Manual for cleaning:

Heat exchanger coils and microchannels

Cleaning with water

goodwaybenelux.com

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Coil cleaning system type: Goodway CC-400HF



Goodway Benelux recommends using the following personal protection equipment when performing a condenser coil cleaning:



Cleaner resistant gloves



Safety glasses and/ or full-face shields



Cleaner resistant, protective clothing

1. Setting up the machine

- **Positioning the machine**
  Place the CC-400HF as close as possible to the heat exchanger to minimize hose length. Also, ensure proper working space for the operators to work in a safe and correct manner.
- **Connecting the water supply**
  Connect a water hose to the water inlet of the CC-400HF. Make sure it is properly attached; the water flow should be 12 liters per minute at 2-3 bar. Water pressure should not exceed 3 bar to avoid seal damage. Do not use water with a temperature of more than 30°C.
- **Connecting the power supply**
  Connect the power cable of the CC-400HF to a suitable electrical outlet. The CC-400HF is designed to operate on both 50 and 60 Hz frequencies. The system automatically adapts to the frequency it receives.
- **Activating the surge protection**
  Activate the surge protection on the GFCI of the CC-400HF power cable. Press the reset/activation button on the surge protection unit before starting the machine.
- **Replacing red oil cup**
  Remove the red oil cup from the pump and replace it with the black cup in the supplied plastic bag.
- **Priming the pump**
  Connect the hose and spray gun to the CC-400HF. Then, turn on the water supply and squeeze the gun trigger until water comes out. Do not turn on the system during this process! Once water comes out of the gun, the system is primed and ready to use.

2. Cleaning the coils

1. **Preparing the heat exchanger**
   If possible, remove the fan motors from the heat exchanger for easier access to the coils. Always make sure the unit is turned off completely before disassembly!
2. **Pre-rinsing the coils**
   Start pre-rinsing the coils with water. Always rinse from top to bottom or from inside to outside, depending on the coil lay-out. For rinsing, use the yellow nozzle supplied. If the coils are covered with a thick layer of deposits, you can also manually remove this layer or use a vacuum system, before using water.
3. **Applying CoilShine cleaner**
   After the rinsing, disconnect the yellow nozzle and reconnect the black nozzle. After that, place the siphon hose into a canister of CoilShine cleaning agent. Once the gun trigger is squeezed, the machine will automatically start administering the cleaner in a fixed 1:10 ratio. Please note, the siphon hose only works when the black nozzle is connected. Make sure to apply sufficient CoilShine cleaner to the coils, depending on the amount of deposits.
4. **Cleaner reaction time**
   Let the CoilShine solution work on the coils for a few minutes, before rinsing it off. Do not let it dry! In the meantime, switch from the black nozzle to the yellow nozzle.
5. **Cleaning the coils**
   After a few minutes, and with the yellow nozzle connected, start cleaning the coils thoroughly. Make sure all CoilShine cleaner is completely removed from the coils along with all the deposits. Take your time to effectively remove all deposits.

   5.1. Spraying angle:
   For regular coils, always make sure to spray horizontally. This way, the water pressure and flow are best spread over the coil fins. Essentially, creating a + pattern.

   5.2. Cleaning V-type coils:
   For V-type coils, use the special wonderwand lance. This thin lance can be pushed between the grills of the fans, eliminating the need to remove the fans during cleaning.
6. **Rinsing the system through the siphon hose**
   After cleaning, place the siphon hose into a bucket of clean water. Connect the black nozzle and keep rinsing the entire system for ca. 30-45 seconds to ensure the hose and pump are free of chemicals before storage.
7. **Reconnecting the fan motors**
   After cleaning, make sure to reconnect the fan motors to the heat exchanger.



Rinse and clean the coils with the yellow nozzle connected. Always spray the coils horizontally. This way, the water pressure and flow are best spread over the coil fins. Essentially, creating a + pattern.



When applying CoilShine cleaner, make sure to place the siphon hose into a canister and connect the black nozzle.



Use the thin wonderwand lance to clean V-shape coils from the inside out.

3. CC-400HF settings and accessories

Most used accessories for the CC-400HF system

The CC-400HF performs best when paired with some unique Goodway cleaning accessories. Below, you can find the most commonly supplied accessories, and what they are used for.



SKU: LPH-10 and LPH-25

Spray hose

The LPH-10 is a low-pressure spray hose which is used to connect to the CC-400HF cleaning system. The standard length, that comes with every CC-400HF system, is 10 meters. Also available in 25 meters.



SKU: QDN-1512-Y

Yellow cleaning nozzle

The yellow spray nozzle is used for all cleaning purposes; it has a 15-degree flat spray and is used with the CC-400HF system only. Every CC-400HF comes with 1 yellow spray nozzle.



SKU: QDN-LP25

Black application nozzle

The black 25-degree flat spray foaming nozzle has a large hole which allows the cleaning product to flow through. This nozzle is used to apply the cleaning agent. Every CC-400HF comes with 1 black spray nozzle.



SKU: QDN-45

45-degree coupling

This tool allows operators to clean difficult areas or hard to reach spots. The tool is fixed at a 45-degree spray angle. Not standardly included with CC-400HF, needs to be purchased separately.



SKU: QDN-90

90-degree coupling

This tool allows operators to clean difficult areas or hard to reach spots. The tool is fixed at a 90-degree spray angle. Not standardly included with CC-400HF, needs to be purchased separately.



SKU: 9657, 9658, 9659

Extension lance

This is a simple but useful tool, designed to clean surfaces at longer distances without having to put the gun right near the coil. The extension lances are available in various lengths: 90, 120, and 150 centimeters. Needs to be purchased separately.



SKU: 8945-36, 8945-48, 8945-60

Wonderwand

The Wonderwand is a thin lance with a 90-degree spray head. It is thin enough to go through the grills of the fans, therefore eliminating the need to remove them. Available in 90, 120, and 150 centimeters. Needs to be purchased separately.



SKU: 9650

Flexible spray tool

This flexible tool allows operators to clean difficult areas or hard to reach spots and can be bent according to the needs. It has a total length of 25 centimeters. Not standardly included with CC-400HF, needs to be purchased separately.



CC-400HF components:

1. Spray hose connection
2. Water supply connection
3. Siphon hose for cleaning agent
4. On/off switch
5. Spray hose
6. Spray gun
7. Black nozzle
8. Yellow nozzle
9. Extension lance
10. 90-degree cleaner application lance

This accessory kit is standardly supplied with the CC-400HF system.

4. After-use maintenance and storage

Rinsing the system and parts after each use

After each cleaning, place the siphon hose into a bucket of clean water. Connect the black nozzle and keep rinsing the system for ca. 30-45 seconds to ensure the hose and pump are free of chemicals before storage. Also, rinse off any other tools you have used with CoilShine cleaner. Ignoring this important step will lead to premature chemical damage which is excluded from the warranty. In the worst case the entire system needs to be replaced.

Cleaning the system from the outside

Make sure to wipe off any excess chemical that may have been leaked or spilled on the exterior parts of the CC-400HF system during the cleaning process.

Storage

Store the cleaning system indoor at normal room temperature. Do not store in overly hot or freezing conditions.

Long term maintenance

1. Periodically check the oil level in the pump sight glass. Only use 75W-90 oil to top off if the oil level is below the dot.
2. In case the pump leaks between the head and crankcase, immediately replace the water seals.

5. Safety instructions and precautions

Important safety instructions

- Read all instructions before using this cleaning system.
- Make sure all spray hoses are secure before starting the cleaning.
- Always check the pump system, hoses, fittings, etc. for damage, leaks, slices, or cuts before each use.
- Do not use with gasoline or any other flammable liquid. Do not operate in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. The system is not ATEX-certified.
- Remove the red oil cup from the pump and replace it with the black cup in the supplied plastic bag.
- Stay alert, watch what you are doing and use common sense when operating this cleaning system.
- Turn cleaning system off and relieve pressure in the hoses when done.
- Do not use while tired or under the influence of drugs, alcohol, or medication.
- Do not use the cleaning system if it does not operate properly or has been damaged. Do not try to service the unit yourself - call Goodway Benelux for assistance. Service must be performed only by qualified repair personnel. Service performed by unqualified personnel could result in a risk of injury and voids the warranty.
- The CC-400HF has a fixed pressure and flow rating, this cannot be changed. Do not use the black handle on top of the unit to change the settings. Rotating this handle may damage the unit.
- Always turn cleaning system off after use.
- Do not spray the cleaning system with water or chemicals.
- Use only approved accessories and replacement parts.
- **IMPORTANT:** The CC-400HF is specifically designed for low pressure, high flow cleaning at 12 liters per minute. Ensure the incoming water supply also provides 12 liters per minute at 2-3 bar of pressure.
- Drain spray hoses and guns of all liquids prior to short term and long-term storage of the pump system.
- **IMPORTANT:** Always prime the cleaning system with water, before using it. Do not turn on the system during the priming process. For precise steps, see page 1 of this manual.
- **IMPORTANT:** Do not use water with a temperature of more than 30°C.
- **IMPORTANT:** Never allow the pump to run dry; doing so will damage the pump seals.
- **IMPORTANT:** Wear proper PPE during a coil cleaning. While CoilShine is a mild chemical, it should still be handled with care. See page 1 of this manual for the recommended PPE.

Chemical warnings

- **WARNING:** Don't use with harsh chemicals or acids. Goodway CoilShine cleaner is specifically designed for use with the CC-400HF cleaning system. If you are planning on using a different chemical, make sure to check with Goodway Benelux beforehand. When used with harsh chemicals or acids, these may potentially damage the system and void the warranty.
- **WARNING:** Do not mix chemicals! Mixing incompatible chemicals may cause damage to the pump system, or may cause dangerous, life-threatening chemical reactions. Always flush the unit with water after use or before changing chemicals.

Electrical precautions

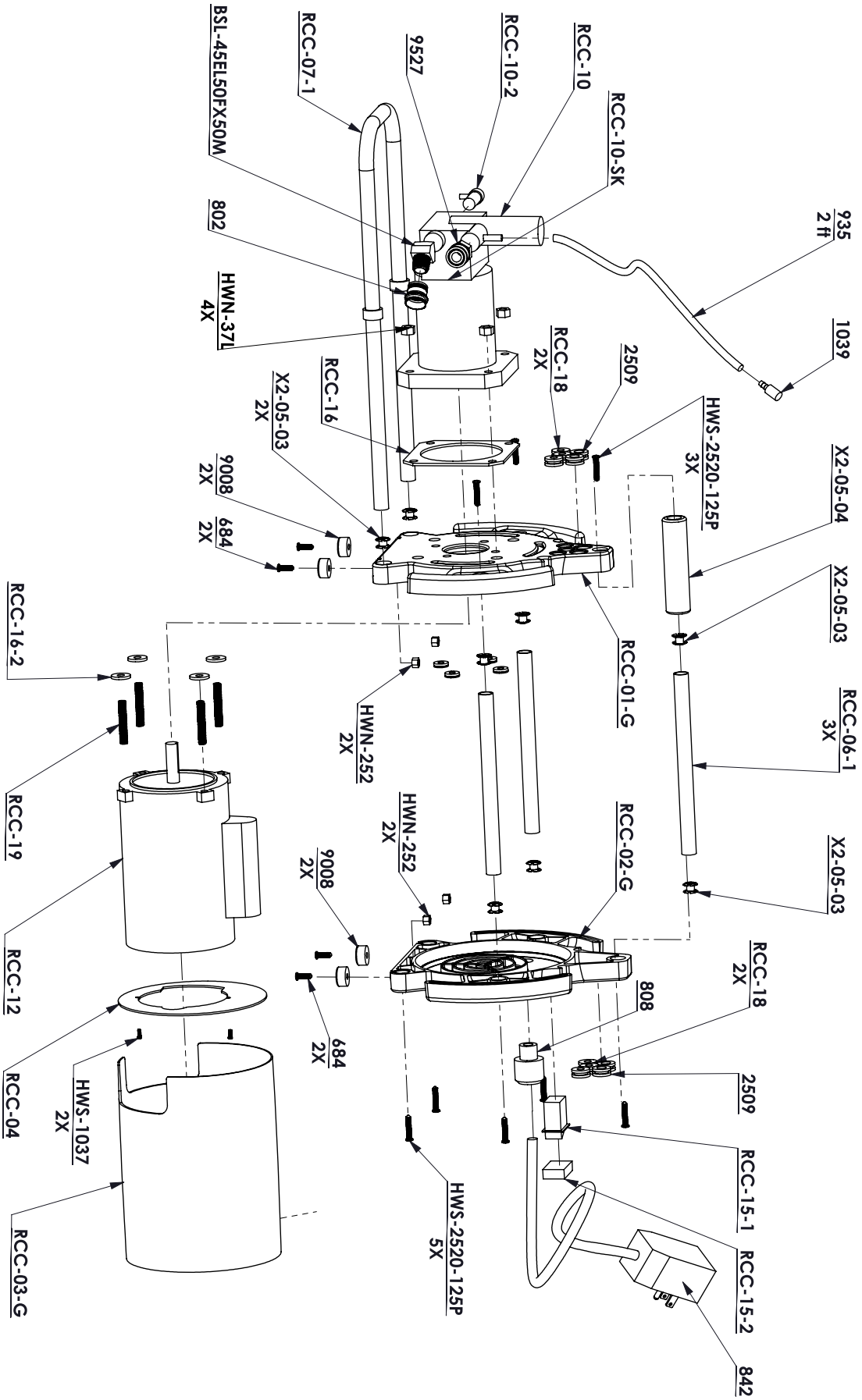
- Never expose the unit to rain or the elements. Store unit indoors in a cool, dry area.
- Make certain that the power source conforms to the requirements of the equipment.
- This unit is equipped with a Ground Fault Circuit Interrupter (GFCI) at the plug end of the cord for electrocution protection. Do not remove this device! If replacement of the plug or cord becomes necessary, use only identical replacement parts that include GFCI protection.
- When unplugging the power cord, grasp the plug – not the cord.
- Unplug the power cord when servicing the unit or leaving the machine unattended.
- Do not pull on the power cord, close a door on the cord, or pull the cord around sharp corners. Keep the cord away from hot surfaces.
- Do not use the machine if it has a damaged cord or plug.
- **DANGER:** Never remove the grounding prong from the power cord plug or use an adapter that eliminates ground.
- **WARNING:** To reduce the risk of electrocution, keep all connections dry and off the ground. Do not handle the unit or electrical plug with wet hands.

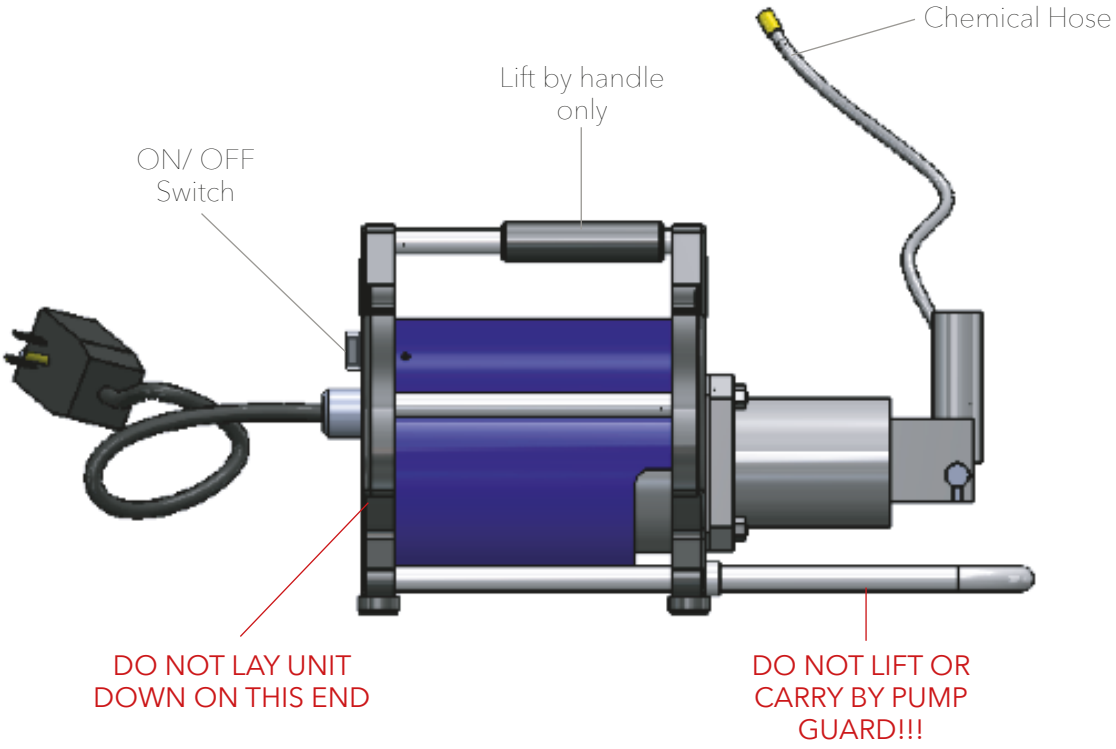
6. Troubleshooting

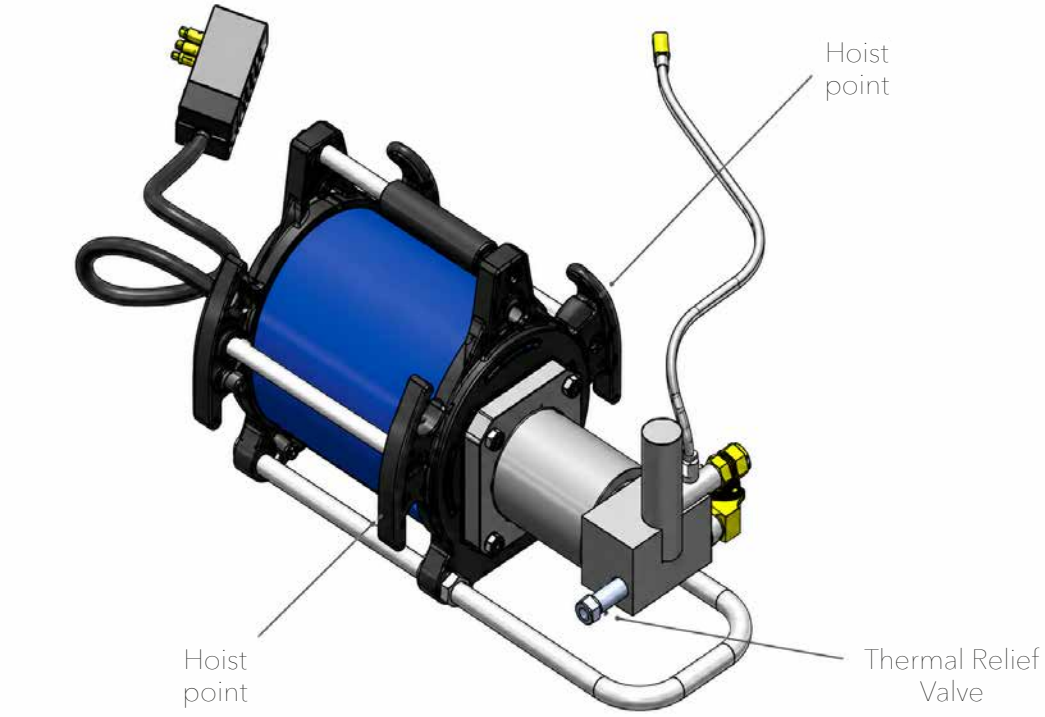
Problem	Probable cause	Remedy
Inconsistent and/or erratic pressure.	• Nozzle clogged. • Inadequate water supply.	• Clean nozzle opening. • 12 liters per minute minimum.
Motor stops abruptly.	• Motor thermal breaker tripped.	• Turn off the unit and let it cool down.
Motor buzzes but fails to start.	• Inadequate power supply.	• Check if power supply is adequate for unit electrical requirements.
Unit does not spray chemical.	• Wrong nozzle attached. • Siphon hose not in chemical.	• Connect black nozzle (QDN-LP25). • Put hose to bottom of CoilShine cleaner.

Problem not listed - call Goodway Benelux customer service: +31 183 216 170

7. Parts list and exploded view




Chemical Hose
Lift by handle only
ON/ OFF Switch
DO NOT LAY UNIT DOWN ON THIS END
DO NOT LIFT OR CARRY BY PUMP GUARD!!!


Hoist point
Hoist point
Thermal Relief Valve

PRODUCT CODE	DESCRIPTION	QTY
RCC-15-1	Switch, 1.5 hp Max	1
684	Screw, 1/4-20 panhead, 3/4" L	4
802	HOSE CONNECTOR	1
808	Romex Fitting	1
842	GFCI, 115V	1
935	Hose, Braided, 1/4' ID	2
1039	Tip, For Siphon Hose	1
2509	Grommet, 1/2 ID	4
9008	Foot	4
9527	Quick Connect, Female, 3/8	1
BSL-45EL50FX50M	Brass Elbow, 45 degree, 1/2M x F	1
HWN-37L	Nut, Nylock, 3/8	4
HWN-252	Nut, 1/4-20	4
HWS-1037	Screw, #10, Sheet Metal, 3/8"	2
HWS-2520-125P	Screw, 1/4-20, Panhead, 1.25	8
HWW-252	Washer, 1/4	4
RCC-01-G	Mounting Plate, Molded, Front	1
RCC-02-G	Mounting Plate, Molded, Rear	1
RCC-03-G	Cover Tube	1
RCC-04	Baffle, Rear	1
RCC-06-1	Tube, 3/4 OD, 9.56 L	3
RCC-07-1	Pump Guard	1
RCC-10	Pump, 3.0 GPM	1
RCC-10-2	Thermal Relief Valve, 1/4 NPT	1
RCC-10-SK	Seal Kit, RCC-10	1
RCC-12	Motor, 1 HP, 56F	1
RCC-15-2	Cover, for 530-117 Switch	1
RCC-16	Heat Shield, Complete Set	1
RCC-16-2	Heat Shield, Washer, Motor	4
RCC-17-2	Heat Shield, Washer, Pump	4
RCC-18	Grommet, 3/8 ID	6
RCC-19	Motor Set Screw, 3/8-16, 2.25'"L	4
X2-05-03	Star Nut, Tube Connector	8
X2-05-04	Foam Grip, 1/2 ID. 5.25	1