LEROY SOMER

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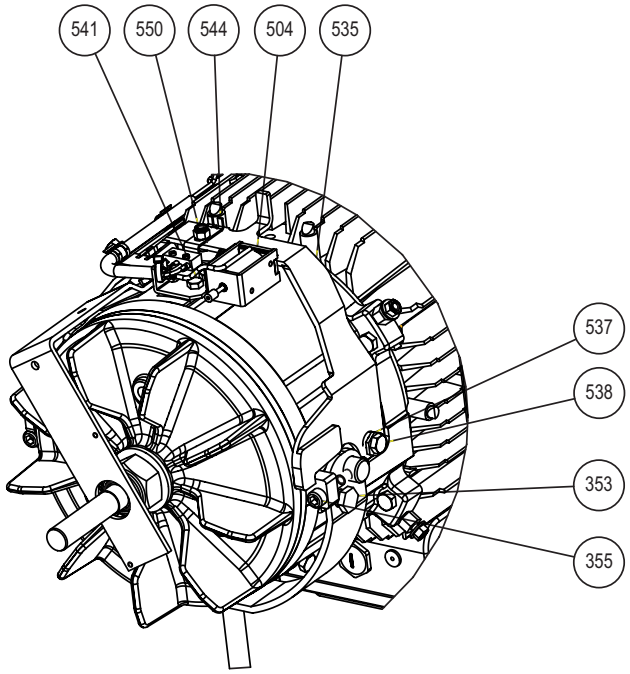
This manual is to be given to the end user



D.M.D.2 for FCR brake motor

Remote brake release lock off

Installation and maintenance

D.M.D.2 for FCR brake motor

Remote sustained release

GENERAL WARNING - CONTENTS

GENERAL WARNING

These symbols ⚠ ⚠ appear in this document whenever it is important to take special precautions during installation, operation, maintenance or servicing of the motors.

It is essential that electric motors are installed by experienced, qualified and authorised personnel.

In accordance with the main requirements of EC Directives, the safety of people, animals and property should be ensured when fitting the motors into machines (please refer to current standards).

Particular attention should be given to equipotential ground or earthing connections.

⚠ **The following preliminary precautions must be taken before working on any stationary device:**

- **Mains voltage disconnected and no residual voltage present**
  - **Do not open when powered up in atmospheres containing explosive dust**
  - **Do not repair while powered up**
  - **Do not move when on load**
  - **Wait for a few minutes before opening**
- **Careful examination of the causes of the stoppage (blocked transmission - loss of phase - cut-out due to thermal protection - lack of lubrication, etc)**
  - **Replace the seals tightly to ensure watertightness**

⚠ **This document complements the FCR brake motor installation and maintenance manual ref. 2908.**
These recommendations, instructions and descriptions refer to the D.M.D.2 option.

Failure to comply with these recommendations may lead to premature wear and tear of the motor and may invalidate the manufacturer warranty.

CONTENTS

D.M.D.2 for FCR brake motor

Remote sustained release

DESCRIPTION OF OPERATION - EXPLODED VIEWS AND PARTS LIST

1 - DESCRIPTION OF OPERATION

1.1 - Manual operation

Manual release

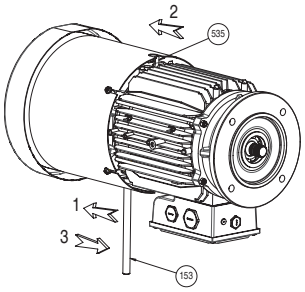
a. Push the Hand Brake release lever **ref. 153** towards the back of the brake motor cover.

b. Hold it for as long as it takes to operate the DMD2 lever **ref. 535**.

c. Release the Hand Brake release lever first, then the DMD2 lever.

Re-activating the brake

d. Push the Hand Brake release lever **ref. 153** towards the back of the brake motor cover and allow it to return or deactivate the DMD2 the first time the brake is powered up.



1.2 - Electrical operation

Electrical release

a. Supply the brake coil with power to attract the armature **ref. 11**.

b. Switch on the power supply **(max. 2 seconds 3 times in a row)** for the electromagnet **ref. 504**.

c. Switch off the brake coil power supply and then that of the electromagnet **ref. 504**.

Re-activating the brake

d. Deactivate the DMD2 the first time the brake is powered up.

The micro-switch **ref. 544** indicates the state of the DMD2.

1.3 - Maintenance

Check that the original adjustments are marked (wax dots) on:

- the eccentric adjuster fixing screws **ref. 538**
- the fixing screws for the switch contact bracket **ref. 550**
- the fixing screws for the electromagnet support **ref. 541**

2 - EXPLODED VIEWS AND PARTS LIST

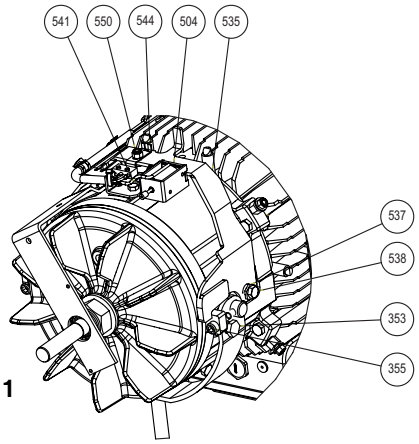


Fig. 1

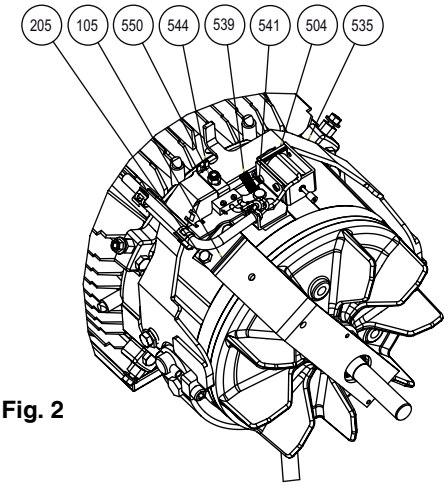


Fig. 2

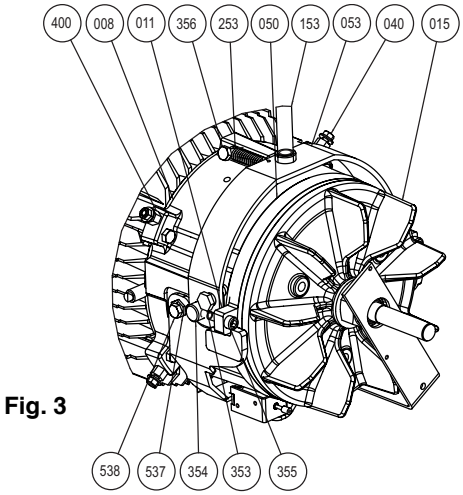


Fig. 3

Ref.	Description	Qty
008	Brake shield	1
011	Armature	1
015	Brake lining fan	1
040	Cover nuts	4
050	O ring seal	1
053	Hand Brake release caliper	1
105	FCR encoder support bracket	1
153	FCR lever rod	1
205	M5x10 screws	2
253	Stainless steel tension spring	1
353	Hand Brake release caliper shaft	2
354	Hand Brake release shaft	2
355	M6x45 CHC screws	2
356	M6x20 H screw	1
400	Cover spacer	4
504	Electromagnet	1
535	Pin clamp	1
537	FCR eccentric adjuster	1
538	M6x20 H screws	2
539	Spring	1
541	M5x10 screws	2
544	DMD2 micro-switch contact bracket	1
550	M5 nut	1

3 - DISMANTLING THE D.M.D.2 (to change the brake disk)

Tools required: cutting tool, clamp collar, combination pliers, set of shims, removable threadlocker, 8-10-13 spanners, CHC 5 male spanner, box spanners, 3 M8 screws.

All the fixing screws must be tightened up to 70% of their yield strength.

Disconnect the connector (if encoder).

Unscrew the rod from the lever **ref. 153** if necessary, undo the 4 adjusting nuts **ref. 040** and slide the cover back in order to remove it.

In the case where encoder is installed: in order to remove the encoder assembly, cut the 3 cable ties; undo the two screws **ref. 205** to remove the encoder support bracket **ref. 105**; move the micro-switch electromagnet cable out of the way.

3.1 - Replacing the electromagnet

Follow instructions § 3. Check it has been disconnected.

Undo the connections in the terminal box; unscrew **ref. 541** to release the electromagnet **ref. 504**; lift it to disengage it from the clamp **ref. 535**.

Undo the nut **ref. 550** and push the contact bracket **ref. 544** hard towards the stator.

Fit the new kit (see Section 4 Electromagnet + Adjusting the electromagnet).

For smooth manual release, play of 1.2 mm is needed between the screw head **ref. 355** and the armature **ref. 011**.

3.2 - Replacing the brake lining fan

Follow instructions § 3 and 3.1. Then see the procedure § 4.2: "dismantling the brake motor" from FCR installation and maintenance manual reference 2908.

3.3 - Replacing the pin clamp

Follow instructions § 3 and 3.1. Remove the two screws **ref. 538** with the two eccentric adjusters **ref. 537** and remove the clamp **ref. 535** (**Fig. 2 and 3**).

3.4 - Replacing the hand brake release (fig.3)

Follow instructions § 3. Remove screw **ref. 356** from the spring loop, and detach spring **ref. 253** from clamp **ref. 053**.

Undo the two screws **ref. 355** and also those **ref. 353** on the armature **ref. 011** then remove the two shafts **ref. 354**.

Put aside the hand release **ref. 053**.

4 - REASSEMBLING THE D.M.D.2

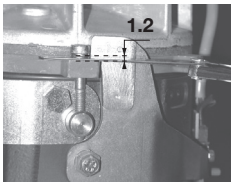
Adjust the FCR air gap (see FCR manual ref. 6 ref 2908 section 4.1).

⚠ Specific air gap **6 tenths**.

4.1 - Hand Brake release

Replace the O ring seal **ref. 050**.

Place the two shoulder shafts **ref. 354** on the inner side in the clamp **ref. 053**.



Tighten screws **ref. 353** coated with removable thread-locker through the clamp **ref. 053** and into the yoke.

Tighten and adjust the two screws **ref. 355** coated with removable threadlocker through the armature **ref. 011** in both shafts **ref. 354**. Leave 1.2 mm of play between the armature and the screw head.

Hook the spring **ref. 253** into the clamp **ref. 053**, engage the screw **ref. 356** coated with removable threadlocker in the other spring loop and tighten it fully into the corresponding hole on the yoke. Tighten the lever rod **ref. 153** and check that the manual release works.

4.2 - Pin clamp (Fig. 2 and 3)

On the yoke, mount the clamp **ref. 535** with the two eccentric adjusters **ref. 537** and the two screws **ref. 538** coated with removable threadlocker and loosely tightened. (Offset marker 25° towards terminal box and motor shaft extension).

Adjusting the pin clamp

Supply the brake coil with power, then supply the 24 VDC electromagnet wires **ref. 1** and **2**; cut the brake power supply, then cut the electromagnet power supply. THE ELECTROMAGNET MUST NOT BE SUPPLIED WITH POWER FOR MORE THAN 2 SECONDS.

Check that the fan is rotating freely. If it is still catching, re-adjust the eccentric adjusters **ref. 537**.

Repeat the complete test procedure.

Once adjusted correctly, lock the two screws **ref. 538** while holding the eccentric adjusters in position. Mark the spot with a wax dot (confirming correct adjustment).

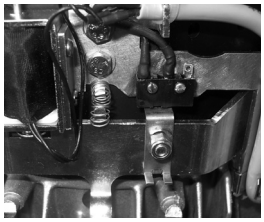
4.3 - Electromagnet (Fig. 1)

Position the assembly **ref. 504** by hooking the core into the groove of clamp **ref. 535** and inserting the spring **ref. 539**. Push **ref. 504** towards the fan and check that the core is centred in the groove of the clamp. Fix the assembly **ref. 504** with the two screws **ref. 541** coated with removable threadlocker. Adjust contact bracket **ref. 544**.

Encoder support and encoder if necessary

Mount the encoder support bracket **ref. 105** on the yoke with the two screws **ref. 205** coated with removable threadlocker (type Omnifit 100H for example).

Adjusting the electromagnet



Supply the brake coil with power, then the electromagnet, check that the brake has been released and cut the power supply to the coil, then the electro-magnet (brake lock off).

Insert a 0.3 mm adjustment shim between the contact bracket **ref. 544** and the micro-switch plunger (1 kg max. force on the plunger).

Tighten nut **ref. 550** coated with removable threadlocker. Place a wax dot on the point of contact.

With encoder: Mount the encoder, attach the electromagnet cable with 3 cable ties and the encoder cable with 2 of the 3 cable ties and bring them out in the stator.

Pre-tighten the 4 nuts **ref. 040**. Slide the cover onto the motor, push back the cable(s) during operation. Tighten the 4 nuts **ref. 040**.