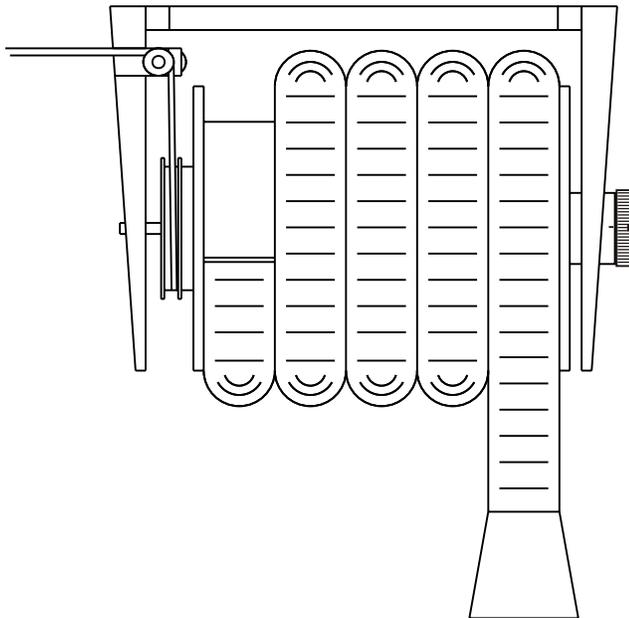


INSTALLATION AND OPERATIONS MANUAL

WINCH OPERATED TUBING STORAGE REEL

MODEL TSR-W



CAR-MON
PRODUCTS, INC.

1225 Davis Road Elgin, IL 60123
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INSPECTION AND PREPARATION

1. Check each unit to see that it is complete. The components of the system include:
 - A. Tubing Storage Reel (Reel may have attached CMW Exhaust Fan.)
 - B. Hose assembly consisting of hose with flange at one end, and exhaust adapter other end.
 - C. PSWC Closed Circuit Winch, 150' cable, Pulley Bracket with 2 pulleys, and Cable Guide.
2. Check for any damage that may have been caused by shipping. If concealed damage is found, report it to the carrier immediately. Car-Mon cannot be responsible for any damage not reported to the carrier in a timely manner.
3. Review the installation procedure thoroughly before proceeding.

REEL INSTALLATION

1. Although tubing storage reels may be ceiling or wall mounted, it is recommended that winch reels be ceiling mounted. If ceiling mount is not possible, contact factory for special instructions for wall mount of winch reels.. Make sure the mounting surface is level and plumb and able to support the weight and stress of the reel and hose which can weigh up to 200 lbs. Use all four mounting holes and make sure the bolts are suited for the weight of the reel. After mounting, make sure the reel is level. Hanging by threaded rods is not acceptable.
2. Mount closed circuit winch to a secure surface, by bolting or welding. (See diagram on page 3) Make sure it is level. Install cable guide and pulley bracket, making sure they line up with each other. The guide and bracket should be at least 20" apart. The center lines of the reel, pulley bracket, cable guide, and winch should be in the same plane. The pulley bracket does not need to be at the same height of the mounted pulleys on the reel, however, a radical angle going up to the reel may cause strain on the pulleys.
3. Attach the hose assembly to the reel using the bolts and gasket provided to the inlet pocket of the reel. Do not wind any of the hose on the reel at this time. See the photo at right.
4. Refer to the diagram on page 3 for step 4 & 5. With the flexible hose fully extended, attach one end of cable #1 to the cable drum by sliding the cable under both retainers and tightening the set screws. Wrap one turn of cable for every 5 foot length of hose that will be on the reel around the cable drum counterclockwise. Route the cable through pulleys A & B and down through cable guide C. Wrap the cable around the winch drum no more than once and attach to the winch drum using the set screws farthest from the mounting surface.

Note: In the fully extended position with the hose hanging down, the pocket of the reel should be between the 11:00 and 3:00 position. (See below) The pocket should not go past the 3:00 position. Cut off the access cable.



5. Attach cable #2 to the cable drum as you did in step #4 using the other pair of retainers and set screws. Wrap the cable no more than once around the cable drum and thread it through the pulleys D & E and cable guide F. Do not attach the cable to the winch at this time. Keep cable #2 taught while using the winch to wind the hose onto the reel until the adapter is about 1 foot below the bottom of the reel. Do not go past this point. Wind cable #2 around the winch drum no more than once and attach it to the drum using the other pair of set screws. Cut off the excess cable. Check the operation of the winch winding the hose up and down.
6. If hose reel has attached fan, complete wiring. (Wiring diagrams are found in fan instruction sheet or online from fan manufacturer.) If fan is not attached, connect exhaust ducting.
7. Test system. Unwind hose completely, turn on fan system. Check to see that there is a good air flow through the exhaust adapter. If it appears that there is very little air velocity, recheck wiring on fan to make sure voltage is correct and it is not running backwards.

OPERATION

1. To unwind: Put the ratchet release in the down position, firmly grasp the winch handle and turn counterclockwise until the hose is all unwound. Leaving wraps on the reel will cause higher static pressure and may decrease the air flow .
2. Attach the exhaust adapter to the vehicle. **VEHICLE MUST NOT BE RUNNING WHEN ATTACHING ADAPTERS TO EXHAUST PIPES.**
3. Turn on fan system-start vehicle only after fan is up and running.
4. After servicing vehicle, turn vehicle off and let the system fan run for a short time. This will cool the exhaust adapter and clear the hose and reel of any fumes and carbon monoxide.
5. Detach adapter, switch the ratchet stop to the up position, grasp the winch handle firmly and wind in a clockwise position until the hose is retracted and the exhaust adapter is about 1 to 2 feet below the bottom of the reel. Leave ratchet stop in up position when storing hose on reel.

MAINTENANCE

1. Lubrication:
 - A. Periodically check and lubricate the discharge duct bearing with a lithium base grease.
 - B. The heavy duty cast steel flange bearing should be periodically checked and greased as needed.
 - C. Lubricate the pulleys and the winch journals as required with a non-detergent 30 weight oil.
 - D. Periodically check the winch cable for any wear or fraying.
2. Cleaning
 - A. Inspect the flexible hose, wipe off excess grime. Check for any breaks or cracks.
 - B. Brush or wipe off accumulated dirt and grime.

LIMITED WARRANTY

Car-Mon Products, Inc. shall replace or repair at its discretion any products or components sold or manufactured which prove to be defective in workmanship or materials within 1 year from date of shipment.

The foregoing is in lieu of all warranties, expressed or implied, and all other obligations or liabilities on behalf of the company, regarding products it may manufacture or sell. Except as otherwise provided herein, the purchaser accepts the product "as is".

No warranty is made regarding the suitability or compatibility of any Car-Mon product for a particular application or purpose unless specifically stated. The Customer is responsible for the final selection and utilization of Car-Mon products for their use. The Customer assumes all liability for the consequences of performance, application, use and/or misuse by employees of products purchased from Car-Mon Products, Inc.

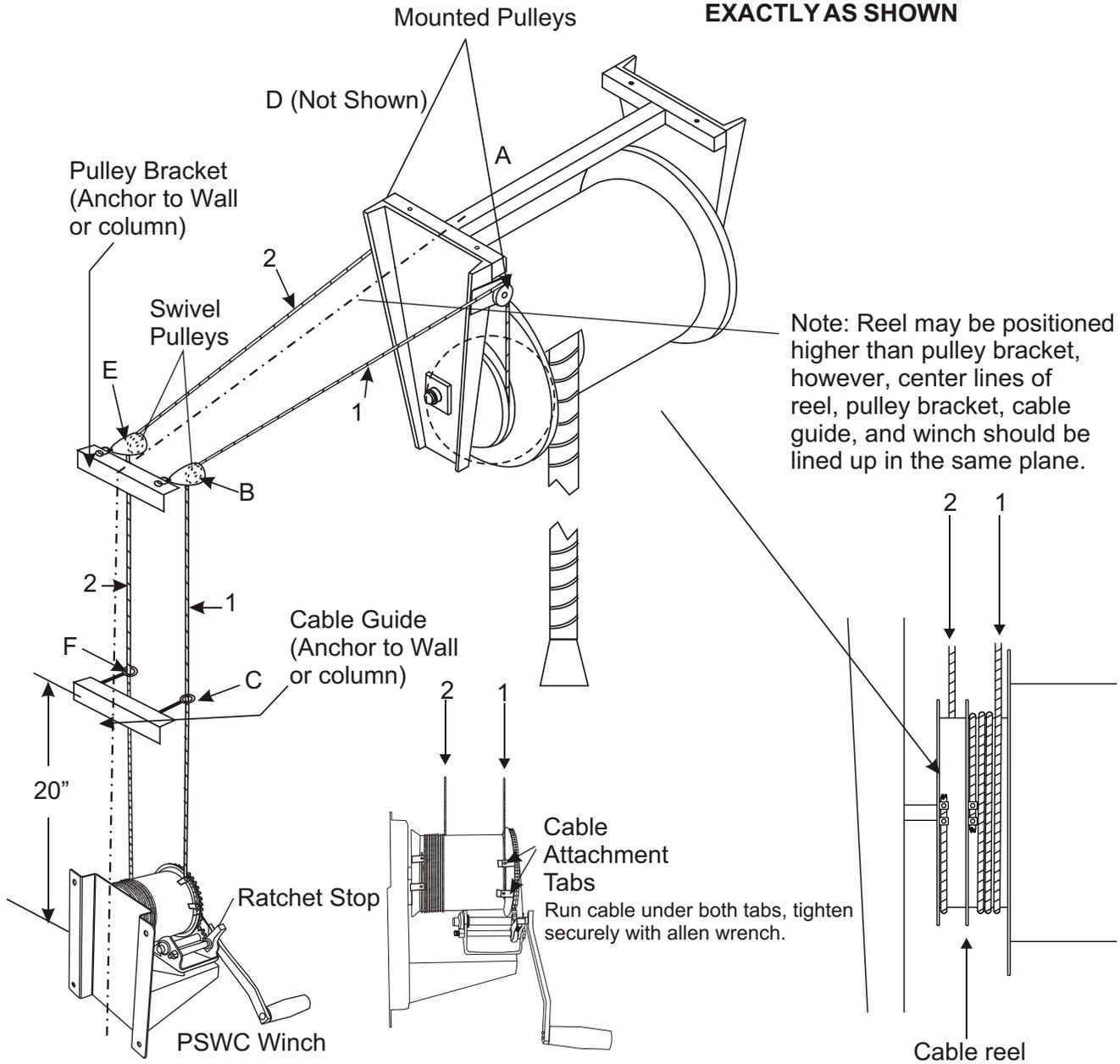
In no event shall Car-Mon Products, Inc. be liable for consequential or special damages; for transportation, labor, or other charges for adjustment, replacement, installation, incorrect electrical connections, overloading of motor, performance at low voltage, or other alterations which may be performed in connection with such products. The warranty specified herein is waived in the event that the Distributor, Contractor, or Purchaser perform any unauthorized repairs or modifications to the product.

With regard to products or components which are furnished by Car-Mon, Inc. but not manufactured by Car-Mon, Inc., the warranty obligation of Car-Mon shall be limited to and be the same as that of its supplier.

CAR-MON INSTALLATION - OPERATION - MAINTENANCE

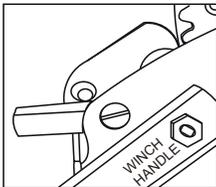
CABLE INSTALLATION INSTRUCTIONS - TUBING STORAGE REEL

CABLES MUST BE INSTALLED EXACTLY AS SHOWN

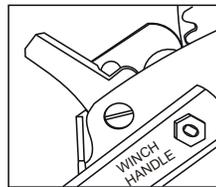


NOTE: Only one layer of cable can exist on either drum. Excess cable **must** be cut off.

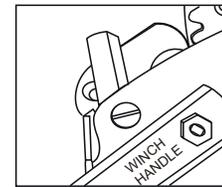
Ratchet Stop Operation



Ratchet in down position allows hose to be wound down off the reel. Always hold on to handle when unwinding hose.



Ratchet in middle position allows hose to be wound up or down. Do not leave ratchet in this position when hose is stored.



Ratchet in up position allows hose to be wound up on to the reel. Always store hose in this position.

NOTE: When reel is not in use and hose is on reel, ratchet should be in up position.