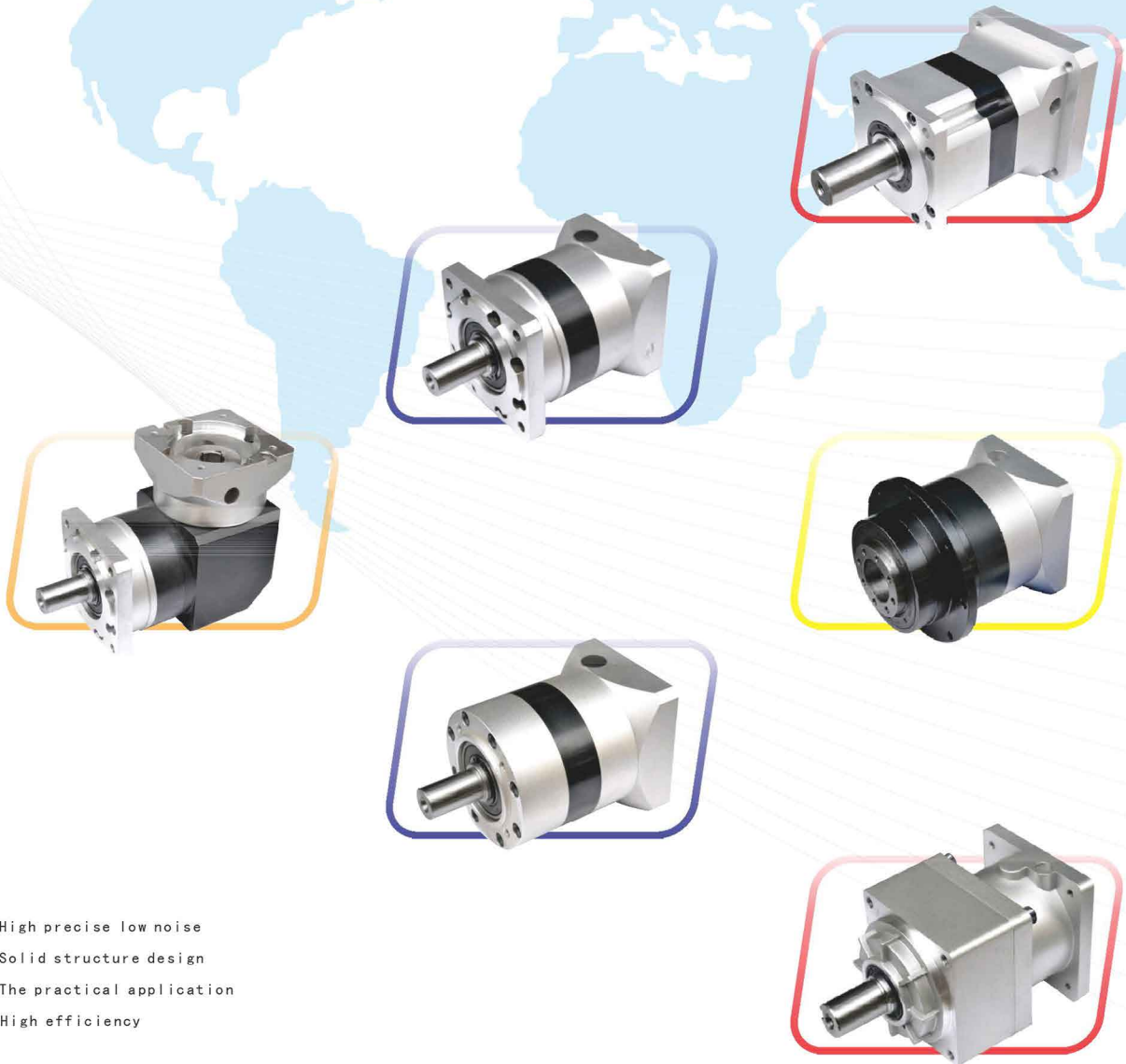


# Precision Planetary Gearbox



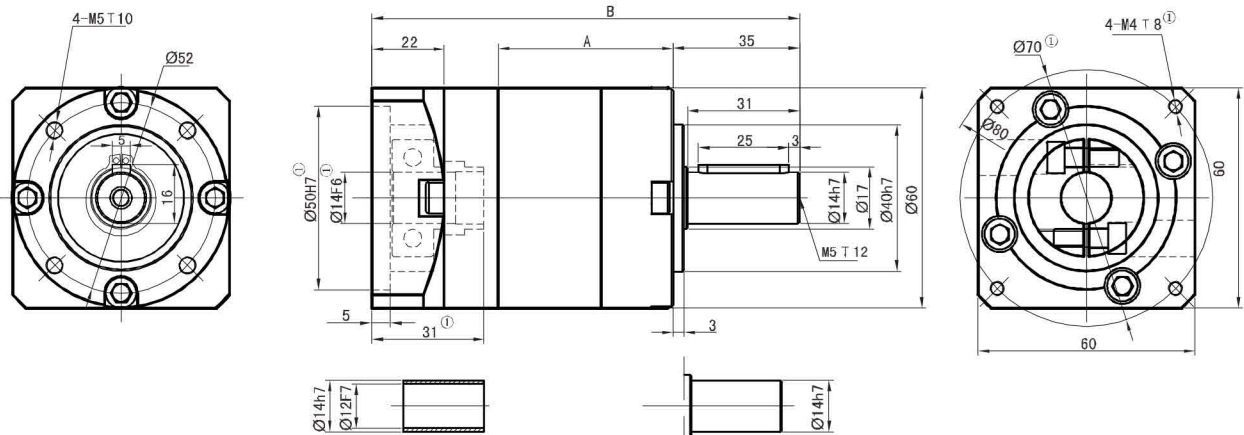
High precise low noise  
Solid structure design  
The practical application  
High efficiency

伍勒斯精密机械有限公司  
**WOOLARS PRECISION MACHINERY CO., LIMITED**

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# PLE60



If motor shaft diameter is too small, it can be installed with the bushing, minimum bushing thickness is 1mm.

Round shaft output

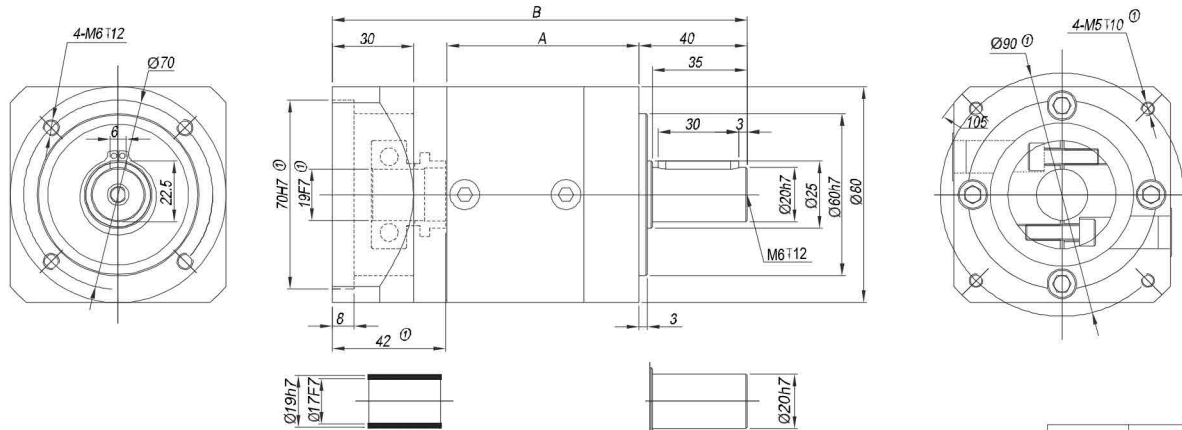


Stage	Stage 1 (i: 3 4 5 7 10)		Stage 2 (i: 12 16 20 25 28 35 40 50 70)					Stage 3 (i: 64 80 100 125 140 175 200 250 350 400 500 700 1000)						
	A	B	A	B				A	B					
Length(mm)	46	118	62	134				78	150					
Rated input speed(rpm)	4000		4000					4000						
Maximum input speed(rpm)	8000		8000					8000						
The maximum radial force(N) <sup>②</sup>	485		605					670						
The maximum axial force(N) <sup>②</sup>	380		490					550						
No load torque(Nm)	about 0.6		about 0.3					about 0.3						
Efficiency withfull load(%)	96		94					90						
Back lash(arcmin)	<12		<15					<18						
Noise(dB)	≤58		≤58					≤58						
Weight(Kg)	1.0		1.3					1.6						
Average lifetime(h)			>20000											
Torsional rigidity(Nm/arcmin)			2.3											
lubricant	Effective lubrication													
direction of rotation	The input and output to the same													
Protection level	IP65													
Installation	arbitrarily													

Ratio(i)	3 <sup>(small gear)</sup>	4	5	7	10	12 <sup>(small gear)</sup>	16	20	25	28	35	40	50	70
Rated output torque(Nm)	16.5	27.0	29.5	19.5	8.5	30.0	30.0	30.0	33.0	30.0	33.0	30.0	33.0	21.5
maximum output torque(Nm)	33.0	54.0	59.0	39.0	17.0	60.0	60.0	60.0	66.0	60.0	66.0	60.0	66.0	43.0
Moment of inertia(Kgcm <sup>2</sup> )	0.107	0.094	0.092	0.091	0.091	0.107	0.094	0.092	0.092	0.091	0.091	0.091	0.091	0.091

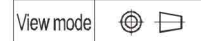
Ratio(i)	64	80	100	125	140	175	200	250	280	350	400	500	700	1000
Rated output torque(Nm)	37.5	37.5	37.5	41.0	37.5	41.0	37.5	41.0	37.5	41.0	37.5	41.0	27.0	11.5
maximum output torque(Nm)	75.0	75.0	75.0	82.0	75.0	82.0	75.0	82.0	75.0	82.0	75.0	82.0	54.0	23.0
Moment of inertia(Kgcm <sup>2</sup> )	0.092	0.092	0.092	0.092	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091

Subscript ①: We offer different adapter for different size of motors. Our speed reducer can be matched to any motor.  
 Subscript ②: The allowable radial force and axial force are measured at the center of the output shaft (at the 1/2 axis length, stressed at same time), when the output speed is 1 sate 100rpm, 2 stage 50rpm, 3 stage 10rpm.



If motor shaft diameter is too small, it can be installed with the bushing, minimum bushing thickness is 1mm.

Round shaft output



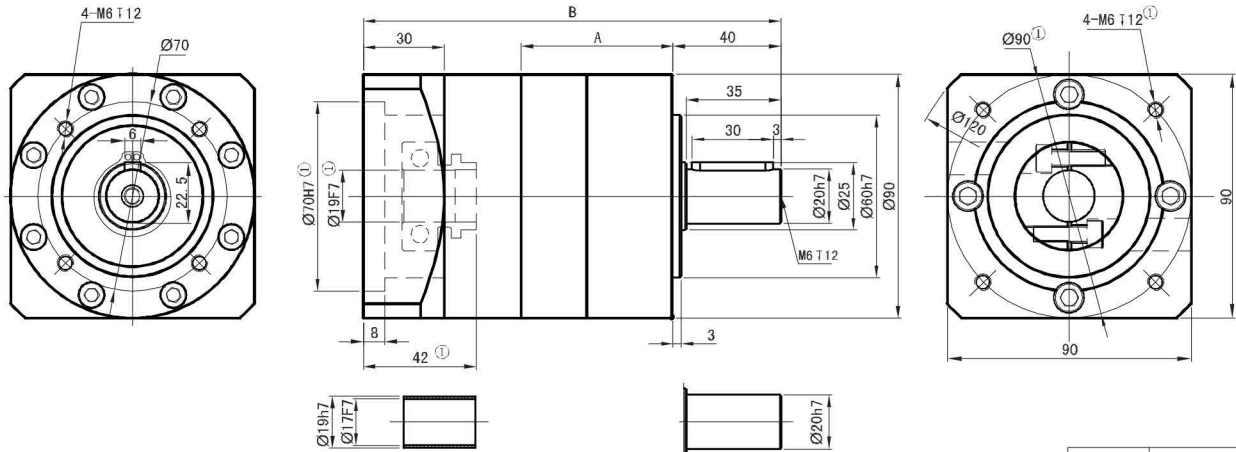
Stage	Stage 1 (i: 3 4 5 7 10)		Stage 2 (i: 12 16 20 25 28 35 40 50 70)				Stage 3 (i: 64 80 100 125 140 175 200 250 350 400 500 700 1000)							
	A	B	A	B	A	B	A	B	A	B	A	B		
Length(mm)	71.5	154	94.5	177	117.5	201.5								
Rated input speed(rpm)	3500		3500				3500							
Maximum input speed(rpm)	6000		6000				6000							
The maximum radial force(N) <sup>②</sup>	1020		1270				1420							
The maximum axial force(N) <sup>②</sup>	850		1100				1250							
No load torque(Nm)	about 0.8		about 0.4				about 0.4							
Efficiency with full load(%)	96		94				90							
Back lash(arcmin)	<12		<15				<18							
Noise(dB)	≤62		≤62				≤62							
Weight(Kg)	2.5		3.1				3.7							
Average lifetime(h)			>20000											
Torsional rigidity(Nm/arcmin)			7.5											
lubricant	Effective lubrication													
direction of rotation	The input and output to the same													
Protection level	IP65													
Installation	arbitrarily													

Ratio(i)	3 <sup>(second)</sup>	4	5	7	10	12 <sup>(second)</sup>	16	20	25	28 <sup>(2nd)</sup>	35	40	50	70
Rated output torque(Nm)	60.0	86.0	94.5	64.0	39.5	96.0	96.0	96.0	105.5	96.0	105.5	96.0	105.5	71.5
maximum output torque(Nm)	120.0	172.0	189.0	128.0	79.0	192.0	192.0	192.0	211.0	192.0	211.0	192.0	211.0	143.0
Moment of inertia(Kgcm <sup>2</sup> )	0.4	0.309	0.291	0.285	0.283	0.4	0.309	0.291	0.291	0.285	0.285	0.283	0.283	0.283

Ratio(i)	64	80	100	125	140	175	200	250	280 <sup>(2nd)</sup>	350	400	500	700	1000
Rated output torque(Nm)	120.0	120.0	120.0	132.0	120.0	132.0	120.0	132.0	120.0	132.0	120.0	132.0	89.5	55.0
maximum output torque(Nm)	240.0	240.0	240.0	264.0	240.0	264.0	240.0	264.0	240.0	264.0	240.0	264.0	179.0	110.0
Moment of inertia(Kgcm <sup>2</sup> )	0.291	0.291	0.291	0.291	0.285	0.285	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283

Subscript ①: We offer different adapter for different size of motors. Our speed reducer can be matched to any motor.  
 Subscript ②: The allowable radial force and axial force are measured at the center of the output shaft (at the 1/2 axis length, stressed at same time), when the output speed is 1 stage 100rpm, 2 stage 50rpm, 3 stage 10rpm.

# PLE90



If motor shaft diameter is too small, it can be installed with the bushing, minimum bushing thickness is 1mm.

Round shaft output

View mode

Stage	Stage 1 (i: 3 4 5 7 10)		Stage 2 (i: 12 16 20 25 28 35 40 50 70)				Stage 3 (i: 64 80 100 125 140 175 200 250 350 400 500 700 1000)							
	A	B	A	B	A	B	A	B	A	B	A	B		
Length(mm)	55	153	78.5	176.5	101.5	199.5								
Rated input speed(rpm)	3500		3500				3500							
Maximum input speed(rpm)	6000		6000				6000							
The maximum radial force(N) <sup>②</sup>	1020		1270				1420							
The maximum axial force(N) <sup>②</sup>	850		1100				1250							
No load torque(Nm)	about 0.8		about 0.4				about 0.4							
Efficiency withfull load(%)	96		94				90							
Back lash(arcmin)	<12		<15				<18							
Noise(dB)	≤62		≤62				≤62							
Weight(Kg)	2.8		3.4				4.0							
Average lifetime(h)			>20000											
Torsional rigidity(Nm/arcmin)			7.5											
lubricant	Effective lubrication													
direction of rotation	The input and output to the same													
Protection level	IP65													
Installation	arbitrarily													

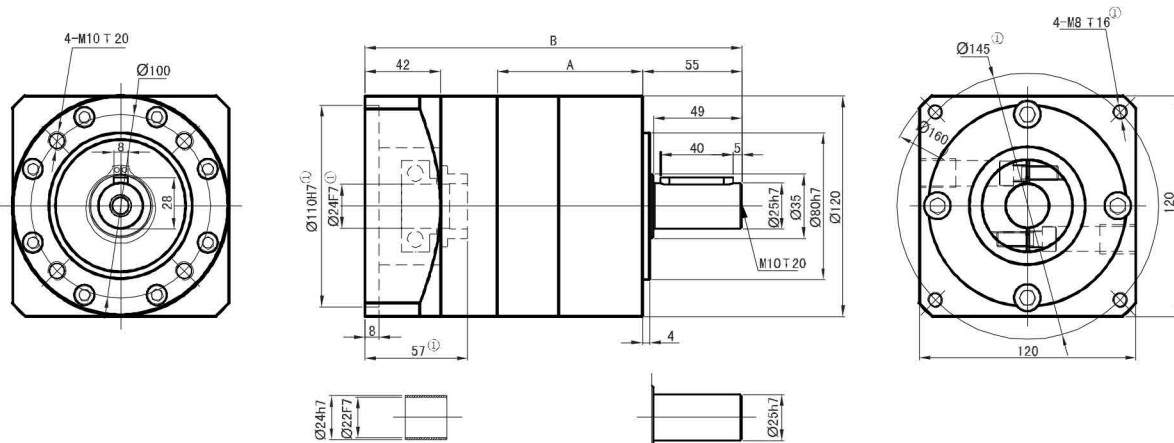
Ratio(i)	3 <sup>max</sup>	4	5	7	10	12 <sup>max</sup>	16	20	25	28	35	40	50	70
Rated output torque(Nm)	60.0	86.0	94.5	64.0	39.5	96.0	96.0	96.0	105.5	96.0	105.5	96.0	105.5	71.5
maximum output torque(Nm)	120.0	172.0	189.0	128.0	79.0	192.0	192.0	192.0	211.0	192.0	211.0	192.0	211.0	143.0
Moment of inertia(Kgcm <sup>2</sup> )	0.4	0.309	0.291	0.285	0.283	0.4	0.309	0.291	0.291	0.285	0.285	0.283	0.283	0.283

Ratio(i)	64	80	100	125	140	175	200	250	280	350	400	500	700	1000
Rated output torque(Nm)	120.0	120.0	120.0	132.0	120.0	132.0	120.0	132.0	120.0	132.0	120.0	132.0	89.5	55.0
maximum output torque(Nm)	240.0	240.0	240.0	264.0	240.0	264.0	240.0	264.0	240.0	264.0	240.0	264.0	179.0	110.0
Moment of inertia(Kgcm <sup>2</sup> )	0.291	0.291	0.291	0.291	0.285	0.285	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283

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# PLE120



If motor shaft diameter is too small, it can be installed with the bushing, minimum bushing thickness is 1mm.

Round shaft output

View mode

Stage	Stage 1 (i: 3 4 5 7 10)		Stage 2 (i: 12 16 20 25 28 35 40 50 70)				Stage 3 (i: 64 80 100 125 140 175 200 250 350 400 500 700 1000)													
	A	B	A	B	A	B	A	B	A	B	A	B								
Length(mm)	80	210	110	240	140	270														
Rated input speed(rpm)	3000		3000				3000													
Maximum input speed(rpm)	4800		4800				4800													
The maximum radial force(N) <sup>②</sup>	2230		2840				3020													
The maximum axial force(N) <sup>②</sup>	1550		2100				2600													
No load torque(Nm)	about 1.3		about 0.6				about 0.6													
Efficiency with full load(%)	96		94				90													
Back lash(arcmin)	<12		<15				<18													
Noise(dB)	≤65		≤65				≤65													
Weight(Kg)	6.8		8.8				11.0													
Average lifetime(h)			>20000																	
Torsional rigidity(Nm/arcmin)			15.0																	
lubricant	Effective lubrication																			
direction of rotation	The input and output to the same																			
Protection level	IP65																			
Installation	arbitrarily																			

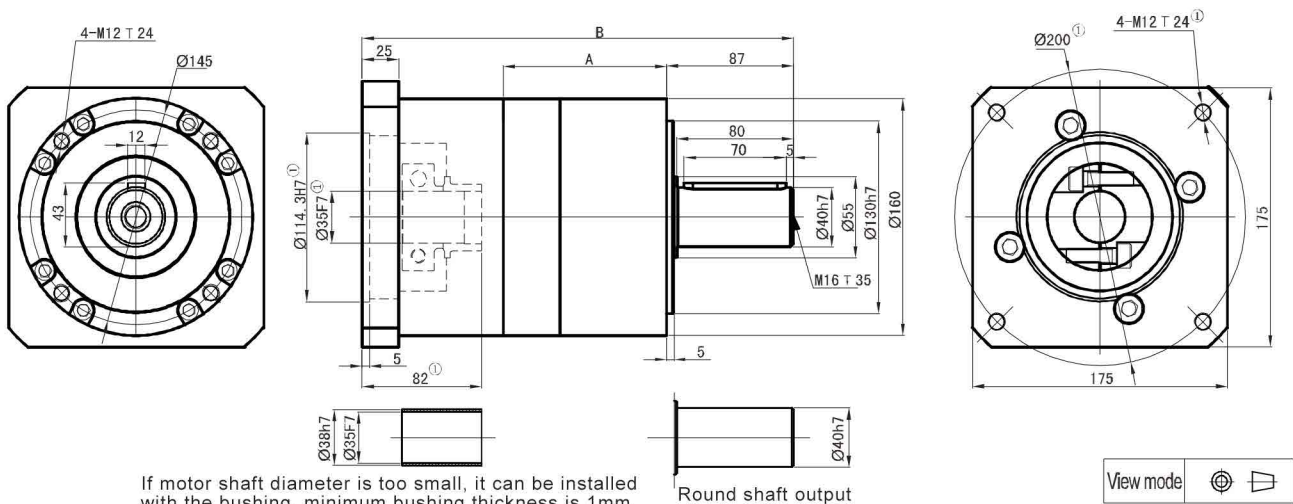
Ratio(i)	3 <sup>(extra stage)</sup>	4	5	7	10	12 <sup>(extra stage)</sup>	16	20	25	28	35	40	50	70
Rated output torque(Nm)	148.0	222.0	235.0	158.0	93.0	250.0	250.0	250.0	264.0	250.0	264.0	250.0	264.0	177.0
maximum output torque(Nm)	296.0	444.0	470.0	316.0	186.0	500.0	500.0	500.0	528.0	500.0	528.0	500.0	528.0	354.0
Moment of inertia(Kgcm <sup>2</sup> )	1.65	1.22	1.15	1.13	1.11	1.65	1.22	1.15	1.15	1.13	1.13	1.11	1.11	1.11

Ratio(i)	64	80	100	125	140	175	200	250	280	350	400	500	700	1000
Rated output torque(Nm)	310.0	310.0	310.0	329.0	310.0	329.0	310.0	329.0	310.0	329.0	310.0	329.0	220.0	130.0
maximum output torque(Nm)	620.0	620.0	620.0	658.0	620.0	658.0	620.0	658.0	620.0	658.0	620.0	658.0	440.0	260.0
Moment of inertia(Kgcm <sup>2</sup> )	1.15	1.15	1.15	1.15	1.13	1.13	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11

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Subscript ②: The allowable radial force and axial force are measured at the center of the output shaft (at the 1/2 axis length, stressed at same time), when the output speed is 1 stage 100rpm, 2 stage 50rpm, 3 stage 10rpm.

# PLE160



If motor shaft diameter is too small, it can be installed with the bushing, minimum bushing thickness is 1mm.

Stage	Stage 1 (i: 3 4 5 8)		Stage 2 (i: 12 16 20 25 32 40 64)				Stage 3 (i: 60 64 80 100 120 160 200 256 320 512)					
	A	B	A	B	A	B	A	B	A	B		
Length(mm)	111	296.0	149	333	187	374.0						
Rated input speed(rpm)	3000		3000				3000					
Maximum input speed(rpm)	4500		4500				4500					
The maximum radial force(N) <sup>②</sup>	2200		2700				4650					
The maximum axial force(N) <sup>②</sup>	2300		3000				6200					
No load torque(Nm)	about 3.2		about 2.1				about 2.1					
Efficiency withfull load(%)	96		94				90					
Back lash(arcmin)	< 12		< 15				< 18					
Noise(dB)	≤ 68		≤ 68				≤ 68					
Weight(Kg)	19.0		25.0				31.0					
Average lifetime(h)	>20000											
Torsional rigidity(Nm/arcmin)	27.0											
lubricant	Effective lubrication											
direction of rotation	The input and output to the same											
Protection level	IP65											
Installation	arbitrarily											

Ratio(i)	3	4	5	8	12	16	20	25	32	40	60	64 <sup>2</sup>	64 <sup>3</sup>	80
Rated output torque(Nm)	310.0	605.0	420.0	270.0	680.0	680.0	680.0	460.0	680.0	460.0	900.0	310.0	900.0	900.0
maximum output torque(Nm)	620.0	1210.0	840.0	540.0	1360.0	1360.0	1360.0	920.0	1360.0	920.0	1800.0	620.0	1800.0	1800.0
Moment of inertia(Kgcm <sup>2</sup> )	6.31	5.15	4.93	4.84	6.31	5.15	4.93	4.93	4.84	4.84	9.31	4.84	4.93	4.93

Ratio(i)	100	120	160	200	256	320	512							
Rated output torque(Nm)	900.0	580.0	900.0	580.0	900.0	580.0	400.0							
maximum output torque(Nm)	1800.0	1160.0	1800.0	1160.0	1800.0	1160.0	800.0							
Moment of inertia(Kgcm <sup>2</sup> )	4.93	4.84	4.84	4.84	4.84	4.84	4.84							

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