

Installation Guide

for partly completed machines
according to machinery directive 2006/42/EG app. VI

Maintenance Instructions

Declaration of Conformity

according to machinery directive 2006/42/EG app. II 1. B.

ForTorque® Swivelling-Rotary Modules FT01




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1. General Information

1.1 Introduction

	<p>This manual includes instructions for the assembly, use, installation, risks of danger, maintenance, transport, and storage of swivelling-rotary modules. The document is intended for electricians, mechanics, service technicians and warehouse staff. Please comply with the safety instructions at all times. Keep this guide accessible and make it available for the assigned staff.</p>
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1.2 Explanation of Signs

	<p>Round command signs indicate what to do.</p>
	<p>Triangular warning signs indicate danger.</p>
	<p>JUNG ANTRIEBSTECHNIK U. AUTOMATION GMBH the company will be referred to as JA² GmbH in the following text.</p>

1.3 Warranty & Liability



As manufacturer of automation systems, JA² GmbH does not accept responsibility for the improper use, application or handling of products and declines any liability. Warranty may not be claimed after use or combination with third party products, like cables and power supplies. With purchase every customer confirms to have read and understood the in the installation and maintenance guide listed warnings. This guide is included in every delivery and available online. Please always include this guide in your deliveries, should you resell our linear motor systems as components or install them into machines. We also refer to our general terms and conditions.

1.4 Copyright Trademark Protection




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2. Intended Use


2.1 Use of Swivelling-Rotary Modules

	<p>The swivelling-rotary modules are high-dynamic actuators. According to European law 2006/42/EG the actuators are partly completed machines, which are further installed into machines. They are used in machines for industrial automation, handling and assembly technologies, packaging, as well as testing technologies.</p>
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2.2 Assembly of Partly Completed Machines into Machines





	<p>In order to assemble the partly completed machines properly and without compromising the safety and health of people, the following conditions must be met:</p> <ul style="list-style-type: none"> - The installation of machines may only be carried out by qualified personnel. - This document must be read and understood completely before installation. - All warnings in this document must be observed. <p>A risk assessment for the complete machine must be carried out!</p>
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2.3 Operating Conditions


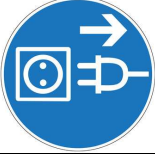




	<p>Conditions</p> <ul style="list-style-type: none"> - environmental temperature with nat. cooling 0°C to 40°C - relative humidity ≤ 60 % not condensing - storage temperature -15°C to +70°C <p>The storage room must be dry, free of dust and frost and must be protected from shock. The swiveling-rotary module must be protected from extreme weather conditions. The storage room air may not contain any aggressive gases. The maximum installation height is 4.000 m above sea level (MASL). When installing above 1.000 m MASL, with identical motor power, a derating of 1 °C per 100 m is to be expected for air cooling.</p> <p>The operating voltage of the swivelling-rotary modules ≤ 72 VDC.</p>
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3. Safety Instructions

3.1 Warnings for Unpacking, Handling, Assembly, Processing & Storage

	<p>Pacemakers / Defibrillators</p> <p>When approaching strong magnetic fields, pacemakers or other devices, may switch into test mode and will not function properly. As a wearer of such a device, you should always keep the following minimum distance between the devices and the modules:</p> <ul style="list-style-type: none"> - 100 mm (4") to the surface of the module <p>Warn other persons, who wear these devices, to avoid getting too close to the swiveling-rotary modules.</p>
	<p>Magnetic Fields</p> <p>Magnets integrated into the servo motors produce a strong magnetic field. They could damage TV's, laptops, computer hard drives, credit and ATM cards, data storage media, mechanical watches, hearing aids, and speakers.</p> <p>Keep magnets away from devices and objects that could be damaged by strong magnetic fields.</p> <p>Please keep a minimum distance of 100 mm (4") from the above mentioned objects.</p>
	<p>Effects on People</p> <p>Based on current scientific knowledge, magnetic fields of permanent magnets do not have a measurable positive or negative effects on people. It is unlikely that permanent magnets constitute a health risk, but it cannot be entirely ruled out. For your own safety, avoid constant contact with magnets and store large magnets at least one meter away from your body.</p>
	<p>Temperature Resistance</p> <p>Keep swiveling-rotary modules away from unshielded flames or heat. Temperatures above 120°C will cause demagnetization.</p>

3.2 Warnings for Intended Use

 	<p>Fast moving Machine Parts Our swiveling-rotary modules are high-dynamic machine elements. Necessary precautions must be taken to prevent contact with moving parts during operations. This can be done by installing covers, enclosures, light curtains, safety mats, etc.. Operations, without appropriate safety measures are forbidden. Operations may only be carried out by qualified personnel. During assembly the machine is to be turned off!</p>
	<p>Burn Hazards The surface of swiveling-rotary modules can reach temperatures of 80 °C during operations, which may cause burns upon contact.</p>
	<p>Bruises & Sprains Our swiveling-rotary modules can apply very high accelerations, high top speeds and high torques. Depending on the application and the duration of exposure appropriate protective devices must be used!</p>
	<p>Severing of Limbs Our swivelling-rotary modules can apply very high accelerations, high top speeds and high torques. Depending on the application and the duration of exposure appropriate protective devices must be used!</p>
	<p>Risk Assessment & Performance Level (PL) of Protective Measures Since the risk depends on the type of machine, the assembly conditions and the implemented protective measures, a general specification to minimize risks during assembly cannot be given by us. We recommend the software assistant SISTEMA for risk assessment and evaluation of the PL according to DIN EN ISO 13849.</p>

4. Special Operating Conditions

4.1 Warnings for Crash



Case of Crash

The swivelling-rotary modules are high-dynamic actuators. They use special gear box technologies. According to this feature they are able to rotate high inertias and excentrical application masses.

In case of hard collision the gearbox components may be destroyed.

In principle the output torque can be limited by reducing and limiting the current of the servomotor.

In case of a hard crash, when running at full speed, current limitation is not a protection against gearbox malfunction!

Dependig on application a 'soft block' must be used.

5. Maintenance, Dismantling & Assembly

5.1 Maintenance of Swivelling-Rotary Modules



ForTorque® swivelling-rotary modules are maintenance-free!

5.2 Dismantling

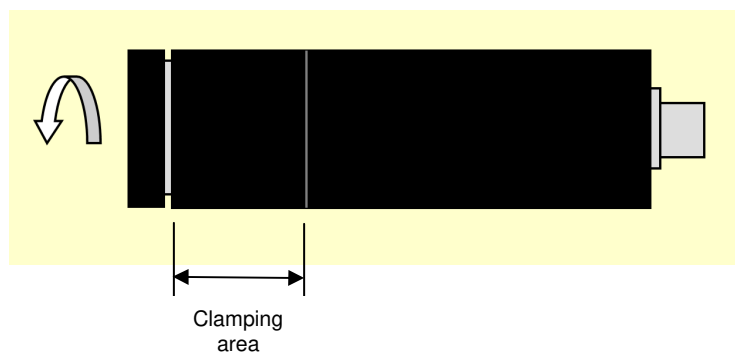


Dismantling of the module is not possible. If the need for service arises, the complete module needs to be send back to the manufacturer. Maintenance or service is recommended to be done in our factory. Improper handling can lead to destruction.

5.3 Mounting of Swivelling-Rotary Modules to Machines



A clamping flange from our accessory program should be used for the mounting and affixing of swivelling-rotary modules. When affixing the clamping flange, it is essential to ensure, that it is only affixed in the area intended for this purpose!



6. Declaration of Conformity & CE-Marking



The following declaration of conformity is generated by computer.
We declare, that this declaration has legal validity.

Declaration of Conformity & CE-Marking

According to **EC Machinery Directives** 2006/42/EC, appendix II 1. B.

We hereby declare, that the below listed partly completed machine is in accordance with safety and health requirements of the EC Machinery Directives 2006/42/EC.

Partly completed machine: ForTorque® Swivelling-Rotary Module FT01

Drawingnumber: 0462.000.0, 0469.000.0 & 0470.000.0

The following EU guidelines are applied:

- Electromagnetic Compatibility Directive 2004/108/EC

We also declare, that the special technical documentation for this partly completed machine was created in accordance with the appendix VII B. Also we commit to sending it to market surveillance authorities on demand. Authorized representative for the compilation of the technical documentation is managing director Wilhelm Jung.

The operating of the partly completed machine is forbidden until it is installed into the complete machine and the machine is in accordance with the requirements of the EU guidelines. The declaration of conformity according to appendix II 1. A. must exist.

Wettenberg, December 04th, 2017



Wilhelm Jung

Managing Director

JUNG ANTRIEBSTECHNIK U.
AUTOMATION GMBH