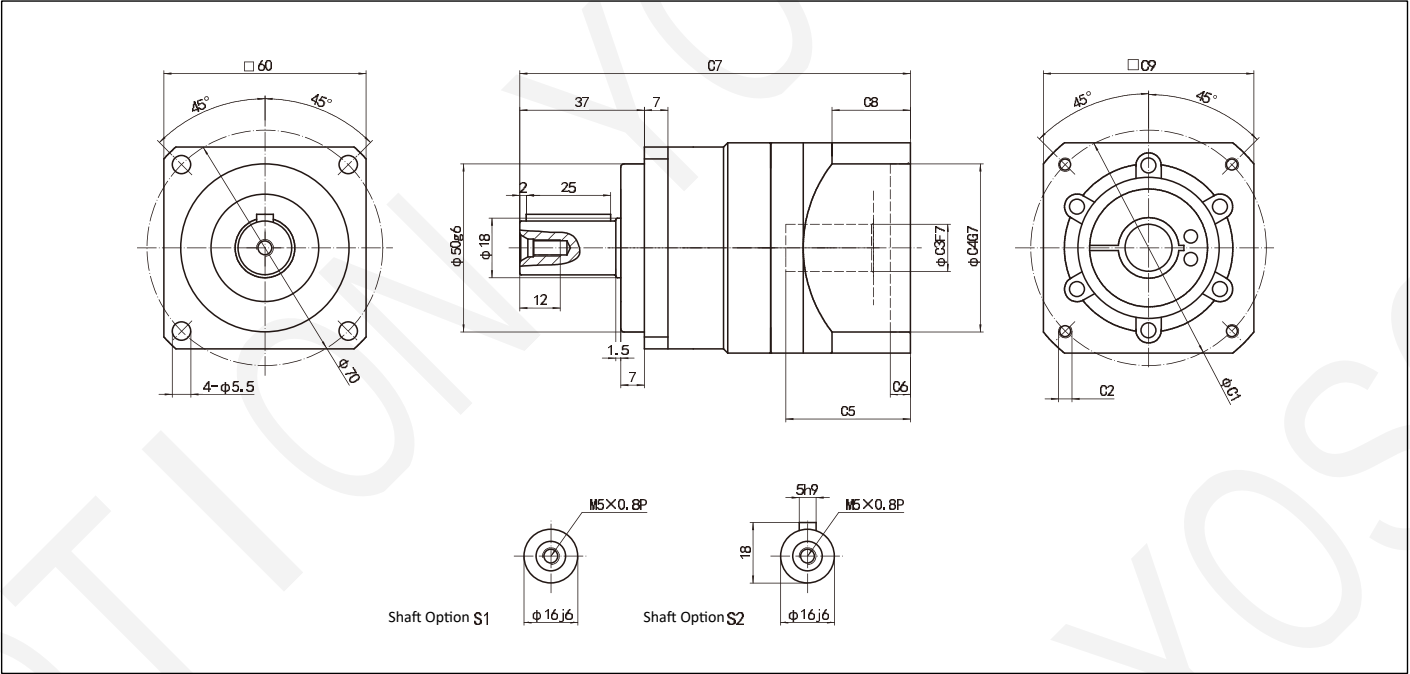
Model	Unit	Stage	Ratio	ZPF060	ZPF090	ZPF120
Rated output torqueT _{2N}	Nm	1	3	35	130	208
			4	50	140	290
			5	60	160	330
			6	55	150	310
			7	50	140	300
			8	45	120	260
			10	40	100	230
			12	55	160	290
		2	15	55	140	208
			16	55	140	208
			20	50	140	290
			25	60	160	330
			30	55	150	310
			35	50	140	300
			40	45	120	260
			50	60	160	330
			60	55	150	310
			70	50	140	300
			80	45	120	260
			100	40	100	230
Emergency stop torque T _{2NOT}	Nm	1,2	3-100	Triple rated output torque		
Rated input speed η _{1N}	rpm	1,2	3-100	5000	4000	4000
Maximum input speed η _{1B}		1,2	3-100	10000	8000	8000
Precision backlashP ₁	arcmin	1	3-10	≤5	≤5	≤5
		2	12-100	≤8	≤8	≤8
Torsional rigidity	Nm/arcmin	1,2	3-100	7	14	25
Allowable radial force F _{2aB}	N	1,2	3-100	1530	3250	6700
Allowable axial force F _{2aB}	N	1,2	3-100	765	1625	3350
Sevice life	hrs	1,2	3-100	20000		
Efficiency	%	1	3-10	≥97%		
		2	12-100	≥94%		
Gross weight	kg	1	3-10	1.3	3.7	7.8
		2	12-100	1.5	4.1	9
Working temperature	℃	1,2	3-100	-10℃~90℃		
Lubricating		1,2	3-100	Synthetic lubricating grease		
IP Grade		1,2	3-100	IP65		
Installation direction		1,2	3-100	In any direction		
Noise level (η ₁ =3000rpm,off load)	dB	1,2	3-100	≤63	≤65	≤68

YOSO MOTION Planetary Gear Reducer

Helical Tooth with Moment of Inertia

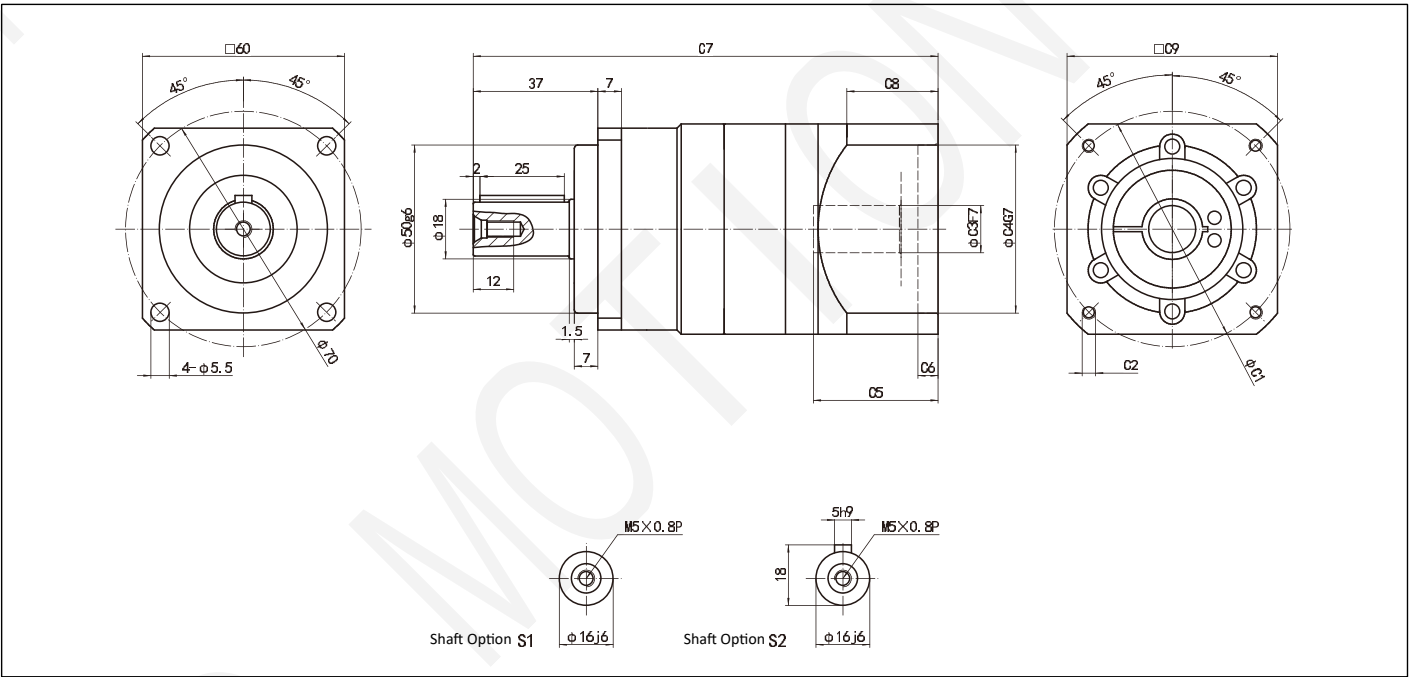
Model	Unit	Stage	Ratio	ZPF060	ZPF090	ZPF120
Moment of Inertia J ₁	kg.cm ²	1	3	0.16	0.61	3.25
			4	0.14	0.48	2.74
			5	0.13	0.47	2.71
			6	0.13	0.45	2.65
			7	0.13	0.45	2.62
			8	0.13	0.44	2.58
			10	0.13	0.44	2.57
		2	12	0.03	0.13	0.47
			15	0.03	0.13	0.47
			16	0.03	0.13	0.47
			20	0.03	0.13	0.47
			25	0.03	0.13	0.47
			30	0.03	0.13	0.47
			35	0.03	0.13	0.44
			40	0.03	0.13	0.44
			50	0.03	0.13	0.44
			60	0.03	0.13	0.44
			70	0.03	0.13	0.44
			80	0.03	0.13	0.44
			100	0.03	0.13	0.44

ZPF-060-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPF-060-L2 Profile



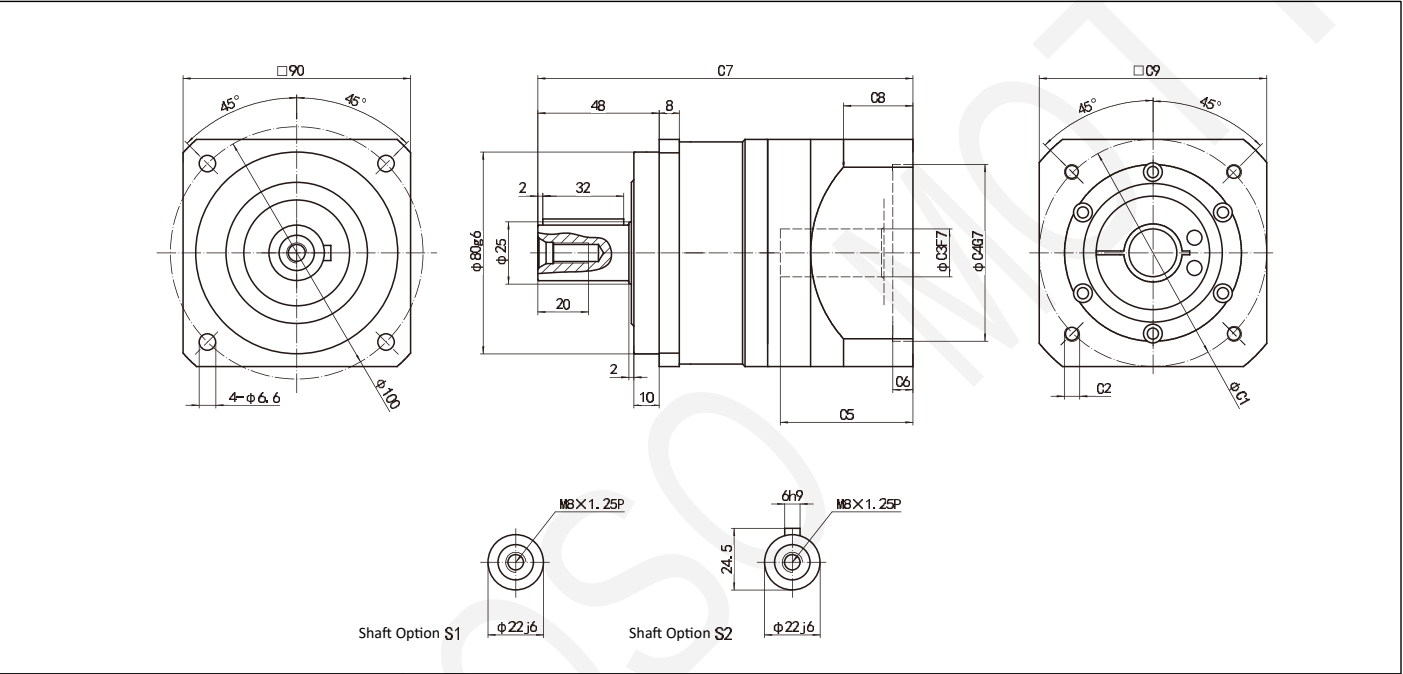
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPF-060-L1	70	4-M4×10	≤14/≤16	50	37	6	116	23	62.5
ZPF-060-L2	70	4-M4×10	≤14/≤16	50	37	6	139	23	62.5

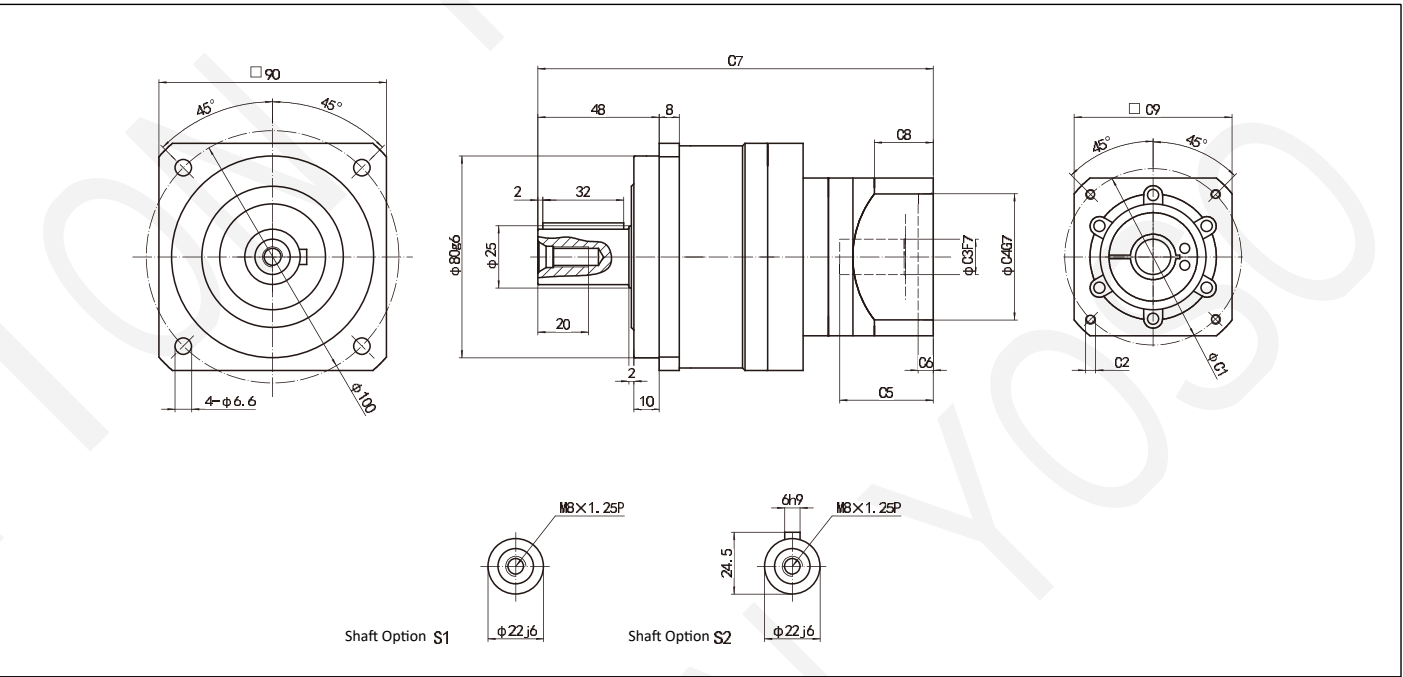
YOSO MOTION Planetary Gear Reducer

ZPF-090-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPF-090-L2 Profile

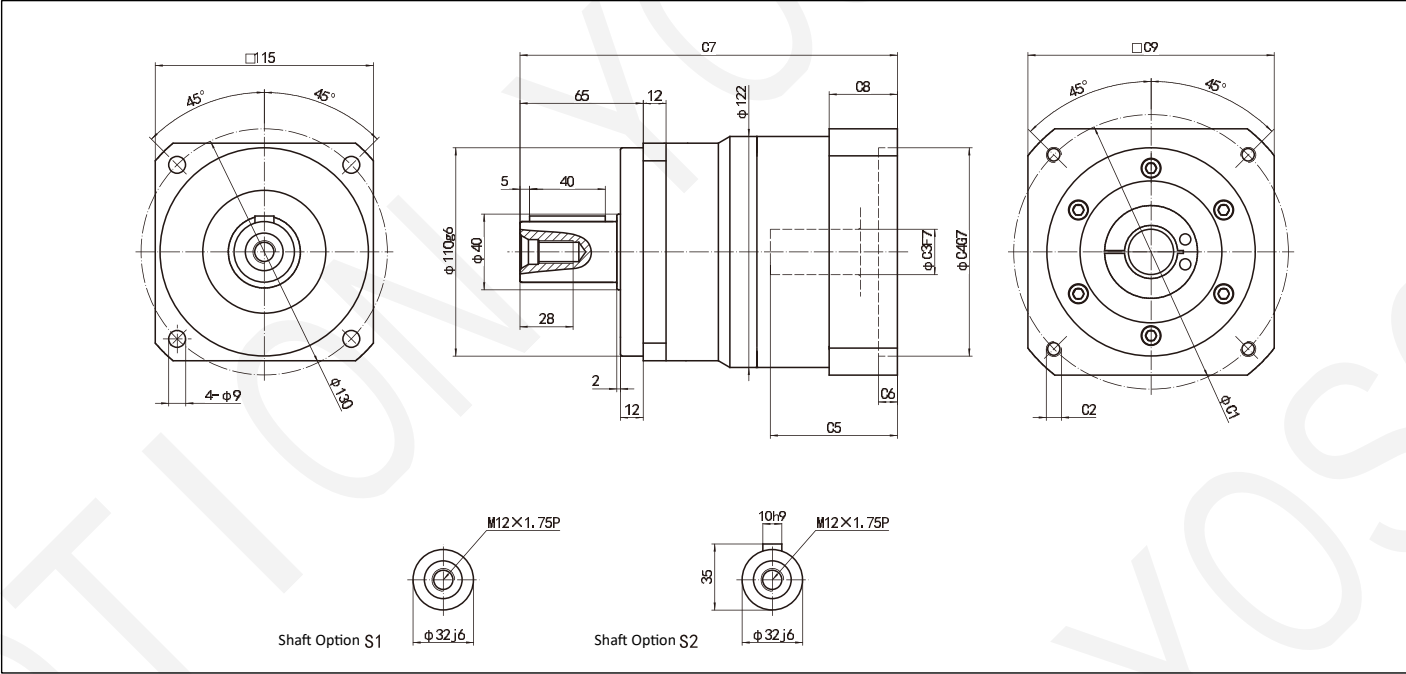


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

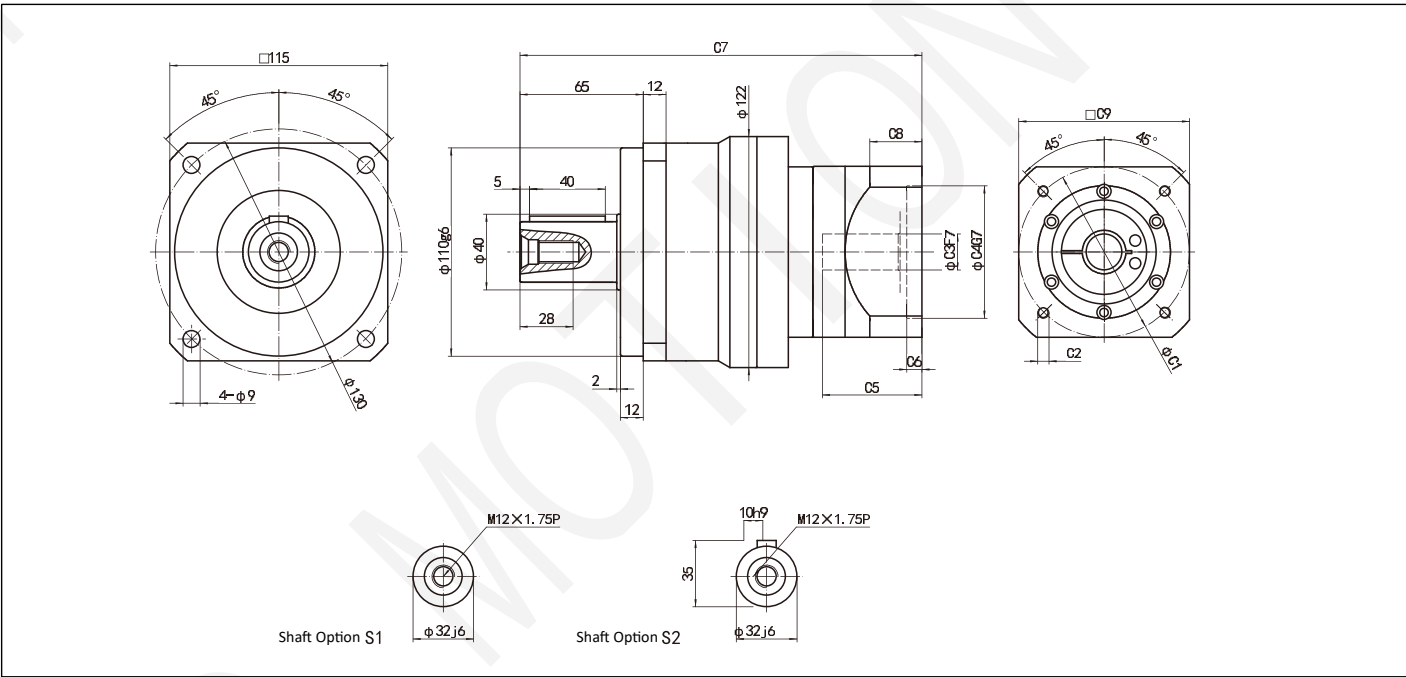
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPF-090-L1	90	4-M5×12	≤19/≤24	70	50	8	148.5	27.5	90
ZPF-090-L2	70	4-M4×10	≤16	50	37	8	156.5	23	62.5

ZPF-120-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPF-120-L2 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPF-120-L1	145	4-M8×20	≤35	110	60	8	198.5	35	130
ZPF-120-L2	90	4-M5×12	≤24	70	50	8	212.5	27.5	90

ZPFR SERIES



FUTURE

- Small backlash
- High torque
- High efficiency
- Low noise
- Easy installation
- Maintenance-free grease lubrication
- Transmission diversity



ZPFR Series Performance Table

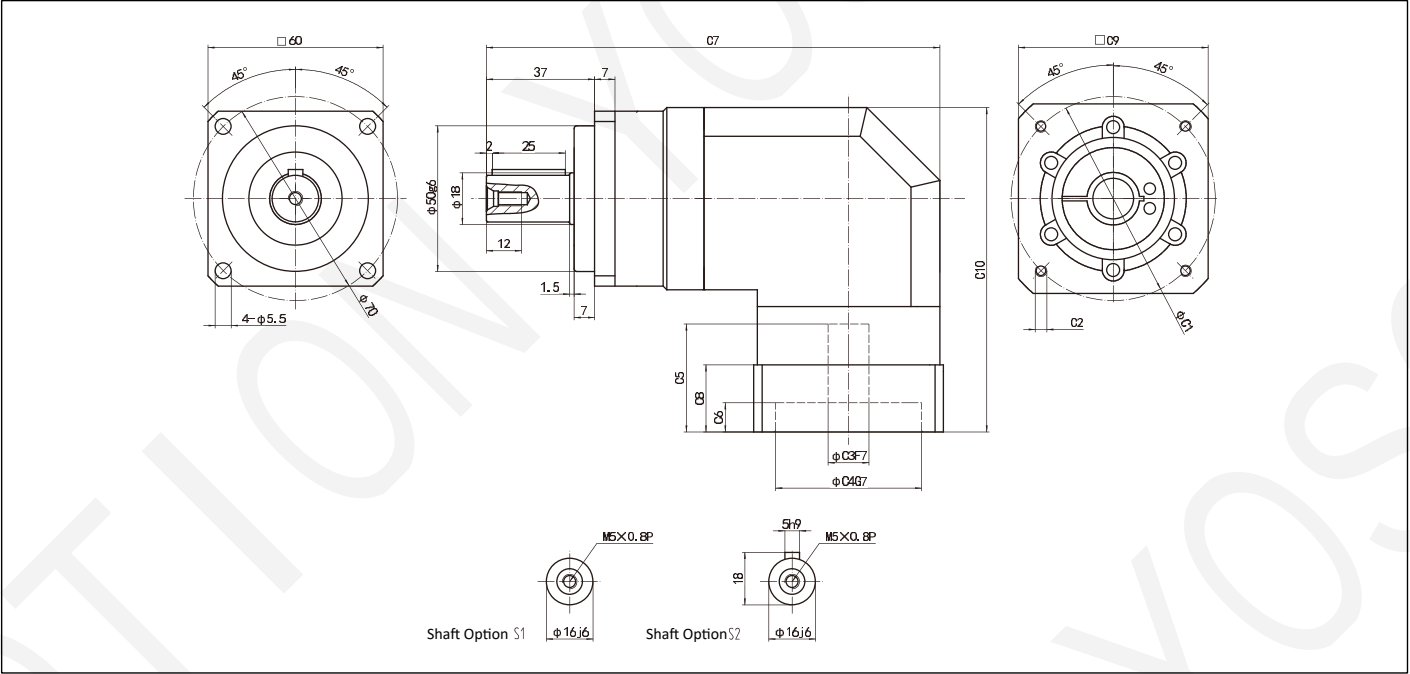
Model	Unit	Stage	Ratio	ZPFR060	ZPFR090	ZPFR120
Rated output torqueT _{2N}	Nm	1	3	35	130	208
			4	50	140	290
			5	60	160	330
			6	55	150	310
			7	50	140	300
			8	45	120	260
			10	40	100	230
			12	55	160	290
		2	15	55	140	208
			16	55	140	208
			20	50	140	290
			25	60	160	330
			30	55	150	310
			35	50	140	300
			40	45	120	260
			50	60	160	330
			60	55	150	310
			70	50	140	300
			80	45	120	260
			100	40	100	230
Emergency stop torque T _{2NOT}	Nm	1,2	3-100	Triple rated output torque		
Rated input speed η _{1N}	rpm	1,2	3-100	5000	4000	4000
Maximum input speed η _{1B}		1,2	3-100	10000	8000	8000
Precision backlashP ₁	arcmin	1	3-10	≤7	≤7	≤7
		2	12-100	≤9	≤9	≤9
Torsional rigidity	Nm/arcmin	1,2	3-100	7	14	25
Allowable radial force F _{2aB}	N	1,2	3-100	1530	3250	6700
Allowable axial force F _{2aB}	N	1,2	3-100	765	1625	3350
Sevice life	hrs	1,2	3-100	20000		
Efficiency	%	1	3-10	≥95%		
		2	12-100	≥92%		
Gross weight	kg	1	3-10	2.1	5.4	
		2	12-100	2.7	6.5	
Working temperature	℃	1,2	3-100	-10℃~90℃		
Lubricating		1,2	3-100	Synthetic lubricating grease		
IP Grade		1,2	3-100	IP65		
Installation direction		1,2	3-100	In any direction		
Noise level (η ₁ =3000rpm,off load)	dB	1,2	3-100	≤65	≤67	≤70

YOSO MOTION Planetary Gear Reducer

Helical Tooth with Moment of Inertia

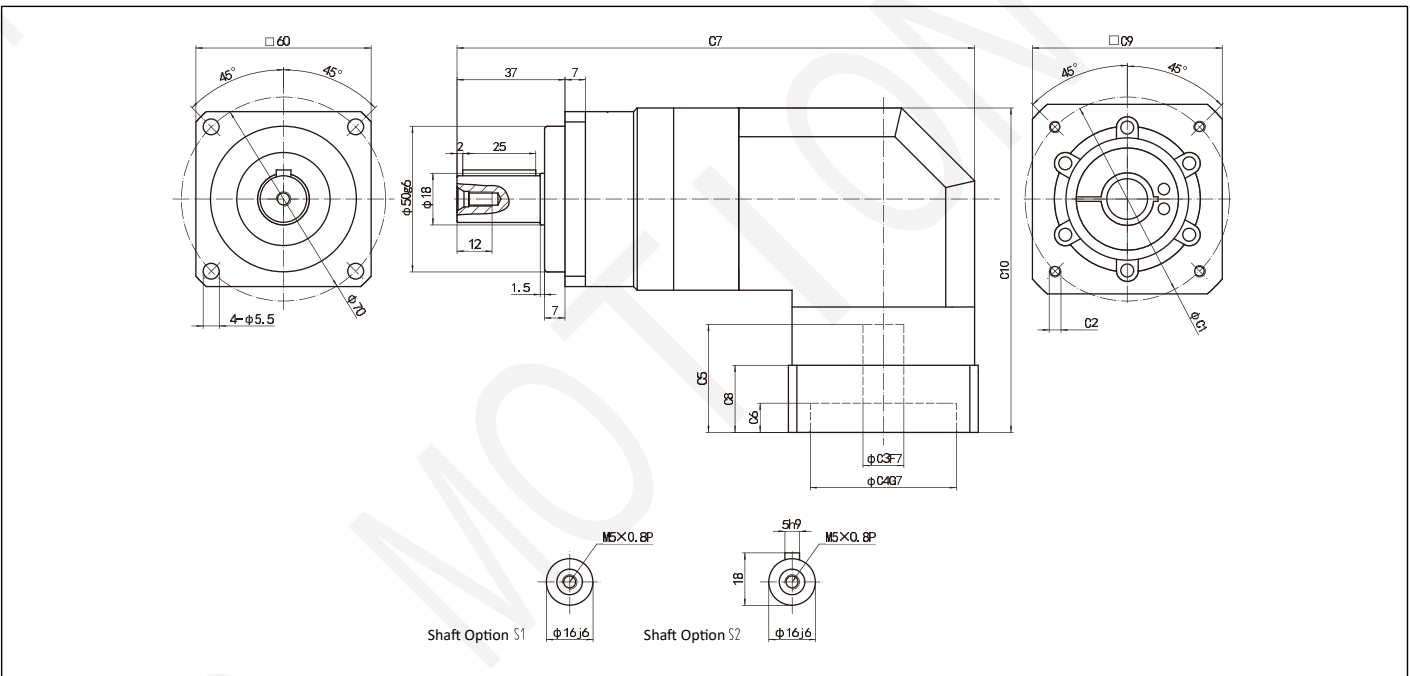
Model	Unit	Stage	Ratio	ZPFR060	ZPFR090	ZPFR120
Moment of Inertia J ₁	kg.cm ²	1	3	0.16	0.61	3.25
			4	0.14	0.48	2.74
			5	0.13	0.47	2.71
			6	0.13	0.45	2.65
			7	0.13	0.45	2.62
			8	0.13	0.44	2.58
			10	0.13	0.44	2.57
		2	12	0.03	0.13	0.47
			15	0.03	0.13	0.47
			16	0.03	0.13	0.47
			20	0.03	0.13	0.47
			25	0.03	0.13	0.47
			30	0.03	0.13	0.47
			35	0.03	0.13	0.44
			40	0.03	0.13	0.44
			50	0.03	0.13	0.44
			60	0.03	0.13	0.44
			70	0.03	0.13	0.44
			80	0.03	0.13	0.44
			100	0.03	0.13	0.44

ZPFR-060-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPFR-060-L2 Profile



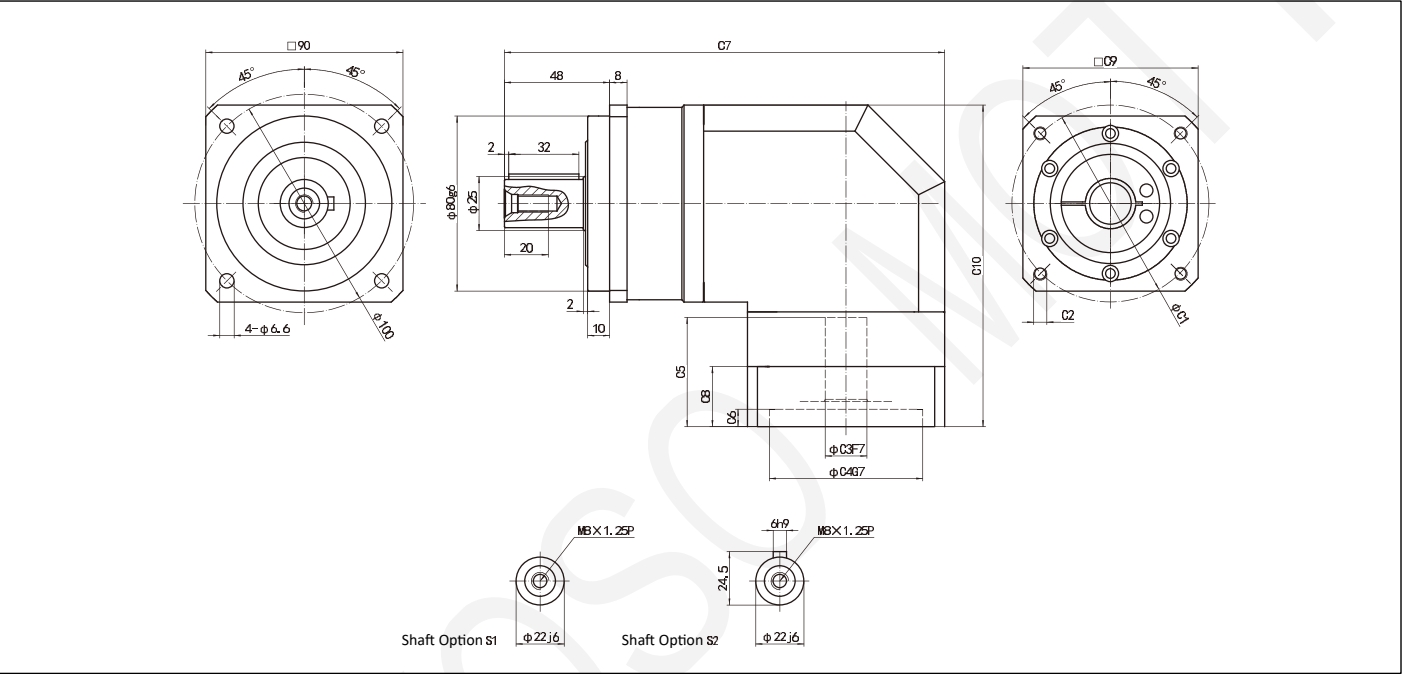
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPFR-060-L1	70	4-M4×10	≤14/≤16	50	37	8	151	23	65	110
ZPFR-060-L2	70	4-M4×10	≤14/≤16	50	37	8	174	23	65	117.5

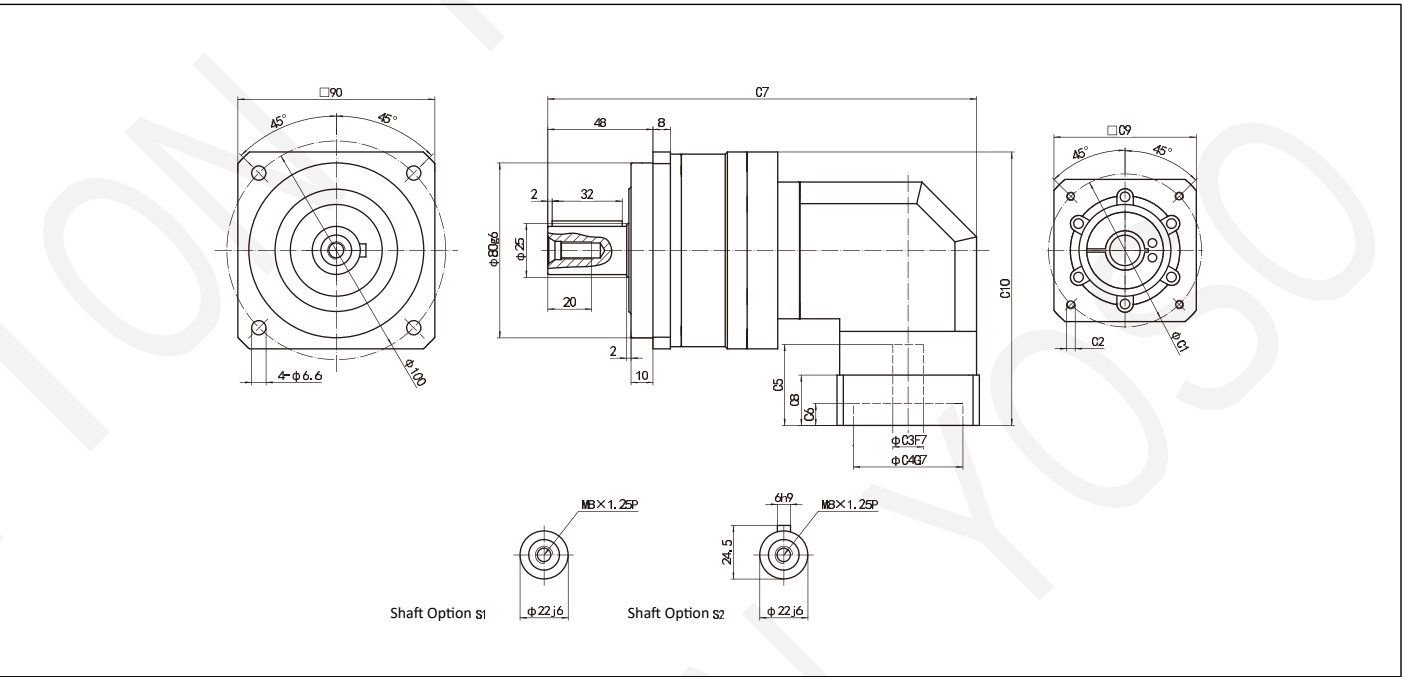
YOSO MOTION Planetary Gear Reducer

● ZPFR-090-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

● ZPFR-090-L2 Profile

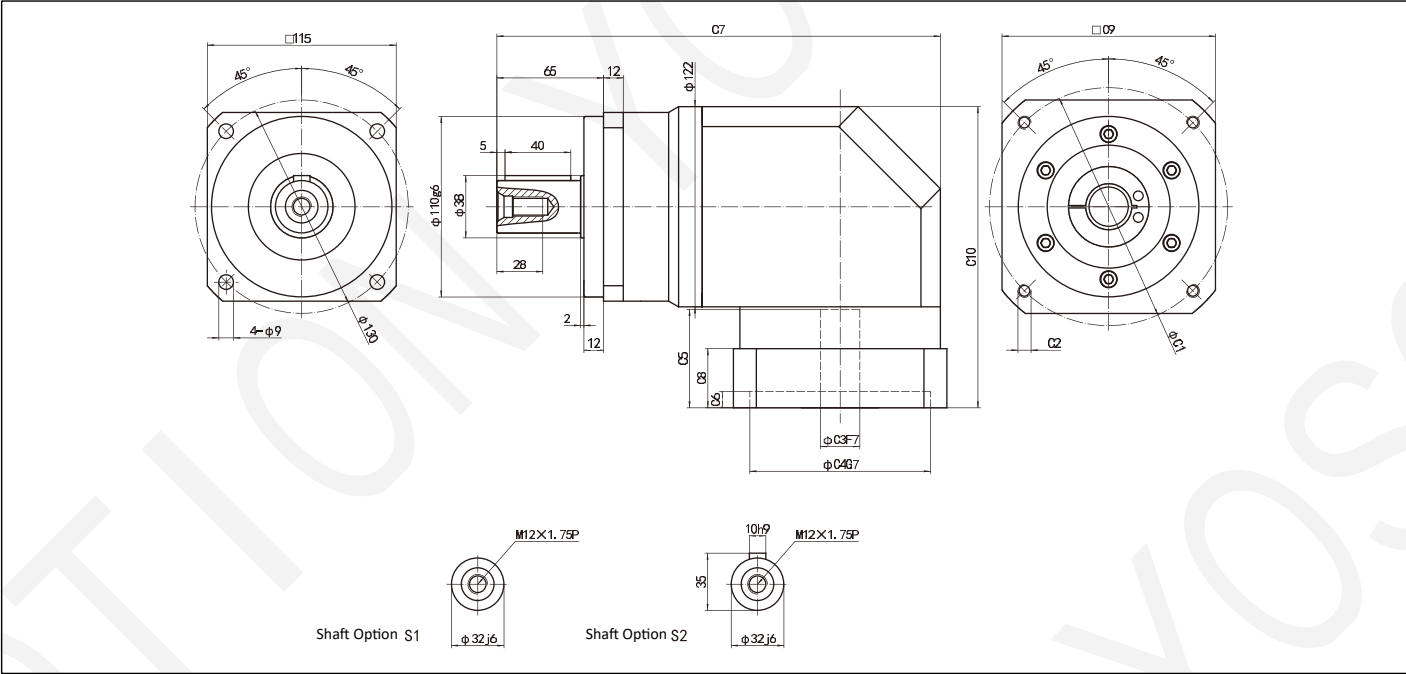


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

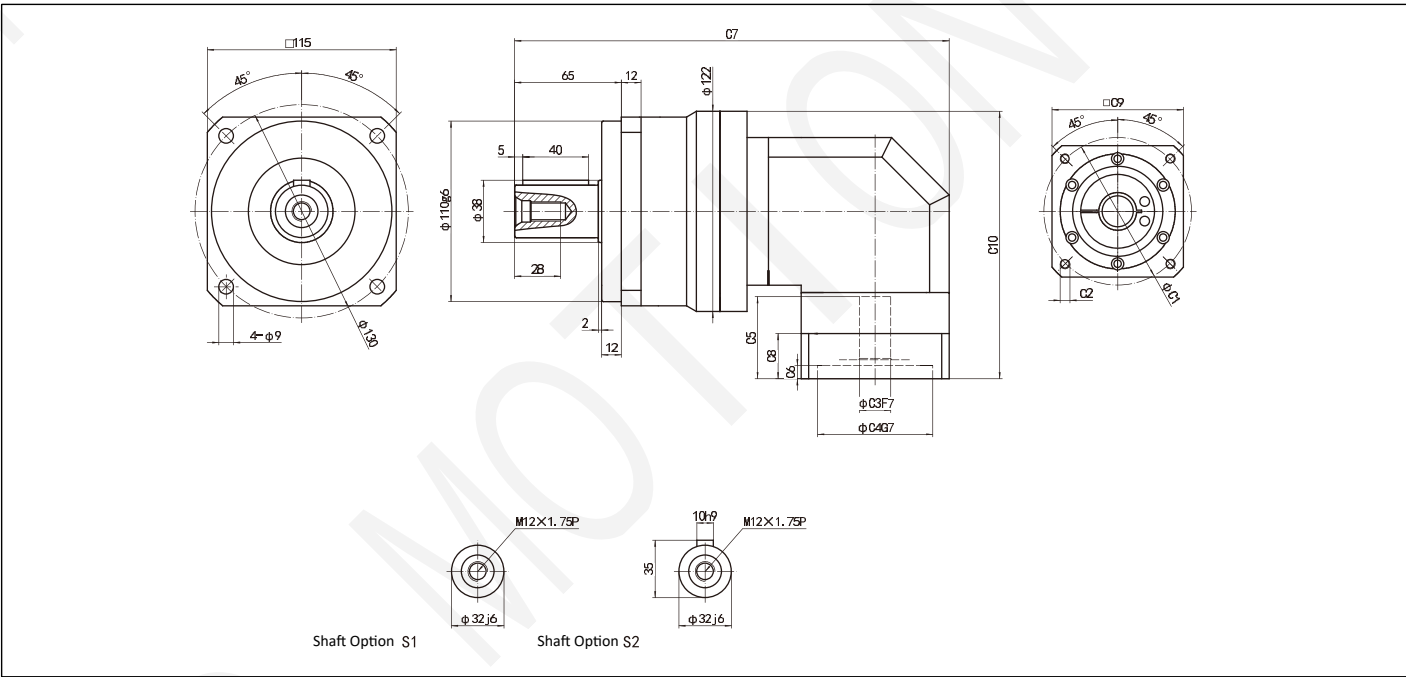
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPFR-090-L1	90	4-M5×12	≤19/≤24	70	50	8	201.5	27.5	90	142.5
ZPFR-090-L2	70	4-M4×10	≤16	50	37	8	196	23	62.5	125

● ZPFR-120-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

● ZPFR-120-L2 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPFR-120-L1	145	4-M8×20	≤35	110	60	8	270	35	130	192
ZPFR-120-L2	90	4-M5×12	≤24	70	50	8	264.5	27.5	90	157.5

ZPE SERIES



FUTURE

- Small backlash
- High torque
- High efficiency
- Low noise
- Easy installation
- Maintenance-free grease lubrication

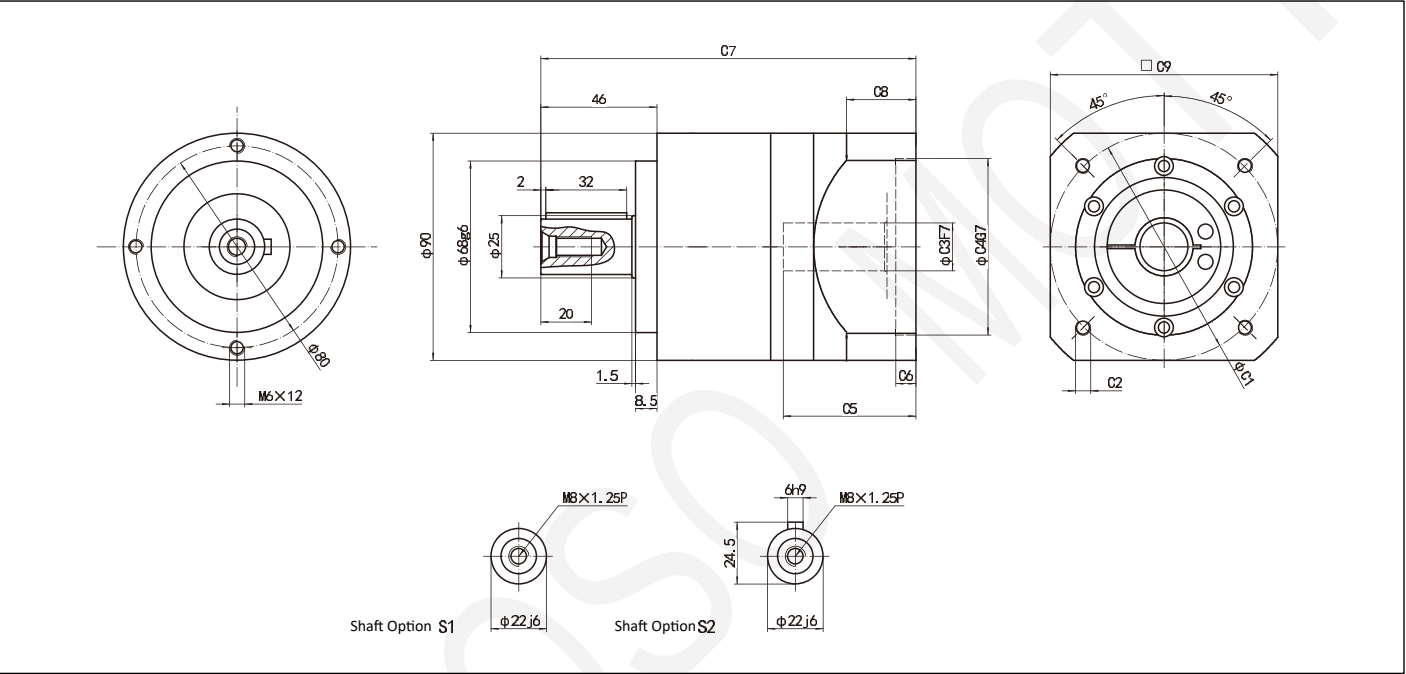


ZPE Series Performance Table

Model	Unit	Stage	Ratio	ZPE060	ZPE090	ZPE120
Rated output torqueT _{2N}	Nm	1	3	35	130	208
			4	50	140	290
			5	60	160	330
			6	55	150	310
			7	50	140	300
			8	45	120	260
			10	40	100	230
			12	55	160	290
		2	15	55	140	208
			16	55	140	208
			20	50	140	290
			25	60	160	330
			30	55	150	310
			35	50	140	300
			40	45	120	260
			50	60	160	330
			60	55	150	310
			70	50	140	300
			80	45	120	260
			100	40	100	230
Emergency stop torque T _{2NOT}	Nm	1,2	3-100	Triple rated output torque		
Rated input speed η_{1N}	rpm	1,2	3-100	5000	4000	4000
Maximum input speed η_{1B}		1,2	3-100	10000	8000	8000
Precision backlashP ₁	arcmin	1	3-10	≤5	≤5	≤5
		2	12-100	≤8	≤8	≤8
Torsional rigidity	Nm/arcmin	1,2	3-100	7	14	25
Allowable radial force F _{2aB}	N	1,2	3-100	1530	3250	6700
Allowable axial force F _{2aB}	N	1,2	3-100	765	1625	3350
Sevice life	hrs	1,2	3-100	20000		
Efficiency	%	1	3-10	≥97%		
		2	12-100	≥94%		
Gross weight	kg	1	3-10	1.3	3.7	7.8
		2	12-100	1.5	4.1	9
Working temperature	℃	1,2	3-100	-10℃~90℃		
Lubricating		1,2	3-100	Synthetic lubricating grease		
IP Grade		1,2	3-100	IP65		
Installation direction		1,2	3-100	In any direction		
Noise level ($\eta_1=3000rpm, off\ load$)	dB	1,2	3-100	≤63	≤65	≤68

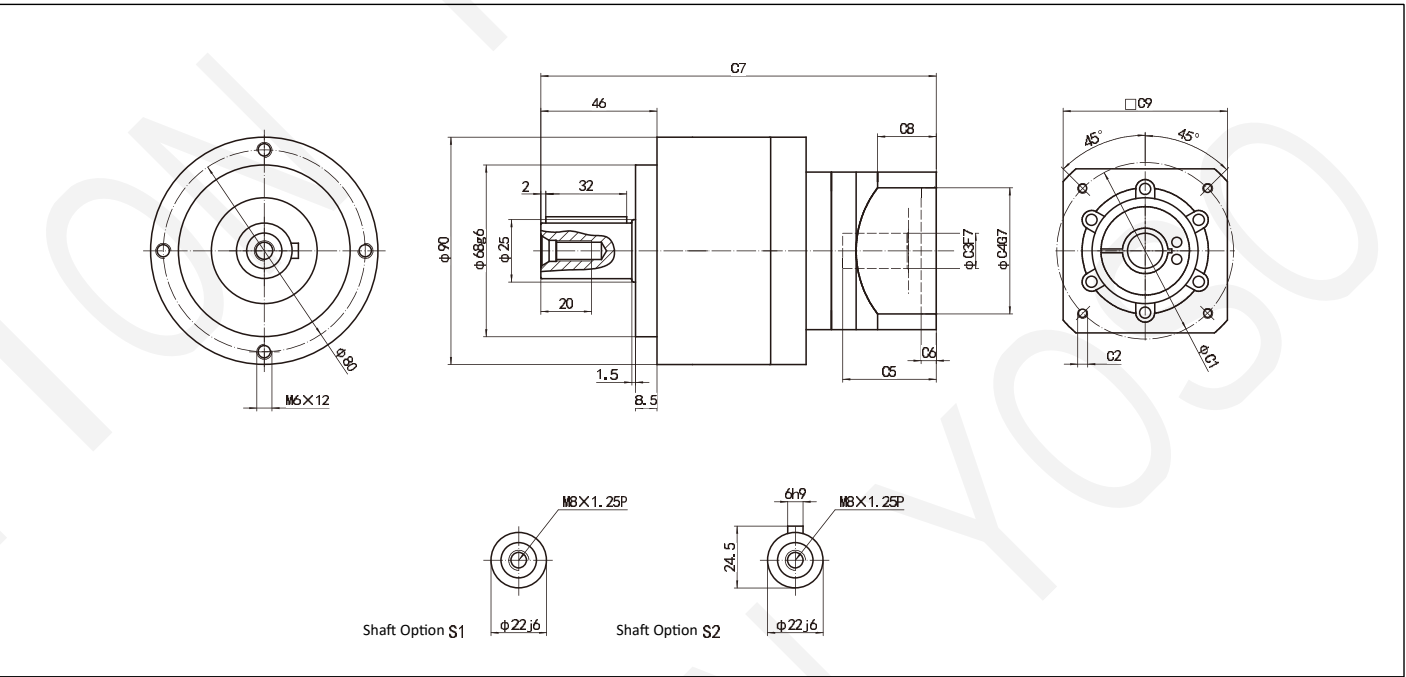
YOSO MOTION Planetary Gear Reducer

ZPE-090-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPE-090-L2 Profile

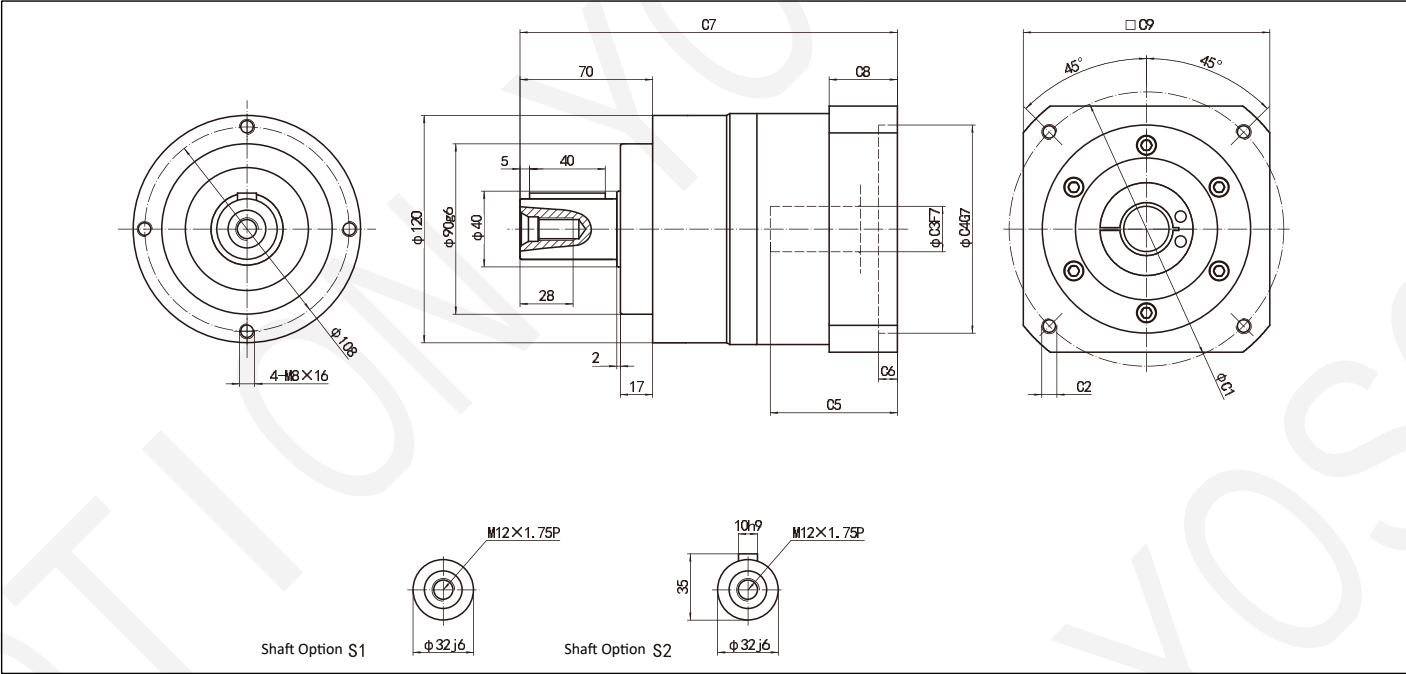


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

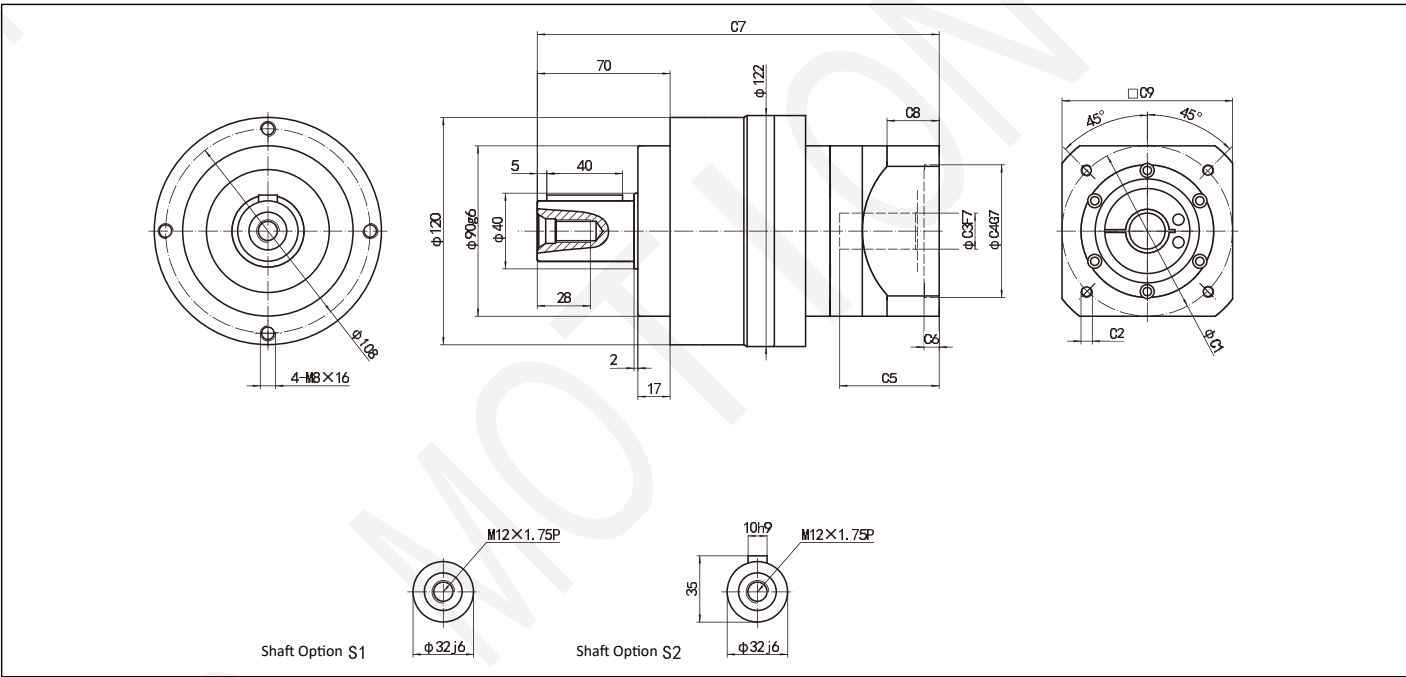
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPE-090-L1	90	4-M5×12	≤19/≤24	70	50	8	148.5	27.5	90
ZPE-090-L2	70	4-M4×10	≤16	50	37	8	156.5	23	62.5

ZPE-120-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPE-120-L2 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
ZPE-120-L1	145	4-M8×20	≤35	110	60	8	198.5	35	130
ZPE-120-L2	90	4-M5×12	≤24	70	50	8	212.5	27.5	90

ZPER SERIES



ZPER Series Performance Table

Model	Unit	Stage	Ratio	ZPER060	ZPER090	ZPER120
Rated output torqueT _{2N}	Nm	1	3	35	130	208
			4	50	140	290
			5	60	160	330
			6	55	150	310
			7	50	140	300
			8	45	120	260
			10	40	100	230
			12	55	160	290
		2	15	55	140	208
			16	55	140	208
			20	50	140	290
			25	60	160	330
			30	55	150	310
			35	50	140	300
			40	45	120	260
			50	60	160	330
			60	55	150	310
			70	50	140	300
			80	45	120	260
			100	40	100	230
Emergency stop torque T _{2NOT}	Nm	1,2	3-100	Triple rated output torque		
Rated input speed η_{1N}	rpm	1,2	3-100	5000	4000	4000
Maximum input speed η_{1B}		1,2	3-100	10000	8000	8000
Precision backlashP ₁	arcmin	1	3-10	≤7	≤7	≤7
		2	12-100	≤9	≤9	≤9
Torsional rigidity	Nm/arcmin	1,2	3-100	7	14	25
Allowable radial force F _{2aB}	N	1,2	3-100	1530	3250	6700
Allowable axial force F _{2aB}	N	1,2	3-100	765	1625	3350
Sevice life	hrs	1,2	3-100	20000		
Efficiency	%	1	3-10	≥95%		
		2	12-100	≥92%		
Gross weight	kg	1	3-10	2.1	5.4	11.5
		2	12-100	2.7	6.5	12.5
Working temperature	°C	1,2	3-100	-10°C~90°C		
Lubricating		1,2	3-100	Synthetic lubricating grease		
IP Grade		1,2	3-100	IP65		
Installation direction		1,2	3-100	In any direction		
Noise level ($\eta_1=3000rpm, off\ load$)	dB	1,2	3-100	≤65	≤67	≤70

FUTURE

- Small backlash
- High torque
- High efficiency
- Low noise
- Easy installation
- Maintenance-free grease lubrication
- Transmission diversity

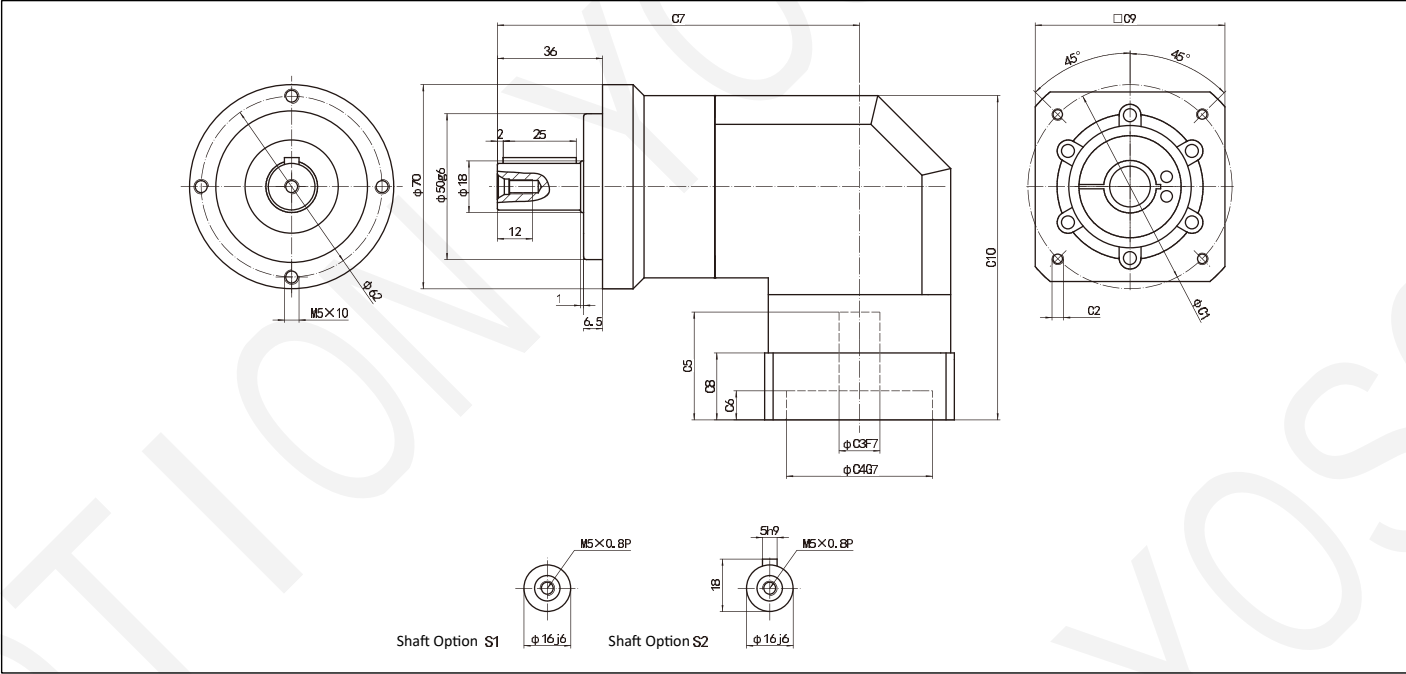


YOSO MOTION Planetary Gear Reducer

Helical Tooth with Moment of Inertia

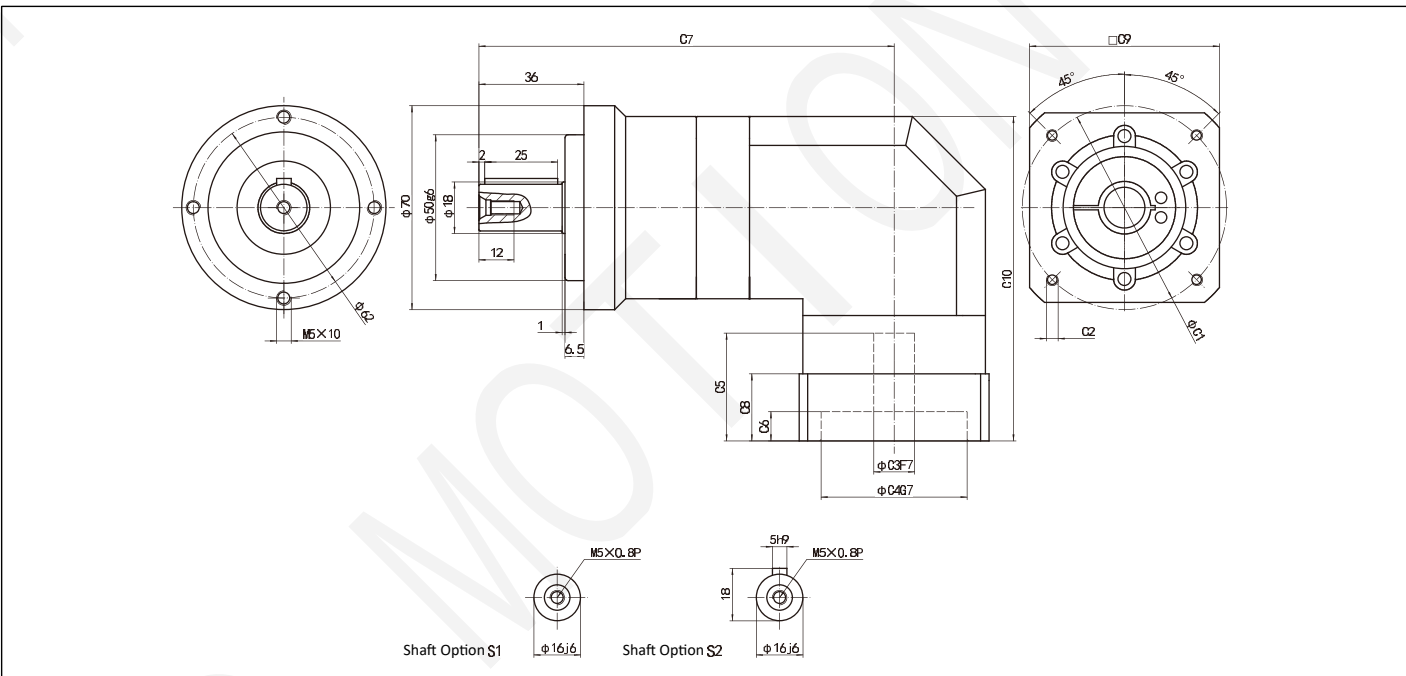
Model	Unit	Stage	Ratio	ZPER060	ZPER090	ZPER120
Moment of Inertia J ₁	kg.cm ²	1	3	0.16	0.61	3.25
			4	0.14	0.48	2.74
			5	0.13	0.47	2.71
			6	0.13	0.45	2.65
			7	0.13	0.45	2.62
			8	0.13	0.44	2.58
			10	0.13	0.44	2.57
		2	12	0.03	0.13	0.47
			15	0.03	0.13	0.47
			16	0.03	0.13	0.47
			20	0.03	0.13	0.47
			25	0.03	0.13	0.47
			30	0.03	0.13	0.47
			35	0.03	0.13	0.44
			40	0.03	0.13	0.44
			50	0.03	0.13	0.44
			60	0.03	0.13	0.44
			70	0.03	0.13	0.44
			80	0.03	0.13	0.44
			100	0.03	0.13	0.44

ZPER-060-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPER-060-L2 Profile



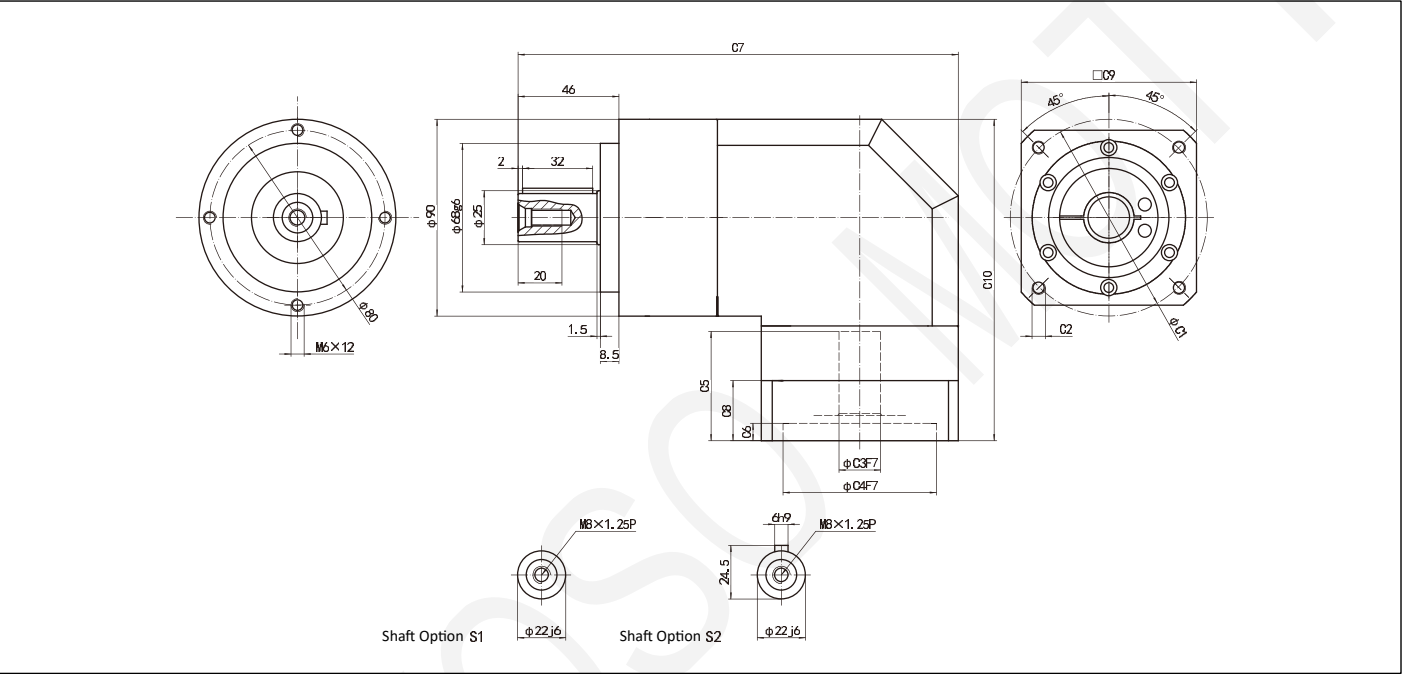
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPER-060-L1	70	4-M4×10	≤14/≤16	50	37	8	151	23	65	110
ZPER-060-L2	70	4-M4×10	≤14/≤16	50	37	8	174	23	65	117.5

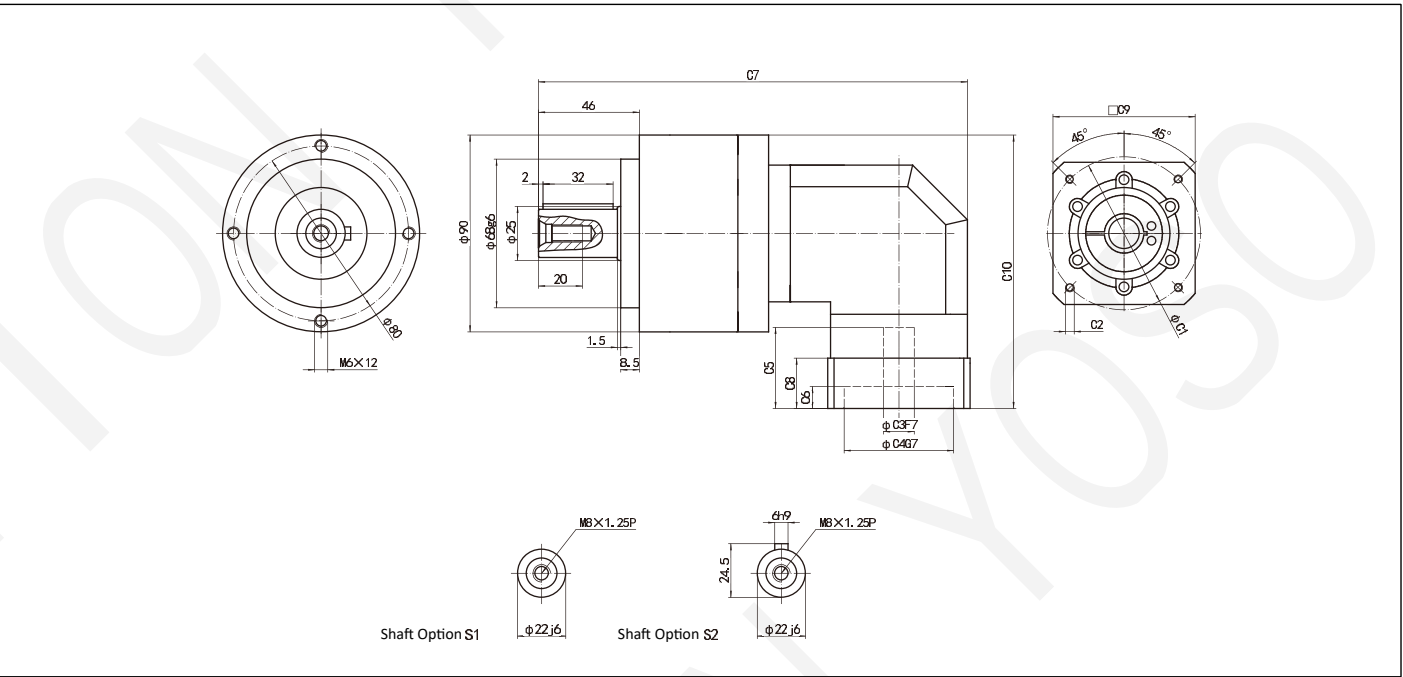
YOSO MOTION Planetary Gear Reducer

ZPER-090-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPER-090-L2 Profile

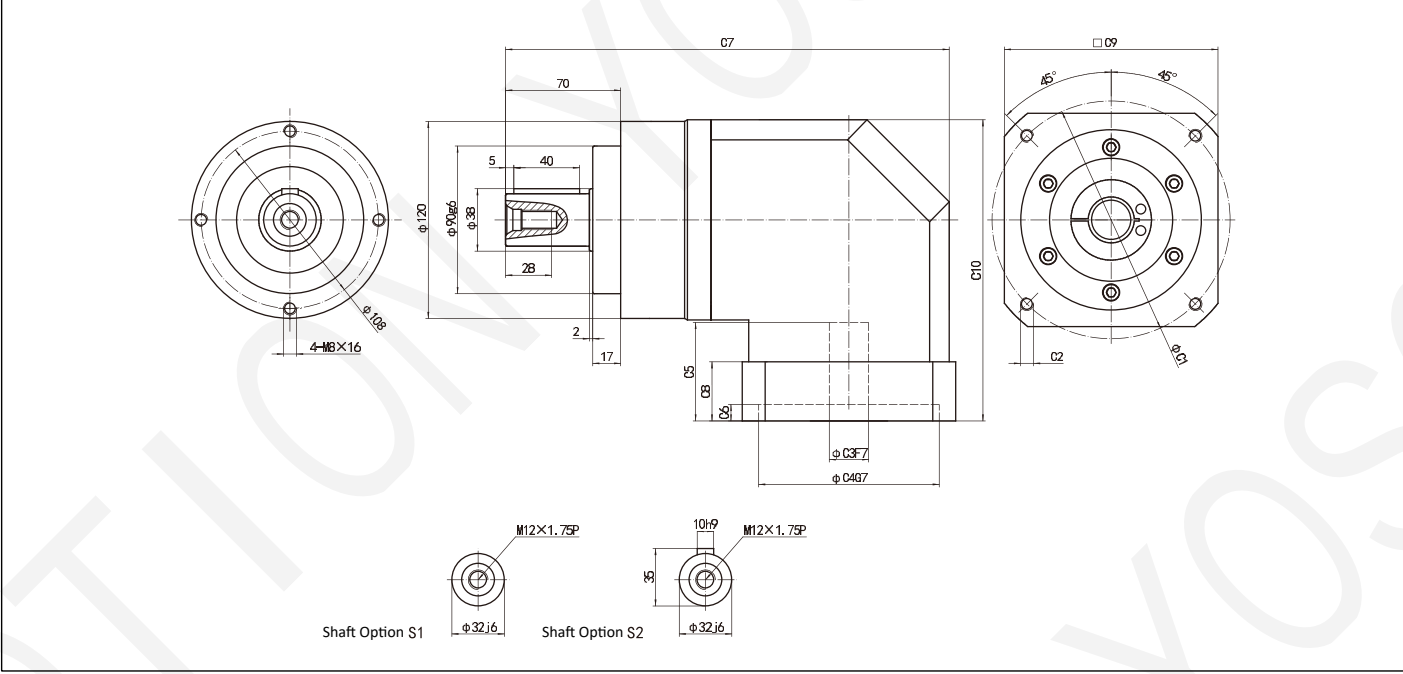


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

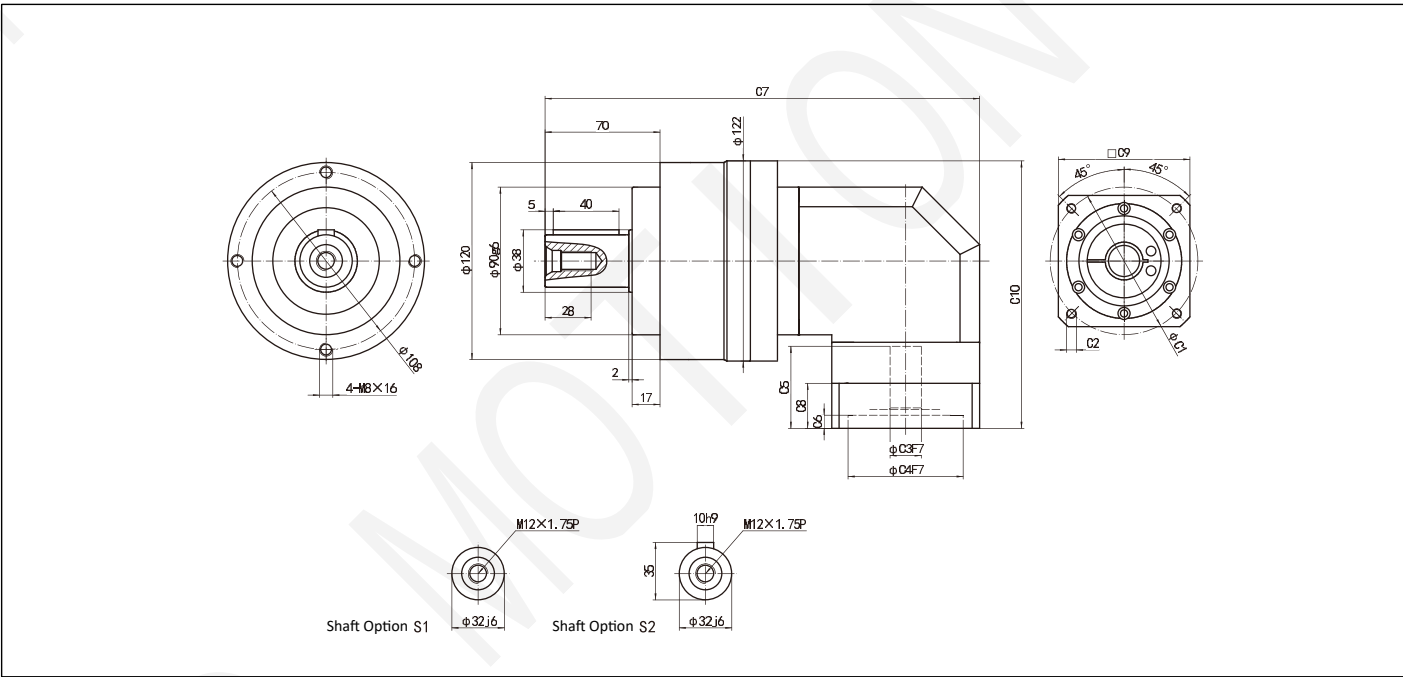
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPER-090-L1	90	4-M5×12	≤19/≤24	70	50	8	201.5	27.5	90	142.5
ZPER-090-L2	70	4-M4×10	≤16	50	37	8	199.5	23	62.5	125.5

ZPER-120-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

ZPER-120-L2 Profile



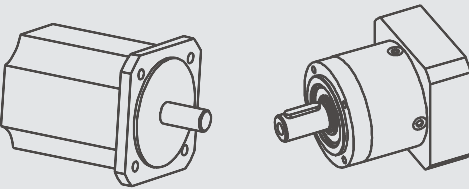
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

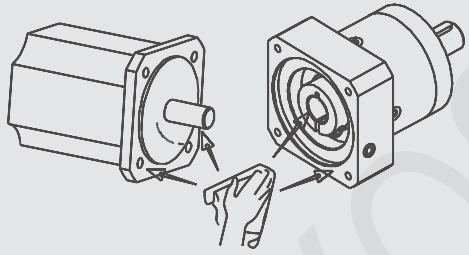
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ZPER-120-L1	145	4-M8×20	≤35	110	60	8	270	35	130	192
ZPER-120-L2	90	4-M5×12	≤24	70	50	8	264.5	27.5	90	157.5

Helical Teeth Series Assembly Guide

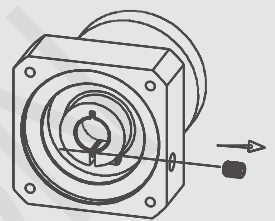
● B5 Motor Direct Coupling Type



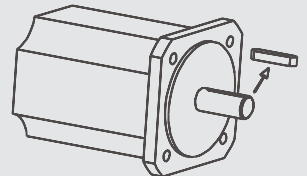
1.Is the motor correct? Is the reducer correct?



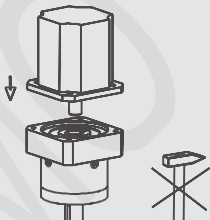
2.Check if the motor and reducer are in good condition. Clean the connection between the motor shaft and the reducer.



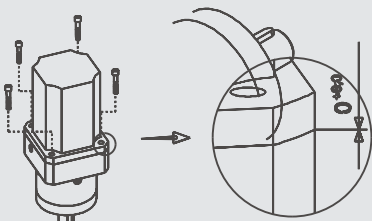
3.Unscrew the sealing screw on the outer side of the reducer to adjust the clamping screws.



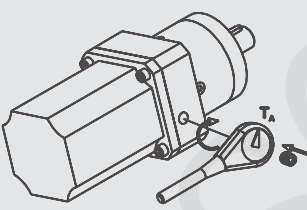
4.Remove the motor shaft key.



5.Unscrew the clamping screw. If the motor shaft is smaller than the input hole diameter, please use the matching one. Then assemble the matching motor and reducer in the vertical direction.

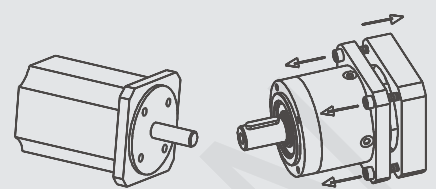


6.Connect the reducer flange to the motor flange and tighten the positioning bolts diagonally.

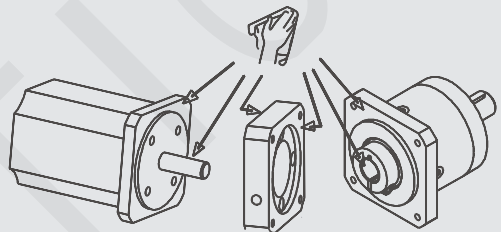


7.Use a torque wrench (TA) to tighten the clamping ring, then tighten the sealing screw.

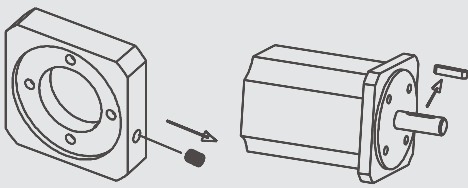
● B14 Motor Direct Coupling Type



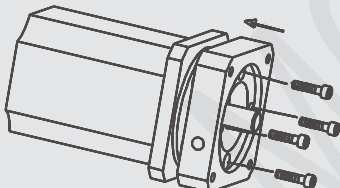
1.Is the motor correct? Is the reducer correct?



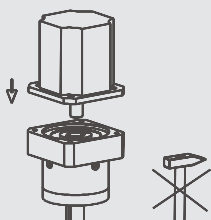
2.Check if the motor and reducer are in good condition. Clean the connection between the motor shaft and the reducer.



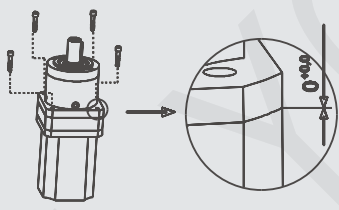
3.Unscrew the sealing screw on the outer side of the reducer to adjust the clamping screws, and remove the motor shaft key.



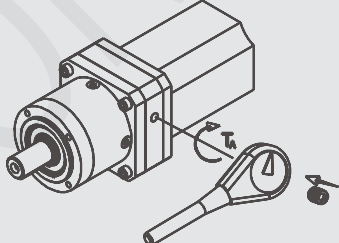
4.Mount the connecting flange onto the motor.



5.Unscrew the clamping screw. If the motor shaft is smaller than the input hole diameter, please use the matching one. Then assemble the matching motor and reducer in the vertical direction.



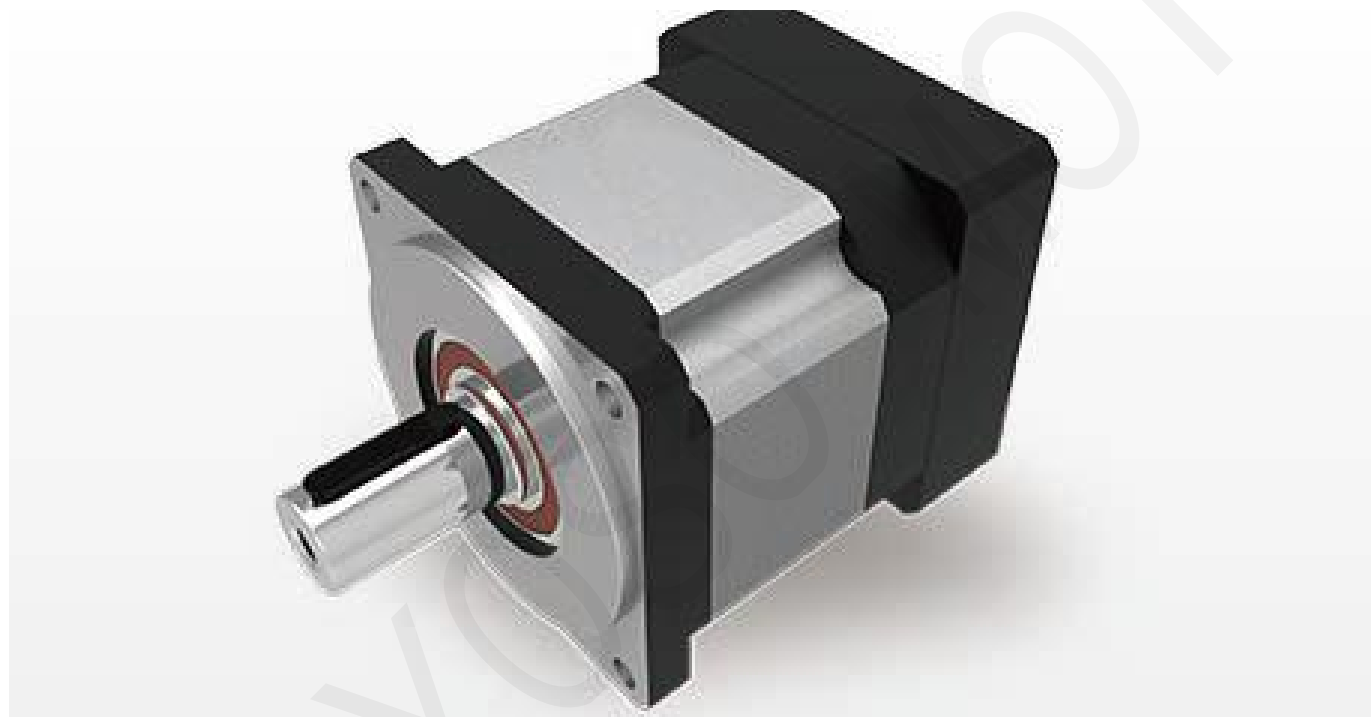
6.Connect the reducer flange to the motor flange and tighten the positioning bolts diagonally.



7.Use a torque wrench (TA) to tighten the clamping ring, then tighten the sealing screw.

Model	40		60	80/90	120/115	142/180
Shaft diameter	≤8	>8	≤14	≤19	≤24	≤35
TA(Nm)	2	4.5	4.5	9.5	16.5	40
SW(Nm)	2.5	3	3	4	5	6

ZB SERIES



ZB Series Performance Table

Model	Unit	Stage	Ratio	ZB042	ZB060	ZB090	ZB115	ZB142	ZB190	ZB240	ZB280	ZB330
Rated output torqueT _{2N}	Nm	1	3	9	20	50	140	310	1050	1600	—	—
			4	18	35	90	240	605	1780	3500	5800	10190
			5	16	32	70	240	605	1345	2640	4400	7180
			7	—	—	50	100	320	—	—	—	—
			8	9	20	50	90	300	750	1480	2595	4080
			10	7	15	35	90	250	500	—	—	—
		2	9	9	25	50	140	340	1050	1840	—	—
			12	18	25	50	140	340	1030	1840	4400	10000
			15	16	25	50	140	340	1485	1840	5200	8800
			16	20	40	100	260	680	2035	3710	6400	10800
			20	20	40	100	260	680	2035	3710	6400	10800
			25	20	35	80	260	680	1485	2805	4710	7550
			32	20	40	100	260	680	2035	3710	6400	10800
			40	20	35	80	260	680	2035	2805	4710	7550
			50	20	35	80	260	680	1485	2805	—	—
			64	20	20	41	—	—	—	1500	2650	4500
		3	60	—	35	60	260	450	2590	1950	6400	10800
			64	25	44	110	260	680	2590	3950	8130	13700
			80	25	44	110	260	680	2590	3950	8130	13700
			100	25	44	110	260	680	2590	3950	8130	13700
			120	—	25	60	260	450	1450	1950	5800	9800
			125	25	30	90	260	680	1850	3000	6030	9800
			160	25	44	110	260	680	2590	3950	8130	13700
			200	25	40	90	260	680	1855	3950	6030	9800
			250	25	—	—	260	680	1600	3000	6030	8800
			256	20	44	110	—	—	—	—	—	—
			280	—	—	—	260	680	—	—	—	—
			320	20	40	60	—	—	2590	3950	6030	9800
			350	—	—	—	260	680	—	—	—	—
			400	20	—	—	260	680	2590	3950	—	—
			500	—	—	—	260	680	1600	3000	—	—
			512	—	25	52	—	—	—	—	2700	5230
			1000	—	—	—	100	275	1070	—	—	—
Emergency stop torque T _{2NOT}	Nm	1,2,3	3-1000	Twice rated output torque								
Rated input speed η _{1N}	rpm	1,2,3	3-1000	4500	4500	4000	3000	3000	2000	1500	1500	1500
Maximum input speed η _{1B}		1,2,3	3-1000	6000	6000	6000	6000	4000	3500	3000	3000	3000
Precision backlashP ₁	arcmin	1	3-10	≤12	≤12	≤12	≤12	≤12	≤12	≤12	≤15	≤15
		2	9-64	≤15	≤15	≤15	≤15	≤15	≤15	≤15	≤18	≤18
		3	60-1000	≤18	≤18	≤18	≤18	≤18	≤18	≤18	≤22	≤22
Torsional rigidity	Nm/arcmin	1,2,3	3-1000	0.9	1.8	4.4	9.2	26.7	66.7	123.3	213.3	339
Allowable radial force F _{2aB}	N	1,2,3	3-1000	170	265	440	1240	3700	6500	10500	15000	17000
Allowable axial force F _{2aB}	N	1,2,3	3-1000	140	200	400	1000	3000	5000	8000	12000	15000
Sevice life	hrs	1,2,3	3-1000	20000								
Efficiency	%	1	3-10	≥97%								
		2	9-64	≥94%								
		3	60-1000	≥91%								
Gross weight	kg	1	3-10	0.6	1.2	2.7	9.8	20	36	50	110	160
		2	9-64	0.8	1.5	3.4	12.1	25	48	65	135	180
		3	60-1000	1	1.9	4.1	14.9	30	53	72	145	192
Working temperature	°C	1,2,3	3-1000	-10°C~90°C								
Lubricating		1,2,3	3-1000	Synthetic lubricating grease								
IP Grade		1,2,3	3-1000	IP65								
Installation direction		1,2,3	3-1000	In any direction								
Noise level (η ₁ =3000rpm,off load)	dB	1,2	3-1000	≤57	≤62	≤65	≤65	≤67	≤68	≤70	≤73	≤75

FUTURE

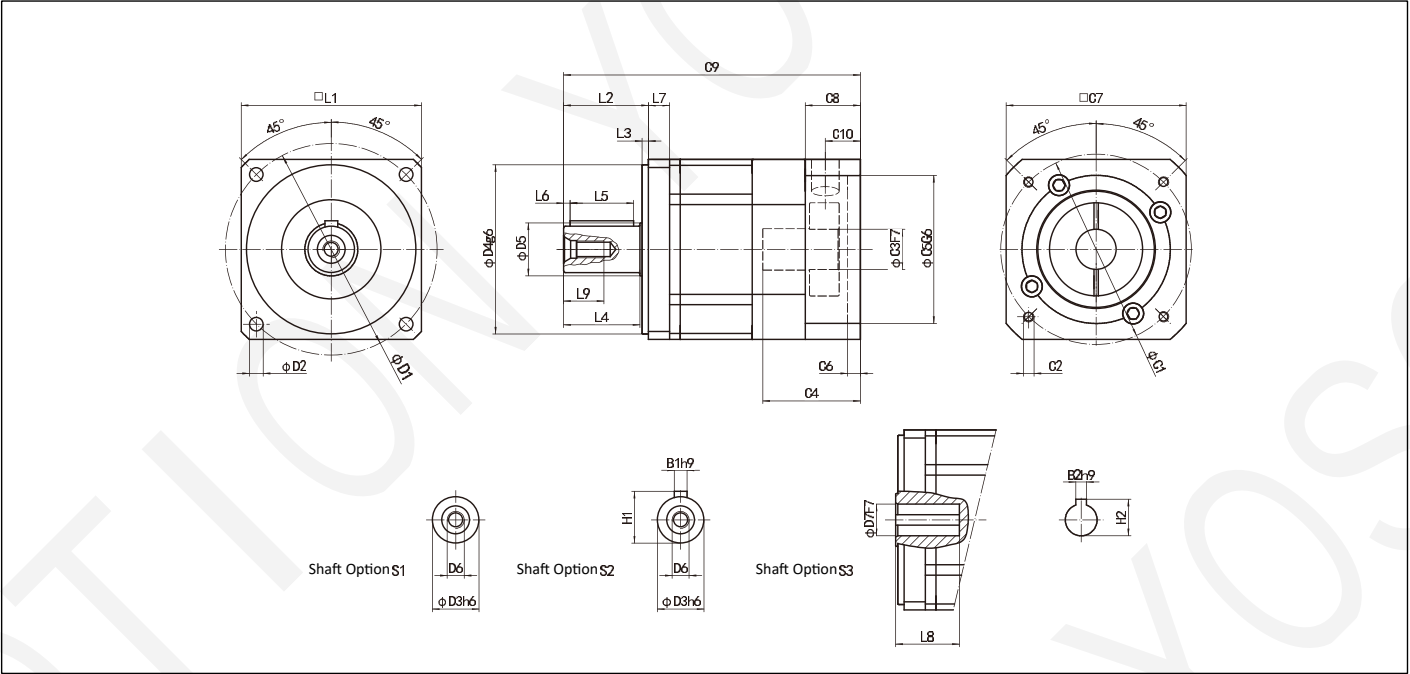
- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Equidirectional rotation
- Wide range of output shaft designs
- Precise gearing
- Higher torsional rigidity

YOSO MOTION Planetary Gear Reducer

■ Straight Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZB042	ZB060	ZB090	ZB115	ZB142	ZB190	ZB240	ZB280	ZB330
Moment of Inertia J ₁	kg.cm ²	1	3	—	0.135	0.77	2.63	12.14	15.6	15.6	—	—
			4	0.022	0.093	0.52	1.79	7.78	16.3	16.3	40.2	75.1
			5	0.019	0.078	0.45	1.53	6.07	15.4	15.4	39.9	73.4
			7	—	—	0.40	1.32	4.63	—	—	—	—
			8	0.017	0.065	0.39	1.32	4.63	16.10	16.1	34.5	62.5
			10	0.016	0.065	0.39	1.32	4.63	15.20	—	—	—
		2	9	0.015	0.131	0.74	2.62	12.14	15.9	15.9	—	—
			12	0.007	0.127	0.72	2.62	12.37	15.9	15.9	18.8	24.0
			15	0.007	0.077	0.71	2.62	12.35	15.9	15.9	18.8	23.0
			16	0.005	0.088	0.50	2.62	7.47	15.0	15.0	18.8	23.8
			20	0.007	0.075	0.44	2.53	6.65	15.0	15.0	18.8	23.8
			25	0.007	0.075	0.44	1.50	5.81	15.7	15.0	18.3	23.3
		3	32	0.007	0.064	0.39	1.50	5.81	15.3	15.7	16.8	24.0
			40	0.005	0.064	0.39	1.30	5.28	16.10	16.1	16.6	21.6
			50	0.005	0.064	0.39	1.30	5.28	15.20	15.2	—	21.6
			64	0.015	0.064	0.39	1.30	5.28	7.50	14.3	15.2	18.2
			60	0.007	0.076	0.51	1.12	7.50	7.50	7.50	17.7	19.7
			64	0.007	0.076	0.50	1.12	7.50	7.50	7.50	17.8	19.8
			80	0.007	0.075	0.50	1.12	7.50	7.50	7.50	14.8	19.8
			100	0.007	0.075	0.44	1.50	7.40	7.40	7.40	14.8	18.8
			120	0.005	0.064	0.70	1.50	7.30	7.30	7.30	14.8	18.8
			125	0.007	0.064	0.65	1.50	7.20	7.20	7.20	13.54	18.5
			160	0.013	0.064	0.39	1.30	6.50	6.50	6.50	13.54	17.5
			200	0.007	0.064	0.39	1.30	6.20	6.20	6.20	13.54	16.5
			250	—	—	—	1.30	5.40	5.40	5.40	13.50	16.5
			280	—	—	—	1.30	5.70	—	—	—	—
			320	0.007	0.064	0.39	1.30	5.40	5.70	5.70	13.3	15.3
			350	—	—	—	1.30	5.40	—	—	—	—
			400	—	—	—	1.30	5.20	5.20	5.20	—	—
			500	—	—	—	1.30	5.10	5.10	5.10	—	—
			512	0.007	0.064	0.39	—	—	—	—	10.5	15.5
			1000	—	—	—	1.30	4.90	4.90	—	—M2	—

● ZB-L1 Profile



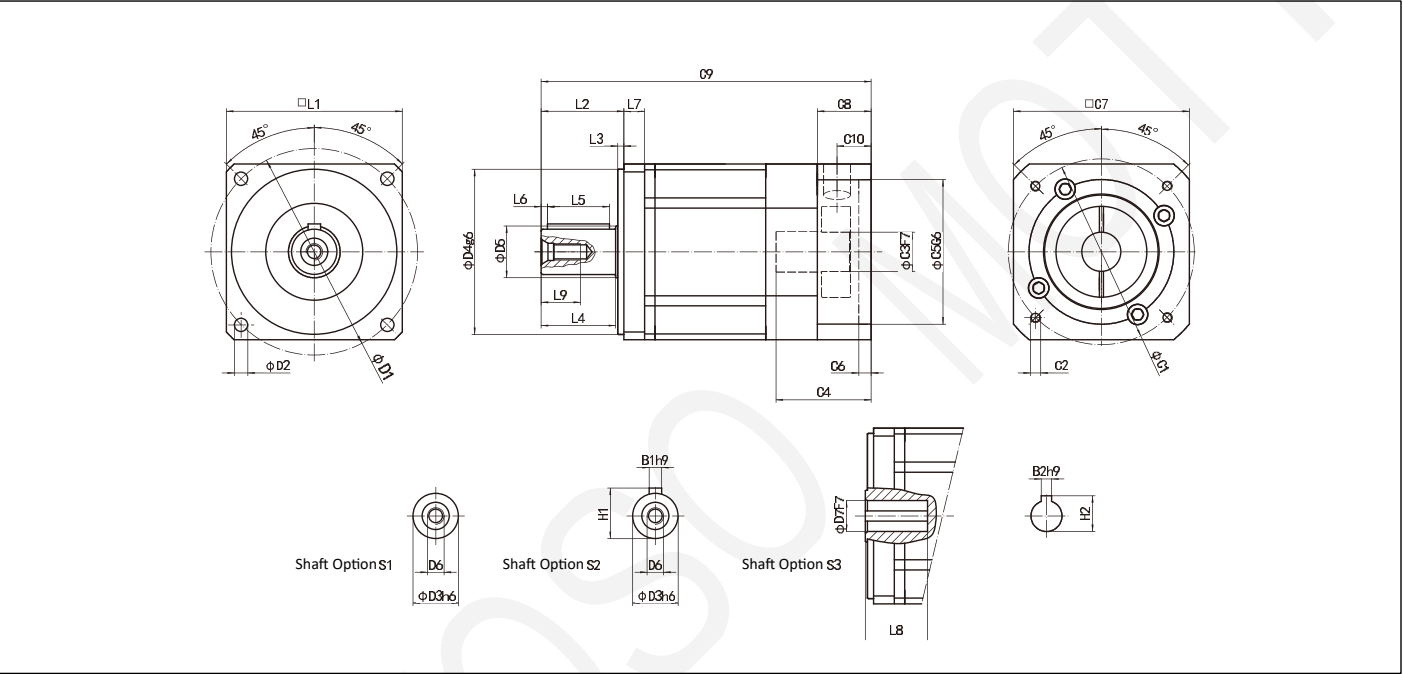
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

Size	ZB042	ZB060	ZB090	ZB115	ZB142	ZB190	ZB240	ZB280	ZB330
D1	50	70	100	130	165	215	265	315	370
D2	3.4	5.5	6.5	9	11	13	18	22	22
D3	13	14/16	20/22	25/32	40	50/55	65	70	80
D4	35	50	80	110	130	160	225	250	290
D5	17	17	25	40	60	65	75	85	95
D6	M4×0.7P	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P	M20×2.5P	M20×2.5P	M20×2.5P	M20×2.5P
D7	—	10	15	25	35	50	55	65	70
L1	42	65	85	115	142	190	240	285	330
L2	26	32	40	57	86	88	108	132	150
L3	5.5	3	3	4	5	6	6	20	25
L4	19	28	36	52	80	80	100	110	120
L5	16	25	30	45	65	70	90	100	100
L6	2	2	3	5	7	5	5	5	10
L7	4	8	10	15	20	20	25	25	30
L8	—	≤24	≤30	≤52	≤60	≤75	≤78	≤90	≤120
L9	10	12	16	25	35	42	42	42	42
C1	46	70	90	145	200	215	265	265	265
C2	M4×0.7P	M4×0.7P	M5×0.8P	M8×1.25P	M12×1.75P	M12×1.75P	M12×1.75P	M12×1.75P	M12×1.75P
C3	≤11	≤12/≤16	≤19/≤24	≤35	≤42	≤55	≤60	≤65	≤65
C4	27	33	45	60	82	82	120	120	120
C5	30	50	70	110	114.3	180	230	230	230
C6	5	5	6	8	8	8	8	8	8
C7	42	65	85	128	178	198	250	250	250
C8	15	20	26	43	50	54	54	54	54
C9	86.5	112	140	193.5	263	308	352	456	520
C10	10	16	16.5	25	34	35	35	35	35
B1	5	5	6	8/10	12	14/16	18	20	22
B2	—	3	5	8	10	14	16	18	20
H1	15	16/18	22.5/24.5	28/35	43	53.5/59	69	74.5	85
H2	—	11.4	17.3	28.3	38.3	53.8	59.3	69.4	74.9

YOSO MOTION Planetary Gear Reducer

ZB-L2 Profile

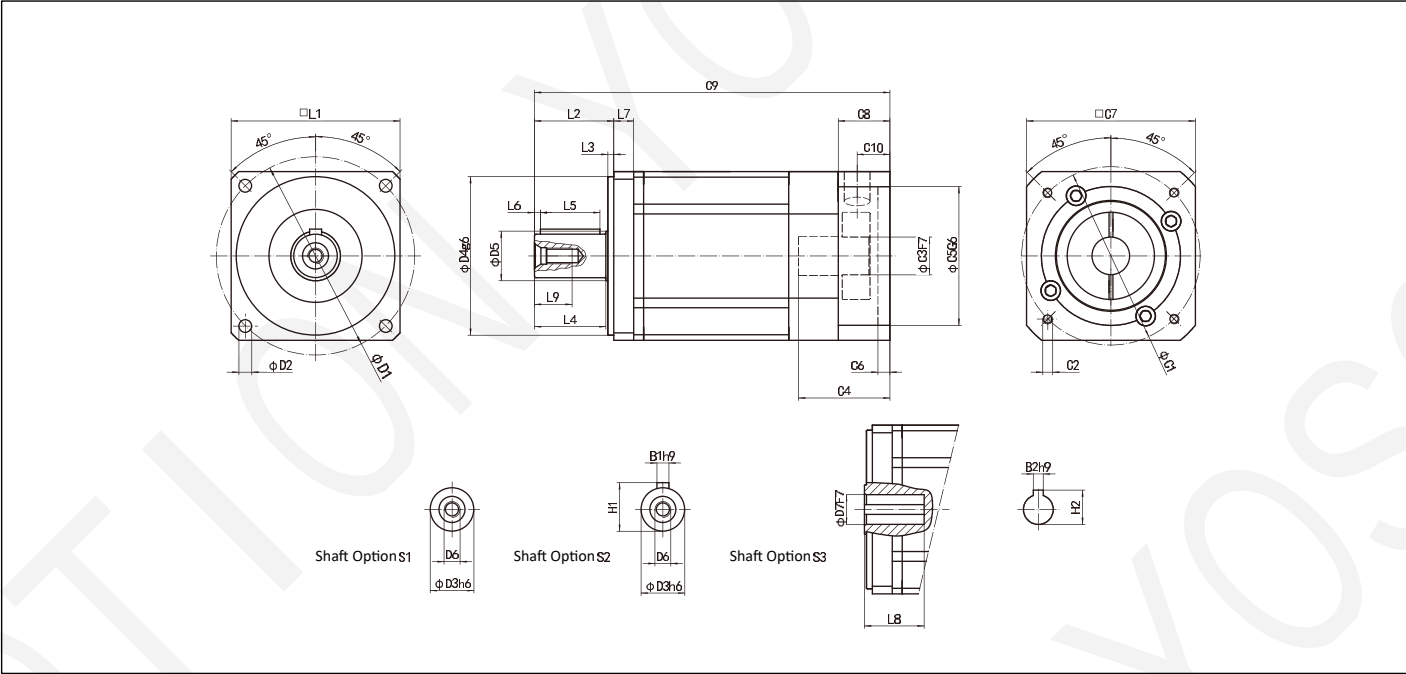


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	ZB042	ZB060	ZB090	ZB115	ZB142	ZB190	ZB240	ZB280	ZB330
D1	50	70	100	130	165	215	265	315	370
D2	3.4	5.5	6.5	9	11	13	18	22	22
D3	13	14/16	20/22	25/32	40	50/55	65	70	80
D4	35	50	80	110	130	160	225	250	290
D5	17	17	25	40	60	65	75	85	95
D6	M4×0.7P	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P	M20×2.5P	M20×2.5P	M20×2.5P	M20×2.5P
D7	—	10	15	25	35	50	55	65	70
L1	42	65	85	115	142	190	240	285	330
L2	26	32	40	57	86	88	108	132	150
L3	5.5	3	3	4	5	6	6	20	25
L4	19	28	36	52	80	80	100	110	120
L5	16	25	30	45	65	70	90	100	100
L6	2	2	3	5	7	5	5	5	10
L7	4	8	10	15	20	20	25	25	30
L8	—	≤24	≤30	≤52	≤60	≤75	≤78	≤90	≤120
L9	10	12	16	25	35	42	42	42	42
C1	46	70	90	145	145	200	215	265	265
C2	M4×0.7P	M4×0.7P	M5×0.8P	M8×1.25P	M8×1.75P	M12×1.75P	M12×1.75P	M12×1.75P	M12×1.75P
C3	≤11	≤12/≤16	≤19/≤22	≤24	≤35	≤42	≤55	≤60	≤60
C4	27	33	45	60	60	82	82	120	120
C5	30	50	70	110	110	114.3	180	230	230
C6	5	5	6	8	8	8	8	8	8
C7	42	65	85	128	128	178	198	250	250
C8	15	20	26	43	43	50	54	54	54
C9	102	129.5	159.5	222.5	283	343	450	524	600
C10	10	16	16.5	25	34	35	35	35	35
B1	5	5	6	8/10	12	14/16	18	20	22
B2	—	3	5	8	10	14	16	18	20
H1	15	16/18	22.5/24.5	28/35	43	53.5/59	69	74.5	85
H2	—	11.4	17.3	28.3	38.3	53.8	59.3	69.4	74.9

ZB-L3 Profile

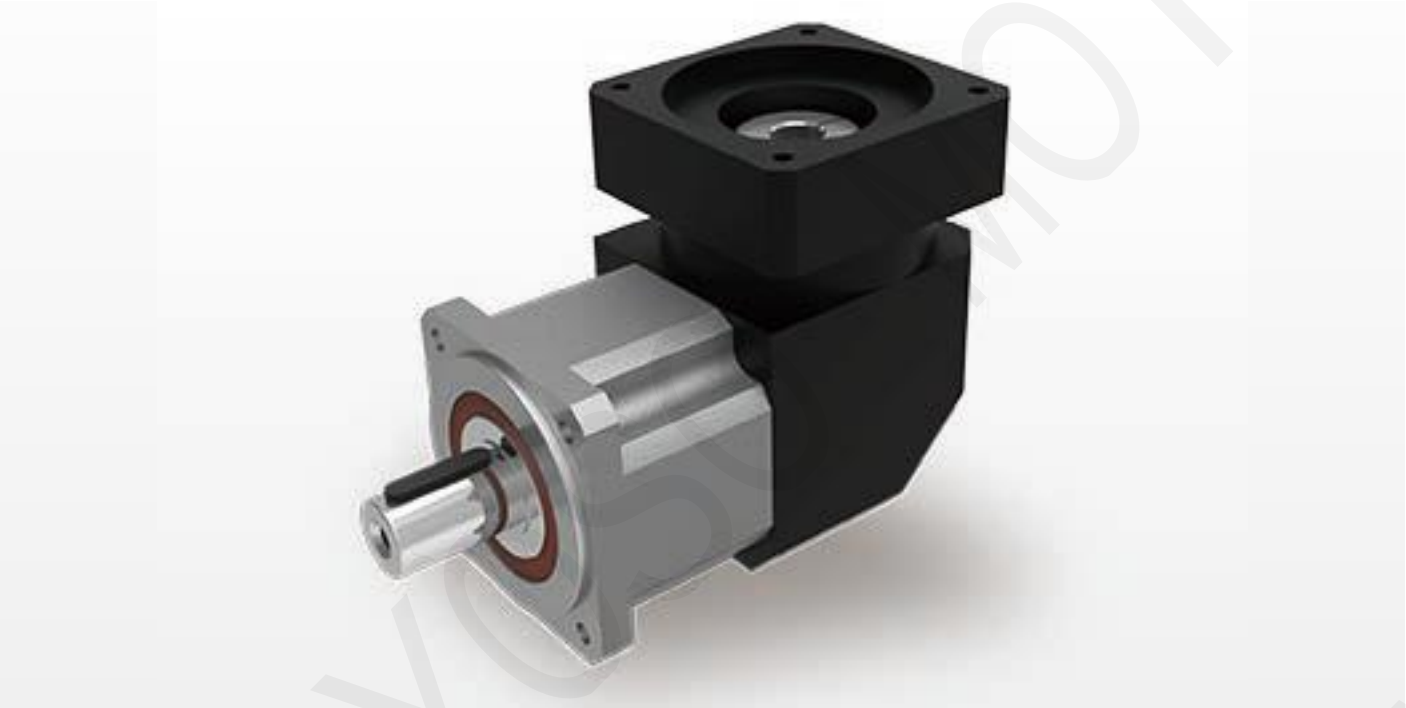


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	ZB042	ZB060	ZB090	ZB115	ZB142	ZB190	ZB240	ZB280	ZB330
D1	50	70	100	130	165	215	265	315	370
D2	3.4	5.5	6.5	9	11	13	18	22	22
D3	13	14/16	20/22	25/32	40	50/55	65	70	80
D4	35	50	80	110	130	160	225	250	290
D5	17	17	25	40	60	65	75	85	95
D6	M4×0.7P	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P	M20×2.5P	M20×2.5P	M20×2.5P	M20×2.5P
D7	—	10	15	25	35	50	55	65	70
L1	42	65	85	115	142	190	240	285	330
L2	26	32	40	57	86	88	108	132	150
L3	5.5	3	3	4	5	6	6	20	25
L4	19	28	36	52	80	80	100	110	120
L5	16	25	30	45	65	70	90	100	100
L6	2	2	3	5	7	5	5	5	10
L7	4	8	10	15	20	20	25	25	30
L8	—	≤24	≤30	≤52	≤60	≤75	≤78	≤90	≤120
L9	10	12	16	25	35	42	42	42	42
C1	46	70	90	145	145	200	215	265	265
C2	M4×0.7P	M4×0.7P	M5×0.8P	M8×1.25P	M8×1.25P	M12×1.75P	M12×1.75P	M12×1.75P	M12×1.75P
C3	≤11	≤12/≤16	≤19/≤22	≤24	≤35	≤42	≤55	≤60	≤60
C4	27	33	45	60	60	82	82	120	120
C5	30	50	70	110	110	114.3	180	230	230
C6	5	5	6	8	8	8	8	8	8
C7	42	65	85	128	128	178	198	250	250
C8	15	20	26	43	43	50	54	54	54
C9	117.5	147	179	251	333	417	510	585	625
C10	10	16	16.5	25	34	35	35	35	35
B1	5	5	6	8/10	12	14/16	18	20	22
B2	—	3	5	8	10	14	16	18	20
H1	15	16/18	22.5/24.5	28/35	43	53.5/59	69	74.5	85
H2	—	11.4	17.3	28.3	38.3	53.8	59.3	69.4	74.9

ZBR SERIES



ZBR Series Performance Table

Model	Unit	Stage	Ratio	ZBR042	ZBR060	ZBR090	ZBR115	ZBR142	ZBR190	ZBR240
Rated output torqueT _{2N}	Nm	1	3	—	20	50	140	310	1050	1600
			4	18	35	90	240	605	1780	3500
			5	16	32	70	240	605	1345	2640
			7	—	—	50	100	320	—	—
			8	9	20	50	90	300	750	1480
			10	7	15	35	90	250	500	—
		2	9	—	25	50	140	340	1050	1840
			12	—	25	50	140	340	1030	1840
			15	—	25	50	140	340	1485	1840
			16	20	40	100	260	680	2035	3710
			20	20	40	100	260	680	2035	3710
			25	20	35	80	260	680	1485	2805
			32	20	40	100	260	680	2035	3710
			40	20	35	80	260	680	2035	2805
			50	20	35	80	260	680	1485	2805
			64	20	20	41	90	300	750	1500
		3	60	—	35	60	260	450	2590	1950
			64	25	44	110	260	680	2590	3950
			80	25	44	110	260	680	2590	3950
			100	25	44	110	260	680	2590	3950
			120	—	25	60	260	450	1450	1950
			125	25	30	90	260	680	1850	3000
			160	25	44	110	260	680	2590	3950
			200	25	40	90	260	680	1855	3950
			250	25	—	—	260	680	1600	3000
			256	20	44	110	—	—	—	—
			280	—	—	—	260	680	—	—
			320	20	40	60	—	—	2590	3950
			350	—	—	—	260	680	—	—
			400	20	—	—	260	680	2590	3950
			500	—	—	—	260	680	1600	3000
			512	—	25	52	—	—	—	—
			1000	—	—	—	100	275	1070	—
Emergency stop torque T _{2NOT}	Nm	1,2,3	3-1000	Twice rated output torque						
Rated input speed η _{1N}	rpm	1,2,3	3-1000	4500	4500	4000	3000	3000	2000	1500
Maximum input speed η _{1B}		1,2,3	3-1000	6000	6000	6000	6000	4000	3500	3000
Precision backlashP ₁	arcmin	1	3-10	≤15	≤15	≤15	≤15	≤15	≤15	≤15
		2	9-64	≤18	≤18	≤18	≤18	≤18	≤18	≤18
		3	60-1000	≤22	≤22	≤22	≤22	≤22	≤22	≤22
Torsional rigidity	Nm/arcmin	1,2,3	3-1000	0.9	1.8	4.4	9.2	26.7	66.7	123.3
Allowable radial force F _{2aB}	N	1,2,3	3-1000	170	265	440	1240	3700	6500	10500
Allowable axial force F _{2aB}	N	1,2,3	3-1000	140	200	400	1000	3000	5000	8000
Sevice life	hrs	1,2,3	3-1000	20000						
Efficiency	%	1	3-10	≥94%						
		2	9-64	≥91%						
		3	60-1000	≥89%						
Gross weight	kg	1	3-10	1	2.2	5.3	13.9	25.5	42.5	
		2	9-64	1.2	2.5	6.1	16.5	30.5	53.5	71.5
		3	60-1000	1.4	2.9	6.7	19.3	35.5	60.5	78.5
Working temperature	°C	1,2,3	3-1000	-10°C~90°C						
Lubricating		1,2,3	3-1000	Synthetic lubricating grease						
IP Grade		1,2,3	3-1000	IP65						
Installation direction		1,2,3	3-1000	In any direction						
Noise level (η ₁ =3000rpm,off load)	dB	1,2	3-1000	≤60	≤62	≤65	≤65	≤68	≤70	≤72

FUTURE

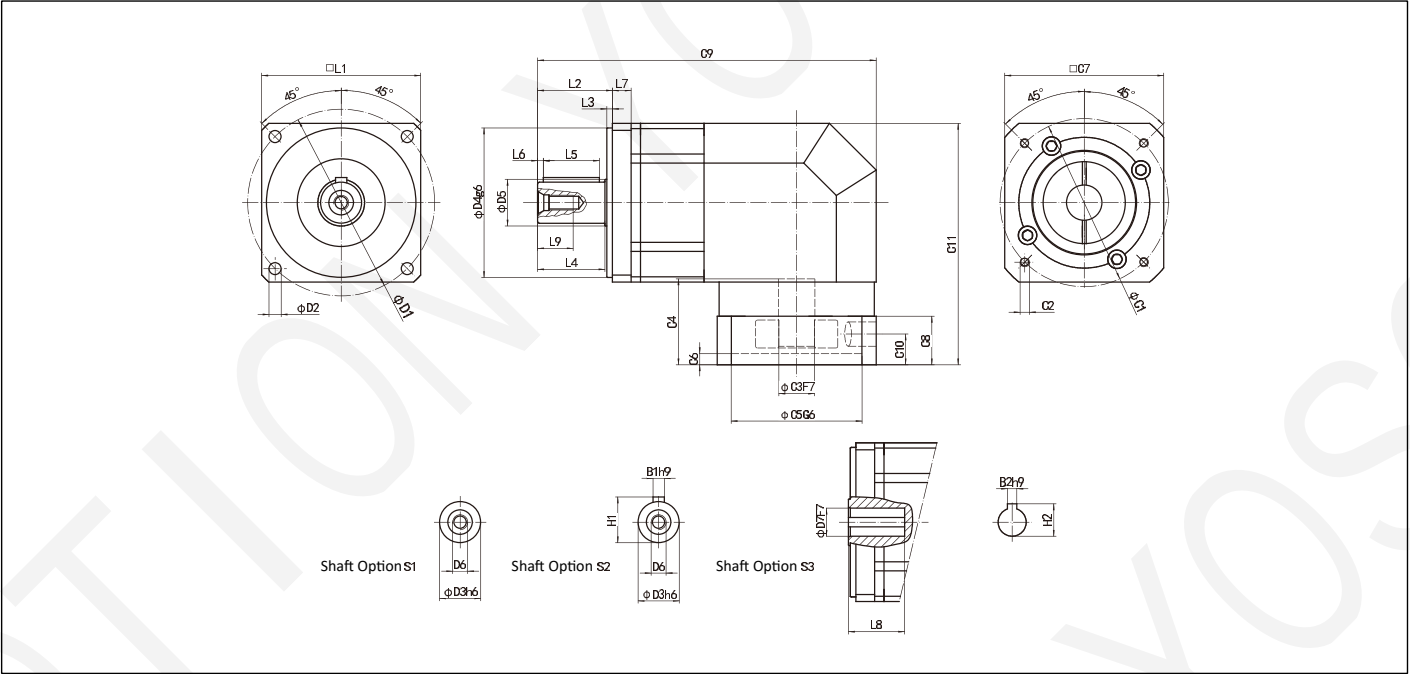
- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Equidirectional rotation
- Wide range of output shaft designs
- Precise gearing
- Higher torsional rigidity
- Transmission diversity

YOSO MOTION Planetary Gear Reducer

■ Straight Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZBR042	ZBR060	ZBR090	ZBR115	ZBR142	ZBR190	ZBR240
Moment of Inertia J ₁	kg.cm ²	1	3	—	0.135	0.77	2.63	12.14	15.6	15.6
			4	0.022	0.093	0.52	1.79	7.78	16.3	16.3
			5	0.019	0.078	0.45	1.53	6.07	15.4	15.4
			7	—	—	0.40	1.32	4.63	—	—
			8	0.017	0.065	0.39	1.32	4.63	16.10	16.1
			10	0.016	0.065	0.39	1.32	4.63	15.20	—
		2	9	0.015	0.131	0.74	2.62	12.14	15.9	15.9
			12	0.007	0.127	0.72	2.62	12.37	15.9	15.9
			15	0.007	0.077	0.71	2.62	12.35	15.9	15.9
			16	0.005	0.088	0.50	2.62	7.47	15.0	15.0
			20	0.007	0.075	0.44	2.53	6.65	15.0	15.0
			25	0.007	0.075	0.44	1.50	5.81	15.7	15.0
			32	0.007	0.064	0.39	1.50	5.81	15.3	15.7
			40	0.005	0.064	0.39	1.30	5.28	16.10	16.1
			50	0.005	0.064	0.39	1.30	5.28	15.20	15.2
			64	0.015	0.064	0.39	1.30	5.28	7.50	14.3
		3	60	0.007	0.076	0.51	1.12	7.50	7.50	7.50
			64	0.007	0.076	0.50	1.12	7.50	7.50	7.50
			80	0.007	0.075	0.50	1.12	7.50	7.50	7.50
			100	0.007	0.075	0.44	1.50	7.40	7.40	7.40
			120	0.005	0.064	0.70	1.50	7.30	7.30	7.30
			125	0.007	0.064	0.65	1.50	7.20	7.20	7.20
			160	0.013	0.064	0.39	1.30	6.50	6.50	6.50
			200	0.007	0.064	0.39	1.30	6.20	6.20	6.20
			250	—	—	—	1.30	5.40	5.40	5.40
			280	—	—	—	1.30	5.70	—	—
			320	0.007	0.064	0.39	1.30	5.40	5.70	5.70
			350	—	—	—	1.30	5.40	—	—
			400	—	—	—	1.30	5.20	5.20	5.20
			500	—	—	—	1.30	5.10	5.10	5.10
			512	0.007	0.064	0.39	—	—	—	—
			1000	—	—	—	1.30	4.90	4.90	—

● ZBR-L1 Profile



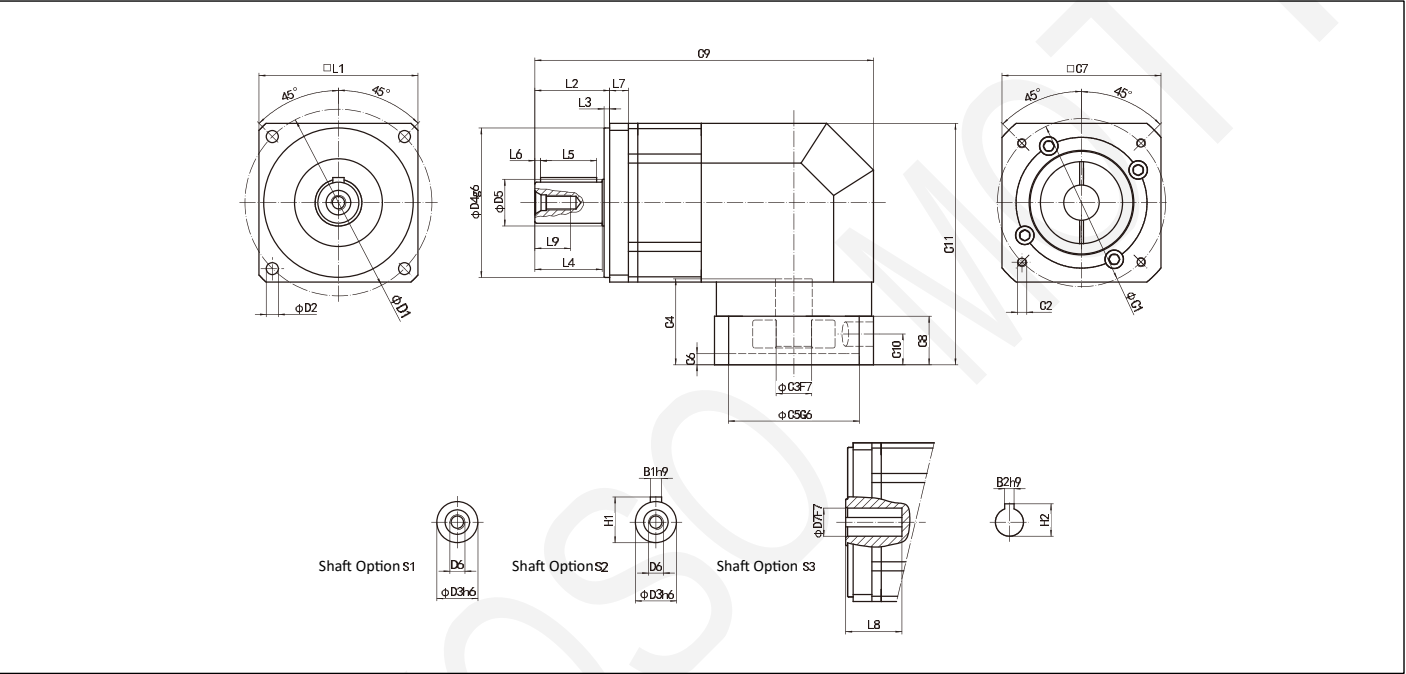
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

Size	ZBR042	ZBR060	ZBR090	ZBR115	ZBR142	ZBR190
D1	50	70	100	130	165	215
D2	3.4	5.5	6.5	9	11	13
D3	13	14/16	20/22	25/32	40	50/55
D4	35	50	80	110	130	160
D5	17	17	25	40	60	65
D6	M4×0.7P	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P	M20×2.5P
D7	—	10	15	25	35	50
L1	42	65	85	115	142	190
L2	26	32	40	55	86	88
L3	5.5	3	3	4	5	6
L4	19	28	36	52	80	80
L5	16	25	30	45	65	70
L6	2	2	3	5	7	5
L7	4	8	10	15	20	20
L8	—	≤24	≤30	≤52	≤60	≤75
L9	10	12	16	25	35	42
C1	46	70	90	145	200	215
C2	M4×0.7P	M4×0.7P	M5×0.8P	M8×1.25P	M12×1.75P	M12×1.75P
C3	≤11	≤12/≤16	≤19/≤24	≤35	≤42	≤55
C4	27	33	45	60	82	82
C5	30	50	70	110	114.3	180
C6	5	5	6	8	8	8
C7	42	65	85	128	178	198
C8	15	20	26	43	50	54
C9	99.5	143.3	181	253	352.5	397
C10	10	16	16.5	25	34	35
C11	67	98	129	184	240	256.5
B1	5	5	6	8/10	12	14/16
B2	—	3	5	8	10	14
H1	15	16/18	22.5/24.5	28/35	43	53.5/59
H2	—	11.4	17.3	28.3	38.3	53.8

YOSO MOTION Planetary Gear Reducer

ZBR-L2 Profile

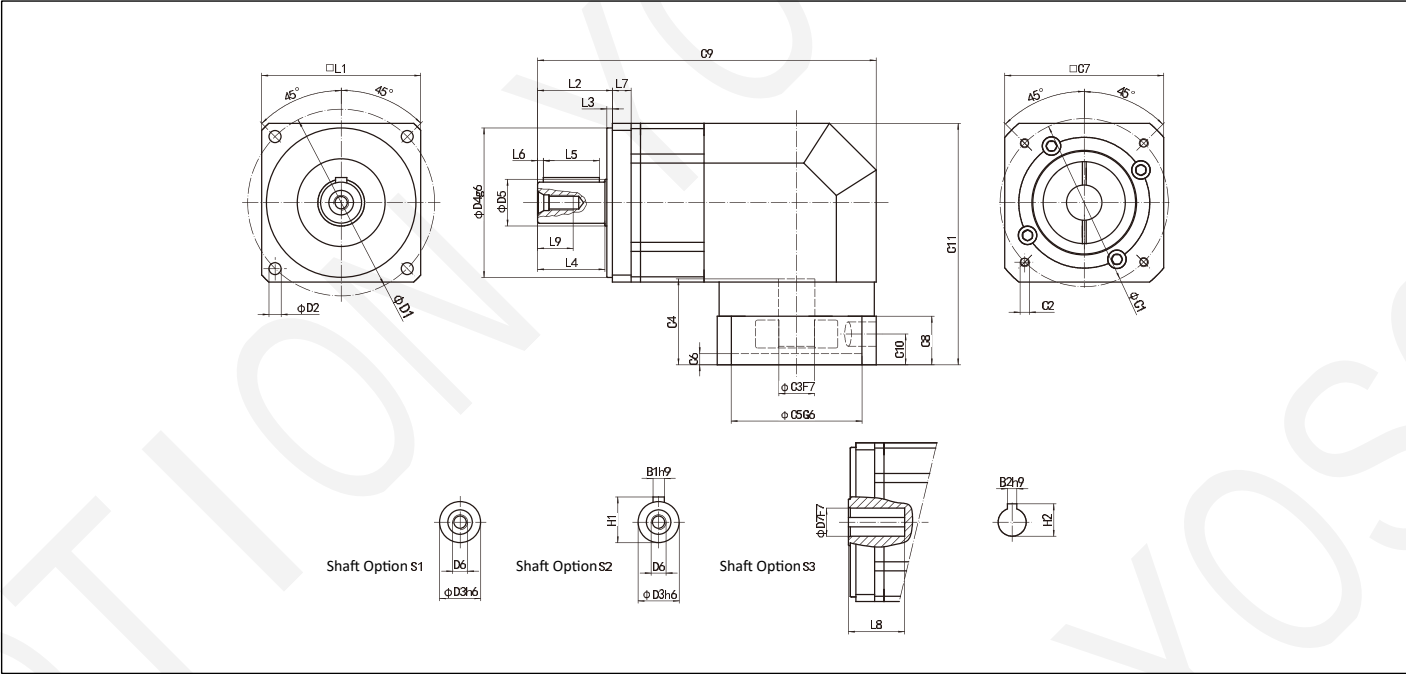


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	ZBR042	ZBR060	ZBR090	ZBR115	ZBR142	ZBR190	ZBR240
D1	50	70	100	130	165	215	265
D2	3.4	5.5	6.5	9	11	13	18
D3	13	14/16	20/22	25/32	40	50/55	65
D4	35	50	80	110	130	160	225
D5	17	17	25	40	60	65	75
D6	M4×0.7P	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P	M20×2.5P	M20×2.5P
D7	—	10	15	25	35	50	55
L1	42	65	85	115	142	190	240
L2	26	32	40	55	86	88	108
L3	5.5	3	3	4	5	6	6
L4	19	28	36	52	80	80	100
L5	16	25	30	45	65	70	90
L6	2	2	3	5	7	5	5
L7	4	8	10	15	20	20	25
L8	—	≤24	≤30	≤52	≤60	≤75	≤78
L9	10	12	16	25	35	42	42
C1	46	70	90	145	145	200	215
C2	M4×0.7P	M4×0.7P	M5×0.8P	M8×1.25P	M8×1.25P	M12×1.75P	M12×1.75P
C3	≤11	≤12/≤16	≤19/≤22	≤24	≤35	≤42	≤55
C4	27	33	45	60	60	82	82
C5	30	50	70	110	110	114.3	180
C6	5	5	6	8	8	8	8
C7	42	65	85	128	128	178	198
C8	15	20	26	43	43	50	54
C9	103	161	201	300	400	306.5	512
C10	10	16	16.5	25	34	35	35
C11	67	98	129	184	240	256.5	315
B1	5	5	6	8/10	12	14/16	18
B2	—	3	5	8	10	14	16
H1	15	16/18	22.5/24.5	28/35	43	53.5/59	69
H2	—	11.4	17.3	28.3	38.3	53.8	59.3

ZBR-L3 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	ZBR042	ZBR060	ZBR090	ZBR115	ZBR142	ZBR190	ZBR240
D1	50	70	100	130	165	215	265
D2	3.4	5.5	6.5	9	11	13	18
D3	13	14/16	20/22	25/32	40	50/55	65
D4	35	50	80	110	130	160	225
D5	17	17	25	40	60	65	75
D6	M4×0.7P	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P	M20×2.5P	M20×2.5P
D7	—	10	15	25	35	50	55
L1	42	65	85	115	142	190	240
L2	26	32	40	55	86	88	108
L3	5.5	3	3	4	5	6	6
L4	19	28	36	52	80	80	100
L5	16	25	30	45	65	70	90
L6	2	2	3	5	7	5	5
L7	4	8	10	15	20	20	25
L8	—	≤24	≤30	≤52	≤60	≤75	≤78
L9	10	12	16	25	35	42	42
C1	46	70	90	145	145	200	215
C2	M4×0.7P	M4×0.7P	M5×0.8P	M8×1.25P	M8×1.25P	M12×1.75P	M12×1.75P
C3	≤11	≤12/≤16	≤19/≤22	≤24	≤35	≤42	≤55
C4	27	33	45	60	60	82	82
C5	30	50	70	110	110	114.3	180
C6	5	5	6	8	8	8	8
C7	42	65	85	128	128	178	198
C8	15	20	26	43	43	50	54
C9	119.5	180.5	220.5	329	432	356.5	562
C10	10	16	16.5	25	34	35	35
C11	67	98	131.5	179	192	256	314
B1	5	5	6	8/10	12	14/16	18
B2	—	3	5	8	10	14	16
H1	15	16/18	22.5/24.5	28/35	43	53.5/59	69
H2	—	11.4	17.3	28.3	38.3	53.8	59.3

ZBD SERIES



ZBD Series Performance Table

Model	Unit	Stage	Ratio	ZBD042	ZBD060	ZBD090	ZBD115	ZBD142	ZBD190	ZBD240	ZBD280	ZBD330
Rated output torqueT _{2N}	Nm	1	3	—	20	50	140	310	1050	1600	—	—
			4	18	35	90	240	605	1780	3500	5800	10190
			5	16	32	70	240	605	1345	2640	4400	7180
			7	—	—	50	100	320	—	—	—	—
			8	9	20	50	90	300	750	1480	2595	4080
			10	7	15	35	90	250	500	—	—	—
		2	9	—	25	50	140	340	1050	1840	—	—
			12	—	25	50	140	340	1030	1840	4400	10000
			15	—	25	50	140	340	1485	1840	5200	8800
			16	20	40	100	260	680	2035	3710	6400	10800
			20	20	40	100	260	680	2035	3710	6400	10800
			25	20	35	80	260	680	1485	2805	4710	7550
			32	20	40	100	260	680	2035	3710	6400	10800
			40	20	35	80	260	680	2035	2805	4710	7550
			50	20	35	80	260	680	1485	2805	—	—
			64	20	20	41	—	—	—	1500	2650	4500
		3	60	—	35	60	260	450	2590	1950	6400	10800
			64	25	44	110	260	680	2590	3950	8130	13700
			80	25	44	110	260	680	2590	3950	8130	13700
			100	25	44	110	260	680	2590	3950	8130	13700
			120	—	25	60	260	450	1450	1950	5800	9800
			125	25	30	90	260	680	1850	3000	6030	9800
			160	25	44	110	260	680	2590	3950	8130	13700
			200	25	40	90	260	680	1855	3950	6030	9800
			250	25	—	—	260	680	1600	3000	6030	8800
			256	20	44	110	—	—	—	—	—	—
			280	—	—	—	260	680	—	—	—	—
			320	20	40	60	—	—	2590	3950	6030	9800
			350	—	—	—	260	680	—	—	—	—
			400	20	—	—	260	680	2590	3950	—	—
			500	—	—	—	260	680	1600	3000	—	—
			512	—	25	52	—	—	—	—	2700	5230
			1000	—	—	—	100	275	1070	—	—	—
Emergency stop torque T _{2NOT}	Nm	1,2,3	3-1000	Twice rated output torque								
Rated input speed η _{1N}	rpm	1,2,3	3-1000	4500	4500	4000	3000	3000	2000	1500	1500	1500
Maximum input speed η _{1B}		1,2,3	3-1000	6000	6000	6000	6000	4000	3500	3000	3000	3000
Precision backlashP ₁	arcmin	1	3-10	≤12	≤12	≤12	≤12	≤12	≤12	≤12	≤15	≤15
		2	9-64	≤15	≤15	≤15	≤15	≤15	≤15	≤15	≤18	≤18
		3	60-1000	≤18	≤18	≤18	≤18	≤18	≤18	≤18	≤22	≤22
Torsional rigidity	Nm/arcmin	1,2,3	3-1000	0.9	1.8	4.4	9.2	26.7	66.7	123.3	213.3	339
Allowable radial force F _{2aB}	N	1,2,3	3-1000	170	265	440	1240	3700	6500	10500	15000	17000
Allowable axial force F _{2aB}	N	1,2,3	3-1000	140	200	400	1000	3000	5000	8000	12000	15000
Sevice life	hrs	1,2,3	3-1000	20000								
Efficiency	%	1	3-10	≥97%								
		2	9-64	≥94%								
		3	60-1000	≥91%								
Gross weight	kg	1	3-10	0.6	1.2	2.7	9.8	20	36	50	110	160
		2	9-64	0.8	1.5	3.4	12.1	25	48	65	135	180
		3	60-1000	1	1.9	4.1	14.9	30	53	72	145	192
Working temperature	°C	1,2,3	3-1000	-10°C~90°C								
Lubricating		1,2,3	3-1000	Synthetic lubricating grease								
IP Grade		1,2,3	3-1000	IP65								
Installation direction		1,2,3	3-1000	In any direction								
Noise level (η ₁ =3000rpm,off load)	dB	1,2	3-1000	≤57	≤62	≤65	≤65	≤67	≤68	≤70	≤73	≤75

FUTURE

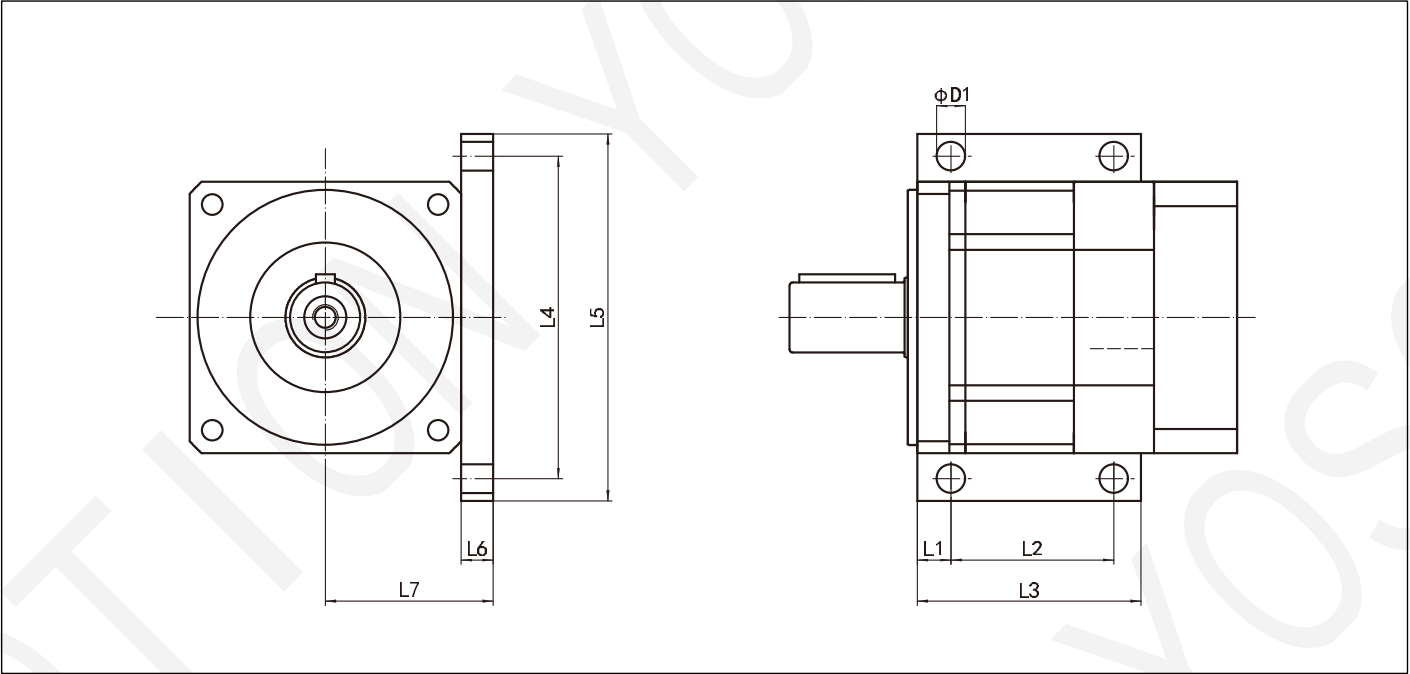
- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Equidirectional rotation
- Wide range of output shaft designs
- Precise gearing
- Higher torsional rigidity

YOSO MOTION Planetary Gear Reducer

■ Straight Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZBD042	ZBD060	ZBD090	ZBD115	ZBD142	ZBD190	ZBD240	ZBD280	ZBD330
Moment of Inertia J ₁	kg.cm ²	1	3	—	0.135	0.77	2.63	12.14	15.6	15.6	—	—
			4	0.022	0.093	0.52	1.79	7.78	16.3	16.3	40.2	75.1
			5	0.019	0.078	0.45	1.53	6.07	15.4	15.4	39.9	73.4
			7	—	—	0.40	1.32	4.63	—	—	—	—
			8	0.017	0.065	0.39	1.32	4.63	16.10	16.1	34.5	62.5
			10	0.016	0.065	0.39	1.32	4.63	15.20	—	—	—
		2	9	0.015	0.131	0.74	2.62	12.14	15.9	15.9	—	—
			12	0.007	0.127	0.72	2.62	12.37	15.9	15.9	18.8	24.0
			15	0.007	0.077	0.71	2.62	12.35	15.9	15.9	18.8	23.0
			16	0.005	0.088	0.50	2.62	7.47	15.0	15.0	18.8	23.8
			20	0.007	0.075	0.44	2.53	6.65	15.0	15.0	18.8	23.8
			25	0.007	0.075	0.44	1.50	5.81	15.7	15.0	18.3	23.3
			32	0.007	0.064	0.39	1.50	5.81	15.3	15.7	16.8	24.0
			40	0.005	0.064	0.39	1.30	5.28	16.10	16.1	16.6	21.6
			50	0.005	0.064	0.39	1.30	5.28	15.20	15.2	—	21.6
			64	0.015	0.064	0.39	1.30	5.28	7.50	14.3	15.2	18.2
		3	60	0.007	0.076	0.51	1.12	7.50	7.50	7.50	17.7	19.7
			64	0.007	0.076	0.50	1.12	7.50	7.50	7.50	17.8	19.8
			80	0.007	0.075	0.50	1.12	7.50	7.50	7.50	14.8	19.8
			100	0.007	0.075	0.44	1.50	7.40	7.40	7.40	14.8	18.8
			120	0.005	0.064	0.70	1.50	7.30	7.30	7.30	14.8	18.8
			125	0.007	0.064	0.65	1.50	7.20	7.20	7.20	13.54	18.5
			160	0.013	0.064	0.39	1.30	6.50	6.50	6.50	13.54	17.5
			200	0.007	0.064	0.39	1.30	6.20	6.20	6.20	13.54	16.5
			250	—	—	—	1.30	5.40	5.40	5.40	13.50	16.5
			280	—	—	—	1.30	5.70	—	—	—	—
			320	0.007	0.064	0.39	1.30	5.40	5.70	5.70	13.3	15.3
			350	—	—	—	1.30	5.40	—	—	—	—
			400	—	—	—	1.30	5.20	5.20	5.20	—	—
			500	—	—	—	1.30	5.10	5.10	5.10	—	—
			512	0.007	0.064	0.39	—	—	—	—	10.5	15.5
			1000	—	—	—	1.30	4.90	4.90	—	—M2	—

● ZBD Profile



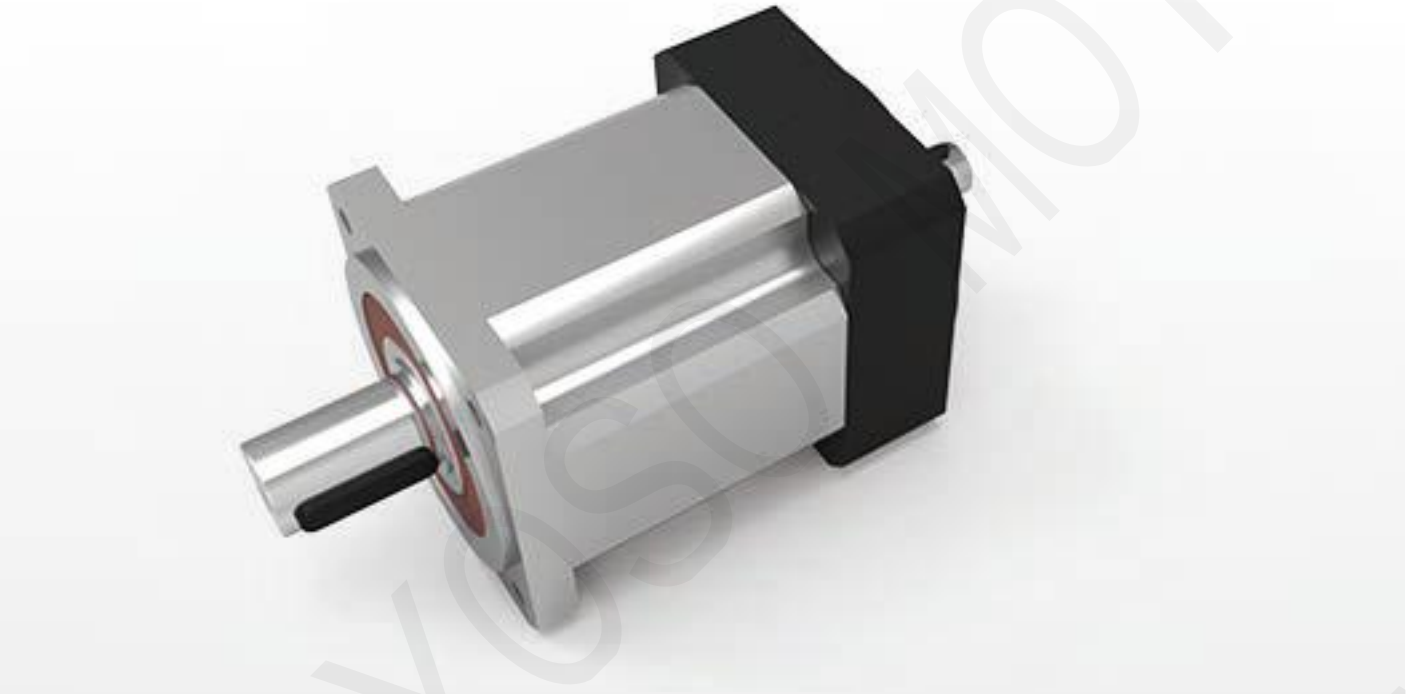
Note: Other dimensions refer to ZB series.

■ Size Table

Model	ZBD060			ZBD090			ZBD115			ZBD142		
Stage	1	2	3	1	2	3	1	2	3	1	2	3
D1	4-Φ7	4-Φ7	4-Φ7	4-Φ9	4-Φ9	4-Φ9	4-Φ9	4-Φ9	4-Φ9	4-Φ9	4-Φ9	4-Φ9
L1	8	8	8	10.5	10.5	10.5	25	25	25	10	10	10
L2	28	45	63	51	70	90	71	100	130	109	154	200
L3	45	62	80	70	90	110	105	137	169	130	175	222
L4	78	78	78	101	101	101	135	135	135	165	165	165
L5	90	90	90	115	115	115	150	150	150	185	185	185
L6	10	10	10	10	10	10	16	16	16	18	18	18
L7	42.5	42.5	42.5	52.5	52.5	52.5	75	75	75	93	93	93

Model	ZBD190			ZBD240			ZBD280			ZBD330		
Stage	1	2	3	1	2	3	1	2	3	1	2	3
D1	4-Φ11	4-Φ11	4-Φ11	4-Φ13	4-Φ13	4-Φ13	4-Φ13	4-Φ13	4-Φ13	4-Φ18	4-Φ18	4-Φ18
L1	10	10	10	30	30	30	35	35	35	40	40	40
L2	100	100	150	110	110	180	150	150	200	180	230	230
L3	148	148	200	180	180	240	220	220	270	260	310	310
L4	216	216	216	260	260	260	310	310	310	360	360	360
L5	240	240	240	300	300	300	350	350	350	420	420	420
L6	18	18	18	30	30	30	30	30	30	35	35	35
L7	113	113	113	150	150	150	172.5	172.5	172.5	200	200	200

ZBS SERIES



FUTURE

- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Equidirectional rotation
- Wide range of output shaft designs
- Precise gearing
- Higher torsional rigidity

ZBS Series Performance Table

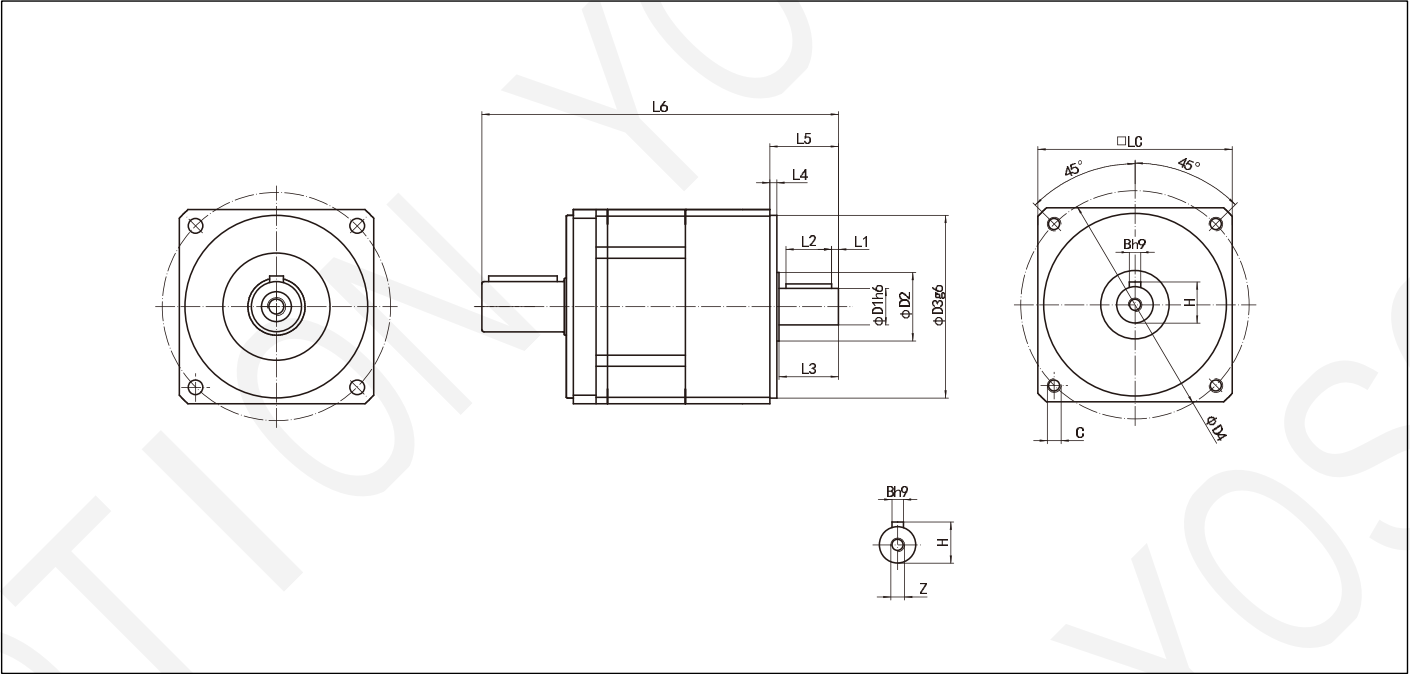
Model	Unit	Stage	Ratio	ZBS042	ZBS060	ZBS090	ZBS115	ZBS142	ZBS190	ZBS240	ZBS280	ZBS330
Rated output torqueT _{2N}	Nm	1	3	—	20	50	140	310	1050	1600	—	—
			4	18	35	90	240	605	1780	3500	5800	10190
			5	16	32	70	240	605	1345	2640	4400	7180
			7	—	—	50	100	320	—	—	—	—
			8	9	20	50	90	300	750	1480	2595	4080
			10	7	15	35	90	250	500	—	—	—
		2	9	—	25	50	140	340	1050	1840	—	—
			12	—	25	50	140	340	1030	1840	4400	10000
			15	—	25	50	140	340	1485	1840	5200	8800
			16	20	40	100	260	680	2035	3710	6400	10800
			20	20	40	100	260	680	2035	3710	6400	10800
			25	20	35	80	260	680	1485	2805	4710	7550
			32	20	40	100	260	680	2035	3710	6400	10800
			40	20	35	80	260	680	2035	2805	4710	7550
			50	20	35	80	260	680	1485	2805	—	—
			64	20	20	41	—	—	—	1500	2650	4500
		3	60	—	35	60	260	450	2590	1950	6400	10800
			64	25	44	110	260	680	2590	3950	8130	13700
			80	25	44	110	260	680	2590	3950	8130	13700
			100	25	44	110	260	680	2590	3950	8130	13700
			120	—	25	60	260	450	1450	1950	5800	9800
			125	25	30	90	260	680	1850	3000	6030	9800
			160	25	44	110	260	680	2590	3950	8130	13700
			200	25	40	90	260	680	1855	3950	6030	9800
			250	25	—	—	260	680	1600	3000	6030	8800
			256	20	44	110	—	—	—	—	—	—
			280	—	—	—	260	680	—	—	—	—
			320	20	40	60	—	—	2590	3950	6030	9800
			350	—	—	—	260	680	—	—	—	—
			400	20	—	—	260	680	2590	3950	—	—
			500	—	—	—	260	680	1600	3000	—	—
			512	—	25	52	—	—	—	—	2700	5230
			1000	—	—	—	100	275	1070	—	—	—
Emergency stop torque T _{2NOT}	Nm	1,2,3	3-1000	Twice rated output torque								
Rated input speed η _{1N}	rpm	1,2,3	3-1000	4500	4500	4000	3000	3000	2000	1500	1500	1500
Maximum input speed η _{1B}		1,2,3	3-1000	6000	6000	6000	6000	4000	3500	3000	3000	3000
Precision backlashP ₁	arcmin	1	3-10	≤12	≤12	≤12	≤12	≤12	≤12	≤12	≤15	≤15
		2	9-64	≤15	≤15	≤15	≤15	≤15	≤15	≤15	≤18	≤18
		3	60-1000	≤18	≤18	≤18	≤18	≤18	≤18	≤18	≤22	≤22
Torsional rigidity	Nm/arcmin	1,2,3	3-1000	0.9	1.8	4.4	9.2	26.7	66.7	123.3	213.3	339
Allowable radial force F _{2aB}	N	1,2,3	3-1000	170	265	440	1240	3700	6500	10500	15000	17000
Allowable axial force F _{2aB}	N	1,2,3	3-1000	140	200	400	1000	3000	5000	8000	12000	15000
Sevice life	hrs	1,2,3	3-1000	20000								
Efficiency	%	1	3-10	≥97%								
		2	9-64	≥94%								
		3	60-1000	≥91%								
Gross weight	kg	1	3-10	0.6	1.2	2.7	9.8	20	36	50	110	160
		2	9-64	0.8	1.5	3.4	12.1	25	48	65	135	180
		3	60-1000	1	1.9	4.1	14.9	30	53	72	145	192
Working temperature	°C	1,2,3	3-1000	-10°C~90°C								
Lubricating		1,2,3	3-1000	Synthetic lubricating grease								
IP Grade		1,2,3	3-1000	IP65								
Installation direction		1,2,3	3-1000	In any direction								
Noise level (η ₁ =3000rpm,off load)	dB	1,2	3-1000	≤57	≤62	≤65	≤65	≤67	≤68	≤70	≤73	≤75

YOSO MOTION Planetary Gear Reducer

■ Straight Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZBS042	ZBS060	ZBS090	ZBS115	ZBS142	ZBS190	ZBS240	ZBS280	ZBS330
Moment of Inertia J ₁	kg.cm ²	1	3	—	0.135	0.77	2.63	12.14	15.6	15.6	—	—
			4	0.022	0.093	0.52	1.79	7.78	16.3	16.3	40.2	75.1
			5	0.019	0.078	0.45	1.53	6.07	15.4	15.4	39.9	73.4
			7	—	—	0.40	1.32	4.63	—	—	—	—
			8	0.017	0.065	0.39	1.32	4.63	16.10	16.1	34.5	62.5
			10	0.016	0.065	0.39	1.32	4.63	15.20	—	—	—
		2	9	0.015	0.131	0.74	2.62	12.14	15.9	15.9	—	—
			12	0.007	0.127	0.72	2.62	12.37	15.9	15.9	18.8	24.0
			15	0.007	0.077	0.71	2.62	12.35	15.9	15.9	18.8	23.0
			16	0.005	0.088	0.50	2.62	7.47	15.0	15.0	18.8	23.8
			20	0.007	0.075	0.44	2.53	6.65	15.0	15.0	18.8	23.8
			25	0.007	0.075	0.44	1.50	5.81	15.7	15.0	18.3	23.3
			32	0.007	0.064	0.39	1.50	5.81	15.3	15.7	16.8	24.0
			40	0.005	0.064	0.39	1.30	5.28	16.10	16.1	16.6	21.6
			50	0.005	0.064	0.39	1.30	5.28	15.20	15.2	—	21.6
			64	0.015	0.064	0.39	1.30	5.28	7.50	14.3	15.2	18.2
		3	60	0.007	0.076	0.51	1.12	7.50	7.50	7.50	17.7	19.7
			64	0.007	0.076	0.50	1.12	7.50	7.50	7.50	17.8	19.8
			80	0.007	0.075	0.50	1.12	7.50	7.50	7.50	14.8	19.8
			100	0.007	0.075	0.44	1.50	7.40	7.40	7.40	14.8	18.8
			120	0.005	0.064	0.70	1.50	7.30	7.30	7.30	14.8	18.8
			125	0.007	0.064	0.65	1.50	7.20	7.20	7.20	13.54	18.5
			160	0.013	0.064	0.39	1.30	6.50	6.50	6.50	13.54	17.5
			200	0.007	0.064	0.39	1.30	6.20	6.20	6.20	13.54	16.5
			250	—	—	—	1.30	5.40	5.40	5.40	13.50	16.5
			280	—	—	—	1.30	5.70	—	—	—	—
			320	0.007	0.064	0.39	1.30	5.40	5.70	5.70	13.3	15.3
			350	—	—	—	1.30	5.40	—	—	—	—
			400	—	—	—	1.30	5.20	5.20	5.20	—	—
			500	—	—	—	1.30	5.10	5.10	5.10	—	—
			512	0.007	0.064	0.39	—	—	—	—	10.5	15.5
			1000	—	—	—	1.30	4.90	4.90	—	—M2	—

● ZBS Profile



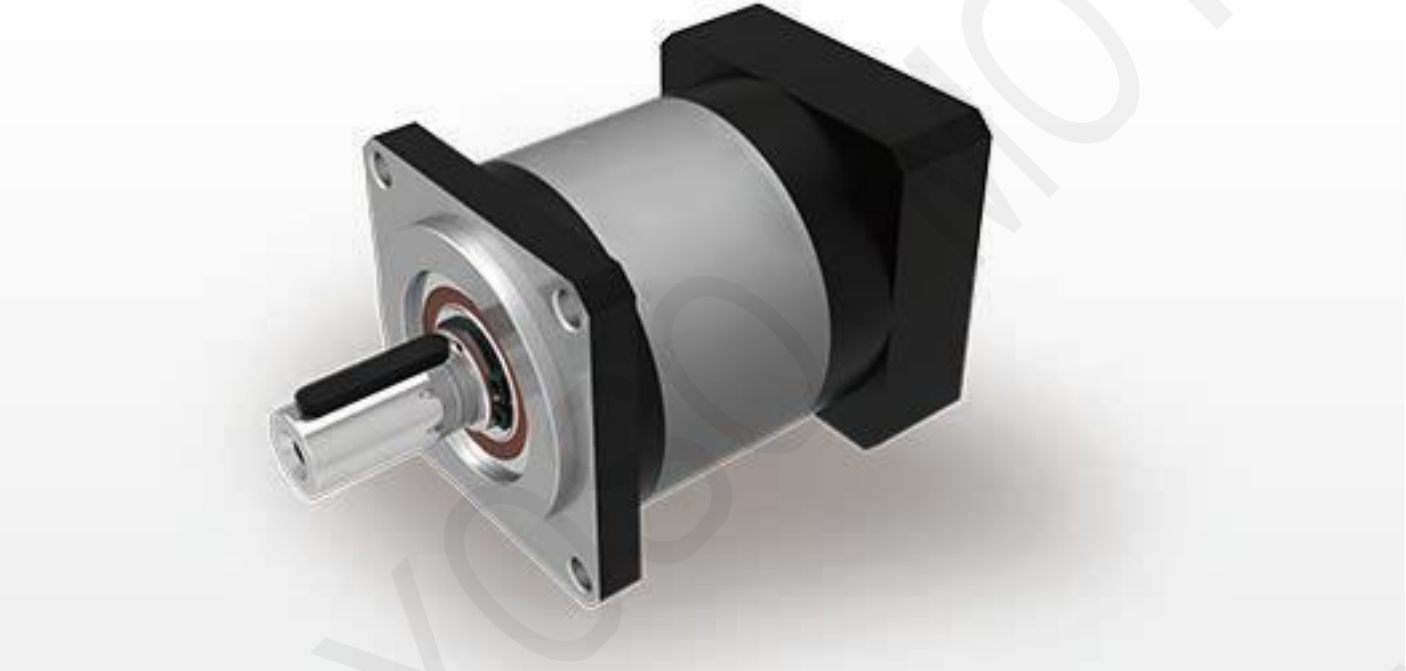
Note: Other dimensions refer to ZB series.

■ Size Table

Model	ZBS060			ZBS090			ZBS115			ZBS142		
Stage	1	2	3	1	2	3	1	2	3	1	2	3
D1	10	10	10	16	16	16	20	20	20	35	20	20
D2	20	20	20	30	30	30	40	40	40	50	40	40
D3	50	50	50	80	80	80	110	110	110	130	110	110
D4	70	70	70	100	100	100	130	130	130	165	130	130
L1	3	3	3	3	3	3	4	4	4	5	4	4
L2	16	16	16	20	20	20	30	30	30	50	30	30
L3	21	21	21	26	26	26	40	40	40	58	40	40
L4	3	3	3	3	3	3	4	4	4	5	4	4
L5	25	25	25	30	30	30	45	45	45	65	45	45
L6	129	146.5	164	156	175.5	195	232	264	296	326	327.5	374.5
C	4-M5	4-M5	4-M5	4-M6	4-M6	4-M6	4-M8	4-M8	4-M8	4-M10	4-M8	4-M8
B	3	3	3	5	5	5	6	6	6	10	6	6
H	11.2	11.2	11.2	18	18	18	22.5	22.5	22.5	38	22.5	22.5
Z	M3×6	M3×6	M3×6	M6×15	M6×15	M6×15	M6×15	M6×15	M6×15	M10×25	M6×15	M6×15
LC	65×65	65×65	65×65	85×85	85×85	85×85	118×118	118×118	118×118	150×150	118×118	118×118

Model	ZBS190			ZBS240			ZBS280			ZBS330		
Stage	1	2	3	1	2	3	1	2	3	1	2	3
D1	40	35	35	50	40	35	60	50	40	70	50	40
D2	50	50	50	75	50	50	80	75	50	90	75	50
D3	160	130	130	225	160	130	250	225	160	290	225	160
D4	215	165	165	265	215	165	315	265	215	370	265	215
L1	5	4	4	5	5	4	4	5	5	5	5	5
L2	50	50	50	60	50	50	70	60	50	80	60	50
L3	63	58	58	73	63	58	80	73	63	90	73	63
L4	5	5	5	8	5	4	8	8	5	8	8	5
L5	70	65	65	83	70	65	90	83	70	100	83	70
L6	352	410	457	413	458	515	444	549	594	526	625	670
C	4-M12	4-M10	4-M10	4-M16	4-M12	4-M10	4-M16	4-M16	4-M12	4-M16	4-M16	4-M12
B	12	10	10	14	12	10	18	12	12	20	14	12
H	43	38	38	53.5	43	38	64	64	43	74.5	53.5	43
Z	M10×25	M10×25	M10×25	M12×20	M10×25	M10×25	M10×25	M10×25	M10×25	M10×35	M10×25	M10×25
LC	190×190	165×165	165×165	240×240	190×190	165×165	285×285	240×240	190×190	330×330	240×240	190×190

ZF SERIES



FUTURE

- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Equidirectional rotation
- Wide range of output shaft designs
- Precise gearing

ZF Series Performance Table

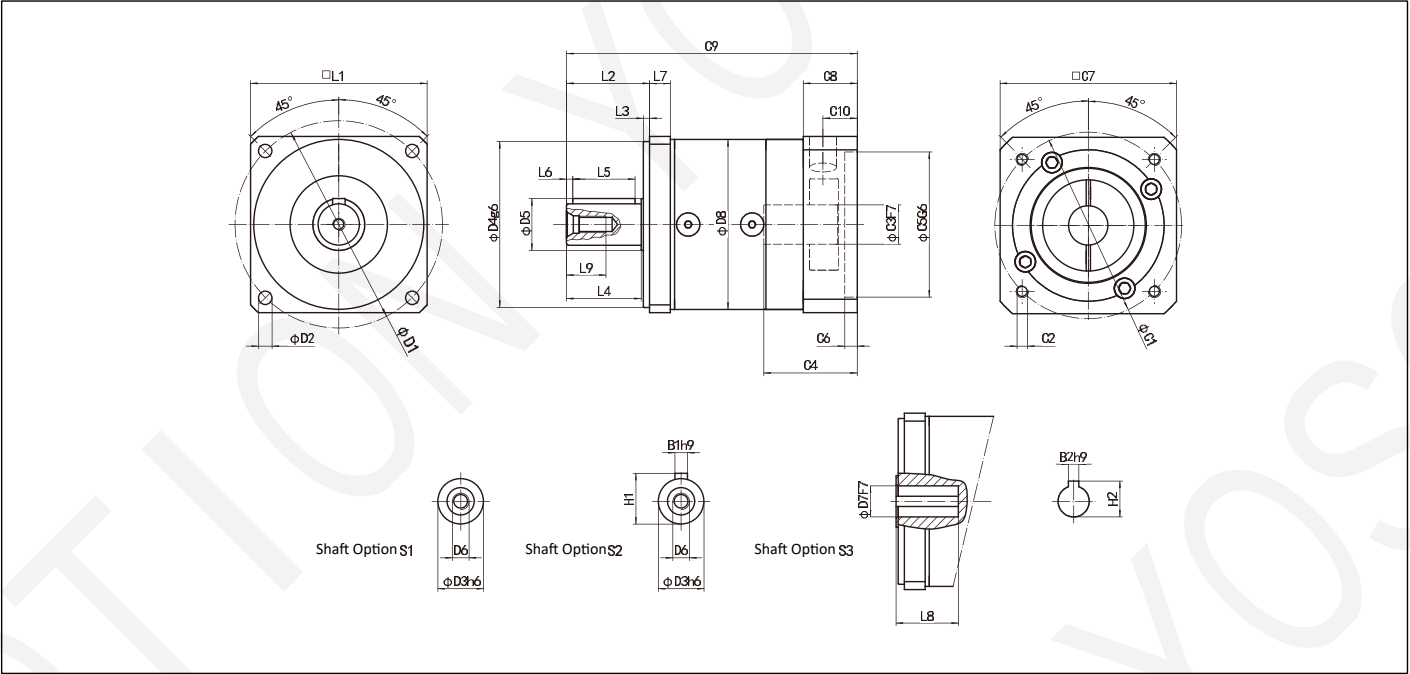
Model	Unit	Stage	Ratio	ZF60	ZF80	ZF120	ZF160
Rated output torqueT _{2N}	Nm	1	3	20	50	140	310
			4	35	90	240	605
			5	32	70	240	605
			7	—	50	100	320
			8	20	50	90	300
			10	15	35	90	250
		2	9	25	50	140	340
			12	25	50	140	340
			15	25	50	140	340
			16	40	100	260	680
			20	40	100	260	680
			25	35	80	260	680
			32	40	100	—	—
			40	35	80	260	680
			64	20	41	—	—
		3	60	35	60	260	450
			64	44	110	260	680
			80	44	110	260	680
			100	44	110	260	680
			120	25	60	260	450
			125	30	90	260	680
			160	44	110	260	680
			200	40	90	260	680
			250	—	—	260	680
			256	44	110	—	—
			280	—	—	260	680
			320	40	60	—	—
			350	—	—	260	680
			400	—	—	260	680
			500	—	—	260	680
			512	25	52	—	—
			1000	—	—	100	275
Emergency stop torque T _{2NOT}	Nm	1,2,3	3-1000	Twice rated output torque			
Rated input speed η_{1N}	rpm	1,2,3	3-1000	4500	4000	3000	3000
Maximum input speed η_{1B}		1,2,3	3-1000	6000	6000	6000	4000
Precision backlashP ₁	arcmin	1	3-10	≤12	≤12	≤12	≤12
		2	9-64	≤15	≤15	≤15	≤15
		3	60-1000	≤18	≤18	≤18	≤18
Torsional rigidity	Nm/arcmin	1,2,3	3-1000	1.7	4.2	8.7	25.4
Allowable radial force F _{2aB}	N	1,2,3	3-1000	265	440	1240	3700
Allowable axial force F _{2aB}	N	1,2,3	3-1000	200	400	1000	3000
Sevice life	hrs	1,2,3	3-1000	20000			
Efficiency	%	1	3-10	≥97%			
		2	9-64	≥94%			
		3	60-1000	≥91%			
Gross weight	kg	1	3-10	0.95	2.3	7.6	20
		2	9-64	1.2	2.9	9.7	26
		3	60-1000	1.5	3.6	11.3	32
Working temperature	°C	1,2,3	3-1000	-10°C~90°C			
Lubricating		1,2,3	3-1000	Synthetic lubricating grease			
IP Grade		1,2,3	3-1000	IP65			
Installation direction		1,2,3	3-1000	In any direction			
Noise level (η_1 =3000rpm,off load)	dB	1,2	3-1000	≤62	≤65	≤65	≤68

YOSO MOTION Planetary Gear Reducer

■ Straight Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZF60	ZF80	ZF120	ZF160
Moment of Inertia J ₁	kg.cm ²	1	3	0.135	0.77	2.63	12.14
			4	0.093	0.52	1.79	7.78
			5	0.078	0.45	1.53	6.07
			7	—	0.40	1.32	4.63
			8	0.065	0.39	1.32	4.63
			10	0.065	0.39	1.32	4.63
		2	9	0.131	0.74	2.62	12.14
			12	0.127	0.72	2.62	12.37
			15	0.077	0.71	2.62	12.35
			16	0.088	0.50	2.62	7.47
			20	0.075	0.44	2.53	6.65
			25	0.075	0.44	1.50	5.81
			32	0.064	0.39	1.50	5.81
			40	0.064	0.39	1.30	5.28
			50	0.064	0.39	1.30	5.28
			64	0.064	0.39	1.30	5.28
		3	60	0.076	0.51	1.12	7.50
			64	0.076	0.50	1.12	7.50
			80	0.075	0.50	1.12	7.50
			100	0.075	0.44	1.50	7.40
			120	0.064	0.70	1.50	7.30
			125	0.064	0.65	1.50	7.20
			160	0.064	0.39	1.30	6.50
			200	0.064	0.39	1.30	6.20
			250	—	—	1.30	5.40
			280	—	—	1.30	5.70
			320	0.064	0.39	1.30	5.40
			350	—	—	1.30	5.40
			400	—	—	1.30	5.20
			500	—	—	1.30	5.10
			512	0.064	0.39	—	—
			1000	—	—	1.30	4.90

● ZF-L1 Profile



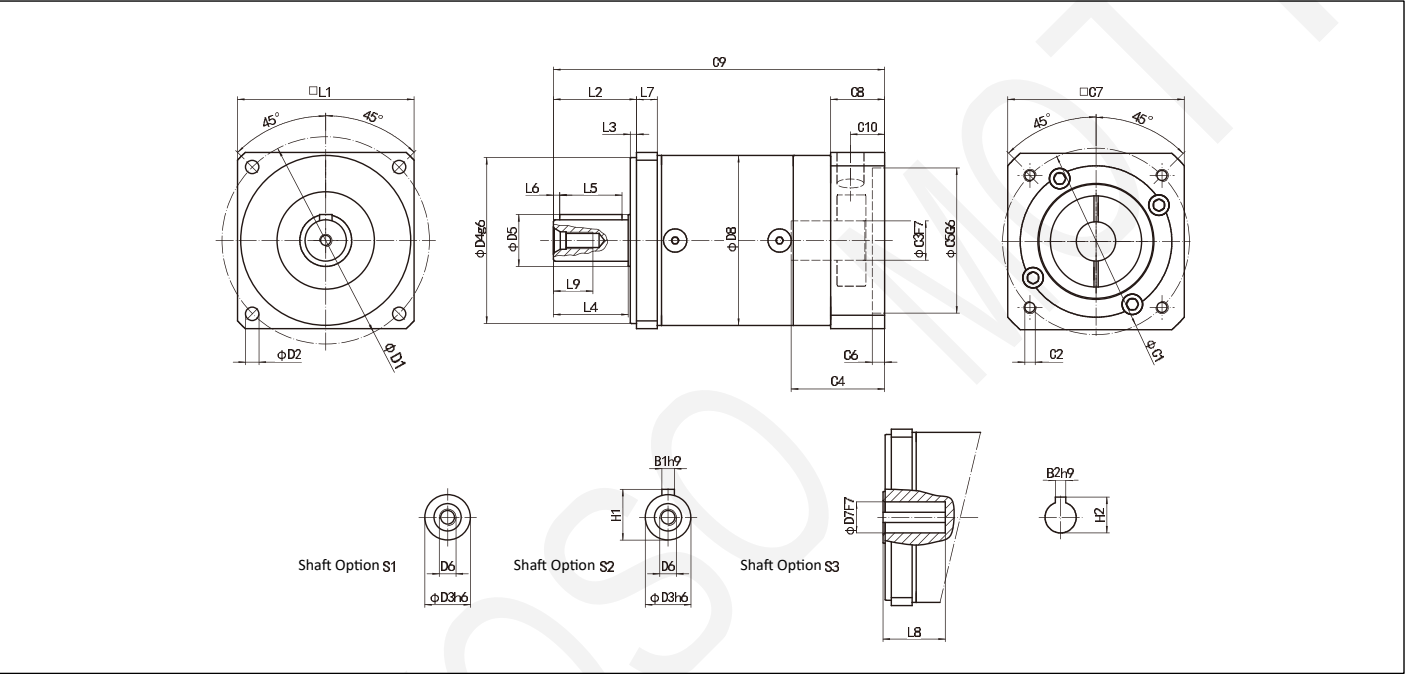
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

Size	ZF60	ZF80	ZF120	ZF160
D1	70	100	130	185
D2	5.5	6.5	9	11
D3	14/16	20/22	25/32	40
D4	50	80	110	130
D5	17	25	40	60
D6	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P
D7	10	15	20	35
D8	60	82	118	162
L1	60	85	115	165
L2	32	40	54	86
L3	3	3	3	5
L4	28	36	50	80
L5	25	30	40	65
L6	2	3	5	7
L7	8	10	13	18
L8	≤24	≤30	≤52	≤60
L9	12	16	25	35
C1	70	90	145	200
C2	M4×0.7P	M5×0.8P	M8×1.25P	M12×1.75P
C3	≤12/≤16	≤19/≤24	≤35	≤42
C4	33	45	60	82
C5	50	70	110	114.3
C6	5	8	8	8
C7	60	85	128	178
C8	20	26	43	50
C9	112	140	193.5	252
C10	16	16	25	35
B1	5	6	8/10	12
B2	3	5	8	10
H1	16/18	22.5/24.5	28/35	43
H2	11.4	17.3	22.8	38.3

YOSO MOTION Planetary Gear Reducer

ZF-L2 Profile

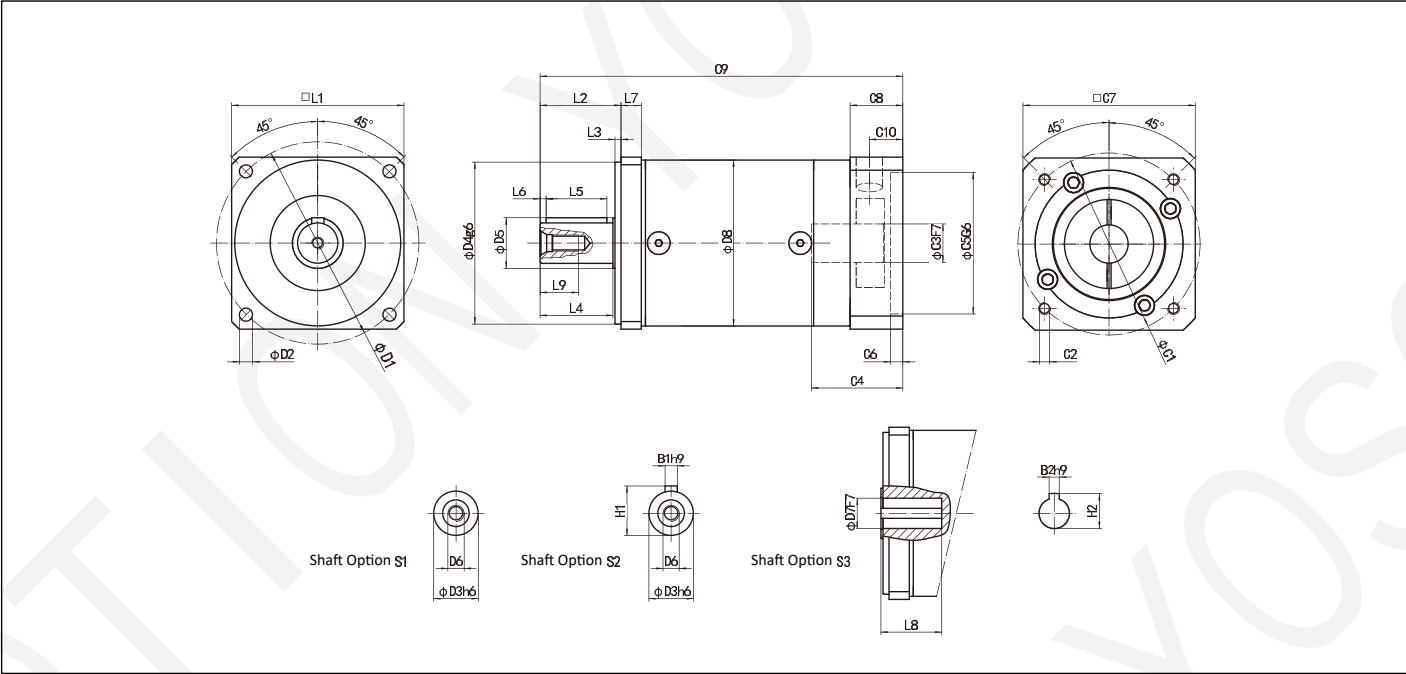


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	ZF60	ZF80	ZF120	ZF160
D1	70	100	130	185
D2	5.5	6.5	9	11
D3	14/16	20/22	25/32	40
D4	50	80	110	130
D5	17	25	40	60
D6	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P
D7	10	15	20	35
D8	60	82	118	162
L1	60	85	115	165
L2	32	40	54	86
L3	3	3	3	5
L4	28	36	50	80
L5	25	30	40	65
L6	2	3	5	7
L7	8	10	13	18
L8	≤24	≤30	≤52	≤60
L9	12	16	25	35
C1	70	90	145	145
C2	M4×0.7P	M5×0.8P	M8×1.25P	M8×1.25P
C3	≤12/≤16	≤19/≤24	≤35	≤24
C4	33	45	60	60
C5	50	70	110	110
C6	5	8	8	8
C7	60	85	128	128
C8	20	26	43	43
C9	129.5	159.5	222.5	291
C10	16	16	25	25
B1	5	6	8/10	12
B2	3	5	8	10
H1	16/18	22.5/24.5	28/35	43
H2	11.4	17.3	22.8	38.3

ZF-L3 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	ZF60	ZF80	ZF120	ZF160
D1	70	100	130	185
D2	5.5	6.5	9	11
D3	14/16	20/22	25/32	40
D4	50	80	110	130
D5	17	25	40	60
D6	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P
D7	10	15	20	35
D8	60	82	118	162
L1	60	85	115	165
L2	32	40	54	86
L3	3	3	3	5
L4	28	36	50	80
L5	25	30	40	65
L6	2	3	5	7
L7	8	10	13	18
L8	≤24	≤30	≤52	≤60
L9	12	16	25	35
C1	70	90	145	145
C2	M4×0.7P	M5×0.8P	M8×1.25P	M8×1.25P
C3	≤12/≤16	≤19/≤22	≤35	≤24
C4	33	45	60	60
C5	50	70	110	110
C6	5	8	8	8
C7	60	85	128	128
C8	20	26	43	43
C9	147	179	251.5	331
C10	16	16	25	25
B1	5	6	8/10	12
B2	3	5	8	10
H1	16/18	22.5/24.5	28/35	43
H2	11.4	17.3	22.8	38.3

ZFR SERIES



ZFR Series Performance Table

Model	Unit	Stage	Ratio	ZFR60	ZFR80	ZFR120	ZFR160
Rated output torqueT _{2N}	Nm	1	3	20	50	140	310
			4	35	90	240	605
			5	32	70	240	605
			7	—	50	100	320
			8	20	50	90	300
			10	15	35	90	250
		2	9	25	50	140	340
			12	25	50	140	340
			15	25	50	140	340
			16	40	100	260	680
			20	40	100	260	680
			25	35	80	260	680
		3	32	40	100	260	680
			40	35	80	260	680
			64	20	41	—	—
			60	35	60	260	450
			64	44	110	260	680
			80	44	110	260	680
			100	44	110	260	680
			120	25	60	260	450
			125	30	90	260	680
			160	44	110	260	680
			200	40	90	260	680
			250	—	—	260	680
			256	44	110	240	605
			280	—	—	260	680
			320	40	60	—	—
			350	—	—	260	680
			400	—	—	260	680
			500	—	—	260	680
			512	25	52	100	250
			1000	—	—	100	275
Emergency stop torque T _{2NOT}	Nm	1,2,3	3-1000	Twice rated output torque			
Rated input speed η _{1N}	rpm	1,2,3	3-1000	4500	4000	3000	3000
Maximum input speed η _{1B}		1,2,3	3-1000	6000	6000	6000	4000
Precision backlashP ₁	arcmin	1	3-10	≤15	≤15	≤15	≤15
		2	9-64	≤18	≤18	≤18	≤18
		3	60-1000	≤22	≤22	≤22	≤22
Torsional rigidity	Nm/arcmin	1,2,3	3-1000	1.7	4.2	8.7	25.4
Allowable radial force F _{2aB}	N	1,2,3	3-1000	265	440	1240	3700
Allowable axial force F _{2aB}	N	1,2,3	3-1000	200	400	1000	3000
Sevice life	hrs	1,2,3	3-1000	20000			
Efficiency	%	1	3-10	≥94%			
		2	9-64	≥91%			
		3	60-1000	≥89%			
Gross weight	kg	1	3-10	1.95	4.95	12.5	26.5
		2	9-64	2.25	5.55	15.7	32.5
		3	60-1000	2.56	6.25	17.3	38.5
Working temperature	°C	1,2,3	3-1000	-10°C~90°C			
Lubricating		1,2,3	3-1000	Synthetic lubricating grease			
IP Grade		1,2,3	3-1000	IP65			
Installation direction		1,2,3	3-1000	In any direction			
Noise level (η ₁ =3000rpm,off load)	dB	1,2	3-1000	≤62	≤65	≤65	≤68

FUTURE

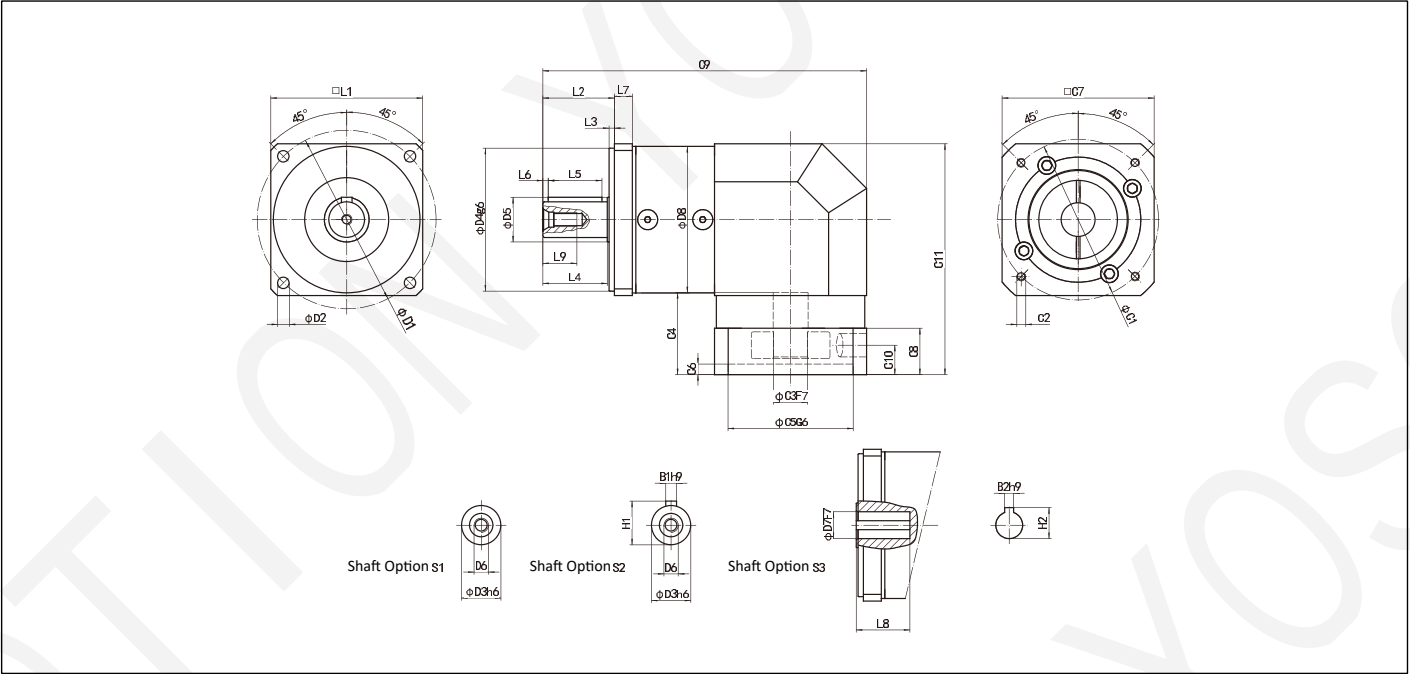
- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Equidirectional rotation
- Wide range of output shaft designs
- Precise gearing
- Transmission diversity

YOSO MOTION Planetary Gear Reducer

■ Straight Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZFR60	ZFR80	ZFR120	ZFR160
Moment of Inertia J ₁	kg.cm ²	1	3	0.135	0.77	2.63	12.14
			4	0.093	0.52	1.79	7.78
			5	0.078	0.45	1.53	6.07
			7	—	0.40	1.32	4.63
			8	0.065	0.39	1.32	4.63
			10	0.065	0.39	1.32	4.63
		2	9	0.131	0.74	2.62	12.14
			12	0.127	0.72	2.62	12.37
			15	0.077	0.71	2.62	12.35
			16	0.088	0.50	2.62	7.47
			20	0.075	0.44	2.53	6.65
			25	0.075	0.44	1.50	5.81
			32	0.064	0.39	1.50	5.81
			40	0.064	0.39	1.30	5.28
			50	0.064	0.39	1.30	5.28
			64	0.064	0.39	1.30	5.28
		3	60	0.076	0.51	1.12	7.50
			64	0.076	0.50	1.12	7.50
			80	0.075	0.50	1.12	7.50
			100	0.075	0.44	1.50	7.40
			120	0.064	0.70	1.50	7.30
			125	0.064	0.65	1.50	7.20
			160	0.064	0.39	1.30	6.50
			200	0.064	0.39	1.30	6.20
			250	—	—	1.30	5.40
			280	—	—	1.30	5.70
			320	0.064	0.39	1.30	5.40
			350	—	—	1.30	5.40
			400	—	—	1.30	5.20
			500	—	—	1.30	5.10
			512	0.064	0.39	—	—
			1000	—	—	1.30	4.90

● ZFR-L1 Profile



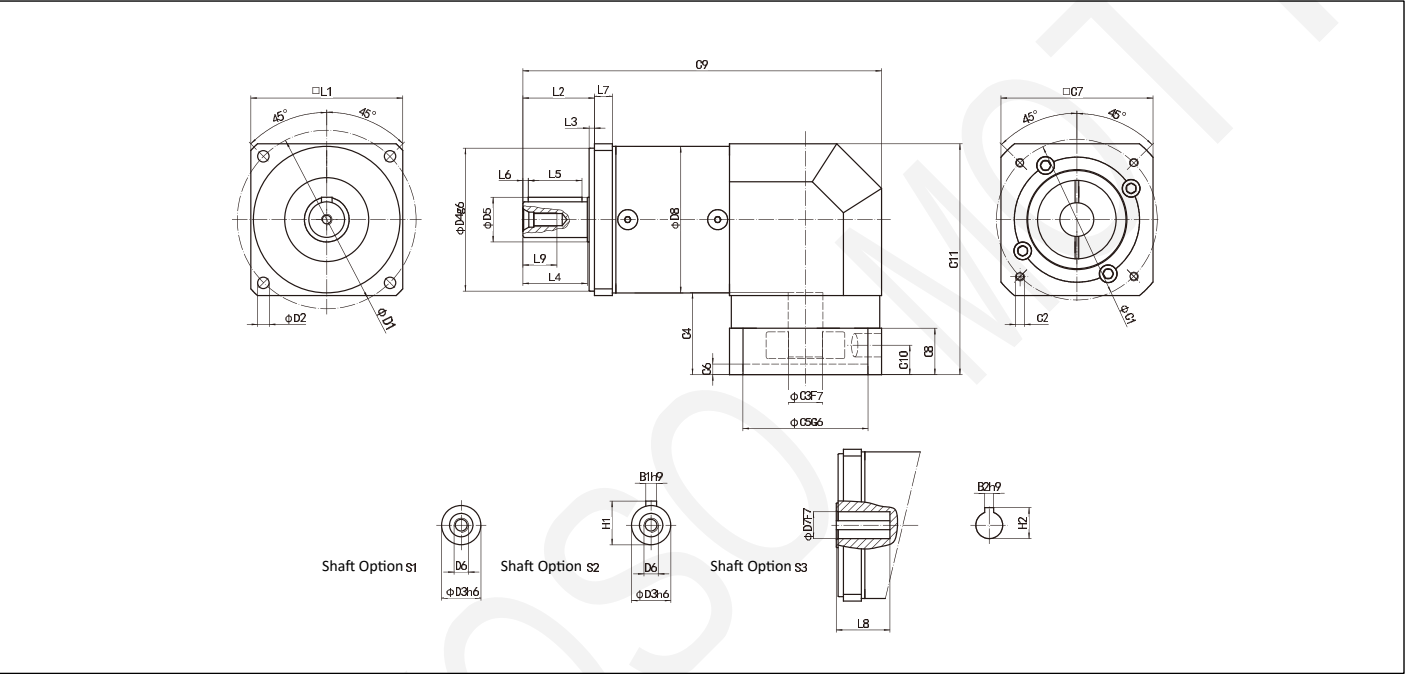
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

Size	ZFR60	ZFR80	ZFR120	ZFR160
D1	70	100	130	185
D2	5.5	6.5	9	11
D3	14/16	20/22	25/32	40
D4	50	80	110	130
D5	17	25	40	60
D6	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P
D7	10	15	20	35
D8	60	82	118	162
L1	60	85	115	165
L2	32	40	54	86
L3	3	3	3	5
L4	28	36	50	80
L5	25	30	40	65
L6	2	3	5	7
L7	8	10	13	18
L8	≤24	≤30	≤52	≤60
L9	12	16	25	35
C1	70	90	145	200
C2	M4×0.7P	M5×0.8P	M8×1.25P	M12×1.75P
C3	≤12/≤16	≤19/≤24	≤35	≤42
C4	33	45	60	82
C5	50	70	110	114.3
C6	5	8	8	8
C7	65	85	128	178
C8	20	26	43	50
C9	143.3	181	253	352.5
C10	16	16	25	35
C11	95.5	131.5	183	263
B1	5	6	8/10	12
B2	3	5	6	10
H1	16/18	22.5/24.5	28/35	43
H2	11.4	17.3	22.8	38.3

YOSO MOTION Planetary Gear Reducer

ZFR-L2 Profile

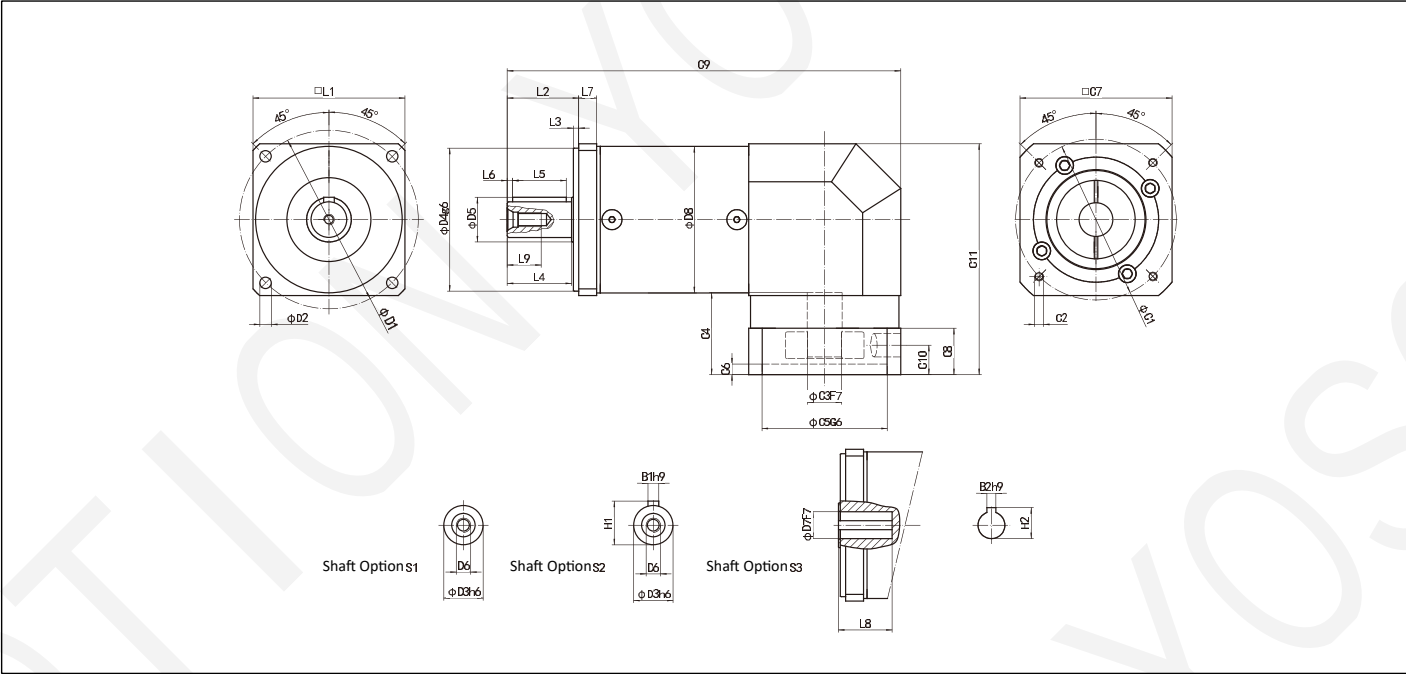


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	ZFR60	ZFR80	ZFR120	ZFR160
D1	70	100	130	185
D2	5.5	6.5	9	11
D3	14/16	20/22	25/32	40
D4	50	80	110	130
D5	17	25	40	60
D6	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P
D7	10	15	20	35
D8	60	82	118	162
L1	60	85	115	165
L2	32	40	54	86
L3	3	3	3	5
L4	28	36	50	80
L5	25	30	40	65
L6	2	3	5	7
L7	8	10	13	18
L8	≤24	≤30	≤52	≤60
L9	12	16	25	35
C1	70	90	145	145
C2	M4×0.7P	M5×0.8P	M8×1.25P	M8×1.25P
C3	≤12/≤16	≤19/≤24	≤35	≤35
C4	33	45	60	60
C5	50	70	110	110
C6	5	8	8	8
C7	65	85	128	128
C8	20	26	43	43
C9	160.8	200.5	285	399.5
C10	16	16	25	25
C11	95.5	131.5	183	260.5
B1	5	6	8/10	12
B2	3	5	6	10
H1	16/18	22.5/24.5	28/35	43
H2	11.4	17.3	22.8	38.3

ZFR-L3 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	ZFR60	ZFR80	ZFR120	ZFR160
D1	70	100	130	185
D2	5.5	6.5	9	11
D3	14/16	20/22	25/32	40
D4	50	80	110	130
D5	17	25	40	60
D6	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P
D7	10	15	20	35
D8	60	82	118	162
L1	60	85	115	165
L2	32	40	54	86
L3	3	3	3	5
L4	28	36	50	80
L5	25	30	40	65
L6	2	3	5	7
L7	8	10	13	18
L8	≤24	≤30	≤52	≤60
L9	12	16	25	35
C1	70	90	145	145
C2	M4×0.7P	M5×0.8P	M8×1.25P	M8×1.25P
C3	≤12/≤16	≤19/≤24	≤35	≤35
C4	33	45	60	60
C5	50	70	110	110
C6	5	8	8	8
C7	65	85	128	128
C8	20	26	43	43
C9	178.3	240	317	408.7
C10	16	16	25	25
C11	95.5	131.5	183	260.5
B1	5	6	8/10	12
B2	3	5	6	10
H1	16/18	22.5/24.5	28/35	43
H2	11.4	17.3	22.8	38.3

ZFS SERIES



ZFS Series Performance Table

Model	Unit	Stage	Ratio	ZFS60	ZFS80	ZFS120	ZFS160
Rated output torqueT2N	Nm	1	3	20	50	140	310
			4	35	90	240	605
			5	32	70	240	605
			7	—	50	100	320
			8	20	50	90	300
			10	15	35	90	250
		2	9	25	50	140	340
			12	25	50	140	340
			15	25	50	140	340
			16	40	100	260	680
			20	40	100	260	680
			25	35	80	260	680
			32	40	100	—	—
			40	35	80	260	680
			64	20	41	—	—
		3	60	35	60	260	450
			64	44	110	260	680
			80	44	110	260	680
			100	44	110	260	680
			120	25	60	260	450
			125	30	90	260	680
			160	44	110	260	680
			200	40	90	260	680
			250	—	—	260	680
			256	44	110	—	—
			280	—	—	260	680
			320	40	60	—	—
			350	—	—	260	680
			400	—	—	260	680
			500	—	—	260	680
			512	25	52	—	—
			1000	—	—	100	275
Emergency stop torque T2NOT	Nm	1,2,3	3-1000	Twice rated output torque			
Rated input speed η1N	rpm	1,2,3	3-1000	4500	4000	3000	3000
Maximum input speed η1B		1,2,3	3-1000	6000	6000	6000	4000
Precision backlashP1	arcmin	1	3-10	≤12	≤12	≤12	≤12
		2	9-64	≤15	≤15	≤15	≤15
		3	60-1000	≤18	≤18	≤18	≤18
Torsional rigidity	Nm/arcmin	1,2,3	3-1000	1.7	4.2	8.7	25.4
Allowable radial force F2aB	N	1,2,3	3-1000	265	440	1240	3700
Allowable axial force F2aB	N	1,2,3	3-1000	200	400	1000	3000
Sevice life	hrs	1,2,3	3-1000	20000			
Efficiency	%	1	3-10	≥97%			
		2	9-64	≥94%			
		3	60-1000	≥91%			
Gross weight	kg	1	3-10	0.95	2.3	7.6	20
		2	9-64	1.2	2.9	9.7	26
		3	60-1000	1.5	3.6	11.3	32
Working temperature	°C	1,2,3	3-1000	-10°C~90°C			
Lubricating		1,2,3	3-1000	Synthetic lubricating grease			
IP Grade		1,2,3	3-1000	IP65			
Installation direction		1,2,3	3-1000	In any direction			
Noise level (η1=3000rpm,off load)	dB	1,2	3-1000	≤62	≤65	≤65	≤68

FUTURE

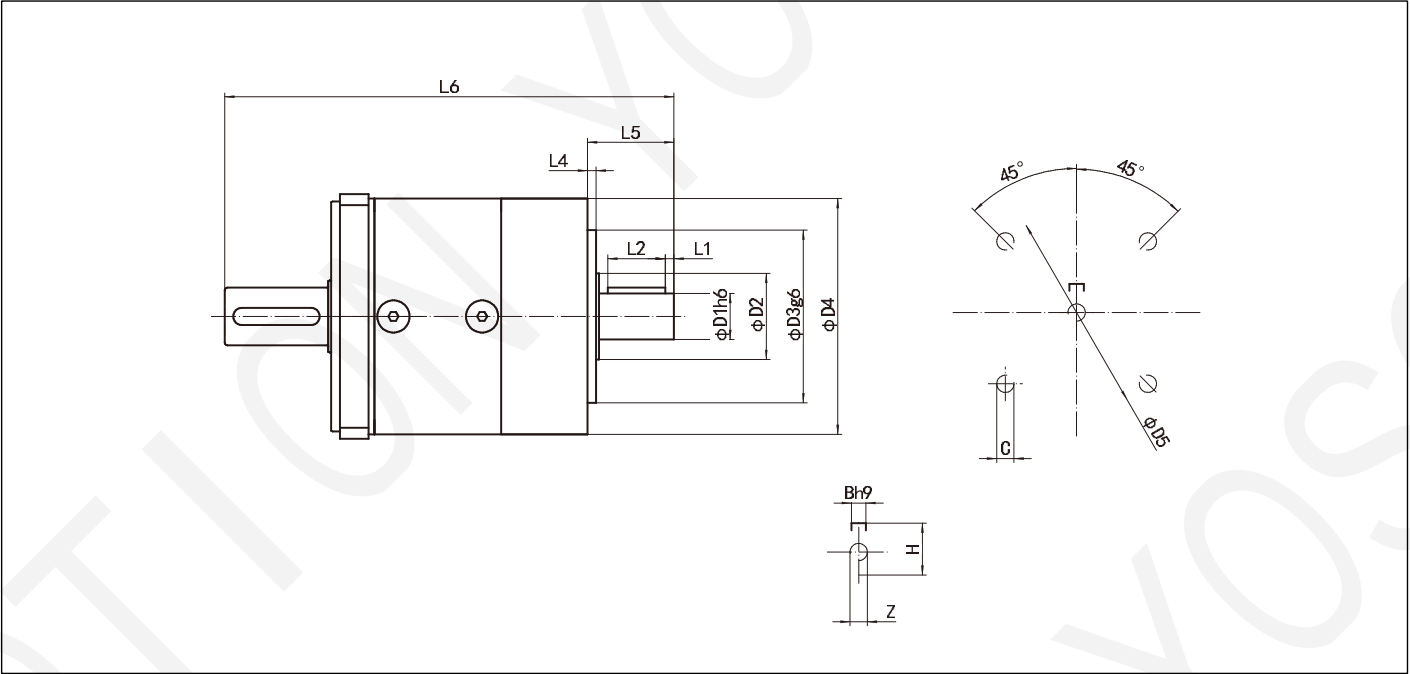
- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Equidirectional rotation
- Wide range of output shaft designs
- Precise gearing
- Transmission diversity

YOSO MOTION Planetary Gear Reducer

■ Straight Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZFS60	ZFS80	ZFS120	ZFS160
Moment of Inertia J ₁	kg.cm ²	1	3	0.135	0.77	2.63	12.14
			4	0.093	0.52	1.79	7.78
			5	0.078	0.45	1.53	6.07
			7	—	0.40	1.32	4.63
			8	0.065	0.39	1.32	4.63
			10	0.065	0.39	1.32	4.63
		2	9	0.131	0.74	2.62	12.14
			12	0.127	0.72	2.62	12.37
			15	0.077	0.71	2.62	12.35
			16	0.088	0.50	2.62	7.47
			20	0.075	0.44	2.53	6.65
			25	0.075	0.44	1.50	5.81
			32	0.064	0.39	1.50	5.81
			40	0.064	0.39	1.30	5.28
			50	0.064	0.39	1.30	5.28
			64	0.064	0.39	1.30	5.28
		3	60	0.076	0.51	1.12	7.50
			64	0.076	0.50	1.12	7.50
			80	0.075	0.50	1.12	7.50
			100	0.075	0.44	1.50	7.40
			120	0.064	0.70	1.50	7.30
			125	0.064	0.65	1.50	7.20
			160	0.064	0.39	1.30	6.50
			200	0.064	0.39	1.30	6.20
			250	—	—	1.30	5.40
			280	—	—	1.30	5.70
			320	0.064	0.39	1.30	5.40
			350	—	—	1.30	5.40
			400	—	—	1.30	5.20
			500	—	—	1.30	5.10
			512	0.064	0.39	—	—
			1000	—	—	1.30	4.90

● ZFS Profile

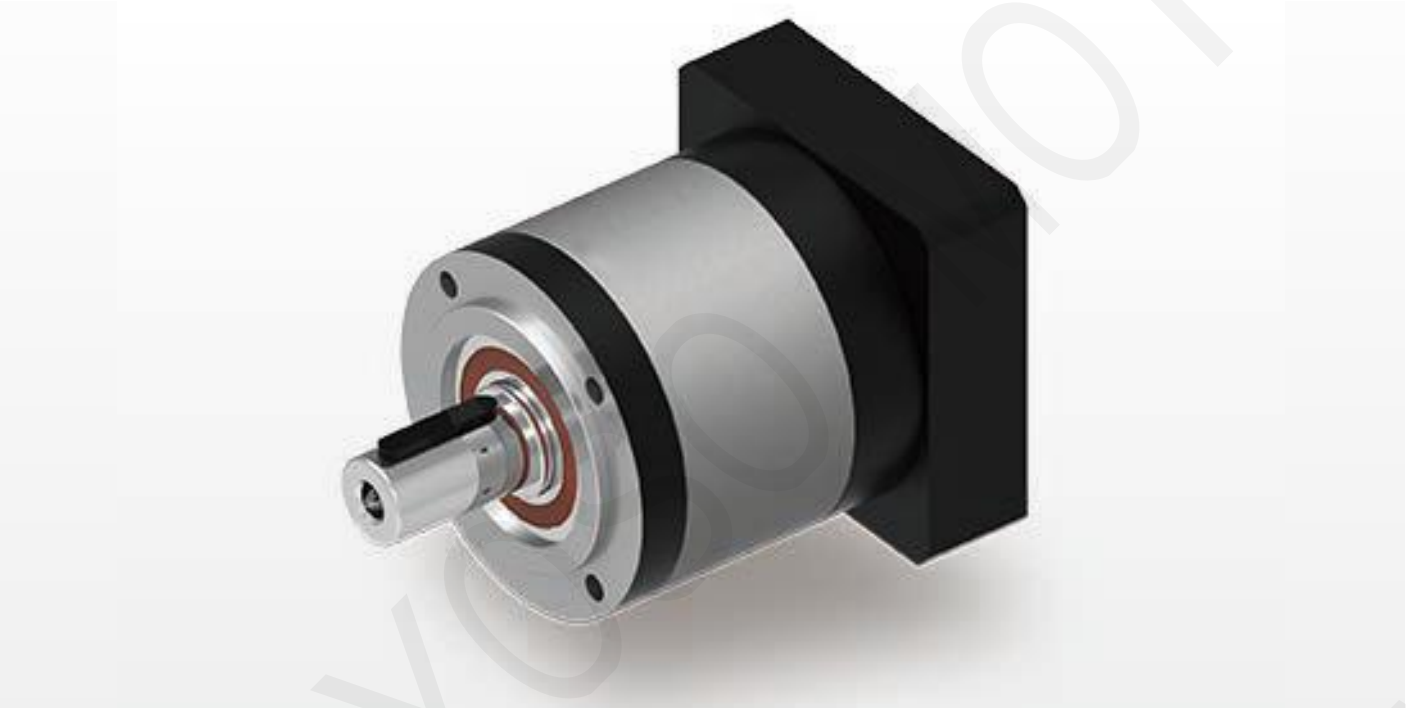


Note: Other dimensions refer to ZF series.

■ Size Table

Model	ZFS060			ZFS080			ZFS120			ZFS160		
Stage	1	2	3	1	2	3	1	2	3	1	2	3
D1	10	10	10	16	16	16	20	20	20	35	20	20
D2	20	20	20	30	30	30	40	40	40	50	40	40
D3	40	40	40	60	60	60	80	80	80	130	80	80
D4	60	60	60	82	82	82	118	118	118	165	118	118
D5	52	52	52	70	70	70	100	100	100	145	100	100
L1	3	3	3	3	3	3	5	5	5	4	5	5
L2	16	16	16	20	20	20	30	30	30	50	30	30
L3	21	21	21	26	26	26	40	40	40	58	40	40
L4	3	3	3	3	3	3	4	4	4	5	4	4
L5	25	25	25	30	30	30	45	45	45	65	45	45
L6	129	146.5	164	156	175.5	195	222	251	280	326	327.5	374.5
C	4-M5	4-M5	4-M5	4-M6	4-M6	4-M6	4-M10	4-M10	4-M10	4-M12	4-M10	4-M10
B	3	3	3	5	5	5	6	6	6	10	6	6
H	11.2	11.2	11.2	18	18	18	22.5	22.5	22.5	38	22.5	22.5
Z	M3×6	M3×6	M3×6	M6×15	M6×15	M6×15	M6×15	M6×15	M6×15	M10×25	M6×15	M6×15

ZE SERIES



FUTURE

- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Equidirectional rotation
- Wide range of output shaft designs
- Precise gearing

ZE Series Performance Table

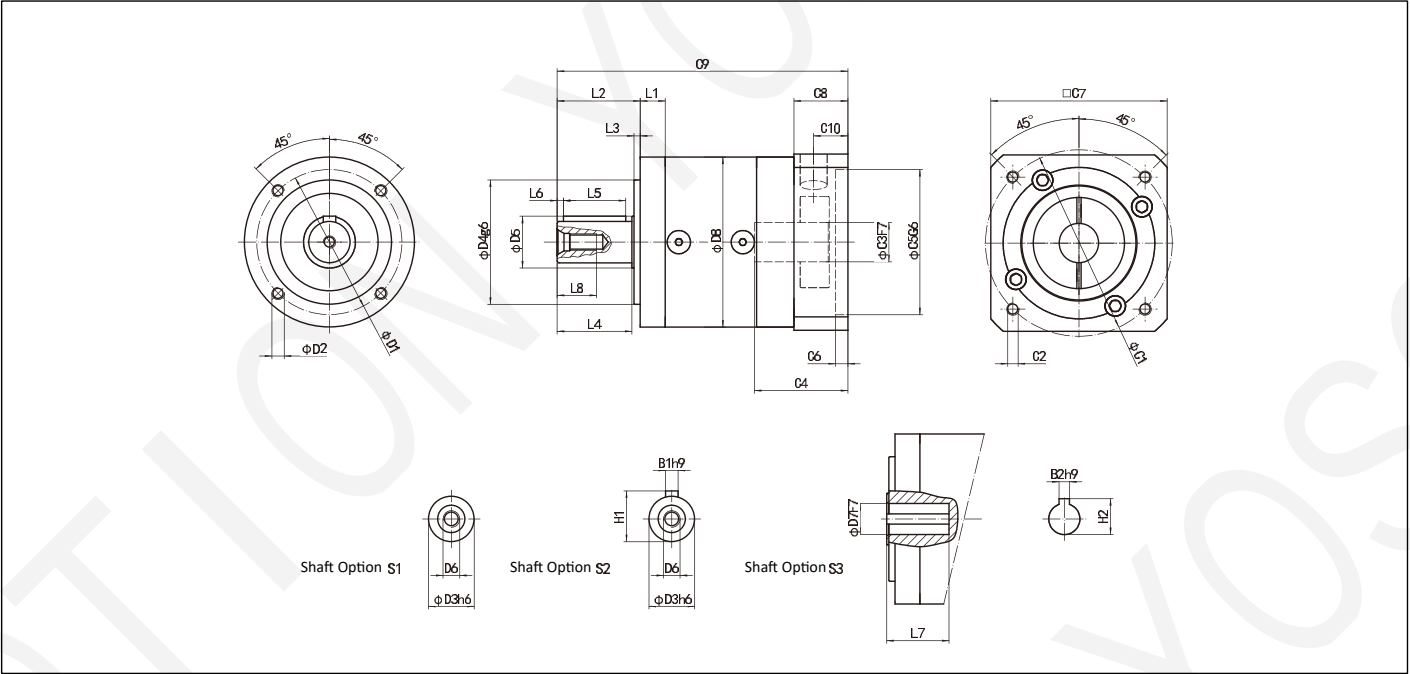
Model	Unit	Stage	Ratio	ZE60	ZE80	ZE120	ZE160
Rated output torqueT _{2N}	Nm	1	3	20	50	140	310
			4	35	90	240	605
			5	32	70	240	605
			7	—	50	100	320
			8	20	50	90	300
			10	15	35	90	250
		2	9	25	50	140	340
			12	25	50	140	340
			15	25	50	140	340
			16	40	100	260	680
			20	40	100	260	680
			25	35	80	260	680
		3	32	40	100	260	680
			40	35	80	260	680
			64	20	41	—	—
			60	35	60	260	450
			64	44	110	260	680
			80	44	110	260	680
			100	44	110	260	680
			120	25	60	260	450
			125	30	90	260	680
			160	44	110	260	680
			200	40	90	260	680
			250	—	—	260	680
			256	44	110	—	—
			280	—	—	260	680
			320	40	60	—	—
			350	—	—	260	680
			400	—	—	260	680
			500	—	—	260	680
			512	25	52	—	—
			1000	—	—	100	275
Emergency stop torque T _{2NOT}	Nm	1,2,3	3-1000	Twice rated output torque			
Rated input speed η_{1N}	rpm	1,2,3	3-1000	4500	4000	3000	3000
Maximum input speed η_{1B}		1,2,3	3-1000	6000	6000	6000	4000
Precision backlashP ₁	arcmin	1	3-10	≤12	≤12	≤12	≤12
		2	9-64	≤15	≤15	≤15	≤15
		3	60-1000	≤18	≤18	≤18	≤18
Torsional rigidity	Nm/arcmin	1,2,3	3-1000	1.7	4.2	8.7	25.4
Allowable radial force F _{2aB}	N	1,2,3	3-1000	265	440	1240	3700
Allowable axial force F _{2aB}	N	1,2,3	3-1000	200	400	1000	3000
Sevice life	hrs	1,2,3	3-1000	20000			
Efficiency	%	1	3-10	≥97%			
		2	9-64	≥94%			
		3	60-1000	≥91%			
Gross weight	kg	1	3-10	0.95	2.3	7.6	20
		2	9-64	1.2	2.9	9.7	26
		3	60-1000	1.5	3.6	11.3	32
Working temperature	°C	1,2,3	3-1000	-10°C~90°C			
Lubricating		1,2,3	3-1000	Synthetic lubricating grease			
IP Grade		1,2,3	3-1000	IP65			
Installation direction		1,2,3	3-1000	In any direction			
Noise level ($\eta_1=3000$ rpm,off load)	dB	1,2	3-1000	≤62	≤65	≤65	≤68

YOSO MOTION Planetary Gear Reducer

■ Straight Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZE60	ZE80	ZE120	ZE160
Moment of Inertia J ₁	kg.cm ²	1	3	0.135	0.77	2.63	12.14
			4	0.093	0.52	1.79	7.78
			5	0.078	0.45	1.53	6.07
			7	—	0.40	1.32	4.63
			8	0.065	0.39	1.32	4.63
			10	0.065	0.39	1.32	4.63
		2	9	0.131	0.74	2.62	12.14
			12	0.127	0.72	2.62	12.37
			15	0.077	0.71	2.62	12.35
			16	0.088	0.50	2.62	7.47
			20	0.075	0.44	2.53	6.65
			25	0.075	0.44	1.50	5.81
			32	0.064	0.39	1.50	5.81
			40	0.064	0.39	1.30	5.28
			50	0.064	0.39	1.30	5.28
			64	0.064	0.39	1.30	5.28
		3	60	0.076	0.51	1.12	7.50
			64	0.076	0.50	1.12	7.50
			80	0.075	0.50	1.12	7.50
			100	0.075	0.44	1.50	7.40
			120	0.064	0.70	1.50	7.30
			125	0.064	0.65	1.50	7.20
			160	0.064	0.39	1.30	6.50
			200	0.064	0.39	1.30	6.20
			250	—	—	1.30	5.40
			280	—	—	1.30	5.70
			320	0.064	0.39	1.30	5.40
			350	—	—	1.30	5.40
			400	—	—	1.30	5.20
			500	—	—	1.30	5.10
			512	0.064	0.39	—	—
			1000	—	—	1.30	4.90

● ZE-L1 Profile



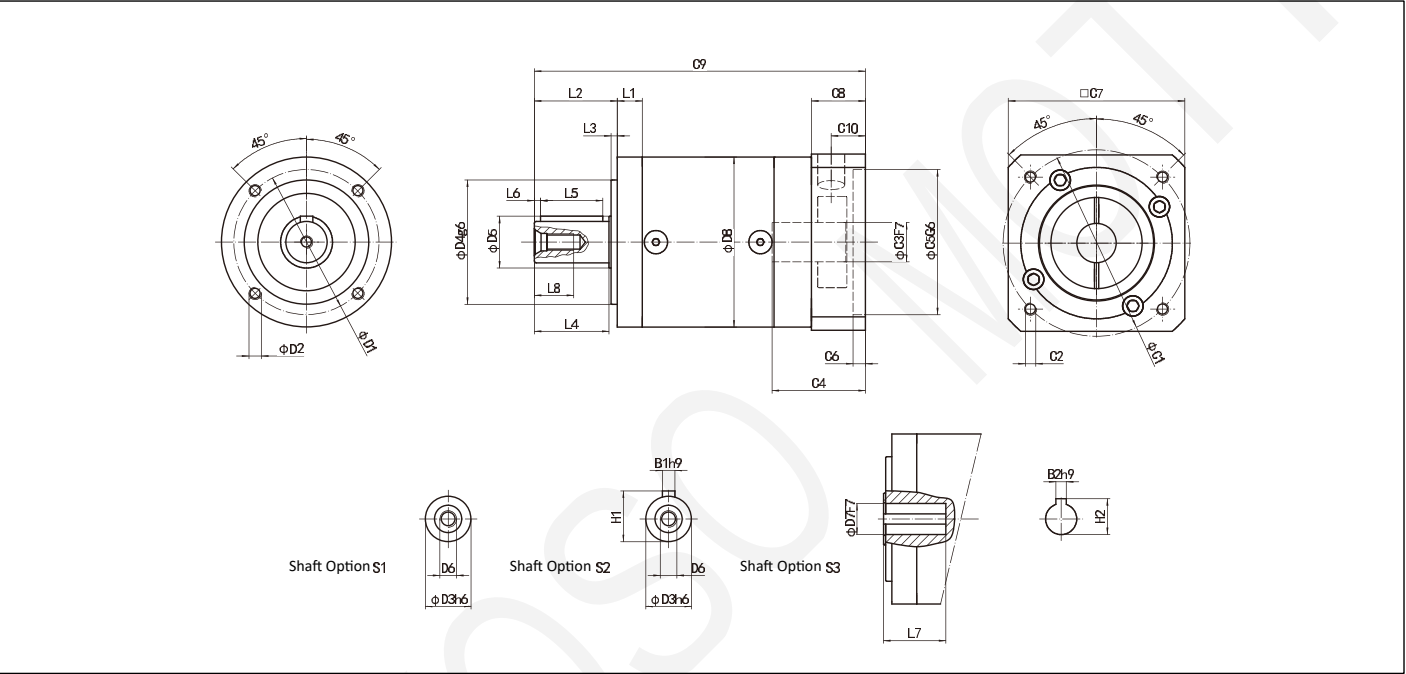
Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

Size	ZE60	ZE80	ZE120	ZE160
D1	52	70	100	145
D2	M5×0.8P	M6×1P	M10×1.5P	M12×1.75P
D3	14/16	20/22	25/32	40
D4	40	60	80	130
D5	17	25	40	60
D6	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P
D7	10	15	20	35
D8	60	82	118	162
L1	13	12	18	23
L2	32	40	54	86
L3	3	3	3	5
L4	28	36	50	80
L5	25	30	40	65
L6	2	3	5	7
L7	≤24	≤30	≤52	≤60
L8	12	16	25	35
C1	70	90	145	200
C2	M4×0.7P	M5×0.8P	M8×1.25P	M12×1.75P
C3	≤12/≤16	≤19/≤24	≤35	≤42
C4	33	45	60	82
C5	50	70	110	114.3
C6	5	8	8	8
C7	60	85	128	178
C8	20	26	43	50
C9	112	140	193.5	252
C10	16	16	25	35
B1	5	6	8/10	12
B2	3	5	6	10
H1	16/18	22.5/24.5	28/35	43
H2	11.4	17.3	22.8	38.3

YOSO MOTION Planetary Gear Reducer

ZE-L2 Profile

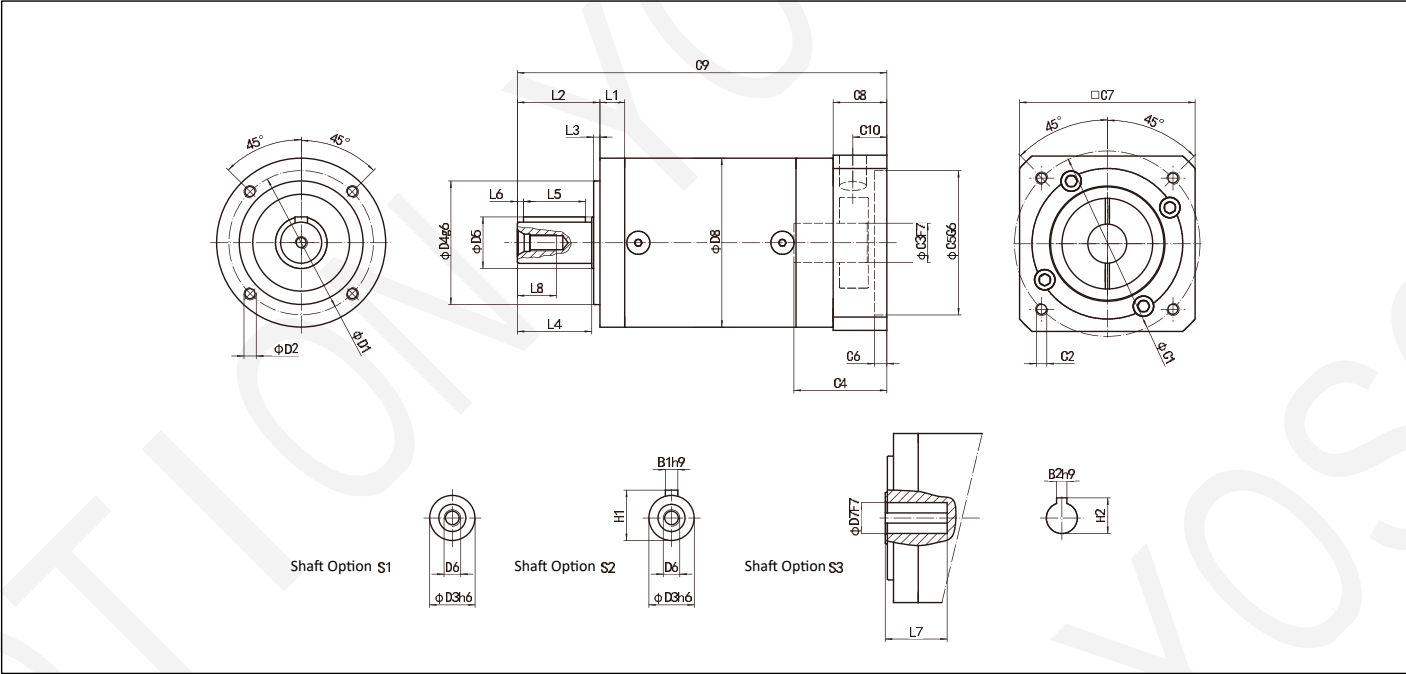


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	ZE60	ZE80	ZE120	ZE160
D1	52	70	100	145
D2	M5×0.8P	M6×1P	M10×1.5P	M12×1.75P
D3	14/16	20/22	25/32	40
D4	40	60	80	130
D5	17	25	40	60
D6	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P
D7	10	15	20	35
D8	60	82	118	162
L1	13	12	18	23
L2	32	40	54	86
L3	3	3	3	5
L4	28	36	50	80
L5	25	30	40	65
L6	2	3	5	7
L7	≤24	≤30	≤52	≤60
L8	12	16	25	35
C1	70	90	145	200
C2	M4×0.7P	M5×0.8P	M8×1.25P	M8×1.25P
C3	≤12/≤16	≤19/≤24	≤35	≤35
C4	33	45	60	60
C5	50	70	110	110
C6	5	8	8	8
C7	60	85	128	128
C8	20	26	43	43
C9	129.5	159.5	222.5	291
C10	16	16	25	25
B1	5	6	8/10	12
B2	3	5	6	10
H1	16/18	22.5/24.5	28/35	43
H2	11.4	17.3	22.8	38.3

ZE-L3 Profile

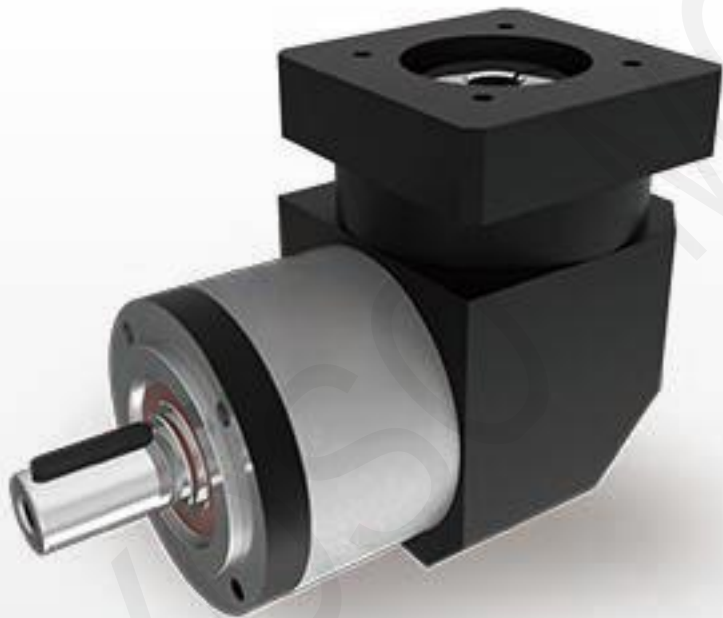


Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

Size Table

Size	ZE60	ZE80	ZE120	ZE160
D1	52	70	100	145
D2	M5×0.8P	M6×1P	M10×1.5P	M12×1.75P
D3	14/16	20/22	25/32	40
D4	40	60	80	130
D5	17	25	40	60
D6	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P
D7	10	15	20	35
D8	60	82	118	162
L1	13	12	18	23
L2	32	40	54	86
L3	3	3	3	5
L4	28	36	50	80
L5	25	30	40	65
L6	2	3	5	7
L7	≤24	≤30	≤52	≤60
L8	12	16	25	35
C1	70	90	145	145
C2	M4×0.7P	M5×0.8P	M8×1.25P	M8×1.25P
C3	≤12/≤16	≤19/≤24	≤35	≤35
C4	33	45	60	60
C5	50	70	110	110
C6	5	8	8	8
C7	60	85	128	128
C8	20	26	43	43
C9	147	179	251.5	391
C10	16	16	25	25
B1	5	6	8/10	12
B2	3	5	6	10
H1	16/18	22.5/24.5	28/35	43
H2	11.4	17.3	22.8	38.3

ZER SERIES



ZER Series Performance Table

Model	Unit	Stage	Ratio	ZER60	ZER80	ZER120	ZER160
Rated output torqueT _{2N}	Nm	1	3	20	50	140	310
			4	35	90	240	605
			5	32	70	240	605
			7	—	50	100	320
			8	20	50	90	300
			10	15	35	90	250
		2	9	25	50	140	340
			12	25	50	140	340
			15	25	50	140	340
			16	40	100	260	680
			20	40	100	260	680
			25	35	80	260	680
		3	32	40	100	260	680
			40	35	80	260	680
			64	20	41	—	—
			60	35	60	260	450
			64	44	110	260	680
			80	44	110	260	680
			100	44	110	260	680
			120	25	60	260	450
			125	30	90	260	680
			160	44	110	260	680
			200	40	90	260	680
			250	—	—	260	680
			256	44	110	—	—
			280	—	—	260	680
			320	40	60	—	—
			350	—	—	260	680
			400	—	—	260	680
			500	—	—	260	680
			512	25	52	—	—
			1000	—	—	100	275
Emergency stop torque T _{2NOT}	Nm	1,2,3	3-1000	Twice rated output torque			
Rated input speed η_{1N}	rpm	1,2,3	3-1000	4500	4000	3000	3000
Maximum input speed η_{1B}		1,2,3	3-1000	6000	6000	6000	4000
Precision backlashP ₁	arcmin	1	3-10	≤15	≤15	≤15	≤15
		2	9-64	≤18	≤18	≤18	≤18
		3	60-1000	≤22	≤22	≤22	≤22
Torsional rigidity	Nm/arcmin	1,2,3	3-1000	1.7	4.2	8.7	25.4
Allowable radial force F _{2aB}	N	1,2,3	3-1000	265	440	1240	3700
Allowable axial force F _{2aB}	N	1,2,3	3-1000	200	400	1000	3000
Sevice life	hrs	1,2,3	3-1000	20000			
Efficiency	%	1	3-10	≥94%			
		2	9-64	≥91%			
		3	60-1000	≥89%			
Gross weight	kg	1	3-10	1.95	4.95	12.5	26.5
		2	9-64	2.25	5.55	15.7	32.5
		3	60-1000	2.56	6.25	17.3	38.5
Working temperature	°C	1,2,3	3-1000	-10°C~90°C			
Lubricating		1,2,3	3-1000	Synthetic lubricating grease			
IP Grade		1,2,3	3-1000	IP65			
Installation direction		1,2,3	3-1000	In any direction			
Noise level ($\eta_1=3000$ rpm,off load)	dB	1,2	3-1000	≤62	≤65	≤65	≤68

FUTURE

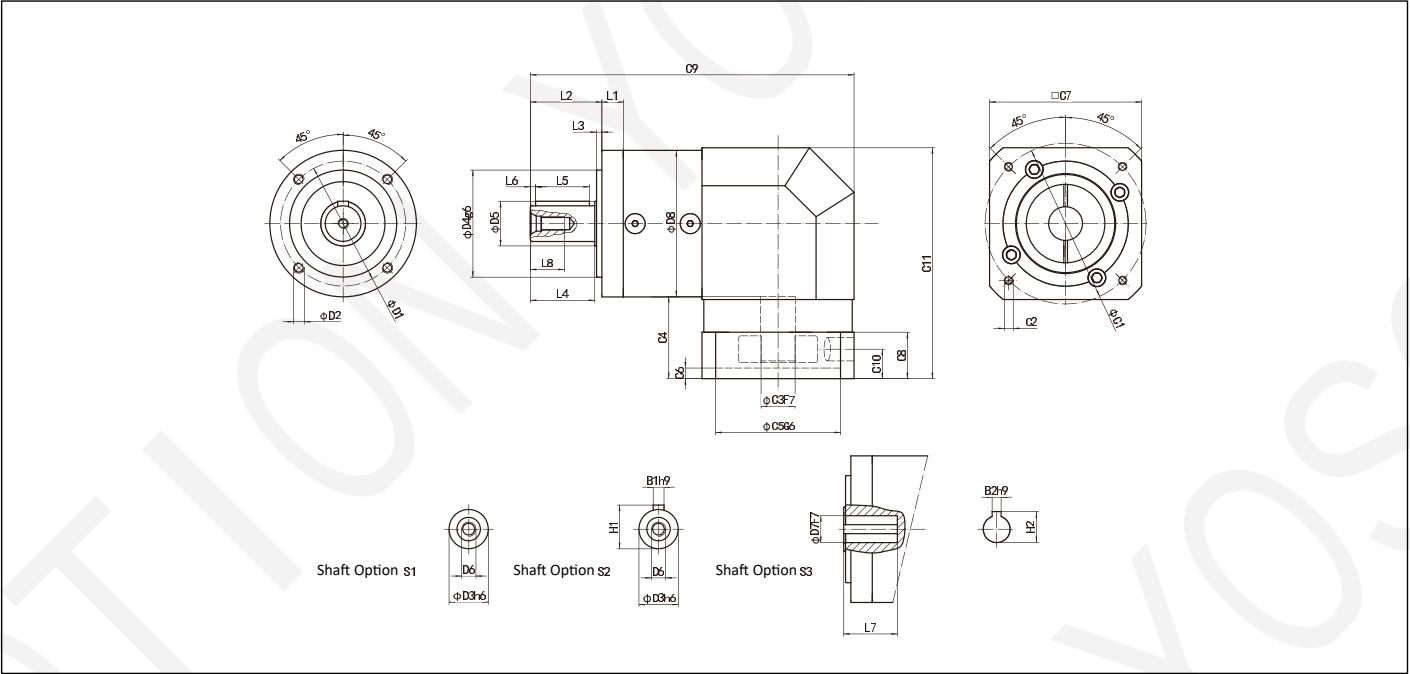
- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Equidirectional rotation
- Wide range of output shaft designs
- Precise gearing
- Transmission diversity

YOSO MOTION Planetary Gear Reducer

■ Straight Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZER60	ZER80	ZER120	ZER160
Moment of Inertia J ₁	kg.cm ²	1	3	0.135	0.77	2.63	12.14
			4	0.093	0.52	1.79	7.78
			5	0.078	0.45	1.53	6.07
			7	—	0.40	1.32	4.63
			8	0.065	0.39	1.32	4.63
			10	0.065	0.39	1.32	4.63
		2	9	0.131	0.74	2.62	12.14
			12	0.127	0.72	2.62	12.37
			15	0.077	0.71	2.62	12.35
			16	0.088	0.50	2.62	7.47
			20	0.075	0.44	2.53	6.65
			25	0.075	0.44	1.50	5.81
			32	0.064	0.39	1.50	5.81
			40	0.064	0.39	1.30	5.28
			50	0.064	0.39	1.30	5.28
			64	0.064	0.39	1.30	5.28
		3	60	0.076	0.51	1.12	7.50
			64	0.076	0.50	1.12	7.50
			80	0.075	0.50	1.12	7.50
			100	0.075	0.44	1.50	7.40
			120	0.064	0.70	1.50	7.30
			125	0.064	0.65	1.50	7.20
			160	0.064	0.39	1.30	6.50
			200	0.064	0.39	1.30	6.20
			250	—	—	1.30	5.40
			280	—	—	1.30	5.70
			320	0.064	0.39	1.30	5.40
			350	—	—	1.30	5.40
			400	—	—	1.30	5.20
			500	—	—	1.30	5.10
			512	0.064	0.39	—	—
			1000	—	—	1.30	4.90

● ZER-L1 Profile



Note: The above are the commonly used paired motor sizes. The input end size can be customized according to the specific motor size.

■ Size Table

Size	ZER60	ZER80	ZER120	ZER160
D1	52	70	100	145
D2	M5×0.8P	M6×1P	M10×1.5P	M12×1.75P
D3	14/16	20/22	25/32	40
D4	40	60	80	130
D5	17	25	40	60
D6	M5×0.8P	M8×1.25P	M10×1.5P	M12×1.75P
D7	10	15	20	35
D8	60	82	118	162
L1	13	12	18	23
L2	32	40	54	86
L3	3	3	3	5
L4	28	36	50	80
L5	25	30	40	65
L6	2	3	5	7
L7	≤24	≤30	≤52	≤60
L8	12	16	25	35
C1	70	90	145	200
C2	M4×0.7P	M5×0.8P	M8×1.25P	M12×1.75P
C3	≤12/≤16	≤19/≤24	≤35	≤42
C4	33	45	60	82
C5	50	70	110	114.3
C6	5	8	8	8
C7	65	85	128	178
C8	20	26	43	50
C9	143.3	181	253	352.5
C10	16	16	25	35
C11	95.5	131.5	183	263
B1	5	6	8/10	12
B2	3	5	6	10
H1	16/18	22.5/24.5	28/35	43
H2	11.4	17.3	22.8	38.3

ZES SERIES



FUTURE

- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Equidirectional rotation
- Wide range of output shaft designs
- Precise gearing

ZES Series Performance Table

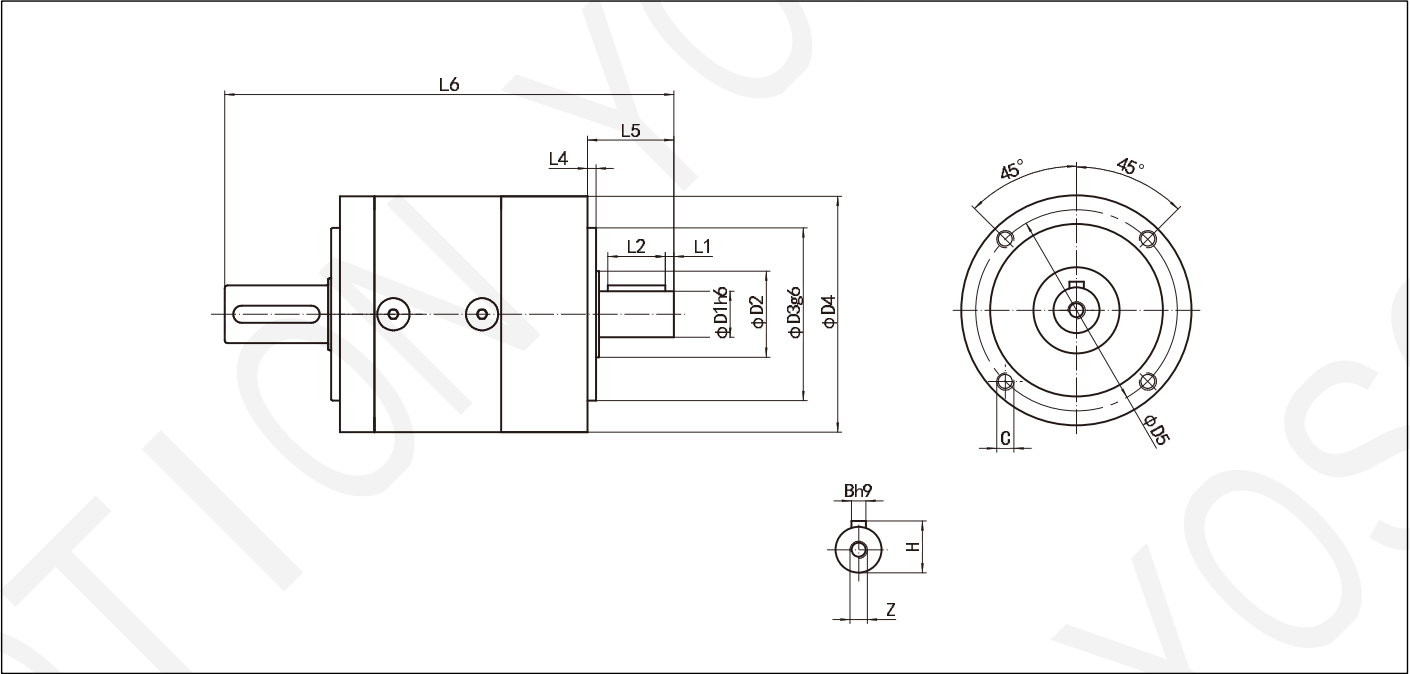
Model	Unit	Stage	Ratio	ZES60	ZES80	ZES120	ZES160
Rated output torqueT _{2N}	Nm	1	3	20	50	140	310
			4	35	90	240	605
			5	32	70	240	605
			7	—	50	100	320
			8	20	50	90	300
			10	15	35	90	250
		2	9	25	50	140	340
			12	25	50	140	340
			15	25	50	140	340
			16	40	100	260	680
			20	40	100	260	680
			25	35	80	260	680
		3	32	40	100	260	680
			40	35	80	260	680
			64	20	41	—	—
			60	35	60	260	450
			64	44	110	260	680
			80	44	110	260	680
			100	44	110	260	680
			120	25	60	260	450
			125	30	90	260	680
			160	44	110	260	680
			200	40	90	260	680
			250	—	—	260	680
			256	44	110	—	—
			280	—	—	260	680
			320	40	60	—	—
			350	—	—	260	680
			400	—	—	260	680
			500	—	—	260	680
			512	25	52	—	—
			1000	—	—	100	275
Emergency stop torque T _{2NOT}	Nm	1,2,3	3-1000	Twice rated output torque			
Rated input speed η _{1N}	rpm	1,2,3	3-1000	4500	4000	3000	3000
Maximum input speed η _{1B}		1,2,3	3-1000	6000	6000	6000	4000
Precision backlashP ₁	arcmin	1	3-10	≤12	≤12	≤12	≤12
		2	9-64	≤15	≤15	≤15	≤15
		3	60-1000	≤18	≤18	≤18	≤18
Torsional rigidity	Nm/arcmin	1,2,3	3-1000	1.7	4.2	8.7	25.4
Allowable radial force F _{2aB}	N	1,2,3	3-1000	265	440	1240	3700
Allowable axial force F _{2aB}	N	1,2,3	3-1000	200	400	1000	3000
Sevice life	hrs	1,2,3	3-1000	20000			
Efficiency	%	1	3-10	≥97%			
		2	9-64	≥94%			
		3	60-1000	≥91%			
Gross weight	kg	1	3-10	0.95	2.3	7.6	20
		2	9-64	1.2	2.9	9.7	26
		3	60-1000	1.5	3.6	11.3	32
Working temperature	°C	1,2,3	3-1000	-10°C~90°C			
Lubricating		1,2,3	3-1000	Synthetic lubricating grease			
IP Grade		1,2,3	3-1000	IP65			
Installation direction		1,2,3	3-1000	In any direction			
Noise level (η ₁ =3000rpm,off load)	dB	1,2	3-1000	≤62	≤65	≤65	≤68

YOSO MOTION Planetary Gear Reducer

■ Straight Tooth with Moment of Inertia

Model	Unit	Stage	Ratio	ZES60	ZES80	ZES120	ZES160
Moment of Inertia J ₁	kg.cm ²	1	3	0.135	0.77	2.63	12.14
			4	0.093	0.52	1.79	7.78
			5	0.078	0.45	1.53	6.07
			7	—	0.40	1.32	4.63
			8	0.065	0.39	1.32	4.63
			10	0.065	0.39	1.32	4.63
		2	9	0.131	0.74	2.62	12.14
			12	0.127	0.72	2.62	12.37
			15	0.077	0.71	2.62	12.35
			16	0.088	0.50	2.62	7.47
			20	0.075	0.44	2.53	6.65
			25	0.075	0.44	1.50	5.81
			32	0.064	0.39	1.50	5.81
			40	0.064	0.39	1.30	5.28
			50	0.064	0.39	1.30	5.28
			64	0.064	0.39	1.30	5.28
		3	60	0.076	0.51	1.12	7.50
			64	0.076	0.50	1.12	7.50
			80	0.075	0.50	1.12	7.50
			100	0.075	0.44	1.50	7.40
			120	0.064	0.70	1.50	7.30
			125	0.064	0.65	1.50	7.20
			160	0.064	0.39	1.30	6.50
			200	0.064	0.39	1.30	6.20
			250	—	—	1.30	5.40
			280	—	—	1.30	5.70
			320	0.064	0.39	1.30	5.40
			350	—	—	1.30	5.40
			400	—	—	1.30	5.20
			500	—	—	1.30	5.10
			512	0.064	0.39	—	—
			1000	—	—	1.30	4.90

● ZES Profile



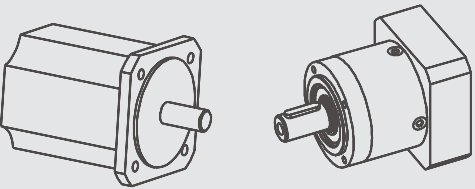
Note: Other dimensions refer to ZE series.

■ Size Table

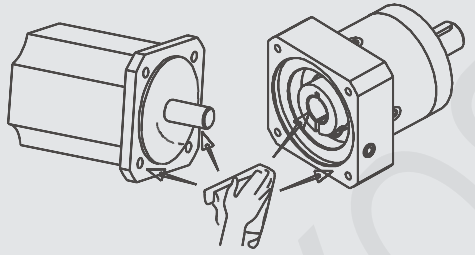
Model	ZES060			ZES080			ZES120			ZES160		
Stage	1	2	3	1	2	3	1	2	3	1	2	3
D1	10	10	10	16	16	16	20	20	20	35	20	20
D2	20	20	20	30	30	30	40	40	40	50	40	40
D3	40	40	40	60	60	60	80	80	80	130	80	80
D4	60	60	60	82	82	82	118	118	118	165	118	118
D5	52	52	52	70	70	70	100	100	100	145	100	100
L1	3	3	3	3	3	3	5	5	5	4	5	5
L2	16	16	16	20	20	20	30	30	30	50	30	30
L3	21	21	21	26	26	26	40	40	40	58	40	40
L4	3	3	3	3	3	3	4	4	4	5	4	4
L5	25	25	25	30	30	30	45	45	45	65	45	45
L6	129	146.5	164	156	175.5	195	222	251	280	326	327.5	374.5
C	4-M5	4-M5	4-M5	4-M6	4-M6	4-M6	4-M10	4-M10	4-M10	4-M12	4-M10	4-M10
B	3	3	3	5	5	5	6	6	6	10	6	6
H	11.2	11.2	11.2	18	18	18	22.5	22.5	22.5	38	22.5	22.5
Z	M3×6	M3×6	M3×6	M6×15	M6×15	M6×15	M6×15	M6×15	M6×15	M10×25	M6×15	M6×15

Straight Teeth Series Assembly Guide

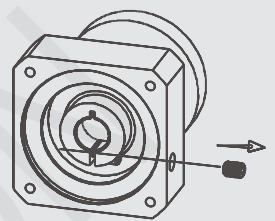
● B5 Motor Direct Coupling Type



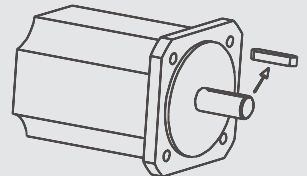
1.Is the motor correct? Is the reducer correct?



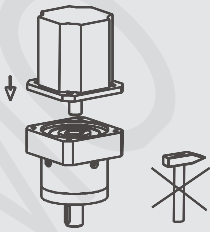
2.Check if the motor and reducer are in good condition. Clean the connection between the motor shaft and the reducer.



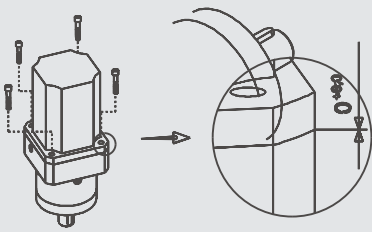
3.Unscrew the sealing screw on the outer side of the reducer to adjust the clamping screws.



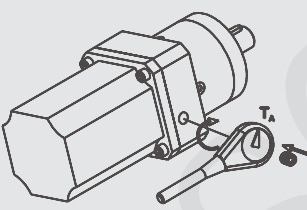
4.Remove the motor shaft key.



5.Unscrew the clamping screw. If the motor shaft is smaller than the input hole diameter, please use the matching one. Then assemble the matching motor and reducer in the vertical direction.

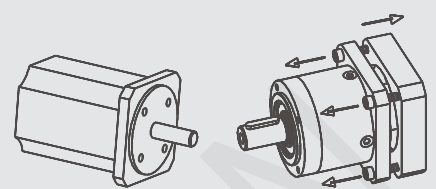


6.Connect the reducer flange to the motor flange and tighten the positioning bolts diagonally.

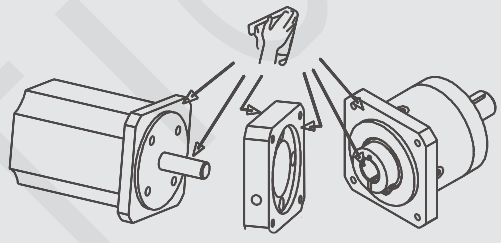


7.Use a torque wrench (TA) to tighten the clamping ring, then tighten the sealing screw.

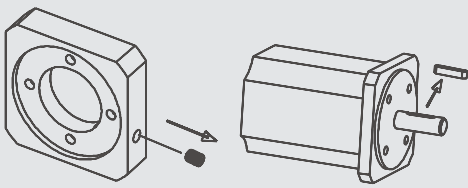
● B14 Motor Direct Coupling Type



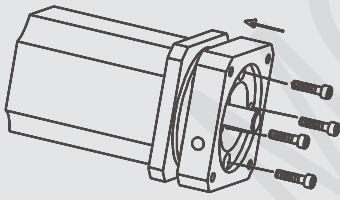
1.Is the motor correct? Is the reducer correct?



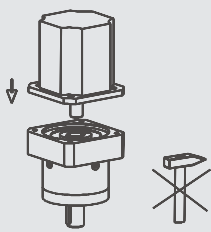
2.Check if the motor and reducer are in good condition. Clean the connection between the motor shaft and the reducer.



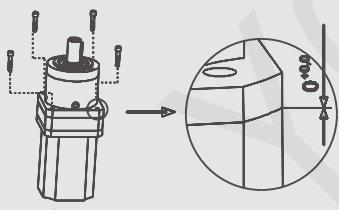
3.Unscrew the sealing screw on the outer side of the reducer to adjust the clamping screws, and remove the motor shaft key.



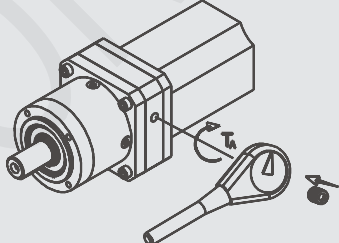
4.Mount the connecting flange onto the motor.



5.Unscrew the clamping screw. If the motor shaft is smaller than the input hole diameter, please use the matching one. Then assemble the matching motor and reducer in the vertical direction.



6.Connect the reducer flange to the motor flange and tighten the positioning bolts diagonally.



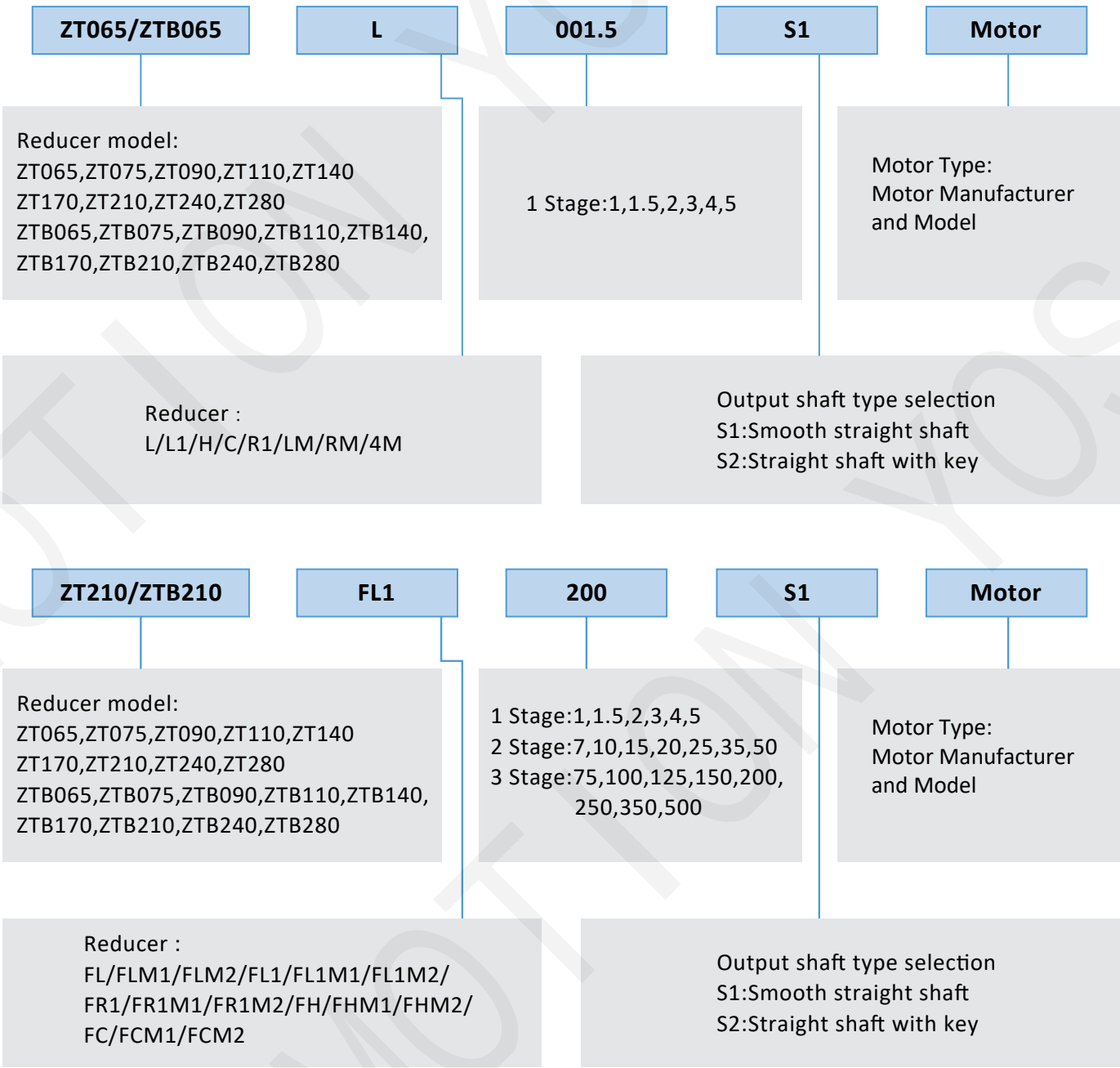
7.Use a torque wrench (TA) to tighten the clamping ring, then tighten the sealing screw.

Model	40		60	80/90	120/115	142/180
Shaft diameter	≤8	>8	≤14	≤19	≤24	≤35
TA(Nm)	2	4.5	4.5	9.5	16.5	40
SW(Nm)	2.5	3	3	4	5	6

ZT/ZTB SERIES



ZT/ZTB Series Coding Rules

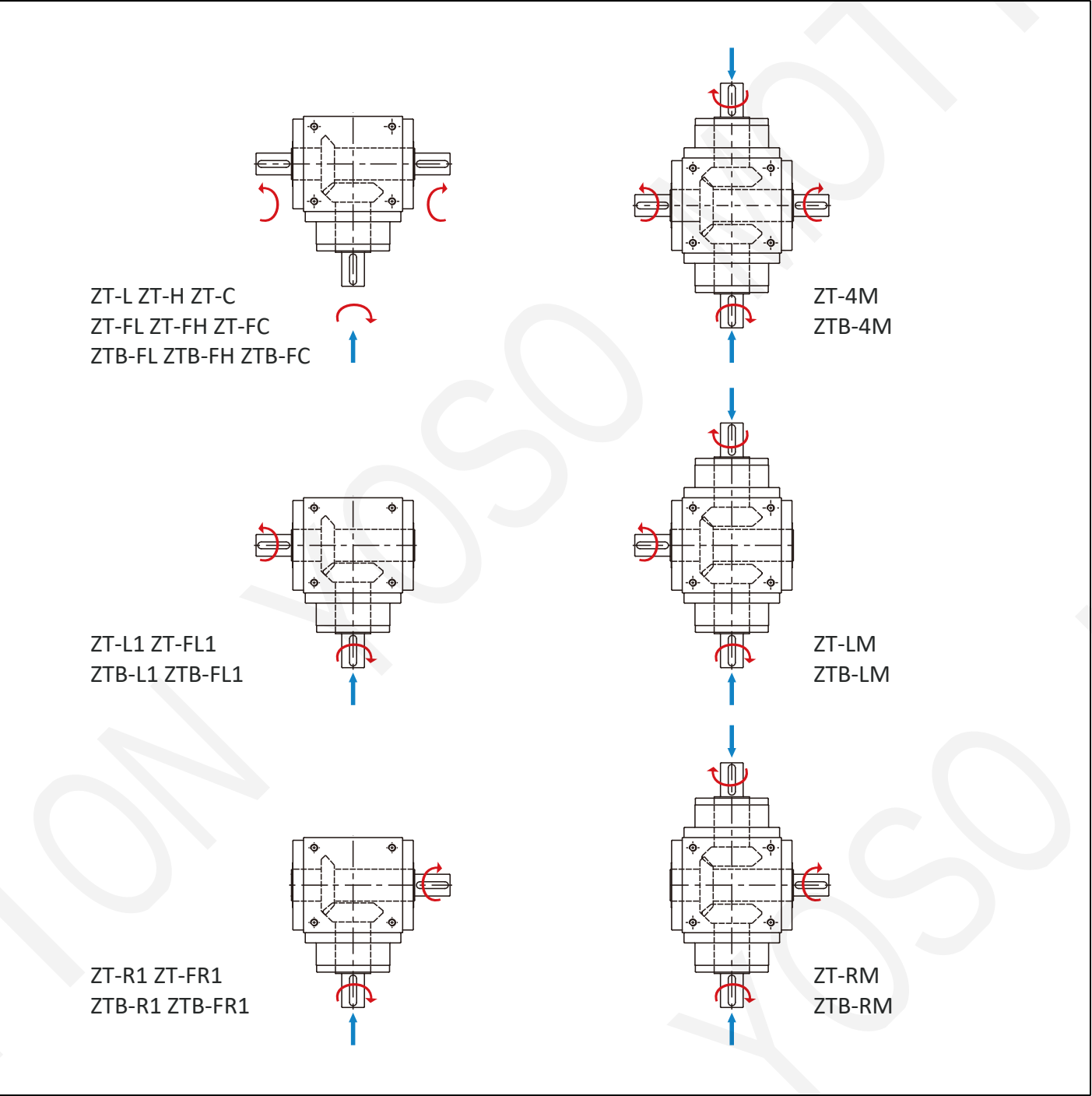


FUTURE

- Different material shell design
Aluminum Alloy-ZT
Cast iron-ZTB
- Various output shaft options
- High torque
- High efficiency
- Long service life
- Low backlash
- Maintenance-free
- Flexible installation dimensions

YOSO MOTION Planetary Gear Reducer

Rotation direction of ZT/ZTB series



Selection of Shrink Disk Accessories

	C/FC Series	D1	D2	D3	H1	H2
	SSD-d16×dw14	41	16	26	15	18.5
	SSD-d22×dw18	50	22	36	19.5	23
	SSD-d25×dw22	50	25	38	19.5	23
	SSD-d44×dw32	80	44	61	25.5	29.5
	SSD-d50×dw40	90	50	70	27.5	31.5
	SSD-d62×dw50	110	62	86	30.5	34.5
	SSD-d68×dw55	115	68	86	30.5	34.5
	SSD-d75×dw60	138	75	100	32.5	38

ZT/ZTB Shaft Type

Performance Parameter Table(The performance and specifications of ZTB series are the same as those of ZT series)

Model	Unit	Stage	Ratio	ZT065 L	ZT075 L	ZT090 L	ZT110 L	ZT140 L	ZT170 L	ZT210 L	ZT240 L	ZT280 L
				ZT065 L1	ZT075 L1	ZT090 L1	ZT110 L1	ZT140 L1	ZT170 L1	ZT210 L1	ZT240 L1	ZT280 L1
				ZT065 H	ZT075 H	ZT090 H	ZT110 H	ZT140 H	ZT170 H	ZT210 H	ZT240 H	ZT280 H
				ZT065 C	ZT075 C	ZT090 C	ZT110 C	ZT140 C	ZT170 C	ZT210 C	ZT240 C	ZT280 C
				ZT065 R1	ZT075 R1	ZT090 R1	ZT110 R1	ZT140 R1	ZT170 R1	ZT210 R1	ZT240 R1	ZT280 R1
				ZT065 LM	ZT075 LM	ZT090 LM	ZT110 LM	ZT140 LM	ZT170 LM	ZT210 LM	ZT240 LM	ZT280 LM
				ZT065 RM	ZT075 RM	ZT090 RM	ZT110 RM	ZT140 RM	ZT170 RM	ZT210 RM	ZT240 RM	ZT280 RM
				ZT065 4M	ZT075 4M	ZT090 4M	ZT110 4M	ZT140 4M	ZT170 4M	ZT210 4M	ZT240 4M	ZT280 4M
Rated output torqueT _{2N}	Nm	1	1	25	45	78	150	360	585	1300	2150	3200
			1.5	25	45	78	150	360	585	1300	2150	3200
			2	24	42	68	150	330	544	1220	2010	3050
			3	18	33	54	120	270	450	1020	1650	2850
			4	13	28	48	100	224	376	860	1410	2300
Maximum acceleration torque T _{2B}	Nm	1	5	12	25	40	85	196	320	740	1210	2000
			1~5	1.5 times the rated output torque								
			1	7500	6500	5500	4500	3500	3000	2200	2000	1700
			1	1~5	≤8	≤8	≤8	≤8	≤10	≤10	≤10	≤10
			1	1~5	≤8	≤8	≤8	≤8	≤10	≤10	≤10	≤10
Allowable radial force F _{1rB} ^C	N	1	1~5	700	950	1450	2100	2700	3800	7800	9600	10500
Output shaft d1	N	1	1~5	900	1100	1700	2700	4800	6600	11500	16000	18000
Allowable radial force F _{2rB} ^D	N	1	1~5	900	1100	1700	2700	4800	6600	11500	16000	18000
Output shaft d2	N	1	1~5	900	1100	1700	2700	4800	6600	11500	16000	18000
Allowable axial force F _{1aB} ^C	N	1	1~5	350	425	725	1050	1350	1900	3900	4800	5250
Output shaft d1	N	1	1~5	350	425	725	1050	1350	1900	3900	4800	5250
Allowable axial force F _{2aB} ^D	N	1	1~5	450	550	850	1350	2400	3300	5750	8500	9000
Output shaft d2	N	1	1~5	450	550	850	1350	2400	3300	5750	8500	9000
Sevice life ^E	hr	1	1~5	20000								
Efficiency η	%	1	1~5	≥94%								
Working temperature	°C	1	1~5	-10°C~90°C								
Lubricating			1~5	Synthetic lubricating grease								
Noise level (n=1500rpm,off load) ^F	dB(A)	1	1~5	≤68	≤70	≤74	≤76	≤77	≤78	≤80	≤82	≤83

Reducer Moment of Inertia(The performance and specifications of ZTB series are the same as those of ZT series)

Model	Unit	Stage	Ratio	ZT065 L	ZT075 L	ZT090 L	ZT110 L	ZT140 L	ZT170 L	ZT210 L	ZT240 L	ZT280 L
				ZT065 L1	ZT075 L1	ZT090 L1	ZT110 L1	ZT140 L1	ZT170 L1	ZT210 L1	ZT240 L1	ZT280 L1
				ZT065 H	ZT075 H	ZT090 H	ZT110 H	ZT140 H	ZT170 H	ZT210 H	ZT240 H	ZT280 H
				ZT065 C	ZT075 C	ZT090 C	ZT110 C	ZT140 C	ZT170 C	ZT210 C	ZT240 C	ZT280 C
				ZT065 R1	ZT075 R1	ZT090 R1	ZT110 R1	ZT140 R1	ZT170 R1	ZT210 R1	ZT240 R1	ZT280 R1
				ZT065 LM	ZT075 LM	ZT090 LM	ZT110 LM	ZT140 LM	ZT170 LM	ZT210 LM	ZT240 LM	ZT280 LM
				ZT065 RM	ZT075 RM	ZT090 RM	ZT110 RM	ZT140 RM	ZT170 RM	ZT210 RM	ZT240 RM	ZT280 RM
				ZT065 4M	ZT075 4M	ZT090 4M	ZT110 4M	ZT140 4M	ZT170 4M	ZT210 4M	ZT240 4M	ZT280 4M
Moment of Inertia J ₁	kg.cm ²	1	1	0.51	1.30	3.16	7.70	23.57	58.99	195.40	369.34	799.12
			1.5	0.64	1.16	2.82	6.74	19.37	49.28	155.45	283.58	595.78
			2	0.44	1.11	2.70	6.31	17.75	45.35	140.24	249.74	511.76
			3	0.43	1.09	2.66	6.17	17.18	44.01	134.95	237.71	483.06
			4	0.43	1.09	2.65	6.13	17.06	43.70	133.58	234.72	476.26
			5	0.43	1.09	2.65	6.12	17.02	43.60	133.14	233.67	473.58

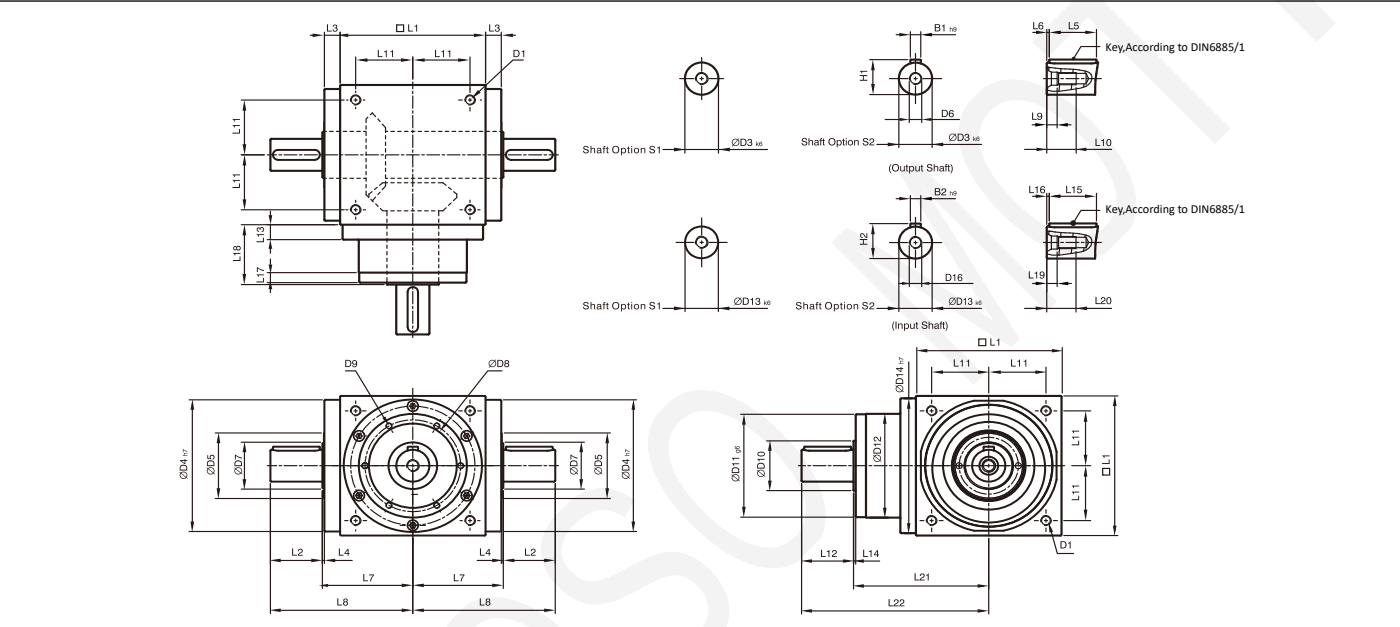
Weight

Model	Unit	Stage	Ratio	ZT065	ZT075	ZT090	ZT110	ZT140	ZT170	ZT210	ZT240	ZT280
L Series	kg	1	1~5	2.6	4.2	6.8	11.6	19.8	34.8	66.2	98.1	155.7
L1 Series			1~5	2.6	4.1	6.7	11.5	19.5	34.2	65.1	96.6	153.4
H Series			1~5	2.5	3.9	6.4	11.0	18.1	31.6	60.0	89.4	143.4
C Series			1~5	2.8	4.2	6.9	11.4	19.6	33.7	63.3	97.9	149.1
R1 Series			1~5	2.6	4.1	6.7	11.5	19.5	34.2	65.1	96.6	153.4
LM Series			1	3.5	5.6	9.0	15.2	24.1	42.4	81.4	122.0	190.9
RM Series			1	3.5	5.6	9.0	15.2	24.1	42.4	81.4	122.0	190.9
4M Series			1	3.5	5.6	9.1	15.4	24.8	42.6	82.5	123.5	193.3

A:Ratio (i=N_{in}/N_{out}): ZT-LM/RM/4M only provides a 1:1 ratio
B:The backlash value is measured under a torque of 2% of the rated torque T_{2N}
C:Maximum acceleration input speed n_{1B} acts on the center position of the input shaft
D:Maximum acceleration output speed n_{1B} acts on the center position of the input shaft
E:The service life under continuous operation is 10000 hours
F:Noise levels will increase with low reduction ratios and high rotational speeds

YOSO MOTION Planetary Gear Reducer

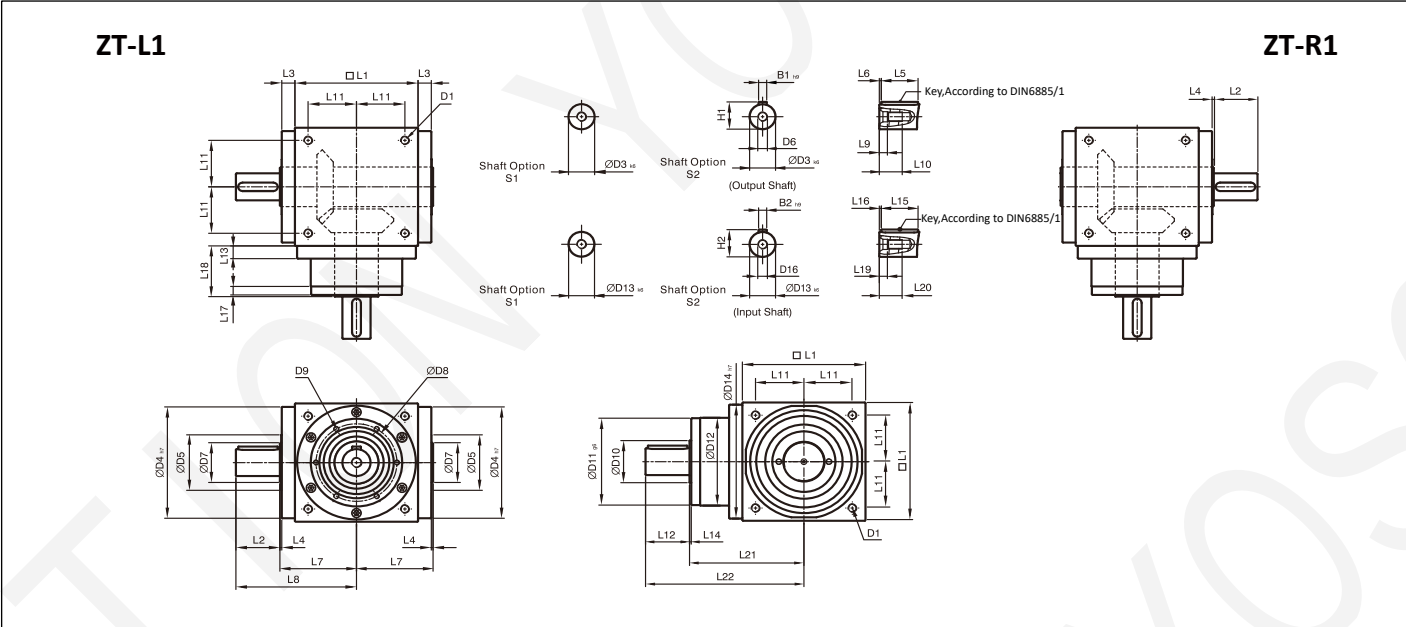
ZT-ZTB-L Series (Single Stage,Reduction Ratio i=1~5)



Note: The dimensions of the ZTB series are the same as those of the ZT series. (Unit: mm)

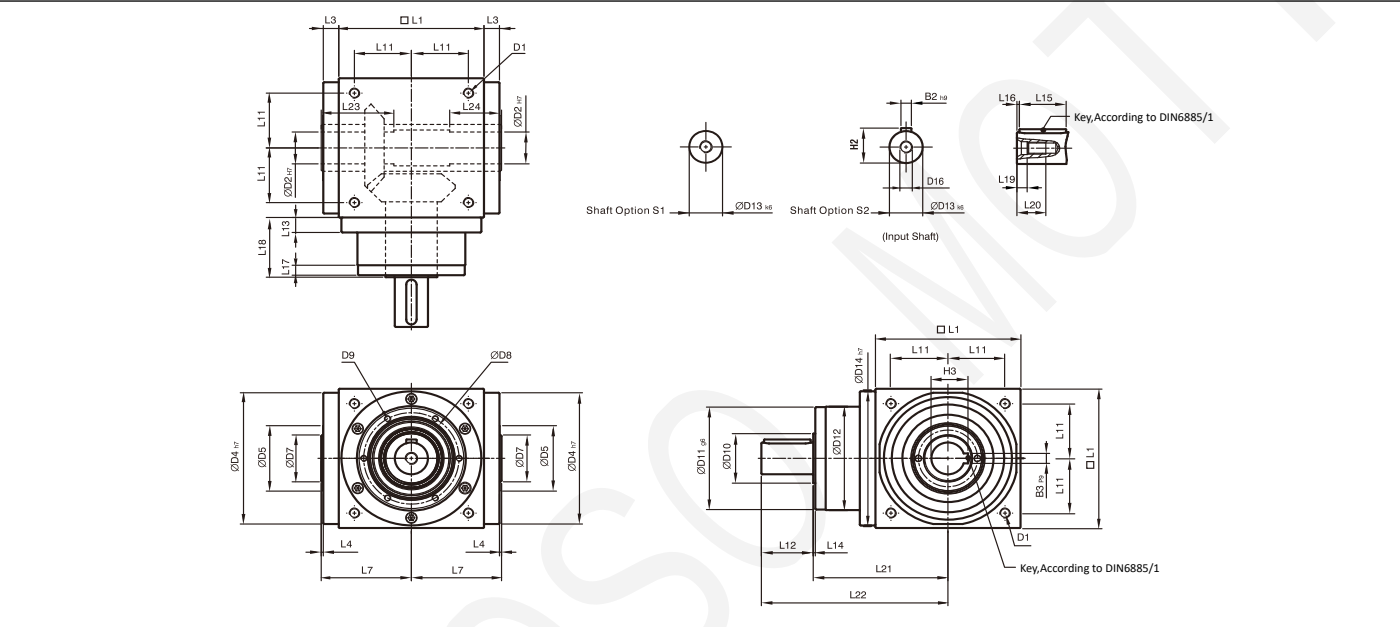
Size	ZT065 L	ZT075 L	ZT090 L	ZT110 L	ZT140 L	ZT170 L	ZT210 L	ZT240 L	ZT280 L
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 k6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D8	53	62	76	95	92	114	142	160	176
D9	4×M4×L7	4×M5×L8	4×M5×L8	6×M6×L10	6×M6×L10	6×M8×L12.5	6×M8×L12.5	6×M8×L12.5	6×M10×L15
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3	92.3	102.3
D11 g6	62.9	72.9	87	107	103	127	158	178	198
D12	62	72	86	106	104	128	160	180	200
D13 k6	13	16	18	22	32	40	50	55	60
D14 h7	63	73	88	108	135	165	205	235	275
D16	M4	M5	M5	M8	M12	M16	M16	M16	M20
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L12	19.5	30	35	40	50	60	75	85	110
L13	13	15	15	15	15	15	20	25	25
L14	2	2	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70	80	100
L16	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L17	6	8	8	8	10	10	10	10	10
L18	43	52.5	55	60	60	70	90	105	120
L19	4.5	4.8	4.8	7.2	10	12	12	12	15
L20	10	12.5	12.5	19	28	36	36	36	42
L21	75.5	90	100	115	130	155	195	225	260
L22	95	120	135	155	180	215	270	310	370
B1 h9	5	5	6	6	10	12	14	16	18
B2 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64
H2	15	18	20.5	24.5	35	43	53.5	59	64

ZT-L1/R1 / ZTB-L1/R1 Series (Single Stage,Reduction Ratio i=1~5)



YOSO MOTION Planetary Gear Reducer

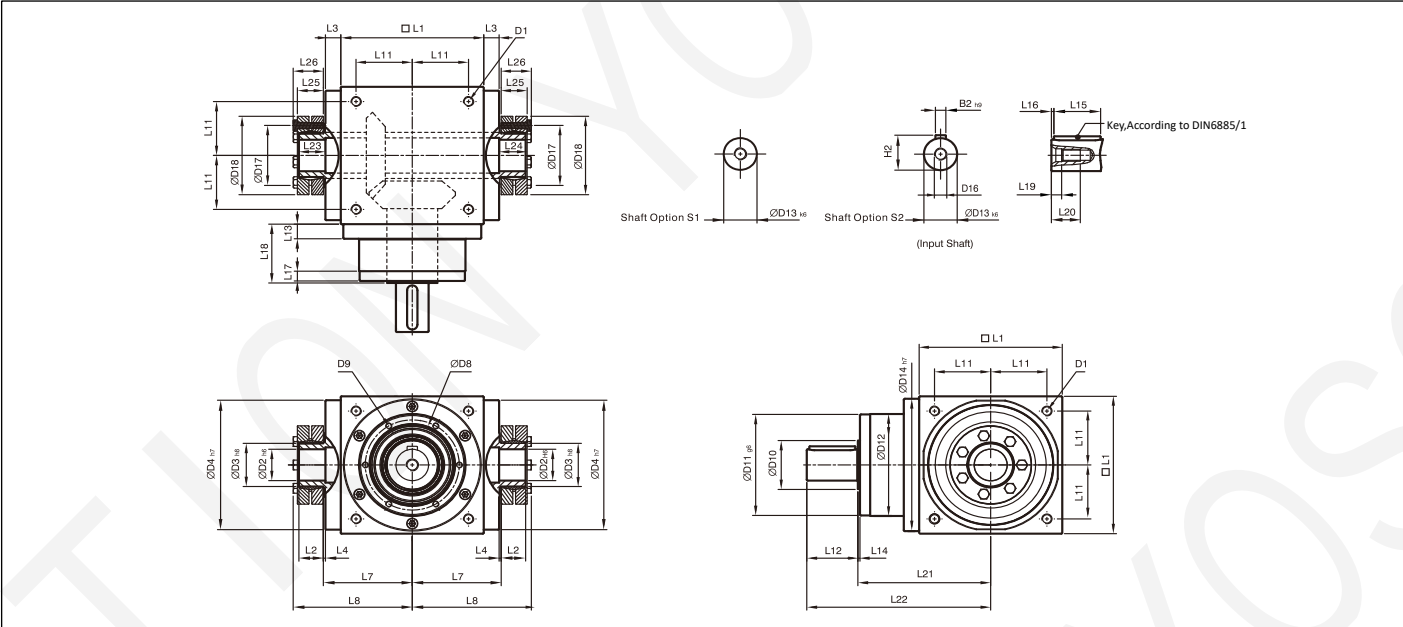
● ZT-H / ZTB-H Series (Single Stage,Reduction Ratio i=1~5)



Note: The dimensions of the ZTB series are the same as those of the ZT series. (Unit: mm)

Size	ZT065 H	ZT075 H	ZT090 H	ZT110 H	ZT140 H	ZT170 H	ZT210 H	ZT240 H	ZT280 H
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H7	13	14	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D7	21	22	28	33	47	55	75	85	110
D8	53	62	76	95	92	114	142	160	176
D9	4×M4×L7	4×M5×L8	4×M5×L8	6×M6×L10	6×M6×L10	6×M8×L12.5	6×M8×L12.5	6×M8×L12.5	6×M10×L15
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3	92.3	102.3
D11 g6	62.9	72.9	87	107	103	127	158	178	198
D12	62	72	86	106	104	128	160	180	200
D13 K6	13	16	18	22	32	40	50	55	60
D14 h7	63	73	88	108	135	165	205	235	275
D16	M4	M5	M5	M8	M12	M16	M16	M16	M20
L1	65	75	90	110	140	170	210	240	280
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L11	27	30	36	44	55	67	85	95	110
L12	19.5	30	35	40	50	60	75	85	110
L13	13	15	15	15	15	15	20	25	25
L14	2	2	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70	80	100
L16	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L17	6	8	8	8	10	10	10	10	10
L18	43	52.5	55	60	60	70	90	105	120
L19	4.5	4.8	4.8	7.2	10	12	12	12	15
L20	10	12.5	12.5	19	28	36	36	36	42
L21	75.5	90	100	115	130	155	195	225	260
L22	95	120	135	155	180	215	270	310	370
L23	40	47	52	53	70	80	95	115	115
L24	30	32	35	35	50	55	65	80	80
B2 h9	5	5	6	6	10	12	14	16	18
B3 p9	5	5	6	6	10	12	14	16	18
H2	15	18	20.5	24.5	35	43	53.5	59	64
H3	15.3	16.3	20.8	24.8	35.3	43.3	53.8	59.3	64.4

● ZT-C / ZTB-C Series (Single Stage,Reduction Ratio i=1~5)



Note: The dimensions of the ZTB series are the same as those of the ZT series. (Unit: mm)

Size	ZT065 C	ZT075 C	ZT090 C	ZT110 C	ZT140 C	ZT170 C	ZT210 C	ZT240 C	ZT280 C
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H6	13	14	18	22	32	40	50	55	60
D3 h8	16	16	22	25	44	50	62	68	75
D4 h7	63	73	88	108	135	165	205	235	275
D8	53	62	76	95	92	114	142	160	176
D9	4×M4×L7	4×M5×L8	4×M5×L8	6×M6×L10	6×M6×L10	6×M8×L12.5	6×M8×L12.5	6×M8×L12.5	6×M10×L15
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3	92.3	102.3
D11 g6	62.9	72.9	87	107	103	127	158	178	198
D12	62	72	86	106	104	128	160	180	200
D13 K6	13	16	18	22	32	40	50	55	60
D14 h7	63	73	88	108	135	165	205	235	275
D16	M4	M5	M5	M8	M12	M16	M16	M16	M20
D17	26	26	36	38	61	70	86	86	100
D18	41	41	50	50	80	90	110	115	138
L1	65	75	90	110	140	170	210	240	280
L2	14	14	18	18	24	26	29	29	30.5
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L8	66	72.5	85	95	116.5	133.5	161.5	181.5	205
L11	27	30	36	44	55	67	85	95	110
L12	19.5	30	35	40	50	60	75	85	110
L13	13	15	15	15	15	15	20	25	25
L14	2	2	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70	80	100
L16	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L17	6	8	8	8	10	10	10	10	10
L18	43	52.5	55	60	60	70	90	105	120
L19	4.5	4.8	4.8	7.2	10	12	12	12	15
L20	10	12.5	12.5	19	28	36	36	36	42
L21	75.5	90	100	115	130	155	195	225	260
L22	95	120	135	155	180	215	270	310	370
L23	15	15	20	20	26	28	31	31	32.5
L24	15	15	20	20	26	28	31	31	32.5
L25	15	15	19.5	19.5	25.5	27.5	30.5	30.5	32.5
L26	18.5	18.5	23	23	29.5	31.5	34.5	34.5	38
B2 h9	5	5	6	6	10	12	14	16	18
H2	15	15	20.5	24.5	35	43	53.5	59	64

ZT/ZTB Flange Type

Performance Parameter Table(The performance and specifications of ZTB series are the same as those of ZT series)

Model	Unit	Stage	Ratio	ZT065 FL ZT065 FL1 ZT065 FH ZT065 FC ZT065 FR1	ZT075 FL ZT075 FL1 ZT075 FH ZT075 FC ZT075 FR1	ZT090 FL ZT090 FL1 ZT090 FH ZT090 FC ZT090 FR1	ZT110 FL ZT110 FL1 ZT110 FH ZT110 FC ZT110 FR1	ZT140 FL ZT140 FL1 ZT140 FH ZT140 FC ZT140 FR1	ZT170 FL ZT170 FL1 ZT170 FH ZT170 FC ZT170 FR1	ZT210 FL ZT210 FL1 ZT210 FH ZT210 FC ZT210 FR1	ZT240 FL ZT240 FL1 ZT240 FH ZT240 FC ZT240 FR1	ZT280 FL ZT280 FL1 ZT280 FH ZT280 FC ZT280 FR1
Rated output torqueT _{2N}	Nm	1	1	25	45	78	150	360	585	1300	2150	3200
			1.5	25	45	78	150	360	585	1300	2150	3200
			2	24	42	68	150	330	544	1220	2010	3050
			3	18	33	54	120	270	450	1020	1650	2850
			4	13	28	48	100	224	376	860	1410	2300
			5	12	25	40	85	196	320	740	1210	2000
		2	7	25	30	70	165	196	220	450	960	1050
			10	24	28	68	150	208	208	430	846	846
			15	18	33	54	120	270	312	645	1269	1269
			20	13	28	48	100	224	376	860	1410	1692
			25	12	25	40	85	196	320	740	1210	2000
			35	12	25	40	85	196	320	740	1210	1790
		3	50	12	25	40	85	196	320	740	1210	1465
			75	—	45	78	120	210	312	585	1269	1269
			100	—	45	78	100	224	376	780	1410	1692
			125	—	45	78	85	196	320	740	1210	2000
			150	—	45	78	120	135	312	390	975	975
			200	—	45	78	100	180	376	520	1300	1300
			250	—	45	78	85	196	320	650	1210	1625
			350	—	45	78	85	196	320	740	1210	1790
			500	—	45	78	85	196	320	740	1210	1465
Maximum acceleration torque T _{2B}	Nm	1,2,3	1~500	1.5 times the rated output torque								
Maximum acceleration input speed n _{1B}	rpm	1	1~5	7500	6500	5500	4500	3500	3000	2200	2000	1700
		2	7~50	8000	8000	6000	6000	6000	6000	4800	3600	3600
		3	75~500	—	—	—	8000	8000	6000	6000	6000	6000
Backlash ^B	arcmin	1	1~5	≤6	≤6	≤6	≤6	≤6	≤6	≤6	≤6	≤6
		2	7~50	≤10	≤10	≤10	≤10	≤10	≤13	≤13	≤13	≤15
		3	75~500	—	—	—	≤15	≤15	≤18	≤18	≤25	≤25
Allowable radial force F _{2rB} ^C Output shaft d2	N	1,2,3	1~500	900	1100	1700	2700	4800	6600	11500	16000	18000
Allowable axial force F _{2aB} ^C Output shaft d2	N	1,2,3	1~500	450	550	850	1350	2400	3300	5750	8500	9000
Sevice life ^D	hr	1,2,3	1~500	20000								
Efficiency η	%	1	1~5	≥94%								
		2,3	7~500	≥90%								
Working temperature	°C	1,2,3	1~500	-10°C~90°C								
Lubricating				Synthetic lubricating grease								
Noise level (n=1500rpm,off load) ^E	dB(A)	1,2,3	1~500	≤71	≤72	≤76	≤77	≤78	≤79	≤81	≤83	≤84

Reducer Moment of Inertia(The performance and specifications of ZTB series are the same as those of ZT series)

Model	Unit	Stage	Ratio	ZT065 FL ZT065 FL1 ZT065 FH ZT065 FC ZT065 FR1	ZT075 FL ZT075 FL1 ZT075 FH ZT075 FC ZT075 FR1	ZT090 FL ZT090 FL1 ZT090 FH ZT090 FC ZT090 FR1	ZT110 FL ZT110 FL1 ZT110 FH ZT110 FC ZT110 FR1	ZT140 FL ZT140 FL1 ZT140 FH ZT140 FC ZT140 FR1	ZT170 FL ZT170 FL1 ZT170 FH ZT170 FC ZT170 FR1	ZT210 FL ZT210 FL1 ZT210 FH ZT210 FC ZT210 FR1	ZT240 FL ZT240 FL1 ZT240 FH ZT240 FC ZT240 FR1	ZT280 FL ZT280 FL1 ZT280 FH ZT280 FC ZT280 FR1
Moment of Inertia J ₁	kg.cm ²	1	1	0.51	1.30	3.14	7.62	23.54	59.09	195.96	365.38	787.63
			1.5	0.46	1.15	2.80	6.65	19.34	49.38	156.02	279.62	584.28
			2	0.44	1.10	2.68	6.23	17.72	45.44	140.80	245.78	500.26
			3	0.43	1.09	2.64	6.08	17.16	44.11	135.51	233.75	471.56
			4	0.43	1.08	2.63	6.05	17.03	43.79	134.14	230.77	464.76
			5	0.43	1.08	2.63	6.04	16.99	43.69	133.71	229.71	462.08
		2	7	0.15	0.15	0.50	2.79	2.79	2.79	9.91	29.26	29.26
			10	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
			15	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
			20	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
			25	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
			35	0.15	0.15	0.50	2.79	2.79	2.79	9.91	29.26	29.26
			50	0.15	0.15	0.50	2.79	2.79	2.79	9.89	29.20	29.20
		3	75	—	—	—	0.15	0.15	0.50	0.50	2.80	2.80
			100	—	—	—	0.15	0.15	0.50	0.50	2.80	2.80
			125	—	—	—	0.15	0.15	0.50	0.50	2.80	2.80
			150	—	—	—	0.15	0.15	0.50	0.50	2.79	2.79
			200	—	—	—	0.15	0.15	0.50	0.50	2.79	2.79
			250	—	—	—	0.15	0.15	0.50	0.50	2.79	2.79
			350	—	—	—	0.15	0.15	0.50	0.50	2.79	2.79
			500	—	—	—	0.15	0.15	0.50	0.50	2.79	2.79

Weight

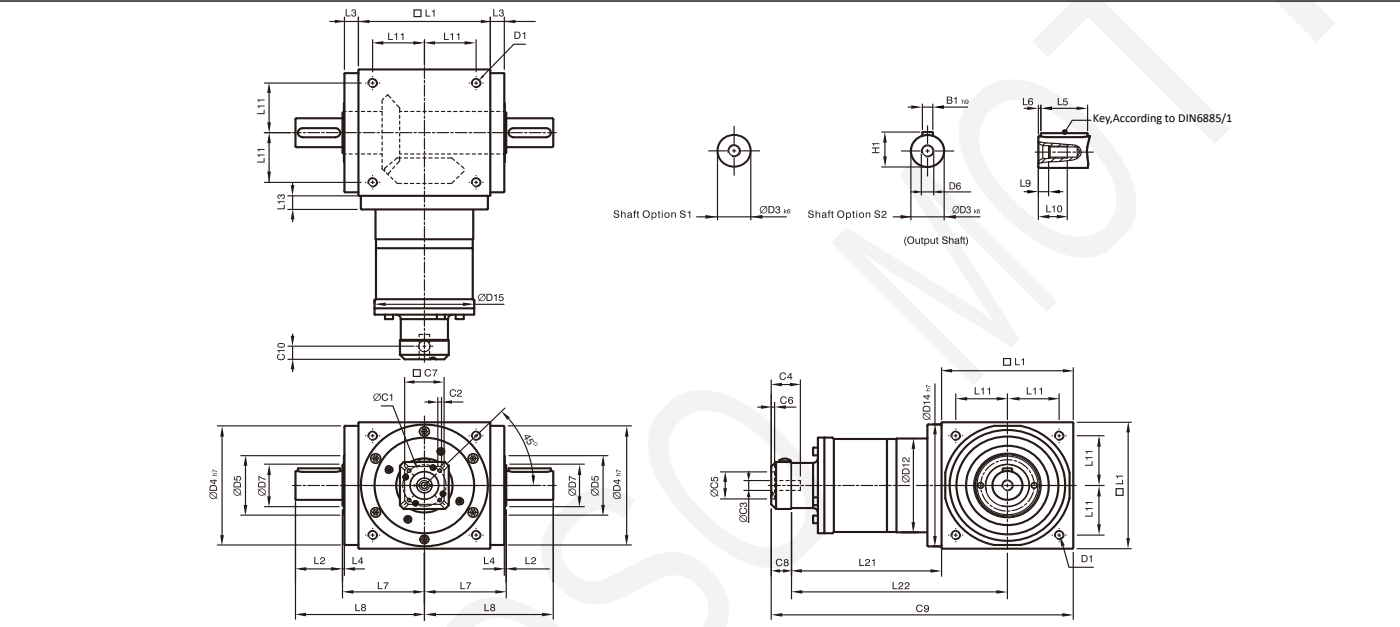
Model	Unit	Stage	Ratio	ZT065	ZT075	ZT090	ZT110	ZT140	ZT170	ZT210	ZT240	ZT280
FL Series	kg	1	1~5	2.8	4.4	7.1	12.1	20.9	36.1	69.4	101.2	158.3
		2	7~50	3.2	4.8	8.1	14.3	24.2	38.5	74.1	112.4	171.0
		3	75~500	—	—	—	13.9	23.7	38.8	73.4	110.2	168.7
FL1 Series		1	1~5	2.7	4.3	7.1	11.9	20.3	35.5	68.3	99.6	156.0
		2	7~50	3.2	4.8	8.0	14.2	23.9	37.9	73.0	110.8	168.6
		3	75~500	—	—	—	13.8	23.4	38.2	72.3	108.6	166.4
FH Series		1	1~5	2.6	4.1	6.7	11.4	18.9	32.9	63.2	92.5	146.0
		2	7~50	3.1	4.6	7.7	13.6	22.4	35.3	67.9	103.7	158.7
		3	75~500	—	—	—	13.3	21.9	35.6	67.2	101.5	156.5
FC Series		1	1~5	2.9	4.4	7.2	11.8	20.4	35.0	66.5	96.0	151.7
		2	7~50	3.3	4.9	8.2	14.1	24.1	37.4	71.2	107.2	164.4
		3	75~500	—	—	—	13.7	23.5	37.5	70.5	105.0	162.2
FR1 Series		1	1~5	2.7	4.3	7.1	11.9	20.3	35.5	68.3	99.6	156.0
		2	7~50	3.2	4.8	8.0	14.2	23.9	37.9	73.0	110.8	168.6
		3	75~500	—	—	—	13.8	23.4	38.2	72.3	108.6	166.4

A:Ratio (i=N_{in}/N_{out})
B:The backlash value is measured under a torque of 2% of the rated torque T_{2N}
C:Maximum acceleration input speed n_{1B} acts on the center position of the input shaft

D:The service life under continuous operation is 10000 hours
E:Noise levels will increase with low reduction ratios and high rotational speeds

YOSO MOTION Planetary Gear Reducer

● ZT-FL / ZTB-FL Series (Three Stages,Reduction Ratio i=75~500)

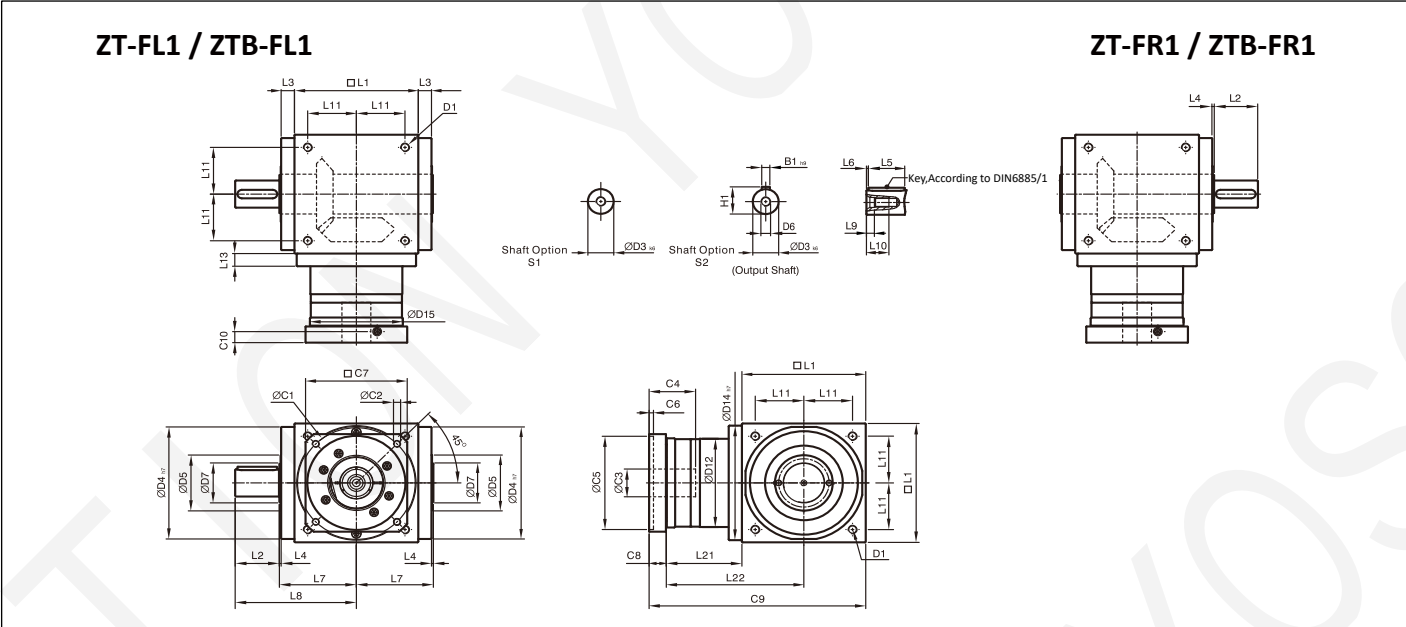


Note: The dimensions of the ZTB series are the same as those of the ZT series. (Unit: mm)

Size	ZT110 FL	ZT140 FL	ZT170 FL	ZT210 FL	ZT240 FL	ZT280 FL
D1	M8	M10	M12	M16	M16	M16
D3 K6	22	32	40	50	55	60
D4 h7	108	135	165	205	235	275
D5	53	68	83	104	124	144
D6	M8	M12	M16	M16	M16	M20
D7	33	47	55	75	85	110
D12	106	104	128	160	180	200
D14 h7	108	135	165	205	235	275
D15	107	106	130	158	178	198
L1	110	140	170	210	240	280
L2	40	50	60	75	85	110
L3	15	15	15	20	25	25
L4	2	2	2	2	2	2
L5	32	45	50	70	80	100
L6	4	2.5	5	2.5	2.5	5
L7	72	87	102	127	147	167
L8	112	137	162	202	232	277
L9	7.2	10	12	12	12	15
L10	19	28	36	36	36	42
L11	44	55	67	85	95	110
L13	15	15	15	20	25	25
L21	136.5	159.5	183.5	226	269	278
L22	191.5	229.5	268.5	331	389	418
C1 ⁴	46	46	70	70	100	100
C2 ⁴	M4	M4	M5	M5	M6	M6
C3 ⁴	≤12	≤12	≤16	≤16	≤24	≤24
C4 ⁴	30	30	34	34	40	40
C5 ⁴	30	30	50	50	80	80
C6 ⁴	3.5	3.5	8	8	4	4
C7 ⁴	42	42	60	60	92	92
C8 ⁴	21.5	21.5	21.5	21.5	20	20
C9 ⁴	268	321	375	457.5	529	578
C10 ⁴	14.5	14.5	15.5	15.5	13	13
B1 h9	6	10	12	14	16	18
H1	24.5	35	43	53.5	59	64

4.C1~C10 are standard sizes for metric motors

● ZT-FL1/FR1 / ZTB-FL1/FR1 Series (Single Stage,Reduction Ratio i=1~5)



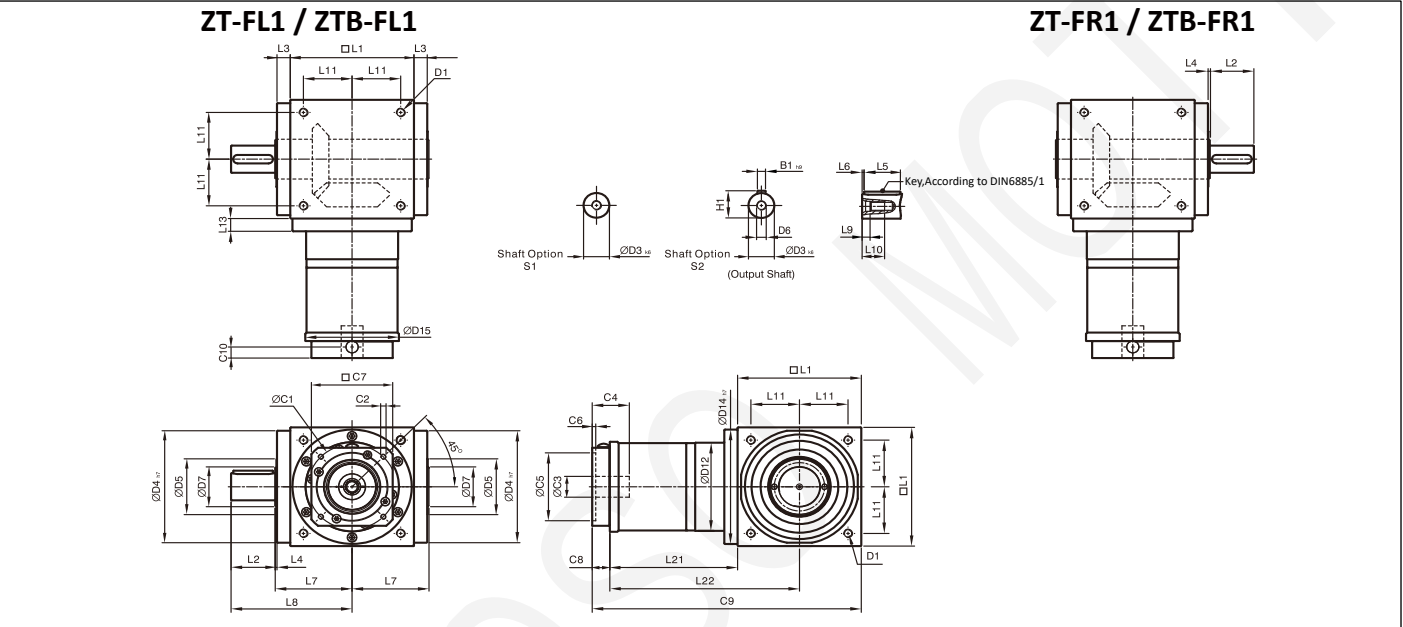
Note: The dimensions of the ZTB series are the same as those of the ZT series. (Unit: mm)

Size	ZT065 FL1/FR1	ZT075 FL1/FR1	ZT090 FL1/FR1	ZT110 FL1/FR1	ZT140 FL1/FR1	ZT170 FL1/FR1	ZT210 FL1/FR1	ZT240 FL1/FR1	ZT280 FL1/FR1
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 K6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	105	130	158	178	198
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	49	60.5	63	69.5	85.5	95	130	144.5	135
L22	81.5	98	108	124.5	155.5	180	235	264.5	275
C1 ⁵	46	70	100	100	130	165	215	215	235
C2 ⁵	M4	M5	M6	M6	M8	M10	M12	M12	M12
C3 ⁵	≤8/≤14 ⁶	≤14/≤15.875/≤19 ⁶	≤19	≤24	≤35	≤38	≤42	≤48	≤55
C4 ⁵	30	34	40	40	50	60	85	85	116
C5 ⁵	30	50	80	80	110	130	180	180	200
C6 ⁵	3.5	8	4	4	5	6	6	6	6
C7 ⁵	42	60	90	90	115	142	190	190	220
C8 ⁵	19.5	19	17	17	19.5	22.5	29	29	63
C9 ⁵	133.5	154.5	170	196.5	245	287.5	369	413.5	478
C10 ⁵	13.25	13.5	10.75	10.75	13	15	20.75	20.75	53.5
B1 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64

5.C1~C10 are standard sizes for metric motors
6.ZT065 FL1/FR1M1 provides C3≤12 selection;ZT075 FL1/FR1M1 provides C3≤12 selection;ZT075 FL1/FR1M2 provides C3≤15.875 selection

YOSO MOTION Planetary Gear Reducer

● ZT-FL1/FR1 / ZTB-FL1/FR1 Series (Two Stages,Reduction Ratio i=7~50)

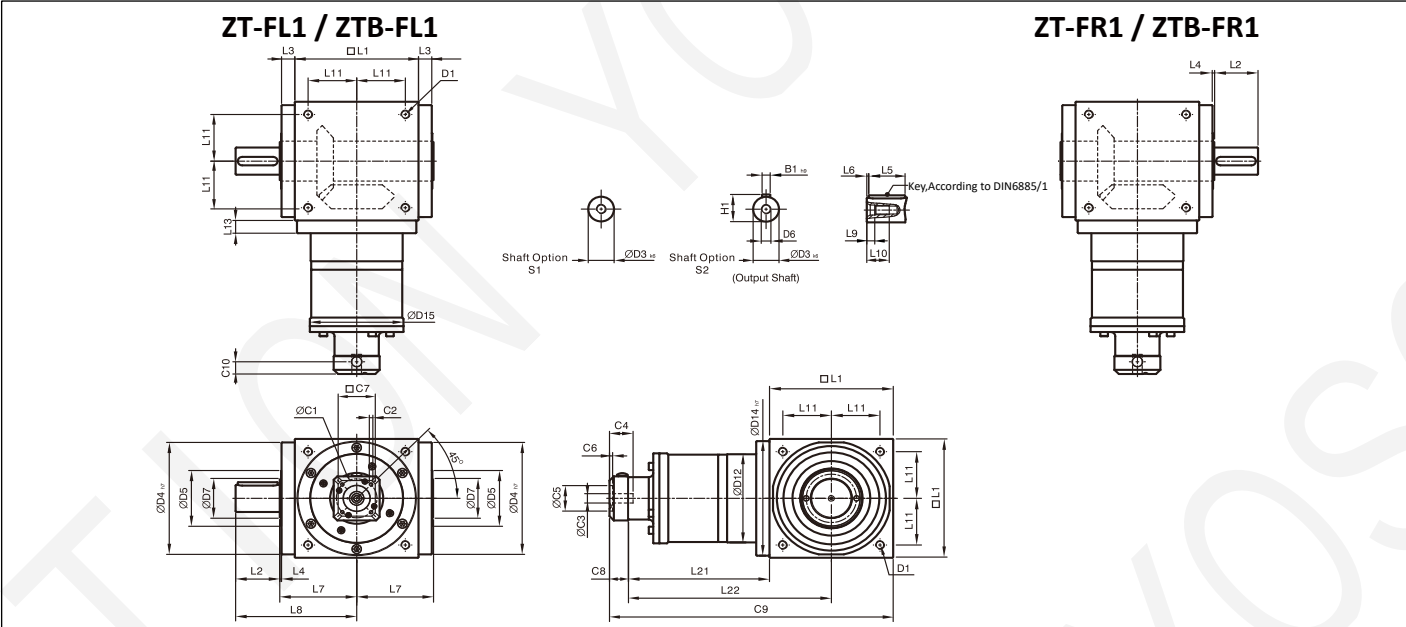


Note: The dimensions of the ZTB series are the same as those of the ZT series. (Unit: mm)

Size	ZT065 FL1/FR1	ZT075 FL1/FR1	ZT090 FL1/FR1	ZT110 FL1/FR1	ZT140 FL1/FR1	ZT170 FL1/FR1	ZT210 FL1/FR1	ZT240 FL1/FR1	ZT280 FL1/FR1
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 K6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	106	130	158	178	198
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	75	84.5	99	122	144.5	157.5	206.5	239	248
L22	107.5	122	144	177	214.5	242.5	311.5	359	388
C1 ⁷	46	46	70	100	100	100	130	165	165
C2 ⁷	M4	M4	M5	M6	M6	M6	M8	M10	M10
C3 ⁷	≤12	≤12	≤16	≤24	≤24	≤24	≤32	≤38	≤38
C4 ⁷	30	30	34	40	40	40	50	60	60
C5 ⁷	30	30	50	80	80	80	110	130	130
C6 ⁷	3.5	3.5	8	4	4	4	5	6	6
C7 ⁷	42	42	60	92	92	92	115	142	142
C8 ⁷	21.5	21.5	21.5	20	20	20	24	31	31
C9 ⁷	161.5	181	210.5	252	304.5	347.5	440.5	510	559
C10 ⁷	14.55	14.5	15.5	13	13	13	16	21	21
B1 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64

7.C1~C10 are standard sizes for metric motors

● ZT-FL1/FR1 / ZTB-FL1/FR1 Series (Three Stages,Reduction Ratio i=75~500)



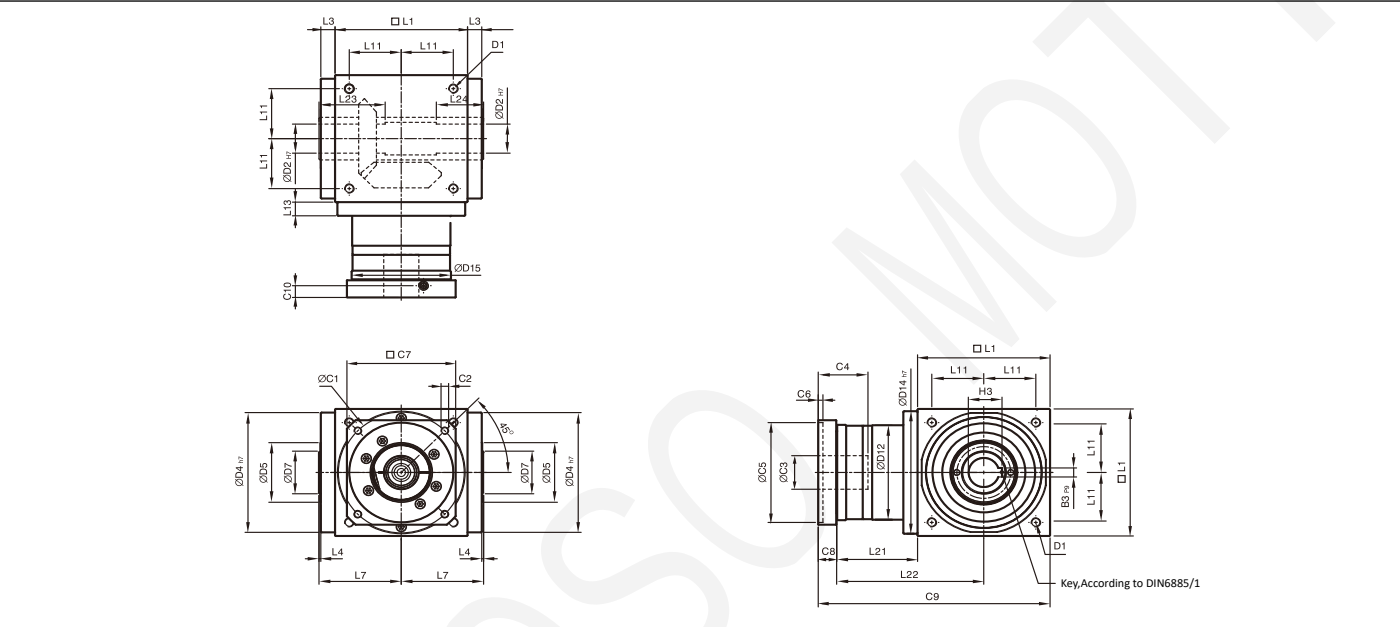
Note: The dimensions of the ZTB series are the same as those of the ZT series. (Unit: mm)

Size	ZT110 FL1/FR1	ZT140 FL1/FR1	ZT170 FL1/FR1	ZT210 FL1/FR1	ZT240 FL1/FR1	ZT280 FL1/FR1
D1	M8	M10	M12	M16	M16	M16
D3 K6	22	32	40	50	55	60
D4 h7	108	135	165	205	235	275
D5	53	68	83	104	124	144
D6	M8	M12	M16	M16	M16	M20
D7	33	47	55	75	85	110
D12	106	104	128	160	180	200
D14 h7	108	135	165	205	235	275
D15	107	106	130	158	178	198
L1	110	140	170	210	240	280
L2	40	50	60	75	85	110
L3	15	15	15	20	25	25
L4	2	2	2	2	2	2
L5	32	45	50	70	80	100
L6	4	2.5	5	2.5	2.5	5
L7	72	87	102	127	147	167
L8	112	137	162	202	232	277
L9	7.2	10	12	12	12	15
L10	19	28	36	36	36	42
L11	44	55	67	85	95	110
L13	15	15	15	20	25	25
L21	136.5	159.5	183.5	226	269	278
L22	191.5	229.5	268.5	331	389	418
C1 ⁸	46	46	70	70	100	100
C2 ⁸	M4	M4	M5	M5	M6	M6
C3 ⁸	≤12	≤12	≤16	≤16	≤24	≤24
C4 ⁸	30	30	34	34	40	40
C5 ⁸	30	30	50	50	80	80
C6 ⁸	3.5	3.5	8	8	4	4
C7 ⁸	42	42	60	60	92	92
C8 ⁸	21.5	21.5	21.5	21.5	20	20
C9 ⁸	268	321	375	457.5	529	578
C10 ⁸	14.5	14.5	15.5	15.5	13	13
B1 h9	6	10	12	14	16	18
H1	24.5	35	43	53.5	59	64

8.C1~C10 are standard sizes for metric motors

YOSO MOTION Planetary Gear Reducer

● ZT-FH / ZTB-FH Series (Single Stage,Reduction Ratio i=1~5)

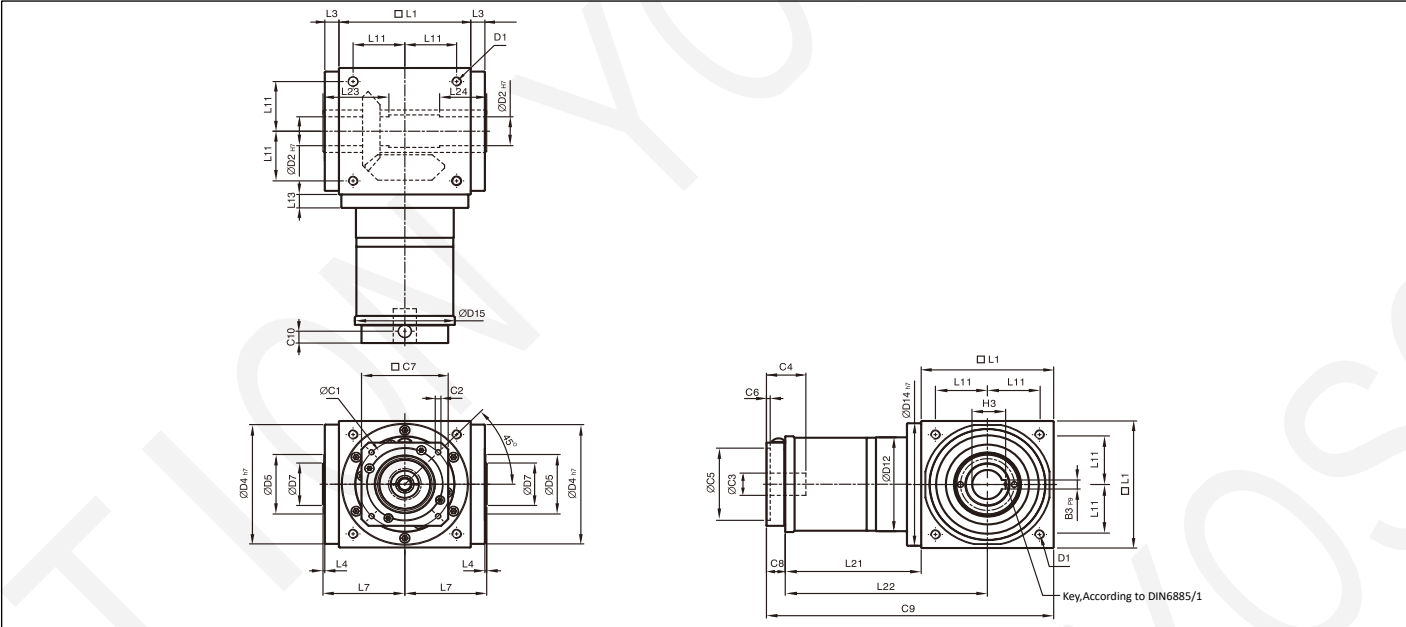


Note: The dimensions of the ZTB series are the same as those of the ZT series. (Unit: mm)

Size	ZT065 FH	ZT075 FH	ZT090 FH	ZT110 FH	ZT140 FH	ZT170 FH	ZT210 FH	ZT240 FH	ZT280 FH
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 h7	13	14	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	105	130	158	178	198
L1	65	75	90	110	140	170	210	240	280
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	49	60.5	63	69.5	85.5	95	130	144.5	135
L22	81.5	98	108	124.5	155.5	180	235	264.5	275
L23	40	47	52	53	70	80	95	115	115
L24	30	32	35	35	50	55	65	80	80
C1°	46	70	100	100	130	165	215	215	235
C2°	M4	M5	M6	M6	M8	M10	M12	M12	M12
C3°	≤11/≤12 ¹⁰	≤14/≤15.875/≤16 ¹⁰	≤19	≤24	≤32	≤38	≤42	≤48	≤55
C4°	30	34	40	40	50	60	85	85	116
C5°	30	50	80	80	110	130	180	180	200
C6°	3.5	8	4	4	5	6	6	6	6
C7°	42	60	90	90	115	142	190	190	220
C8°	19.5	19	17	17	19.5	22.5	29	29	63
C9°	133.5	154.5	170	196.5	245	287.5	369	413.5	478
C10°	13.25	13.5	10.75	10.75	13	15	20.75	20.75	53.5
B3 p9	5	5	6	6	10	12	14	16	18
H3	15.3	16.3	20.8	24.8	35.3	43.3	53.8	59.3	64.4

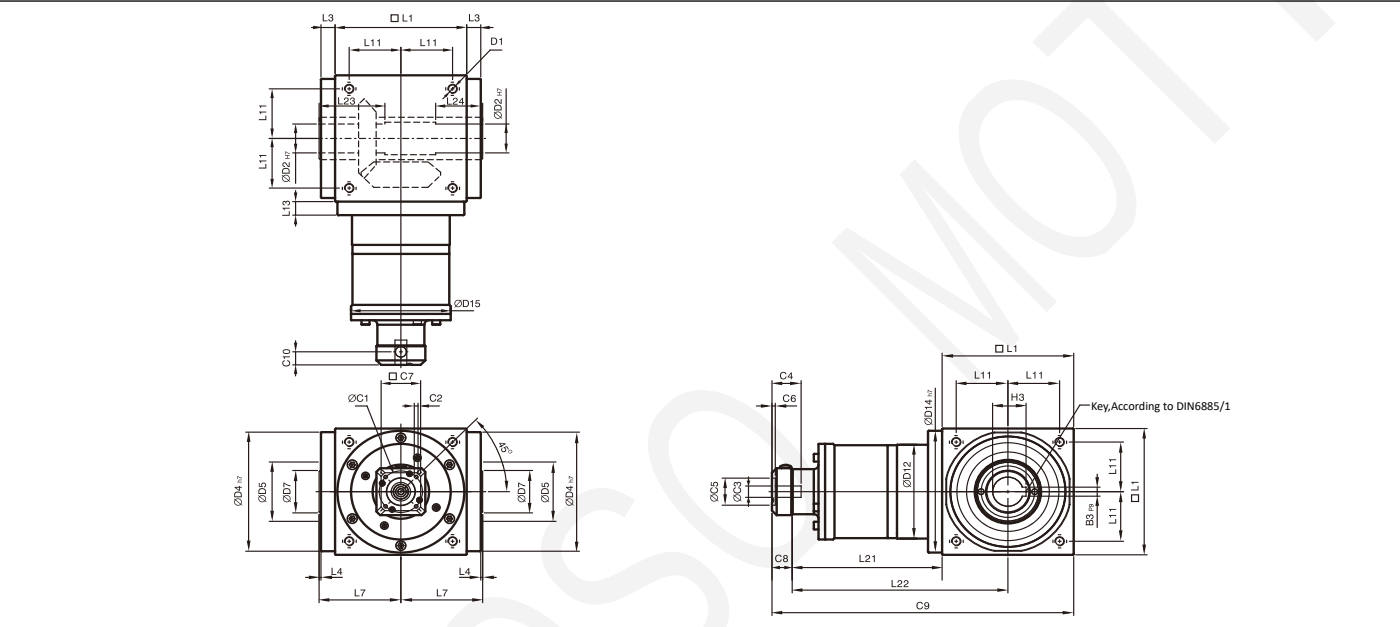
9.C1~C10 are standard sizes for metric motors
10.ZT065FHM1 provides C3≤12 selection;ZT075FHM1 provides C3≤16 selection;ZT075FHM2 provides C3≤15.875 selection

● ZT-FH / ZTB-FH Series (Two Stages,Reduction Ratio i=7~50)



YOSO MOTION Planetary Gear Reducer

● ZT-FH / ZTB-FH Series (Three Stages,Reduction Ratio i=75~500)

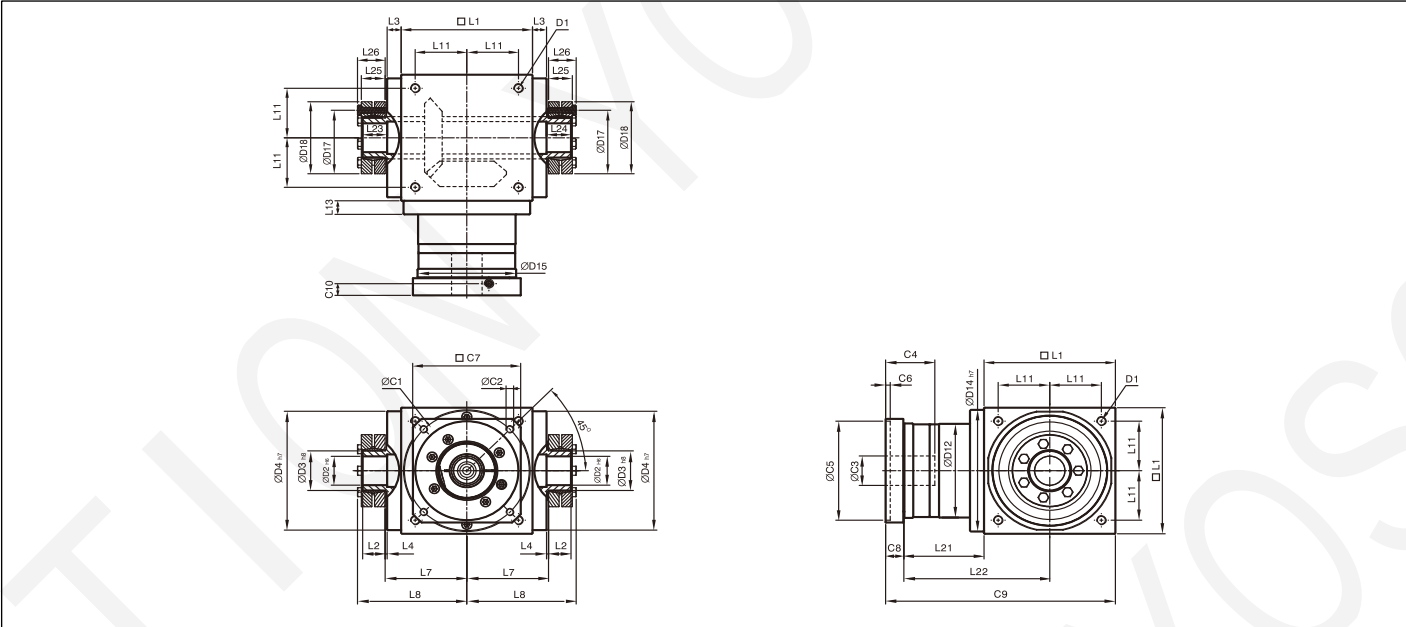


Note: The dimensions of the ZTB series are the same as those of the ZT series. (Unit: mm)

Size	ZT110 FH	ZT140 FH	ZT170 FH	ZT210 FH	ZT240 FH	ZT280 FH
D1	M8	M10	M12	M16	M16	M16
D2 h7	22	32	40	50	55	60
D4 h7	108	135	165	205	235	275
D5	53	68	83	104	124	144
D7	33	47	55	75	85	110
D12	106	104	128	160	180	200
D14 h7	108	135	165	205	235	275
D15	107	106	130	158	178	198
L1	110	140	170	210	240	280
L3	15	15	15	20	25	25
L4	2	2	2	2	2	2
L7	72	87	102	127	147	167
L11	44	55	67	85	95	110
L13	15	15	15	20	25	25
L21	136.5	159.5	183.5	226	269	278
L22	191.5	229.5	268.5	331	389	418
L23	53	70	80	95	115	115
L24	35	50	55	65	80	80
C1 ¹²	46	46	70	70	100	100
C2 ¹²	M4	M4	M5	M5	M6	M6
C3 ¹²	≤12	≤12	≤16	≤16	≤24	≤24
C4 ¹²	30	30	34	34	40	40
C5 ¹²	30	30	50	50	80	80
C6 ¹²	3.5	3.5	8	8	4	4
C7 ¹²	42	42	60	60	92	92
C8 ¹²	21.5	21.5	21.5	21.5	20	20
C9 ¹²	268	321	375	457.5	529	578
C10 ¹²	14.5	14.5	15.5	15.5	13	13
B3 p9	6	10	12	14	16	18
H3	24.8	35.3	43.3	53.8	59.3	64.4

12.C1~C10 are standard sizes for metric motors

● ZT-FC / ZTB-FC Series (Single Stage,Reduction Ratio i=1~5)

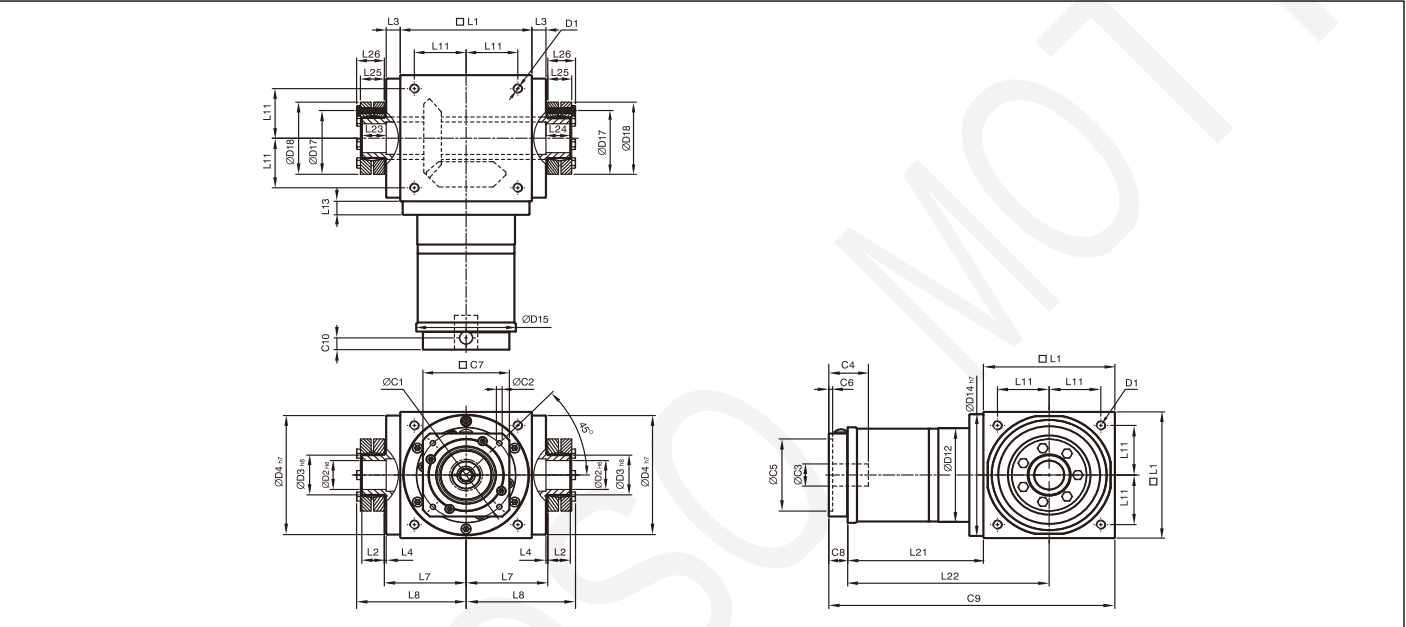


Note: The dimensions of the ZTB series are the same as those of the ZT series. (Unit: mm)

Size	ZT065 FC	ZT075 FC	ZT090 FC	ZT110 FC	ZT140 FC	ZT170 FC	ZT210 FC	ZT240 FC	ZT280 FC
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 ^{H6}	13	14	18	22	32	40	50	55	60
D3 ^{H8}	16	16	22	25	44	50	62	68	75
D4 ^{H7}	63	73	88	108	135	165	205	235	275
D12	62	72	86	106	104	128	160	180	200
D14 ^{H7}	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	105	130	158	178	198
D17	26	26	36	38	61	70	86	86	100
D18	41	41	50	50	80	90	110	115	138
L1	65	75	90	110	140	170	210	240	280
L2	14	14	18	18	24	26	29	29	30.5
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L8	66	72.5	85	95	116.5	133.5	161.5	181.5	205
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	49	60.5	63	69.5	85.5	95	130	144.5	135
L22	81.5	98	108	124.5	155.5	180	235	264.5	275
L23	15	15	20	20	26	28	31	31	32.5
L24	15	15	20	20	26	28	31	31	32.5
L25	15	15	19.5	19.5	25.5	27.5	30.5	30.5	32.5
L26	18.5	18.5	23	23	29.5	31.5	34.5	34.5	38
C1 ¹³	46	70	100	100	130	165	215	215	235
C2 ¹³	M4	M5	M6	M6	M8	M10	M12	M12	M12
C3 ¹³	≤11/≤12 ¹⁴	≤14/≤15.875/≤16 ¹⁴	≤19	≤24	≤32	≤38	≤42	≤48	≤55
C4 ¹³	30	34	40	40	50	60	85	85	116
C5 ¹³	30	50	80	80	110	130	180	180	200
C6 ¹³	3.5	8	4	4	5	6	6	6	6
C7 ¹³	42	60	90	90	115	142	190	190	220
C8 ¹³	19.5	19	17	17	19.5	22.5	29	29	63
C9 ¹³	133.5	154.5	170	196.5	245	287.5	369	413.5	478
C10 ¹³	13.25	13.5	10.75	10.75	13	15	20.75	20.75	53.5

YOSO MOTION Planetary Gear Reducer

● ZT-FC / ZTB-FC Series (Two Stages,Reduction Ratio i=7~50)



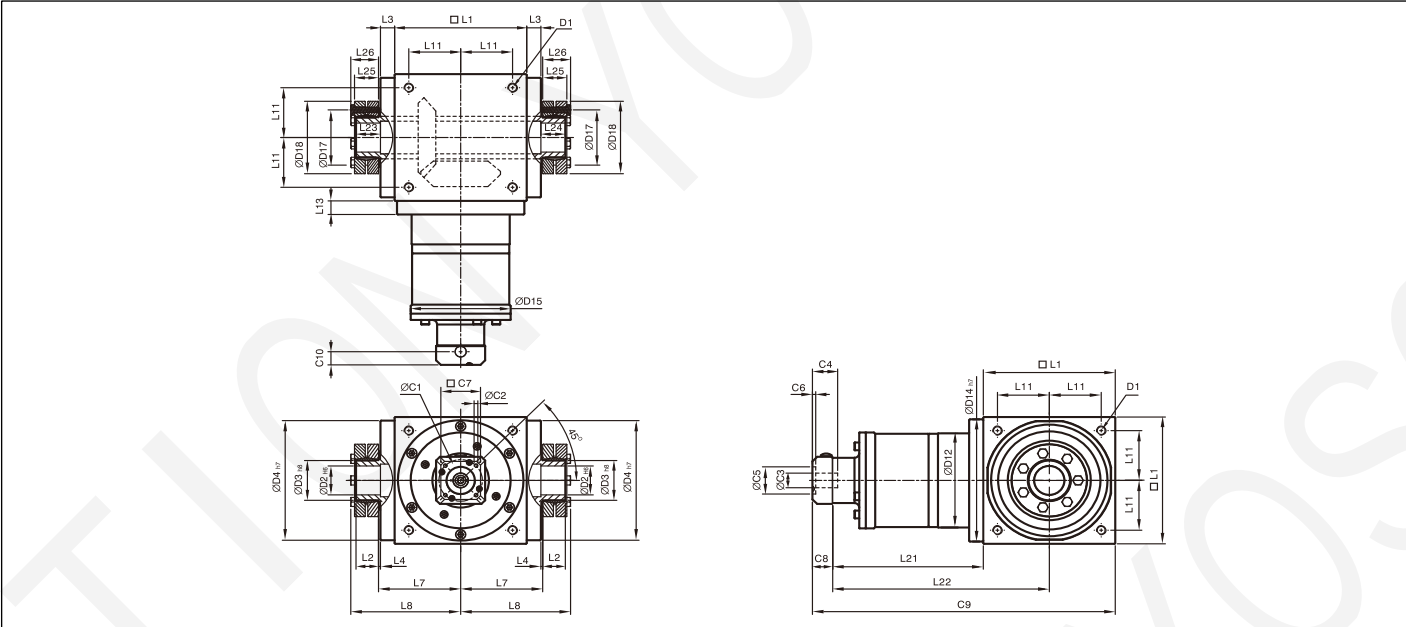
Note: The dimensions of the ZTB series are the same as those of the ZT series.

(Unit: mm)

Size	ZT065 FC	ZT075 FC	ZT090 FC	ZT110 FC	ZT140 FC	ZT170 FC	ZT210 FC	ZT240 FC	ZT280 FC
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H6	13	14	18	22	32	40	50	55	60
D3 h8	16	16	22	25	44	50	62	68	75
D4 h7	63	73	88	108	135	165	205	235	275
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	106	130	158	178	198
D17	26	26	36	38	61	70	86	86	100
D18	41	41	50	50	80	90	110	115	138
L1	65	75	90	110	140	170	210	240	280
L2	14	14	18	18	24	26	29	29	30.5
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L8	66	72.5	85	95	116.5	133.5	161.5	181.5	205
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	75	84.5	99	122	144.5	157.5	206.5	239	248
L22	107.5	122	144	177	214.5	242.5	311.5	359	388
L23	15	15	20	20	26	28	31	31	32.5
L24	15	15	20	20	26	28	31	31	32.5
L25	15	15	19.5	19.5	25.5	27.5	30.5	30.5	32.5
L26	18.5	18.5	23	23	29.5	31.5	34.5	34.5	38
C1 ¹⁵	46	46	70	100	100	100	130	165	165
C2 ¹⁵	M4	M4	M5	M6	M6	M6	M8	M10	M10
C3 ¹⁵	≤12	≤12	≤16	≤24	≤24	≤24	≤32	≤38	≤38
C4 ¹⁵	30	30	34	40	40	40	50	60	60
C5 ¹⁵	30	30	50	80	80	80	110	130	130
C6 ¹⁵	3.5	3.5	8	4	4	4	5	6	6
C7 ¹⁵	42	42	60	92	92	92	115	142	142
C8 ¹⁵	21.5	21.5	21.5	20	20	20	24	31	31
C9 ¹⁵	161.5	181.5	210.5	252	304.5	347.5	440.5	510	559
C10 ¹⁵	14.5	14.5	15.5	13	13	13	16	21	21

15.C1~C10 are standard sizes for metric motors

● ZT-FC / ZTB-FC Series (Three Stages,Reduction Ratio i=75~500)



Note: The dimensions of the ZTB series are the same as those of the ZT series.

(Unit: mm)

Size	ZT110 FC	ZT140 FC	ZT170 FC	ZT210 FC	ZT240 FC	ZT280 FC
D1	M8	M10	M12	M16	M16	M16
D2 H6	22	32	40	50	55	60
D3 h8	25	44	50	62	68	75
D4 h7	108	135	165	205	235	275
D12	106	104	128	160	180	200
D14 h7	108	135	165	205	235	275
D15	107	106	130	158	178	198
D17	38	61	70	86	86	100
D18	50	80	90	110	115	138
L1	110	140	170	210	240	280
L2	18	24	26	29	29	30.5
L3	15	15	15	20	25	25
L4	2	2	2	2	2	2
L7	72	87	102	127	147	167
L8	95	116.5	133.5	161.5	181.5	205
L11	44	55	67	85	95	110
L13	15	15	15	20	25	25
L21	136.5	159.5	183.5	226	269	278
L22	191.5	229.5	268.5	331	389	418
L23	20	26	28	31	31	32.5
L24	20	26	28	31	31	32.5
L25	19.5	25.5	27.5	30.5	30.5	32.5
L26	23	29.5	31.5	34.5	34.5	38
C1 ¹⁶	46	46	70	70	100	100
C2 ¹⁶	M4	M4	M5	M5	M6	M6
C3 ¹⁶	≤12	≤12	≤16	≤16	≤24	≤24
C4 ¹⁶	30	30	34	34	40	40
C5 ¹⁶	30	30	50	50	80	80
C6 ¹⁶	3.5	3.5	8	8	4	4
C7 ¹⁶	42	42	60	60	92	92
C8 ¹⁶	21.5	21.5	21.5	21.5	20	20
C9 ¹⁶	268	321	375	457.5	529	578
C10 ¹⁶	14.5	14.5	15.5	15.5	13	13

16.C1~C10 are standard sizes for metric motors