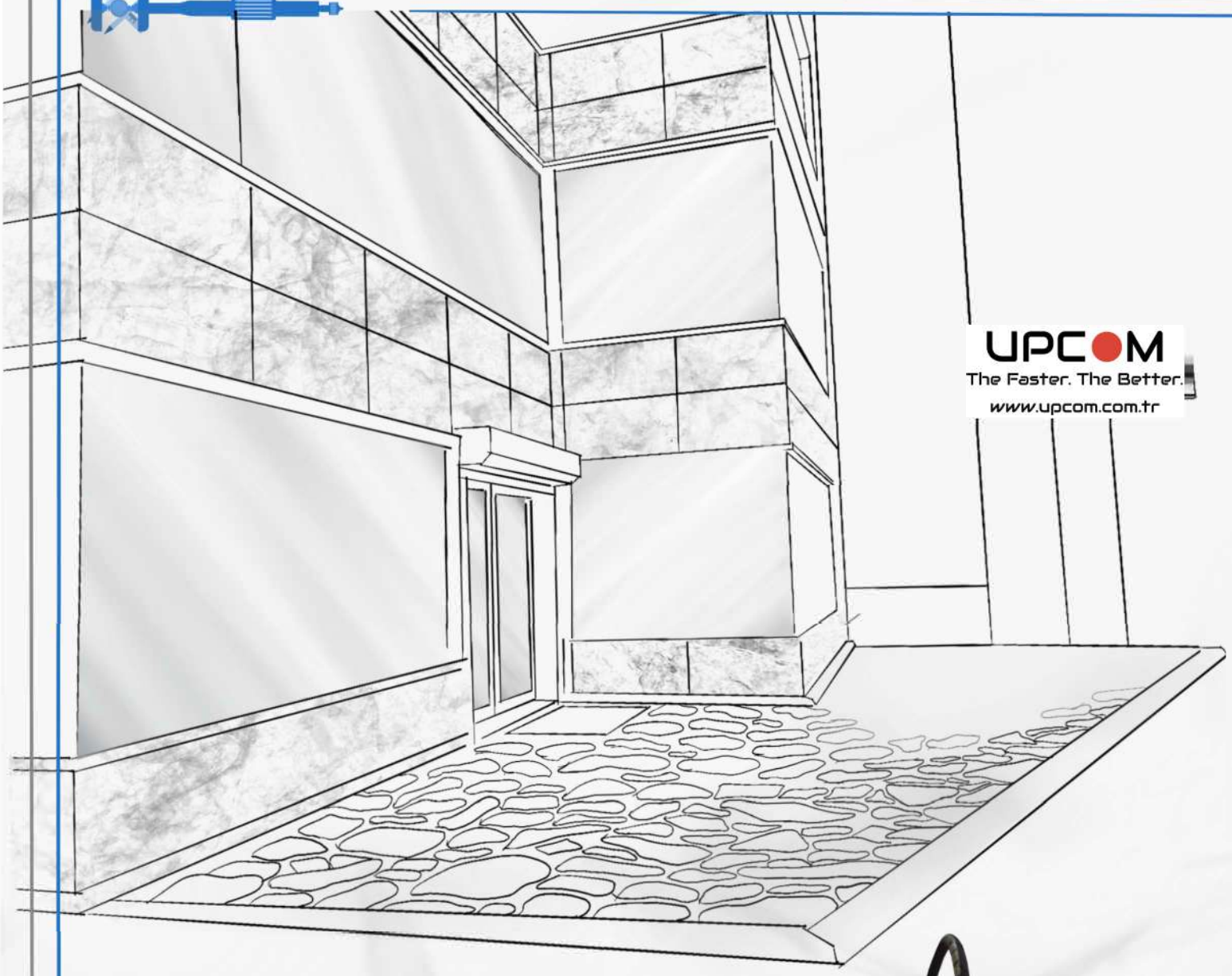

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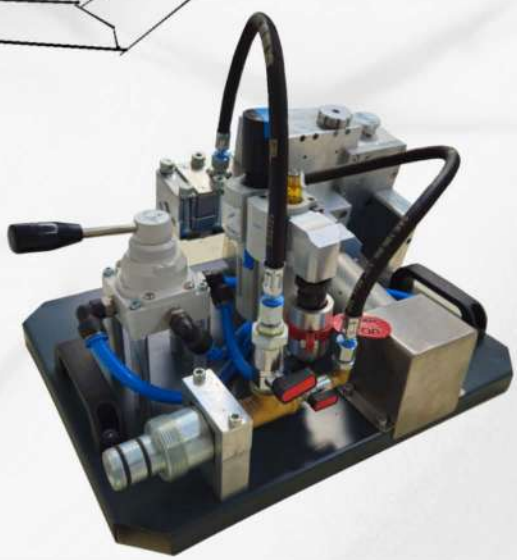


MikroFOK

Micro Fiber Optic Cable Blowing Machine

UPCOM MACHINE HISTORY

Our company has been in the machinery and machinery spare parts manufacturing sector since 1994. Since 1999, almost all of the fiber cable blowing works in Turkey have been done using fiber optic cable blowing machines produced by UPCOM.

It continues its R&D activities on fiber blowing machines and revisions are made according to customer requests.

Fiber optic cable blowing machines produced by UPCOM Makina are used in many countries of the world, especially in Italy, the Netherlands, Uruguay, Holland, Germany, England, African Countries, Canada, USA, Syria, Iraq, Romain, Bulgaria, Kazakhistan, Libya and Suudi Arabia.

OUR UNDERSTANDING OF QUALITY

Based on the principle of customer satisfaction first, our focus is to fully perceive customer demands and expectations and provide complete products and services accordingly,
To achieve this goal;

-Continuously improving product quality, reducing costs while increasing product qualities, -To fully meet technological infrastructure and personnel information needs,
-Aiming for continuous improvement as a whole with the participation of employees.

OUR MISSION

To be the first choice of our customers with our products, solutions, after-sales services, reliability and high business ethics.

OUR VISION

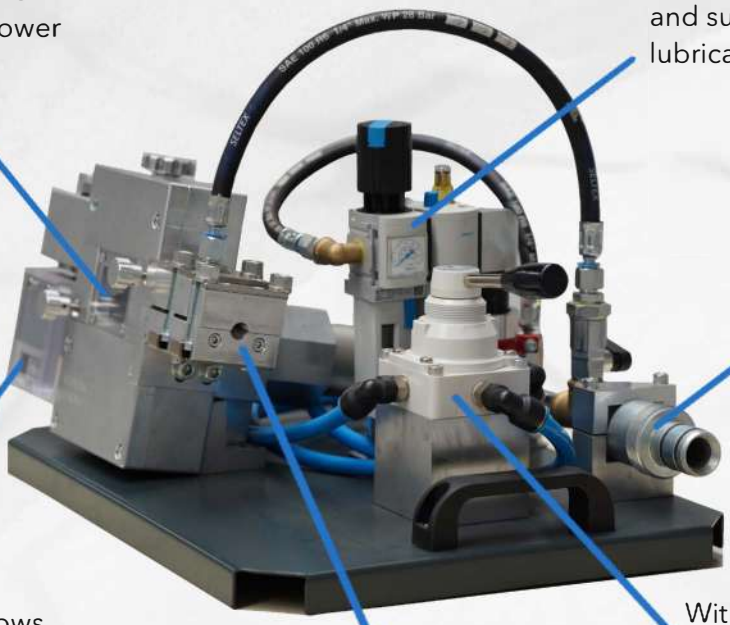
To be a leader in its country and a preferred company in the world with its organization that that makes makes a name for itself in the technological developments in the sector in which it produces products and services, adds value to the lives of its customers and the society in which it operates, is admired for its performance in the solution partnerships it establishes with its customers, and adopts sustainable development as its working culture.

THE UNITS OF MIKROFOK MACHINE

You can install your cable in muddy fields with our special designed pusher rolls.Cable blowing power will not decrease.

This Festo lubricant system takes off mmoisture of pressured air which comes from compressor and supplies continuous lubricate fora ir motors

The problems on ex air mounth(hook and but joint) are solved with quick air connection design.



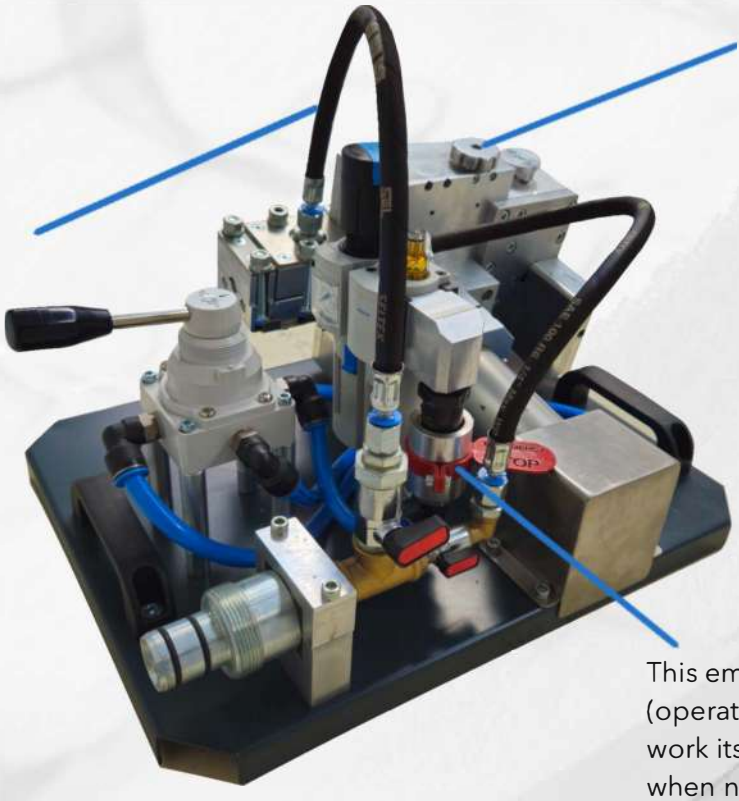
This digital counter shows how many meters blow cable you in to the duct.

Special designed exit box supplies productive guiding for pressure ait into pre-installed duct.

With this direction control valve, you can blow the cable forward or backward.

You can set the pressure that applying to cable by pusher rolls with this knob.

This hose blow the compressed air in to the duct. In this way, cable can be more easily blow



This emergency stop unit stops (operator must use it, the unit do not work itself) the machine suddenly when negative situations.

MIKROFOK

MIKROFOK is designed and produced meeting the expectation of end of users. The MIKROFOK cable blowing machine installs microcables and its versatility saves your money. The design of the MIKROFOK provides for quick and easy component changes for different cable or duct sizes. It's compact size and portable maneuverability make the MIKROFOK is ideally suited for either outside or in-building use.

The MIKROFOK uses compressed air to install the cable. The drive roller powered by air motors. Cable pusher rolls can change easily. One air inlet from compressor with quick connection. Quick connection part is giving with machine. Easily changeable for different cables.

MIKROFOK Machine; It can work in range of cable diameter Ø1-Ø6mm HDPE (pipe) diameter Ø7-Ø20mm.

You can easily blow your cable even in muddy fields with our specially designed pulling rolls. Cable blowing power is not reduced. You can adjust the cable blowing speed and direction with the directional control valve. The specially designed exit box ensures that compressed air is efficiently directed to the pre- installed HDPE pipe. The quick air connection makes your work easier with its easy installation method. Festo brand air lubrication system; It dehumidifies the air coming from the compressor and provides continuous lubrication for the air motors. MIKROFOK is equipped with a digital distance meter (digital counter) to track the work done.

MIKROFOK CONTENT

INCLUDING WITH MACHINE

1 set Pulling Rolls

1 pcs Air Lubrication System

1 pcs Air Motor

1 set Blue Nutrings

2 meters Black Rubber O-Ring

1 pcs Quick Insert Air Jack

1 pcs Box for Plastic Tools

1 pcs Operator Guide

1 pcs Cable Inserts

1 set Duct Inserts

1 set Cable aligning parts

1 pcs Wooden Case

1 set Tool Kit

NOT INCLUDING WITH MACHINE

Air cooler

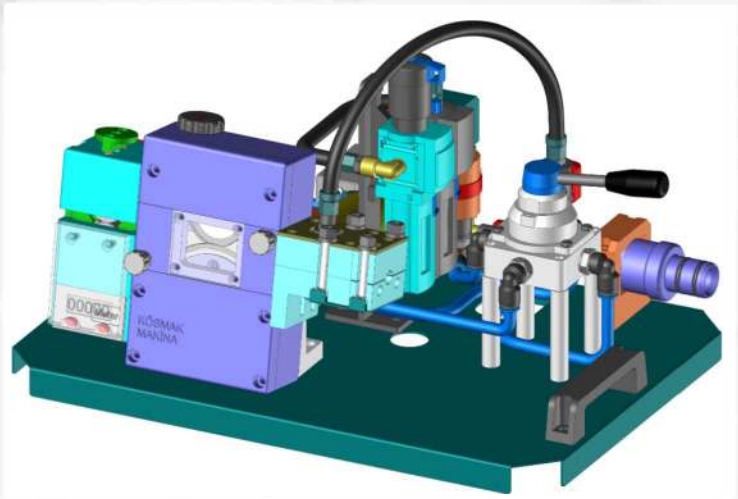
Lubricant Oil

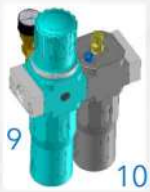
Air Compressor

TECHNICAL DATA

Standart version Type	1 pcs of pneumatic motor drive MIKROFOK
Cable Dia. [mm]	1-6
Pulling Roll Options	Ø1 / Ø2-Ø3 / Ø4-Ø6
Duct OD [mm]	Ø7-Ø20
Drive Unit	Pneumatic
Max air consumption of 1pcs of motor [m3/min]	1,5m3/min (at 6 bar)
Torque Nm. – Max Power	8,5 Nm x 1 piece 80
Max speed [m/min]	12
Max. Air pressure [bar]	51x42x39
Dimensions of Machine [cm]	18,5
Weight of Machine	28
Total Weight (with case and accessories)	

MIKROFOK MACHINE PARTS





1) Quick Pipe Connection

2) Emergency Stop

3) Air Motor

4) Digital Counter

5) Direction Control Valve

6) Exit Box

7) Easy Duct Connection

8) Air lubricating unit to lubricate air motors during cable blowing

9) Pressure regulating unit to regulate air pressure on air motors.

10) Rubber coated rolls for pushing cable without skidding.

11) Cable aligning parts to blow cable ahead.

12) Seals for nutrings

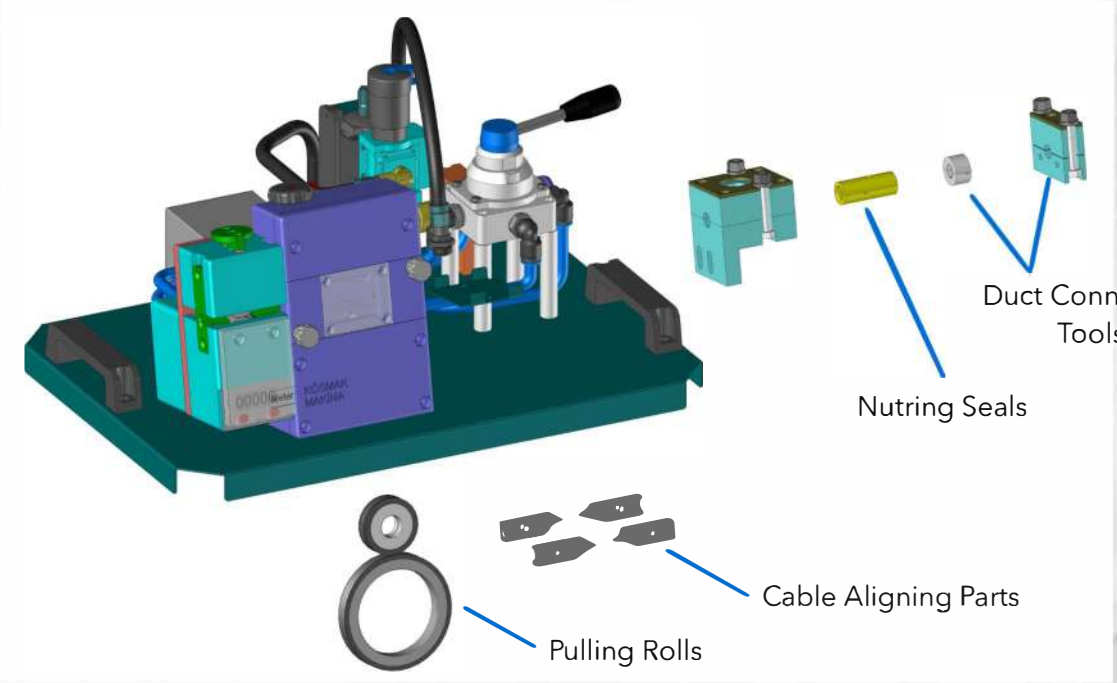
13) HDPE reducer tool

ACCESSORIES

Pulling Rolls Set (mm)	Cable Aligning Tools (mm)
P1: Ø1	C1: Ø1
P2: Ø2-Ø3	C2: Ø2
P3: Ø4-Ø6	C3: Ø3
	C4: Ø4
	C5: Ø5
	C6: Ø6

Nutring Seals & Nutrings(mm)	Duct Connection Tools (mm)
N1: Ø1-Ø1,5	D1: Ø7
N2: Ø2	D2: Ø10
N3: Ø3	D3: Ø12
N4: Ø4	D4: Ø14
N5: Ø5	D5: Ø16
N6: Ø6	D6: Ø20

1 set of Pulling roll + 1 set of Cable Aligning Tool + 1 set of Nutring Seals + 1 pcs Duct Connection Tool is included.



MICRO FIBER OPTIC CABLE BLOWING MACHINE USER'S BOOK

Selecting and locating cable seals.

Setting axis for cable diameter

Locating pre-installed duct and cable

Making air connections coming from air compressor - Pressures at machine

Setting air motor pressure and lubrication style

Using direction control valve

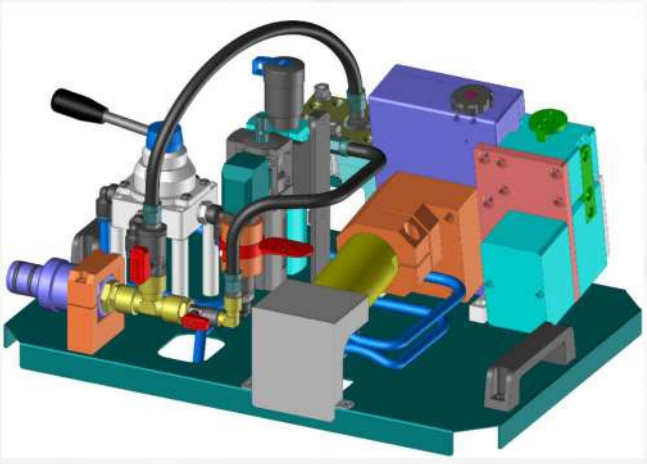
MICROFOK maintenance instructions

Safety Rules

Usage tips

Tools given with machine

Working land terms



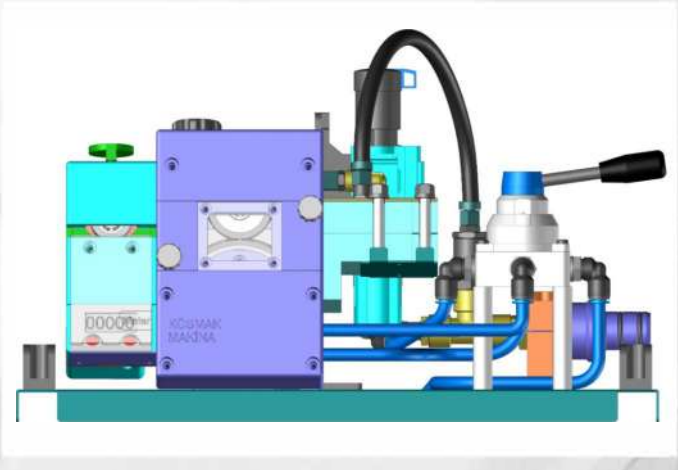


Figure 1


Figure 2


Figure 3


Figure 4

Firstly meassure cable diameter with callipers (figure 1). The selected cable seals inside diameter (figure2) must be same with cables outside diameter and it must work slippery on cable (figure 3) not to let air leak. Cut cable seals as you see on figure 4.


Figure 5

Note: You must inform us your cable diameter that you will install with your MICROFOK order.

Canals of the selected cable seals must locate to install way of cable. If not, we can not use compressed air productive which comes from compressor (figure 5).

Touch faces of black o-rings with cable seals must be cutted angular.

SETTING AXIS FOR CABLE DIAMETER

Figure 6-a

Figure 6-b

Figure 6-c


Figure 6-d

Axis of machine must be set, when the cable diameter is changed to make productive blowing. Locate the cable you will blow into machine as seen on figure 6-a to set axis. Unscrew the bolts (No:3) and set on same level cable axis on machine (No:1) with touch face (No:2) between up and down exit box parts. After set same axis machine and exit box, press the bolts (No:3 on figure 6-c) to fix axis for your cable.

Note: If you inform our company about your cable diameter before you buy machine, machine axis will the setted by our company. When you will blow different cable diameter, you will have to set axis as we explained up wrench set will be given with machine.

LOCATING PRE-INSTALLED DUCT AND CABLE

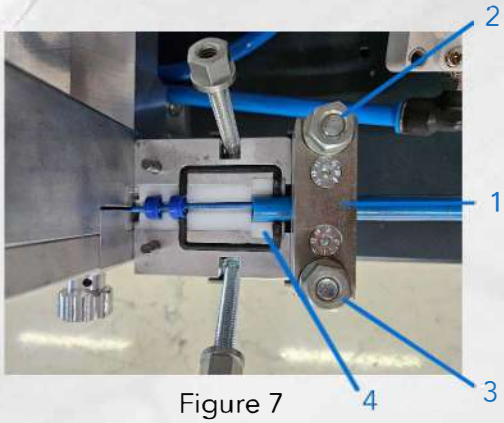


Figure 7

Loosen the bolts (No: 2,3 on figure 7) firstly to assemble Duct into the machine and then leave the upper part (No:1). Drive duct until the face number 4. Then put the upper part (No:1) on cable and press bolts (No: 2,3) to finish duct assemble. Locate cable into machine as shown on figure 8.
Note: Selecting cables, setting cable axis, preparing pulleys are done when the cable diameter is changed.

MAKING AIR CONNECTIONS COMING FROM AIR COMPRESSOR

Figure 8-a

Figure 8-b


Figure 8-c

Connect 1''air hose to machine with quick connection which comes from air compressor. Quick connection main body is assembled on machine as you see on No:1 (on figure 8-a). The hose coming from the compressor is connected to the quick connect sliding piece No:2 (on figure 8-b). After the hose is connected, the sliding part is mounted on the main body as shown in figure

PRESSURES AT HE MACHINE

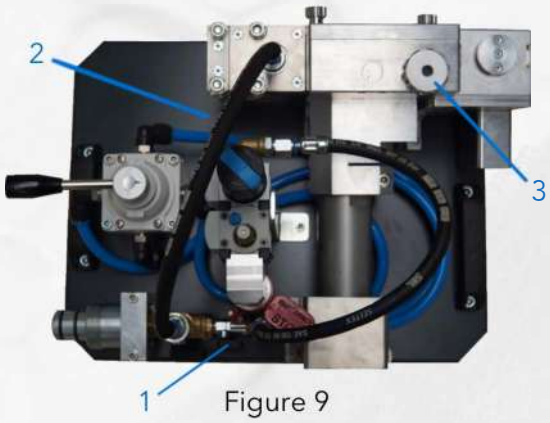


Figure 9

The air hose (No: 2 on figure 9) directly connect to Exit Box after quick connect with a valve(No:1 on figure 9). In this way, the compressed air blow into the duct. It provides easy blowing cable to duct.
The knob supplies drive roller pressure that applying to cable. This system prevents the wear in your cable between rollers.
Note: Setting air motor pressure is explained on the next page.

SETTING AIR MOTOR PRESSURE AND LUBRICATION STYLE

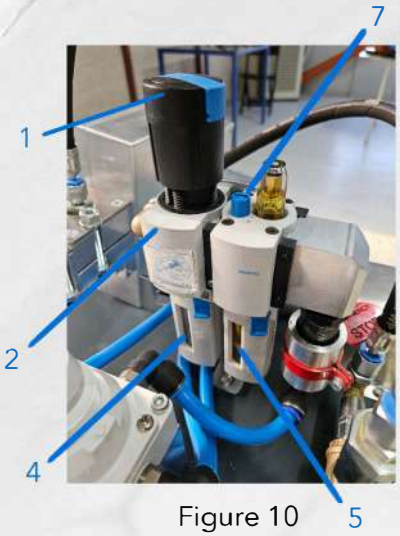


Figure 10

Figure 11

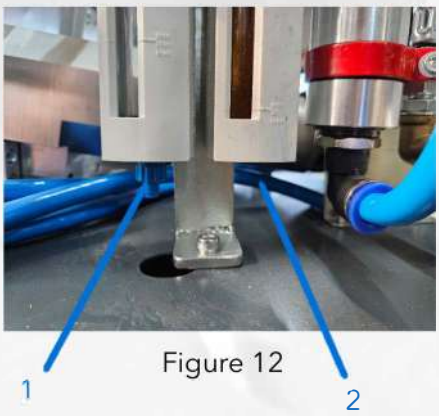


Figure 12

Use the mechanism (figure 10-1) to set pressure of air motor and control on gauge (figure 10-2). Air motors must work between 6,5-7 Bar.
The reservoir (figure 10-4) takes moisture of pressurized air which comes from compressor. Use tap (figure 12-1) to discharge collected moisture. You must do this operation not to let rüşt the parts of air motors.
Put oil for air motor to reservoir (figure 10-5) and use screw (figure 12-2) to re-fill it. This is necessary to lubricate bearings of air motor.
When the blue stopper (figure 10-7) lubrication for air motor will be closed.
Use screwdriver (figure 11-3) to set the amont of oil for air motor. Current amount of oil is one drop in one minute. You can see drop in (figure11-6).
Note: Our MICROFOK is ready to install cable after making the configurations we stated in earliner pages. We can start to install our cable by using direction control valve.

USING DRIECTION CONTROL VALVE


Figure 13

You can regulate fiber optic cable direction and speed (0-80 m/min) by moving direction control valve to right or left.
Note: You must use stop use stop position when you are changing the direction. If you pass the opposite direction directly and don't stop on stop position this will damage the gears of air motor.

Figure 14

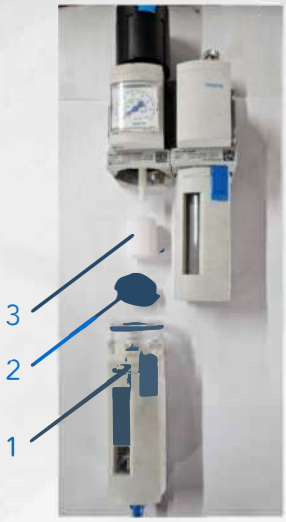


Figure 15

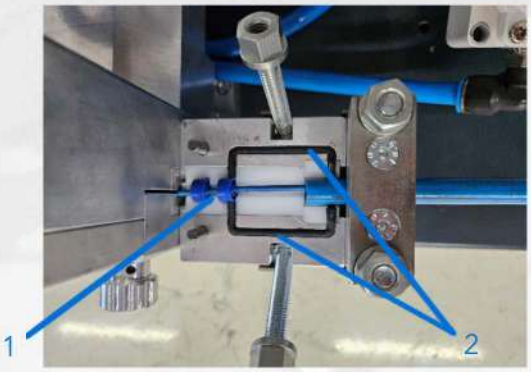


Figure 16

To maintain air motor, open oil set screw end (figure 14-1) and run motor 30-35 secs on this positio. This operation supplies bearing lubrication for air motor and parts.
This operation must be repeated in every evening after the work ends, if not the moisture collected in motor will cause the bearings to rüşt.
The foreign objects entering into reservoir (figure 14-2) causes to the filter be blocked. This cahanges its colour and it's shape. You must change this filter before this case occurs, if not air pressure yield will be less and you will have problems about the machine.
You can see the demontaging of air filter on figure 15. Firstly open reservior (figure 15-1) and nut (figure 15-2) then you can take air filter (figure 15-3)
Put our cable seaks (figure 16-1) and o-rings (figure 16-2) to make care of exit box (figure 16). Clean their slots with diesel oil and brush. If cable seals and o-rings are beaten, change them otherwise there will be air leak.

MICROFOK MAINTENANCE INSTRUCTIONS

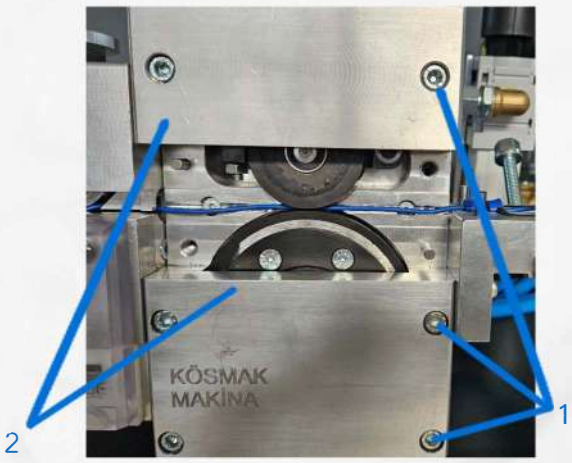


Figure 17

Locate your cable in to machine shown in figure 22. Drive rollers must press to cable and mustn't touch each other. If they touch, this means your drive rollers are worned away. They must be changed.
If the blowing area is muddy, mud can go into the drive rollers of the machine. You may clean mud with pressured water. Loosen the bolts No:1 (Figure 17) and take out front covers No:2 (Figure 17).

Figure 19

Figure 18

If there is something happens unusual on machine push emegergency button to get out pressurised air from machine.

Do not open cover before evacuating air on Exit Box

Close nuts correctly before giving air on machine. If nuts and bolts are beaten, change them with new ones.

Work machine with only bright places. Do not touch working parts of machine. Use gloves and ear plugs while working with machine.

You must check quick connection before giving air to machine. Take up quick connection part as you see in figure 18 to check it. Do not use if its coming up.

Do not open water tap and oil jar before evacuating air on machine. (Figure 19)

USAGE TIPS

If your machine can not catch cable and drive rollers skid on cable, it means that your rollers are damaged and needs to change or roller pressure is low.

If cable exit box squeeze cable it means that cable seals are false chose correct cable seals.

If there is oil or air leaking on exit box drive rollers side it means that your cable seals are false or montaged false direction

If there is air leaking on exit box, clean surfaces of exit box and change o-rings.

If you machine is working hardly while you are blowing cable, it means that your ducts air pressure can be less, you need to increase your air pressure which is coming from compressor.It must be minimum 12 bar/10.5 metercup/minute.

If your cable blowing machine is working but you can not blow cable in ducts is means that your ducts can be plugged. You need to solve the problems in ducts.

If drive rollers of cable blowing machine is not turning it means that bearings (in air motor) are damaged because of slogging or bearing are rusted because of being in wet situation. You must send machine for maintenance.

If your air motor is not turning it means that bearing of air motor are damaged you need to send machine to maintenance.

If your air motor is not turning it means that gears are damaged you need to change gears. You must send machine for maintenance

If your air pressure on motors are reducing while you are cable blowing it means that your air filter is plugged or damaged you need to change it.

TOOLS GIVEN WITH MACHINE

1) 13mmSocket wrench arm set ("T" arm)	1 Qty
2) Screw Driver (3*100)	1 Qty
3) 10-11mm Open-End Wrench	1 Qty
4) 4mm HEX Key	1 Qty
5) 5mm HEX Key	1 Qty
6) 6mm HEX Key	1 Qty
7) Stationary Knife	1 Qty
8) Ø3,5 O-Ring 50cm	1 Qty
9) Ø3 O-Ring 50cm	1 Qty
10) Ø12 AIR PIPE 2meters	1 Qty

Note: We set axis line of MIKROFOK with the information of cable diameter before sending the machine. We send 10 pieces cable seals, 1 piece cable slot and 3 pieces of nutrings with machine for your cable diameter. You can see cable diameter groups under, but if you inform us your cable diameter this will be better.

WORKING LAND TERMS

CONDITIONS FOR MICROFOK MACHINE PRODUCED BY KOSMAK MACHINE BUILDING, INDUSTRY & TRADE CP. THAT YOU HAVE TO CHECK ON WORKING AREA BEFORE YOU START TO WORK.

1) DUCT CONTROL

USE NATURAL GAS PIPE (DIA:25MM,LENGTH:1.5m) BOTH SIDE CLOSED TO CONTROL DUCT.THIS PIPE MUST PAS ALL ALONG IN YOUR DUCT

2)MACHINE CONTROL

MONTAGE THE MACHINE TO PIPE AND LET PRESSURIZED AIR IN,AFTER YOU CHECKED THE SUITABILITY OF YOUR DUCT. WHEN PRESSURIZED AIR WENT OUT FROM THE END OF DUCT, YOU MUST SEE THESE VALUES:
AIR MOTOR PRESSURE:6 BAR /// DUCT PRESSURE :10.5 BAR (COMP. PRESSURE).
(MACHINE AXIS MUST BE SET TO RUN)

3)WORKING CONTROL

YOU MUST TRY TO STAY IN SAME LEVEL AS FAR AS POSSIBLE DUCT, MACHINE AND FIBER OPTIC CABLE.

YOU MUST HAVE THESE VALUES WHEN YOU ARE RUNNING MACHINE:
AIR MOTOR PRESSURE : 6 BAR /// DUCT PRESSURE: 10,5 BAR (COMP. PRESSURE)

CHECK OIL DROP VALUE THAT YOU NEED FOR AIR MOTORS ON AIR LUBRICANT(2-3 DROPS/MIN)
YOU MUST LEAVE INSIDE OF AIR MOTORS OILY AFTER YOU USE THE MACHINE . TO DO THIS: LOOSEN THE OIL SET SCREW ON PREPERATION AIR LUBRICANT AND INCREASE THE SPEED OF OIL FLOW AND RUN MACHINE 3-4 MINS IN THIS POSITION.

CONTACTS FOR MAINTEANCE AND MANUFACTURING

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