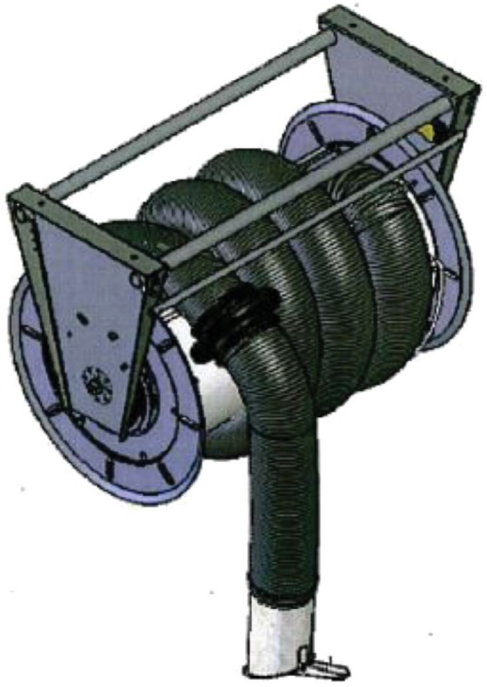
AQC DUST COLLECTING SYSTEMS

Owner's manual for installation, usage and maintenance



MAXIREEL™

HR (spring) model and HRM (motorized) model

This manual is property of the owner. Leave with the unit when set-up and start-up are complete. *AQC Dust Collecting Systems inc.* reserves the right to change design and specifications without prior notice.

Introduction

This present manual refers to the *Maxireel hose reel*. It includes important information concerning the installation, usage and maintenance of your unit. Read this manual thoroughly and apply the directives and procedures. Staff and personnel using the system will have to trained on safety measures and maintenance instructions.

Warning!
The usage of the fume arm will require proper installation and handling. Contact *A.Q.C.* Inc. if you have any doubt in regard to the usage of your extension swing boom.

Warning: Not following directives and procedures could cause injuries or property damages.

Information on *Maxireel* hose reel

Model : _____ Serial number : _____

Delivery date : _____ Date of installation : _____

Name of customer : _____

Address : _____

_____

_____

Accessories : _____

Other : _____

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Presentation

The *Maxireel* hose reel is designed to be installed near the source of fume or CO created by vehicles while running and to be exhausted outside of the facility. A tailipe adaptor or hood at the end of the flexible hose is required for proper source capture of contaminants.

The flexible hose can also reach inside of tanks, ship's hulls or other confined areas where conventional equipment cannot reach in order to facilitate the extraction of polluted air from working areas.

Flexible hose mounted on the reel allows extraction of gas-air mixtures to a maximum 1500°F, 815°C (depending on the hose selected). Other special hoses may be supplied as per application.

Each spring hose reel unit includes:

- Bolted reinforced steel frame
- Flexible hose inlet connection
- Exhaust outlet (to fan or main duct)
- Galvanized hose storage drum and drum cover
- Hose guide for proper flexible storage around the drum.
- 3 step paint preparation: degreasing, primer and polyurethane base paint final coat
- Single or double heavy duty spring(s)
- Spring cassettes
- Hose type, diameter and length according to customer requirements
- Tailpire adaptor according to customer requirements
- Flexible hose stop

The *Maxireel* hose reel is delivered fully assembled. Spring tenssion is adjusted at the factory but can be field modified if required.

Each motorized hose reel unit includes:

- Bolted reinforced steel frame
- Flexible hose inlet connection
- Exhaust outlet (to fan or main duct)
- Galvanized hose storage drum and drum cover
- Hose guide for proper flexible storage around the drum.
- 3 step paint preparation: degreasing, primer and polyurethane base paint final coat
- Tube motor (0.33 HP / 115V) direct drive
- Handset, pendant or wall mounted UP/DOWN/STOP switch
- Hose type, diameter and length according to customer requirements
- Tailpire adaptor according to customer requirements

UP/DOWN/STOP limit switches are adjusted at the factory but can be field modified if required.

Model numbers

Because of the wide variety of model numbers, it is suggested to refer to the promotional leaflet.

Normal usage

The *Maxireel* hose reel is a rotating storage and dispensing device for exhaust hoses in diameters of 3”(75mm), 4”(100mm), 5”(125mm), 6”(150mm) and 8”(200mm). The flexible hose and attached nozzle are rolled onto the drum.

Operation and purpose

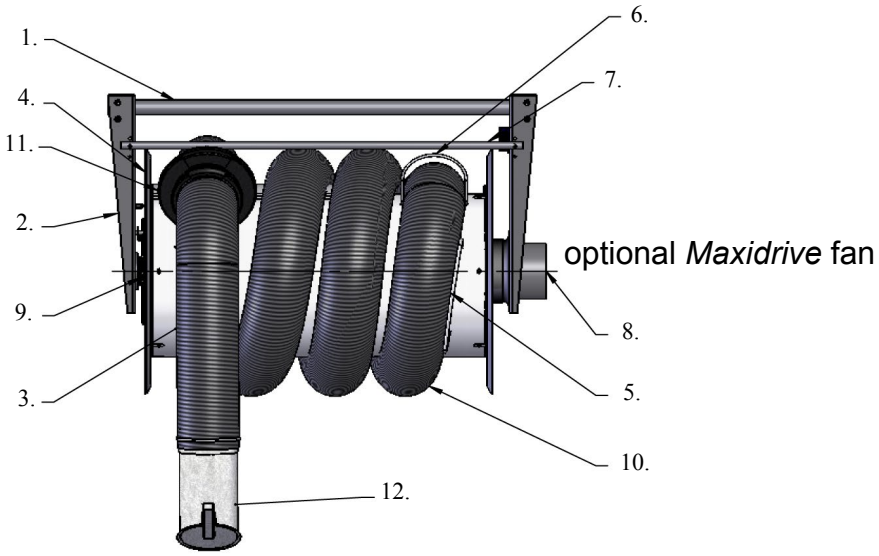
During normal operation, the *Maxireel* hose reel tailpipe adaptor is fitted onto the vehicle exhaust pipe. The tailpipe adaptor must be larger in diameter than the vehicle exhaust pipe in order to draw ambiant air and cool the exhaust fume temperature. The spring recoil system or the motorized motor allow the flexible hose to be stored onto the reel drum thus reducing the risks of crushing the hose by not laying it on the floor when not in use.

Warning!

Flammable and /or explosive solids and solvents may create a fire or explosion within the hose reel. Such matters should not be vacuumed unless the hose reel is designed to that effect and equipped with appropriate hose specifications. Special care is mandatory when the hose reel is used for flammable and/or explosive solids and solvents. Any object on fire or bearing a fire hazard such as sparks created by grinding/ buffing or smoking material should not be allowed to enter the source capture area as it may cause a fire or explosion.

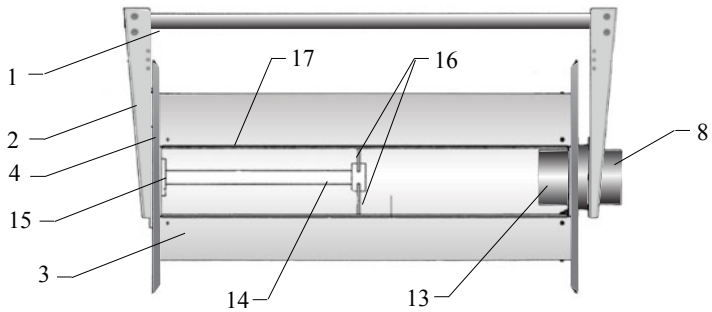
Spring hose reel components

1. Tubular structure
2. Side panel
3. Drum
4. Drum sheaf
5. Hose guide
6. Hose clamp
7. Hose stop bar
8. ø 6'' air outlet connection
9. Spring cassette
10. Flexible hose
11. Hose stop
12. Nozzle



Motorized hose reel components

1. Tubular structure
2. Side panel
3. Drum
4. Drum sheaf
8. Air outlet connection
13. Internal flexible hose connection
14. Direct drive tube motor
15. Tube motor crown adaptor
16. Tripod
17. Drum cover (not shown in drawing for clarity purposes)



Warning!

Installation of equipment must be performed as per local building laws and regulations. Structure must meet proper weight support of arm and equipment. Installation must be performed by a competent and qualified contractor. Structural grade fasteners must be used for holding the hose reel and components to ceiling, trusses or joyces.

Inspection of goods

The *Maxireel* hose reel may be shipped on one (1) skid or attached in pairs. Proceed with a visual inspection upon receiving the material for any damages or missing skid(s).

NOTE: If damages are apparent upon receiving the material, indicate so on receiving slip (freight waybill) and confirm by having the truck driver sign the waybill with any discrepancy. *AQC* takes photos of material prior to shipping. Inspect hose reel appearance when receiving the goods. Report damages to carrier immediately. Failure to do so will void future claims.

Note : Certain oversized tailpipe adaptors may be shipped not attached to flexible hoses. Minimal assembly may be required at jobsite.

Location

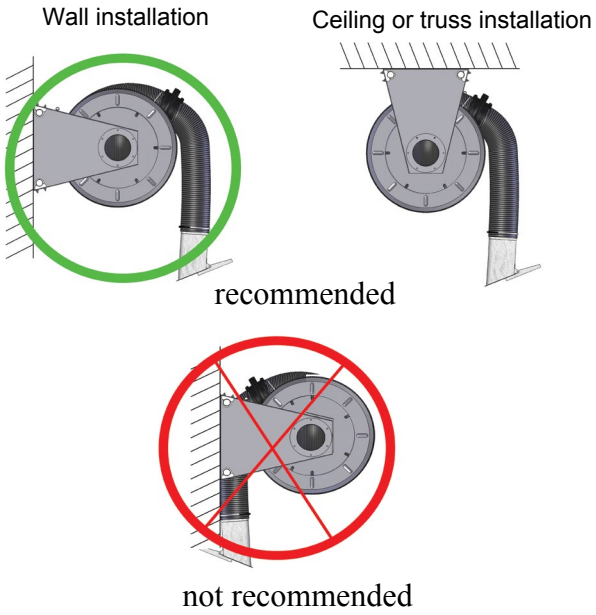
1. The area where the hose reel will be installed should be able to sustain the weight of such along with the accessories, ducting, fan or any optional equipment.

2. Installer should ensure area around the hose reel will be free of obstacles such as beams, lighting fixtures, overhead cranes, etc.

3. Height of installation for hose reel bracket should not be higher than the actual length of flexible hose. If permitted, nozzle and hose should be hanging about 7’(2.2m) above the floor in order for the user to grab the nozzle and pull on hose. If not permitted, a cable and handle should be installed on the nozzle so user can grab handle to pull down flexible hose when needed.

4. For safety measures, a minimum two (2) man crew should be appointed for the installation of the hose reel.

Assembly on building structure



Note: Wall mounted hose reel should have hose away from the wall.

Installation

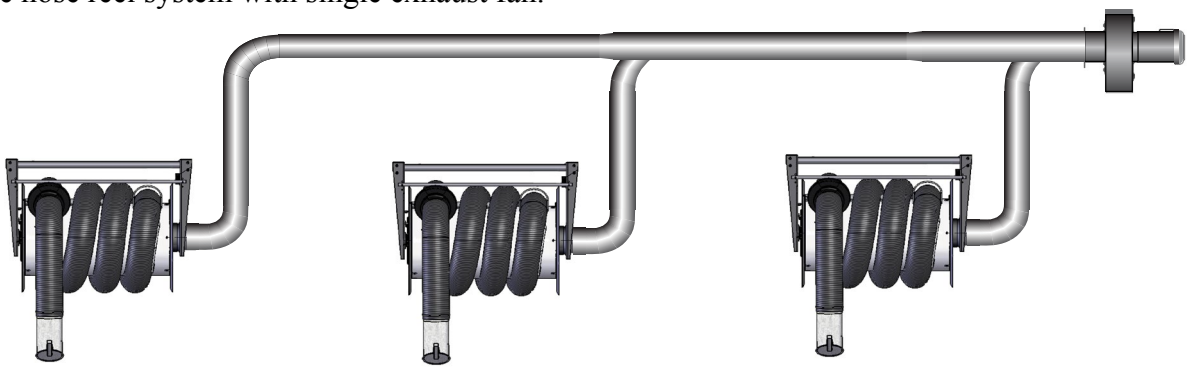
Warning!

Hose reel is operated by two (2) heavy duty springs. Do not remove hose stop from flexible hose when installing. Hose reel spring ratchet lock may disengage if removed causing injuries and/or property damages.

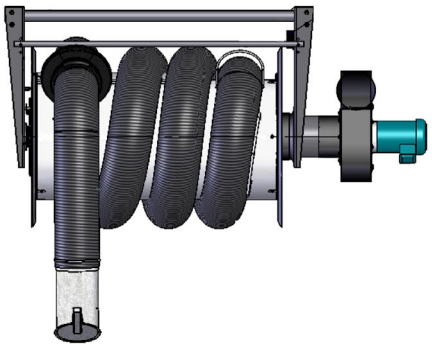
Do not remove flexible hose from reel when installing. Contact *AQC* or refer to ''Flexible hose replacement'' section of this manual if required.

Typical hose reel installation

Multiple hose reel system with single exhaust fan.



Single hose reel system with direct mount exhaust fan



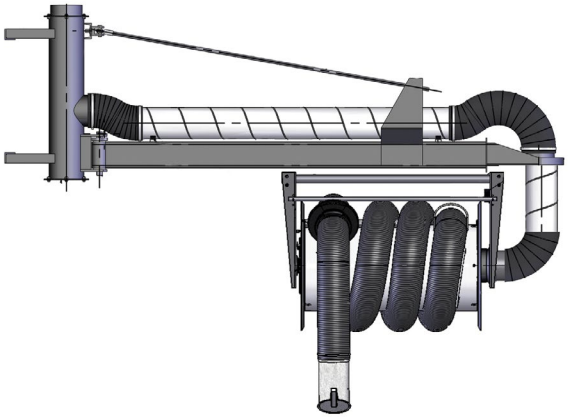
1. Locate the area where the hose reel will be installed. Ensure hose reel air outlet faces the proper direction for connection to main exhaust duct system.

2. Bolt the hose reel tubular structure to joyces or wall.

3. Connect flexible hose or spiral pipe from hose reel air outlet to main exhaust duct system.

4. If hose reel is equiped with direct mounted exhaust fan, connect spiral pipe to exhaust stack outside of the facility.

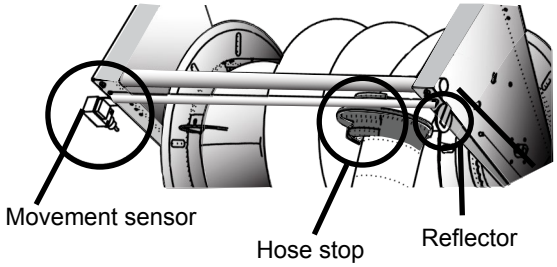
Hose reel with extension swing boom (single pivot only)



Optional equipment

1. Movement sensor with hose stop for automatic exhaust fan START/STOP. (requires reel mounted control panel)

   Note: For proper operation, hose stop has to be aligned with movement sensor and reflector. Contact *AQC*, fore more details on eletrical panel. (refer to electrcial section of this manual)



2. Mechanical spring damper at reel outlet. Usually required if hose is equipped with ‘’open’’ type nozzles.

3. Low to
extreme temperature hoses

4. Different tailpipe adaptors

5. Direct mount exhaust fan

6. Lightweight aluminum cane nozzles for high truck stacks

7. Telescopic pole with grab hook to reach fully coiled hose nozzle onto hose reel.

Start up (Spring hose reel)

Prior to using the hose reel for the first time, the check list must be followed to ensure a proper continuous operation.

1. Pull down on tailpipe adaptor to uncoil the flexible hose from the hose reel drum.

2. Ensure you hear a clicking sound telling the operator the ratchet lock is moving over the spring cassette gears.

DO NOT COMPLETELY UNCOIL FLEXIBLE HOSE FROM HOSE REEL. It is important to leave half a loop of hose around the drum in order to coil it back on reel.

3. To lock the flexible hose at the required length, release pulling on it when two or three ‘’clicks’’ have been heard. This will indicate the ratchet lock is ready to be engaged.

4. To coil the flexible hose back onto the drum, pull on the hose until no ‘’click’’ is heard. This will indicate the ratchet lock is disengaged and in between two sets of gears and the spring may now coil the hose (wrap) onto the drum..

5. Gently lift the hose up and guide it onto the hose reel drum.

Note: Keep hose from recoiling too fast by holding it. Springs are industrial grade and coiling hose rapidly onto drum may damage it when hose stop hits hose stop bar.

6. Ensure tailpipe adaptor is properly attached to the flexible hose.

7. Start exhaust fan and ensure vacuum is adequate.

8. If flexible is left hanging at ‘’grab’’ level, ensure it does not become an obstacle to personnel or moving vehicles.

9. Ensure length of flexible hose is sufficient to reach tailpipe of vehicle to be serviced.

10. If hose reel is equipped with mechanical damper, ensure it is in the ‘’OPEN’’ position when hose is uncoiled from reel.

Start up (Motorized hose reel with wall mount, pendant or wireless remote controls)

Note: *AQC* adjusts the maximum UP/ DOWN limit switches when hose is supplied by factory. DO NOT ATTEMPT TO READJUST LIMIT SWITCHES. If customer supplies his hose, refer to flexible hose replacement procedure in this manual.

1. Press or turn the DOWN button on remote control. **NOTE: Be ready to stop the reel if hose does not stop automatically after uncoiling all it's length and starts to ''rewrap'' backward.**

2. When hose is uncoiled completely and rell stopped by itself, press or turn the UP button.

NOTE: Be ready to stop the reel if hose does not stop automatically after coiling all it's length and starts to ''rewrap'' over the drum.

3. Flexible hose may also be stopped anywhere while coiling or uncoiling. Press or turn the STOP button and ensure the reel stops turning. UP or DOWN action can then be activated.

   Proceed with steps 6 to 10 on spring reel version.

Adjustment & Functionality

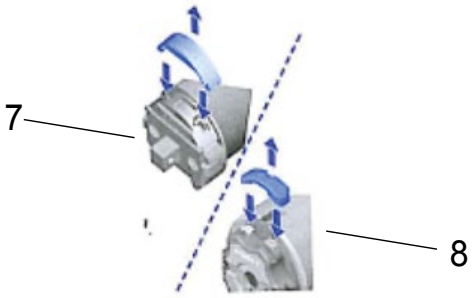
For motorized reels equipped with pendant or wall mounted controls ONLY.

Warning!

To reduce risk of severe injury or matrial damages, it is advised to have two (2) technicians working on the parameters of limit switches. One (1) technician to operate the UP/DOWN switches (wall mounted or pendant) and one (1) to set the limit switches.

Hose reel is factory set for a safe and proper use of hose length contained on hose drum. To readjust or modify the limit switches, refer to step by step procedure listed below.

1. Remove tube motor protective cap covering the UP/DOWN limit switch buttons.



Location to the protective cap is between the side round disk (# 7 in drawing) and side support bracket (# 8 in drawing). The use of a long stem flat head screwdriver could be needed.

2. Both buttons (yellow for maximum DOWN and white for maximum UP hose positions) underneath the protective cap should be "popped up''. This determines the limit switches were set and locked.

If the hose is completely or partly wrapped around the drum, technicians will begin with setting the maximum hose DOWN setting.

3. To unlock and reset the DOWN limit switch, press on the YELLOW push button so it "pops'' down, unlocking the limit switch. The technician operating the pendant or wall controls witch will be asked to turn the rotary switch to the DOWN position.

4. When all of the flexible hose has unwrapped from the hose reel drum, (refer to proper maximum hose DOWN position in drawing below), the technician operating the rotary switch will be asked to turn the knob to the STOP position.

5. The technician operating the push button limit switches will then press the YELLOW button so it "pops''up locking the limit switch into place.

6. To unlock and reset the UP limit switch, press on the WHITE push button so it "pops'' down, unlocking the limit switch. The technician operating the pendant or wall control switch will be asked to turn the rotary switch to the UP position.

7. When all of the hose or as maximum length of hose that can be wrapped around the drum has been completed, the technician operating the rotary switch will be asked to turn the knob to the STOP position.

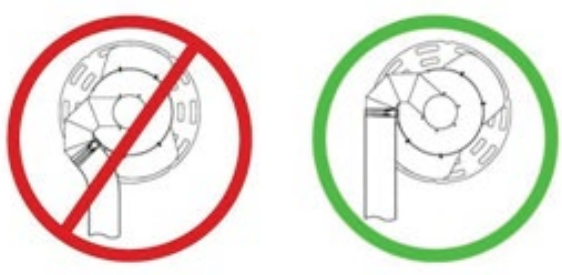
Warning!

To reduce risk of breakage or detachment of the hose, always keep limit adjustment in a way so that the hose hangs correctly as shown. Do not overturn or underturn flexible hose on hose reel.

8. The technician operating the push button limit switches will then press the WHITE button so it "pops'' up locking the limit switch into place.

9. Before replacing the protective cap over the limit switches, the technicians should test maximum UP and DOWN of the hose. System should stop automatically as per limit switches settings. The technicians should also test the system by turning the rotary switch to STOP and ensuring the system stops. UP and/or DOWN automatic operations should resume even if hose was stopped before maximum limit switches settings.

10. If all operations are satisfactory, replace protective cap over push buttons on tube motor.



Adjustment & Functionality

For motorized reels equipped with radio signal controls ONLY.

Note on wireless transmitters: Each hose reel has his assigned remote transmitter pre-set at the factory. UP/DOWN limits are also pre-set at the factory.

Hose reel is factory set for a safe and proper use of hose length contained on hose drum. To readjust or modify the limit switches, refer to step by step procedure listed below. Regular operation of the wireless remote is performed from the ground but for UP/DOWN setting results, it is best to have the transmitter no more than 6‟(1,8 meter) from the hose reel and aimed at the hose reel.

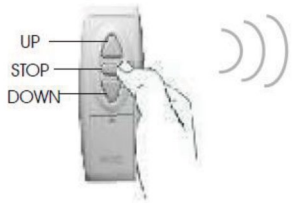
To assign a new or a replacement transmitter with a definite hose reel:

1. Push the UP and DOWN buttons on the transmitter simultaneously and release the buttons after the hose reels jogs briefly up and down indicating the transmitter is now linked to the hose reel tube motor integrated receiver.

2. Press the STOP/MY and UP or DOWN buttons simultaneously depending on which setting you need to do first. When the flexible hose has reached the desired maximum UP or DOWN position, release pressing the buttons. Additional minute adjustments may be performed by pressing the DOWN or UP position that was selected to start with.

3. Proceed with UP or DOWN other settings using the same procedure as in step 2 mentioned above.

4. Press the programming button on the back of the transmitter to confirm and lock settings.



To modify or re-adjust the UP/DOWN limit switches:

1. Press the STOP/MY button only. Hose reel will jog briefly indicating it is ready for programming.

2. Proceed with steps 2, 3 and 4 mentioned above.

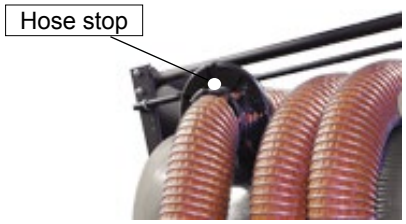
Replacing hose (motorized)

Note: It is advised to have two (2) technicians to perform hose replacement on the *Maxireel* hose reel. *AQC* will not be held responsible of hose reel operation if customer does not replace defective or damaged hose with identical new hose. Technicians or qualified personal will need to work from a safe raised platform if hose reel is installed at ceiling height.

SAFETY NOTE: Proper gear such as harnesses and hard hats should be be worn as per OSHA safety standards if technicians need to work in an elevated area.

DO NOT OPERATE REEL UNTIL STEPS LISTED BELOW HAVE BEEN COMPLETED.

1. Press the DOWN button to unwrap the hose completely from the drum. **DO NOT OPERATE REEL AFTER THIS STEP.**



2. Remove hose reel drum cover.

3. Remove hose clamp from reel exhaust inlet inside hose reel drum.

4. Loosen the U clamp holding the flexible hose onto the reel drum. **AT THIS POINT, A TECHNICIAN SHOULD HOLD THE HOSE TO STOP IT FROM FALLING DOWN TO THE FLOOR. THIS COULD RESULT IN SEVERE INJURIES OR PROPERTY DAMAGES.**

5. Lower the hose gently to the floor. **DO NOT DROP THE HOSE.**

6. If hose is equipped with hose stop, remove and set aside. It will be needed when replacement of hose complete.

7. Insert about 24'' to 30'' of the new flexible hose through the U bolt on hose reel drum.

8. Slip hose onto the reel exhaust inlet inside hose reel drum.

9. Tighten hose clamp onto the new hose. Ensure clamp is firmly attached to the hose reel inlet collar. Metal screws may be used below the hose clamp to secure the hose in place on collar.

10. Pull on hose toward the exterior of the reel to form a long 90 degrees bend. **DO NOT KINK THE HOSE TO BLOCK AIRFLOW.**

11. Tighten the U bolt onto the new flexible hose. **DO NOT CRUSH THE HOSE AND BLOCK AIRFLOW.**

12. Install drum cover on to the hose reel drum.

13. Remove tailpipe adaptor from damaged hose and install on new hose

14. Check up and down movement of hose reel for proper operation.

15. If hose reel is equipped with hose stop for automatic fan START/STOP, install hose stop on flexible making sure the hose stop blocks the signal to the reflector when hose is wrapped around the drum.

Replacing hose (spring reel)

Note: It is advised to have two (2) technicians to perform hose replacement on the *Maxireel* hose reel. *AQC* will not be held responsible of hose reel operation if customer does not replace defective or damaged hose with identical new hose. Technicians or qualified personal will need to work from a safe raised platform if hose reel is installed at ceiling height.

SAFETY NOTE: Proper gear such as harnesses and hard hats should be be worn as per OSHA safety standards if technicians need to work in an elevated area.

DO NOT OPERATE REEL UNTIL STEPS LISTED BELOW HAVE BEEN COMPLETED.

1. Lower flexible hose completely off the reel.

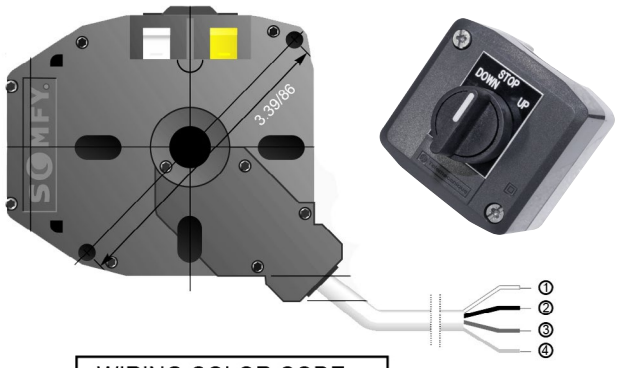
2. Lock hose reel with ratchet lock system. Remove hose reel drum cover. **Safety note: It is recommended to use vise-grips on drum sheaf # 4, front and back of the hose stop bar # 4.**

3. Continue steps 3 to 15 on motorized reel version.

Electrical connections

Note: Because of the wide variety of possible electrical connections with exhaust fans, proximity switches, etc, *AQC* will supply appropriate drawings as per selection. If reels are equipped with side mounted control panels, electrical diagram are pasted in the cover of the panel.

Wall mounted motorized reel UP / DOWN / STOP control switch wiring connection



WIRING COLOR CODE		
①	White	Neutral
②	Black	Up
③	Red	Down
④	Green	Ground

Note: Pendant UP /DOWN /STOP switch is factory installed to hose reel

Maintenance and inspection

The chart indicated below shows different inspections and the frequency at which they should be performed.

Frequency of inspections	Components	Procedures
Daily	Springs or tube motor	• Ensure flexible hose recoils and uncoils properly from the hose reel drum.
Weekly	Flexible hoses	• Check for possible leaks or tears. Repair or replace if necessary.
		• Ensure hose clamps are fastened correctly to tail pipe adaptor.
Yearly	Hose reel assembly	• Perform a complete inspection of hose reel and components.
		• Check status of ratchet lock assembly for spring version. Check tripod attachments on motorized version. Replace if necessary.

Troubleshooting

Problem	Probable cause	Solution
(Spring reel) **Flexible hose will not recoil onto hose reel drum**	Spring tension inadequate	Remove the tailpipe adaptor and hose stop from flexible hose. Pull hose down about 6' to 8'(2 to 2.5m). Guide the flexible hose toward the rear of the reel drum and wrap hose upward onto the drum. Pull flexible hose toward the front of the reel in order to add more tension to the springs. Check spring tension. DO NOT RELEASE YOUR HOLD ON FLEXIBLE HOSE WHEN CHECKING SPRING TENSION. If spring tension is not sufficient, add more "wraps" around the drum until tension is adequate. DO NOT OVERTIGHT. Upon reinstalling the hose stop on flexible hose, ensure ratchet lock is in between two sets of gears when the hose is coiled around the drum. Reinstall tailpipe adaptor.
	Ratchet lock is jammed	Release ratchet lock manually on hose reel spring cassette. Adjust hose stop on flexible hose so that the hose stop rests against the hose stop bar and ratchet lock is between two (2) sets of gears.
	Spring assembly is broken	Replace spring assembly including the spring cassettes. DO NOT ATTEMPT TO RE-PLACE SPRINGS ONLY. **EXTREME INJURIES COULD OCCUR BY REMO-VING THE SPRINGS FROM THE SPRING CASSETTE.**
(Motorized reel) **Flexible hose does not go UP or DOWN**	Tube motor is defective	Replace tube motor
	Limit switches are not adjusted properly	Proceed with setting the limit switches procedure on page 14 of this manual.
	Defective or faulty wire connections in panel or junction box.	Check electrical wiring and connections (refer to electrical diagram if included)
	Tripod tube motor support is broken or loose.	Check fasteners on tripod. Replace if twisted or broken.

Problem	Probable cause	Solution
Flexible hose coils up to quickly (spring reel) *(Spring reel)*	Spring tension inadequate	**Note: Secure (lock) hose reel using the ratchet lock system before proceeding. Remove tailpipe adaptor and hose stop. Push flexible hose up in order to remove one wrap from around the drum. Check spring tension. DO NOT RELEASE YOUR HOLD ON FLEXIBLE HOSE WHEN CHECKING SPRING TENSION. If tension is still too tight, remove wraps of hose from the drum until tension is adequate. Upon reinstalling the hose stop on flexible hose, ensure ratchet lock is in between two sets of gears when the hose is coiled around the drum. Reinstall tailpipe adaptor.**
Insufficient suction of smoke, vapor or dust	Hose reel outlet damper is closed or jammed	Open damper. Check damper assembly components.
	Fan has obstructions	Check for obstructions at the fan outlet. Remove any debris.
	Debris in flexible hose, tailpipe adaptor or ductwork	Remove flexible hoses and check interior for debris. Open tailpipe adaptor and ductwork and check for debris.

Limited Warranty

AQC warrants to the original purchaser that all equipment will be free from defects in materials and workmanship for one year from the date of shipment from *AQC*.
This warranty applies only if equipment is properly installed, maintained, and operated under normal conditions and does not apply to damage caused by corrosion, abrasion, abnormal use or misuse, misapplication, or normal wear and tear. This Warranty will be void with respect to equipment that is subject to unauthorized repairs or modifications. *AQC* makes no warranty as to goods manufactured or supplied by others. This warranty is subject to any limitations in *AQC* quotation and may not be modified except by a written instrument signed by the President or Vice President of Sales of *AQC*.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED, INCLUDING ANY IMPLED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT.

As purchaser's exclusive remedy for any defects in the equipment, *AQC* will exchange of repair any defective parts during the warranty period, provided such parts are returned, prepaid, to *AQC* factory. The obligation of *AQC* is limited to furnishing replacement parts F.O.B. *AQC* factory or making repairs at *AQC* factory of any parts that are determined, upon inspection by *AQC* to be defective. In no event will *AQC* be responsible for labor or transportation charges for the removal, reshipment of reinstallation of the parts.

IN NO EVENT WILL AQC BE RESPONSIBLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES.

AQC DUST COLLECTING SYSTEMS

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