

Installation Instructions

Introduction

The FORTA Ranger is a volumetric fiber dispenser that efficiently and easily adds Mobile-Mesh™ fibers to a volumetric concrete process.

The Ranger must be installed on the volumetric concrete truck before use. The enclosed instructions provide good overall guidance on how to install the Ranger dispenser on your truck. Most truck manufacturers can provide more specific instructions or guidelines on how to install the Ranger dispenser on their truck bodies. Contact your truck's manufacturer.

These instructions outline the necessary steps to install the Ranger. 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.

The Ranger is available with two different lengths of discharge feed tube: 24 in long tube or 36 in long tube.

The Ranger is 24 in tall, from the bottom of the discharge feed tube to the top of the drum. If additional capacity is needed, an optional 16 in extension sleeve can be purchased. Contact FORTA Corporation for more information.

The Ranger can be connected to the truck's control system, or an optional control kit can be purchased. The kit includes a power wire, a ground wire, and a control panel with an on/off switch, potentiometer, LED display, and proportional control valve with cable.



Important

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

For Use With

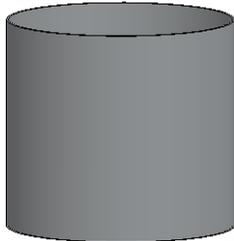


FORTA[®]
MOBILE-MESH™

Before you start

1. Items included

The following items are included with the Ranger dispenser; locate and identify them before you start:



Optional extension sleeve



Mounting brackets, qty 2



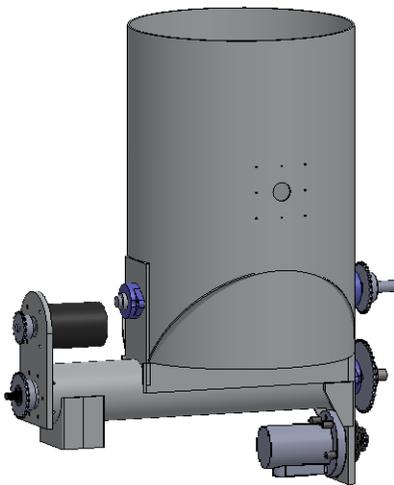
Auger drive cover



Declumper drive cover



All-thread (3/8 in-16), qty 2



Ranger unit



Optional control kit



Lid

<i>Component Weights</i>	Standard (24 in (610 mm) discharge tube)	Extended (36 in (915 mm) discharge tube)
Ranger unit (with covers)	66 lb (30 kg)	71 lb (32.2 kg)
Lid	3.5 lb (1.6 kg)	
Mounting brackets (2)	3.5 lb (1.6 kg)	
Optional control kit	5 lb (2.3 kg)	
Optional extension sleeve	9 lb (4.1 kg)	

2. Utilities needed for operation

The following utilities are needed to operate the Ranger:

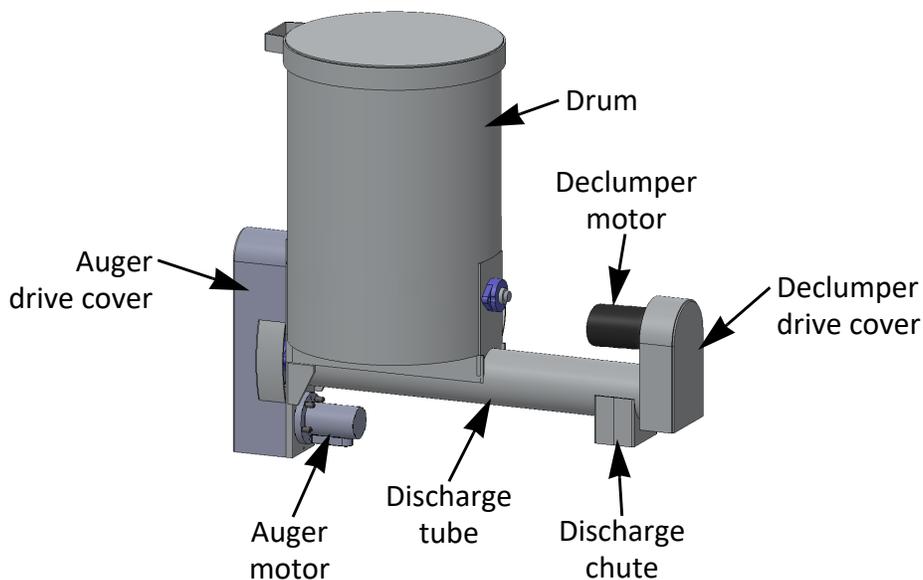
- A 12 VDC fused power source (2 Amp fuse)
- Truck's hydraulic power supply - Ranger requires an approximate oil flow of 1 gal/min

3. Tools and supplies required to install

You will need the following tools and supplies to install the Ranger:

- Drill, and both a 1/4 in and 5/16 in drill bit (for metal)
- Fasteners to install mounting brackets to Ranger (will use the supplied all-thread):
 - Four (4) 3/8 in **stainless steel** flat washers
 - Four (4) 3/8 in-16 **stainless steel** nylon-insert lock nuts
- Fasteners to install mounting brackets to truck:
 - Four (4) 3/8 in **stainless steel** fasteners, length sufficient for thickness of mounting surface, plus thickness of Ranger bracket (0.125 in), plus use of a flat washer on both sides, and **full engagement** of the threads of the nylon-insert lock nut
 - Eight (8) 3/8 in **stainless steel** flat washers
 - Four (4) 3/8 in **stainless steel** nylon-insert lock nuts
- Fasteners to install control panel to Ranger:
 - Three (3) 1/4 in-20 **stainless steel** fasteners, length sufficient for thickness of control panel plus Ranger (0.25 in total), plus use of a flat washer on both sides, and **full engagement** of the threads of the nylon-insert lock nut
 - Six (6) 1/4 in-20 **stainless steel** flat washers
 - Three (3) 1/4 in-20 **stainless steel** nylon-insert lock nuts
- Various wrenches and/or sockets (for the above listed fasteners)
- Three (3) hydraulic hoses, 3/8 in diameter or larger, #6 fittings, length sufficient to connect components as shown in [“Check operation”](#) on page 9

4. Identifying parts of the Ranger



Mount the Ranger on the truck

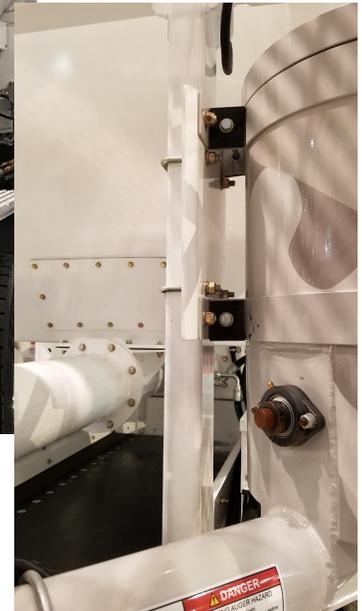
 **Note**
Two or more people are needed to perform this part of installation.

1. Locate the preferred mounting area

The Ranger must be mounted so that its discharge chute is above, and as close as possible to, the belt of the truck. See examples at right.

Your truck's manufacturer should be able to provide specific guidance on the best placement of the Ranger.

If it is not possible to mount the Ranger so that the end of the discharge chute is close to the belt, a length of 5 in clear static-resistant tubing can be used to extend the chute. Mount and secure the tubing as necessary to the end of the discharge chute; see example at right.



Extending the discharge chute with 5 in clear tubing.

2. Prepare Ranger for mounting

Put mounting brackets on the drum of the Ranger. Position the brackets just below the lid and approximately in the middle of the drum (as seen in pictures of step 1). Make sure that the brackets do not interfere with the window in the drum and that they are in a good position to align with the mounting location on the truck. Secure the brackets to the Ranger with the all-thread and 3/8 in-16 washers and nylon-insert lock nuts.

3. Prepare truck for mounting

Hold the Ranger up to the truck at the desired mounting location and use it as a template to mark the positions of the holes needed to match the mounting brackets. Use the 11/32 in drill bit to drill holes at the marked locations.



Note

In some cases it may be necessary to add additional brackets or spacers to the truck to accommodate mounting the Ranger.

4. Lift and mount the Ranger

While one person lifts the Ranger into place and aligns it with the mounting holes, the other person secures the unit with the 3/8 in fasteners, washers and nylon-insert lock nuts. If it is necessary to rotate the Ranger so that the discharge chute aligns correctly with the belt, loosen the nuts of the all-thread just enough to rotate the unit, and then re-tighten the nuts when done. Also, a short piece of static-resistant tubing can be added to the end of the discharge chute if needed.

Install control kit



Note

If you will use the truck's existing controls to operate the Ranger, skip this step and continue with " Make connections" on page 7.

1. Locate the preferred mounting area

The control panel must be mounted so that an operator can easily see the display and reach the controls. Typically the control panel is mounted to the drum of the Ranger. However, in some cases it may be desirable to mount the control panel near the truck's controls.



2. Drill mounting holes and mount panel

Hold the control panel in the desired location and use it as a template to mark the positions of the holes needed to match its mounting holes. Use the 1/4 in drill bit to drill holes at the marked locations. Use the 1/4 in-20 stainless steel fasteners to secure the control panel to the drum or truck.



Make connections

1. Make hydraulic connections

Connect hydraulic hoses between the components as shown in the appropriate schematic at right (blue lines). The hose between the auger motor and declumper motor should already be connected (red line).



Important

Orientation of individual components may be different than what is shown. Always make sure that hoses are connected to the correct port numbers as stamped on the component. Hoses should always connect port P2 of one component to port P1 of the next component.



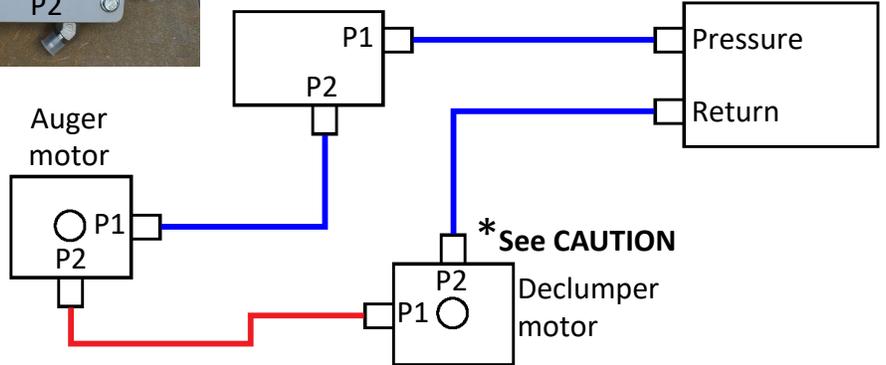
CAUTION!

* Back pressure at the outlet port of the declumper motor must be less than 50 psig. Pressures greater than 50 psig could blow out the seals of the motor; this damage is not covered under warranty. The hose used must be 3/8 in or larger, with no kinks, and be connected to no other components that will create back pressure. Blown seals are evident by oil leakage.

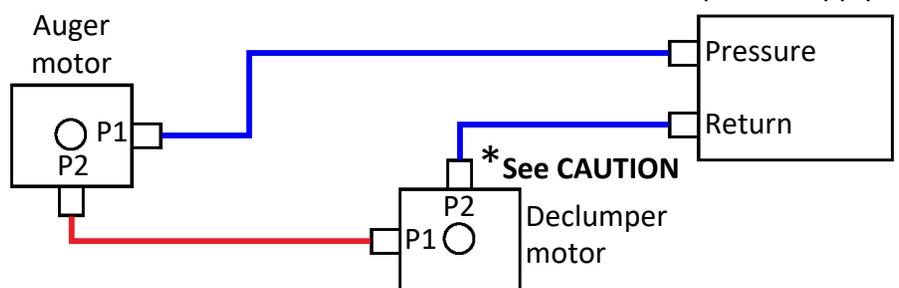
Schematic for Using Control Kit



Control valve connections on control panel.



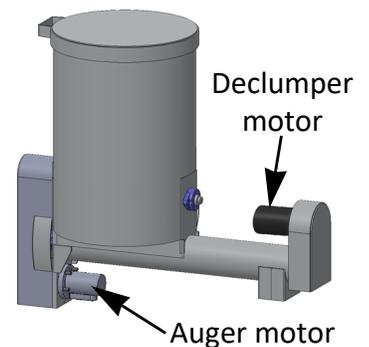
Schematic for Using Truck's Controls



Schematic Legend and Notes

- Supplied with Ranger
- Customer supplied

Ports labeled P1 are always inlet ports.
Ports labeled P2 are always outlet ports.



2. Make electrical connections - using control kit

Connect the ground wire (black) to one of the 3/8 in stainless steel fasteners that secure the Ranger to the truck (see “Lift and mount the Ranger” on page 5).

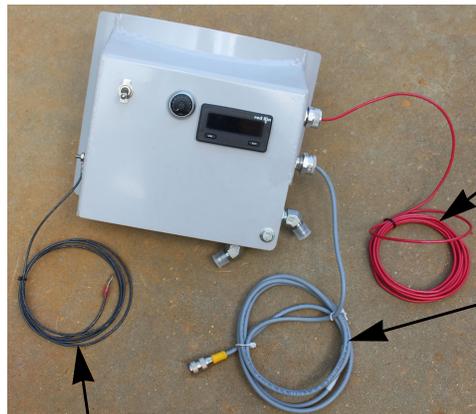
Connect the power wire (red) to the 12 VDC fused power source. If you want to connect the control panel into the truck’s controls, contact FORTA Corporation, see “Contact FORTA Corporation” on page 10.

Remove the cap from the end of the speed sensor in the auger motor. Connect the sensor cable (gray) from the control panel to the speed sensor. Match the connectors, plug in and then tighten the outer ring of the connector onto the speed sensor to make the connection secure.



CAUTION!

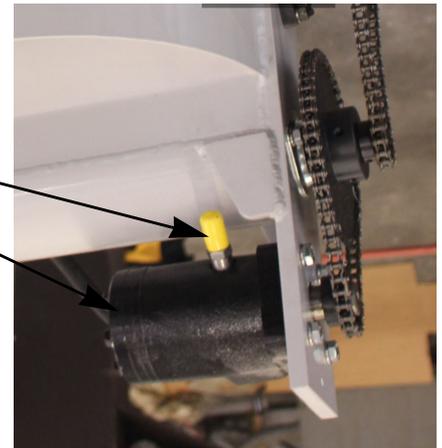
Do NOT loosen or try to adjust the speed sensor; damage can occur. If the sensor has come loose, contact FORTA Corporation, see “Contact FORTA Corporation” on page 10.



Ground wire

Power wire

Sensor cable



Speed sensor

Auger motor



Sensor cable connected

3. Make electrical connections - using truck’s controls

When using the truck’s control system to operate the Ranger, it is only necessary to connect the supplied speed sensor cable between the auger motor and the truck’s controls. For integration into the truck’s controls, the wires in the cable are as follows:

- Brown - hot
- Blue - ground
- Black - signal

The speed sensor is set to deliver 36 counts/revolution. Relief valve for the auger motor should be set to 2500 psi.

Connect the sensor cable to the speed sensor (see images in step 2 above). Remove the cap from the end of the speed sensor in the auger motor, match the connectors, plug in and then tighten the outer ring of the connector

onto the speed sensor to make the connection secure.



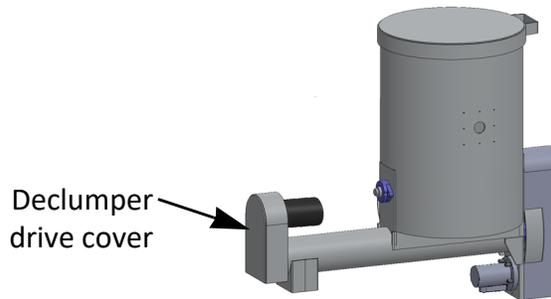
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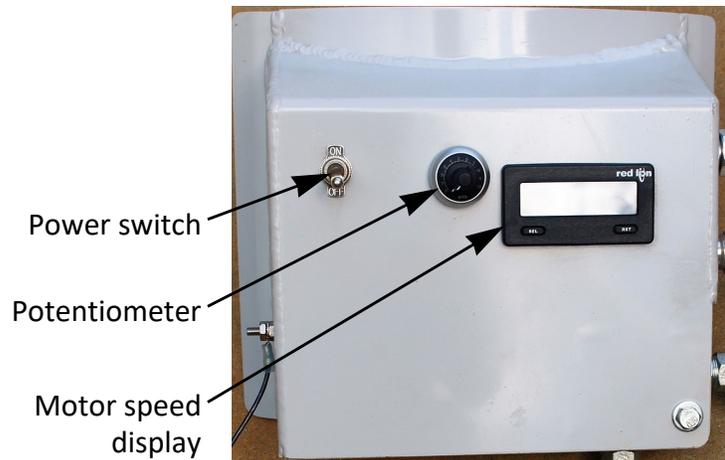
Check operation

1. Check for proper shaft rotation

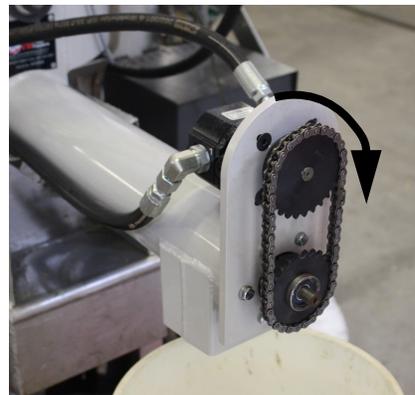
If the declumper drive cover is installed on the Ranger, remove it.



Turn ON the 12 Vdc power supply and the truck’s hydraulic power supply. Turn the control panel power switch to ON. The dispenser’s auger motor and declumper motor should start and the LED display should illuminate. Make sure that an “R” (for RPM) is displayed on the left side of the display - if not, press the SEL button once. If the LED display shows zero RPM, turn the potentiometer knob to increase the speed of the auger motor.

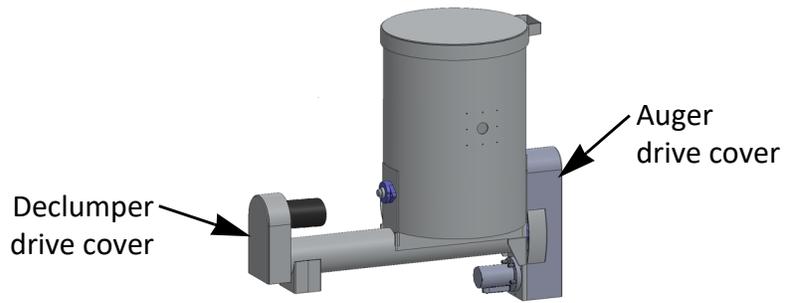


Look at the end of the declumper motor shaft and observe the shaft’s direction of rotation. It should rotate clockwise. If rotation is not clockwise, then the hydraulic hoses have been plumbed backwards, and it is probable that the seals of the declumper motor have been blown; see “Check operation” on page 9.



2. Install covers

Install the declumper drive cover and the auger drive cover.



3. Optional extension sleeve

An optional extension sleeve can be purchased and installed to extend the height and capacity of the Ranger. Contact FORTA Corporation for more information.



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