

Dear customer,

Congratulations!

You have chosen the best product we know how to make with our 30 years of experience and passion for precision.

Please follow the instructions in this manual to avoid mistakes and save time.

In case you need further information or you have further requests we will be glad to be at your disposal.

With best regards,

Your GRIP GmbH

GRIP GmbH Handhabungstechnik  
Alter Hellweg 70  
44379 Dortmund, Germany

Tel. +49 231 96450 01

info@grip-gmbh.com  
www.grip-gmbh.com



## DDF Multi Swivel

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## 1 Operation

The compressed air is routed through channels inside the multi swivel (DDF). These channels prevent the pneumatic lines from becoming twisted, when the multi swivel is rotated.

## 2 Safety

### 2.1 Symbol



This symbol indicates possible hazards to persons or the DDF Multi Swivel.

### 2.2 Intended use

The DDF Multi Swivel has been designed for use on robots for applications with endless rotation and for the implementation of pneumatics. The system is intended for the installation in a machine. The requirements of the applicable instructions must be considered and adhered to. The unit may only be used in the context of its technical specifications. Any unintended use is not recommended. The manufacturer is not liable for damages resulting from such usage.

### 2.3 Environmental and operating conditions

- Only use the unit within its technical specifications,
- Printing quality requirements ISO 8573-1: 6 4 4,
- Preconditions are clean environmental conditions at room temperature. If this is not observed, the maintenance interval will be reduced depending on the application,
- The environment must be free of splash water and superheated steam as well as from abrasion or processing dust.

### 2.4 Safety indication

The unit is built according to the state of the art at the time of delivery. However, dangers can arise if the unit is used improperly, installed, maintained or used for non-intended use and the EC Machinery Directive, the UVV, the VDE directives, the safety and installation instructions are not observed.

#### Details:

- Everyone who is responsible for assembly, commissioning and maintenance must read and understand the complete operating instructions.
- Installation, connection and commissioning may only be performed by authorized personnel.
- Improper use, which affects the function and operational safety of the DDF Multi Swivel, is prohibited.
- Additional bores or threads may not be installed.
- Valid Safety instructions and accident prevention regulations at the place of installation shall be complied with.



**CAUTION! Do not move parts by hand when the power supply is connected.**



**CAUTION! Do not reach into the open mechanism and moving parts of the unit.**



**CAUTION! Always remove the power supply during installation, modification, maintenance and adjustment work.**



**CAUTION! Conduct maintenance, remodeling or installation outside the danger zones.**



**CAUTION! When mounting, assembling, connecting, adjusting, implementing and testing the unit, it must be ensured that accidental actuation of the unit is not possible.**

### **3 Warranty**

If the product is used as intended in 1-shift operation the warranty is valid for 24 months from the ex-works delivery date under observance the mandatory maintenance and lubrication intervals and the given operating conditions. Generally parts touching the work piece and wear parts are not part of the warranty. Wear parts are listed in chapter 8.1. The unit is considered to be defective if its basic function "turning and executing" is no longer functioning.

### **4 Scope of Delivery**

- DDF as painted in image 4

### **5 Technical Data**

Behold technical data sheets : TD-DDF050-EN

**6 Assembly**

The dynamic element can be mounted on the mounting flange. Therefore, 4 x M6 threaded bores are provided.

Via the fitments  $\varnothing 31,5$  and  $\varnothing 6 H7$ , the attachment can be centered and aligned.

4 x M5 countersinks are provided for installation on supply side.



**NOTICE!**

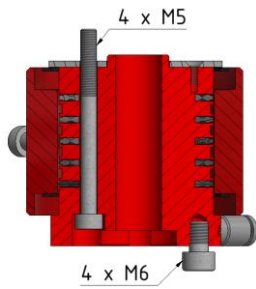
Please note that the mounting bolts are not too long to prevent the bolt from being screwed against the base of the tapped hole.



**NOTICE!**

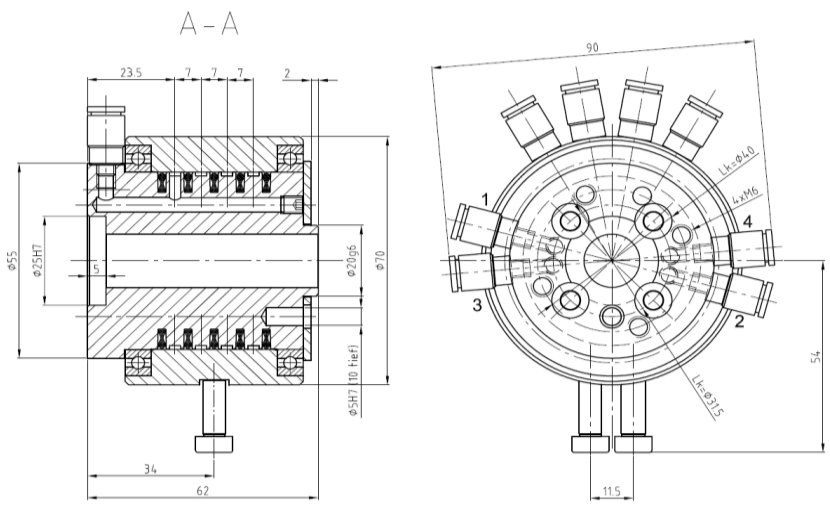
Only screws of minimum strength class 8.8 should be used.

**6.1 Minimum screw depth and load capacity of mounting screws**



		supply side 4 x M5				dynamic side 4 x M6				
		load capacity [N]				load capacity [N]				
		static		dynamic		static		dynamic		
	Minimum screw depth [mm]	per screw	total	per screw	total	per screw	total	per screw	total	
		structural steel	Rm < 800N/mm <sup>2</sup>	6				7,2		
	Rm > 800N/mm <sup>2</sup>	5	1600	6400	1000	4000	2500	10000	1600	6400
cast iron materials		7,5				8				
aluminium alloy		8				8				

**Image 1**



## 7 Maintenance and care

In order to achieve the function, please note the following:

- Blank external steel parts must be lubricated.
- During maintenance, certain parts must be installed with oil or grease (production lubrication).
- All gliding surfaces must be treated with Fin Assembly Grease from Interflon or an equivalent lubricant.
- Treat all gaskets with Renolit HLT 2 or an equivalent lubricant.
- Every time the DDF is serviced, all gaskets must be renewed. The complete gasket kit is available at GRIP.
- Except as otherwise required tread locking fluid must be applied to all screws and nuts and tightened to a tightening torque according to DIN.
- An environmental temperature above 50 ° C leads to rapid curing of the lubricants. In this case the lubrication and maintenance work must be performed more frequently.

**Maintenance interval depending on the operational conditions, recommendation**

**100.000 Cycles**

### 7.1 Disassembly of the DDF

(Behold Image 3)

1. Remove all compressed air lines.
2. Thoroughly unscrew the counter sunk bolt (pos.6).
3. Remove the disc (pos.3).
4. Pull the ring (pos.2) incl. the grooved ball bearing (pos.5). carefully.
5. Remove all of the gaskets (pos. 4).
6. Clean all parts thoroughly. Inspect for wear and defects.
7. Lubricate all mating surfaces.
8. Replace all gaskets.

For assembly, reverse the order.

### 7.2 Torque specifications

M5 – 4 Nm; M6 – 8,5 Nm; M8 – 20,6 Nm; M10 – 41 Nm; M12 – 71 Nm

### 7.3 Compressed air connection

Requirements for compressed air according to 8573-1: 6 4 4.  
Close the unused feedthroughs with suitable dummy plugs.



9 Exploded view

Image 3

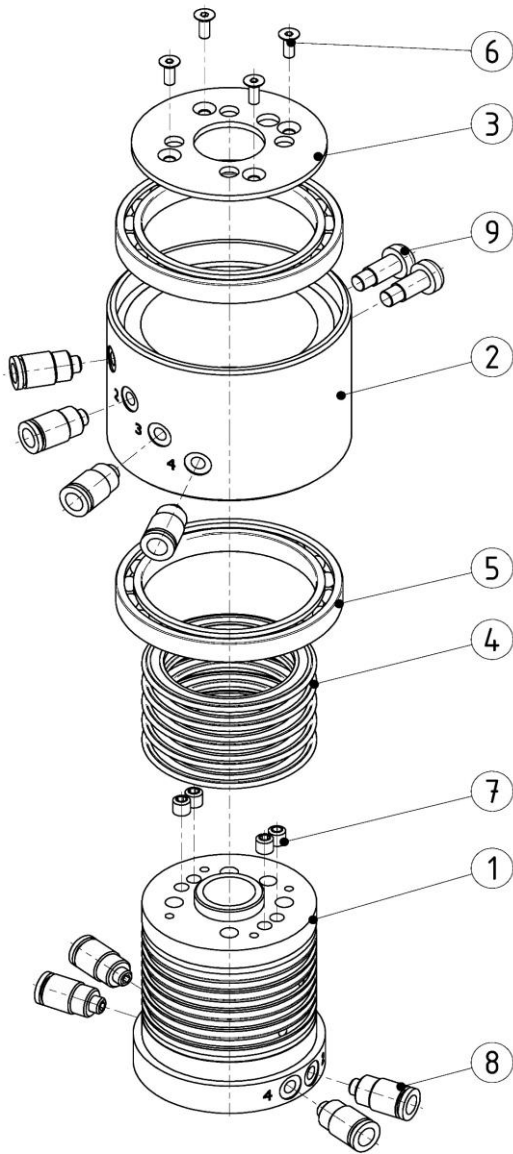


Image 4



**10 EC - Declaration of incorporation**

according to the Machinery Directive 2006/42/EC, annex II B

The producer / distributor GRIP GmbH Handhabungstechnik  
Alter Hellweg 70  
D-44379 Dortmund, Germany

hereby declares that the following products

**Product designation:** Multi swivel (DDF)

**Functional description:** System to implement compressed air for endless rotary movements

**Type designation:** G-DDF050...

The provisions of the above-mentioned directives- including their effective amendments- comply with the time of the declaration.

He further states that the following essential requirements of the Machinery Directive 2006/42/EC were applied and observed:  
annex I, numerics: 1.1.2; 1.1.3; 1.1.5; 1.3.2; 1.7.4

He further states that the specific technical documentation has been drawn up in accordance with annex VII, Part B.

The following harmonized standard has been applied:

EN ISO 12100-1:2003 Safety of Machinery- Basic concepts, general principles for design- Part 1:  
Basic terminology and methodology (ISO 12100-1:2003)

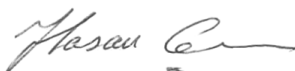
EN ISO 12100-2:2003 Safety of Machinery- Basic concepts, general principles for design- Part 2:  
Technical principles (ISO 12100-2:2003)

In the case of reasoned requests, the specific documents shall be sent to the national authorities as follows: Post

The product mentioned above may only be put into operation if it has been established applicable that the unit, into which the above-mentioned product is to be incorporated, complies with the provisions of the Machinery Directive 2006/42 / EC.

Authorized representative: Dipl.-Ing. (FH) Hasan Canti

Location: Dortmund  
Date: 15.09.2022



Dipl.-Ing. (FH) Hasan Canti  
Executive Director