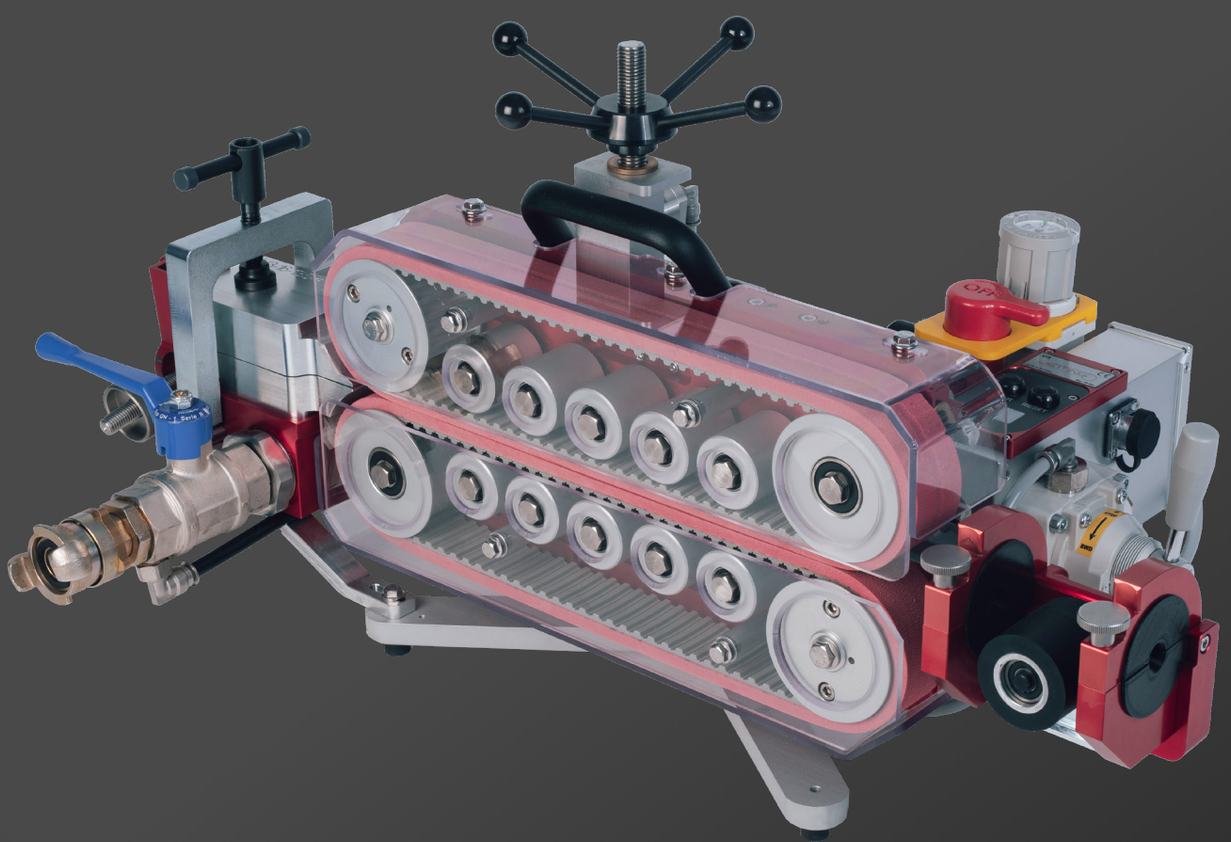
# V3

## Product model/type: V3 2017-SW > 3.0

V3 USER'S GUIDE AND SAFETY MANUAL




JETTING
DARE TO DO IT DIFFERENTLY.

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## Important safety notice

Read and understand all procedures and safety instructions before using the V3 cable blower. Observe all safety information on this page and note specific safety requirements as explained by procedures in this manual. Failure to follow these instructions could result in serious personal injury or death.



Caution: Noise will exceed 70 db

## Manufacturer

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# 1. General information

The V3 is a unique device for installing fiber optic cable directly into pipe. The V3 is comprised of an air block and a belt drive that, when combined installs a cable into an airtight pipe, run at speeds of 0 to 0-120 m/min.

The V3 greatly reduces pulling stress on the cable. The adjustable push force of the belt drive will stall the motor or slip in the belt drive if the cable hits an obstruction.

The V3 comes standard with a Digital LCD meter display, pipe packs and a service kit in aluminium case.

These operating instructions contain a full description of the V3, which have been designed for the purpose of feeding fiber cable through pipes of uniform cross section. The pipe must have previously been installed underground or overhead to receive the fiber optic cable and must be of sufficient length on exit to be received by the machine. The pipe must be of material with sufficient compression strength for it to be adequately sealed in the pipe clamps of the machine. The pipe must be airtight up to a pressure of 16 bar. Pipe(s) sizes range from 10 mm-63 mm, while fiber optic cable(s) range from 4 mm-40 mm.

The V3 consists of an air block that is made in two halves that clamp together around the pipe. The pipe clamps hold a seal that the fiber optic cable is fed through before entering the pipe. The pipe clamps and cable seals can be interchanged to accommodate different pipe and cable sizes. The pipe is mechanically clamped between the pipe clamps at the exit of the air block, preventing movement in any direction. Seals conform around the pipe when clamped.

The fiber optic cable is fed through the pipe by a combined pulling/pushing force. The pulling force is achieved when pressurized air is fed into the air block and forced into the pipe, generating drag on the fiber cable from airflow passing over it. The pushing force is created by engaging the belt drive system. As the belt drive feeds fiber cable into the pipe, drag force is created by the airflow. The fiber optic cable floats in the pipe, minimizing any resistance to being pushed in by the belt drive.

The use of the V3 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 V3 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 V3 should not be used to install any cable other than fiber optic cable specified within the range outlined in this instruction manual.
H. The V3 should not be run without oil in the oil mist canister, this will immediately void the warranty.

Jetting is not responsible for injuries incurred as a result of improper use of the V3.

## 2. Technical information

**A. Condition of use**

1. Temperature from -15° 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

**B. Air compressor requirements**

| | | |
|---|---|---|
| 1. | Pneumatic pressure | 16 bar maximum |
| 2. | Required air flow | 0,14 - 11 m3/min |
| 3. | Air hose fittings | 1/" European quick connect |
| 4. | Maximum pressure to motors | 6 bar |
| 5. | Clean dry air only | |

**C. Operational capacities**

| | | |
|---|---|---|
| 1. | Pushing force | 1200 N max push force |
| 2. | Pushing speed | 120 m/min maximum |
| 3. | Cable sizes | 4-40 mm |
| 4. | Pipe sizes | 10-63 mm |

**D. Electrical requirements**

| | | |
|---|---|---|
| 1. | Power requirements | 9 V alkaline battery |
| 2. | Power connection | Battery compartment |

**E. Physical specifications**

| | | |
|---|---|---|
| 1. | Height | 300 mm |
| 2. | Length | 700 mm |
| 3. | Width | 310 mm |
| 4. | Weight | 22 kg |

**F. Belt drive specifications**

1. Maximum clamping force is 2000 N
2. Constant cable centerline design
3. Forward
4. Independent pushing drive belts
5. Touch guards

**G. Duct coupling 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. Pipe ends must be cut off squarely and deburred
6. Pipe must be fully seated into the coupler

## 3. Safe operating practices

Inappropriate operation could result in serious personal injury, property damage or death. Read and understand all procedures and safety instructions before using the V3. Observe all safety information on this page and note specific safety requirements as explained by procedures called out in this manual. Failure to follow these instructions could result in serious personal injury, property damage or death.

**A. Work area safety**

1. Wear personal protective equipment: hard hat, safety glasses, safety shoes, and light leather work gloves (OSHA approved or personal protective equipment directive 89/686/EEC compliant).
2. Wear close fitting clothing to avoid clothing getting trapped in belt drive.
3. Keep long hair tucked back and refrain from wearing any jewlery.
4. The safe operation of this equipment requires that the operators be on stable footing.
5. Stay clear of cables or lines under tension.
6. Stay clear of pressurized line and pipe.
7. Use the blower only for its intended purpose.
8. Do not place cable reel too close to unit. Place the reel far enough away from the unit to ensure proper control.
9. Keep hands away from belt drive while blower is in operation.

**B. Pneumatic devices**

The V3 is a pneumatic device, using pressurized air to project cable at high velocities. Please observe the following precautions when operating the blower:

1. Forced air creates flying debris. Always wear personal protective equipment. Severe personal injury could result.
2. Ensure no personnel are in the destination access vault during the blowing operation. It could result in severe personal injury.

**C. Electrical devices**

The 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 ground 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. Refer servicing to qualified service personnel.

**D. Working at night requirements**

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

**Misuse will void warranty**

## 4. Unpacking the box

**A. Blower components**

Each V3 STD Kit contains the following items:

- V3 main unit
- Machine mount
- Quick Connect
- Pipe clamps (varying related to order)
- Cable Seals Kit (varying related to order)

## 5. Set up the blower

This manual contains setup and operating instructions for the V3.


Do not connect air supply until setup is complete.

**A. Determine fiber size**

• Determine cable size to be installed.

**B. Select cable seal & pipe**

• Choose the correct cable seal and air block for the particular application according to pipe and cable size.

**C. Install cable seal & cable in air block**

• Install the appropriate cable seal on the fiber. Make sure orientation of seal on fiber is correct so that it will seat in the air block properly. The seal lip of the cable seal should be facing the pipe end.

• Once the cable seal is positioned properly on the cable, install the cable seal in the bottom half of the appropriate air block.

**D. Install pipe**

• Place cable seal over the cable.

• Position the pipe properly in the bottom half of the air block.

• Ensure there is adequate length of pipe available to avoid unnecessary strain on the pipe.

• Place cable into pipe, place cable and seal into air block.

• Once the pipe is in place, secure the configuration by installing the top half of the air block and pressing firmly together.

**E. Install pipe & fiber in blower**

• Loosen the knob on the air block assembly. Open the air block cover. Insert the pipe into the air block as shown. Close air block cover and hand tighten knob to secure.

**F. Install cable in belt drive and tighten**

- Adjust rear guide and measurement wheel to fit the cable and make sure the measurement wheel doesn't slip.
- Insert pipe assembly and tighten knob into air block.
- Feed the cable between belt drive and through the rear fiber guide.
- Tighten belt drive using the down screw knob to ensure even pressure on the cable.
- Tighten down so that the belts no longer slip at the push force setting determined in the crash test procedure. Do not over tighten.

**G. Power on the counter unit**

**H. Connect air compressor**

NOTE: Ensure the air control valve is off before connecting the air hose.

- Attach the air compressor hose to the air compressor.
- Then connect the compressor hose to the blower unit. The unit uses a Camlock coupling (an adaptor from Camclock to claw connector can be provided).


NOTE: Always use clean and dry air.

NOTE: Route all hoses properly to prevent tripping hazard.

To avoid creating a trip hazard always route air hose out of the way and secured to a stable object.

The fiber cable reel should be placed axially perpendicular to the length of the micro pope and typically 6 ft (2 m) or more from the V3. The V3 must be positioned in-line between the fiber cable to be installed and the micro pipe. The fiber should not enter the V3 at an angle of more than 10 degrees from the intended axis of travel.

**I. Display**

- Start the display by pushing the POWER button. Reset the values by pushing RESET.
- The V3 display shows number of meter of blown fiber cable into the duct(m) and current speed (m/m meter/minute).
- For V3-JLP versions it shows the connection with the JetLogger documentation system as follows: Connected (LOGON)/Disconnected (LOGOF) & low battery (LOWB).
- When the machine is not in operation, the display should be switched off in order to save the battery.

## 6. Crash test

Cable Crash Testing is a very quick and easy step to be completed before attempting the installation of cable with the V3. This test is necessary to set the push force control of the motor below the point that the V3 may cause cable damage as a result of over pushing or encountering an obstruction in the sub-pipe system.

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


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


IMPORTANT

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

**Crash Test: For all types of cables > 4 mm diameter**

Set belt clamp force to the lowest possible setting that will allow for a desirable installation speed.

1. Insert the cable and seal inside the pipe pack as it would be for the actual installation.
2. Install a 1 to 2m test length of pipe into the V3 pipe clamp and insert pipe clamp into the air block.
3. Block the end of the test length of pipe.
4. Tighten down belts on to the fiber with the belt drive engaged in the forward direction until the fiber starts to install.
5. Ram the fiber into the blocked end of the pipe.
6. Belt slip should occur on the fiber before the fiber folds over.
7. Tighten down belts on the fiber a half turn.
8. Repeat step 6-7 until the cable folds. This is your push force slip limit.
9. Loosen up the belts 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 pipe and proceed to operating the V3.

## 7. Blower operations

**1. Verify adjustable push force**

Verify that adjustable pushing force is set to the established crash test value and that the Easy Joystick Controller is in STOP position. The regulator should be on 0 bar – check by lifting the dial ring and turn anti clockwise.

**2. Engage belt drive with Easy Joystick Controller**

Make sure the Easy Joystick Controller is in the STOP position. The belt drive can be operated in FORWARD & REVERSE. The cable installation into the duct should be by the machines pushing force only and not in combination with compressed air as a start. See section 3 below "Engage air". When the engine speed drops, air should be applied in steps. Maximum pushing force is reached at 6 bars to the engines.

To start the process for installation, set the regulator to the desired level – e.g. 2,0 to 6,5 bar - by lifting the dial ring and turn clockwise. Gently push the Easy Joystick Controller into FORWARD position.

Using the Easy Joystick Controller, you control the speed and performance with a stepless joystick. Selected drive modes are met by moving the Easy Joystick Controller to the positions FORWARD, STOP & REVERSE.

**3. Engage air**

Slowly open the air control valve to allow air flow to the air block. Do not apply maximum air pressure and flow at initial air engagement. Do not open air supply before adequate fiber has been pushed in (> 100M), in order to avoid air stopping the fiber blowing procedure.


IMPORTANT


Do not exceed 16 bars when operating the unit.
Forced air creates flying debris.
Always wear personal protective equipment.

**4. Adjust speed**

Use the Easy Joystick Controller to adjust the belt drive speed to ensure smooth installation. Adjust in combination with the pressure regulator by lifting the dial ring and turn anti clockwise (to reduce power) or clockwise (to increase power) and match the amount of air pressure being used so that the forces are working together, not against one another.

**5. Install fiber**

It may be helpful to guide/apply back tension to the fiber using your hand at the cable entrance of the machine to maintain control over the fiber. Always use a cloth in order to secure clean fiber enter into the machine. This will decrease the daily maintenance/cleaning of measure wheel, drive belts, cable guides & duct clamp compartment. It will also prevent dirt, dust and water ingress into the machine.

**6. Manage operation**

To reduce speed on the belt drive, pull back the Easy Joystick Controller slowly or reduce the pressure regulator by lifting the dial ring and turn anti clockwise.

To stop the belt drive, pull back the Easy Joystick Controller to STOP position, or reduce the pressure regulator by lifting the dial ring and turn anti clockwise to zero.

At emergency situations, turn the red emergency shut off valve in the OFF direction clockwise.

**7. Check water separator and oil lubricator**

Check/empty the water separator regularly to secure that no water will go into the motors and make sure that oil is in the automatic motor lubricator (use Jetting Pneumatic oil 32). The lubrictation feeds the air intake with about 1 drop per 30 seconds. See also under section 8 Maintenance.

# 8. Maintenance

| Procedure | Daily | Weekly | Monthly | 60 days | 90 days |
|---|---|---|---|---|---|
| Clean all assemblies and components thoroughly with dry cloth | X | | | | |
| Inspect fasteners and screws | X | | | | |
| Check Belt Tension. Replace if excess wear has occurred. Excessive wear has occurred when the belts are no longer able to effectively grip the cable optic cable | X | | | | |
| Pipe Pack Seal Replacement | | | | | X |
| Belts Replacement | Every 50 km unless excessive wear is occurring | | | | |
| Seals Replacement | Every 10 km unless excessive wear is occurring | | | | |
| IMPORTANT!<br>• Check oil level daily and refill container if needed. Oil level should never be completely empty<br>• Check oil dispenser unit if it´s working by looking at the small glass bulb on top, if properly adjusted and in working order it will dispense 3 drops/min otherwise adjust it by turning it to the correct amount<br>• (Do not run engines with empty or defect oil dispenser!) | How-to<br>• Turn off the machine<br>• Make sure that the machine is level<br>• Un-screw the glass container (no tools needed)<br>• Refill with "Jetting Lubrication 1L Oil32" art.nr: 1030<br>• Screw it back on (no tools needed) | | | | |
| • Always dry clean air<br>• Check/empty water separator | • Use compressor with water separator/dryer<br>• Placed on the machine | | | | |
| • If machine is not used every day or you leave it for the weekend/holiday we recommend cleaning and lubricate the motors | • Inject a good gulp of oil into the motors an rotate the motors | | | | |


Avoid handling leaking couplings, valve seal or inadequately sealed pipe in air block.

Disconnect air supply and exhaust any air pressure before servicing any component on the V3.

DANGER! Risk of air under pressure penetrating skin.

## 9. Troubleshooting guide

| | |
|---|---|
| Cable becomes jammed in the pipe | 1. Inform the people at the other end of the pipe that a problem has been experienced and the operator is going to shut down the system.<br>2. Shut off the pneumatic air supply with the air control valve, allowing the air pressure to be depressurized from the pipe and the air block.<br>3. Using the counter or the measurement on the cable, determine where the blockage might be located.<br>4. Notify supervisor about problem and determine a solution accordingly. |
| Belt feed does not pull the cable | 1. Assist the reel by pushing it and/or by pulling the cable of the reel. |
| The cable run is hard to restart after having stopped | 1. Put air to the system with the belt drive. The belt can be restarted after the air pressure has increased and stabilized. |
| Belt feed does not start | 1. Estop may still be engaged. Reset the estop button by turning it clockwise.<br>2. Check oil canister. |
| The display is down or is acting strange /unusual values | 1. Check the 9 V battery. |

## 10. Documentation and disposal

**Ordering documentation**

Documentation, user instructions and technical information can be ordered by contacting Jetting AB by phone or mail, +46 502-65 90 10, info@jetting.se.

**Documentation feedback**

Comments to our product documentation can be sent to info@jetting.se. We appreciate your comments.

**Disposal**

Please follow the regulations for your country regarding how to recycle parts and dispose products.

# 11. EC Declaration of conformity

## EC Declaration of Conformity

**Manufacturers Name:** Jetting AB

**Manufacturers' Address:** Murgatan1, 52235 Tidaholm Sweden

**Declare that the machinery described below conforms to health and safety requirements of Parts 1and 2.2 of Annex I of Machinery Directive 2006/42/EC. Confidential technical documentation has been compiled as described in Annex VII Part A of Machinery Directive 2006/42/EC and is available to European national authorities on written request. If a request is received documentation will be transmitted either electronically or by post.**

**Description:** **V3 Fiber jetting machine**

**The following standards have either been complied with in part or in full or used for reference as relevant:**

| | | |
|---|---|---|
| EN ISO 12100: 2006 | Safety of machinery | Safety of machinery - General principles for design - Risk assessment and risk reduction |
| EN 60204-1:2006 | Safety of machinery | Electrical equipment of machines - Part 1: General requirements |
| EN ISO 13849-1:2008 | Safety of machinery | Safety Related Parts of Control Systems – Part 1 General Principals for Design |
| EN 614-1:2006+A1:2009 | Safety of machinery | Ergonomic design principles - Part 1: Terminology and general principles |
| EN 614-2:2000+A1:2008 | Safety of machinery | Ergonomic design principles - Part 2: Interactions between the design of machinery and work tasks |
| EN 953:1997+A1:2009 | Safety of machinery | General requirements for the design and construction of guards. |
| ENISO 11202/A1 1997 | Noise | Measurement of emission sound pressure levels at a workstation and at other specified positions. |
| ISO 20643:2005 | Mechanical vibration | Hand-held and hand-guided machinery - Principles for evaluation of vibration emission |
| EN 61000-6-3:2007 | | EMC - Generic standards - Emission standard for residentia commercial and light-industrial environments |
| EN 61000-6-2: 2001 | | EMC - Generic standards - Immunity for – industrial environments. |

**Full Name of responsible person and place of signing**

Håkan Johansson **Position** Manager

**Signature:** Håkan Johansson **Date** 20180115



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## 12. Notes

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