RV®

JAB CM022

E055

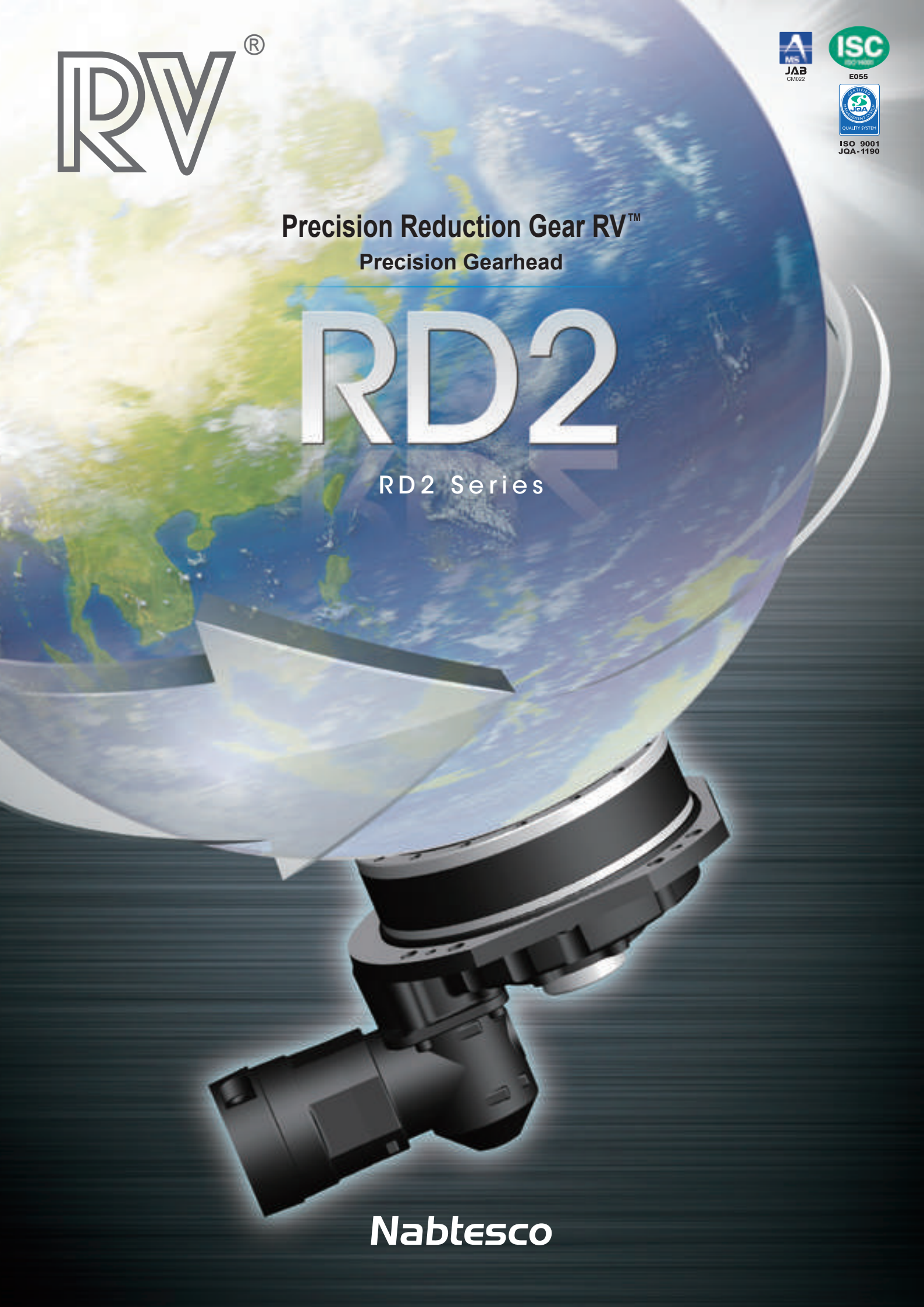
ISO 9001 JQA-1190

Precision Reduction Gear RV™

Precision Gearhead

RD2

RD2 Series

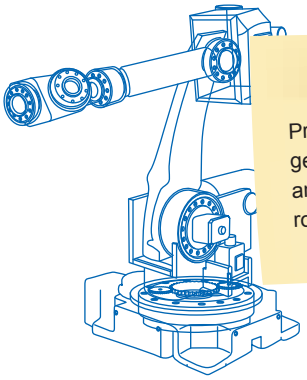


Nabtesco

Nabtesco's technologies supporting society

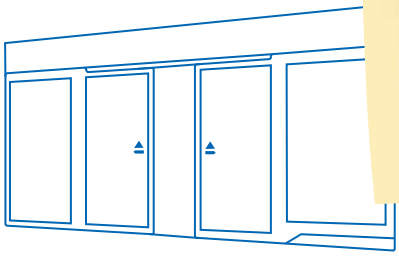
Contributing to Society with Our ‘Moving it. Stopping it.’ Technologies

Nabtesco manufactures products which are used in everyday life. Our high-accuracy components are essential for moving objects; they may be rarely visible, but are the foundation of everyday objects that you see moving and wonder how. Nabtesco’s technologies are found throughout objects that move and stop people’s lives.



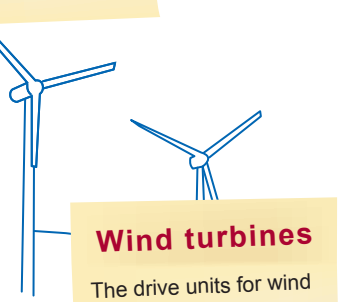
Robots

Precision reduction gears precisely move and stop industrial robots.



Doors

Nabtesco technology opens and closes automatic doors in buildings and platform doors at train stations.



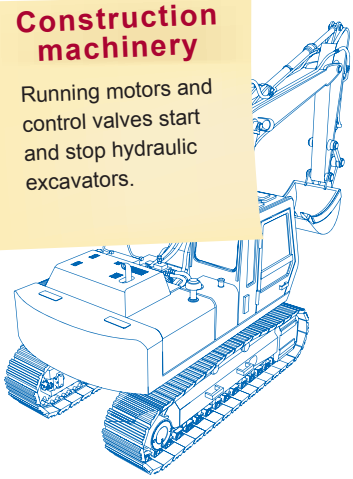
Wind turbines

The drive units for wind turbine generators control the orientation of the wind turbine and the angle of the blades.

Nabtesco technologies are at work in many areas of our daily lives.

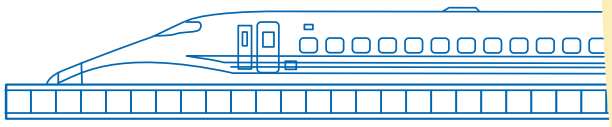
Construction machinery

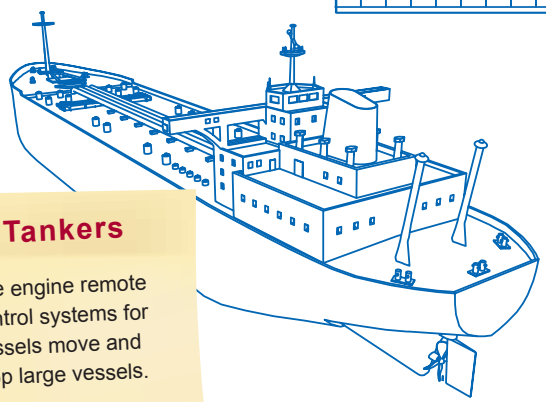
Running motors and control valves start and stop hydraulic excavators.



Shinkansen bullet trains

Brakes and doors ensure safety and comfort for the world-famous Shinkansen bullet trains.





Tankers

The engine remote control systems for vessels move and stop large vessels.

Airplanes

The flight control systems are crucial for the flight safety of aircraft.

CONTENTS

Who is Nabtesco?

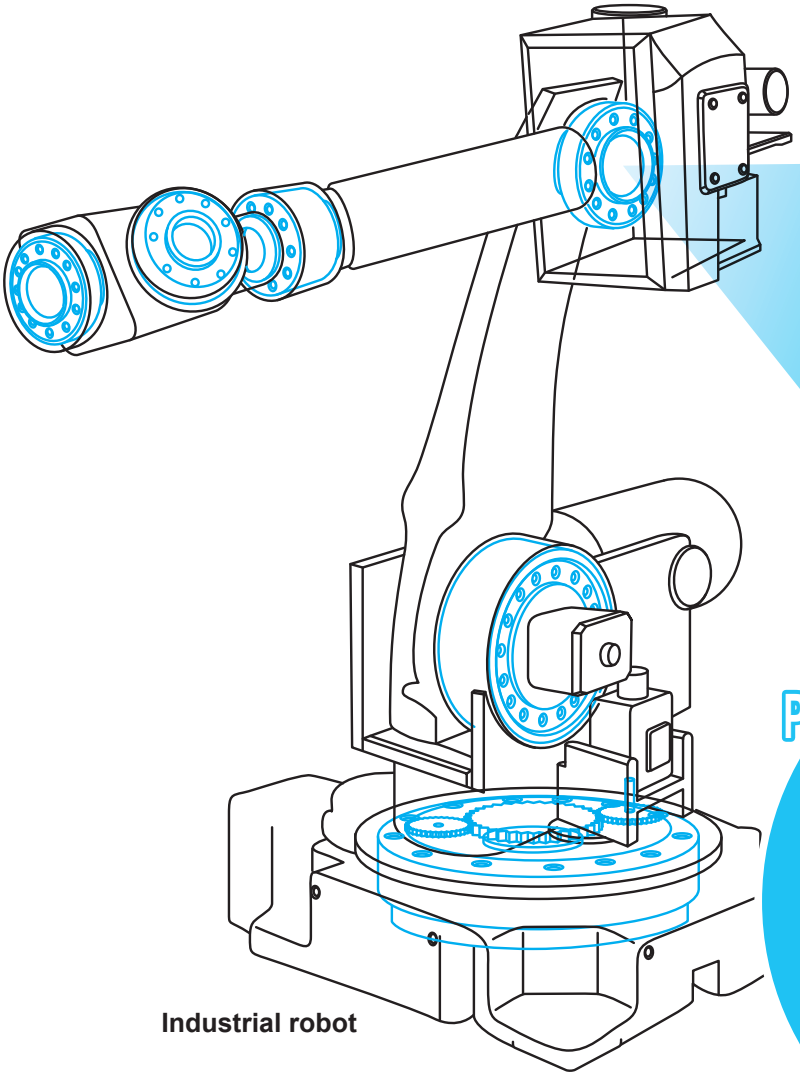
The key word of Nabtesco is 'motion control.' We use our strengths in the fields of component and systems technologies to develop highly creative products. Through the Nabtesco Group as a whole, we can also utilize our advantage of expertise to maximum effect in order to further enhance these strengths.
In the air, on land and at sea, we have a leading share in various fields of both international and domestic markets. Nabtesco will continue to evolve by utilizing its strengths in many fields and by exploring the possibilities of the future.

April 2002 Initiation of hydraulic equipment business alliance
October 2003 Business merger

The business alliance between Teijin Seiki and NABCO on hydraulic equipment projects was the beginning of a mutual confirmation by the companies of the other's product configuration, core technologies, corporate strategies and corporate culture. This led to a common recognition that a business merger would be an extremely effective means of increasing corporate value and achieving long-term development. Based on this mutual judgment, in 2003 an equity transfer was conducted to establish Nabtesco as a pure holding company, with both firms as wholly owned subsidiaries. After a year of preparation, both companies were absorbed and amalgamated by means of a short form merger, and Nabtesco was transitioned to an operating holding company.

RD2: The gear that will change everything

A highly developed Precision Reduction Gear RV™ that offers high quality, high performance and ease of use.



Industrial robot

Precision Reduction Gear RV™

Precision Reduction Gear RV enables the precision movements of industrial robots and also ensures their strength. Precision Reduction Gear RV has been praised for being compact and lightweight while offering high precision and rigidity. Since its debut in 1985, Precision Reduction Gear RV has been selected for use by most major industrial robot manufacturers around the world.

Market share

Industrial robot (vertical articulated robot) joints — *60%* share of global market *1

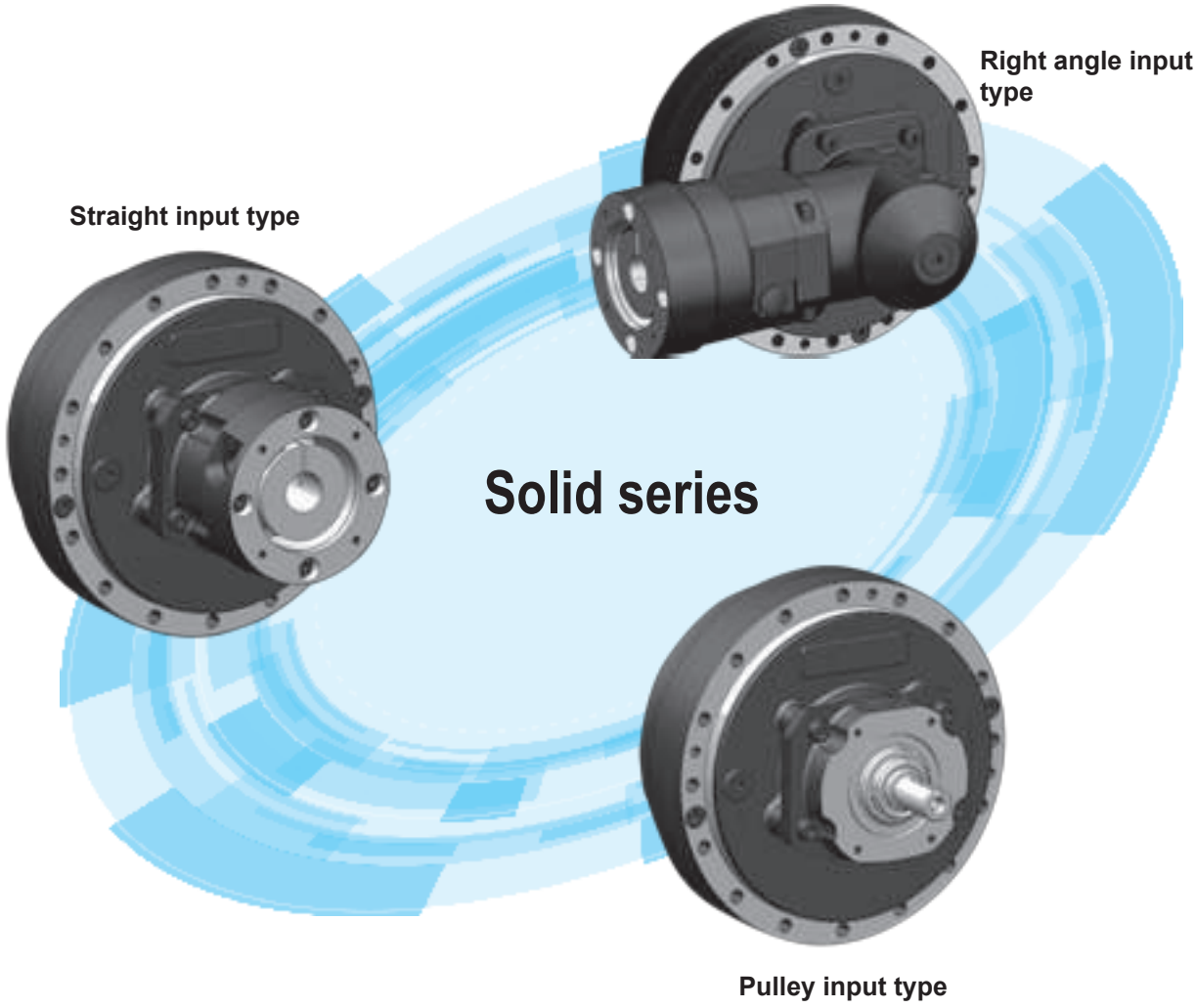
Machine tool ATC drive units — *80%* share of Japanese market *2

*1/2 Based on Nabtesco studies
*2 Only for units with precision reduction gears

Precision Gearhead
RD2 Series

Nabtesco took Precision Reduction Gear RV, the most advanced in the industry, and created the RD Series.
The RD Series is a pre-lubricated model with a sealed structure that can be easily mounted on all major motors.
The RD2 Series, a new version with three input configurations, offers customers dramatically expanded freedom of design.

RD2 Series: Designed to meet a variety of customer needs

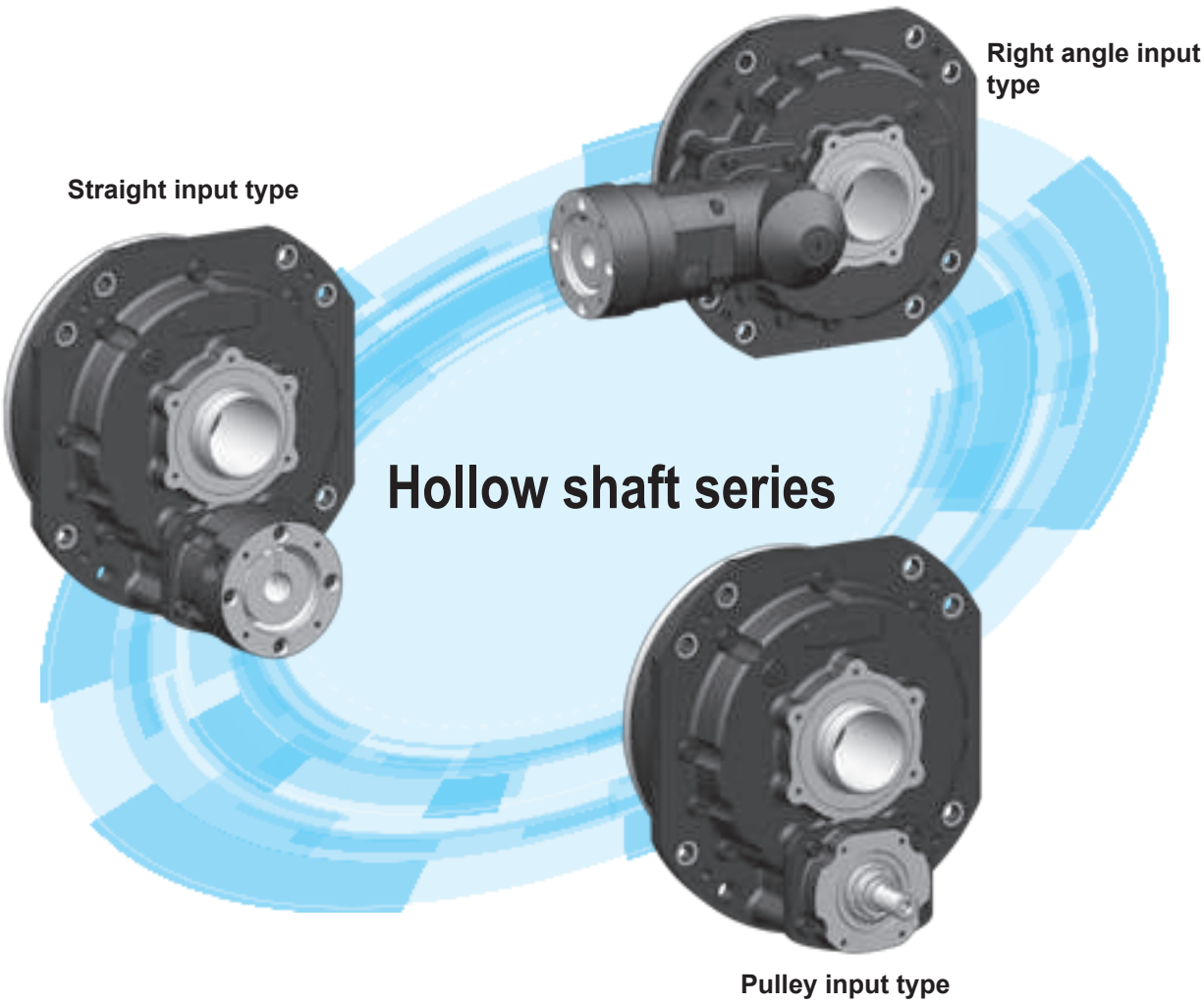


3...

...Benefits
1 Allows compact equipment design

...Advantages
1 Flexibility

...User-friendly
1 Many ratios available



2 Reduces the number of components needed

3 High reliability

2 Pre-lubricated
Our specialized, environmentally conscious lubricant
VIGOGREASE RE0

3 Easy mount

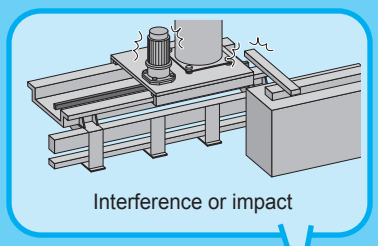
2 Easy installation

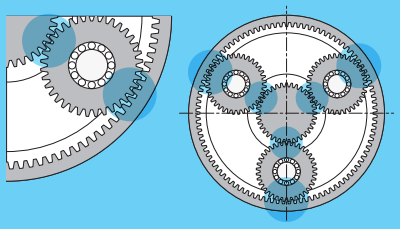
3 Fluorine is used for all oil seals

Nabtesco RD2 Series offer a variety of solutions

■ Standard Epicyclic Gear

Low contact ratio and low resistance to impacts

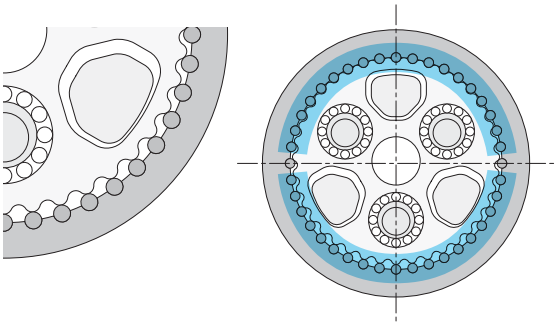




Typical gear is damaged by shock load

■ RD2 Series

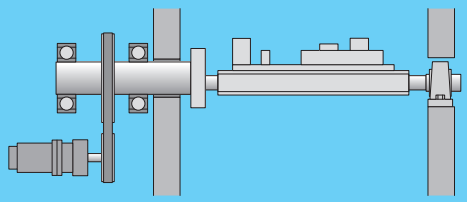
Use of pin/gear mechanism results in high contact ratio and considerable impact resistance



High reliability for your machine

■ Typical equipment

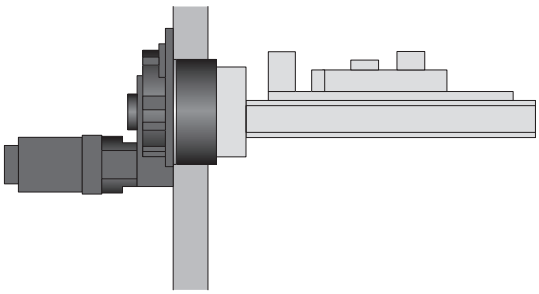
Bearings and external support table are needed



More components
Higher assembly cost
Higher design cost

■ RD2 Series

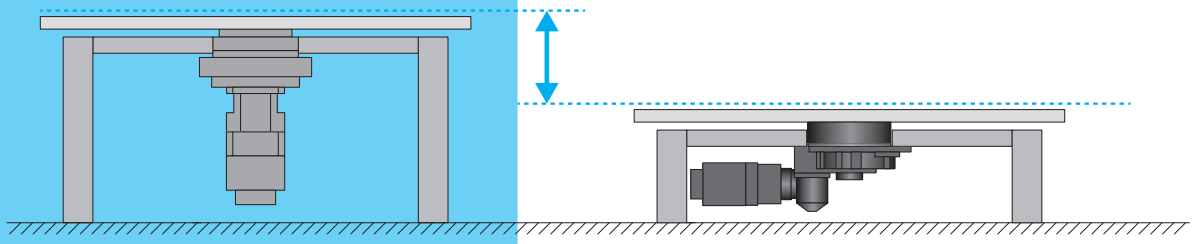
Integrated large-capacity
⇨External bearings and support table are not needed



Reduced number of components
Reduced cost of assembly
Reduced cost of design

■ Typical equipment

Reduction gear thickness + motor length + space for motor removal



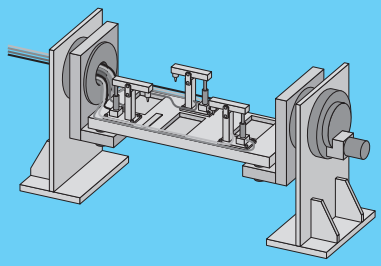
Equipment needs increased space

■ RD2 Series

Only the thickness of the reduction gear itself

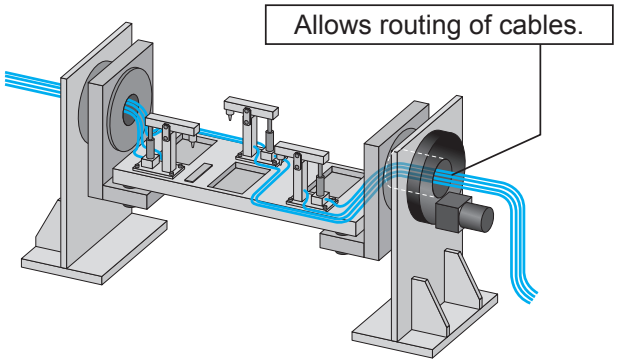
Right angle and pulley models can be used for a lower profile

■ Typical equipment



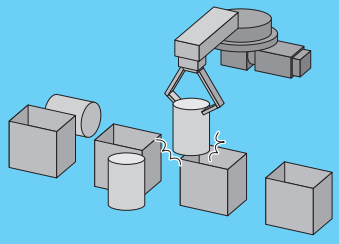
Cable routing is difficult

■ RD2 Series



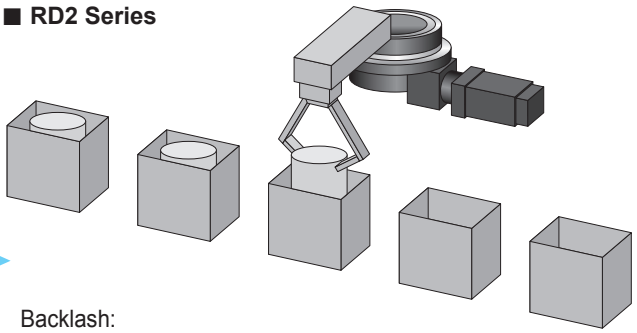
Hollow shaft series also available
Improved layout

■ Typical equipment



High backlash leads to poor repeatability

■ RD2 Series

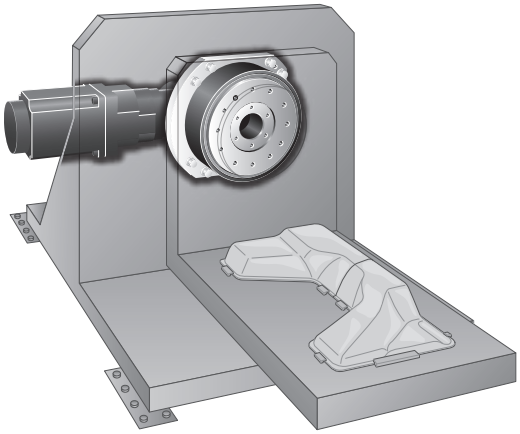


Backlash:
1 arc.min for straight input and pulley input type
1.5 arc.min for right angle input type (except some models)

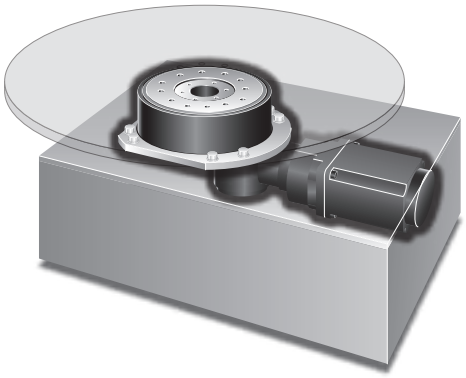
Highly precise positioning is possible

Examples of Uses for the RD2 Series (for reference)

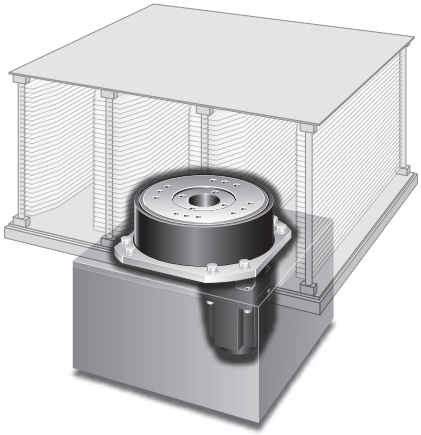
■ Positioner (tilting axis)



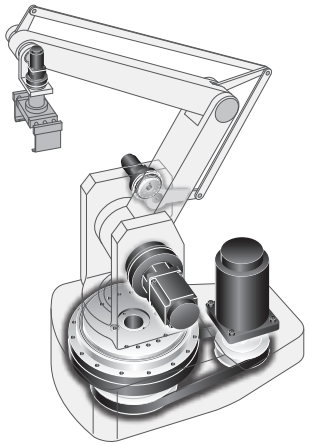
■ Positioner (rotary axis)



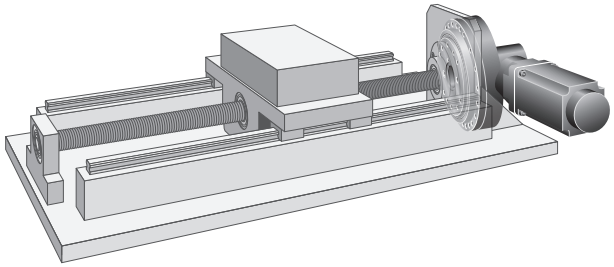
■ Glass Substrate/ Wafer Rotation and Positioning



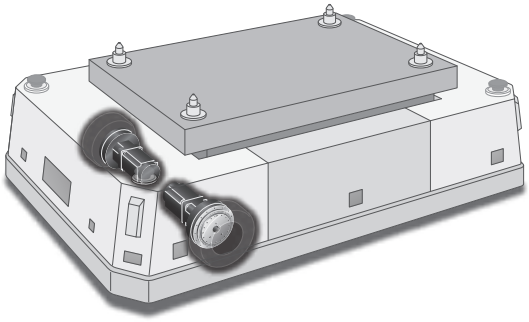
■ Palletizing Robots



■ Ball Screw Drive



■ AGV Drive

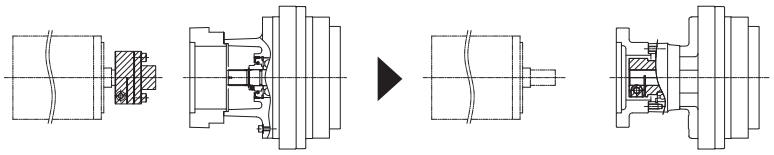


Difference Between RD Series and RD2 Series

1. Simplified motor mounting

Integrated coupling makes mounting easy

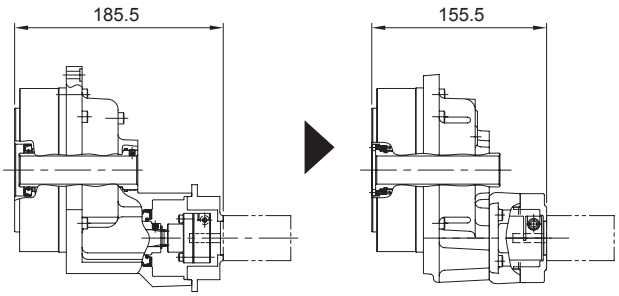
With the previous series, the coupling was an accessory, but on the RD2 Series the coupling is built into the input unit. This simplifies the process of mounting the servo motor to the reduction gear.



2. Compact design

Reduced total length

Compared to the previous series, the total length in the axial direction has been reduced by up to 15%.



Note: • Use of the same motor model is being studied.
• This diagram shows a comparison between the RD-010C and the RDS-010C.

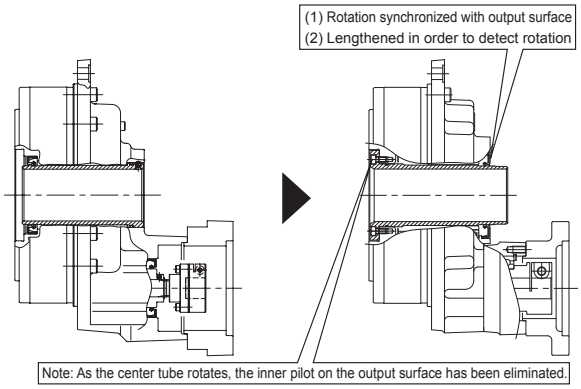
3. Center pipe rotates

For encoder

The center tube has been lengthened.

To protect the cable

On the RD2 Series, the center tube is designed to rotate (synchronized with the output face.)



4. Environmentally conscious lubricant

Product name: VIGOGREASE RE0

The barium sulfonate used up to now as a rust prevention agent has been replaced with calcium sulfonate to reduce the environmental impact.

Product Code Selection

http://precision.nabtesco.com/

1. Verify reduction gear capacity (model code selection).

Step 1: Establish items needed for selection.

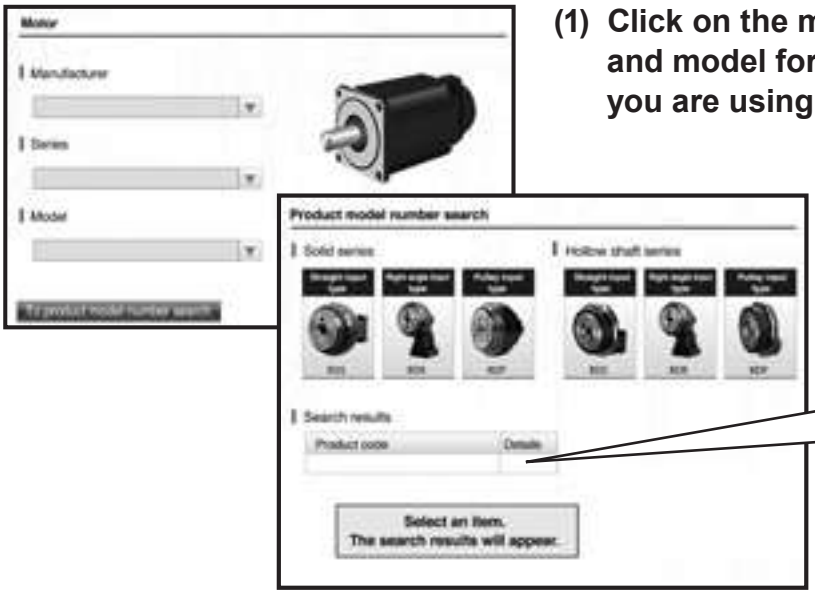
Step 2: Verify reduction gear load.

Step 3: Select reduction gear.

Step 4: Verify input unit specifications.

Note: For flow charts and calculation methods, see pages 103 – 111 of the Technical Documents.

2. Select input unit and motor flange / bushing.



(1) Click on the manufacturer, series and model for the servo motor that you are using.

(2) In the reduction gear list, click on the desired type of reduction gear.

(3) The product codes corresponding to that motor will be displayed.

Product code	Details
RDS-006E-031-B1-CH-ZZ	
RDS-006E-043-B1-CH-ZZ	
RDS-006E-054-B1-CH-ZZ	
RDS-020E-081-B1-CH-ZZ	
RDS-020E-105-B1-CH-ZZ	

3. Download CAD data.

You may also download CAD data, either 3D CAD (STEP file) or 2D CAD (DXF file).

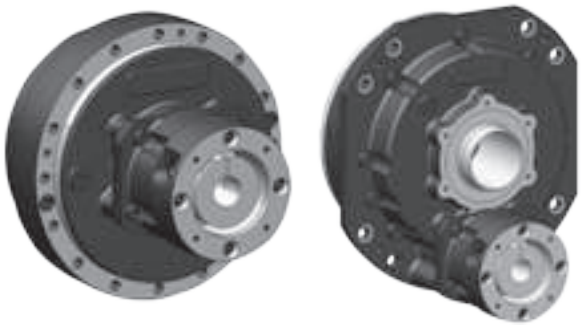
Note: Free membership registration is required to download the CAD data.

Note: Due to ongoing improvements, the website is subject to change without notice.

Overview of Features (listed by input type)

Input type	Reduction gear configuration	Product	Product features	Corresponding speed ratio	Allowable acceleration and deceleration torque (Nm)	Items not included	External dimensions
Straight input type	Solid series		• The total length in the axial direction has been reduced by up to 15% as compared to the previous series.	31 to 258	117 to 7,840	Servo motor	P.16 ▼ P.27
	Hollow shaft series						P.28 ▼ P.39
Right angle input type	Solid series		• Equipment can be more compact • Can be installed in confined space • Table can be made shorter	31 to 258	117 to 7,840	Servo motor	P.44 ▼ P.55
	Hollow shaft series						P.56 ▼ P.67
Pulley input type	Solid series		• Belt input is possible • Motor can be installed anywhere • Speed ratio can be changed using pulley	57 to 157	412 to 7,840	Servo motor pulley	P.71 ▼ P.75
	Hollow shaft series						P.76 ▼ P.81

Straight input type



Straight Input Type Product Codes / Configuration Diagram

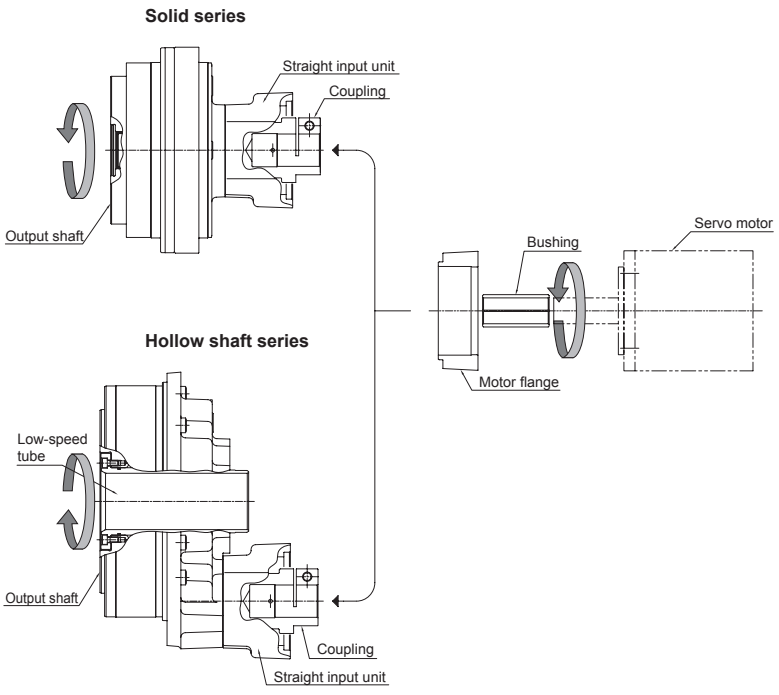
Product code

RD S – 040 E – 153 – B2 – CF – 1E

Model Code			Ratio Code	Input unit code	Motor flange code	Bushing code
Straight Input code	Torque code	Series code				
S	006	E: Solid series	031, 043, 054, 079, 103	B0 : Corresponding motor shaft diameter Ø8 to 14 B1 : Corresponding motor shaft diameter Ø14 to 24	2-letter code (code will differ depending on motor to be mounted)	2-letter code (code will differ depending on motor to be mounted)
	020		041, 057, 081, 105, 121, 161	B0 : Corresponding motor shaft diameter Ø8 to 14 B1 : Corresponding motor shaft diameter Ø14 to 24		
	040		041, 057, 081, 105, 121, 153	B2 : Corresponding motor shaft diameter Ø14 to 24 B3 : Corresponding motor shaft diameter Ø25 to 35		
	080		041, 057, 081, 101, 121, 153	B2 : Corresponding motor shaft diameter Ø14 to 24 B3 : Corresponding motor shaft diameter Ø25 to 35		
	160		066, 081, 101, 121, 145, 171	B4 : Corresponding motor shaft diameter Ø19 to 28 B5 : Corresponding motor shaft diameter Ø32 to 42		
	320		066, 081, 101, 121, 141, 185	B4 : Corresponding motor shaft diameter Ø19 to 28 B5 : Corresponding motor shaft diameter Ø32 to 42		
	010	C: Hollow shaft series	081, 108, 153, 189, 243	B0 : Corresponding motor shaft diameter Ø8 to 14 B1 : Corresponding motor shaft diameter Ø14 to 24		
	027		100, 142, 184, 233	B0 : Corresponding motor shaft diameter Ø8 to 14 B1 : Corresponding motor shaft diameter Ø14 to 24		
	050		109, 153, 196, 240	B2 : Corresponding motor shaft diameter Ø14 to 24 B3 : Corresponding motor shaft diameter Ø25 to 35		
	100		101, 150, 210, 258	B2 : Corresponding motor shaft diameter Ø14 to 24 B3 : Corresponding motor shaft diameter Ø25 to 35		
	200		106, 156, 206, 245	B4 : Corresponding motor shaft diameter Ø19 to 28 B5 : Corresponding motor shaft diameter Ø32 to 42		
	320		115, 157, 207, 253	B4 : Corresponding motor shaft diameter Ø19 to 28 B5 : Corresponding motor shaft diameter Ø32 to 42		

Note: For selection of motor flange and bushing, see the selection tables on pages 83 – 85 or visit the Nabtesco website (URL : http://precision.nabtesco.com/).

Configuration Diagram



Rating Table Straight Input Type

Solid series

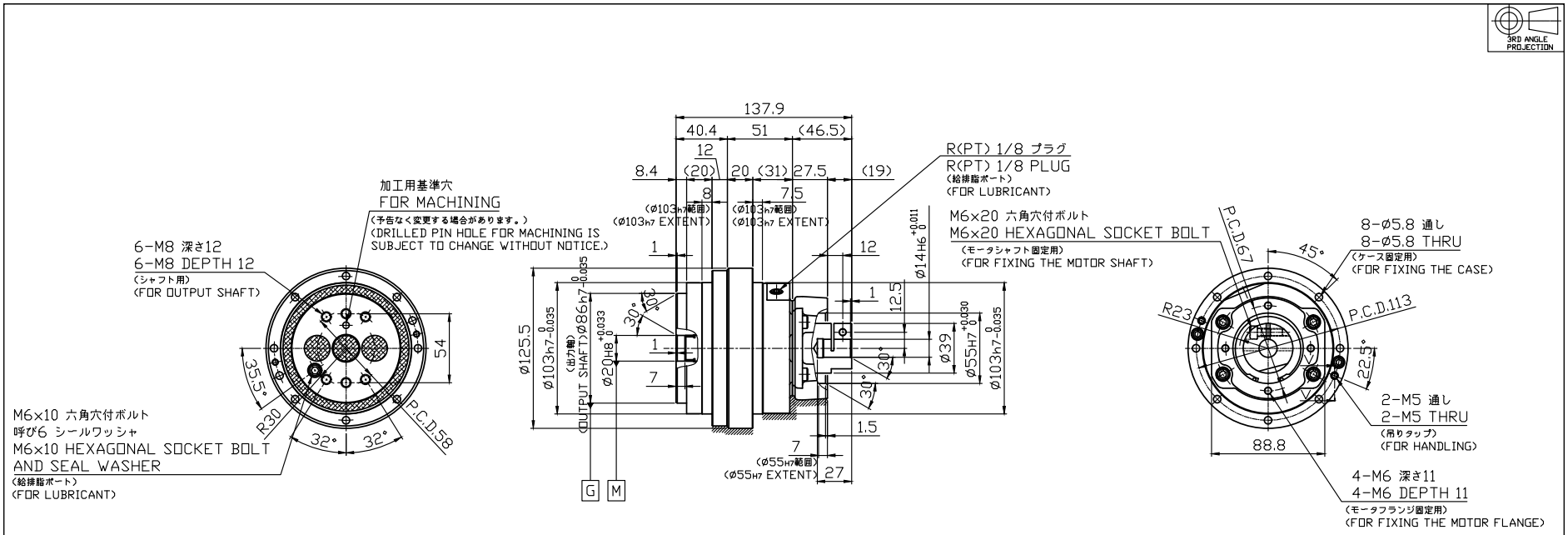
Model Code	Ratio code (actual gear ratio)	Reduction Gear														External Dimensions
		T_0 Rated Torque	N_0 Rated Output Speed	K Life Rating	T_{S1} Allowable Startup/Stop Torque	T_{S2} Momentary maximum allowable torque	N_{in} Allowable Input Speed (Note 2)	N_S Allowable Output Speed (Note 2)	N_{To} Reference value to output speed during continuous operation at rated torque	Backlash	Lost motion	Torsional rigidity (Representative values)	Start-up Efficiency	M_0 Allowable moment (Note 3)	α Dimension α	
		(Nm)	(rpm)	(h)	(Nm)	(Nm)	(rpm)	(rpm)	(rpm)	(arc.min.)	(arc.min.)	(Nm/arc.min.)	(%)	(Nm)	(mm)	
RDS-006E	031 (31)	58	30	6,000	117	294	3,500	100	100	1.5	1.5	20	70	196	77.8	Input Unit Code : B0 ——P.16 Input Unit Code : B1 ——P.17
	043 (43)							81	76							
	054 (53.5)							65	63							
	079 (79)							44	44							
	103 (103)							34	34							
RDS-020E	041 (41)	167	15	6,000	412	833	3,500	75	75	1.0	1.0	49	75	882	93.2	Input Unit Code : B0 ——P.18 Input Unit Code : B1 ——P.19
	057 (57)							61	56							
	081 (81)							43	42							
	105 (105)							33	33							
	121 (121)							29	29							
	161 (161)							22	22							
RDS-040E	041 (41)	412	15	6,000	1,029	2,058	3,000	70	37	1.0	1.0	108	70	1,666	114.6	Input Unit Code : B2 ——P.20 Input Unit Code : B3 ——P.21
	057 (57)							53	35							
	081 (81)							37	34							
	105 (105)							29	29							
	121 (121)							25	25							
	153 (153)							20	20							
RDS-080E	041 (41)	784	15	6,000	1,960	3,920	3,000	70	34	1.0	1.0	196	75	2,156	136.1	Input Unit Code : B2 ——P.22 Input Unit Code : B3 ——P.23
	057 (57)							53	31							
	081 (81)							37	29							
	101 (101)							30	28							
	121 (121)							25	25							
	153 (153)							20	20							
RDS-160E	066 (66)	1,568	15	6,000	3,920	7,840	2,000	30	20	1.0	1.0	392	75	3,920	167.3	Input Unit Code : B4 ——P.24 Input Unit Code : B5 ——P.25
	081 (81)							25	18							
	101 (101)							20	16							
	121 (121)							17	15							
	145 (145)							14	14							
	171 (171)							12	12							
RDS-320E	066 (66)	3,136	15	6,000	7,840	15,680	2,000	30	15	1.0	1.0	980	80	7,056	203	Input Unit Code : B4 ——P.26 Input Unit Code : B5 ——P.27
	081 (81)							25	12							
	101 (101)							20	9							
	121 (121)							17	7							
	141 (141)							14	6							
	185 (185)							11	4							

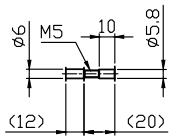
Hollow shaft series

Model Code	Ratio code (actual gear ratio)	Reduction Gear														External Dimensions
		T_0 Rated Torque	N_0 Rated Output Speed	K Life Rating	T_{S1} Allowable Startup/Stop Torque	T_{S2} Momentary maximum allowable torque	N_{in} Allowable Input Speed (Note 2)	N_S Allowable Output Speed (Note 2)	N_{To} Reference value to output speed during continuous operation at rated torque	Backlash	Lost motion	Torsional rigidity (Representative values)	Start-up Efficiency	M_0 Allowable moment (Note 3)	α Dimension α	
		(Nm)	(rpm)	(h)	(Nm)	(Nm)	(rpm)	(rpm)	(rpm)	(arc.min.)	(arc.min.)	(Nm/arc.min.)	(%)	(Nm)	(mm)	
RDS-010C	081 (81)	98	15	6,000	245	490	3,500	43	43	1.0	1.0	47	65	686	91.2	Input Unit Code : B0 ——P.28 Input Unit Code : B1 ——P.29
	108 (108)							32	32							
	153 (153)							23	23							
	189 (189)							19	19							
	243 (243)							14	14							
RDS-027C	100 (99.82)	265	15	6,000	662	1,323	3,500	35	35	1.0	1.0	147	70	980	112	Input Unit Code : B0 ——P.30 Input Unit Code : B1 ——P.31
	142 (141.68)							25	25							
	184 (184)							19	19							
	233 (233.45)							15	15							
RDS-050C	109 (109)	490	15	6,000	1,225	2,450	3,000	28	28	1.0	1.0	255	70	1,764	136.8	Input Unit Code : B2 ——P.32 Input Unit Code : B3 ——P.33
	153 (152.6)							20	20							
	196 (196.2)							15	15							
	240 (239.8)							13	13							
RDS-100C	101 (100.5)	980	15	6,000	2,450	4,900	3,000	30	20	1.0	1.0	510	80	2,450	148.9	Input Unit Code : B2 ——P.34 Input Unit Code : B3 ——P.35
	150 (150)							20	17							
	210 (210)							14	14							
	258 (258)							12	12							
RDS-200C	106 (105.83)	1,960	15	6,000	4,900	9,800	2,000	19	16	1.0	1.0	980	80	8,820	204.4	Input Unit Code : B4 ——P.36 Input Unit Code : B5 ——P.37
	156 (155.96)							13	12							
	206 (206.09)							10	10							
	245 (245.08)							8	8							
RDS-320C	115 (115)	3,136	15	6,000	7,840	15,680	2,000	17	17	1.0	1.0	1,960	80	20,580	245.9	Input Unit Code : B4 ——P.38 Input Unit Code : B5 ——P.39
	157 (157)							13	13							
	207 (207)							10	10							
	253 (253)							8	8							

Notes:
1. The rating table shows the specification values including the entry fields for reduction gear values.
2. The allowable speed may be limited by heat depending on the operating rate. Make sure the surface temperature of the reduction gear does not exceed 60°C during use.
3. The allowable moment will differ depending on the thrust load. Check the allowable moment diagram.
4. For the moment of inertia of the reduction gears, refer to the external dimension drawings for the reduction gear.

Model Code: RDS-006E-XXX-B0 (Corresponding motor shaft diameter: Ø8 to Ø14)





SECTION V-V

注記

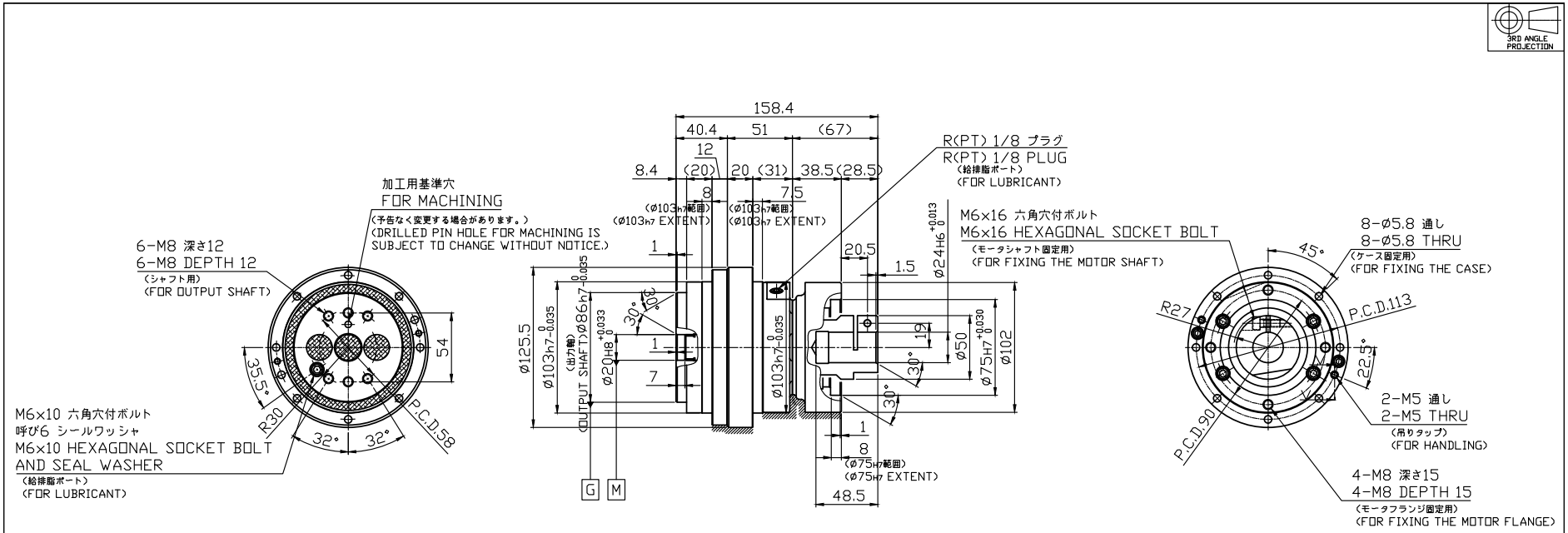
1.フランジ固定用8-M5六角穴付ボルトは、締付トルク9.01±0.49N-mにて締付けること。
2.シャフト用6-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G Mは、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

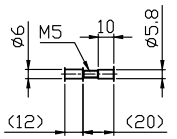
NOTE

1.Tightening torque of 8-M5 hexagon socket headed bolt for fixing case is 9.01±0.49N-m.
2.Tightening torque of 6-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
31	RDS-006E-031-B0	5.7	1.16×10-4
43	RDS-006E-043-B0		1.14×10-4
54	RDS-006E-054-B0		1.14×10-4
79	RDS-006E-079-B0		1.13×10-4
103	RDS-006E-103-B0		1.12×10-4

Model Code: RDS-006E-XXX-B1 (Corresponding motor shaft diameter: Ø14 to Ø24)





SECTION V-V

注記

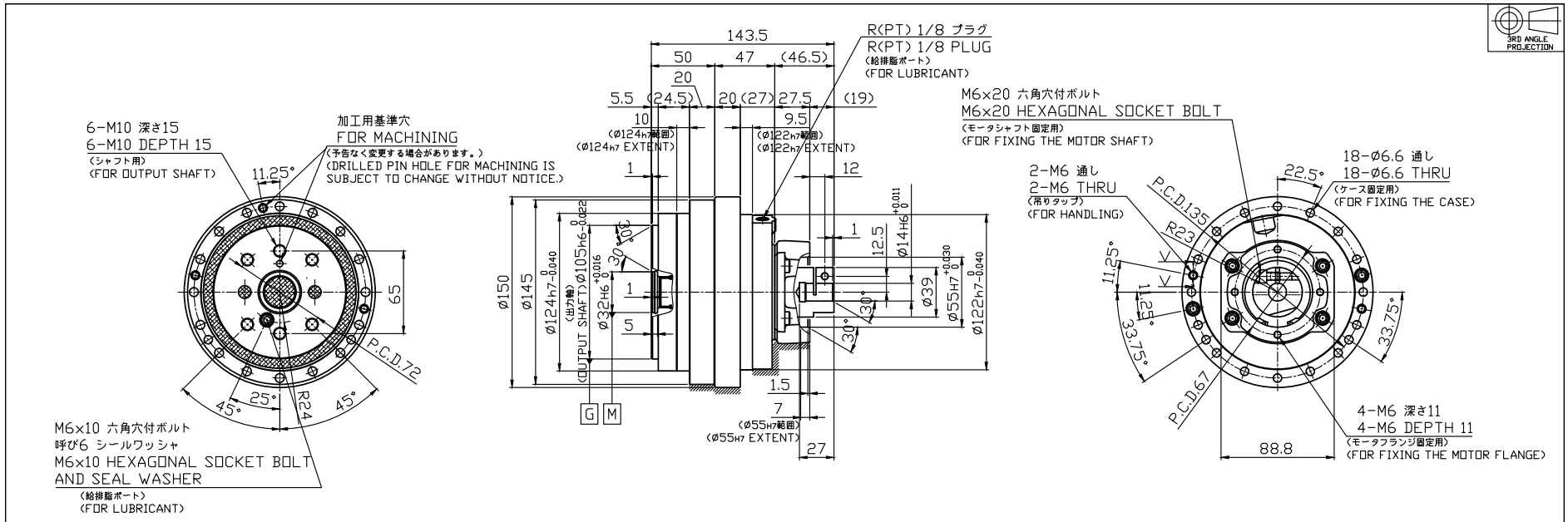
1.フランジ固定用8-M5六角穴付ボルトは、締付トルク9.01±0.49N-mにて締付けること。
2.シャフト用6-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G Mは、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

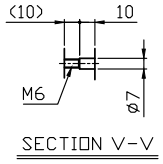
NOTE

1.Tightening torque of 8-M5 hexagon socket headed bolt for fixing case is 9.01±0.49N-m.
2.Tightening torque of 6-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
31	RDS-006E-031-B1	6.8	2.50x10-4
43	RDS-006E-043-B1		2.48x10-4
54	RDS-006E-054-B1		2.47x10-4
79	RDS-006E-079-B1		2.47x10-4
103	RDS-006E-103-B1		2.46x10-4

Model Code: RDS-020E-XXX-B0 (Corresponding motor shaft diameter: Ø8 to Ø14)





注記

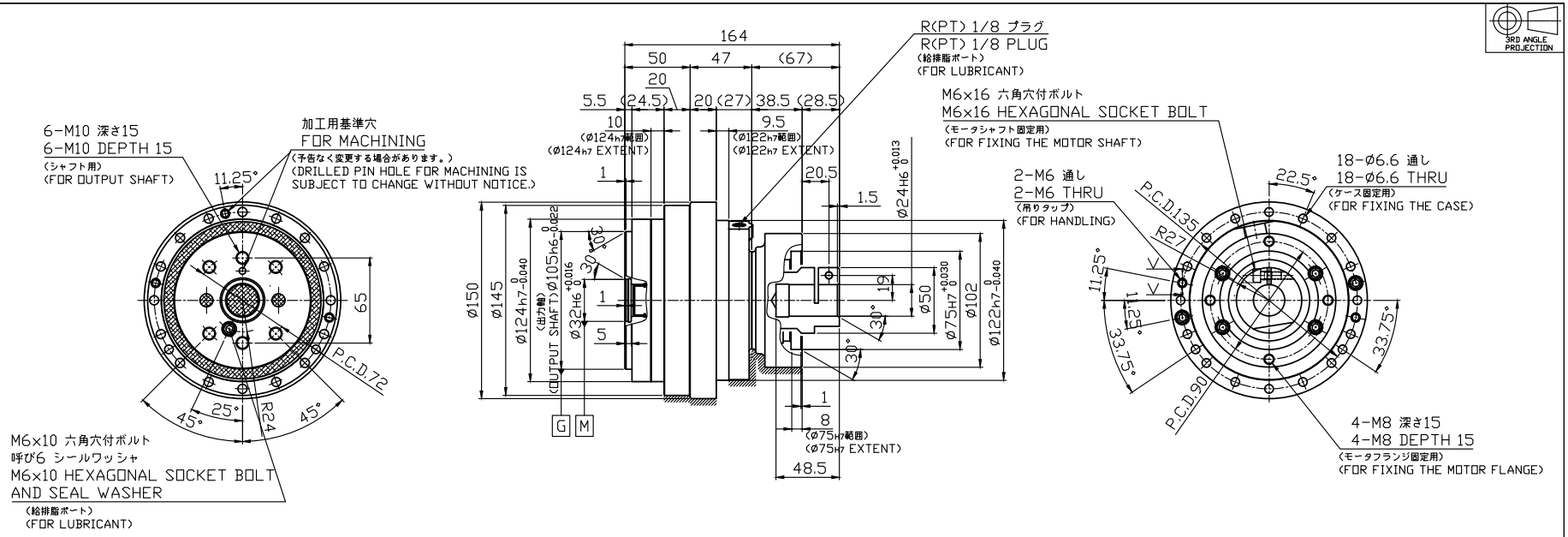
1. フランジ固定用18-M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
2. シャフト用6-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3. モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4. ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5. インロー G Mは、どちらか一方を選択し、使用のこと。
6. 減速機内部には、弊社指定潤滑剤を充填済。
7. 塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

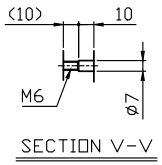
NOTE

1. Tightening torque of 18-M6 hexagon socket headed bolt for fixing case is 15.6±0.78N-m.
2. Tightening torque of 6-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3. Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4. Bolt shall be used with corned disk spring for heavy duty.
5. Use one of G or M.
6. The specified lubricant is already sealed in before shipment.
7. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD²/4) 入力軸換算値 The Motor Axis Conversion (kg-m²)
41	RDS-020E-041-B0	8.4	1.30×10^{-4}
57	RDS-020E-057-B0		1.23×10^{-4}
81	RDS-020E-081-B0		1.18×10^{-4}
105	RDS-020E-105-B0		1.16×10^{-4}
121	RDS-020E-121-B0		1.15×10^{-4}
161	RDS-020E-161-B0		1.14×10^{-4}

Model Code: RDS-020E-XXX-B1 (Corresponding motor shaft diameter: Ø14 to Ø24)





注記

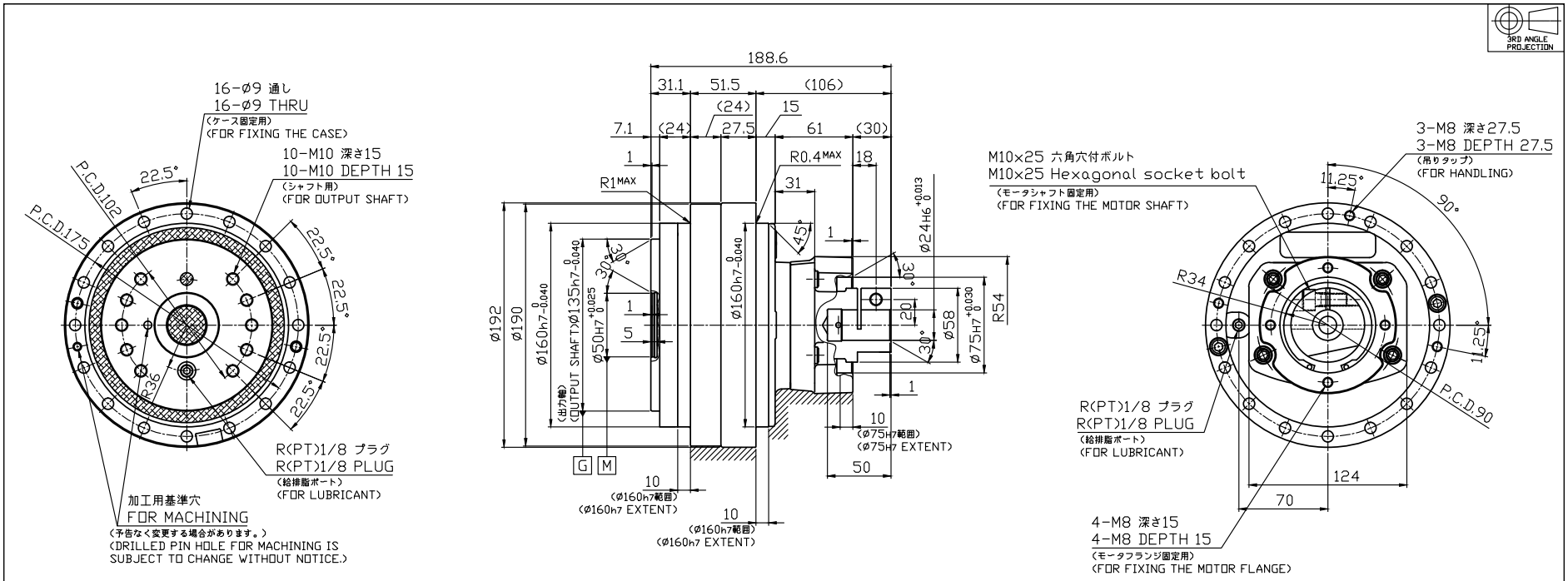
1.フランジ固定用18-M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
2.シャフト用6-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G Mは、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 18-M6 hexagon socket headed bolt for fixing case is 15.6±0.78N-m.
2.Tightening torque of 6-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDS-020E-041-B1	9.5	2.64×10-4
57	RDS-020E-057-B1		2.57×10-4
81	RDS-020E-081-B1		2.52×10-4
105	RDS-020E-105-B1		2.50×10-4
121	RDS-020E-121-B1		2.49×10-4
161	RDS-020E-161-B1		2.48×10-4

Model Code: RDS-040E-XXX-B2 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

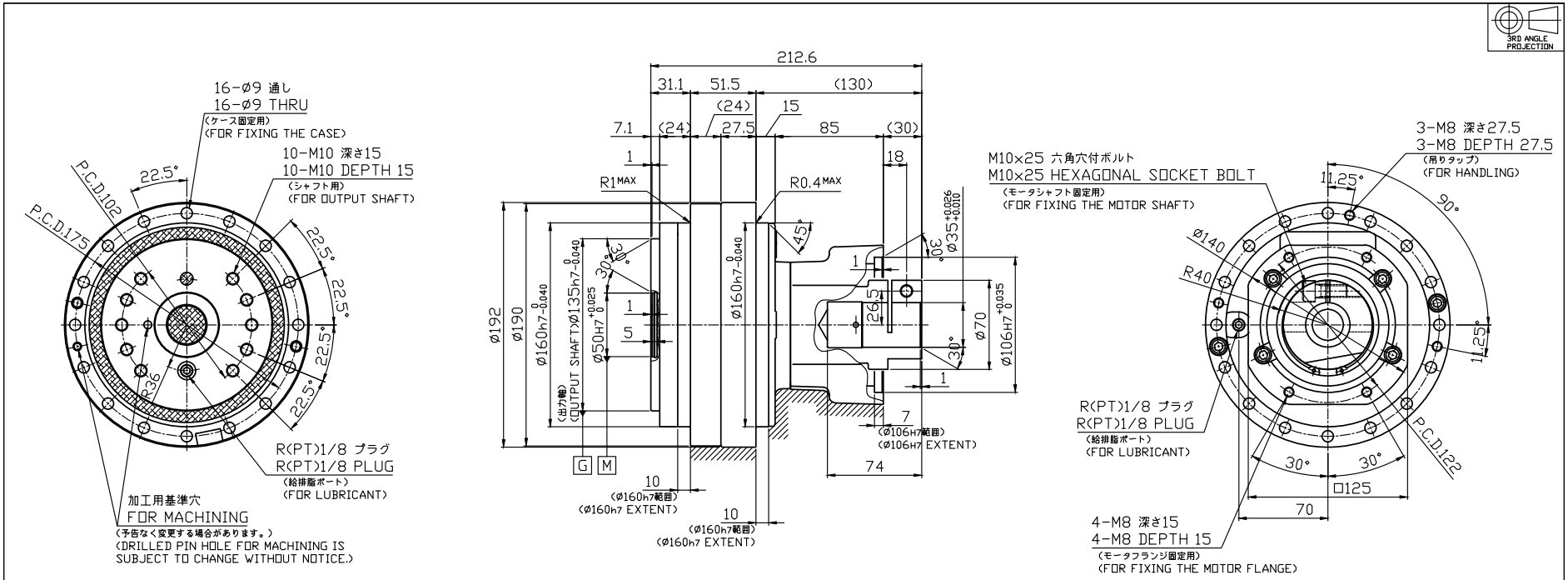
1.ケース固定用16-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用10-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 16-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 10-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDS-040E-041-B2	17.5	7.17x10-4
57	RDS-040E-057-B2		6.93x10-4
81	RDS-040E-081-B2		6.78x10-4
105	RDS-040E-105-B2		6.70x10-4
121	RDS-040E-121-B2		6.67x10-4
153	RDS-040E-153-B2		6.63x10-4

Model Code: RDS-040E-XXX-B3 (Corresponding motor shaft diameter: Ø25 to Ø35)



注記

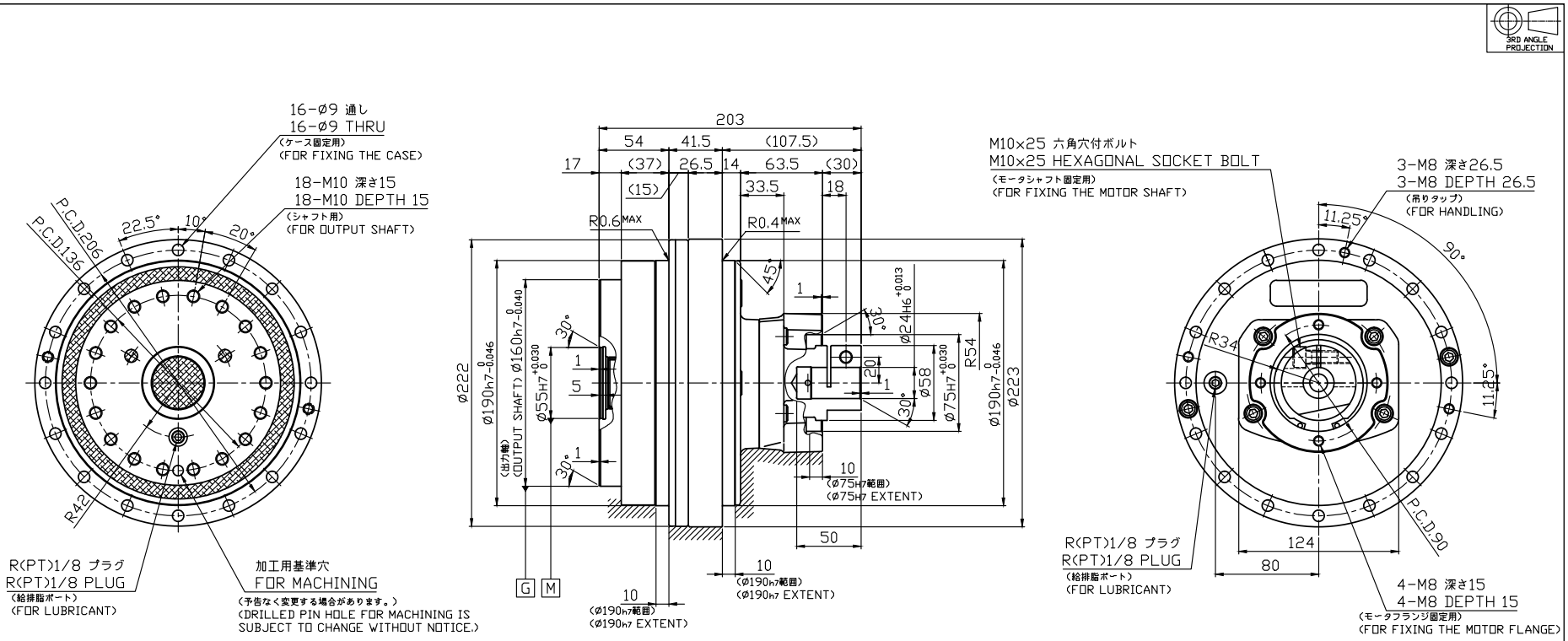
1.ケース固定用16-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用10-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装 塗装色 エポキシ マンセルNo.N1.5(黒色) 塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 16-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 10-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDS-040E-041-B3	20.0	1.31x10-3
57	RDS-040E-057-B3		1.28x10-3
81	RDS-040E-081-B3		1.27x10-3
105	RDS-040E-105-B3		1.26x10-3
121	RDS-040E-121-B3		1.26x10-3
153	RDS-040E-153-B3		1.25x10-3

Model Code: RDS-080E-XXX-B2 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

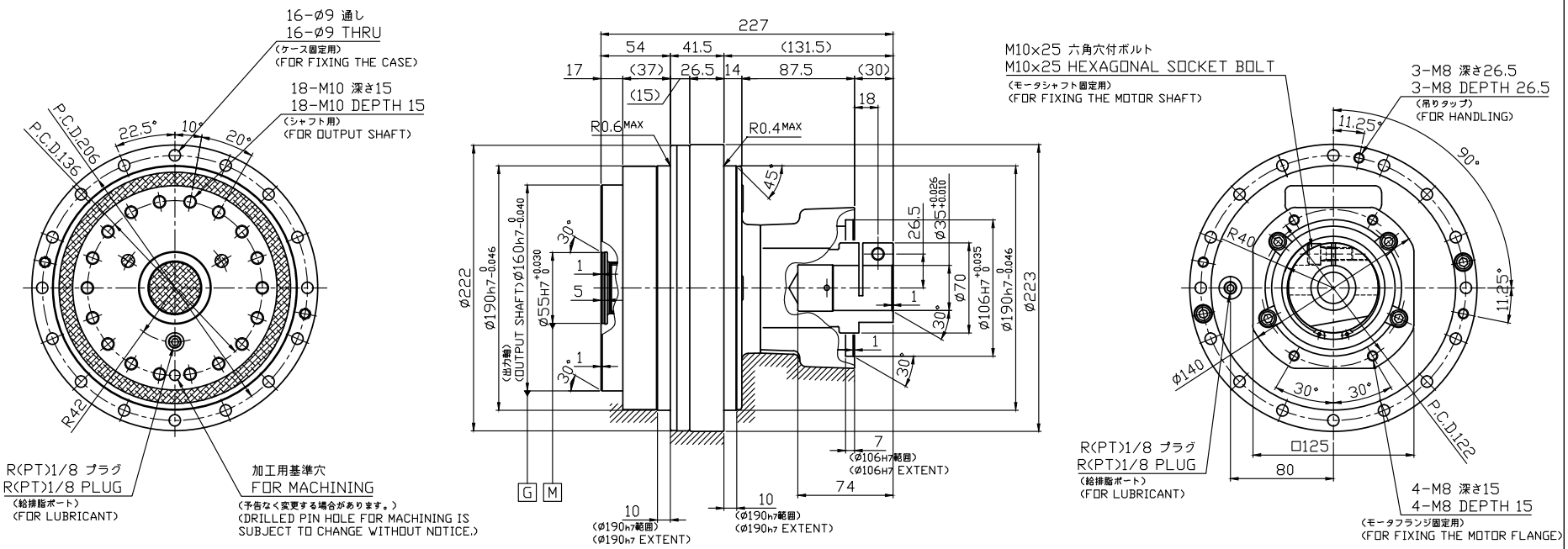
1.ケース固定用16-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用18-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装 塗装色 エポキシ マンセルNo.N1.5(黒色) 塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 16-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 18-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDS-080E-041-B2	23.8	7.91x10-4
57	RDS-080E-057-B2		7.44x10-4
81	RDS-080E-081-B2		7.13x10-4
101	RDS-080E-101-B2		6.99x10-4
121	RDS-080E-121-B2		6.90x10-4
153	RDS-080E-153-B2		6.80x10-4

Model Code: RDS-080E-XXX-B3 (Corresponding motor shaft diameter: Ø25 to Ø35)



注記

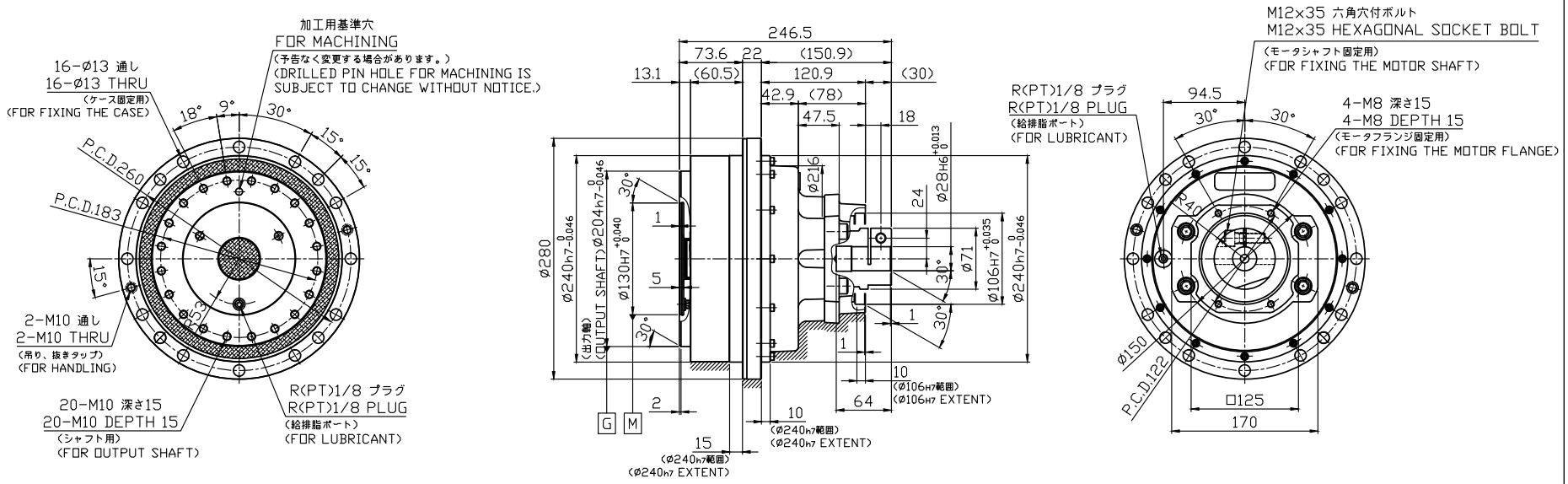
1.ケース固定用16-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用18-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 16-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 18-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDS-080E-041-B3	26.3	1.38×10-3
57	RDS-080E-057-B3		1.33×10-3
81	RDS-080E-081-B3		1.30×10-3
101	RDS-080E-101-B3		1.29×10-3
121	RDS-080E-121-B3		1.28×10-3
153	RDS-080E-153-B3		1.27×10-3

Model Code: RDS-160E-XXX-B4 (Corresponding motor shaft diameter: Ø19 to Ø28)



注記

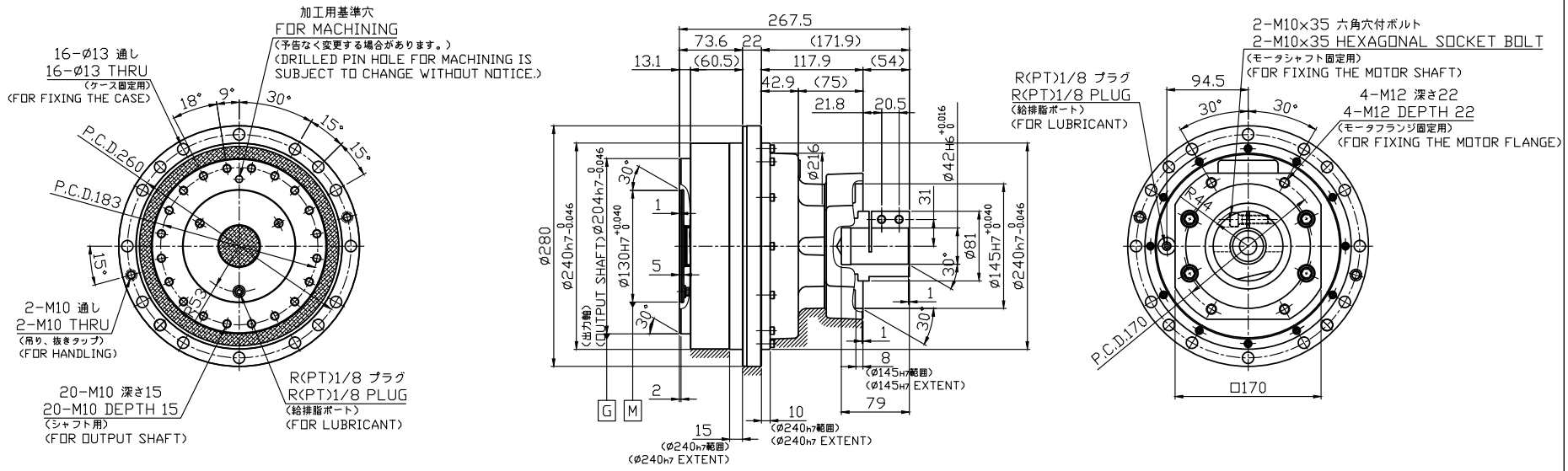
1.ケース固定用16-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用20-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 16-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 20-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M12 hexagon socket headed bolt for fixing motor shaft is 129±6.37N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD²/4) 入力軸換算値 The Motor Axis Conversion (kg-m²)
66	RDS-160E-066-B4	43.4	2.08x10⁻³
81	RDS-160E-081-B4		2.03x10⁻³
101	RDS-160E-101-B4		1.98x10⁻³
121	RDS-160E-121-B4		1.94x10⁻³
145	RDS-160E-145-B4		1.91x10⁻³
171	RDS-160E-171-B4		1.88x10⁻³

Model Code: RDS-160E-XXX-B5 (Corresponding motor shaft diameter: Ø32 to Ø42)



注記

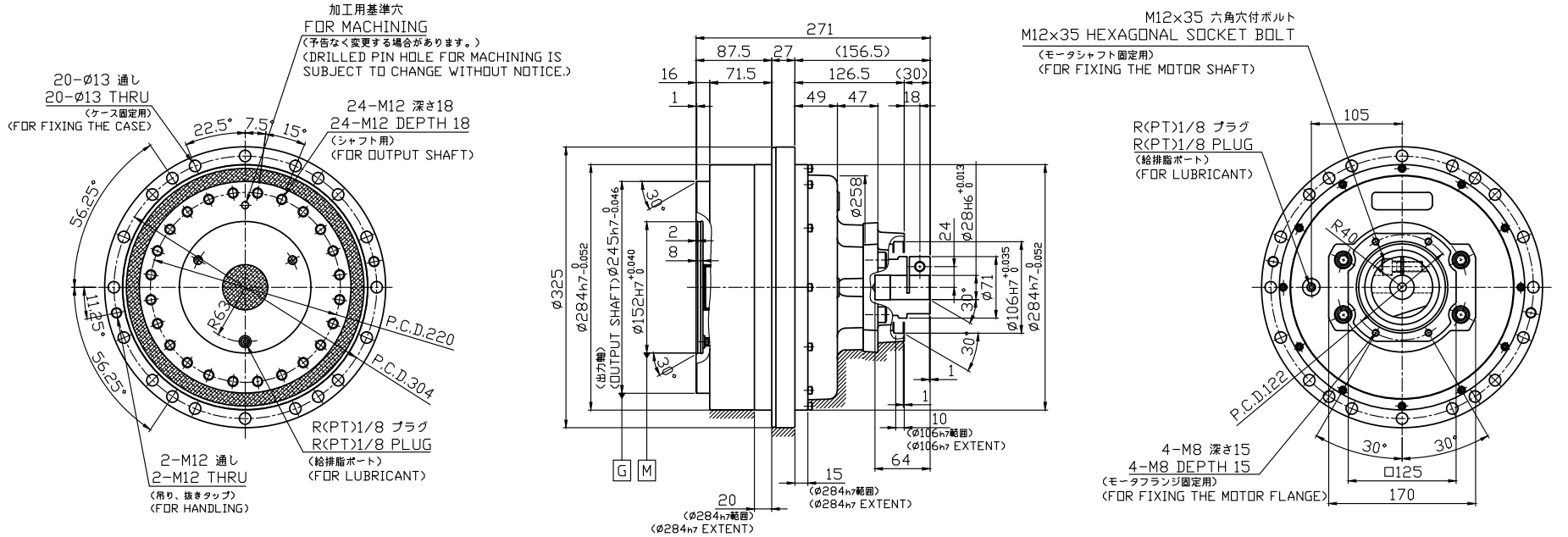
1.ケース固定用16-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用20-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用2-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 16-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 20-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of 2-M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
66	RDS-160E-066-B5	46.3	3.17×10-3
81	RDS-160E-081-B5		3.11×10-3
101	RDS-160E-101-B5		3.06×10-3
121	RDS-160E-121-B5		3.03×10-3
145	RDS-160E-145-B5		2.99×10-3
171	RDS-160E-171-B5		2.96×10-3

Model Code: RDS-320E-XXX-B4 (Corresponding motor shaft diameter: Ø19 to Ø28)



注記

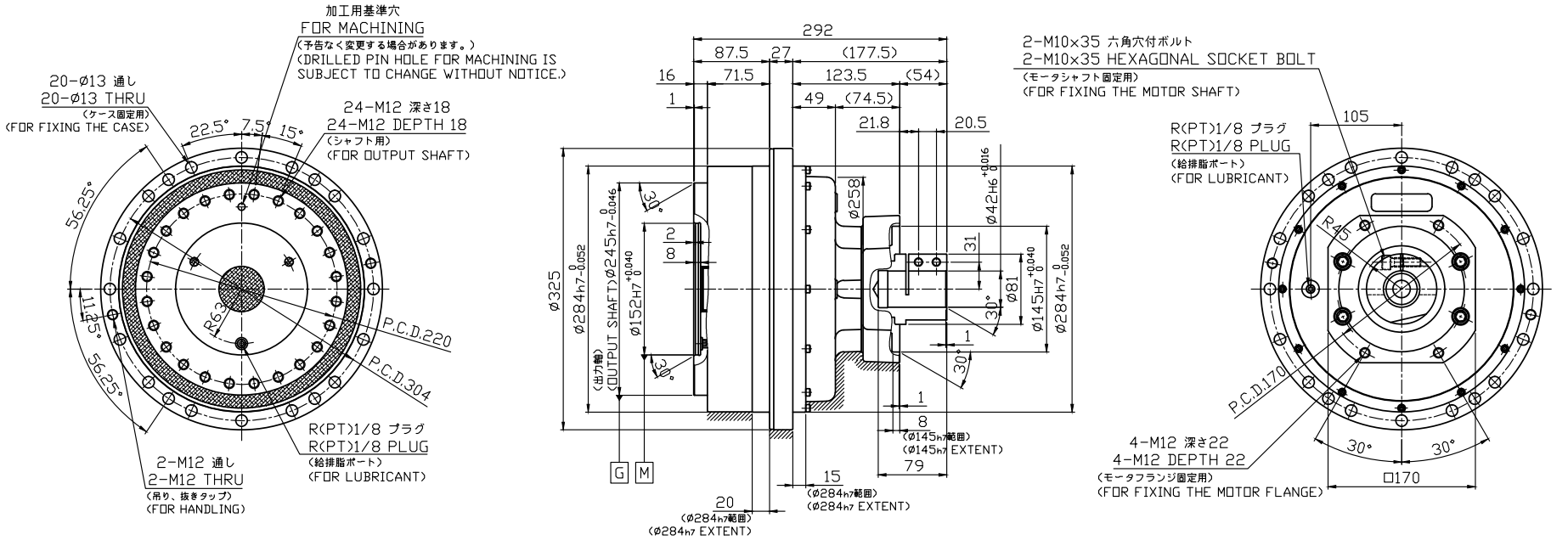
1.ケース固定用20-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用24-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
3.モータシャフト固定用M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー [G] [M] は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 20-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 24-M12 hexagon socket headed bolt on the output shaft is 129±6.37N-m.
3.Tightening torque of M12 hexagon socket headed bolt for fixing motor shaft is 129±6.37N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of [G] or [M].
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD²/4) 入力軸換算値 The Motor Axis Conversion (kg-m²)
66	RDS-320E-066-B4	68.9	2.60×10⁻³
81	RDS-320E-081-B4		2.40×10⁻³
101	RDS-320E-101-B4		2.26×10⁻³
121	RDS-320E-121-B4		2.17×10⁻³
141	RDS-320E-141-B4		2.10×10⁻³
185	RDS-320E-185-B4		2.01×10⁻³

Model Code: RDS-320E-XXX-B5 (Corresponding motor shaft diameter: Ø32 to Ø42)



注記

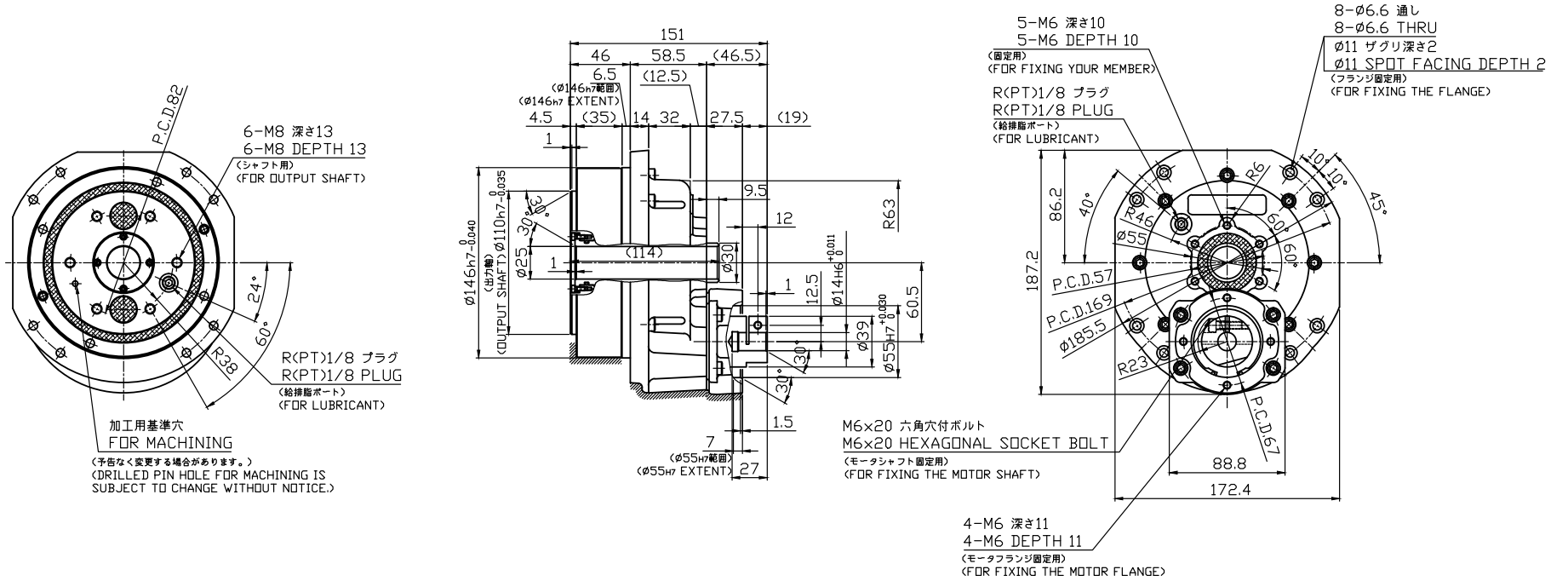
1.ケース固定用20-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用24-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
3.モータシャフト固定用2-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 20-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 24-M12 hexagon socket headed bolt on the output shaft is 129±6.37N-m.
3.Tightening torque of 2-M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
66	RDS-320E-066-B5	71.8	3.68x10-3
81	RDS-320E-081-B5		3.49x10-3
101	RDS-320E-101-B5		3.34x10-3
121	RDS-320E-121-B5		3.25x10-3
141	RDS-320E-141-B5		3.18x10-3
185	RDS-320E-185-B5		3.09x10-3

Model Code: RDS-010C-XXX-B0 (Corresponding motor shaft diameter: Ø8 to Ø14)



注記

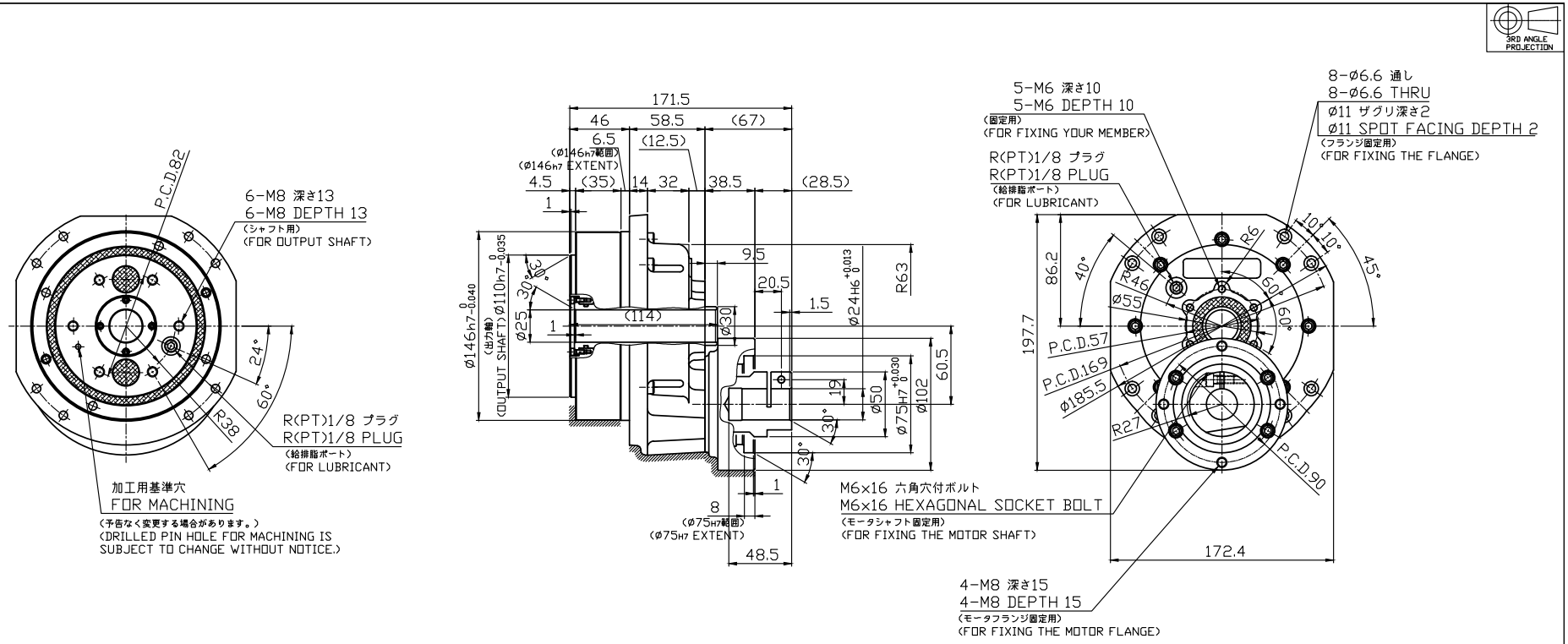
1.フランジ固定用8-M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
2.シャフト用6-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 8-M6 hexagon socket headed bolt for fixing case is 15.6±0.78N-m.
2.Tightening torque of 6-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia "I" (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
81	RDS-010C-081-B0	10.4	1.66x10-4
108	RDS-010C-108-B0		1.48x10-4
153	RDS-010C-153-B0		1.34x10-4
189	RDS-010C-189-B0		1.27x10-4
243	RDS-010C-243-B0		1.22x10-4

Model Code: RDS-010C-XXX-B1 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

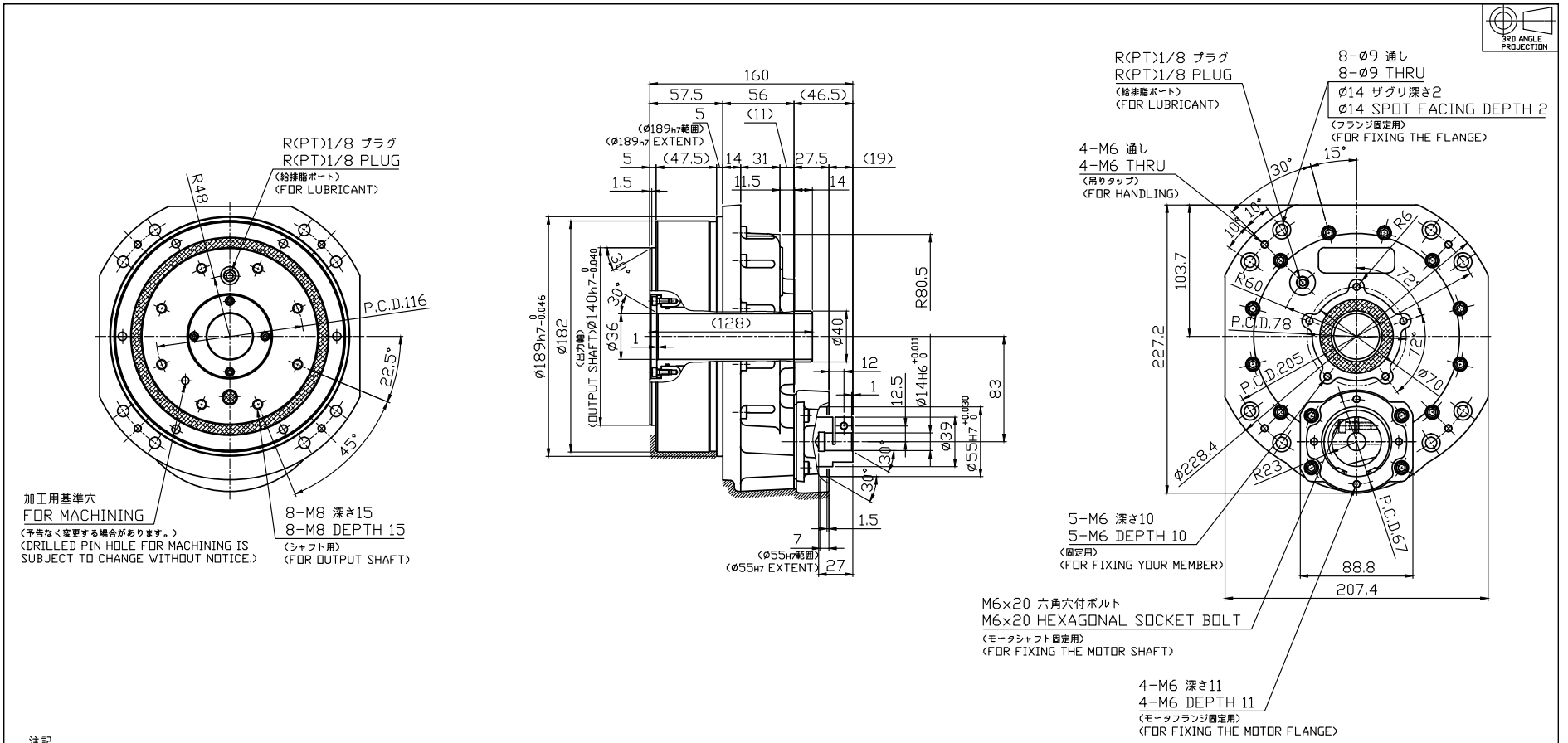
1. フランジ固定用8-M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
2. シャフト用6-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3. モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4. ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5. 減速機内部には、弊社指定潤滑剤を充填済。
6. 塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　　塗装範囲部分を ////// に示す。

NOTE

1. Tightening torque of 8-M6 hexagon socket headed bolt for fixing case is 15.6±0.78N-m.
2. Tightening torque of 6-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3. Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4. Bolt shall be used with corned disk spring for heavy duty.
5. The specified lubricant is already sealed in before shipment.
6. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia "I" (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
81	RDS-010C-081-B1	11.5	3.01×10-4
108	RDS-010C-108-B1		2.83×10-4
153	RDS-010C-153-B1		2.69×10-4
189	RDS-010C-189-B1		2.63×10-4
243	RDS-010C-243-B1		2.57×10-4

Model Code: RDS-027C-XXX-B0 (Corresponding motor shaft diameter: Ø8 to Ø14)



注記

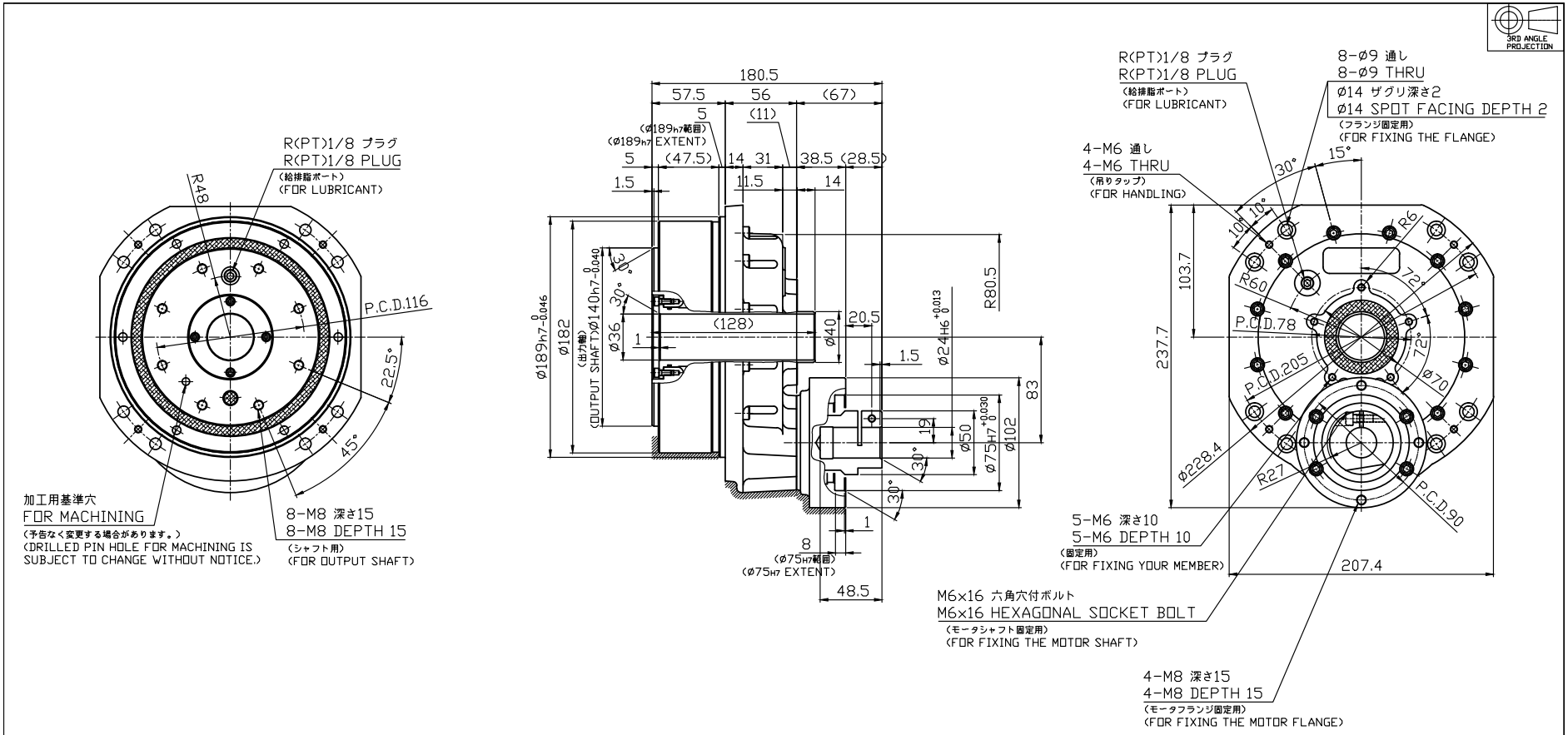
1.フランジ固定用8-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用8-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 8-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 8-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
99.82	RDS-027C-100-B0	16.5	3.05x10-4
141.68	RDS-027C-142-B0		2.26x10-4
184	RDS-027C-184-B0		1.93x10-4
233.45	RDS-027C-233-B0		1.69x10-4

Model Code: RDS-027C-XXX-B1 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

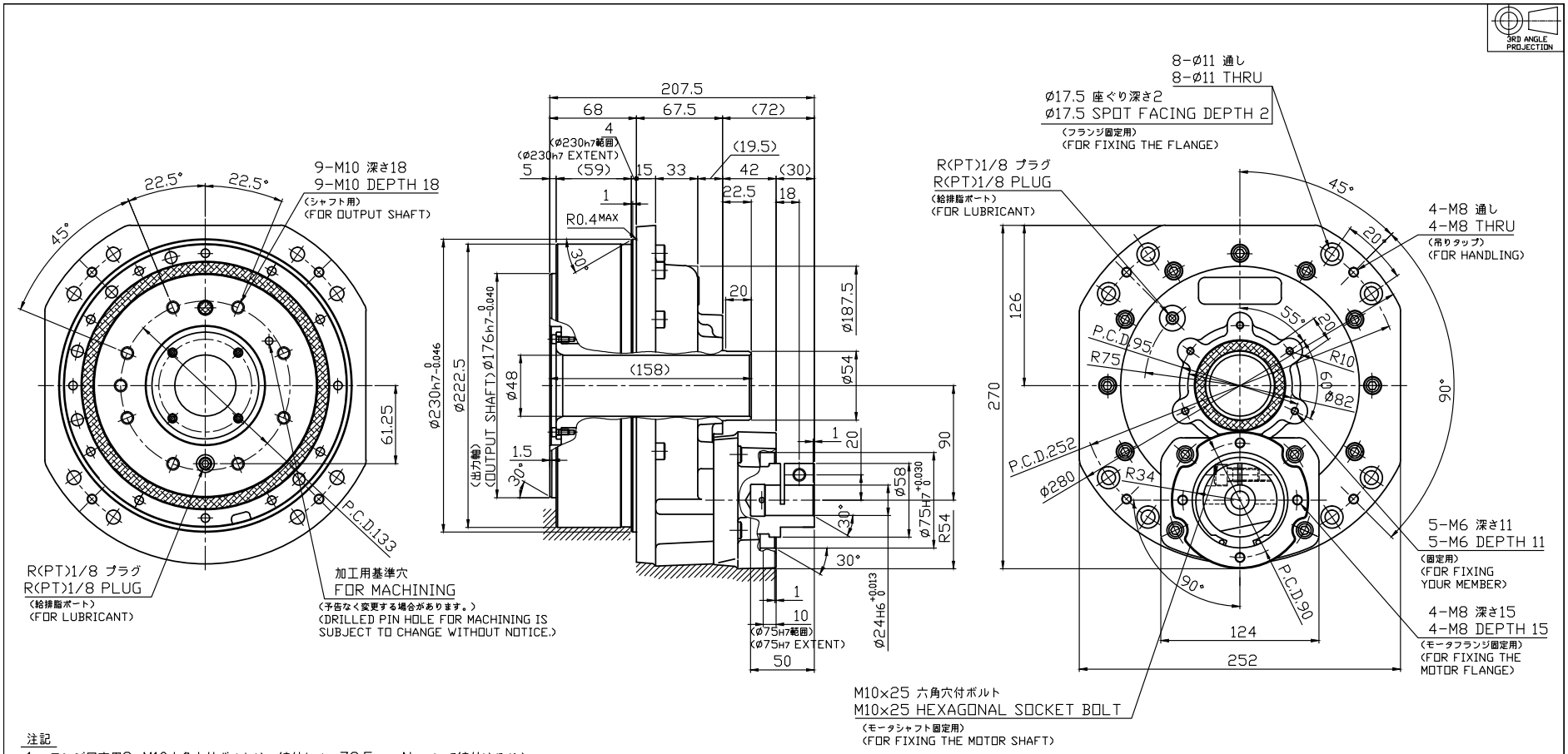
1.フランジ固定用8-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用8-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　　塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 8-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 8-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
99.82	RDS-027C-100-B1	17.6	4.40x10-4
141.68	RDS-027C-142-B1		3.61x10-4
184	RDS-027C-184-B1		3.29x10-4
233.45	RDS-027C-233-B1		3.04x10-4

Model Code: RDS-050C-XXX-B2 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

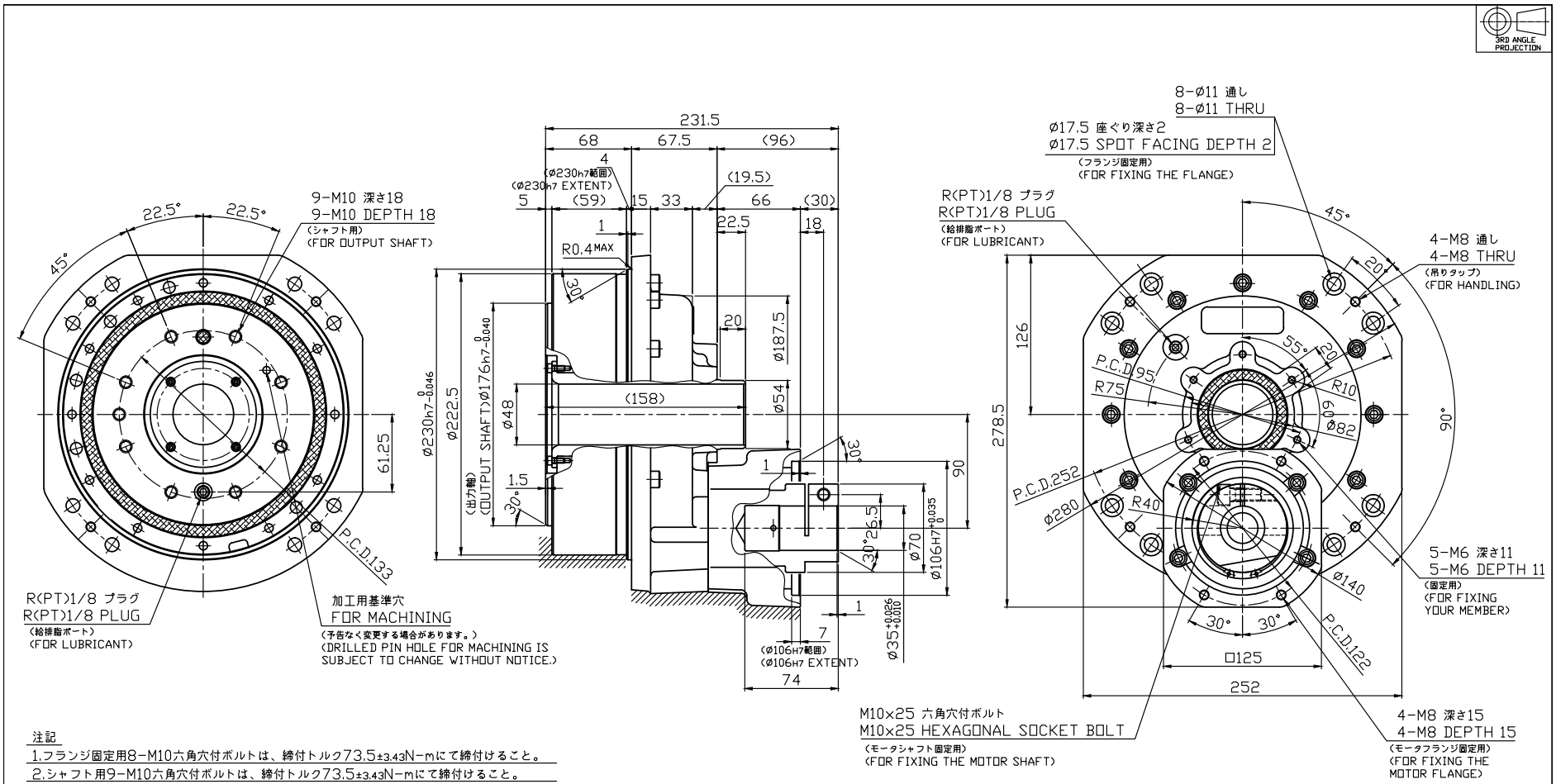
1.フランジ固定用8-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
2.シャフト用9-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 8-M10 hexagon socket headed bolt for fixing case is 73.5±3.43N-m.
2.Tightening torque of 9-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
109	RDS-050C-109-B2	29.9	8.23×10-4
152.6	RDS-050C-153-B2		7.52×10-4
196.2	RDS-050C-196-B2		7.18×10-4
239.8	RDS-050C-240-B2		6.99×10-4

Model Code: RDS-050C-XXX-B3 (Corresponding motor shaft diameter: Ø25 to Ø35)



注記

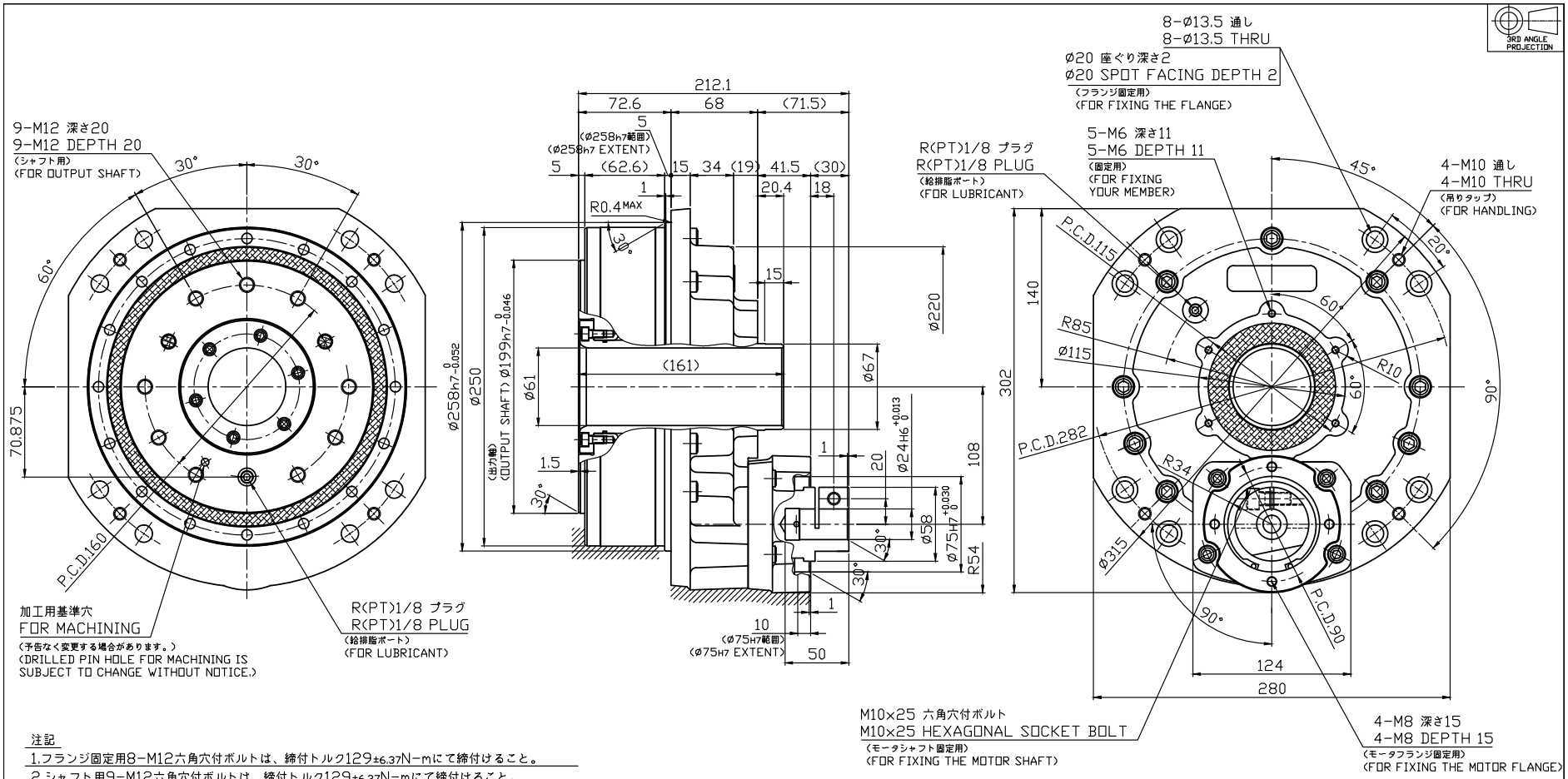
1.フランジ固定用8-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
2.シャフト用9-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 8-M10 hexagon socket headed bolt for fixing case is 73.5±3.43N-m.
2.Tightening torque of 9-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
109	RDS-050C-109-B3	32.3	1.41×10-3
152.6	RDS-050C-153-B3		1.34×10-3
196.2	RDS-050C-196-B3		1.31×10-3
239.8	RDS-050C-240-B3		1.29×10-3

Model Code: RDS-100C-XXX-B2 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

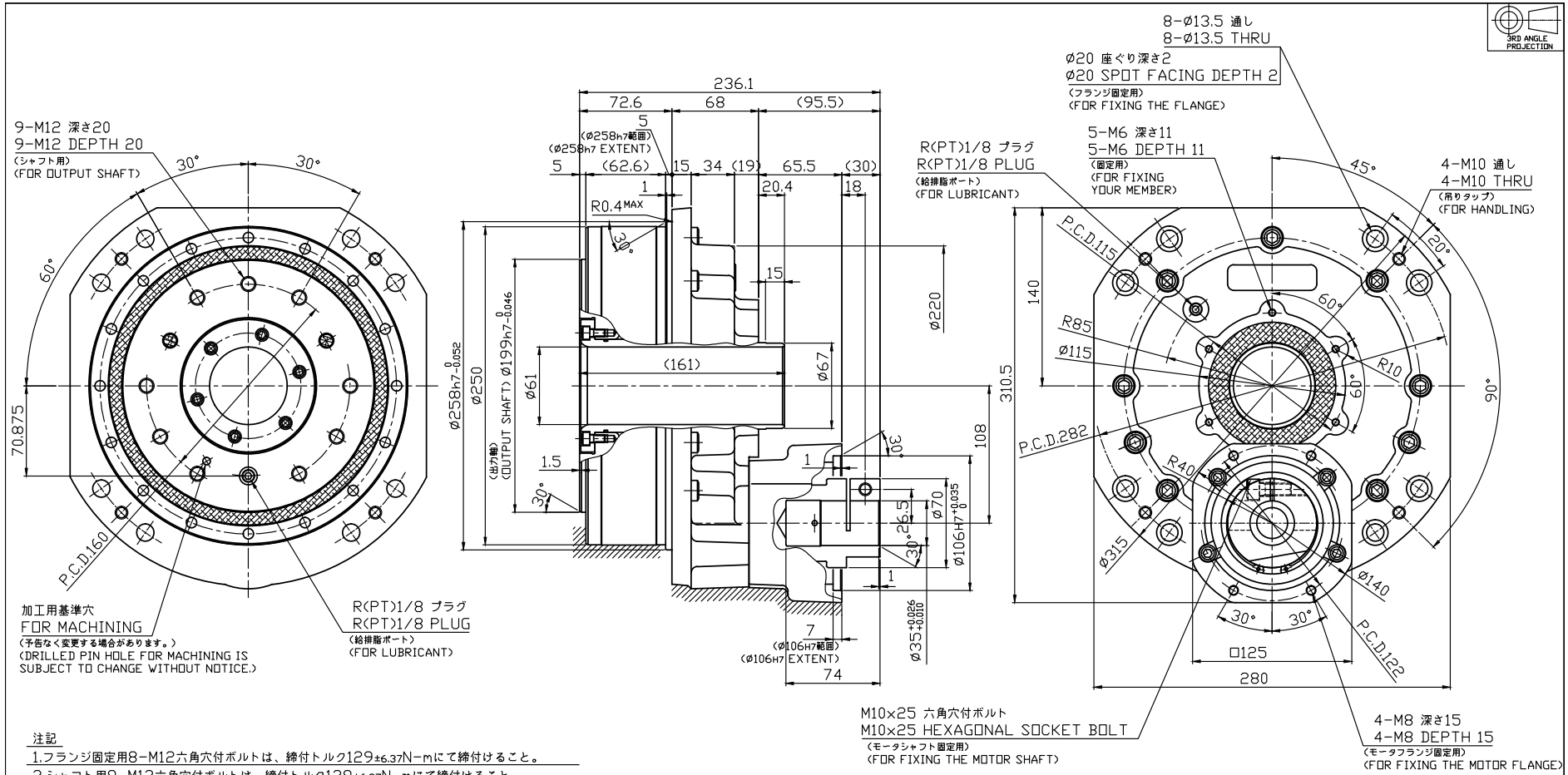
1.フランジ固定用8-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用9-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////に示す。

NOTE

1.Tightening torque of 8-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 9-M12 hexagon socket headed bolt on the output shaft is 129±6.37N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.////area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
100.5	RDS-100C-101-B2	37.9	1.40×10-3
150	RDS-100C-150-B2		1.06×10-3
210	RDS-100C-210-B2		8.91×10-4
258	RDS-100C-258-B2		8.23×10-4

Model Code: RDS-100C-XXX-B3 (Corresponding motor shaft diameter: Ø25 to Ø35)

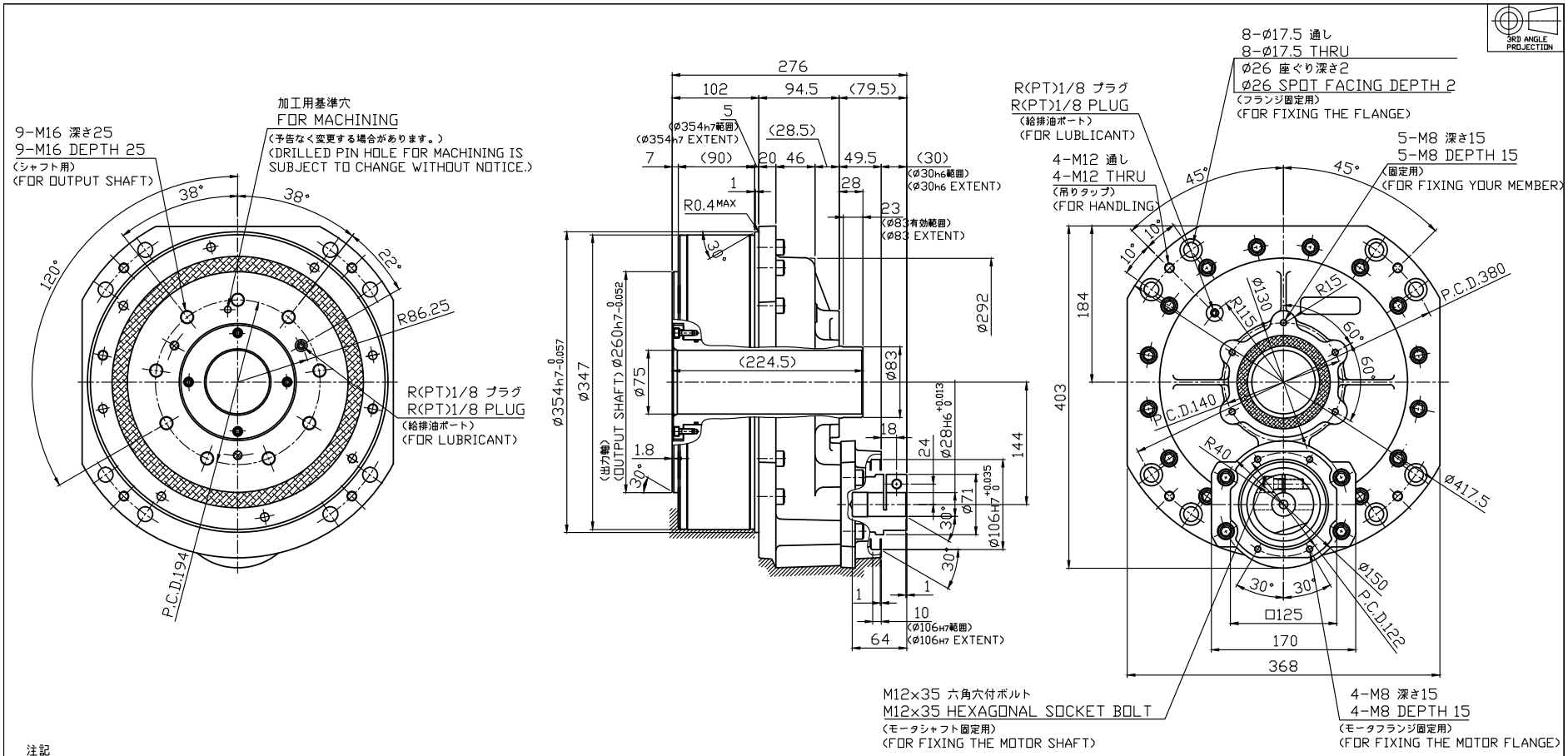


注記
1.フランジ固定用8-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用9-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE
1.Tightening torque of 8-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 9-M12 hexagon socket headed bolt on the output shaft is 129±6.37N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
100.5	RDS-100C-101-B3	40.4	1.99×10-3
150	RDS-100C-150-B3		1.65×10-3
210	RDS-100C-210-B3		1.48×10-3
258	RDS-100C-258-B3		1.41×10-3

Model Code: RDS-200C-XXX-B4 (Corresponding motor shaft diameter: Ø19 to Ø28)



注記

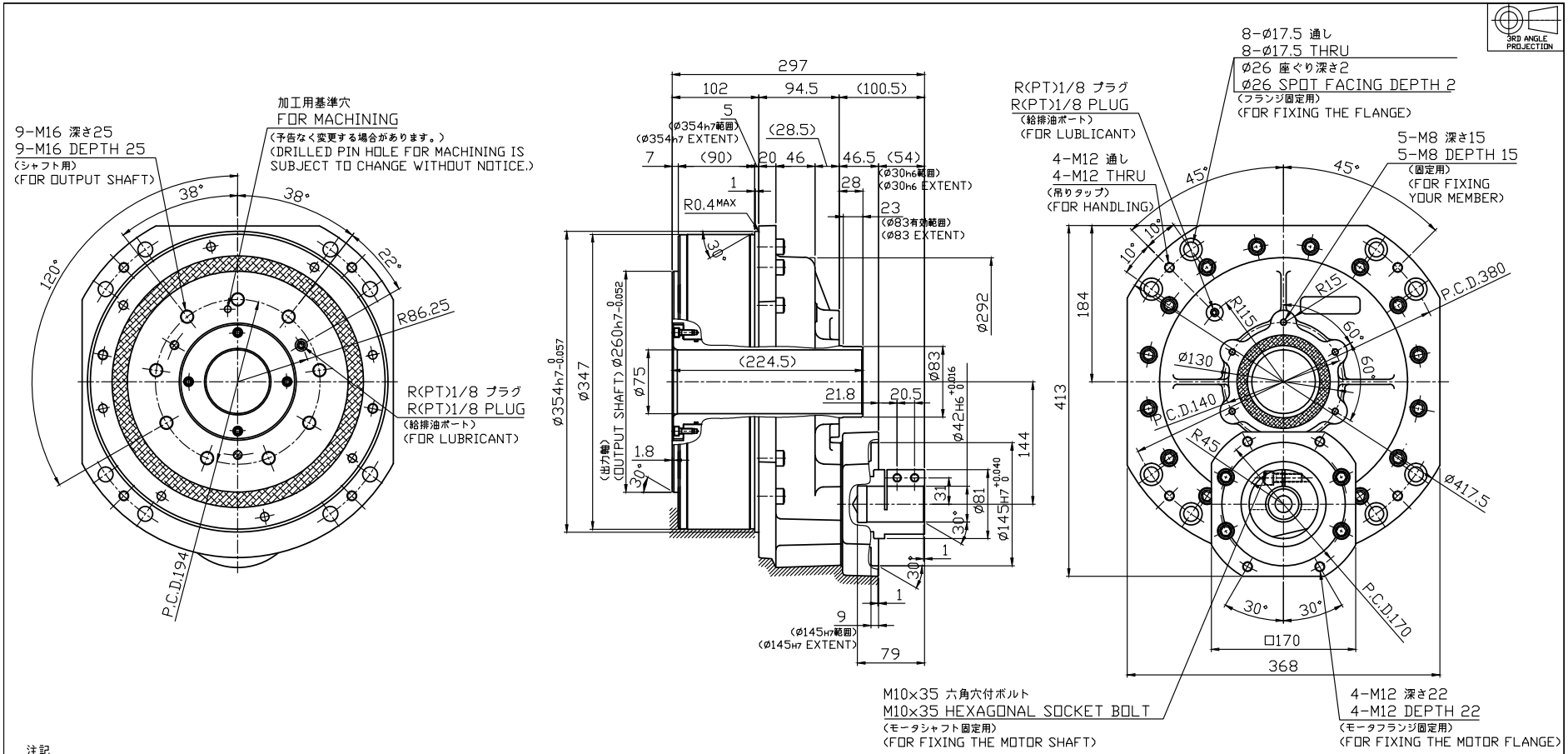
1.フランジ固定用8-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
2.シャフト用9-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
3.モータシャフト固定用M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 8-M16 hexagon socket headed bolt for fixing case is 319±15.9N-m.
2.Tightening torque of 9-M16 hexagon socket headed bolt on the output shaft is 319±15.9N-m.
3.Tightening torque of M12 hexagon socket headed bolt for fixing motor shaft is 129±6.37N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
105.83	RDS-200C-106-B4	95.5	3.60×10-3
155.96	RDS-200C-156-B4		2.80×10-3
206.09	RDS-200C-206-B4		2.43×10-3
245.08	RDS-200C-245-B4		2.28×10-3

Model Code: RDS-200C-XXX-B5 (Corresponding motor shaft diameter: Ø32 to Ø42)



注記

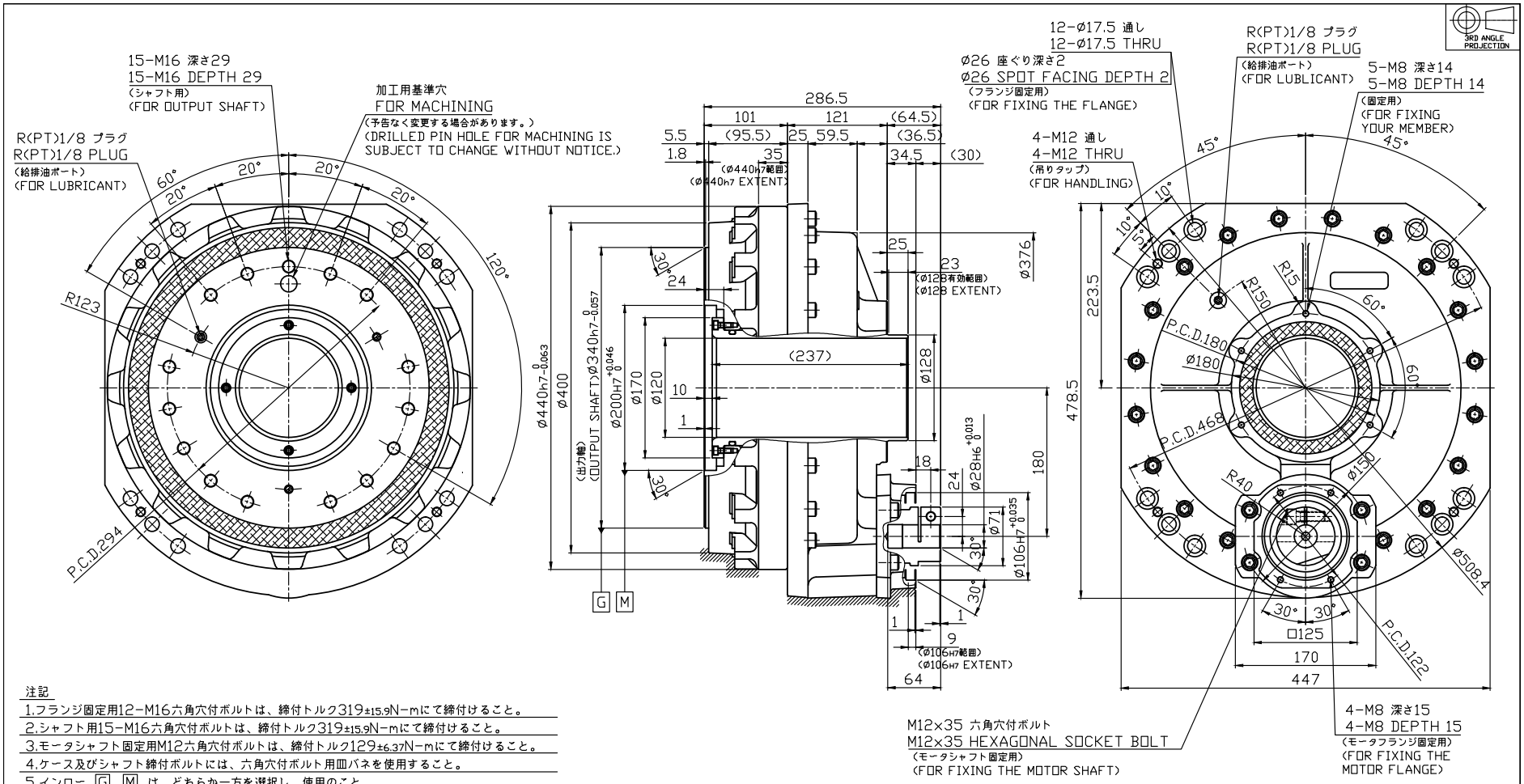
1.フランジ固定用8-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
2.シャフト用9-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
3.モータシャフト固定用2-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 8-M16 hexagon socket headed bolt for fixing case is 319±15.9N-m.
2.Tightening torque of 9-M16 hexagon socket headed bolt on the output shaft is 319±15.9N-m.
3.Tightening torque of 2-M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
105.83	RDS-200C-106-B5	98.4	4.69×10-3
155.96	RDS-200C-156-B5		3.89×10-3
206.09	RDS-200C-206-B5		3.51×10-3
245.08	RDS-200C-245-B5		3.36×10-3

Model Code: RDS-320C-XXX-B4 (Corresponding motor shaft diameter: Ø19 to Ø28)



注記

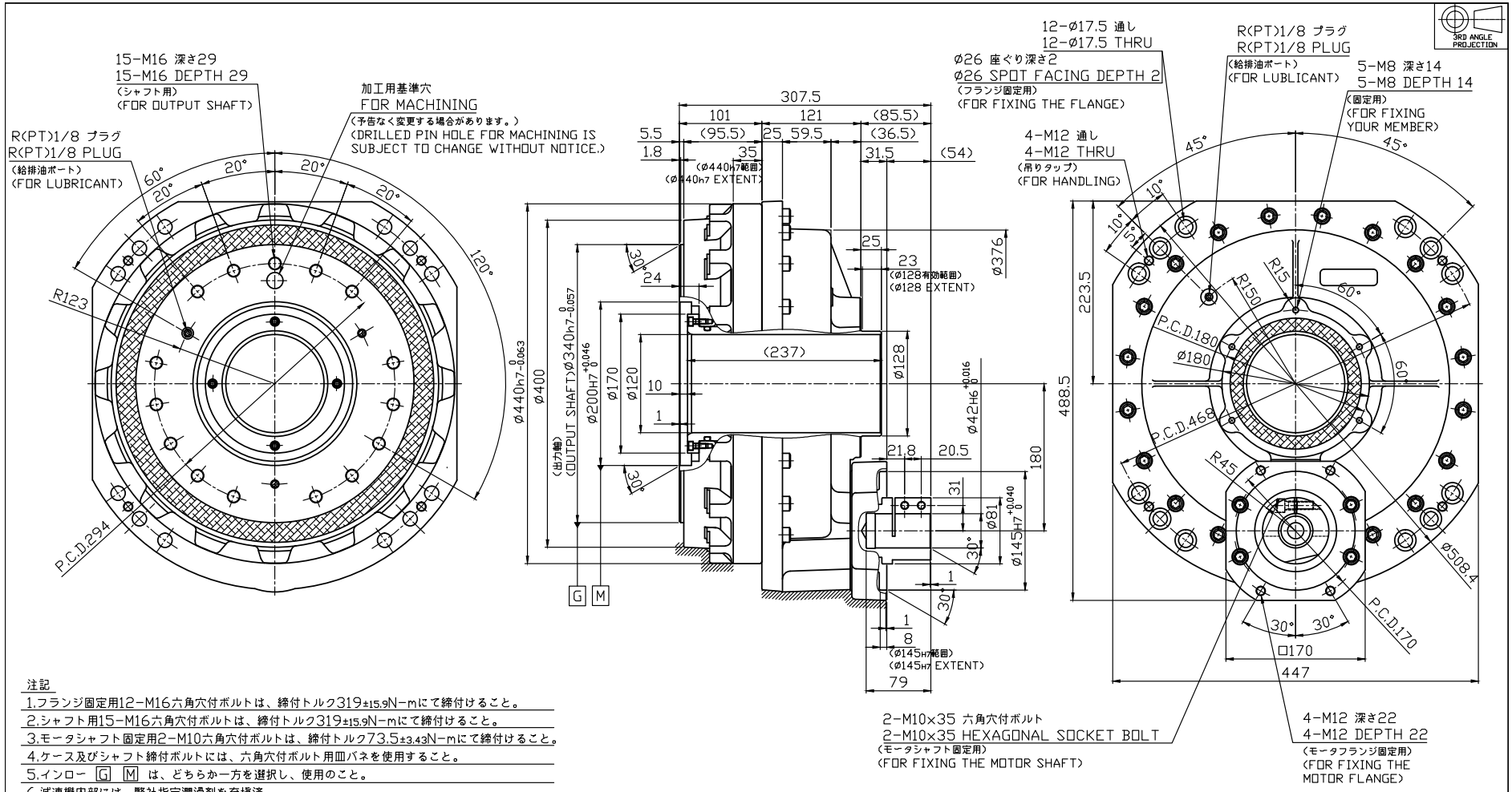
1.フランジ固定用12-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
2.シャフト用15-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
3.モータシャフト固定用M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 12-M16 hexagon socket headed bolt for fixing case is 319±15.9N-m.
2.Tightening torque of 15-M16 hexagon socket headed bolt on the output shaft is 319±15.9N-m.
3.Tightening torque of M12 hexagon socket headed bolt for fixing motor shaft is 129±6.37N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
115	RDS-320C-115-B4	141.4	7.17×10-3
157	RDS-320C-157-B4		5.10×10-3
207	RDS-320C-207-B4		3.90×10-3
253	RDS-320C-253-B4		3.29×10-3

Model Code: RDS-320C-XXX-B5 (Corresponding motor shaft diameter: Ø32 to Ø42)



注記

1.フランジ固定用12-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
2.シャフト用15-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
3.モータシャフト固定用2-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 12-M16 hexagon socket headed bolt for fixing case is 319±15.9N-m.
2.Tightening torque of 15-M16 hexagon socket headed bolt on the output shaft is 319±15.9N-m.
3.Tightening torque of 2-M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
115	RDS-320C-115-B5	144.3	8.25×10-3
157	RDS-320C-157-B5		6.18×10-3
207	RDS-320C-207-B5		4.98×10-3
253	RDS-320C-253-B5		4.37×10-3

Right angle input type

Right Angle Input Type Code Description and Configuration Diagram

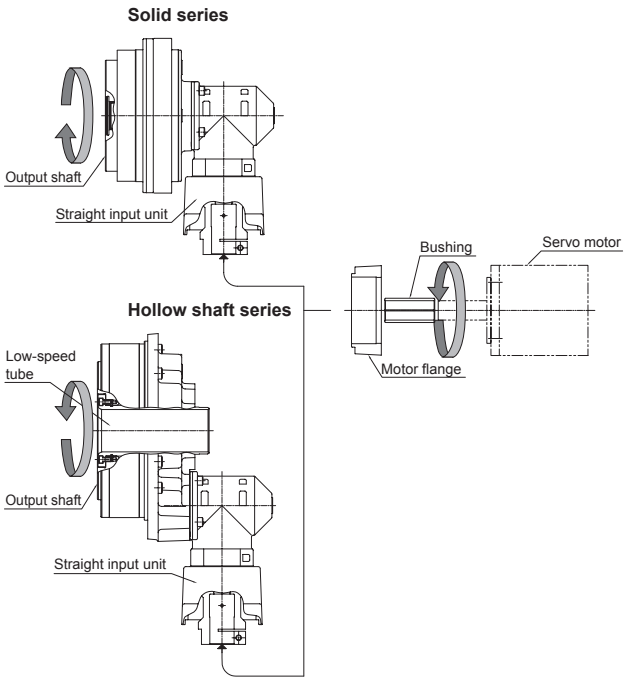
Product code

RDR – 080E – 041 – C3 – GD – ZZ

Model Code			Ratio Code	Input unit code	Motor flange code	Bushing code
Right angle input code	Torque code	Series code				
R	006	E: Solid series	031, 043, 054, 079, 103	C0 : Corresponding motor shaft diameter Ø8 to 14 C1 : Corresponding motor shaft diameter Ø14 to 24	2-letter code (code will differ depending on motor to be mounted)	2-letter code (code will differ depending on motor to be mounted)
	020		041, 057, 081, 105, 121, 161	C0 : Corresponding motor shaft diameter Ø8 to 14 C1 : Corresponding motor shaft diameter Ø14 to 24		
	040		041, 057, 081, 105, 121, 153	C2 : Corresponding motor shaft diameter Ø14 to 24 C3 : Corresponding motor shaft diameter Ø25 to 35		
	080		041, 057, 081, 101, 121, 153	C2 : Corresponding motor shaft diameter Ø14 to 24 C3 : Corresponding motor shaft diameter Ø25 to 35		
	160		066, 081, 101, 121, 145, 171	C4 : Corresponding motor shaft diameter Ø19 to 28 C5 : Corresponding motor shaft diameter Ø32 to 42		
	320		066, 081, 101, 121, 141, 185	C4 : Corresponding motor shaft diameter Ø19 to 28 C5 : Corresponding motor shaft diameter Ø32 to 42		
	010	C: Hollow shaft series	081, 108, 153, 189, 243	C0 : Corresponding motor shaft diameter Ø8 to 14 C1 : Corresponding motor shaft diameter Ø14 to 24		
	027		100, 142, 184, 233	C0 : Corresponding motor shaft diameter Ø8 to 14 C1 : Corresponding motor shaft diameter Ø14 to 24		
	050		109, 153, 196, 240	C2 : Corresponding motor shaft diameter Ø14 to 24 C3 : Corresponding motor shaft diameter Ø25 to 35		
	100		101, 150, 210, 258	C2 : Corresponding motor shaft diameter Ø14 to 24 C3 : Corresponding motor shaft diameter Ø25 to 35		
	200		106, 156, 206, 245	C4 : Corresponding motor shaft diameter Ø19 to 28 C5 : Corresponding motor shaft diameter Ø32 to 42		
	320		115, 157, 207, 253	C4 : Corresponding motor shaft diameter Ø19 to 28 C5 : Corresponding motor shaft diameter Ø32 to 42		

Note: For selection of motor flange and bushing, see the selection tables on pages 83 – 85 or visit the Nabtesco website (URL : http://precision.nabtesco.com/).

Configuration Diagram



Rating Table Right angle input type

Solid series

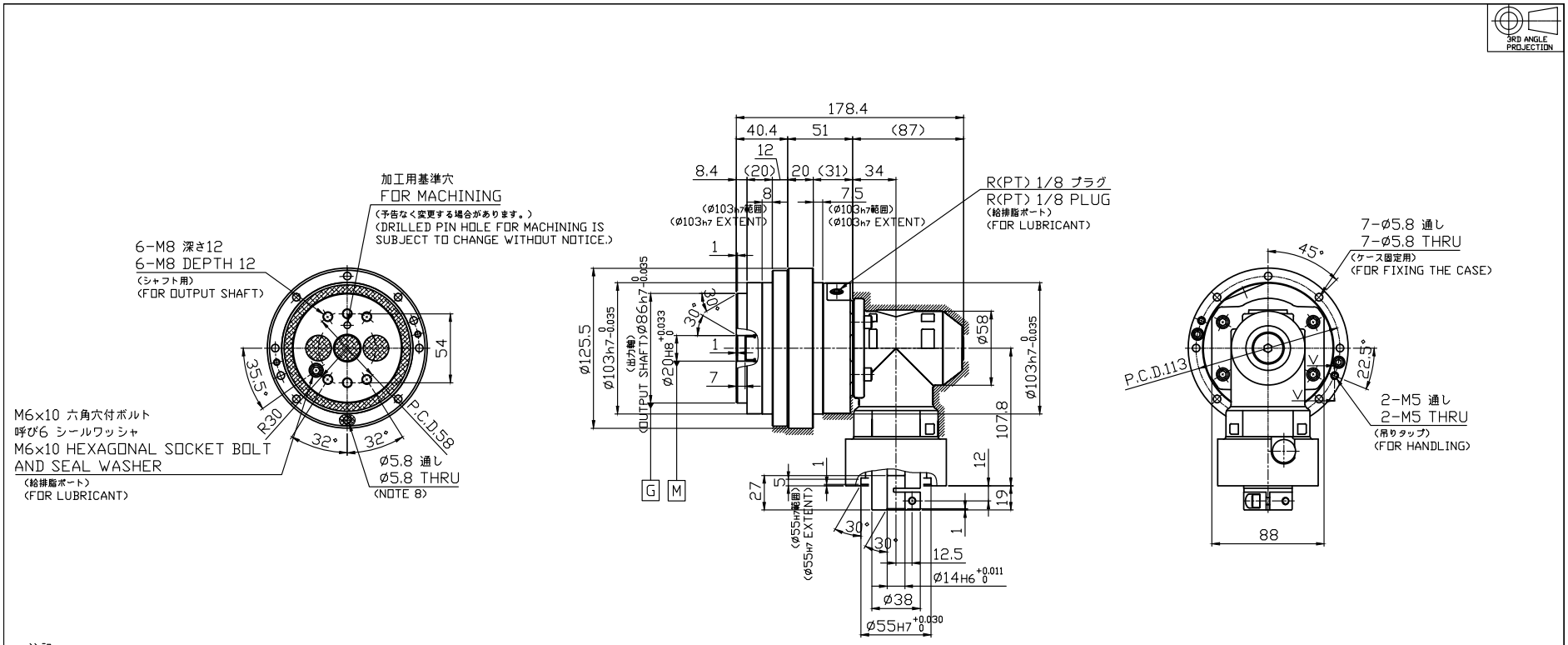
Model Code	Ratio code (actual gear ratio)	Reduction Gear														External Dimensions
		T_0 Rated Torque	N_0 Rated Output Speed	K Life Rating	T_{S1} Allowable Startup/Stop Torque	T_{S2} Momentary maximum allowable torque	N_{in} Allowable Input Speed (Note 2)	N_S Allowable Output Speed (Note 2)	N_{To} Reference value to output speed during continuous operation at rated torque	Backlash	Lost motion	Torsional rigidity (Representative values)	Start-up Efficiency	M_0 Allowable moment (Note 3)	α Dimension α	
		(Nm)	(rpm)	(h)	(Nm)	(Nm)	(rpm)	(rpm)	(rpm)	(arc.min.)	(arc.min.)	(Nm/arc.min.)	(%)	(Nm)	(mm)	
RDR-006E	031 (31)	58	30	6,000	117	294	3,500	100	100	2.0	2.0	20	70	196	77.8	Input Unit Code : C0 ——P.44 Input Unit Code : C1 ——P.45
	043 (43)							81	76							
	054 (53.5)							65	63							
	079 (79)							44	44							
	103 (103)							34	34							
RDR-020E	041 (41)	108	15	6,000	271	543	3,500	75	55	1.5	1.5	49	75	882	93.2	Input Unit Code : C0 ——P.46 Input Unit Code : C1 ——P.47
	057 (57)	151			378	755		61	44							
	081 (81)	167			412	833		43	35							
	105 (105)							33	30							
	121 (121)							29	28							
	161 (161)							22	22							
RDR-040E	041 (41)	400	15	6,000	1,000	2,000	3,000	70	32	1.5	1.5	108	70	1,666	114.6	Input Unit Code : C2 ——P.48 Input Unit Code : C3 ——P.49
	057 (57)	412			1,029	2,058		53	30							
	081 (81)							37	28							
	105 (105)							29	27							
	121 (121)							25	25							
	153 (153)							20	20							
RDR-080E	041 (41)	400	15	6,000	1,000	2,000	3,000	70	35	1.5	1.5	196	75	2,156	136.1	Input Unit Code : C2 ——P.50 Input Unit Code : C3 ——P.51
	057 (57)	556			1,390	2,781		53	31							
	081 (81)	784			1,960	3,920		37	29							
	101 (101)							30	27							
	121 (121)							25	25							
	153 (153)							20	20							
RDR-160E	066 (66)	1,568	15	6,000	3,920	7,840	2,000	30	20	1.5	1.5	392	75	3,920	167.3	Input Unit Code : C4 ——P.52 Input Unit Code : C5 ——P.53
	081 (81)							25	18							
	101 (101)							20	16							
	121 (121)							17	14							
	145 (145)							14	13							
	171 (171)							12	12							
RDR-320E	066 (66)	1,800	15	6,000	4,503	9,002	2,000	30	14	1.5	1.5	980	80	7,056	203	Input Unit Code : C4 ——P.54 Input Unit Code : C5 ——P.55
	081 (81)	2,209			5,527	11,048		25	9							
	101 (101)	2,755			6,892	13,776		20	7							
	121 (121)	3,136			7,840	15,680		17	6							
	141 (141)							14	5							
	185 (185)							11	4							

Hollow shaft series

Model Code	Ratio code (actual gear ratio)	Reduction Gear														External Dimensions
		T_0 Rated Torque	N_0 Rated Output Speed	K Life Rating	T_{S1} Allowable Startup/Stop Torque	T_{S2} Momentary maximum allowable torque	N_{in} Allowable Input Speed (Note 2)	N_S Allowable Output Speed (Note 2)	N_{To} Reference value to output speed during continuous operation at rated torque	Backlash	Lost motion	Torsional rigidity (Representative values)	Start-up Efficiency	M_0 Allowable moment (Note 3)	α Dimension α	
		(Nm)	(rpm)	(h)	(Nm)	(Nm)	(rpm)	(rpm)	(rpm)	(arc.min.)	(arc.min.)	(Nm/arc.min.)	(%)	(Nm)	(mm)	
RDR-010C	081 (81)	98	15	6,000	245	490	3,500	43	39	1.5	1.5	47	65	686	91.2	Input Unit Code : C0 ——P.56 Input Unit Code : C1 ——P.57
	108 (108)							32	31							
	153 (153)							23	23							
	189 (189)							19	20							
	243 (243)							14	14							
RDR-027C	100 (99.82)	265	15	6,000	662	1,323	3,500	35	23	1.5	1.5	147	70	980	112	Input Unit Code : C0 ——P.58 Input Unit Code : C1 ——P.59
	142 (141.68)							25	18							
	184 (184)							19	15							
	233 (233.45)							15	14							
RDR-050C	109 (109)	490	15	6,000	1,225	2,450	3,000	28	28	1.5	1.5	255	70	1,764	136.8	Input Unit Code : C2 ——P.60 Input Unit Code : C3 ——P.61
	153 (152.6)							20	20							
	196 (196.2)							15	15							
	240 (239.8)							13	13							
RDR-100C	101 (100.5)	980	15	6,000	2,450	4,900	3,000	30	19	1.5	1.5	510	80	2,450	148.9	Input Unit Code : C2 ——P.62 Input Unit Code : C3 ——P.63
	150 (150)							20	17							
	210 (210)							14	14							
	258 (258)							12	12							
RDR-200C	106 (105.83)	1,960	15	6,000	4,900	9,800	2,000	19	11	1.5	1.5	980	80	8,820	204.4	Input Unit Code : C4 ——P.64 Input Unit Code : C5 ——P.65
	156 (155.96)							13	8							
	206 (206.09)							10	6							
	245 (245.08)							8	5							
RDR-320C	115 (115)	3,136	15	6,000	7,840	15,680	2,000	17	14	1.5	1.5	1,960	80	20,580	245.9	Input Unit Code : C4 ——P.66 Input Unit Code : C5 ——P.67
	157 (157)							13	11							
	207 (207)							10	7							
	253 (253)							8	8							

Notes:
1. The rating table shows the specification values including the entry fields for reduction gear values.
2. The allowable speed may be limited by heat depending on the operating rate. Make sure the surface temperature of the reduction gear does not exceed 60°C during use.
3. The allowable moment will differ depending on the thrust load. Check the allowable moment diagram.
4. For the moment of inertia of the reduction gears, refer to the external dimension drawings for the reduction gear.

Model Code: RDR-006E-XXX-C0 (Corresponding motor shaft diameter: Ø8 to Ø14)



注記

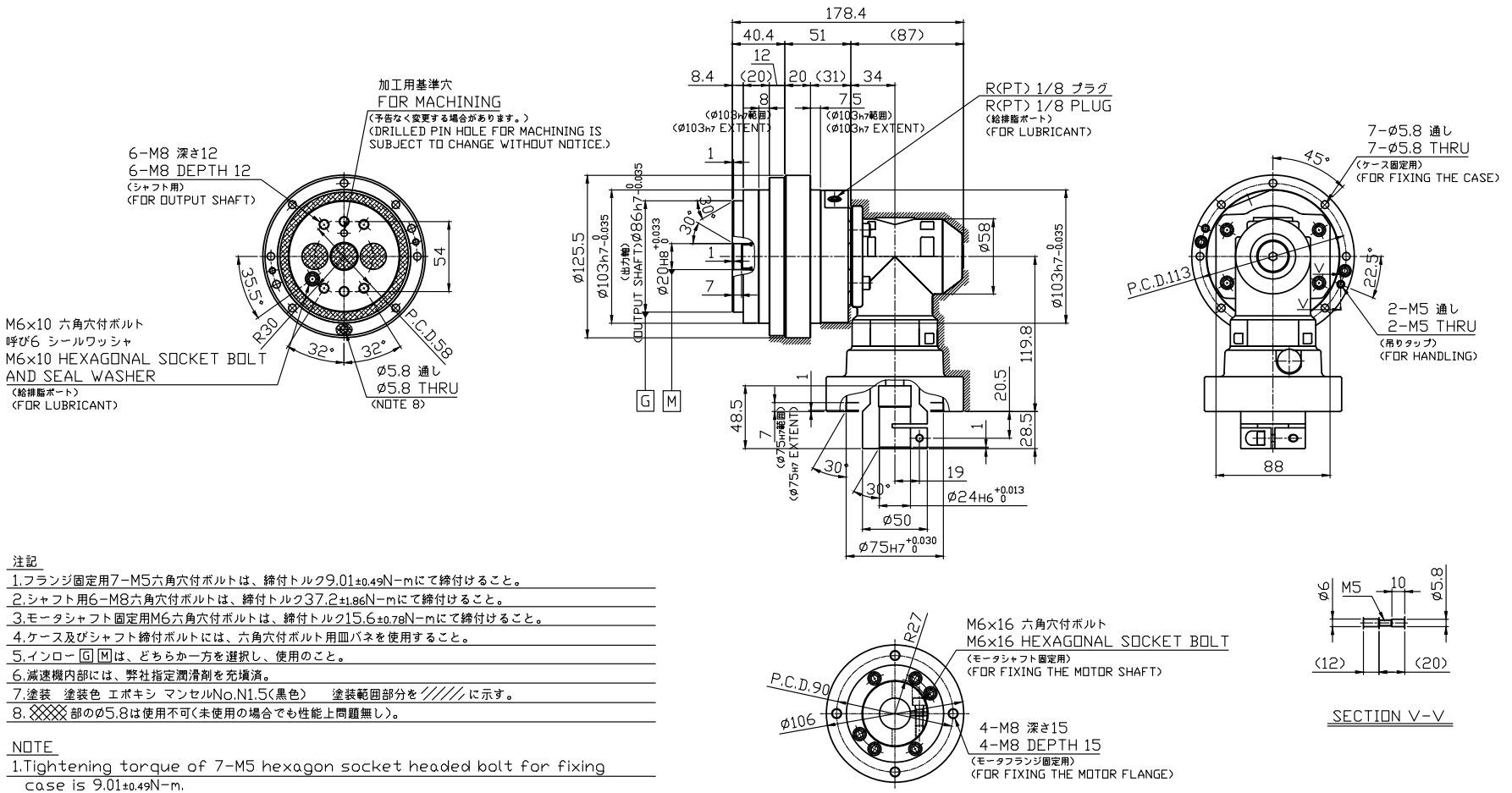
1.フランジ固定用7-M5六角穴付ボルトは、締付トルク9.01±0.49N-mにて締付けること。
2.シャフト用6-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。
8. ▨ 部のØ5.8は使用不可(未使用の場合でも性能上問題無し)。

NOTE

1.Tightening torque of 7-M5 hexagon socket headed bolt for fixing case is 9.01±0.49N-m.
2.Tightening torque of 6-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7. ////// area is painted black.
8.Ø5.8 of ▨ area cannot be used.(Even if it does not tighten M5(Ø5.8), the performance of the gear reducer is not influence.)

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
31	RDR-006E-031-C0	7.2	1.58x10-4
43	RDR-006E-043-C0		1.57x10-4
54	RDR-006E-054-C0		1.56x10-4
79	RDR-006E-079-C0		1.55x10-4
103	RDR-006E-103-C0		1.55x10-4

Model Code: RDR-006E-XXX-C1 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

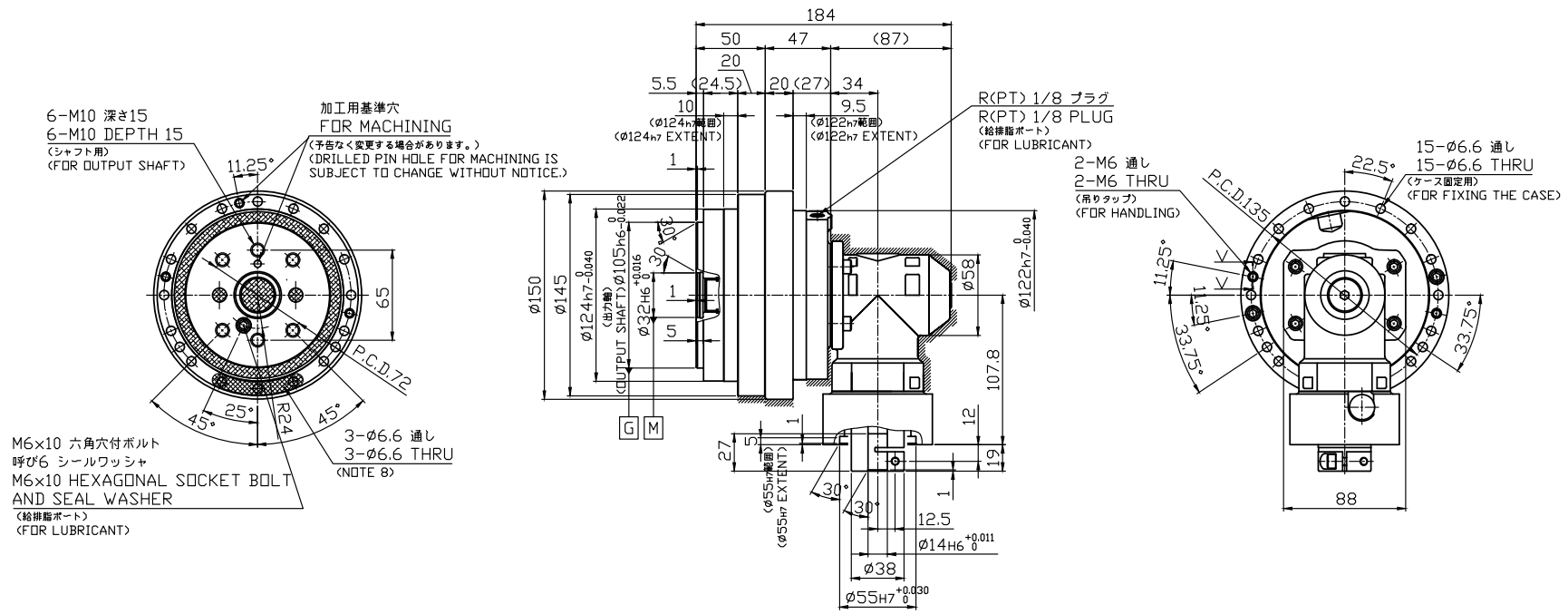
1.フランジ固定用7-M5六角穴付ボルトは、締付トルク9.01±0.49N-mにて締付けること。
2.シャフト用6-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。
8. ▨ 部のØ5.8は使用不可(未使用の場合でも性能上問題無し)。

NOTE

1.Tightening torque of 7-M5 hexagon socket headed bolt for fixing case is 9.01±0.49N-m.
2.Tightening torque of 6-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7. ////// area is painted black.
8.Ø5.8 of ▨ area cannot be used.(Even if it does not tighten M5(Ø5.8), the performance of the gear reducer is not influence.)

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
31	RDR-006E-031-C1	8.2	2.81×10-4
43	RDR-006E-043-C1		2.62×10-4
54	RDR-006E-054-C1		2.61×10-4
79	RDR-006E-079-C1		2.60×10-4
103	RDR-006E-108-C1		2.60×10-4

Model Code: RDR-020E-XXX-C0 (Corresponding motor shaft diameter: Ø8 to Ø14)



注記

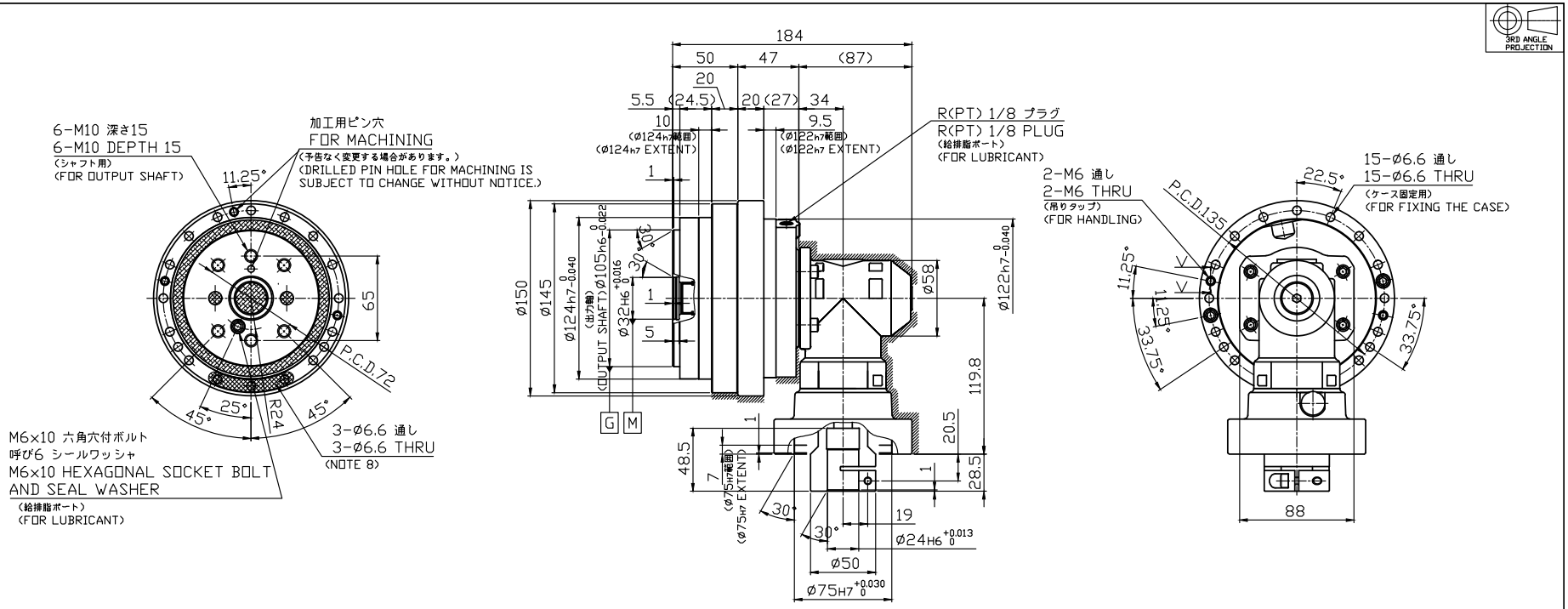
1. フランジ固定用15-M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
2. シャフト用6-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3. モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4. ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5. インロー G M は、どちらか一方を選択し、使用のこと。
6. 減速機内部には、弊社指定潤滑剤を充填済。
7. 塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。
8. ▨ 部の3-Ø6.6は使用不可(未使用の場合でも性能上問題無し)。

NOTE

1. Tightening torque of 15-M6 hexagon socket headed bolt for fixing case is 15.6±0.78N-m.
2. Tightening torque of 6-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3. Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4. Bolt shall be used with corned disk spring for heavy duty.
5. Use one of G or M.
6. The specified lubricant is already sealed in before shipment.
7. ////// area is painted black.
8. 3-Ø6.6 of ▨ area cannot be used.(Even if it does not tighten 3-M6(3-Ø6.6),the performance of the gear reducer is not influence.)

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDR-020E-041-C0	9.9	1.73×10-4
57	RDR-020E-057-C0		1.65×10-4
81	RDR-020E-081-C0		1.61×10-4
105	RDR-020E-105-C0		1.59×10-4
121	RDR-020E-121-C0		1.58×10-4
161	RDR-020E-161-C0		1.57×10-4

Model Code: RDR-020E-XXX-C1 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

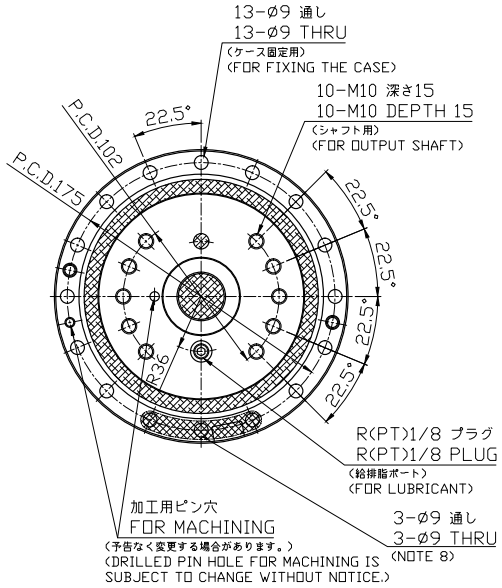
1.フランジ固定用15-M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
2.シャフト用6-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.インロー G Mは、どちらか一方を選択し、使用のこと。
6.減速機内部には、弊社指定潤滑剤を充填済。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。
8. ▨ 部の3-Ø6.6は使用不可(未使用の場合でも性能上問題無し)。

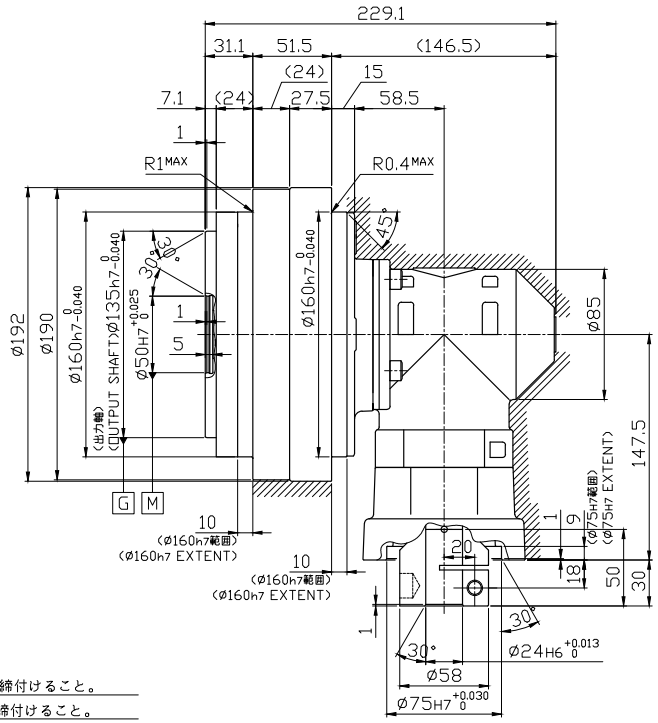
NOTE

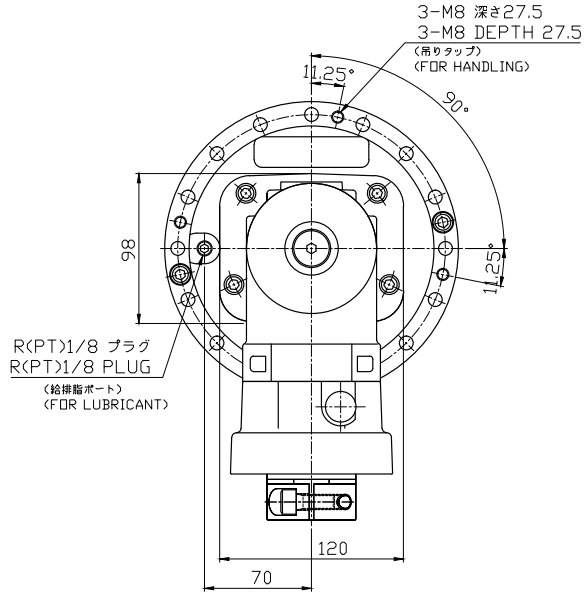
1.Tightening torque of 15-M6 hexagon socket headed bolt for fixing case is 15.6±0.78N-m.
2.Tightening torque of 6-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.Use one of G or M.
6.The specified lubricant is already sealed in before shipment.
7.////// area is painted black.
8.3-Ø6.6 of ▨ area cannot be used.(Even if it does not tighten 3-M6(3-Ø6.6),the performance of the gear reducer is not influence.)

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDR-020E-041-C1	10.9	2.78x10-4
57	RDR-020E-057-C1		2.70x10-4
81	RDR-020E-081-C1		2.66x10-4
105	RDR-020E-105-C1		2.64x10-4
121	RDR-020E-121-C1		2.63x10-4
161	RDR-020E-161-C1		2.61x10-4

Model Code: RDR-040E-XXX-C2 (Corresponding motor shaft diameter: Ø14 to Ø24)





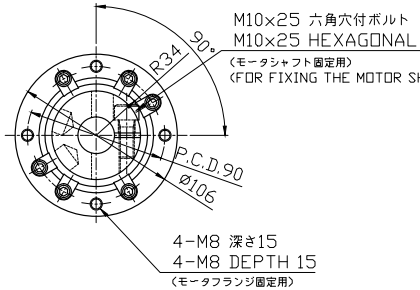


注記

1.ケース固定用13-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用10-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.インローG M は、どちらか一方を選択し、使用のこと。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を//////に示す。
8.XXXXX部の3-Ø9は使用不可(未使用の場合でも性能上問題無し)。

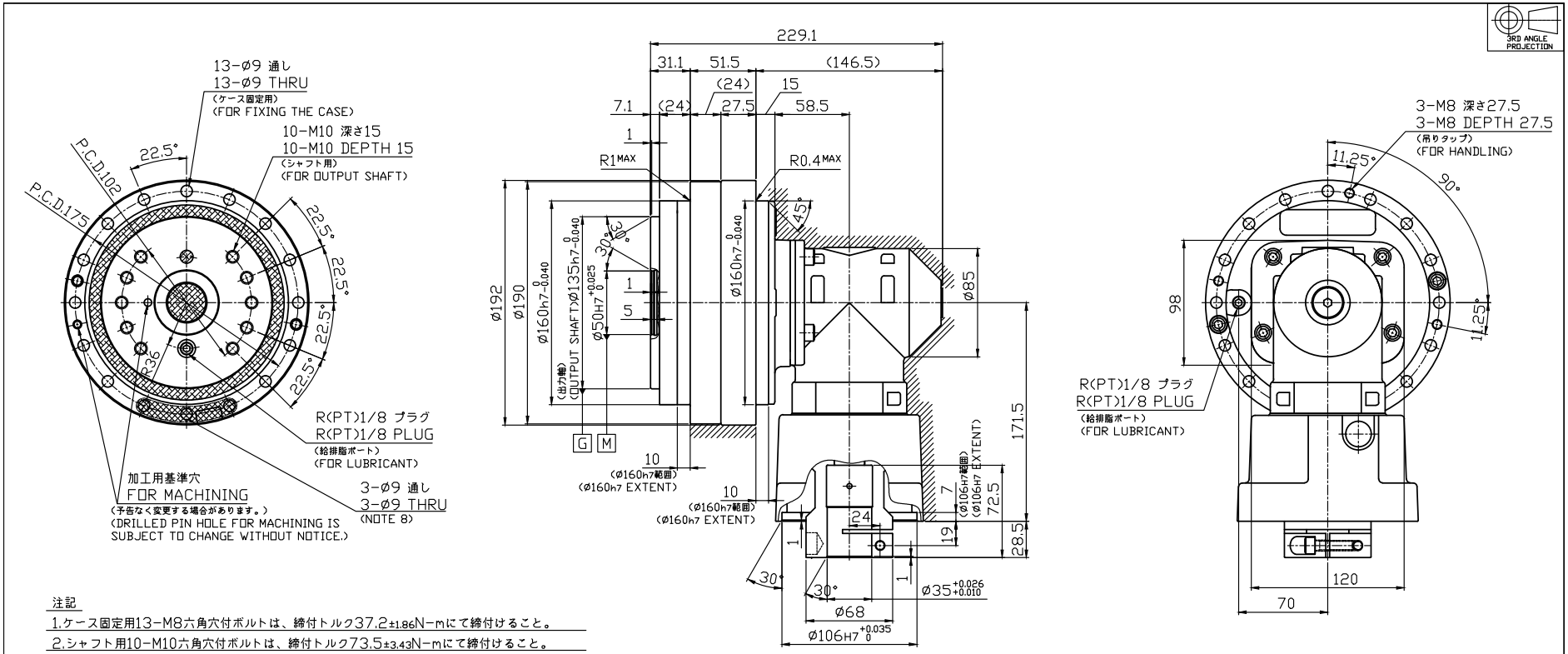
NOTE

1.Tightening torque of 13-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 10-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.Use one of G or M.
7.////// area is painted black.
8.3-Ø9 of XXXXX area cannot be used.
(Even if it does not tighten 3-M8(3-Ø9),the performance of the gear reducer is not influence.)



速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDR-040E-041-C2	20.5	8.86×10-4
57	RDR-040E-057-C2		8.62×10-4
81	RDR-040E-081-C2		8.46×10-4
105	RDR-040E-105-C2		8.39×10-4
121	RDR-040E-121-C2		8.36×10-4
153	RDR-040E-153-C2		8.32×10-4

Model Code: RDR-040E-XXX-C3 (Corresponding motor shaft diameter: Ø25 to Ø35)



注記

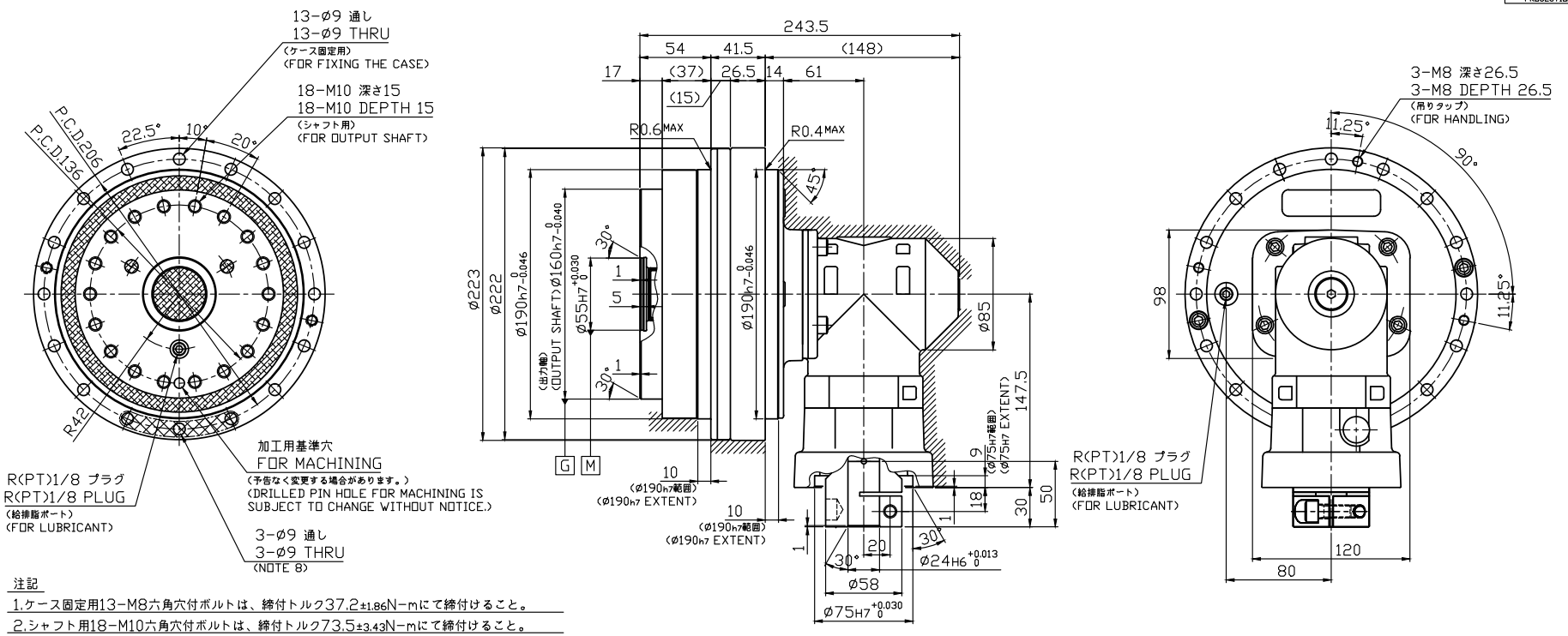
1.ケース固定用13-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用10-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.インロー G M は、どちらか一方を選択し、使用のこと。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。
8.XXXXX部の3-Ø9は使用不可(未使用の場合でも性能上問題無し)。

NOTE

1.Tightening torque of 13-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 10-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M8 hexagon socket headed bolt for fixing motor shaft is 37.2±1.86N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.Use one of G or M.
7.////// area is painted black.
8.3-Ø9 of XXXXX area cannot be used.
(Even if it does not tighten 3-M8(3-Ø9),the performance of the gear reducer is not influence.)

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDR-040E-041-C3	23.2	1.64×10-3
57	RDR-040E-057-C3		1.61×10-3
81	RDR-040E-081-C3		1.60×10-3
105	RDR-040E-105-C3		1.59×10-3
121	RDR-040E-121-C3		1.59×10-3
153	RDR-040E-153-C3		1.58×10-3

Model Code: RDR-080E-XXX-C2 (Corresponding motor shaft diameter: Ø14 to Ø24)

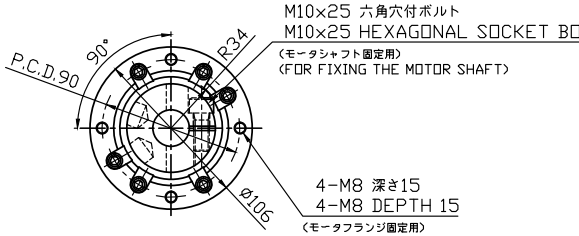


注記

1.ケース固定用13-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用18-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.インロー G M は、どちらか一方を選択し、使用のこと。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ///// に示す。
8.XXXXX部の3-Ø9は使用不可(未使用の場合でも性能上問題無し)。

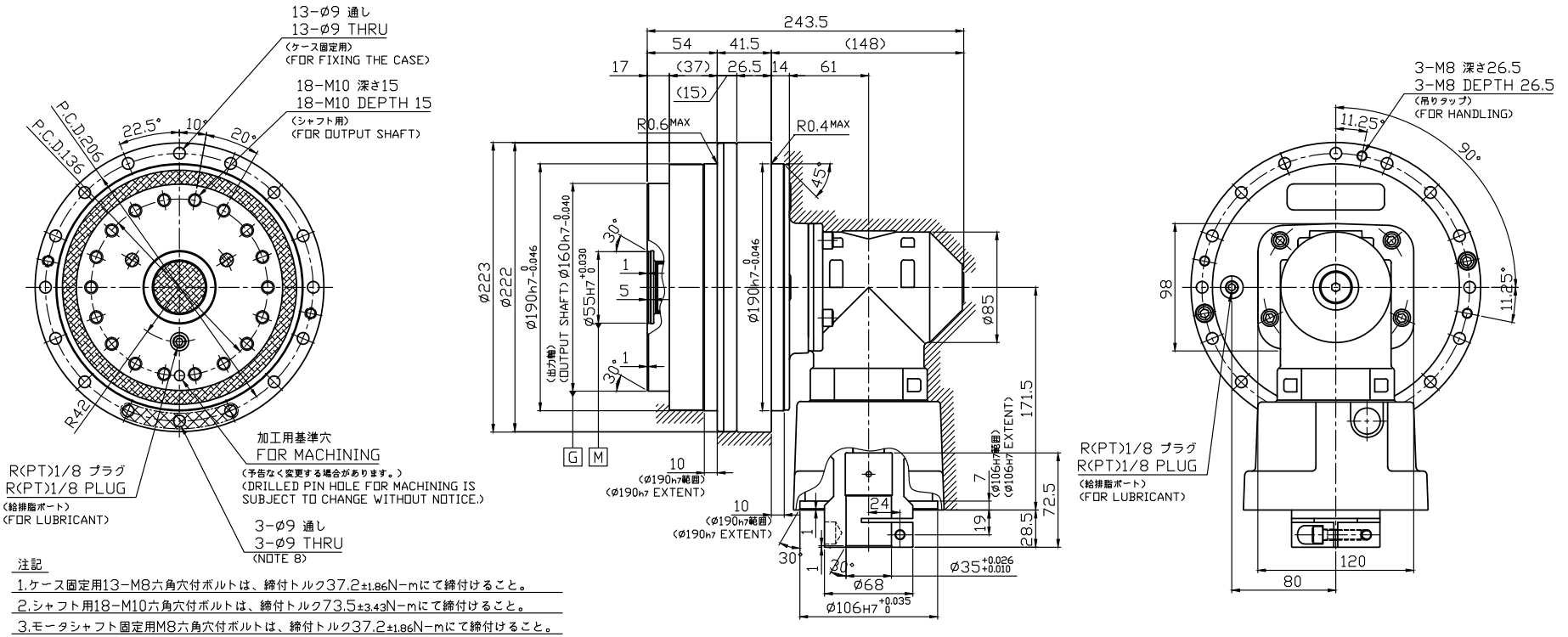
NOTE

1.Tightening torque of 13-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 18-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.Use one of G or M.
7.///// area is painted black.
8.3-Ø9 of XXXXX area cannot be used.
(Even if it does not tighten 3-M8(3-Ø9),the performance of the gear reducer is not influence.)



速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDR-080E-041-C2	26.8	8.97x10-4
57	RDR-080E-057-C2		8.49x10-4
81	RDR-080E-081-C2		8.19x10-4
101	RDR-080E-101-C2		8.04x10-4
121	RDR-080E-121-C2		7.95x10-4
153	RDR-080E-153-C2		7.85x10-4

Model Code: RDR-080E-XXX-C3 (Corresponding motor shaft diameter: Ø25 to Ø35)



注記

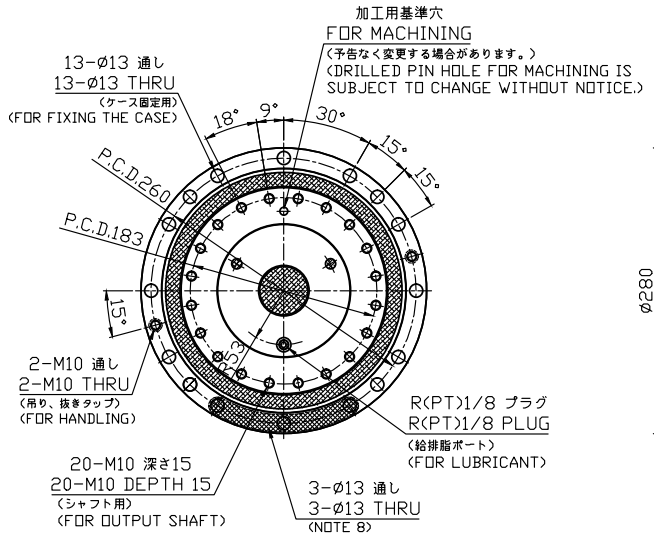
1.ケース固定用13-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用18-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充塡済。
6.インロー G M は、どちらか一方を選択し、使用のこと。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。
8.XXXX部の3-Ø9は使用不可(未使用の場合でも性能上問題無し)。

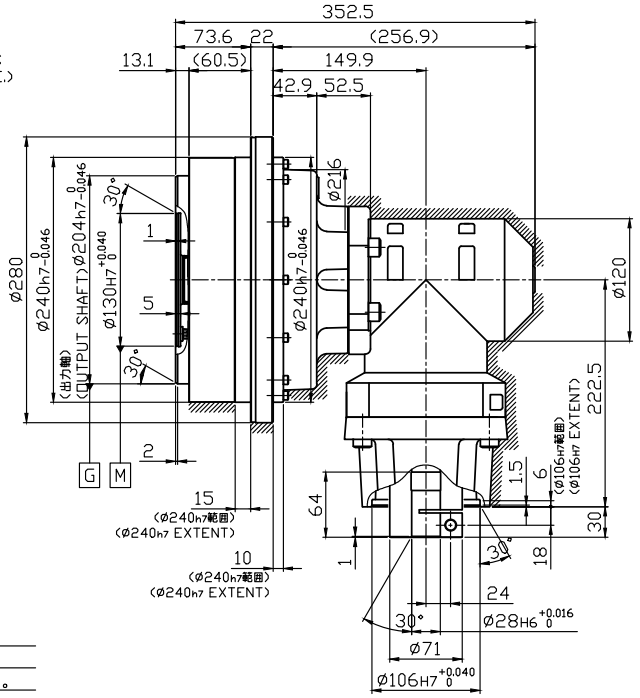
NOTE

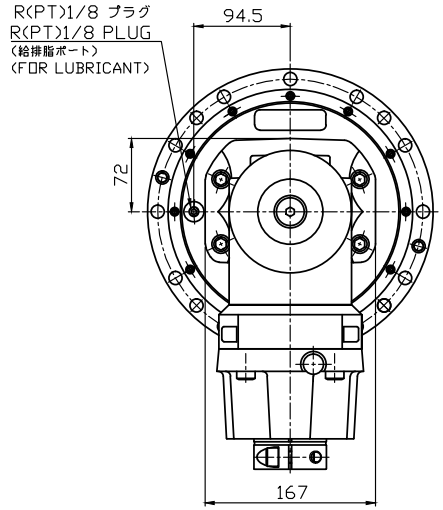
1.Tightening torque of 13-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 18-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M8 hexagon socket headed bolt for fixing motor shaft is 37.2±1.86N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.Use one of G or M.
7.////// area is painted black.
8.3-Ø9 of XXXX area cannot be used.
(Even if it does not tighten 3-M8(3-Ø9),the performance of the gear reducer is not influence.)

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
41	RDR-080E-041-C3	29.6	1.56×10-3
57	RDR-080E-057-C3		1.51×10-3
81	RDR-080E-081-C3		1.48×10-3
101	RDR-080E-101-C3		1.46×10-3
121	RDR-080E-121-C3		1.45×10-3
153	RDR-080E-153-C3		1.44×10-3

Model Code: RDR-160E-XXX-C4 (Corresponding motor shaft diameter: Ø19 to Ø28)





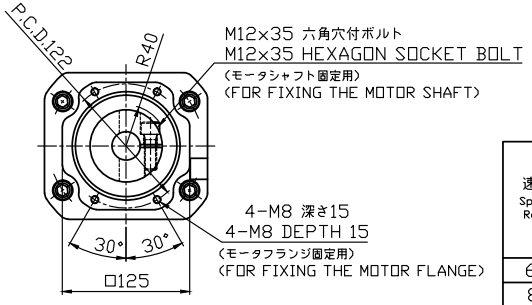


注記

1.ケース固定用13-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用20-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.インロー G M は、どちらか一方を選択し、使用のこと。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。
8. ▨ 部の3-Ø13は使用不可(未使用の場合でも性能上問題無し)。

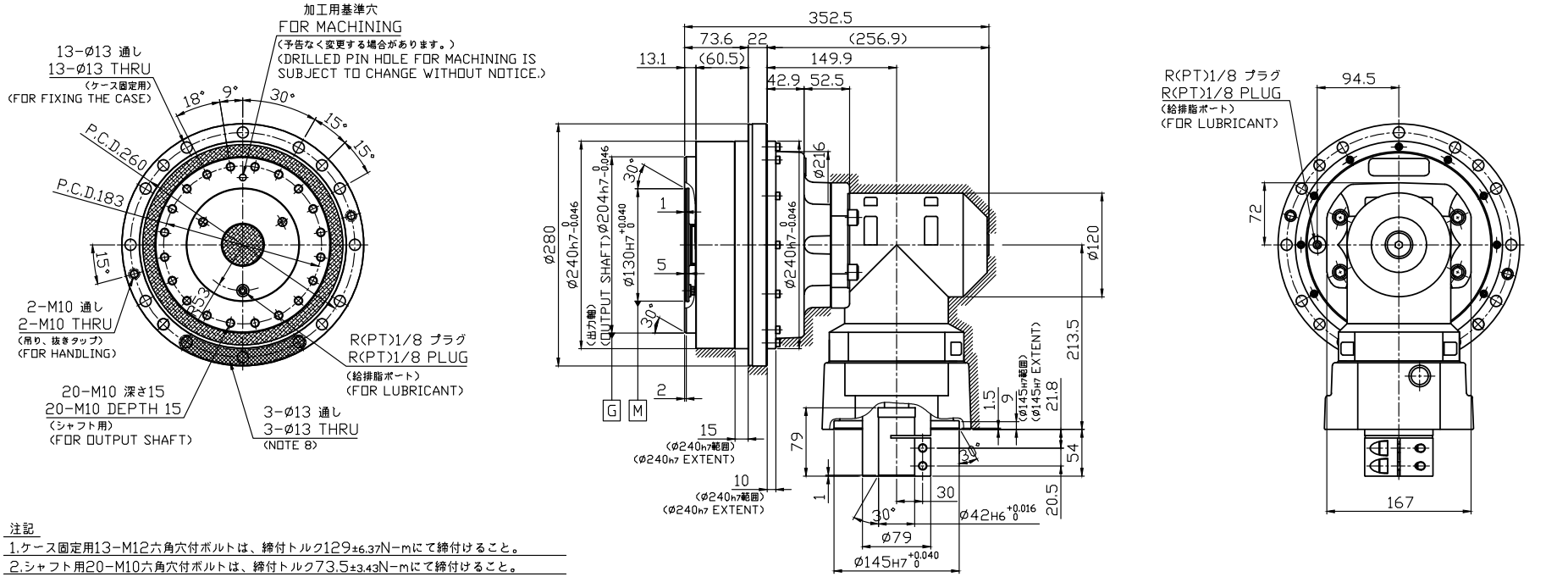
NOTE

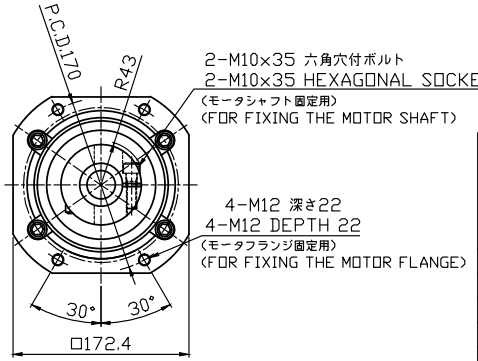
1.Tightening torque of 13-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 20-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M12 hexagon socket headed bolt for fixing motor shaft is 129±6.37N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.Use one of G or M.
7.////// area is painted black.
8.3-Ø13 of ▨ area cannot be used.
(Even if it does not tighten 3-M12(3-Ø13),the performance of the gear reducer is not influence.)



速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
66	RDR-160E-066-C4	65.6	5.01×10-3
81	RDR-160E-081-C4		4.95×10-3
101	RDR-160E-101-C4		4.90×10-3
121	RDR-160E-121-C4		4.87×10-3
145	RDR-160E-145-C4		4.83×10-3
171	RDR-160E-171-C4		4.80×10-3

Model Code: RDR-160E-XXX-C5 (Corresponding motor shaft diameter: Ø32 to Ø42)





注記

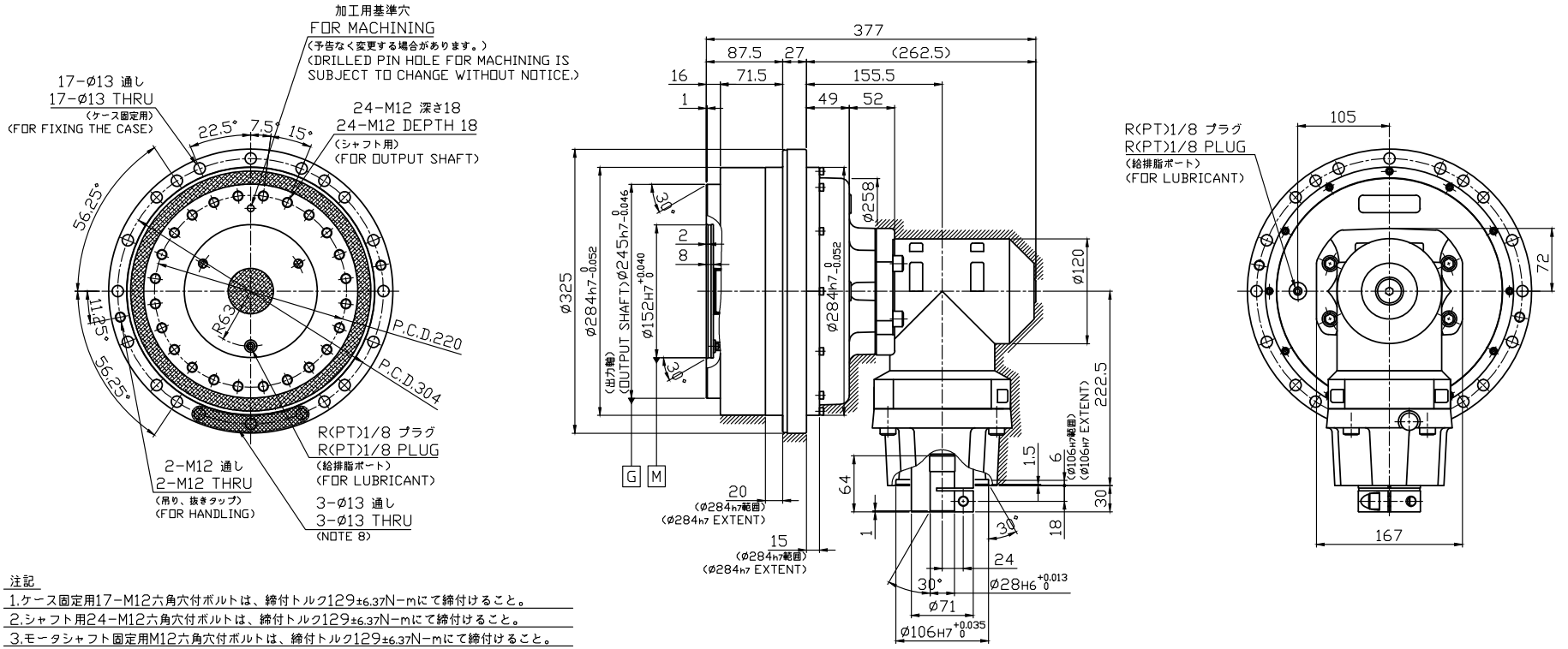
1.ケース固定用13-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用20-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用2-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.インロー G M は、どちらか一方を選択し、使用のこと。
7.塗装 塗装色 エポキシ マンセルNo.N1.5(黒色) 塗装範囲部分を ////// に示す。
8. ▨ 部の3-Ø13は使用不可(未使用の場合でも性能上問題無し)。

NOTE

1.Tightening torque of 13-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 20-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of 2-M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.Use one of G or M.
7.////// area is painted black.
8.3-Ø13 of ▨ area cannot be used.
(Even if it does not tighten 3-M12(3-Ø13),the performance of the gear reducer is not influence.)

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
66	RDR-160E-066-C5	68.1	6.68×10-3
81	RDR-160E-081-C5		6.62×10-3
101	RDR-160E-101-C5		6.57×10-3
121	RDR-160E-121-C5		6.54×10-3
145	RDR-160E-145-C5		6.50×10-3
171	RDR-160E-171-C5		6.47×10-3

Model Code: RDR-320E-XXX-C4 (Corresponding motor shaft diameter: Ø19 to Ø28)



注記

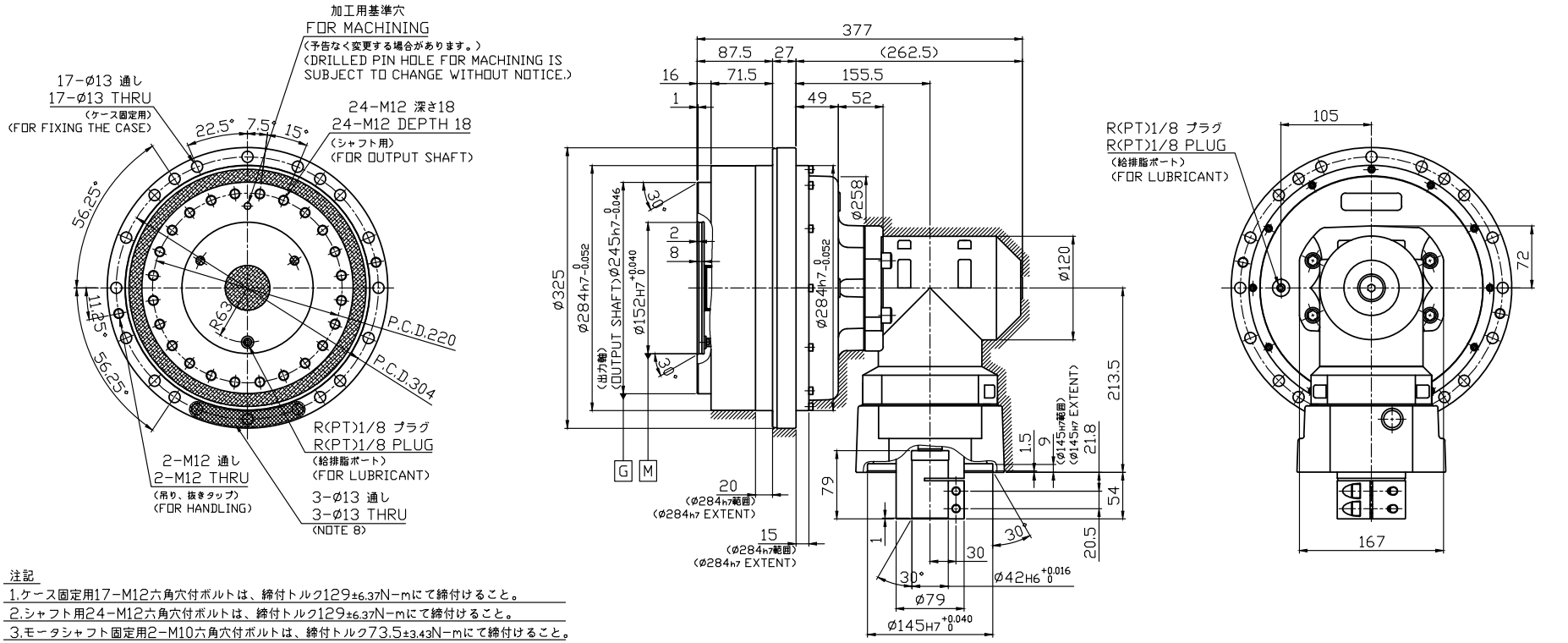
1.ケース固定用17-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用24-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
3.モータシャフト固定用M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.インロー G M は、どちらか一方を選択し、使用のこと。
7.塗装 塗装色 エポキシ マンセルNo.N1.5(黒色) 塗装範囲部分を ////// に示す。
8. 部の3-Ø13は使用不可(未使用の場合でも性能上問題無し)。

NOTE

1.Tightening torque of 17-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 24-M12 hexagon socket headed bolt on the output shaft is 129±6.37N-m.
3.Tightening torque of M12 hexagon socket headed bolt for fixing motor shaft is 129±6.37N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.Use one of G or M.
7.////// area is painted black.
8.3-Ø13 of area cannot be used.
(Even if it does not tighten 3-M12(3-Ø13),the performance of the gear reducer is not influence.)

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
66	RDR-320E-066-C4	91.2	5.52x10-3
81	RDR-320E-081-C4		5.33x10-3
101	RDR-320E-101-C4		5.18x10-3
121	RDR-320E-121-C4		5.09x10-3
141	RDR-320E-141-C4		5.02x10-3
185	RDR-320E-185-C4		4.93x10-3

Model Code: RDR-320E-XXX-C5 (Corresponding motor shaft diameter: Ø32 to Ø42)



注記

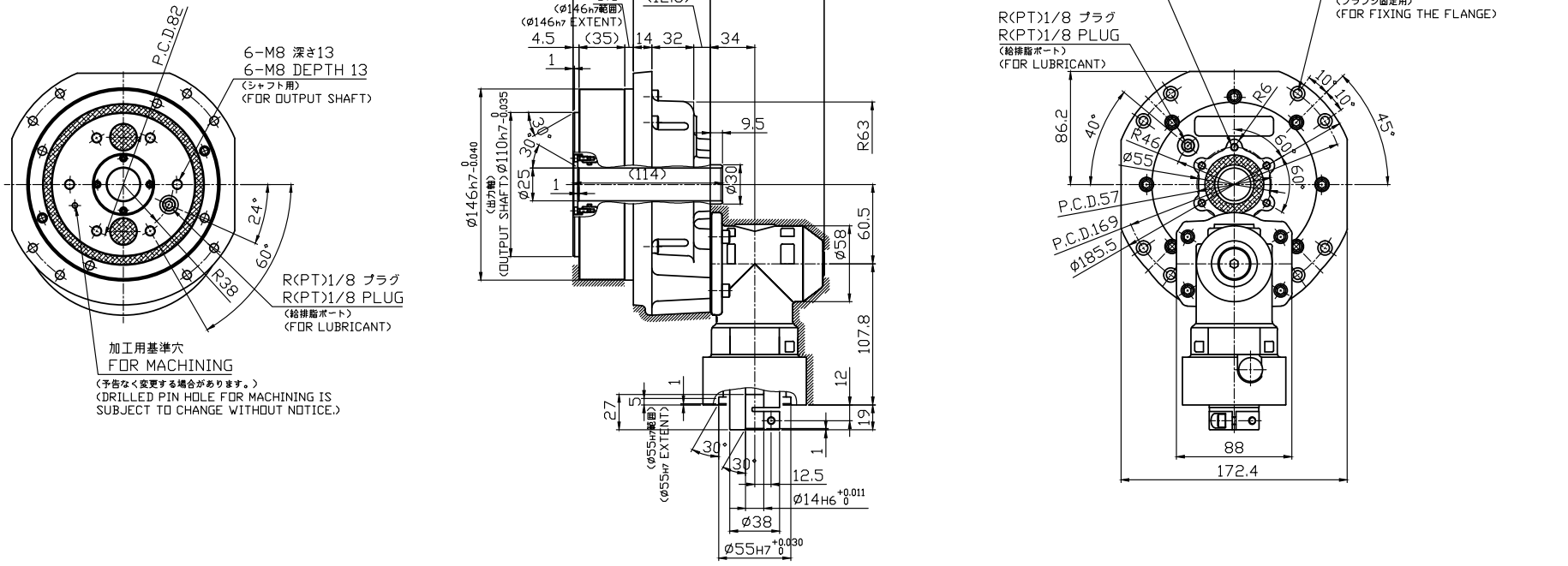
1.ケース固定用17-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用24-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
3.モータシャフト固定用2-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.インロー G M は、どちらか一方を選択し、使用のこと。
7.塗装 塗装色 エポキシ マンセルNo.N1.5(黒色) 塗装範囲部分を ////// に示す。
8.▨ 部の3-Ø13は使用不可(未使用の場合でも性能上問題無し)。

NOTE

1.Tightening torque of 17-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 24-M12 hexagon socket headed bolt on the output shaft is 129±6.37N-m.
3.Tightening torque of 2-M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.Use one of G or M.
7.////// area is painted black.
8.3-Ø13 of ▨ area cannot be used.
(Even if it does not tighten 3-M12(3-Ø13),the performance of the gear reducer is not influence.)

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
66	RDR-320E-066-C5	93.7	7.19×10-3
81	RDR-320E-081-C5		7.00×10-3
101	RDR-320E-101-C5		6.85×10-3
121	RDR-320E-121-C5		6.76×10-3
141	RDR-320E-141-C5		6.69×10-3
185	RDR-320E-185-C5		6.60×10-3

Model Code: RDR-010C-XXX-C0 (Corresponding motor shaft diameter: Ø8 to Ø14)



注記

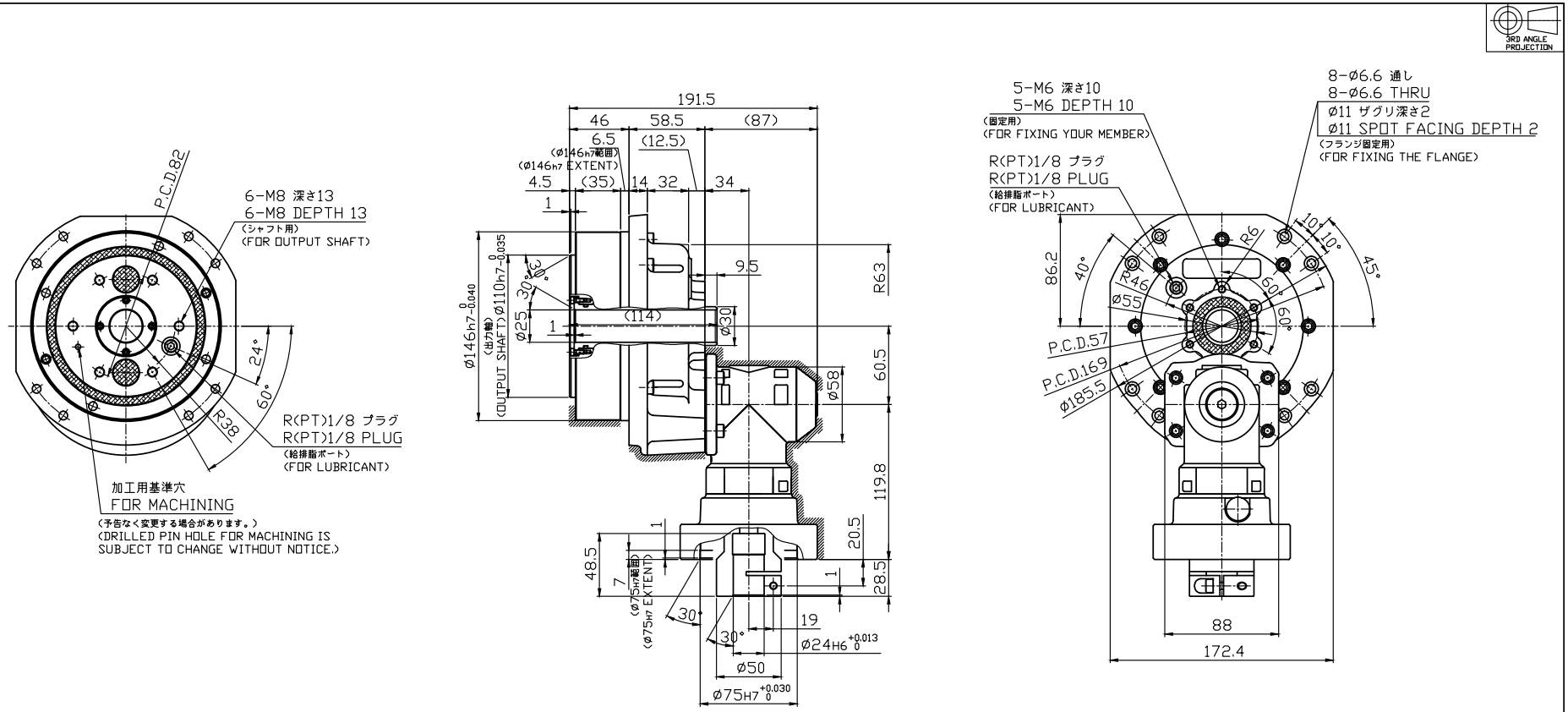
1. フランジ固定用8-M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
2. シャフト用6-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3. モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4. ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5. 減速機内部には、弊社指定潤滑剤を充填済。
6. 塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1. Tightening torque of 8-M6 hexagon socket headed bolt for fixing case is 15.6±0.78N-m.
2. Tightening torque of 6-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3. Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4. Bolt shall be used with corned disk spring for heavy duty.
5. The specified lubricant is already sealed in before shipment.
6. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
81	RDR-010C-081-C0	11.9	2.08×10⁻⁴
108	RDR-010C-108-C0		1.91×10⁻⁴
153	RDR-010C-153-C0		1.76×10⁻⁴
189	RDR-010C-189-C0		1.70×10⁻⁴
243	RDR-010C-243-C0		1.65×10⁻⁴

Model Code: RDR-010C-XXX-C1 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

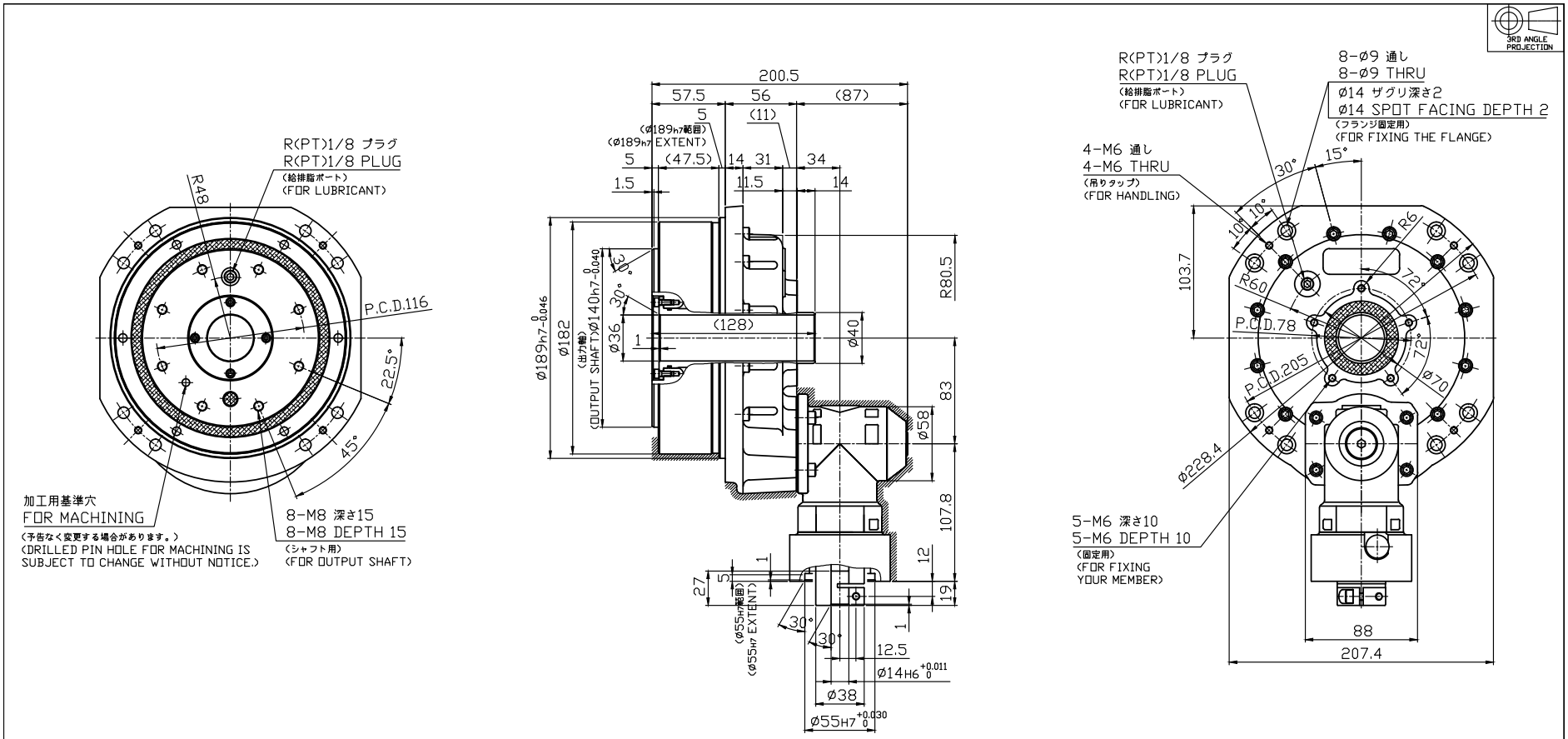
1.フランジ固定用8-M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
2.シャフト用6-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 8-M6 hexagon socket headed bolt for fixing case is 15.6±0.78N-m.
2.Tightening torque of 6-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia "I" (I=GD²/4) 入力軸換算値 The Motor Axis Conversion (kg-m²)
81	RDR-010C-081-C1	13.0	9.34x10⁻⁴
108	RDR-010C-108-C1		9.26x10⁻⁴
153	RDR-010C-153-C1		9.11x10⁻⁴
189	RDR-010C-189-C1		9.05x10⁻⁴
243	RDR-010C-243-C1		8.99x10⁻⁴

Model Code: RDR-027C-XXX-C0 (Corresponding motor shaft diameter: Ø8 to Ø14)



注記

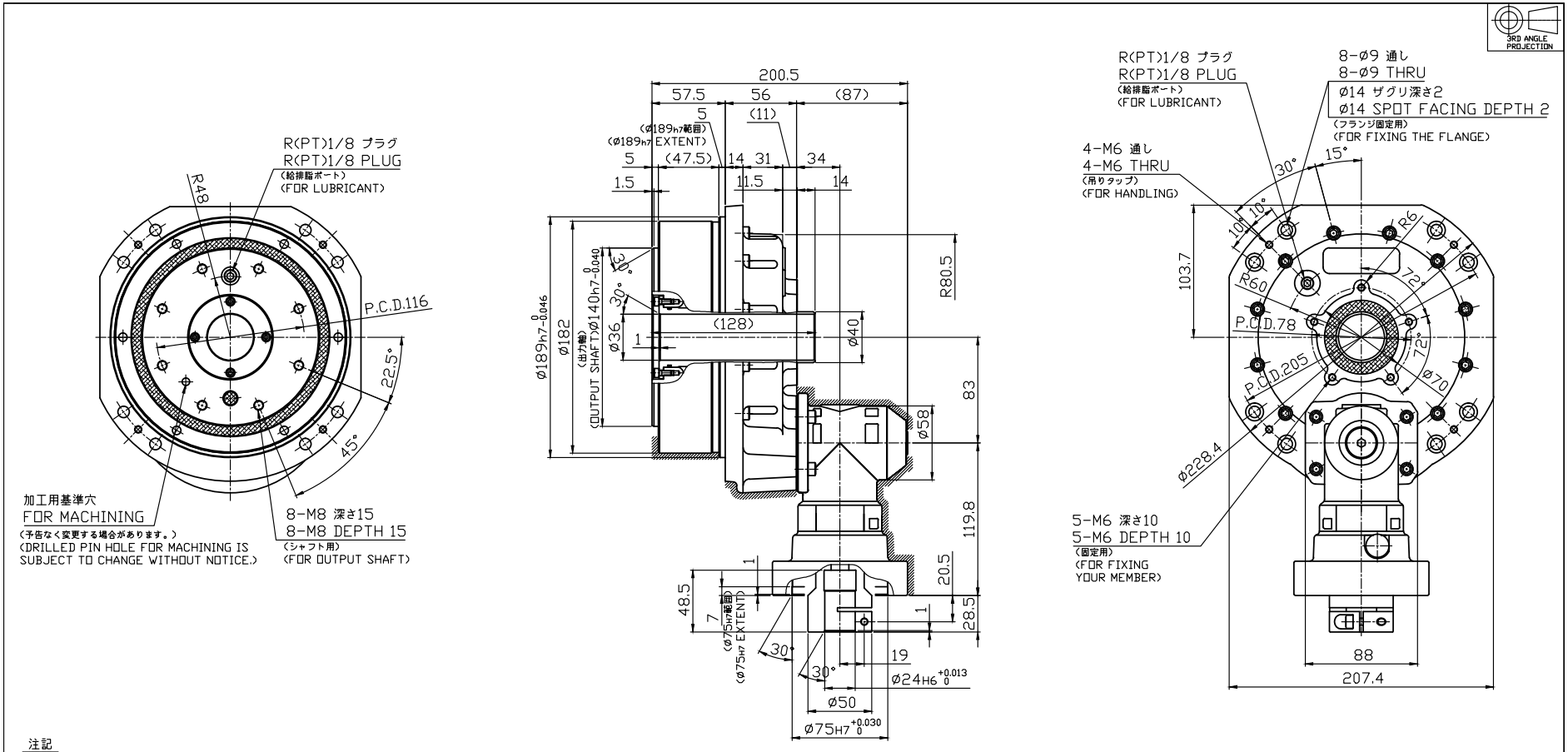
1. フランジ固定用8-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2. シャフト用8-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3. モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4. ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5. 減速機内部には、弊社指定潤滑剤を充填済。
6. 塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1. Tightening torque of 8-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2. Tightening torque of 8-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3. Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4. Bolt shall be used with corned disk spring for heavy duty.
5. The specified lubricant is already sealed in before shipment.
6. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
99.82	RDR-027C-100-C0	18.0	3.48x10-4
141.68	RDR-027C-142-C0		2.68x10-4
184	RDR-027C-184-C0		2.36x10-4
233.45	RDR-027C-233-C0		2.11x10-4

Model Code: RDR-027C-XXX-C1 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

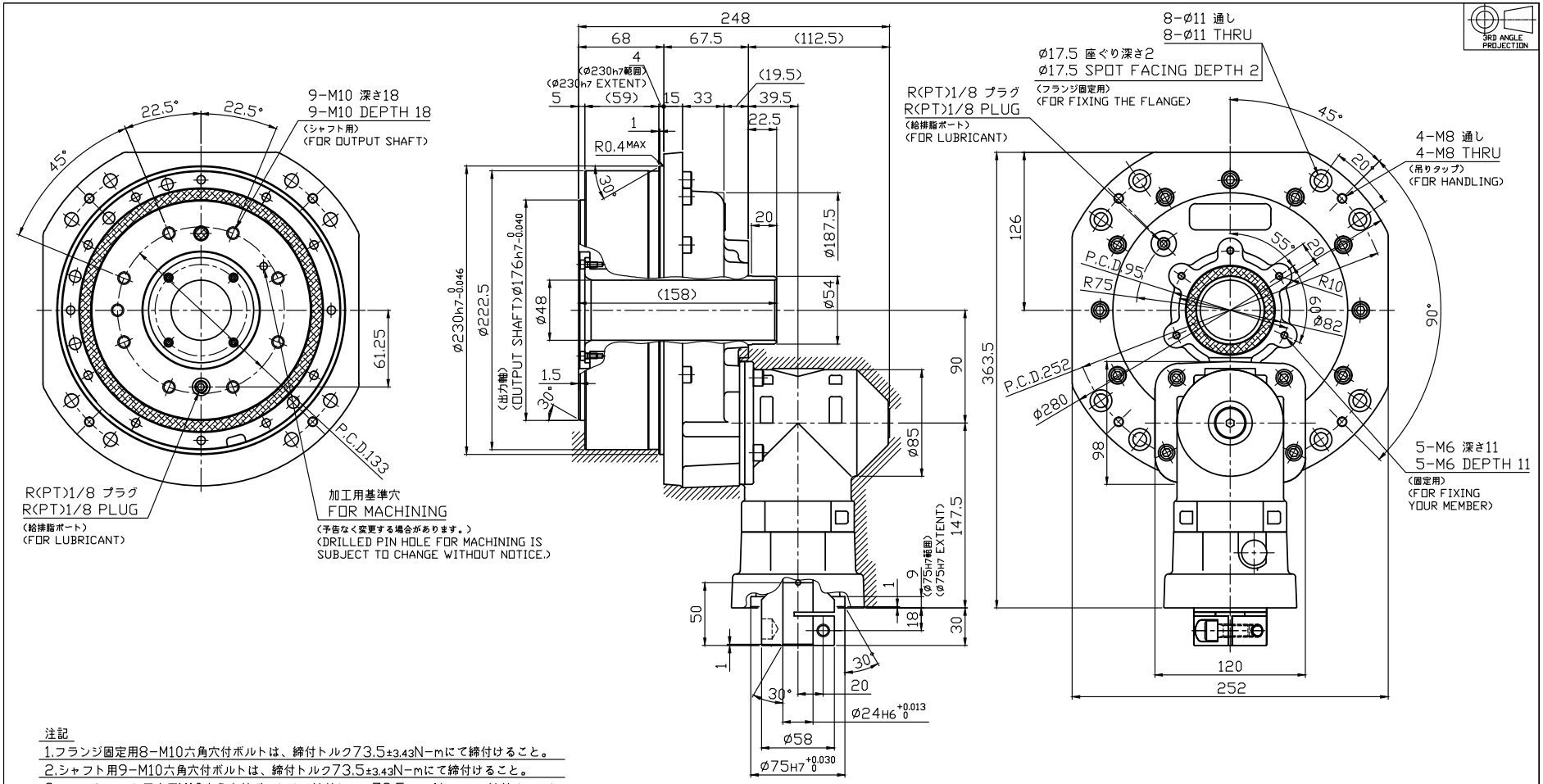
1.フランジ固定用8-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用8-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3.モータシャフト固定用M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 8-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 8-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3.Tightening torque of M6 hexagon socket headed bolt for fixing motor shaft is 15.6±0.78N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
99.82	RDR-027C-100-C1	19.0	4.53×10-4
141.68	RDR-027C-142-C1		3.73×10-4
184	RDR-027C-184-C1		3.41×10-4
233.45	RDR-027C-233-C1		3.16×10-4

Model Code: RDR-050C-XXX-C2 (Corresponding motor shaft diameter: Ø14 to Ø24)

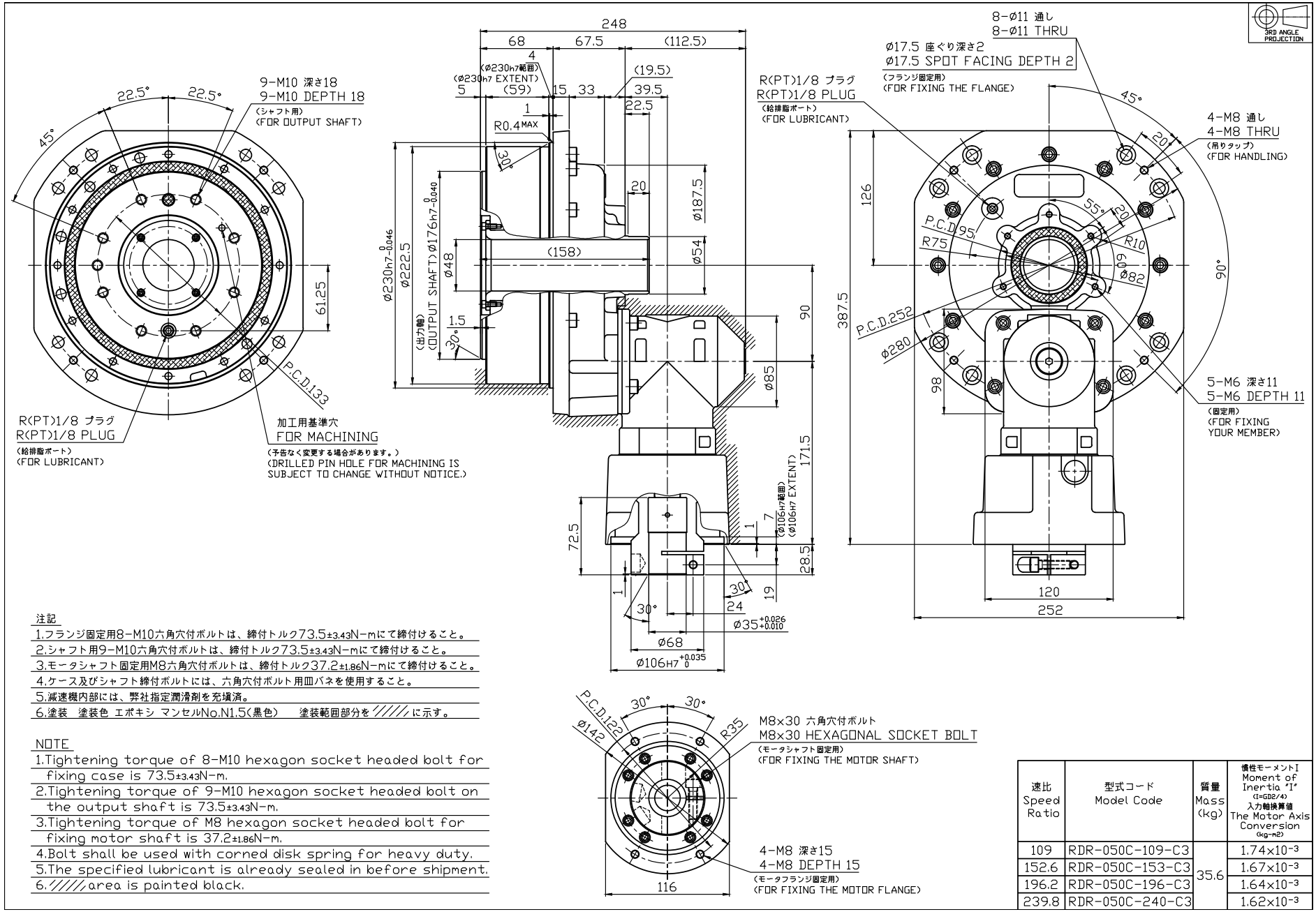


注記
1.フランジ固定用8-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
2.シャフト用9-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE
1.Tightening torque of 8-M10 hexagon socket headed bolt for fixing case is 73.5±3.43N-m.
2.Tightening torque of 9-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
109	RDR-050C-109-C2	32.9	9.92×10-4
152.6	RDR-050C-153-C2		9.21×10-4
196.2	RDR-050C-196-C2		8.87×10-4
239.8	RDR-050C-240-C2		8.68×10-4

Model Code: RDR-050C-XXX-C3 (Corresponding motor shaft diameter: Ø25 to Ø35)



注記

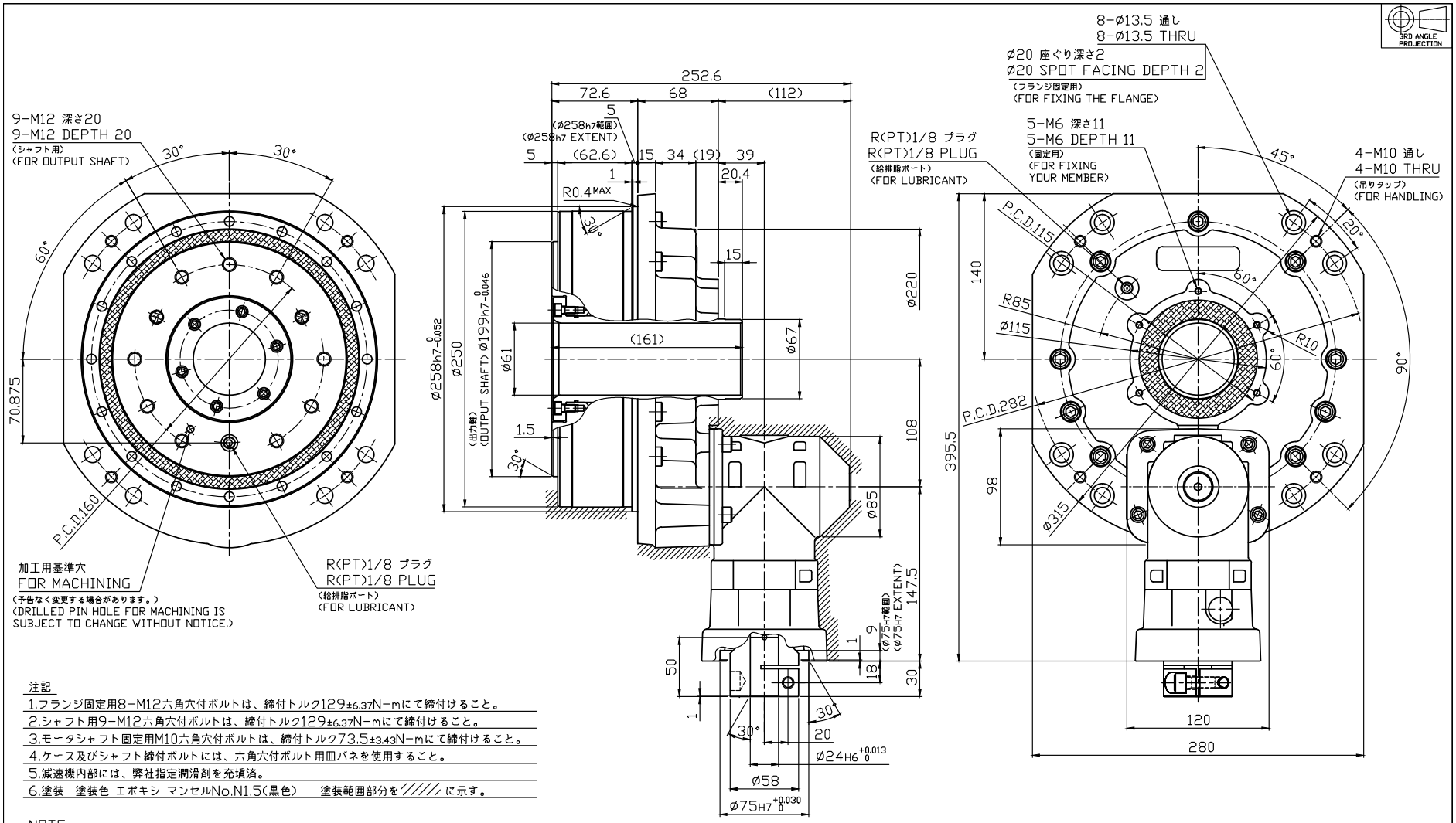
1.フランジ固定用8-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
2.シャフト用9-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.モータシャフト固定用M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 8-M10 hexagon socket headed bolt for fixing case is 73.5±3.43N-m.
2.Tightening torque of 9-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Tightening torque of M8 hexagon socket headed bolt for fixing motor shaft is 37.2±1.86N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
109	RDR-050C-109-C3	35.6	1.74×10-3
152.6	RDR-050C-153-C3		1.67×10-3
196.2	RDR-050C-196-C3		1.64×10-3
239.8	RDR-050C-240-C3		1.62×10-3

Model Code: RDR-100C-XXX-C2 (Corresponding motor shaft diameter: Ø14 to Ø24)



注記

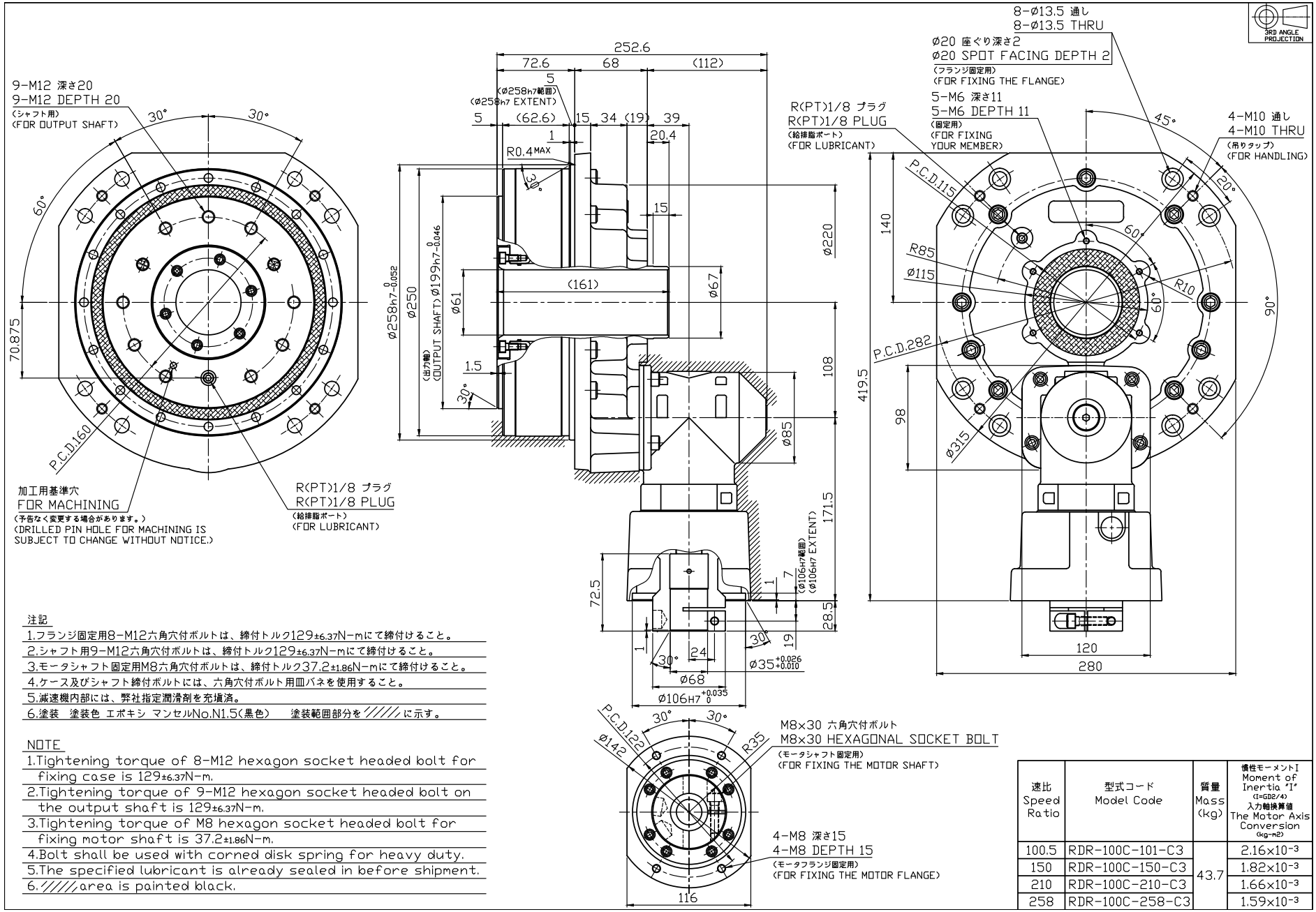
1. フランジ固定用8-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2. シャフト用9-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
3. モータシャフト固定用M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4. ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5. 減速機内部には、弊社指定潤滑剤を充填済。
6. 塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1. Tightening torque of 8-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2. Tightening torque of 9-M12 hexagon socket headed bolt on the output shaft is 129±6.37N-m.
3. Tightening torque of M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4. Bolt shall be used with corned disk spring for heavy duty.
5. The specified lubricant is already sealed in before shipment.
6. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
100.5	RDR-100C-101-C2	40.9	1.50×10-3
150	RDR-100C-150-C2		1.16×10-3
210	RDR-100C-210-C2		9.97×10-4
258	RDR-100C-258-C2		9.28×10-4

Model Code: RDR-100C-XXX-C3 (Corresponding motor shaft diameter: Ø25 to Ø35)



注記

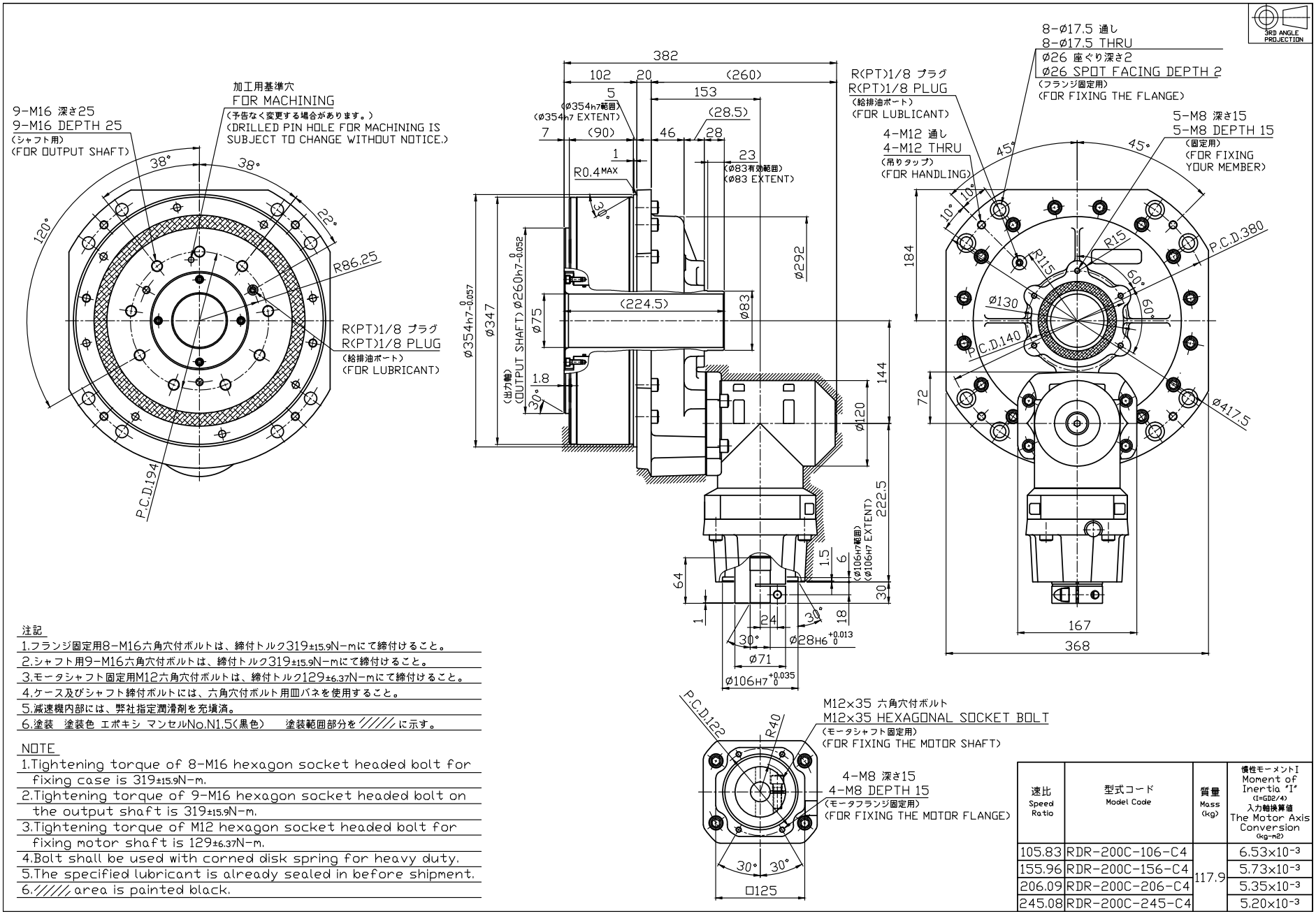
1.フランジ固定用8-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用9-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
3.モータシャフト固定用M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ///// に示す。

NOTE

1.Tightening torque of 8-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 9-M12 hexagon socket headed bolt on the output shaft is 129±6.37N-m.
3.Tightening torque of M8 hexagon socket headed bolt for fixing motor shaft is 37.2±1.86N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6. ///// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
100.5	RDR-100C-101-C3	43.7	2.16×10-3
150	RDR-100C-150-C3		1.82×10-3
210	RDR-100C-210-C3		1.66×10-3
258	RDR-100C-258-C3		1.59×10-3

Model Code: RDR-200C-XXX-C4 (Corresponding motor shaft diameter: Ø19 to Ø28)



注記

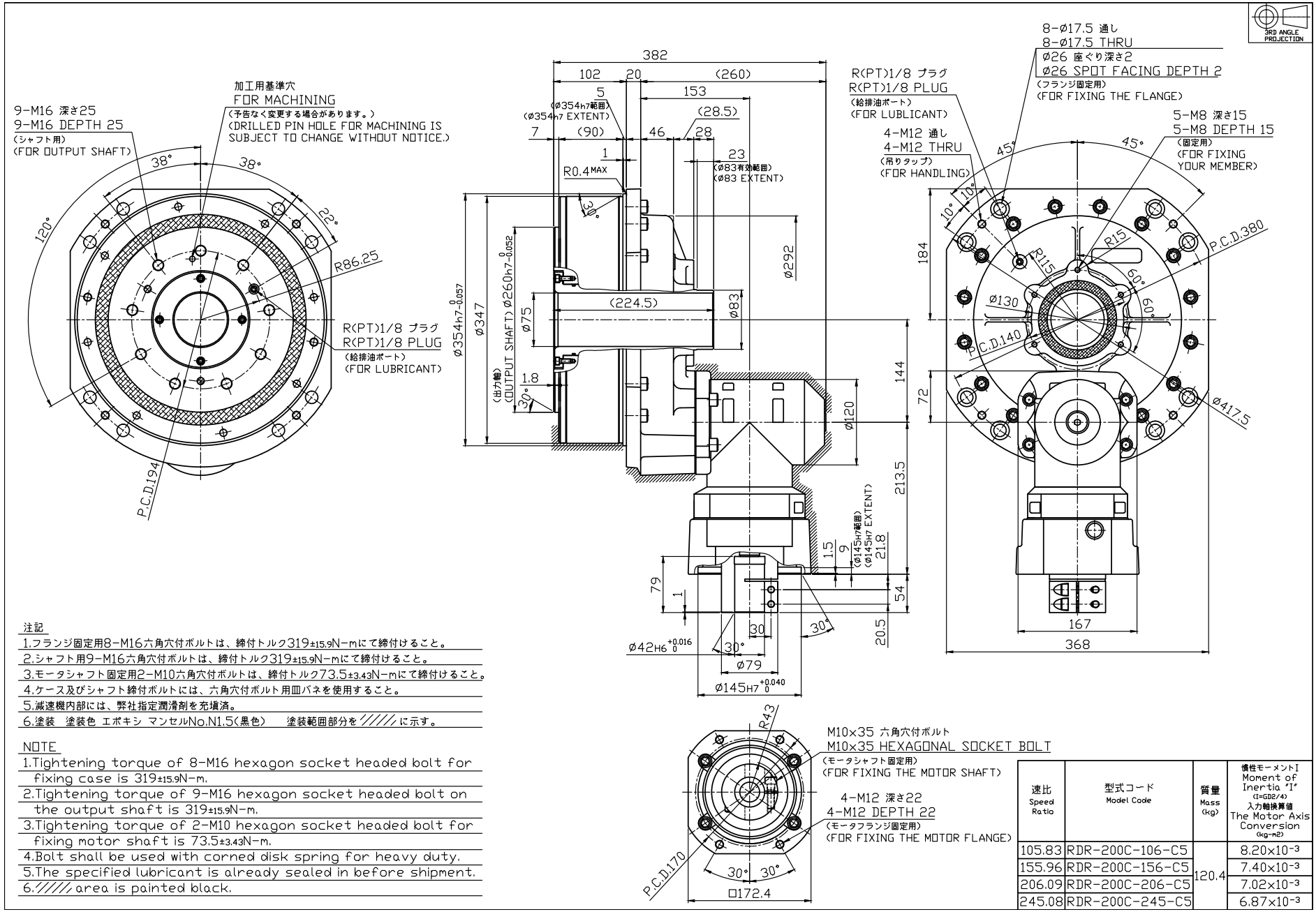
1.フランジ固定用8-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
2.シャフト用9-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
3.モータシャフト固定用M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 8-M16 hexagon socket headed bolt for fixing case is 319±15.9N-m.
2.Tightening torque of 9-M16 hexagon socket headed bolt on the output shaft is 319±15.9N-m.
3.Tightening torque of M12 hexagon socket headed bolt for fixing motor shaft is 129±6.37N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
105.83	RDR-200C-106-C4	117.9	6.53×10-3
155.96	RDR-200C-156-C4		5.73×10-3
206.09	RDR-200C-206-C4		5.35×10-3
245.08	RDR-200C-245-C4		5.20×10-3

Model Code: RDR-200C-XXX-C5 (Corresponding motor shaft diameter: Ø32 to Ø42)



注記

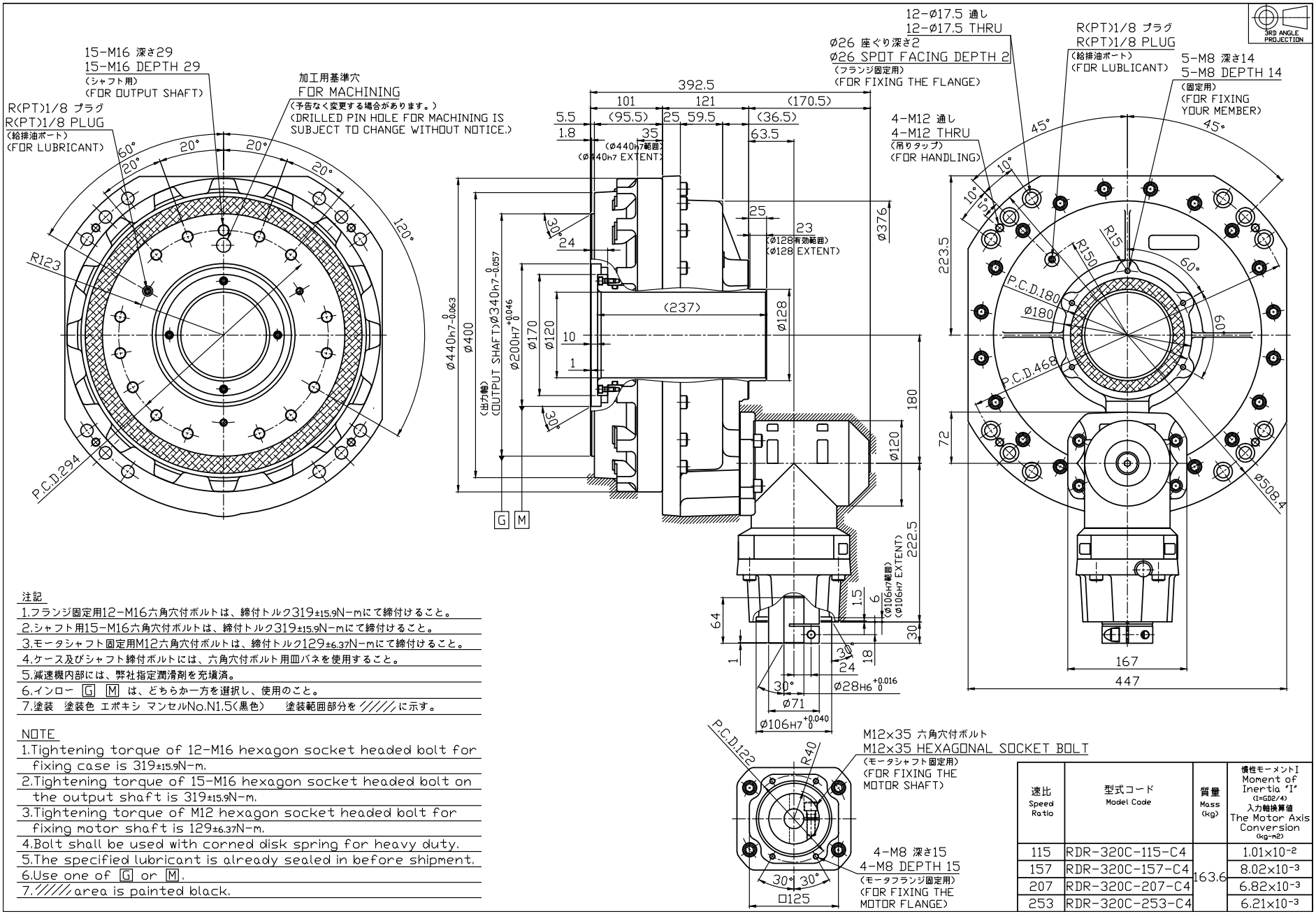
1.フランジ固定用8-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
2.シャフト用9-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
3.モータシャフト固定用2-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 8-M16 hexagon socket headed bolt for fixing case is 319±15.9N-m.
2.Tightening torque of 9-M16 hexagon socket headed bolt on the output shaft is 319±15.9N-m.
3.Tightening torque of 2-M10 hexagon socket headed bolt for fixing motor shaft is 73.5±3.43N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
105.83	RDR-200C-106-C5	120.4	8.20×10-3
155.96	RDR-200C-156-C5		7.40×10-3
206.09	RDR-200C-206-C5		7.02×10-3
245.08	RDR-200C-245-C5		6.87×10-3

Model Code: RDR-320C-XXX-C4 (Corresponding motor shaft diameter: Ø19 to Ø28)



注記

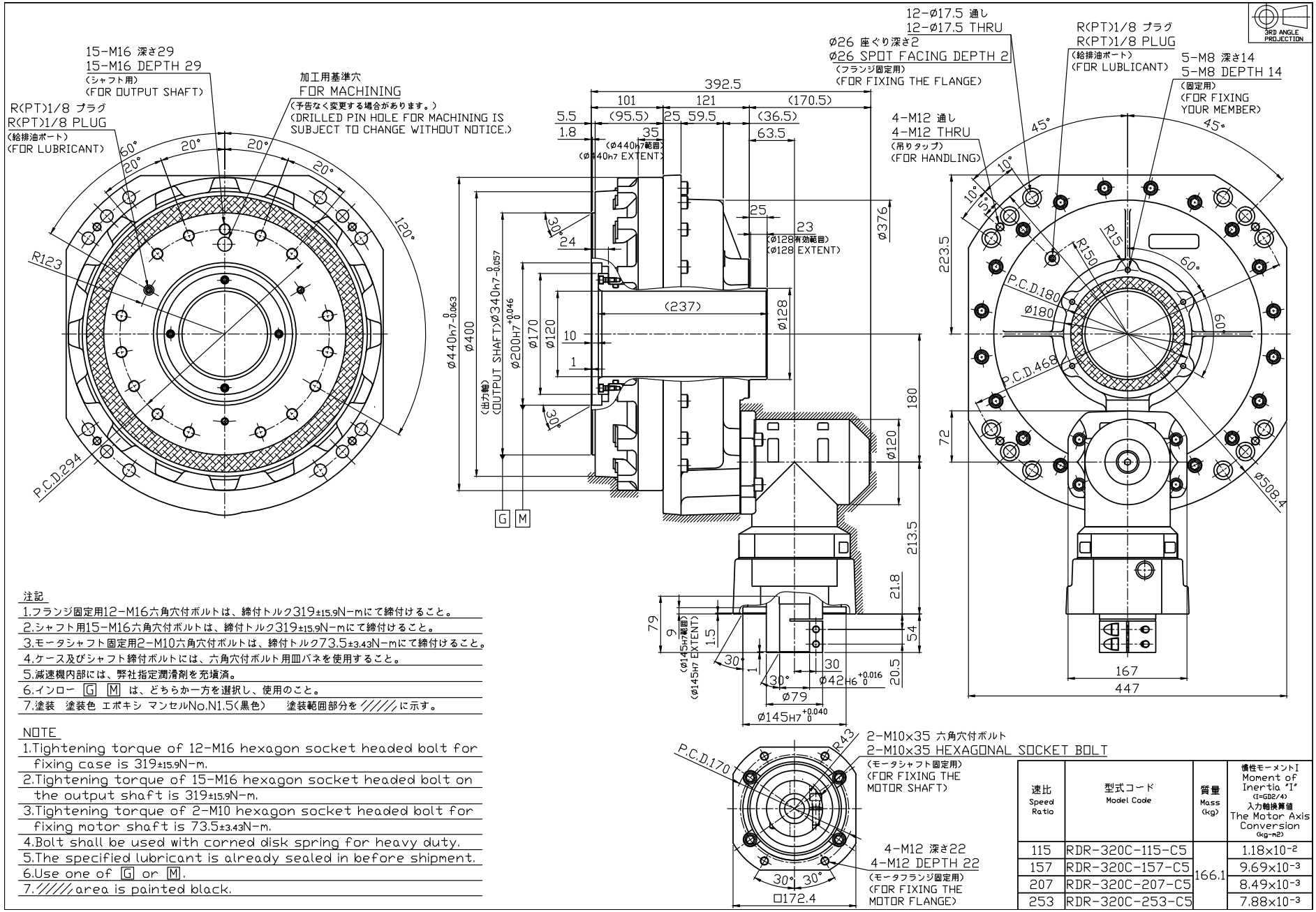
1.フランジ固定用12-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
2.シャフト用15-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
3.モータシャフト固定用M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
4.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.インロー G M は、どちらか一方を選択し、使用のこと。
7.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 12-M16 hexagon socket headed bolt for fixing case is 319±15.9N-m.
2.Tightening torque of 15-M16 hexagon socket headed bolt on the output shaft is 319±15.9N-m.
3.Tightening torque of M12 hexagon socket headed bolt for fixing motor shaft is 129±6.37N-m.
4.Bolt shall be used with corned disk spring for heavy duty.
5.The specified lubricant is already sealed in before shipment.
6.Use one of G or M.
7.////// area is painted black.

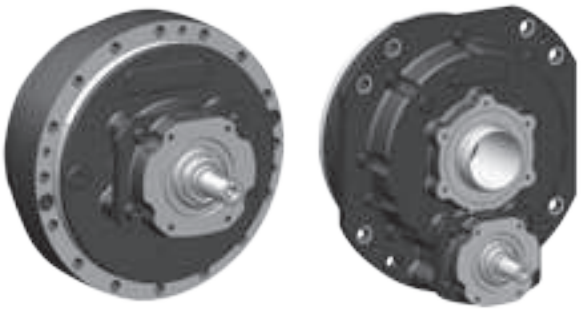
速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
115	RDR-320C-115-C4	163.6	1.01×10^{-2}
157	RDR-320C-157-C4		8.02×10^{-3}
207	RDR-320C-207-C4		6.82×10^{-3}
253	RDR-320C-253-C4		6.21×10^{-3}

Model Code: RDR-320C-XXX-C5 (Corresponding motor shaft diameter: Ø32 to Ø42)



速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
115	RDR-320C-115-C5	166.1	1.18×10-2
157	RDR-320C-157-C5		9.69×10-3
207	RDR-320C-207-C5		8.49×10-3
253	RDR-320C-253-C5		7.88×10-3

Pulley input type



Pulley Input Type Code Description and Configuration Diagram

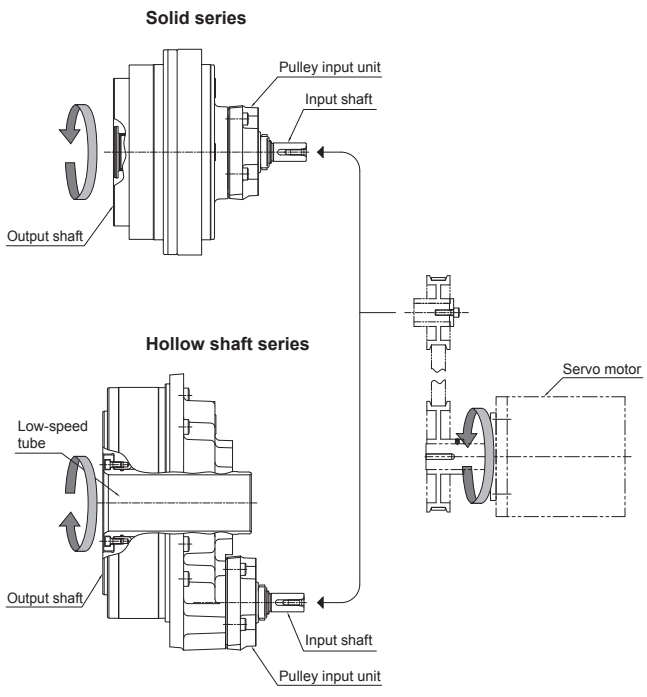
Product code

RD P – 050 C – 109 – A3 – ZZ – ZZ

Model Code			Ratio Code	Input unit code	Motor flange code	Bushing code
Pulley input code	Torque code	Series code				
P	020	E: Solid series	081	A0	ZZ: No motor flange (The pulley input type does not come with a motor flange.)	ZZ: No bushing (The pulley input type does not come with a bushing.)
	040		057	A3		
	080		081	A4		
	160		066	A6		
	320		081	A7		
	010	C: Hollow shaft series	108	A1		
	027		100	A2		
	050		109	A3		
	100		101	A5		
	200		106	A8		
	320		157	A9		

The input unit code for the pulley input type is one code for each model number.

Configuration Diagram



Rating Table Pulley input type

Solid series

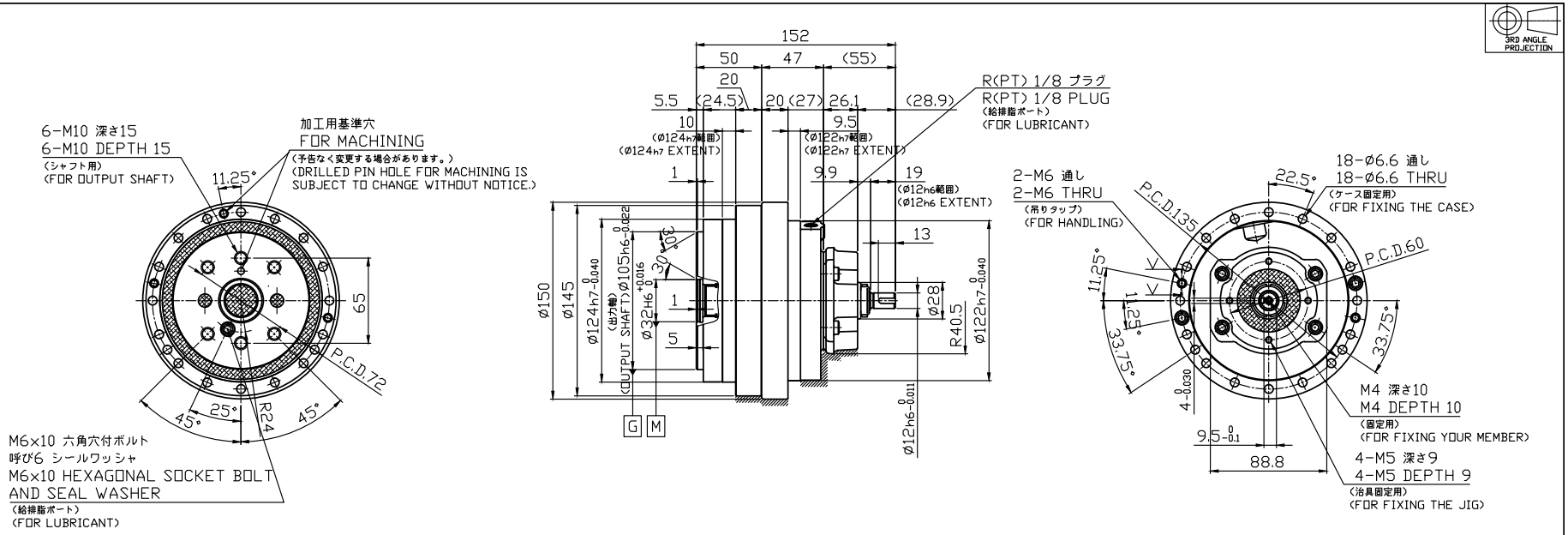
Model Code	Ratio code (actual gear ratio)	Reduction Gear														Input shaft			External Dimensions
		T_0 Rated Torque	N_0 Rated Output Speed	K Life Rating	T_{S1} Allowable Startup/Stop Torque	T_{S2} Momentary maximum allowable torque	N_{in} Allowable Input Speed (Note 2)	N_S Allowable Output Speed (Note 2)	N_{To} Reference value to output speed during continuous operation at rated torque	Back-lash	Lost motion	Torsional rigidity (Representative values)	Start-up Efficiency	M_O Allowable moment (Note 3)	α Dimension α	M_{Oin} Rated moment	M_{Sin} Allowable moment	β dimensions	
		(Nm)	(rpm)	(h)	(Nm)	(Nm)	(rpm)	(rpm)	(rpm)	(arc.min.)	(arc.min.)	(Nm/arc.min.)	(%)	(Nm)	(mm)	(Nm)	(Nm)	(mm)	
RDP-020E	081 (81)	167	15	6,000	412	833	3,500	43	43	1.0	1.0	49	75	882	93.2	38	38	58	Input Unit Code : A0 ——P.71
RDP-040E	057 (57)	412			1,029	2,058	3,000	53	25			108	80	1,666	114.6	78	122	73.8	Input Unit Code : A3 ——P.72
RDP-080E	081 (81)	784			1,960	3,920		37	24			196	80	2,156	136.1		133		Input Unit Code : A4 ——P.73
RDP-160E	066 (66)	1,568			3,920	7,840	2,000	30	15			392	80	3,920	167.3	158	295	86.6	Input Unit Code : A6 ——P.74
RDP-320E	081 (81)	3,136			7,840	15,680		25	12			980	85	7,056	203		417		Input Unit Code : A7 ——P.75

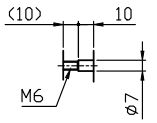
Hollow shaft series

Model Code	Ratio code (actual gear ratio)	Reduction Gear														Input shaft			External Dimensions
		T_0 Rated Torque	N_0 Rated Output Speed	K Life Rating	T_{S1} Allowable Startup/Stop Torque	T_{S2} Momentary maximum allowable torque	N_{in} Allowable Input Speed (Note 2)	N_S Allowable Output Speed (Note 2)	N_{To} Reference value to output speed during continuous operation at rated torque	Back-lash	Lost motion	Torsional rigidity (Representative values)	Start-up Efficiency	M_O Allowable moment (Note 3)	α Dimension α	M_{Oin} Rated moment	M_{Sin} Allowable moment	β dimensions	
		(Nm)	(rpm)	(h)	(Nm)	(Nm)	(rpm)	(rpm)	(rpm)	(arc.min.)	(arc.min.)	(Nm/arc.min.)	(%)	(Nm)	(mm)	(Nm)	(Nm)	(mm)	
RDP-010C	108 (108)	98	15	6,000	245	490	3,500	32	32	1.0	1.0	47	75	686	91.2	38	38	58	Input Unit Code : A1 ——P.76
RDP-027C	100 (99.82)	265			662	1,323		35	28			147	75	980	112		40		Input Unit Code : A2 ——P.77
RDP-050C	109 (109)	490			1,225	2,450	3,000	28	23			255	80	1,764	136.8	78	90	73.8	Input Unit Code : A3 ——P.78
RDP-100C	101 (100.5)	980			2,450	4,900		30	18			510	80	2,450	148.9		134		Input Unit Code : A5 ——P.79
RDP-200C	106 (105.83)	1,960			4,900	9,800	2,000	19	14			980	80	8,820	204.4	158	230	86.6	Input Unit Code : A8 ——P.80
RDP-320C	157 (157)	3,136			7,840	15,680		13	13			1,960	85	20,580	245.9		215		Input Unit Code : A9 ——P.81

Notes:
1. The rating table shows the specification values including the entry fields for reduction gear values.
2. The allowable speed may be limited by heat depending on the operating rate. Make sure the surface temperature of the reduction gear does not exceed 60°C during use.
3. The allowable moment will differ depending on the thrust load. Check the allowable moment diagram.
4. For the moment of inertia of the reduction gears, refer to the external dimension drawings for the reduction gear.

Model Code: RDP-020E-081-A0





SECTION V-V

注記

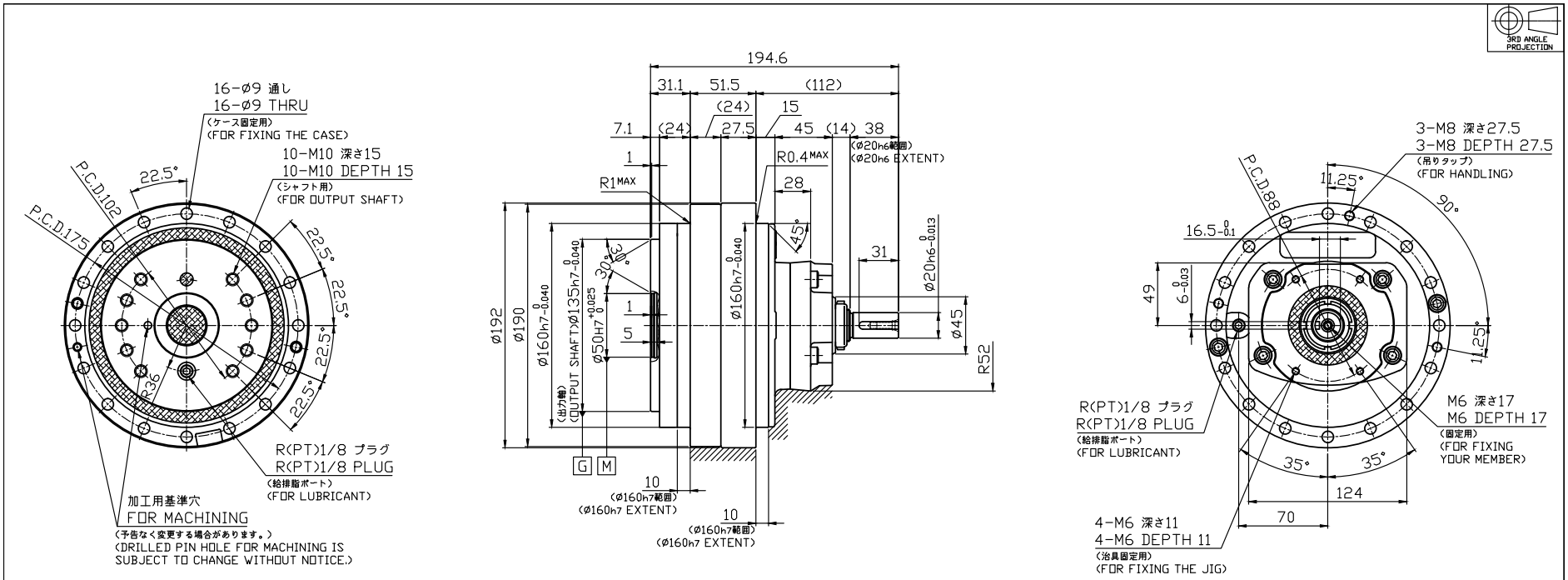
1.フランジ固定用18-M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
2.シャフト用6-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4.インロー G M は、どちらか一方を選択し、使用のこと。
5.減速機内部には、弊社指定潤滑剤を充填済。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 18-M6 hexagon socket headed bolt for fixing case is 15.6±0.78N-m.
2.Tightening torque of 6-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Bolt shall be used with corned disk spring for heavy duty.
4.Use one of G or M.
5.The specified lubricant is already sealed in before shipment.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
81	RDP-020E-081-A0	8.3	2.24x10-5

Model Code: RDP-040E-057-A3



注記

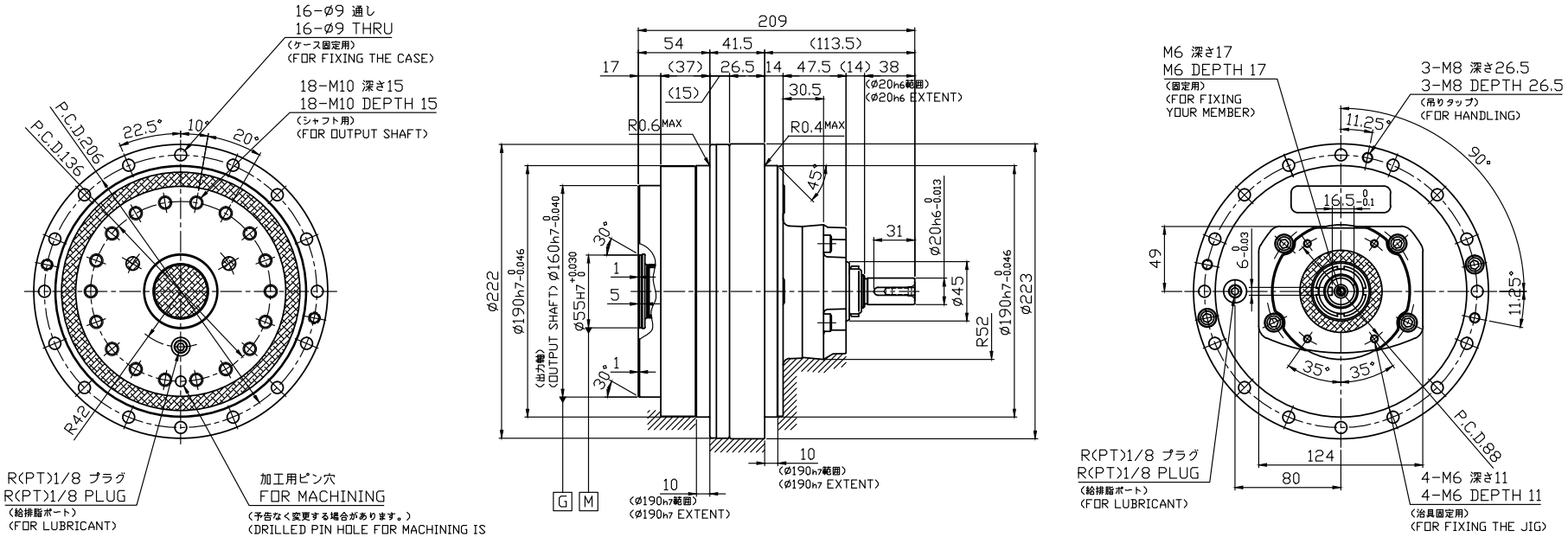
1.ケース固定用16-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用10-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4.減速機内部には、弊社指定潤滑剤を充填済。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 16-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 10-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Bolt shall be used with corned disk spring for heavy duty.
4.The specified lubricant is already sealed in before shipment.
5.Use one of G or M.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
57	RDP-040E-057-A3	16.4	1.73x10-4

Model Code: RDP-080E-081-A4



注記

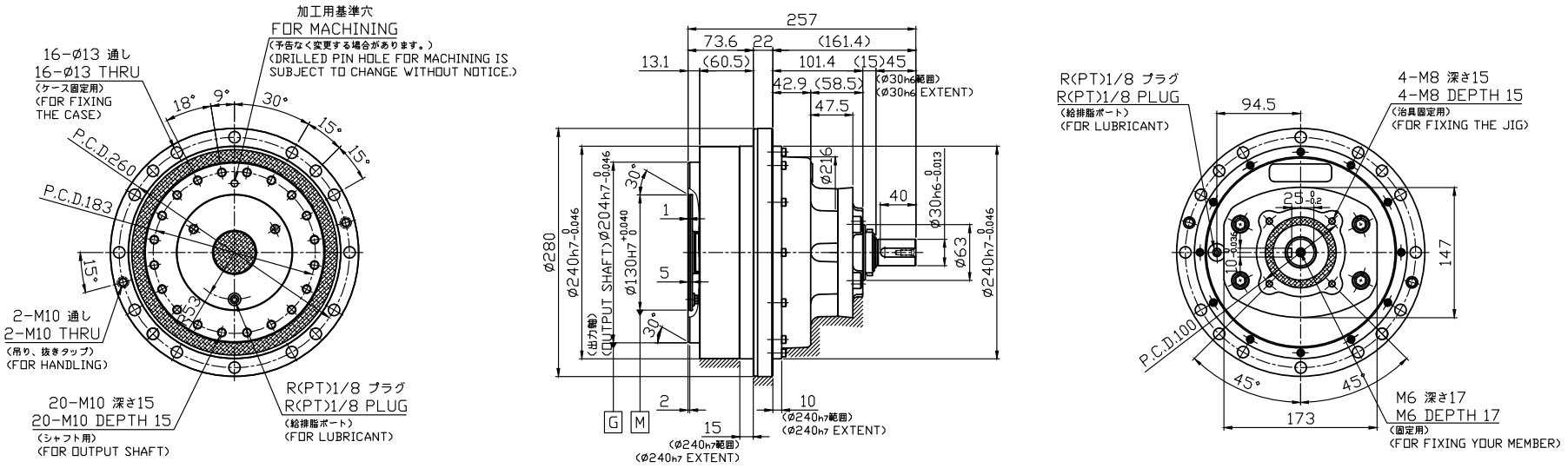
1.ケース固定用16-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用18-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4.減速機内部には、弊社指定潤滑剤を充填済。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 16-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 18-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Bolt shall be used with corned disk spring for heavy duty.
4.The specified lubricant is already sealed in before shipment.
5.Use one of G or M.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
81	RDP-080E-081-A4	22.8	1.92x10-4

Model Code: RDP-160E-066-A6



注記

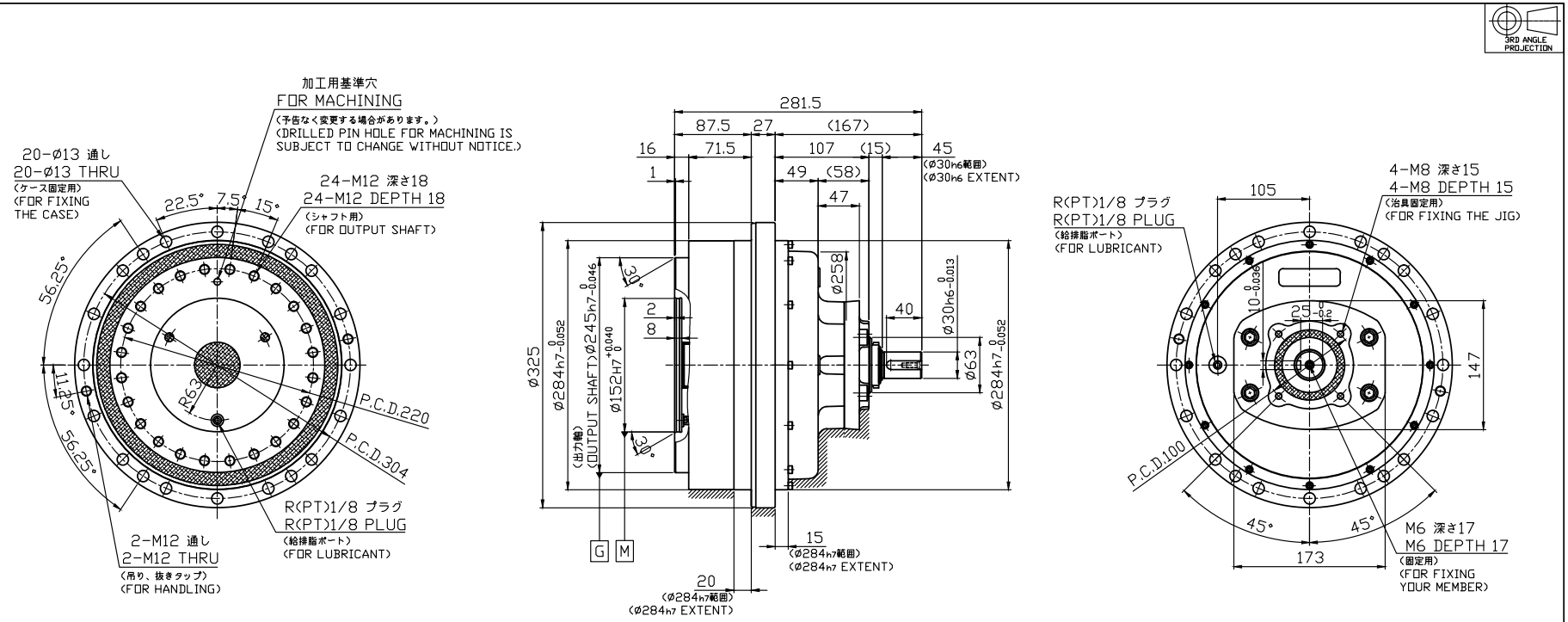
1.ケース固定用16-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用20-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4.減速機内部には、弊社指定潤滑剤を充填済。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 16-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 20-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Bolt shall be used with corned disk spring for heavy duty.
4.The specified lubricant is already sealed in before shipment.
5.Use one of G or M.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
66	RDP-160E-066-A6	41.9	8.94x10-4

Model Code: RDP-320E-081-A7



注記

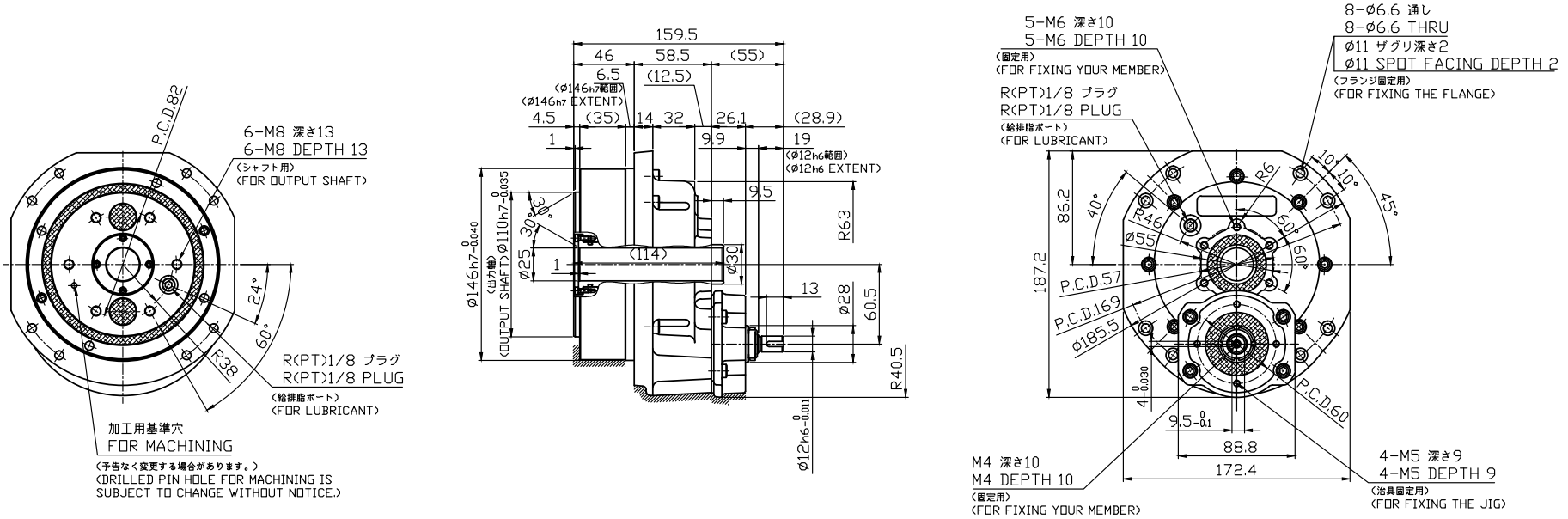
1.ケース固定用20-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用24-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
3.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4.減速機内部には、弊社指定潤滑剤を充填済。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 20-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 24-M12 hexagon socket headed bolt on the output shaft is 129±6.37N-m.
3.Bolt shall be used with corned disk spring for heavy duty.
4.The specified lubricant is already sealed in before shipment.
5.Use one of G or M.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
81	RDP-320E-081-A7	67.3	1.17x10-3

Model Code: RDP-010C-108-A1



注記

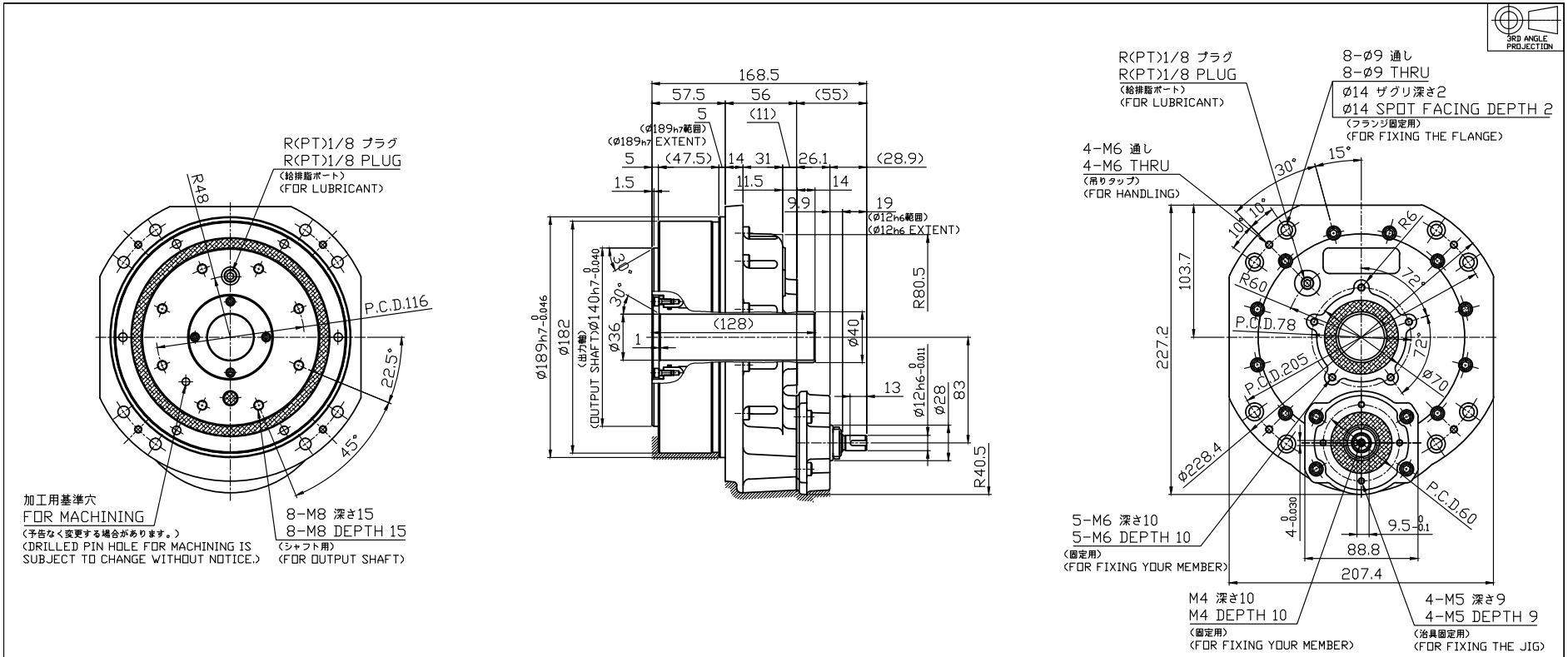
1. フランジ固定用8-M6六角穴付ボルトは、締付トルク15.6±0.78N-mにて締付けること。
2. シャフト用6-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3. ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4. 減速機内部には、弊社指定潤滑剤を充填済。
5. 塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1. Tightening torque of 8-M6 hexagon socket headed bolt for fixing case is 15.6±0.78N-m.
2. Tightening torque of 6-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3. Bolt shall be used with corned disk spring for heavy duty.
4. The specified lubricant is already sealed in before shipment.
5. ////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
108	RDP-010C-108-A1	10.3	5.52x10-5

Model Code: RDP-027C-100-A2



注記

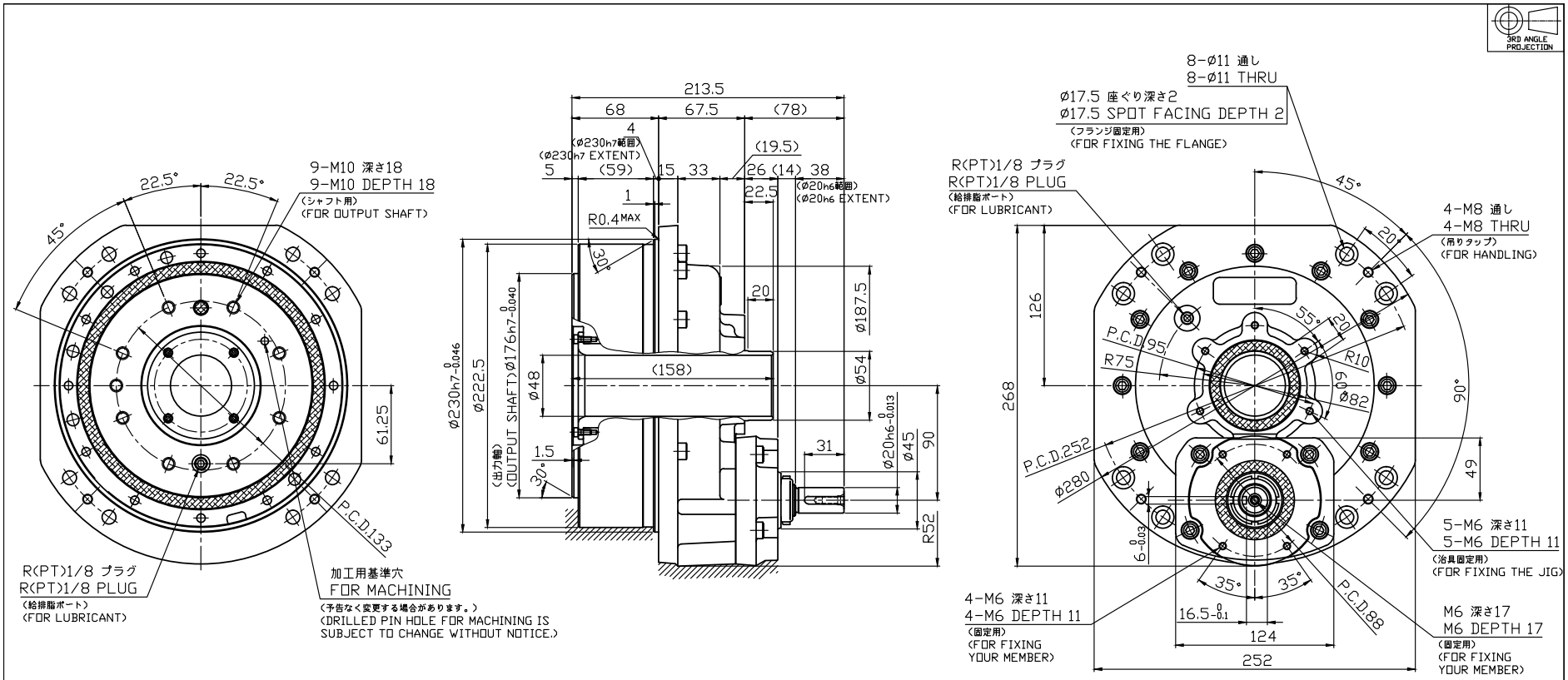
1.フランジ固定用8-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
2.シャフト用8-M8六角穴付ボルトは、締付トルク37.2±1.86N-mにて締付けること。
3.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4.減速機内部には、弊社指定潤滑剤を充填済。
5.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を//////に示す。

NOTE

1.Tightening torque of 8-M8 hexagon socket headed bolt for fixing case is 37.2±1.86N-m.
2.Tightening torque of 8-M8 hexagon socket headed bolt on the output shaft is 37.2±1.86N-m.
3.Bolt shall be used with corned disk spring for heavy duty.
4.The specified lubricant is already sealed in before shipment.
5.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
99.82	RDP-027C-100-A2	16.4	2.13x10-4

Model Code: RDP-050C-109-A3



注記

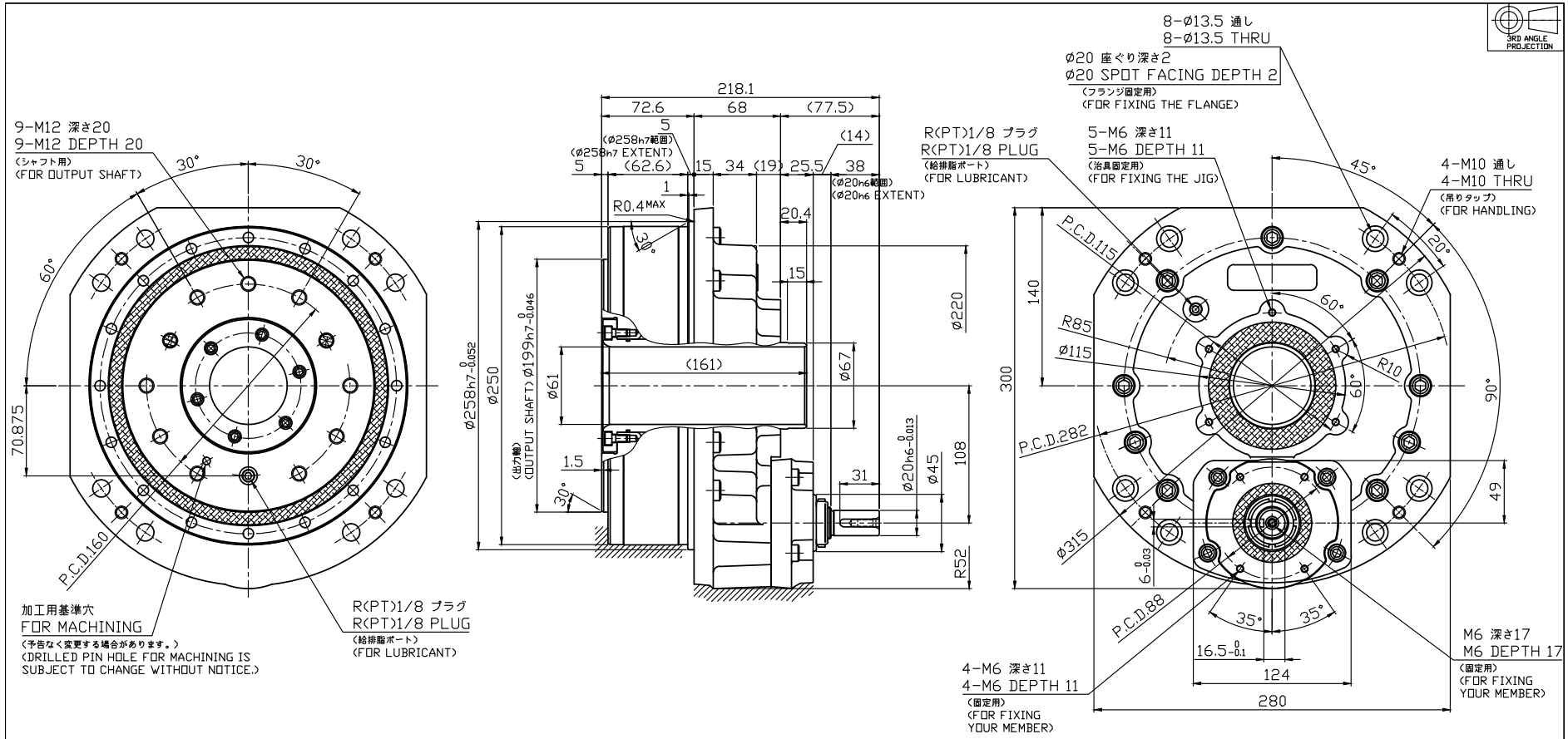
1.フランジ固定用8-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
2.シャフト用9-M10六角穴付ボルトは、締付トルク73.5±3.43N-mにて締付けること。
3.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4.減速機内部には、弊社指定潤滑剤を充填済。
5.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 8-M10 hexagon socket headed bolt for fixing case is 73.5±3.43N-m.
2.Tightening torque of 9-M10 hexagon socket headed bolt on the output shaft is 73.5±3.43N-m.
3.Bolt shall be used with corned disk spring for heavy duty.
4.The specified lubricant is already sealed in before shipment.
5.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
109	RDP-050C-109-A3	28.8	3.02x10-4

Model Code: RDP-100C-101-A5



注記

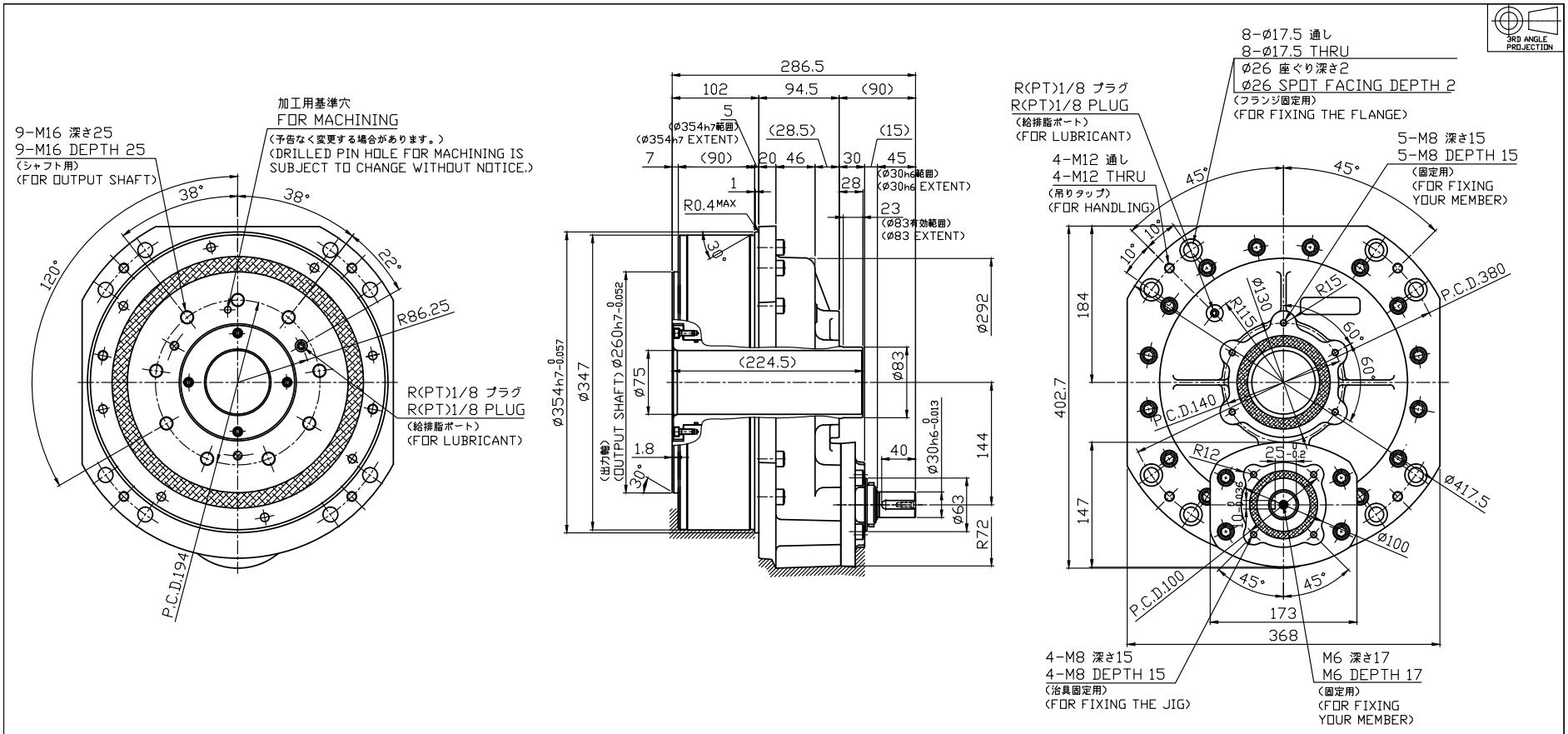
1.フランジ固定用8-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
2.シャフト用9-M12六角穴付ボルトは、締付トルク129±6.37N-mにて締付けること。
3.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4.減速機内部には、弊社指定潤滑剤を充填済。
5.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を////// に示す。

NOTE

1.Tightening torque of 8-M12 hexagon socket headed bolt for fixing case is 129±6.37N-m.
2.Tightening torque of 9-M12 hexagon socket headed bolt on the output shaft is 129±6.37N-m.
3.Bolt shall be used with corned disk spring for heavy duty.
4.The specified lubricant is already sealed in before shipment.
5.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
100.5	RDP-100C-101-A5	36.9	9.05×10-4

Model Code: RDP-200C-106-A8



注記

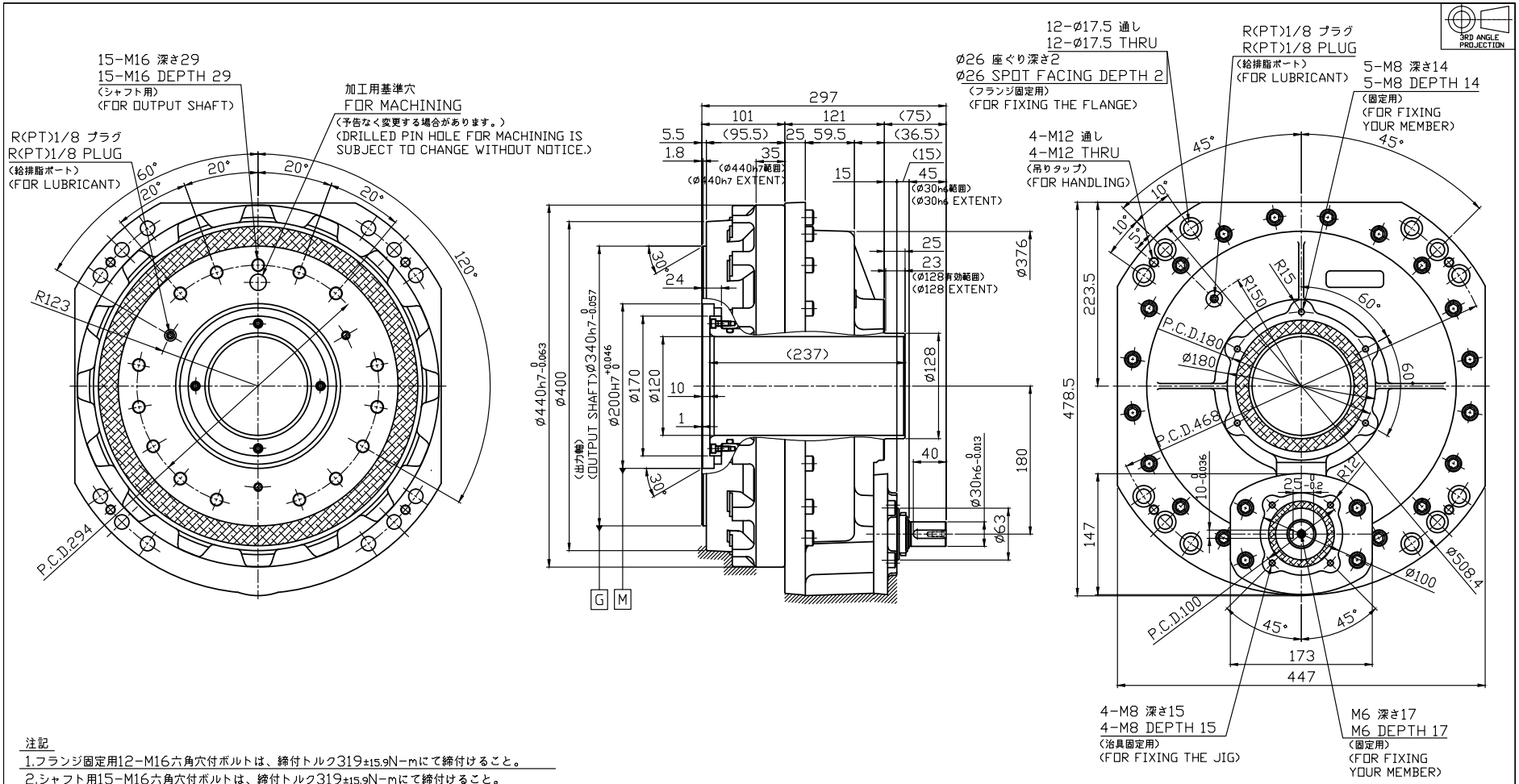
1.フランジ固定用8-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
2.シャフト用9-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
3.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4.減速機内部には、弊社指定潤滑剤を充填済。
5.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 8-M16 hexagon socket headed bolt for fixing case is 319±15.9N-m.
2.Tightening torque of 9-M16 hexagon socket headed bolt on the output shaft is 319±15.9N-m.
3.Bolt shall be used with corned disk spring for heavy duty.
4.The specified lubricant is already sealed in before shipment.
5.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
105.83	RDP-200C-106-A8	93.8	2.37x10-3

Model Code: RDP-320C-157-A9



注記

1.フランジ固定用12-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
2.シャフト用15-M16六角穴付ボルトは、締付トルク319±15.9N-mにて締付けること。
3.ケース及びシャフト締付ボルトには、六角穴付ボルト用皿バネを使用すること。
4.減速機内部には、弊社指定潤滑剤を充填済。
5.インロー G M は、どちらか一方を選択し、使用のこと。
6.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1.Tightening torque of 12-M16 hexagon socket headed bolt for fixing case is 319±15.9N-m.
2.Tightening torque of 15-M16 hexagon socket headed bolt on the output shaft is 319±15.9N-m.
3.Bolt shall be used with corned disk spring for heavy duty.
4.The specified lubricant is already sealed in before shipment.
5.Use one of G or M.
6.////// area is painted black.

速比 Speed Ratio	型式コード Model Code	質量 Mass (kg)	慣性モーメントI Moment of Inertia 'I' (I=GD2/4) 入力軸換算値 The Motor Axis Conversion (kg-m2)
157	RDP-320C-157-A9	139.7	3.87x10-3

Motor flange / bushing

Select the motor flange code and bushing code based on the dimension of the motor to be used. Applicable model code: RD□-006E, 020E, 010C, 027C

Supported motor shaft diameter: Ø8 to Ø14

Model Code	Input unit code
Reduction gear (straight input type)	
RDS-006E	B0
RDS-020E	
RDS-010C	
RDS-027C	
Reduction gear (right angle input type)	
RDR-006E	C0
RDR-020E	
RDR-010C	
RDR-027C	

Motor flange									Bushing		
Motor flange code	Motor shaft length (mm) a		Motor mounting pilot diameter (mm) Øb	Motor mounting pilot tolerance	Motor mounting pilot length (mm) c (*)	Bolt P.C.D. d	Bolt size e	Stepped part max length (mm) g	Bushing code	Motor shaft diameter(mm) Øf	Motor shaft tolerance
	Min.	Max.									
AA	23	30	30	h7	3	46	M4	3.5	0A	8	h6
AB	23	31	50	h7	5	60	M4	4	0B	9	h6
AC	23	31	50	h7	5	70	M4	4	0C	10	h6
AD	23	31	50	h7	5	70	M5	4	0D	11	h6
AE	24	32	70	h7	6	90	M5	5	0E	9	k6
AF	23	31	70	h7	6	90	M6	4	0F	11	k6
AG	30	38	80	h7	6	100	M6	11	ZZ	14	h6
AH	23	31	80	h7	6	100	M6	4			
AJ	30	38	95	h7	6	115	M8	11			
AK	35	43	115	h7	6	165	M8	16			
AL	32	40	80	h7	6	100	M6	13			
AM	25	32	30	h7	3	46	M4	5.5			
AN	26	34	70	h7	6	90	M6	7			
AP	25	33	50	h7	5	60	M4	6			
AQ	23	30	60	h7	6	75	M5	3			
AR	23	30	40	h7	–	63	M5	3.5			

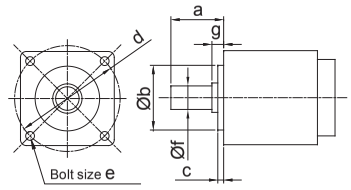
* The motor mounting pilot length indicates the maximum value of the capable range.

Supported motor shaft diameter: Ø14 to Ø24

Model Code	Input unit code
Reduction gear (straight input type)	
RDS-006E	B1
RDS-020E	
RDS-010C	
RDS-027C	
Reduction gear (right angle input type)	
RDR-006E	C1
RDR-020E	
RDR-010C	
RDR-027C	

Motor flange									Bushing		
Motor flange code	Motor shaft length (mm) a		Motor mounting pilot diameter (mm) Øb	Motor mounting pilot tolerance	Motor mounting pilot length (mm) c (*)	Bolt P.C.D. d	Bolt size e	Stepped part max length (mm) g	Bushing code	Motor shaft diameter(mm) Øf	Motor shaft tolerance
	Min.	Max.									
CA	28	55	50	h7	6	70	M5	6.5	1B	15	h6
CB	28	55	70	h7	5.5	90	M5	6.5	1C	16	h6
CC	28	55	70	h7	5.5	90	M6	6.5	1D	17	h6
CD	30	57	80	h7	6	100	M6	8.5	1E	19	h6
CE	30	57	95	h7	6	115	M6	8.5	1F	22	h6
CF	30	57	95	h7	6	115	M8	8.5	1G	14	k6
CG	32	59	110	h7	7	135	M8	10.5	1H	19	k6
CH	32	59	110	h7	7	145	M8	10.5	1J	16	k6
CJ	47	74	110	h7	7	145	M8	25.5	ZZ	24	h6
CK	32	59	114.3	h7	5	200	M12	10.5			
CL	32	59	115	h7	6	165	M8	10.5			
CM	32	59	130	h7	6	165	M10	10.5			
CN	32	59	200	h7	5	235	M12	10.5			
CP	37	64	80	h7	6	100	M6	15.5			
CQ	35	62	95	h7	6	115	M8	13.5			
CR	40	67	110	h7	7	145	M8	18.5			
CT	32	59	110	h7	7	130	M8	10.5			
CU	28	55	60	h7	–	75	M5	6.5			

* The motor mounting pilot length indicates the maximum value of the capable range.



Select the motor flange code and bushing code based on the dimension of the motor to be used.
Applicable model code: RD□-040E,080E,050C,100C

Supported motor shaft diameter: Ø14 to Ø24

Model Code	Input unit code
Reduction gear (straight input type)	
RDS-040E	B2
RDS-080E	
RDS-050C	
RDS-100C	
Reduction gear (right angle input type)	
RDR-040E	C2
RDR-080E	
RDR-050C	
RDR-100C	

Motor flange									Bushing		
Motor flange code	Motor shaft length (mm) a		Motor mounting pilot diameter (mm) Øb	Motor mounting pilot tolerance	Motor mounting pilot length (mm) c (*)	Bolt P.C.D. d	Bolt size e	Stepped part max length (mm) g	Bushing code	Motor shaft diameter(mm) Øf	Motor shaft tolerance
	Min.	Max.									
CA	34	55	50	h7	6	70	M5	5	1A	14	h6
CB	34	55	70	h7	5.5	90	M5	5	1B	15	h6
CC	34	55	70	h7	5.5	90	M6	5	1C	16	h6
CD	36	57	80	h7	6	100	M6	7	1D	17	h6
CE	36	57	95	h7	6	115	M6	7	1E	19	h6
CF	36	57	95	h7	6	115	M8	7	1F	22	h6
CG	38	59	110	h7	7	135	M8	9	1G	14	k6
CH	38	59	110	h7	7	145	M8	9	1H	19	k6
CJ	53	74	110	h7	7	145	M8	24	1J	16	k6
CK	38	59	114.3	h7	5	200	M12	9	ZZ	24	h6
CL	38	59	115	h7	6	165	M8	9			
CM	38	59	130	h7	6	165	M10	9			
CN	38	59	200	h7	5	235	M12	9			
CP	43	64	80	h7	6	100	M6	14			
CQ	41	62	95	h7	6	115	M8	12			
CR	46	67	110	h7	7	145	M8	17			
CT	38	59	110	h7	7	130	M8	9			

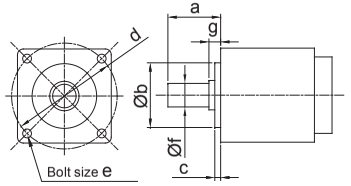
* The motor mounting pilot length indicates the maximum value of the capable range.

Supported motor shaft diameter: Ø25 to Ø35

Model Code	Input unit code
Reduction gear (straight input type)	
RDS-040E	B3
RDS-080E	
RDS-050C	
RDS-100C	
Reduction gear (right angle input type)	
RDR-040E	C3
RDR-080E	
RDR-050C	
RDR-100C	

Motor flange									Bushing		
Motor flange code	Motor shaft length (mm) a		Motor mounting pilot diameter (mm) Øb	Motor mounting pilot tolerance	Motor mounting pilot length (mm) c (*)	Bolt P.C.D. d	Bolt size e	Stepped part max length (mm) g	Bushing code	Motor shaft diameter(mm) Øf	Motor shaft tolerance
	Min.	Max.									
GA	36	81	95	h7	8	115	M8	7	3A	25	h6
GB	38	83	110	h7	7	135	M8	9	3B	28	h6
GC	38	83	110	h7	7	145	M8	9	3C	28	k6
GD	38	83	114.3	h7	5	200	M12	9	3D	32	k6
GE	38	83	130	h7	6	165	M10	9	3E	32	h6
GF	38	83	200	h7	6	235	M12	9	ZZ	35	(+0.010/0)
GG	48	93	110	h7	7	145	M8	19			
GH	48	93	114.3	h7	5	200	M12	19			
GJ	43	88	110	h7	7	145	M8	14			
GK	38	83	110	h7	7	130	M8	9			

* The motor mounting pilot length indicates the maximum value of the capable range.



Select the motor flange code and bushing code based on the dimension of the motor to be used.
Applicable model code: RD□-160E,320E,200C,320C

Supported motor shaft diameter: Ø19 to Ø28

Model Code	Input unit code
Reduction gear (straight input type)	
RDS-160E	B4
RDS-320E	
RDS-200C	
RDS-320C	
Reduction gear (right angle input type)	
RDR-160E	C4
RDR-320E	
RDR-200C	
RDR-320C	

Motor flange									Bushing		
Motor flange code	Motor shaft length (mm) a		Motor mounting pilot diameter (mm) Øb	Motor mounting pilot tolerance	Motor mounting pilot length (mm) c (*)	Bolt P.C.D. d	Bolt size e	Stepped part max length (mm) g	Bushing code	Motor shaft diameter(mm) Øf	Motor shaft tolerance
	Min.	Max.									
GA	36	71	95	h7	8	115	M8	7	2A	19	h6
GB	38	73	110	h7	7	135	M8	9	2B	22	h6
GC	38	73	110	h7	7	145	M8	9	2C	24	h6
GD	38	73	114.3	h7	5	200	M12	9	2D	19	k6
GE	38	73	130	h7	6	165	M10	9	2E	24	k6
GF	38	73	200	h7	6	235	M12	9	ZZ	28	h6
GG	48	83	110	h7	7	145	M8	19			
GH	48	83	114.3	h7	5	200	M12	19			
GJ	43	78	110	h7	7	145	M8	14			

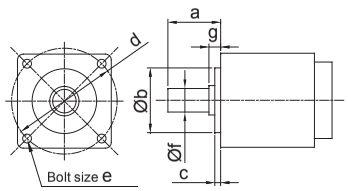
* The motor mounting pilot length indicates the maximum value of the capable range.

Supported motor shaft diameter: Ø32 to Ø42

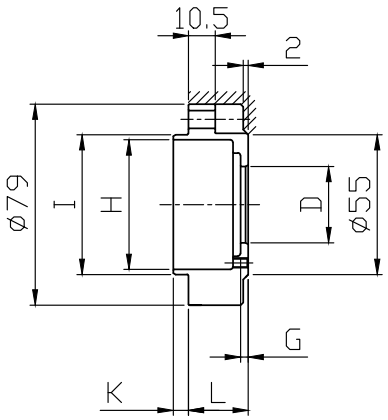
Model Code	Input unit code
Reduction gear (straight input type)	
RDS-160E	B5
RDS-320E	
RDS-200C	
RDS-320C	
Reduction gear (right angle input type)	
RDR-160E	C5
RDR-320E	
RDR-200C	
RDR-320C	

Motor flange									Bushing		
Motor flange code	Motor shaft length (mm) a		Motor mounting pilot diameter (mm) Øb	Motor mounting pilot tolerance	Motor mounting pilot length (mm) c (*)	Bolt P.C.D. d	Bolt size e	Stepped part max length (mm) g	Bushing code	Motor shaft diameter(mm) Øf	Motor shaft tolerance
	Min.	Max.									
JA	56	86	110	h7	7	145	M8	7	4A	32	h6
JB	54	84	114.3	h7	5	200	M12	5	4B	35	(+0.010/0)
JC	85	115	114.3	h7	5	200	M12	36	4C	38	k6
JD	57	87	180	h7	5	215	M12	8	4D	32	k6
JE	54	84	200	h7	5	235	M12	5	4E	38	h6
JF	87	117	200	h7	5	235	M12	38	4F	35	h6
JG	59	89	114.3	h7	5	200	M12	10	ZZ	42	h6
JH	54	84	130	h7	10	165	M10	5			

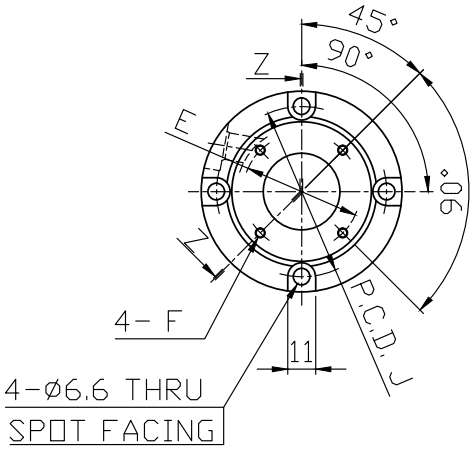
* The motor mounting pilot length indicates the maximum value of the capable range.



Motor Flange Dimension Drawing



SECTION Z-Z



コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
AA	$\phi 30^{+0.030}_{+0.009}$	ø46	M4 THRU	3	ø51	$\phi 55_{h7}{}^{0}_{-0.030}$	67	6	23.5	0.45
AM									25.5	0.48

注記

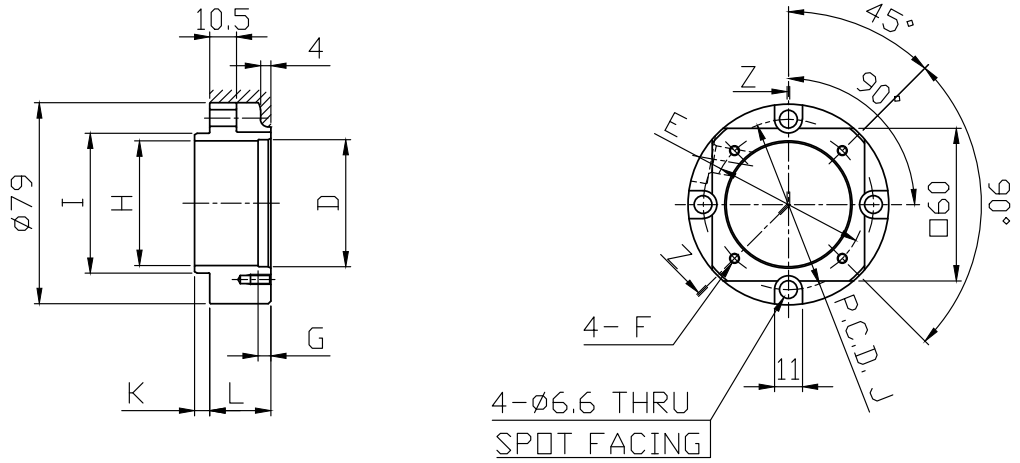
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1. ////// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



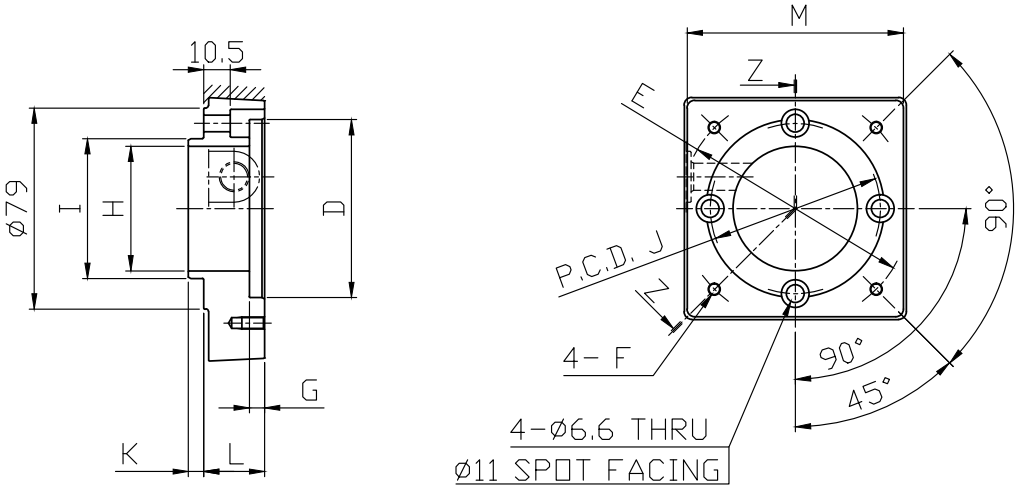
コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
AB	$ø50^{+0.036}_{+0.011}$	ø60	M4 DEPTH 8	5	ø49	$ø55_{h7}{}^{0}_{-0.030}$	67	6	24	0.44
AC		ø70								
AD			M5 DEPTH 9							
AP		ø60	M4 DEPTH 8						26	0.46
AR	$ø40^{+0.036}_{+0.011}$	ø63	M5 DEPTH 9	4	ø51				23.5	0.48

注記
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE
1. ////// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



コード Code	モータ取付部寸法 Dimensions (mm)										質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	M	
AQ	$\phi 60^{+0.037}_{+0.012}$	ø75	M5 DEPTH 9	6	ø49	$\phi 55_{h7}{}^{0}_{-0.030}$	67	6	23	□85	0.8
AE	$\phi 70^{+0.037}_{+0.012}$	ø90							25		
AF			M6 DEPTH 11						24		
AN									27		0.92
AG	$\phi 80^{+0.037}_{+0.012}$	ø100							31		1.1
AL									33		1.1
AH									24		0.75
AJ	$\phi 95^{+0.038}_{+0.013}$	ø115	M8 DEPTH 15						31	□105	1.8
AK	$\phi 115^{+0.038}_{+0.013}$	ø165							36	□150	4.9

注記

1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

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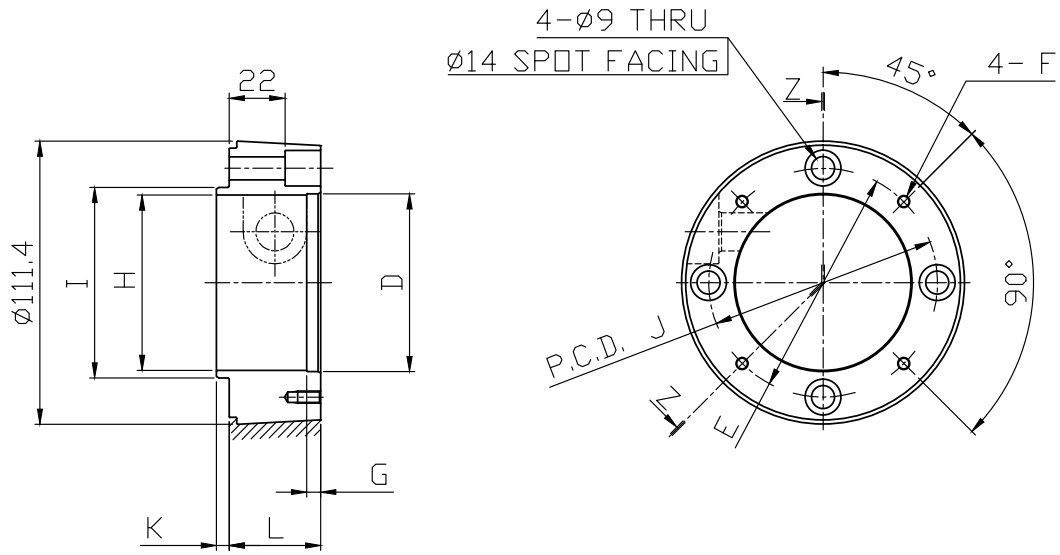
3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
CA	ø50 +0.036 +0.011	ø70	M5 DEPTH 9	3.5	ø69	ø75 h7 0 -0.030	90	5	36	1.3
CU	ø60 +0.037 +0.012	ø75			ø67					
CB	ø70 +0.037 +0.012	ø90		5.5	ø69					
CC			M6 DEPTH 11							

注記
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE
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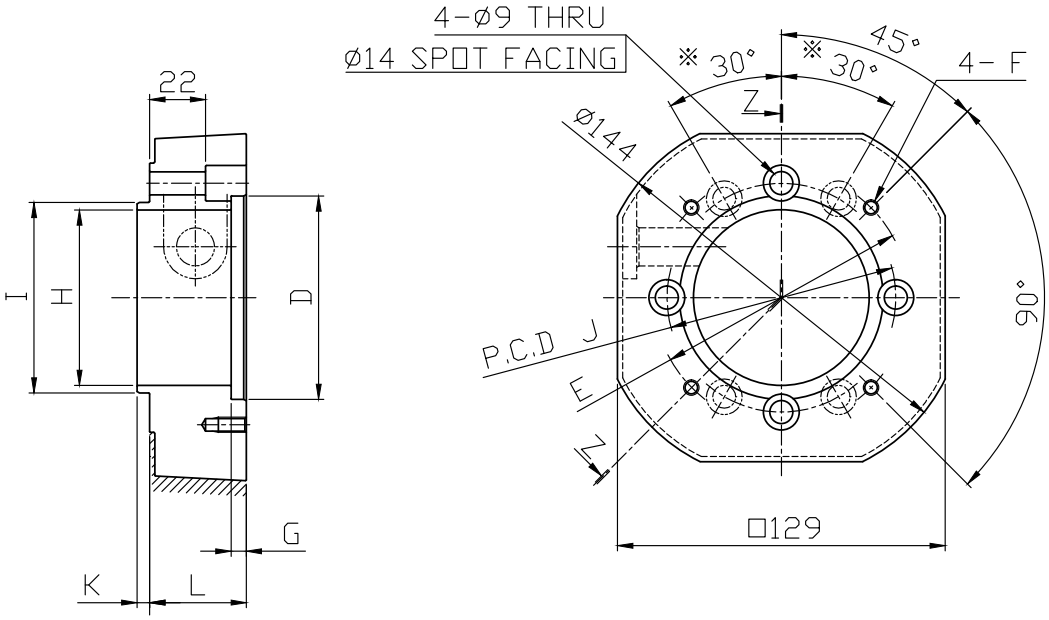
3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



※ 印の角度寸法は、コード"GA"に適用とする。

※ Applied to Code "GA"

コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
CD	ø80 $^{+0.037}_{+0.012}$	ø100	M6 DEPTH 11	6	ø69	ø75h7 $^{0}_{-0.030}$	90	5	38	2.5
CE	ø95 $^{+0.038}_{+0.013}$	ø115								2.4
CF			M8 DEPTH 15							
CQ									43	2.8
GA	ø95 $^{+0.038}_{+0.013}$	ø115		7	ø96	ø106h7 $^{0}_{-0.035}$	122		38	1.8

注記

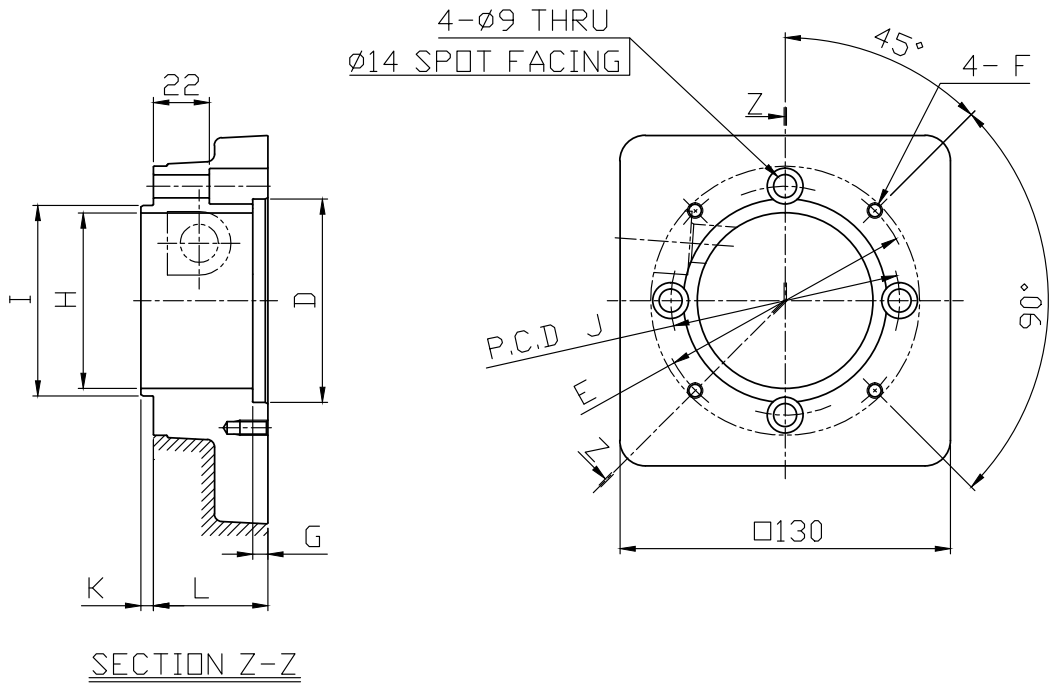
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1. ////// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
CP	$\phi 80^{+0.037}_{+0.012}$	ø100	M6 DEPTH 11	6	ø69	$\phi 75_{h7}{}^{0}_{-0.030}$	90	5	45	2.6

注記

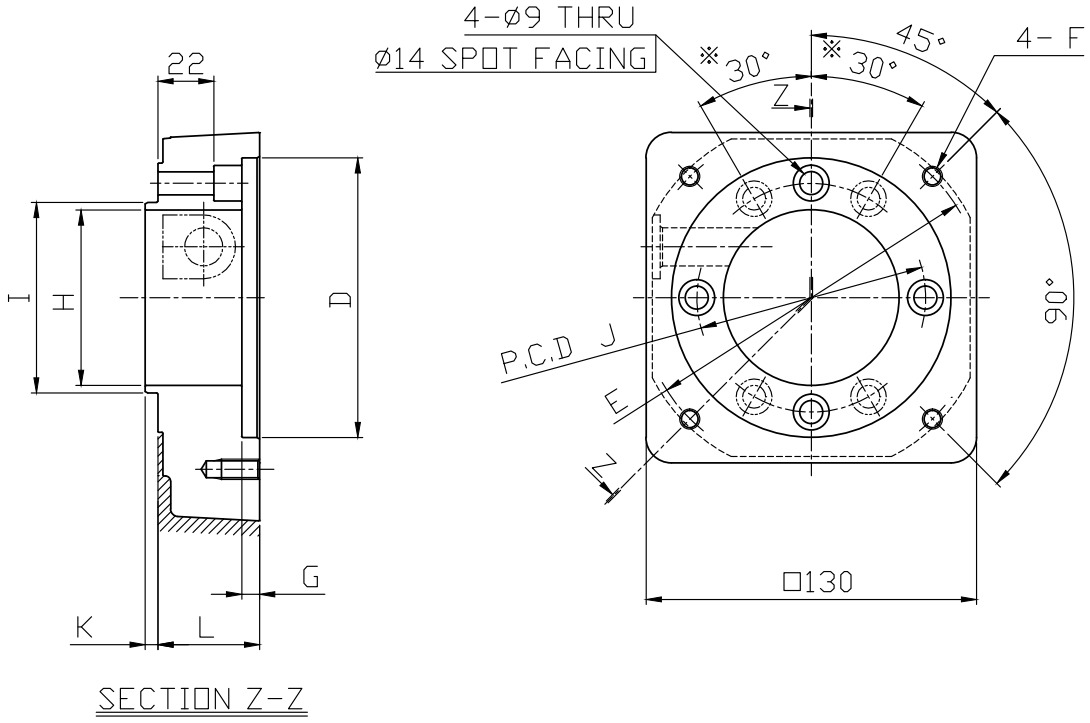
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1. ////// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



※ 印の角度寸法は、コード"GB"、"GC"、"GG"、"GJ"に適用とする。

※ Applied to Code "GB","GC","GG" or "GJ"

コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
CG	ø110 +0.038 +0.013	ø135	M8 DEPTH 15	7	ø69	ø75 h7 0 -0.030	90	5	40	3.2
CT		ø130								
CH		ø145								
CR									48	3.5
GB		ø135			ø96	ø106 h7 0 -0.035	122		40	2.5
GC		ø145								
GG									50	3.2
GJ									45	2.8

注記

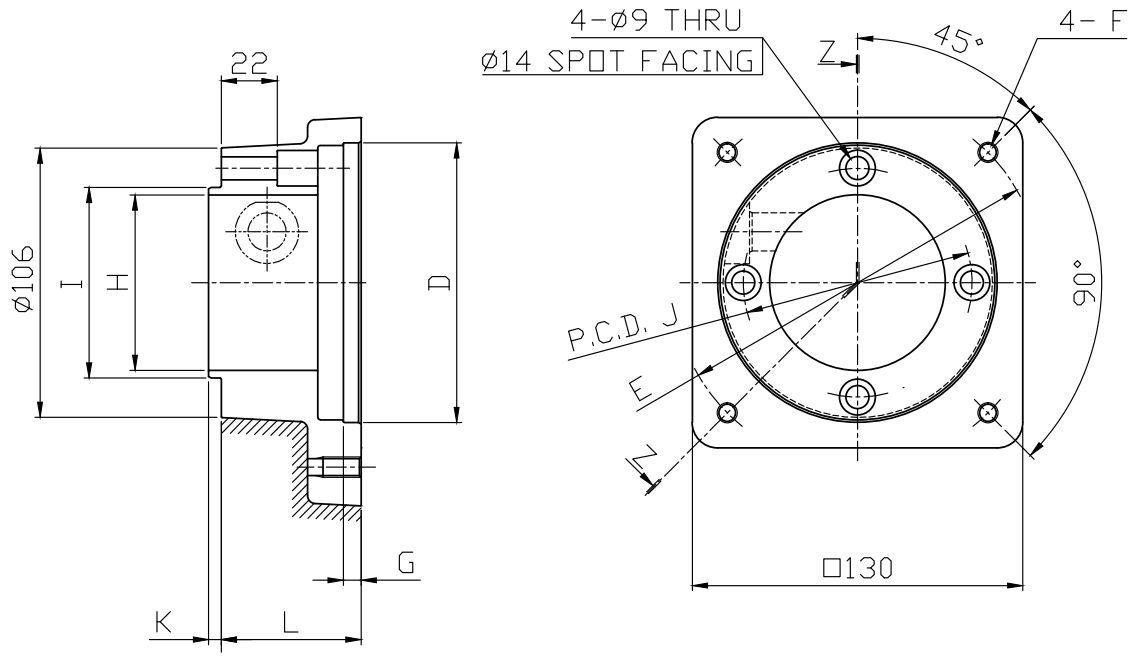
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ///// に示す。

NOTE

1. ///// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
CJ	$\phi110^{+0.038}_{+0.013}$	ø145	M8 DEPTH 15	7	ø69	$\phi75h7^{0}_{-0.030}$	90	5	55	2.5
GK		ø130			ø96	$\phi106h7^{0}_{-0.035}$	122		40	

注記

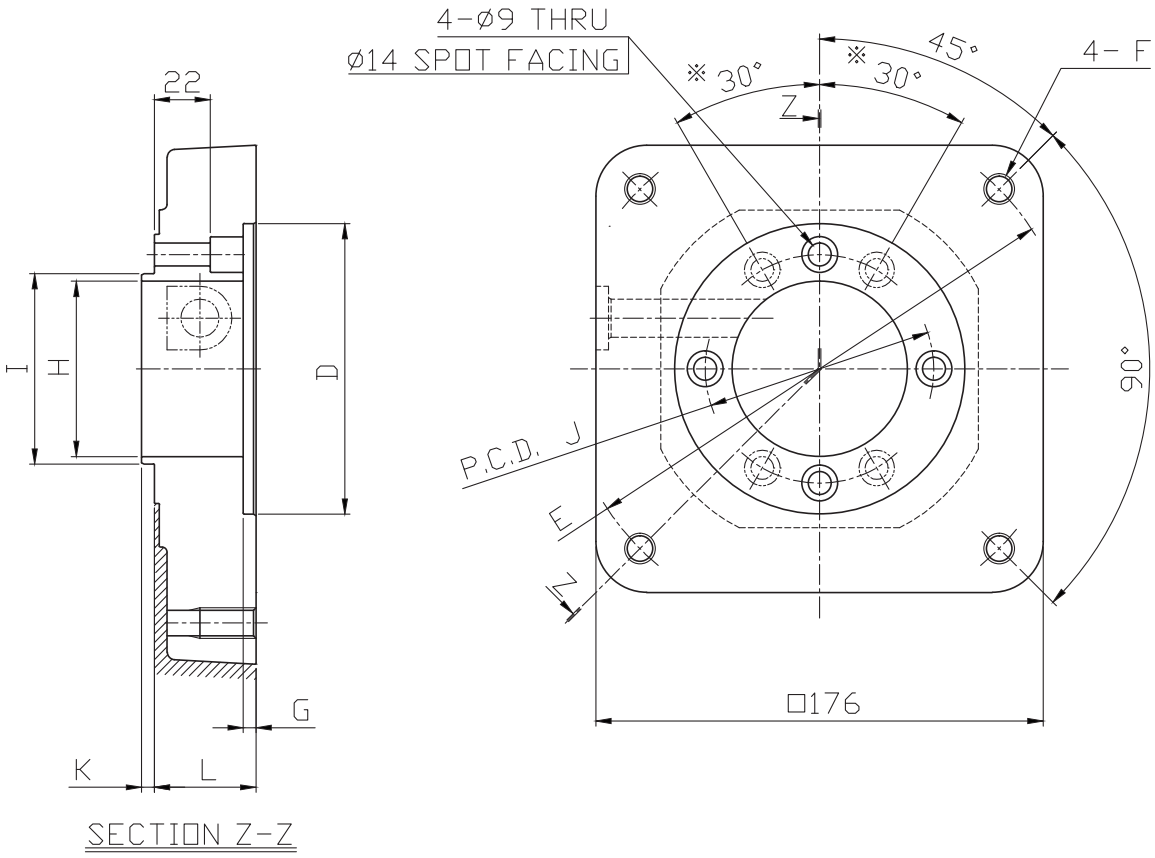
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1. ////// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



※ 印の角度寸法は、コード"GD"、"GE"、"GH"に適用とする。

※ Applied to Code "GD","GE" or "GH"

コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
CK	ø114.3 $^{+0.038}_{+0.013}$	ø200	M12 DEPTH 22	5	ø69	ø75h7 $^{0}_{-0.030}$	90	5	40	6.7
CL	ø115 $^{+0.038}_{+0.013}$	ø165	M8 DEPTH 15	6						6.8
CM	ø130 $^{+0.039}_{+0.014}$		M10 DEPTH 18							6.6
GD	ø114.3 $^{+0.038}_{+0.013}$	ø200	M12 DEPTH 22	5	ø96	ø106h7 $^{0}_{-0.035}$	122			6.1
GE	ø130 $^{+0.039}_{+0.014}$	ø165	M10 DEPTH 18	6						6.0
GH	ø114.3 $^{+0.038}_{+0.013}$	ø200	M12 DEPTH 22	5					50	7.1

注記

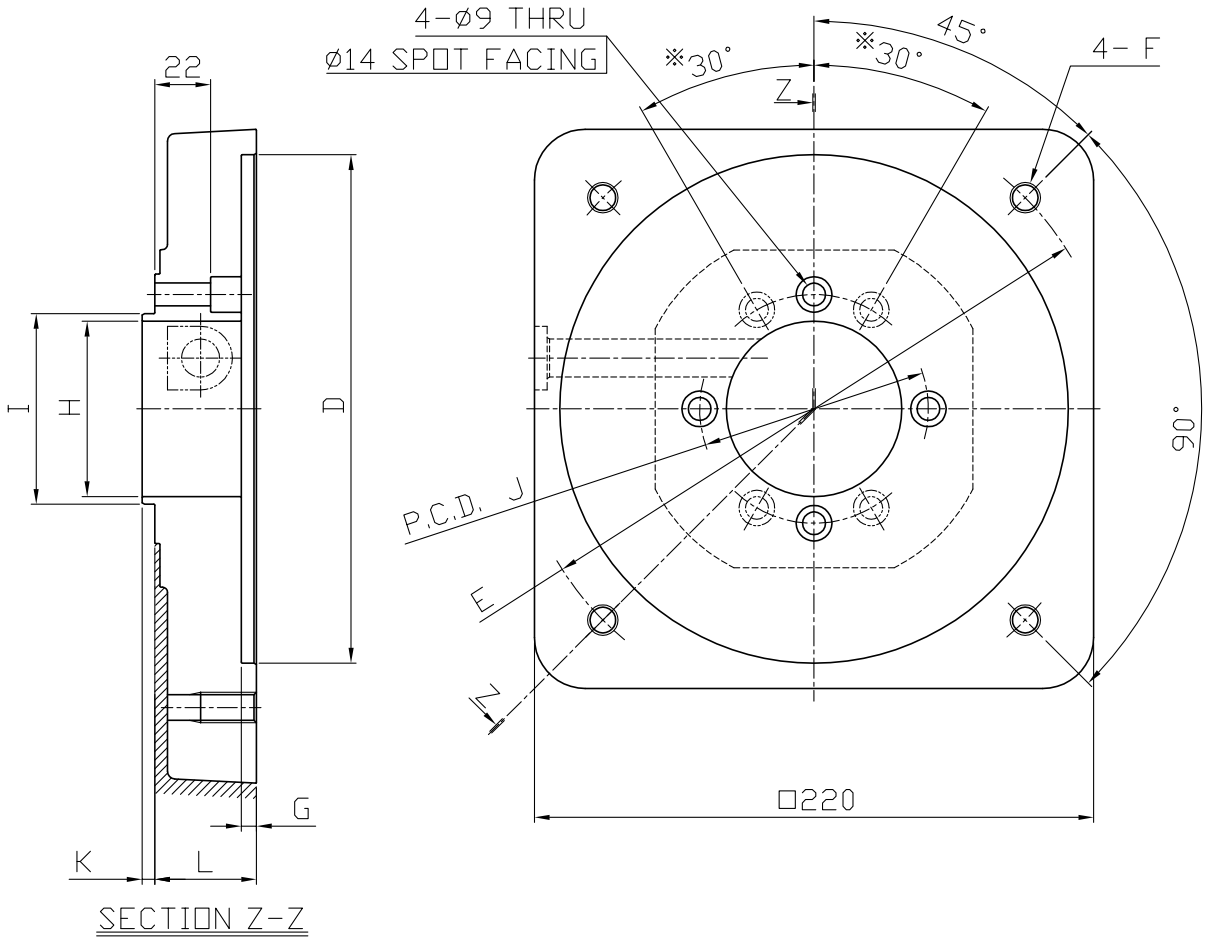
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1. ////// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



※ 印の角度寸法は、コード"GF"に適用とする。

※ Applied to Code "GF"

コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
CN	$\phi 200^{+0.040}_{+0.015}$	ø235	M12 DEPTH 22	6	ø69	$\phi 75_{h7-0.030}^{0}$	90	5	40	10.3
GF					ø96	$\phi 106_{h7-0.035}^{0}$	122			9.8

注記

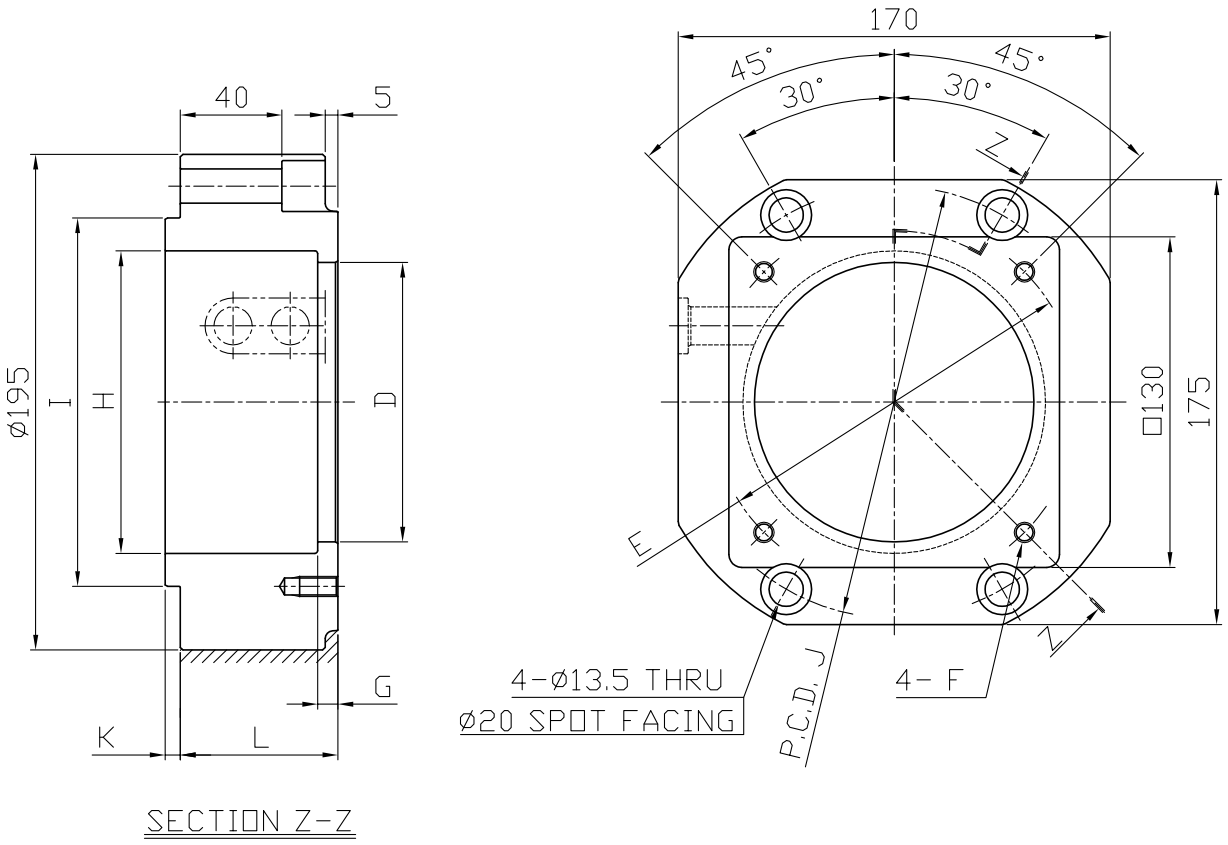
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ///// に示す。

NOTE

1. ///// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
JA	$\phi 110^{+0.038}_{+0.013}$	ø145	M8 DEPTH 15	8	ø119	$\phi 145_{h7\ -0.040}^{\ 0}$	170	6	62	6.9

注記

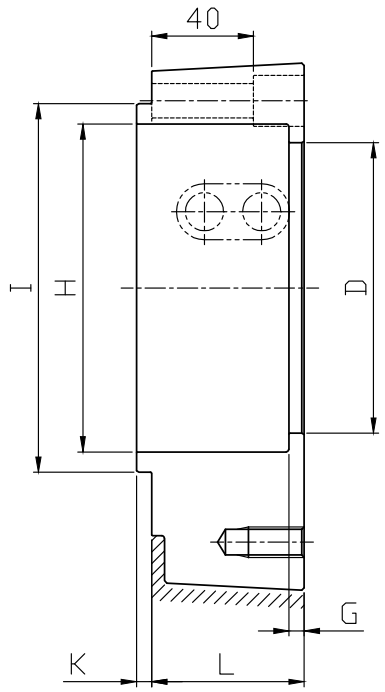
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ///// に示す。

NOTE

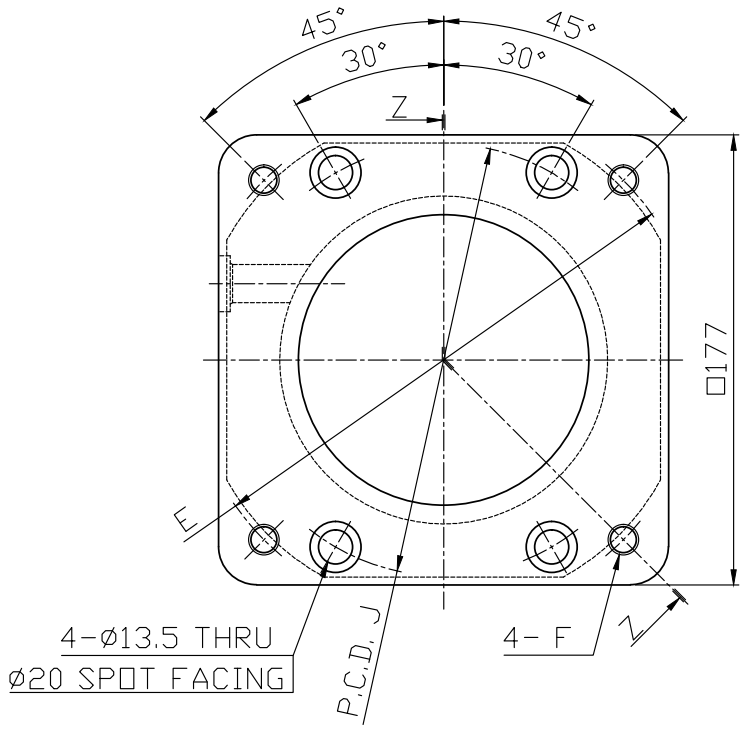
1. ///// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



SECTION Z-Z



コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
JB	ø114.3 $^{+0.038}_{+0.013}$	ø200	M12 DEPTH 22	6	ø129	ø145h7 $^{0}_{-0.040}$	170	6	60	8
JG									65	9.9
JH	ø130 $^{+0.054}_{+0.014}$	ø165	M10 DEPTH 18	10	ø130				60	7.9

注記

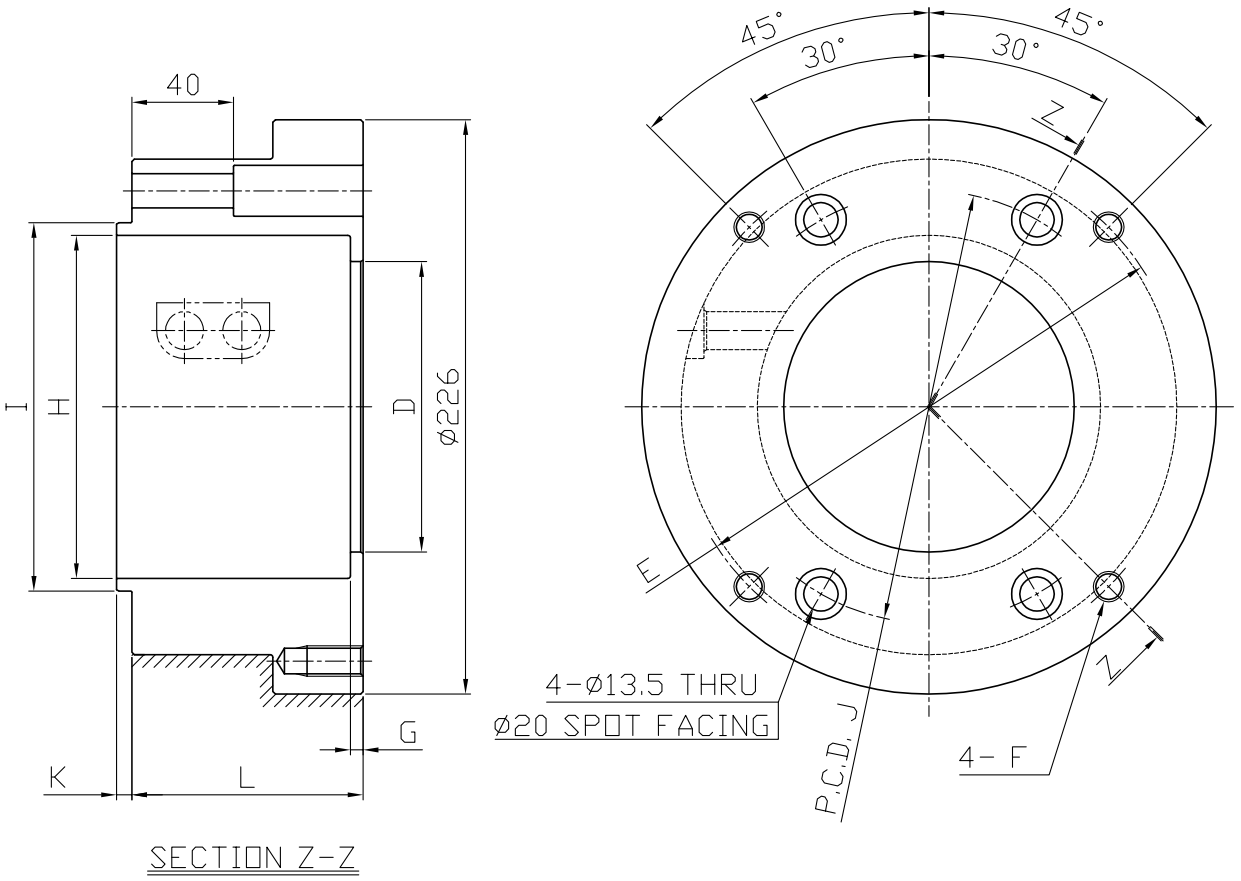
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1. ////// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
JC	$\phi 114.3^{+0.038}_{+0.013}$	ø200	M12 DEPTH 22	5	ø135	$\phi 145_{h7\ -0.040}^{\ 0}$	170	6	91	12.2

注記

1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

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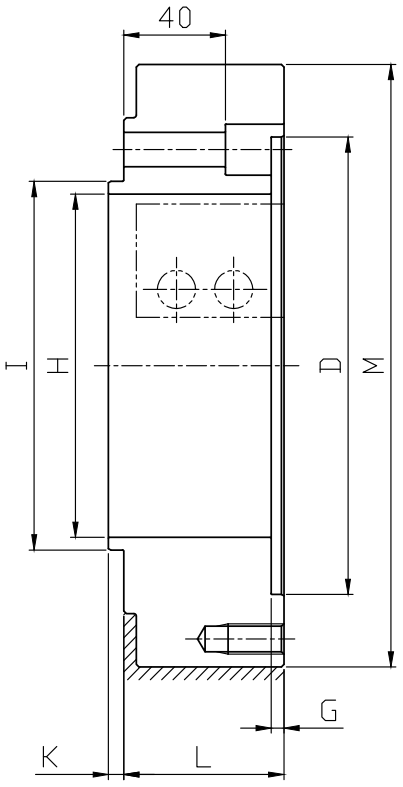
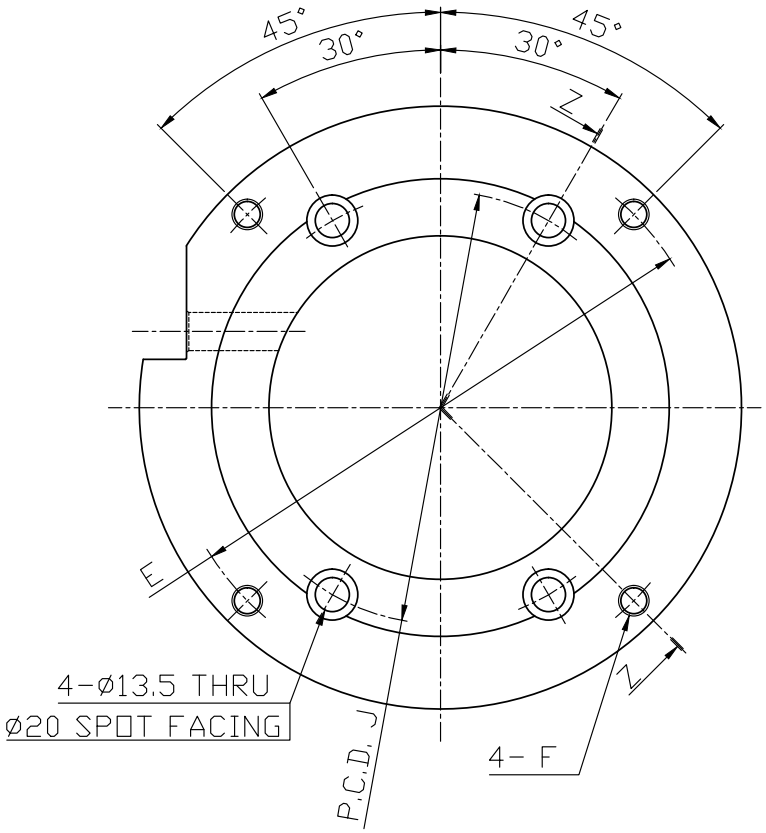
3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



SECTION Z-Z



コード Code	モータ取付部寸法 Dimensions (mm)										質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	M	
JD	$\phi180^{+0.039}_{+0.014}$	ø215	M12 DEPTH 22	5	ø135	$\phi145_{h7\,-0.040}$	170	6	63	ø237	12
JF	$\phi200^{+0.040}_{+0.015}$	ø235							93	ø255	17

注記

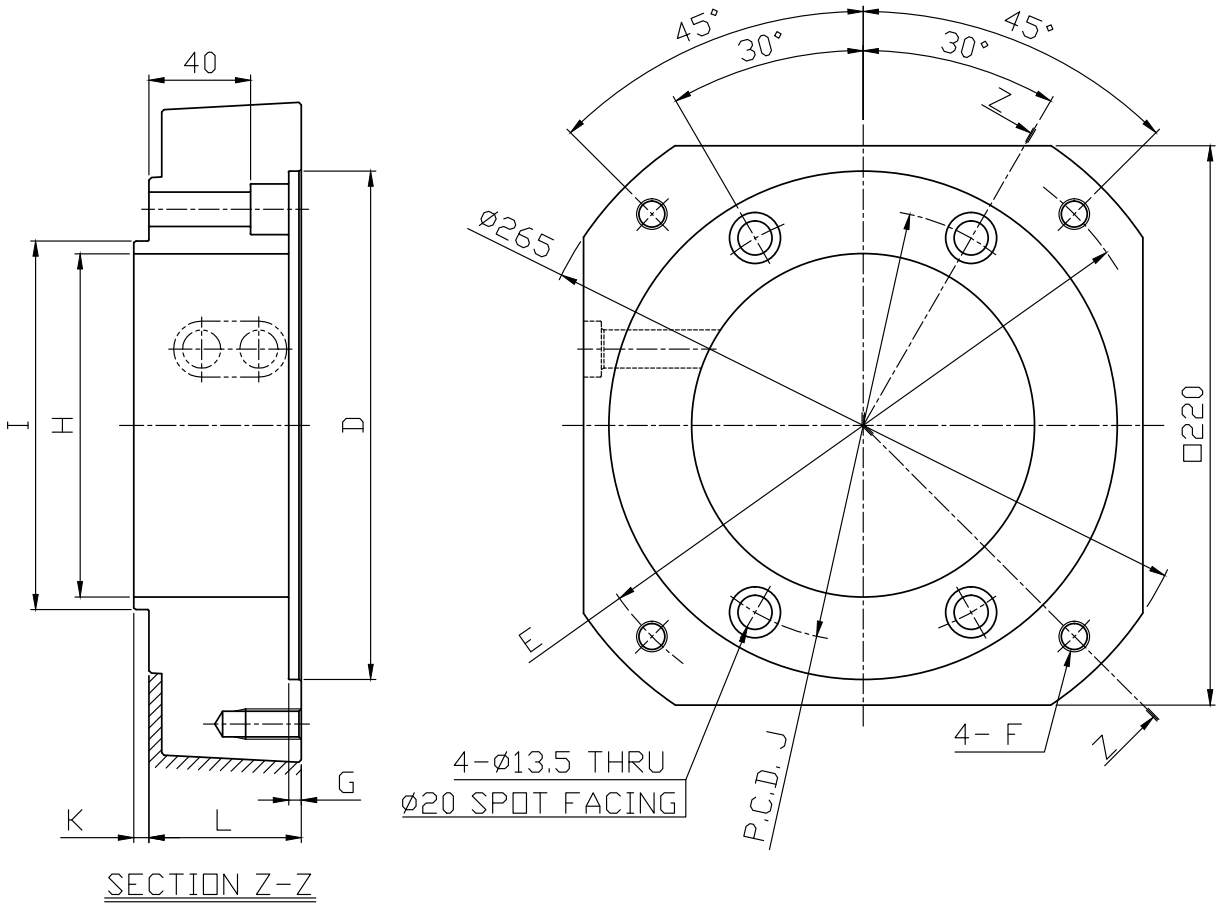
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ///// に示す。

NOTE

1. ///// area is painted black.

3RD ANGLE PROJECTION

Motor Flange Dimension Drawing



コード Code	モータ取付部寸法 Dimensions (mm)									質量 Mass (kg)
	D	E	F	G	H	I	J	K	L	
JE	$\phi 200^{+0.040}_{+0.015}$	ø235	M12 DEPTH 22	5	ø135	$\phi 145_{h7\,-0.040}^{\ 0}$	170	6	60	11.7

注記

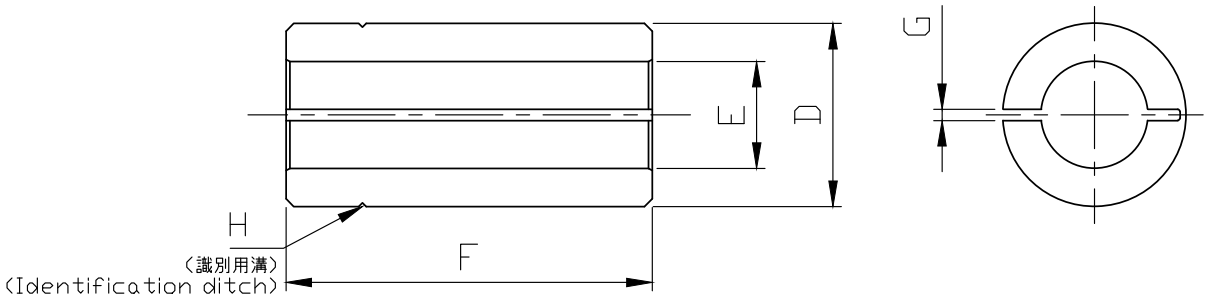
1.塗装　塗装色 エポキシ マンセルNo.N1.5(黒色)　塗装範囲部分を ////// に示す。

NOTE

1. ////// area is painted black.

3RD ANGLE PROJECTION

Bush Dimension Drawing



コード Code	ブッシュ寸法 Dimensions (mm)				
	D	E	F	G	H
0A	Ø14h7 $^{0}_{-0.018}$	Ø8 $^{+0.025}_{+0.005}$	26	1.5	無し Nothing
0B		Ø9 $^{+0.025}_{+0.005}$			
0C		Ø10 $^{+0.025}_{+0.005}$			
0D		Ø11 $^{+0.025}_{+0.005}$			
0E		Ø9 $^{+0.035}_{+0.015}$			有り It is.
0F		Ø11 $^{+0.037}_{+0.017}$			
1A	Ø24h7 $^{0}_{-0.021}$	Ø14 $^{+0.030}_{+0.005}$	48		無し Nothing
1B		Ø15 $^{+0.030}_{+0.005}$			
1C		Ø16 $^{+0.030}_{+0.005}$			
1D		Ø17 $^{+0.030}_{+0.005}$			
1E		Ø19 $^{+0.030}_{+0.005}$			
1F		Ø22 $^{+0.030}_{+0.005}$			
1G		Ø14 $^{+0.042}_{+0.017}$			有り It is.
1H		Ø19 $^{+0.045}_{+0.020}$			
1J		Ø16 $^{+0.042}_{+0.017}$			
2A	Ø28h7 $^{0}_{-0.021}$	Ø19 $^{+0.030}_{+0.005}$	62		無し Nothing
2B		Ø22 $^{+0.030}_{+0.005}$			
2C		Ø24 $^{+0.030}_{+0.005}$			
2D		Ø19 $^{+0.045}_{+0.020}$			有り It is.
2E		Ø24 $^{+0.045}_{+0.020}$			
3A	Ø35 $^{+0.01}_{-0.015}$	Ø25 $^{+0.030}_{+0.005}$	72		無し Nothing
3B		Ø28 $^{+0.030}_{+0.005}$			
3C		Ø28 $^{+0.045}_{+0.020}$			有り It is.
3D		Ø32 $^{+0.048}_{+0.023}$			
3E		Ø32 $^{+0.030}_{+0.005}$			無し Nothing
4A	Ø42h7 $^{0}_{-0.025}$	Ø32 $^{+0.030}_{+0.005}$	77		
4B		Ø35 $^{+0.040}_{+0.015}$			
4C		Ø38 $^{+0.048}_{+0.023}$			
4D		Ø32 $^{+0.048}_{+0.023}$			有り It is.
4E		Ø38 $^{+0.030}_{+0.005}$			
4F		Ø35 $^{+0.030}_{+0.005}$			

3RD ANGLE PROJECTION

Technical Information

Cautions for use of RD2 Series

- If the end user of the product is a military interest or if the product is to be used in the manufacture of weapons, the product may be subject to export regulations prescribed in the Foreign Trade Control Act. Confirm these conditions before exporting the product and take the necessary steps.
- If failure or malfunction of the product may directly endanger human life or if it is used in units which may injure the human body (atomic facilities, space equipment, medical equipment, safety units, etc.), examination of individual situations is required. Contact our agent or nearest business office in such a case.
- Although this product has been manufactured under strict quality control, if it is to be used in equipment that could cause serious injury or damage to facilities as a result of failure of the product, all appropriate safety measures must be taken.

Installation environment

Use the reduction gear under the following environment:

- ·Location where the ambient temperature is between -10°C to 40°C.
- ·Location where the humidity is less than 85% and no condensation occurs.
- ·Location where the altitude is less than 1000 m.
- ·Well-ventilated location

Do not install the reduction gear at the following locations.

- ·Location where a lot of dust is collected.
- ·Outdoors that can be directly affected by wind and rain
- ·Location near the environment that contains combustible, explosive, or corrosive gases and flammable materials.
- ·Location where the performance of the servo motor can be affected by magnetic fields or vibration.

Note 1: If the required installation environment cannot be established, contact our customer representative in advance.

Note 2: When using the reduction gear under special conditions (clean room, equipment for food, concentrated alkali, high-pressure steam, etc.), contact our customer representative in advance.

Maintenance

- The reduction gear is filled with grease and the standard replacement time is 20,000 hours.
- When using the reduction gear with deteriorated grease or under an inappropriate ambient temperature condition (40°C or higher), check the deterioration condition of the grease and determine the appropriate replacement cycle.

Reduction gear temperature

- Be careful so that the surface temperature of the reduction gear does not exceed 60°C.

Manuals

- Safety information and detail product instructions are indicated in the operation manual. The operation manual can be downloaded from the following web address.

http://precision.nabtesco.com/

Glossary

Life rating

The lifetime resulting from the operation with the rated torque and the rated output speed is referred to as the “life rating ”.

Allowable acceleration/deceleration torque

When the machine starts or stops, the load torque to be applied to the reduction gear is larger than the constant-speed load torque due to the effect of the inertia torque of the rotating part.

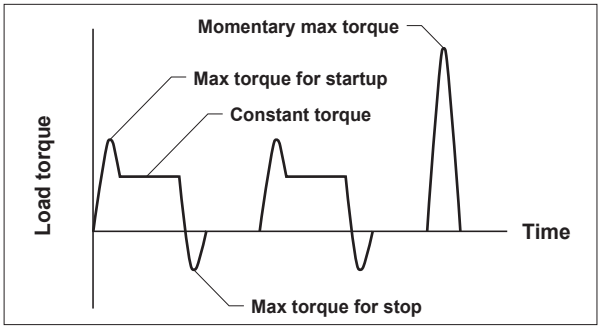
In such a situation, the allowable torque during acceleration/deceleration is referred to as “allowable acceleration/deceleration torque”.

Note: Be careful that the load torque, which is applied at startup and stop, does not exceed the allowable acceleration/deceleration torque.

Momentary maximum allowable torque

A large torque may be applied to the reduction gear due to execution of emergency stop or by an external shock. In such a situation, the allowable value of the momentary applied torque is referred to as “momentary maximum allowable torque”.

Note: Be careful that the momentary excessive torque does not exceed the momentary maximum allowable torque.



Allowable input speed

The allowable value of the input speed is referred to as “allowable input speed”.

Note: The reduction gear temperature may increase significantly even when the speed is under the allowable speed depending on the speed ratio. In such a case, use the reduction gear at the speed so that the gear temperature is 60°C or lower.

Allowable output speed

The allowable value of the output speed is referred to as “allowable output speed”.

Note: The reduction gear temperature may exceed 60°C even when the speed is under the allowable output speed depending on the specification conditions (duty, ambient temperature). In such a case, use the reduction gear at the speed so that the gear temperature is 60°C or lower.

Allowable output speed reference value

This is a reference value of the output speed at which the temperature increase of the reduction gear is 40°C or lower when the rated torque is applied to the reduction gear and the gear is operated continuously in one direction.

Note: Maintain the environment and operation conditions so that the temperature of the reduction gear is 60ºC or lower.

Torsional rigidity, lost motion, backlash

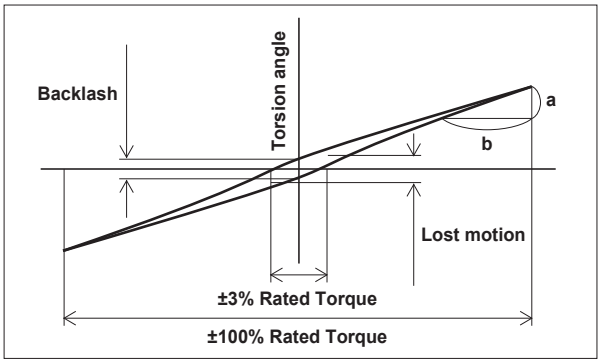
When a torque is applied to the output shaft while the input shaft is fixed, torsion is generated according to the torque value. The torsion can be shown in the hysteresis curves.

The value of b/a is referred to as “torsional rigidity.”

The torsion angle at the mid point of the hysteresis curve width within ±3% of the rated torque is referred to as “lost motion.”

The torsion angle when the torque indicated by the hysteresis curve is equal to zero is referred to as “backlash.”

■ Hysteresis curve



Startup efficiency

The efficiency of the moment when the reduction gear starts up is referred to as “startup efficiency.”

No-load running torque (input shaft)

The torque for the input shaft that is required to run the reduction gear without load is referred to as “no-load running torque.”

Allowable moment and maximum thrust load

The external load moment may be applied to the reduction gear during normal operation. The allowable values of the external moment and the external axial load at this time are each referred to as “allowable moment” and “maximum thrust load.”

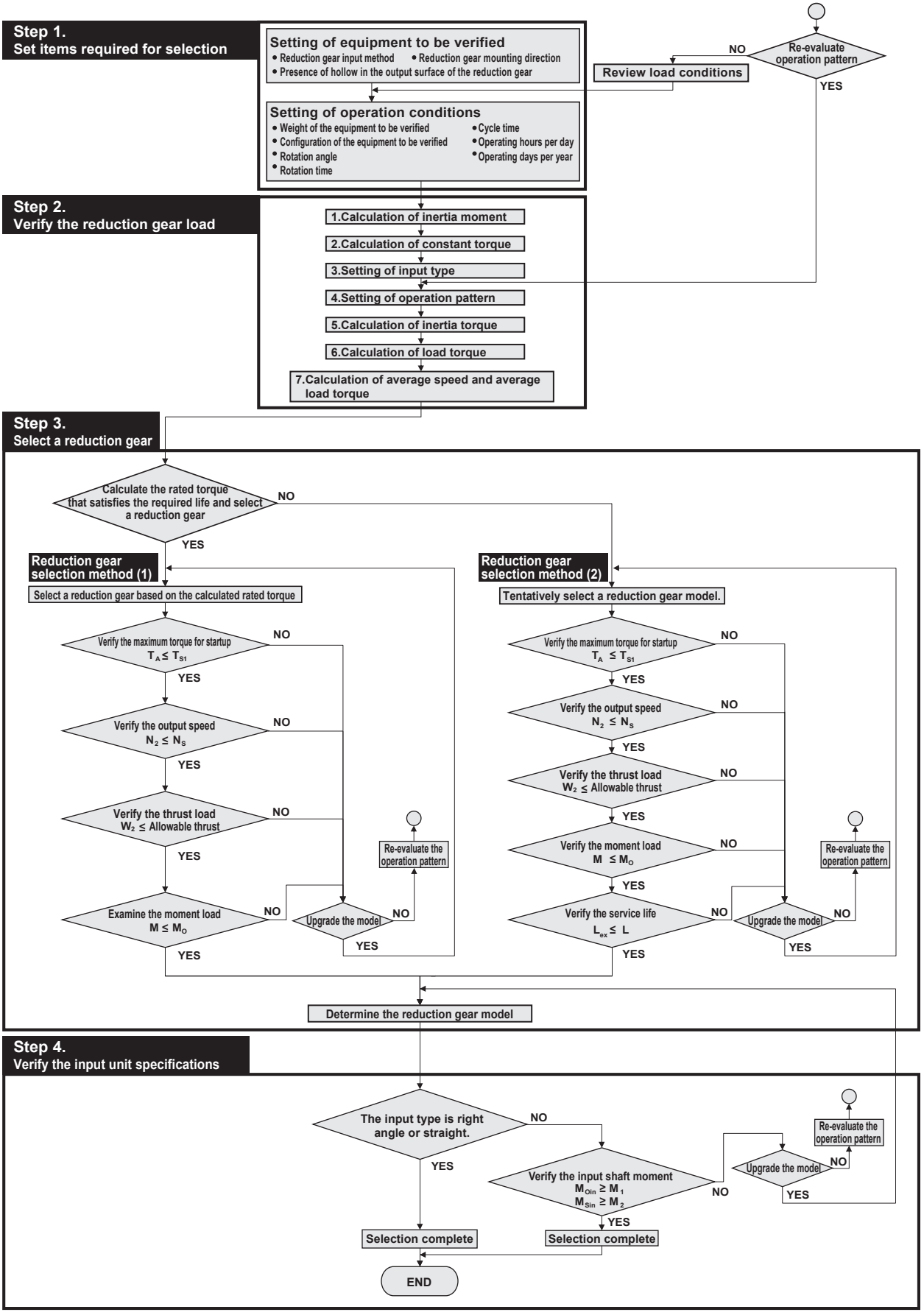
Input shaft rated moment

This is the moment load that satisfies the life rating. The moment to be applied normally must be less than the rated moment.

Input shaft allowable moment

This is the allowable value of the load that can be applied for startup and stop.

Product Selection Flowchart

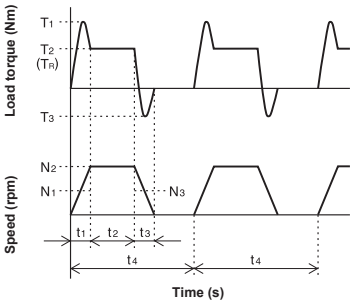


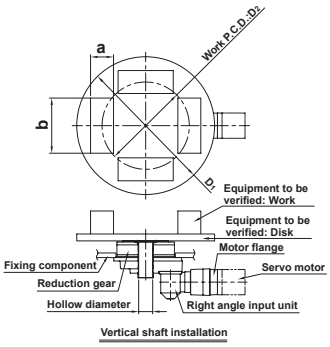
Selection of Product Code-1-(1) (With vertical shaft installed)

Step 1. Set items required for selection

Specification example for the equipment to be verified (1) (with vertical shaft installed)

Specification example for the equipment to be verified (1)	Setting item and value
Reduction gear input method	Right angle input type
Presence of hollow in the output surface of the reduction gear	Hollow (C type)
Reduction gear mounting direction	Vertical shaft installation
Installed equipment weight	
W_A ——— Disk weight (kg)	450
W_B ——— Work weight (kg)	100 x 4 pieces
Installed equipment configuration	
D_1 ——— Disk: D dimension (mm)	1,200
a ——— Work piece: a dimension (mm)	200
b ——— Work piece: b dimension (mm)	400
D_2 ——— Work piece: P.C.D. (mm)	800
Operation conditions	
θ ——— Rotation angle (°)	180
$[t_1+t_2+t_3]$ ——— Rotation time (sec)	2.5
$[t_4]$ ——— Cycle time (sec)	20
Q_1 ——— Equipment operation hours per day (hours/day)	12
Q_2 ——— Equipment operation days per year (days/year)	365





Step 2-1. Examine the reduction gear load

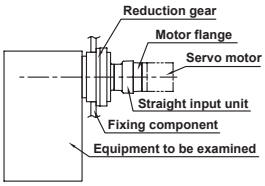
Setting item		Calculation formula	Selection examples
1.Calculate the inertia moment based the calculation formula on page 123.			
I_R	Load inertia moment (kgm^2)	$I_{R1}=\dfrac{W_A\times\left(\dfrac{D_1}{2\times1{,}000}\right)^2}{2}$ $I_{R2}=\left[\dfrac{W_B}{12}\left\{\left(\dfrac{a}{1{,}000}\right)^2+\left(\dfrac{b}{1{,}000}\right)^2\right\}+W_B\times\left(\dfrac{D_2}{2\times1{,}000}\right)^2\right]\times4$ I_{R1} = Disk inertia moment I_{R2} = Work inertia $I_R = I_{R1} + I_{R2}$	$I_{R1}=\dfrac{450\times\left(\dfrac{1{,}200}{2\times1{,}000}\right)^2}{2}$ $=81\,(kgm^2)$ $I_{R2}=\left[\dfrac{100}{12}\left\{\left(\dfrac{200}{1{,}000}\right)^2+\left(\dfrac{400}{1{,}000}\right)^2\right\}+100\times\left(\dfrac{800}{2\times1{,}000}\right)^2\right]\times4$ $=70.7\,(kgm^2)$ $I_R = 81 + 70.7$ $=151.7\,(kgm^2)$
2.Examine the constant torque.			
T_R	Constant torque with vertical shaft installed (Nm)	$T_R=(W_A+W_B)\times9.8\times\dfrac{D_{in}}{2\times1{,}000}\times\mu$ μ = Friction factor Note: Use 0.015 for this example as the load is applied to the bearing of the RD2 reduction gear. D_{in} = Rolling diameter: Use the pilot diameter which is almost equivalent to the rolling diameter in this selection calculation. * If the reduction gear model is not determined, select the following pilot diameter: Solid series = 284 (mm) – Maximum pilot diameter Hollow shaft series = 440 (mm) – Maximum pilot diameter	$T_R=(450+100\times4)\times9.8\times\dfrac{440}{2\times1{,}000}\times0.015$ $=27.5\,(Nm)$

Selection of Product Code-1-(2) (With horizontal shaft installed)

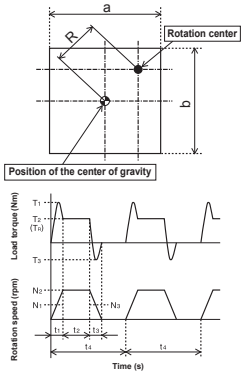
Step 1. Set items required for selection

Equipment specification example (2) (with horizontal shaft installed)

Equipment specification example (2)	Setting item and value
Reduction gear input method	Straight input type
Presence of hollow in the output surface of the reduction gear	Without hollow (Solid series)
Reduction gear mounting direction	Horizontal shaft installation
Installed equipment weight	
W_C ——— Mounted work weight (kg)	490
Installed equipment configuration	
a ——— a dimension (mm)	500
b ——— b dimension (mm)	500
c ——— R dimension (mm)	320
Operation conditions	
θ ——— Rotation angle (°)	90
$[t_1+t_2+t_3]$ ——— Rotation time (sec)	1.5
$[t_4]$ ——— Cycle time (sec)	20
Q_1 ——— Equipment operation hours per day (hours/day)	24
Q_2 ——— Equipment operation days per year (days/year)	365



Horizontal shaft installation



Step 2-1. Examine the reduction gear load

Setting item		Calculation formula	Selection examples
1.Calculate the inertia moment based the calculation formula on page 123.			
I_R	Load inertia moment (kgm^2)	$I_R = \frac{W_C}{12} \times \left\{\left(\frac{a}{1{,}000}\right)^2 + \left(\frac{b}{1{,}000}\right)^2\right\} + W_C \times \left(\frac{R}{1{,}000}\right)^2$	$I_R = \frac{490}{12} \times \left\{\left(\frac{500}{1{,}000}\right)^2 + \left(\frac{500}{1{,}000}\right)^2\right\} + 490 \times \left(\frac{320}{1{,}000}\right)^2$ = 70 .6 (kgm^2)
2.Examine the constant torque.			
T_R	Constant torque with horizontal shaft installed (Nm)	$T_R = W_C \times 9.8 \times \frac{R}{1{,}000}$	$T_R = 490 \times 9.8 \times \frac{320}{1{,}000}$ = 1,537 (Nm)

Selection of Product Code-2 (With vertical shaft installed)

*** For Selection examples, the calculation for specification example for the equipment to be verified (1) (with vertical shaft installed) is listed.**

Step 2-2. Set items required for selection

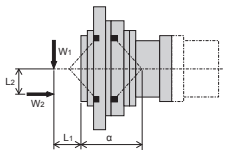
Setting item	Calculation formula	Selection examples (Specification example for the equipment to be verified (1))
(3)-1 Examine the input type.		
RDS ——— Straight input type RDR ——— Right angle input type RDP ——— Pulley input type		Select RDR (right angle input type) based on the equipment to be verified.
(3)-2 Examine the in-line type and hollow type of the reduction gear output shaft.		
Solid series or hallow shaft series		Select the hollow shaft type (C type) based on the equipment to be verified.
(4) Set the acceleration/deceleration time, constant-speed operation time, and output speed.		
t_1 ——— Acceleration time (sec) t_2 ——— Constant-speed operation time (sec) t_3 ——— Deceleration time (sec) N_2 ——— Constant speed (rpm)	• The operation pattern does not need to be verified if it is already set. • If the operation pattern has not been determined, use the following formula to calculate the reference operation pattern. $t_1 = t_3 =$ Rotation time $[t_1 + t_2 + t_3] - \dfrac{\theta}{\left(\dfrac{N_2}{60} \times 360\right)}$ $t_2 =$ Rotation time $[t_1 + t_2 + t_3] - (t_1 + t_3)$ Note: 1. Assume that t_1 and t_3 are the same. Note: 2. N_2 = 15 rpm if the reduction gear output speed (N_2) is not known. Note: 3. If t_1 and t_3 is less than 0, increase the output speed or extend the rotation time.	Examine the operation pattern using N_2 = 15 rpm as the reduction gear output speed is unknown. $t_1 = t_3 = 2.5 - \dfrac{180}{\left(\dfrac{15}{60} \times 360\right)} = 0.5\,(\text{sec})$ $t_2 = 2.5 - (0.5 + 0.5) = 1.5\,(\text{sec})$ $\therefore t_1 = t_3 = 0.5\,(\text{sec})$ $t_2 = 1.5\,(\text{sec})$ $N_2 = 15\,(\text{rpm})$
N_1 ——— Average speed for startup (rpm)	$N_1 = \dfrac{N_2}{2}$	$N_1 = \dfrac{15}{2} = 7.5\,(\text{rpm})$
N_3 ——— Average speed for stop (rpm)	$N_3 = \dfrac{N_2}{2}$	$N_3 = \dfrac{15}{2} = 7.5\,(\text{rpm})$
(5) Calculate the inertia torque for acceleration/deceleration.		
T_A ——— Inertia torque for acceleration (Nm)	$T_A = \left\{\dfrac{I_R \times (N_2 - 0)}{t_1}\right\} \times \dfrac{2\pi}{60}$	$T_A = \left\{\dfrac{151.7 \times (15 - 0)}{0.5}\right\} \times \dfrac{2\pi}{60}$ $= 476.6\,(\text{Nm})$
T_D ——— Inertia torque for deceleration (Nm)	$T_D = \left\{\dfrac{I_R \times (0 - N_2)}{t_3}\right\} \times \dfrac{2\pi}{60}$	$T_D = \left\{\dfrac{151.7 \times (0 - 15)}{0.5}\right\} \times \dfrac{2\pi}{60}$ $= -476.6\,(\text{Nm})$
(6) Calculate the load torque for acceleration/deceleration.		
T_1 ——— Maximum torque for startup (Nm)	$T_1 = \lvert T_A + T_R \rvert$ T_R : Constant torque See page 106.	$T_1 = \lvert 476.6 + 27.5 \rvert$ $= 504.1\,(\text{Nm})$
T_2 ——— Constant maximum torque (Nm)	$T_2 = \lvert T_R \rvert$	$T_2 = 27.5\,(\text{Nm})$
T_3 ——— Maximum torque for stop (Nm)	$T_3 = \lvert T_D + T_R \rvert$ T_R : Constant torque See page 106.	$T_3 = \lvert -476.6 + 27.5 \rvert$ $= 449.1\,(\text{Nm})$
(7) -1 Calculate the average speed.		
N_m ——— Average speed (rpm)	$N_m = \dfrac{t_1 \times N_1 + t_2 \times N_2 + t_3 \times N_3}{t_1 + t_2 + t_3}$	$N_m = \dfrac{0.5 \times 7.5 + 1.5 \times 15 + 0.5 \times 7.5}{0.5 + 1.5 + 0.5}$ $= 12\,(\text{rpm})$
(7) -2 Calculate the average load torque.		
T_m ——— Average load torque (Nm)	$T_m = \sqrt[\frac{10}{3}]{\dfrac{t_1 \times N_1 \times T_1^{\frac{10}{3}} + t_2 \times N_2 \times T_2^{\frac{10}{3}} + t_3 \times N_3 \times T_3^{\frac{10}{3}}}{t_1 \times N_1 + t_2 \times N_2 + t_3 \times N_3}}$	$T_m = \sqrt[\frac{10}{3}]{\dfrac{0.5 \times 7.5 \times 504.1^{\frac{10}{3}} + 1.5 \times 15 \times 27.5^{\frac{10}{3}} + 0.5 \times 7.5 \times 449.1^{\frac{10}{3}}}{0.5 \times 7.5 + 1.5 \times 15 + 0.5 \times 7.5}}$ $= 315.7\,(\text{Nm})$

Go to Page 109 if the reduction gear model is verified based on the required life.
Go to Page 110 if the service life is verified based on the reduction gear model.

Selection of Product Code-3-(1)

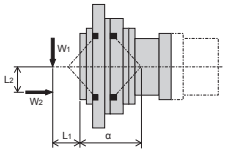
Step 3. Select a reduction gear

Reduction gear selection method (1) Calculate the required torque based on the load conditions and required life and select a reduction gear.

Setting item		Calculation formula	Selection examples
(1) Calculate the rated torque for the reduction gear that satisfies the required life.			
L_{ex}	Required life (year)	Based on the operation conditions	5 years
Q_{1cy}	Number of cycles per day (times)	$Q_{1cy} = \frac{Q_1 \times 60 \times 60}{t_4}$	$Q_{1cy} = \frac{12 \times 60 \times 60}{20}$ = 2,160 (times)
Q_3	Operating hours of reduction gear per day (h)	$Q_3 = \frac{Q_{1cy} \times (t_1 + t_2 + t_3)}{60 \times 60}$	$Q_3 = \frac{2,160 \times (0.5 + 1.5 + 0.5)}{60 \times 60}$ = 1.5 (h)
Q_4	Operating hours of reduction gear per year (h)	$Q_4 = Q_3 \times Q_2$	Q_4 = 1.5 × 365 = 548 (h)
L_{hour}	Reduction gear service life (h)	$L_{hour} = Q_4 \times L_{ex}$	L_{hour} = 548 × 5 = 2,740 (h)
T_O'	Reduction gear rated torque that satisfies the required life (Nm)	$T_0' = T_m \times \sqrt[(10/3)]{\frac{L_{hour}}{K} \times \frac{N_m}{N_0}}$ K : Reduction gear rated life (h) N_0 : Reduction gear rated torque (Nm)	$T_0' = 315.7 \times \sqrt[(10/3)]{\frac{2,740}{6,000} \times \frac{12}{15}}$ = 233.5 (Nm)
(2) Select a reduction gear model based on the calculated rated torque.			
Tentative selection of the reduction gear model and actual reduction ratio		Tentatively select a reduction gear model that T_0 is equal to or greater than T_0'. Then check that T_{S1} of the tentatively selected model is equal to or greater than the maximum torque for startup T_1 and N_S of the tentatively selected model is equal to or greater than the output speed N_2. If the tentatively selected reduction gear is outside of the specifications, increase the reduction gear model. T_{S1}: Check the rating table. N_S: The allowable output speed varies depending on the actual reduction ratio. Tentatively select the actual reduction ratio alongside the allowable output speed.	Tentatively select RDR-027C (T_0 = 265 Nm) based on the calculated rated torque. Rated torque: 265 (Nm) ≥ 233.5 (Nm) Allowable acceleration/deceleration torque: 662 (Nm) ≥ 504.4 (Nm) Allowable output speed: 15 (rpm) (when the actual reduction ratio is 233.45) is equal to or greater than 15 (rpm), tentatively selecting RDR-027C-233 should be no problem.
W_1	Radial load (N)		0(N)
L_1	Distance to the point of radial load application (mm)		0(mm)
W_2	Thrust load (N)		W_2 = (450 + 100 × 4) × 9.8 = 8,330 (N)
L_2	Distance to the point of thrust load application (mm)		0(mm)
M	Calculation of the moment load (Nm)	$M = \frac{W_1 \times (L_1 + \alpha) + W_2 \times L_2}{1,000}$ Refer to the rating table of α = each input type.	As α dimension of RDR-027C is 112 (mm) based on the rating table $M = \frac{0 \times (0 + 112) + 8,330 \times 0}{1,000}$ = 0 (Nm)
Determination of the reduction gear model		From the allowable moment diagram on Page 112 • Thrust load • Moment load Select a reduction gear for which the above fall within the allowable moment diagram. Specify the actual reduction ratio so it is lower than the actual reduction ratio that was selected when the allowable output speed was examined. The actual reduction ratio is determined based on the motor speed, input torque, and inertia moment. Check with the motor manufacturer.	For this equipment, Thrust load W_2 = 8,330 (N) Moment load M = 0 (N) As the above values are within the RCR-027C allowable moment diagram, RDR-027C is selected. The actual reduction ratio lower than 233.45 which was selected when the allowable output speed was verified is selected.
Select a motor flange and bushing.			
Refer to the selection table on page 83 to 85 or our Web site for the motor flange and bushing selection. URL : http://precision.nabtesco.com/			
Selection of the motor flange and bushing.			
T_{M1}	Motor momentary maximum torque (Nm)	Determine based on the motor specifications.	For example, T_{M1} = 25 (Nm)
T_{M1OUT}	Maximum torque generated at the output shaft for the reduction gear (Nm)	$T_{M1out} = T_{M1} \times R \times \eta$ R:Actual reduction ratio η :Startup efficiency(%) Note: If the maximum torque generated at the output shaft for the reduction gear exceeds the momentary maximum allowable torque, impose a limitation on the motor torque value. Also, ensure that the shock torque, due to an emergency stop, is the same as or lower than the momentary maximum allowable torque.	For example, calculate the maximum torque generated at the output shaft for the reduction gear based on the specifications when RDR-027C-233.45 was selected. $T_{M1out} = T_{M1} \times R \times \eta$ $= 25 \times 233.45 \times \frac{70}{100}$ = 4,085 (Nm) As T_{M1out} is equal to or greater than T_{s2} (1,323 Nm), a limitation is required for the motor torque.

Selection of Product Code-3-(2)

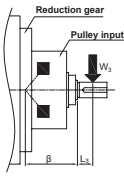
Reduction gear selection method (2) Calculate the required torque based on the load conditions and required life and select a reduction gear.

Setting item	Calculation formula	Selection examples
(1) Select a reduction gear model based on the maximum torque for startup T_1, output speed N_2, thrust load, and moment load.		
Tentative selection of the reduction gear model and actual reduction ratio	If T_{S1} of the tentatively selected model is equal to or greater than the maximum torque for startup T_1 and the tentatively selected model is outside of the reduction gear specifications, upgrade the reduction gear model. T_{S1}: Check the rating table. N_S: The allowable output speed varies depending on the actual reduction ratio. Tentatively select the actual reduction ratio alongside the allowable output speed.	Allowable acceleration/deceleration torque: 662 (Nm) ≥ 504.4 (Nm) Allowable output speed: 15 (rpm) (when the actual reduction ratio is 233.45) is equal to or greater than 15 (rpm), tentatively select RDR-027C-233.
W_1 ——— Radial load (N)		0(N)
L_1 ——— Distance to the point of radial load application (mm)		0(mm)
W_2 ——— Thrust load (N)		$W_2 = (450 + 100 \times 4) \times 9.8$ $= 8,330$ (N)
L_2 ——— Distance to the point of thrust load application (mm)		0(mm)
M ——— Calculation of the moment load (Nm)	$M = \frac{W_1 \times (L_1 + \alpha) + W_2 \times L_2}{1,000}$ Refer to the rating table of α = each input type.	As α dimension of RDR-027C is 112 (mm) based on the rating table $M = \frac{0 \times (0 + 112) + 8,330 \times 0}{1,000}$ $= 0$ (Nm)
Determination of the reduction gear model	From the allowable moment diagram on Page 112 • Thrust load • Moment load Select a reduction gear for which the above fall within the allowable moment diagram. Specify the actual reduction ratio so it is lower than the actual reduction ratio that was selected when the allowable output speed was examined. The actual reduction ratio is determined based on the motor rotation speed, input torque, and inertia moment. Check with the motor manufacturer.	For this equipment, Thrust load $W_2 = 8,330$ (N) Moment load M = 0 (N) As the above fall within the RCR-027C allowable moment diagram, RDR-027C is selected. The actual reduction ratio lower than 233.45 which was selected when the allowable output speed was examined is selected.
(2) Calculate the reduction gear service life and compare to the required life.		
L_h ——— Life (h)	$L_h = 6,000 \times \frac{N_0}{N_m} \times \left(\frac{T_0}{T_m}\right)^{\frac{10}{3}}$	$L_h = 6,000 \times \frac{15}{12} \times \left(\frac{265}{315.7}\right)^{\frac{10}{3}}$ $= 4,184$ (h)
Q_{1cy} ——— Number of cycles per day (times)	$Q_{1cy} = \frac{Q_1 \times 60 \times 60}{t_4}$	$Q_{1cy} = \frac{12 \times 60 \times 60}{20} = 2,160$ (times)
Q_3 ——— Operating hours per day (h)	$Q_3 = \frac{Q_1 \times (t_1 + t_2 + t_3)}{60 \times 60}$	$Q_3 = \frac{2,160 \times (0.5 + 1.5 + 0.5)}{60 \times 60} = 1.5$ (h)
Q_4 ——— Operating hours per year (h)	$Q_4 = Q_3 \times Q_2$	$Q_4 = 1.5 \times 365 = 548$ (h)
L_{year} ——— Reduction gear service life (year)	$L_{year} = \frac{L_h}{Q_4}$	$L_{year} = \frac{4,180}{548} = 7.6$ (year)
L_{ex} ——— Required life (year)	Based on the required specifications. If the required life is longer than the service life, upgrade the reduction gear model and re-calculate the service life.	As L_{ex} 5 (year) is equal to or smaller than 7.6 (year), a reduction gear model is RDR-027C.
Select a motor flange and bushing		
Refer to the selection table on page 83 to 85 or our Web site for the motor flange and bushing selection. URL : http://precision.nabtesco.com/		
Cautions for selecting a motor		
T_{M1} ——— Motor momentary maximum torque (Nm)	Determine based on the motor specifications.	For example, $T_{M1} = 25$ (Nm)
T_{M1OUT} ——— Maximum torque generated at the output shaft for the reduction gear (Nm)	$T_{M1out} = T_{M1} \times R \times \eta$ R:Actual reduction ratio η :Startup efficiency(%) Note: If the maximum torque generated at the output shaft for the reduction gear exceeds the momentary maximum allowable torque, impose a limitation on the motor torque value. Also, ensure that the shock torque, due to an emergency stop, is the same as or lower than the momentary maximum allowable torque.	For example, calculate the maximum torque generated at the output shaft for the reduction gear based on the specifications when RDR-027C-233.45 was selected. $T_{M1out} = T_{M1} \times R \times \eta$ $= 25 \times 233.45 \times \frac{70}{100}$ $= 4,085$ (Nm) As T_{M1} out is equal to or greater than T_{s2} (1,323 Nm), a limitation is required for the motor torque.

Selection of Product Code-4

Step 4. Verify the input unit specifications (calculation method of pulley input unit specifications)

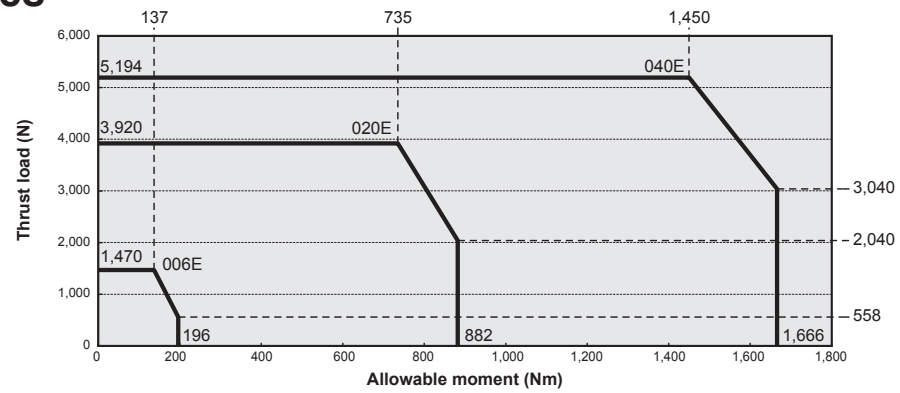
* Examine only when selecting a pulley input unit.

Setting item	Calculation formula	Selection examples
Calculate the moment load for the input shaft.		
M_1 ——— Input shaft load moment to be applied during normal operation (Nm)	 $M_1 = W_3 \times \left(\frac{\beta + L_3}{1{,}000}\right)$ β = Refer to the rating table on Page 70.	When RDP-027C-100 is selected $W_3 = 150$ (N) $\beta = 58$ (mm) $L_3 = 10$ (mm) $M_1 = 150 \times \left(\frac{(58+10)}{1{,}000}\right) = 10.2$ (Nm)
M_2 ——— Input shaft load moment to be applied at startup and stop (Nm)	$M_2 = \frac{\left(\frac{\text{Maximum output torque for startup (Nm)}}{\text{Actual reduction ratio} \times \frac{\text{Efficiency (\%)}}{100}}\right)}{\frac{\text{Pulley pitch diameter (mm)}}{2 \times 10^{-3}}} \times \left(\frac{(\beta + L_3)}{1{,}000}\right)$ β = Refer to the rating table on Page 70.	When the maximum torque for startup is 600 Nm at the output stage and the pulley pitch diameter is 50 mm $M_2 = \frac{\left(\frac{600}{99.82 \times 0.75}\right)}{\left(\frac{50}{2 \times 1{,}000}\right)} \times \left(\frac{(58+10)}{1{,}000}\right)$ $= 21.8$ (Nm)
Select a pulley input unit based on the moment load of the input shaft.		
Determination of the input shaft	$M_{0in} \geq M_1$ $M_{Sin} \geq M_2$ * M_{0in}, M_{Sin} = Refer to the rating table on Page 70. Select an input unit that meets the above conditions.	If RDP-027C-100 is selected, M_{0in} = 38 (Nm) and M_{Sin} = 40 (Nm) and the there is no problem with the pulley input shaft.

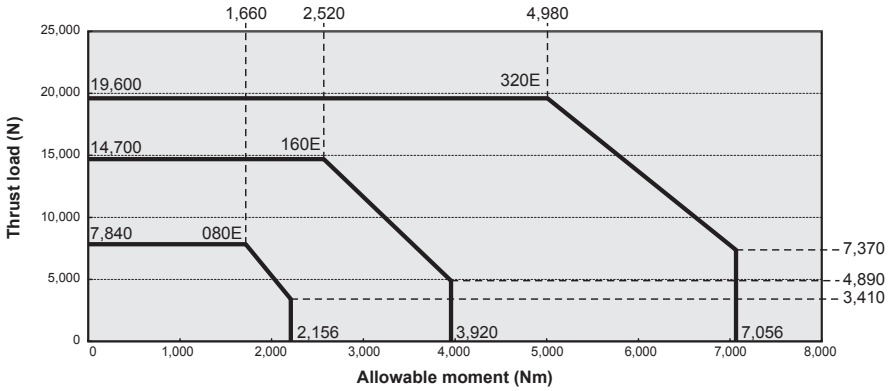
Allowable Moment Diagram

Solid series
RD□-E

E type (006E/020E/040E)

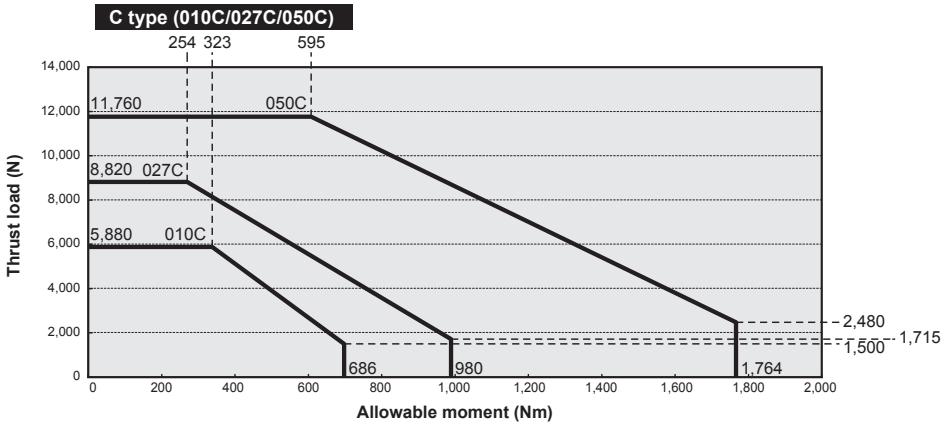


E type (080E/160E/320E)

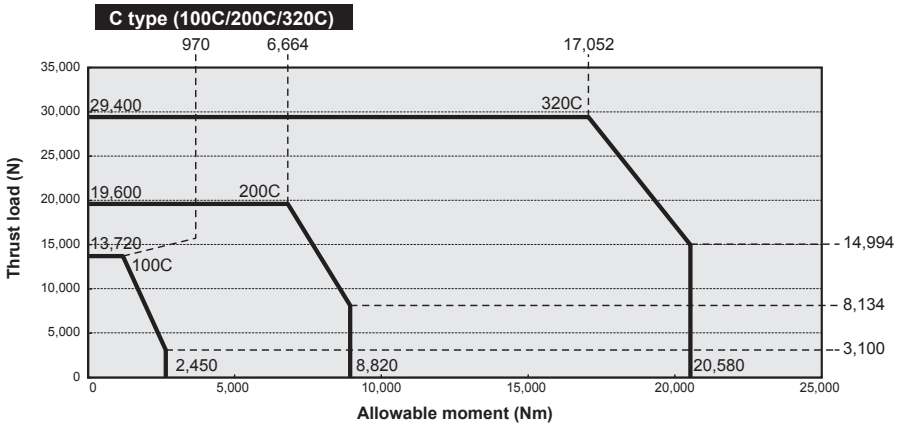


Hollow shaft series
RD□-C

C type (010C/027C/050C)



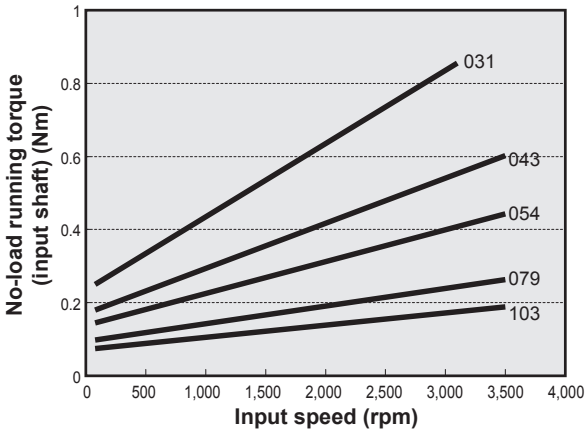
C type (100C/200C/320C)



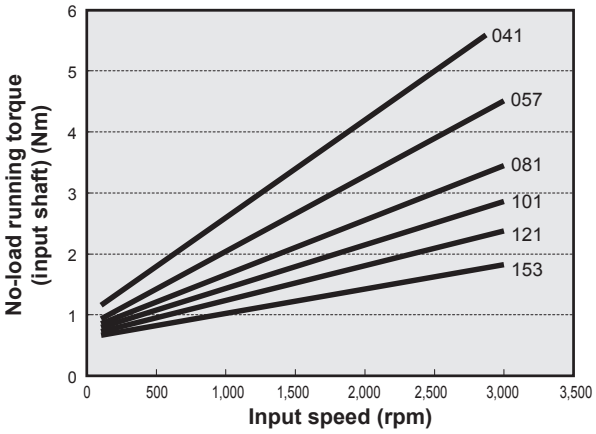
No-load Running Torque (straight input type)

Solid series

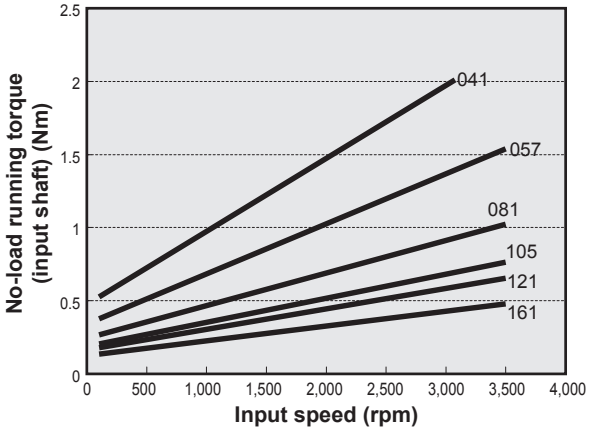
RDS-006E



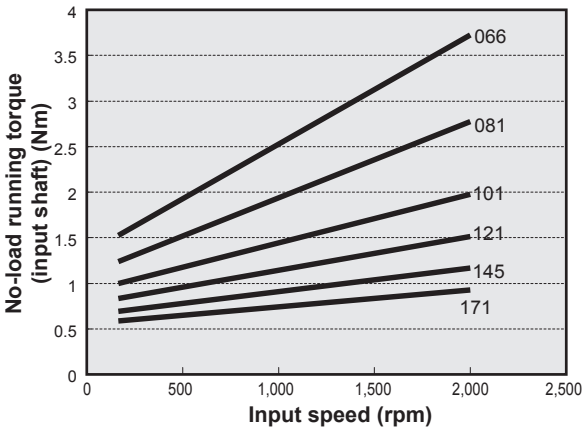
RDS-080E



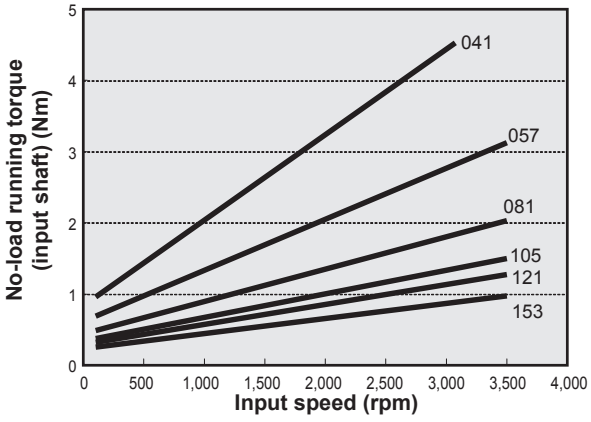
RDS-020E



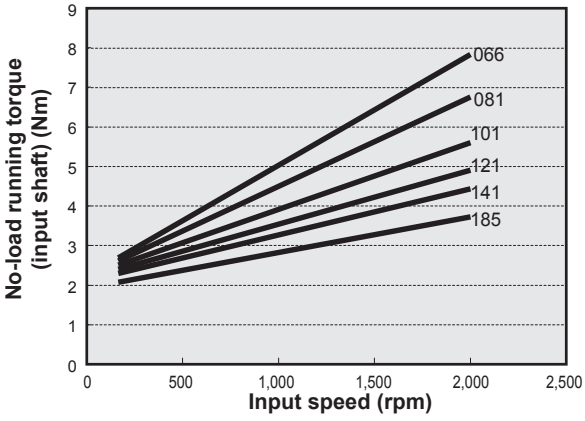
RDS-160E



RDS-040E



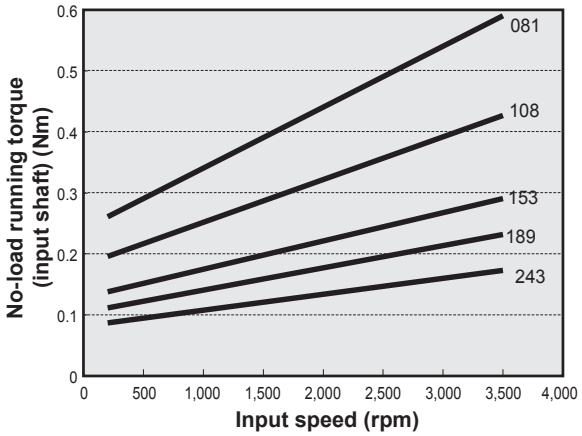
RDS-320E



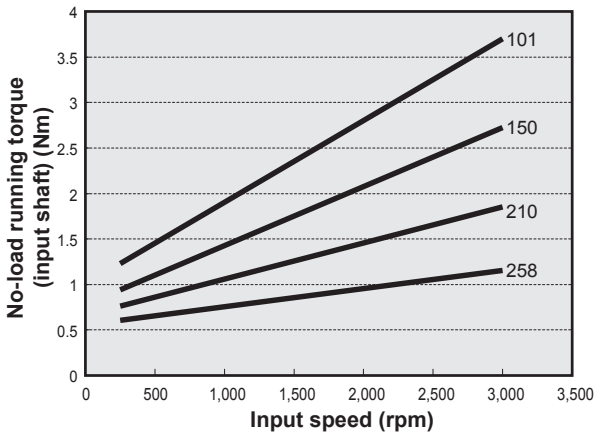
No-load Running Torque (straight input type)

Hollow shaft series

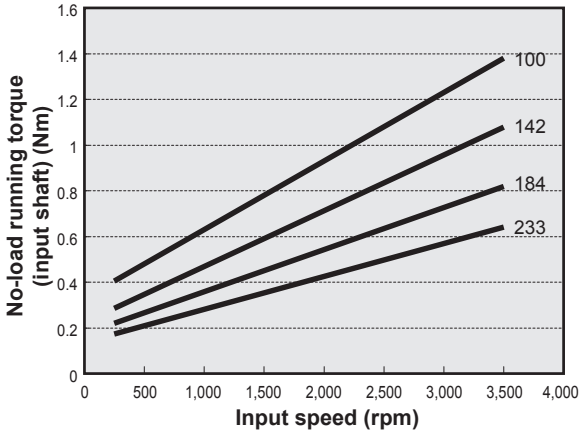
RDS-010C



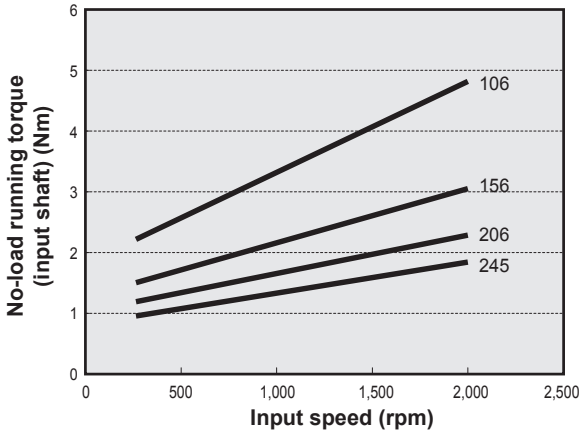
RDS-100C



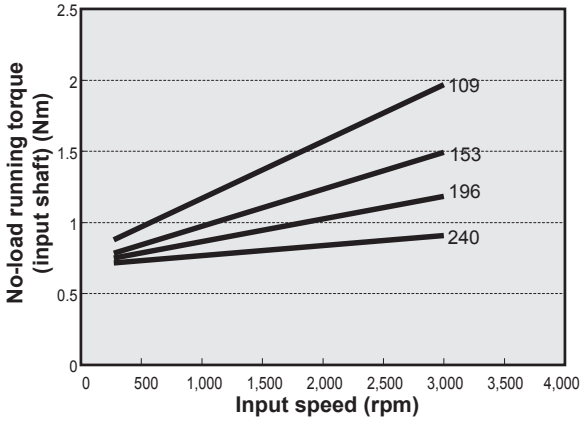
RDS-027C



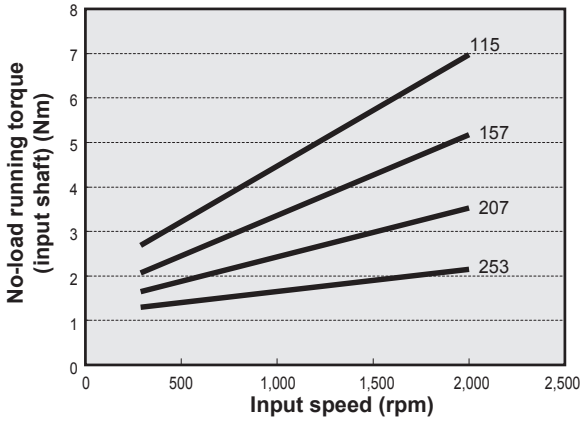
RDS-200C



RDS-050C



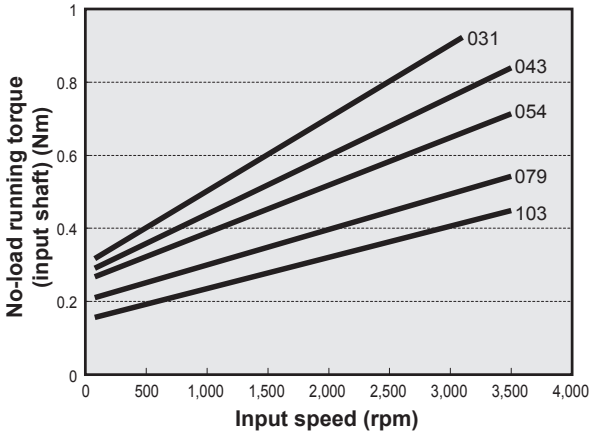
RDS-320C



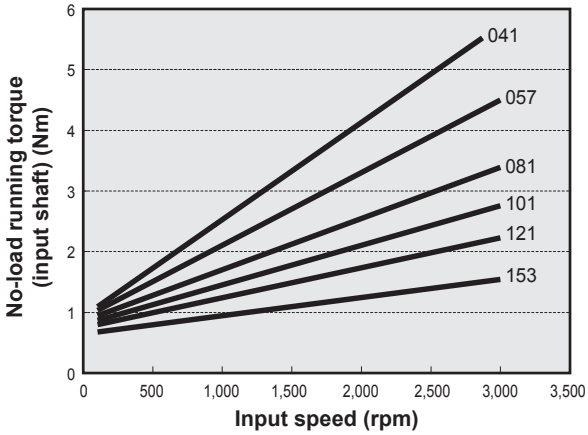
No-load Running Torque (Right angle input type)

Solid series

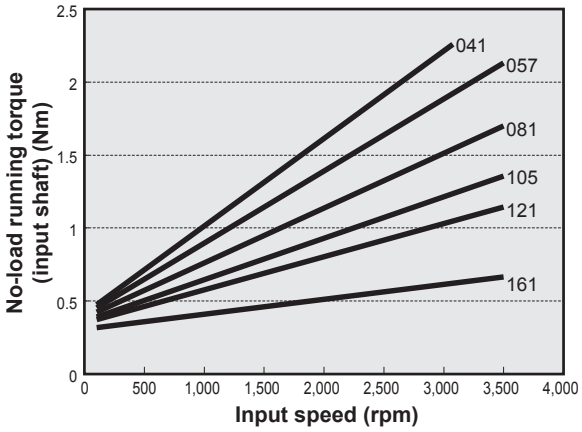
RDR-006E



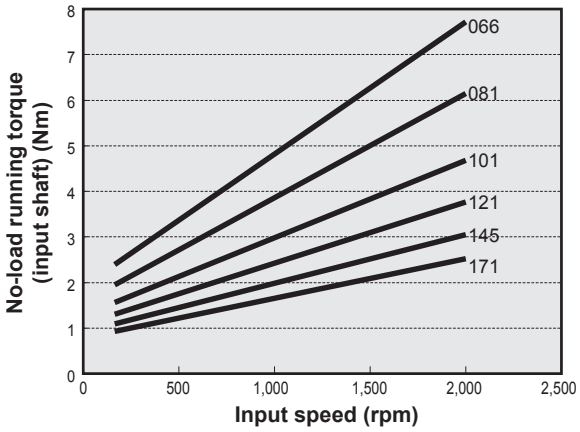
RDR-080E



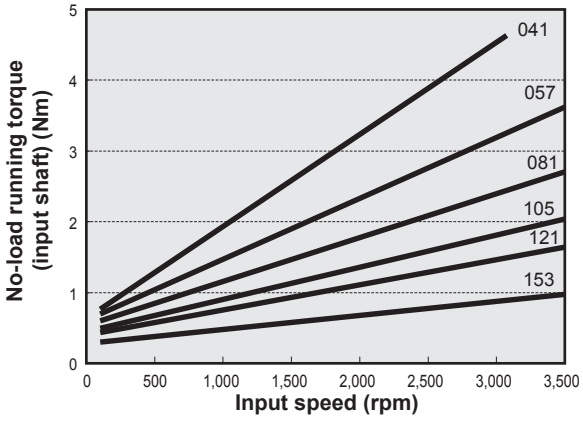
RDR-020E



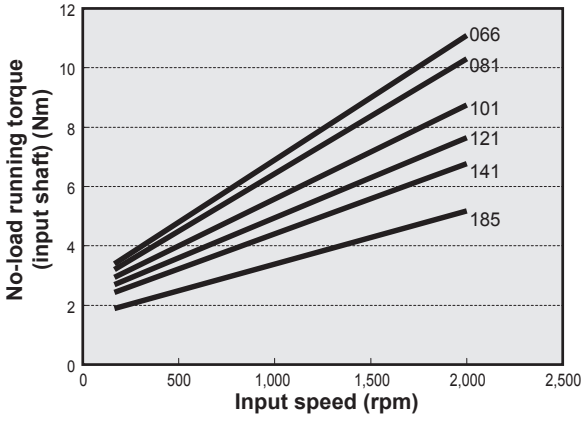
RDR-160E



RDR-040E



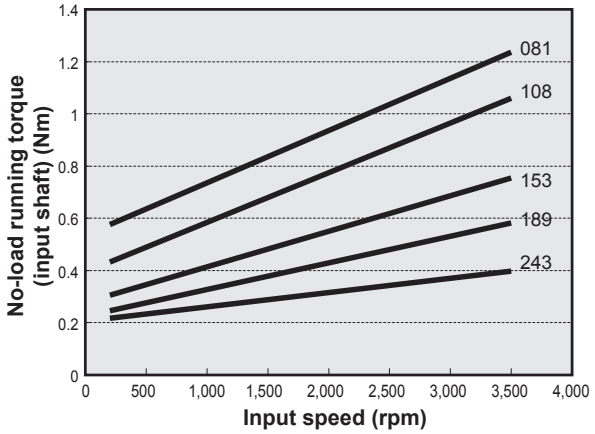
RDR-320E



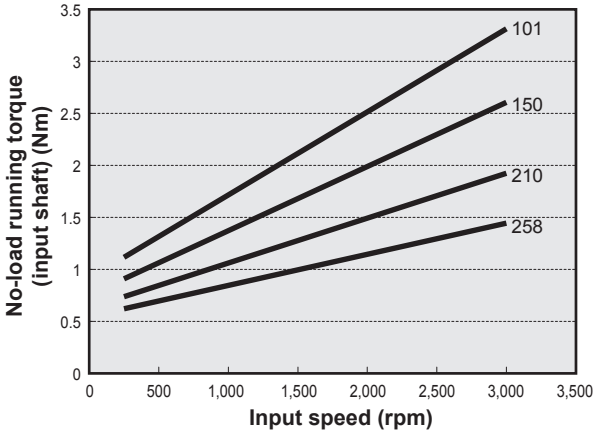
No-load Running Torque (Right angle input type)

Hollow shaft series

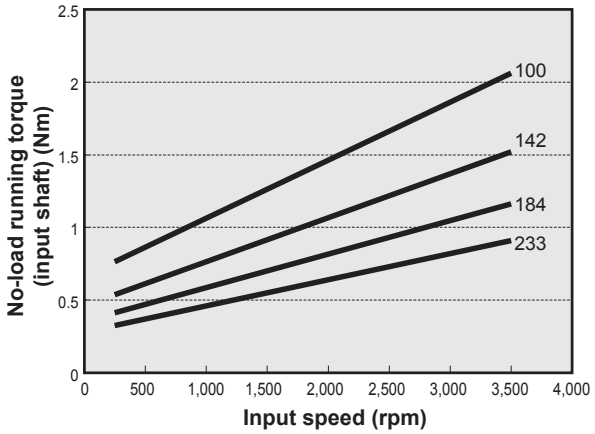
RDR-010C



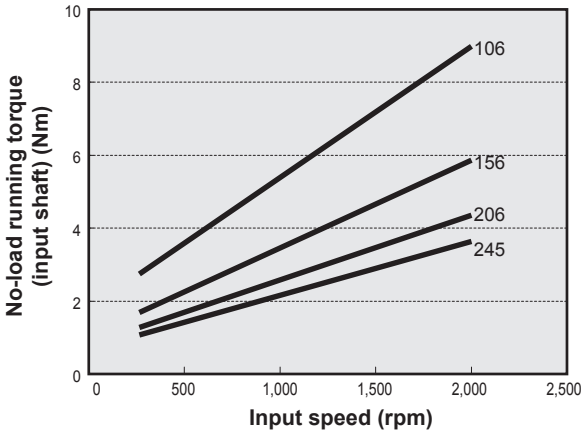
RDR-100C



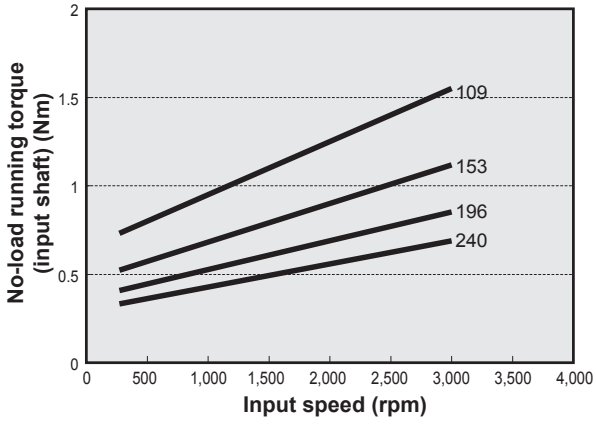
RDR-027C



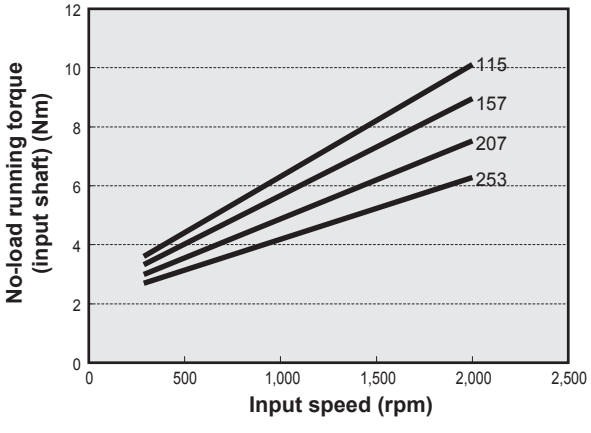
RDR-200C



RDR-050C

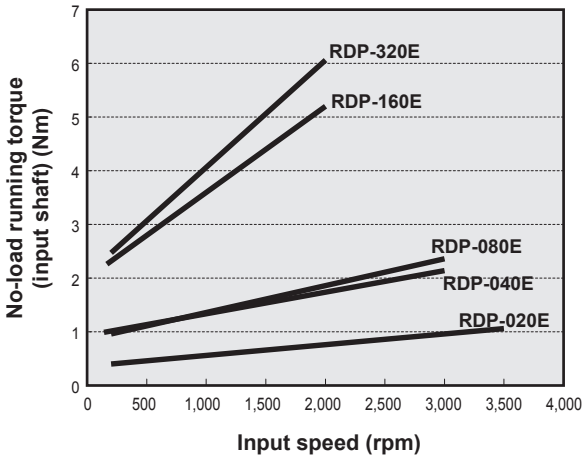


RDR-320C

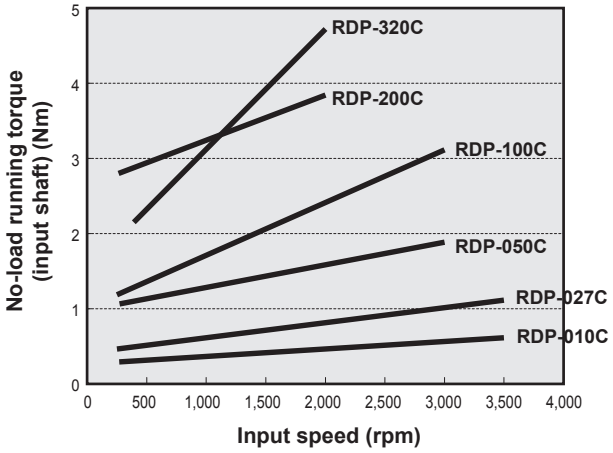


No-load Running Torque (Pulley input type)

Solid series



Hollow shaft series



Calculation of Tilt Angle and Torsion Angle

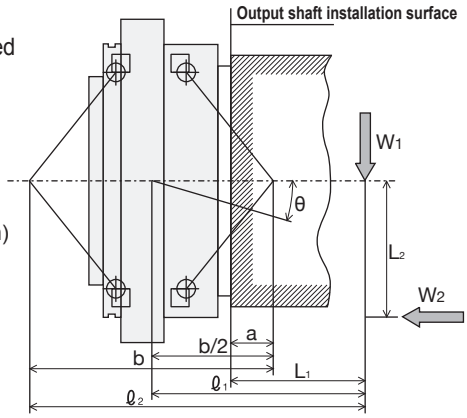
Calculation of tilt angle

When a load moment occurs with an external load applied, the output shaft will tilt in proportion to the load moment (if ℓ_2 is larger than b).
The moment rigidity indicates the rigidity of the main bearing, and it is represented by the load moment value required for tilting the main bearing by 1 arc.min.

$$\theta = \frac{W_1 \ell_1 + W_2 L_2}{M_1 \times 10^3}$$

- θ : Tilt angle of the output shaft (arc.min)
- M_1 : Moment rigidity (Nm/arc.min.)
- W_1, W_2 : Load (N)
- ℓ_1, L_2 : Distance to the point of load application (mm)
- ℓ_1 : $L_1 + \frac{b}{2} - a$
- L_1 : Distance from the output shaft installation surface to the point of load application (mm)

External load diagram



Model code	Moment rigidity Nm/arc.min.*1	Dimensions (mm)	
		a	b
RD□-006E	117	12.5	90.3
RD□-020E	372	20.1	113.3
RD□-040E	931	29.9	144.5
RD□-080E	1,176	27.9	164.0
RD□-160E	2,940	42.7	210.0
RD□-320E	4,900	48.4	251.4

Model code	Moment rigidity Nm/arc.min.*1	Dimensions (mm)	
		a	b
RD□-010C	421	28.0	119.2
RD□-027C	1,068	38.0	150.0
RD□-050C	1,960	50.5	187.3
RD□-100C	2,813	58.7	207.6
RD□-200C	9,800	76.0	280.4
RD□-320C	12,740	114.5	360.4

*1 The moment rigidity value is a representative value.

Calculation of torsion angle

Calculate the torsion angle when the torque is applied in a single direction, using an example of RD□-160E.

1) When the load torque is 30 Nm·····Torsion angle (ST_1)
   - When the load torque is within the lost motion range:

$$ST_1 = \frac{30}{47} \times \frac{1\ (\text{arc.min.})}{2} = 0.32\text{arc.min. or less}$$

2) When the load torque is 1,300 Nm Torsion angle (ST_2)
   - When the load torque is within the rated range:

$$ST_2 = \frac{1}{2} + \frac{1{,}300 - 47.0}{392} = 3.70\text{arc.min.}$$

Note: 1. The torsion angles that are calculated above are for a single reduction gear.

Model code	Torsion rigidity Nm/arc.min. *2	Lost motion		Backlash arc.min.
		Lost motion arc.min.	Measured torque Nm	
RD□-006E	20	For RDS or RDP 1.5 For RDR 2.0	± 1.76	For RDS 1.5 For RDR 2.0
RD□-020E	49	For RDS or RDP 1.0 For RDR 1.5	± 5.00	For RDS or RDP 1.0 For RDR 1.5
RD□-040E	108		± 12.3	
RD□-080E	196		± 23.5	
RD□-160E	392		± 47.0	
RD□-320E	980		± 94.0	

Model code	Torsion rigidity Nm/arc.min. *2	Lost motion		Backlash arc.min.
		Lost motion arc.min.	Measured torque Nm	
RD□-010C	47	For RDS or RDP 1.0 For RDR 1.5	± 2.94	For RDS or RDP 1.0 For RDR 1.5
RD□-027C	147		± 7.94	
RD□-050C	255		± 14.7	
RD□-100C	510		± 29.4	
RD□-200C	980		± 58.8	
RD□-320C	1,960		± 94.1	

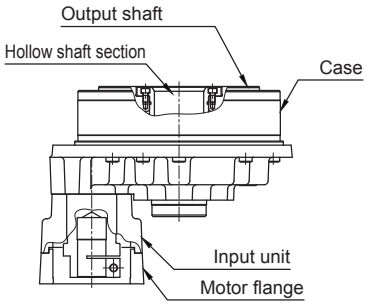
*2 The torsion rigidity value is a representative value.

Engineering Notes-1

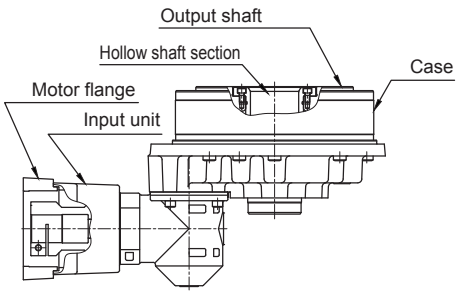
Installation direction of RD2 Series

If you use the hollow shaft types installed vertically with the shaft facing upward (as shown in the figures below), contact our customer representative in advance.

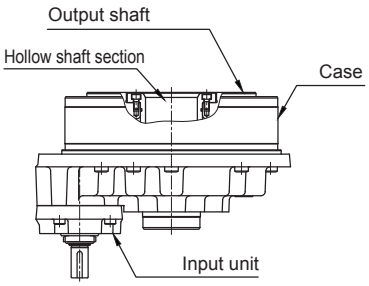
Note: For the solid type, the installation direction shown in the figures below can be used.



Straight input type



Right angle input type
Vertical shaft installation (with shaft facing upward)



Pulley input type

Lubrication

- The standard lubricant for RD2 Series is grease.
  RD2 Series are pre-lubricated with our recommended VIGOGREASE RE0 grease when shipped.
  When this product is operated while it is filled with an appropriate amount of lubricant, the standard lubricant replacement time due to lubricant degradation is 20,000 hours. However, if RD2 Series are operated under unfavorable conditions (that may deteriorate the lubricant more quickly or that cause gear surface temperatures above 40°C), the state of lubricant degradation should be checked and the lubricant replaced earlier as necessary.

<Nabtesco-specified lubricant>

Brand	VIGOGREASE RE0
Manufacturer	Nabtesco
Ambient temperature	-10 to 40°C

- It is recommended that the running-in operation is performed.
  Abnormal noise or torque variation may occur during operation due to the characteristics of the lubricant. There is no problem with the quality when the symptom disappears after the running-in operation is performed for 30 minutes or more (until the surface temperature of the RD2 body reaches around 50°C).

Installation of the reduction gear and mounting it to the output shaft

When installing the reduction gear and mounting it to the output shaft, use hexagonal socket head cap screw and tighten to the torque, as specified below, in order to satisfy the momentary maximum allowable torque, which is noted in the rating table.
Employment of the Belleville spring washer is recommended to prevent the bolt from loosening and protect the bolt seat surface from flaws.

<Bolt tightening torque and tightening force>

Hexagon socket head cap screw nominal size x pitch (mm)	Tightening torque (Nm)	Tightening force F (N)	Bolt specification
M5 × 0.8	9.01 ± 0.49	9,310	Hexagon socket head cap screw JIS B 1176 : 2006 Strength class JIS B 1051 : 2000 12.9 Thread JIS B 0209 : 2001 6 g
M6 × 1.0	15.6 ± 0.78	13,180	
M8 × 1.25	37.2 ± 1.86	23,960	
M10 × 1.5	73.5 ± 3.43	38,080	
M12 × 1.75	129 ± 6.37	55,100	
M16 × 2.0	319 ± 15.9	103,410	

Note: 1. The tightening torque values listed are for steel or cast iron material.
2. If softer material, such as aluminum or stainless, is used, limit the tightening torque. Also pay attention to the system requirements of the transmission torque and the allowable moment.

<Calculation of allowable transmission torque of bolts>

$$T = F \times \frac{D}{2} \times \mu \times n \times 10^{-3}$$

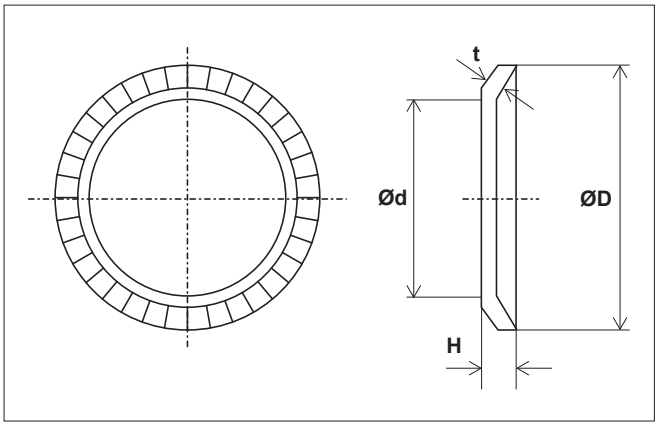
T	Allowable transmission torque by tightening bolt (Nm)
F	Bolt tightening force (N)
D	Bolt mounting P.C.D. (mm)
μ	Friction factor μ=0.15: When lubricant remains on the mating face. μ=0.20: When lubricant is removed from the mating face.
n	Number of bolts (pcs.)

<Serrated lock washer for hexagonal socket head cap screw>

Name: Belleville spring washer (made by Heiwa Hatsujyo Industry Co., Ltd.)
Corporation symbol: CDW-H
CDW-L (only for M5)
Material: S50C to S70C
Hardness: HRC 40 to 48

(Unit: mm)

Nominal size	ID and OD of Belleville spring washer		t	H
	Ød	ØD		
5	5.25	8.5	0.6	0.85
6	6.4	10	1.0	1.25
8	8.4	13	1.2	1.55
10	10.6	16	1.5	1.9
12	12.6	18	1.8	2.2
16	16.9	24	2.3	2.8



Note: When using any equivalent washer, select it with special care given to its outside diameter D.

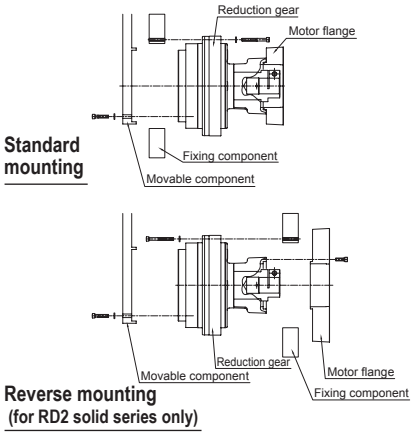
Engineering Notes-3

Gearhead Installation

→ Mount the gearhead onto the specified position. Align the gear-head bolt holes with the tapped holes of the installation components, and install the case with the designated number of bolts.

→ Tighten all the hexagonal socket head cap screw (with a conical spring lock washer) uniformly, by using the specified tightening torque.

Bolt size	Tightening torque (Nm)	Bolt specification
M5	9.01 ± 0.49	Hexagon socket head cap screw JIS B 1176 : 2006 Strength class JIS B 1051 : 2000 12.9 Thread JIS B 0205 : 2001 6 g
M6	15.6 ± 0.78	
M8	37.2 ± 1.86	
M10	73.5 ± 3.43	
M12	129 ± 6.37	
M16	319 ± 15.9	

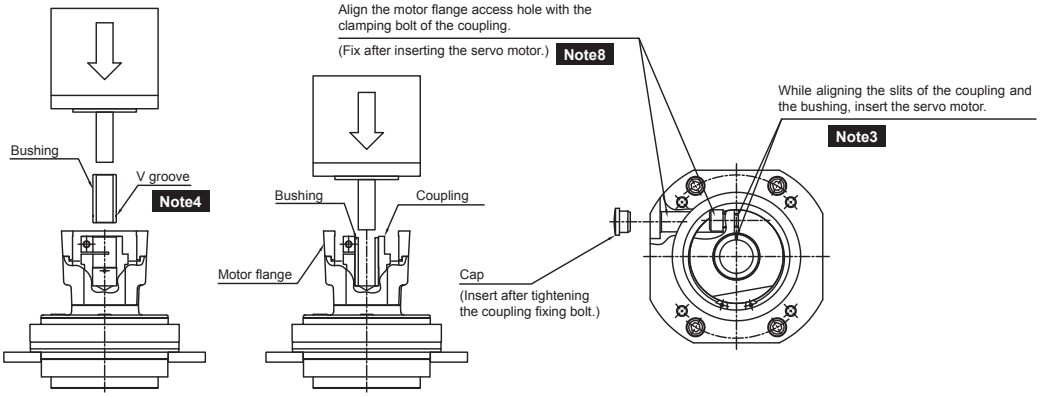


Note: When the gearhead is delivered, a motor flange may already be mounted. Depending on the situation, the gearhead might not be normally assembled unless the motor flange is removed. In the following cases, remove the motor flange before assembling the gearhead into the equipment.

- In the standard mounting, the torque wrench cannot be used because it makes contact with the motor flange
- In the reverse mounting, the motor flange is larger than the mating hole

Do not apply external load to the hollow section of the RD2 hollow shaft series. It could warp the oil seal.

Installation of the servo motor (for straight and right angle input units)



Step 1. Wipe the outside of the servo motor shaft and the clamping surface inside the coupling with a clean cloth. (Make sure that the clamping bolt of the coupling is not tightened.)
When using a bushing, wipe the inside and outside of the bushing using a clean cloth.

Note: 1. Make sure that there is no damage inside of the coupling, bushing, and the motor shaft which before performing the assembly.
2. Make sure that there is no foreign material or oil on the outside of the servo motor shaft, the clamping surface of the coupling, or the inside and outside of the bushing.

Step 2. When using a bushing, insert the bushing into the coupling, and then align the position of the clamping bolt of the coupling and the motor flange hole.

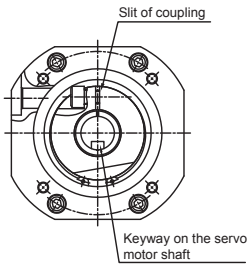
Note: 3. When inserting the bushing, align the slit of the bushing and the slit of the coupling. If the slits of the bushing and coupling are not aligned, proper tightening force cannot be achieved.
4. When using the bushing with a V groove on the circumference, turn the V groove toward the back (reduction gear side). If the direction is not correct, proper tightening force cannot be achieved.

Step 3. Wipe off the oil on the installation face of the motor flange and servo motor, and apply the liquid sealing agent on the face.

Note: 5. If the servo motor is forcibly inserted into the reduction gear, the servo motor and reduction gear may be damaged.

Step 4. Align the mating part of the motor flange and insert the servo motor straight.

If there is a keyway on the servo motor shaft, set the keyway in a reverse direction against the slit of the coupling and then insert the motor.



Note 6: Make sure that the flange of the servo motor and the edge of the motor flange are in close contact.
If either of the surfaces is tilting or there is a gap, remove the servo motor and repeat Step 4.

7: Adjust the positional relationship between the slit of the coupling and the keyway of the servo motor shaft, as specified in this manual.
If the relational position is not correct, proper tightening force cannot be achieved.

Step 5. Fix the servo motor to the motor flange with bolts.

Check the bolt tightening torque specified by the servo motor manufacturer.

Step 6. Tighten the clamping bolt of the coupling at the specified tightening torque.

Note 8: After step 5 is completed, perform step 6. If the sequence is wrong, the servo motor or the reduction gear could be damaged.

Code	Input type	Input unit code	Nominal size x pitch (mm)	Tightening torque
RD□-006E, RD□-020E RD□-010C, RD□-027C	Straight	B0	M6 x 1.0	15.6 ± 0.78 Nm
		B1		
	Right angle	C0		
		C1		
RD□-040E, RD□-080E RD□-050C, RD□-100C	Straight	B2	M10 x 1.5	73.5 ± 3.43 Nm
		B3		
	Right angle	C2		
		C3	M8 x 1.25	37.2 ± 1.86 Nm
RD□-160E, RD□-320E RD□-200C, RD□-320C	Straight	B4	M12 x 1.75	129 ± 6.37 Nm
		B5	M10 x 1.5	73.5 ± 3.43 Nm
	Right angle	C4	M12 x 1.75	129 ± 6.37 Nm
		C5	M10 x 1.5	73.5 ± 3.43 Nm

Step 7. Insert the cap into the access hole of the motor flange.

Installation of the pulley (for pulley input unit)

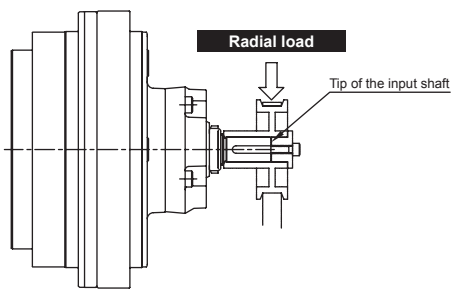
Step 1. Install the pulley using the keyway on the input shaft of the reduction gear and the tap on the tip or set screws.

When using the keyway, prepare a key yourself.

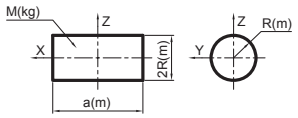
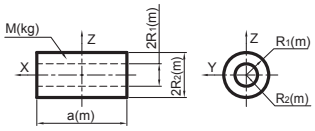
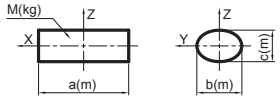
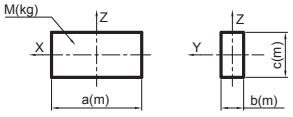
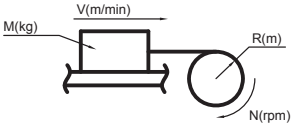
Note 1: Design so that the radial load applied to the tip of the input shaft is less than the rated moment and allowable moment.

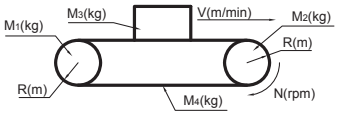
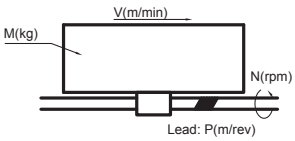
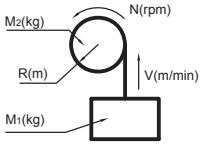
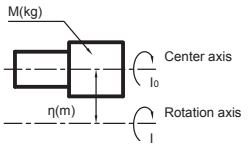
2: Unreasonable force that is applied to the input shaft of the reduction gear can cause damage to the reduction gear or customer's equipment.

3: When inserting the pulley, do not use a hammer to avoid impact on the input shaft.



Inertia Moment Calculation Formula

Shape	I(kg, m²)
1. Cylinder solid 	$I_x = \frac{1}{2} M R^2$ $I_y = \frac{1}{4} M \left(R^2 + \frac{R^2}{3} \right)$ $I_z = I_y$
2. Cylinder hollow 	$I_x = \frac{1}{2} M \left(R_1^2 + R_2^2 \right)$ $I_y = \frac{1}{4} M \left\{ \left(R_1^2 + R_2^2 \right) + \frac{a^2}{3} \right\}$ $I_z = I_y$
3. Oval cross section 	$I_x = \frac{1}{16} M \left(b^2 + c^2 \right)$ $I_y = \frac{1}{4} M \left(\frac{c^2}{4} + \frac{a^2}{3} \right)$ $I_z = \frac{1}{4} M \left(\frac{b^2}{4} + \frac{a^2}{3} \right)$
4. Rectangle 	$I_x = \frac{1}{12} M \left(b^2 + c^2 \right)$ $I_y = \frac{1}{12} M \left(a^2 + c^2 \right)$ $I_z = \frac{1}{12} M \left(a^2 + b^2 \right)$
5. General application 	$I = \frac{M}{4} \left(\frac{V}{\pi \times N} \right)^2 = MR^2$

Shape	I(kg, m²)
6. Horizontal movement by conveyor 	$I = \left(\frac{M_1 + M_2}{2} + M_3 + M_4 \right) \times R^2$
7. Horizontal movement by lead screw 	$I = \frac{M}{4} \left(\frac{V}{\pi \times N} \right)^2 = \frac{M}{4} \left(\frac{P}{\pi} \right)^2$
8. Up/down movement by hoist 	$I = M_1 R^2 + \frac{1}{2} M_2 R^2$
9. Parallel axis theorem 	$I = I_0 + M\eta^2$ I_0 : Moment of inertia of any object about an axis through its center of mass I : Moment of inertia about any axis parallel to the axis through its center of mass η : Perpendicular distance between the above two axes

MEMO

Warranty

1. In the case where Nabtesco confirms that a defect of the Product was caused due to Nabtesco's design or manufacture within the Warranty Period of the Product, Nabtesco shall repair or replace such defective Product at its cost. The Warranty Period shall be from the delivery of the Product by Nabtesco or its distributor to you ("Customer") until the end of one (1) year thereafter, or the end of two thousand (2,000) hours running of the Product installed into Customer's equipment, whichever comes earlier.
2. Unless otherwise expressly agreed between the parties in writing, the warranty obligations for the Product shall be limited to the repair or replacement set forth herein. OTHER THAN AS PROVIDED HEREIN, THERE ARE NO WARRATIES ON THE PRODUCT, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
3. The warranty obligation under the Section 1 above shall not apply if:
   a) the defect was caused due to the use of the Product deviated from the Specifications or the working conditions provided by Nabtesco;
   b) the defect was caused due to exposure to foreign substances or contamination (dirt, sand etc.)
   c) lubricant or spare part other than the ones recommended by Nabtesco was used in the Product;
   d) the Product was used in an unusual environment (such as high temperature, high humidity, a lot of dust, corrosive/volatile/inflammable gas, pressurized/depressurized air, under water/liquid or others except for those expressly stated in the Specifications);
   e) the Product was disassembled, re-assembled, repaired or modified by anyone other than Nabtesco;
   f) the defect was caused due to the equipment into which the Product was installed;
   g) the defect was caused due to an accident such as fire, earthquake, lightning, flood or others; or
   h) the defect was due to any cause other than the design or manufacturing of the Product.
4. The warranty period for the repaired/replaced Product/part under the Section 1 above shall be the rest of the initial Warranty Period of the defective Product subjected to such repair/replace.

Rev. 006

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CAT.150330 **(Issued on March 30, 2015)**