SB 1000-100

Operate the Brake Test Kit

2018-04-12

Rev. B

1 Scope and Target Group

WARNING

- ✓ Always refer to the user manual for additional information and safety warnings.
- ✓ Only perform this task if you are qualified to carry out the steps described below.
- ✓ Always make sure that the tasks described in this bulletin are intended for the equipment you are working on.
- ✓ If you are unsure about the workflow, steps or qualification, contact your TTS aftersales service contact.

Your after-sales service contact:

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2 Problem

The brake linings are worn down and may need to be replaced.

3 Solution

Test the brake lining using the brake test kit and replace the brake lining, if necessary.

4 Operation

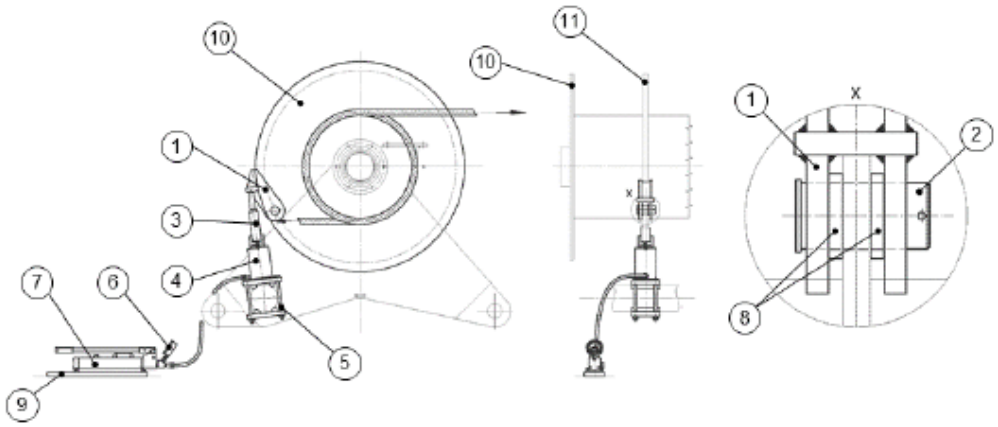
Operation of the brake test kit

In the following cases you must test the brake holding capacity of the drum band brake with brake test kit.

- Every year or according to classification regulations.
- After modification or repair of the drum band brake.
- In case a premature brake slippage or malfunction on the drum band brake.

The brake test kit consists of a plate with bolt and split-pin, a hydraulic hand pump with a pressure gauge and hydraulic jack.

The drum flange or the split disc must be equipped with a hole as shown in the drawing of brake test kit to install the plate for brake test kit.



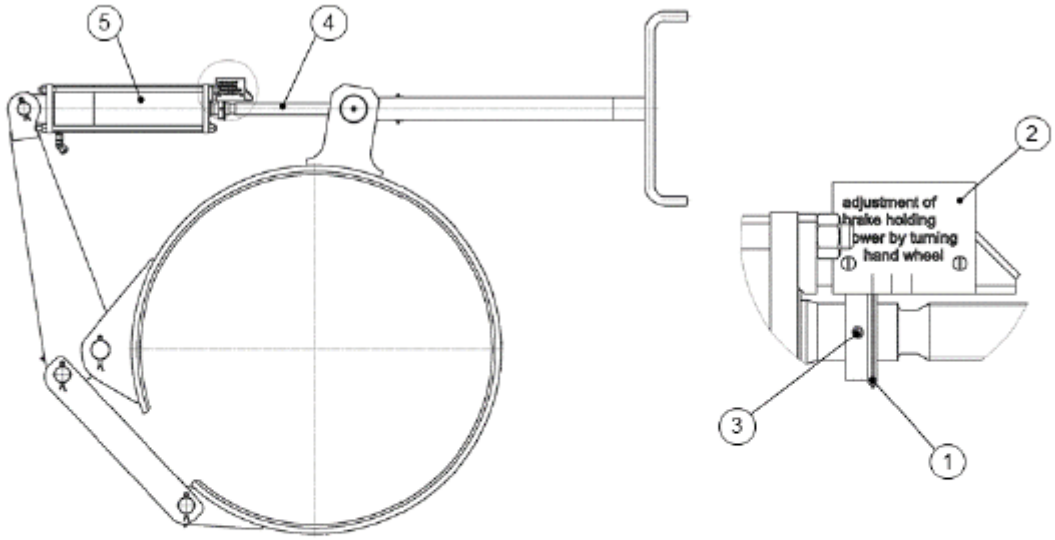
Brake test kit, overview

1. Plate for brake test kit
2. Bolt
3. Pin
4. Hydraulic jack
5. Brake test kit, foundation
6. Pressure gauge
7. Hydraulic hand pump
8. Distance ring
9. Deck foundation for brake test kit
10. Drum flange
11. Split disc

Precondition of the brake test kit

- For the dimensions and the correlation of the read-off pressure to the brake holding force, see the 'brake test kit' drawing .
- Make sure you grease the spindle and the nut on the band brake before use.
- If the brake linings are new, they must be smoothed for 30 minutes while you close the band brake and rotate the winch slowly. Make sure that the brake band does not overheat when you smooth the brake linings.

To operate the brake test kit



To operate the brake test kit — 1

1. Ring for point marking
2. Sign plate
3. Safety screw
4. Brake spindle
5. Brake cylinder

To operate the brake test kit (cont'd.)

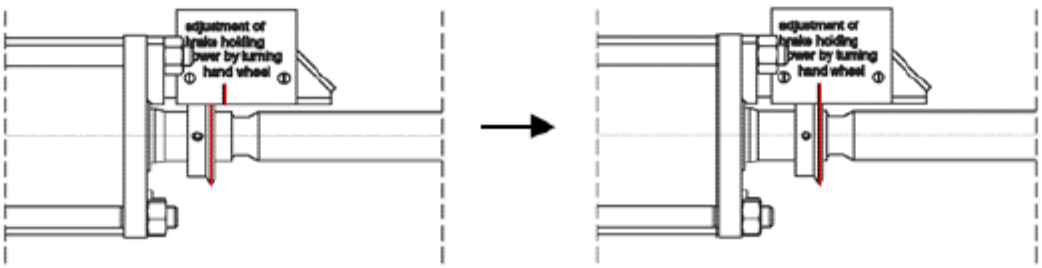
1. Install the mounting device(brake test kit foundation, plate for brake test kit, bolt, pin and distance ring) on the connection pipe and hole on the drum flange or split disc.
2. Put the hydraulic hand pump on the deck foundation.
3. Engage the drum clutch and turn the rope drum that way that the plate for brake test kit is placed on the pin, while the pin must be in a position like shown in the 'brake test kit' drawing.

Note It is important that the center line of the hydraulic jack meets the center line of the plate for brake test kit, foundation for the brake test kit and the pin.

Note For a strong position of the components, it is important that the bottom of the hydraulic jack has a steady contact to the brake test kit foundation.

Note If you exchange the brake lining make sure that you grind the brake lining with the machine until it is smooth before you test it.

4. Fasten the plate for brake test kit again.
5. Loosen screw and move ring on brake-spindle toward brake-cylinder as below arrow direction and fix it again by screw.
6. Fasten the drum band brake thoroughly by using the brake handle and disengage the clutch.
7. Actuate the hydraulic hand pump. In case the brake slips, fasten the brake again, because a new brake lining is not yet close to the brake drum.
8. Pump the hydraulic hand pump until you see the exactly the correct value on the pressure gauge.
9. If you pump the hydraulic hand pump and the value on the pressure gauge is higher than the correct value, loosen the brake by turning the brake handle.
10. If you pump the hydraulic hand pump and you cannot reach the correct value on the pressure gauge, tighten the brake by turning the brake handle.
11. Continue to adjust the brake until you reach the correct value on the pressure gauge. After you reach the correct value, the pressure gauge goes down.
12. Mark the center point of ring on sign plate.
13. Loosen screw and move ring on brake-spindle to put in line with the arrow on the sign plate and fix it again by screw.



To operate the brake test kit — 2

Hydraulic cylinder of the brake test kit

Warning Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.

The test jack has two security devices.

- An internal pressure relief valve which prevents overrunning while pumping.
- A stroke relief valve which directs the pressure oil back to the tank at the end of stroke.

To prepare the hydraulic cylinder of the brake test kit

1. Make hydraulic connections. Use a pump with a release valve for single acting cylinders.
2. Remove air from the cylinder.
3. Single-acting cylinders: Position the cylinder so that the plunger is pointed down and the cylinder lower than the pump. Fully extend and retract the cylinder 2 or 3 times.

Note The following items should always be noticed:

- The piston has to be cleaned before running in, if it is fouled.
- Out-coming oil at the piston means not in any case a damaged collar, it also may be "Drag-Oil".
- During operation the push button on the oil filling screw should be pressed from time to time. By this, vacuum resp. overpressure will be compensated. This respective vacuum overpressure will arise when oil will be conveyed from the tank respectively. When oil is flowing back at the running in of the piston.

Warning Working safety. Always follow the following safety rules closely.

- Make sure that the base of the hydraulic hand pump is fully laying (placement).
- Never place the hydraulic hand pump on edges.

To operate the hydraulic pump

Operate the hydraulic pump to advance and retract the cylinder. Some single-acting cylinders are spring-return, others are load return. The speed of retraction is affected by the length. The cylinder stop ring is designed to take the full load. However, to reduce cylinder wear, use less than full stroke when possible.

Oil level check

- The oil level should be checked regularly.
- Make sure that the piston runs correctly.
- Oil filling will be done through the oil filling screw at the end of the test jack. Check with oil level plunger.

Note

These cylinders should be repaired only by authorized technical service centers. Single-acting cylinders are spring loaded and require special disassembly techniques to prevent personal injury.

Note

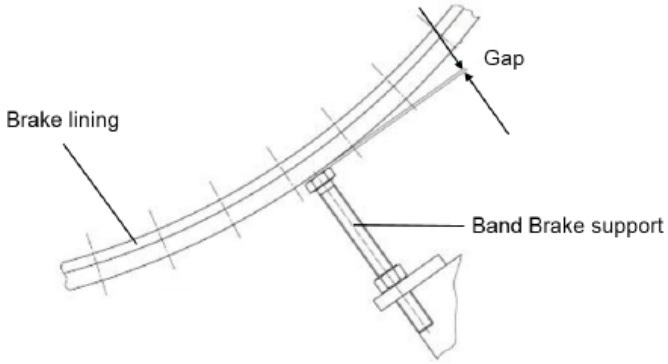
- Use only ISO VG15 oil with these cylinders. The use of any other oil may invalidate your warranty.
- Use dust caps when cylinders are disconnected from the hose. Keep entire cylinder clean to prolong cylinder life.
- Store cylinders up-right to prevent seal distortion.

Inspection of the band brake lining

Caution Make sure that no oil moisture or heavy rust is on the brake drum. The physical condition of the brakes affects the holding power. Oil, moisture or heavy rust on the brake linings or drum can reduce the brake holding power up to 75%.

Part	Procedure	Person in charge
Moisture	Running the winch with the brake applied very lightly. Care must be taken not to cause excessive wear.	Operator
Oil build up	Oil build up cannot be removed. Affected linings must be replaced.	Operator

Inspection of the brake band support



Inspection, brake band support

Note Only adjust the brake band support if the brake is closed.

1. Examine the gap between the band brake and the band brake support. Make sure the gap is 2 mm.
2. If necessary, adjust the drum band brake support.

To replace the brake linings

Caution Exhausting gases could be hazardous to health.

Caution Glue and thinner are flammable. All precautions must be observed.

Note We recommend TTS PROFESSIONAL GLUE – other glues by request. We recommend carrying out brake lining replacement by our service, either assembly or exchange. Contact TTS service for a quotation.

1. Remove all clamping elements (screws or rivets). Use heat to remove the brake lining from brake band.
2. Make sure that the brake band is completely smooth before glueing the new lining.
3. TTS Marine brake lining shall be glued together with the brake band.
4. Brake band and lining must be dry and free from dust, grease and oil.
5. Check for damage before glueing brake band and lining.
6. Cut to size the brake lining accordingly.
7. Provide both parts with TTS Professional glue. Start to brush brake band and lining at the middle and then work on to both ends simultaneously.
8. Fit both parts instantly together and fix them with clamping devices.
9. Pay attention that brake lining is tight to brake band (no interstices).
10. After the glue has dried, use the brake band as template for drilling the required holes for the rivets and screws.
11. Remove the clamping device and assemble the mounting elements (screws or rivets).
12. After replacement of the brake lining, smooth the brake lining by rotating the winch slowly for 30 minutes while you close the drum band brake.
13. Test and set brake holding capacity by the brake test kit.