GAMM-BUD®

Operating Manual

Fiber Optic Cable Blowing Machine

Blue Dragon Jet

Budget PLUS

The images in this manual are for reference only. The actual appearance of the product may differ from the pictures.

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Safety Precautions

General Safety Precautions

As the general rule, the owner of the machine is responsible for maintaining good technical condition of the machine and safe work environment. The machine is built in accordance with the latest technical knowledge and general safety standards. However, a serious injury may occur to personnel operating the machine or other parties present near it while in operation.

The machine may only be used for its intended purpose, ie. blowing fiber optic cables and only if its technical condition is impeccable.

Prior to operating the machine, its technical specifications must be learnt, as well as the ambient temperature must be measured. The appropriate use of the machine is described in detail on the following pages.

The basic condition for safe operation and proper functioning of the machine is the knowledge of the basic safety instructions and general safety regulations. In the workplace where the machine is operated Health and Safety regulations must be strictly meet at all times. Both, when operating and servicing the machine, good care should be taken to keeping the workplace clean and orderly.

In the event of any modifications to the design of the machine or operating in ways different from those intended, the Manufacturer is exempt from any liability and warranty service.

Liabilities of the machine's owner

It is the owner's responsibility to make sure that only properly trained personnel is allowed to operate the machine. Such persons must be:

- familiar with Health and Safety regulations
- familiar with the operating instructions of the machine
- familiar with manual instructions and aware of warnings related to work safety, and
- whose knowledge of work safety is checked at regular intervals.

Service and repair works may be carried out by only trained personnel and any defect that may affect work safety must be removed immediately.

Liabilities of personnel operating the machine

All persons working with the machine are obliged to:

- comply with generally applicable safety regulations
- learn and comply with the safety precautions while operating the machine.

Warranty and liability of the producer.

Unless stated otherwise, the general terms conditions of sale and delivery by GAMM BUD Ltd apply.

The producer shall have no liability for damage of property or injuries, if these occur due to one or more of the following:

- operating the machine in violation of its operating instructions and intended use
- incorrect installation, operation or maintenance of the machine
- operating the machine with defective, incorrectly installed or missing safety guards
- unauthorized design changes to the machine or improper performance parameters of the machine
- allowing for excessive wear and tear of some parts of the machine
- repairs or operations of the machine carried out incorrectly
- accidents due to external factors or force majeure.

Detailed recommendations

Personnel operating the machine must read operating manual beforehand and comply with its provisions while operating the machine.

Failure to comply with safety instructions and general Health and Safety regulations can result in accidents or death.

WARNING! Keep hands away from rotating parts of the machine due to possible injury.

Maintenance and repair work on pneumatic equipment may only be performed only by trained personnel.

Compliance with environmental regulations

Oils should not be mixed with any other liquids. They should not be poured into drains or waste or onto the ground. All the oils, greases and other liquids used during repairs or maintenance of the machine should be collected in special containers, stored, transported and disposed of in accordance with the pertaining laws and regulations.

Product Description

Blue Dragon Jet Budget PLUS is a blowing machine for microcables. It is used for blowing fiber optic microcables into microducts with use of a compressed air.
During blowing, the fiber optic cable is moved by the feeding mechanism and the blowing head equipped with a gasket.
Two rollers ensure the transfer of a force onto the blown cable. The top roller can be raised and lowered using the knob.

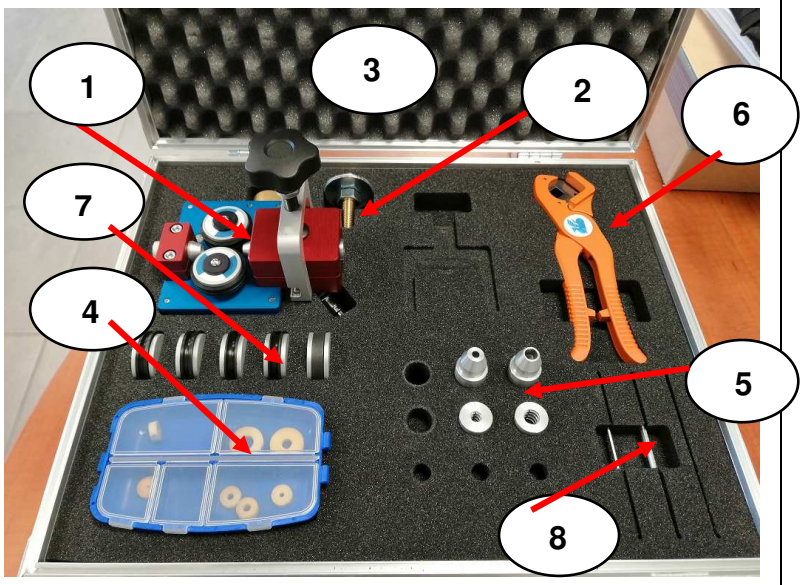
The top roller is driven by a cordless electric screwdriver.

The rollers pressed against the cable, force it to move forward.

The pushing force transferred by the rollers onto the cable is supported with the stream of compressed air fed through the blowing head into the microduct.

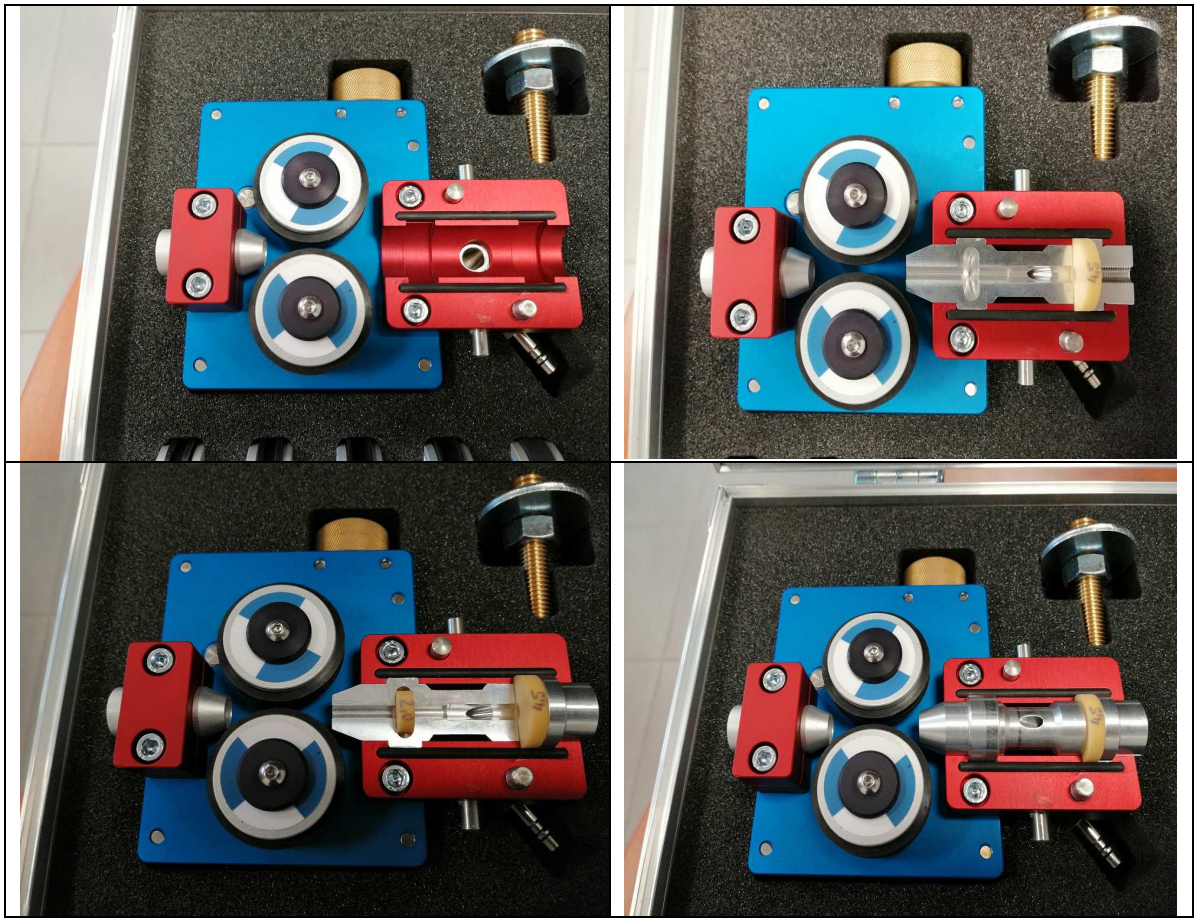
The blowing speed can be adjusted by changing the speed of the screwdriver. In addition, the correct setting of the screwdriver's clutch protects the cable from breaking when the cable is suddenly stopped.

Sturdy aluminium casing provides stability of the machine while maintaining a light weight.

Standard equipment: 1) BDJ budget Plus drive 2) BDJ budget Plus blowing head 3) Carrying case 4) Gaskets kit 5) Bushings kit 6) Microduct cutters 7) Spare drive wheels 8) Tools 9) Airhose 10 m (not in a picture)	

Operating the Blowing Head

The BDJ Budget PLUS blower can blow microcables into microducts with diameters of 5,7 and 10 mm. Prior to blowing in, the blowing head must be properly set up by installing a suitable gaskets and bushings.



Install a cable leading inner bushing inside the blowing head. The size of the bushing should match in size the diameter of the cable. Properly selected bushing should allow free movement of the cable. At the same time the clearance (looseness) between the cable and the bushing should not be too large. Too much looseness (clearance) between the cable and the bushing may lead to a damaging cable during blowing (the cable may break off). Then you should install a proper handle (bushing) for the microduct.

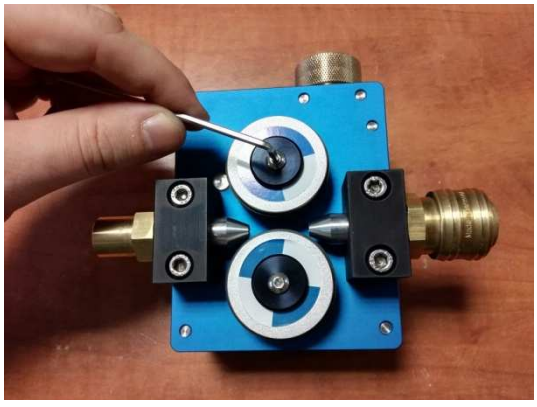
After installing both: inner bushing, and the microduct bushing, a cable gasket should be selected. A properly selected cable gasket, should move freely over the cable without a resistance. The gasket should be installed inside the inner bushing. In the end, the drive should be closed with the top part and fastened with the screw, in order to seal the blowing head. Use 4 mm Allen key to do that.

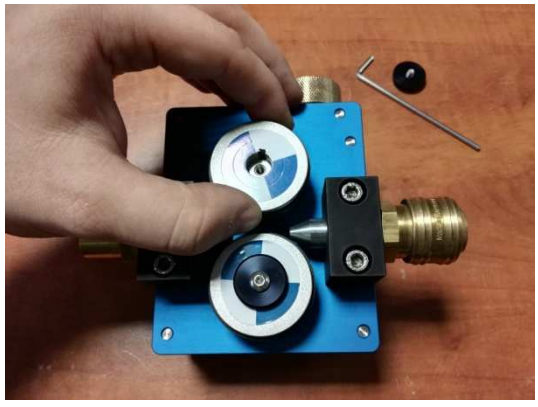
The facilitate the operation of the unit, all the bushings are arranged in groups inside the suitcase according to their intended purpose.

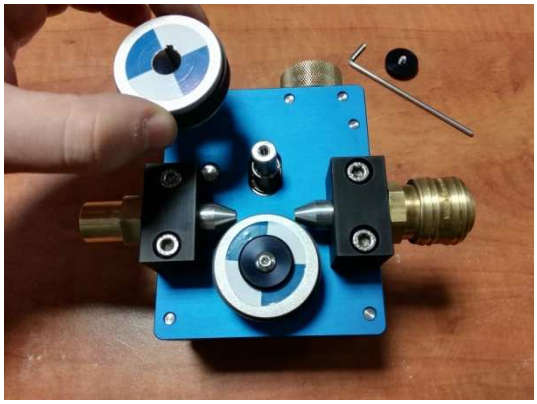
Drive Operation

Prior to blowing the cables, the appropriate drive wheels should be selected. The set includes wheels with a 2, 4, 6 mm groove and one set of flat wheels without a groove, that provides pressure.

In order to replace the drive wheel, use the provided 2.5mm Allen key to unscrew the screw, remove the drive-locking shield and replace the wheel.







Blowing the cable

Prior to blowing the cable, the head and drive of the machine must be properly configured in accordance with the above description (Blowing Head and Drive Operation).

Then the cable should be inserted into the drive through the drive rollers and slid into the blowing head. Insert a few meters of cable into the microduct. Connect the pneumatic hose to the head, close the valve on the hose and connect the hose to the compressor.

Lower the top drive roller onto the cable and press lightly. Depending on the clamping force and the friction factor between the cable and the rubber bands on the drive wheels, the pushing force is created.

Too strong or too weak pressure may lead to cable damage or to an excessive wear of the drive rollers.

In order to initiate the blowing, install a cordless screwdriver at the bottom drive roller. The cable will be pushed into the microduct. Pay attention to the machine's stability. if necessary, fasten it with the safety belt. The cable from the drum should be unwind without resistance. If necessary, provide manual unwinding.

Blowing speed can be adjusted with the rotation speed of the cordless screwdriver. To support the blowing process, gradually increase the air pressure applied to the blowing head.

Make sure, that nothing gets between the drive rollers while the machine is being operated.

After finishing blowing, turn off the cordless screwdriver and close the air supply to the blowing head.

Technical specifications

Cable diameter	0.5 - 6 mm
Microduct diameter	5 ,7,10 mm
Lenght x width x hight (the machine)	150 x 160 x 130 mm
Weight	2 kg
Weight including accessories	8 kg
Maximum air pressure (head)	15 bar
Speed	About 60 m/min

Operation

Risk of property damage!

After each use, the entire machine must be thoroughly cleaned, in particular the drive rollers, head and pipes.

Follow the operating instructions included in the operating manual!
The machine should be regularly cleaned and adjusted.
The machine may only be operated by a trained personnel!
Use only original spare parts.

Risk of injury!

After performing any repairs or adjustments, check if the bolts and nuts are correctly tightened.

Check all connections and air ducts regularly, any defects or damage must be repaired immediately.

During the warranty period, the machine must be subject to mandatory inspection at an authorized service centre (after 6-8 months)!
The warranty condition is proper identification of the blowing unit, based on a nameplate including a serial number.
Removing the nameplate by the user results in lack of such identification,
which consequently may lead into charging a customer for every warranty repair.

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Equipment:

Item	Name
1.	Microduct handle: 5 mm 7 mm 10 mm
2.	Drive wheels: 1 x without a groove 2 x with a groove 2 mm 2 x with a groove 4 mm 2 x with a groove 6 mm
3.	Cable gaskets: 1.0 mm 2.0 mm 3.0 mm 4.0 mm 5.0 mm 6.0 mm Microduct gaskets: 4,5 mm 6,5 mm 8,3 mm
4.	Inner head bushings: 4 mm 5 mm 8,3 mm
5.	Air hose 10 m
6.	Tools: Allen key 4mm Allen key 2.5mm Microduct cutter