



**OWNER'S MANUAL**

***VACUUM TUMBLER***  
**VT-500**

# SAFETY INSTRUCTIONS

## **WARNING TO ALL PURCHASERS, OPERATORS AND OPERATION SUPERVISORS :**

MAKE CERTAIN EVERY PERSON WHO IS TO OPERATE THIS MACHINE HAS READ THIS MANUAL BEFORE BEING PERMITTED TO OPERATE THIS MACHINE.

HAVE ALL OPERATORS SIGN THE SIGNATURE PAGE FOUND AT THE END OF THIS MANUAL.

FAILURE TO READ AND ADHERE TO THE FOLLOWING IMPROTANT INSTRUCTIONS COULD RESULT IN BODILY INJURY.

**READ THIS MANUAL COMPLETELY BEFORE OPERATING  
ADDITIONAL MANUALS AS WELL AS REPLACEMENT SAFETY LABELS ARE AVAILABLE.**

1. **DO NOT OPERATE THIS MACHINE UNTIL IT HAS BEEN INSPECTED AND MADE READY FOR OPERATION.**
2. **CREATE A SECURITY PERIMETER BEFORE USING THE TUMBLER, TO PREVENT ANY POTENTIAL CAUSE OF ACCIDENT.**
3. **DO NOT TOUCH MOVING PARTS.**
4. **DO NOT OPERATE OR WORK AROUND THIS MACHINE WITH LOOSE FITTING CLOTHING. IT COULD BECOME ENTANGLED IN THE MACHINE**
5. **NEVER TRY TO MANUALLY STOP OR TURN THE TUMBLER. USE THE CONTROL TO POSITION THE TUMBLER AS DESIRED.**
6. **FAILURE TO PROPERLY GROUND THIS MACHINE COULD RESULT IN ELECTRICAL SHOCK. ONLY A QUALIFIED ELECTRICIAN WHO IS FAMILIAR WITH THE APPORPRIATE ELECTRICAL CODES SHOULD PROVIDE THE PROPER ELECTRICAL CONNECTION.**
7. **DO NOT ALTER OR MODIFY THIS TUMBLER IN ANY WAY FROM ITS ORIGINAL FORM. ALLOW ONLY AUTHORIZED PERSONAL TO SERVICE YOUR MACHINE.**
8. **ALWAYS TRUN OFF THE MACHINE WHEN IT IS NOT IN USE.**
9. **UNPLUG THE MACHINE FORM THE POWER SOURCE BEFORE REMOVING ANY PANELS OR HOUSING FOR MAINTENANCE OR MAKING ADJUSTMENTS TO THE MACHINE.**
10. **ALWAYS OPERATE ON A LEVEL SURFACE.**
11. **KEEP UNAUTHORIZED PERSONAL AWAY FROM MACHINE.**
12. **THESE TUMBLERS ARE DESIGNED TO HANDLE VACUUM AND NOT PRESSURE. NOTE: DO NOT PUT ANYTHING IN THE DRUM WHICH WOULD GENERATE A PRESSURE SUCH AS CARBON DIOXIDE SNOW OR PELLETS**
13. **INSTALL THE MACHINE IN A POSITION THAT PROVIDES ADEQUATE SPACE TO ALLOW SAFE CLEARANCE OF ANY PERSONAL IN THE AREA.**

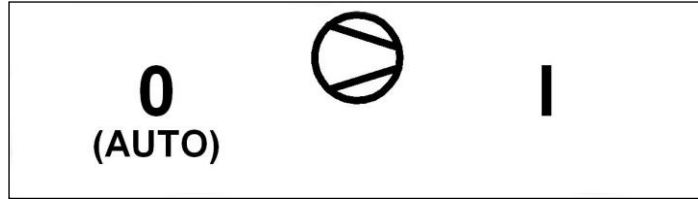
# OPERATING & PROGRAMING INSTRUCTIONS

## Power up:

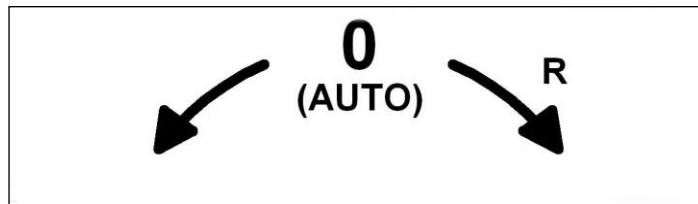
Turn the **0 I** selector to **I** position.

## Manual operation:

With the **0 I** selector to **I** position, you can manually start the pump and the rotation without the PLC. Turn the pump selector to position **I** to start the pump, put back the selector at position **0** to stop the pump. If the selector stays at position **I** the pump will work continuously regardless of the program running.

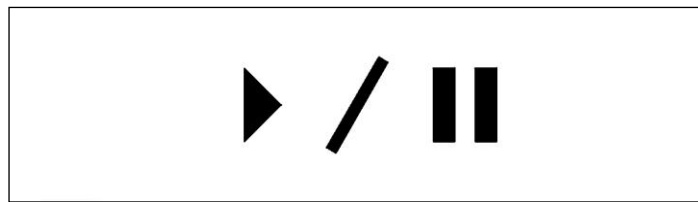


To jog the tumbler or to make the tumbler run at 4 rpm fixed speed without the use of the PLC (backup mode), use the rotation selector. Rotation in the **R** direction is for unloading (reverse rotation). Standard rotation when operating is counterclockwise. Turn the rotation selector to position **0** to make the rotation work accordingly with the program.



## Working with program:

Press **ON/OFF** to power on the tumbler. When the tumbler is energized, the identification of the last executed program is displayed on the LCD screen. If **EMERGENCY STOP** appears on the screen release the E-STOP button. Use the start/pause push button to start the program in memory, make sure the pump selector and the rotation selector are at position 0 (auto) before starting the program.



To change the program in memory see *Activating a program* in the next section. You can manually make the vacuum inside the tumbler by activating the pump on the remote control, stop the pump when it's done.

## **PROGRAMMING OPERATION:**

The **ESC** key switches you between the Function Menus and Program Menus. The **SELECT** key scrolls you through either the Function submenus or the Program submenus depending on which mode you are currently in. The **ENTER** key allows you to access particular functions, programs and options. Below is a list of how each menu is organized.

## **FUNCTION MENUS:**

F1 CREATE A PRGM  
F2 DELETE A PRGM  
F3 UNLOCK A PRGM

## **PROGRAM MENUS:**

PRGRM CYCLE NAME: For example, P01: (12 character limit)

PRGRM SEGMENT #1

SEGMT TIME:0h00

MESSAGE ON: 0h00

MESSAGE OFF: 0h00

VACUUM PUMP : OFF

SP < \*\*\*\*\* >

PRGRM SEGMENT #2

SEGMT TIME:0h00

MESSAGE ON: 0h00

MESSAGE OFF: 0h00

VACUUM PUMP : OFF

SP < \*\*\*\*\* >

PRGRM SEGMENT #3

SEGMT TIME:0h00

MESSAGE ON: 0h00

MESSAGE OFF: 0h00

VACUUM PUMP : OFF

SP < \*\*\*\*\* >

## CREATING A PROGRAM NAME:

1. If **F1 CREATE A PRGM** is not displayed on the LCD screen Press **ESC**. Once **F1 CREATE A PRGM** appears press **ENTER**.
2. **PRGM CYCLE NAME** will appear on the LCD screen. Press **ENTER** to create a new program name.
3. **Pxx NO NAME** will flash. (The program number (Pxx) will be allocated automatically). Begin typing the program name by using the numeric keyboard; press a numeric key until the desired character appears. Once the correct letter is displayed press **ENTER** and the cursor will move one space to the right. Upon completion of typing program name press **ENTER** two times. The newly typed program name will flash. Press **ENTER** to confirm. Your program name has been completed.
4. To set program features enter the program menu by pressing **ESC**. The newly created program name will appear on the LCD screen. Press **ENTER** if the displayed program name is the one needing to be set or modified. Or press the **SELECT** key to display other pre-set programs. Once the correct program name appears press **ENTER**. See *setting program options below for more information*.

## SETTING PROGRAM OPTIONS:

Within each program three segments are available to set the tumbler times and speeds. A complete program duration may be up to 72 hours in length (24 hours per segment). PRGRM SEGMENT #1 can be set for X amount of time with the MESSAGE OFF (no rotation will occur), this can be used to draw vacuum inside the tumbler prior to tumble. Then PRGRM SEGMENT #2 can be set for X amount of time with the MESSAGE ON (rotation will occur) at a set RPM (rotations per minute). Perhaps after this tumbling cycle you will want to tumble for X more amount of time but at a different speed. In PRGRM SEGMENT #3 type this final tumbling time MESSAGE ON and at what RPM. Depending on your tumbling needs, one two or all three of the segments may be programmed. In short, the different cycles may be used for a pause in tumbling or tumbling at different speed.

1. **PRGRM SEGMENT #1:** will appear once a program name has been selected for modification or programming. To make changes to this segment press **ENTER**.
2. **SEGMENT TIME: 0h00** will appear. Enter the length of tumbling segment #1. Hours must be entered in two number increments (i.e. 01, 05, 12, etc. up to 24) followed by the minutes. In total, you must enter 4 numbers to set the tumbling cycle time. When completed the time will flash. Press **ENTER** to confirm and move the next screen.
3. **MESSAGE ON: 0h00** will appear. Type the length of time you want to *tumble*. Type the same time as the SEGMENT TIME if tumbling is desired during this. If no time is entered the machine will not rotate. In this case PRGRM SEGMENT #1 will act as a timer, delaying tumbling until the next segment is activated. Press **ENTER** to confirm time and/or move to the next screen.
4. **MESSAGE OFF: 0h00** will appear. This option is for producers who want to temporarily stop tumbling in a tumbling cycle. No time need be entered if a MESSAGE ON time has been entered. If no tumbling is desired in the segment, type the same time as SEGMENT TIME. Press **ENTER** to confirm time or move to next screen.

### **SETTING PROGRAM OPTIONS:**

5. **VACUUM PUMP OFF:** will appear and **OFF** will flash. Press the **SELECT** key to scroll from **OFF** to **ON**. Press **ENTER** to confirm.
6. **SP < \*\*\*\*\* >** will appear. Press key #4 to reduce or key #5 to increase the speed level. Press **ENTER** to confirm.
7. **PRGRM SEGMENT #1** will re-appear. If this is only a one-segment tumbling program press **ESC** to display program name and press **ENTER** to begin tumbling. If additional segments need to be set, press the **SELECT** key to scroll to **PRGRM SEGMENT #2** and press **ENTER** to set options. Same procedure applies for setting **PRGRM SEGMENT #3**. Following instructions from setting **PRGRM SEGMENT #1**.

### **MODIFYING PRE-SET PROGRAM OPITONS:**

1. To modify a pre-set program press **ESC** if in function mode (i.e. F1, F2, or F3 ).
2. When a program name appears either press **ENTER** if that is the program to be modified or press the **SELECT** key to scroll though pre-set programs. When the desired program appears press **ENTER**.
3. **PRGRM SEGMENT #1** will appear. To make changes in this segment press **ENTER**.
4. As you press **ENTER**, numbers for each submenu will flash. If you want to make a change, enter the new time or speed and press **ENTER**. If no changes are needed to a time or speed press **ENTER** to confirm and advance you to the next submenu screen.
5. To move onto segments #2 and/or #3 press **ENTER** until **PRGRM SEGMENT #1** appears and press the **SELECT** key to scroll to other segments. Press **ENTER** when desired segment appears. Repeat steps as above.

### **ACTIVATING A PROGRAM:**

1. Press **ENTER** if the program name you want to run appears to activate.
2. To select a different program than the one on the screen, press the **SELECT** key.
3. Press **ENTER** after the correct program name appears.
4. The selected program will run until all segment have been completed, or the programmed is manually stopped.

## **VACUUM PUMP DAILY MAINTENANCE:**

Maintenance procedure is required after **each utilization** of the tumbler to evacuate water condensation inside the pump.

1. At the end of each program, close the valve between the pump and the water separator.
2. Start and run the pump for a minimum of 20 minutes.

**\*\*\*IMPORTANT NOTICE; failure to do this regular maintenance could damage the pump and void the warranty supplied by Busch Vacuum Pumps & Systems.**

## **STOPPING A PROGRAM:**

1. To interrupt a program in progress rotate the **M-START** button to the right. Doing so only stops the rotation of the tumbler. The machine will remember how much time has elapsed.
2. Rotate the **M-START** button to the right again to continue, if so desired.
3. Press **ESC** to access the function menus if you would like to clear out the program memory from a program manually stopped before completion.
4. Press the **SELECT** key to scroll to **F3 UNLOCK A PRGM** and then press **ENTER**. The name of the current program will appear.
5. Press **ENTER** to reset the counters. At this point another program may be accessed.

\*A program is locked from the beginning of execution through completion to prevent any unintentional modification to the status of the current program.

## **DELETING A PROGRAM:**

1. To delete a pre-set program from the tumbler's memory access the function menus and scroll to **F2 DELETE A PRGM** and press **ENTER**.
2. The first program in memory will blink. Press **ENTER** to delete or the **SELECT** key to move to the next program.
3. Once the program needing to be deleted appears press **ENTER**.
4. Press **ESC** to unconfirmed a deflection and/or to exit the delete function.

# PROGRAM SAMPLE

## OBJECTIVE :

TUMBLE CHICKEN PARTS FOR 15 MIN. AT MAX. SPEED WITH VACUUM PUMP ON.

### PRESS

1. On/Off
2. ESC                                   until
3. Enter
4. Enter
5. Number keypad  
until desired letter appears  
Enter after each selection  
Enter Twice
6. Select
7. Enter
8. 0015
9. Enter
10. 0015
11. ENTER
12. ENTER
13. SELECT
14. ENTER
15. ENTER
16. ESC

### RESULTING DISPLAY

Display Lights  
F1 Create a PRGM  
PRGM Cycle name  
P01 No name (Flashing)  
P01 chick parts

Program Cycle name  
PRGM SEG #1  
SEGMENT TIME:0h00 (Flashing)  
SEGMENT TIME:0h15  
MESSAGE ON: 0h00  
MESSAGE ON: 0h15  
MESSAGE OFF: 0h00  
VACUUM PUMP: OFF  
VACUUM PUMP: ON  
SP<\*\*\*\*\*>  
PRGM SEGMENT #1  
P01 CHICK

## PROGRAM IS NOW COMPLETE

**No other segments are necessary unless you want to change speeds during the program. You can insert a segment at the beginning to make the vacuum inside the tumbler without rotation.**

**If you make a mistake when entering, press ESC key.**

**Press ENTER to review program selections.**



# PROGRAM SAMPLE

## JOG :

Jog is also available on the PLC control. Press key pad 2 to jog forward. Press key pad 1 for continuous reverse rotation. NOTE: Wait 5 seconds after tank stops before using jog.

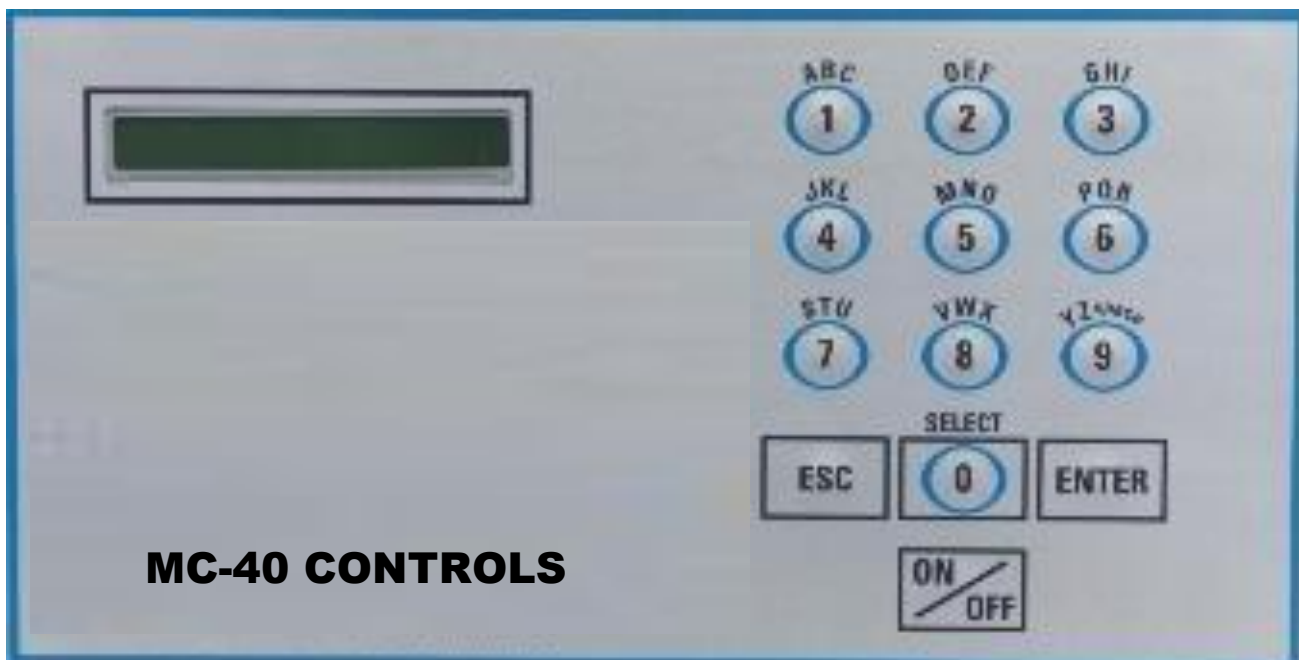
## TO UNLOCK A PROGRAM if programming is not responding

Push **ESC** until *F1 Create a PRGM* appears

Push **SELECT** until *F3 Unlock a PRGM* appears

Push **ENTER**

## KEY BOARD DETAIL



# CLEANING & SANITATION

The Vacuum Tumbler drum and machine must be cleaned and sanitized daily and whenever one marinating product is switched to another.

1. After removing all excess marinating solution, add the necessary amount of water and mild detergent to create a solution for pre washing.

**Hot water is not recommended in the first step, as it may cause the “myosin protein” left over from the tumbling process to build up and discolour the inside surface of the drum**

2. Fasten the cover into position and rotate the drum at full speed for approximately two (2) minutes.
3. Use the REV button to rotate in the reverse direction for two (2) minutes.
4. Drain the cleaning solution by removing the drain plug from the clean out port .
5. Wash the inside of the drum with hot soapy water and then rinse with hot water.
6. Always lock out the power source when cleaning the tumbler except when rotation described in step 2 and 3.

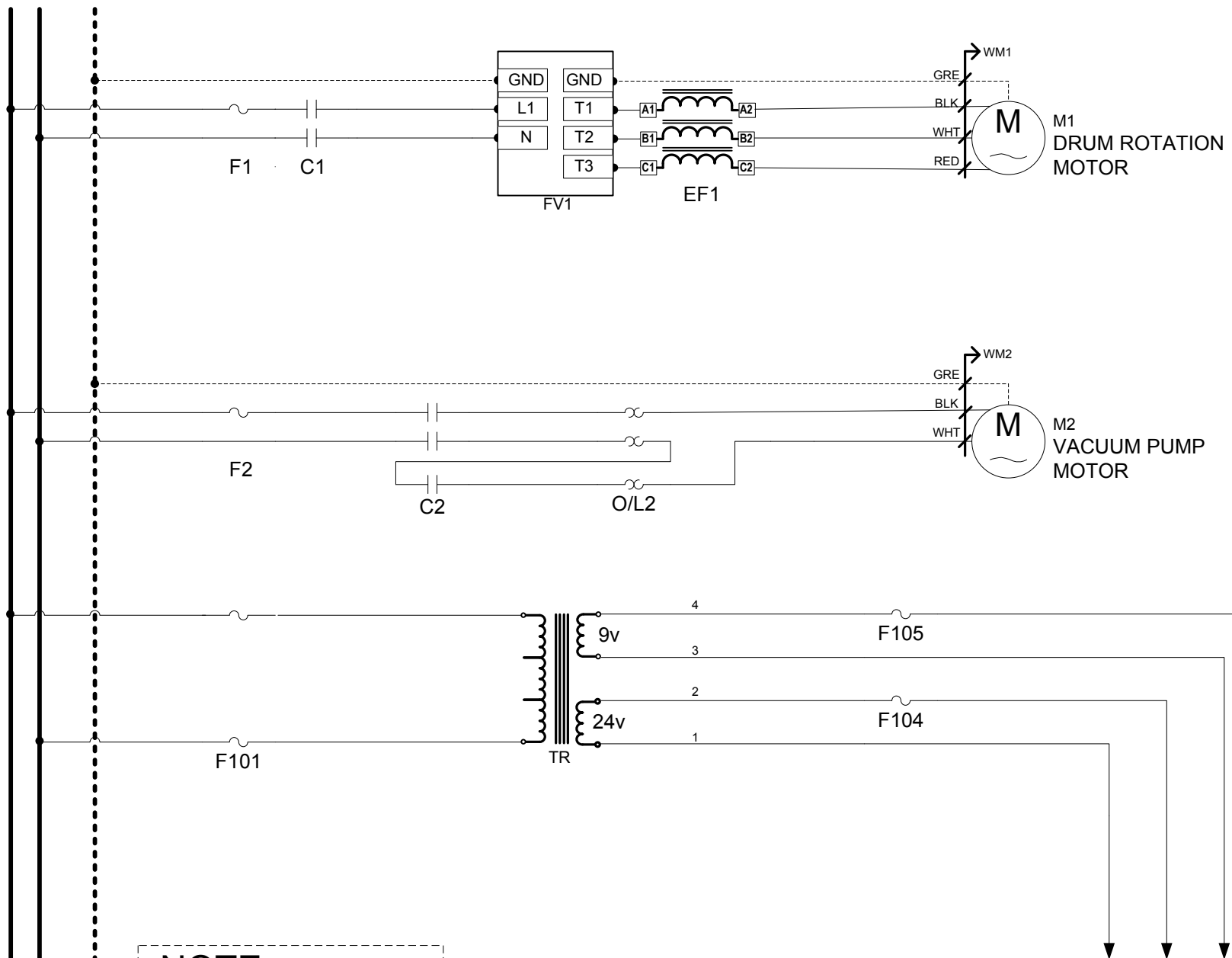
Lid gasket should be washed and sanitized in warm soapy water. Remove the gasket from lid and clean the lid too.

7. The outside surface of the machine should also be wiped down and cleaned.
8. During cleaning of the machine, do not direct water on the controls. Instead, wipe with a damp cloth and dry with a clean dry towel.
9. After cleaning, the machine should be sanitized with a USDA FDA approved sanitizing solution.

# MAINTENANCE

1. Lock out energy source from the machine before doing any maintenance.
2. Check the gear reducer for oil leak montly.
3. Remove the hood cover to check condition of parts.

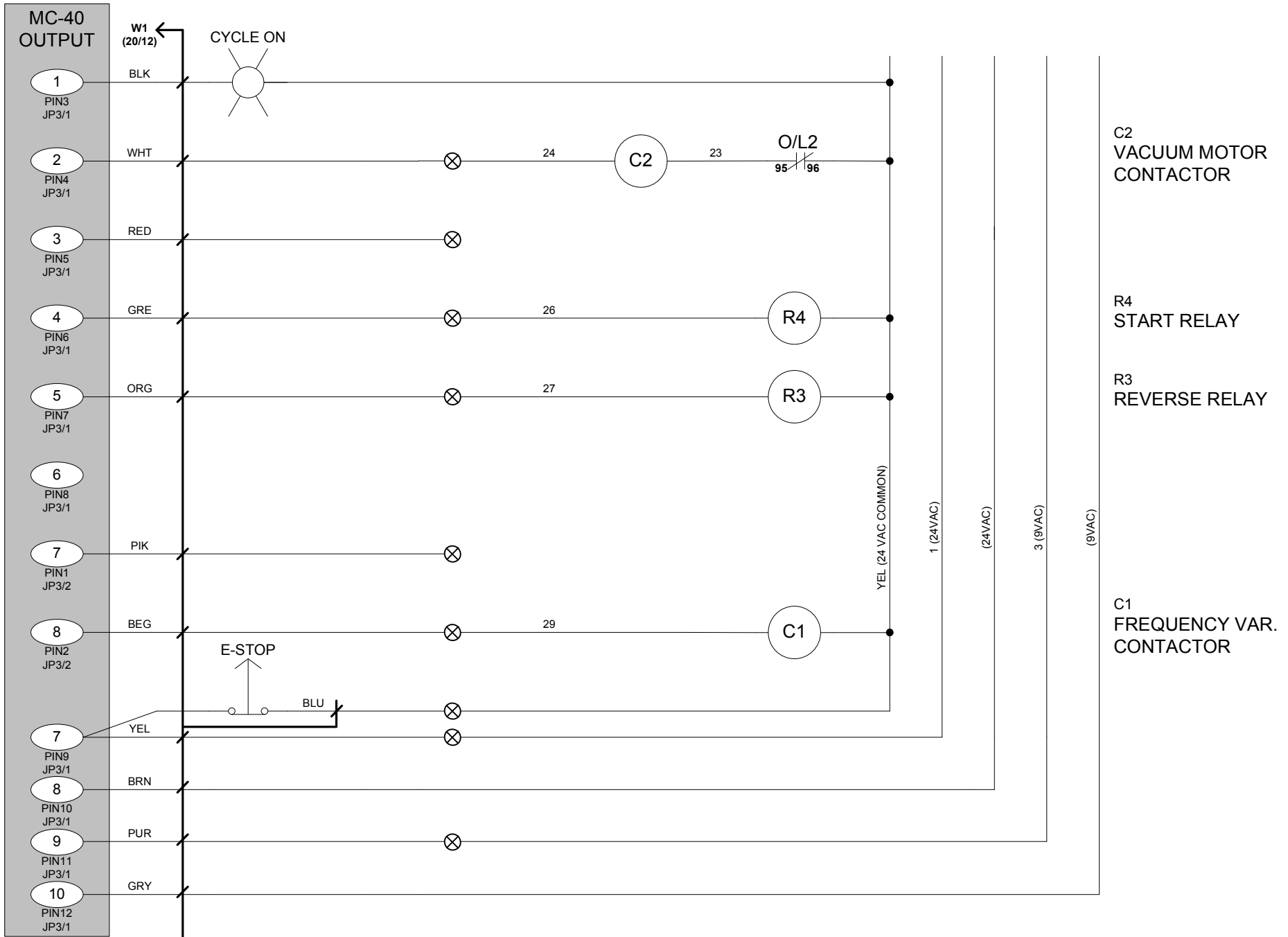
L1 N GND



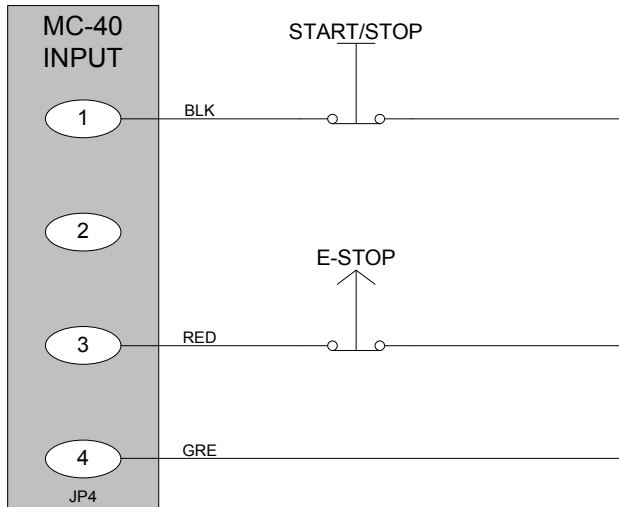
AMPERAGE	
THEORIC	MESURED
_____ A	_____ A
_____ V	_____ V
_____ A	_____ A
_____ V	_____ V

**NOTE:** RC FILTERS  
MUST BE CONNECTED  
ON EACH AC COIL.  
(Not shown on diagram)

category	MASSAGER	model	VT-500	volt.	1PH/60HZ			<b>SIPROMAC</b> St-Germain de Grantham QUEBEC, CANADA
system				circuit	POWER	year	month	
usual				concept	DL	draw	SP	app
fonctions				options				DL
								006-2937
								PAGE:1 OF 3

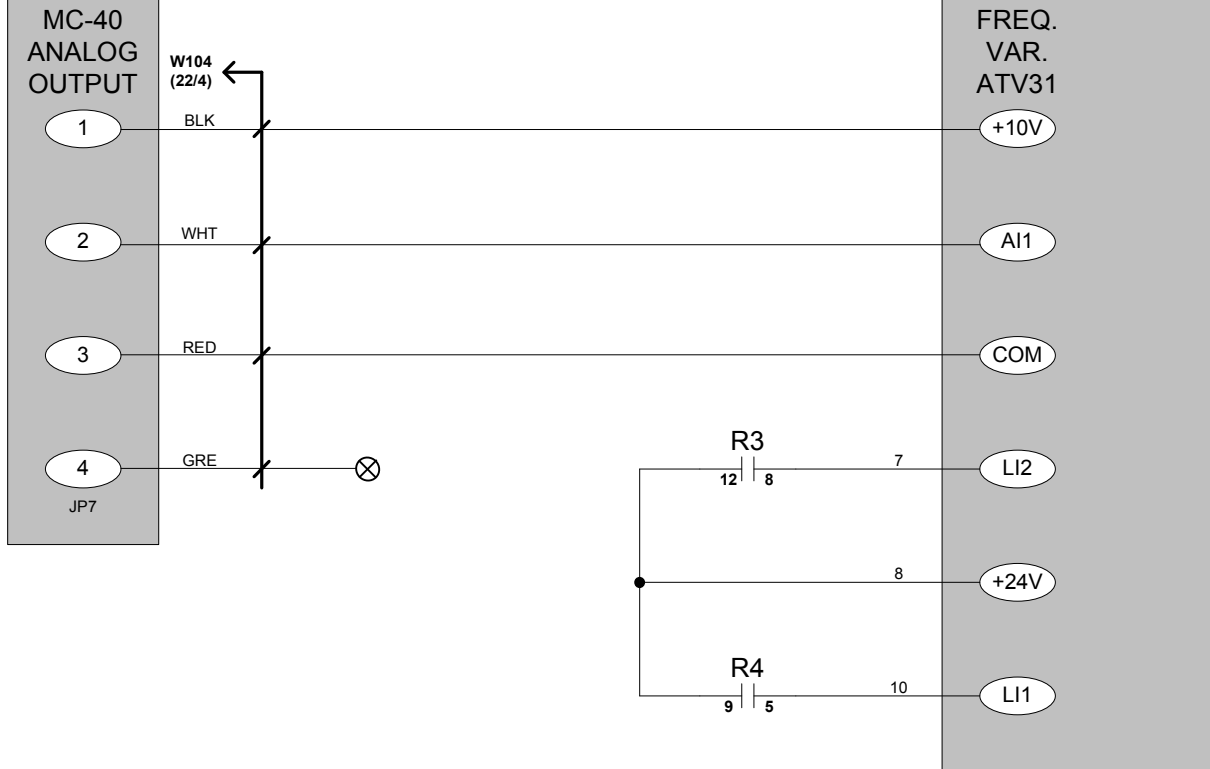


category	MASSAGER	model	VT-500	volt.	ALL			<b>SIPROMAC</b> St-Germain de Grantham QUEBEC, CANADA	
system	MC-40 OUTPUT			circuit	COMMAND	year	month		
usual functions				concept	DL	draw	SP	app	006-2937 PAGE:2 OF 3
options									



**ATV12**

MENU	PARAMETERS	SET TO:
SET:	ACC	15
	DEC	6
	LSP	0.0 (2RPM@15.1HZ)
	HSP	100 (9RPM@71.9HZ)
	NCR	2.7
DRC:	TUNE	YES → DONE
	TFR	100
I/O:	R1	RUN
FUN:	RRS	L2H
FLT:	THT-ITH	4



category	MASSAGER	model	VT-500	volt.	ALL			<b>SIPROMAC</b> St-Germain de Grantham QUEBEC ,CANADA		
system	MC-40 INPUT AND ANALOG OUTPUT			circuit	COMMAND	year	month			day
usual functions							11	10	10	
options							concept	draw	app	006-2937 PAGE:3 OF 3
							DL	SP	DL	

# SIPRO	PART DESCRIPTION	PART APPLICATION	MACHINE VOLTAGE	MACHINE	REF.	QTY
028-0018	TERMINAL BLOCK M6/8	ALIMENTATION	120V/1PH/60HZ	VT-500	L1-N	4
028-0105	GROUND BARRIER (6 HOLES)	ALIMENTATION	120V/1PH/60HZ	VT-500	GRD	1
028-0060	SEPARATOR M4/6	ALIMENTATION	120V/1PH/60HZ	VT-500	L1-N-GRD	2
034-0755	FUSE HOLDER 30A 1 PÔLE 600V	DRIVE MOTOR	120V/1PH/60HZ	VT-500	F1	1
034-0560	FUSE 25A/600V FA	DRIVE MOTOR	120V/1PH/60HZ	VT-500	F1	1
025-0025	CONTACTOR 1 HP IN 120V 1PH-CSA	DRIVE MOTOR	120V/1PH/60HZ	VT-500	C1	1
041-0017	FREQ.VAR. ATV12 1HP 100V-120V 50/60HZ	DRIVE MOTOR	120V/1PH/60HZ	VT-500	FV1	1
041-1001	EMI FILTER 4AMP 3MH, 3PH.	DRIVE MOTOR	120V/1PH/60HZ	VT-500	EF1	1
030-0250	CAB TIRE	MOTOR	120V/1PH/60HZ	VT-500	WM1	2M.
037-0953	MOTOR 80S/4-56C, 3/4HP, 230V/60HZ 2.7A	MOTOR	120V/1PH/60HZ	VT-500	M1	1
034-0755	FUSE HOLDER 30A 1 PÔLE 600V	PUMP	120V/1PH/60HZ	VT-500	F2	1
034-0530	FUSE 20A/250V TD	PUMP	120V/1PH/60HZ	VT-500	F2	1
025-0030	CONTACTOR 1 HP IN 120V 1PH-CSA	PUMP	120V/1PH/60HZ	VT-500	C2	1
025-0190	THERMAL OVERLOAD 12 TO 18A	PUMP	120V/1PH/60HZ	VT-500	O/L2	1
030-0160	CAB TIRE	PUMP	120V/1PH/60HZ	VT-500	WM2	2M.
125-1020	BUSCH KB-0020 115V/1PH/60HZ	PUMP	120V/1PH/60HZ	VT-500	M2	1
034-0740	FUSE HOLDER M4/8SF-CSA	TRANSFO	120V/1PH/60HZ	VT-500	F101	1
034-0205	FUSE 5X20MM 1A/250V TIME DELAY	TRANSFO	120V/1PH/60HZ	VT-500	F101	1
029-0008	TRANSFO 65VA/120/24-9	TRANSFO	120V/1PH/60HZ	VT-500	TR	1
034-0740	FUSE HOLDER M4/8SF-CSA	24VAC+9VAC	ALL	VT-500	F104+105	2
034-0210	FUSE 5X20MM 2A/250V TIME DELAY	9VAC	ALL	VT-500	F105	1
034-0240	FUSE 5X20MM 4A/250V TIME DELAY	24VAC	ALL	VT-500	F104	1
036-0740	12 CONTACTS CONNECTOR	OUTPUT MC-40	ALL	VT-500		1
036-0860	MTA-100 RECEPTACLE	ANALOG OUTPUT MC-40	ALL	VT-500		1
036-0820	0.156 CENTERLINE CRIMP HOUSING	INPUT MC-40	ALL	VT-500		1
036-0850	0.156 CENTERLINE CRIMP TERMIN.	INPUT MC-40	ALL	VT-500		4
033-0036	MICROPROCESSOR MC-40 VT MASSAGERS	MC-40	ALL	VT-500		1
033-0015	MEMBRANE SIPROMAC	MC-40 CONTROL	ALL	VT-500		1
026-0240	LIGHT HEAD BODY	CYCLE ON LIGHT	ALL	VT-500	CYCLE ON	1
026-0300	LIGHT BULB 24V	CYCLE ON LIGHT	ALL	VT-500	CYCLE ON	1
026-0220	YELLOW LIGHT HEAD	CYCLE ON LIGHT	ALL	VT-500	CYCLE ON	1
026-0475	``CYCLE ON``LEGEND	CYCLE ON LIGHT	ALL	VT-500	CYCLE ON	1
026-0025	N.C. WITH BASE	EMERGENCY STOP	ALL	VT-500	E-STOP	1
026-0030	N.C. WITHOUT BASE	EMERGENCY STOP	ALL	VT-500	E-STOP	1
026-0150	E. STOP BUTTON PUSH PULL	EMERGENCY STOP	ALL	VT-500	E-STOP	1
026-0485	``E. STOP``LEGEND	EMERGENCY STOP	ALL	VT-500	E-STOP	1
026-0010	1 N.O. CONTACT WITH BASE	STOP/START	ALL	VT-500	START/STOP	1
026-0110	BLACK CAP PUSH BUTTON (WATER)	STOP/START	ALL	VT-500	START/STOP	1
026-0435	STOP-START LEGEND	STOP/START	ALL	VT-500	START/STOP	1
025-0600	4PDT RELAY 24VAC (55.34-24VAC)	REV. FOW.	ALL	VT-500	R3+R4	2
025-0610	4PDT RELAY SOCKET 24VAC	REV. FOW.	ALL	VT-500	R3+R4	2