

INSTALLATION AND OPERATIONS MANUAL

SPRING OPERATED TUBING STORAGE REEL

MODEL TSR-S



CAR-MON

PRODUCTS, INC.

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Please note: The operation instructions in this manual applies only to reels manufactured January 2006 or later.

TSRS1007

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.

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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.

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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.

SPRING OPERATED TUBING STORAGE REEL

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. Tubing assembly consisting of tubing with flange at one end, and exhaust adapter other end.
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. Tubing storage reels may be ceiling or wall mounted. Make sure the mounting surface is level and plumb and able to support the weight and stress of the reel and tubing 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, vibration isolators are not necessary.
2. **CAUTION! FOLLOW THIS STEP CAREFULLY. THIS OPERATION SHOULD BE DONE BY TWO PERSONS.** The spring reel is shipped from the factory with tension applied to the spring mechanism. This is done by securing the reel in place with a bolt, marked in red, located about 10" above the discharge on the reel. (See photo at right.) BEFORE removing this bolt, the tube assembly must be attached. Place a clamp or vice grip on the discharge end side of the drum directly beneath the bearing mounting bar in the front to prevent the reel from any rotation. (See photo 2 below) Failure to hold the reel in place could cause damage to the reel or pose a hazard to the installer. If you have any questions on this procedure, please call the factory.
3. Attach the tubing assembly by using the bolts and gasket provided. Attach the flanged end of the tubing to the flange pocket, using the gasket in between the flanges. Attach securely bolting the flanges together. (See photo 3 below)
- 3a. After reel is secure and tube assembly is attached, remove the locking bolt.
4. It is now time to release the tension on the reel and wind on the tubing. Grasp and hold the end of the tubing assembly (See photo 4) before releasing the clamp or vice grip. While holding the tubing, release the grip-the reel will start to pull the tubing assembly onto the reel. Slowly guide the tubing onto the reel from left to right, making sure there are no gaps between the wraps of the tubing. The tension pulling the tubing on the reel will subside as the tubing wraps on the drum. There will be some tube that will not wrap onto the tubing drum. This is normal. (Note: Some reels may be equipped with a longer than normal length of tubing, and may have over 5' of tube hanging off the reel.)
5. Attach the pull down cable to the ring on the exhaust adapter. Adjust the length so that the operator can reach the cable pull down ring at floor level.
6. Test the reel from ground level to make sure it unwraps and wraps correctly. Units were preadjusted at the factory. NOTE: When retracting tubing onto reel, always hang onto cable and "control" the speed of retraction. Never let go of the cable and let the tubing to wind on the reel uncontrolled. If your reel does not unwind or retract properly, a spring tension adjustment will be necessary. See pages 3 & 4.



LOCKING BOLT

PHOTO 2



Make sure gasket is in place between tube and reel flange

PHOTO 3

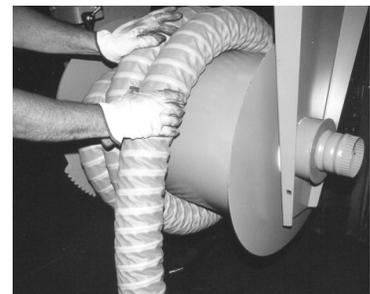


PHOTO 4

7. If tubing storage reel is equipped with attached CMW-F fan, it should now be wired and tested. Please refer to operation instructions that were included for fan. If reel is duct connected, make sure all connections are made to central fan.

OPERATION

1. Using the pull down cable extend the tubing to the desired length. You will note an audible "click" as the tubing is extended. This is a normal sound of the ratchet mechanism. For the ratchet to hold the tube in an extended position, it is necessary to stop the drum within one of the ratchet gear ranges. The ratchet will automatically engage, holding the tubing in position. The tubing must be fully extended when the reel is in use. Leaving wraps on the reel while the fan is running and the tubing connected to the exhaust will impede air flow and possibly overheat and damage the system.
2. Attach the exhaust adapter to vehicle exhaust pipe-vehicle should not be running while this is being done. Before starting the vehicle, make sure the fan to the reel is in operation. NEVER start or run a vehicle when the system is connected and the fan is not running.
3. After servicing vehicle, turn vehicle off and leave tube connected and fan running for a few minutes to clear any exhaust in system and allow for exhaust adapter to cool. To retract the tube assembly, it is necessary to extend the tube a little further so that the drum rotates past the ratchet gear range. The ratchet will release and allow the gear to slide past the ratchet as the tube retracts. **Guide the tubing back onto the reel by holding the pull-down cable. Do not let the tube assembly rewind "wildly" by itself.**

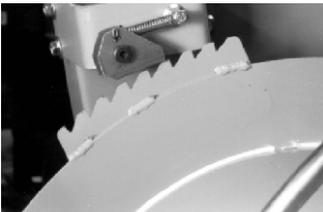
NOTE: SEE PAGE 7 FOR ADDITIONAL INSTALLATION PHOTOS.

RATCHET AND DRUM POSITIONS



FULLY RETRACTED STOP POSITION

This is the position the drum and reel stop is in when the tubing is in the fully wound and up position.



FORWARD ROTATION POSITION

This is the position the reel stop mechanism is in as the tubing is being pulled of the reel.



DESIRED LENGTH STOP POSITION

The position the reel stop mechanism is in when the tubing is in the extended down and locked position.

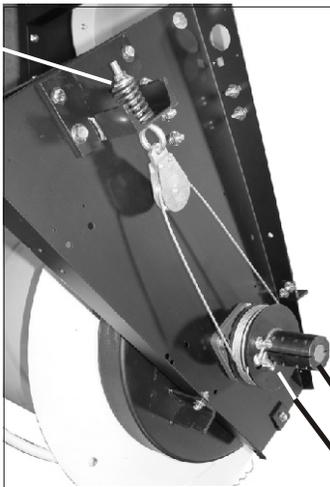
INSTALLATION - OPERATION - MAINTENANCE

PROCEDURE TO ADD TENSION TO SPRING OPERATED TUBING STORAGE REEL

NOTE: REELS ARE FACTORY ADJUSTED TO THE LENGTHS OF HOSE THAT ARE TO BE WOUND ON THE REEL AND WILL NORMALLY HAVE 5-7' OF HOSE HANGING DOWN WHEN THE HOSE IS FULLY RETRACTED. DO NOT MAKE ANY ADJUSTMENTS TO TRY TO WIND THIS PORTION OR DAMAGE TO THE HOSE MAY OCCUR.

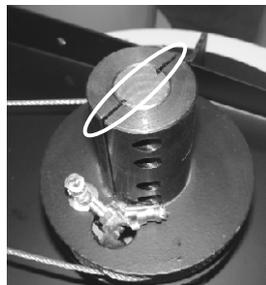
1. With the tubing completely in the down position on the reel, clamp the drum end plate to the frame on the discharge end of the reel with a clamp or vise grip to prevent rotation of the reel. Remove the hose from the reel flange pocket.
2. Remove the protective cover over the spring mechanism end.
3. Reference the position collar and drum shaft by marking a line across the two. This will help in determining one complete revolution when tensioning.
4. Using a torque wrench loosen all 8 bolts on the clamping collar equally.
5. CAREFULLY loosen the clamp on the reel and the frame (it will have tension on it) Wind the reel in a clockwise (when looking at shaft end) direction one full turn. The mark you made on the shaft and collar should line up in the position you marked it. Only the shaft should turn, the collar should not. Re-clamp the reel to the frame.
6. Tighten the bolts on the clamping collar to 14.5 lbs torque. ALL BOLTS MUST BE SET THE SAME.
7. Re-attach hose to the reel, making sure the gasket is in place between the hose and the reel pocket.
8. Replace cover over spring mechanism.

SPRING
LOADED
NUT



CLAMPING COLLAR

REEL
BRAKE
MECHANISM



Mark the collar and shaft so you have a reference point for a full revolution.



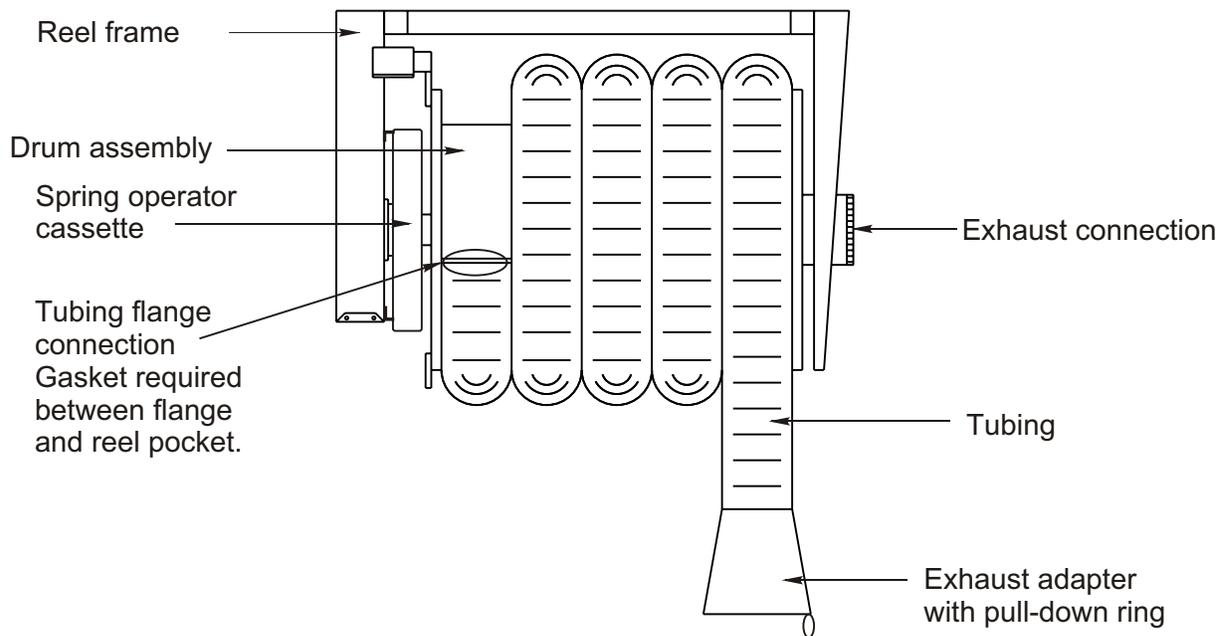
Loosen bolts on clamping collar to rotate drum on reel. After adjustment is made, all 8 bolts must be tightened to 14.5 lbs of torque.

INSTALLATION - OPERATION - MAINTENANCE

MAINTENANCE

1. Periodically check and lubricate the discharge duct bearing with a lithium based grease.
2. The heavy duty cast steel flange bearing should be checked and greased periodically.
3. Periodically wipe any excess dirt or grease from exhaust adapter and outside of tubing.
4. Follow maintenance procedures for fan.

SERIES TSR-S REEL PARTS LIST



The above parts guide is given only as a reference to identify any problems that may develop. Due to the type of construction, most of the parts are not replaceable by the user. The reel is designed for heavy duty use and the main components including frame, drum assembly, and spring operator are designed to last for the life of the equipment. Replaceable parts may include tubing assembly and exhaust adapter



VERY IMPORTANT! When retracting the tubing grasp the tubing and guide it up onto the reel, making sure that the tubing does not overlap. After the tube starts to make the last wrap on the reel, let go of the tubing



When the tubing is fully retracted on to the spring reel. Approximately 5-7' of tube will hang down. This is normal to protect the tubing and adapter from being damaged.