

CHERNE AIR-LOC® VACUUM GENERATOR

OPERATION AND MAINTENANCE MANUAL

200-908

COMPRESSOR REQUIREMENTS

The compressor must provide at least 80cfm at 125psi in order for this vacuum generator to work effectively. More compressor capacity and shorter length / larger diameter compressor output hose will improve performance.



WARNING Test all manholes for gases before using the Manhole Tester. Ventilate the manhole if toxic or flammable gases are present. **Gases can cause injury, asphyxiation and death!** If the sewer system has hazardous gases from sewage or solvents, the Manhole Tester may draw them into the manhole during the vacuum operation. Test again for gases after the vacuum operation if you need to enter the manhole.

SET-UP AND OPERATION

1. Connect the vacuum and read back hoses to the manhole tester.
2. Connect “vacuum” port on generator to 1-1/2” hose assembly. Make sure the ball valve is in the closed position. Connect “air supply” port on generator to output hose from compressor.
CAUTION: Make sure the compressor output hose has zero gauge pressure when connecting /disconnecting from the vacuum generator.
3. Pressurize the output hose from the compressor.
CAUTION: Wear hearing & eye protection, keep face away from exit port of vacuum generator.



DANGER! NEVER OPERATE THE MANHOLE TESTER WHILE A PERSON IS INSIDE THE TEST AREA.

4. Open the ball valve on hose assembly and evacuate manhole to 10” Hg. (0.3) bar.
5. Close ball valve and monitor vacuum for the specified time period. If the vacuum does not drop in excess of 1” Hg. over the specified time period, the manhole is considered acceptable and passes the test. If the manhole fails the test, identify the leaking areas by removing the head assembly, coating the interior surfaces of the manhole with a soap and water solution, and repeating the vacuum test for approximately sixty seconds. Leaking areas will have soapy bubbles. Once the leaks have been identified, complete all necessary repairs and repeat test procedures until satisfactory results are obtained.
6. To disconnect vacuum generator from hose assembly: Depressurize the compressor output hose, open the ball valve, then disconnect the vacuum generator when the vacuum gauge reads zero.



WARNING!

Manhole tester can suddenly shoot upwards. This can happen if the plugs suddenly dislodge due to excessive vacuum or backpressure or if a plug bursts during the test. Either event can pressurize the manhole causing the tester to shoot upwards suddenly.

DEPTH (FEET) MANHOLE LENGTH	48 INCH	60 INCH	72 INCH
8	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	65
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121

MAINTENANCE

The vacuum generator requires very little maintenance. The silencer should be removed and blown clean with compressed air after every 10 hours of use.

Cherne Industries, Inc. recommends the installation of a condensation filter on the compressed air hose.

TROUBLE SHOOTING

Problem	Cause	Solution
Little or no vacuum generated.	Dirty or clogged passageways. Manhole is leaking. Compressor pressure and flow rate is marginal. Silencer element clogged	Clean passageways. See step 5 of setup instructions. Insure that compressor meets vacuum generator requirements. Use shorter/larger diameter compressor output hose. Clean screen off using compressed air. Install condensation filter on compressed air hose.

MANHOLE SAFETY PROCEDURE

RECOMMENDED SAFETY PROCEDURE FOR ENTRANCE INTO MANHOLES OR CONFINED SPACES

WARNING: THESE RECOMMENDATIONS ARE TO BE USED AS A GENERAL GUIDELINE ONLY.

ALTHOUGH CHERNE RECOMMENDS THESE FOLLOWING GUIDELINES, IT DOES NOT WARRANT, REPRESENT, OR ASSUME ANY RESPONSIBILITY THAT THESE RECOMMENDATIONS WILL FULFILL ALL APPLICABLE FEDERAL, STATE, OR LOCAL REQUIREMENTS. CHERNE ASSUMES NO LIABILITY FOR EITHER PERSONAL INJURY OR CONSEQUENTIAL DAMAGES THAT RESULT FROM THE RELIANCE ON THESE RECOMMENDATIONS.

WARNING: IT IS THE PRODUCT USER'S RESPONSIBILITY TO READ AND COMPLY WITH ALL APPLICABLE REGULATIONS. REFER TO THE CODE OF FEDERAL REGULATIONS, ""CFR" PART 1926 AND ALL OTHER PERTINENT FEDERAL, STATE, AND LOCAL REGULATIONS.

ALWAYS OUTFIT YOURSELF WITH THE NECESSARY SAFETY EQUIPMENT FOR ENTRANCE INTO A MANHOLE OR CONFINED SPACE. THIS MAY INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS (REFER TO WARNING STATED IMMEDIATELY ABOVE):

Recommended equipment is as follows:

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| A. Safety Hat | G. Ear Protection |
| B. Safety Glasses | H. Hazardous Gas Detector and Oxygen Monitor |
| C. Respirator or Self-Contained Air Source | I. Manhole or Confined Space Ventilation |
| D. Safety Harness, Ropes, and Winching System | J. Protective Clothing |
| E. Safety Shoes or Boots | K. Safety Ladders |
| F. Protective Gloves | L. Any Other Recommended or Required Equipment |

ALWAYS ENSURE THAT ALL EQUIPMENT MEETS OR EXCEEDS THE MINIMUM REQUIREMENTS OF ALL APPLICABLE REGULATORY GUIDELINES. ALL EQUIPMENT SHOULD BE PROPERLY MAINTAINED, STORED, CALIBRATED IF NECESSARY, AND INSPECTED PRIOR TO EACH USE, IN COMPLIANCE WITH APPLICABLE REGULATIONS AND EQUIPMENT MANUFACTURER RECOMMENDATIONS.

ALWAYS PROPERLY VENTILATE MANHOLE OR CONFINED SPACE BEFORE ENTERING AND MAINTAIN VENTILATION WHILE IN MANHOLE OR CONFINED SPACE.

ALWAYS THOROUGHLY CHECK AT ALL LEVELS FOR HAZARDOUS GASES AND PROPER OXYGEN LEVELS (20% MINIMUM). CONTINUOUSLY MONITOR THESE LEVELS WHEN WORKERS ARE IN THE MANHOLE.

NEVER ENTER A MANHOLE OR CONFINED SPACE WITHOUT CO-WORKER ASSISTANCE. CO-WORKERS MUST BE PROPERLY TRAINED IN SAFETY REQUIREMENTS FOR ACCESS TO MANHOLES OR CONFINED SPACES.

IF YOU ENCOUNTER OR OBSERVE ANY CONDITIONS THAT ARE NOT EXPLAINED HERE OR NOT FULLY UNDERSTOOD BY YOU, NOTIFY YOUR SUPERVISOR OR SAFETY DIRECTOR BEFORE PROCEEDING.

ALWAYS CONSULT WITH PROPER STATE, LOCAL, AND FEDERAL AGENCIES TO INSURE THAT ALL REQUIRED REGULATIONS ARE BEING FULFILLED.

FAILURE TO COMPLY WITH PROPER SAFETY REGULATIONS MAY RESULT IN SERIOUS BODILY INJURY OR DEATH!

LIMITED WARRANTY

Manufacturer warrants all products manufactured by it will be free from defects in material and workmanship for one (1) year following the date of manufacture. If any of the goods are found to be defective, such goods will, at manufacturer's option be replaced or repaired at manufacturer's cost. The parties hereto expressly agree that buyer's sole and exclusive remedy against the manufacturer shall be for repair or replacement of defective goods as provided herein. (The sole purpose of the stipulated exclusive remedy shall be to provide the buyer with free repair and replacement of defective goods in the manner provided herein. The exclusive remedy shall not be deemed to have failed of its essential purpose so long as the manufacturer is willing and able to repair or replace defective goods in the prescribed manner.) Goods which may be sold by manufacturer but are not manufactured by it are not warranted by manufacturer, but are sold only with the warranties, if any, of the original manufacturers thereof. (This warranty does not cover labor or other costs or expenses to remove or install any defective, repaired or replaced goods.) Manufacturer's warranty does not apply to any goods which have been subjected to misuse, mishandling, misapplication, neglect (including but not limited to use of unauthorized parts or attachments), or adjustment or repair performed by anyone other than manufacturer or one of manufacturer's authorized agents.

Any claim by buyer with reference to the goods sold hereunder shall be deemed waived by the buyer unless submitted in writing to manufacturer within the earlier of (1) thirty days (30) days following the date buyer discovered or by reasonable inspection should have discovered, any claimed breach of the foregoing warranty, or (2) thirteen (13) months following the date of manufacture. Any cause of action for breach of the foregoing warranty shall be brought within one year from the date the alleged breach was discovered or should have been discovered, whichever comes first.

LIMITATION OF LIABILITY. Manufacturer's liability (whether under the theories of breach of contract or warranty, negligence, or strict liability) for its goods shall be limited to repairing or replacing parts found by the manufacturer to be defective, or at manufacturer's option, to refunding the purchase price of such goods or parts thereof.

DISCLAIMER OF CONSEQUENTIAL DAMAGES. In no event shall manufacturer be liable for consequential damages arising out of or in connection with this agreement, including without limitation breach of any obligation imposed on manufacturer hereunder or in connection herewith. Consequential damages for purposes hereof shall include, without limitation (including death) to any person, or loss of or damage to property (including without limitation property handled or processed by the use of goods). Buyer shall indemnify manufacturer against all liability, cost or expense which may be sustained by manufacturer on account of any such loss, damage or injury.

DEFECTIVE PRODUCTS POLICY. To obtain performance under this warranty, any product suspected of having a manufacturing defect in materials or workmanship at manufacturers request must be returned to CHERNE INDUSTRIES INCORPORATED, freight prepaid, for inspection. A returned goods authorization must be obtained before shipping any product back to CHERNE. Call 1-800-843-7584 and ask for customer service.

CUSTOMER TRANSPORTATION REIMBURSEMENT. Whenever CHERNE repairs or replaces a product at CHERNE'S expense CHERNE will reimburse the distributor by credit memo, the surface freight amount it cost CHERNE to return the warranty items.

The foregoing warranty is in lieu of all other warranties express or implied, including those of merchantability or fitness for any purpose not expressly set forth herein. No affirmation of manufacturer, by words or action, other than as set forth in this language shall constitute a warranty.