

**Installation and Operating Instructions for
Brake Caliper DH 010 MSM**

E 09.635e



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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 warranty 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.

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 DH 010 MSM, brake caliper mounted at a right angle to the brake disc (see Fig. 3.1 in Section 3) handwheel (threaded spindle) mounted right.
- the DH 010 MSM handwheel (threaded spindle) mounted left.
- 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.

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).

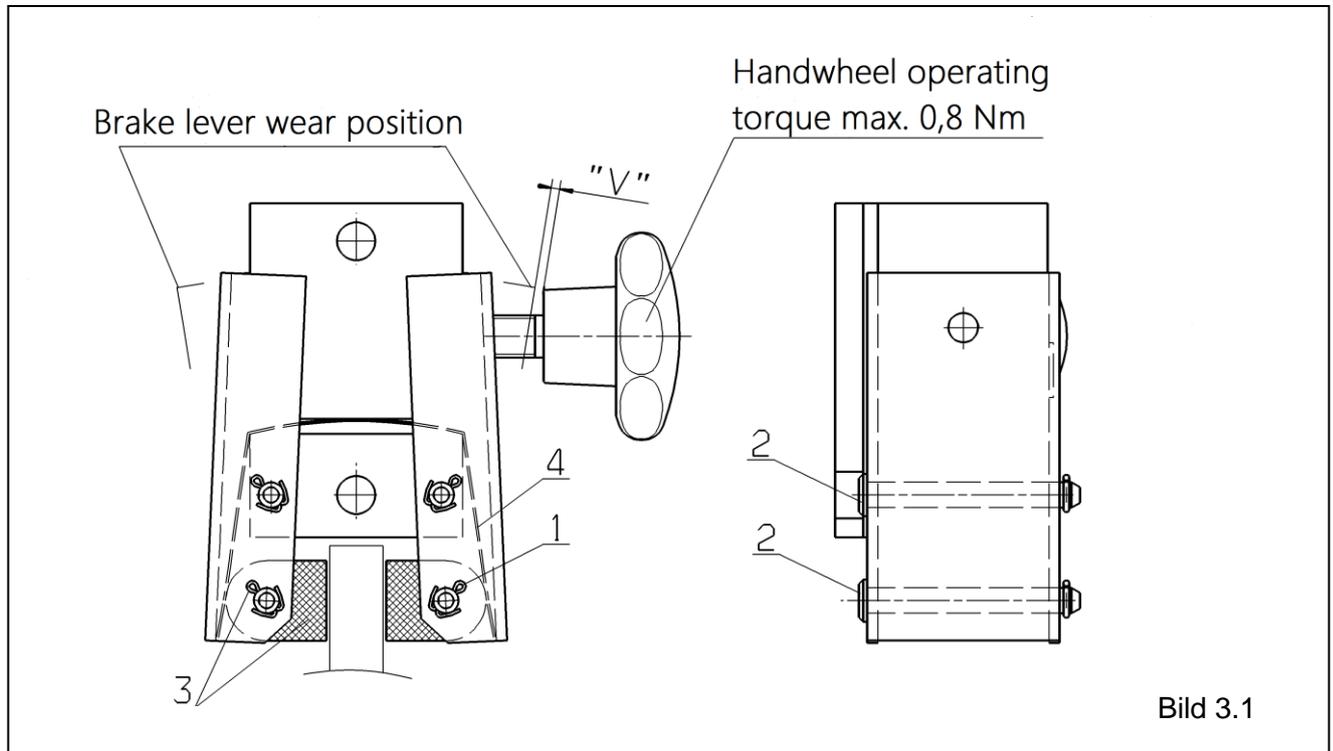


Danger to life and limb !

**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 .**

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3. Drawing and parts list



Parts list:

Part	Nomenclature	Quantity	Part number
1	Split pin 1,6x12	4	5202.016.106.000000
2	Clevis pin with head 6h11x50	4	5213.010.150.000000
3	Standard brake pad with split pin for brake calipers: 4457.901.107.000000 4457.100.201.000000	2	3457.901.101.000000*
	Brake pad from BK 6905 with split pin for brake caliper: 4457.100.208.000000	2	3457.901.104.000000*
	Brake pad from PTFE with split pin for brake caliper: 4457.100.206.000000	2	3457.901.106.000000*
4	Retracting spring	1	2449.146.001.000000

*) 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 from 13.5 mm. 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 using 2 M8 bolts (strength class 8.8).



Caution!

Check to ensure that the brake disc rotates freely.



Caution!

When assembling, make sure that the brake pads are centred aligned and in full contact with the brake disc.
The maximum permissible wear is to observed.

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5.2 Handwheel operation

The braking or parking moment is generated by turning the handwheel clockwise. After 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 0,8 Nm generates the maximum catalog braking torque.

In handwheel rotations, this means, that after the contact brake pads against the brake disc after:

0.5 rotations approx. 50%
1.0 rotations approx. 100%

braking torque is available stand.



Caution!

If the handwheel more than 1,5 rotations (after contact of brake pads against the brake disc) twisted or with the operating torque greater 0,8 Nm actuated, the caliper unacceptably high burden. This may cause damage to the brake caliper.

5.3 Running-in procedure

Optimum braking effect is achieved only when both brake pads (3) 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 running-in cannot performed, the braking torques specified in our catalog no. 46 cannot be achieved. Reductions of up to 50% are possible.



Caution!

If the brakes are used as holding brakes, the braking torques can not be attained. Reductions up to 50% of the braking torques are possible.

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6. Maintenance

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

6.1 General maintenance

- Check the fixed screw connection of the brake caliper with the machine part
- Check both brake levers for ease of movement.
- Clean all bearings and glide points
- Lubricate all bearing and glide points.
- Check to ensure that the brake pads do not rub against the brake disc when the brake calliper is open, i.e. hat the gap is uniform on both sides.



Caution!

Brake pads must not come in contact with lubricants.

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. 3.1).

With the closed brake caliper the distance "V" of about 1 mm is reached, you need to replace the brake pads.

Brake pads (Part 3 in the parts list) must always be replaced in pairs.



Caution!

Before replacing the friction pads ensure that mass, held by the brake caliper of is secured against rotation, since a change of the friction pads the brake is released (open)..

Remove the split pin (1), pull the clevis pin (2) out of the brake pad and the brake lever and removed the worn brake pad (3). Press the new brake pad with the rounded side against the retracting spring (4) and push the clevis pin into the holes in the lever and brake pad and secure the pin with the splint pin.. Repeat the process on the opposite lever.



Danger to life and limb!

The brake pads may be replaced only when the plant or the working machine is standstill!