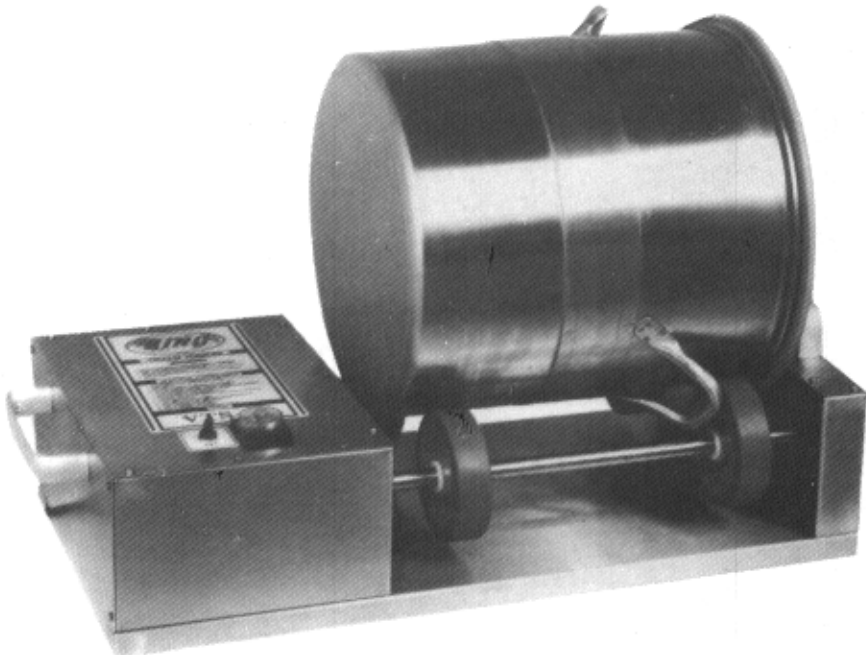


BIRO[®]

VACUUM TUMBLER OPERATION MANUAL & PARTS LIST

**MODEL VTS-41
REMOTE PUMP**

**MODEL VTS-42
SELF CONTAINED**



The **BIRO VTS-41 & VTS-42 VACUUM TUMBLERS** are versatile machines used for vacuum tumbling all types of meats with one of the "**BIRO BLEND**" brand blends of herbs and spices. All marinades are FDA approved and meet F.S.I. standards. The **BIRO VTS-41 & VTS-42** produce equally impressive results with beef, pork, poultry and fish.

All marinades have instructions for twenty-five (25) pound loads, which is the maximum recommendation for proper tumbling. Any amount beyond twenty-five (25) pounds may take away the benefits of tumbling, and proper marination might not be achieved.

The units are both easy to clean and maintain as well as sanitary in design and construction. The entire machine is built to give many years of trouble free service while providing a unique line of marinated products for your customers.

The BIRO VTS-41 & VTS-42 have the following agency approval:

ULc (U.S. & CANADA)

SAFETY TIPS



ROTATING DRUM TO AVOID SERIOUS PERSONAL INJURY.

***NEVER** Touch This Machine Without Training and Authorization By Your Supervisor.*

***ALWAYS** Read Operating and Parts Manual **BEFORE** Operating, Cleaning or Servicing.*

***ALWAYS** Keep Hands Clear of the Rotating Drum and Other Moving Parts.*

***NEVER** Operate or Work Around This Machine With Loose Fitting Clothing That Could Become Entangled.*

***NEVER** Attempt to Remove the Drum Lid Unless Vacuum Has Been Released and the Drum is Positioned Vertically with the Lid at the Top.*

***NEVER** Operate Vacuum Pump Unless Properly Connected to Tumbler Drum.*

***ONLY** Operate Vacuum Pump in Recommended Vacuum Range (15-20 Inches of Mercury)
NEVER TO EXCEED 20 INCHES Hg.*

***ONLY** Use a Qualified Electrician to Install According to Local Building Codes: Machine **MUST** Be Properly Grounded.*

***ONLY** Install on Level, Non-Skid Surface in a Clean, Well-Lighted Work Area Away From Children and Visitors.*

***DO NOT** Store or Operate Machine in Meat Cooler.*

***DO NOT** Allow Food Particles, Liquids or Any Other Foreign Material to Enter the Vacuum Pump or Vacuum Hose.*

***ALWAYS** Turn Off, Unplug From Power Source and Perform Lockout/Tagout Procedure to This Machine **BEFORE** Cleaning or Servicing.*

***NEVER** Leave Machine Unattended While Operating.*

***PROMPTLY REPLACE** Any Worn or Illegible Warning and/or Instruction Labels.*

CLEANING



ROTATING DRUM TO AVOID PERSONAL INJURY

ALWAYS Turn Off, Unplug From Power Source and Perform Lockout/Tagout Procedures to This Machine Before Cleaning, Servicing or When Not in Use.

ONLY Use Recommended Cleaning Equipment, Materials and Procedures.

NEVER Spray Water or Other Liquid Substances Directly at Motor, Power Controls or Any Other Electrical Components.

ALWAYS Thoroughly Clean Equipment Daily.



DO NOT Use Harsh Chemicals, Scouring Pads or Cleansers. Ordinary Liquid Detergent for Manual Dish or Pot/Pan Washing Will Not Harm the Machine. Dish Machine Chemicals Will Cause Brown "Rusty" Stains, as will Chlorine Bleach and Similar Products if Allowed to Stand In or On the Machine for Any Length of Time.

CLEANING THE BIRO VACUUM TUMBLER:

1. Turn "OFF", unplug machine from power source, and perform lockout/tagout procedure.
2. The drum, drum lid, baffles in Stainless Steel drum and gasket can be removed and washed in utensil sink. Be sure to flush the vacuum valve with warm soapy water and rinse with clean water thoroughly. The drum, drum lid, baffles from Stainless Steel drum and gasket should be sanitized with a chlorine solution or another appropriate sanitizer approved by your local Health Dept. All parts should be air dried before reassembly and storage.
3. The exterior of the tumbler base can be wiped down with the same type soap solution followed by a rinse water wiping.
4. If food stains are not removed, use a product such as "Bon Ami" or "Soft Scrub". Be sure to wipe with the grain of the Stainless Steel with a soft cloth or sponge.
5. Streaks or water spots can usually be removed with a solution of vinegar and water.

MAINTENANCE



ROTATING DRUM TO AVOID SERIOUS PERSONAL INJURY

ALWAYS Turn Off, Unplug From Power Source and Perform Lockout/Tagout Procedure to This Machine **BEFORE** Servicing.

NEVER Touch This Machine Without Training and Authorization By Your Supervisor.

NEVER Bypass, Alter, or Modify This Equipment in Any Way From Its Original Condition.

PROMPTLY REPLACE Any Worn or Illegible Labels.

USE ONLY GENUINE BIRO Parts and Accessories Properly Installed.

A. PUMP FILTER

1. Check filter daily. Filter must be drained before the separated moisture and oil reaches the bottom of the lower white baffle. Drain by unscrewing the black drain plug in bottom of sight bowl.
2. The filter element should be removed and cleaned monthly.
 - a. Unscrew clear threaded bowl.
 - b. Unscrew filter element assembly
 - c. Clean bowl and filter element. Reassemble filter element. Clean bowl with mild soap and water only. Do not use detergents, cleansing agents, such as acetone, alcohol, benzene or gasoline, which are damaging to plastic.
 - d. Lubricate bowl gasket to assist initial sealing. Use only mineral based oils or grease. Do not use synthetic oils or silicones.
 - e. Screw bowl into body of filter. Close black drain plug.

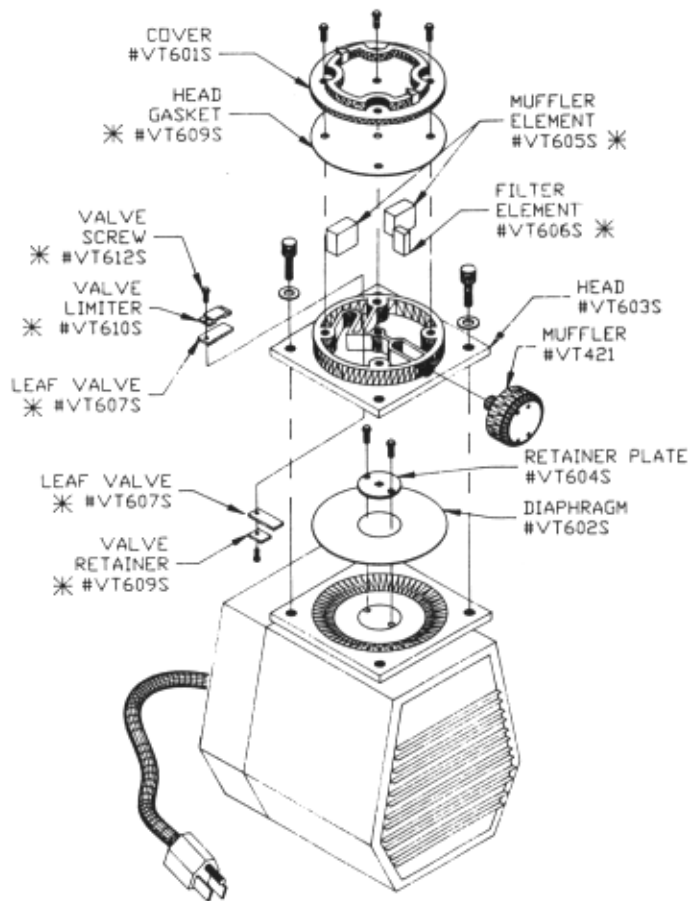
B. VACUUM PUMP

WARNING: THE MOTOR IS THERMALLY PROTECTED AND CAN AUTOMATICALLY RESTART WHEN THE OVERLOAD RESETS. ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING. PERSONAL INJURY COULD BE THE RESULT.

1. Do not at any time lubricate any parts of the vacuum pump with oil, grease or petroleum products or clean with acids, caustics or chlorinated solvents. Never allow the diaphragm to contact any petroleum products. This can reduce greatly the service life of the vacuum pump.
2. To clean or replace the internal filters and/or rubber gasket. Remove the five screws in the top of the pump. The filter and gasket are located beneath this top plate. Remove the filters and wash them in solvent and blow off with air or replace. The gasket may be cleaned with water. Replace the filters in proper position and replace the gasket. The gasket and top plate will fit in one position only.
3. To replace the diaphragm, remove the socket cap screws from the head of the pump. The diaphragm is held in place by two phillips head screws. Remove screws, retainer plate and diaphragm. The diaphragm will fit in any position on the connecting rod. Replace the plate and the two phillips head screws. Torque to 30 inch pounds.

CAUTION: DO NOT RAISE ANY BURRS OR NICKS ON THE HEADS OF THESE SCREWS. THESE BURRS COULD CAUSE DAMAGE TO THE INLET VALVE.

VT 418 or VT479S VACUUM PUMP ASSEMBLY



* NO. VT611S DENOTES PARTS
IN SERVICE KIT

OPERATING AND MAINTENANCE INSTRUCTIONS

Do not at any time lubricate any of the parts with oil, grease, or petroleum products nor clean with acids, caustics or chlorinated solvents. Be very careful to keep the diaphragm from contacting any petroleum product or hydro carbons. It can affect the service life of the pump.

WARNING: To prevent explosive hazard, Do NOT pump combustible liquids or vapors with these units. Personal Injury and/or Property Damage would result.

To clean or replace the filters and/or rubber gasket, remove the five screws in the top of the unit. The filters and gasket are located beneath this top plate. Remove the filters and wash them in solvent and/or blow off with air and replace. The gasket may be cleaned with water. Replace the filters in proper position and replace the gasket. Note that the gasket and top plate will fit in one position only.

To replace the diaphragm, remove the socket cap screws from the head of the pump. The diaphragm is held in place by two phillips head screws. Remove screws, retainer plate, and the diaphragm. The diaphragm will fit in any position on the connecting rod. Replace the plate and the two phillips head screws. Torque to 30 inch-pounds on DOA and DAA. Torque to 12 inch-pounds on MOA and MAA.

CAUTION: Do not raise any burrs or nicks on the heads of these screws. These burrs could cause damage to the inlet valve.

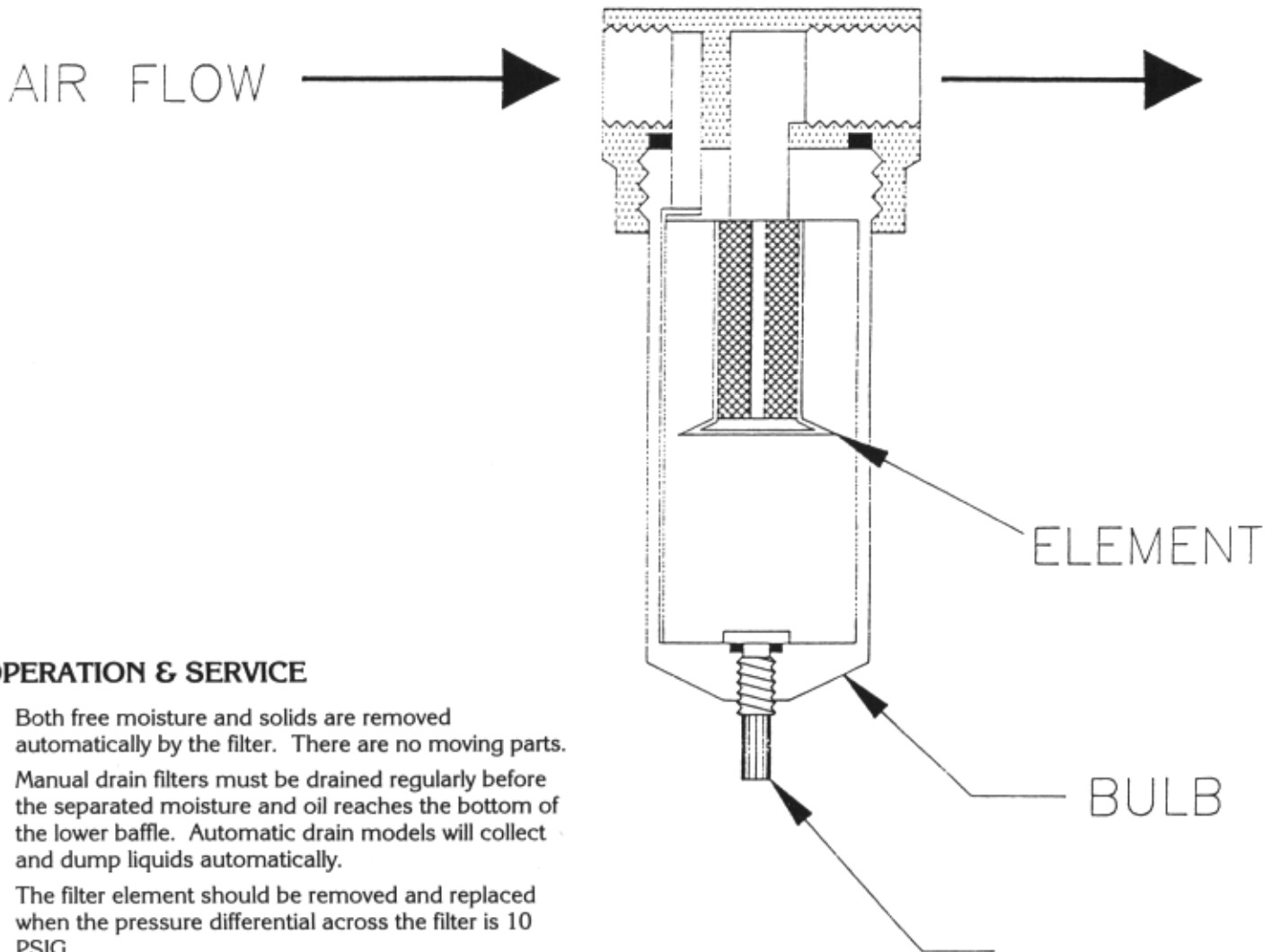
For replacing the inlet and the outlet valve, remove the slotted machine screw that holds each valve in place. The stainless steel inlet and outlet valves are interchangeable.* Clean them with water. When replacing the outlet valve, place the new valve in location and note there is a retaining bar near the machine screw hole. The retaining bar holds the valve in position. When replacing the inlet valve, note that the valve holder is marked with an X in one corner. This X should be in the lower right hand corner toward the inlet of the air chamber. Replace the head and tighten the socket head screws. to 90-100 inch-pounds of torque on DOA and DAA. Torque to 30 inch-pounds on MOA and MAA. *DOA and DAA models only.

WARNING: The motor may be thermally protected and can automatically restart when the overload resets. Always disconnect power source before servicing. Personal Injury and/or Property Damage could result.

Do not attempt to replace the connecting rod or motor bearings. If after cleaning the unit and/or installing a new Service Kit, the unit still does not operate properly, contact your representative, the factory, or return the pump to one of our authorized Service Centers.

IF YOUR PUMP IS EQUIPPED WITH PLASTIC PLUGS IN THE EXHAUST AND/OR INTAKE PORTS, REMOVE BEFORE STARTING THE UNIT.

No. VTS7121
INLET FILTER
DRAINING INSTRUCTIONS



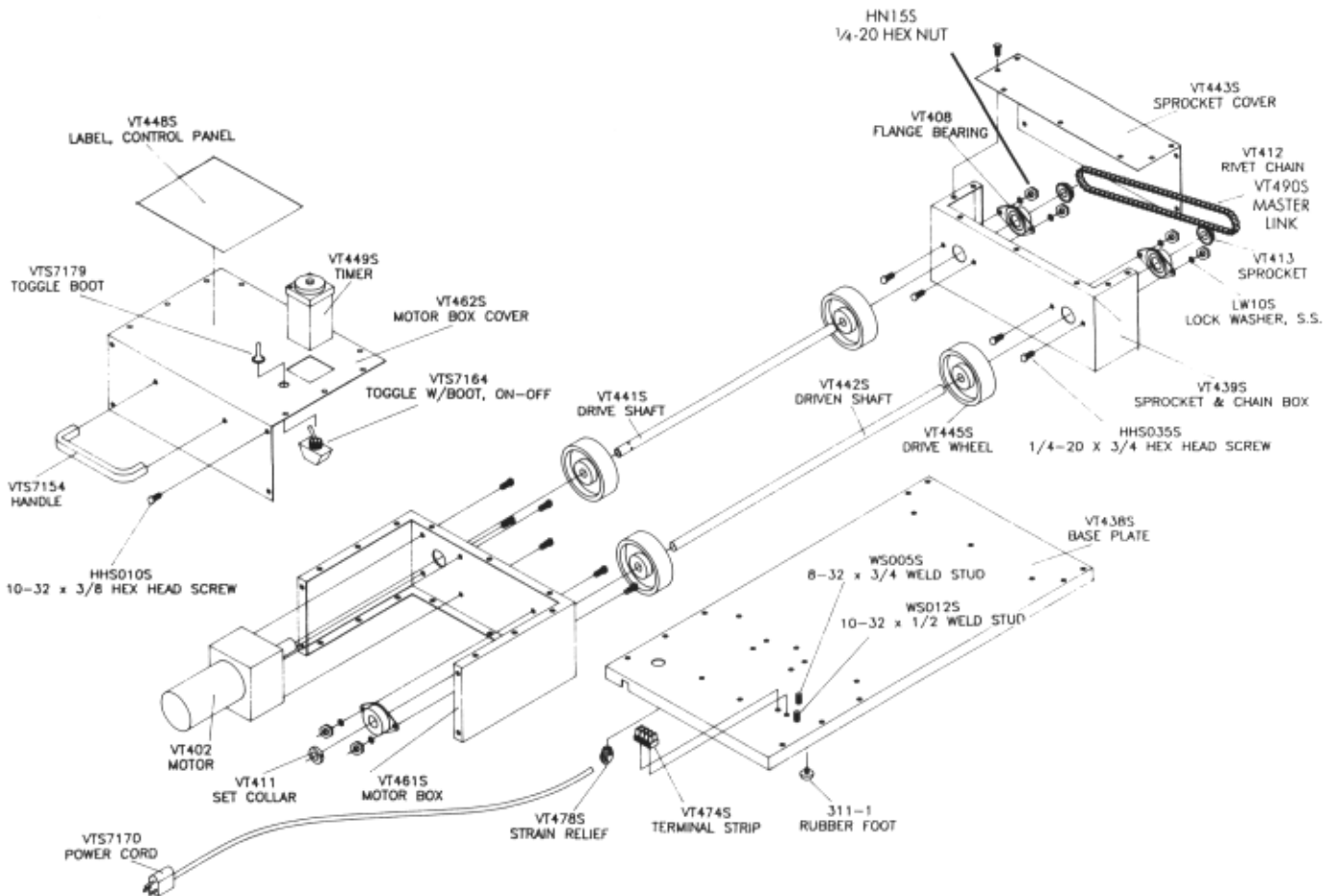
UNSCREW
DRAIN
VALVE TO
DRAIN

OPERATION & SERVICE

1. Both free moisture and solids are removed automatically by the filter. There are no moving parts.
2. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the lower baffle. Automatic drain models will collect and dump liquids automatically.
3. The filter element should be removed and replaced when the pressure differential across the filter is 10 PSIG.
4. To remove the filter element: **SHUT OFF AIR SUPPLY** and depressurize the unit.
 - a. Unscrew threaded bowl
 - b. Unscrew element assembly
 - c. Clean bowl and internal parts before cleaning reassembling. See polycarbonate bowl cleaning section.
 - d. Attach clean element assembly and tighten firmly.
 - e. Replace bowl gasket; lubricate gasket to assist in retaining it in position. Use only mineral base oils or grease. Do NOT use synthetic oils such as esters, and do NOT use silicones.
 - f. Screw bowl into body and tighten firmly.

VTS-41

IMPORTANT: Always Advise Model & Serial Number When Ordering Parts



Part No.	Description
311-1	Rubber foot
HHS010S	Hex head screw, 10-32 x 3/8, SS
HHS035S	Hex head screw, 1/4-20 x 5/8, SS
HN15S	1/4-20 hex nut
LW10S	Lock washer, 1/4, SS
VT402	Motor, HP, 1/25 115-60-1, 17.7RPM. 90:1
VT408	Flange bearing
VT411	Set collar
VT412	Rivet chain
VT413	Sprocket
VT438S	Tumbler base plate
VT439S	Sprocket & chain box less cover
VT441S	Driving shaft
VT442S	Driven shaft
VT443S	Sprocket & chain cover
VT445S	Drive wheel, caster

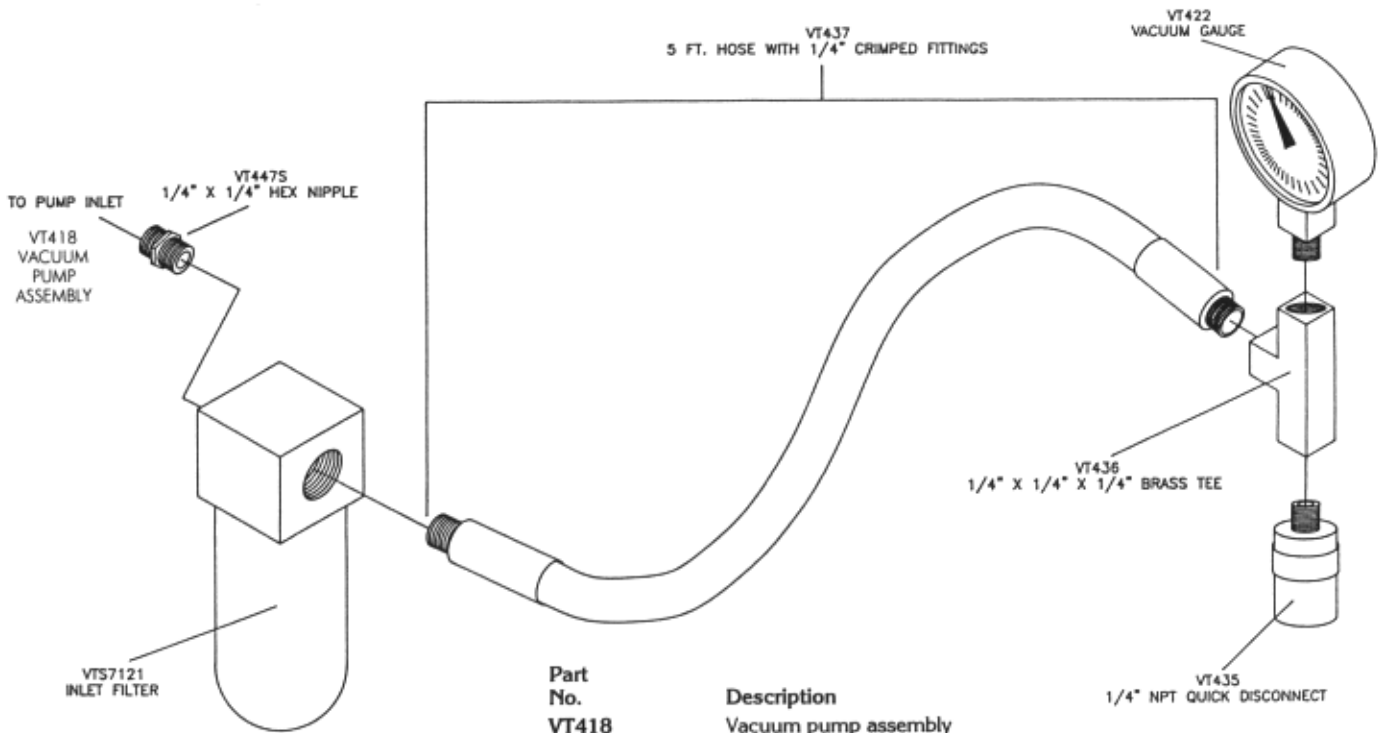
Part No.	Description
VT448S	Label, VTS-41 control panel
VT449S	Timer, pushbutton start, 0-50 minute
VT461S	Motor box less cover
VT462S	Motor box cover
VT474S	Terminal strip, 4 circuit
VT478S	Strain relief, 90 deg.
VT490S	Master link
VTS7154	Oval handle
VTS7164	Toggle switch w/boot, ON-OFF
VTS7170	Power cord w/120V plug, 8', 16/3
VTS7179	Toggle switch boot

NOT SHOWN

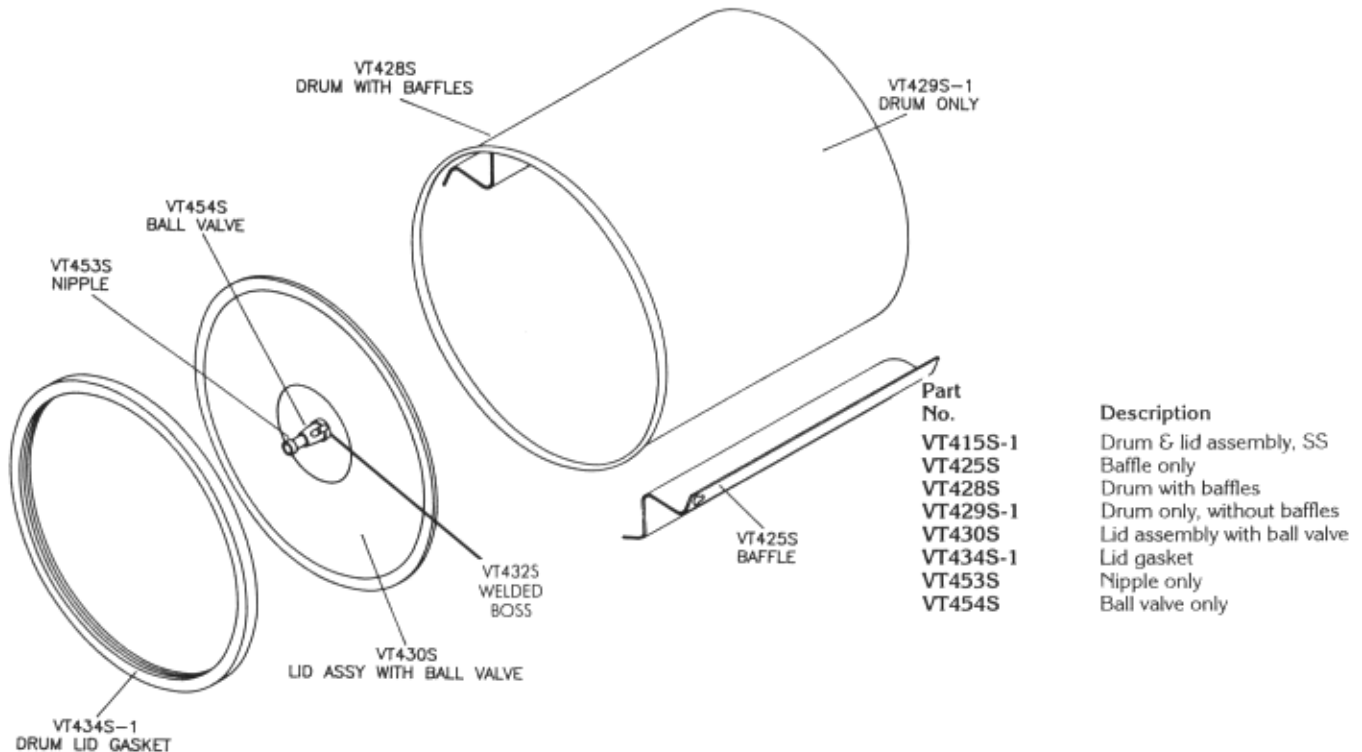
VT418	Vacuum pump w/toggle, 110-60-1
VT479S	Vacuum pump w/toggle, 220-50-1

VTS-41

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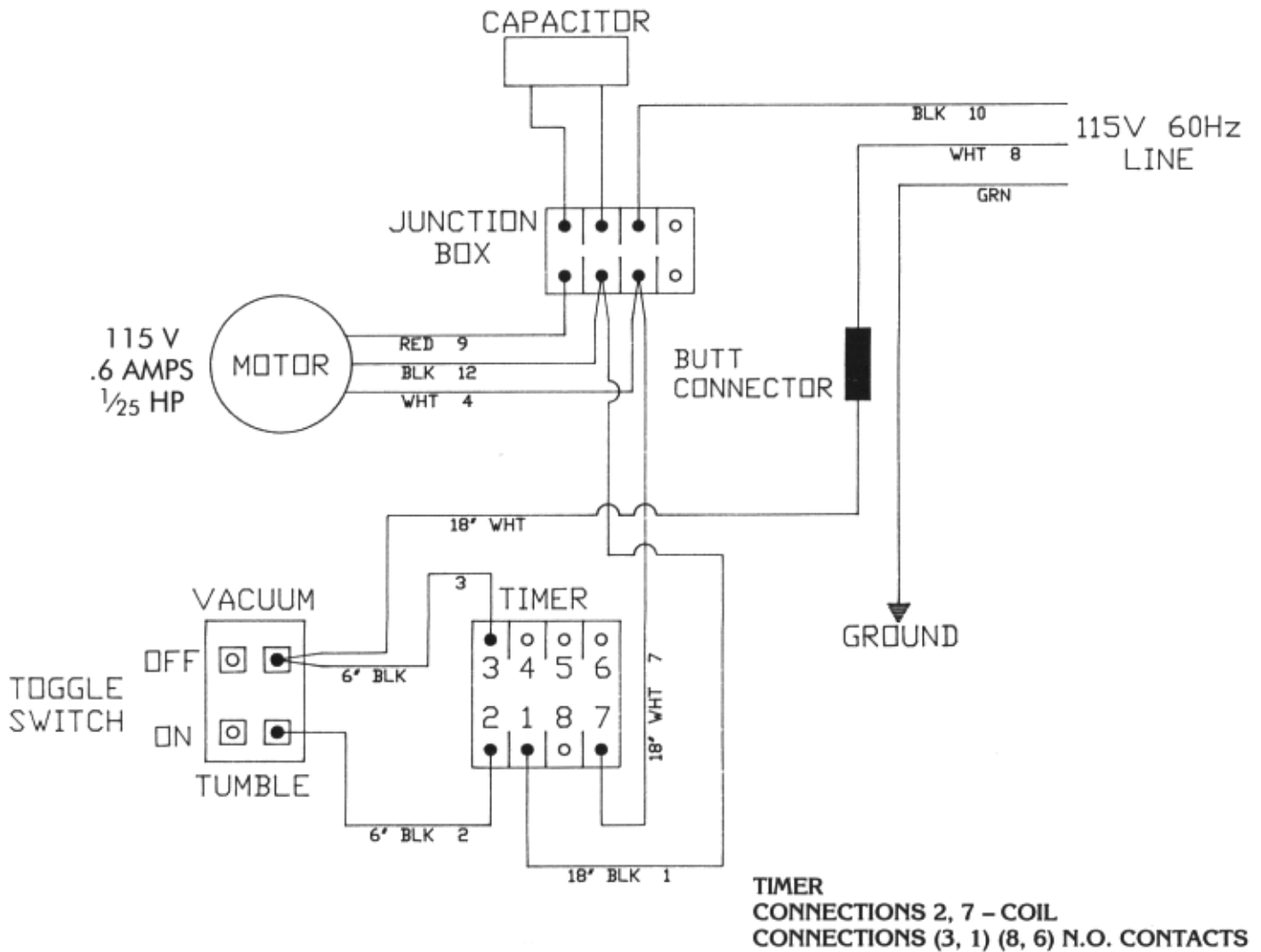
Part No.	Description
VT418	Vacuum pump assembly
VT422	Vacuum gauge
VT435	Coupler, 1/4MPT
VT436	Tee, 1/4 x 1/4 x 1/4 FPT, brass
VT437	Hose, 5' with 1/4MPT crimped ends
VT447S	Hex nipple, 1/4NPT
VTS7121	Inlet filter



Part No.	Description
VT415S-1	Drum & lid assembly, SS
VT425S	Baffle only
VT428S	Drum with baffles
VT429S-1	Drum only, without baffles
VT430S	Lid assembly with ball valve
VT434S-1	Lid gasket
VT453S	Nipple only
VT454S	Ball valve only

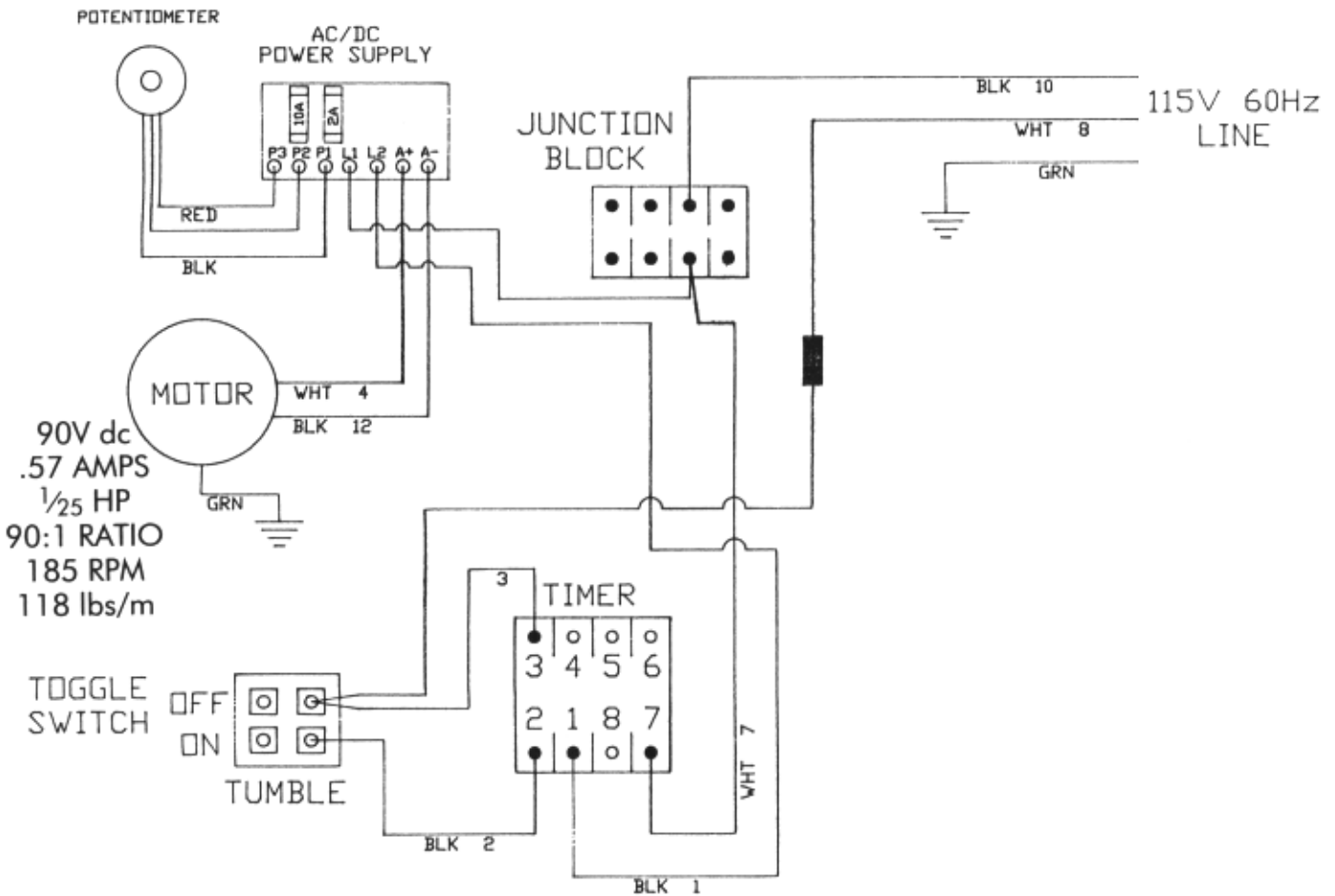
VTS-41 WIRING DIAGRAM

IMPORTANT: Always Advise Model & Serial Number



VTS-41 WIRING DIAGRAM FOR VARIABLE SPEED

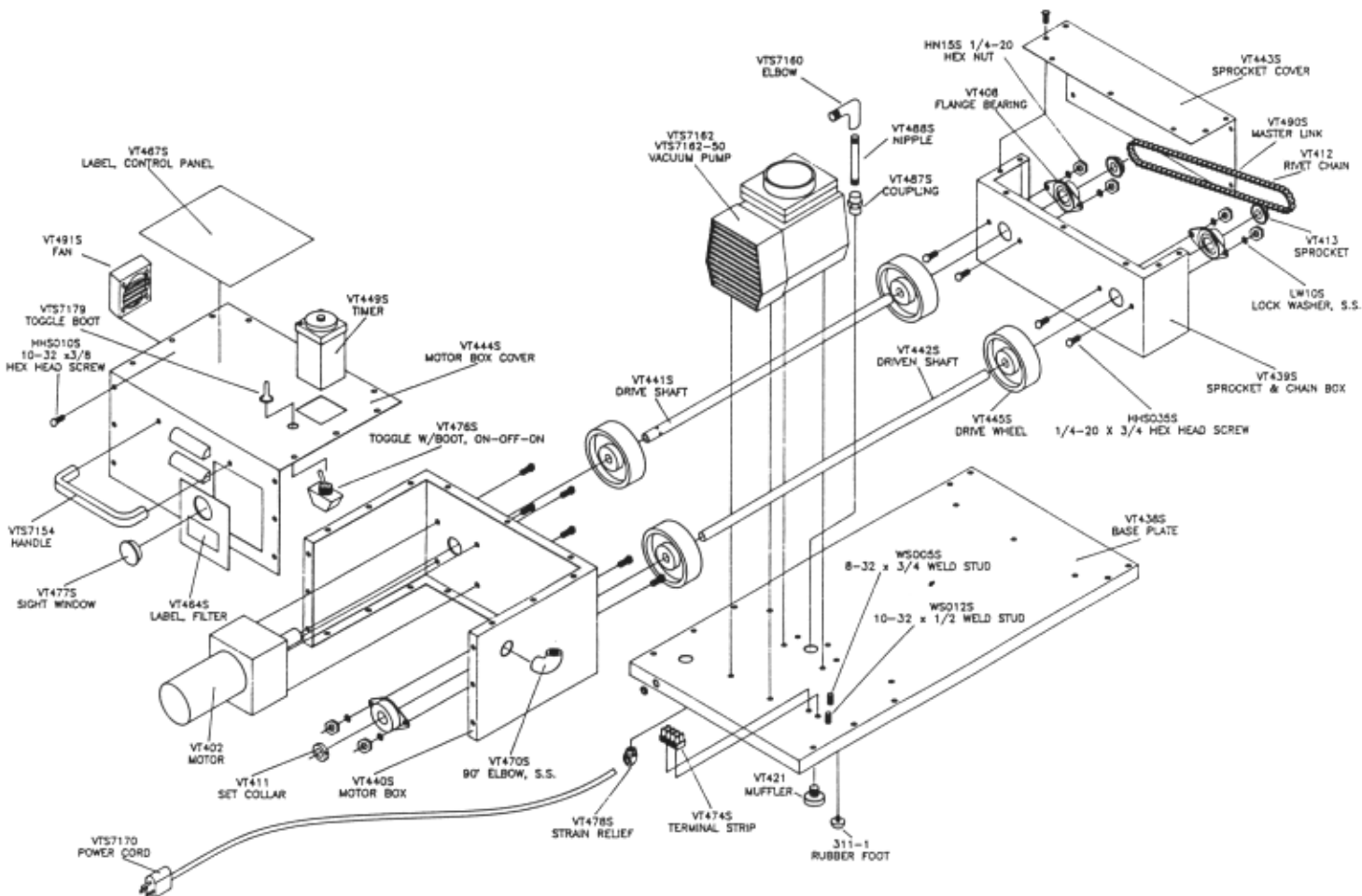
IMPORTANT: Always Advise Model & Serial Number



TIMER
CONNECTIONS 2, 7 - COIL
CONNECTIONS (3, 1) (8, 6) N.O. CONTACTS

VTS-42

IMPORTANT: Always Advise Model & Serial Number When Ordering Parts



Part No.

Description

311-1	Rubber foot
HHS010S	Hex head screw, 10-32 x 3/8, SS
HHS035S	Hex head screw, 1/4-20 x 5/8, SS
HN15S	1/4-20 Hex nut
LW10S	Lock washer, 1/4, SS
VT402	Motor, HP, 1/25 115-60-1, 17.7RPM. 90:1
VT408	Flange bearing
VT411	Set collar
VT412	Rivet chain
VT413	Sprocket
VT421	Muffler
VT438S	Tumbler base plate
VT439S	Sprocket & chain box less cover
VT440S	Motor & pump box less cover
VT441S	Driving shaft
VT442S	Driven shaft
VT443S	Sprocket & chain cover
VT444S	Motor & pump cover
VT445S	Drive wheel, caster

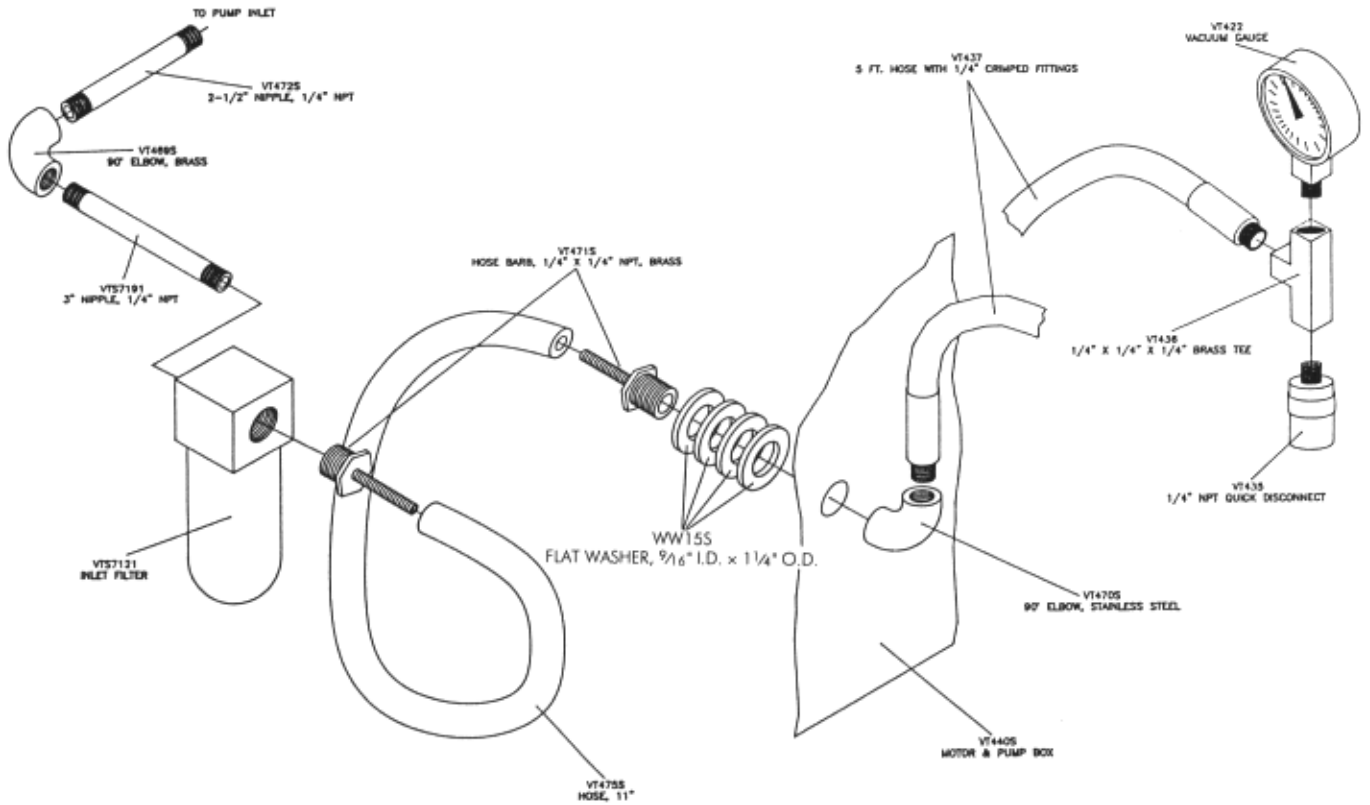
Part No.

Description

VT449S	Timer, pushbutton start, 0-50 minute
VT464S	Label, filter
VT467S	Label, VTS-42 control panel
VT470S	Elbow, 90 deg., 1/4 FPT, SS
VT474S	Terminal strip, 4 circuit
VT476S	Toggle switch w/boot, ON-OFF-ON
VT477S	Sight window
VT478S	Strain relief, 90 deg.
VT487S	Coupling 1/4 FPT brass
VT488S	Nipple 6" x 1/4 MPT brass
VT490S	Master link
VT491S	Ventilation fan
VT57154	Oval handle
VTS7160	90° street 1/4 MPT x 1/4 FPT brass
VTS7162	Vacuum pump, 115-60-1
VTS7162-50	Vacuum pump, 220-50-1
VTS7170	Power cord w/120V plug, 8', 16/3
VTS7179	Toggle switch boot

VTS-42

IMPORTANT: Always Advise Model & Serial Number When Ordering Parts



Part No.

WW15S
VT422
VT435
VT436
VT437
VT440S

Description

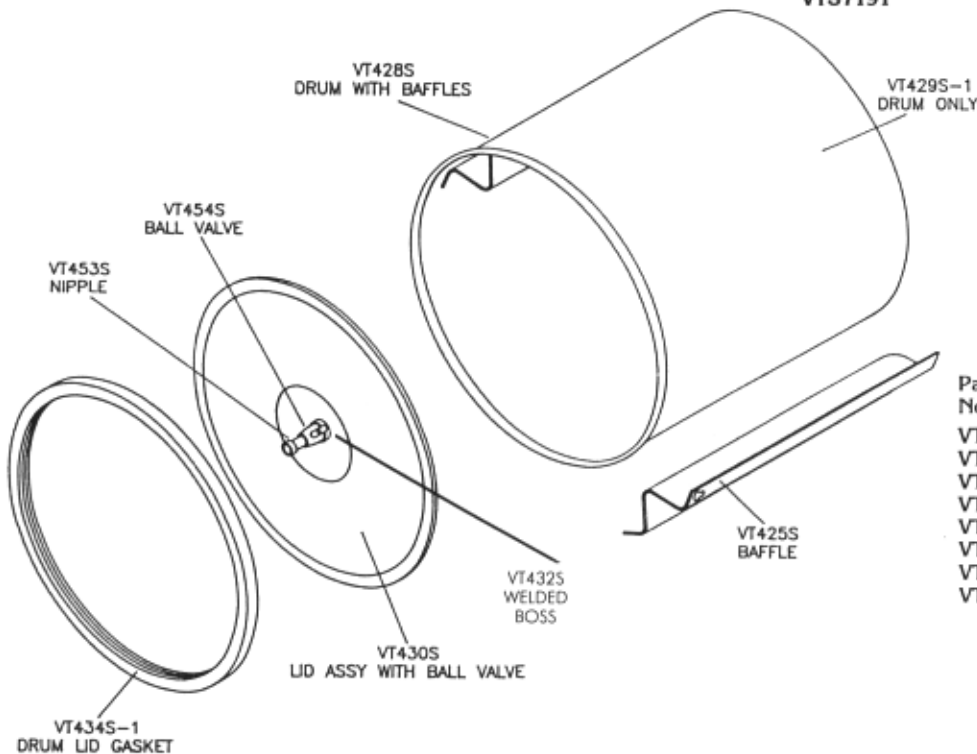
Flat washer, 9/16, SS
Vacuum gauge
Coupler, 1/4MPT
Tee, 1/4 x 1/4 x 1/4FPT, brass
Hose, 5' with 1/4MPT crimped ends
Motor & pump box less cover

Part No.

VT469S
VT470S
VT471S
VT472S
VT475S
VTS7121
VT57191

Description

Elbow, 90 deg., 1/4FPT, brass
Elbow, 90 deg., 1/4FPT, SS
Hose barb, 1/4 x 1/4, brass
Nipple, 2 1/2, 1/4NPT
Vacuum hose, 11"
Inlet filter
Pipe nipple, 3" long x 1/4MPT, brass



Part No.

VT415S-1
VT425S
VT428S
VT429S-1
VT430S
VT434S-1
VT453S
VT454S

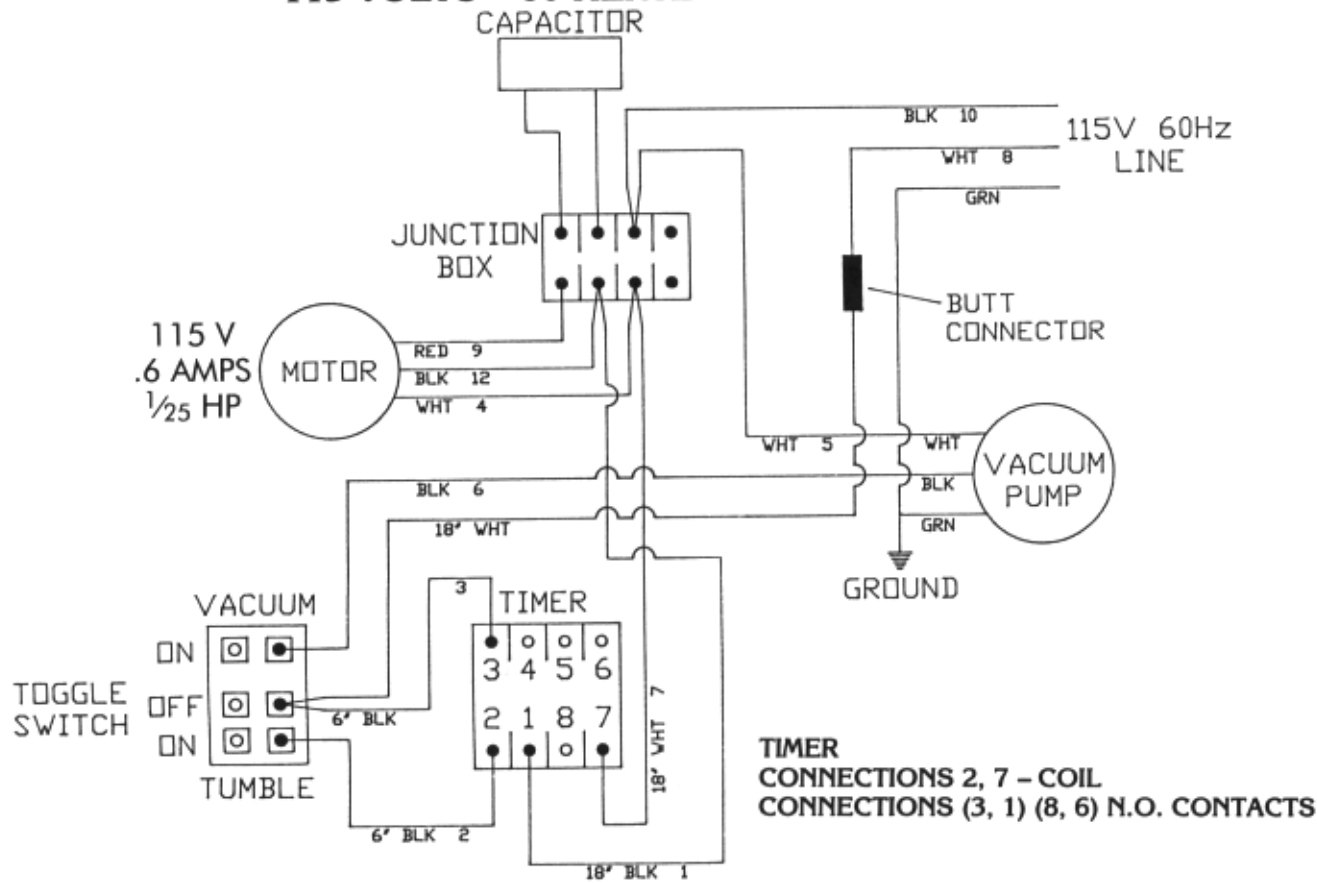
Description

Drum & lid assembly, SS
Baffle only
Drum with baffles
Drum only, without baffles
Lid assembly with ball valve
Lid gasket
Nipple only
Ball valve only

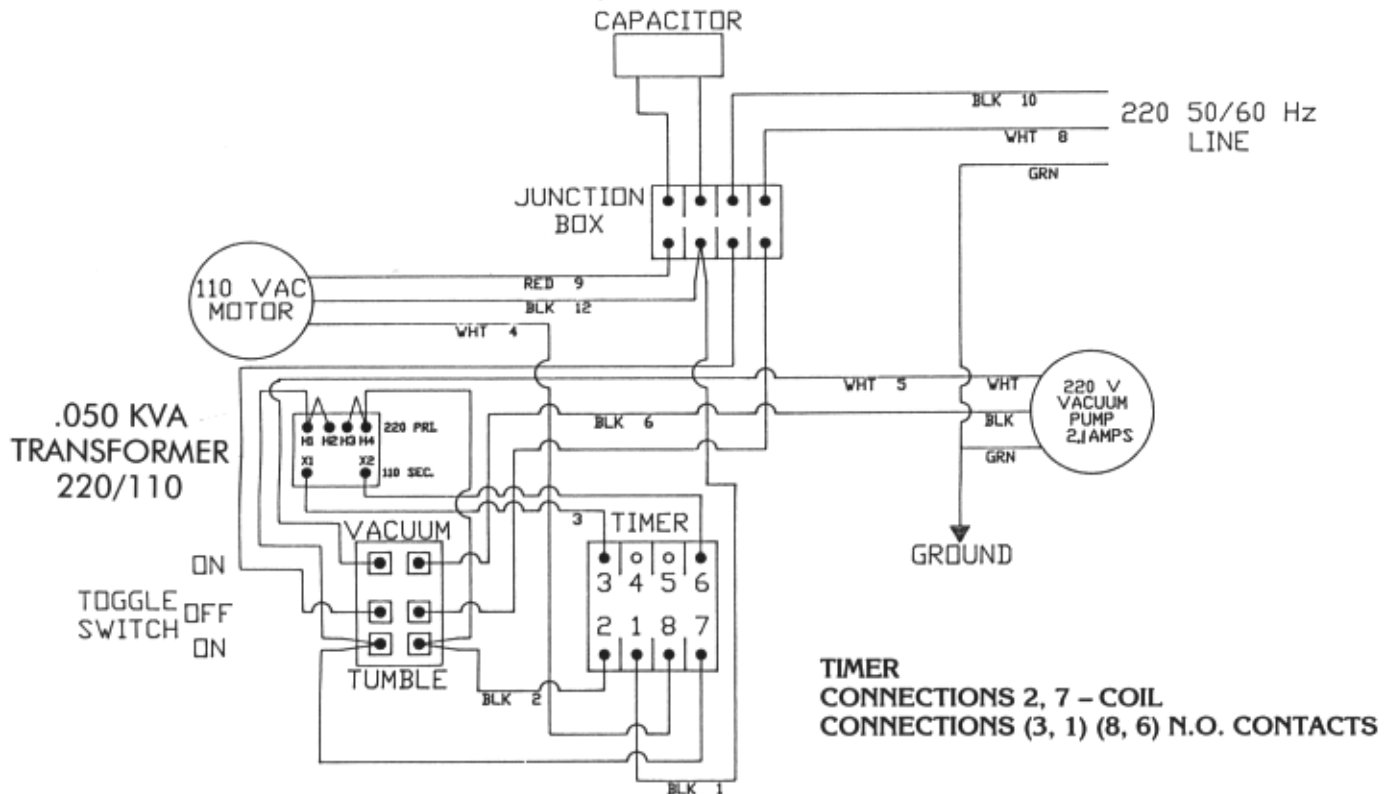
VTS-42 WIRING DIAGRAM

IMPORTANT: Always Advise Model & Serial Number

115 VOLTS - 60 HERTZ - 1 PHASE



220 VOLTS - 50/60 HERTZ - 1 PHASE



LIMITED WARRANTY:

WARRANTY: The BIRO Manufacturing Company warrants that the BIRO Vacuum Tumbler will be free from defects in material and workmanship under normal use and with recommended service. BIRO will replace defective parts, which are covered by this limited warranty, provided that the defective parts are authorized for return, shipping charges prepaid, to a designated factory for inspection and/or testing.

DURATION OF WARRANTY: The warranty period for all parts covered by this limited warranty is one (1) year from inspection/demonstration as advised on the returned Warranty registration card, or eighteen (18) months from original factory shipping date, whichever occurs first, except as noted below.

PARTS NOT COVERED BY WARRANTY: The following parts are **not** covered by this limited warranty: the vacuum pump inlet filter assembly, the drum lid gasket, and the ball valve on drum lid. This limited warranty does not apply to machines sold as used, rebuilt, modified, or altered from the original construction in which the machine was shipped from the factory. Water contaminated electrical systems are not covered under this limited warranty. BIRO is not responsible for electrical connection of equipment, adjustments to switch gear or any other electrical requirements, which must be performed only by a certified electrician. BIRO is not responsible for service charges or labor required to replace any part covered by this limited warranty or for any damages resulting from misuse, abuse, lack of proper or recommended service.

EXCLUSION OF WARRANTIES AND LIMITATION OF REMEDIES: BIRO gives no warranties other than those expressly stated in this limited warranty. THE IMPLIED WARRANTY OF MERCHANTABILITY, THE IMPLIED WARRANTY OF FITNESS FOR PROCESSING OF FOOD PRODUCTS, AND ALL OTHER IMPLIED WARRANTIES ARE SPECIFICALLY EXCLUDED. BIRO IS NOT LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, EXPENSES, OR LOSSES. THE REMEDIES PROVIDED IN THIS BIRO LIMITED WARRANTY ARE PURCHASER'S SOLE AND EXCLUSIVE REMEDIES AGAINST BIRO.

REGISTRATION CARDS: You must sign, date and complete the warranty card supplied with each machine. The warranty card must be returned to The Biro Manufacturing Company for proper registration. If no warranty registration card is returned to BIRO, the warranty period will begin from the date the machine was originally shipped from the factory.

HOW TO GET SERVICE:

1. Contact the agency from whom you purchased the machine.
2. Consult the yellow pages of the phone directory for the nearest authorized dealer.
3. Or call BIRO Service Department (419) 798-4451 who will put you in contact with the nearest service agency.