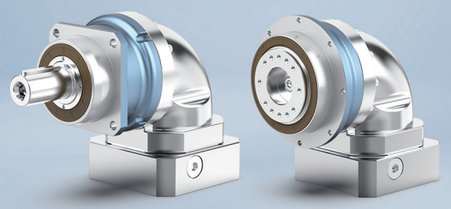
WANSHSIN®

High Rigidity Planetary Gearbox

Catalog



WANSHSIN SEIKOU (HUNAN) CO., LTD

Add. : WANSHSIN Industrial Park, Ningxiang Hi-tech Zone,
Changsha City, Hunan Province, China
Tel. : +86-731-82247038
Email : sales@wanshsin.com
Website : www.wanshsin.com

COMMITTED TO BUILDING
ENDURING HIGHLY-PRECISION GEARBOX

CONTENTS

WANSHSIN SEIKOU (HUNAN) CO., LTD

WANSHSIN was founded in 2009 in Dongguan Guangdong, and moved its headquarters to Changsha, Hunan in 2014. At present, WANSHSIN has five manufacturing bases in Dongguan, changsha and Zhuzhou of Hunan province, and three technology innovation platforms. WANSHSIN has also established three R&D centers in Japan, Shenzhen and Hunan headquarters to lead the high-quality development of the industry with innovation.

WANSHSIN is a professional gearbox and gear motor manufacturer and intelligent automation complete solution provider, integrating R&D, production, sales and service. WANSHSIN ranks the First in this industry in Hunan Province and the Tenth in China. Products include gear reducer, gear motor and controller (servo driver, inverter, etc).They are widely used in lithium battery industry, automated production lines, robots, automobile manufacturing, engineering machinery, warehousing and logistics, metallurgy chemicals, ceramics, animal husbandry and other industries. WANSHSIN has gradually become a reliable long-term partner of those leading enterprises of relevant industries.

3	5	40+	700+	80,000
R&D Center	Production Base	Countries	Global Staff	Annual Quantities

Advantages

Heat Treatment Process

The internal gear adopts a nitriding heat treatment process, which maximizes the material performance and significantly improves the surface hardness, while retaining the core toughness

Precision Control

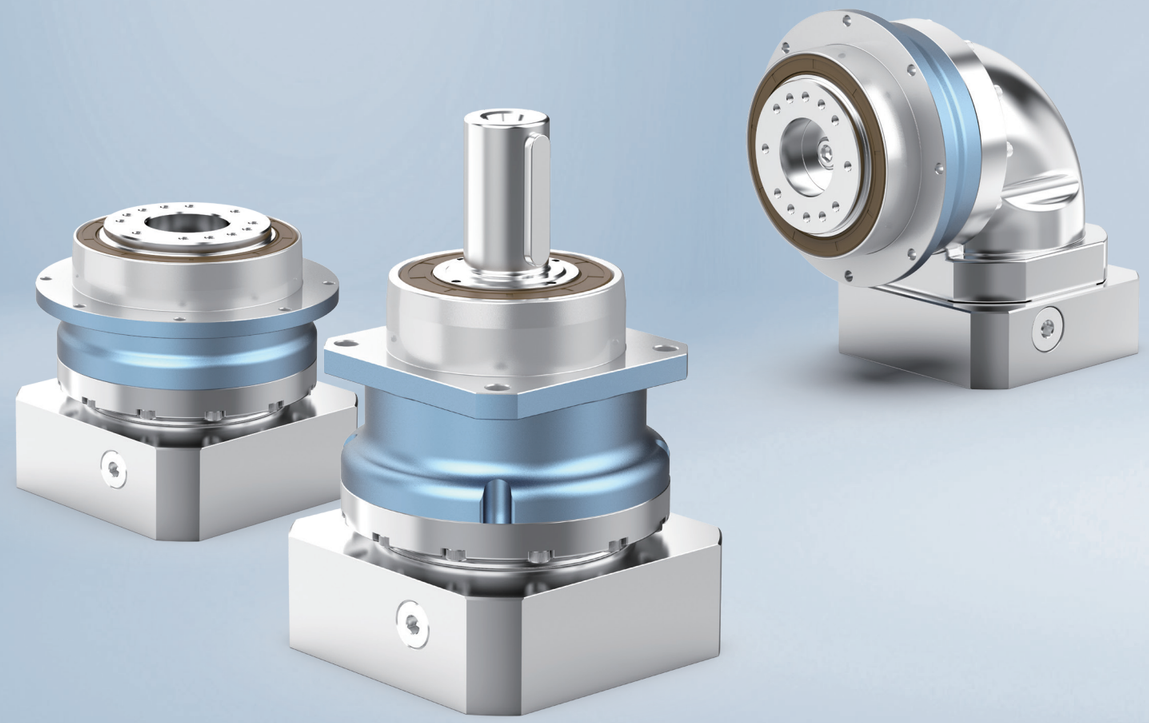
High precision gear processing machine tool + imported CNC lathe, combined with special cutting tools and processing technology to ensure stable control of backlash within the standard

Production Management

Adopts the ISO9001 management system to ensure temperature rise, noise, lifespan, efficiency and other indicators in mass production products

Fast Delivery

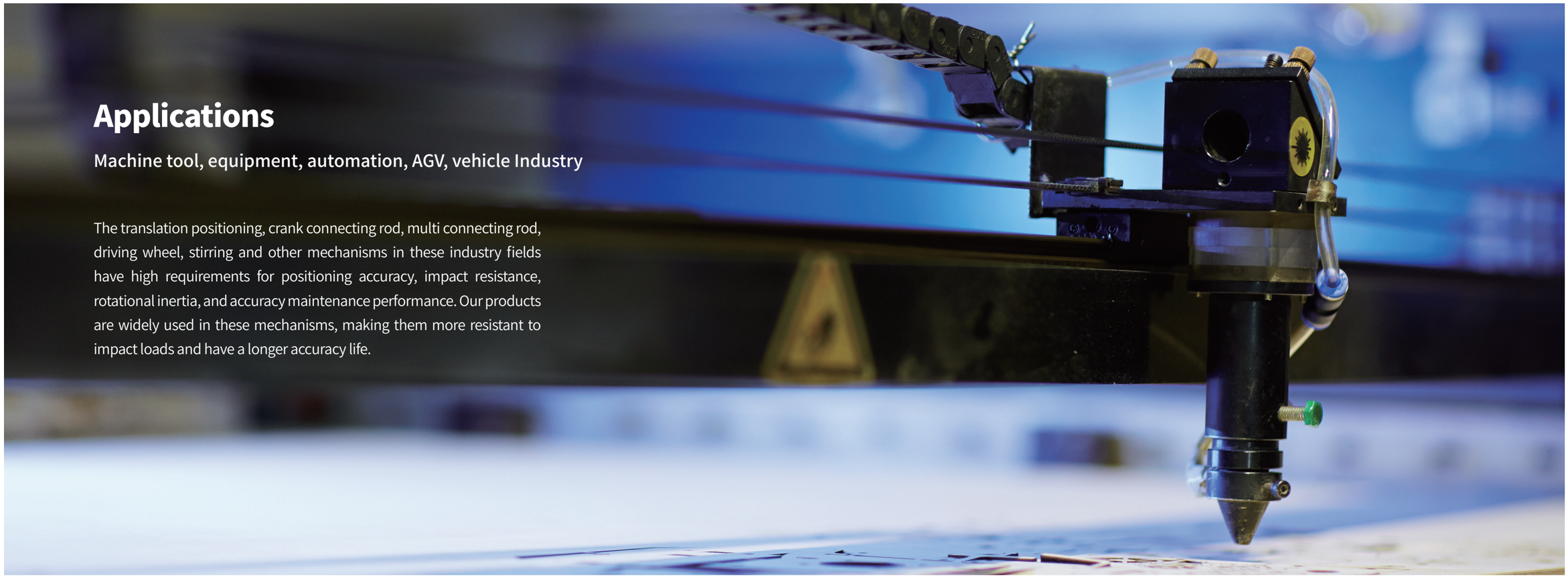
We have more than 80 thousands spare parts in stock to ensure fast delivery



Applications

Machine tool, equipment, automation, AGV, vehicle Industry

The translation positioning, crank connecting rod, multi connecting rod, driving wheel, stirring and other mechanisms in these industry fields have high requirements for positioning accuracy, impact resistance, rotational inertia, and accuracy maintenance performance. Our products are widely used in these mechanisms, making them more resistant to impact loads and have a longer accuracy life.



Laser Cutting Equipment

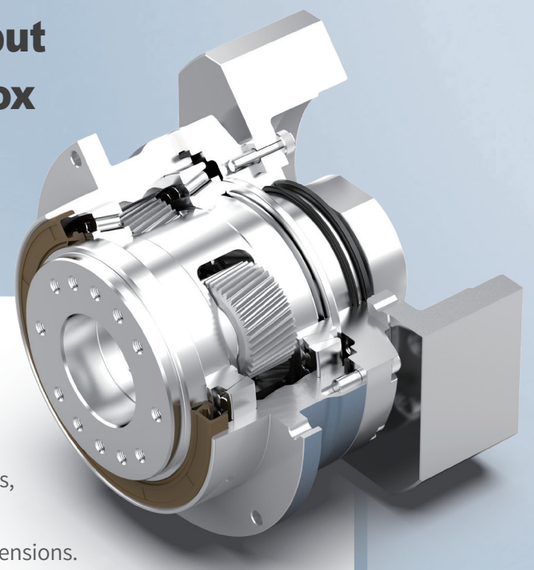
Flying Saw Equipment

Automotive Welding Equipment

Robots

High rigidity flange output helical planetary gearbox

WTH Series



Product Features

- High precision, compact dimensions, excellent sealing performance.
- High universality in installation dimensions.
- Significantly enhances overall rigidity, vibration resistance, and load-bearing capacity in any direction.
- Special manufacturing processes for annular gear to ensure superior accuracy throughout its entire lifespan.
- For WSH series with size 100 above, the output bearings adopt a double-support structure, leads to a longer span and superior overturning torque capacity.
- Compared to similar models in the market, its total length is further reduced, resulting in higher power density.

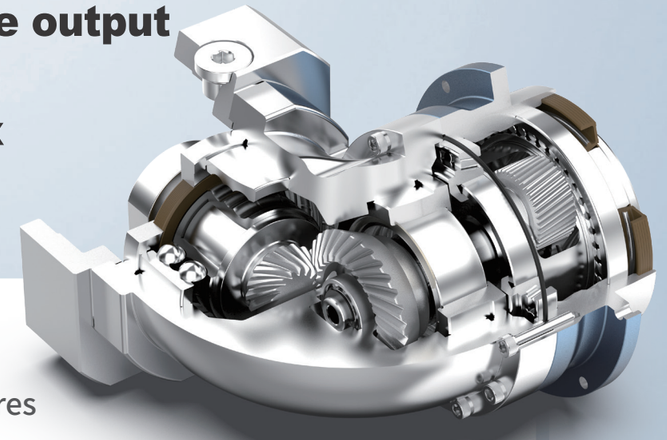
※ Suitable for conditions requiring high positioning accuracy, high dynamic periodic operation and compact radial/axial space.

High rigidity shaft output helical planetary gearbox

WSH Series

High rigidity flange output helical right-angle planetary gearbox

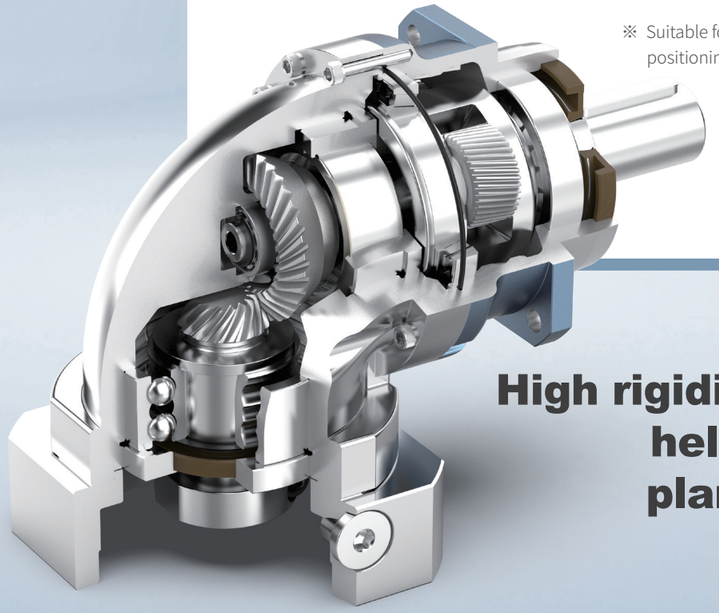
WTHR Series



Product Features

- Higher and more stable rotation speed, less vibration.
- High universality in installation dimensions.
- Brand-new manufacturing processes for superior accuracy retention.
- Significantly enhances overall rigidity, vibration resistance, and load-bearing capacity in any direction.
- Special manufacturing processes for input stages using spiral bevel gears, resulting in lower working noise and higher precision.
- Compared to similar models in the market, its total length is further reduced, resulting in higher power density.

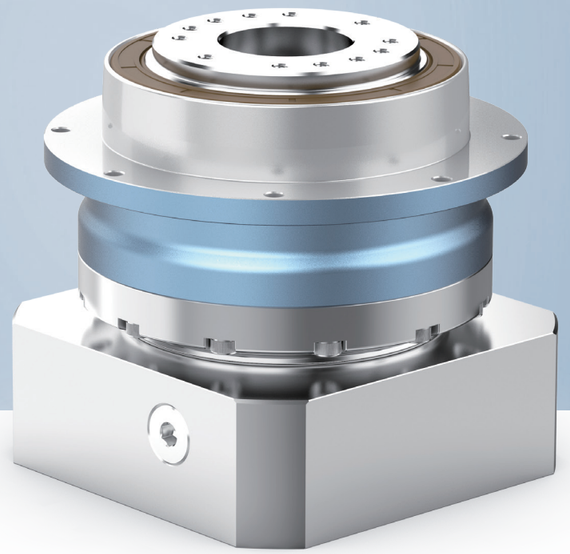
※ Suitable for conditions requiring high positioning accuracy, high dynamic periodic operation and compact axial space.



High rigidity shaft output helical right-angle planetary gearbox

WSHR Series

Model No.



W — TH — 110 — 010 — P1 — Motor reference

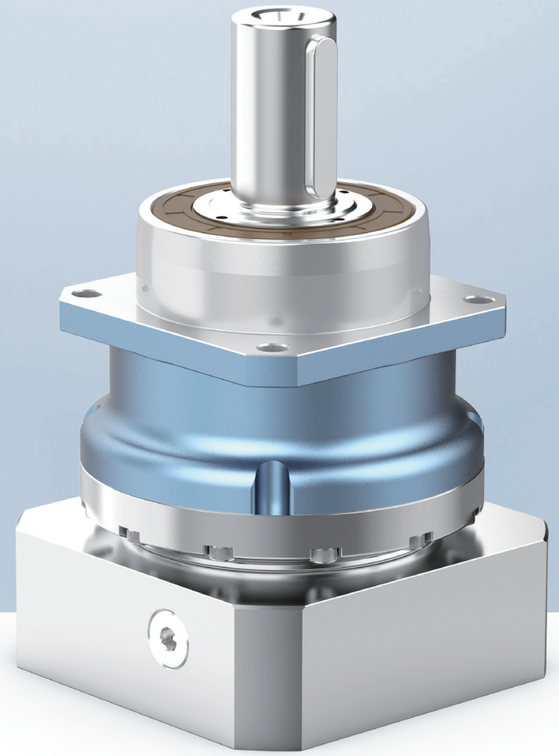
Brand

Model
TH

Size
064
090
110
140
200

Ratio
4
5
6
7
8
10
16
20
25
30
35
40
50
60
70
80
100

Precision
P0 Super precision backlash
P1 Precision backlash
P2 Standard backlash



W — SH — 100 — 010 — P1 — Motor reference

Brand

Model
SH

Size
060
075
100
140
180
210

Ratio
3
4
5
6
7
8
10
15
16
20
25
30
35
40
50
60
70
80
100

Precision
P0 Super precision backlash
P1 Precision backlash
P2 Standard backlash

WTH064 L1 Stage

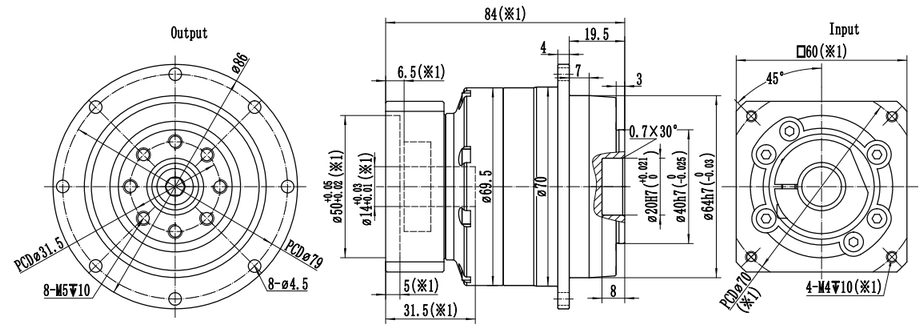
Specification		Unit	WTH064-1-Stage					
Ratio			4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	55	60	55	50	40	35
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}					
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm, 20°C running)		Nm	0.55	0.45	0.45	0.33	0.27	0.27
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5					
Torsional rigidity		Nm/arcmin	13					
Max Tilting Moment M_{2K}		Nm	130					
Allowable Radial Force F_{2R} (b)		N	2500					
Allowable Axle Force F_{2A} (b)		N	2000					
Service Life		h	20000					
Efficienct		%	⩾97					
Applicable Ambient Temperature		°C	-20°C～+40°C					
Weight		kg	1.5					
Protection class			IP65					
Lubrication (c)			Synthetic Lubricating Oil					
Noise		dB(A)	≤58					
Rotational inertia J1	≤14	kg.cm²	0.22	0.2	0.18	0.18	0.18	0.18
	≤19		0.55	0.5	0.45	0.45	0.45	0.45

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

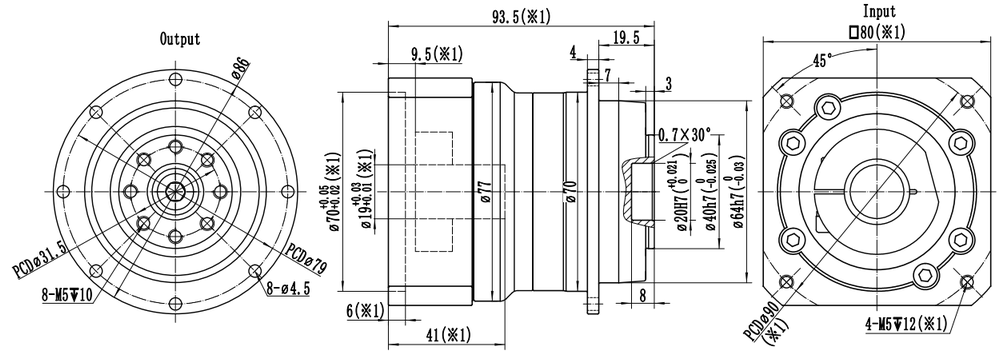
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft
bore diameter



Max. 19(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTH064 L2 Stage

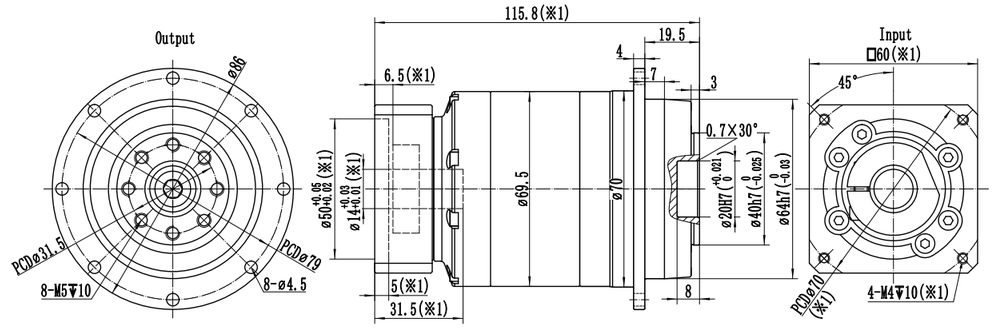
Specification		Unit	WTH064-2-Stage										
Ratio			16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	55	55	60	55	50	55	60	55	50	40	35
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	3500	3500	3500	3500	3500	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm, 20°C running)		Nm	0.45	0.32	0.32	0.32	0.32	0.2	0.2	0.2	0.2	0.16	0.16
Max Backlash		arcmin	P0⩽3 / P1⩽5 / P2⩽8										
Torsional rigidity		Nm/arcmin	13										
Max Tilting Moment M_{2K}		Nm	130										
Allowable Radial Force F_{2R} (b)		N	2500										
Allowable Axle Force F_{2A} (b)		N	2000										
Service Life		h	20000										
Efficienct		%	⩾95										
Applicable Ambient Temperature		°C	-20°C～+40°C										
Weight		kg	2.1										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	⩽58										
Rotational inertia J1	⩽8	kg.cm²	0.12	0.1	0.1	0.1	0.1	0.08	0.08	0.08	0.08	0.08	0.08
	⩽14		0.22	0.17	0.17	0.17	0.17	0.15	0.15	0.15	0.15	0.15	0.15

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTH090 L1 Stage

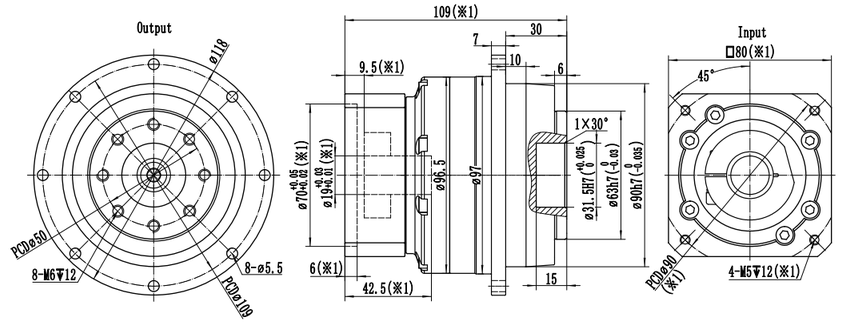
Specification		Unit	WTH090-1-Stage					
Ratio			4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	150	160	150	140	100	90
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}					
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	1.1	0.75	0.75	0.6	0.5	0.5
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5					
Torsional rigidity		Nm/arcmin	31					
Max Tilting Moment M_{2K}		Nm	280					
Allowable Radial Force F_{2R} (b)		N	4800					
Allowable Axle Force F_{2A} (b)		N	3500					
Service Life		h	20000					
Efficienct		%	≥97					
Applicable Ambient Temperature		°C	-20°C～+40°C					
Weight		kg	3.8					
Protection class			IP65					
Lubrication (c)			Synthetic Lubricating Oil					
Noise		dB(A)	≤60					
Rotational inertia J1	≤19	$kg.cm^2$	0.85	0.75	0.65	0.65	0.65	0.65
	≤24		2.1	2	1.9	1.9	1.9	1.9

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

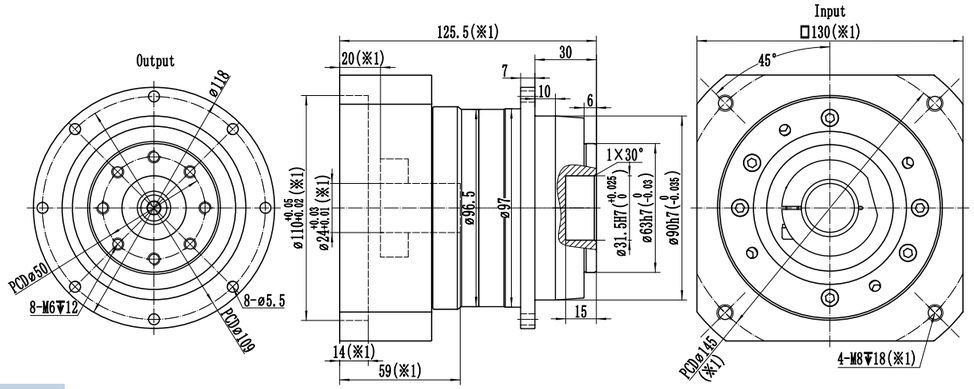
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 19(※2)
Input shaft
bore diameter



Max. 24(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTH090 L2 Stage

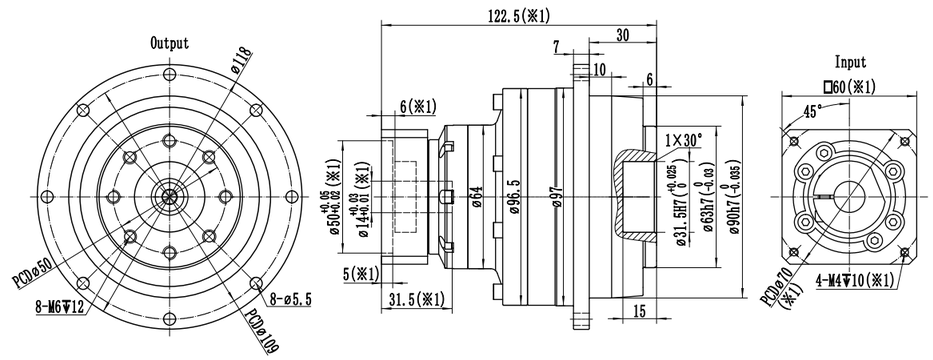
Specification		Unit	WTH090-2-Stage										
Ratio			16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	150	150	160	150	140	150	160	150	140	100	90
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	3500	3500	3500	3500	3500	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.7	0.5	0.5	0.5	0.5	0.35	0.35	0.35	0.35	0.3	0.3
Max Backlash		arcmin	P0⩽3 / P1⩽5 / P2⩽8										
Torsional rigidity		Nm/arcmin	31										
Max Tilting Moment M_{2K}		Nm	280										
Allowable Radial Force F_{2R} (b)		N	4800										
Allowable Axle Force F_{2A} (b)		N	3500										
Service Life		h	20000										
Efficienct		%	⩾95										
Applicable Ambient Temperature		°C	-20°C～+40°C										
Weight		kg	4.4										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	⩽60										
Rotational inertia J1	⩽14	kg.cm²	0.22	0.19	0.19	0.19	0.19	0.16	0.16	0.16	0.16	0.16	0.16
	⩽19		0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

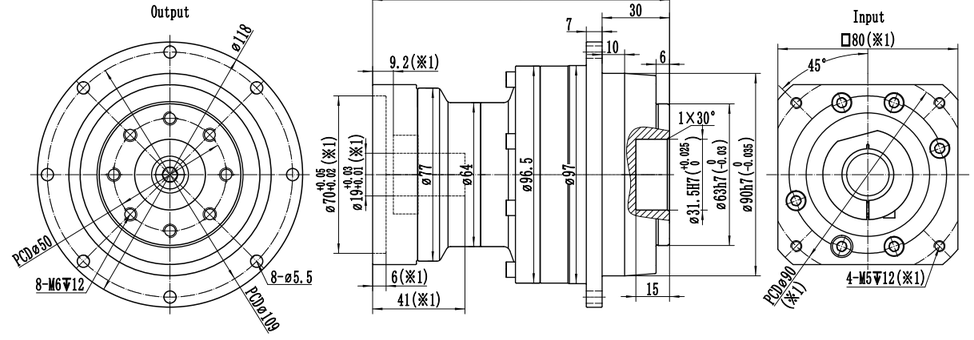
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft
bore diameter



Max. 19(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

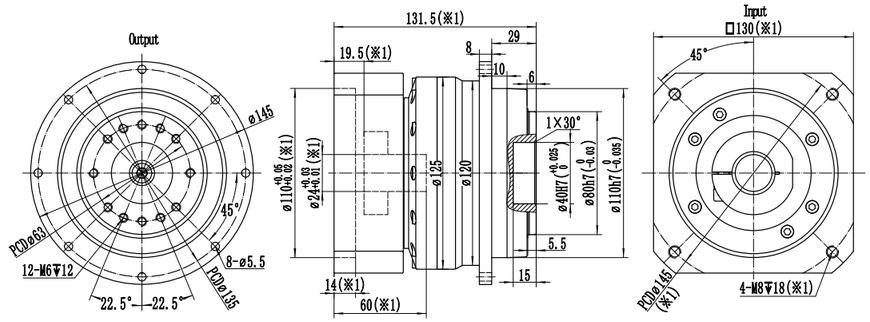
Specification		Unit	WTH110-1-Stage					
Ratio			4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	330	330	310	300	230	200
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}					
Rated Input Speed n_{1N} (a)		rpm	2800	2800	2800	3300	3300	3300
Max Input Speed n_{1B}		rpm	5000	5000	5000	5000	5000	5000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	2	1.5	1.5	1.3	1	1
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5					
Torsional rigidity		Nm/arcmin	82					
Max Tilting Moment M_{2K}		Nm	510					
Allowable Radial Force F_{2R} (b)		N	7800					
Allowable Axle Force F_{2A} (b)		N	6000					
Service Life		h	20000					
Efficienct		%	≥97					
Applicable Ambient Temperature		°C	-20°C～+40°C					
Weight		kg	6.1					
Protection class			IP65					
Lubrication (c)			Synthetic Lubricating Oil					
Noise		dB(A)	≤63					
Rotational inertia J1	≤19	$kg.cm^2$	2.5	2	1.5	1.5	1.5	1.5
	≤24		3	2.5	2	2	2	2
	≤28		3.5	3	2.5	2.5	2.5	2.5
	≤35		10	9.5	9	9	9	9

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

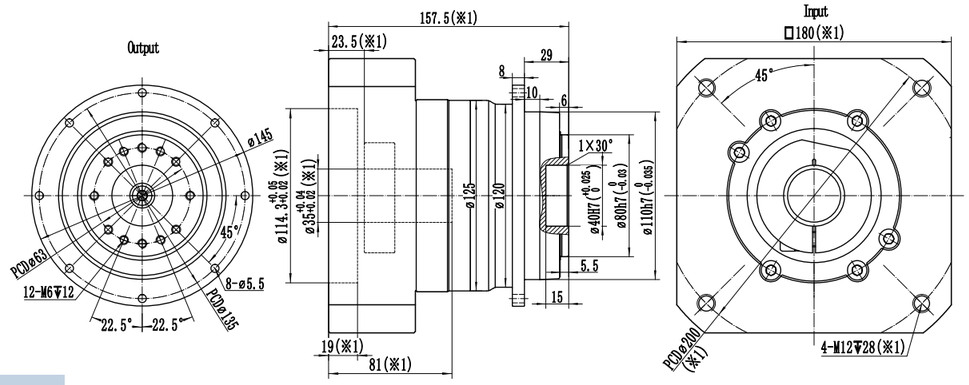
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTH110 L2 Stage

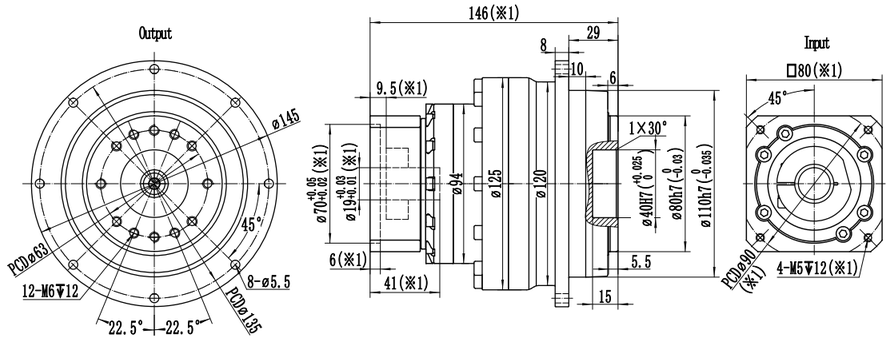
Specification		Unit	WTH110-2-Stage										
Ratio			16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	330	330	330	310	300	330	330	310	300	230	200
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	3300	3800	3800	3800	3800	3800	3800
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.95	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5
Max Backlash		arcmin	P0⩽3 / P1⩽5 / P2⩽8										
Torsional rigidity		Nm/arcmin	82										
Max Tilting Moment M_{2K}		Nm	510										
Allowable Radial Force F_{2R} (b)		N	7800										
Allowable Axle Force F_{2A} (b)		N	6000										
Service Life		h	20000										
Efficienct		%	⩾95										
Applicable Ambient Temperature		℃	-20℃～+40℃										
Weight		kg	6.8										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	⩽61										
Rotational inertia J1	⩽19	kg.cm²	0.85	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6
	⩽24		2.1	1.9	1.9	1.9	1.9	1.85	1.85	1.85	1.85	1.85	1.85

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

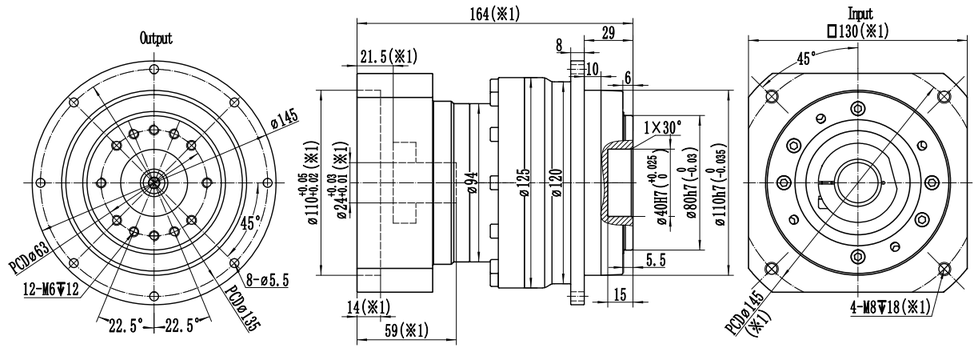
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 19(※2)
Input shaft
bore diameter



Max. 24(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTH140 L1 Stage

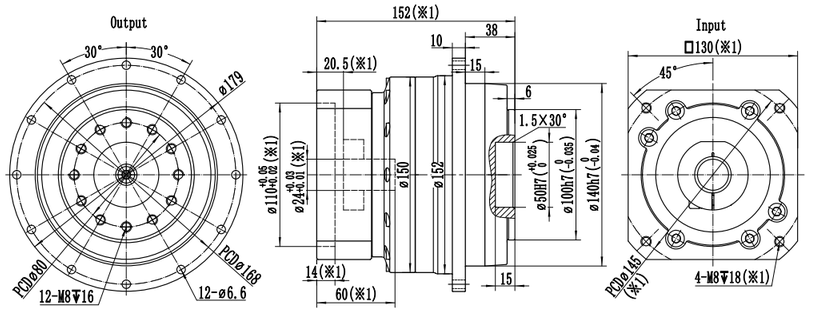
Specification		Unit	WTH140-1-Stage					
Ratio			4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	650	650	600	550	450	400
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}					
Rated Input Speed n_{1N} (a)		rpm	2500	2500	2500	3000	3000	3000
Max Input Speed n_{1B}		rpm	4500	4500	4500	4500	4500	4500
No Load Running Torque (n1=3000rpm,20°C running)		Nm	3.6	2.8	2.8	2	1.35	1.35
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5					
Torsional rigidity		Nm/arcmin	155					
Max Tilting Moment M_{2K}		Nm	1350					
Allowable Radial Force F_{2R} (b)		N	13000					
Allowable Axle Force F_{2A} (b)		N	11000					
Service Life		h	20000					
Efficienct		%	≥97					
Applicable Ambient Temperature		°C	-20°C～+40°C					
Weight		kg	14.5					
Protection class			IP65					
Lubrication (c)			Synthetic Lubricating Oil					
Noise		dB(A)	≤65					
Rotational inertia J1	≤24	$kg.cm^2$	7	5.5	4.5	4.5	4.5	4.5
	≤28		8	6.5	5.5	5.5	5.5	5.5
	≤35		11.5	10	9	9	9	9
	≤42		24	23	22	22	22	22

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

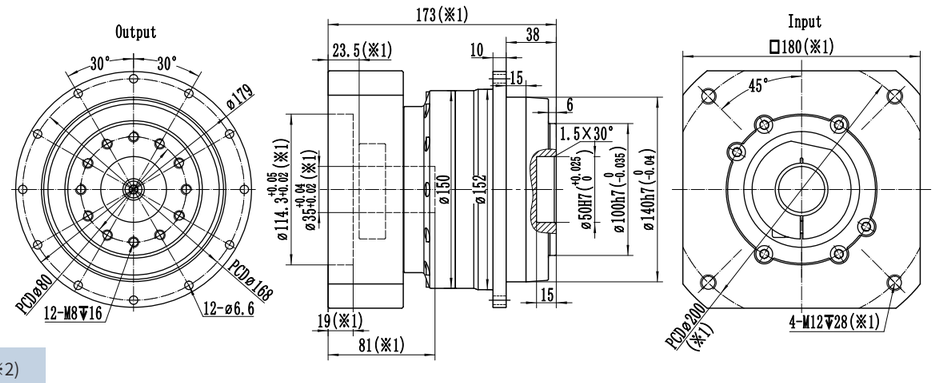
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

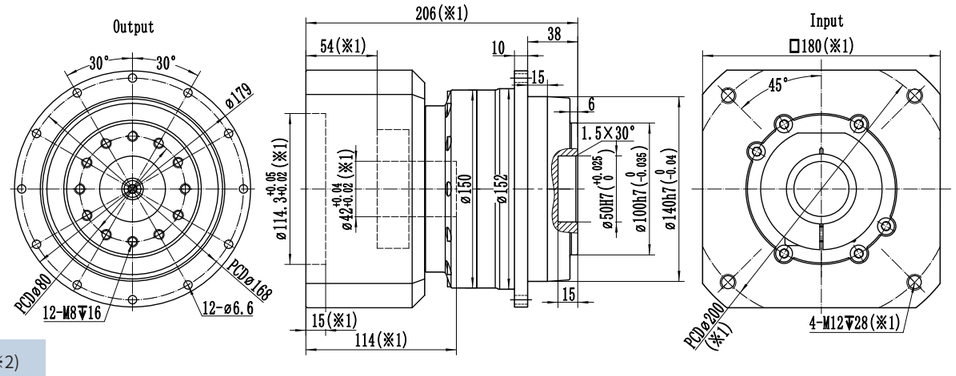
Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter



Max. 42(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTH140 L2 Stage

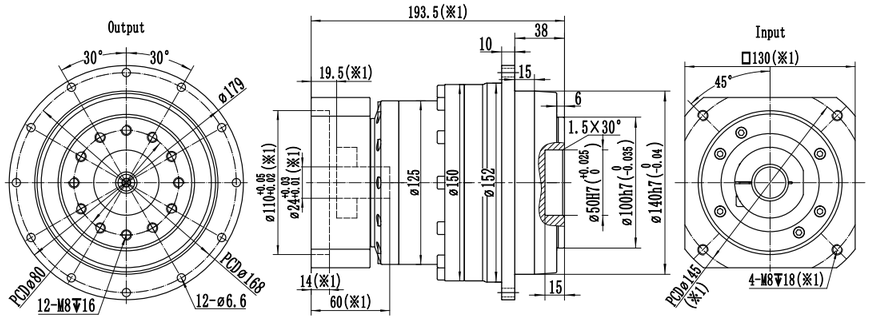
Specification		Unit	WTH140-2-Stage										
Ratio			16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	650	650	650	600	550	650	650	600	550	450	400
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	3000	3000	3000	3000	3000	3300	3300	3300	3300	3300	3300
Max Input Speed n_{1B}		rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	1.5	1.3	1.3	1.3	1.3	1.1	1.1	1.1	1.1	0.95	0.95
Max Backlash		arcmin	P0⩽3 / P1⩽5 / P2⩽8										
Torsional rigidity		Nm/arcmin	155										
Max Tilting Moment M_{2K}		Nm	1350										
Allowable Radial Force F_{2R} (b)		N	13000										
Allowable Axle Force F_{2A} (b)		N	11000										
Service Life		h	20000										
Efficienct		%	⩾95										
Applicable Ambient Temperature		°C	-20°C～+40°C										
Weight		kg	16.5										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	⩽63										
Rotational inertia J1	⩽19	kg.cm²	3.2	2.3	2.3	2.3	2.3	1.4	1.4	1.4	1.4	1.4	1.4
	⩽24		3.7	2.8	2.8	2.8	2.8	1.9	1.9	1.9	1.9	1.9	1.9
	⩽28		4.2	3.3	3.3	3.3	3.3	2.4	2.4	2.4	2.4	2.4	2.4
	⩽35		10	9.3	9.3	9.3	9.3	8.5	8.5	8.5	8.5	8.5	8.5

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

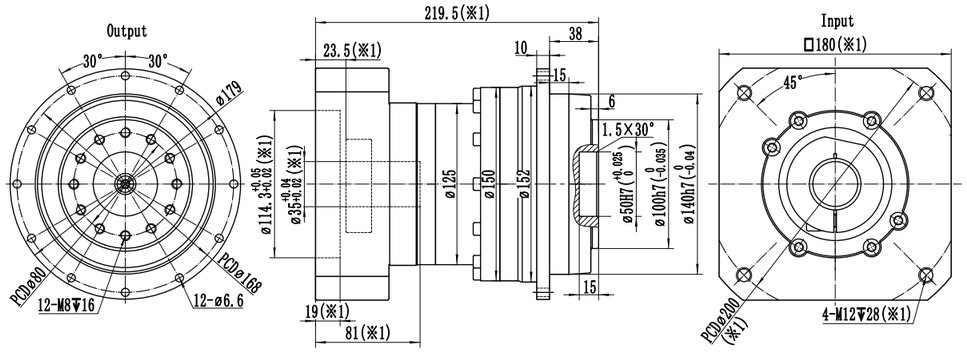
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

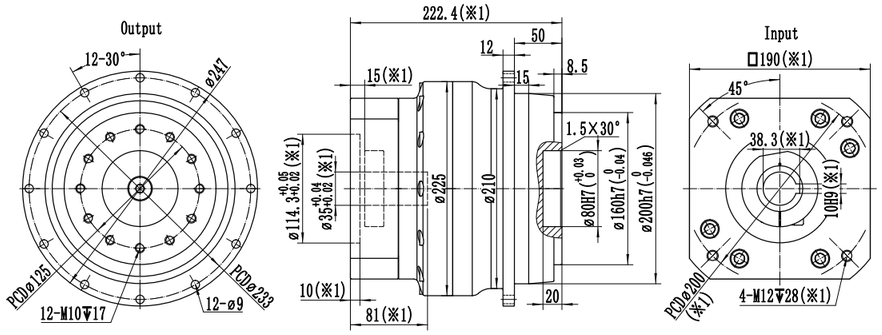
Specification		Unit	WTH200-1-Stage					
Ratio			4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	2000	2050	1950	1700	1450	1350
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}					
Rated Input Speed n_{1N} (a)		rpm	1500	1500	1500	2000	2000	2000
Max Input Speed n_{1B}		rpm	3000	3000	3000	3000	3000	3000
No Load Running Torque (n1=2000rpm,20°C running)		Nm	8.1	6.1	6.1	4.5	3	3
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5					
Torsional rigidity		Nm/arcmin	650					
Max Tilting Moment M_{2K}		Nm	3400					
Allowable Radial Force F_{2R} (b)		N	26000					
Allowable Axle Force F_{2A} (b)		N	21000					
Service Life		h	20000					
Efficienct		%	≥97					
Applicable Ambient Temperature		℃	-20°C～+40°C					
Weight		kg	41					
Protection class			IP65					
Lubrication (c)			Synthetic Lubricating Oil					
Noise		dB(A)	≤66					
Rotational inertia J1	≤35	$kg.cm^2$	37	30	22	19	12	12
	≤42		48	41	33	30	23	23
	≤55		70	61	53	50	43	43
	≤65		98	89	81	78	71	71

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

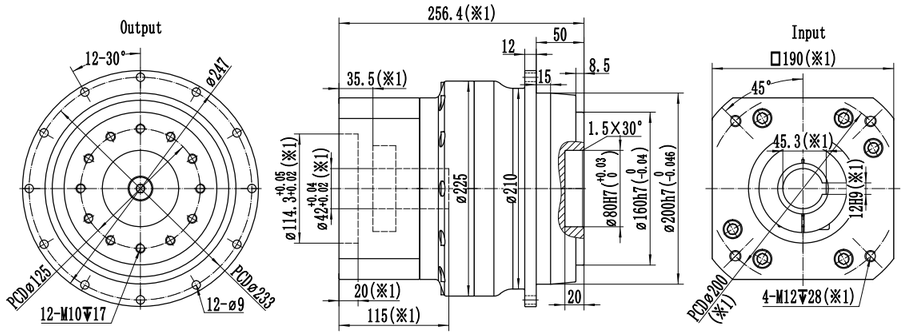
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

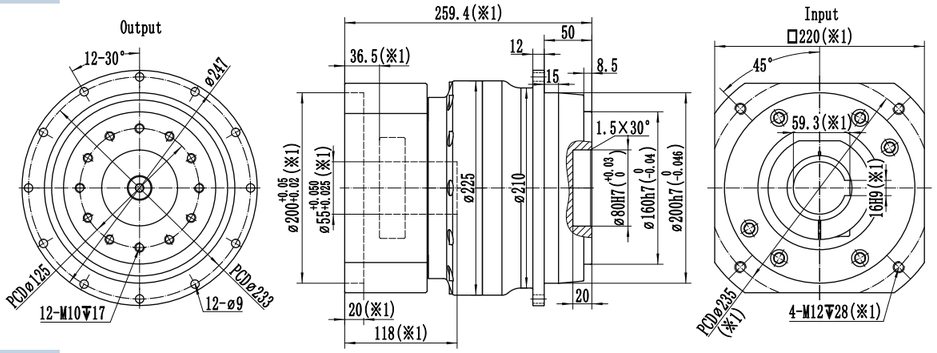
Motor shaft diameter(mm)



Max. 35(※2)
Input shaft
bore diameter



Max. 42(※2)
Input shaft
bore diameter



Max. 55(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WTH200 gearbox: Default keyway on input shaft. Please notify if not needed.

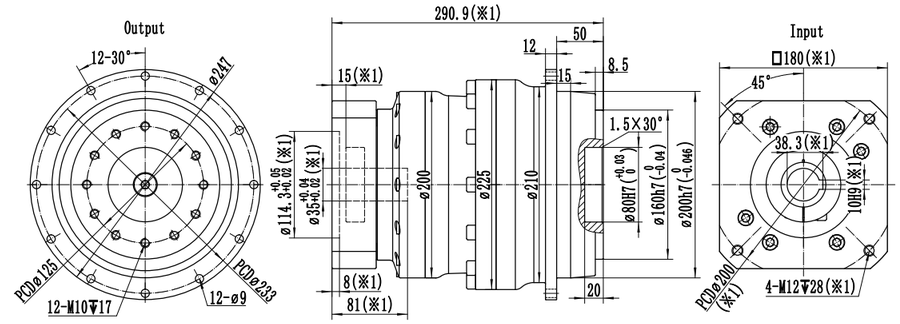
Specification		Unit	WTH200-2-Stage										
Ratio			16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	2000	2000	2050	1950	1700	2000	2050	1950	1700	1450	1350
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	2000	2000	2000	2000	2000	2500	2500	2500	2500	2500	2500
Max Input Speed n_{1B}		rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
No Load Running Torque (n1=2000rpm,20°C running)		Nm	4.3	2.85	2.85	2.85	2.85	2.3	2.3	2.3	2.3	2.15	2.15
Max Backlash		arcmin	P0⩽3 / P1⩽5 / P2⩽8										
Torsional rigidity		Nm/arcmin	650										
Max Tilting Moment M_{2K}		Nm	3400										
Allowable Radial Force F_{2R} (b)		N	26000										
Allowable Axle Force F_{2A} (b)		N	21000										
Service Life		h	20000										
Efficienct		%	⩾95										
Applicable Ambient Temperature		℃	-20°C～+40°C										
Weight		kg	49										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	⩽66										
Rotational inertia J1	⩽28	$kg.cm^2$	13.5	8.5	8.5	8.5	8.5	7.5	7.5	7.5	7.5	7.5	7.5
	⩽35		16	11	11	11	11	10	10	10	10	10	10
	⩽42		27	22	22	22	22	17	17	17	17	16	16
	⩽55		41	36	36	36	36	31	31	31	31	30	30

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

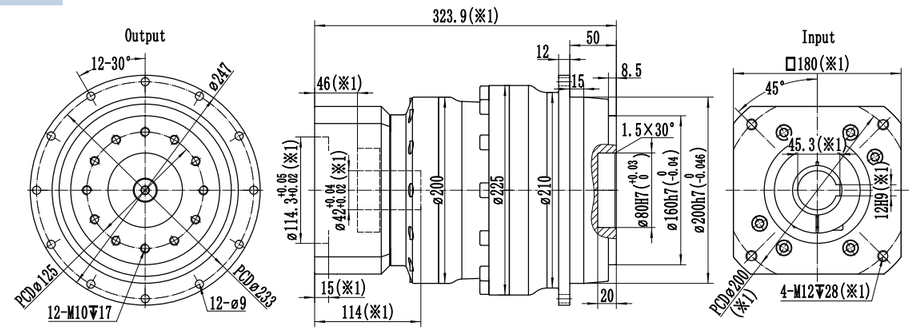
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

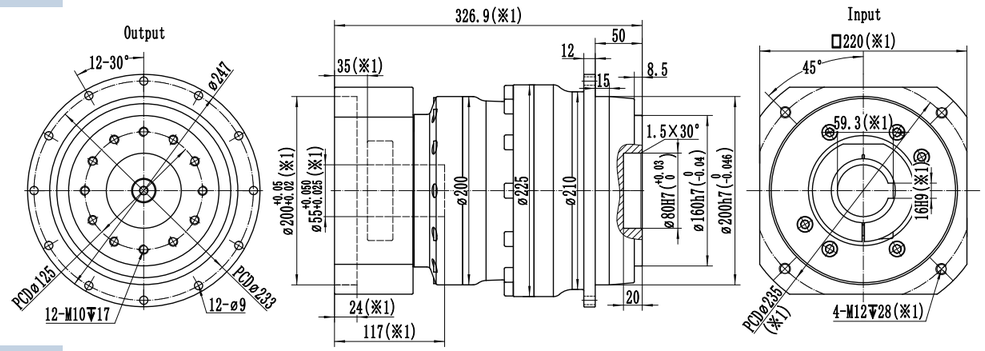
Motor shaft diameter(mm)



Max. 35(※2)
Input shaft bore diameter



Max. 42(※2)
Input shaft bore diameter



Max. 55(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WTH200 gearbox: Default keyway on input shaft. Please notify if not needed.

WSH060 L1 Stage

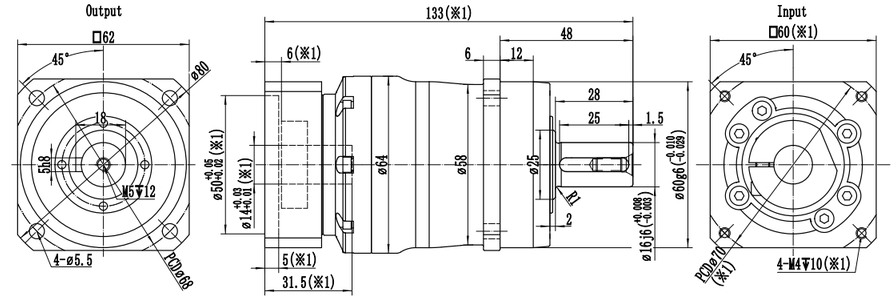
Specification		Unit	WSH060-1-Stage						
Ratio			3	4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	50	55	60	55	50	40	35
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}						
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.6	0.5	0.4	0.4	0.3	0.25	0.25
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5						
Torsional rigidity		Nm/arcmin	7						
Max Tilting Moment M_{2K}		Nm	160						
Allowable Radial Force F_{2R} (b)		N	3000						
Allowable Axle Force F_{2A} (b)		N	2400						
Service Life		h	20000						
Efficienct		%	⩾97						
Applicable Ambient Temperature		°C	-20°C～+40°C						
Weight		kg	1.6						
Protection class			IP65						
Lubrication (c)			Synthetic Lubricating Oil						
Noise		dB(A)	≤58						
Rotational inertia J1	≤14	kg.cm²	0.28	0.22	0.2	0.18	0.18	0.18	0.18
	≤19		0.61	0.55	0.5	0.45	0.45	0.45	0.45

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

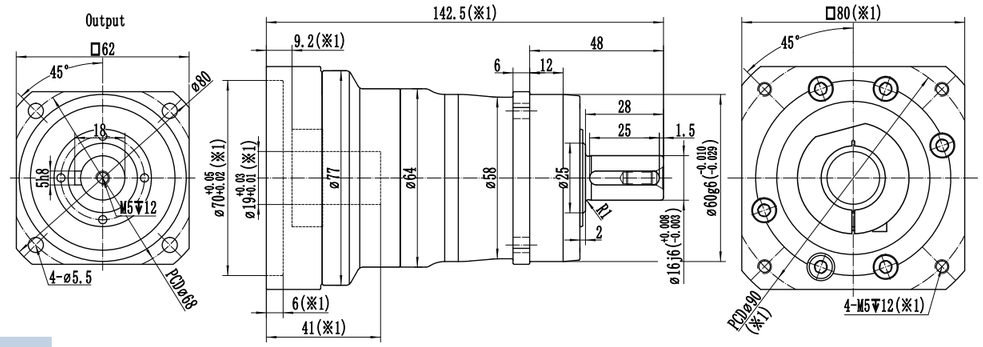
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft bore diameter



Max. 19(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSH060 L2 Stage

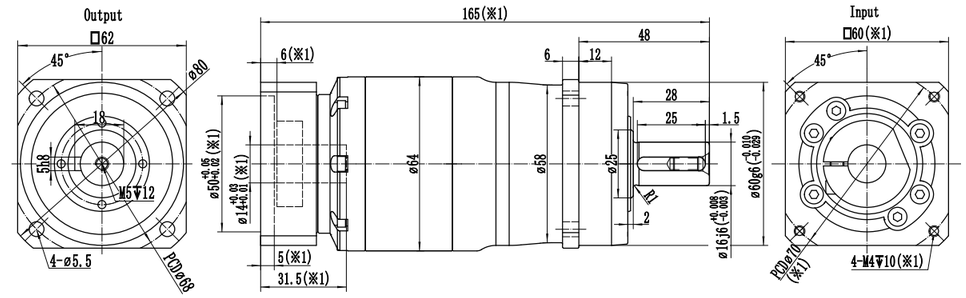
Specification		Unit	WSH060-2-Stage											
Ratio			15	16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	50	55	55	60	55	50	55	60	55	50	40	35
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)		rpm	3500	3500	3500	3500	3500	3500	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.16	0.16
Max Backlash		arcmin	P0⩽3 / P1⩽5 / P2⩽8											
Torsional rigidity		Nm/arcmin	7											
Max Tilting Moment M_{2K}		Nm	160											
Allowable Radial Force F_{2R} (b)		N	3000											
Allowable Axle Force F_{2A} (b)		N	2400											
Service Life		h	20000											
Efficienct		%	⩾95											
Applicable Ambient Temperature		°C	-20°C～+40°C											
Weight		kg	2.2											
Protection class			IP65											
Lubrication (c)			Synthetic Lubricating Oil											
Noise		dB(A)	⩽58											
Rotational inertia J1	⩽8	kg.cm²	0.12	0.12	0.1	0.1	0.1	0.1	0.08	0.08	0.08	0.08	0.08	0.08
	⩽14		0.22	0.22	0.17	0.17	0.17	0.17	0.15	0.15	0.15	0.15	0.15	0.15

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSH075 L1 Stage

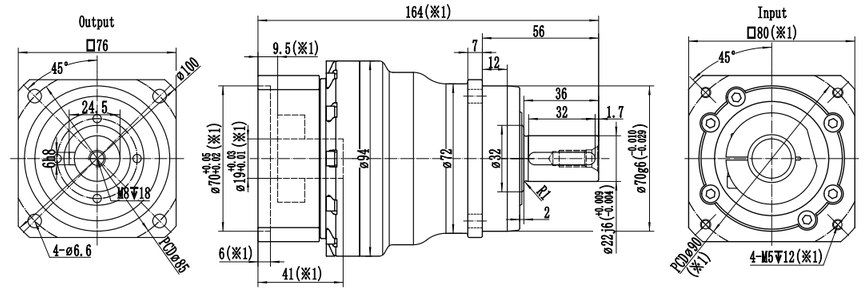
Specification		Unit	WSH075-1-Stage						
Ratio			3	4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	130	150	160	150	140	100	90
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}						
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	1.2	1	0.7	0.7	0.6	0.5	0.5
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5						
Torsional rigidity		Nm/arcmin	14						
Max Tilting Moment M_{2K}		Nm	270						
Allowable Radial Force F_{2R} (b)		N	4500						
Allowable Axle Force F_{2A} (b)		N	3350						
Service Life		h	20000						
Efficienct		%	≥97						
Applicable Ambient Temperature		°C	-20°C～+40°C						
Weight		kg	4						
Protection class			IP65						
Lubrication (c)			Synthetic Lubricating Oil						
Noise		dB(A)	≤60						
Rotational inertia J1	≤19	kg.cm²	1	0.8	0.7	0.6	0.6	0.6	0.6
	≤24		2.2	2	1.9	1.8	1.8	1.8	1.8

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

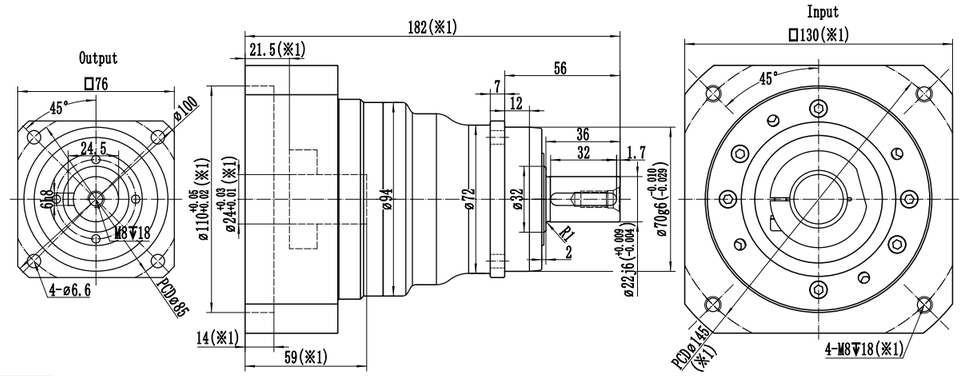
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 19(※2)
Input shaft
bore diameter



Max. 24(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSH075 L2 Stage

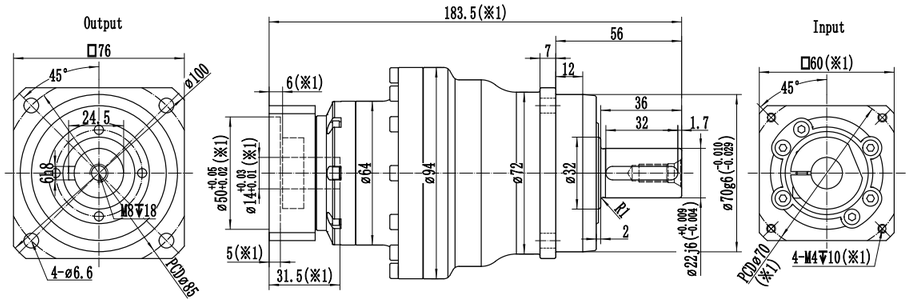
Specification		Unit	WSH075-2-Stage											
Ratio			15	16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	130	150	150	160	150	140	150	160	150	140	100	90
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)		rpm	3500	3500	3500	3500	3500	3500	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.7	0.7	0.5	0.5	0.5	0.5	0.35	0.35	0.35	0.35	0.3	0.3
Max Backlash		arcmin	P0≤3 / P1≤5 / P2≤8											
rigidity		Nm/arcmin	14											
Max Tilting Moment M_{2K}		Nm	270											
Allowable Radial Force F_{2R} (b)		N	4500											
Allowable Axle Force F_{2A} (b)		N	3350											
Service Life		h	20000											
Efficienct		%	⩾95											
Applicable Ambient Temperature		°C	-20°C～+40°C											
Weight		kg	4.6											
Protection class			IP65											
Lubrication (c)			Synthetic Lubricating Oil											
Noise		dB(A)	≤60											
Rotational inertia J1	≤14	kg.cm²	0.22	0.22	0.19	0.19	0.19	0.19	0.16	0.16	0.16	0.16	0.16	0.16
	≤19		0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

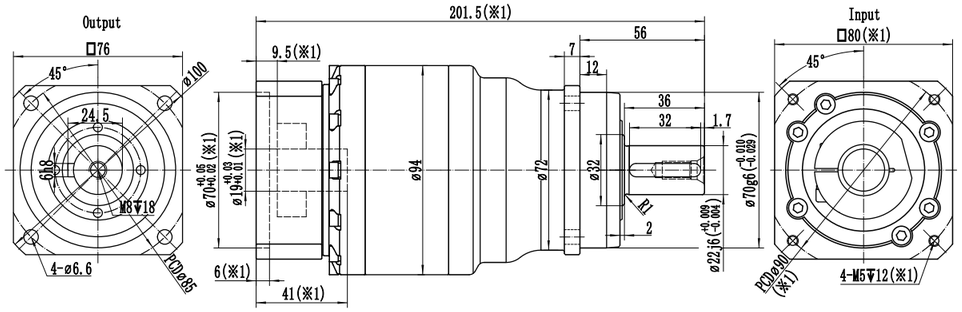
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft
bore diameter



Max. 19(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSH100 L1 Stage

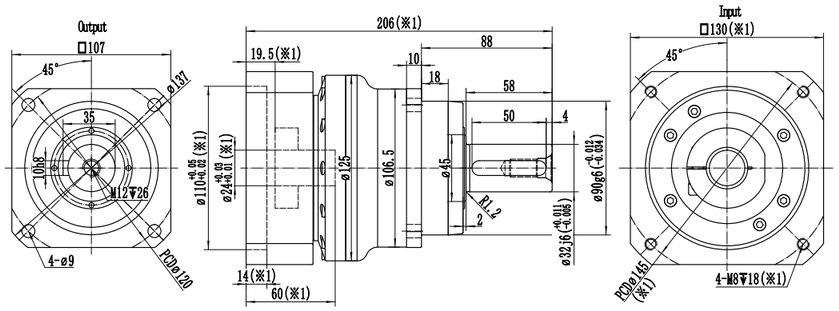
Specification		Unit	WSH100-1-Stage						
Ratio			3	4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	230	330	330	310	300	230	200
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}						
Rated Input Speed n_{1N} (a)		rpm	2800	2800	2800	2800	3300	3300	3300
Max Input Speed n_{1B}		rpm	5000	5000	5000	5000	5000	5000	5000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	2.3	1.9	1.4	1.4	1.2	0.95	0.95
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5						
Torsional rigidity		Nm/arcmin	32						
Max Tilting Moment M_{2K}		Nm	670						
Allowable Radial Force F_{2R} (b)		N	8500						
Allowable Axle Force F_{2A} (b)		N	7000						
Service Life		h	20000						
Efficienct		%	⩾97						
Applicable Ambient Temperature		°C	-20°C～+40°C						
Weight		kg	6.4						
Protection class			IP65						
Lubrication (c)			Synthetic Lubricating Oil						
Noise		dB(A)	⩽63						
Rotational inertia J1	⩽19	kg.cm²	3.5	2.5	2	1.5	1.5	1.5	1.5
	⩽24		4	3	2.5	2	2	2	2
	⩽28		4.5	3.5	3	2.5	2.5	2.5	2.5
	⩽35		11.5	10	9.5	9	9	9	9

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

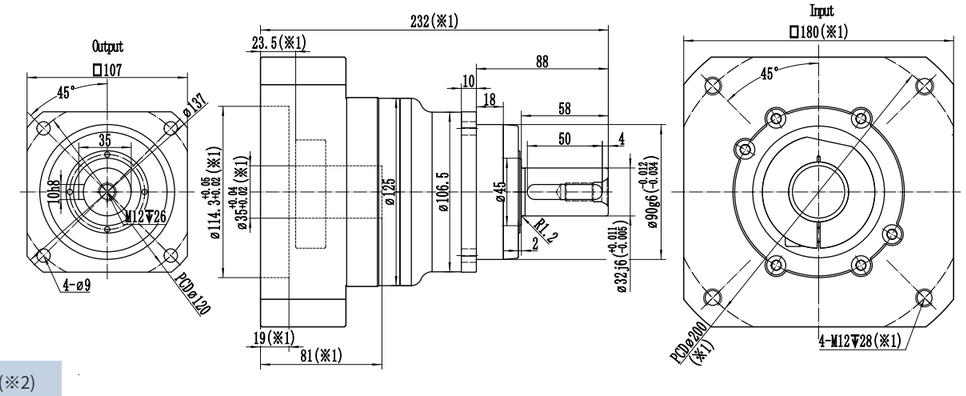
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSH100 L2级

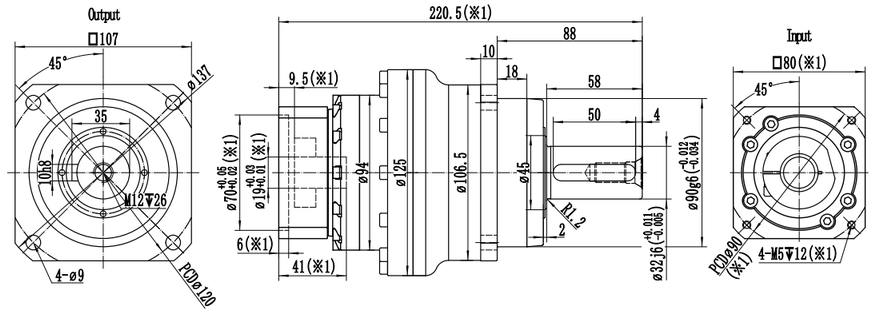
Specification		Unit	WSH100-2-Stage											
Ratio			15	16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	230	330	330	330	310	300	330	330	310	300	230	200
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	3300	3300	3800	3800	3800	3800	3800	3800
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.95	0.95	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5
Max Backlash		arcmin	P0≤3 / P1≤5 / P2≤8											
Torsional rigidity		Nm/arcmin	32											
Max Tilting Moment M_{2K}		Nm	670											
Allowable Radial Force F_{2R} (b)		N	8500											
Allowable Axle Force F_{2A} (b)		N	7000											
Service Life		h	20000											
Efficienct		%	⩾95											
Applicable Ambient Temperature		°C	-20°C～+40°C											
Weight		kg	7.1											
Protection class			IP65											
Lubrication (c)			Synthetic Lubricating Oil											
Noise		dB(A)	⩽61											
Rotational inertia J1	⩽19	kg.cm²	0.85	0.85	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6
	⩽24		2.1	2.1	1.9	1.9	1.9	1.9	1.85	1.85	1.85	1.85	1.85	1.85

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

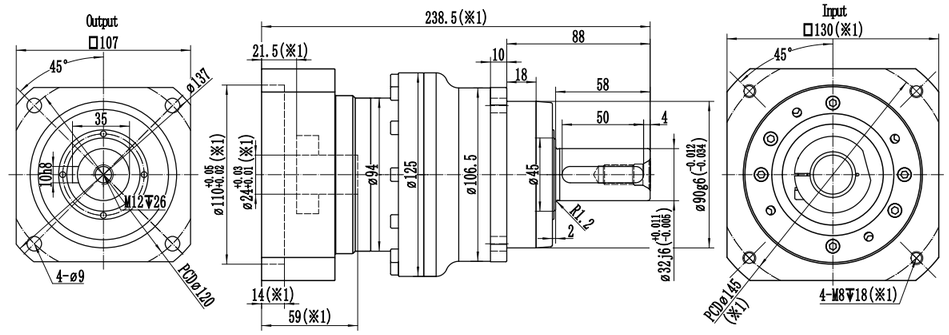
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 19(※2)
Input shaft
bore diameter



Max. 24(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSH140 L1 Stage

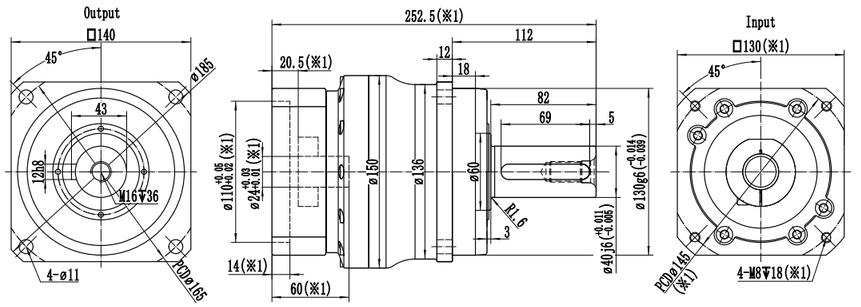
Specification		Unit	WSH140-1-Stage						
Ratio			3	4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	400	650	650	600	550	450	400
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}						
Rated Input Speed n_{1N} (a)		rpm	2500	2500	2500	2500	3000	3000	3000
Max Input Speed n_{1B}		rpm	4500	4500	4500	4500	4500	4500	4500
No Load Running Torque (n1=3000rpm,20°C running)		Nm	4.3	3.4	2.6	2.6	1.9	1.3	1.3
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5						
Torsional rigidity		Nm/arcmin	60						
Max Tilting Moment M_{2K}		Nm	1630						
Allowable Radial Force F_{2R} (b)		N	16000						
Allowable Axle Force F_{2A} (b)		N	12000						
Service Life		h	20000						
Efficienct		%	≥97						
Applicable Ambient Temperature		°C	-20°C～+40°C						
Weight		kg	15.1						
Protection class			IP65						
Lubrication (c)			Synthetic Lubricating Oil						
Noise		dB(A)	≤65						
Rotational inertia J1	≤24	$kg.cm^2$	9.5	7	5.5	4.5	4.5	4.5	4.5
	≤28		10.5	8	6.5	5.5	5.5	5.5	5.5
	≤35		14.5	11.5	10	9	9	9	9
	≤42		26	24	23	22	22	22	22

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

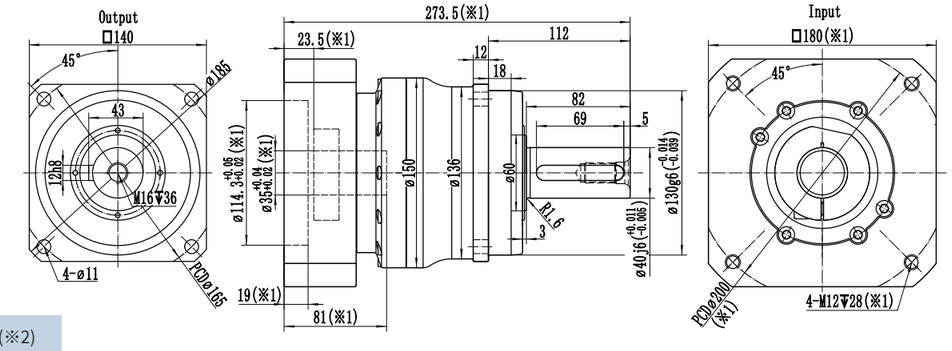
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

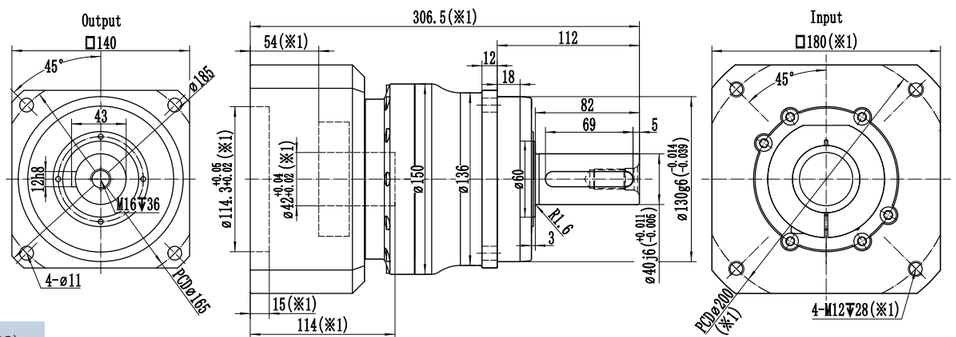
Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter



Max. 42(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSH140 L2 Stage

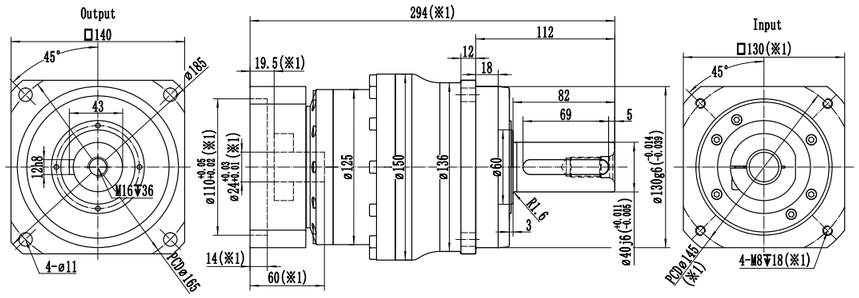
Specification		Unit	WSH140-2-Stage											
Ratio			15	16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	400	650	650	650	600	550	650	650	600	550	450	400
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)		rpm	3000	3000	3000	3000	3000	3000	3300	3300	3300	3300	3300	3300
Max Input Speed n_{1B}		rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	1.5	1.5	1.3	1.3	1.3	1.3	1.1	1.1	1.1	1.1	0.95	0.95
Max Backlash		arcmin	P0≤3 / P1≤5 / P2≤8											
Torsional rigidity		Nm/arcmin	60											
Max Tilting Moment M_{2K}		Nm	1630											
Allowable Radial Force F_{2R} (b)		N	16000											
Allowable Axle Force F_{2A} (b)		N	12000											
Service Life		h	20000											
Efficienct		%	⩾95											
Applicable Ambient Temperature		°C	-20°C～+40°C											
Weight		kg	17.1											
Protection class			IP65											
Lubrication (c)			Synthetic Lubricating Oil											
Noise		dB(A)	≤63											
Rotational inertia J1	≤19	kg.cm²	3.2	3.2	2.3	2.3	2.3	2.3	1.4	1.4	1.4	1.4	1.4	1.4
	≤24		3.7	3.7	2.8	2.8	2.8	2.8	1.9	1.9	1.9	1.9	1.9	1.9
	≤28		4.2	4.2	3.3	3.3	3.3	3.3	2.4	2.4	2.4	2.4	2.4	2.4
	≤35		10	10	9.3	9.3	9.3	9.3	8.5	8.5	8.5	8.5	8.5	8.5

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

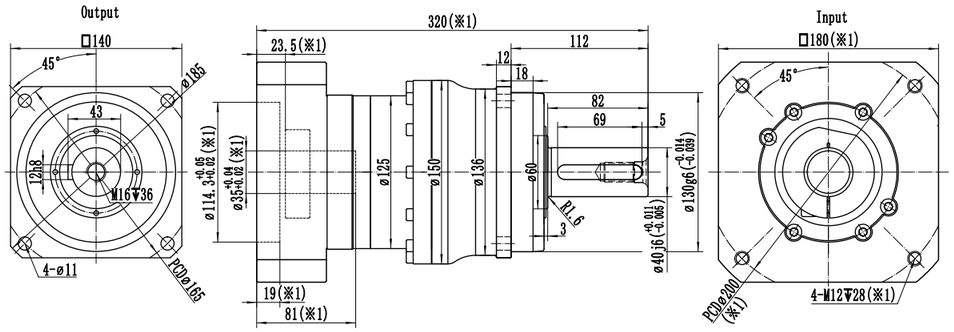
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

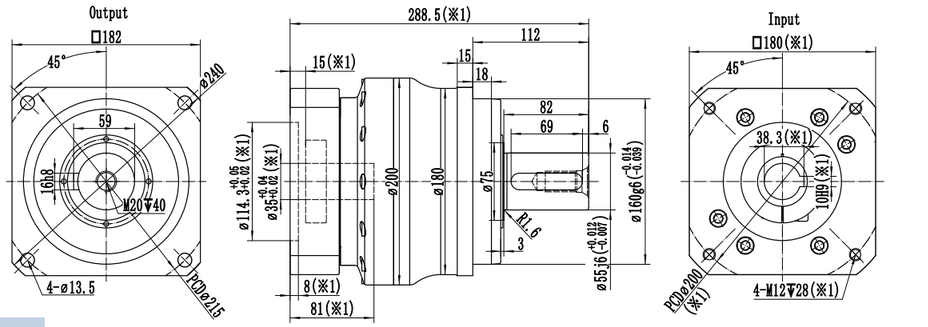
Specification		Unit	WSH180-1-Stage						
Ratio			3	4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	1000	1400	1400	1100	1000	850	760
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}						
Rated Input Speed n_{1N} (a)		rpm	2000	2000	2000	2000	2500	2500	2500
Max Input Speed n_{1B}		rpm	3500	3500	3500	3500	3500	3500	3500
No Load Running Torque (n1=2000rpm,20°C running)		Nm	7.2	5.7	4.3	4.3	3.2	2.15	2.15
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5						
Torsional rigidity		Nm/arcmin	175						
Max Tilting Moment M_{2K}		Nm	3200						
Allowable Radial Force F_{2R} (b)		N	23000						
Allowable Axle Force F_{2A} (b)		N	19000						
Service Life		h	20000						
Efficienct		%	⩾97						
Applicable Ambient Temperature		°C	-20°C～+40°C						
Weight		kg	30						
Protection class			IP65						
Lubrication (c)			Synthetic Lubricating Oil						
Noise		dB(A)	≤66						
Rotational inertia J1	≤28	$kg.cm^2$	-	-	-	-	-	-	-
	≤35		52	25	20	16	14	12	12
	≤42		52	36	31	27	25	23	23
	≤55		66	50	45	40	38	36	36

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

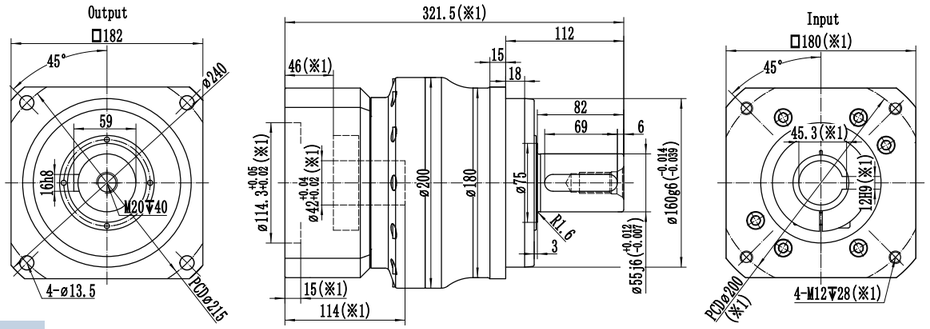
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

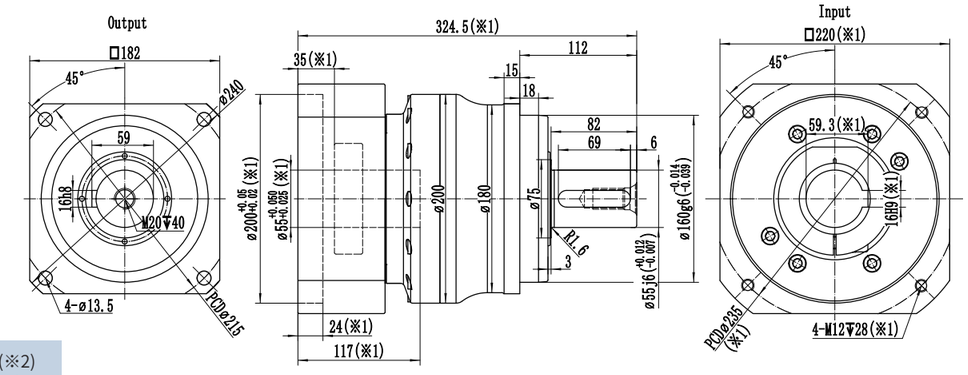
Motor shaft diameter (mm)



Max. 35(※2)
Input shaft
bore diameter



Max. 42(※2)
Input shaft
bore diameter



Max. 55(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WSH180 gearbox: Default keyway on input shaft. Please notify if not needed.

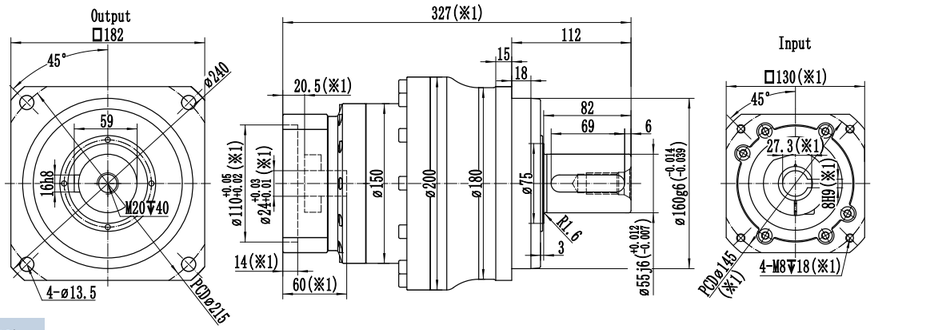
Specification		Unit	WSH180-2-Stage											
Ratio			15	16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	1000	1400	1400	1400	1100	1100	1400	1400	1100	1000	850	760
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)		rpm	2500	2500	2500	2500	2500	2500	3000	3000	3000	3000	3000	3000
Max Input Speed n_{1B}		rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
No Load Running Torque (n1=2000rpm,20°C running)		Nm	2.6	2.6	1.7	1.7	1.7	1.7	1.4	1.4	1.4	1.4	1.3	1.3
Max Backlash		arcmin	P0⩽3 / P1⩽5 / P2⩽8											
Torsional rigidity		Nm/arcmin	175											
Max Tilting Moment M_{2K}		Nm	3200											
Allowable Radial Force F_{2R} (b)		N	23000											
Allowable Axle Force F_{2A} (b)		N	19000											
Service Life		h	20000											
Efficienct		%	⩾95											
Applicable Ambient Temperature		°C	-20°C～+40°C											
Weight		kg	35											
Protection class			IP65											
Lubrication (c)			Synthetic Lubricating Oil											
Noise		dB(A)	⩽65											
Rotational inertia J1	⩽24	kg.cm²	6	6	5	5	5	5	4	4	4	4	4	4
	⩽28		6.5	6.5	5.5	5.5	5.5	5.5	4.5	4.5	4.5	4.5	4.5	4.5
	⩽35		8	8	7	7	7	7	6	6	6	6	6	6
	⩽42		20	20	19	19	19	19	18	18	18	18	18	18

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

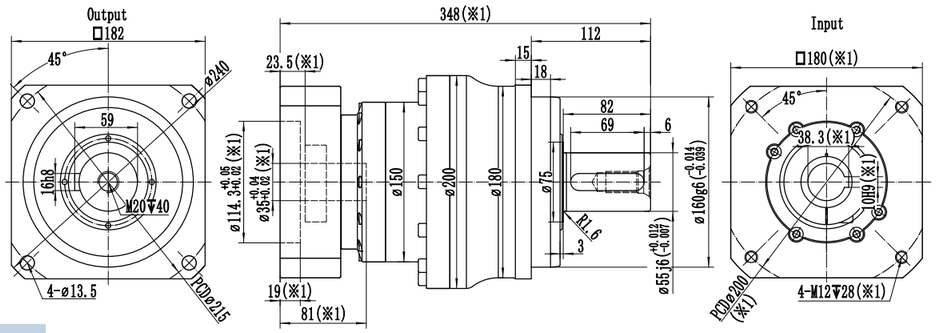
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

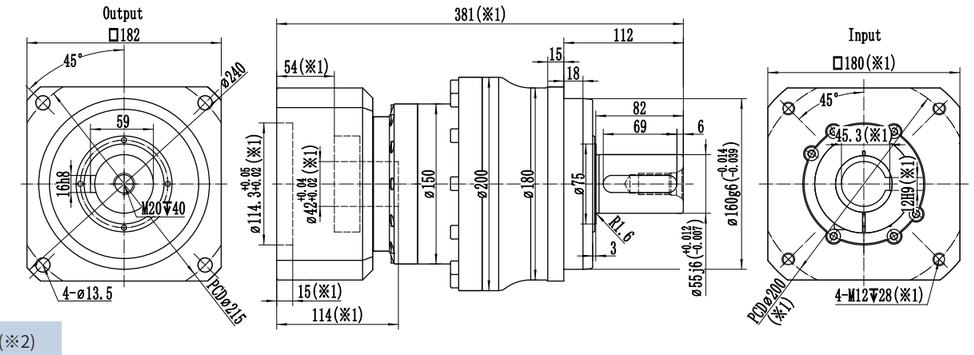
Motor shaft diameter (mm)



Max. 24(※2)
Input shaft bore diameter



Max. 35(※2)
Input shaft bore diameter



Max. 42(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WSH180 gearbox: Default keyway on input shaft. Please notify if not needed.

WSH210 L1 Stage

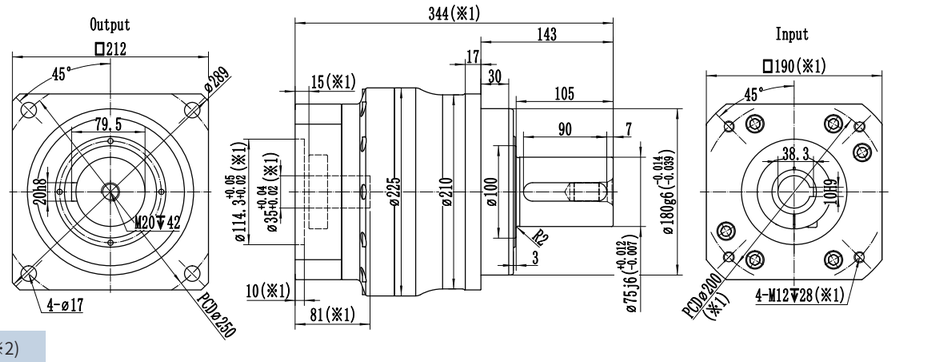
Specification		Unit	WSH210-1级/1-Stage						
Ratio			3	4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	1800	2400	2400	1950	1700	1450	1350
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}						
Rated Input Speed n_{1N} (a)		rpm	1500	1500	1500	1500	2000	2000	2000
Max Input Speed n_{1B}		rpm	3000	3000	3000	3000	3000	3000	3000
No Load Running Torque (n1=2000rpm,20°C running)		Nm	9.55	7.65	5.7	5.7	4.2	2.85	2.85
Max Backlash		arcmin	P0≤1.5 / P1≤3 / P2≤5						
Torsional rigidity		Nm/arcmin	410						
Max Tilting Moment M_{2K}		Nm	5300						
Allowable Radial Force F_{2R} (b)		N	30000						
Allowable Axle Force F_{2A} (b)		N	24000						
Service Life		h	20000						
Efficienct		%	⩾97						
Applicable Ambient Temperature		°C	-20°C～+40°C						
Weight		kg	50						
Protection class			IP65						
Lubrication (c)			ynthetic Lubricating Oil						
Noise		dB(A)	⩽66						
Rotational inertia J1	⩽42	kg.cm²	80	58	51	43	40	33	33
	⩽55		105	80	71	63	60	53	53
	⩽65		133	108	99	91	88	81	81

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

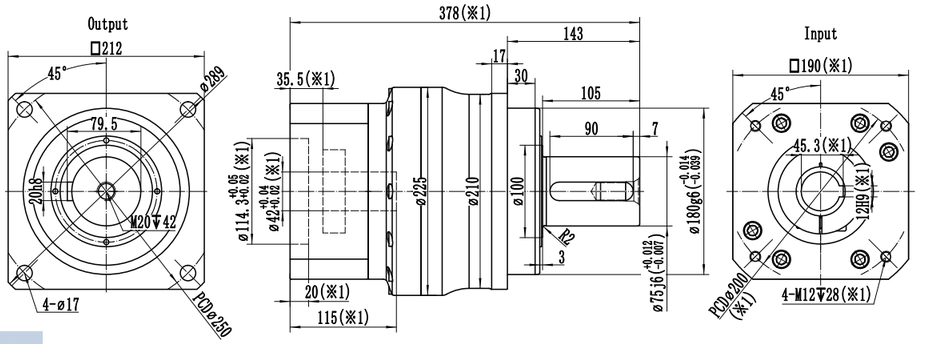
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

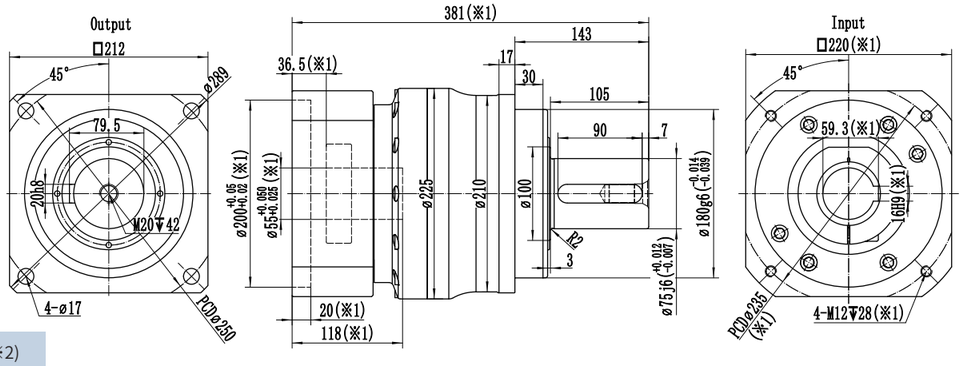
Motor shaft diameter (mm)



Max. 35(※2)
Input shaft bore diameter



Max. 42(※2)
Input shaft bore diameter



Max. 55(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WSH210 gearbox: Default keyway on input shaft. Please notify if not needed.

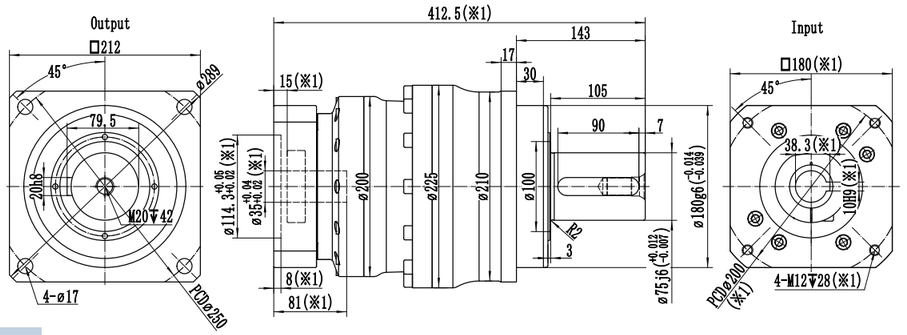
Specification		Unit	WSH210-2-Stage											
Ratio			15	16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	1800	2400	2400	2400	1950	1700	2400	2400	1950	1700	1450	1350
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)		rpm	2000	2000	2000	2000	2000	2000	2500	2500	2500	2500	2500	2500
Max Input Speed n_{1B}		rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
No Load Running Torque (n1=2000rpm,20°C running)		Nm	4.3	4.3	2.85	2.85	2.85	2.85	2.3	2.3	2.3	2.3	2.15	2.15
Max Backlash		arcmin	P0≤3 / P1≤5 / P2≤8											
Torsional rigidity		Nm/arcmin	410											
Max Tilting Moment M_{2K}		Nm	5300											
Allowable Radial Force F_{2R} (b)		N	30000											
Allowable Axle Force F_{2A} (b)		N	24000											
Service Life		h	20000											
Efficienct		%	≥95											
Applicable Ambient Temperature		°C	-20°C～+40°C											
Weight		kg	57											
Protection class			IP65											
Lubrication (c)			Synthetic Lubricating Oil											
Noise		dB(A)	≤66											
Rotational inertia J1	≤35	kg.cm²	18	18	13	13	13	13	10	10	10	10	10	10
	≤42		29	29	24	24	24	24	19	19	19	19	19	19
	≤55		43	43	38	38	38	38	33	33	33	33	33	33

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

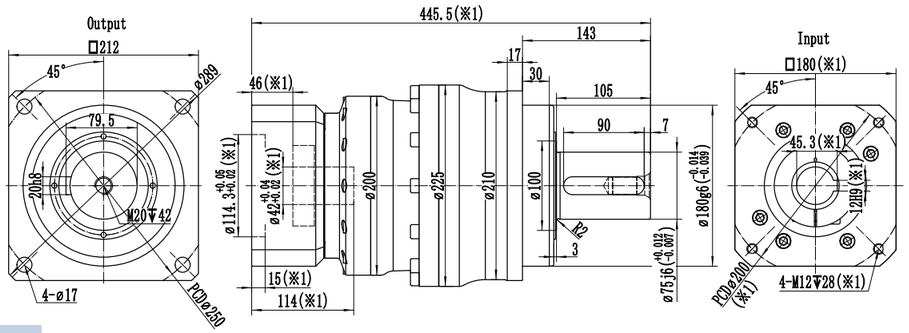
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

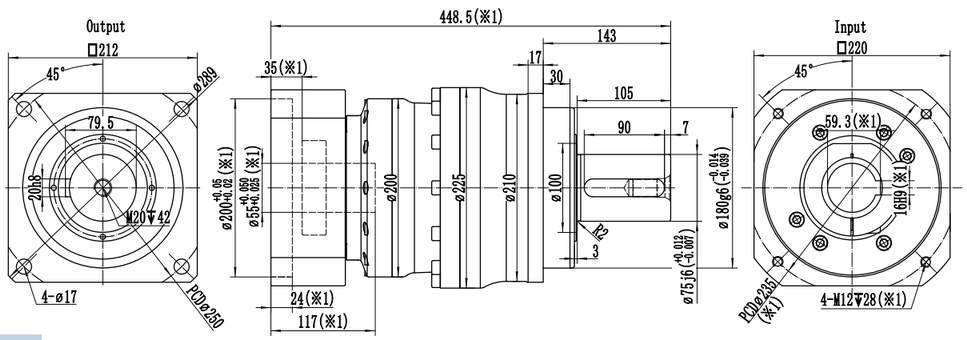
Motor shaft diameter (mm)



Max. 35(※2)
Input shaft bore diameter



Max. 42(※2)
Input shaft bore diameter



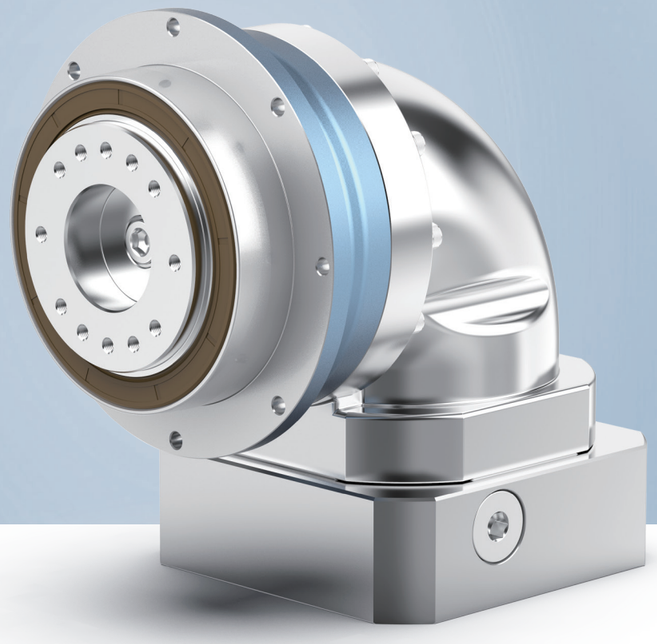
Max. 55(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WSH210 gearbox: Default keyway on input shaft. Please notify if not needed.

Model No.



W — THR — 110 — 010 — P1 — Motor reference

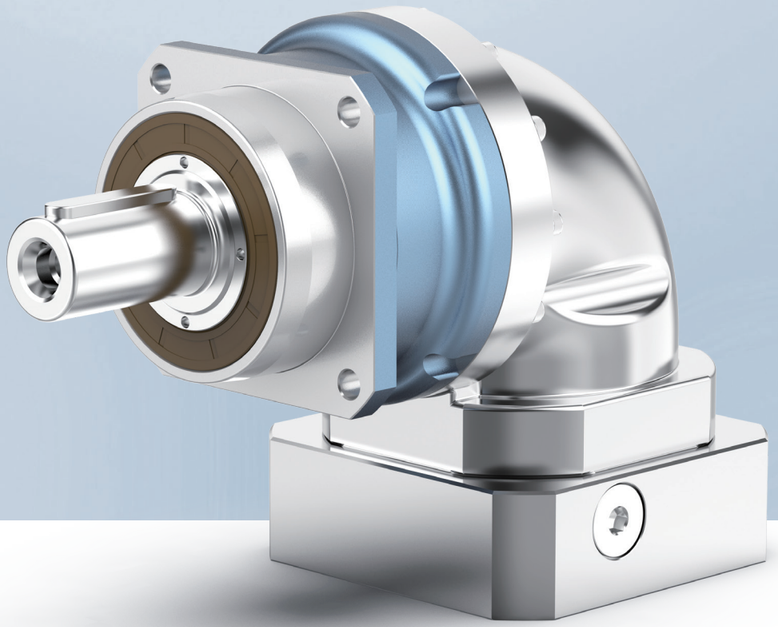
Brand

Model
THR

Size
064
090
110
140
200

Ratio
4
5
6
7
8
10
12
14
16
20
25
35
40
50
60
70
80
100
120
140
160
200

Precision
P0 Super precision backlash
P1 Precision backlash
P2 Standard backlash



W — SHR — 100 — 010 — P1 — Motor reference

Brand

Model
SHR

Size
060
075
100
140
180
210

Ratio
3
4
5
6
7
8
10
12
14
15
16
20
25
30
35
40
50
60
70
80
100
120
140
160
200

Precision
P0 Super precision backlash
P1 Precision backlash
P2 Standard backlash

WTHR064 L1 Stage

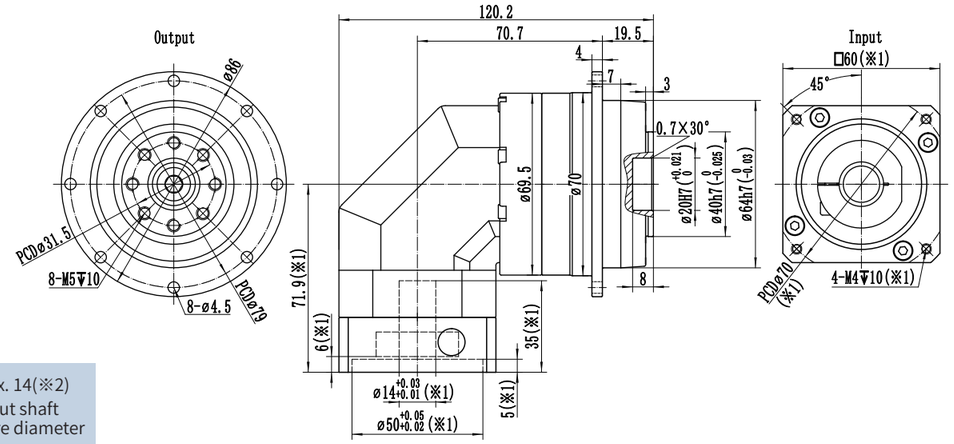
Specification		Unit	WTHR064-1-Stage									
Ratio			4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	55	60	55	50	55	60	55	50	40	35
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}									
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.65	0.55	0.55	0.55	0.45	0.4	0.4	0.4	0.35	0.35
Max Backlash		arcmin	P1≤4 / P2≤6									
Torsional rigidity		Nm/arcmin	13									
Max Tilting Moment M_{2K}		Nm	130									
Allowable Radial Force F_{2R} (b)		N	2500									
Allowable Axle Force F_{2A} (b)		N	2000									
Service Life		h	20000									
Efficienct		%	≥95									
Applicable Ambient Temperature		°C	-20°C～+40°C									
Weight		kg	2.2									
Protection class			IP65									
Lubrication (c)			Synthetic Lubricating Oil									
Noise		dB(A)	≤63									
Rotational inertia J1	≤14	kg.cm²	0.42	0.4	0.38	0.38	0.33	0.31	0.31	0.31	0.31	0.31
	≤19		0.75	0.7	0.65	0.65	0.68	0.63	0.58	0.58	0.58	0.58

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

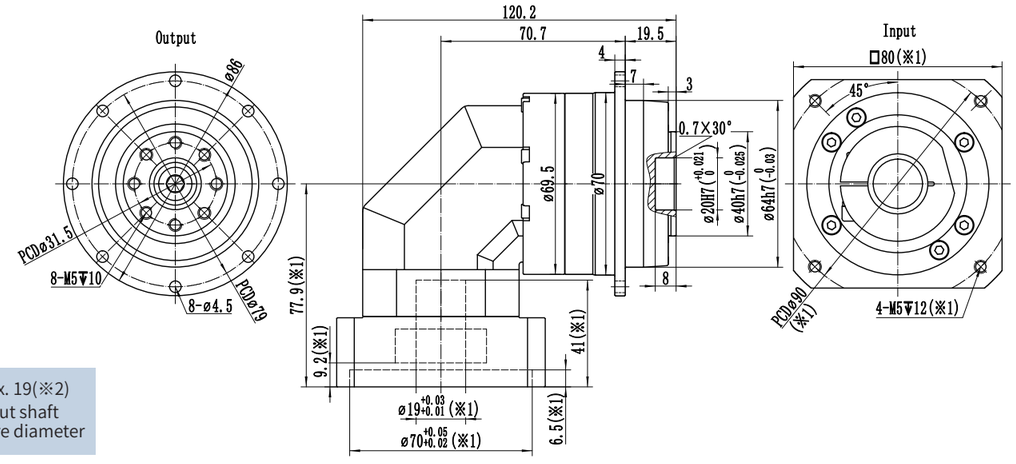
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft bore diameter



Max. 19(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTHR064 L2 Stage

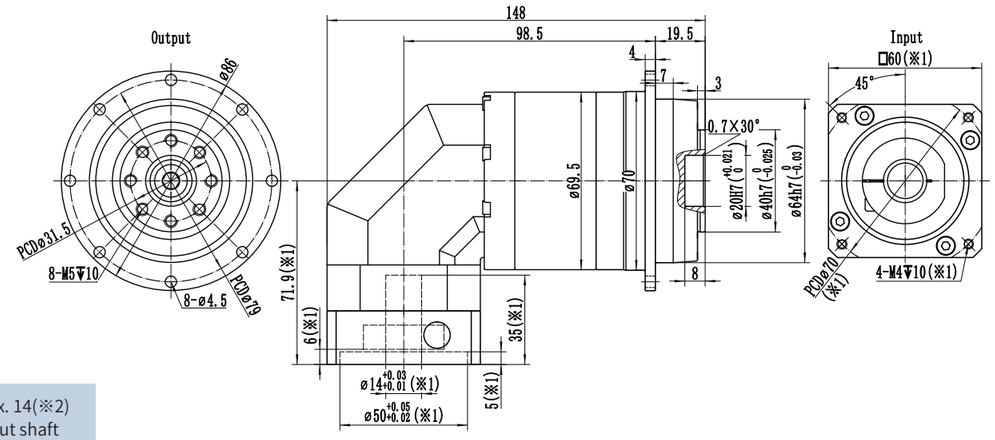
Specification	Unit	WTHR064-2-Stage											
Ratio		25	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}	Nm	60	50	55	60	55	50	55	60	55	50	40	35
Emergency stop Torque T_{2NOT}	Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)	rpm	3300	3300	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)	Nm	0.5	0.5	0.4	0.4	0.4	0.4	0.35	0.35	0.35	0.35	0.3	0.3
Max Backlash	arcmin	P1⩽7 / P2⩽9											
Torsional rigidity	Nm/arcmin	13											
Max Tilting Moment M_{2K}	Nm	130											
Allowable Radial Force F_{2R} (b)	N	2500											
Allowable Axle Force F_{2A} (b)	N	2000											
Service Life	h	20000											
Efficienct	%	⩾92											
Applicable Ambient Temperature	°C	-20°C～+40°C											
Weight	kg	2.8											
Protection class		IP65											
Lubrication (c)		Synthetic Lubricating Oil											
Noise	dB(A)	⩽63											
Rotational inertia J1 ⩽8	kg.cm²	0.3	0.3	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Rotational inertia J1 ⩽14	kg.cm²	0.37	0.37	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTHR090 L1 Stage

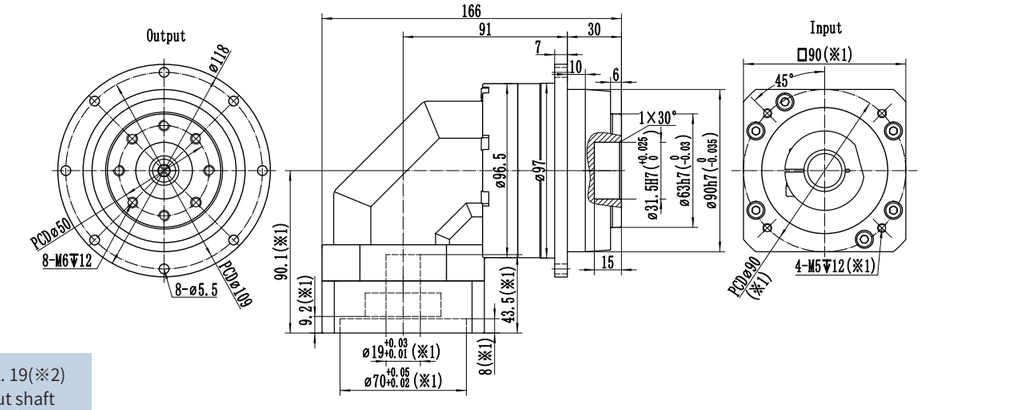
Specification		Unit	WTHR090-1-Stage									
Ratio			4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	150	160	150	140	150	160	150	140	100	90
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}									
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	1.2	0.95	0.95	0.95	0.85	0.8	0.8	0.8	0.7	0.7
Max Backlash		arcmin	P1⩽4 / P2⩽6									
Torsional rigidity		Nm/arcmin	31									
Max Tilting Moment M_{2K}		Nm	280									
Allowable Radial Force F_{2R} (b)		N	4800									
Allowable Axle Force F_{2A} (b)		N	3500									
Service Life		h	20000									
Efficienct		%	⩾95									
Applicable Ambient Temperature		°C	-20°C～+40°C									
Weight		kg	6.5									
Protection class			IP65									
Lubrication (c)			Synthetic Lubricating Oil									
Noise		dB(A)	⩽65									
Rotational inertia J1	⩽19	kg.cm²	2.5	2.4	2.3	2.3	2	1.9	1.8	1.8	1.8	1.8
	⩽24		3.7	3.6	3.5	3.5	3.2	3.1	3	3	3	3

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

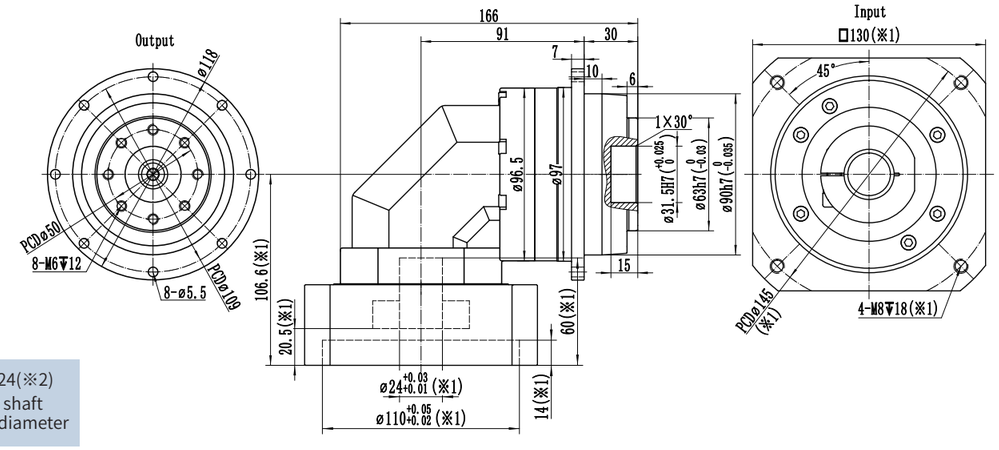
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 19(※2)
Input shaft bore diameter



Max. 24(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTHR090 L2 Stage

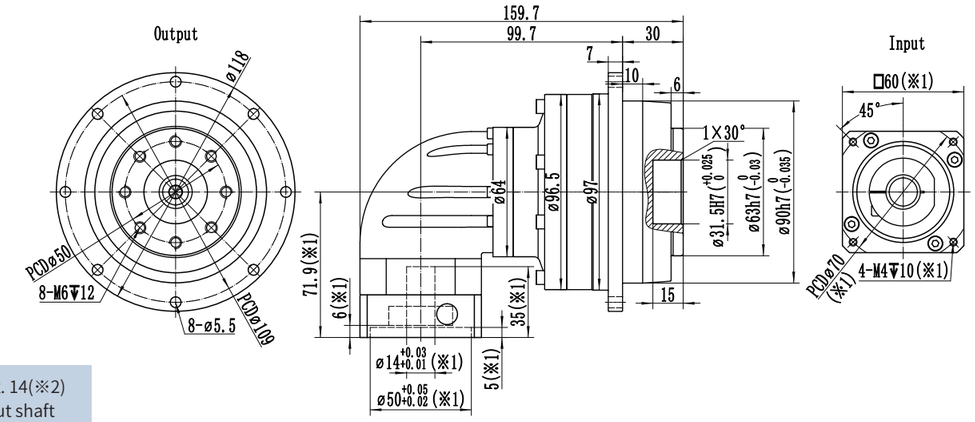
Specification		Unit	WTHR090-2-Stage											
Ratio			25	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}		Nm	160	140	150	160	150	140	150	160	150	140	100	90
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)		rpm	3300	3300	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.35	0.35
Max Backlash		arcmin	P1≤7 / P2≤9											
Torsional rigidity		Nm/arcmin	31											
Max Tilting Moment M_{2K}		Nm	280											
Allowable Radial Force F_{2R} (b)		N	4800											
Allowable Axle Force F_{2A} (b)		N	3500											
Service Life		h	20000											
Efficienct		%	≥92											
Applicable Ambient Temperature		℃	-20°C～+40°C											
Weight		kg	5.1											
Protection class			IP65											
Lubrication (c)			Synthetic Lubricating Oil											
Noise		dB(A)	≤63											
Rotational inertia J1	≤14	kg.cm²	0.45	0.45	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
	≤19		0.8	0.8	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

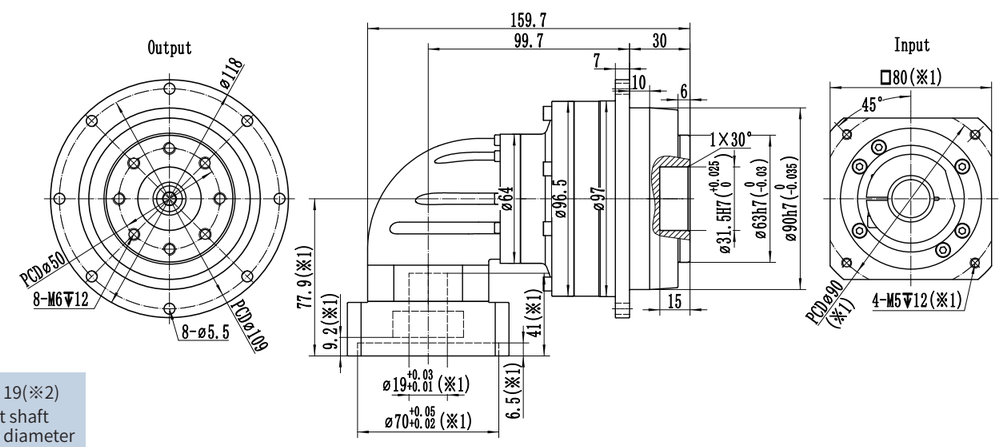
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft bore diameter



Max. 19(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTHR110 L1 Stage

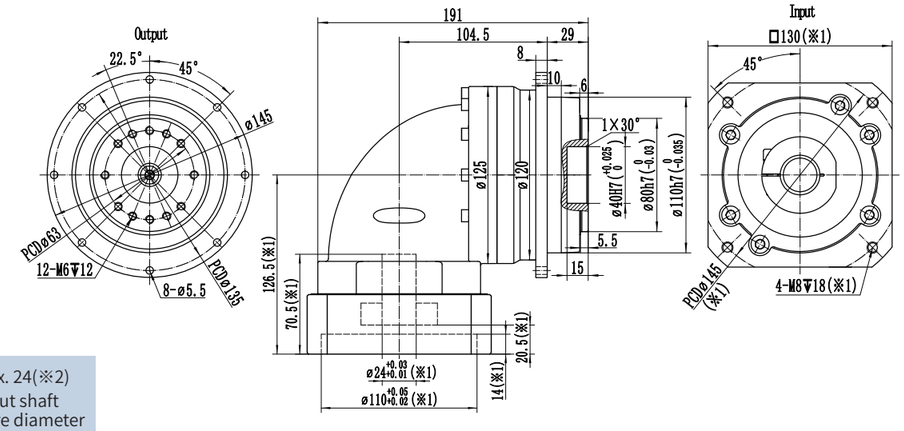
Specification		Unit	WTHR110-1-Stage									
Ratio			4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	330	330	310	300	330	330	310	300	230	200
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}									
Rated Input Speed n_{1N} (a)		rpm	2800	2800	2800	3300	3300	3300	3300	3300	3300	3300
Max Input Speed n_{1B}		rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	2.3	1.9	1.9	1.9	1.6	1.55	1.55	1.55	1.4	1.4
Max Backlash		arcmin	P1⩽4 / P2⩽6									
Torsional rigidity		Nm/arcmin	82									
Max Tilting Moment M_{2K}		Nm	510									
Allowable Radial Force F_{2R} (b)		N	7800									
Allowable Axle Force F_{2A} (b)		N	6000									
Service Life		h	20000									
Efficienct		%	⩾95									
Applicable Ambient Temperature		°C	-20°C～+40°C									
Weight		kg	11.3									
Protection class			IP65									
Lubrication (c)			Synthetic Lubricating Oil									
Noise		dB(A)	⩽68									
Rotational inertia J1	⩽19	kg.cm²	5.9	5.4	4.9	4.9	4.4	4.3	4.2	4.2	4.2	4.2
	⩽24		6.4	5.9	5.4	5.4	4.9	4.8	4.7	4.7	4.7	4.7
	⩽28		6.9	6.4	5.9	5.9	5.4	5.3	5.2	5.2	5.2	5.2
	⩽35		13.4	12.9	12.4	12.4	11.5	11.2	11	11	11	11

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

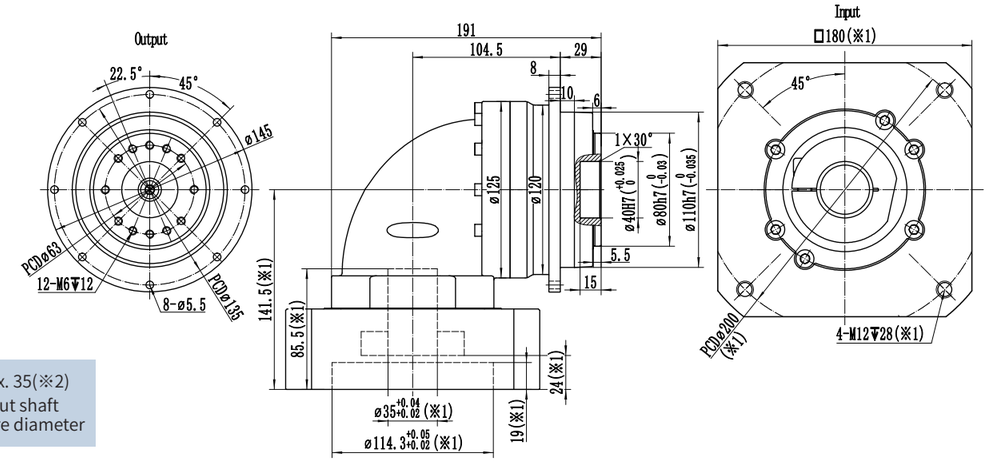
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTHR110 L2 Stage

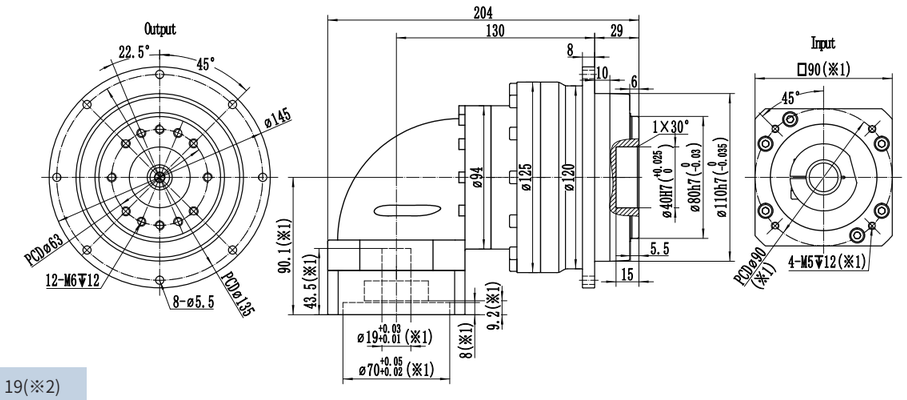
Specification		Unit	WTHR110-2-Stage											
Ratio			25	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}		Nm	330	300	330	330	310	300	330	330	310	300	230	200
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)		rpm	3300	3300	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	1	1	0.85	0.85	0.85	0.85	0.75	0.75	0.75	0.75	0.7	0.7
Max Backlash		arcmin	P1≤7 / P2≤9											
Torsional rigidity		Nm/arcmin	82											
Max Tilting Moment M_{2K}		Nm	510											
Allowable Radial Force F_{2R} (b)		N	7800											
Allowable Axle Force F_{2A} (b)		N	6000											
Service Life		h	20000											
Efficienct		%	≥92											
Applicable Ambient Temperature		°C	-20°C～+40°C											
Weight		kg	9.5											
Protection class			IP65											
Lubrication (c)			Synthetic Lubricating Oil											
Noise		dB(A)	≤65											
Rotational inertia J1	≤19	kg.cm²	2.5	2.5	2	2	2	2	2	2	2	2	2	2
	≤24		3.7	3.7	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

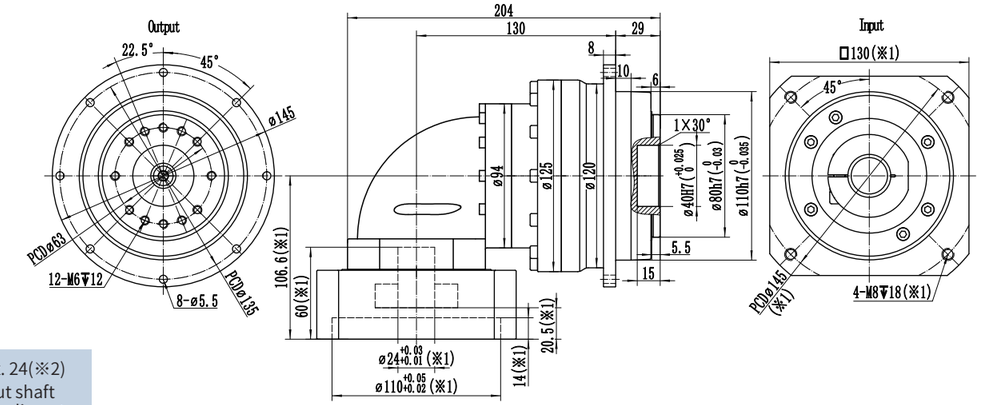
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 19(※2)
Input shaft
bore diameter



Max. 24(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTHR140 L1 Stage

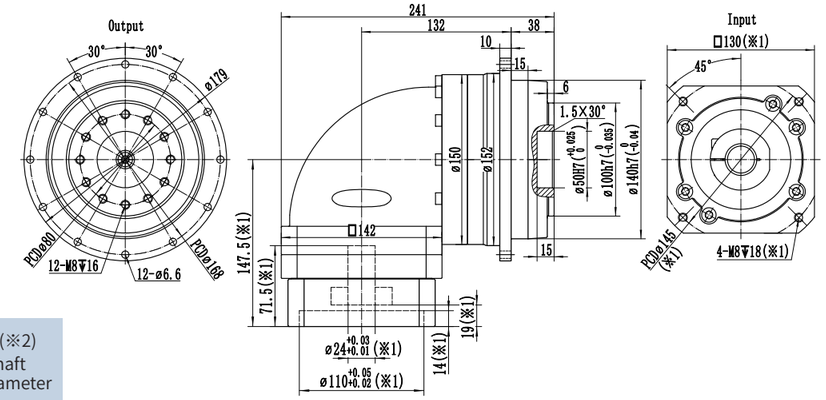
Specification		Unit	WTHR140-1-Stage									
Ratio			4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	650	650	600	550	650	650	600	550	450	400
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}									
Rated Input Speed n_{1N} (a)		rpm	2300	2300	2300	2300	2800	2800	2800	2800	2800	2800
Max Input Speed n_{1B}		rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
No Load Running Torque (n1=3000rpm,20°C running)		Nm	4.4	3.6	3.6	3.6	3.1	3	3	3	2.9	2.9
Max Backlash		arcmin	P1⩽4 / P2⩽6									
Torsional rigidity		Nm/arcmin	155									
Max Tilting Moment M_{2K}		Nm	1350									
Allowable Radial Force F_{2R} (b)		N	13000									
Allowable Axle Force F_{2A} (b)		N	11000									
Service Life		h	20000									
Efficienct		%	⩾95									
Applicable Ambient Temperature		°C	-20°C～+40°C									
Weight		kg	23									
Protection class			IP65									
Lubrication (c)			Synthetic Lubricating Oil									
Noise		dB(A)	⩽70									
Rotational inertia J1	⩽24	kg.cm²	19	17.5	16.5	16.5	15.3	15	14.8	14.8	14.8	14.8
	⩽28		20	18.5	17.5	17.5	16.3	16	15.8	15.8	15.8	15.8
	⩽35		23.5	22	21	21	19.8	19.5	19.3	19.3	19.3	19.3
	⩽42		36	35	34	34	32.8	32.5	32.3	32.3	32.3	32.3

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

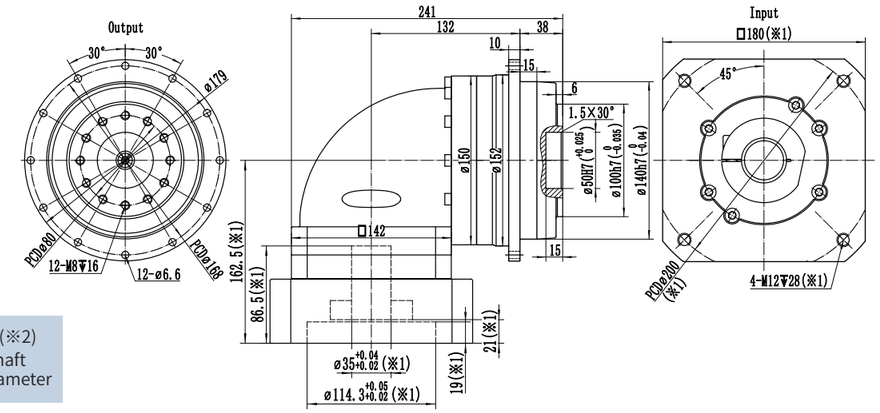
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

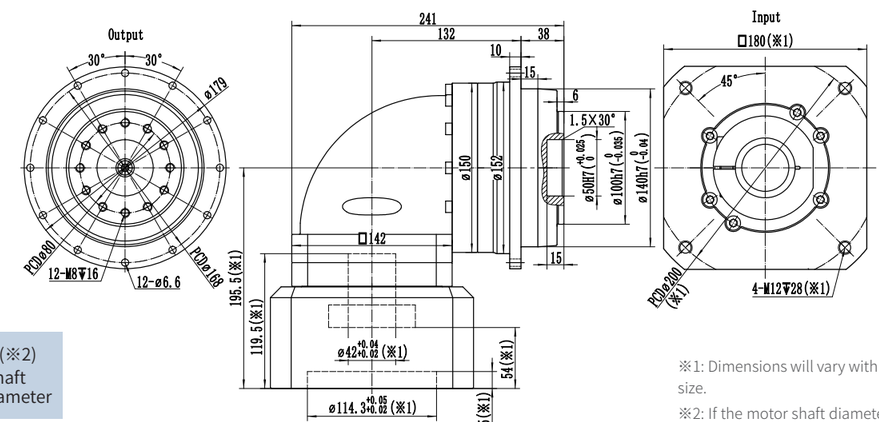
Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter



Max. 42(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTHR140 L2 Stage

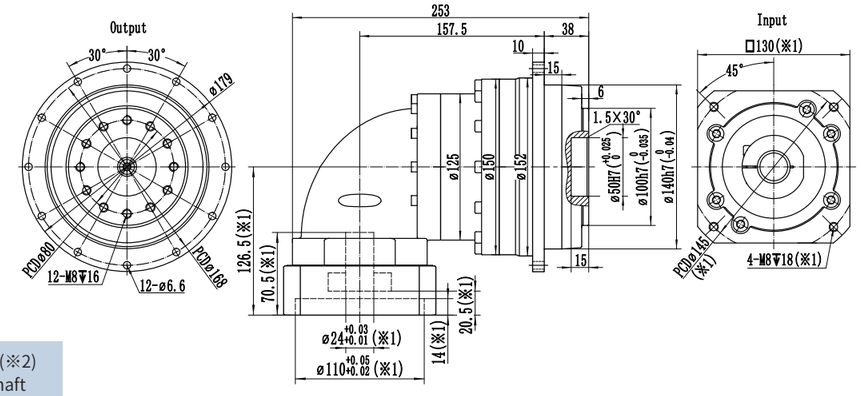
Specification		Unit	WTHR140-2-Stage											
Ratio			25	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}		Nm	650	550	650	650	600	550	650	650	600	500	450	400
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)		rpm	2800	2800	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
Max Input Speed n_{1B}		rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	2	2	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6	1.6
Max Backlash		arcmin	P1≤7 / P2≤9											
Torsional rigidity		Nm/arcmin	155											
Max Tilting Moment M_{2K}		Nm	1350											
Allowable Radial Force F_{2R} (b)		N	13000											
Allowable Axle Force F_{2A} (b)		N	11000											
Service Life		h	20000											
Efficienct		%	≥92											
Applicable Ambient Temperature		°C	-20°C～+40°C											
Weight		kg	21.7											
Protection class			IP65											
Lubrication (c)			Synthetic Lubricating Oil											
Noise		dB(A)	≤68											
Rotational inertia J1	≤19	kg.cm²	5.5	5.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	≤24		6	6	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
	≤28		6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
	≤35		13	13	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

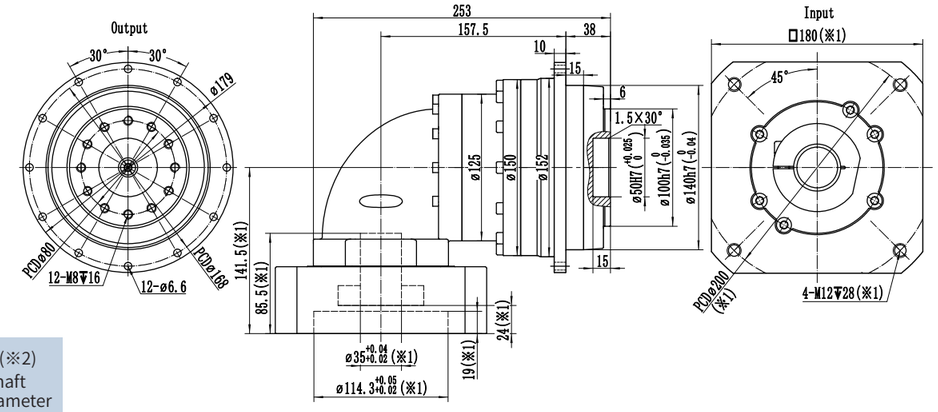
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WTHR200 L1 Stage

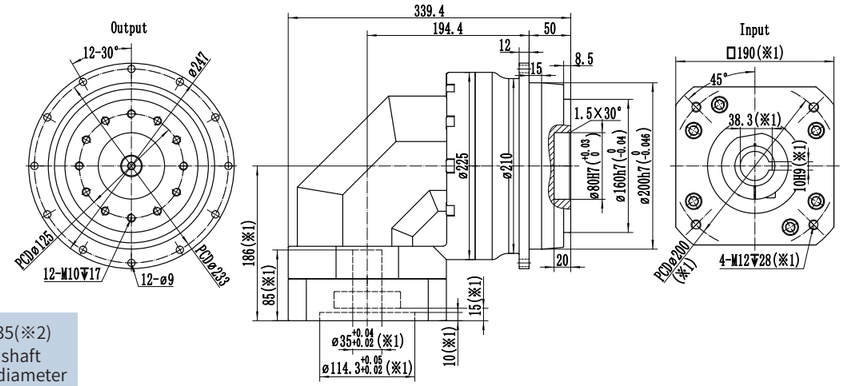
Specification		Unit	WTHR200-1-Stage									
Ratio			4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	2000	2050	1950	1700	2000	2050	1950	1700	1450	1350
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}									
Rated Input Speed n_{1N} (a)		rpm	1500	1500	1500	1500	1500	1800	1800	1800	1800	1800
Max Input Speed n_{1B}		rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
No Load Running Torque (n1=2000rpm,20°C running)		Nm	13.5	11	11	11	9	9	9	9	7.5	7.5
Max Backlash		arcmin	P1⩽4 / P2⩽6									
Torsional rigidity		Nm/arcmin	650									
Max Tilting Moment M_{2K}		Nm	3400									
Allowable Radial Force F_{2R} (b)		N	26000									
Allowable Axle Force F_{2A} (b)		N	21000									
Service Life		h	20000									
Efficienct		%	⩾95									
Applicable Ambient Temperature		°C	-20°C～+40°C									
Weight		kg	61.5									
Protection class			IP65									
Lubrication (c)			全合成润滑油/Synthetic Lubricating Oil									
Noise		dB(A)	⩽72									
Rotational inertia J1	⩽28	kg.cm²	-	-	-	-	-	-	-	-	-	-
	⩽35		72	67	62	62	57	52	52	52	52	52
	⩽42		92	87	82	82	77	72	72	72	72	72
	⩽55		120	115	110	110	105	100	100	100	100	100

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

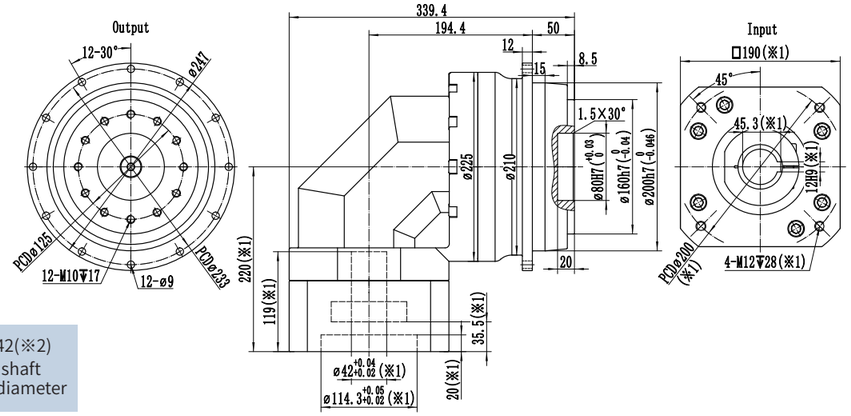
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

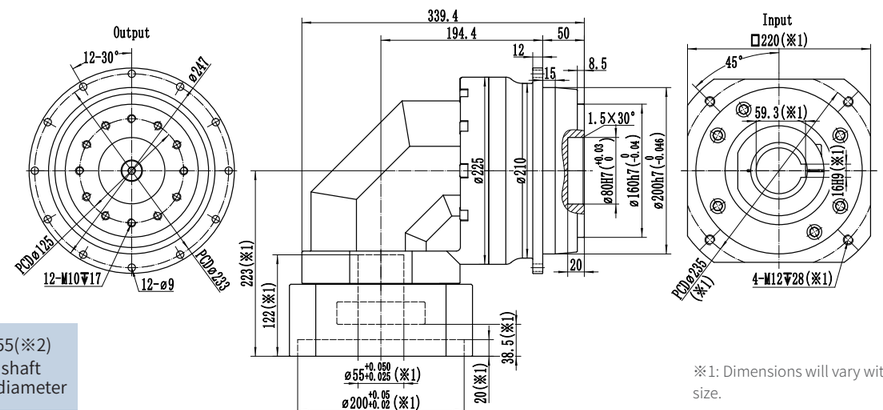
Motor shaft diameter (mm)



Max. 35(※2)
Input shaft
bore diameter



Max. 42(※2)
Input shaft
bore diameter



Max. 55(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WTHR200 gearbox: Default keyway on input shaft. Please notify if not needed.

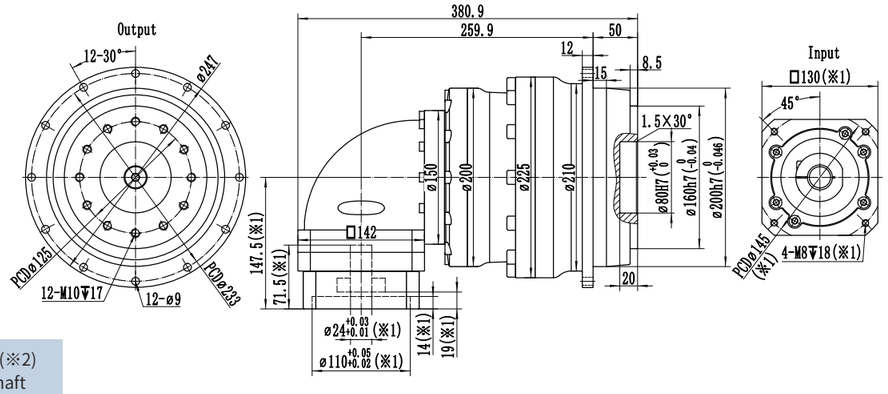
Specification		Unit	WTHR200-2-Stage											
Ratio			25	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}		Nm	2025	1700	2000	2050	1950	1700	2000	2050	1950	1700	1450	1350
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}											
Rated Input Speed n_{1N} (a)		rpm	2000	2000	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Max Input Speed n_{1B}		rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
No Load Running Torque (n1=2000rpm,20°C running)		Nm	4.4	4.4	4	4	4	4	3.8	3.8	3.8	3.8	3.7	3.7
Max Backlash		arcmin	P1≤7 / P2≤9											
Torsional rigidity		Nm/arcmin	650											
Max Tilting Moment M_{2K}		Nm	3400											
Allowable Radial Force F_{2R} (b)		N	26000											
Allowable Axle Force F_{2A} (b)		N	21000											
Service Life		h	20000											
Efficienct		%	≥92											
Applicable Ambient Temperature		°C	-20°C～+40°C											
Weight		kg	59.5											
Protection class			IP65											
Lubrication (c)			Synthetic Lubricating Oil											
Noise		dB(A)	≤70											
Rotational inertia J1	≤24	kg.cm²	21.8	21.8	20	20	20	20	20	20	20	20	20	20
	≤28		22.8	22.8	21	21	21	21	21	21	21	21	21	21
	≤35		26.3	26.3	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
	≤42		39.3	39.3	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

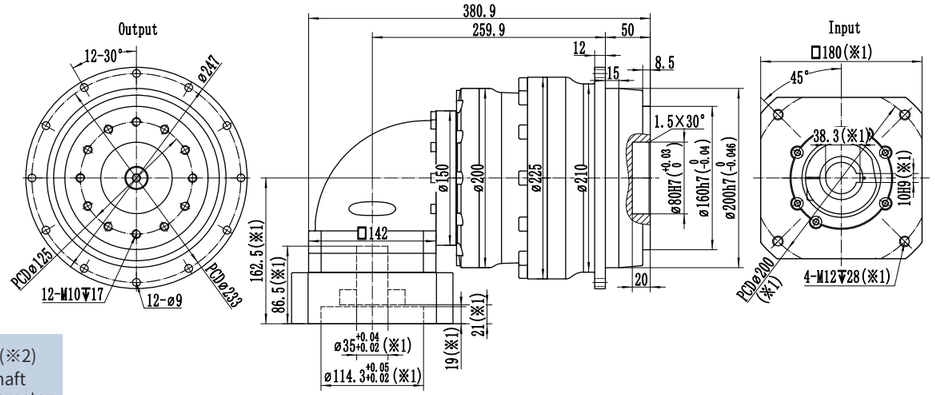
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

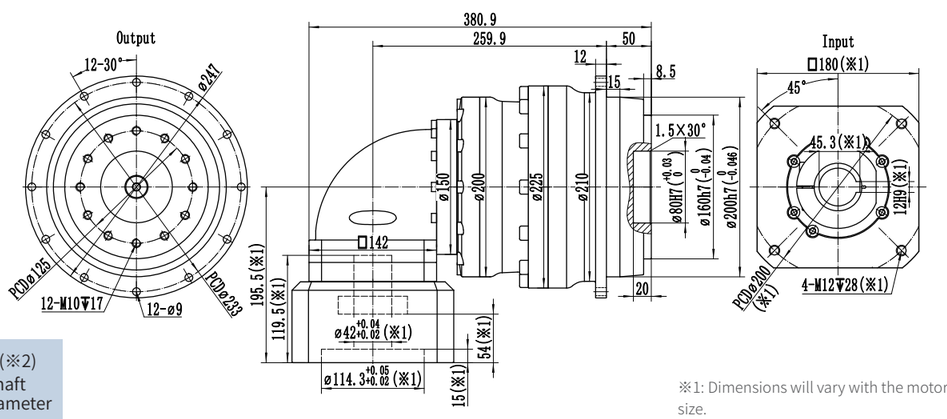
Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter



Max. 42(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WTHR200 gearbox: Default keyway on input shaft. Please notify if not needed.

WSHR060 L1 Stage

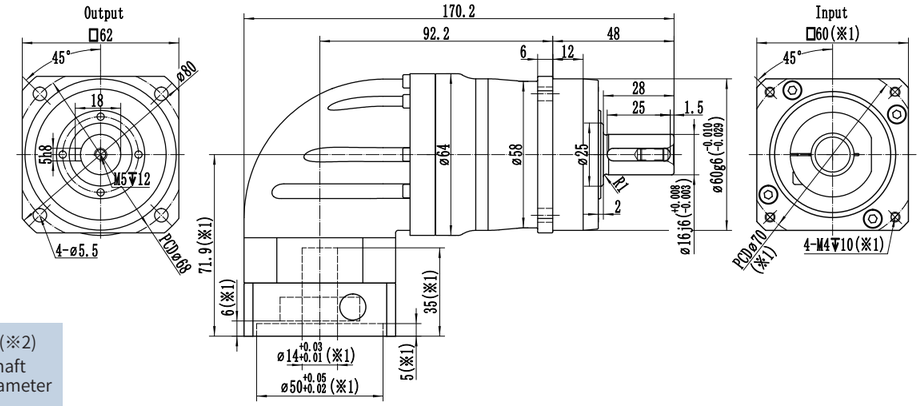
Specification		Unit	WSHR060-1-Stage										
Ratio			3	4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	50	55	60	55	50	55	60	55	50	40	35
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	4000	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.35	0.35
Max Backlash		arcmin	P1≤4 / P2≤6										
Torsional rigidity		Nm/arcmin	7										
Max Tilting Moment M_{2K}		Nm	160										
Allowable Radial Force F_{2R} (b)		N	3000										
Allowable Axle Force F_{2A} (b)		N	2400										
Service Life		h	20000										
Efficienct		%	≥95										
Applicable Ambient Temperature		°C	-20°C～+40°C										
Weight		kg	2.2										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	≤63										
Rotational inertia J1	≤14	kg.cm²	0.48	0.42	0.4	0.38	0.38	0.35	0.33	0.31	0.31	0.31	0.31
	≤19		0.81	0.75	0.7	0.65	0.65	0.68	0.63	0.58	0.58	0.58	0.58

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

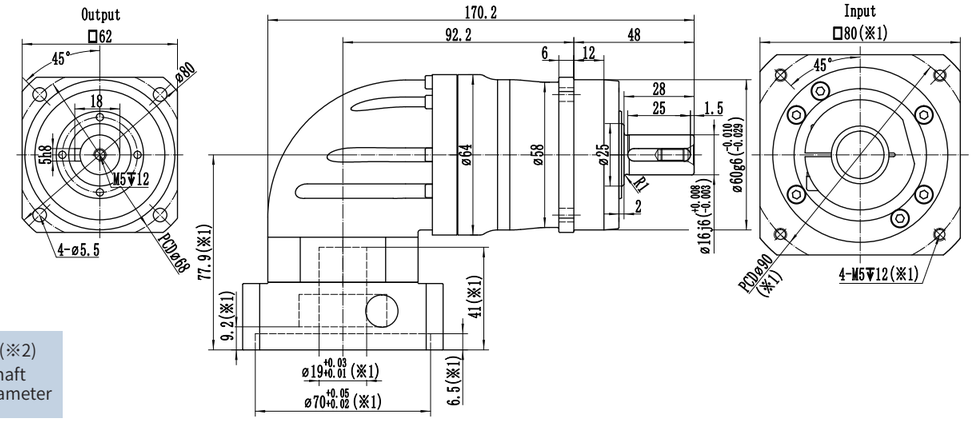
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft
bore diameter



Max. 19(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSHR060 L2级

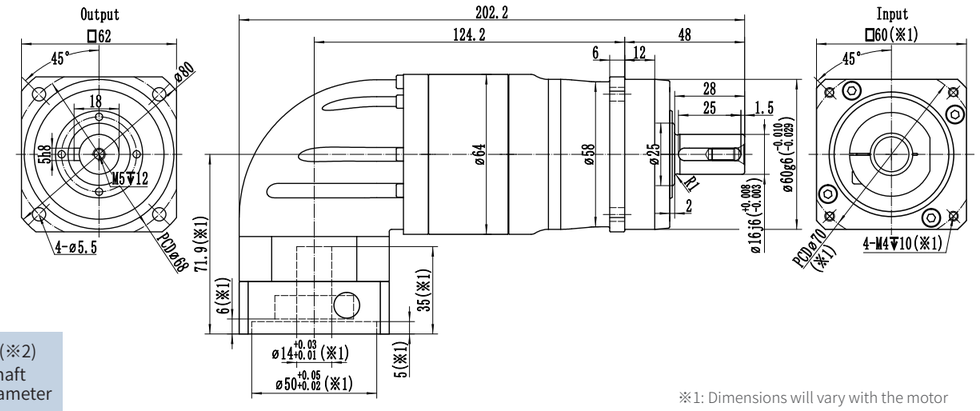
Specification		Unit	WSHR060-2-Stage													
Ratio			15	25	30	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}		Nm	50	60	50	50	55	60	55	50	55	60	55	50	40	35
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}													
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.5	0.5	0.45	0.5	0.4	0.4	0.4	0.4	0.35	0.35	0.35	0.35	0.3	0.3
Max Backlash		arcmin	P1⩽7 / P2⩽9													
Torsional rigidity		Nm/arcmin	7													
Max Tilting Moment M_{2K}		Nm	160													
Allowable Radial Force F_{2R} (b)		N	3000													
Allowable Axle Force F_{2A} (b)		N	2400													
Service Life		h	20000													
Efficienct		%	⩾92													
Applicable Ambient Temperature		°C	-20°C～+40°C													
Weight		kg	2.8													
Protection class			IP65													
Lubrication (c)			Synthetic Lubricating Oil													
Noise		dB(A)	⩽63													
Rotational inertia J1	⩽8	$kg.cm^2$	0.32	0.3	0.23	0.3	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
	⩽14		0.42	0.37	0.3	0.37	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 14(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSHR075 L1 Stage

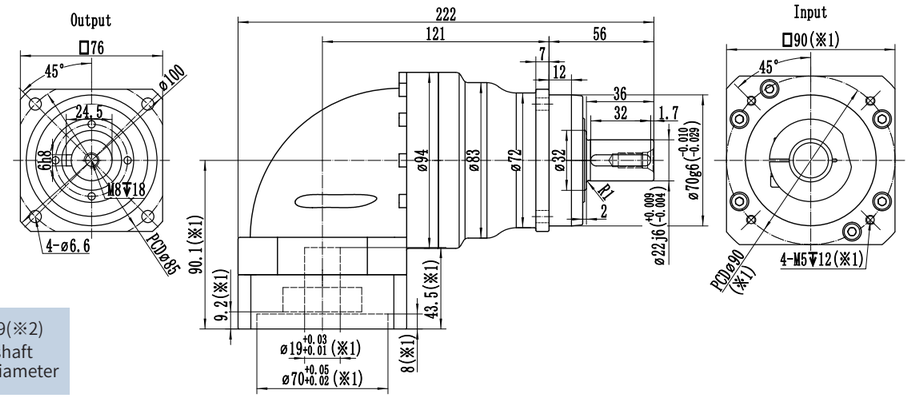
Specification		Unit	WSHR075-1-Stage										
Ratio			3	4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	130	150	160	150	140	150	160	150	140	100	90
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	4000	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	1.35	1.15	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7
Max Backlash		arcmin	P1⩽4 / P2⩽6										
Torsional rigidity		Nm/arcmin	14										
Max Tilting Moment M_{2K}		Nm	270										
Allowable Radial Force F_{2R} (b)		N	4500										
Allowable Axle Force F_{2A} (b)		N	3350										
Service Life		h	20000										
Efficienct		%	⩾95										
Applicable Ambient Temperature		°C	-20°C～+40°C										
Weight		kg	6.7										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	⩽65										
Rotational inertia J1	⩽19	kg.cm²	2.7	2.5	2.4	2.3	2.3	2	1.9	1.8	1.8	1.8	1.8
	⩽24		3.9	3.7	3.6	3.5	3.5	3.2	3.1	3	3	3	3

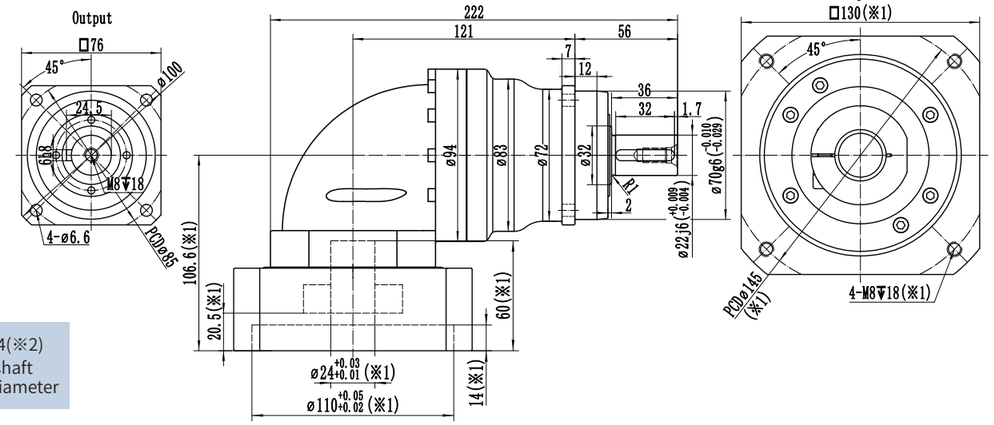
(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)





※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSHR075 L2 Stage

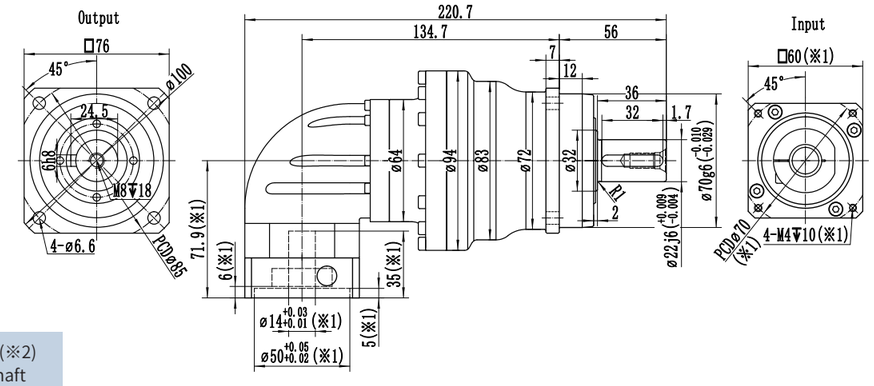
Specification		Unit	WSHR075-2-Stage													
Ratio			15	25	30	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}		Nm	130	160	130	140	150	160	150	140	150	160	150	140	100	90
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}													
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	0.9	0.9	0.8	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.65	0.65
Max Backlash		arcmin	P1⩽7 / P2⩽9													
Torsional rigidity		Nm/arcmin	14													
Max Tilting Moment M_{2K}		Nm	270													
Allowable Radial Force F_{2R} (b)		N	4500													
Allowable Axle Force F_{2A} (b)		N	3350													
Service Life		h	20000													
Efficienct		%	⩾92													
Applicable Ambient Temperature		°C	-20°C～+40°C													
Weight		kg	7.3													
Protection class			IP65													
Lubrication (c)			Synthetic Lubricating Oil													
Noise		dB(A)	⩽65													
Rotational inertia J1	⩽14	kg.cm²	0.45	0.45	0.35	0.45	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
	⩽19		2.4	2.3	1.8	2.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7

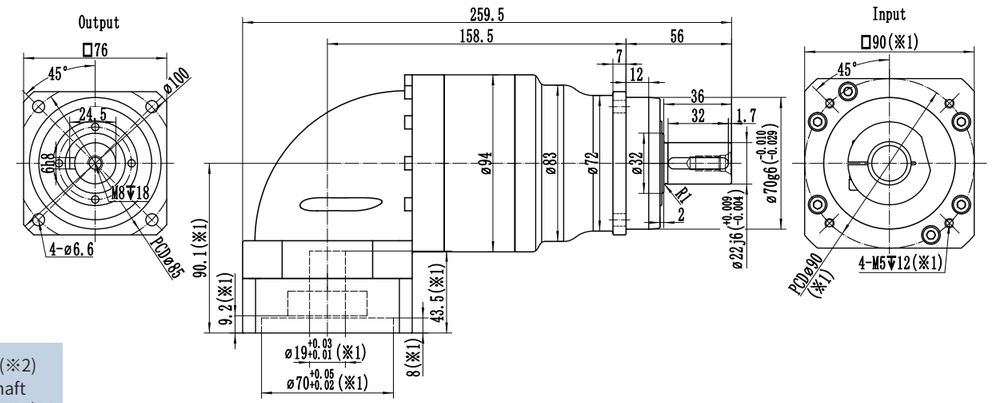
(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)





※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

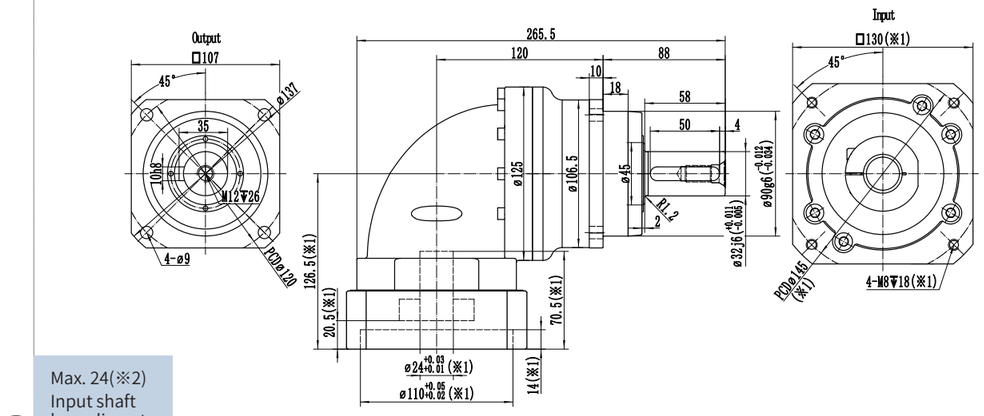
Specification		Unit	WSHR100-1-Stage										
Ratio			3	4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	230	330	330	310	300	330	330	310	300	230	200
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	2800	2800	2800	2800	4000	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	2.6	2.2	1.8	1.8	1.8	1.5	1.5	1.5	1.5	1.4	1.4
Max Backlash		arcmin	P1⩽4 / P2⩽6										
Torsional rigidity		Nm/arcmin	32										
Max Tilting Moment M_{2K}		Nm	670										
Allowable Radial Force F_{2R} (b)		N	8500										
Allowable Axle Force F_{2A} (b)		N	7000										
Service Life		h	20000										
Efficienct		%	⩾95										
Applicable Ambient Temperature		°C	-20°C～+40°C										
Weight		kg	11.6										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	⩽68										
Rotational inertia J1	⩽19	kg.cm²	6.9	5.9	5.4	4.9	4.9	4.4	4.3	4.2	4.2	4.2	4.2
	⩽24		7.4	6.4	5.9	5.4	5.4	4.9	4.8	4.7	4.7	4.7	4.7
	⩽28		7.9	6.9	6.4	5.9	5.9	5.4	5.3	5.2	5.2	5.2	5.2
	⩽35		14.9	13.4	12.9	12.4	12.4	11.5	11.2	11	11	11	11

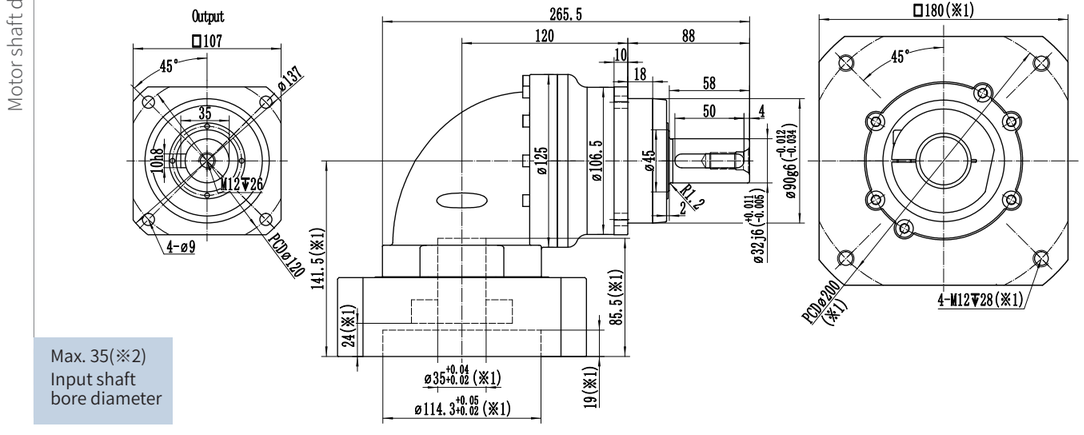
(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)





※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

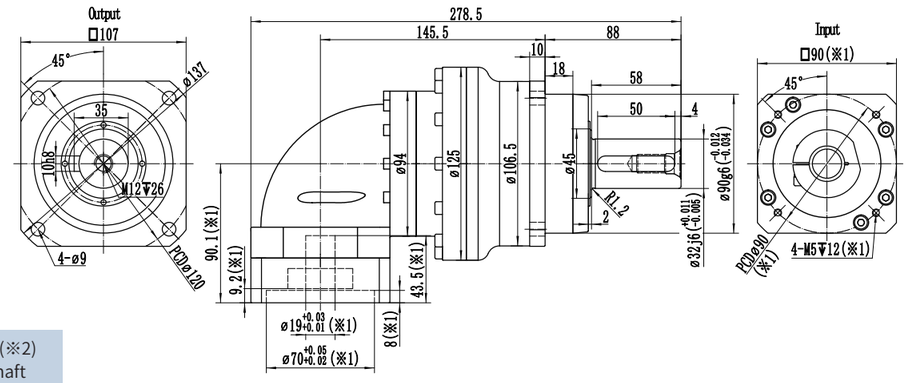
Specification		Unit	WSHR100-2-Stage													
Ratio			15	25	30	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}		Nm	230	330	230	300	330	330	310	300	330	330	310	300	230	200
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}													
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	3300	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Max Input Speed n_{1B}		rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	1	1	0.85	1	0.85	0.85	0.85	0.85	0.75	0.75	0.75	0.75	0.7	0.7
Max Backlash		arcmin	P1≤7 / P2≤9													
Torsional rigidity		Nm/arcmin	32													
Max Tilting Moment M_{2K}		Nm	670													
Allowable Radial Force F_{2R} (b)		N	3000													
Allowable Axle Force F_{2A} (b)		N	2400													
Service Life		h	20000													
Efficienct		%	≥92													
Applicable Ambient Temperature		°C	-20°C～+40°C													
Weight		kg	9.8													
Protection class			IP65													
Lubrication (c)			Synthetic Lubricating Oil													
Noise		dB(A)	≤65													
Rotational inertia J1	≤19	$kg.cm^2$	2.6	2.5	2.1	2.5	2	2	2	2	2	2	2	2	2	2
	≤24		3.8	3.7	3.3	3.7	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

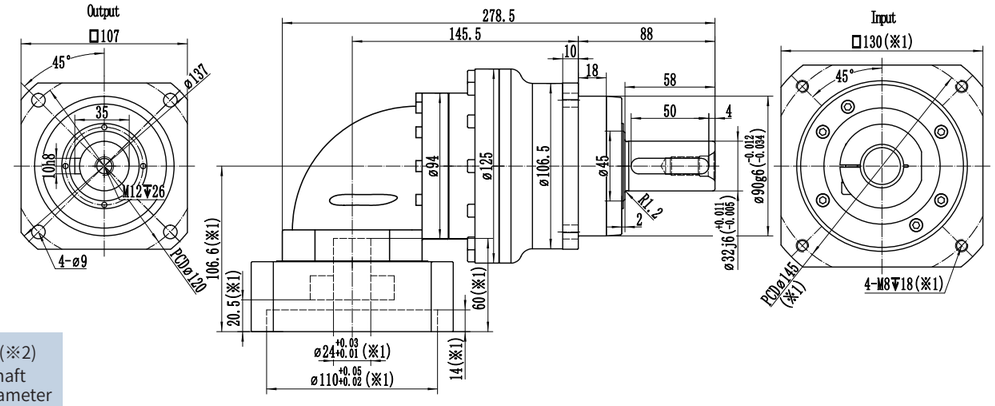
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 19(※2)
Input shaft
bore diameter



Max. 24(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

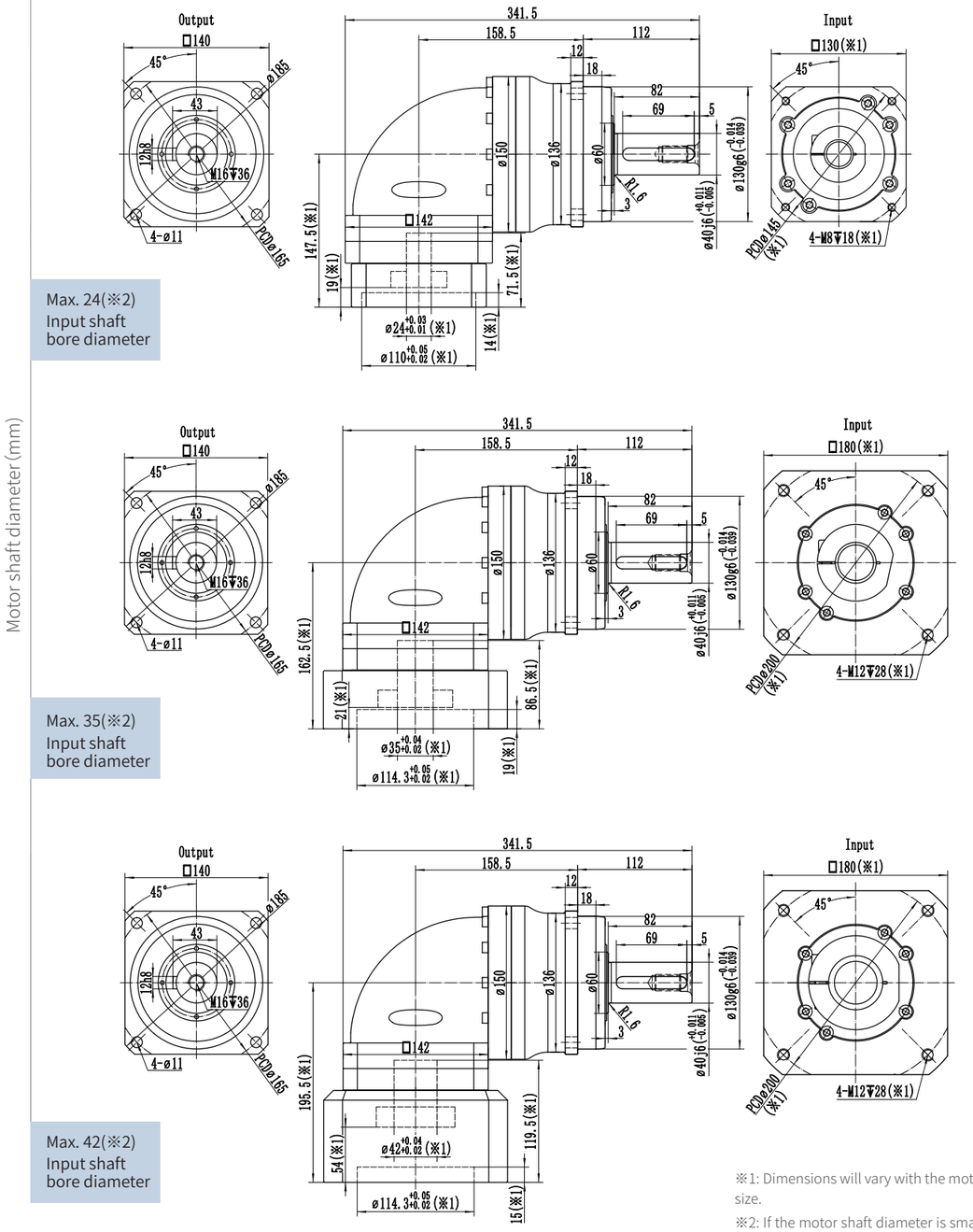
Specification		Unit	WSHR140-1-Stage										
Ratio			3	4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	400	650	650	600	550	650	650	600	550	450	400
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	2300	2300	2300	2300	2300	2800	2800	2800	2800	2800	2800
Max Input Speed n_{1B}		rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
No Load Running Torque (n1=3000rpm,20°C running)		Nm	5.2	4.3	3.5	3.5	3.5	3	3	3	3	2.9	2.9
Max Backlash		arcmin	P1⩽4 / P2⩽6										
Torsional rigidity		Nm/arcmin	60										
Max Tilting Moment M_{2K}		Nm	1630										
Allowable Radial Force F_{2R} (b)		N	16000										
Allowable Axle Force F_{2A} (b)		N	12000										
Service Life		h	20000										
Efficienct		%	⩾95										
Applicable Ambient Temperature		°C	-20°C～+40°C										
Weight		kg	23.6										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	⩽70										
Rotational inertia J1	⩽24	kg.cm²	21.5	19	17.5	16.5	16.5	15.3	15	14.8	14.8	14.8	14.8
	⩽28		22.5	20	18.5	17.5	17.5	16.3	16	15.8	15.8	15.8	15.8
	⩽35		26.5	23.5	22	21	21	19.8	19.5	19.3	19.3	19.3	19.3
	⩽42		38	36	35	34	34	32.8	32.5	32.3	32.3	32.3	32.3

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSHR140 L2 Stage

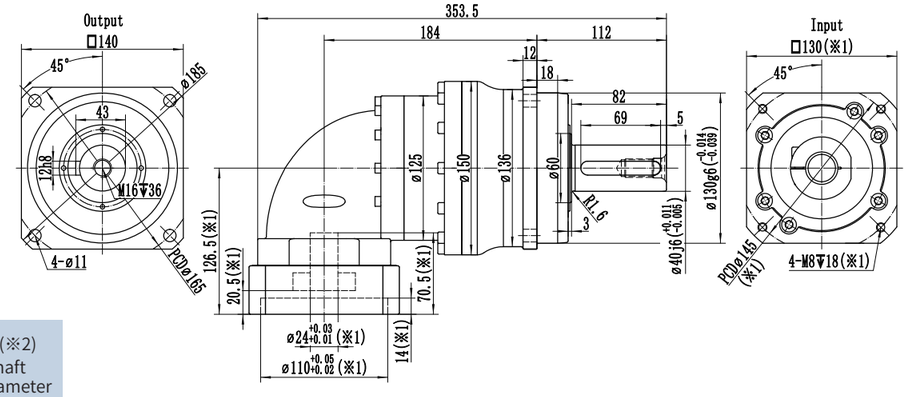
Specification		Unit	WSHR140-2-Stage													
Ratio			15	25	30	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}		Nm	400	650	400	550	650	650	600	550	650	650	600	550	450	400
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}													
Rated Input Speed n_{1N} (a)		rpm	2800	2800	2800	2800	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
Max Input Speed n_{1B}		rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
No Load Running Torque (n1=3000rpm,20°C running)		Nm	2	2	1.8	2	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6	1.6
Max Backlash		arcmin	P1≤7 / P2≤9													
Torsional rigidity		Nm/arcmin	60													
Max Tilting Moment M_{2K}		Nm	1630													
Allowable Radial Force F_{2R} (b)		N	16000													
Allowable Axle Force F_{2A} (b)		N	12000													
Service Life		h	20000													
Efficienct		%	⩾92													
Applicable Ambient Temperature		°C	-20°C～+40°C													
Weight		kg	22.3													
Protection class			IP65													
Lubrication (c)			Synthetic Lubricating Oil													
Noise		dB(A)	≤68													
Rotational inertia J1	≤19	$kg.cm^2$	5.8	5.5	4.7	5.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	≤24		6.3	6	5	6	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
	≤28		6.8	6.5	5.6	6.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
	≤35		13.3	13	11.5	13	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

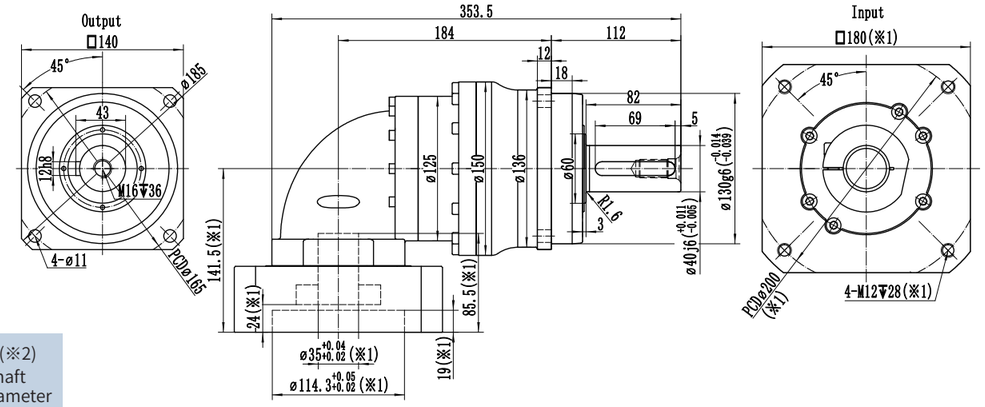
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ Please notify if a keyway is needed for the gearbox input shaft bore.

WSHR180 L1 Stage

Specification		Unit	WSHR180-1-Stage										
Ratio			3	4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	1000	1400	1400	1100	1000	1400	1400	1100	1000	850	760
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	2000	2000	2000	2000	2000	2200	2200	2200	2200	2200	2200
Max Input Speed n_{1B}		rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
No Load Running Torque (n1=2000rpm,20°C running)		Nm	8.6	7.1	5.7	5.7	4.6	4	4	4	4	3.9	3.9
Max Backlash		arcmin	P1⩽4 / P2⩽6										
Torsional rigidity		Nm/arcmin	175										
Max Tilting Moment M_{2K}		Nm	3200										
Allowable Radial Force F_{2R} (b)		N	23000										
Allowable Axle Force F_{2A} (b)		N	19000										
Service Life		h	20000										
Efficienct		%	⩾95										
Applicable Ambient Temperature		°C	-20°C～+40°C										
Weight		kg	40.5										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	⩽72										
Rotational inertia J1	⩽28	kg.cm²	-	-	-	-	-	-	-	-	-	-	-
	⩽35		58	42	37	33	31	29	28.5	28.5	28.5	28.5	28.5
	⩽42		69	53	48	44	42	40	39.5	39.5	39.5	39.5	39.5
	⩽55		-	-	-	-	-	-	-	-	-	-	-

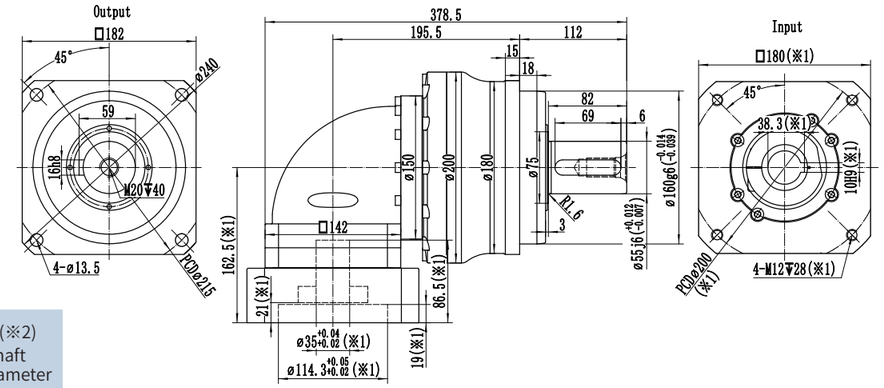
(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) Applied to the center point of the output shaft.

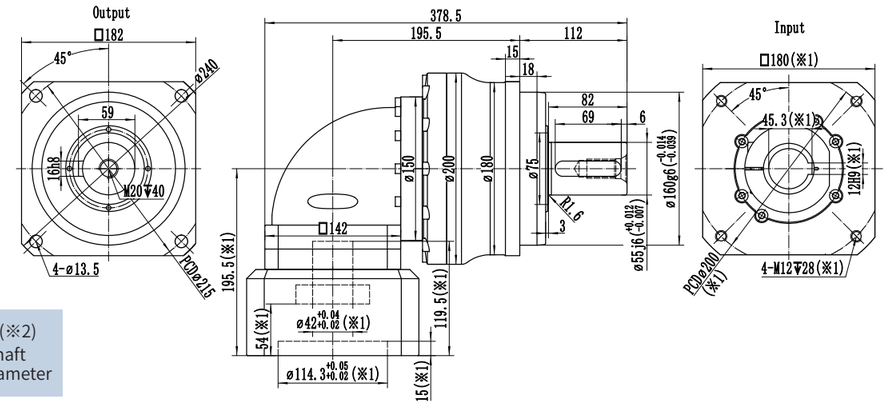
(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)

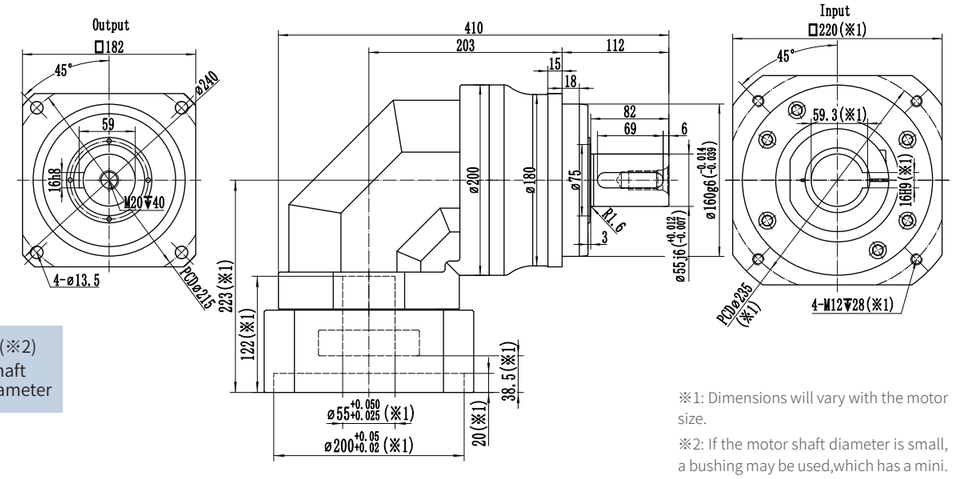
Max. 35(※2)
Input shaft
bore diameter



Max. 42(※2)
Input shaft
bore diameter



Max. 55(※2)
Input shaft
bore diameter



※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WSHR180 gearbox: Default keyway on input shaft. Please notify if not needed.

WSHR180 L2 Stage

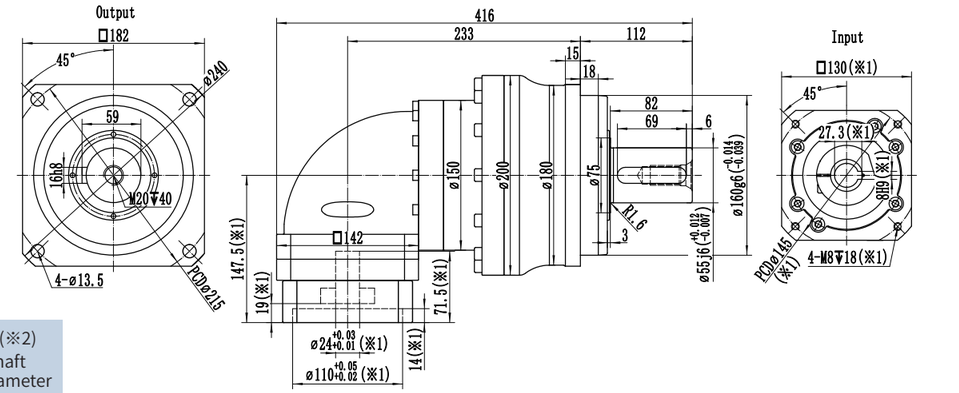
Specification		Unit	WSHR180-2-Stage													
Ratio			15	25	30	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}		Nm	1000	1400	1000	1000	1400	1400	1100	1000	1400	1400	1100	1000	850	760
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}													
Rated Input Speed n_{1N} (a)		rpm	2300	2300	2800	2300	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800
Max Input Speed n_{1B}		rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
No Load Running Torque (n1=2000rpm,20°C running)		Nm	3.7	3.7	3.3	3.7	3.3	3.3	3.3	3.3	3.1	3.1	3.1	3.1	3	3
Max Backlash		arcmin	P1⩽7 / P2⩽9													
Torsional rigidity		Nm/arcmin	175													
Max Tilting Moment M_{2K}		Nm	3200													
Allowable Radial Force F_{2R} (b)		N	23000													
Allowable Axle Force F_{2A} (b)		N	19000													
Service Life		h	20000													
Efficienct		%	⩾92													
Applicable Ambient Temperature		°C	-20°C～+40°C													
Weight		kg	43.5													
Protection class			IP65													
Lubrication (c)			Synthetic Lubricating Oil													
Noise		dB(A)	⩽70													
Rotational inertia J1	⩽24	kg.cm²	17.5	16.8	15.3	16.8	15	15	15	15	15	15	15	15	15	15
	⩽28		18.5	17.8	16.3	17.8	16	16	16	16	16	16	16	16	16	16
	⩽35		22	21.3	19.8	21.3	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
	⩽42		35	34.3	32.8	34.3	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

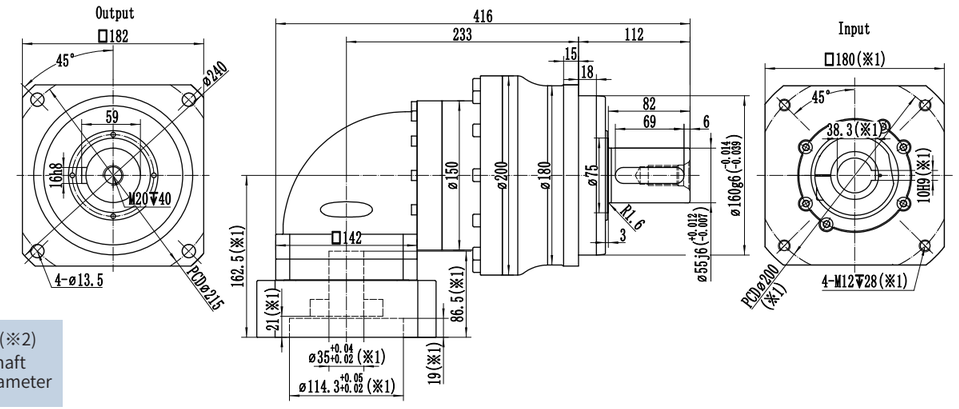
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

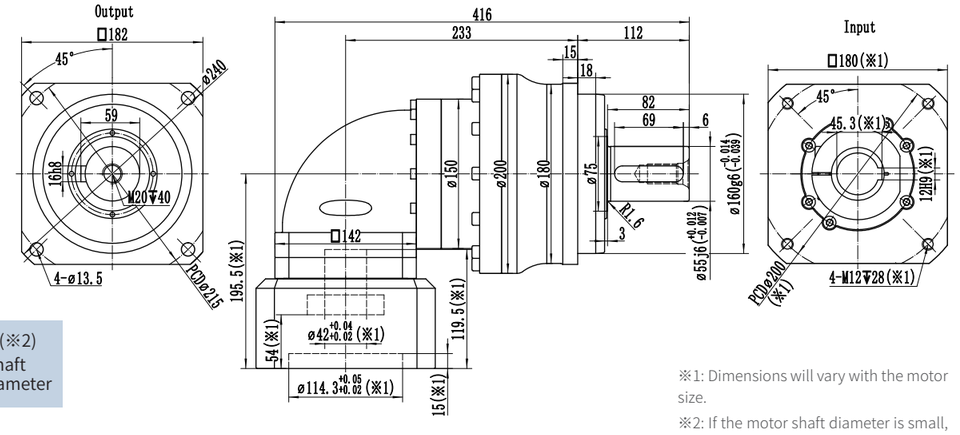
Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter



Max. 42(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WSHR180 gearbox: Default keyway on input shaft. Please notify if not needed.

WSHR210 L1 Stage

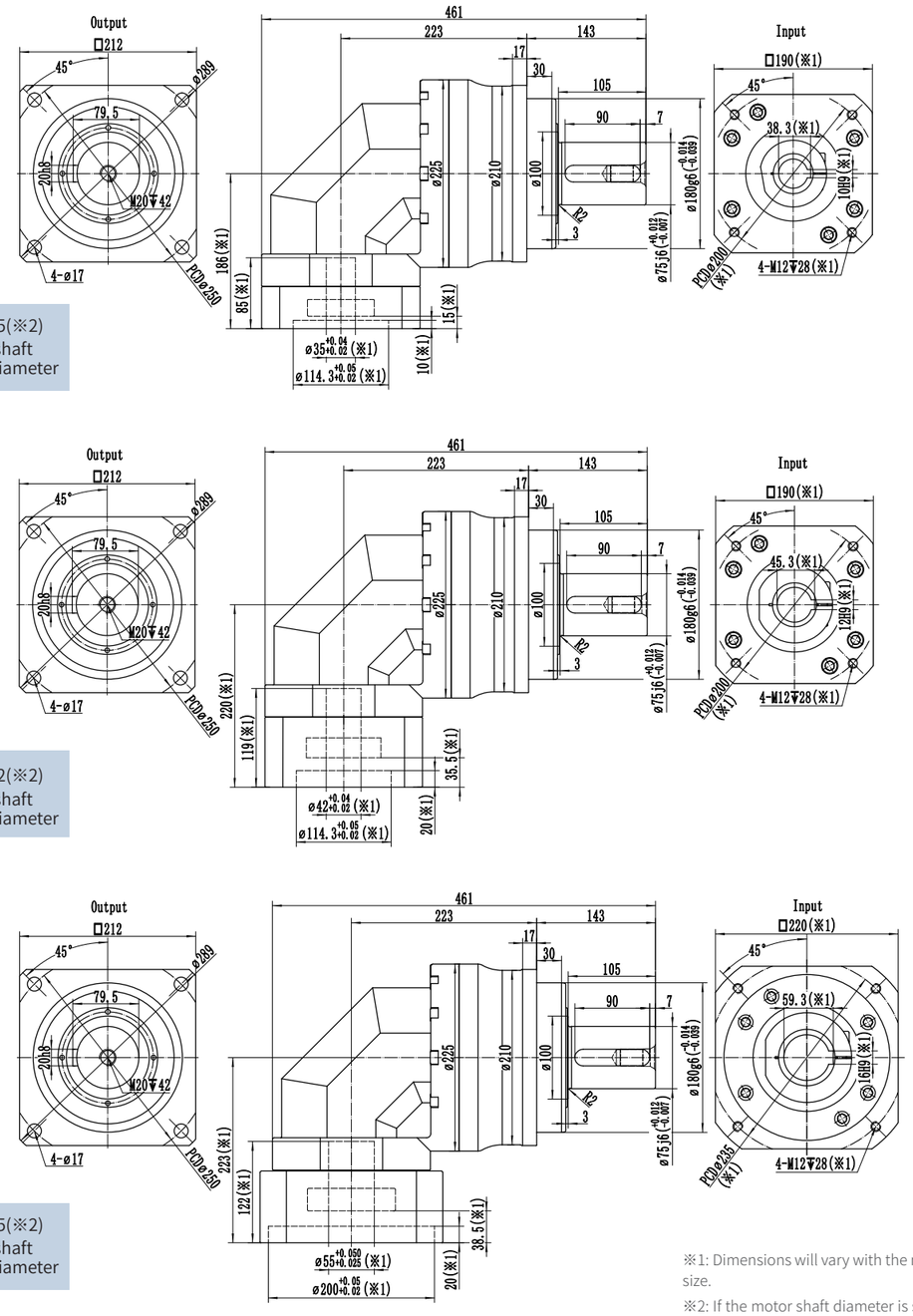
Specification		Unit	WSHR210-1-Stage										
Ratio			3	4	5	6	7	8	10	12	14	16	20
Rated Output Torque T_{2N}		Nm	1800	2400	2400	1950	1700	2400	2400	1950	1700	1450	1350
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	1500	1500	1500	1500	1500	1500	1800	1800	1800	1800	1800
Max Input Speed n_{1B}		rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
No Load Running Torque (n1=2000rpm,20°C running)		Nm	13.5	13.5	11	11	11	9	9	9	9	7.5	7.5
Max Backlash		arcmin	P1⩽4 / P2⩽6										
Torsional rigidity		Nm/arcmin	410										
Max Tilting Moment M_{2K}		Nm	5300										
Allowable Radial Force F_{2R} (b)		N	30000										
Allowable Axle Force F_{2A} (b)		N	24000										
Service Life		h	20000										
Efficienct		%	⩾95										
Applicable Ambient Temperature		°C	-20°C～+40°C										
Weight		kg	70.5										
Protection class			IP65										
Lubrication (c)			Synthetic Lubricating Oil										
Noise		dB(A)	⩽74										
Rotational inertia J1	⩽28	kg.cm²	-	-	-	-	-	-	-	-	-	-	-
	⩽35		87	72	67	62	62	57	52	52	52	52	52
	⩽42		107	92	87	82	82	77	72	72	72	72	72
	⩽55		135	120	115	110	110	105	100	100	100	100	100

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

Motor shaft diameter (mm)



※1: Dimensions will vary with the motor size.

※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WSHR210 gearbox: Default keyway on input shaft. Please notify if not needed.

WSHR210 L2 Stage

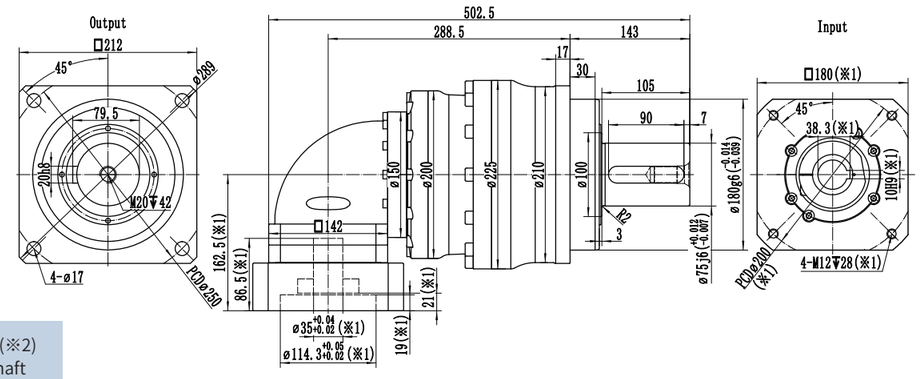
Specification		Unit	WSHR210-2-Stage													
Ratio			15	25	30	35	40	50	60	70	80	100	120	140	160	200
Rated Output Torque T_{2N}		Nm	1800	2400	1800	1700	2400	2400	1950	1700	2400	2400	1950	1700	1450	1350
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}													
Rated Input Speed n_{1N} (a)		rpm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Max Input Speed n_{1B}		rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
No Load Running Torque (n1=2000rpm,20°C running)		Nm	4.4	4.4	4	4.4	4	4	4	4	3.8	3.8	3.8	3.8	3.7	3.7
Max Backlash		arcmin	P1≤7 / P2≤9													
Torsional rigidity		Nm/arcmin	410													
Max Tilting Moment M_{2K}		Nm	5300													
Allowable Radial Force F_{2R} (b)		N	30000													
Allowable Axle Force F_{2A} (b)		N	24000													
Service Life		h	20000													
Efficienct		%	⩾92													
Applicable Ambient Temperature		°C	-20°C～+40°C													
Weight		kg	74.5													
Protection class			IP65													
Lubrication (c)			Synthetic Lubricating Oil													
Noise		dB(A)	≤72													
Rotational inertia J1	≤24	kg.cm²	23.8	21.8	21.8	21.8	20	20	20	20	20	20	20	20	20	20
	≤28		26.8	22.8	22.8	22.8	21	21	21	21	21	21	21	21	21	21
	≤35		31.3	26.3	26.3	26.3	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
	≤42		44.3	39.3	39.3	39.3	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5

(a) When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

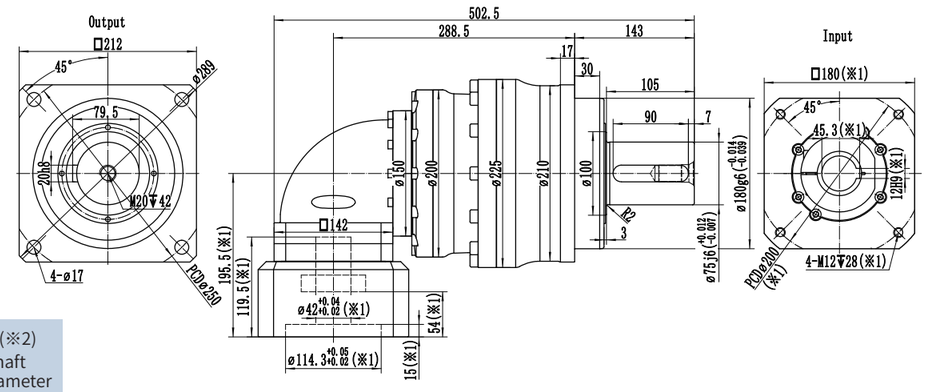
(b) Applied to the center point of the output shaft.

(c) If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

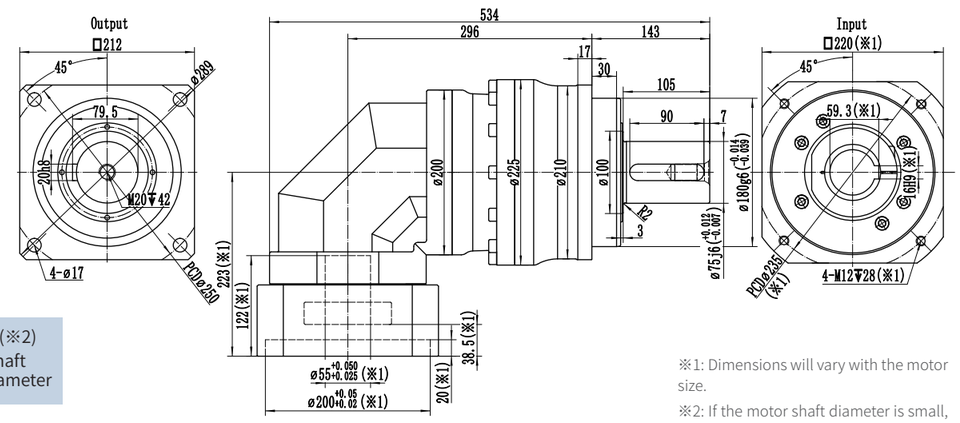
Motor shaft diameter (mm)



Max. 24(※2)
Input shaft
bore diameter



Max. 35(※2)
Input shaft
bore diameter



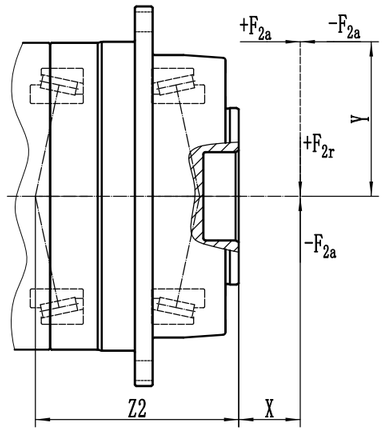
Max. 55(※2)
Input shaft
bore diameter

※1: Dimensions will vary with the motor size.

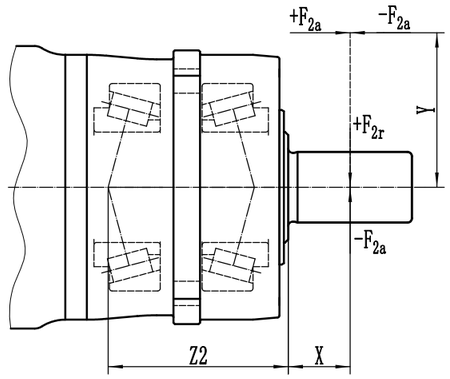
※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

※ WSHR210 gearbox: Default keyway on input shaft. Please notify if not needed.

WTH Series Bearing Load Diagram



WSH Series Bearing Load Diagram



$$\text{Max Tilting Moment } M_{2K} = \frac{F_{2a} \cdot Y + F_{2r} \cdot (X+Z2)}{1000}$$

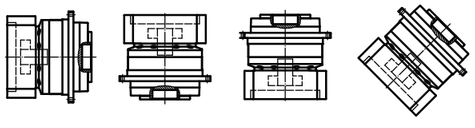
M_{2K} : (Nm)
F_{2a}, F_{2r} : (N)
X, Y, Z2: (mm)

WSH & WSHR	60	75	100	140	180	210
Z2 (mm)	38.8	45.2	85.8	104.7	120.6	146.5
WTH & WTHR	64	90	110	140	200	
Z2 (mm)	46	63.3	69.4	86.2	129.9	

Note: Output speed 100rpm

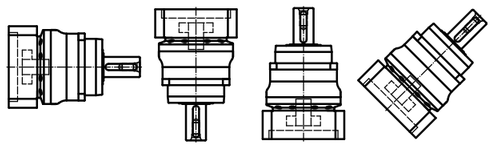
WTH Installation Location

B5-Level | V1-Output vertical down | V3-Output vertical up | S- Any angle inclined installation



WSH Installation Location

B5-Level | V1-Output vertical down | V3-Output vertical up | S- Any angle inclined installation

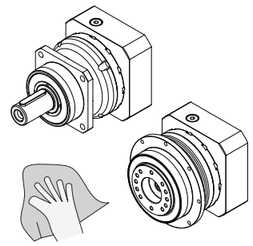


The installation position relates to the oil volume only, provided for reference only, not obligatory when ordering!

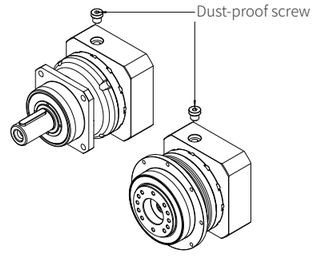
Please comply with the following requirements when installation

The dimension of the adapter on the planetary gearbox differs depending on the servo motor, so please make sure to install the servo motor specified at the time of purchase. The output shaft of the servo motor may be coated with rust inhibitor, etc.

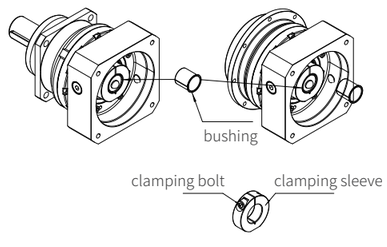
1 Wipe the rust inhibitor, oil, and other substances off the motor shaft mounting surface.



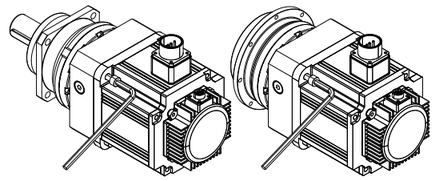
2 Remove the plug



3 Rotate the input shaft to align the head of the clamping bolt with the plug hole, and please confirm that the clamping bolt is in a relaxed state. Place the reducer vertically in a flat place, with the motor installation surface of the reducer facing upwards. (If there is a bushing, please install it according to the diagram)



4 Please slowly insert the motor shaft into the input shaft to avoid impact, and confirm that the motor flange surface is tightly attached to the reducer flange surface. Tighten the motor mounting bolts according to the specified tightening torque. (Refer to Table 3)



5 Use tools such as torque wrench to tighten the clamping bolt of the input shaft according to the specified tightening torque (Refer to Table 3)

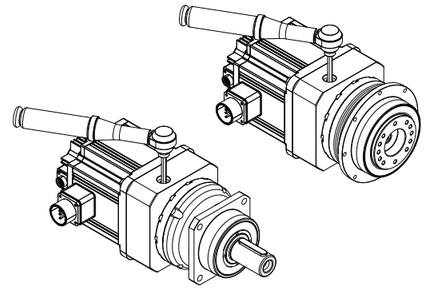
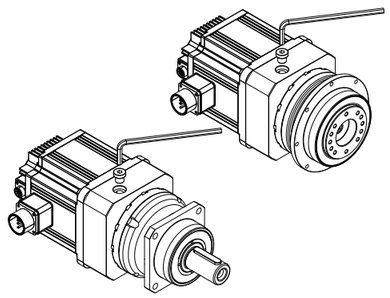


Table 3 Bolt tightening torque

Bolt size		M3	M4	M5	M6	M8	M10	M12	M16
Motor mounting bolts	N·m	1.0	2.5	5.1	8.7	21	42	72	134
	kgf·m	0.11	0.26	0.52	0.89	2.1	4.3	7.3	14
Clamping bolt	N·m	1.9	4.3	8.7	15	36	71	125	-
	kgf·m	0.18	0.44	0.89	1.5	3.7	7.2	13	-

6 Install the plug and complete the task



Installation and Setup

- Avoid using in places that come into direct contact with rainwater. (If you need to use it outdoors or in places that come into contact with dust or water droplets, please consult with Wanshsin in advance.)
- Please set it in an environment of 0-40 °C.
- Please install it on a sturdy and vibration free surface, and firmly secure it with bolts, etc.
- During installation, it should be ensured that it is easy to maintain and inspect.

Install to the output flange (flange type only)

- When installing device components, etc. onto the output flange, please use tools such as torque wrenches Tighten according to the specified tightening torque.

Bolt size		M3	M4	M5	M6	M8	M10	M12	M16	M20
Clamping bolt	N·m	1.9	4.3	8.7	15	36	71	125	310	603
	kgf·m	0.18	0.44	0.89	1.5	3.7	7.2	13	32	62

※ Recommended bolt strength classification above grade 12.9

Output shaft side connection

- When installing a gear, pulley, sprocket, etc. on the output flange type, please use a flanged installation design, embed it into the output flange's protruding part. Please be careful not to apply excessive thrust load during installation.
- When installing a coupling, sprocket, etc. on the output shaft type, please be careful not to apply excessive thrust load during installation. Do not forcefully strike the output shaft during embedding, otherwise it cause damage to the bearings and the interior of the gearbox.
- Pls. be noted that excessive clearance between shafts and keys in coupling and other parts can lead to sintering.
- Please accurately center when connecting.

Precautions before starting the machine

- It can be used directly after arrival as lubricating oil has been added according to the specified amount.
- When running for the first time, please confirm the steering of the output shaft first, and then gradually increase the load.

Precautions during operation

- Please be careful not to overload.
- The speed of the output shaft must not exceed the specified speed.
- When the following situations occur, please stop the machine for inspection.
  1、The temperature suddenly began to rise.
  2、Suddenly, there was a loud noise.
  3、The speed suddenly began to become unstable.
- The possible reasons are as follows, please handle them promptly.
  1、Is it in an overload state?
  2、Are there any damages to the bearings, gears, and transmission surfaces?
  3、Are there any abnormalities in the machine connection conditions?

Lubricant

- The lubricating oil cannot be replaced

Daily Inspection

- Is there any abnormal increase in the temperature of the gearbox casing during operation? (Maximum not greater than 90 °C)
- Are there any abnormal noises in bearings, gears, and other parts?
- Is there any abnormal vibration in the gearbox? (When such abnormalities occur, please stop the machine immediately and contact our company.)
- Is there any lubricating oil leakage?(When there is a grease leak, please contact with Wanshsin)

Regular Inspection

- Is there an overload state and abnormal rotation?
- Is there any looseness in the installation bolts of the pulley, sprocket, and reducer?
- Inspection and maintenance of main components. (When abnormal phenomena occur, please stop the machine immediately, and contact with Wanshsin)