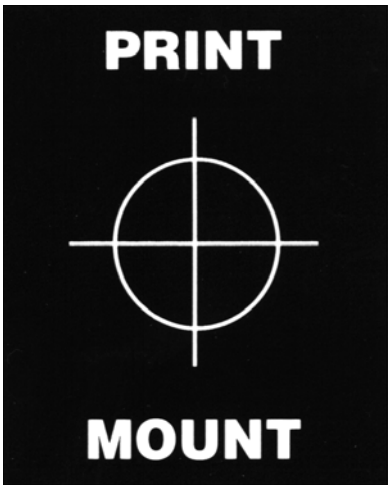


PRINT MOUNT PM/SERIES

COMMERCIAL COLD VACUUM PRESS

ASSEMBLY AND OPERATION MANUAL

The Print Mount Company, Inc.
20 Industrial Drive
Smithfield, RI 02917

Voice: 401/232-0096 • Fax: 401/232-1893

Upon receipt of merchandise, record the following here:

Model # _____ Serial # _____

Table of Contents

Print Mount PM/Series

Commercial Cold Vacuum Press

Assembly and Operation Manual

Congratulations on the purchase of your new PRINT MOUNT PM/Series Commercial Cold Vacuum Press. This vacuum press is the industry's standard in vacuum mounting equipment at a *truly* affordable price.

This operation manual has been carefully prepared to assist you in the set-up and operation of your PM/Series Vacuum Press and vacuum mounting in general. It is well worth reading and using as a base reference. Seemingly limitless mounting applications await your professional and creative talents. We welcome your feedback—comments, suggestions or questions regarding the uses, techniques or adaptations of our product(s). Please feel free to consult us at any time. Only by serving you better can we achieve one of the major objectives of our company—customer satisfaction.

We urge you to read this manual through, now, before you begin exploring the highly versatile and profitable realm of vacuum mounting.

Good luck with your new PRINT MOUNT press!

THE PRINT MOUNT COMPANY, INC.

I. SET UP PROCEDURE

A. Before assembling the press, check that the following have been included in the shipment:

1. PM/Series Vacuum Press
2. Vacuum Pump
3. Four (4) Leveling Feet

B. If you have purchased the optional PRINT MOUNT floor stand, assemble it first, following the instructions. In this case, it is important to level the stand, not the press. If you have not purchased a stand, place the vacuum press on a sturdy work bench, allowing room on the right side for access to all pump fittings and electrical connections. *The press must be level and on its feet or stand to draw vacuum.*

C. Electrical Service Requirements (USA/Canada Standard)

MODEL	VOLTAGE	HOOKUP
PM/100	110	Standard Wall Outlet
PM/64	110	Standard Wall Outlet
PM/44	110	Standard Wall Outlet

D. Leveling the Press

1. Screw the leveling feet into the threaded corner holes in the press base. *Helpful Hint: Support the press on blocks or hang the press corners over the edge of the work bench to install the feet.*

2. Level the press base using a carpenter's level while adjusting the leveling feet. Level front-to-back, then left-to-right.

E. Connecting Press to Pump/Press to Power Source

1. Plug the vacuum pump power cord into the "pig tail" receptacle on the right side of the press.

2. Loosen, but do not remove, the brass nut attached to the brass elbow secured to the vacuum pump and insert the plastic poly-flo tubing (vacuum hose) exiting from the right side of the vacuum press. Using a 7/16" wrench, firmly snug nut to secure tubing. Do not overtighten.

3. Plug press power cord into standard 110 Volt wall outlet. (NOTE: Presses for export are wired for 220VAC. 50/60Hz, single phase and require an appropriate male plug.)

II. PRESS OPERATION

A. Close the press top and fasten hold-down clamps on left and right sides of press to ensure vacuum seal.

B. Rotate time switch clockwise past the three minute mark (this sets the spring), then set switch to appropriate time (please see adhesive manufacturer's instructions for correct vacuum time).

C. Full vacuum will be reached within 60 seconds (larger presses may require more time). Vacuum gauge must be read at least 18" Hg to ensure proper vacuum mounting. (If press fails to reach full vacuum, consult the Trouble Shooting Guide, Sec. VII.)

D. Timer switch will turn press off automatically. To turn off manually, rotate timer switch to "zero" position.

E. Moisture building will occur in the vacuum system and pump due to humidity and pressure changes. ALWAYS run vacuum pump with press top open for two full minutes after completing daily mounting to assist drying out the vacuum system and pump.

BEFORE ATTEMPTING ANY MOUNTING, TEST VACUUM PRESS OPERATION BY TURNING TIMER SWITCH "ON" AND ALLOWING PRESS TO COME TO FULL VACUUM.

NOTE: The time required to reach full vacuum (the air evacuation time) does not constitute "time under vacuum" as prescribed in adhesive manufacturer's instructions. To decrease air evacuation time, see Hints and Suggestions, Sec. VI., H.

III. MAINTENANCE

A. Press Maintenance

1. Keep press glass free of adhesives by washing with glass cleaner and/or adhesive release.

2. Daily/weekly clean the flexible rubber "blanket" with glass cleaner and/or adhesive release for optimal mounting conditions.

3. Periodically wipe gasket with ARMOUR ALL or similar rubber/vinyl preservative.

B. Pump Maintenance

1. Familiarize yourself with your vacuum pump by reading through pump manufacturer's instructions. Instructions are provided in the carton with the pump and in the appendix of this instruction manual.

2. All pump motors are thermally protected and will turn off in the unlikely event of overheating.

3. All pumps are provided with felt filters which protect the pump from air borne dust particles (intake filter) and collect carbon dust generated by normal pump operation (exhaust filter).

a) Filters should be inspected once every six months and cleaned, if necessary. Clean filters by removing dust particles with a vacuum cleaner or by soaking in a non-flammable "safety solvent" such as

rubbing alcohol. FILTERS MUST BE COMPLETELY DRY BEFORE RE-INSTALLATION. Refer to pump manufacturer's instructions for replacement filters.

b) Replace filters once a year under normal operation. Contact PRINT MOUNT, your framing distributor or the pump manufacturer for replacement filters.

IV. MOUNTING PROCEDURES (GENERAL RECOMMENDATIONS)

A. Solvent Based Spray Adhesives

1. Most solvent-based spray adhesives are very convenient to use. However, they are usually only recommended for use with certain substrates. Make sure you are bonding recommended materials only.

2. Print and substrate must be stored in the same environment for at least 8 hours prior to bonding. The moisture content of both materials is therefore equalized sufficiently so as not to affect the performance of the adhesive.

3. Apply sufficient adhesive to ensure adequate bonding. Spray slowly and evenly in a cross-hatched pattern (side to side and up and down).

4. Allow adhesive to dry to a "dry tack" state (adhesive only slightly sticky when touched with a finger).

5. Place print and substrate in press, turn timer past three and reset to at least three minutes.

6. Print should be maintained under full vacuum (gauge reading at least 18" Hg) for no less than 2 minutes.

7. Allow mounted print to "stabilize" in the same environment for 8-18 hours while the adhesive sets and cures (solvent trapped in the mounting process dissipates and evaporates during this time). Any temperature change during this period may cause bond failure not immediately apparent!

B. Water-Based Adhesive (Spray or Liquid/Paste)

1. Apply adhesive to the mounting substrate using a roller, brush or spray gun as directed.

2. Apply adhesive in a thin, even coat to avoid "bleed through" onto the print. For very thin fabrics and tissue paper, allow adhesive to tack/set slightly before joining materials.

3. Cover materials with a sheet of kraft paper, clean newsprint or unwaxed butcher paper to protect press glass from adhesive if adhesive extends beyond border lines or print.

4. Place materials in press immediately.

5. Turn timer switch on to allow maintenance under full vacuum for at least one minute. Very glossy prints and plastic coated photographic materials (RC photos) should be kept under full vacuum for 3-5 minutes.

6. Remove materials from press and peel back cover sheet (or cover sheets may be left on and removed by trimming to edge of print in glass/paper cutter).

7. Allow mounted print to dry completely, preferable under weight, before framing (20-60 minutes depending upon materials).

V. HINTS AND SUGGESTIONS

A. Mounting Large Prints (30 to 40 inches and larger)

1. Form print into "U" shape and lower bottom of "U" to the center of the substrate.

2. Slowly lower one side, checking the alignment, and smooth print from center to edge. Repeat with other side. Two people make the job easier with over-sized prints.

B. Avoiding Bubbling and/or Air Entrapment

1. Follow adhesive manufacturer's instructions.

2. Use a clean, non-flawed mounting substrate.

3. Smooth print from center to edge to removed trapped air.

4. Allow adhesive to set properly after mounting.

C. Avoiding Wrinkling

1. Clean blanket and glass often as explained in Section III, A.

2. Change protective cover sheet when contaminated with adhesive.

D. Stress Relieving (a technique for smoothing/removing wrinkles and creases prior to bonding).

1. Lay print, image side down, on a clean, smooth mounting board inside the vacuum press.

2. Soak a piece of Kraft paper, larger than the print, in water for 2-3 minutes.

3. Wipe excess water from the Kraft paper and carefully smooth and flatten it over the print.

4. Close press and draw vacuum for 2-3 minutes.

5. Allow print to air dry before mounting or laminating.

Most wrinkles will be smoothed by this process. Paper fibers that may have adhered to the back of the print may be removed with a damp cloth.

E. Mounting to an Irregularly Surfaced Substrate

1. Place mount upside down with print surface next to rubber blanket.

2. For extremely irregularly surfaced substrates, mount upside down and place open-celled foam between print and rubber blanket.

F. Multiple Layer Mounting

1. Mount all prints on same sized board (trim after mounting, if necessary).

2. Stack boards in press alternating with layers of Kraft paper or similar paper to absorb glue seepage.

3. Pad edges, if necessary, to avoid damaging the rubber blanket.

4. Vacuum time will be determined by adhesive (See Section IV).

G. Mounting to Wood or Heavy/Thick Substrates

1. When mounting to wood or substrates that are thicker or heavier than an average mounting board, pad corners (i.e. with foam or mat board) to prevent damage to rubber blanket.

2. Remove restriction panel from underside of press if you will be routinely mounting to substrates 1 ½″ (3.8cm) thick, or if you wish to mount to a 2″ (5cm) thick substrate.

H. Press Performance Options

1. Decrease air evacuation time to obtain vacuum more quickly by placing layers of cardboard, foam board, upholstery foam or similar material between press base plate and rubber blanket.

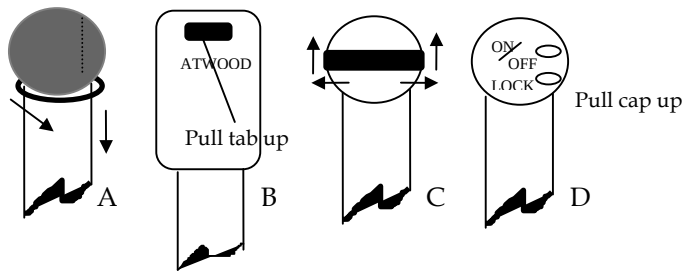
2. Create additional workspace

a) Fasten a plywood panel to the top of the press, or

b) Allow a wall-hinged plywood panel to swing down over the press top when not in use.

VI. TROUBLE SHOOTING

PROBLEM	PROBABLE CAUSE	RECOMMENDED ACTION
Vacuum pump does not turn "on".	No power in wall outlet.	Check wall outlet and/or fuses and circuit breakers.
	Pump disconnected from press.	Attach pump to press at pig-tail receptacle.
	Broken timer switch.	Plug pump directly into wall outlet.
Vacuum press fails to draw full vacuum (Gauge reads less than 18" Hg).	Timer switch turns press off prematurely.	Press should draw vacuum within one minute. PM/100 may require slightly more time. Set timer for at least 2 minutes. Decrease air evacuation time by following procedure in Sec. V., H. Press Performance Options
	Hold-down clamps not fastened.	Fasten clamps on left and right side of press.
	Press not level.	Install leveling feet and level press as in Sec. I, A., Set Up Procedures.
(INSPECTION)	Rubber gasketing misshapened or deformed.	Check for depressions in rubber gasketing. Rejuvenate gasketing by leaving press top open for an extended period. Speed this process by massaging gasketing while applying heat with a blow dryer or heat shrink gun or while dabbing sparingly with paint thinner or other solvent. WARNING! EXCESSIVE HEAT OR SOLVENTS MAY PERMANENTLY DAMAGE THE GASKETING!
	Puncture in rubber blanket.	Examine blanket for puncture holes or rips. Patch blanket from underside.
	Faulty pump.	Disconnect vacuum hose from pump. While pump is running, place finger over intake fitting. You should feel significant "pull" on your finger. To accurately check the pump's function, disconnect vacuum hose leading from right hand vacuum port to the vacuum gauge, at the gauge end. To do this you must be able to access the underside of the press. Using duct tape, package sealing tape or other impermeable tape, cover the fitting you have just exposed. Plug pump power cord back into pig-tail receptacle. Turn timer switch on. You should get an immediate reading on the vacuum gauge of 23-25" Hg. If reading is below 18" Hg. and/or running sluggishly, check felt filters for excess dust buildup and/or flush the pump per pump manufacturer's directions.

		After cleaning filters and/or flushing pump, test pump again as above. Contact PRINT MOUNT or pump manufacturer if reading is still below 18″ Hg.
(TAPE TEST)	Vacuum connection leaks.	Reconnect vacuum hose disconnected in the above probable cause section. Using impermeable tape, cover vacuum ports (small disks in blanket near back edge of press). Turn time switch on. You should get an almost instantaneous reading of 23-25″ Hg. on vacuum gauge. If not, with pump still running, inspect vacuum tubing connections between press and pump, as well as all tubing connections under blanket. Snug nuts to connections but do not overtighten.
(BOOKMARK TEST)	Improper seal between gasket and glass due to hinge dislocation during shipment or normal usage.	Cut 20-30 pieces of paper (½″ x 8 ½″) and lay them over the gasket all around its perimeter. Close press top and attempt to pull the paper strips out from between the gasket and the glass. Paper that is removed without resistance indicates a vacuum leak at that spot. Follow procedure outlined below to readjust hinges.
(HINGE REALIGNMENT)  		Hinge realignment procedure (this is a job for two people). 1. Support glass top in open position. 2. Remove gas spring(s) from open glass top. a. Disconnect safety spring safety (see Fig. 1). b. If you have type C springs, as identified in Fig. 1, hyper-extend press opening by exerting upward pressure on press handle. c. Tap the spring end out, away from the side. 3. Close the press top and loosen all hinge bolts located at back of press by reaching underneath and securing nuts with a wrench while turning the bolts. Placing the four corners of the press on block will allow access to the nuts if not otherwise accessible. 4. Do not fasten clamps. Turn the press on

		and allow it to come up to full vacuum. Set timer to maximum (15 min). You may have to apply pressure at the points located in the first step to help "seal" the vacuum leaks. 5. While pump is still running and press is drawing full vacuum, tighten the hinge bolts. 6. Turn timer to off. Open press top, then close again. Now fasten clamps. Turn pump on and make sure press comes up to full vacuum again before replacing gas springs. 7. Open press top and re-connect gas spring(s), making sure the safety fastened. Your hinges should now properly adjusted.
Press causes print to wrinkle.	Print catching on glass top or blanket due to excess adhesive or dirt.	Clean glass top. Clean blanket.
	Flawed mounting substrate.	Discard and use new board.
	Too much adhesive (usually occurs with "wet" adhesive).	Remove excess adhesive from substrate before joining to artwork using a dry brush or roller. Extend time under vacuum to 5-10 minutes.
	Wrinkles/creases in cover sheet.	Discard and use new sheets.
Bubbling occurs between print and substrate.	Print and substrate have not reached equal relative humidity.	READ ADHESIVE MANUFACTURER'S INSTRUCTIONS CAREFULLY! a. Solvent-Based Spray Adhesive: 1. Proper adhesive coverage can be accomplished by carefully spraying in a slow, deliberate cross-hatched pattern. 2. Spray both artwork and substrate when mounting glossy, heavy prints like RC photographs. b. Wet Mounting Adhesives: 1. Make certain entire surface of substrate is coated by using cross-hatched application process. 2. Hold coated board up to light to verify even sheen across entire surface.
	Insufficient mounting time.	Solvent-based sprays require 2-5 minutes under vacuum. Wet mounting adhesives require 1-2 minutes under vacuum for "breathable" materials, 5-10 minutes for plastic coated

		items.
	Insufficient curing time.	Solvent-based sprays require 8-18 hours to "cure". Mounted pieces should remain in the same environment in which they were mounted for a minimum of 8 hours after bonding. Pieces may be framed immediately, but bear in mind that when "sandwiched" under glass, the curing time will be longer. Unless left in vacuum press until completely dry, artwork mounted with a "wet" adhesive should be allowed to "air dry" flat, under weight, for 20-60 minutes. The more humid your particular environment, the longer the process.
Vacuum time too slow.	Same as "press fails to draw full vacuum".	See Page 7 in Trouble Shooting Guide.
	Blanket sags.	A restriction panel is set at 1½" below absolute level of base frame. If this much depth is not needed, the blanket may be propped up from below by placing layers of board or foam between the panel and the blanket.

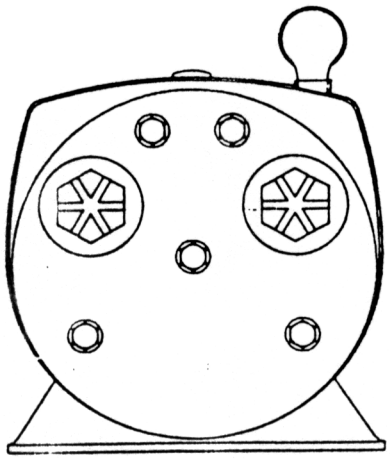
70-290
G375PL
(4-89)

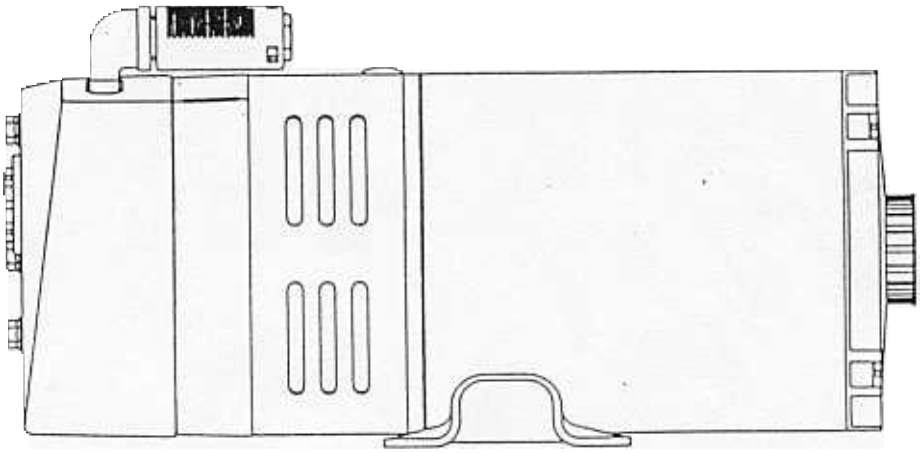
GAST MANUFACTURING CORPORATION
P O BOX 97, BENTON HARBOR, MICHIGAN 49022
PHONE 616-926-6171

PARTS LIST and OPERATING INSTRUCTIONS

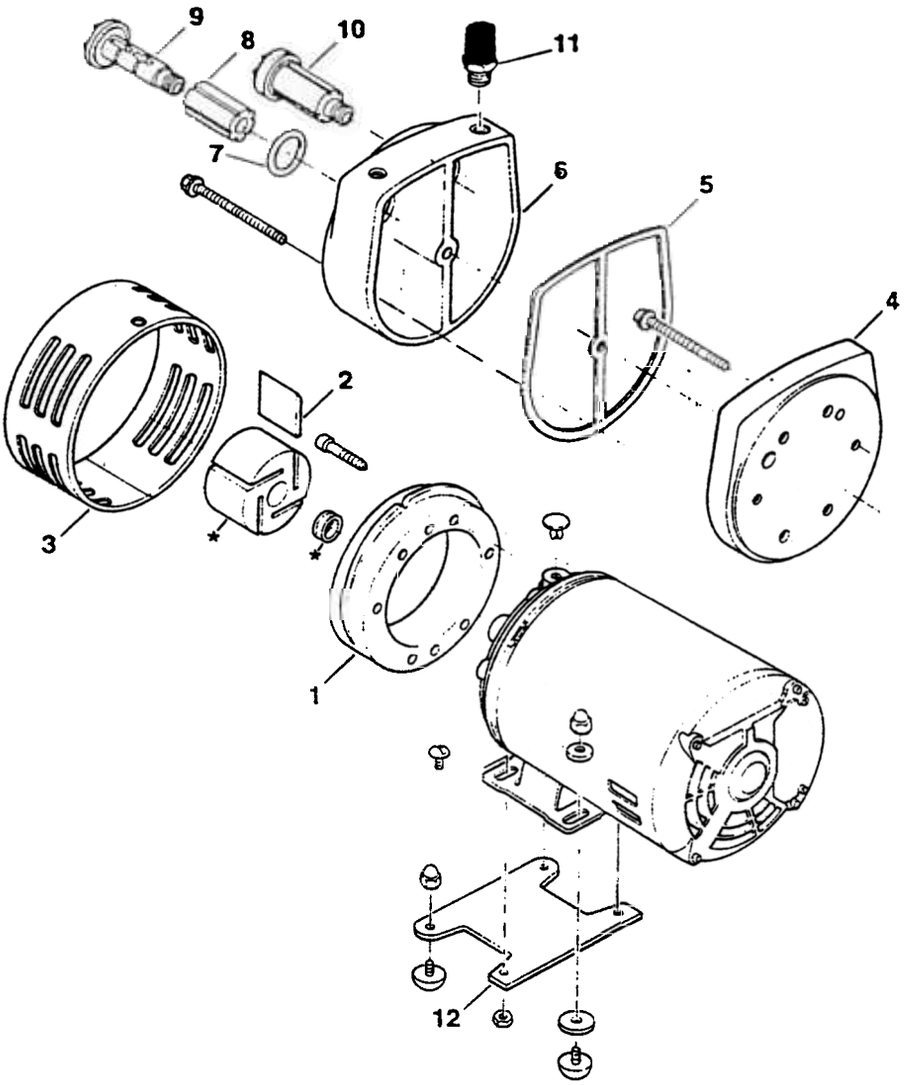
23 SERIES OILLESS VACUUM PUMPS AND COMPRESSORS

0323
0523
0823
1023





WARNING: THESE UNITS SHOULD NOT PUMP EXPLOSIVE GASES OR BE USED IN EXPLOSIVE AMBIENTS.



Ref. No.	Description	Qty	0323-101Q	0323-101	0523-101Q	0523-101
1	Body	1	AK503	AK503	AK505	AK505
•2	Vane	4	AH850A	AH850A	AH850A	AH850A
3	Shroud	1	AK502	AK502	AK502	AH502
4	End Plate	1	AK501	AK516A	AK501	AK516A
•5	Gasket	1	AK521		AK521	
6	Muffler Box	1	AK519		AK519	
•7	O-Ring	2	AK473		AK473	
•8	Felt	2	AK524		AK524	
9	End Cap	2	AK510		AK510	
10	End Cap Asm	2	AK526		AK526	
11	Filter/Muffler	1	AK840A		AK840A	
12	Foot Support	1	AC136		AC136	
	Service Kit	1	K478	K478A	K478	K478A

• Denotes parts included in the Service Kit.
Parts listed are for stock models. For specific OEM models consult the factory.
When corresponding or ordering parts please give complete model and serial numbers.

TROUBLE SHOOTING GUIDE FOR ROTARY VANE PUMPS

RE. ONS FOR PROBLEM	Low		High		Pump Overheating	Motor Overload
	Vac.	Press.	Vac.	Press.		
Filter dirty	X	X	at pump		X	X
Muffler dirty		X		at pump	X	X
Vac. line collapsed	X		at pump		X	X
Relief valve set too high			X	X	X	X
Relief valve set too low	X	X				
Plugged vacuum or pressure line	X	X	at pump	at pump	X	X
Vanes sticking	X	X				
Running at too high RPM			X	X	X	X
Vanes worn (replace)	X	X				
Shaft seal worn (replace)	X	X				
Dust or offset powder in pump	X	X			X	X
Motor not wired correctly	X	X			X	

Performance Data

Model	Pressure		
	0 P.S.I.	5 P.S.I.	10 P.S.I.
0323	3.3 CFM	2.9 CFM	2.4 CFM
0523	5.0	4.7	4.0
0823	8.4	7.4	6.6
1023	9.9	9.8	8.8

Model	Vacuum			Maximum Vacuum
	0" Hg	10" Hg	20" Hg	
0323	3.3 CFM	1.7 CFM	.5 CFM	26" Hg
0523	5.0	2.8	1.0	26" Hg
0823	7.8	4.6	1.8	27" Hg
1023	10.0	5.8	2.2	27" Hg

MODEL NUMBER EXPLANATION FOR ROTORY VANE OILLESS VACUUM PUMPS AND COMPRESSORS

0323 - P 101 Q - G18DX

Pump Model No.

0323 0823 Integral Motor
0523 1023 Pump Unit

Application

P as Compressor
V as Vacuum
No Letter Vacuum or Pressure

Numbers

1 - 99 Lubricated
100 - 199 Oilless
200 & up Lubricated

Indicates Electric Motor is Equipped with

A Thermotector
X Internal Thermotector

Electric Motor Number

Each type & size motor has a specific number found on the specific motor list.

Engineering Design Number

Designates any modifications in dimensions, materials or grouping of accessories.

OPERATING AND MAINTENANCE INSTRUCTIONS

CONSTRUCTION: The end plate, body, rotor and mounting bracket are all cast iron. Consequently any moisture that accumulates in the pump will tend to corrode the interior especially if it stands idle. The muffler box, on the front of the unit, is made of aluminum. The vanes are made of hard carbon and are precision ground. They should last 5,000 to 10,000 hours depending upon the degree of vacuum or pressure at which the pump is run.

STARTING: CAUTION: *NEVER LUBRICATE THIS OILLESS AIR PUMP.* The carbon vanes and grease packed motor bearings require no oil. If the motor fails to start or slows down when under load shut the unit off and unplug. Check that the supply voltage agrees with the motor post terminals and the motor data name plate. CAUTION: ALL DUAL VOLTAGE MOTORS ARE SHIPPED FROM THE FACTORY WIRED FOR THE HIGH VOLTAGE. If the pump is extremely cold allow it to warm to room temperature before starting. If anything appears to be wrong with the motor return the complete pump to an authorized Gast service facility.

To minimize noise and vibration the unit should be mounted on a solid surface that will not resonate. Use of shock mounts or vibration isolation material is recommended. Inlet or discharge noise can be minimized by attaching the enclosed muffler (AF353). The unit should not be allowed to operate in ambient air temperatures in excess of 40°C (104°F). If the motor fails to start or slows down when under load shut the unit off and unplug. Check that the supply voltage agrees with the motor post terminal setup and the motor data name plate.

FILTRATION: Care must be taken to insure that any particles (dirt, chips, foreign material) often found in new plumbing not be allowed to enter the unit. Liquid, moisture vapor, or oil based contaminates will affect pump performance and must be filtered from entering the pump.

Dirty filters restrict air flow and if not corrected could lead to possible motor overload, poor performance and early pump failure. Check filters periodically and clean when necessary by removing felts and washing in Gast flushing solvent (part number AH255). Dry with compressed air and replace.

FLUSHING: Should excessive dirt, foreign particles, moisture, or oil be permitted to enter the pump the vanes will act sluggish or even break. Flushing the pump should remove these materials. There are two options for performing this operation.

Option #1 — You will need two pipe nipples at least 4" long with 3/8" NPT on one end. 1) Remove the filter elements from the front of the muffler box and screw the nipples in through the same holes. 2) With the pump running allow about 2 tbsp. of flushing solvent to be ingested into the vacuum side of the unit. CAUTION: WEAR EYE PROTECTION AND FLUSH IN A WELL VENTILATED AREA. Repeat the flushing procedure. If it does not remedy the situation remove the end plate for further examination.

Option #2 — Remove the filter elements from the front of the muffler box and carefully remove the five bolts that hold the muffler box in place (be careful not to damage the gaskets and it may be necessary to replace them). Tap the box with a small hammer to break it lose. DO NOT PRY WITH A SCREWDRIVER as the gasket will be damaged. This will allow access to the intake and exhaust ports. Follow through with steps 2 & 3 as above.

DISASSEMBLY: If flushing does not eliminate the problem remove the six bolts holding the end plate to the body. Now remove the end plate and the four vanes (do not remove the rotor or loosen any electric motor through bolts). The vanes could be worn or could require further cleaning. The top clearance (between rotor and body) may be adjusted by "LIGHTLY" tapping on the pump body and the rotor should be turned while setting this clearance to assure that all points on the rotor clear the body.

HAZARD PREVENTION:

WARNING: MAKE SURE THE ELECTRIC MOTOR IS PROPERLY GROUNDED AND THE WIRING IS DONE BY A QUALIFIED ELECTRICIAN FAMILIAR WITH NEMA MG2 SAFETY STANDARDS, NATIONAL ELECTRIC CODE AND ALL LOCAL SAFETY CODES.

WARNING: THE ELECTRIC MOTOR MAY BE THERMALLY PROTECTED AND WILL AUTOMATICALLY RESTART WHEN THE PROTECTOR RESETS.

WARNING: WHEN SERVICING ALL POWER TO THE MOTOR MUST BE DE-ENERGIZED AND DISCONNECTED. ALL ROTATING COMPONENTS MUST BE AT A STAND STILL.

WARNING: DO NOT USE KEROSENE OR OTHER COMBUSTIBLE SOLVENTS OR OPERATE PUMP IN EXPLOSIVE AMBIENTS.

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