

Use and Maintenance Instructions

Introduction

The Rover volumetric fiber dispenser is a variable speed, chop-on-demand dispenser of Mobile-Mesh™ fiber roving for addition into a volumetric concrete truck. The Rover’s standard cut length of the roving is approximately 3/4 in (19 mm). The Rover is designed for efficiency and ease of operation. Proper transportation, storage, preparation and loading of the roving bobbins plays a large part in the ease of the Rover’s operation.

These instructions outline the necessary steps to operate the Rover volumetric fiber dispenser. If technical assistance is necessary, some assistance is available by telephone consultation with FORTA Corporation Operations Department. For more in-depth assistance, on-site technical services are available through FORTA Corporation at a cost of the technician’s travel, lodging, and time on site. Contact FORTA Corporation for details; see [page 13](#).



Important

Failure to follow the within instructions, and any other supplied instructions, may void any applicable warranty.



CAUTION!

The Rover volumetric fiber dispenser is designed for use with Mobile-Mesh™ fibers only. The use of any other glass fiber, including E glass may harm or shorten the life of certain components. The use of any fiber other than Mobile-Mesh™ fiber will void any applicable warranty.

Safety and information labeling

The following explains the meaning or purpose of any safety and information labels that may be affixed to any part of the Rover.

	<p>Rotating cutter hazard - Indicates that a hazard exists from rotating cutters. Keep hands clear. Use appropriate lock-out/tag-out procedures before servicing equipment.</p>
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Bobbin transportation and storage

Each bobbin of roving should be transported and stored appropriately to prevent the inside of the bobbin from collapsing. During both transport and storage, make sure that bobbins are kept dry, are stable and well supported, and are prevented from shifting.

Bobbin preparation and loading

1. Prepare the bobbin

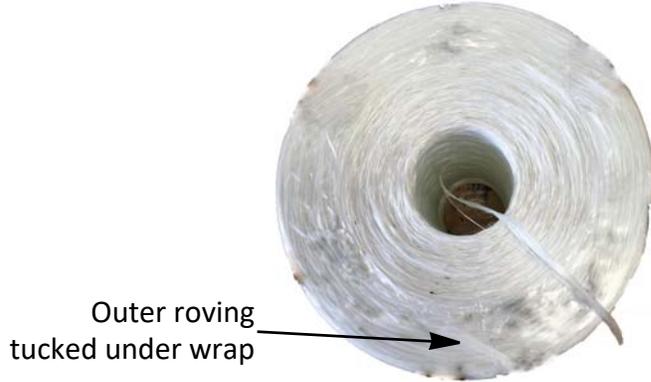
Remove the bobbin from its box. DO NOT remove the outside plastic wrap from the bobbin.



The roving will feed from the center of the bobbin. Pull the loose roving out of the center of the bobbin and trim off any excess/knotted portion of the roving.



If there is loose roving coming from the outside of the bobbin, tuck it under the plastic wrap.



You should now have a 'clean' bobbin with loose roving coming out of the center of the bobbin only.



2. Load the bobbin

Lift the bobbin into the Rover and put it on the shelf; the loose roving should come out of the top of the bobbin. Thread the roving down through the hole in the shelf. Make sure all strands of the roving are threaded through the hole. An easy method for doing this is to twist the roving and then fold it over on itself to make a small, tight loop as shown in inset.



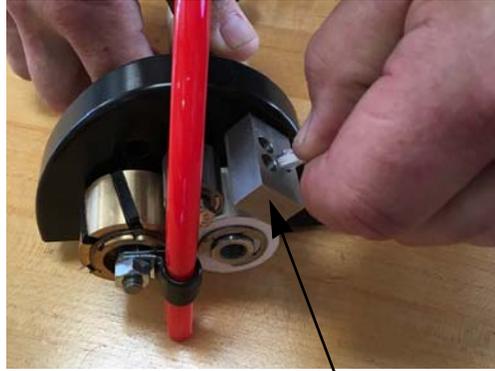
 **WARNING!**

Wear gloves anytime you are working with the cutter wheel or cutter assembly. The blades of the cutter wheel are extremely sharp.

Thread the roving (still folded) through one of the 3 holes in the guide block. Typically it is not necessary for every strand of roving to be perfectly fed into the hole. Stray strands will generally be pulled into the guide block as the roving is pulled by the cutter assembly. Push the roving so that it is into the groove between the rubber roller and pinch roller. Briefly turn on the Rover to pull the roving into the cutter assembly.

 **Important**

To maximize the life of the rubber roller, be sure to use a different hole in the guide block each time you load a new bobbin in the Rover.



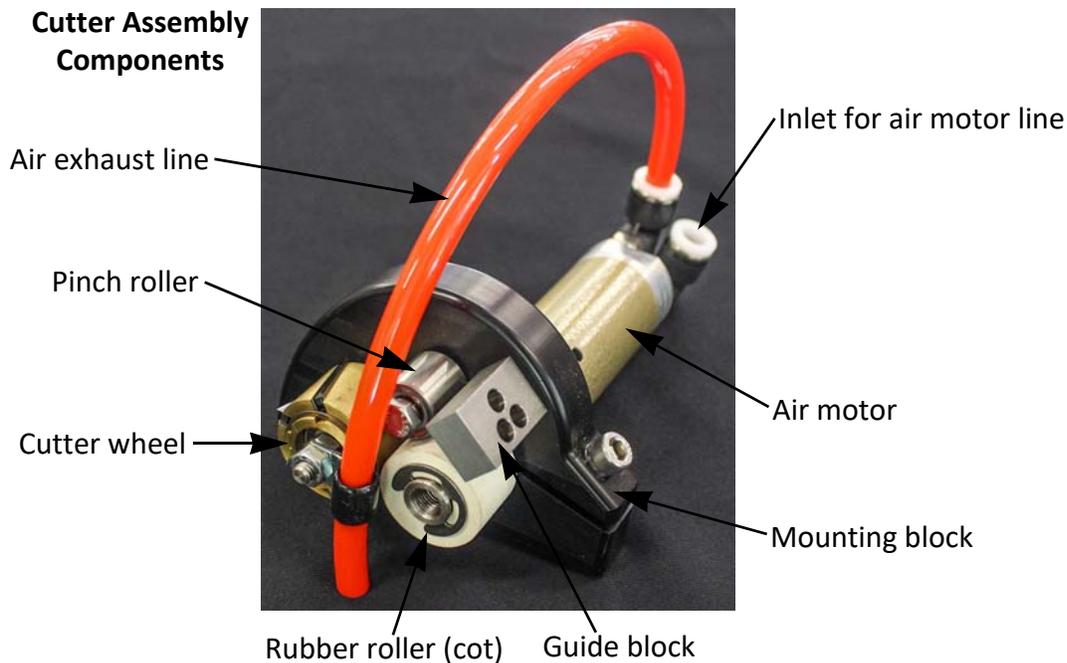
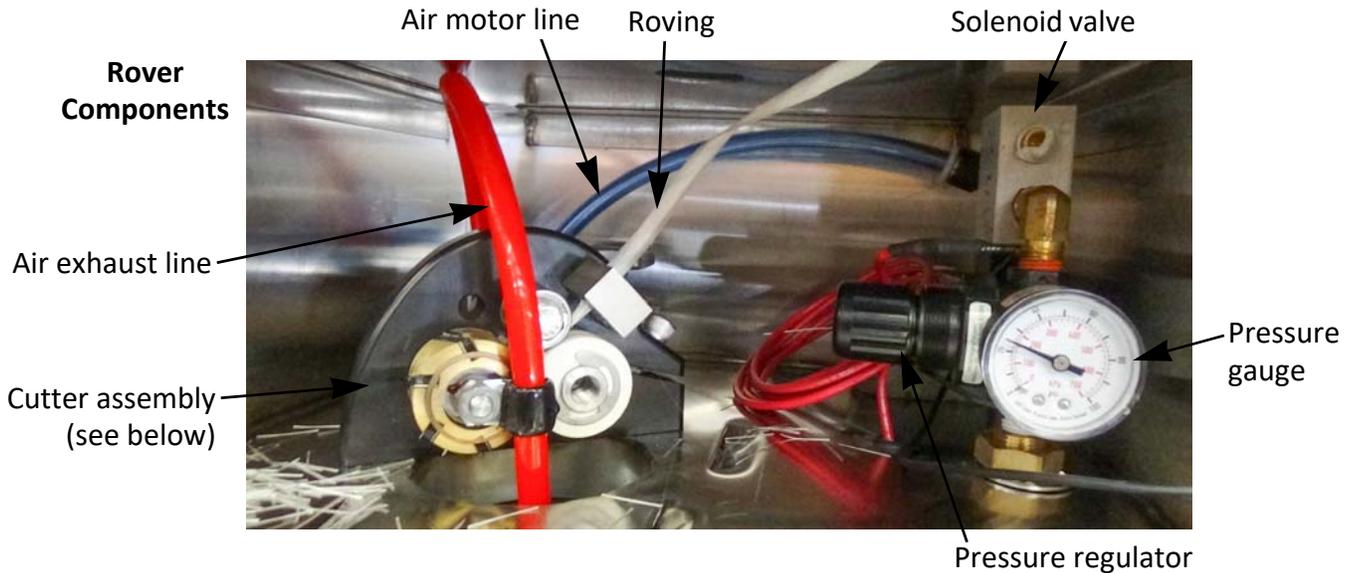
Guide block



Rover operation

Basic description and components

Refer to the following illustrations for component identification. The Rover's cutter assembly is powered by an air motor. The pressure of the incoming air to the air motor determines the speed of the air motor and thus the speed of the cutter assembly. The speed of the cutter assembly determines the feed rate of chopped fiber from the Rover. So to adjust the feed rate of fiber, you simply adjust the air pressure to the cutter assembly. The regulator and solenoid valve are supplied to control the air pressure to the air motor and the pressure gauge shows the current pressure setting.



Check and adjust tension of cutter assembly

 **WARNING!**

Wear gloves anytime you are working with the cutter wheel or cutter assembly. The blades of the cutter wheel are extremely sharp.

 **WARNING!**

When servicing the Rover, disconnect or turn off the air supply to the Rover.

Proper cut length of the fiber is heavily dependent on having correct contact (or tension) between the rubber roller, cutter wheel and pinch roller. The air motor drives rotation of the rubber roller; without proper contact with the other two wheels, one or both of them will not turn and fiber will not be fed and cut properly.

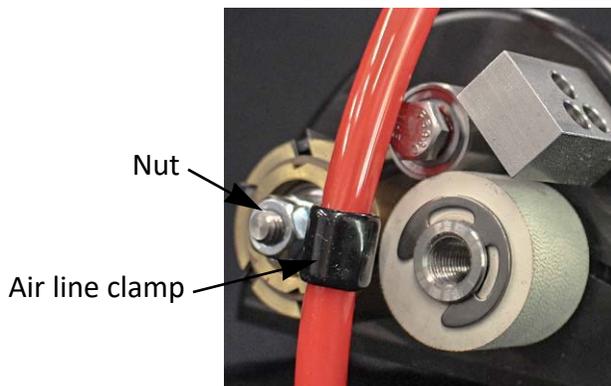
Visually inspect the cut fiber with every use of the Rover. If there are long or inconsistent cuts, check the tension of the cutter assembly. The tension of the cutter assembly should also be checked after every bobbin.

Check tension of the cutter assembly

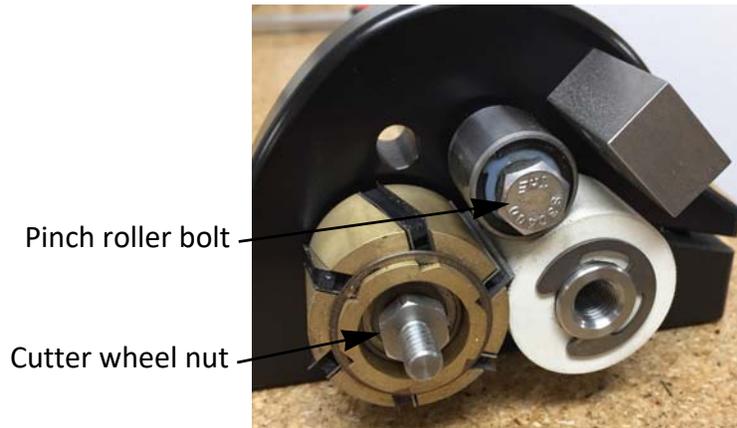
1. You will need a pair of gloves to protect your hands from the blades of the cutter wheel.
2. Disconnect or turn off the air supply to the Rover.
3. With GLOVED hands, manually turn the rubber roller. As you turn it, both the cutter wheel and pinch roller should also turn. If they do not, then the tension of the assembly is not right and must be adjusted; see procedure below.

Adjust tension of the cutter assembly

1. You will need a pair of gloves to protect your hands and a small adjustable wrench or nut driver.
2. Disconnect or turn off the air supply to the Rover.
3. Loosen and remove the nut and air line clamp from the cutter wheel (see illustration below).



- Loosen the nut that holds the cutter wheel and bolt that holds the pinch roller.



- With GLOVED hands, turn the cutter wheel and rubber roller so that there is no blade touching the rubber roller (see illustration above). Squeeze the cutter wheel and rubber roller together and then tighten the cutter wheel nut. This ensures that the blades of the cutter wheel will cut the proper depth into the rubber roller.
- With GLOVED hands, press the pinch roller tight against the rubber roller and then tighten the pinch roller bolt.
- With GLOVED hands, manually turn the rubber roller and ensure that both the cutter wheel and pinch roller also turn. If they do not, repeat steps 4, 5 and 6 as necessary, and then re-check for the proper tension.
- Replace the air line clamp and secure it with the nut.

Set air pressure for desired feed rate

Determine the feed rate of fiber needed for the job, and then refer to the table below to determine the air pressure setting that is needed for that feed rate.

Approximate fiber output at various air pressure settings				
20 psi	30 psi	40 psi	50 psi	60 psi
12 oz/min (0.34 kg/min)	14 oz/min (0.40 kg/min)	19 oz/min (0.54 kg/min)	22 oz/min (0.62 kg/min)	24 oz/min (0.68 kg/min)



Important

The maximum feed rate from the Rover is approximately 2 lb/min (0.91 kg/min) with a sufficient air supply. If a higher feed rate is needed, a custom Rover dispenser that holds multiple bobbins can be purchased; contact FORTA Corporation for additional information.

Once the proper air pressure setting has been determined, the regulator can be adjusted to that setting when the truck's process is started. Adjust the setting by pulling out the knob of the air regulator, adjust the knob until the desired pressure is attained on the pressure gauge, and then push the knob back in to lock the regulator and prevent accidental adjustment.

Calibration

We highly recommend that you run several calibration tests on your dispenser with your truck to confirm its actual yield.

1. You will need:
 - A 5 gallon bucket (or similar) to collect fibers
 - A scale with capacity of 20 lb and accuracy of 0.1 lb (or similar) to weigh the collected fibers
 - A stopwatch or watch with a second hand
2. Load a bobbin into the Rover; see [“Load the bobbin”](#) on page 3.
3. Weigh the empty bucket and record the weight.
4. Determine a specific length of time and feed rate to run the dispenser for the calibration test (for example: run for 60 seconds at 40 psi).
5. Turn on the Rover and adjust the regulator to set it at the air pressure decided in step 4.
6. Simultaneously start the stop watch and put the bucket under the discharge chute to collect fibers as they are dispensed. Once the predetermined amount of time has passed, turn off the Rover and remove the bucket from under the discharge chute.
7. Weigh the bucket with fibers, calculate the weight of the fibers and record the weight.
8. Repeat steps 5 through 7 several times to verify results. If the results are not the yield you were looking for, adjust the regulator and repeat steps 5 through 7. Adjust the regulator until you achieve your desired yield.

Troubleshooting

Indications	Possible Problem	Solution
Air motor not working	Water or other contaminants in air supply line to the air motor or in the air motor	Blow out the air line and put a few drops of air tool oil into the intake of the air motor line.
	Air supply pressure too low	Increase the air supply to the Rover. Although the minimum air pressure needed to operate the Rover is 25 psi, there may be cases where this pressure is not quite high enough to start the air motor. An air supply of 90 psi is preferable.
	Bad air regulator or air motor	Remove air motor line and check that air is flowing sufficiently from the air regulator. Check that air is flowing sufficiently from the air exhaust line.
Fiber cuts too long/not correct length	Improper tension of cutter assembly	Check and adjust tension of cutter assembly; see page 6 .
	Dull, chipped, broken, or rusted blades	Replace blades; see page 11 .
	Rubber roller worn, or has deep ruts or large gaps in its surface	Replace rubber roller; see page 10 . To lengthen the life of rubber rollers, make sure that the roving is fed into a different hole of the guide block each time a new bobbin is loaded.
Fiber getting stuck in discharge tubing	Tube too small	Make sure tube is 3 in (76.2 mm) diameter.
	Static build-up in tube	Tubing should be static resistant, or you can ground the tubing to the truck.
	Build-up of cement dust and other contaminants on end of fiber discharge tube	Clean the end of the fiber discharge tube. If the end of the tube is not kept clean, fiber can easily begin to stick to the tube and cause bridging of additional fiber.

Maintenance

Daily maintenance

The Rover requires minimal maintenance. Cleanliness of the fiber discharge tube and proper tension of the cutter assembly will keep the Rover operating smoothly and efficiently.

- The fiber discharge tube should be thoroughly cleaned of cement dust and other contaminants on a daily basis and anytime buildup is noticed. A small amount of buildup can quickly lead to a reduction in fiber flow or clogging of fibers.
- The tension of the cutter assembly should be checked after every bobbin or anytime fiber cuts are not the right length. See " Check and adjust tension of cutter assembly" on page 6.

Parts replacement

Replace rubber roller

 **WARNING!**

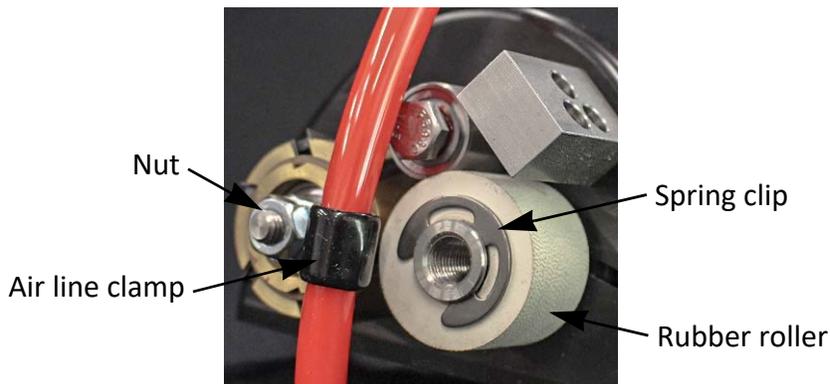
Wear gloves anytime you are working with the cutter wheel or cutter assembly. The blades of the cutter wheel are extremely sharp.

 **WARNING!**

When servicing the Rover, disconnect or turn off the air supply to the Rover.

Indications that the rubber roller needs to be replaced are listed in "Troubleshooting" on page 9.

1. You will need a pair of gloves to protect your hands, a small adjustable wrench or nut driver, and a small flat screwdriver.
2. Disconnect or turn off the air supply to the Rover.
3. Loosen and remove the nut and air line clamp from the cutter wheel (see illustration below).
4. Remove the spring clip that holds the rubber roller on its bearing.
5. Remove the rubber roller and replace it with a new rubber roller.
6. Replace the spring clip to secure the rubber roller.
7. Replace the air line clamp and secure it with the nut.



Replace blades

 **WARNING!**

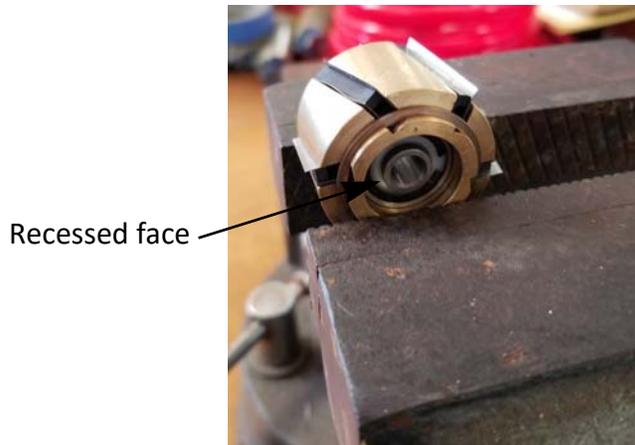
Wear gloves anytime you are working with the cutter wheel or cutter assembly. The blades of the cutter wheel are extremely sharp.

 **WARNING!**

When servicing the Rover, disconnect or turn off the air supply to the Rover.

Indications that the blades need to be replaced are listed in [“Troubleshooting”](#) on page 9. All blades should be replaced at the same time.

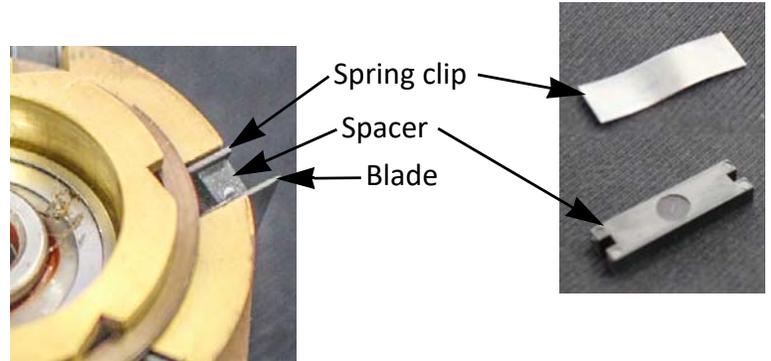
1. You will need a pair of gloves to protect your hands, a bench vise, a small adjustable wrench or nut driver, and a small flathead screwdriver.
2. Disconnect or turn off the air supply to the Rover.
3. Loosen and remove the nut and air line clamp from the cutter wheel.
4. With GLOVED hands, loosen and remove the cutter wheel from the cutter assembly.
5. Secure the cutter wheel in a bench vise with the front of the wheel (recessed face) facing forward.



6. Insert the end of the small flathead screw driver into the notch on the end of a spacer and carefully pry upwards to remove the blade, spacer, and spring clip from the groove.



7. Insert a new blade and the spacer into the groove - the blade goes to the right side of the groove and the spacer just behind (or to the left of) the blade.



8. Insert the spring clip behind (or to the left of) the spacer. The spring clip has one end that is flatter than the other. Insert the flatter end into the groove first and use the flathead screwdriver to press in and then down on the spring clip to get it completely seated in the groove.



9. Repeat steps 6 through 8 for each of the remaining blades so that all blades are replaced.
10. Remove the cutter wheel from the vise and install it back onto the cutter assembly.
11. Perform steps 4 through 7 of [“Adjust tension of the cutter assembly”](#) on page 6.
12. Replace the air line clamp and secure it with the nut.

Contact FORTA Corporation

If it is necessary to contact FORTA Corporation, you can do so by the following:

Mail: FORTA Corporation
100 Forta Drive
Grove City, PA 16127-5221

Phone: 1-800-245-0306 or 1-724-458-5221

Fax: 1-724-458-833

Web: www.fortacorp.com