



Electric Rotary Joint

User Manual



Multi Axis Robot

- Pick-and-place / Assembly / Array and packaging / Semiconductor / Electro-Optical industry / Automotive industry / Food industry
- Articulated Robot
 - Delta Robot
 - SCARA Robot
 - Wafer Robot
 - Electric Gripper
 - Integrated Electric Gripper
 - Rotary Joint



Single Axis Robot

- Precision / Semiconductor / Medical / FPD
- KK, SK
 - KS, KA
 - KU, KE, KC



Direct Drive Rotary Table

- Aerospace / Medical / Automotive industry / Machine tools / Machinery industry
- RAB Series
 - RAS Series
 - RCV Series
 - RCH Series



Ballscrew

- Precision Ground / Rolled
- Super S series
 - Super T series
 - Mini Roller
 - Ecological & Economical Lubrication Module E2
 - Rotating Nut (R1)
 - Energy-Saving & Thermal-Controlling (C1)
 - Heavy Load Series (RD)
 - Ball Spline



Linear Guideway

- Automation / Semiconductor / Medical
- Ball Type--HG, EG, WE, MG, CG
 - Quiet Type--QH, QE, QW, QR
 - Other--RG, E2, PG, SE, RC



Medical Equipment

- Hospital / Rehabilitation centers / Nursing homes
- Robotic Gait Training System
 - Hygiene System
 - Robotic Endoscope Holder



Bearing

- Machine tools / Robot
- Crossed Roller Bearings
 - Ball Screw Bearings
 - Linear Bearing
 - Support Unit



AC Servo Motor & Drive

- Semiconductor / Packaging machine / SMT / Food industry / LCD
- Drives-D1, D1-N, D2
 - Motors-50W-2000W



Driven Tool Holders

- All kinds of turret
- VDI Systems
 - Radial Series, Axial Series, MT
 - BMT Systems
 - DS, NM, GW, FO, MT, OM, MS



Linear Motor

- Automated transport / AOI application / Precision / Semiconductor
- Iron-core Linear Motor
 - Coreless Linear Motor
 - Linear Turbo Motor LMT
 - Planar Servo Motor
 - Air Bearing Platform
 - X-Y Stage
 - Gantry Systems



Torque Motor (Direct Drive Motor)

- Inspection / Testing equipment / Machine tools / Robot
- Rotary Tables-TMS,TMY,TMN
 - TMRW Series
 - TMRI Series

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1. Precautions (be sure to read before use)

1.1

To use the product safely and correctly, and avoid risk of accident or injury, please read the following precautions carefully. In addition, please follow common (ISO/IEC) international standards [Note 1], Japanese Industrial Standards (JIS) [Note 2] and other safety regulations.

[Note 1] ISO 10218:1992: Manipulating industrial robots – Safety

IEC 60204-1: Safety of machinery – Electrical equipment of machine (Part 1: General requirement)

[Note 2] JIS B 9960-1: Safety of machinery – Electrical equipment of machine (Part 1: General requirement)

JIS B 8433-1993: Industrial automatic control – Safety

[Note 3] Labor Safety & Health etc.

1.2

This product is designed and manufactured with common industrial parts and used mainly for the manufacturing industry.

1.3

Please select product specifications with a system designer or person with sufficient knowledge and experience, and read this “Technical Information” carefully before operating this product.

1.4

When the Rotary Joint is operated with a system (mechanical device, robot, end-effector), please follow suitable standards and regulations, and use it correctly.

1.5

The risk, warning, cautions etc. listed in these precautions does not cover all circumstances. Please follow the above mentioned standards and regulations completely.

2. Product Characteristics

2.1 Applications and Features



• Applications

- Free limitations of wiring at end effector, prevents wire damage from interference, wear or bending
- Unlimited rotational motion of end effector
- Reduce operation time of applications such as assembly, grinding

• Features

- Compact Design: Compact size minimizes load requirement
- High IP level: IP level 54, robust design to increase reliability
- Standard flange: Flange dimension according to ISO 9409-1-31.5, robots and end-effectors with same ISO flange are interchangeable
- Easy installation: Built-in set screws, no need to design or use adaptor

2.2 Application Examples

Be used in the application, which require for not only power and signal transmission but also avoiding the wire twisted during the rotation.

• Multi Grippers & Tool Change System

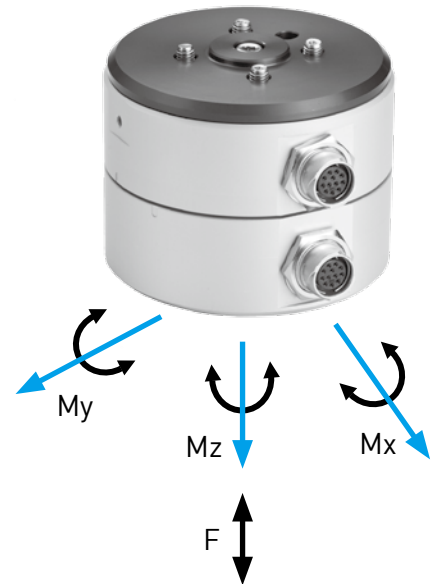


• Unlimited rotational motion

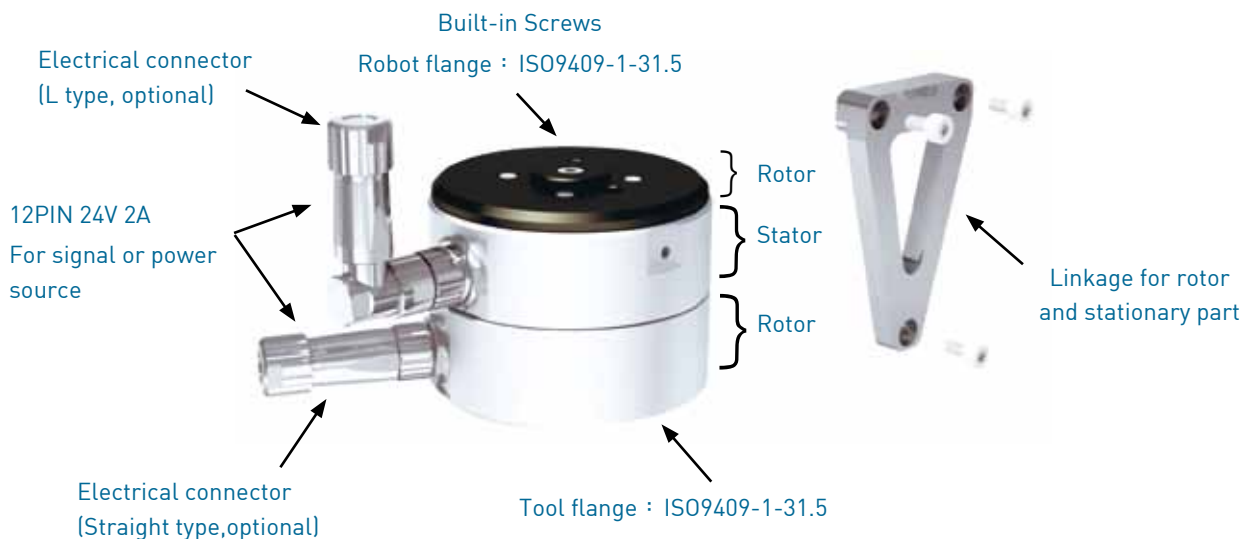


2.3 Specification table

Model		ERJ-30	
Category	Item	Value	Unit
Motion Specification	Rotation angle	Unlimited	°
	Max velocity	150	RPM
Power Specification	Operation voltage	24	V
	Operation current	Max 2	A
	Electric path	12	-
Load	Initial torque	0.3	N-m
	Load torque M_{xy}	10	N-m
	Load torque M_z	2	N-m
	Load strength F_z	50	N
Hardware Specification	Product weight	0.6	kg
	IP Rating	IP54	-
	Operating temperature range	5-60	°C
	Operation humidity	<85	%RH
	Storage temperature range	0-60	°C
	Radius of rotation	R45	mm
	Product height	55	mm
	Mounting interface	ISO 9409-1-31.5-4-M5	-



2.4 Product illustration



2.5 Specification illustration

The model name of product primarily indicates the joint type and optional accessories of Rotary Joint in order to verify the exact specifications by placing an order.

ERJ - 30 - S1 - 605 - T16

A B C D

Code	Item	Description	
A	Type	ERJ30:	Electric rotary joint
B	Connector type	None:	none [Note 1]
		S1:	Straight Type x1 [Note 2]
		S2:	Straight Type x2
		L1:	L Type x1 [Note 2]
		L2:	L Type x2
		C2:	Straight Type x 1, L Type x 1
C	HIWIN robot manipulator	None:	none
		605:	RA605/RT605 Accessory Kit [Note 3]
D	HIWIN electric gripper	None:	none
		X16:	XEG-16 Accessory Kit [Note 4]
		X32:	XEG-32 Accessory Kit [Note 4]
		S04:	SEG-04 Accessory Kit [Note 4]
		S24:	SEG-24 Accessory Kit [Note 4]
		T16:	STG-16 Accessory Kit [Note 4]

[Note 1] If both the optional Code C & D are required to select at the same time, it is recommended that this optional item shall be selected to avoid producing the residual material.

[Note 2] If one of the optional Code C or D is required to select, it is recommended that this optional item shall be selected to avoid producing the residual material.

[Note 3] The electric rotary joint with HIWIN robot manipulator accessory kit, including the wire and stator member from the robot manipulator to the electric rotary joint, will be able to completely transmit the power and signal provided by the robot manipulator.

[Note 4] The electric rotary joint with HIWIN electric gripper accessory kit, including the wire and rotor member from the electric gripper to the electric rotary joint, will be able to completely transmit the power and signal required by the electric gripper.

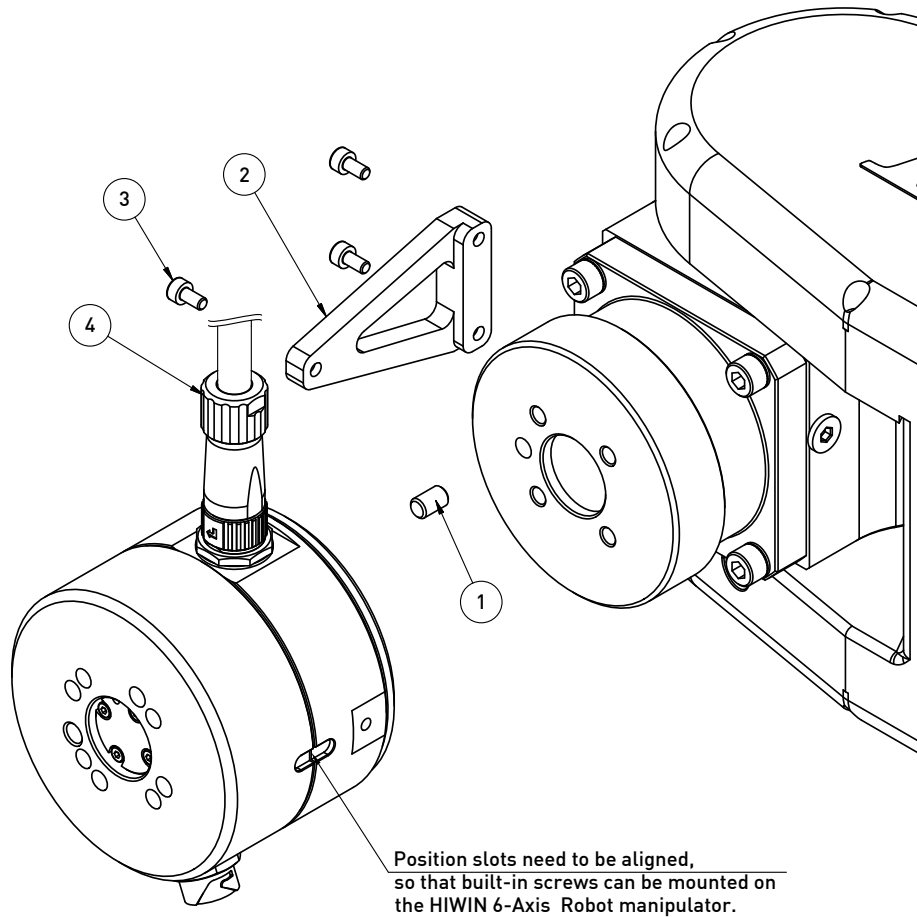
2.6 Model Selection Chart

The model selection chart can be used to select the most appropriate products to minimize automation cost by customers.

Model selection combination				Product Content
A	B	C	D	
				Electric Rotary Joint ERJ-30
ERJ-30				ERJ-30
ERJ-30	S1			ERJ-30, Straight Type connector x 1
ERJ-30	S2			ERJ-30, Straight Type connector x 2
ERJ-30	L1			ERJ-30, L Type connector x 1
ERJ-30	L2			ERJ-30, L Type connector x 2
ERJ-30	C2			ERJ-30, Straight Type connector x 1, L Type connector x 1
ERJ-30	S1	605		ERJ-30, RA605/RT605 Accessory Kit, Straight Type connector x 1
ERJ-30	L1	605		ERJ-30, RA605/RT605 Accessory Kit, L Type connector x 1
ERJ-30	S1		X16	ERJ-30, XEG-16 Accessory Kit, Straight Type connector x 1
ERJ-30	L1		X16	ERJ-30, XEG-16 Accessory Kit, L Type connector x 1
ERJ-30	S1		X32	ERJ-30, XEG-32 Accessory Kit, Straight Type connector x 1
ERJ-30	L1		X32	ERJ-30, XEG-32 Accessory Kit, L Type connector x 1
ERJ-30	S1		S04	ERJ-30, SEG-04 Accessory Kit, Straight Type connector x 1
ERJ-30	L1		S04	ERJ-30, SEG-04 Accessory Kit, L Type connector x 1
ERJ-30	S1		S24	ERJ-30, SEG-24 Accessory Kit, Straight Type connector x 1
ERJ-30	L1		S24	ERJ-30, SEG-24 Accessory Kit, L Type connector x 1
ERJ-30	S1		T16	ERJ-30, STG-16 Accessory Kit, Straight Type connector x 1
ERJ-30	L1		T16	ERJ-30, STG-16 Accessory Kit, L Type connector x 1
ERJ-30		605	X16	ERJ-30, RA605/RT605 and XEG-16 Accessory Kit
ERJ-30		605	X32	ERJ-30, RA605/RT605 and XEG-32 Accessory Kit
ERJ-30		605	S04	ERJ-30, RA605/RT605 and SEG-04 Accessory Kit
ERJ-30		605	S24	ERJ-30, RA605/RT605 and SEG-24 Accessory Kit
ERJ-30		605	T16	ERJ-30, RA605/RT605 and STG-16 Accessory Kit

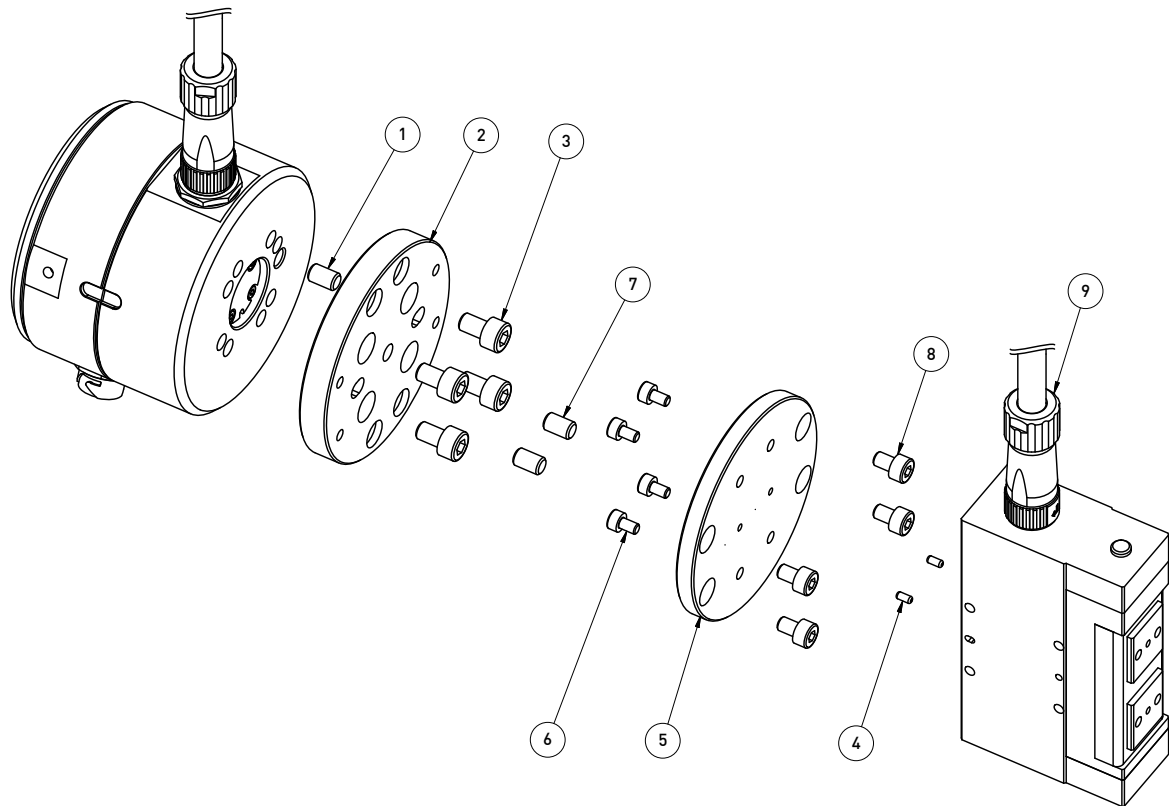
3. Accessory installation methods

3.1 ERJ-30 with HIWIN RA605/RT605 robot manipulator



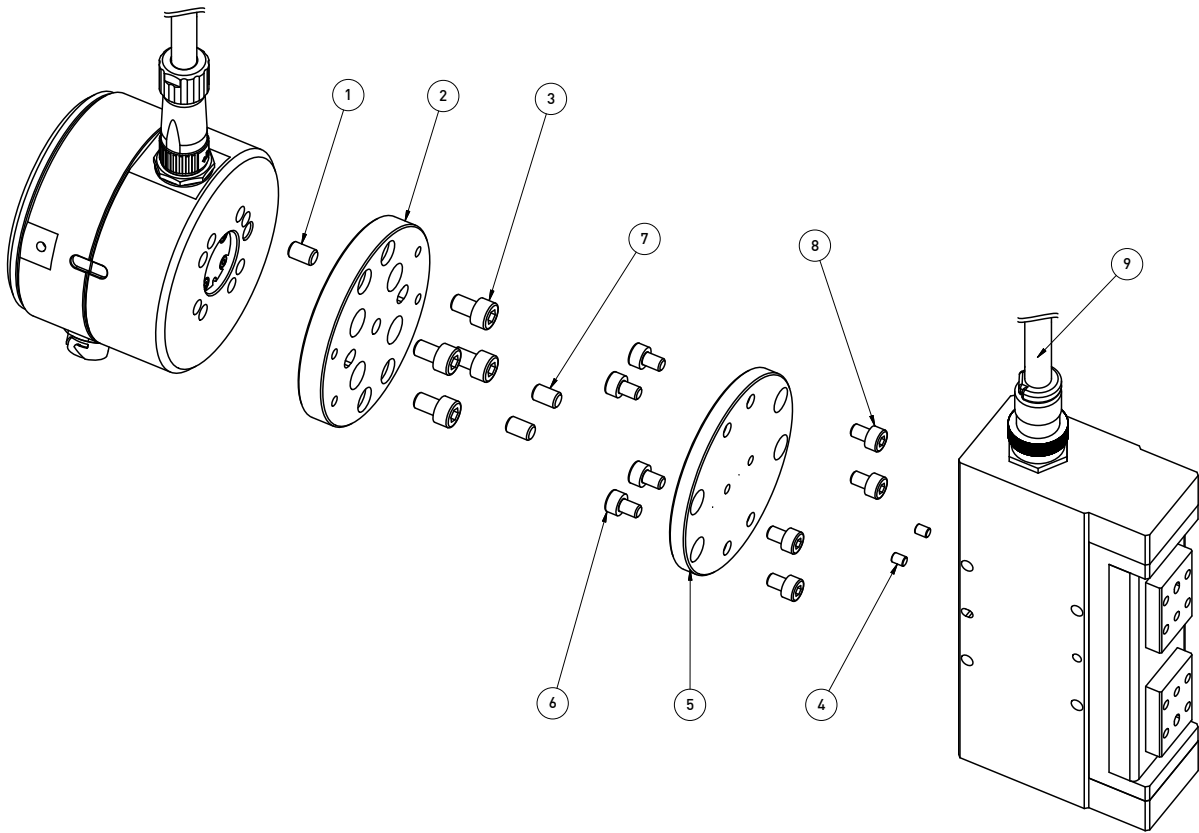
ERJ-30_RA605/RT605 accessory kit		
Item	Name	Amount
1	Positioning pin (Ø5x8L)	1
2	E30 fastener	1
3	Bolt (M3x0.5Px6L)	3
4	E30-605 actuator cable	1

3.2 ERJ-30 with electric gripper XEG-16



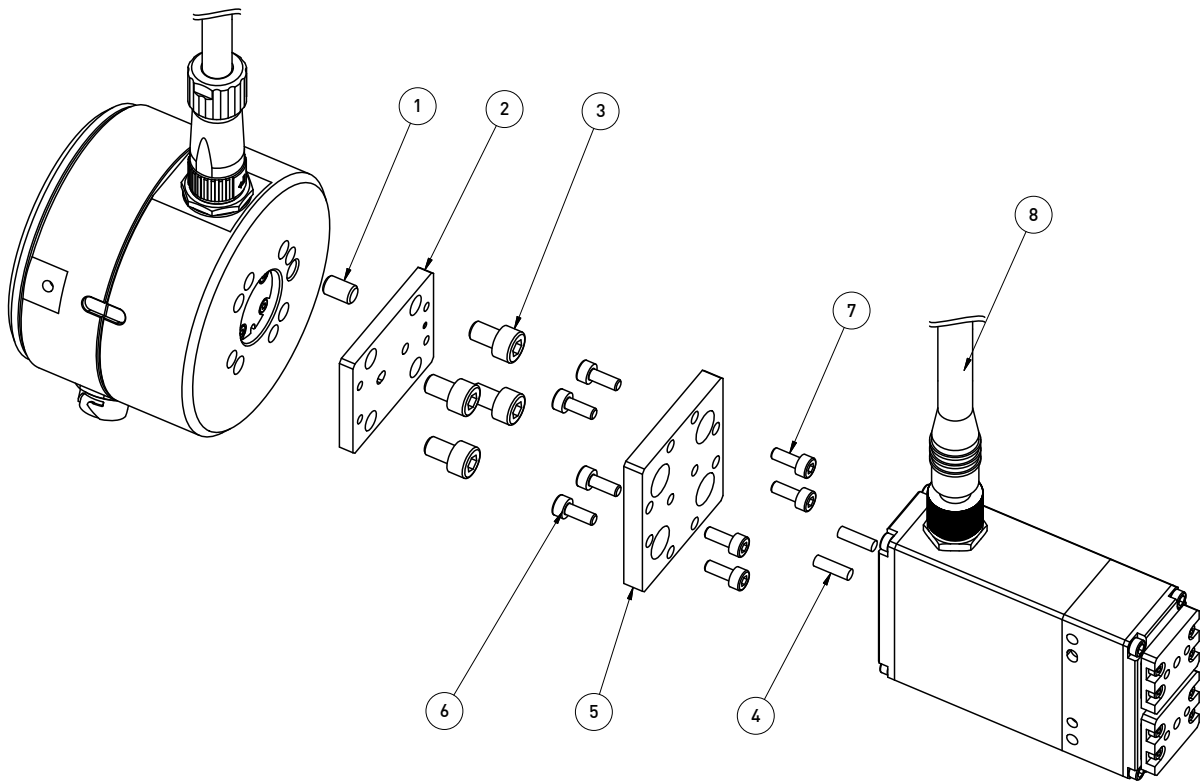
ERJ-30_XEG-16 accessory kit		
Item	Name	Amount
1	Positioning pin (Ø5x8L)	1
2	XEG-16_605 robot manipulator adapter	1
3	Bolt (M5x0.8Px8L)	4
4	Positioning pin (Ø2x4.4L)	2
5	XEG-16_605 gripper adapter	1
6	Bolt (M3x0.5Px5L)	4
7	Positioning pin (Ø5x8L)	2
8	Bolt (M4x0.7Px6L)	4
9	E30-X16 actuator cable	1

3.3 ERJ-30 with electric gripper XEG-32



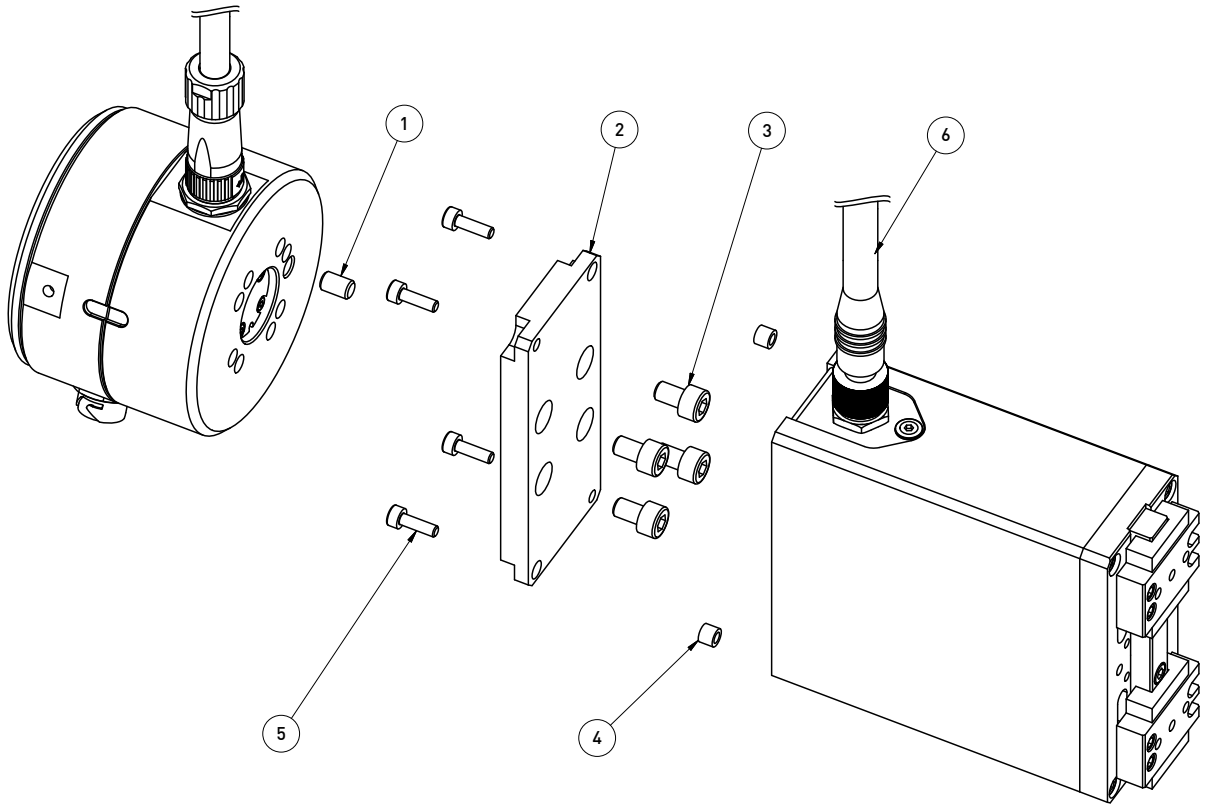
ERJ-30_XEG-32 accessory kit		
Item	Name	Amount
1	Positioning pin (Ø5x8L)	1
2	XEG-32_605 robot manipulator adapter	1
3	Bolt (M5x0.8Px8L)	4
4	Positioning pin (Ø3x4L)	2
5	XEG-32_605 gripper adapter	1
6	Bolt (M4x0.7Px6L)	4
7	Positioning pin (Ø5x8L)	2
8	Bolt (M4x0.7Px6L)	4
9	E30-X32 actuator cable	1

3.4 ERJ-30 with electric gripper SEG-04



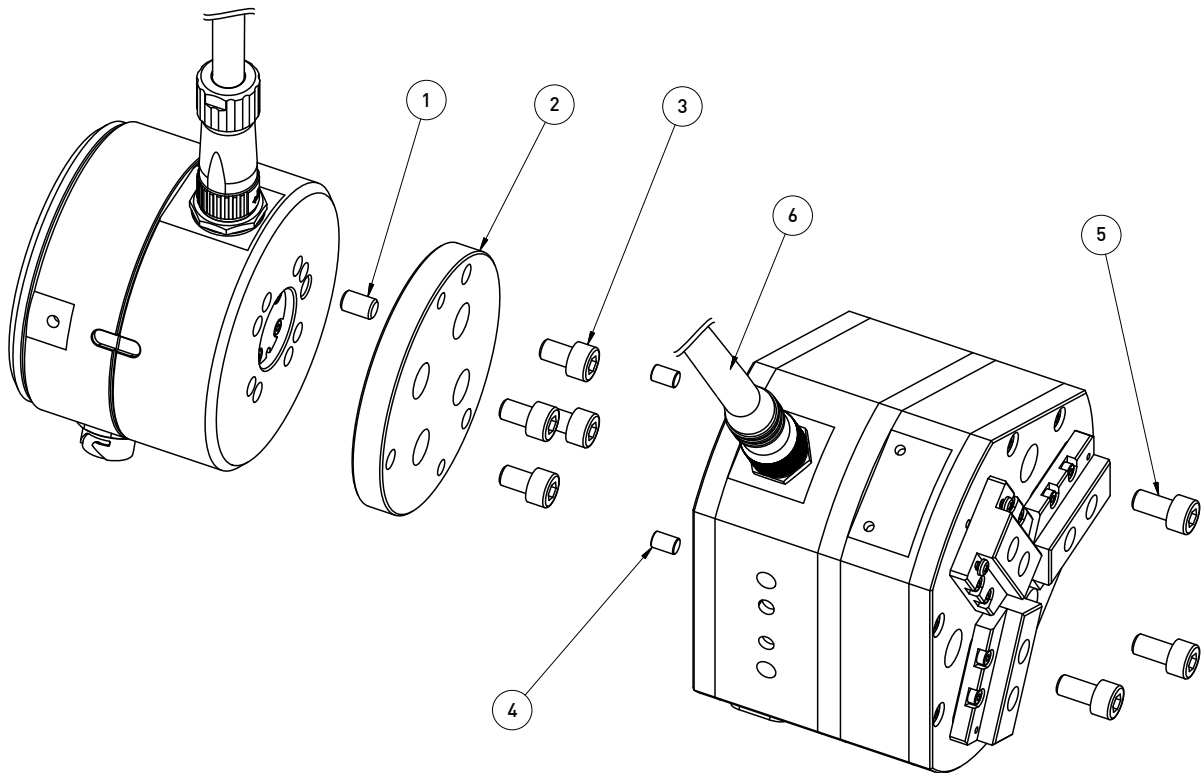
ERJ-30_SEG-04 accessory kit		
Item	Name	Amount
1	Positioning pin (Ø5x8L)	1
2	SEG-04_605 robot manipulator adapter	1
3	Bolt (M5x0.8Px8L)	4
4	Positioning pin (Ø3x10L)	2
5	SEG-04_605 gripper adapter	1
6	Bolt (M3x0.5Px8L)	4
7	Bolt (M3x0.5Px8L)	4
8	E30-S actuator cable	1

3.5 ERJ-30 with electric gripper SEG-24



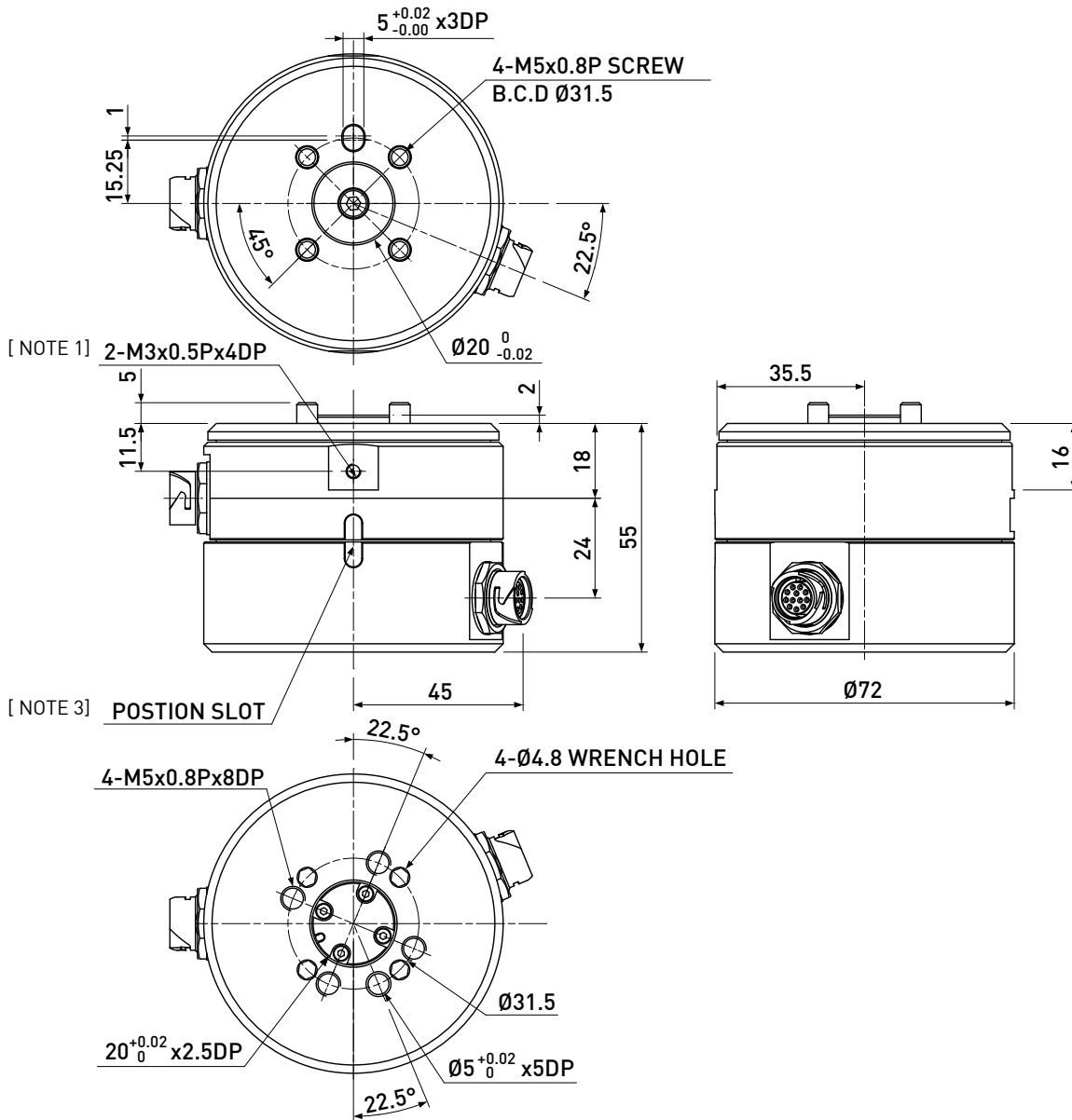
ERJ-30_SEG-24 accessory kit		
Item	Name	Amount
1	Positioning pin (Ø5x8L)	1
2	SEG-24_605 adapter	1
3	Bolt (M5x0.8Px8L)	4
4	SEG-24 centering sleeve	2
5	Bolt (M3x0.5Px10L)	4
6	E30-S actuator cable	1

3.6 ERJ-30 with electric gripper STG-16



ERJ-30_STG-16 accessory kit		
Item	Name	Amount
1	Positioning pin (Ø5x8L)	1
2	STG-16_605 adapter	1
3	Bolt (M5x0.8Px10L)	4
4	Positioning pin (Ø4x6L)	2
5	Bolt (M5x0.8Px10L)	3
6	E30-T16 actuator cable	1

4. Outline drawing



[Note 1] If the HIWIN RA605/RT605 robot manipulator accessory kit is not attached, please make a fastener in accordance with the aligning slot in the above drawings and install it on the stationary part of driving source, in order to prevent the rotation of stator part of rotary joint.

[Note 2] Steel material is recommended for the fastener.

[Note 3] The position slot shall be aligned first, and then bolt the screws firmly.

5. Appendix

5.1 RoHS Certificate



For Question,
Please Contact with SGS
www.tw.sgs.com

Report No: CX/2016/40166

Date: 2016/06/22

HIWIN TECHNOLOGIES CORP.
NO. 7, JINGKE RD., NANTUN DIST., TAICHUNG CITY 408, TAIWAN (R. O. C.)

The following sample(s) was/were submitted and identified by/on behalf of the applicant as :

Sample Submitted By : HIWIN TECHNOLOGIES CORP.
Sample Description : ELECTRIC ROTARY JOINT (ERJ-30)
Sample Receiving Date : 2016/04/20
Testing Period : 2016/04/20 to 2016/05/05

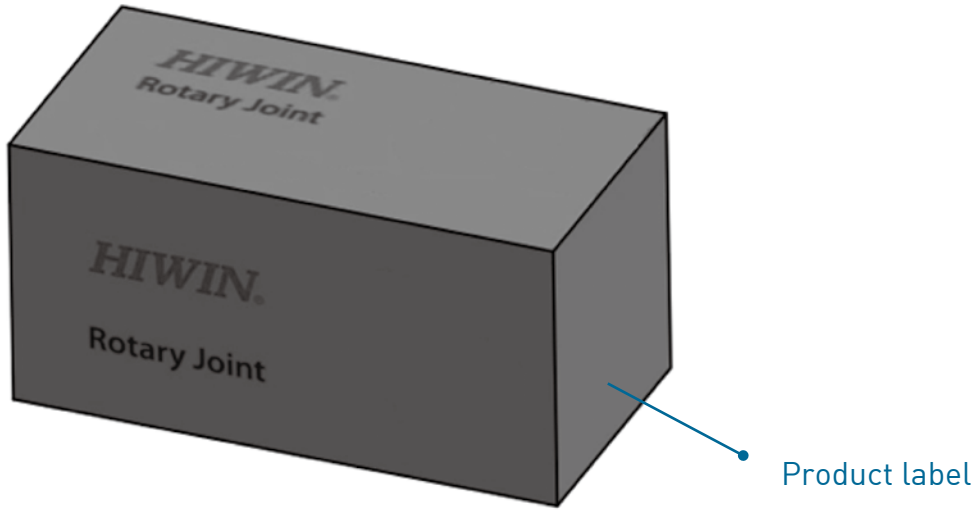
Test Result(s) : Please refer to next page(s).

Conclusion : Based upon the performed tests on submitted samples, the test results comply with the limits of RoHS Directive 2011/65/EU with the exempted materials below according to the declaration from applicant:
1. SILVERY METALLIC NUT (No.1.7) in Table 1: Lead (Pb)
("6(c), Copper alloy containing up to 4 % lead by weight" in Directive 2011/65/EU)

Wendy
Wendy Wei, Supervisor
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

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5.2 Shipping items



- Standard shipping items

1. Electric rotary joint
2. Outline drawing

- Product label



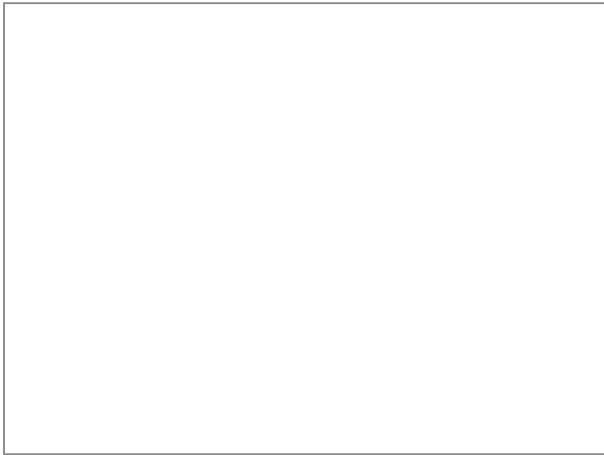
5.3 Inquiry Form

Company		Date	
Contact		Tel.	
E-Mail		Fax	
Address			
1.Model			
2.Rotational angle (°)			
3.Rotational speed (mm/s)			
4.Rotational acceleration (mm/s ²)			
5.Work-piece weight (kg)			
6.Lateral Torque Mxy (N-m)			
7.Working environment	<input type="checkbox"/> Clean room <input type="checkbox"/> Dust <input type="checkbox"/> High temperature ____ °C <input type="checkbox"/> Low temperature ____ °C <input type="checkbox"/> Vibration <input type="checkbox"/> Oil <input type="checkbox"/> Water <input type="checkbox"/> High humidity <input type="checkbox"/> Corrosive chemicals <input type="checkbox"/> Others _____		
8.Target machine			
9.Target machine pay load (kg)			
10.Target machine motion speed (mm/s)			
11.Cycle time (S)			
12.Special requirements			
13.Application	<input type="checkbox"/> Polishing <input type="checkbox"/> Grinding <input type="checkbox"/> Deburring <input type="checkbox"/> Assembly <input type="checkbox"/> Machine tool <input type="checkbox"/> Others _____		
14.Remark			

Electric Rotary Joint User Manual

Publication Date : December 2017, first edition

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