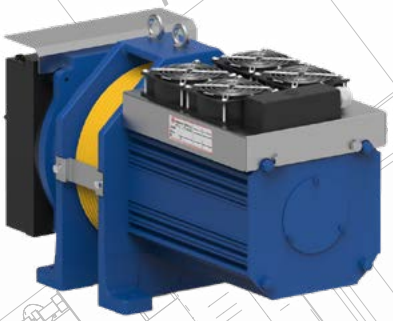
MANUAL

Montanari Group
GEARLESS&GEARBOX
TRACTION MACHINES

INSTALLATION, USE AND MAINTENANCE
GEARLESS

MGC25 RANGE





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REV.	DATE	DESCRIPTION	EDITED BY	VERIFIED BY	APPROVED BY
0	15/05/2026	First Redaction	Marketing Dept	Technical Dept Nicola Iotti	ALBERTO MANTOVANI (DTE)

WARNING SYMBOLS USED IN THE MANUAL:

	It indicates that safety measures must be taken to avoid electric shock.
	It indicates that safety measures must be taken to prevent personal injury.
	It indicates that safety measures must be taken to prevent damage to components.
	It indicates that safety measures must be taken to prevent burns due to contact with hot/ overheated surface.
	It indicates useful information before and during the installation step.
	It refers to specific parts of the manual.
	It refers to the proper product disposal.

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1. GENERAL INFORMATION

1.1 Introduction

These operating instructions must always be available for consultation. No liability is accepted for any malfunction due to installation not conforming to specifications, except in cases approved by Montanari Giulio & C.

All persons involved in the installation, operation, maintenance and repair of the unit must have read and understood the instructions.
No liability is accepted for damage, breakage or accident caused by failure to follow the instructions.

To make technical improvements, Montanari reserves the right, if deemed necessary, to modify the units and accessories, preserving their essential characteristics and improving efficiency and safety, without notice.

1.2 Copyright

All rights to these operating instructions belong to Montanari Giulio & C. S.r.l. The information in this manual may not be reproduced or used in an unauthorized manner or made available to third parties without prior approval.

If you have any questions, please contact:

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2. SAFETY

2.1 Intended use

The MGC25 gearless machine range is supplied ready for safe and reliable use. Any modification by the user that may affect safety or reliability is prohibited; it is also prohibited to tamper with devices or functions designed to prevent accidental contact.



The Montanari MGC25 gearless machine range must be used and operated in strict compliance with the conditions set out in the supply contract.

Technical specifications considered: speed, cab capacity, cab weight, presence or absence of compensation, roping at the time of order.

No liability is accepted for any malfunction due to installation not conforming to specifications, except in cases approved by Montanari Giulio & C.

2.2 User's obligations

The operator must ensure that all persons involved in installation, operation, maintenance and repair have read and understood the supplied operating instructions and have adapted to them in order to:

- Avoid damage to property or persons.
- Ensure safe and reliable operation of the unit.
- Avoid breakage and environmental damage due to misuse.

In particular:

- Always observe the relevant environmental and safety regulations when transporting, assembling, installing, operating, maintaining and dismantling the unit.
- The unit must only be used, maintained and repaired by authorized, properly trained and qualified personnel.
- The gearless must not be cleaned using high-pressure cleaning equipment.
- All work must be carried out with care and with due attention to safety.
- Any work on the unit should only be carried out when it is not in operation.
- A warning must be placed on the main switch to clearly indicate that work is in progress on the unit.
- No welding must be carried out on the unit.
- Do not use the unit as a grounding point for welding operations.
- If any changes are detected (e.g. overheating or unusual noise) during operation, switch off immediately.
- Rotating components must be equipped with appropriate guards to prevent contact.
- If the unit is intended for installation in plant or machinery, the manufacturer of such plant or machinery must ensure that the standards, indications and descriptions contained in these operating instructions are incorporated into its own instructions.

- The information on the warning or identification plates must be complied with. These plates must be kept clean and legible at all times. Missing plates must be replaced.
- All spare parts can be obtained from Montanari Group.

2.3 Correct disposal

Respect the environment and dispose of the product according to the regulations in force in the country of installation.

2.4 Specific hazards

Depending on the conditions of use, the surface of the unit can become very hot.

Danger of burning!

2.5 Legal References

Tab. 1

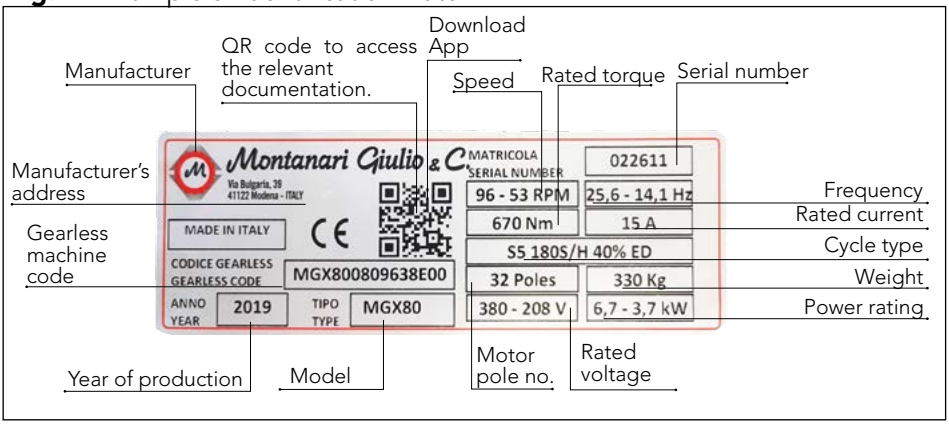
N	Norm	Description
1	UNI 10147	Maintenance: Terminology.
2	EN 81-20	Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods.
3	EN 81 -50	Safety rules for the construction and installation of lifts - Examinations and tests.
4	EN 81 - 21	Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods - Part 21: New passenger and goods passenger lifts in existing building.

3. IDENTIFICATION AND DATA

3.1 Identification plate

The data on the plate are:

Fig. 1 - Example of Identification Plate



GEARLESS MACHINE TECHNICAL CHARACTERISTICS: MGC25ML

Tab. 2

MGC25ML	Tipo	Pn	*Speed*	*Vn*	*Cn*	*In*	*Cmax*	*Imax*	*EMF*	*Poles*	*F*	*Rs*	*Ls*	*Static Load*	*I*	*Duty Cycle*	*Weight*
Code machine		kW	[RPM]	[V]	[Nm]	[A]	[Nm]	[A]	[V·s/ rad]	[N°]	[Hz]	[Ω]	[mH]	[Kg]	[kg·m2]		[Kg]
MGC25200603BC00	MGC25ML	4,0	60	360	630	19	1050	33	20	16	8,0	2,8	32	3200	0,28	240S/H 35%	250
MGC25201203BC00	MGC25ML	6,7	120	360	530	19	915	35	16	16	16,0	1,8	20	3200	0,28	240S/H 40%	250

Tab. 3

BRAKE CHARACTERISTICS						
Model	Brake model	Power (Pn)	Voltage (Vn)	Current (In)	Torque	Certificate
		[W]	[V]	[A]	[Nm]	
MGC25ML	RTW600	2X92 W	207V_{DC}	2X0.45A	2X600 Nm	EU-BD 1014

* Different voltages available upon request

GEARLESS MACHINE TECHNICAL CHARACTERISTICS: MGC25L

Tab. 4

MGC25L	Tipo	Pn	*Speed*	*Vn*	*Cn*	*In*	*Cmax*	*Imax*	*EMF*	*Poles*	*F*	*Rs*	*Ls*	*Static Load*	*I*	*Duty Cycle*	*Weight*
Code machine		kW	[RPM]	[V]	[Nm]	[A]	[Nm]	[A]	[V·s/ rad]	[N°]	[Hz]	[Ω]	[mH]	[Kg]	[kg·m2]		[Kg]
MGC25260603BC00	MGC25L	4,0	60	360	630	15	1100	27	24	16	8,0	3,2	37	3200	0,31	240S/H 40%	250

Tab. 5

BRAKE CHARACTERISTICS						
Model	Brake model	Power (Pn)	Voltage* (Vn)	Current (In)	Torque	Certificate
		[W]	[V]	[A]	[Nm]	
MGC25L	RTW600	2X92 W	207V_{DC}	2X0.45A	2X600 Nm	EU-BD 1014

* Different voltages available upon request

3.2 Dimensions

The technical drawings and the overall dimensions follow.

Tab. 6

MGC25ML - MGC25L				
Pulley		Ropes		
ØD	F	Ø	min - max	Pitch
mm		mm	n°	mm
320	85	8	4-7	11

Fig. 2
MGC25ML

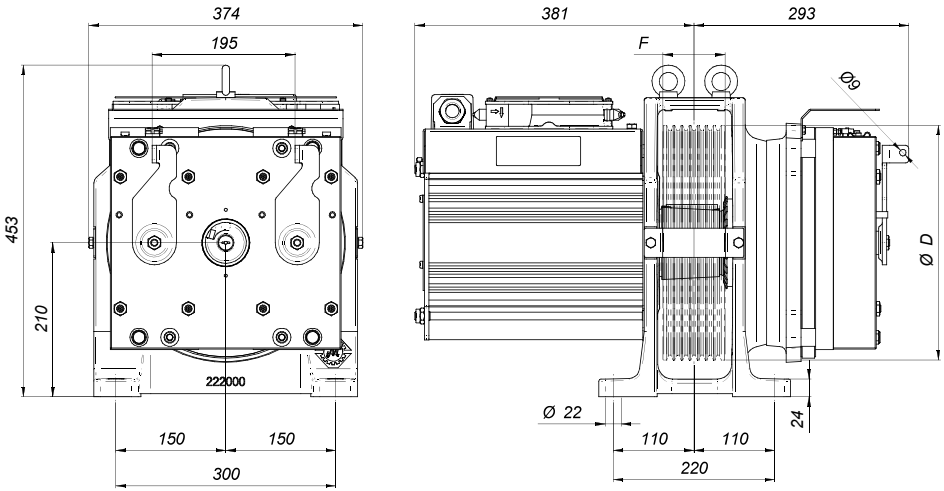
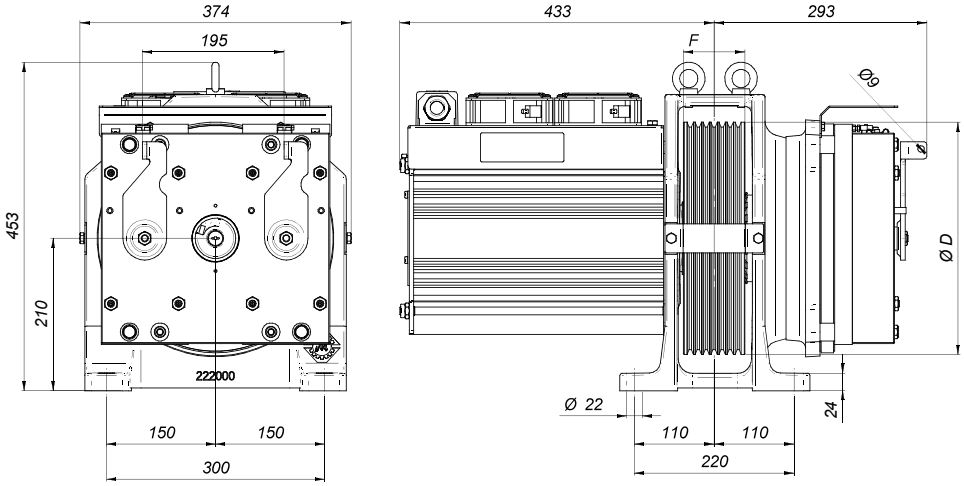


Fig. 3
MGC25L



Only use lifting systems and equipment with adequate lifting capacity for handling. The entire packaging is designed to allow movement with for lift and for lift truck.

4. TRANSPORT AND STORAGE

4.1 Handling

All gearless machines are packed in crates or cages.
Different types of packaging can be used, depending on the size and means of transport. Unless otherwise specified, the packaging complies with the HPE guidelines.
In some cases, the machines are mounted on wooden pallets to enable them to be transported correctly on trucks. The packaging may not be stacked in any way.
It is recommended to check the conditions of the material when it is received. In case of damage, do not proceed with the installation unless expressly authorized by Montanari Giulio & C. Observe the symbols on the packaging to prevent damage to property or personal injury. Here are the meanings of the symbols that may appear on the packaging.


Keep dry


Handle with care


Attachment point


Upper side


Do not use hooks

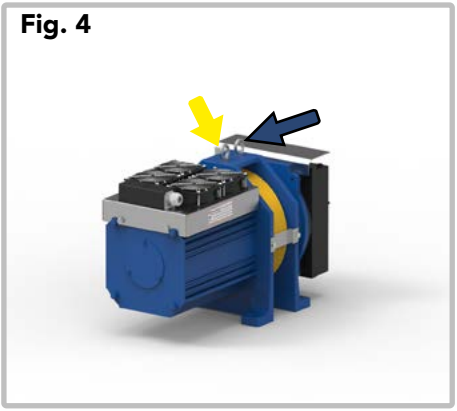

Keep away from heat sources


Fragile


Center of gravity

For lifting, anchor points (eye-bolts) are provided as shown in Fig. 4.
Use only the specified eyebolts to handle the unit.

Fig. 4



4.2 Storage

The gearless machine must be stored in the position of use on a wooden base not subject to vibrations, in a covered and sheltered place.

If the unit is stored outdoors, it should be covered, taking care that no moisture and/or other foreign matter can accumulate on it.

Supplies for special environmental conditions during transport (e.g. by ship) and storage (climate, temperature, etc.) must be contractually agreed.

- Check the correct operation of the motor and brake after installation.
- Repairs may only be carried out by the manufacturer or by authorised personnel.
- The machine can be red-hot.
- These machines must be connected to inverters.
- When the machine is rotating, both manually and mechanically, it can act as a generator and produce high voltage.
- During configuration, the machine is powered by high voltage.

5. DESCRIPTION

5.1 General description

The MGC25 series gearless machines are permanent magnet motors with double brake system.

5.2 Main components

The unit consists of the main groups as shown in Fig. 5.

MGC25 range is equipped with a PTC thermal probe inside the windings to protect against overheating (winding temperature up to 130°C) and with a thermo-contact for the activation of the fans. Refer to the electrical connections for more details. - See Par. 6.4.

Lubrication

The gearless machine contains no oil and it is supplied with bearings already lubricated throughout the life of the machine; no further lubrication is required.

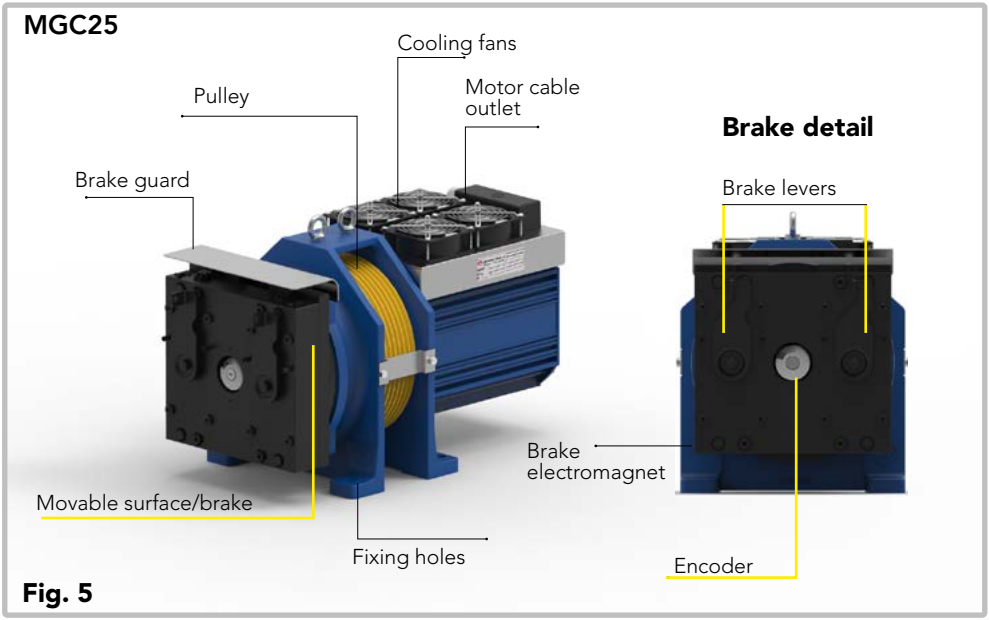


Fig. 5

5.3 Brake

The gearless machine is supplied with a brake that conforms to the standards indicated in paragraph 2.5.
The brake system is pre-calibrated by the manufacturer and no further adjustment is required.

The brake system operates as follows:

- **Not powered** (electromagnet not powered): the brake disc is clamped by the movable surfaces (yellow arrows Fig. 6). In this condition the system does not move.
- When the brake electromagnet is **powered**, it releases the brake disc (yellow arrows Fig. 7); now the motor is released.

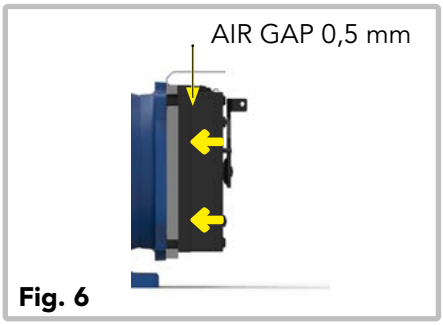


Fig. 6

Brake system not powered

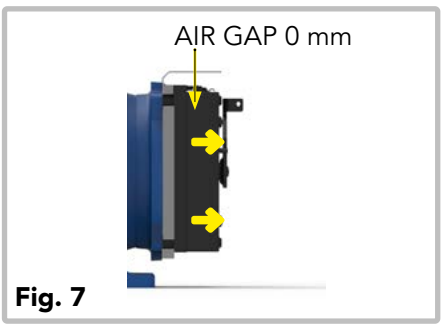


Fig. 7

Brake system powered

6. INSTALLATION

6.1 General installation information

The gearless machine must be installed in a building or in a closed travel compartment.
Do not use the gearless machine in an explosive atmosphere.
The room temperature must be between 0°C and +40°C.
Assembly and installation must be carried out with great care by qualified and trained personnel.
The manufacturer cannot be held responsible for damage caused by incorrect assembly or incorrect installation.
Before starting work, make sure that adequate lifting and handling equipment is available.
No welding work must be carried out on the unit.
The unit must not be used as a grounding point for welding operations. The bearings can be irreparably damaged.
All fixing points specified by the manufacturer must be used.

The air supply for cooling must not be prevented.

6.2 Installation surface

The installation surface must be uniform and level.
The levelling tolerance is 0.1 mm.
The installation surface must be rigid and robust enough to withstand the forces involved.

6.3 Installation procedure

The gearless machine can be lifted using the eyebolts for the insertion of the belts or lifting chains (see also the paragraph on storage and handling). Particular attention is needed to avoid that the gearless machine receives blows in correspondence of the brake disc; the brake levers and the electrical connections of the board are very delicate. Lifting example Fig. 7.

Fig. 8



Place the unit on the installation surface and secure it.

- Fixing screws and nuts must be tightened to the prescribed torque.
- Use bolts with a minimum strength class of 8.8.
- Do not force or hit the fixings to position them; this could damage the bearings, rings, etc.
- Mount the safety devices.

The static load in different roping directions (Fig. 9):

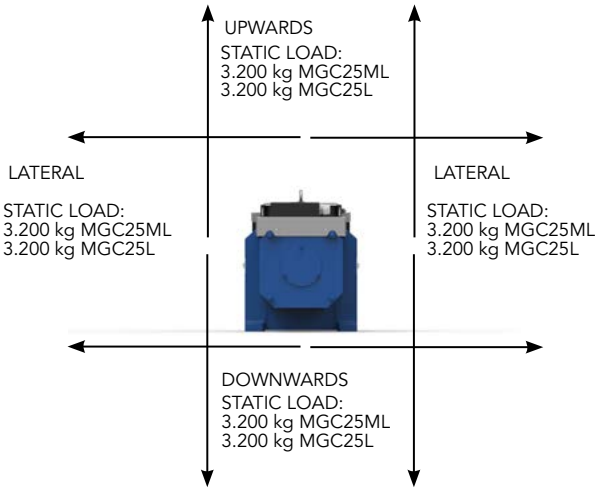


Fig. 9

6.4 Electrical installation - Connections

The gearless machine is supplied with:

- Cable for the power supply of the motor [1 - 2 - 3, Ground, SC] , for the power supply of the cooling fan (230 Vac) [F7-F8] and of the PTC guard [T5-T6] (Fig. 10).

Cable

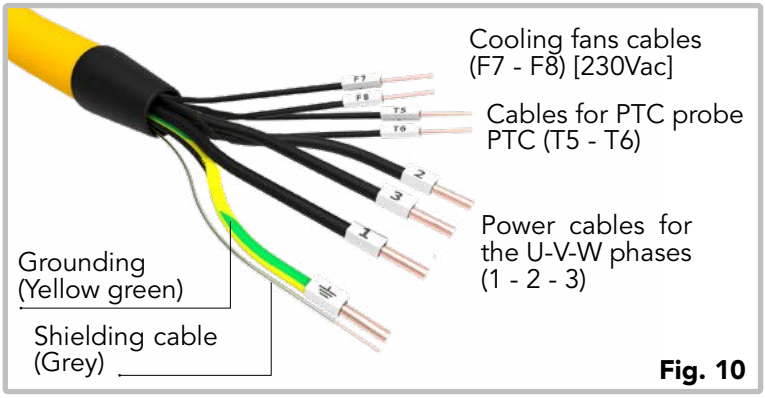


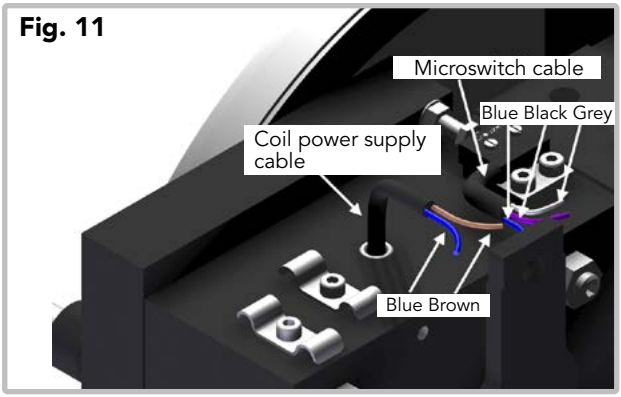
Fig. 10

- The power cable must be routed separately from the other cables.
- The motor power cable is shielded and the shield must be grounded.
- The encoder cable must be routed away from the motor power cable to avoid electrical interference.
- The brake system has a power cable and another cable for the microswitch contacts. (Figure no. 11). All electrical data are listed on the label of the brake system. The microswitch has two contacts: one open and one closed. (Fig. 12).
- These contacts indicate the brake condition (Tab. 6).

Tab. 6

Brake disc closed	Condition contact	Brake disc free	Condition contact
BLACK BLUE COM. N.O.	Disconnected	BLACK BLUE COM. N.O.	Connected
BLACK GREY COM. N.C.	Connected	BLACK GREY COM. N.C.	Disconnected

Fig. 11



Power supply
Brake

- **Standard mode:**

It is possible controlling only contactor 1 and leaving contactors 2 and 3 closed. (Fig. 11).
This protects the brake from dangerous overvoltage and noise when closing.

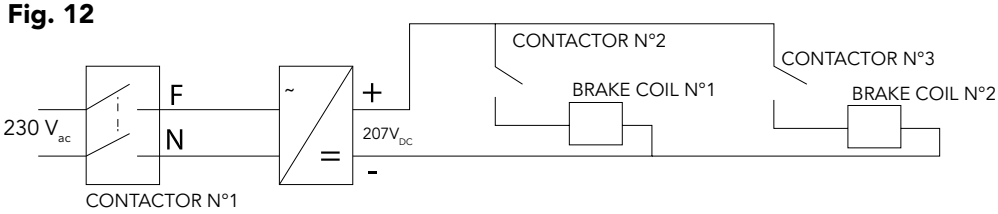
- **Emergency mode and inspection mode:**

The use of all contactors is recommended. Using only contactor no. 1 during opening and/or closing operations may cause an unacceptable delay when closing the brake.

Typical application with brake coils in parallel configuration.

MGC25 ML - L

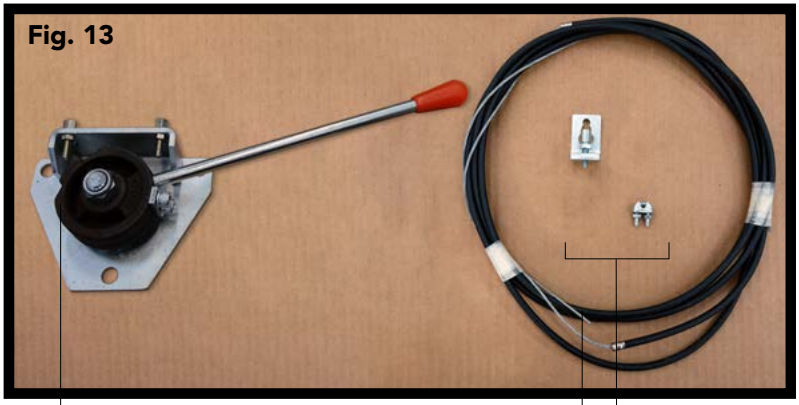
Fig. 12



7. CONNECTION OF THE BRAKE FOR RESCUE SYSTEM

The cable and release lever can be supplied on request.
The kit is shown in Fig. 13.

Fig. 13



Lever for manual brake release.

Connection cable for brake levers for manual rescue system (3.5 m).

Components for fixing the cable.

7.1 Connection of the cable to the brake levers

Insert the end of the cable into the lever holes. Tension and fix. Fold the end and secure with the rope clamp as shown in the figure. At the end, the result is as figure below.

Fig. 14 **MGC25ML-L**



7.2 Connection of the cable to the hand release lever

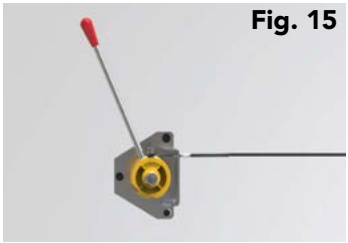
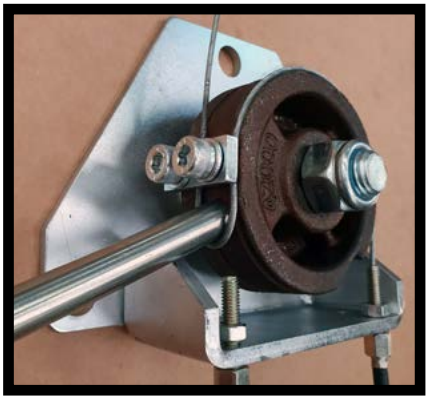


Fig. 15

Fix the lever to the wall with the bolts (not supplied). Connect the cable to the support as shown in Fig. 14.

Insert the other end of the cable into the screw hole. Tighten to stop. Fig. 15.

Fig. 16





7.3 Rescue System

By pulling the lever, the brake will open and the car will move in the direction of greatest unbalance.
To slow down the car, it's recommended to connect the phases together (short circuited connection).

8. OPERATION

8.1 Connections

Connect the motor, brake, and monitoring devices.
The connection must be made by qualified personnel in accordance with the applicable safety regulations. Installation and operation requirements and current national and international standards must be met.

8.2 Additional components

If third party additional components or options are installed, please refer to the information in the respective separate documentation provided.

8.3 General operation information

When operating the MGC25 unit, be sure to check that the following situations do not occur:

- Excessive operating temperature.
- Excessive and unusual noise.

If any irregularity occurs during operation, turn off the power immediately. Identify the cause of the malfunction by using the table in Chap. 9, containing a list of possible problems, causes and suggested remedies.

8.4 Safety gear release

The safety gear can be released via the gearless machine without exceeding the Imax current limit shown in Tables 2 and 3. If this is not possible, it must be released with other means. However, it is always advisable to act on the weight in the cab in order to facilitate the releasing operation.

If the cause of the malfunction cannot be identified, or if the unit has been repaired using the means available, you should contact one of our service centres for a specialised service.

9. TROUBLESHOOTING, MAINTENANCE AND REPAIR

9.1 General information

Problems and malfunctions occurring during the warranty period, which are not precisely identified or which require work on the unit, must be referred to the manufacturer's Customer Service department.

Observe all safety rules.
Do not disassemble the motor on site.
The bearings are protected and do not require any additional lubrication under standard conditions of use.
Do not use high-pressure cleaners on the motor.

Montanari cannot guarantee or be held responsible for unauthorized operations on the unit, improper use, modifications made without its consent or the use of non-genuine spare parts.

When repairing problems or malfunctions, the unit must be put out of service in order to prevent unintentional start-up. Place a warning sign on the starting switch.

9.2 Replacement of components

Instructions for the replacement of any component must be requested each time from the technical department specifying the serial number.

9.3 Problems, causes and solutions

Tab. 7

Diagnostic Table		
Problems	**Causes**	**Solutions**
The motor does not work	Motor phases are connected in the wrong way	Check the connection condition of the motor phases
	Wrong inverter configuration	Check the inverter settings
	Inverter defective	Replace the device
	Brake faulty	See below
	Motor mechanically locked	Contact Montanari Giulio & C.
	Motor connections loosened	Tighten the connections of the machine controller.
	Excessive temperature	See below
Brake system not working	Brake power supply wrong	Check the correct supply voltage of the brake coil.
	Brake system defective	Contact Montanari Giulio & C.
Excessive temperature	Cooling fan not working.	Replace the fan
	Cooling fan not correctly connected.	Check the voltage of the cooling fan. (230 V ac)
	PTC sensor defective	Contact Montanari Giulio & C.
	Wrong inverter settings	Check the inverter settings
Noise while travelling	Alignment of the motor with the deflection sheave incorrect.	Check and correct the alignment.
	Encoder defective	Replace encoder
	Wrong inverter settings	Check the inverter settings
	Bearing defective	Contact Montanari Giulio & C.

9.4 Maintenance and repair

9.4.1 General indications

The unit must only be used, maintained and repaired by authorized, properly trained and qualified personnel.

Compliance with the inspection and maintenance intervals is part of the conditions for the validity of the warranty.

9.4.2 Description of maintenance activities

Stop the unit and put it out of service. Place a warning sign on the start switch to prevent unintentional start.

Cleaning the unit.
Remove dirt on the unit with a hard brush.
Remove corrosion signs.
The unit must not be cleaned with high pressure washing equipment.

10. SPARE PARTS

10.1 General information

By keeping the main spare parts and wear parts in stock, the unit can always be used.

10.2 How to order spare parts

The manufacturer guarantees only genuine spare parts and accessories supplied by him.
Other parts not supplied by the manufacturer have not been tested or approved. The use of these parts can therefore compromise certain characteristics of the gearless machine and expose it to active and passive safety risks.

The manufacturer will not assume any responsibility and will not recognize warranty for damage caused by spare parts and accessories not supplied by the manufacturer himself.

When ordering spare parts, always specify:
- Order no. of the machine to which they must be applied;
- Description;
- Quantity.

To order spare parts, write to **service@montanarigiulio.com.**

Montanari Group
GEARLESS&GEARBOX
TRACTION MACHINES

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