TRIGGAIR

Product model: TriggAIR

TRIGGAIR USER'S GUIDE AND SAFETY MANUAL

JETTING
DARE TO DO IT DIFFERENTLY.

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1. Clamp Lid
2. Counting Wheel
3. Manometer
4. Track for fiber
5. **Power Button**
6. Display

7. **Quick Connector**
8. Adjustable clutch for fiber protection
9. Drive Wheel
10. Trigger
11. Battery indicator

12. Expander Unit
13. Pressure adjustment
14. Mount for Reelarm
15. Forward / Reverse button
16. Cruise Control
17. Motor
18. Handle
19. Battery

Important Safety Notice

Read and understand all procedures and safety instructions before using the Triggair fiber blowing machine. Please note all safety information on this page and take note of specific safety requirements outlined in the procedures of this manual. Failure to follow these instructions may result in serious personal injury or death.

Warning: The noise level will exceed 70 dB.

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1. General information

The TriggAIR is a unique handheld device for installing fiber optic directly into a duct.
The TriggAIR consist of an air block with max air pressure of 16 bar and duct clamps for 3,0*, 5,0, 7,0 and 8,0 mm ducts. The drive wheel, powered by a 12 V battery, will work together with compressed air to install fibers ranging from 0.5 to 3.0 mm in diameter into an airtight duct, at speeds of 0 to 150 m/min. With the built-in digital LCD display showing speed and distance, along with the manometer, you'll always have complete control of the process. The trigger can be set to your preferred speed. There's a reverse function in case you need to pull out a fiber. *Accessory

The TriggAIR is operated without tools. The built-in adjustable clamp force greatly optimizes the pulling stress on the fiber. The u nit have a n adjustable clutch for fi bre se curity. This fiber pro tection system prevent damages on the fiber if the fiber hits an obstruction.

The TriggAIR is supplied in a hard case including the TriggAIR, box for seals, 2 pcs battery and charger. As option for the TriggAIR you can get a tripod and reel arm kit for pre terminated fiber.

These operating instructions contain a full description of the TriggAIR, which have been designed for the purpose of feeding fiber through a duct. The duct must have previously been installed underground or overhead to receive the fiber cable and must be of enough length on exit to be received by the machine. The duct must be of material with enough compression strength for it to be adequately sealed in the duct clamps of the machine. The duct must be airtight up to a pressure of 16 bar.
Duct size range from 3, 5, 7 and 8 mm, while fiber optic fiber(s) range from 0,5 mm-3 mm.

The TriggAIR consists of an air block/duct clamp that is made in two halves that clamp together around the duct. The duct clamp holds a seal that the fiber optic fiber is feed through before entering the duct. The duct clamp can be used for both 3, 5, 7 and 8 mm ducts. You can switch the fiber seals to fit different sizes of fibers. The duct is mechanically clamped between the duct clamps, preventing movement in any direction.

The fiber cable is pushed and pulled through the duct using air pressure and a drive wheel system. Air pressure from the air block helps pull the fiber through the duct by creating drag, while the drive wheel pushes the fiber forward with minimal resistance.

The use of the TriggAIR for operations other than those described in this manual are considered dangerous and are discouraged. Use of this machine for work other then what is intended, relieves the manufacturer from any responsibility, civil or penal. The manufacturer's responsibility ceases, and the warranty is voided when one of the following occurs:

A. When TriggAIR is used for purposes other than what is detailed in this manual.
B. Tampering and/or modifications carried out without written approval of the manufacturer.
C. Not using original manufactured replacement parts.
D. Poor maintenance.
E. Not using supplied safety devices or equipment.
F. Connection of this unit to machines and/or parts not produced or authorized in writing by the manufacturer.
G. The TriggAIR should not be used to install any fiber other than fiber optic fiber specified withinthe range outlined in this instruction manual.

Jetting AB is not responsible for injuries incurred as a result of improper use of the Triggair.

2. Technical information

2.1. Condition of use

1. Temperature from -28° C to +40° C
2. Humidity from 20 % to 90 %
3. Weather conditions relevant to working conditions
4. Natural and/or artificial lighting of the work site, >200 lux

2.2. Air compressor requirements

1.	Pneumatic pressure	16 bar maximum
2.	Required air flow	0,1-0,3 m3/m
3.	Air hose fittings	Cejn type
4.	Air Conditions:	Dry, clean, and oil-free

2.3. Operational capacities

1.	Pushing force	0-30N
2.	Pushing speed	Adjustable 0-150 m/min
3.	Fiber cable sizes	0,5 mm to 3,0 mm
4.	Duct sizes	3-5-7-8 mm

2.4. Electrical requirements

1.	Power requirements	12V, 4Ah Milwaukee
2.	Power connection	Milwaukee standard

2.5. Physical specifications

1.	Height	260 mm
2.	Width	200 mm
3.	Depth	120 mm
4.	Weight	2,3 kg
5.	Transport box incl. machine, and accessories.	HxWxD 180 x 460 x 350

2.6. Wheel drive specifications

1.	Maximum pushing force	30N
2.	Adjustable clamp force	

2.7. Ductcoupling requirements

1. Must withstand maximum air pressure of 16 bar
2. Must withstand axial loading and vibration
3. Must be a compression type coupler
4. Must fit snugly
5. Duct ends must be cut off squarely and deburred
6. Duct must be fully seated into the connector

3. Safety Regulations

Read and understand all procedures and safety instructions before using the Triggair. Please note all safety information on this page and take note of specific safety requirements explained by procedures outlined in this manual. Failure to follow these instructions may result in serious personal injury, property damage, or death. The equipment must only be handled by trained and authorized personnel who have read and understood all documentation. **In the event of mishaps or breakdown, see section 3.1.**

The machine is delivered in a custom hard case. When transported, the machine shall be placed in the hard case. The hard case must be locked, and when transported by car, the locked case should be strapped in a safe way, preventing it from overturning if the car brakes hard.

3.1. Machine Safety Shutdown

1. Push the Power Button.
2. Close the air valve.
3. Turn off the compressor.
4. Disassemble the unpressurized air hose from the Machine.

3.2. Workplace Safety

1. Wear personal protective equipment: ear protection, hard hat, safety glasses, steel reinforced safety shoes, and light leather work gloves (OSHA-approved or Personal Protective Equipment Directive 89/686/EEC-compliant).
2. The operator is responsible that no children or unauthorized persons are close to the machine while in operation.
3. It's strictly forbidden to wear loose fitted clothing and jewelry when operating the machine.
4. Check machine before starting for worn or damaged parts, loose nuts and bolts etc.
5. If machine is left unattended, ensure that unauthorized use is prevented.
6. Keep long hair securely tied back.
7. The safe use of this equipment requires operators to stand on stable ground.
8. Be careful when handling cables and live wires
9. Be careful when handling pressurized lines and hoses.
10. Stay clear of cables or lines under tension.
11. Use the machine only for its intended purpose.
12. Do not place cable drums too close to the unit. Position the drum 2 meters from machine.
13. Keep hands away from drive wheel and moving parts during operation.
14. Beware of hot and cold surfaces, machine uses compressed air.
15. The machine is equipped with a handle; use this when lifting or handling the machine. The machine weighs only than 2,3 kg (5,0 lb). but when lifting, be careful and avoid personal injury and machine damage.
16. Beware of exposed electrical contacts. Do not touch, or allow metal objects to come into contact.
17. Machine may cause additional fire hazard if involved in an existing fire due to compressed air.
18. No personnel are to be in manholes or ducts when the Fiber Blowing Machine is being operated
19. Ensure no personnel are in the manhole at the far end of the cable run. Severe personal injury may result.
20. The machine must be operated on firm ground when attached to Tripod.
21. Only use the machine for its intended purpose.
22. Do not tamper with pressure relief valves or pressure reducing valves.

23. The clamp lid must be closed and tightened before supplying compressed air. Do not supply air until approximately 30 meters (98 feet) of cable has been installed into the duct.
    FAILURE TO DO SO MAY RESULT IN PERSONAL INJURY, AS THE CABLE COULD BE EJECTED FROM THE FIBER BLOWING MACHINE WITH HIGH FORCE AND VELOCITY.
24. If a cable drum is used, ensure that the cable drum rotates freely on its stand; the cable should leave from the top of the drum.
25. If Reel arm is used, ensure that the cable rotates freely from the reel arm when this accessory is used.
26. The cable should enter the machine in a clean and dry condition. In damp, dusty atmospheres, the cable should be cleaned continuously as it enters the machine.
27. Do not open the air chamber until all the air has been exhausted and the air pressure gauge reads zero.

3.3. Working with air

The Triggair, using pressurized air to install cables at high speeds.
Please observe the following precautions when using the machine:

1. Compressed air generates flying debris. Serious personal injuries can occur.
   Always wear personal protective equipment.
2. Ensure no personnel are in the destination access vault during the blowing operation.
3. Never open the air chamber when pressurised. ⚠ **Do not open until the air pressure gauge read zero.**
4. Only AUTHORIZED, fully trained personnel should operate the air compressor.

3.4. Electrical devices

The motor, controller, and digital display are electrical devices. Electrical shock hazards exist that could result in severe personal injury or death. Observe the following precautions to avoid electrical hazards:

1. Do not operate in or near water. This includes setting the unit on a wet surface or exposing to rain.
2. Do not operate when there is lightening or extreme weather. An earth stake driven into the group as added protection is recommended if there is any chance of extreme weather developing.
3. Do not remove the digital display cover. There are no user-serviceable parts inside. Leave servicing to qualified service personnel.
4. Important safety Information about batteries and chargers:
   - Never submerge the battery in water.
   - Never leave the battery in the machine when cleaning.
   - If you suspect your lithium battery has water inside do not use or attempt to recharge.
   - Never use the charger or battery if the leads, contacts or casings are damaged.
   - Dropping the battery may damage the cells or circuit components inside.
   - A LITHIUM BATTERY THAT HAS BEEN SUBMERGED IN WATER OR SUSTAINED DAMAGE IS A FIRE HAZARD. DO NOT USE THE BATTERY. Place outdoors in a noncombustible container well away from flammable materials. DO NOT RECHARGE THE BATTERY.
   - Avoid charging your battery in temperatures below 5° C or above 40° C.
   - Do not exposing the battery to temperatures below -28° C or above 40° C.
   - Do not wrap or cover as the charger generates heat during use.
   - Never expose the charger to rain, moisture or damp. If you suspect any of thes have occurred then do not use the charger.
   - Only charge your battery using the compatible Jetting charger provided with your battery. Never discharge your battery other than in normal use on the Triggair.
   - At the end of the battery's life, dispose at your local recycling centre.

6. Charging your lithium batteries. Place your battery and charger on a hard level surface and connect the battery to the charger first before plugging in the mains power. Never leave the charger connected to the battery with the mains supply switched off.

   We recommend you check/recharge your battery within 24 hours of use. It may take up to 7 hours for a Lithium battery depending on the capacity of the battery and depth of discharge when charging. Never leave your battery in a discharged condition for prolonged periods, this will reduce the life of the battery and your charger may be unable to recharge it. If the battery is not to be used for a period our advice is to store in a cool, dry place.
   Please ensure the battery is fully charged before storing and charge every month thereafter.

3.5. Working at night requirements

1. Operator must provide portable lighting that achieves a light intensity of at least 200 Lux (Lumens/m^2).

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4. Unpacking the Case

4.1. Components

Each Triggair STD Kit contains the following items:

- TriggAIR main unit with built in clamps for 3,0*, 5,0, 7,0 and 8,0 mm duct
- Cejn Air regulator
- 2 pcs batteries
- Battery charger
- Robust hard case
- Cable seal box
- User manual
- Jetting duct cutter up to 16 mm
- Service kit, seals, o-ring, o-ring cord

*Accessory

5. Set Up the Machine

This manual contains setup and operating instructions for the Triggair.

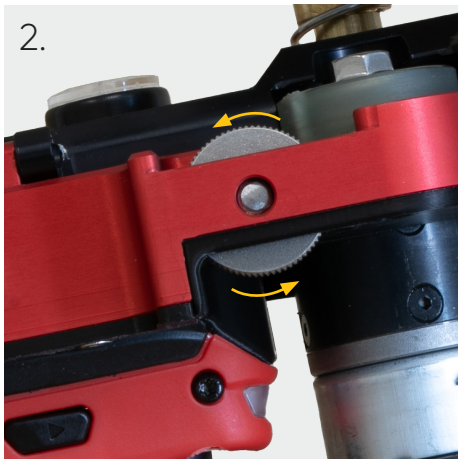
Do not connect power or air supply until the installation is complete.

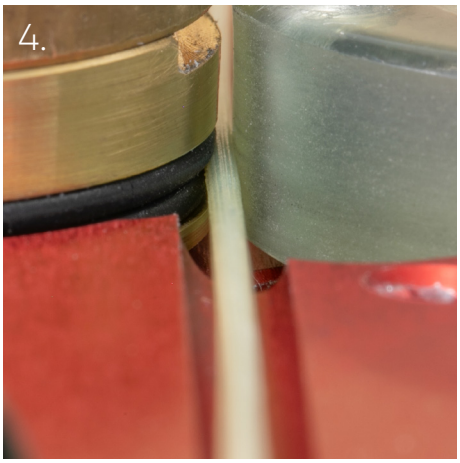
5.1. Determine fiber cable size

1. Determine fiber cable size to be installed.

5.2. Select and install duct and cable seal

1. Select a cable seal that fits the fiber cable to be installed. Pass the fiber cable through the cable seal and place the cable seal in the cable seal groove. Attach a cable head to the end of the fiber cable.
2. Adjust the pressure wheel counterclockwise so that the cable locks into place.
3. Thread the fiber cable into the duct and place the duct in the suitable groove in the duct clamp.
4. Ensure that the cable is centered between the O-rings.
5. Once the duct is in place, secure the configuration by closing the clamp lid and pressing firmly together and tighten expander unit.
   IMPORTANT! The expansion unit is the mechanical function that clamps the duct clamp so that the duct is tight and that the seal between the duct clamp halves works. A certain amount of leakage can be accepted. The lower threaded part (ring)*of the expander unit can be adjusted so that the expander function clamps in an optimal way. This means that the position in which the expander unit is turned downwards to squeeze can be adjusted so that it ends up in an optimal position without interfering with handling against the duct clamp, pressure gauge, etc.
   ⚠ **In case of incorrect handling, the ring of the expander unit will crack and come out of threads.**





5.3. Adjust clutch for fiber security

Adjust if needed, tighten it by turning the knob right and loosing it by turning left.
See section 6 Cable Crash test.

5.4. Connect battery to blowing unit

Do not connect the air supply until the installation is complete. Always use clean, oil-free, and dry air. Route all hoses in a safety way to prevent tripping hazards.
To avoid creating tripping hazards, Place the air hose away from the work area and secure it to a stable object.

5.5. Connect air compressor

1. Ensure the air control valve is closed before connecting the air hose.
2. Connect the compressor hose to the blower unit. The unit uses a standard quick connect air compressor coupling.

5.6. Placement of Cable Drum

The fiber pan/reel should be placed axially perpendicular to the length of micro duct and typically 6 ft (2 m) or more from the TriggAIR. The TriggAIR must be positioned in-line between the fiber to be installed and the micro duct. The fiber should not enter the TriggAIR at an angle of more than 10 degrees from the intended axis.

5.7. Display Functions

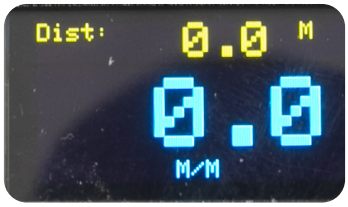
Switching the counter / Meter or Feet

To switch between different units of length, manually rotate the counting wheel to a specific distance (depending on the active length unit in the machine). The machine will alternate between feet and meters until you make an active choice by either turning off the machine or pressing the trigger when your desired choice is active.

1. **Switch from Meter to Feet:**
   Rotate the counting wheel manually to 1.1 meters, wait for about 4 seconds; the machine will count down to the change to feet. Press the trigger when your desired choice is active.
2. **Switch from Feet to Meter:**
   Rotate the counting wheel manually to 3.7 feet, wait for about 4 seconds; the machine will count down for the change to meters. Press the trigger when your desired choice is active

1.

2.



Installed distance meters/feet

Current speed meters/feet

Visit www.jetting.se for instructional videos.

6. Cable Crash test

Fiber Crash Testing is a very quick and easy step to be completed before attempting the installation of fiber cable with the TriggAIR. This test is necessary to set the pushing force control of the motor below the point that the TriggAIR may cause fiber damage as a result of over pushing or encountering an obstruction in the sub-duct system.

Every fiber cable has different pushing values and these values vary depending on duct I.D.

Always wear protective equipment: hard hat, safety glasses, safety shoes and work glove.

IMPORTANT
For the Crash Test to work properly, use the same size fiber and duct that will be used for the job. Jetting cannot be responsible for any fiber damages.

Crash Test: For all types of fibers > 0,5 mm diameter

1. Insert the fiber and seal inside the duct as it would be for the actual installation.
2. Install a 1 to 2 m test length of duct into the TriggAIR clamp.
3. Block the end of the test length of duct.
4. Tighten the wheel pressure on to the fiber with the wheel drive engaged in the forward direction until the fiber starts to install.
5. Ram the fiber into the blocked end of the duct.
6. Fiber cable should stop before the fiber folds over/are damaged. If the fiber cable do not stop go to step 7.
7. Reduce the adjustable clutch for fiber security.
8. Repeat step 6-8 until the fiber folds. This is your push force slip limit.
9. Loosen up the wheel on the fiber a quarter turn and perform test once more to confirm no fold over has occurred. KEEP THIS SETTING APPLIED TO THE FIBER FOR ACTUAL INSTALLATION!
10. Swap out test length of pipe with actual installation duct and proceed to operating the TriggAIR.

7. Machine operations

7.1. Engage wheel drive

The wheel drive can be operated forward and backward. For installation, press the forward/reverse button on the right side of the machine, and then press the trigger. Install the fiber into the duct using push only until the installation hasslowed.

7.2. Supply air

Supply air after feeding the fiber cable approximately 30 meters. Then gradually increase air flow when the machine's speed decreases to reach the target speed.

IMPORTANT

Do not exceed 16 bars when operating the unit

Always wear protective equipment: hard hat, safety glasses, safety shoes and work glove.
Motor is not covered by warranty if motor is overheated.
When exceeding maximum pushing force (clutch fully engaged), let the motor cool down between the cycles.

7.3. Adjust speed

Use the trigger to adjust the drive speed to ensure smooth installation and match the amount of airpressure being used so that the forces are working together, not against one another.

7.3. Cruise control for constant speed

Use the Cruise Control by sliding it sideways onto the trigger. Constant speed in three steps is available:
Step 1. 80 m/m (262 feet/min).
Step 2. 118 m/m (387 feet/min).
Step 3. 147 m/m (482 feet/min.

7.5. Turn of the machine to prevent battery damage

Remember to turn off the machine to protect the battery. When the battery is empty, the engine stops, but the display stays on. Forgetting to switch off the machine can harm the battery.

8. Maintenance

Disconnect the air supply and vent any air pressure before servicing any component on the Triggair. Avoid handling leaking connections, valve seals, or inadequately sealed duct clamps. DANGER! Risk of compressed air penetrating the skin causing air embolism. In case of suspicion, immediately contact emergency medical care.

Procedure	Daily	Weekly	Monthly	60 days	90 days
Clean all units and components thoroughly with a dry cloth.	✓				
If used in moisture weather. Remove the machine from the hard case and leave it to dry completely	✓				
Check/charge batteries in original charger	✓				
Inspect hoses, cables, connections, fastening elements, couplings and screws for any signs of damage or looseness.	✓				
Check wheels for wear. Replace if excess wear has occurred. Excessive wear has occurred when the wheels are no longer able to effectively grip the fiber optic		✓			
Duct seal replacement					✓
Seal replacement	Every 10 km unless excessive wear is occurring				
Wheel cleaning and tightening	Inspect wheel and tighten before and after every blowing session. Clean after every session, or when necessary.				

9. Repair & Service

Repair & Service should be performed by Authorized Jetting Service Center or Jetting AB.
See Authorized Jetting Service Center at www.jetting.se.

10. Troubleshooting

Fiber becomes jammed in the duct	1. Notify the people at the other end of the duct that an issue has occurred, and the operator will shut down the system. 2. Turn off the pneumatic air supply using the air control valve to reduce air pressure from the duct and duct clamp. 3. Use the cable counter or measure the cable to determine the location of the blockage. 4. Inform the supervisor of the problem and collaborate on a solution accordingly.
Wheels does not pull the fiber	1. Assist the cable drum by pulling the cable towards the machine. 2. Adjust the clamping force. 3. Inspect the surfaces of the slack coupling, they should be clean and dry.
Hard to restart after stop	1. Put more/less air to the system. 2. The wheel drive can be restarted after the air pressure has increased and stabilized.
Wheel feed does not start	1. Battery is low, check battery indicator.

11. Documentation and Recycling

Order Documentation
For documentation, user manuals, and technical information, please visit www.jetting.se. Alternatively, contact your local distributor for assistance.

Feedback on Documentation
Comments regarding our product documentation can be sent to info@jetting.se.
We appreciate all feedback.

Disposal
Adhere to the regulations of your country regarding the recycling and disposal of the product.

12. EC Declaration of Conformity

NY EC-DEKLARATION SKA IN

13. Notes

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