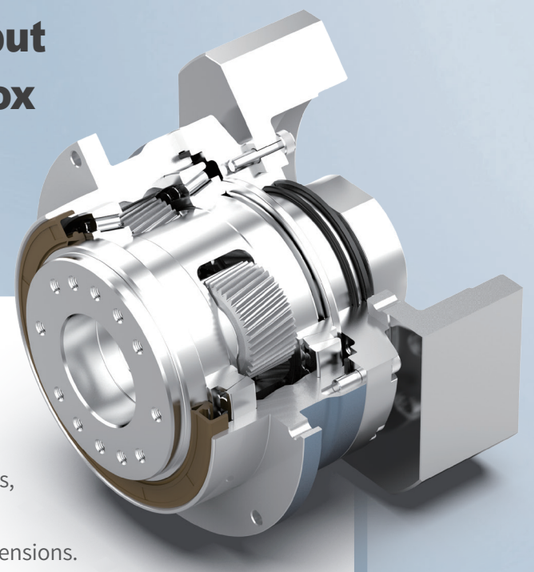
High rigidity flange output helical planetary gearbox

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.

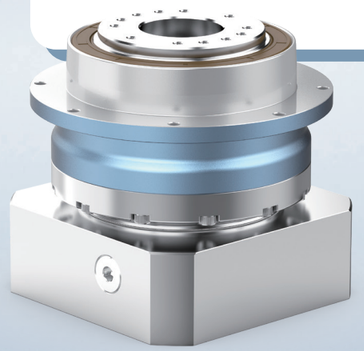
※ Suitable for conditions requiring high positioning accuracy, high dynamic periodic operation and compact radial/axial space.

WANSHSIN®

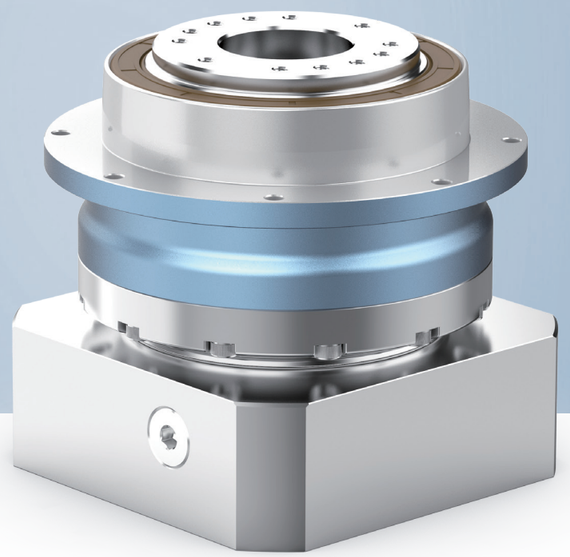
Product Features

- 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.



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

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

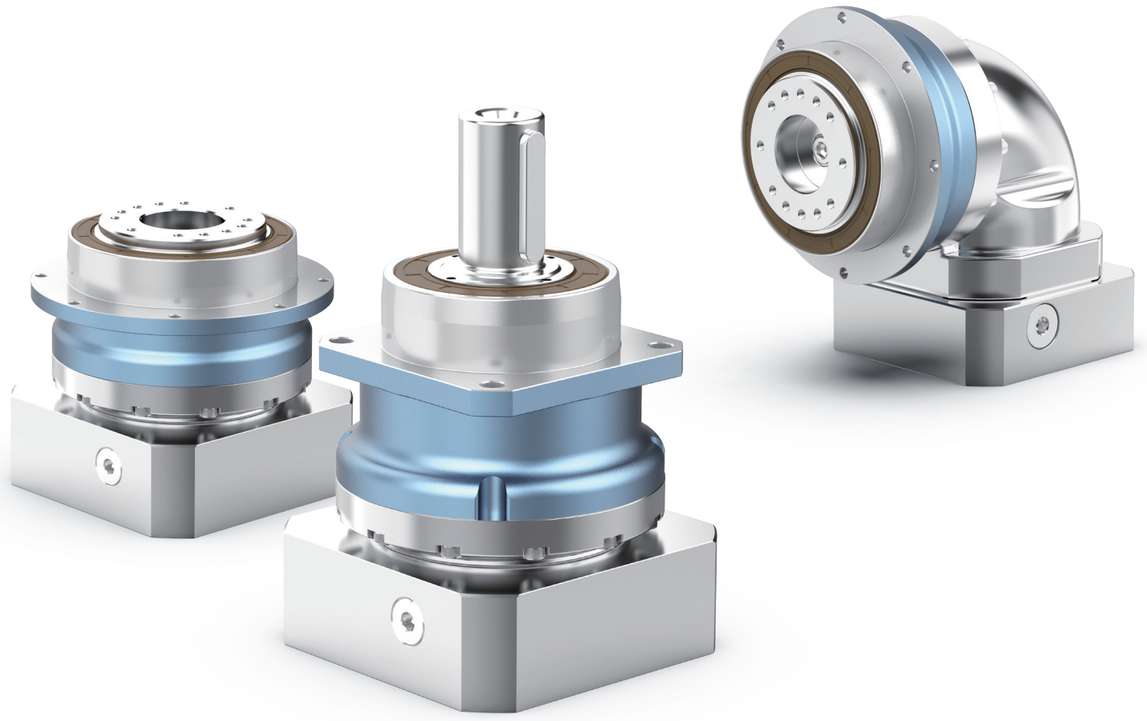
High precision gear processing machine tool + imported CNC lathe, combined with special cutting tools and processing technology to ensure stable control of backlash within the standard

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



WTH064 L1 Stage

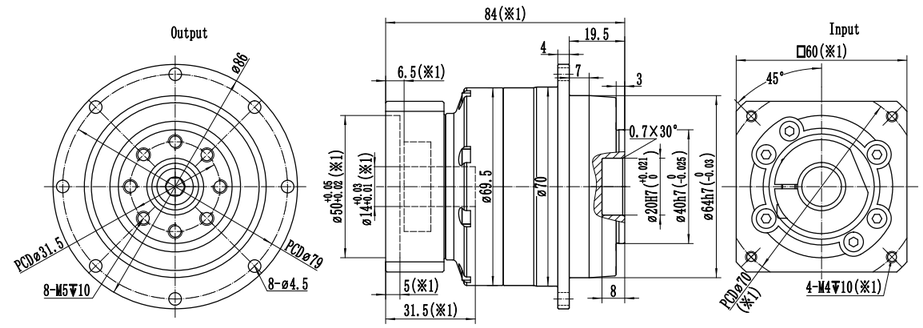
Specification		Unit	WTH064-1-Stage					
Ratio			4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	55	60	55	50	40	35
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}					
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	4000	4000	4000
Max Input Speed n_{1B}		rpm	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.

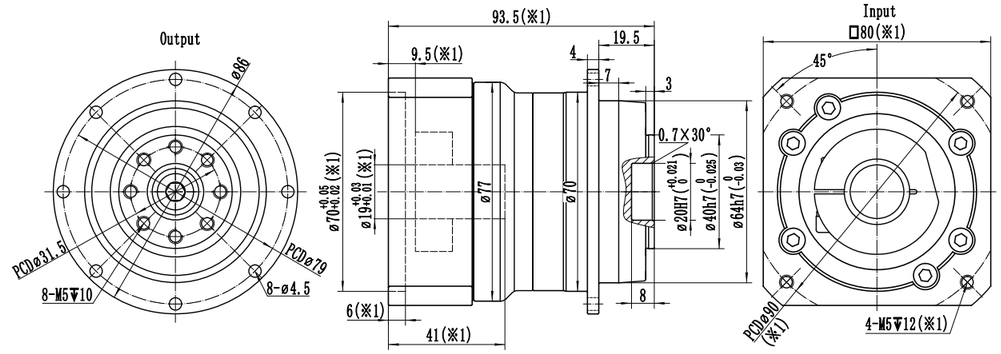
(b) Applied to the center point of the output shaft.

(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

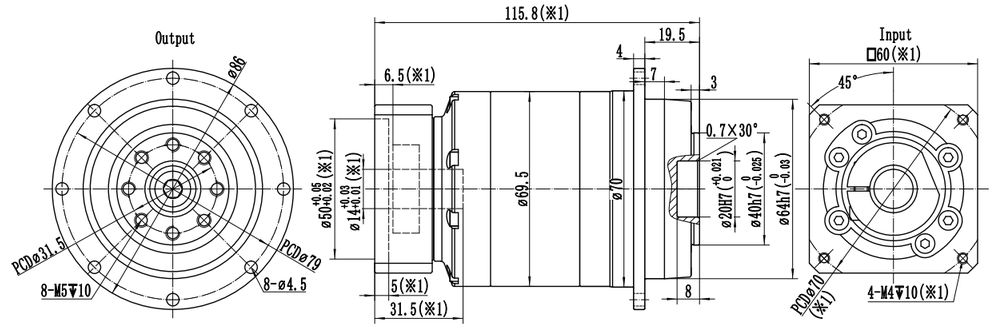
Specification		Unit	WTH064-2-Stage										
Ratio			16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	55	55	60	55	50	55	60	55	50	40	35
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	3500	3500	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

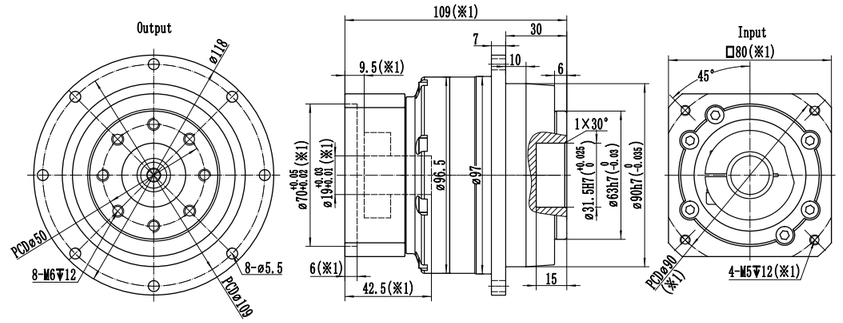
Specification		Unit	WTH090-1-Stage					
Ratio			4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	150	160	150	140	100	90
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}					
Rated Input Speed n_{1N} (a)		rpm	3300	3300	3300	4000	4000	4000
Max Input Speed n_{1B}		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.

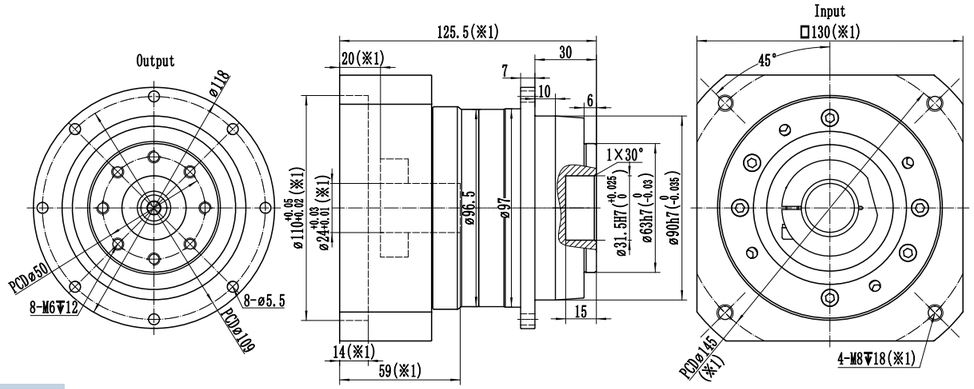
(b) Applied to the center point of the output shaft.

(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

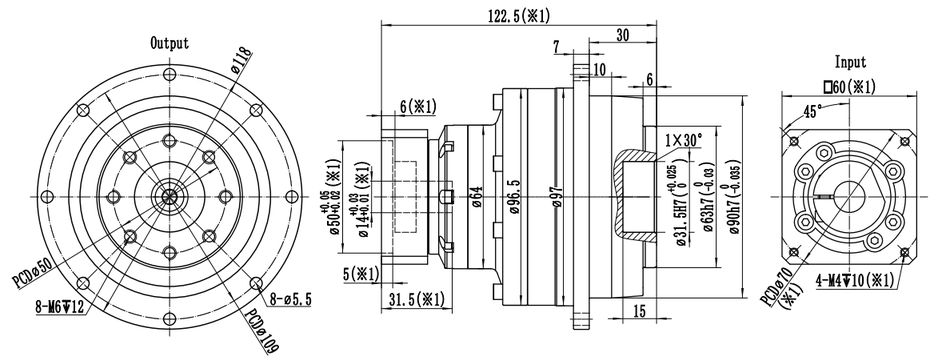
Specification		Unit	WTH090-2-Stage										
Ratio			16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	150	150	160	150	140	150	160	150	140	100	90
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	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.

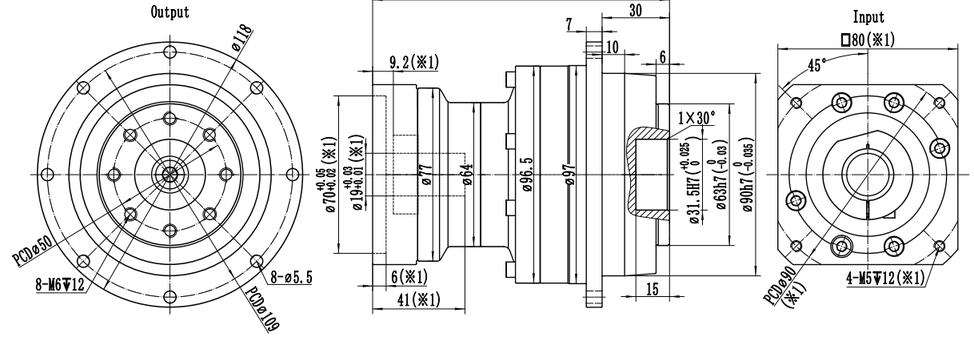
(b) Applied to the center point of the output shaft.

(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.

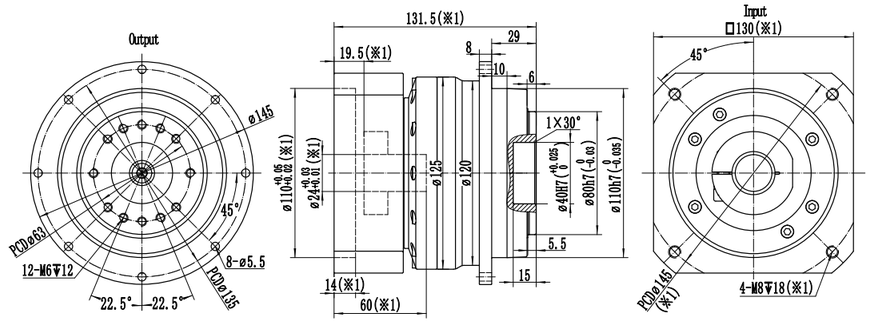
Specification		Unit	WTH110-1-Stage					
Ratio			4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	330	330	310	300	230	200
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}					
Rated Input Speed n_{1N} (a)		rpm	2800	2800	2800	3300	3300	3300
Max Input Speed n_{1B}		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.

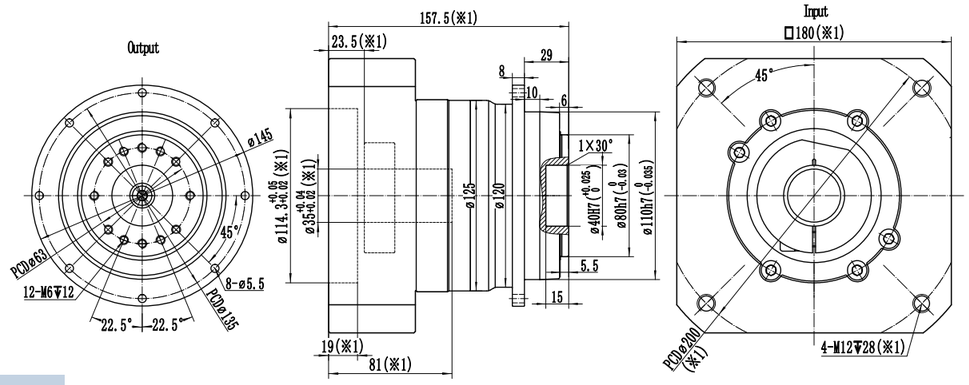
(b) Applied to the center point of the output shaft.

(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

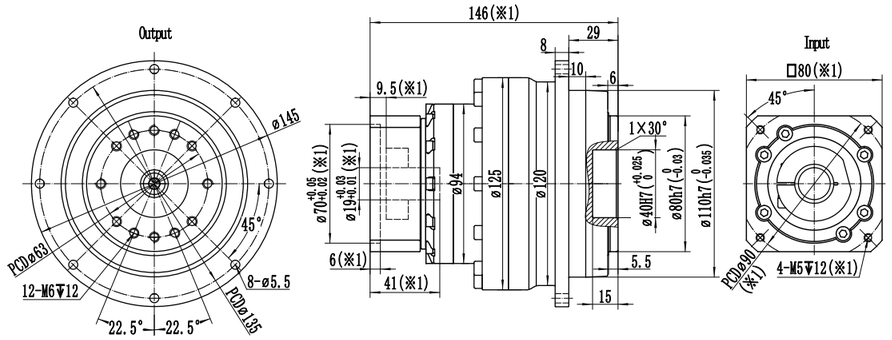
Specification		Unit	WTH110-2-Stage										
Ratio			16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	330	330	330	310	300	330	330	310	300	230	200
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	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.

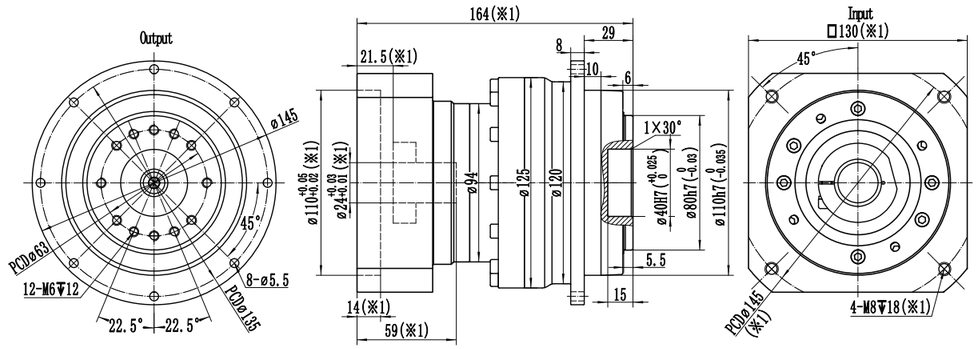
(b) Applied to the center point of the output shaft.

(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

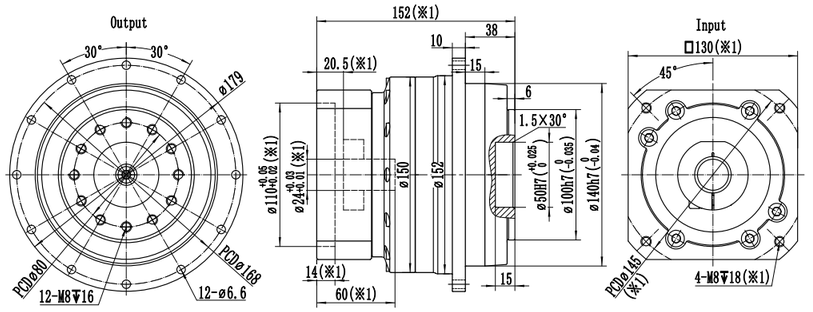
Specification		Unit	WTH140-1-Stage					
Ratio			4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	650	650	600	550	450	400
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}					
Rated Input Speed n_{1N} (a)		rpm	2500	2500	2500	3000	3000	3000
Max Input Speed n_{1B}		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.

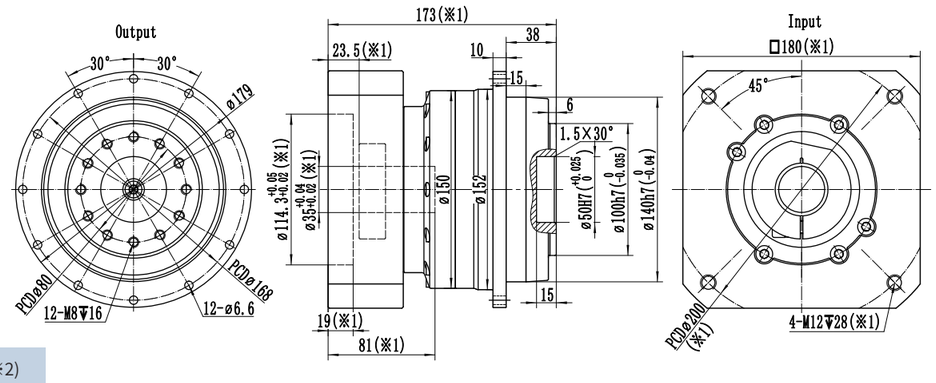
(b) Applied to the center point of the output shaft.

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

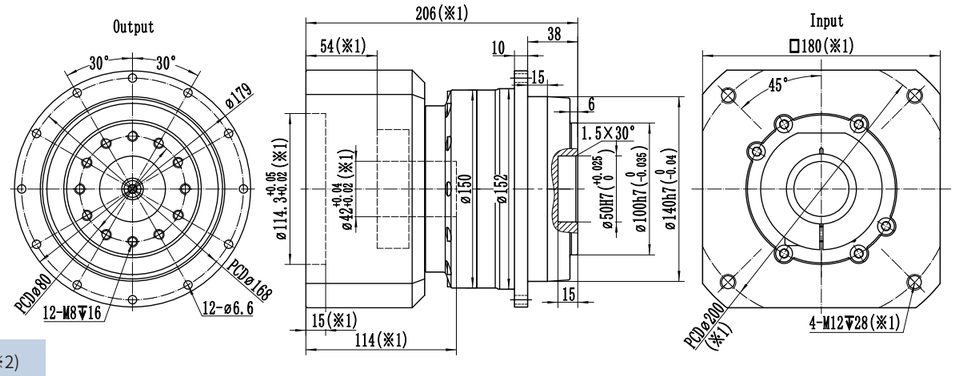
Motor shaft diameter (mm)



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

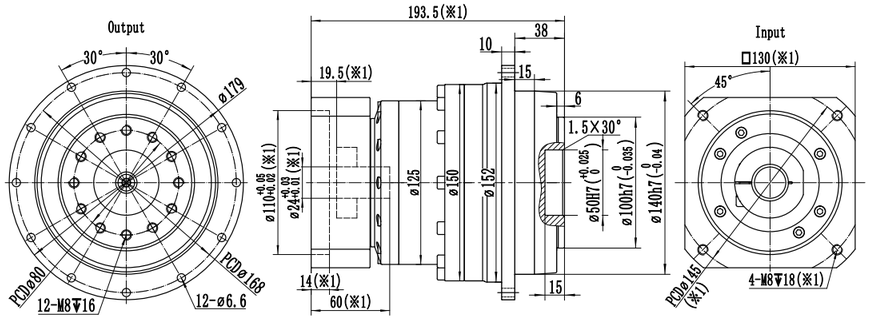
Specification		Unit	WTH140-2-Stage										
Ratio			16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	650	650	650	600	550	650	650	600	550	450	400
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (a)		rpm	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.

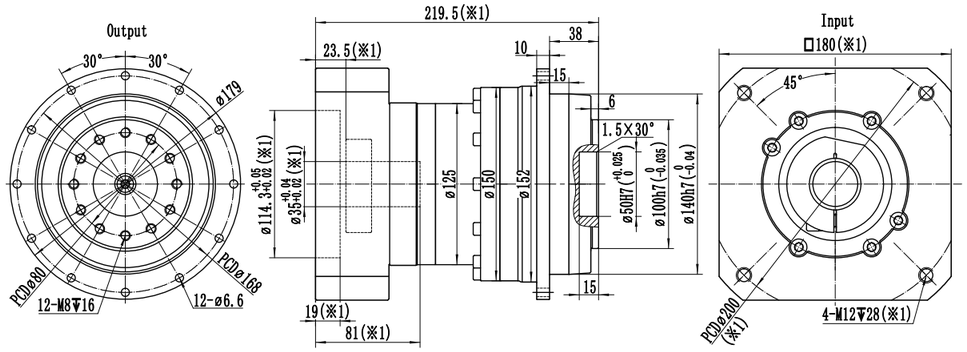
(b) Applied to the center point of the output shaft.

(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.

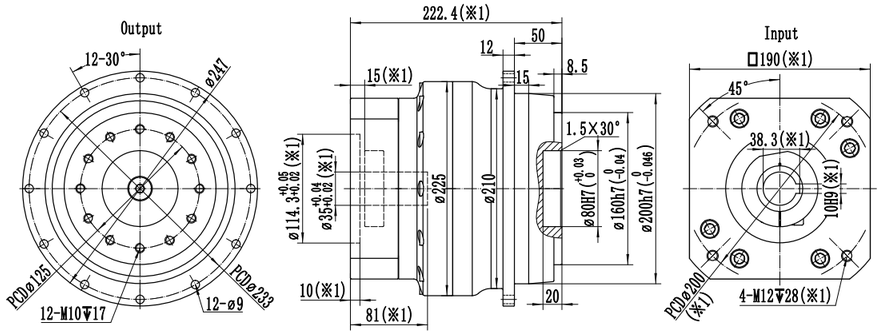
Specification		Unit	WTH200-1-Stage					
Ratio			4	5	6	7	8	10
Rated Output Torque T_{2N}		Nm	2000	2050	1950	1700	1450	1350
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}					
Rated Input Speed n_{1N} (a)		rpm	1500	1500	1500	2000	2000	2000
Max Input Speed 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.

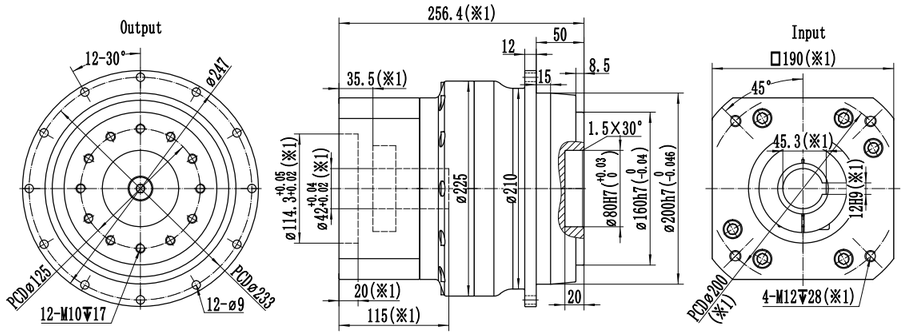
(b) Applied to the center point of the output shaft.

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

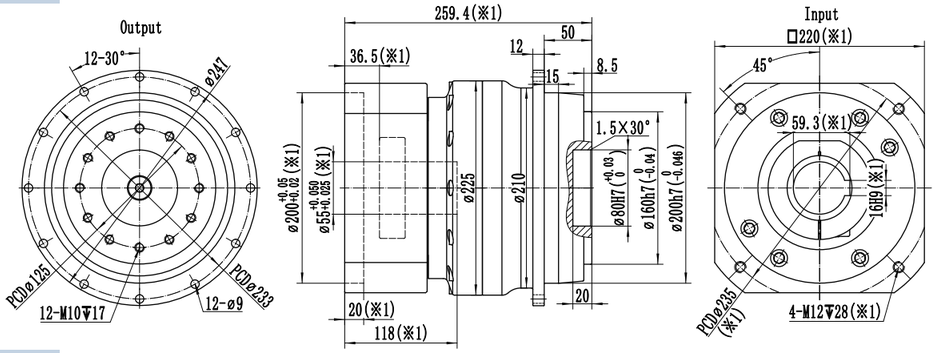
Motor shaft diameter(mm)



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.

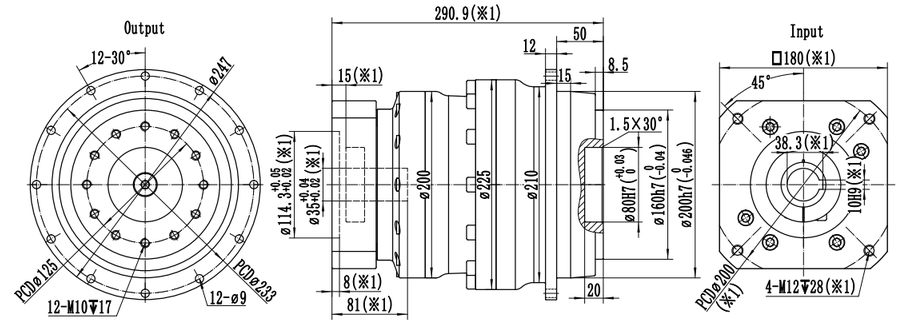
Specification		Unit	WTH200-2-Stage										
Ratio			16	20	25	30	35	40	50	60	70	80	100
Rated Output Torque T_{2N}		Nm	2000	2000	2050	1950	1700	2000	2050	1950	1700	1450	1350
Emergency stop Torque T_{2NOT}		Nm	3 times rated output torque(allow 1000 times)/3 Times T_{2N}										
Rated Input Speed n_{1N} (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.

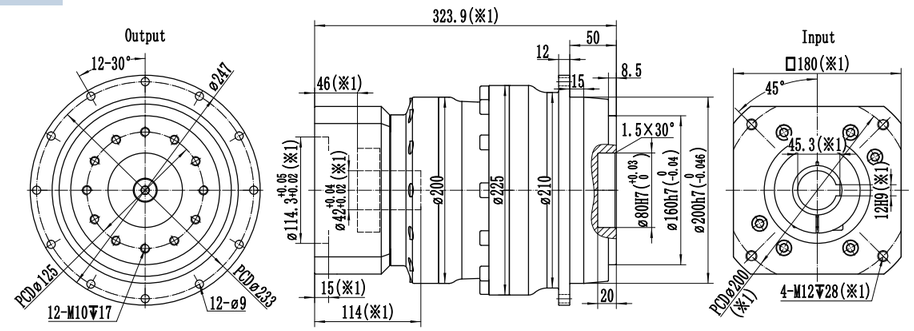
(b) Applied to the center point of the output shaft.

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

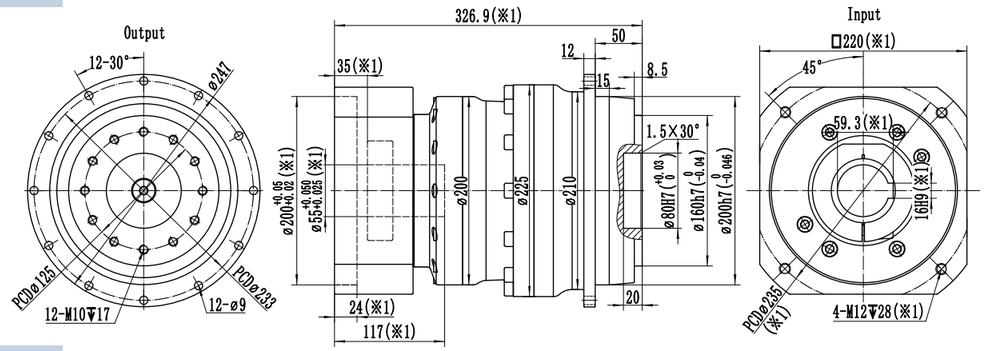
Motor shaft diameter(mm)



Max. 35(※2)
Input shaft bore diameter



Max. 42(※2)
Input shaft bore diameter



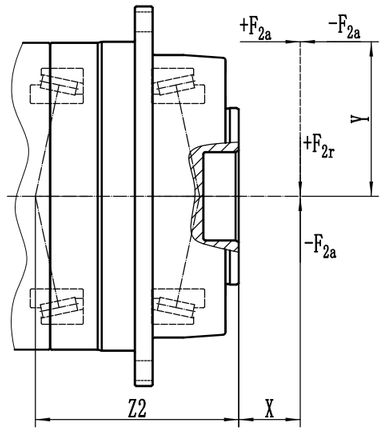
Max. 55(※2)
Input shaft bore diameter

※1: Dimensions will vary with the motor size.

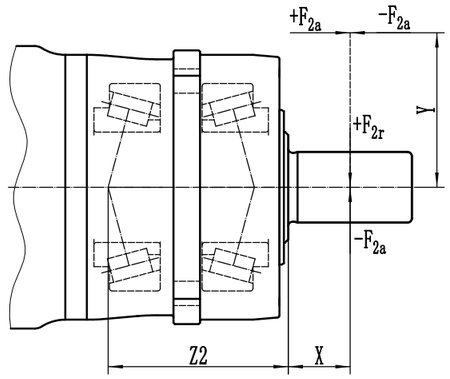
※2: If the motor shaft diameter is small, a bushing may be used,which has a mini. thickness of 1mm.

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

WTH Series Bearing Load Diagram



WSH Series Bearing Load Diagram



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

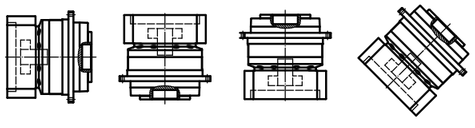
M_{2K} : (Nm)
F_{2a}, F_{2r} : (N)
X, Y, Z2: (mm)

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

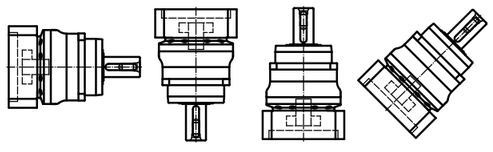
WTH Installation Location

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

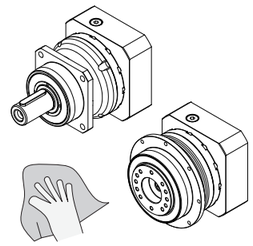


The installation position relates to the oil volume only, provided for reference only, not obligatory when ordering!

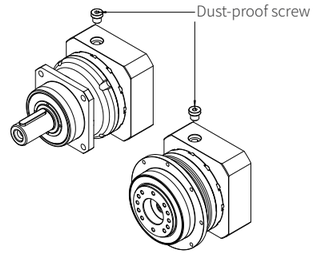
Please comply with the following requirements when installation

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.

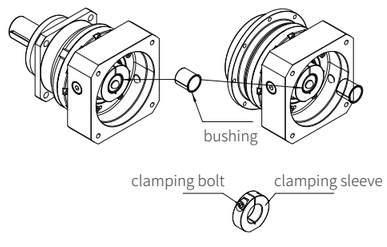
1 Wipe the rust inhibitor, oil, and other substances off the motor shaft mounting surface.



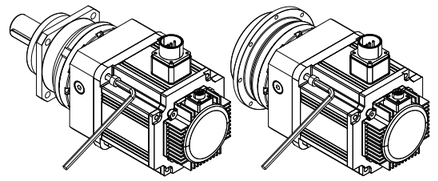
2 Remove the plug



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)

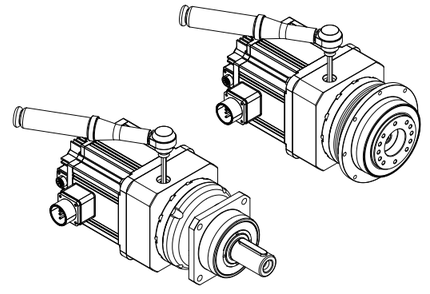
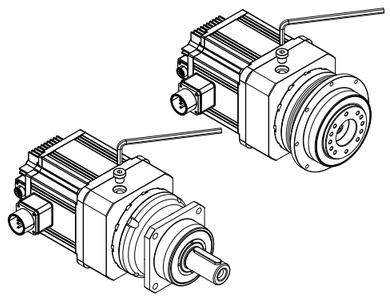


Table 3 Bolt tightening torque

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)