



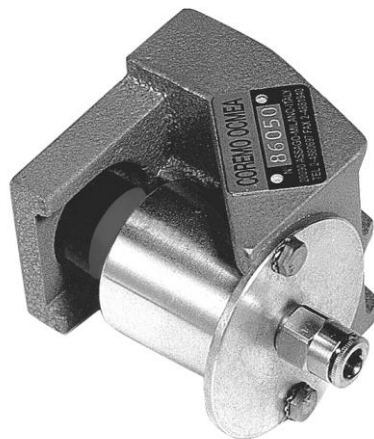
COREMO OCMEA S.P.A.

Via Galilei, 12 - 20090 Assago (MI) - Italy

Tel. +39 024880697 Fax +39 024881940

www.coremo.it info@coremo.it

# User and Maintenance Manual




***MICRO  
MICRO-R***




ISO 9001 - Certificate N°0238

Translation of the original instructions  
EN 130701 REV. 1

	User and Maintenance Manual <b><i>“MICRO” brake</i></b>		Model MICRO Model MICRO -R
	Date: 2013/07/01	Revision: 1	www.coremo.it

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## 1. Introduction

The purpose of this manual is to provide the user with all the information necessary to use the product properly, independently and safely.

This manual constitutes an integral part of the safety features and must be read in its entirety before installation and use of the product. It must therefore be kept in a safe place should future reference be necessary before proceeding with any kind of work.

The user is strongly advised to read it carefully and to follow the rules and procedures contained in it as these provide important information concerning safe use and maintenance.

If any doubt should arise concerning the correct interpretation of the instructions, contact our technical department for the necessary clarification.

It is prohibited for anyone to disclose or modify the content of this manual or to use it for personal purposes.

## 2. Manufacturer

**COREMO OCMEA S.P.A.**

**Via Galilei, 12 - 20090 Assago (MI) - Italy**

**Tel.: +39 024880697 Fax: +39 024881940**


**e-mail: info@coremo.it**

## 3. General information

**Correct use of the product:** In compliance with Italian Legislative Decree 17/2010 and DIRECTIVE 2006/42/EC the operating limits for ideal and safe use of the product are stated in this manual.

**Design parameters:** COREMO OCMEA brakes have been designed for use in conformity with the performance and conditions stated in the catalogue and Chapter 5.1 of this manual. It is advisable not to exceed these limitations.

**Model selection:** Selection of the correct model for a given application is of basic importance. The technical department of COREMO OCMEA can provide you with information, suggestions and assistance regarding correct application and use.

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**Use:** Compliance with the assembly and maintenance instructions prevents not only costly down time but also accidents due to incomplete knowledge of the product.

**Rotating parts:** The brakes are coupled mainly with rotating parts. In this case the moving parts must be protected in conformity with the requirements of DIRECTIVE 2006/42/EC and Italian Legislative Decree 17/2010 or equivalent legislation in force in the countries in which they are used.

**Power source for pneumatic brakes:** Use air not contaminated with oil or water and a 25 micron filter with automatic condensation discharge.


**Friction material:** All COREMO OCMEA brakes are fitted with friction material which is absolutely free of asbestos and is declared as NON toxic/harmful in full observance of health and environment regulations and laws. In any case it is better not to inhale dust produced by them and to wash hands thoroughly before eating or drinking.

**Oils, greases, lubricating components:** These are used in extremely limited quantities. Personnel suffering from allergies to these substances are advised to wear gloves or use protective cream which must be washed off thoroughly before eating or drinking.

**Product markings:** All the data on the plates must always be kept legible. Use the data shown on the plates when contacting the manufacturer for spare parts, information or assistance for example.

**Disposal:** Worn brake lining pads and other materials of which brakes are made are classified as special NON toxic/harmful products and therefore must be disposed of in accordance with the laws in force in the countries in which they are used.


## 4. Warnings

	<p><b>Failure to follow the instructions in this manual and on any plates attached to the product exposes persons to risks and may cause damage to other equipment and machinery.</b></p>
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- The product must not be used at an ambient temperature lower than -20 °C.
- The disc must be made of iron alloy (cast iron or steel) having a hardness in the range 190 to 220 HB.

The technical department of COREMO OCMEA can provide additional information in order to ensure correct application and use of the product.

**Dangers caused by a power failure:** A power failure will cause the brakes to fail. It is therefore necessary to provide an uninterrupted power supply or, if the case requires, use suitable power failure warning systems as a brake failure may cause personal injury and damage to property.

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**Danger of breakage during operation:** To reduce the risk of breakage during operation carry out the periodic inspections shown in this manual.

**Risks connected with changes in operating conditions:** The product is designed for the purposes stated in this user and maintenance manual therefore the power supply pressure required for the brake to work safely and reliably is indicated. The operating conditions also vary depending on the diameter of the brake disc used; this manual contains an equation to calculate the dynamic torque provided as a function of the disc diameter. Please note that an erroneous calculation may result in a braking torque different to the desired value which could compromise aspects of safety.

**Residual risk:** Residual risk can be attributed to the operator not following all the procedures stated in the user and maintenance manual and not giving due consideration to the warnings.

## 5. Technical data

### 5.1. Product performance

The type "MICRO" brakes is designed exclusively for operating stops or tensioning.



**Use of the product for any purpose other than those indicated may represent a risk to any aspect of safety.**

Pneumatic type "MICRO" brakes is able to apply a tangential force of 148 N (type MICRO) or 74 N (type MICRO-R) if powered at 6 bar and considering a coefficient of friction of 0.4

**Warning: The value of the friction coefficient is purely theoretical as it depends on environmental conditions and on how the product is used.**


#### ▪ Dynamic torque

The dynamic torque provided by the brake will be a function of the diameter of the disc used for each single type of product and can be determined using the following equation:

$$\text{Dynamic torque [Nm]} = \text{Tangential force [N]} \times (\text{radius of the disc [m]} - 0,011)$$



**An error in calculation will result in a braking torque different to the desired value and a risk to aspects of safety.**  
**The technical department of COREMO OCMEA can provide information, suggestions and assistance for correct application and use of the product.**

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## 5.2. Brake lining wear



The thickness of each single new lining is 13 mm. A maximum overall lining wear of 12 mm is allowed. Failure to remain within the above limit may represent a risk to aspects of safety.

## 5.3. Special note

During braking kinetic energy is converted into heat caused by friction between the surfaces of the brake linings and the brake disc. It is therefore fundamentally important to consider the amount of heat that can be dissipated.



Ignoring the heat produced during braking affects brake lining wear and may jeopardize the safety of the operators and the reliability of the product. Since a brake can be used for many applications, it is advisable to contact the technical department of COREMO OCMEA for further explanation in this regard.

## 6. Transport and storage



Personnel assigned to this work must wear suitable PPE such as gloves, safety footwear and take any other precautions necessary before proceeding with transport, handling and storage of the this part.


When handling it is important to bear in mind the dimensions and weight of each single type of product as shown in the product drawing enclosed with this manual and in the catalogue of the brake type in question.

## 7. Installation



***THE BRAKE MUST BE INSTALLED WITH THE MACHINE OFF.***

Personnel assigned to this work must wear suitable PPE such as gloves, safety footwear and take any other appropriate precautions to ensure adequate protection and avoid the risk of injury.

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1. Mount the brake on a rigid flat surface of the machine or on a support capable of withstanding a tangential force of 164 N for a brake MICRO or 82 N for a brake MICRO-R.
2. Connect the thruster piston of the brake to the power line using a 1/8" gas fitting and a flexible hose.
3. The control pressure must not exceed 6 bar.



**Do not apply the brake without the disc positioned between the brake linings; failure to follow this rule could result in fingers being crushed and other dangers in addition to damage to the brake itself.**

4. **BEDDING-IN:** The initial braking torque may be from 30% to 50% less than the rated value until the brake lining adjusts to the disc.

## 8. Operation

### 8.1. Power supply of the product

Chapter 5.1 contains the tangential force provided by each single type of product and the relevant equation for calculating the braking torque of each brake as a function of the diameter of the disc used.

The control pressure for the brakes must not exceed 6 bar and the air must not be contaminated with oil or water, therefore a 25 micron filter with automatic condensate discharge should be used

The technical department of COREMO OCMEA can provide information, suggestions and assistance for correct application and use of the brake.




**The wrong power supply pressure will result in a tangential force different to the value indicated in this manual; the braking torque of the product will therefore be different to the value desired and represent a risk to safety aspects.**

### 8.2. Improper use

The products considered here must be used exclusively as described in Chapter 5 of this manual. Any other use is to be considered improper. The manufacturer declines all responsibility for damage caused by erroneous or unreasonable use of the product.



**Use of the product for purposes other than those stated in this manual may compromise any aspect of safety.**

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## 9. Maintenance and cleaning



**ALL TYPES OF WORK ON THE BRAKE MUST BE DONE WITH THE MACHINE OFF.**

Staff assigned to this work must wear suitable PPE such as gloves and safety footwear and take any further precautions necessary to ensure adequate protection and prevent injury. Failure to follow the instructions given for maintenance and cleaning of the product may compromise personal safety and cause damage to equipment and machinery.



High temperatures may be produced after braking on the surfaces of the disc brake and the brake linings. Personnel must therefore wait for parts subject to overheating to cool down and wear suitable protective gloves and PPE.

### 9.1. Changing the lining pads and o-ring

1. Cut off pressure to the thruster.
2. Remove the brake from the machine.
3. Remove the screws (C61187) and the washers (C61310).
4. Rimuovere quindi il corpo pistone (C60941 o C62272) dalla staffa di fissaggio (D70789).
5. Remove the lining pad and the o-ring (C61720 or C62275) and replace them with new ones.
6. Remove the screw C61521 , and the second lining pad (C61717 or C61718) from the mounting bracket (D70789) and replace it with new one.
7. Remount the brake following the instructions in reverse.
8. Apply the brake a number of times to check the correct functionality of the product.

### 9.2. Periodic maintenance




**All inspections must be done with the machine switched off.**

**Although the intervals between these inspections depend on the frequency of use of the brake, they should be done every 3 months in any case so as not to compromise all aspects of safety.**

1. When the wear of each lining reaches 3 mm replace it as described in Chapter 9.2.
2. Check that the surfaces of the linings and the disc are not contaminated with grease, oil or similar substances as these prevent the brake from working effectively.
3. Check that the anchoring screws of the brake and the brake units are correctly tightened.
4. Check the condition of the flexible hoses.
5. Apply the brake a number of times to check the proper functioning of the product.



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## 10. Spare parts list

To avoid costly down time we recommend keeping a stock of spare parts adequate for the number of brakes as listed below:

<b>Lining pads:</b>	Cod. N° C61715 / C61717 ST 10	MICRO
	Cod. N° C61716 / C61718 ST 11	MICRO
	Cod. N° C62273 / C61717 ST 10	MICRO-R
	Cod. N° C62274 / C61718 ST 11	MICRO-R
<b>O-ring:</b>	Cod. N° C61720	MICRO
	Cod. N° C62275	MICRO-R

These spare parts must be kept in a place that is preferably dark, cool and far from substances that could reduce their functionality.