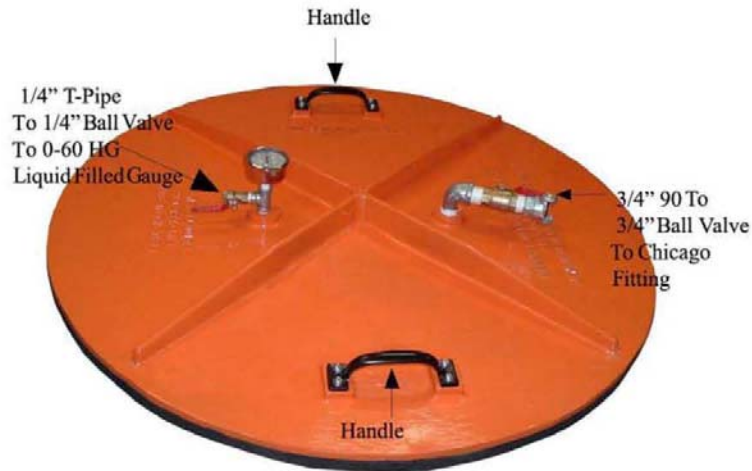


# STEMAR EQUIPMENT & SUPPLY CO., INC.

Serving Underground Construction Since 1922

## OPERATING AND MAINTENANCE INSTRUCTIONS MANHOLE VACUUM TESTING EQUIPMENT

Part #110-38 38" Flat Plate  
Assy. Range 14"-34"  
(shown here)  
Part #110-44 44" Flat Plate  
Assy. Range 14"-40"



**lansas**®

REVISION: 3/18/2009

The flat plate assembly has  $\frac{3}{4}$ " thick close cell foam on the bottom of the plate to help make the seal. If damaged, this foam can be easily replaced with the Lansas Foam and Glue Kit.

P/N 110-38F 38" Foam Pad and Glue for 38" Flat Plate  
P/N 110-44F. 44" Foam Pad and Glue for 44" Flat Plate

Supervac – Vacuum Generator: Are used in conjunction with your air compressor to generate a vacuum on manholes. Air compressor must be capable of supplying a minimum of 80 CFM.



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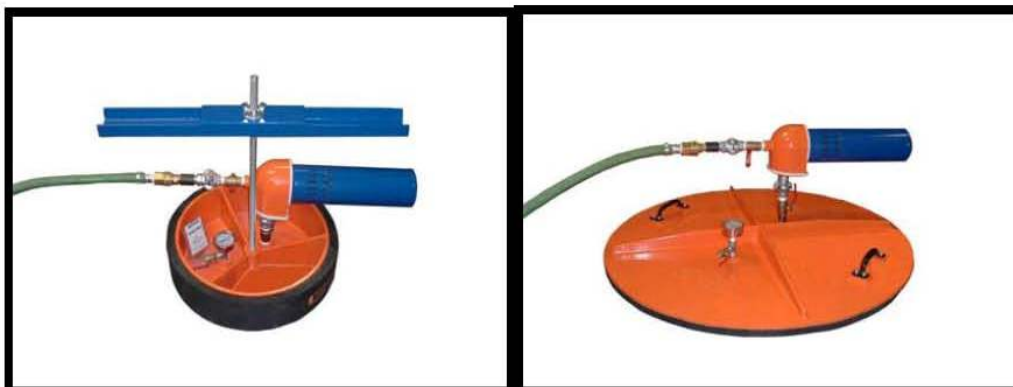
## **Installation of Super-vac on the Bladder Style Disc or Flat Plate assemblies:**

**Bladder Style Disc Assembly:** The Super-vac will go directly on the Chicago fitting of the disc assembly so that the Super-vac is horizontal on the bladder assembly.

**Flat Plate Assembly:** The Lansas flat plate assembly is shipped with a  $\frac{3}{4}$ " 90° elbow that must be removed in order to properly install the Super-vac venture generator.. The below picture shows the  $\frac{3}{4}$ " 90° removed and is ready to have the Super-vac installed. The Super-vac is then installed so it is horizontal to the plate assembly.



Below pictures show a flat plate and Bladder Assembly with the 90° elbow removed and the Super-Vac installed ready for testing.



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## **Set Up Vacuum Test:**



**Caution!** Before entering manhole, follow all local, state and federal guidelines including, but not limited to, confined space safety regulations.



Seal all manhole inverts. All plugs must be blocked and braced! (Consult an engineer for proper blocking and bracing of pipe plugs) When performing a vacuum test up to 10" hg., use pneumatic test plugs with a back pressure rating of 6 PSI or higher



Follow all the manufacturer's instructions for the safe use of test plugs.



Brace inverts if lines entering the manhole have not been backfilled. Inverts not braced may become dislodged and pulled into the manhole.

## **INSTALLATION OF PNEUMATIC DISC ASSEMBLY:**

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Position the Bladder Disc Assembly at the top access of manhole. Adjust the vacuum disc using the adjustment nut on the support brace assembly so the bladder portion will seal in straight section of the manhole.

Inflating the bladder: Inflate the bladder to the recommended inflation pressure that is stenciled on the rubber bladder.





DO NOT OVER-INFLATE OR UNDER-INFLATE THE BLADDER.

## **INSTALLATION OF A FLAT PLATE VACUUM ASSEMBLY**

Center flat plate over manhole opening. (Do not use the 38" plate on any opening larger than 34" and the 44" on any opening larger than 40")

### **TO TEST Using Vacuum Pump:**

1. Close all valves on the bladder disc or flat plate.
2. Attach pump using the vacuum hose.
3. Inflate bladder to the manufacturers' instructions (Do not over-under inflate the bladder.) or center the flat plate over the manhole frame.
4. Start the engine. Refer to the engine manufactures operating manual for proper use/maintenance of the engine.
5. Once the RPM's have stabilized, open the 3/4" ball valve. Allow vacuum to reach required test specification.
6.  Do not exceed manufacturer's vacuum rating on vacuum disc or flat plate. Do not exceed 10 HG on any Lansas plate or disc.
7.  Do not pressurize the manhole!
8. When vacuum reaches test specifications, close the 3/4" ball valve.
9. Turn off the vacuum pump.
10. Monitor vacuum loss as per your test parameters.
11. Open 1/4" ball valve to relieve vacuum on the manhole.
12. After all negative pressure is released, if you were using the bladder style test head, deflate the bladder.

To test using Super-vac:

1. Close all the valves on the vacuum disc or flat plate.

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2. Attach air compressor to the Supervac venture pump using the Chicago fitting
3. Inflate bladder to the manufacturers' instructions (Do not over-inflate the bladder.) or center the flat plate over the manhole frame.
4. Open the valve from the air compressor to the Super-Vac pump allowing air to blow through the venture pump.
5. Open  $\frac{3}{4}$ " ball valve allowing a vacuum to be drawn on your manhole. Allow vacuum to reach required test specifications.
6.  Do not exceed manufacturer's vacuum rating on vacuum disc or flat plate. Do not exceed 10 HG on any Lansas plate or disc.
7.  Do not pressurize the manhole!
8. When vacuum reaches test specifications, close the  $\frac{3}{4}$ " ball valve.
9. Turn off the air compressor.
10. Monitor vacuum loss as per your test parameters.
11. Open  $\frac{1}{4}$ " ball valve to relieve vacuum on the manhole.
12. After all negative pressure is released, if you were using the bladder style test head, deflate the bladder.

## Vacuum Testing Trouble Shooting Chart

Problem	Possible Solution
Can't Get the bladder to seal	Verify that the bladder is inflated to the recommend inflation pressure. This will be stenciled on the bladder.
	Make sure the manhole is within the size range of the head assembly. 110-24 Range 20.0" - 24.3" 110-30 Range 25.5" - 30.3" 110-2127 Range 21.5" - 27.5"
	Make sure you are sealing on the flat area of the manhole. Before the manhole starts to cone out.
Can't get the flat plate to seal on the manhole.	Put pressure on the flat plate to help it get a seal.
	Wet down the foam pad to help get a seal.
	If sealing directly on concrete, wet down the concrete.
Can't get the manhole to reach 10" of HG	Make sure no rock or debris causing a leak path.
	Verify that all inverts have been plugged.
	The manhole may have leaks that prevent it from reaching the 10" HG. Perform the soapy bubble test listed below.  Verify that the head assembly is sealing properly.

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## SOAPY BUBLE TEST:

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Wet down the inside of your manhole with a soapy water solution. This can be best achieved by siphoning soapy water from a 5 gallon bucket with a hose. Repeat steps 1-12. After removing the test head, inspect the manhole to see where your manhole is leaking, as soapy bubbles will be forming any place air is being sucked into the manhole.

### Trouble Shooting Chart on Rotary Vane Pumps:

Problem	Possible Causes	Corrective Action
Low Vacuum	Filter Dirty	Clean or replace
	Vacuum line collapsed	Relace line
	Plugged vacuum line	Replace line or clean
	Relief valve set too low	Adjust valve
	Bag Gauge	Replace gauge
	Motor not wired correctly	Check wiring diagram and rewire
	Vanes Sticking	Flush unit
	Vanes Worn	Replace vanes
	Shaft seal worn	return unit for repair
	Poor or no lubrication	Check oil level
Pump overheats	Filter Dirty	Clean or replace
	Muffler dirty	Clean or replace
	Relief valve set to high	Check and adjust
	Running too high of RPM	Check RPM and reduce speed
	Unit overly dirty	Clean with compressed air
	Lack of lubrication	Check oil level

**To find a Gast certified service center near you, please contact Gast directly or go to the Gast website for a complete list:**

Gast Manufacturing, Inc. 2550 Meadowbrook Rd. Benton Harbor, MI 49022 Ph: 269.926.6171 Fax: 269.927.5727

[www.gastmfg.com/service.html](http://www.gastmfg.com/service.html)

### Maintenance:

Please check the bladder before and after every use for cuts, punctures, abrasions. If any of these conditions exist, do not use the unit. Contact the factory for disposition instructions.

Pump lubricant required: You must fill the oil reservoir (Maximum 2/3's full) with High Detergent (10 wt) automotive oil before the pump is used. Failure to properly lubricate will cause the pump to fail.

Please refer to the Gast operation and maintenance technical manual for the proper use and care of the Gast vacuum pump.

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Please refer to the engines owners' manual for the proper care and use of your Briggs & Stratton or Honda Engine.

The flat plate assembly has 3/4" close cell foam on the bottom of the plate to help make the seal. If damaged, this foam can be easily replaced with the Lansas Foam and Glue Kit P/N 110-38F or 110-44F.

## **Parts list:**

Part Number	Description
121-00-H	Vacuum pump with Honda Engine
120-00	Vacuum pump with B&S Engine
123-05	Super Vac Pump
110-24	24" Bladder Disc Assembly Range 20"-24.3"
110-20	30" Bladder Disc Assembly Range 25.5"-30.3"
110-2127	Multisize Bladder Disc Assembly Range 21.5" - 27.5"
110-38	38" Flat Plate Assembly Range 14"-34"
110-44	44" Flat Plate Assembly Range 14"-40"
125-30	Vacuum Hose Assembly
AB650C	Intake Filter Assembly
140-00	Wheel Kit
3020-V29B	Gast Vacuum Pump
AA900E	Exhaust Muffler Assembly
AA960A-1	Oil Reservoir Assembly
121-Frame	Frame
8M-CHI	1/2" Chicago Fitting
140-00-8V	1/2" Shut off valve
12M-Chi	3/4" Chicago Fitting
110-Support	Support Braces Assembly
110-24B	24" Replacement Bladder
110-2127B	21.5"-27.5" Replacement Bladder
110-30B	30" Replacement Bladder
110-38F	38" Foam and Glue Kit
110-44F	44" Foam and Glue Kit
131-30	Vacuum Gauge
140-00-4V	1/4" Dump Valve
110-Handle	Handle for flat plate
110-38PC	38" Plate Saver protective cover

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