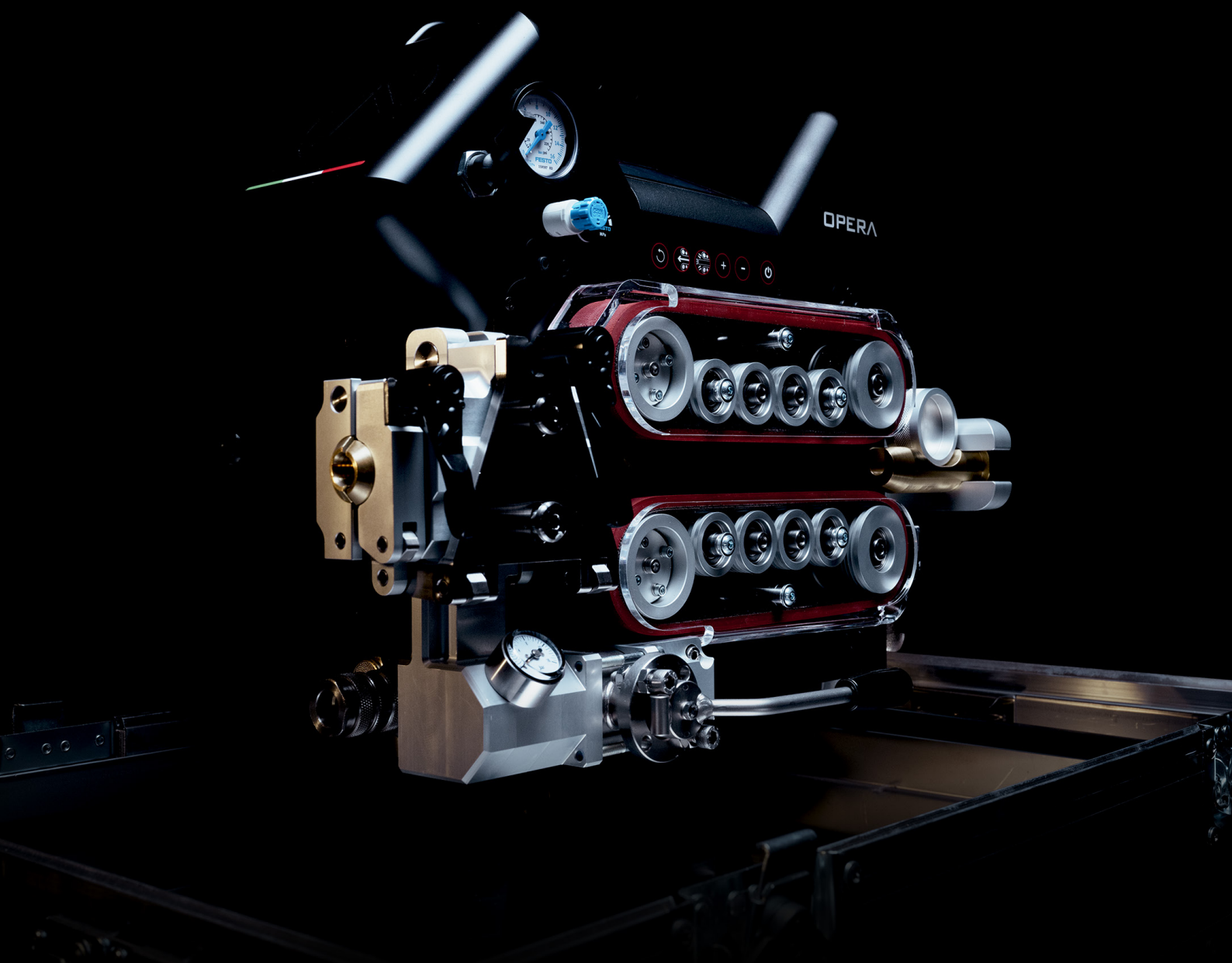


OPERA

ELETTTRICA



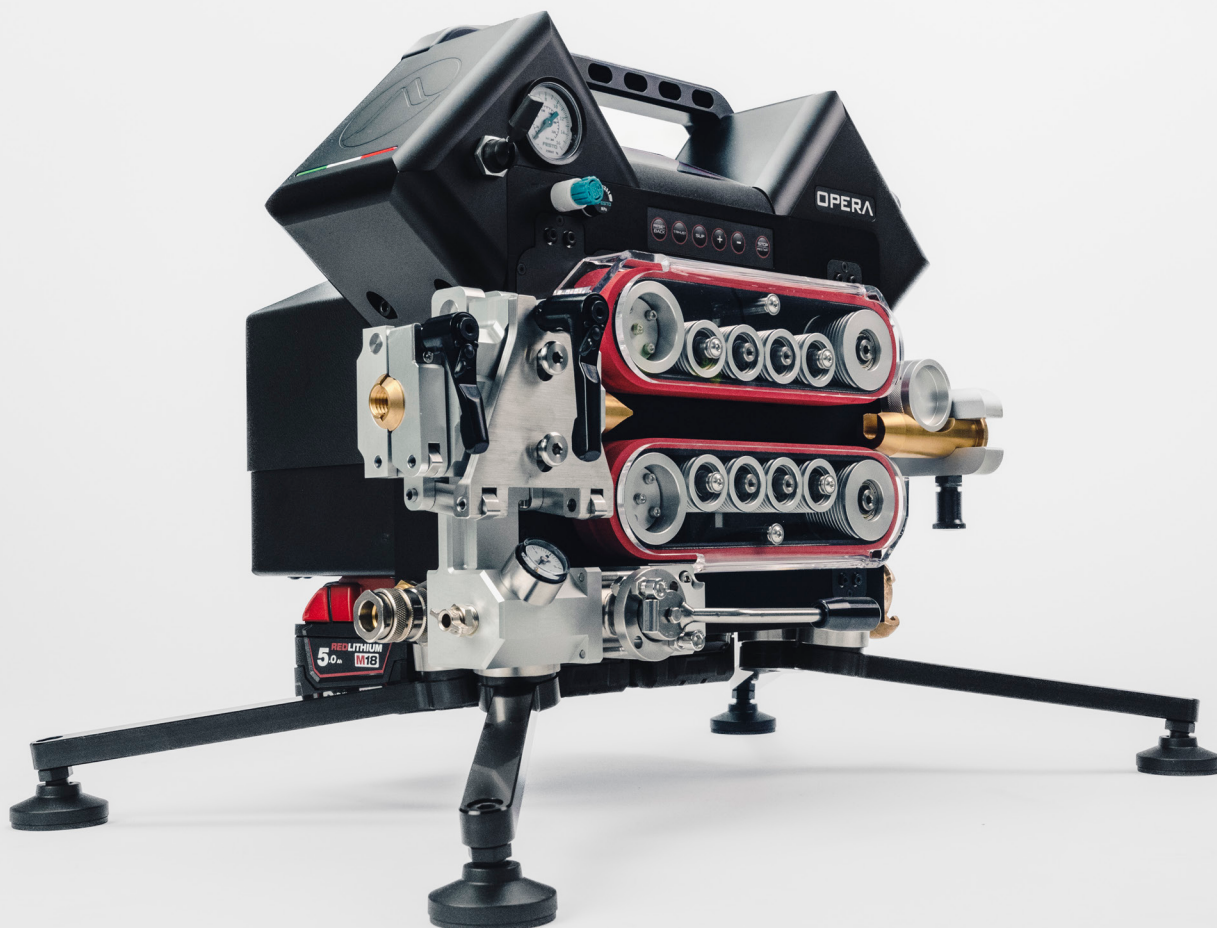
USER MANUAL



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OPERA ELETTRICA

Opera Elettrica is a **fully electric cable blowing machine, designed for long-distance fibre optic cable installation** with maximum efficiency and safety. As it is powered entirely by electric motors, **all the air supplied by the compressor is directed into the duct, ensuring improved installation performance and allowing the machine to operate even with smaller compressors.** It can install cables with diameters ranging from 4 to 16 mm in ducts from 7 to 63 mm (7 to 20 mm with an internal adapter and 22 to 63 mm with an optional external adapter).

The machine features a **built-in multifunction touchscreen display that provides precise control of the installation parameters and real-time monitoring of the installation process.** Thanks to the complete electronic control made possible by the electric power system, Opera Elettrica intelligently protects the cable: if the set parameters are exceeded, the machine automatically reduces its speed while maintaining the pushing force and stops based on the maximum torque and slip settings to prevent cable breakage.

At the end of the installation, **a complete report of the operation performed** can be generated using a specially developed app, providing a detailed record for documentation and verification purposes.

Opera Elettrica is entirely designed, developed and manufactured in Italy and features a typically Italian design that combines functionality and aesthetics.

The Opera Elettrica cable blowing machine delivers optimal performance with cables ranging from 4 to 12 mm in diameter.

SAFETY REGULATIONS



The air pressure must never exceed 232 psi (16 bar).



Do not open the adapter clamps during normal operation while the emergency stop button is released.



Before use, make sure that the machine is positioned and secured on a solid surface or on its transport case. Check that the cable blowing machine is properly connected to the duct and that the cable is correctly positioned between the two drive belts.



Before starting, make sure that no one is standing near the cable reels to avoid potential hazards.



Do not touch the cable while it is being fed into the machine, as this could cause finger injuries. Also make sure that the cable does not become tangled, creating a hazard for the personnel involved.



Before closing the belt carriages, make sure that the space between the belts is clear and that no one is standing near the machine. Keep hands and clothing well away from the belts while the machine is in use and the emergency stop button is released.



Do not remove the plexiglass guards during cable installation, as this could cause hand injuries.



**SEE PAGE 21 FOR THE COMPLETE LIST
OF SAFETY PRECAUTIONS**

TECHNICAL SPECIFICATIONS

Drive system: 2 electric motors

Maximum installation speed: 295 ft/min (90 m/min)

Recommended speed: 197 ft/min (60 m/min)

Cable diameter*: Ø 4 to 16 mm

Duct diameter:** Ø 7 to 63 mm (22 to 63 mm with an external adapter)

Maximum air pressure: 232 psi (16 bar)

Pushing force: 146 lbf (650 N) continuous, 292 lbf (1300 N) for 3 seconds

Maximum clamping force on the cable: 719 lbf (3200 N)

Weight: approximately 66 lb (30 kg)

Dimensions: 22.24 x 9.92 x 14.17 in (565 x 252 x 360 mm)

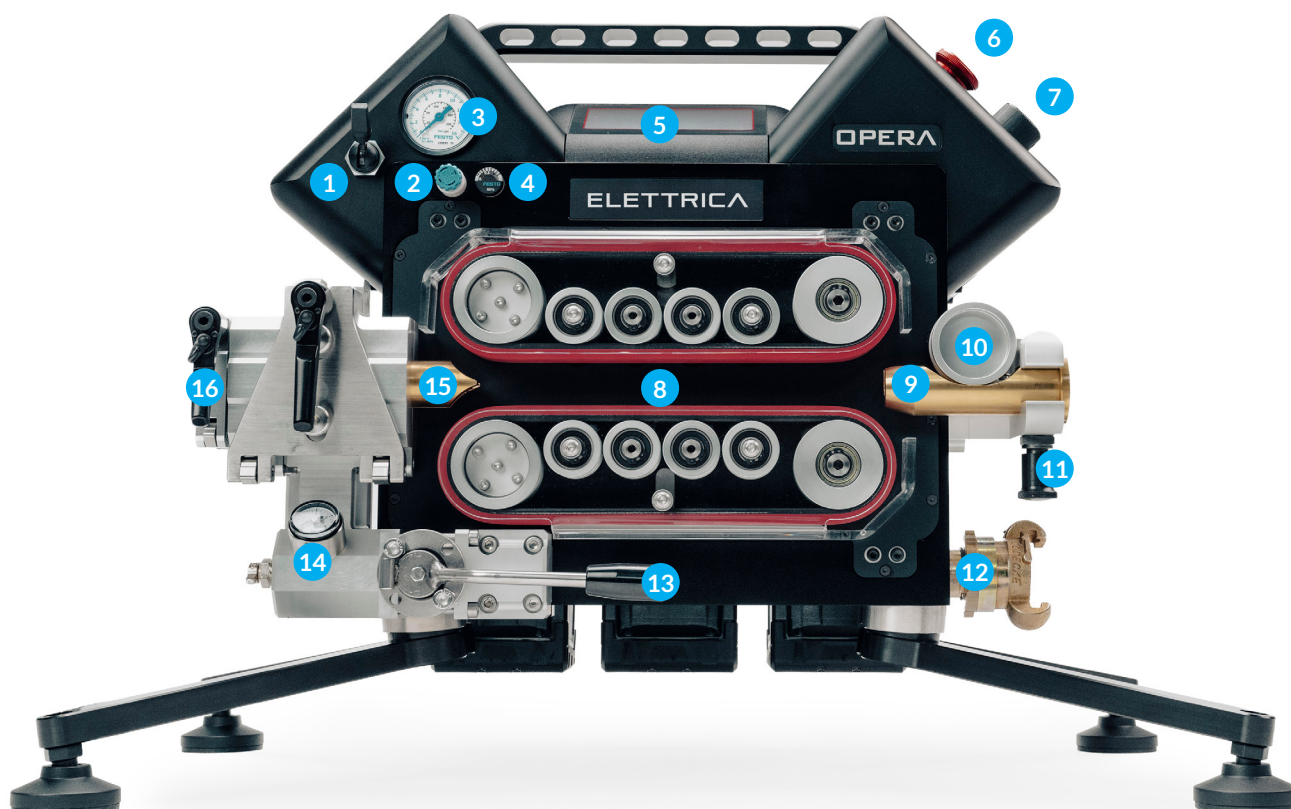
- **4.3-inch TFT touchscreen display** showing operating information (speed, distance, belt clamping force, actual cable pushing force, maximum pushing force, cable slip, maximum cable slip and compressed air pressure).
- **Automatic stopping of cable installation when the maximum pushing force or slip level is reached.**
- **Wi-Fi connection for remote data management and acquisition (tablet with the Fibernet app required , see page 32).**

* Cable adapters are available in the following sizes: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16 mm

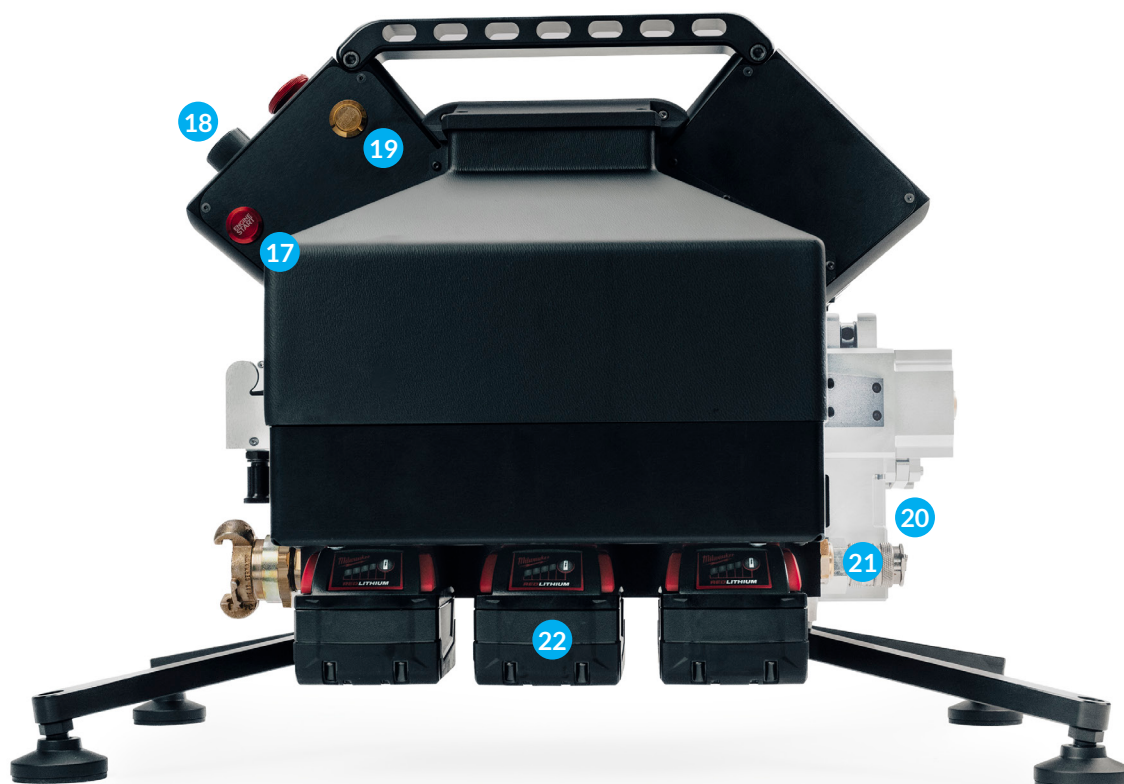
** Duct adapters are available in the following sizes: 7, 8, 10, 12, 14, 16, 18, 20, 22, 25, 32, 40, 50 and 63 mm

Other sizes available in inches: 0.75", 1", 1.25", 1.5" and 2"





- 1 BELT OPENING / CLOSING CONTROL
- 2 BELT CLAMPING FORCE ADJUSTMENT
- 3 MOTOR PRESSURE GAUGE
- 4 BELT CLAMPING PRESSURE GAUGE
- 5 MULTIFUNCTION DISPLAY
- 6 EMERGENCY STOP
- 7 MACHINE START / MOTOR SPEED CONTROL
- 8 BELTS
- 9 CABLE INLET ADAPTER
- 10 METER COUNTER
- 11 CABLE ADAPTER RELEASE KNOB
- 12 COMPRESSED-AIR INLET CONNECTOR
- 13 DUCT COMPRESSED-AIR CONTROL LEVER
- 14 DUCT AIR PRESSURE GAUGE
- 15 CABLE ADAPTER
- 16 DUCT ADAPTER



- 17 MACHINE POWER BUTTON
- 18 THRUST FORCE ADJUSTMENT
- 19 REVERSE BUTTON
- 20 PRESSURE RELIEF VALVE
- 21 SECONDARY COMPRESSED AIR OUTLET
- 22 BATTERIES (3X)

INCLUDED ACCESSORIES



1 pc Rugged Case



1 pc Air Hose 33 ft



1 pc Milwaukee Battery
Charger



3 pcs Milwaukee
Batteries



1 pc Secondary Air
Outlet Adapter



1 pc Tube Cutter



1 pc Fibernet
Lubricant



10 pcs Tube Cleaning
Sponges



1 pc Allen Key Set



1 pc Tube Protection



1 pc Grounding Cable



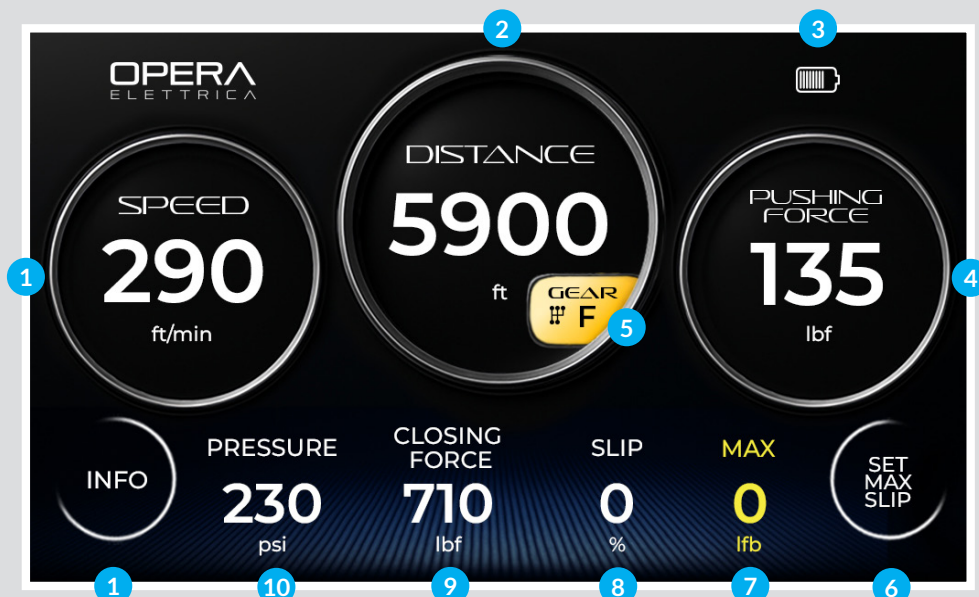
2 pcs Cable Adapter
Gaskets



2 pcs Tube Adapter
Gaskets



DISPLAY - DESCRIPTION AND FUNCTIONS



- | | |
|------------------------------|--------------------------------|
| 1 SPEED (ft/min) | 6 THRUST FORCE SET POINT (LBF) |
| 2 DISTANCE (ft) | 7 SLIP INDICATOR (%) |
| 3 BATTERY CHARGE LEVEL | 8 BELT CLOSING FORCE (lbf) |
| 4 THRUST FORCE (lbf) | 9 PRESSURE (psi) |
| 5 THRUST DIRECTION INDICATOR | 10 MACHINE INFORMATION |
| 6 MAX SLIP SETTING | |

MAXIMUM SLIP SETTING SCREEN

The 'SET MAX SLIP' screen has a black background with white text. It prompts the user to 'SELECT THE DESIRED AMOUNT OF SLIPPAGE PROTECTION:'. There are three options: 'NONE', 'MEDIUM', and 'HIGH', each with a corresponding square selection box. At the bottom left is a '← BACK' button, and at the bottom right is a 'SET VALUE' button.

SPEED - Represents the instantaneous cable-laying speed.

DISTANCE - Reports the feet of cable installed. The value can be positive or negative, in case of cable rewinding.

BATTERY CHARGE LEVEL - Represents the lowest charge among the installed batteries. If the battery charge level is insufficient, an on-screen popup will warn of the machine's imminent shutdown (within 3 seconds).

THRUST - Represents the maximum value, expressed in pounds-force (lbf), of force applied by the machine to the cable during laying, at any given moment (see p. 16). The "Max" value can be set and indicates the control threshold beyond which the machine is automatically stopped.

THRUST DIRECTION INDICATOR - Shows in real time the direction of rotation of the belt drive system.

- F (Forward) – The machine is pushing the cable and feeding it into the tube.
- R (Reverse) – The machine is recovering or withdrawing the cable (rewind or extraction function).

THRUST FORCE SET POINT - Represents the maximum value, expressed in pounds-force (lbf), of force applied by the machine to the cable (see p. 16).

SLIP INDICATOR - Represents the percentage difference in speed between the belts and the cable.*

BELT CLOSING FORCE - Reports the force, expressed in pounds-force (lbf), that the belts exert on the cable once tightened.

PRESSURE - Reports the pressure measured in bar inside the duct.

MACHINE INFORMATION - This screen displays the machine's name and SSID for app connection, the total distance laid by the machine, the currently installed firmware version, motor temperature, and air temperature.

*NOTE: To set the maximum slip values, tap the corresponding icon on the touch display, select the desired values using the buttons, and confirm by pressing the "SET VALUE" button.

NONE - No protection

MEDIUM - The machine stops if the belts are moving but the cable is not advancing.

HIGH - The machine stops if the speed difference between the belts and the cable is excessive. The belt speed exceeds twice that of the cable.

If you exit the screen without confirming, the values will not be saved. The setting remains stored in the machine's memory even after restart.



PRELIMINARY OPERATIONS

To prepare Opera Elettrica for first use, follow the procedure below:

BATTERY CHARGING:

- Check the battery charge level by pressing the check button on each battery. (Fig. 1). The charge level can also be displayed on the Opera Elettrica screen once the machine is turned on (Fig. 2).

The machine's operating range depends on the battery with the lowest charge level among the three installed. The charge level shown on the Opera Elettrica display therefore corresponds to that of the battery with the lowest remaining charge.



Fig. 1



Fig. 2

TUBE AND CABLE ADAPTER:

If you plan to use a duct or cable of a different size than the one currently mounted on the machine, follow these steps:

- Obtain adapters and gaskets of the appropriate size. These can be purchased from your trusted distributor.
- Unscrew the current duct or cable adapter. (Fig. 1)
- Position the new adapter in its housing.
- Screw in the new adapter.
- Check that the air chamber's linear gaskets are correctly seated in their housing. (Fig. 2)

NOTE: For frequent and quick adapter changes, Fibernet can supply dedicated PIMs upon request.

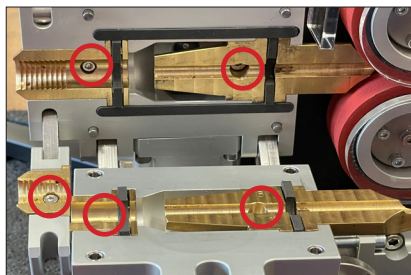


Fig. 1

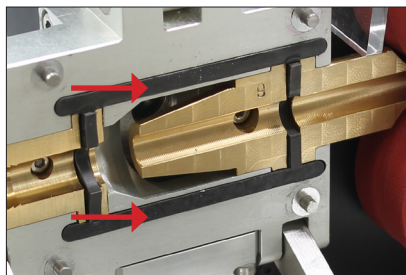
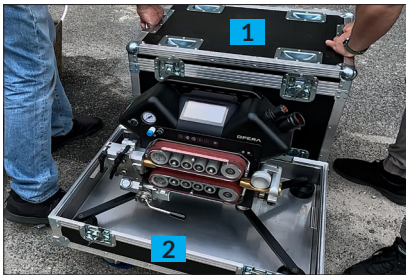
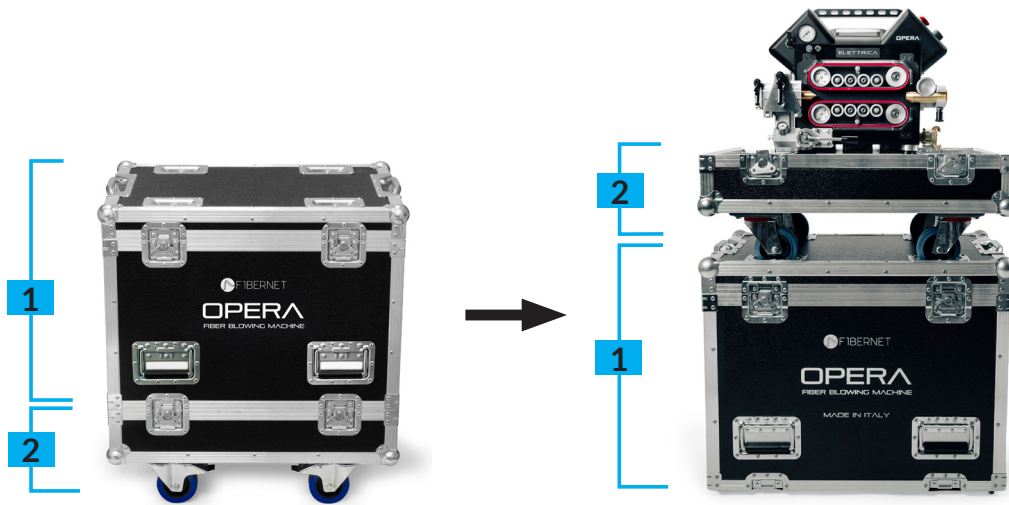


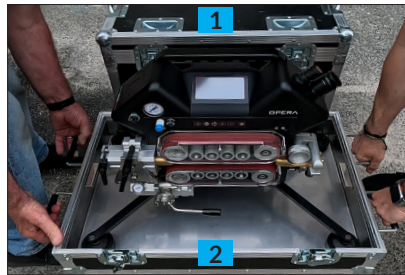
Fig. 2

OPERA ELETTRICA CASE

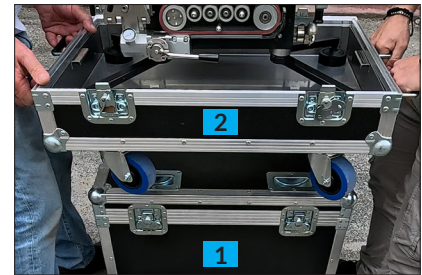
The Opera Elettrica case has been designed as the ideal support for the cable-blowing machine.



Release and remove the top part (1)



Lift the lower base (2)



Place the base (2)
on top of the upper part (1)

OPERATIONS BEFORE EACH USE

- Make sure the compressed air regulation lever is lowered. (Fig. 1)
- Make sure the air discharge valve, located behind the adapter block, is closed. (Fig. 2)
- Turn on the machine. (Fig. 3)
- Check the battery status on the display or directly on the batteries (Fig. 4). The minimum level required just to power on the electronics is 15 - 20%; however, depending on the laying conditions (length, bends, resistance to cable advancement), the charge required to complete the laying operation could be significantly higher.

It is recommended to start the laying operation with the total battery pack charge above 80%.

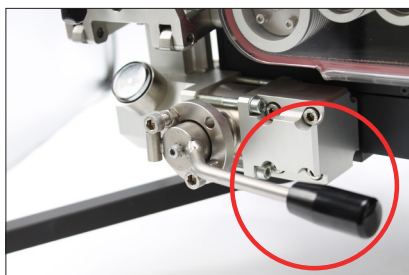


Fig. 1



Fig. 2



Fig. 3



Fig. 4

INSERTING THE DUCT

- Prepare the duct so that once inserted into the machine it does not have excessive curvature. If necessary, shorten it to an appropriate length.
- Open the clamps of the duct adapter and the cable adapter and insert the duct into the duct adapter. (Fig. 1)
- Lock the duct between the first gasket and the cable adapter, leaving enough space to allow air to enter the duct (Fig. 2) - this is the chamber where pressurized air is conveyed into the duct together with the cable.
- Close the duct adapter clamp by tightening it until the movable part is aligned with the fixed part. (Fig. 3)

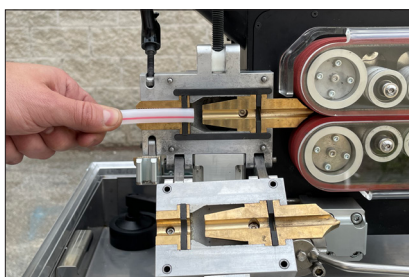


Fig. 1

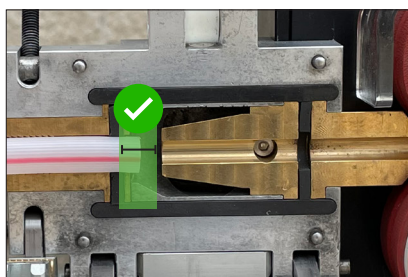


Fig. 2

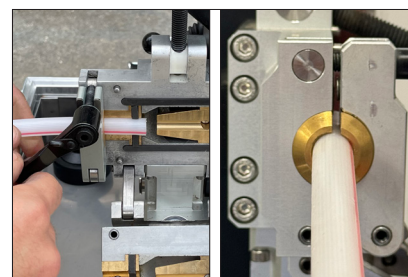


Fig. 3

INSERTING THE CABLE

- Insert the cable into the cable inlet adapter. (Fig. 1)
- Insert the cable inside the cable gasket. The gasket's "lip" must face the duct (Fig. 2). This way, when the chamber is pressurized, air enters the gasket's cavity, expanding the lip and further increasing the seal.
- Seat the gasket in the adapter and slide the cable a few centimeters into the duct, then close the adapter clamp by tightening it firmly. (Fig. 3)

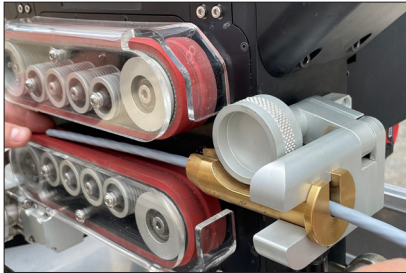


Fig. 1

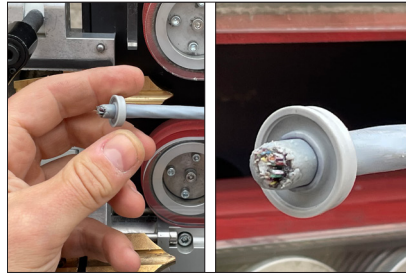


Fig. 2

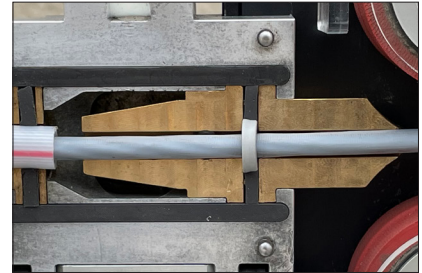


Fig. 3

CONNECTING THE COMPRESSOR

- Make sure the machine's compressed air lever is closed in the horizontal position.
- Connect the compressed air hose to the machine by inserting the hose fitting into the corresponding fitting on Opera Elettrica, rotating it and firmly tightening the safety ring nut. The use of the safety retention cable between the compressed air hose and the machine is **mandatory**. (Fig. 1) (Accessory supplied with Opera Elettrica)
- Repeat the operation with the compressor fitting. (Fig. 2)
- Turn on the compressor and fully open the compressed air supply. (Fig. 3)

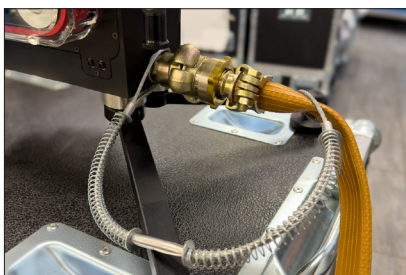


Fig. 1

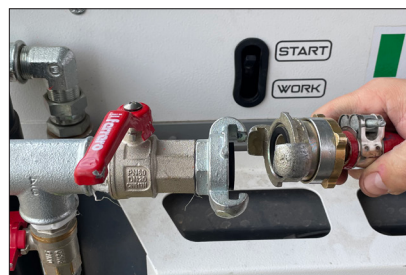


Fig. 2

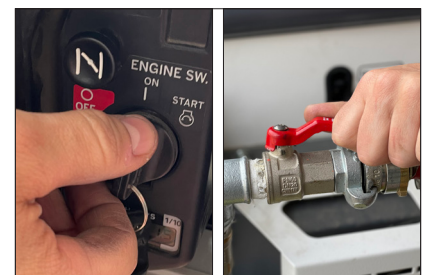


Fig. 3

TIGHTENING THE BELTS

- Turn on the machine. (Fig. 1)
- Lower the belts using the dedicated opening/closing lever. (Fig. 2)
- Unlock the pressure regulator by pulling the knob slightly towards you. (Fig. 3)
- Adjust the belt closing force by turning the regulator (Fig. 4) and checking the value shown on the display, expressed in pounds-force (lbf). (Fig. 5)

This force must be the lowest possible while still sufficient to prevent the cable from slipping. The value varies depending on several factors, such as the type of cable used, the level of belt wear, whether the cable is wet or lubricated, etc.

- Lock the pressure regulator by pushing it inward (Fig. 6).



Fig. 1



Fig. 2



Fig. 3



Fig. 4

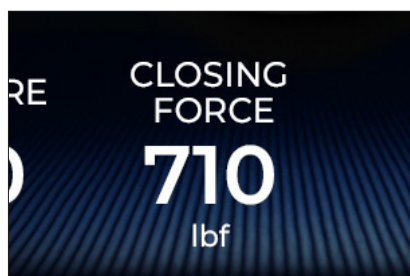


Fig. 5



Fig. 6

SETTING MAXIMUM PUSHING FORCE

This function indicates the maximum thrust force that the machine will apply to the cable during laying operations. If the set force does not ensure cable movement for at least one second, the “Max Pushing Force Reached” popup will appear and the machine will stop.

To determine the value to set, it is preferable to perform a CRASH TEST on the cable (see p. 27), since this test, unlike the manufacturer’s indications, takes into account environmental conditions (temperature) and the machine’s own characteristics.

To configure the maximum thrust force:

- Turn the knob labeled “THRUST” until the desired maximum thrust value is displayed on screen (Fig. 1).

- The newly set maximum value will remain displayed on the main display screen next to the corresponding icon. (Fig. 2)



Fig. 1

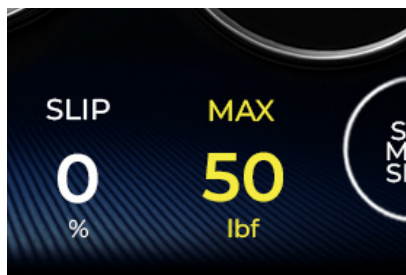


Fig. 2

SETTING MAXIMUM SLIPPAGE

Slip indicates the percentage difference between the belt rotation speed and the cable laying speed, i.e. the cable speed recorded by the footage-counter wheel at the cable inlet.

Poor contact of this wheel may cause an inaccurate slip reading.

Slip control protects the cable: if the cable becomes stuck for any reason, the machine stops.

To set the Maximum Slip:

- Access the settings from the display by tapping the corresponding icon (Fig. 1)
- Select the desired installation protection level using the touch display (Fig. 2):

NONE - No protection

MEDIUM - The machine stops if the belts are moving but the cable is not advancing.

HIGH - The machine stops if the speed difference between belts and cable is excessive. The belt speed exceeds twice that of the cable.

- Press "SET VALUE" to confirm the choice (Fig. 3). If you return to the main menu without confirming, the value will not be saved.

NOTE: The setting remains stored in the machine's memory even after restart.



Fig. 1



Fig. 2



Fig. 3

STARTING THE INSTALLATION / CABLE RECOVERY

1. Verify that the emergency button is released. (Fig. 1)
2. Set the belt rotation direction using the “REVERSE GEAR” button, until the display shows the indication matching the required direction: R (REVERSE) or F (FORWARD). (Fig. 2 and 3)
3. If the direction of rotation matches the operation to be carried out (laying or cable recovery):
 - Close the belts using the knob. (Fig. 4)
 - Set the pushing force to the value required for the operation. (Fig. 5 e 6)
 - Start the machine using the Speed knob. (Fig. 7)

Note: every time the machine is switched off, the direction of rotation is reset to Laying mode on restart. Therefore, before starting a fibre recovery operation, check the direction of rotation again and, if necessary, select R (Reverse) mode.

Switching the machine off and on again is also an alternative way of returning from “Recovery” mode to “Laying” mode.



Fig. 1

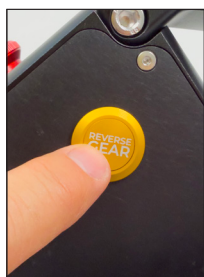


Fig. 2

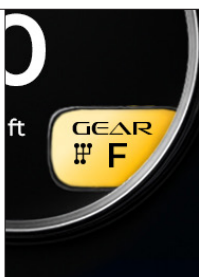


Fig. 3



Fig. 4



Fig. 5

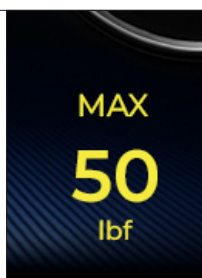


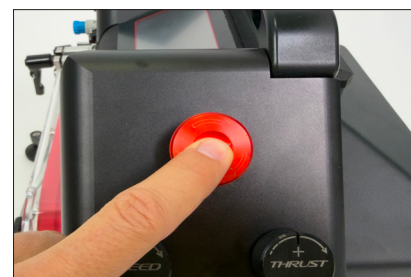
Fig. 6



Fig. 7



**IN CASE OF SUDDEN
PROBLEMS, USE THE
EMERGENCY STOP.**



END OF INSTALLATION

- To end the laying operation, gradually reduce the speed using the speed knob until the motor stops (Fig. 1).
- To release air from the duct without turning off the compressor, use the air discharge valve located behind the adapter block, or wait for the pressure to release on its own. (Fig. 2)
- Remove the duct from the machine and pull out the cable.



At the end of all laying operations, turn off the compressor and release the residual air pressure in the machine using the dedicated lever.



Fig. 1



Fig. 2

REPLACING DUCT AND CABLE ADAPTERS

- Unscrew the screws and remove the adapters to be replaced. (Fig. 1)
- Insert the adapters of the desired size and screw them back in.
- Check the condition of the adapter gaskets, replacing them if necessary. (Fig. 2)
- Check that the air chamber's linear gaskets are correctly seated in their housing. (Fig. 3)

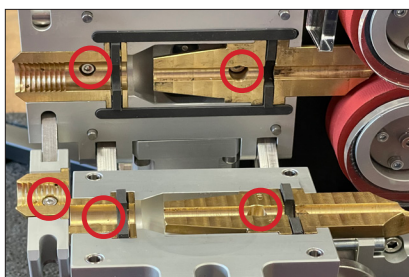


Fig. 1

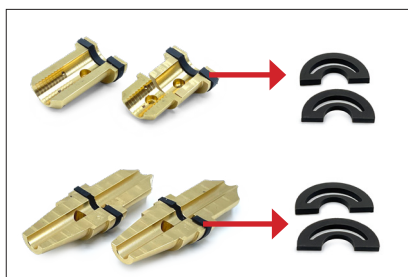


Fig. 2

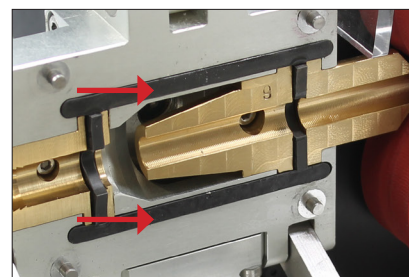


Fig. 3

REPLACING CABLE ENTRY GUIDE

- Pull the cable inlet adapter release knob downward, so that it can be removed. (Fig. 1)
- Insert the adapter of the desired size into the machine (Fig. 2), pulling the adapter release knob downward.

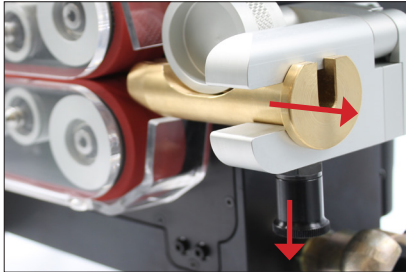


Fig. 1



Fig. 2

SAFETY PRECAUTIONS



READ CAREFULLY FOR YOUR SAFETY

1. **Before starting to supply compressed air**, the operator must verify that all clamps securing the pressure chamber and the duct are fully tightened and correctly positioned.
2. The air hose fitting must be secured using the provided locking system, ensuring that the safety screw is fully tightened. The use of the safety retention cable between the compressed air hose and the machine is **mandatory** (Fig. 1).

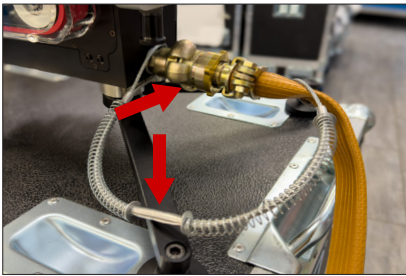


Fig. 1

3. **Before opening the cable adapter block clamps or disconnecting the air hose**, the compressor must be turned off, the air supply and vent valves fully opened, and the pressure gauge must indicate zero pressure.
4. During belt replacement, the operator must first disconnect the batteries and ensure complete depressurization of all internal pneumatic circuits.
5. **In case of damage** to the plexiglass protective panels or the rear cover, all operations must be stopped immediately. The machine must be depressurized and electrically disconnected. Returning the machine to service is strictly prohibited until all damaged parts have been replaced with original spare parts.
6. The machine must not be used without the plexiglass protective panels installed, as these devices are necessary to prevent hand injuries and avoid entanglement of clothing, accessories, or foreign objects in the belt system.
7. If abnormal noises, vibrations, or potential internal air leaks are detected, the operator must immediately stop operations, depressurize the machine, disconnect the electrical power supply, and contact authorized technical support.
8. **Use only original Fibernet components and accessories.** All assembly and installation procedures must comply with official instructions.
9. During operations, no operator may stand along the reel-machine-duct axis.
10. The operator must remain positioned in front of the machine at a minimum distance of **12 in (1 ft)** and must not wear clothing or accessories that extend more than **4 in** from the body.



11. Loose items such as bracelets, necklaces, badge lanyards, or similar accessories must be removed or secured before use.
12. No additional operators or bystanders are permitted within the defined operating area while the machine is running.
13. The duct must be cut to a length that reduces any risk of whipping or impact to the operator in the event of accidental breakage or malfunction.
14. The operator must wear certified work clothing and safety footwear compliant with current regulations.
15. The steel tray must not be removed from the case while the machine is still housed inside it. The tray must be handled exclusively using suitable protective gloves.
16. Before use, the machine must be positioned on a stable surface or on its dedicated case, properly locked. The operator must verify the correct coupling between the blowing machine and the duct, and ensure that the cable is accurately aligned between the two thrust belts.
17. The adapter clamps must not be opened under normal operating conditions when the emergency stop system is disengaged.

MAINTENANCE AND CLEANING

- After use, dry the machine and remove any water residue.
- Clean the machine with a cloth dampened with water (not soaking wet). Do not use other chemical substances.
- Never use alcohol to clean the plexiglass surfaces.
- Do not use water jets to clean Opera Elettrica.
- Compressed air may be used to remove any dust.

REPLACING THE FABELTS

The belts are subject to wear: check them regularly and replace them when they are visibly worn and no longer grip the cable.

To replace the belts, follow these steps:

1. Starting with the upper belt, remove the plexiglass guard by unscrewing the fixing screws. (Fig. 1 - 2)
2. On the first roller on the right, insert an Allen key and turn it counterclockwise to release the belt tension. (Fig. 3)
3. Slide the belt out of its housing. (Fig. 4 - 5)
4. Insert the new belt, taking great care that its groove matches perfectly with that of the rollers. (Fig. 6 - 7)
5. Tension the belt by turning the first roller clockwise with an Allen key (Fig. 8).
6. Reapply the plexiglass guard. (Fig. 9)
7. Repeat the same procedure for the lower belt.



Fig. 1



Fig. 2

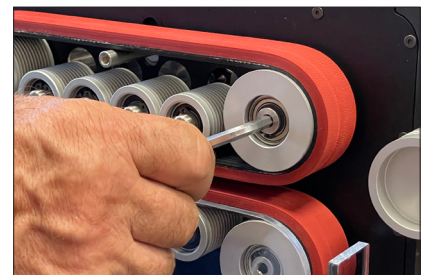


Fig. 3



Fig. 4

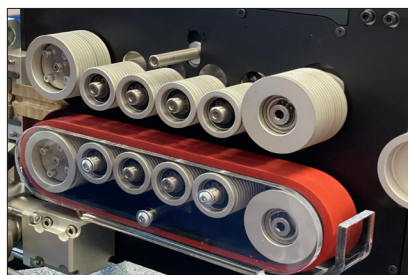


Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9

TROUBLESHOOTING

The machine can display 5 types of error messages:

- Stop
- Max Pushing Force Reached
- Max Slip Reached
- Speed Knob
- No Gear Selected

In all cases the machine stops.

SOLUTION

In the first case, release the emergency stop button as described previously.

After that, the procedure to close the error message is the same in all five cases.

- Turn the speed knob down to zero until it is fully disengaged (you will hear a click).
- Close the error message by pressing the "Close" button.
- Identify the cause of the problem.
- Once the problem has been resolved, resume operations.

For any other issue, contact Fibernet Technical Support:

Tel: +39 06 90.40.50.39 - E-mail: info@fibernet.it

 ERROR MESSAGES

MESSAGE	MEANING	RESET
STOP	Emergency stop activated	1. Release Emergency Stop 2. Turn speed knob to zero until click 3. Press CLOSE on the display
MAX PUSHING FORCE REACHED	Maximum pushing force reached	1. Turn speed knob to zero until click 2. Press CLOSE on the display
MAX SLIP REACHED	Slip exceeded set limit	1. Turn speed knob to zero until click 2. Press CLOSE on the display
SPEED KNOB	Speed knob not at zero on startup	1. Turn speed knob to zero until click 2. Press CLOSE on the display

FAQ - FREQUENTLY ASKED QUESTIONS

1. What is the maximum distance Opera Elettrica can reach?

The maximum distance Opera Elettrica can reach does not depend solely on the machine, but is greatly related to the tubing and the diameter of the cable being laid. The longest laying operation ever carried out by Fibernet is nearly 10,000 ft. There are no limits preventing distances beyond beyond 6,500 ft. In principle, good tubing and a good cable make the difference.

2. What are the cable and duct diameters supported by Opera Elettrica?

Supported cables range from 4 to 16 mm. For tubes, the range is from 7 mm up to 20 mm with the adapter included on the machine, and from 22 mm to 63 mm with an external adapter. The best performance, however, is guaranteed for cables between 4 and 12 mm.

3. In addition to cables, can Opera also lay tubes?

Yes, Opera can lay tubes up to 16 mm in outer diameter.

4. What technical characteristics must a compressor have to be used with Opera?

As a minimum, we recommend a 600-litre, 232 psi compressor to achieve the machine's maximum performance. However, in the absence of a high-performance compressor, or even without a compressor at all, the machine is still able to proceed with cable laying since the motors are electric (naturally, performance may be lower than stated).

5. Is the Lady blowing machine app compatible with Opera Elettrica?

Yes, the app that connects to Lady and Opera Elettrica is the same.

6. Can I blow multiple cables at the same time?

It is not possible to blow multiple cables simultaneously.

7. What happens if the batteries run out or the electronics fail?

To use Opera Elettrica, charged batteries and functioning electronics are required. In the event of an electronic failure, contact your distributor or Fibernet customer service for technical assistance.

TIPS AND TRICKS

CRASH TEST

The Crash Test is a test performed on the optical fiber cable before starting the laying operation. Its purpose is to determine the maximum thrust force to set on Opera Elettrica in order to prevent cable breakage during laying.

The test consists of pushing the cable into a capped duct with a certain force, increasing it each time, until the cable breaks. This allows determining the force that will break the cable, so that this parameter can be set to a lower level – but as high as possible – so that laying operations proceed quickly without damaging the cable.

It is recommended to perform a crash test before a laying operation, since different cable types and different ambient temperatures result in differences in the maximum forces applicable to the cable.

Note: Keep in mind that cables with an outer diameter equal to or greater than 6 mm may require breaking forces that Opera Elettrica cannot deliver.

PROCEDURE

1. Take a piece of duct approximately 10 feet long and cap the end.
2. Attach the duct to Opera Elettrica as shown on p. 14.
3. Lay out the duct as straight as possible to avoid obstacles to cable sliding.
4. Insert the cable into Opera Elettrica following the instructions on p. 15.
5. Select the desired starting maximum thrust force using the Thrust knob (see p. 16) and start laying the cable into the duct at a set speed.
6. At the end of travel, after the cable has hit the duct cap, check whether it has broken or been damaged.
7. If the cable is undamaged, rewind it and repeat the test with a higher thrust force (for example, if you started with a thrust force of 15 lbf, you can try with a thrust force of 20 lbf).
8. Continue increasing the thrust force until the cable breaks or is damaged.
9. Then use a laying thrust force lower than the one that broke or damaged the cable.

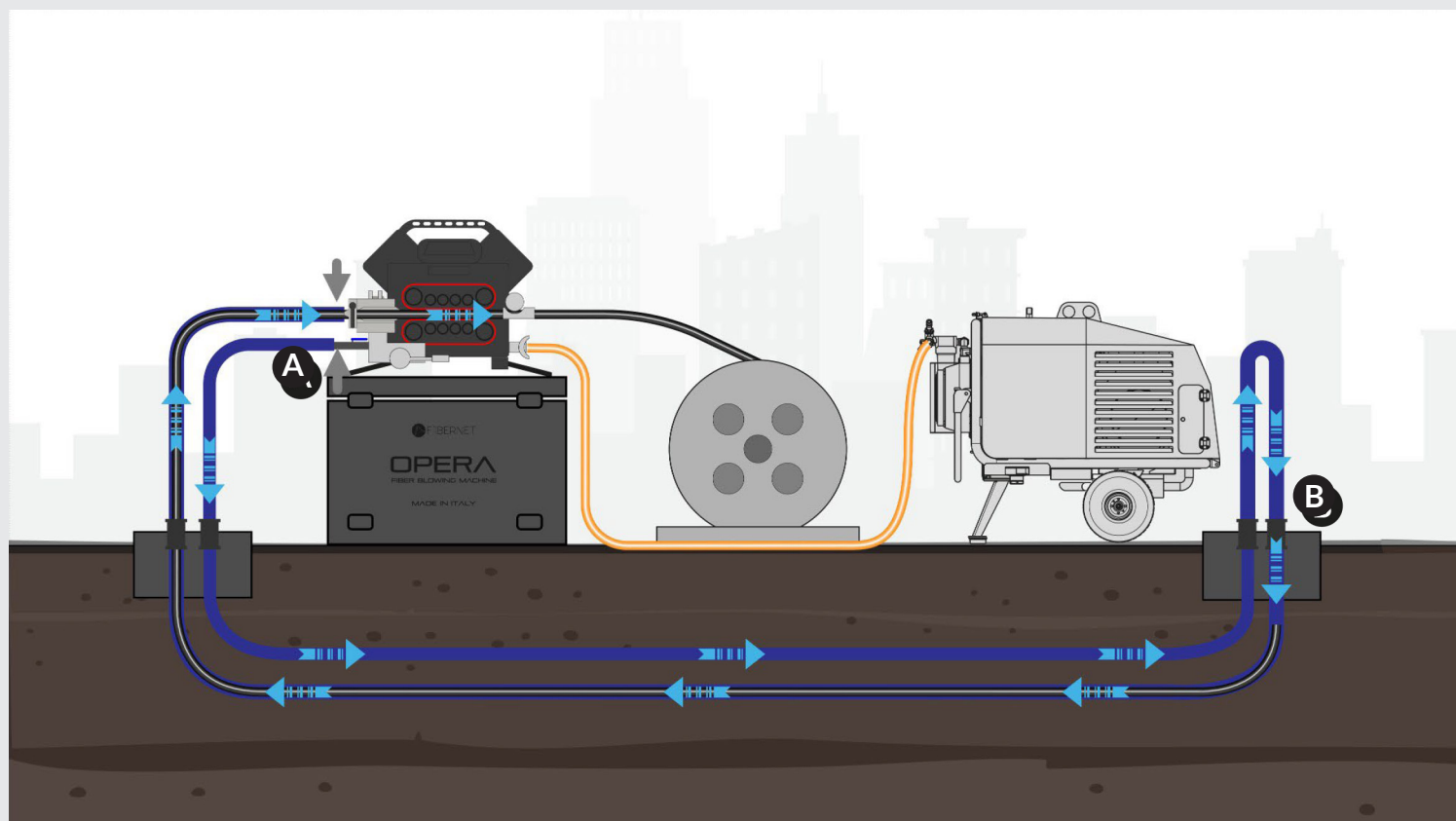


TIPS AND TRICKS

USE OF THE SECONDARY AIR OUTLET / REVERSE

The potential uses of this supplementary outlet (Fig. 1) include:

- 1. Cleaning the duct** before starting the laying operation. The duct can in fact be connected directly to this outlet, without having to clamp it into the duct adapter. This reduces time and makes it easier to insert the sponges for cleaning the duct.
- 2. Facilitating “reverse” operation.** The secondary air outlet allows the machine to recover a cable stuck inside the duct by using Opera’s reverse function together with the compressor’s air. This procedure is only possible if another duct is available that can be connected to the one in which the cable is stuck, creating a circuit. By connecting this second duct to the machine’s secondary air outlet, the compressor’s air will be directed in the opposite direction, helping the cable to retract and free itself.



To use this outlet, insert the dedicated adapter (Fig. 2).

To facilitate Opera Elettrica’s reverse operations and the expulsion of a stuck cable, carry out the following steps:

- Starting from a duct different from the one being worked on (belonging to the same group of underground tubes), connect one of its ends to the secondary air outlet adapter (step A).

- Connect the other end of the duct to the one you were working on, containing the stuck cable. This way, the compressed air will facilitate the reverse operation (step B).
- Keep the duct adapter clamp closed, and be sure to open the air chamber (Fig. 3) to allow the air to escape.
- Start the reverse movement of the belts, adjusting the air flow using the dedicated lever.



Fig. 1



Fig. 2

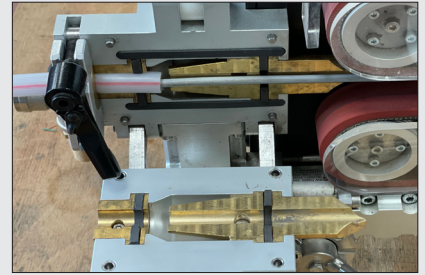


Fig. 3

USING OPERA ELETTRICA WITH THE FIBERNET APP

Opera Elettrica is equipped with a Wi-Fi connection that allows communication with the Fibernet App installed on the dedicated tablet (sold separately).

The Fibernet App allows the user to **record all cable-blowing operations performed with Opera Elettrica**. The same tablet can also be connected to other Fibernet machines equipped with Wi-Fi, making the management and recording of multiple installations easier and more efficient.

The App is pre-installed on the Fibernet tablet and cannot be installed on any other device, as its interface and layout have been specifically designed for the technical specifications of the supplied tablet.



The Fibernet App and the generated reports.

RECORDING OF THE INSTALLATION AND CRASH TEST

The App enables real-time recording of the blowing operation and can also capture data related to the preliminary crash test.

The crash test helps determine with greater accuracy:

- the maximum pushing force,
- the appropriate blowing speed,
- the clamping force of the belts,

so as to prevent damage to the cable during installation.

The recorded data therefore provide clear and objective reference values for setting the correct operational parameters.

STARTING A NEW RECORDING AND REPORTS

Before starting the installation, the machine must be connected to the App via Wi-Fi.
After selecting “*New Installation*”, the user can:

- manually enter all the data related to the upcoming installation, or
- load a previously saved installation and adjust selected parameters.

The fields to be filled in may include, for example:

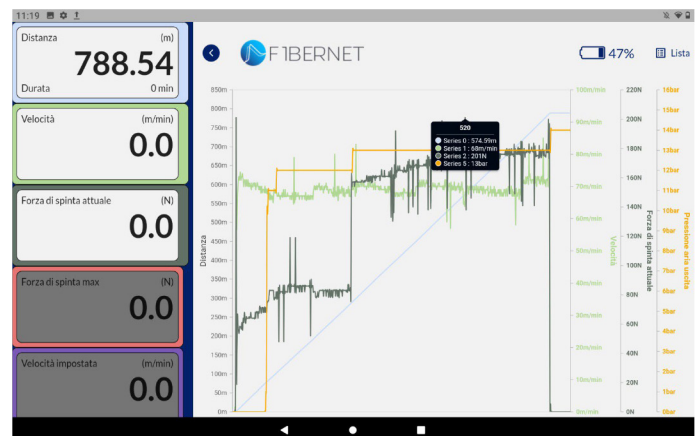
- Project name
- Operator
- Installation address
- GPS position (acquired automatically)
- Type of compressor used
- Type of cable (diameter, manufacturer, colour, etc.)
- Type of duct (diameter, manufacturer, colour, etc.)
- Additional technical information

Once all the required information has been entered, the recording of the installation can begin.

The App displays, in real time, all parameters transmitted by the machine and stores them foot by foot, presenting them in a summary table within the final report.

A particularly useful section of the report is the customisable graph, where the operator can select which parameters to highlight for detailed analysis.

At the end of the installation, comments regarding operating conditions or any difficulties encountered can be added.



The generated report can then be sent by e-mail using the tablet's Wi-Fi connection or exported via the USB port.

ADVANTAGES OF THE FIBERNET APP

Fibernet strongly recommends using the App because it records each installation in detail, providing the installer with objective data to demonstrate the successful outcome of the operation or any issues encountered during the process. **The resulting report can be shared immediately** with the customer or with the internal technical team responsible for the installation.

Analysing the report is highly recommended, as the graph clearly shows how the installation is influenced by many operational variables and how each of them can affect the final result.

For example, the amount of air injected into the duct and the moment it is introduced are crucial factors; studying the report enables the operator to refine and continuously improve their working technique and allows the installer to demonstrate to the customer the quality of the installation performed.

