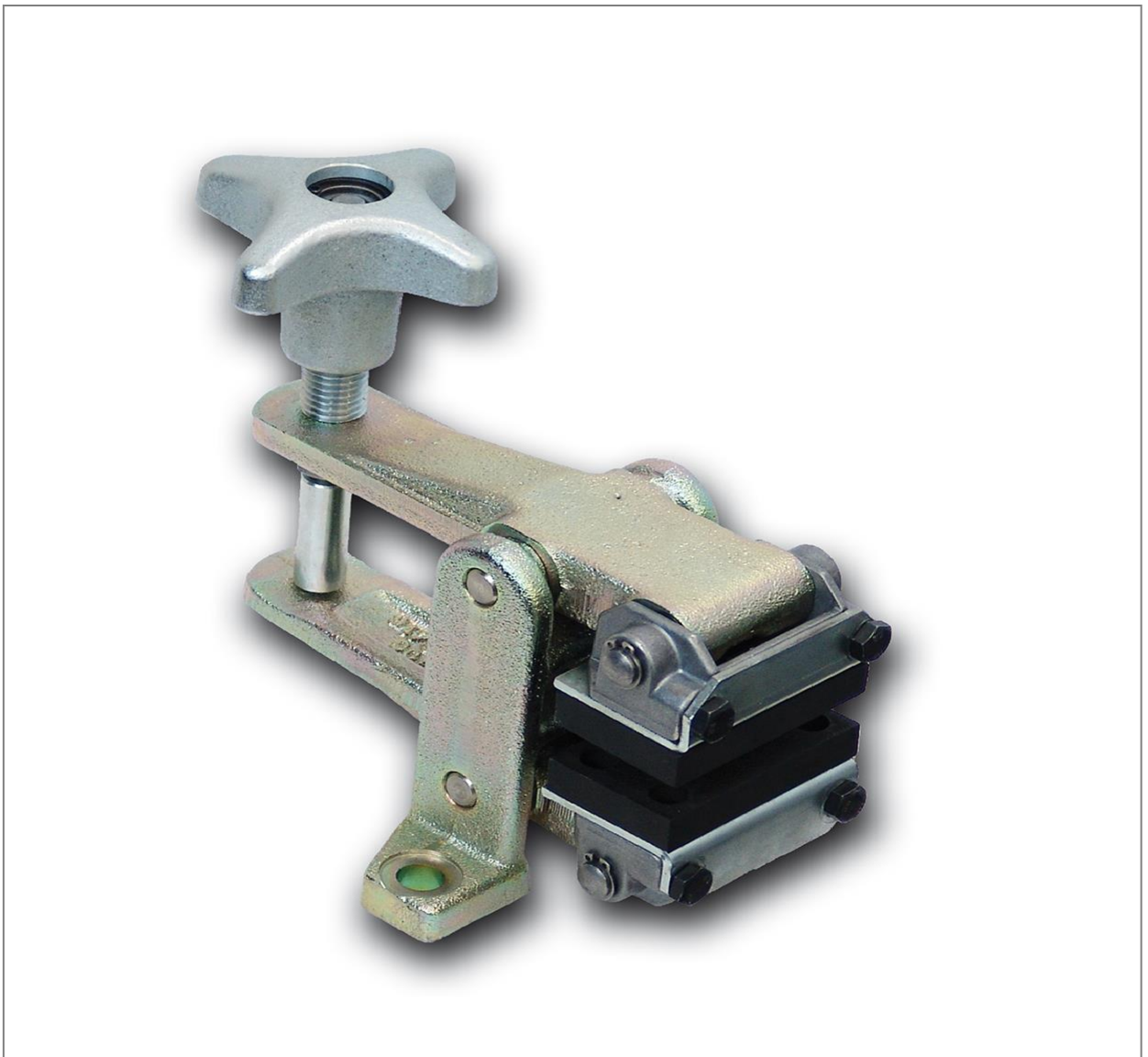


**Installation and Operating Instructions for  
Brake Caliper DV / DH 020 / 030 MSM**

**E 09.640e**



**RINGSPANN GmbH**

Schaberweg 30-34  
61348 Bad Homburg  
Germany

Telephone +49 6172 275-0  
Telefax +49 6172 275-275

[www.ringspann.com](http://www.ringspann.com)  
[mailbox@ringspann.com](mailto:mailbox@ringspann.com)

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## IMPORTANT

Please read these instructions carefully before installing and operating the product. Your particular attention is drawn to the notes on safety.

These installation and operating instructions are valid on condition that the product meets the selection criteria for its proper use. Selection and design of the product is not the subject of these installation and operating instructions.

Disregarding or misinterpreting these installation and operating instructions invalidates any product liability or guarantee by RINGSPANN; the same applies if the product is taken apart or changed.

These installation and operating instructions should be kept in a safe place and should accompany the product if it is passed on to others -either on its own or as part of a machine- to make it accessible to the user.

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## SAFETY NOTICE

- Installation and operation of this product should only be carried out by skilled personnel.
- Repairs may only be carried out by the manufacturer or accredited RINGSPANN agents.
- If a malfunction is indicated, the product or the machine into which it is installed, should be stopped immediately and either RINGSPANN or an accredited RINGSPANN agent should be informed.
- Switch off the power supply before commencing work on electrical components.
- Rotating machine elements must be protected by the purchaser to prevent accidental contact.
- Supplies abroad are subject to the safety laws prevailing in those countries.

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## 1. General information

These installation and operating instructions apply to:

- the DV 020 MSM, brake caliper mounted parallel to the brake disc (Frame V, see Fig. 3.1 in Section 3) Handwheel (threaded spindle) mounted right.
- the DV 020 MSM, Handwheel (threaded spindle) mounted left.
- the DH 020 MSM, brake caliper mounted at a right angle to the brake disc (Frame H, see Fig. 3.2 in Section 3).
- the DH 030 MSM, brake calliper mounted at a right angle to the brake disc (Frame H) Handwheel (threaded spindle) mounted right.
- the DH 030 MSM, Handwheel (threaded spindle) mounted left, see Fig. 3.3 in Section 3.
- for mounting on a brake disc from 12.5 mm thickness.
- various types of brake-pads, e.g. with wear alarm cable, increased glide speed, double friction surface or other special brake pad materials.

An identification plate with a 16-digit part number is affixed to the caliper. The precise design of the brake caliper is defined by this part number only.

Please consult the drawings in each section when using this instructions.



### **Danger to life and limb!**

**It is essential to secure the entire drive train against inadvertent starts during brake installation and maintenance. Rotating components can cause severe injuries.**

**Therefore, rotating components (e.g. brake disc) must be secured by the operator to prevent accidental contact.**

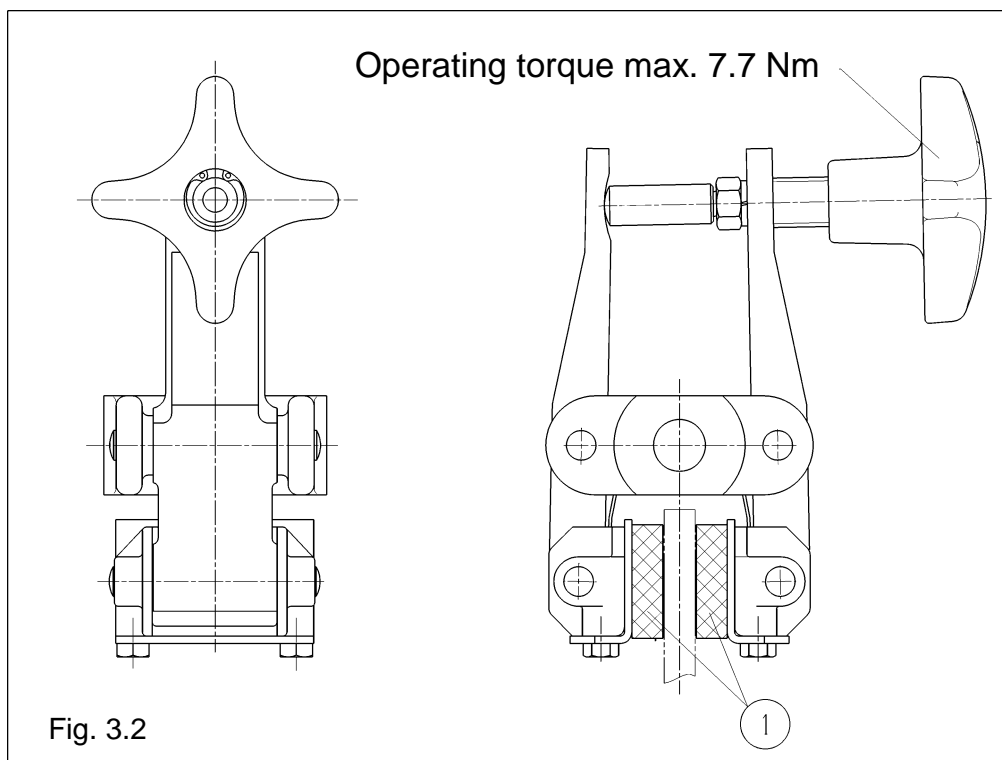
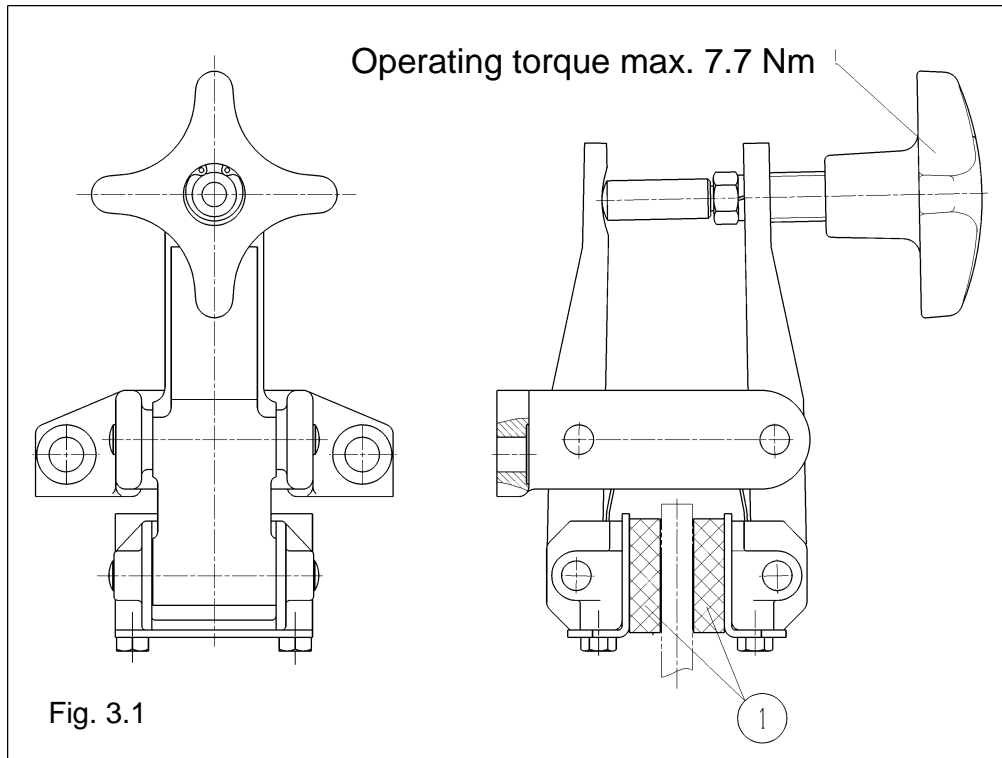
## 2. Configuration and function

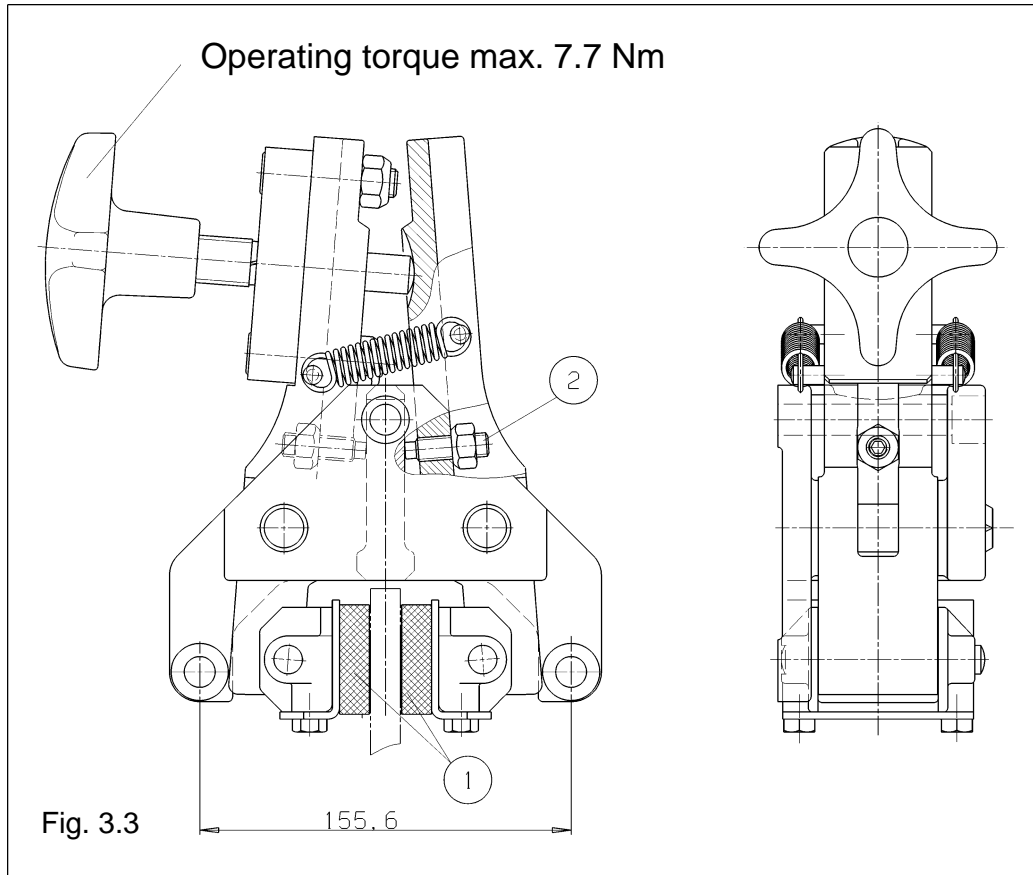
The brake caliper is predominantly used as a parking brake. If the brake caliper used as a control or stopping brake, brake pads wear occurs. The maximum allowable values, see Section 6.2 Checking brake pad wear and replacement of the brake pads.

The braking force and the opening of the brake caliper is carried out by the actuation of a handwheel.

A spring prevents when friction lining wear, that the parking- or braking torque abruptly drops.

Rotating parts must be secured by the user against inadvertent contact (e.g. brake disc).

**3. Drawing and parts list**



**Parts list:**

Part	Nomenclature	Quantity	Part number
1	<b>Standard brake pad</b> for brake calipers: 4457-102200-000000 4457-102201-000000 4457-102202-000000 4457-300207-000000	2	2472.005.013.A00112*
	<b>Brake pad from BK 5300</b> for brake caliper: 4457-201207-000000	2	2472.005.013.A00103*

\* Part number for 1 pad.

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#### 4. Condition on delivery

The brake caliper is delivered complete. The handwheel is turned completely to the left, for the maximum opening gap between the brake pads. So caliper can easily be mounted on the 12.5 mm thick brake disc.

#### 5. Installing the RINGSPANN brake caliper

Before installing the brake, the brake disc must be cleaned with alcohol, e.g. ethyl or isopropyl alcohol, or a water-based surfactant solution (soapy water, etc.) and then rubbed dry with a clean cloth.

When cleaning the brake disc with a thinner, acetone or a brake cleaning agent, it is important to ensure that neither these cleaners nor any cleaner residues come in contact with the brake pads. This is especially important in the case of brakes used only as parking brakes, as no dynamic braking operations take place during which thinner residues would be rubbed off the brake disc.



#### **Caution!**

Oil and rust-proofing-agent residues reduced friction coefficient and thus diminish transmissible braking torque substantially!

#### 5.1 Installation

The brake caliper should be mounted to stabile, vibration-free machine components in order to ensure noise-free, non-screech.

During installation, it is essential to ensure that brake pads are centred and in full contact with the brake disc (the midlines of the brake lever must point to the midpoint of the brake disc.). Maximum permissible lateral brake disc wobble is 0.2 mm. Greater wobble may cause rattling and shaking of the brake unit.

The brake caliper is mounted to the machine component with:

- 2 M12 bolts (for type DV 20 MSM) or
- 1 M20 bolt (for type DH 20 MSM) or
- 3 M12 bolts (for type DH 30 MSM)

of strength class 8.8.

#### Adjusting air gap from brake caliper DH 30 MSM:

Factory-sided is clearance - the gap between the brake pad (part 1) and the brake disc - set to a clearance of about 0.5 mm. If the brake caliper on the mounting bolts to the distance of 155.6 mm not aligned symmetrically to the brake disc, then the air gap is unevenly distributed. You must corrected this following:

- Turn the handwheel counterclockwise (left) back.
- To reduce the air gap, turn on the adjusting screws (item 2 in Fig.3.3, Section 3) clockwise to increase the air gap in the counterclockwise.
- Setting the both levers evenly on air gap of 0.5 mm.

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## 5.2 Handwheel operation

The braking or parking moment is generated by turning the handwheel clockwise. After full contact of the brake pads against the brake disc shall one in the handwheel integrated cup spring package biased which the braking force then generated. The handwheel operating torque of 7.7 Nm generates the maximum catalog braking torque. From the table below, you can see approximately the possible braking torque as a function of the handwheel revolutions (after plant of friction pads against the brake disc).

In handwheel revolutions, this means, that after the plant brake pads against the brake disc after:

approx. 0.8 revolutions	approx. 25%
approx. 1.5 revolutions	approx. 50%
approx. 2.0 revolutions	approx. 75%
approx. 2.5 revolutions	approx. 100%

braking torque is available stand.



### **Danger to life and limb!**

If the handwheel more than 2.75 revolutions (after full contact of brake pads against the brake disc) twisted or with the operating torque greater 7.7 Nm actuated, the internal mechanism unacceptably high burden. In extreme case, this can even be destroyed in consequence is a sudden loss of braking force.

## 5.3 Running-in procedure

Optimum braking effect is achieved only when both brake pads (1) are in full contact with the brake disc and the brake pads have attained a temperature of approx. 200°C. This requires multiple, brief braking while the brake disc is rotating (run-in) .



### **Caution!**

If breaking-in is not performed, the braking forces cited in our catalogue no. 46 cannot be achieved. Reductions of up to 50% are possible.

## **6. Maintenance**

Maintenance should be performed on the brake caliper at intervals of 4 to 12 weeks, depending upon the frequency and duration of operation.

### 6.1 General maintenance

- Check both brake levers for ease of movement.
- Clean all bearings and glide points
- Lubricate all bearing and glide points.



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**Caution!**

Brake pads must not be come in contact with lubricants.

Check for tight bolt / screw connections:

- brake caliper on machine component
- brake pads on the brake lever
- threaded spindle-fastening on the brake lever

6.2 Checking brake pad wear and replacement of brake pads

The allowable wear on the brake pads is determined by the maximum possible handwheel in feed adjustment. By brake pad wear is reduced the distance "V" between the brake lever and the front surface of the handwheel when the brake caliper are closed, (see Fig. 6.1).

If the distance of "V":

5.0 mm for the type DV and DH 20 or.

7.5 mm for the type DH 30 is reached,  
you need to replace the brake pads!

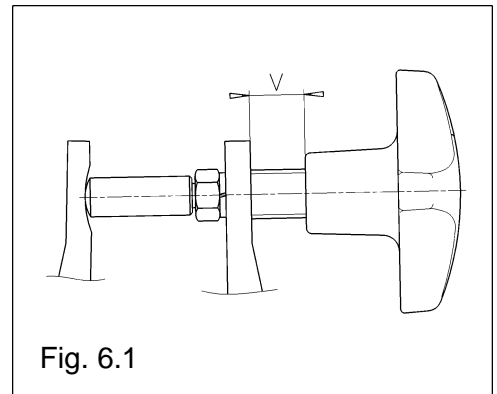


Fig. 6.1



**Caution!**

Brake pads (Part 1 in the parts list) must always be replaced in pairs.  
To screw on and loosen you need a ring or open-end wrench SW 13.