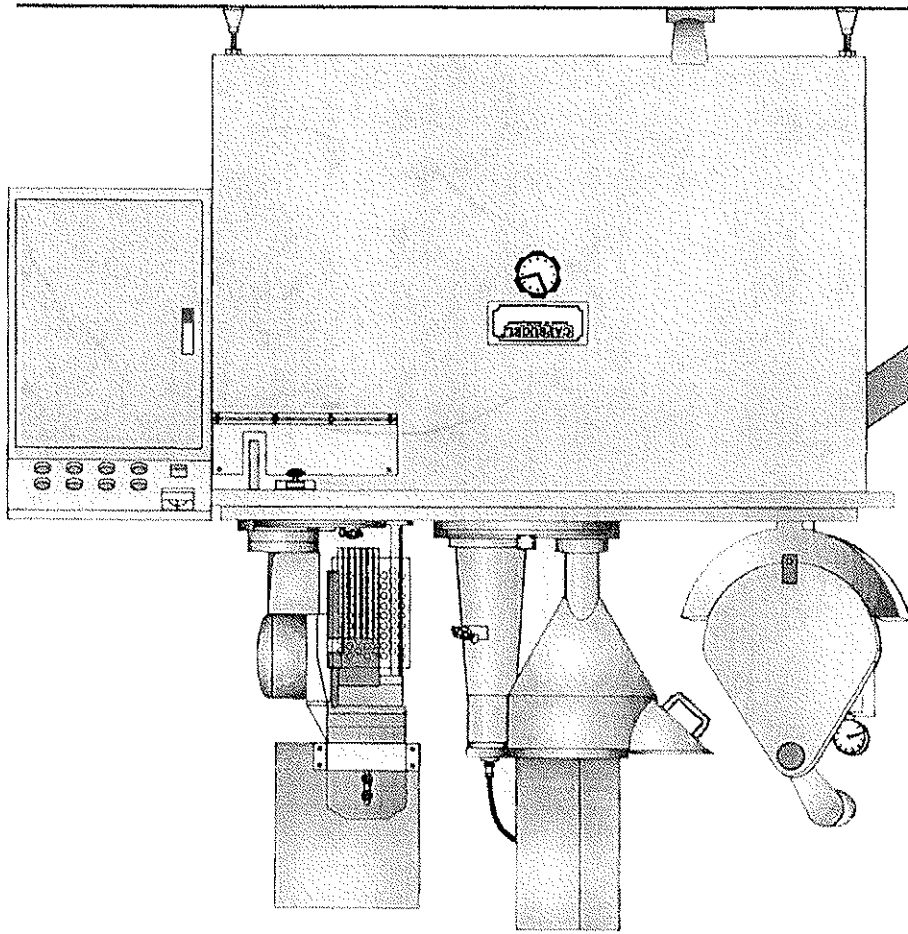


INSTALLATION, OPERATION & MAINTENANCE MANUAL

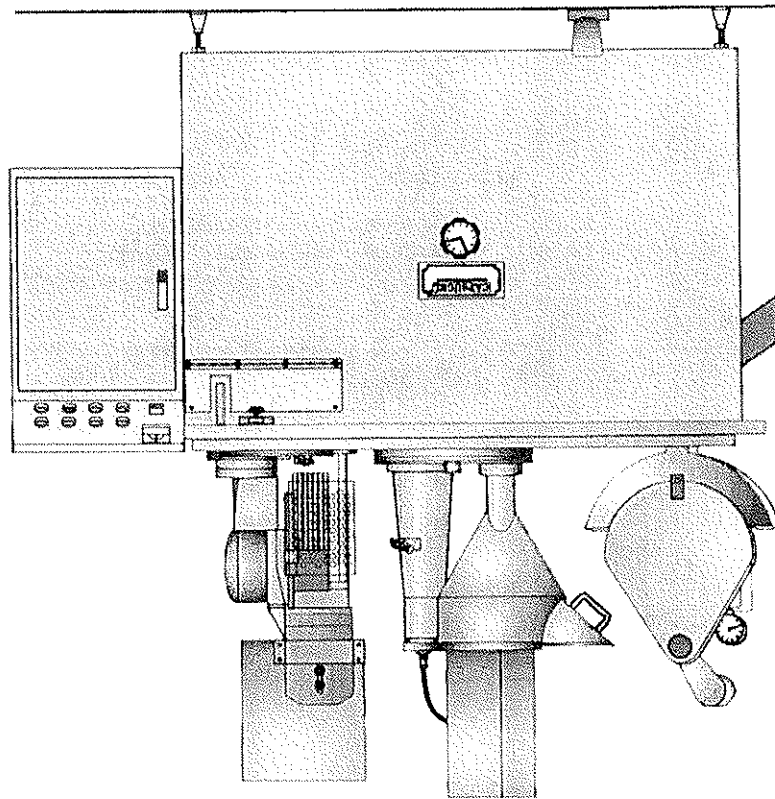


CAPSULE FILLING MACHINE

ULTRA 8

INSTALLATION, OPERATION AND MAINTENANCE OF THE ULTRA 8 CAPSULE FILLING MACHINE

7/8" Model
(Sizes 00 through 5)



With this manual you can install, set up, operate and troubleshoot the ULTRA 8 Capsule Filling Machine. Illustrated, step-by-step procedures are included throughout.

Capsugel also provides a VHS video tape showing installation, operation and adjustments for the ULTRA 8 machine. You may find this video useful in conjunction with this manual to help you change parts for different capsule sizes, fill capsules, and troubleshoot the ULTRA 8 machine. It is also useful for operator training. Contact your Capsugel Representative for information on how to obtain this video.

Capsugel also offers on-site assistance. Our Technical Service staff is available to help you set up and adjust your filling machine for the most efficient operation.

© 1994 by Warner-Lambert Company. All rights reserved. No part of this manual, including the drawings, may be reproduced without the express written permission of Warner-Lambert Company.

CAPSUGEL
DIVISION OF WARNER-LAMBERT

TABLE OF CONTENTS

PAGE **ITEM**

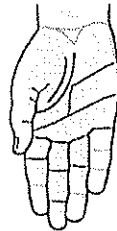
	PREFACE	i
	TABLE OF CONTENTS	ii
	SAFETY	1
	SECTION 1 - GETTING STARTED	2
	About This Manual	2
	General Information	2
	Services Required for Operation of the Machine	2
	Description of the Major Filling Machine Components	2
	SECTION 2 - MACHINE PREPARATION	3
	Uncrating	3
	Motor & Electrical Requirements	3
	Checking Rotation Orientation	3
	SECTION 3 - PRINCIPLE OF OPERATION	4
	SECTION 4 - CHANGE OVER AND MACHINE SET-UP	5
	Removing the Change Parts	5
	Parts You Will Need and Machine Set-Up	6
	Setting the Vacuum	8
	Setting the Hydraulic Pressure	8
	SECTION 5 - OPERATING THE ULTRA 8	9
	Preparation for Filling	9
	Operation	9
	Filling the Capsules	10
	Joining Filled Capsules	11
	SECTION 6 - OPERATING ADJUSTMENTS	12
	Push Blade	12
	Magazine Gate	12
	Ring Brake	12
	Ratchet Blade	12
	Ratchet Wheel	13
	Vertical Guide Plate Timing	14
	Fill Weight Adjustments	14

TABLE OF CONTENTS

ITEM	PAGE
SECTION 7 - MAINTENANCE	16
Cleaning the ULTRA 8	16
Lubricating the ULTRA 8	16
SECTION 8 - ACCESSORIES	17
Accessories Supplied With the ULTRA 8	18
SECTION 9 - TROUBLE-SHOOTING	19
SECTION 10 - PARTS LIST AND EXPLODED DRAWINGS	21
Rectifier Head	22
Joiner	24
Drug Hopper	26
Machine Bed - Detail 1	28
Machine Bed - Detail 2	30
Filter and Vacuum Pump	32
Hydraulic System	34
SECTION 11 - SERVICE AND ORDERING PARTS	35

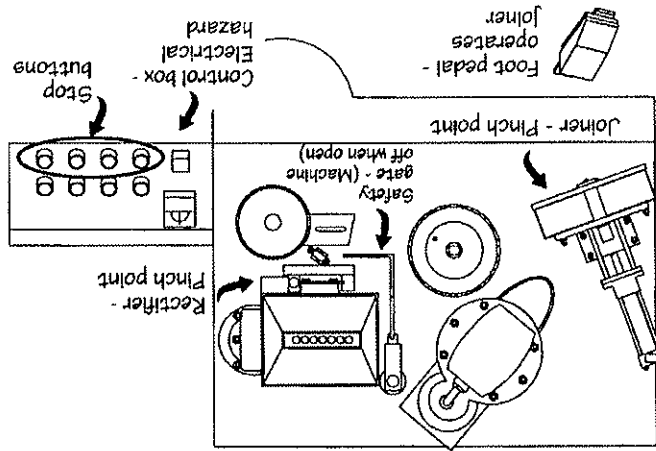
SAFETY

This manual has been prepared to enable a qualified mechanic to install and set up this type of machine. CAPSUGEL cannot be responsible for injuries or damage which may result from failure to properly follow set-up and installation instructions. CAPSUGEL strongly recommends reviewing this entire manual before attempting to operate the ULTRA 8 Capsule Filling Machine. Before using this machine, you should also review the ULTRA 8 video.



It is the responsibility of the user to comply with OSHA standard 29CFR 1910.147, Control of Hazardous Energy. Any and all wiring to electrical energy and/or energy isolating devices is solely the responsibility of the user.

Do not attempt to change any of the safety mechanisms on the machine or injury could result.



SAFETY PRECAUTIONS

- Keep hands and fingers away from moving components.
- Only qualified mechanics should be allowed to perform maintenance on this machine.
- Do not allow powder to accumulate at the rotary table. Damage to the machine can result, and it creates a safety hazard.
- Use extreme caution when servicing any electrical component.
- When servicing the machine, turn the power switch "OFF" and UNPLUG the power cord.
- Keep hands and fingers away from joiner cylinder plunger shaft.

ABOUT THIS MANUAL

This Operator's Manual will alert you to certain procedures or situations which require careful attention. If you see this symbol next to information, it alerts you to important tips and instructions, risk of serious injury, poor performance, or possible damage to your filling machine or accessories!



GENERAL INFORMATION

The ULTRA 8 Capsule Filling Machine is a special purpose production machine, used to fill standard two-piece gelatin capsules, sizes 5 to 00, and Supro™ sizes A through E with beads, granules, flakes or powders to an accuracy of 4%.

SERVICES REQUIRED FOR OPERATION OF THE MACHINE

Electrical: Standard 220 or 380 volt; 3 phase, 60 cycle. Electrical facilities often vary for different countries and these details should be provided with your order to ensure that motors of proper specification are supplied. See Accessory Section for other electrical details.

A hydraulic system is supplied with the machine for the capsule closing operation.

An oil-less vacuum pump is supplied with the machine.

DESCRIPTION OF THE MAJOR FILLING MACHINE UNITS

The Machine Bed provides the work surface and houses the drive train for individual components.

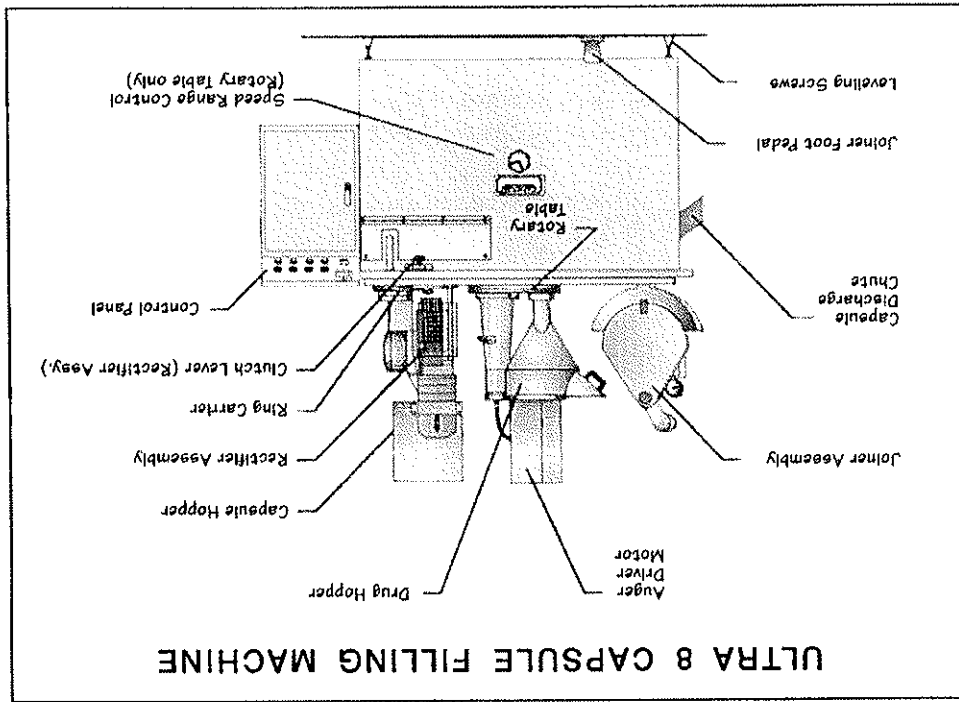
The Rectifier/Feeder is a hopper-fed mechanism that feeds the empty capsules, "cap up", into the capsule fill ring.

The Capsule Joiner is a hydraulically-operated device that joins the empty cap half of the capsule with the filled body half and ejects the filled capsules from the capsule fill ring.

The Vacuum Pump, standard with the machine, supplies vacuum for the machine to seat the capsules in the fill ring and separate cap from body.

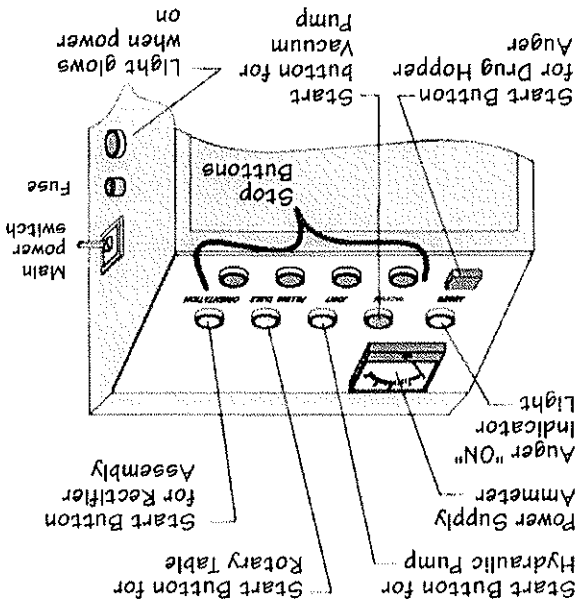
The Hydraulic Pump provides the necessary force to close the capsules.

Other components of the machine are shown below.



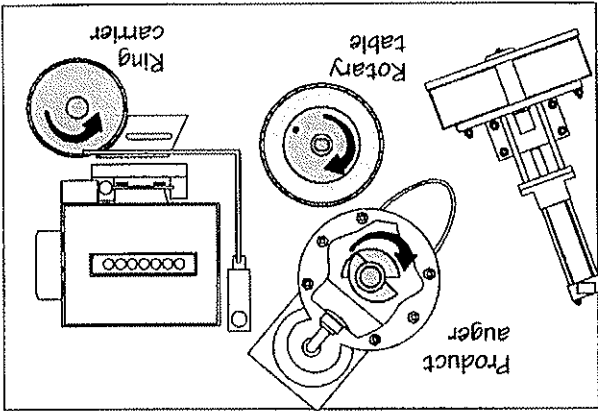
MACHINE PREPARATION

2. Turn the main switch to the on position. If the amber light glows, the machine is receiving power.



CHECKING ROTATION ORIENTATION

Push the green buttons on the control panel, then check rotation of each component one at a time.



Rotary table - clockwise
Product auger - clockwise

Ring carrier - counter clockwise

Vacuum motor - note direction of arrow on housing
Joiner hydraulic pump motor - note direction of arrow on housing

If the direction of rotation is incorrect, reverse any two of the power leads. The green wire is the ground.

on housing

Vacuum motor - note direction of arrow on housing

Ring carrier - counter clockwise

Product auger - clockwise

Rotary table - clockwise

Joiner hydraulic pump motor - note direction of arrow on housing

Vacuum motor - note direction of arrow on housing

Ring carrier - counter clockwise

Product auger - clockwise

Rotary table - clockwise

Joiner hydraulic pump motor - note direction of arrow on housing

Vacuum motor - note direction of arrow on housing

Ring carrier - counter clockwise

Product auger - clockwise

Rotary table - clockwise

Joiner hydraulic pump motor - note direction of arrow on housing

Vacuum motor - note direction of arrow on housing

Ring carrier - counter clockwise

Product auger - clockwise

Rotary table - clockwise

Joiner hydraulic pump motor - note direction of arrow on housing

Vacuum motor - note direction of arrow on housing

Ring carrier - counter clockwise

Product auger - clockwise

Rotary table - clockwise

Joiner hydraulic pump motor - note direction of arrow on housing

Vacuum motor - note direction of arrow on housing

Ring carrier - counter clockwise

Product auger - clockwise

Rotary table - clockwise

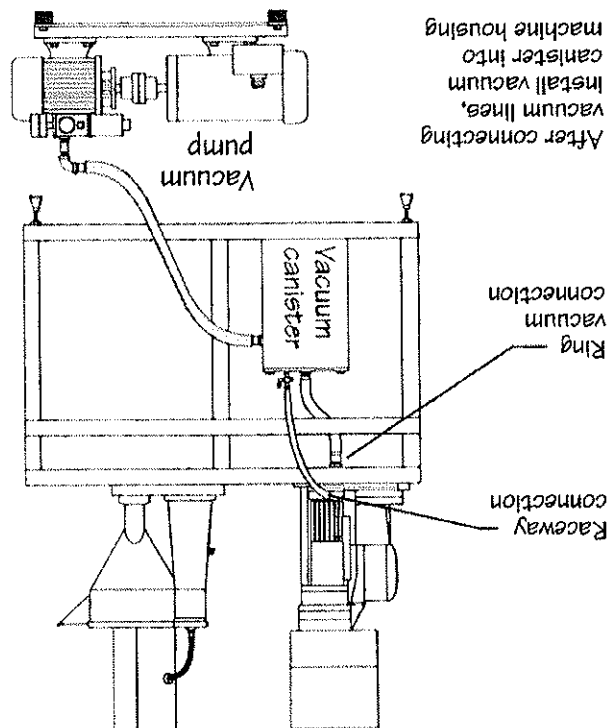
SECTION 2

UNCRATING

1. Unbolt machine and use a suitable lifting device to move the machine to the operating location. Level the machine by adjusting the leveling screws.

The machine weighs about 1,300 pounds. Remove it properly to prevent injury or machine damage.

2. Connect the vacuum lines and put the canister inside the machine.



After connecting vacuum lines, install vacuum canister into machine housing

MOTOR AND ELECTRICAL REQUIREMENTS

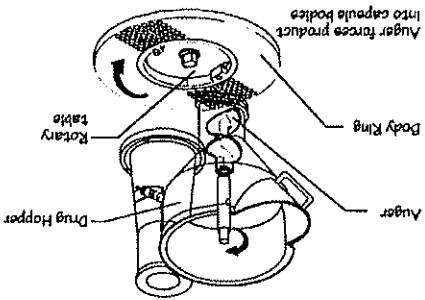
This machine is wired according to our purchase agreement with your company. Serious damage can result if power of improper characteristic is applied to the motor.

Your ULTRA 8 machine comes without an attached electrical plug in. You must fit the plug for local use.

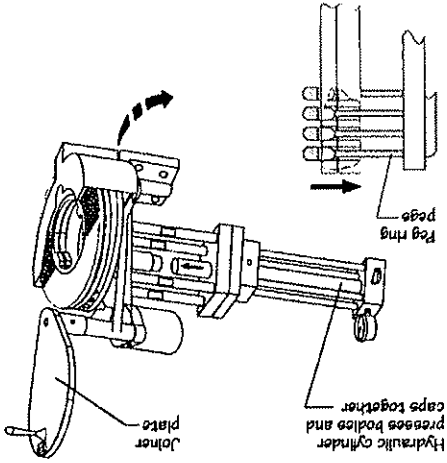
1. Familiarize yourself with the controls on the control panel.

PRINCIPLE OF OPERATION

The rotary table can be operated at variable speeds to adjust fill weight in the capsules. The faster the ring is turning, the lower the weight of fill deposited in the capsule bodies. To begin filling, the **drug hopper** is swung out over the rotating ring and an **auger** in the drug hopper forces powder into the open body halves.



When the ring has made one revolution and all capsule bodies have been filled, the hopper is swung back off the ring. Now the upper ring previously removed that holds the caps is placed over the lower ring holding the filled bodies ready for joining.



To join the capsules, the ring assembly is placed on the **joiner** and the **joiner plate** is swung down into position to hold the capsules in the ring. The **peg ring** and a **hydraulic cylinder** pushes the bodies and caps together into the closed position. The fill ring assembly is now pushed by hand away from the joiner plate and onto the ring. This pushes the closed capsules out of the ring assembly into the capsule discharge chute.

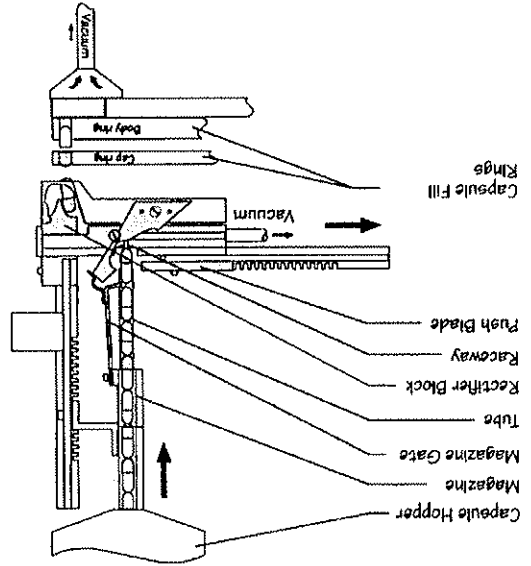
(4)

PRINCIPLE OF OPERATION

The ULTRA 8 Capsule Filling Machine does mechanically what you would do if you filled capsules by hand:

- The capsule body and cap are separated
- The body half of the capsule is filled with active ingredients
- The cap and body are joined and closed

Capsules in the pre-closed position are emptied from the bottom of the large **capsule hopper** into the **magazine**. The **magazine gate** releases one capsule from each **tube** at the bottom of each stroke of the machine.



From the magazine, capsules drop into the slots in the **racway** and are pushed forward to the rectifying area by the **push blade**. The **rectifier block** turning the capsules in each slot due to greater "squeeze" on the larger cap. Now all the capsules are in the "cap up" position and are dropped into each row of holes in the **capsule fill ring** assembly.

As the capsules fall into the fill ring, the caps seat on the counterbore in each hole in the top ring. The capsules are separated when the vacuum pulls the body halves down into the bottom ring.

When all rows of the ring assembly are full, the ring assembly is lifted off the ring carrier and placed on the **rotary table**. Here, the upper ring is lifted off and set aside for later reassembly. The body halves, located in the lower ring, are now ready for filling.

SECTION 3

CHANGE OVER AND MACHINE SET-UP

SECTION 4

CHANGE OVER AND MACHINE SET-UP

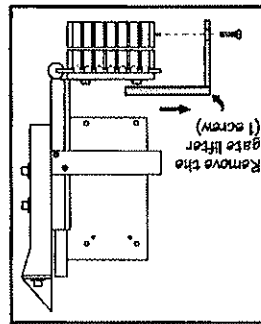
Change parts for your requested capsule size have already been installed on your machine at our facility. To fill a different capsule size, follow these procedures to install the necessary change parts.

REMOVING THE CHANGE PARTS

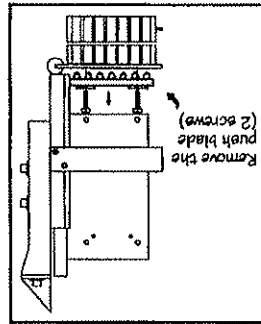
1. Make certain the main electrical power switch is in the "off" position. This switch is located at the disconnect box on the right side of the machine. UNPLUG THE MACHINE.



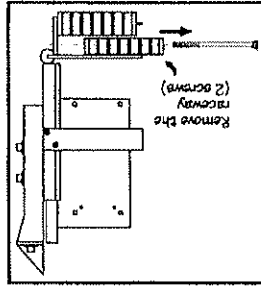
2. Remove the gate lifter by removing one 10-24 x 3/8" screw.



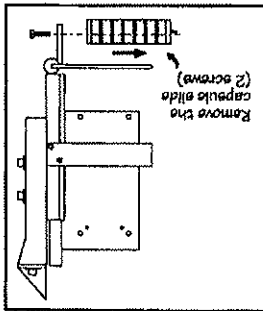
3. The push blade is secured with two 10-24 x 1/4" screws. Remove them to remove the push blade.



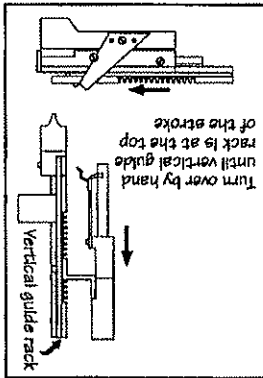
4. Remove the two oval head 10-24 x 3" screws that hold the raceway in position.



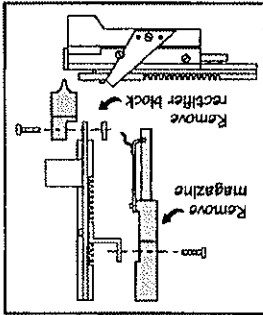
5. Remove the capsule slide by removing the two 10-24 x 1/2" machine screws.



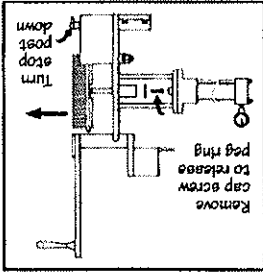
6. Engage, by pushing in, the manual crank wheel on the side of the machine and turn the machine over by hand until the vertical guide rack is at the top of the stroke. Now swing the rectifier guard open and hold back.



7. Remove the magazine by removing the two 10-24 x 3/4" screws holding it and the rectifier block by removing the two 10-24 x 1-1/4" screws.

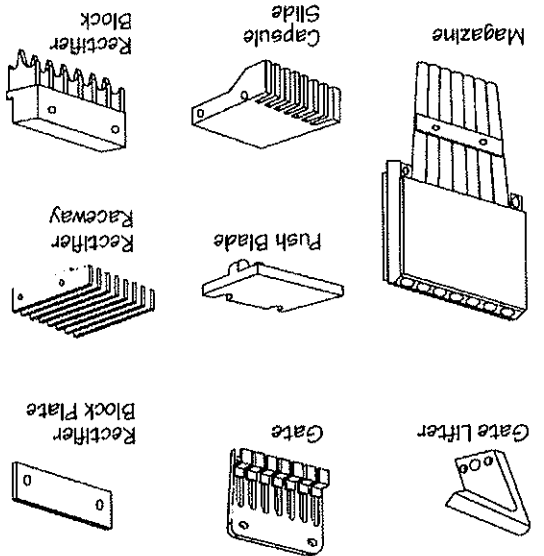


8. Finally, remove the peg ring by loosening the 10-24 x 1/2" allen head cap screw, the bolt holding the stop post in position, and rotating the stop post 90°.

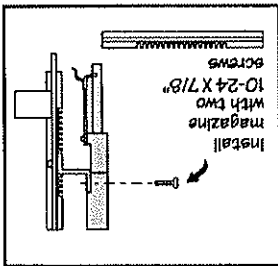


THE PARTS YOU WILL NEED AND MACHINE SET-UP

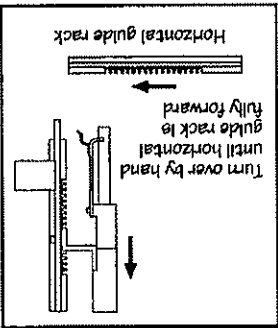
From the Change Parts Combination Table in the Accessories Section, select the proper combination of change parts for the capsule size you want to fill. Shown below are the main change parts.



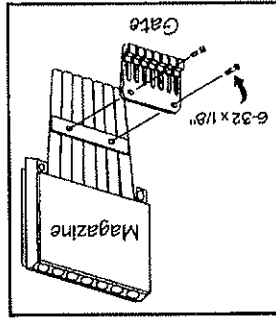
3. Now position the magazine with the spring gate facing the front of the machine. Secure the magazine with two 10-24 x 7/8" screws from the back side through the non-threaded holes in the magazine into the threaded holes in the mounting bracket.



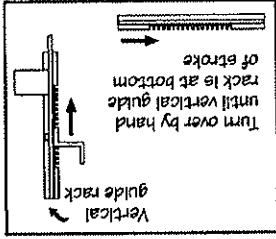
4. Rotate the manual handwheel until the horizontal guide rack is fully forward.



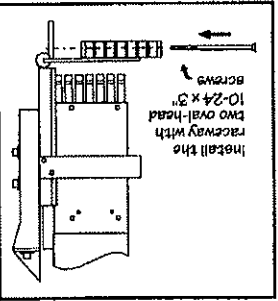
1. Install the gate to the magazine with two 6-32 x 1/8" screws.



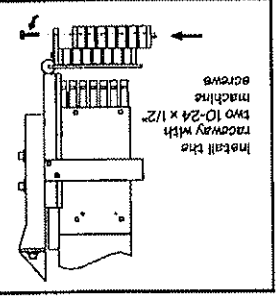
2. Move the guard out of the way, and use the manual handwheel to locate the vertical guide plate to stop at the bottom of the stroke.



5. The raceway is installed below the horizontal guide plate. Secure with two oval-head 10-24 x 3" screws through the non-threaded holes in the raceway into the threaded holes in the rack guide bracket casting.



6. The capsule slide is mounted directly under the raceway. Secure with two 10-24 x 1/2" machine screws through the non-threaded holes in the rack guide bracket and then into the threaded holes in the capsule slide.



SECTION 4

CHANGE OVER AND MACHINE SET-UP

10. At this point it is necessary to ensure that all parts have been installed correctly. Close the rectifier guard, and turn the machine over slowly by hand. If binding is encountered, the machine may be turned backward by hand, holding the clutch lever in engagement. Check the change parts just installed to determine the source of the binding.

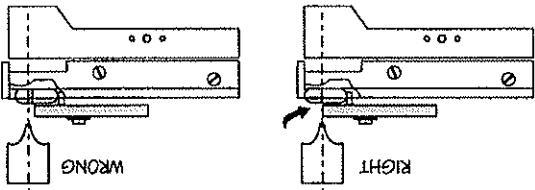
Correct the problem before proceeding or serious damage may result to the machine parts.



11. Only after all binding has been eliminated can the machine be properly operated. If the machine is not properly operating at this point, see the Troubleshooting Section in this manual for further assistance.

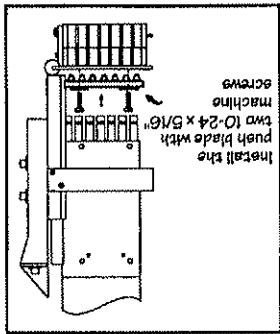
12. Now that the parts are installed, make the final adjustment of the pushblade. The capsules should be

Adjust the push blade so the rectifier strikes the capsule at the cut edge of the cap

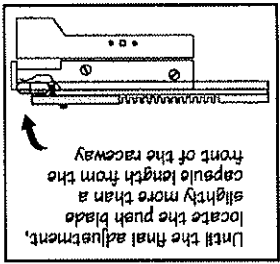


observed while the machine is in operation and the push blade adjusted so the rectifier strikes the capsules just at the cut edge of the cap.

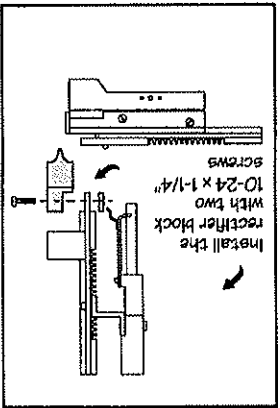
7. The push blade is installed on the top front of the horizontal guide plate with two 10-24 x 5/16" screws and washer through the slots in the push blade into the threaded holes in the horizontal guide plate.



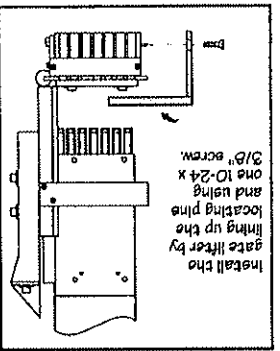
A general rule for rough positioning is to locate the working face of the push blade slightly more than a capsule length from the front of the raceway. Until the final adjustment, locate the push blade slightly more than a capsule length from the front of the raceway.



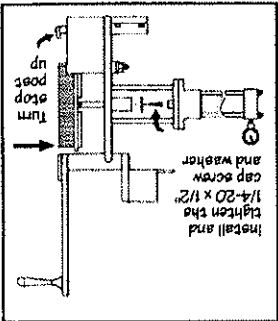
8. Mount the vertical rectifier block on the bottom front of the vertical guide plate. The threaded holes in the back plate are closer to one edge than the other. Position this plate with the holes nearer the bottom. Secure with two 10-24x1-1/4" screws through the non-threaded holes in the rectifier block and guide plate into the threaded holes in the steel back plate.



9. The gate lifter is mounted over the two locating pins on the left side of the capsule slide and is secured with one 10-24 x 3/8" screw.



13. Insert the peg ring into the hole in the center of the joiner bracket. Return the joiner plate stop to the "up" position and secure the bolt. The peg ring washer is now secured to the end of the shaft with the 1/4-20 x 1/2" allen head cap screw.

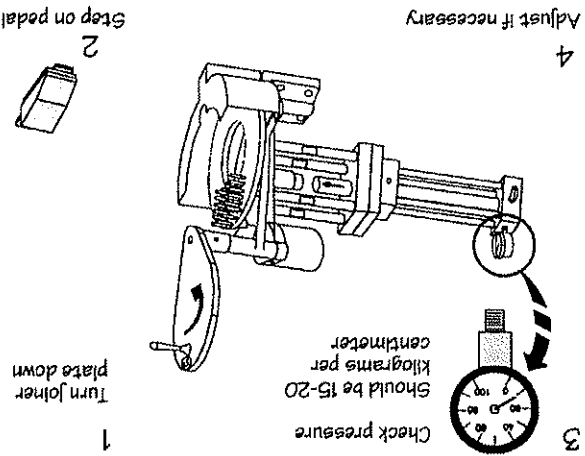


CHANGE OVER AND MACHINE SET-UP

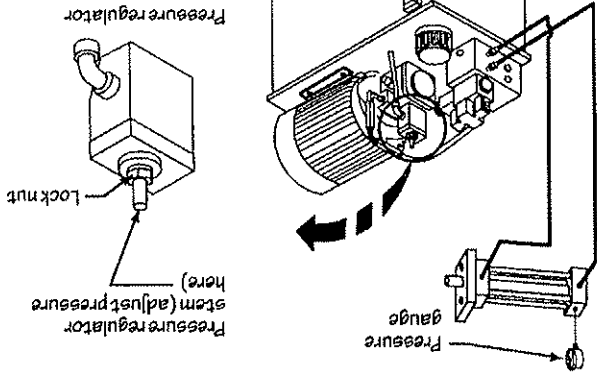
SECTION 4

SETTING THE HYDRAULIC PRESSURE

1. Turn the joiner cover downward, and step on the pedal until the peg ring touches the joining plate.



The pressure gauge should be at about 15 to 20 kilograms per centimeter. If it is not, adjust the pressure gauge. To adjust, loosen the lock nut on pressure regulator stem and turn clockwise to increase and counter clockwise to decrease. Tighten locknut.



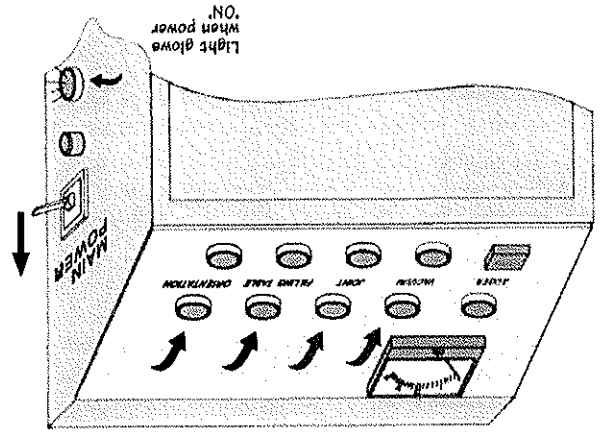
You are now ready to prepare to fill capsules.

After the machine has been checked by hand operation and all problems eliminated, the electricity may be turned on and the trial continued under power.

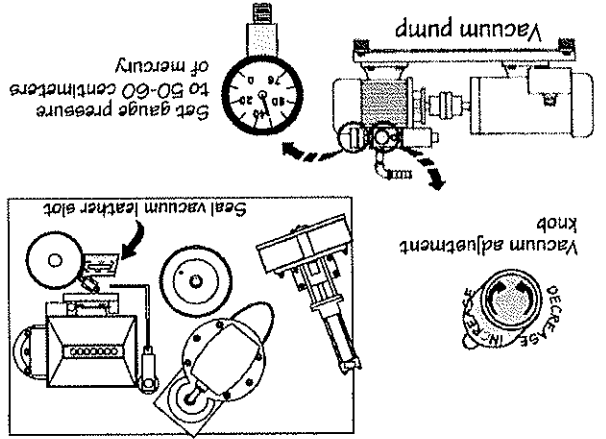
For lubrication information, refer to Section 7.

SETTING THE VACUUM

1. Turn the main switch on.
2. Push the green buttons on the control panel for Orientation, Filling Table, Joint, and Vacuum.



3. Seal the slot in the vacuum leather, and check the gauge on the vacuum pump. The gauge should be 50-60 centimeters of mercury. If it is not, adjust the vacuum controller.



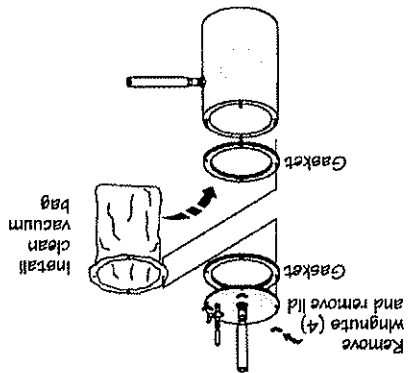
4. Release the seal over the vacuum leather.

OPERATING THE ULTRA 8

SECTION 5

PREPARATION AND FILLING

1. Insert a clean vacuum bag in the vacuum canister. **This bag should be emptied and cleaned out at least once each day during continuous operation.**

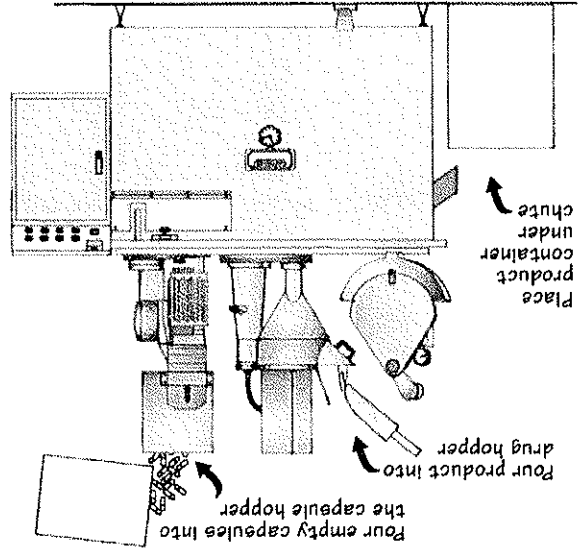


2. Check to make certain that capsule rings are clean and free from caked-on powder. See cleaning procedures in Section 7.

3. Check change parts mounting screws for tightness.

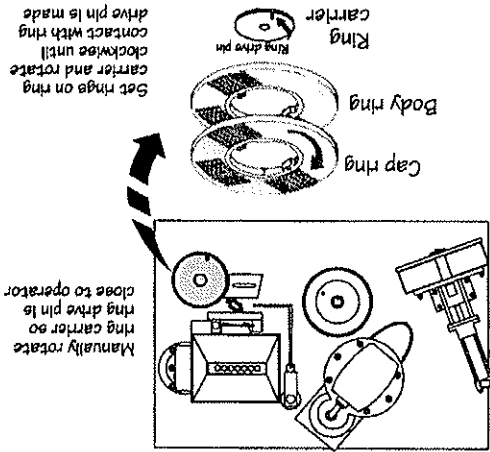
4. Place capsules in the capsule hopper and put product to be filled into the powder hopper. Now the ULTRA 8 is ready for capsule filling.

We recommend the machine operators wear sterile gloves.

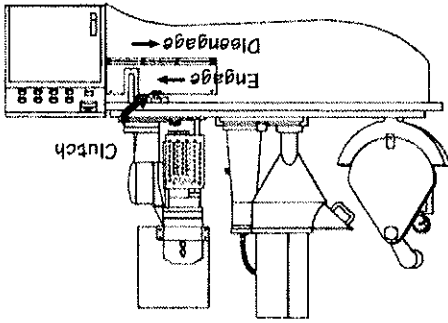


OPERATION

Feeding Empty Capsules
 1. To begin operation, place a capsule fill ring on the ring carrier and turn clockwise until it stops firmly against the drive pin. Then press the **rectifier orientation "START"** button.

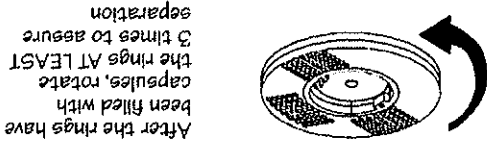


2. Start the ring carrier by moving the clutch lever to the right.



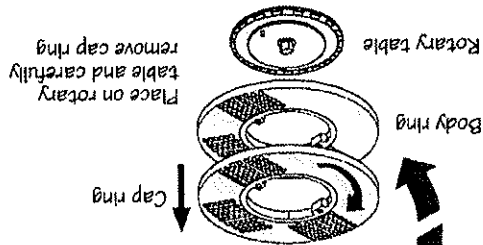
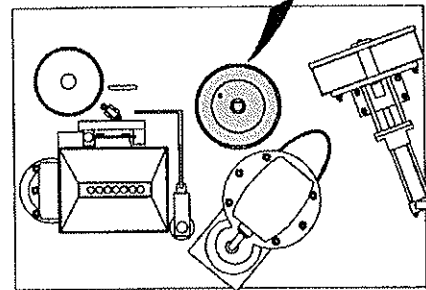
3. As the last row of empty capsules is deposited into the capsule fill ring, stop the ring carrier by moving the clutch lever to the left.

Turn the capsule fill ring at least three complete counter clockwise revolutions to provide additional exposure to the vacuum to assure capsule separation. This is required for good capsule separation.



4. Remove the capsule fill ring from the ring carrier being careful to hold it horizontally to avoid spilling the capsules.

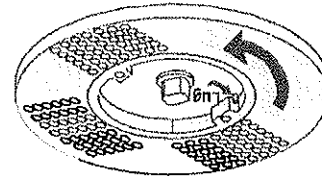
5. Place the ring on the rotary table on the left side of the machine, remove the top half of the ring and place it on the ring tray at the right of the machine.



6. Before proceeding with the filling operation, another empty capsule fill ring should be placed on the ring carrier to start loading.

FILLING THE CAPSULES

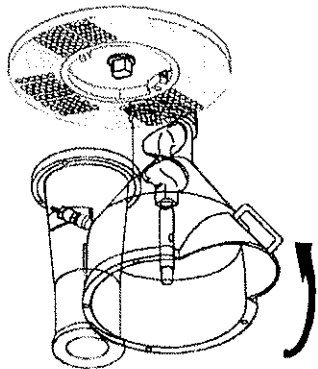
1. The bottom half of the capsule fill ring previously placed on the rotary table on the left side of the machine, should be rotated counter clockwise until the lug engages the stop.



Rotate body ring counter clockwise until its contacts lug

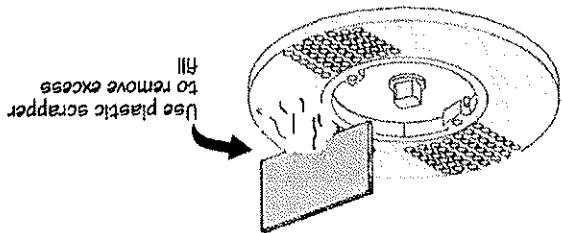
2. The operator should run their hand lightly over the top of the body side of the capsule fill ring to make certain all capsules are below the surface of the ring. Operators should wear gloves during the filling operation.

3. The drug hopper is swung over the face of the ring and held in position during filling. Excessive overlap causes overflow and weight variations. For adjustments to the fill weight, see Section 6.



Swing drug hopper over top of body ring. The auger will begin to rotate

4. Use the plastic scrapper provided to remove excess fill from the top of the ring.



Use plastic scrapper to remove excess fill

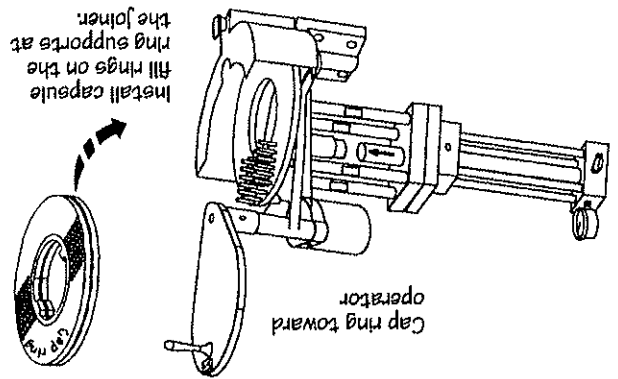
5. The top half of the capsule fill ring is now carefully reassembled to the bottom, making certain the large and small lugs match.

If you experience problems in matching the lugs, stop the machine immediately. Your hands could be seriously injured at the rear of the rotating ring.



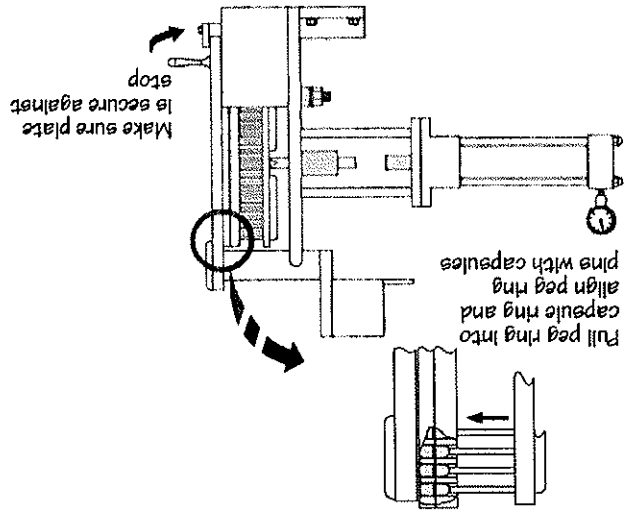
JOINING FILLED CAPSULES

1. The capsule fill ring is placed on the ring supports of the joiner with the cap half toward the operator. Make certain the ring does not separate allowing fill to leak from the capsule body.



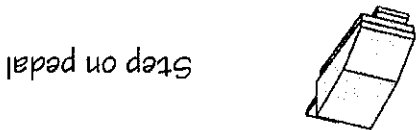
2. Swing the joiner plate down into position and pull the capsule fill ring snugly against it.

3. Pull the peg ring out to the capsule fill ring, rotating as necessary to align the pins with the holes. Ease the peg ring into the capsule fill ring until the capsules have started to join.

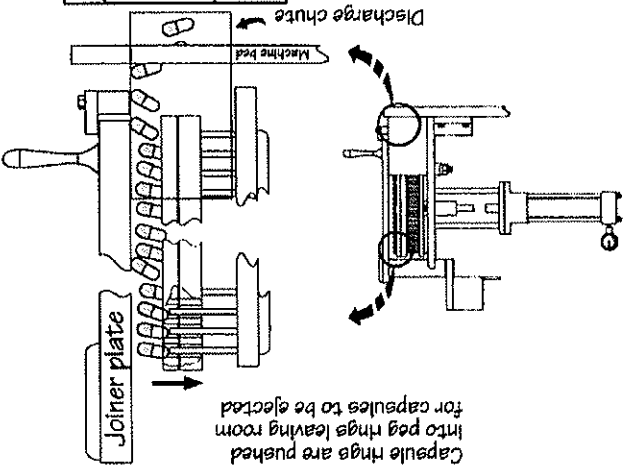


4. Some hand pressure is required to pre-close the capsule. To accomplish this, squeeze the peg ring and capsule fill ring together, keeping the capsule fill ring against the joiner plate to prevent the capsules being pushed out of the ring before closing.

5. Depress the joiner foot pedal to complete the joining.



6. With the heel of your hands, push the capsule fill ring back completely onto the peg ring to eject the capsules.



7. Swing the joiner plate to the up position and remove the capsule fill ring.
 8. Bump the ring against the rubber bumper to remove excess powder. Brush the rotary table clean and repeat the filling cycle.

9. Using a scoop, replace the product in the drug hopper for each ring filled to maintain a constant level in the hopper.

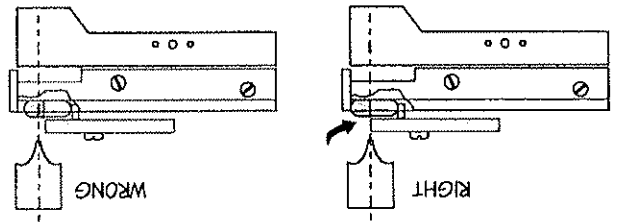
OPERATING ADJUSTMENTS

SECTION 6

OPERATING ADJUSTMENTS

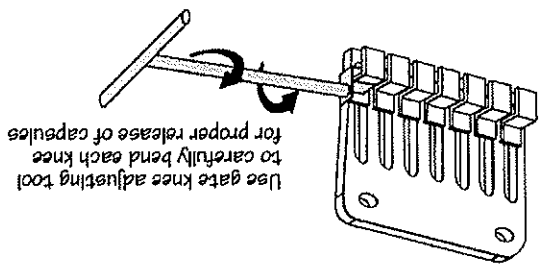
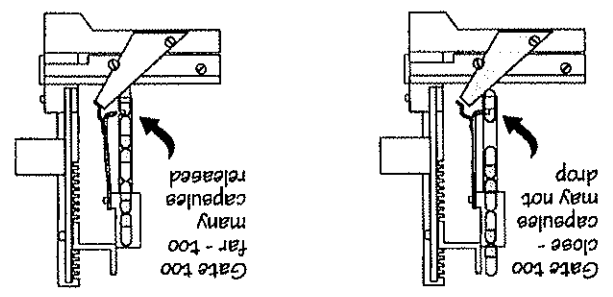
Push Blade: The general rule for push blade positioning is to locate the working face of the push blade slightly more than a capsule length back from the front of the raceway. But this does not take into consideration the momentum of the capsules during operation under power.

Adjust the push blade so the rectifier strikes the capsule at the cut edge of the cap.



For final adjustment, the capsules should be observed while the machine is operating and the push blade adjusted so it strikes the capsules just at the cut edge of the cap.

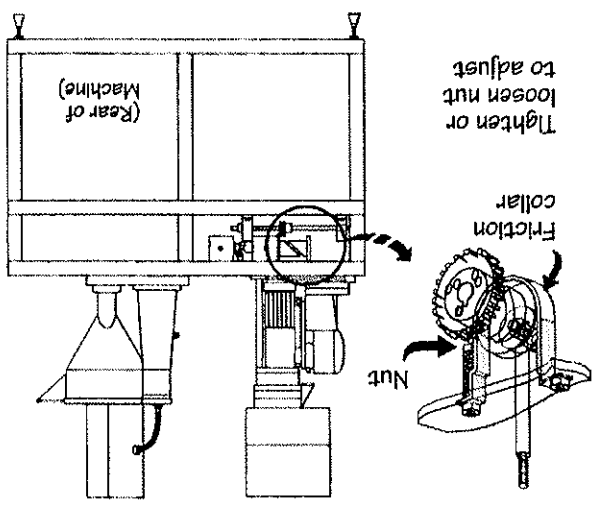
Magazine Gate: Proper adjustment of the magazine gate is necessary to allow the proper number of capsules to be released from the magazine on each stroke of the machine.



If the gate knees are bent too far in, they strike the lifter too soon and release too many capsules.

If the knees are bent too far out, they may not strike the lifter solidly enough to release any capsules. With the special gate knee adjusting tool, carefully bend the individual knees until they engage the gate lifter simultaneously near the bottom of the stroke. The smaller the capsule, the nearer the bottom of the stroke this engagement should take place.

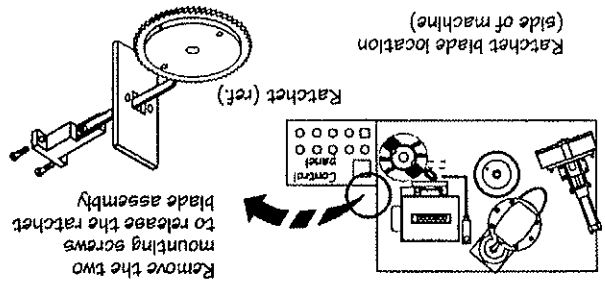
Rectifier Brake: If the rectifier head tends to fall to the bottom of the stroke when the machine is shifted out of gear, the rectifier brake (friction collar) should be tightened up. This adjustment is made by tightening the friction collar located at the rear of the machine.



Just enough pressure to hold the disengaged rectifier in place is sufficient.

Too much pressure will result in excessive heating and wear on the brake shoe and difficulty in releasing the rectifier head clutch.

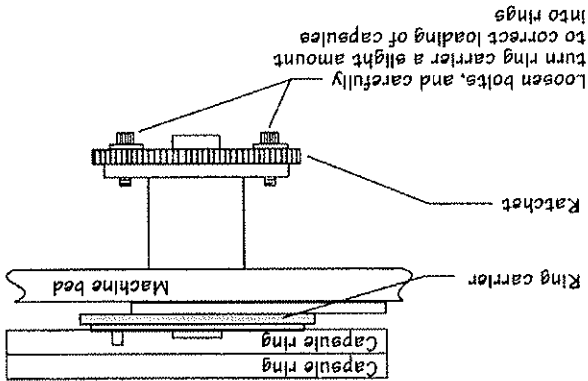
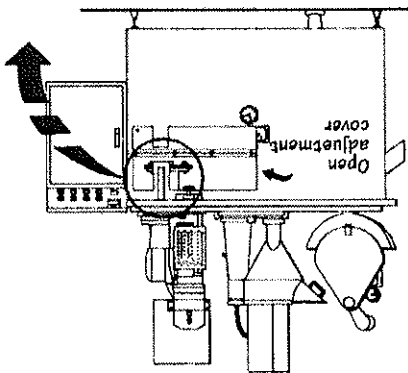
Rectifier Blade: If the table oscillates and falls to index, a ratchet blade adjustment should be made.



OPERATING ADJUSTMENTS

SECTION 6

Ratchet Wheel: If the ring carrier oscillates or if capsules fail to enter the fill ring properly an adjustment may be necessary. Open the cover on the front of the machine and locate the adjustment screws.



Loosen the two screws and rotate the ratchet plate a small amount in the desired direction.

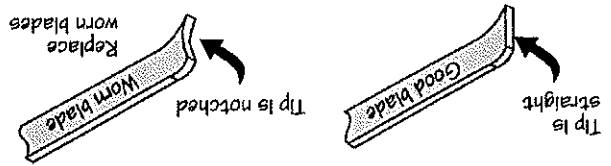
Turn the machine by using the hand-wheel and adjust until the capsules fall properly into the filling ring. Tighten the adjustment screws to secure the ratchet wheel.



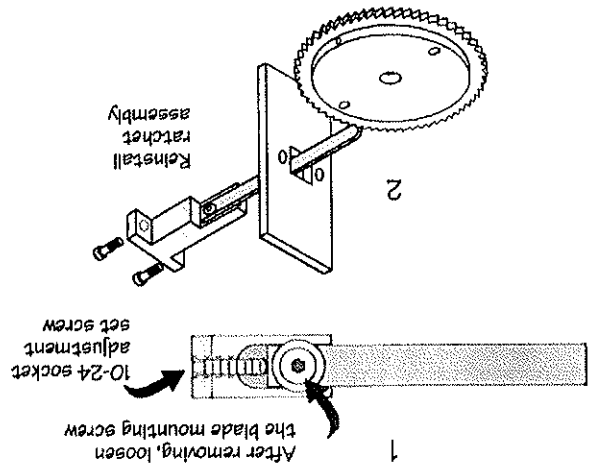
Caution: Do not start the machine until you have re-tightened the ratchet bolts.

The ratchet blade is mounted on the right end of the bed cover. By removing two screws, the ratchet blade and holder assembly can be removed for adjustment.

If the blade is worn, it should be replaced.



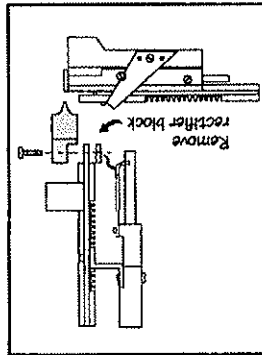
For adjustment, the blade mounting bolt is loosened and the adjusting screw backed out. The blade is then pushed back against the adjusting screw.



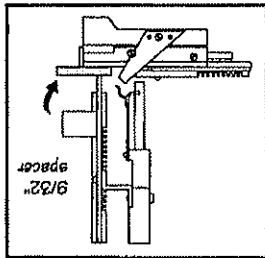
The blade mounting bolt should be snugged and the holder replaced. Now, start the machine and engage the table clutch.

The table will advance past the stop and back up to the blade. Advance the blade adjusting screw a little at a time until the table advances only to the stop and does not back up. Adjustment beyond this point will result in oscillation. When the proper adjustment has been established, the ratchet blade and holder assembly should be removed, the blade mounting bolt tightened securely, and finally returned to the machine bed (with experience, you will not need to remove the holder).

Vertical Guide Plate Timing: If the timing is correct, the distance between the bottom of the vertical guide plate and the top surface of the raceway should be 9/32" (0.71 cm). If the timing is incorrect, first remove the rectifier block.



Place a 9/32" spacer on the raceway and position the sector so that the vertical guide plate touches the spacer at the bottom of the stroke.



When you are done, tighten the collar on the sector gear shaft and replace the rectifier block.

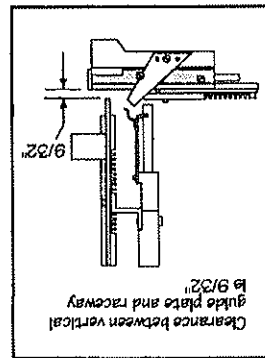
FILL WEIGHT ADJUSTMENTS

Three factors govern fill weight: **rotary table speed, auger configuration, and the amount of powder** in the hopper.

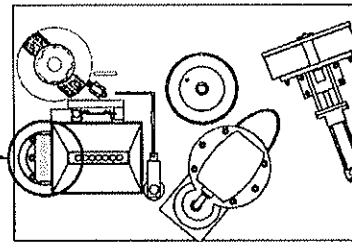
The **speed range control** located in the front center of the machine adjusts the rotary table speed when turned clockwise or when turned counter-clockwise.

Capsule fill weight is increased as the table speed is decreased.

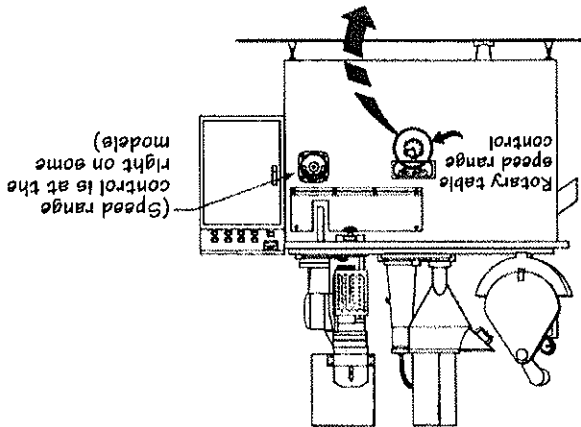
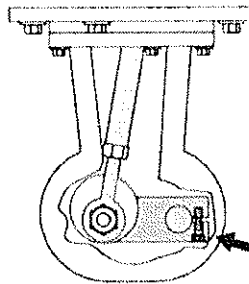
If the clearance is not correct, locate the clamp inside the rectifier head on the sector gear shaft, and loosen it.



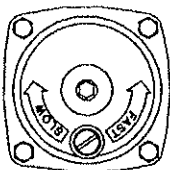
Next, turn the machine over by hand until the vertical guide plate reaches the extreme bottom of the stroke. Check the clearance between the vertical guide plate and the capsule raceway.



Loosen the screw securing the shaft collar



The rotation speed of the rotary table is adjusted by turning the speed range control clockwise or counter clockwise



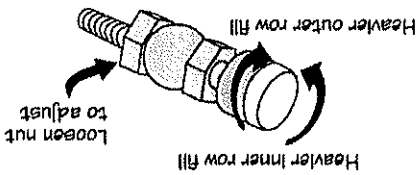
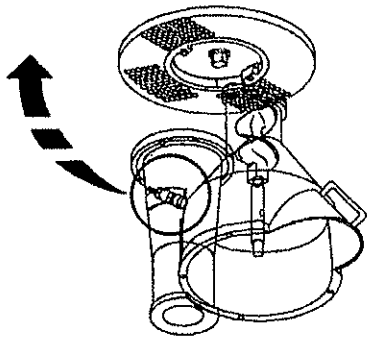
Capsule fill weight is increased as the level of powder in the powder hopper is increased.

OPERATING ADJUSTMENTS

SECTION 6

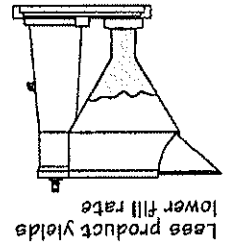
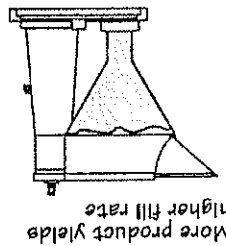
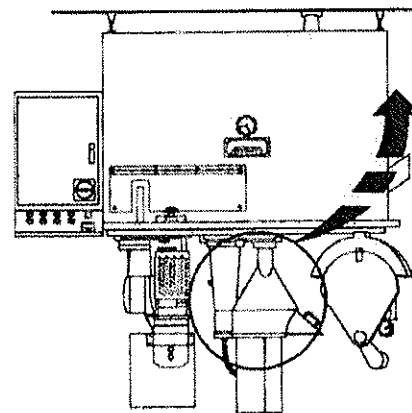
You may also need to adjust the stopping point of the forward swing of the hopper. This adjustment is used to balance the fill weights between the inner and outer rows of capsules in the capsule fill ring.

Counter-clockwise turning of the adjusting screw makes the inner rows heavier; clockwise makes the outer rows heavier.

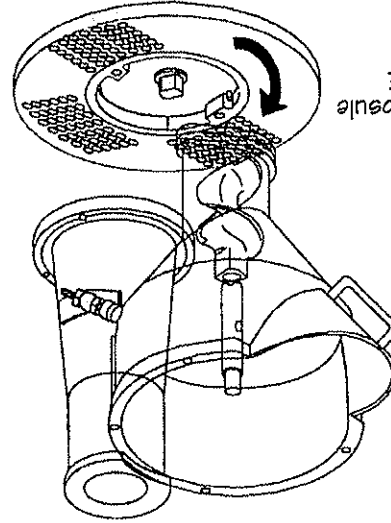


Additional auger designs are available from Capsugel and are listed in the Accessory Section of this manual. Ask your Service Representative which auger design would be best for your situation.

Capsule fill rate is also increased as the level of product in the drug hopper increases.



Do not try to create a heavier fill by allowing the fill ring to rotate twice under the hopper. This can produce unreliable results and could damage the machine.



Only allow the capsule ring to make ONE REVOLUTION

CLEANING THE ULTRA 8

The machine top, rotary table, drug hopper, and front dust pan should be cleaned thoroughly at the end of each day's operation.

The capsule fill ring assemblies should be washed daily with a mild soap solution and thoroughly rinsed, dried and cooled before using.



Caution: Strong caustic cleaning solutions should not be used on the aluminum capsule fill rings as severe chemical etching will occur.

The vacuum bag should be emptied frequently during each period of operation and laundered periodically according to your sanitation requirements.

Caution: The vacuum bag must be thoroughly dry before using after laundering.



Rectifying accessories should be kept clean, dry, and free from oil for best operation.

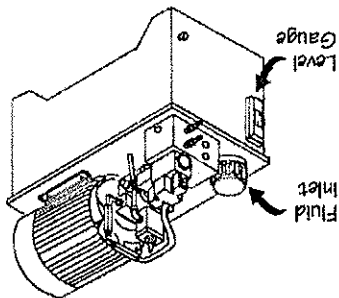
The peg ring should be carefully washed with mild soap solution to prevent a build-up and cross contamination of drug fills.

Do not use compressed air for cleaning! It may force powder underneath the rotary table.



LUBRICATING THE ULTRA 8

Hydraulic Pump - Keep fluid level to the middle of the gauge. If fluid is needed, add hydraulic fluid through the fluid inlet.

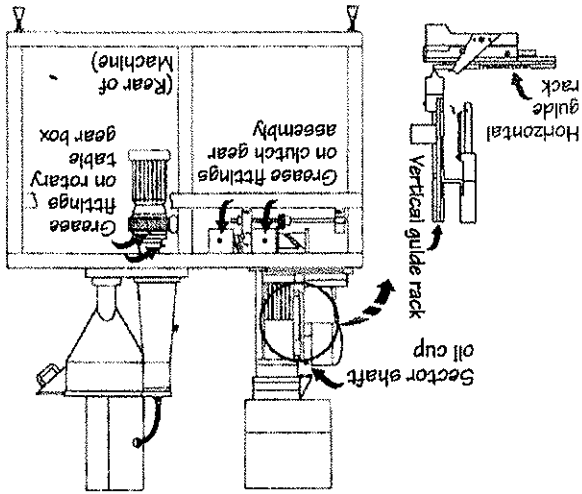


MACHINE

Daily - A few drops of mineral oil should be applied daily to horizontal and vertical guide racks and sector shaft.

Weekly - Apply lithium grease to the grease fittings at the clutch gear assembly.

Semi-annually - Under normal operating conditions, apply lithium grease to fittings on rotary table gear box.



ACCESSORIES

SECTION 8

ACCESSORIES

Augers - The standard auger supplied with the ULTRA 8 Capsule Filling Machine is commonly known as the "Three-Way" auger. A "Way" is normally understood to be a 90° twist in an auger blade.

When filling beadedlets, the auger should be removed.

An optional (One-way or Two-Way) auger is available for lighter fills with the ULTRA 8 machine and can be ordered from Capsugel.

Change Parts - Various parts required for the set-up of any given capsule size.

Capsule Hopper Extension - Fits on capsule hopper to increase capsule holding capacity.

0-6 Fill Ring, Special Spacing - To be used on the Elanco Type 8 Filling Machine.

ULTRA 8 Manual - Operator's guide includes all details of installation, operation and troubleshooting the ULTRA 8 Capsule Filling Machine.

Special Tools - Includes allen wrenches, capsule picks, scoop, scraper, gate adjustment tool, screw driver, oil can, and nylon brush.

ULTRA 8 Video - A companion to this manual, this video takes the viewer step-by-step through all details of machine installation, operation, and maintenance.

TFR-8 Tablet Filling Ring - A special filling ring to aid in the filling of tablets into capsules

CHANGE PART COMBINATIONS														
PART NUMBER			CAPSULE SIZE						SUPRO SIZES					
#00	#0	#0	#1	#2	#3	#3	#4	#4	#5	A	B	C	D	E
8CF186	186B	186C	186E	186G	186F	186F	186H	186F	186F	186B	186E	186E	186G	186G
PEG RING	4-Row	5-Row	6-Row	7-Row	7-Row	7-Row	8-Row	8-Row	7-Row	4-Row	6-Row	7-Row		
8CF101	101B	101C	101D	101E	101F	101G	101H	101H	101M	101P	101Q	101Q	101R	
MAGAZINE GATE														
8CF104	104B	104C	104D	104E	104F	104G	104H	104M	104M	104P	104Q	104Q	104R	
MAGAZINE														
8CF114	114B	114C	114D	114E			114F	114G	114M	114P	114Q	114Q		
PUSH BLADE														
8CF130	130B	130C	130D	130E	130F	130G	130H	130J	130I	130K	130M	130N	130P	130R
RECTIFIER RACEWAY														
8CF131	131B	131C	131D	131E	131F	131G	131H	131J	None	131N	131P	131Q	131Q	
CAPSULE SLIDE														
8CF133	133B	133C	133D	133E			133F	133G	133H	133M	133P	133Q	133Q	
RECTIFIER BLOCK														
8CF106	106A	106B	106C	106D	106E	106F	106G	106I	106H	106J	106M	106N	106P	106R
FILL RINGS														

Note: Peg Rings (186E & 186G) sizes 0 & 1 are 3/16" Fill Rings (106C & 106D) are standard 3/16" hole
 186D 6-Row 1/8"
 186E 7-Row 1/8"

SCREWS FOR ASSEMBLY
 1 - 8CF00M 2 - 8CF0AG
 2 - 8CF0AA 2 - 8CF0AD
 2 - 8CF0AF 2 - 8CF16Z
 *8CF0AD-10-24 X 1/4 Fill
 hd - 2 extra for 00 & 000

For additional information on electrical requirements please contact your Capsugel Representative (see back page of manual for telephone no. or address).

ACCESSORIES

SECTION 8

ACCESSORIES SUPPLIED WITH THE ULTRA 8 CAPSULE FILLING MACHINE:

PART #	DESCRIPTION	QUANTITY	CHECK OFF
8CF094	Vacuum Leather	1	
8CF274	Vacuum Pump Hose 3 Foot	1	
8CF274	Vacuum Pump Hose 6 Foot	1	
N/A	Vacuum Pump Filter	2	
8CF273	Vacuum Bags	2	
8CF272	Vacuum Can Gasket	2	
8CF275	Raceway Hose 3 Foot	1	
8CF292	Brass Nipple	1	
8CF233	Brush	1	
8CF235	Poker	1	
8CF244	Scoop	1	
8CF238	Oil Can	1	
8CF236	Screw Driver	1	
N/A	Grease Gun	1	
8CF234	Pick	1	
8CF239	Allen Wrenches 5/16, 7/32, 3/16, 5/32, 9/64, 1/8, 3/32	1 Each	
8CF243	Scraper	1	
8CF246	Gate Tool	1	
8CF098	Gate Lift	1	
X-976B	All Change Part Screws	1	
8CF086B	Capsugel Name Plate	1	
8CF212	Plastic Bottle	1	
8CF270	Vacuum Can Complete	1	

DATE:

TYPE:

CFM MACHINE #:

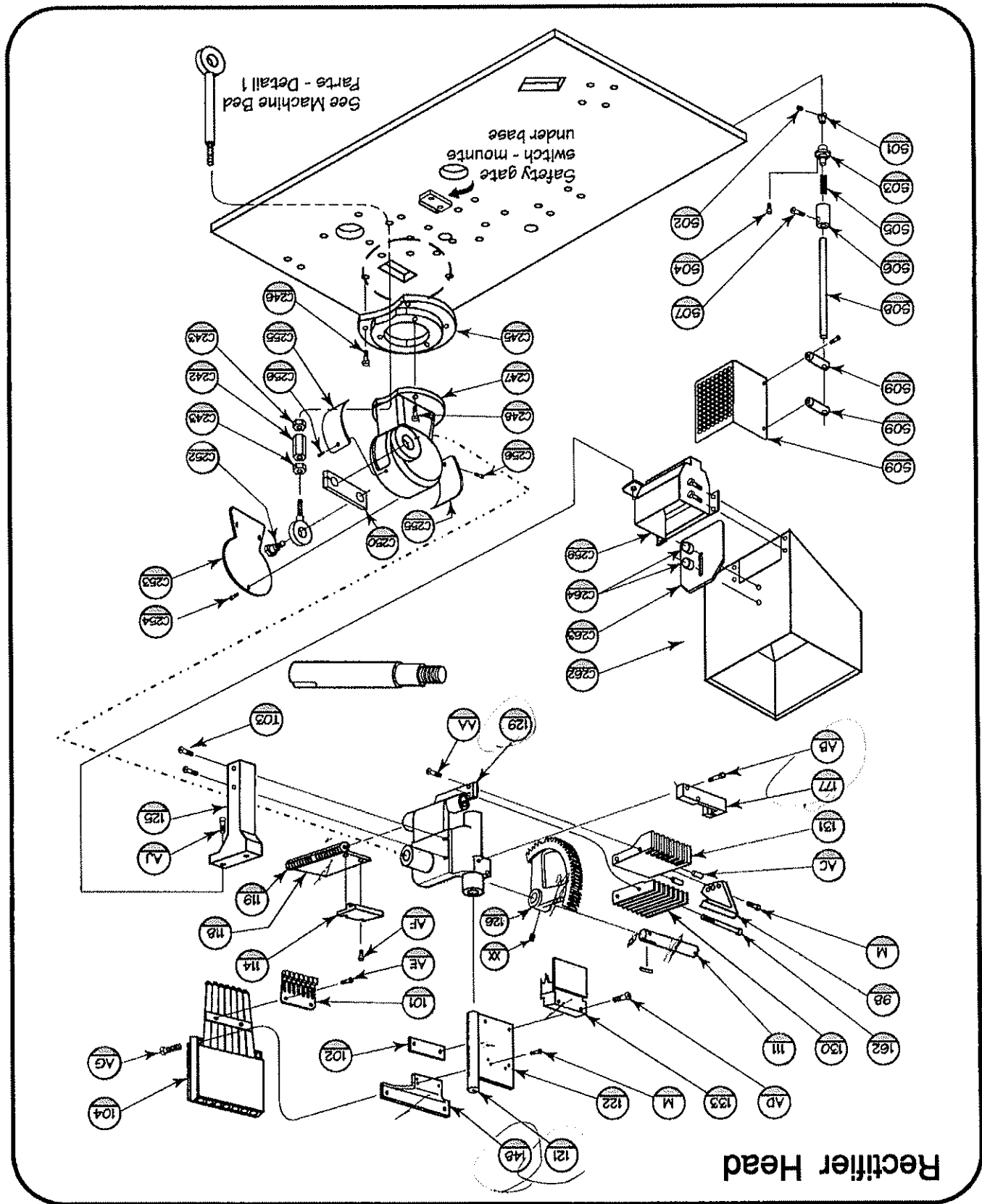
Shown below are common problems and how to remedy them.

Symptom	Possible Cause	Remedy
1. Failure to feed in one or more tracks	a. Insufficient capsules in the capsule hopper b. Clogged magazine tube c. Magazine gate out of adjustment or worn out d. Damaged or bent magazine e. Sector gear shaft slipped f. Gate litter loose or bent	a. Add capsules b. Run the rawhide poker down the magazine tube while holding the corresponding gate knee open by hand c. Adjust magazine gate according to instructions in Section 6 d. Replace magazine e. Check 9/32" dimension in Sect. 6 f. Remove gate litter and check with a square
2. Capsules fail to rectify	a. Separated capsules telescoping on other capsules in the empty capsule hopper (double caps) b. Push blade not properly adjusted c. Incorrect size, worn or bent d. Rectifier block e. Raceway openings bent or worn f. Vacuum leather not sealing	a. Sort or discard capsules b. Adjust according to Section 6 c. Repair or replace d. Repair/replace. Openings should lightly hold body of capsule e. Reseat leather by sand papering
3. Capsules fail to enter capsule fill ring assembly	a. Ring upside down or mismatched ring assemblies b. Ring not driving against pin c. Ring drive pin worn d. Ring holes caked with powder e. Body ring holes damaged or burred f. Vacuum leather not sealing against the ring g. No vacuum h. Push blade not adjusted correctly i. Sector gear shaft slipped j. Broken or worn ratchet blade k. Broken ratchet pawl, pawl pin or cam follower	a. Check ring serial numbers b. Rotate clockwise to the drive pin c. Turn or replace d. Clean according to Section 7 e. Deburr with countersink or replace f. Reseat vacuum leather by sand papering g. Check vacuum system h. Adjust according to Section 6 i. Check 9/32" dimensions; repair according to Section 6 j. Replace or adjust according to Section 6 k. Remove ratchet lever and inspect Section 6
4. Capsules fail to separate	a. No vacuum b. Insufficient vacuum c. Vacuum leather worn or improperly fitted d. Mismatched ring assembly e. Ring holes caked with powder f. Body ring holes damaged or burred g. Rings improperly assembled (rotated 180° or body ring upside down) h. Ring alignment pins bent or holes badly worn	a. Check vacuum system b. Empty vacuum bag c. Reseat vacuum leather by sand papering d. Check ring serial numbers e. Clean according to Section 7 f. Deburr with countersink or replace g. The large lugs and small lugs should correspond. Large body ring holes should face cap ring h. Repair or replace

Symptom	Possible Cause	Remedy
5. Capsules fail to rejoin	<ul style="list-style-type: none"> a. Bent or dirty pins on peg ring b. Rings caked with powder or worn c. Ring supports bent or loose d. Capsules damaged on filling table e. Incorrect peg ring f. Peg ring shaft too tight g. Joiner plate shaft or bushings worn or bent 	<ul style="list-style-type: none"> a. Clean per Section 7, repair or replace b. Clean per Section 7, repair or replace c. Repair or replace d. Clean rings e. Replace f. Lubricate g. Repair or replace
6. Capsules split	<ul style="list-style-type: none"> a. Overfill b. Joined too tightly c. Ring alignment pins bent or holes badly worn 	<ul style="list-style-type: none"> a. Overlap on filling table; select faster table speed; use less diluent; use larger capsule size b. Use less hydraulic pressure; use fewer joining strokes c. Repair or replace
7. Fill weights vary	<ul style="list-style-type: none"> a. Overlap on filling table b. Hopper stop adjustment c. Hopper relief hole plugged 	<ul style="list-style-type: none"> a. Instruct operator b. Adjust per Section 6 c. Empty drug hopper and clean
8. Capsule lengths vary	<ul style="list-style-type: none"> a. Joiner plate shaft or bushings worn 	<ul style="list-style-type: none"> a. Repair or replace
9. Damaged capsules	<ul style="list-style-type: none"> a. Not seated in ring during filling b. Too much hydraulic pressure on joiner c. Too many joining strokes d. Ring alignment pins bent or holes badly worn 	<ul style="list-style-type: none"> a. Clean rings per Section 7 b. Adjust hydraulic pressure c. Instruct operator d. Repair or replace
10. Rectifier table oscillates	<ul style="list-style-type: none"> a. Worn or broken ratchet blade b. Ratchet wheel damaged 	<ul style="list-style-type: none"> a. Repair, replace or adjust per Section 6 b. Remove and inspect teeth
11. Rotary table does not turn	<ul style="list-style-type: none"> a. Electrical problems 	<ul style="list-style-type: none"> a. Check motor and wiring
12. Machine rectifier will not stay in gear	<ul style="list-style-type: none"> a. Check for proper rotation of drive motor 	<ul style="list-style-type: none"> a. Reverse any two of the power leads to the motor. The green wire is the ground.
13. Hopper will not start	<ul style="list-style-type: none"> a. Hopper frozen b. Electrical problems 	<ul style="list-style-type: none"> a. Overhaul motor b. Check motor and wiring
14. No Vacuum	<ul style="list-style-type: none"> a. Overload heaters open b. Vacuum bag full c. Vacuum leather worn d. Vacuum canister top not sealed e. Clogged vacuum hose f. Vacuum pump intake filter clogged 	<ul style="list-style-type: none"> a. Push reset button b. Empty vacuum bag c. Replace d. Check gaskets/tighten wing nuts e. Clean hose f. Clean filter

SECTION 10

RECTIFIER DETAILS



JOINER DETAILS

SECTION 10

Detail No.	Description	Detail No.	Description
H08	Hydraulic Cylinder	J17	5/16-18 x 3/4 Socket Cap Screw
H09	Pressure Gauge	J18	5/8-11 Hex Nut
H12	90° Elbow	J19	5/8 Lock Washer
J01	Joiner Bracket	J21	Joiner Plate Shaft
J02	3/8-16 x 1 1/4 Hex Hd Mach Cap Screw	J22	Joiner Plate
J06	Joiner Chute	J23	Joiner Plate Stop Insert
J07	10-24 x 1/2 Filler Head Mach Screw	J24	10-24 x 5/8 Socket Flat Head Screw
J08	Ring Support Shaft	J25	Joiner Plate Handle
J09	3/4 Lock Washer	J26	1/4 Spring Pin
J10	3/4-10 Hex Nut	J27	Counterweight
J11	Joiner Plate Stop	J28	#4 Taper Pin
J12	3/4-16 x 3/4 Hex Hd Mach Cap Screw	J29	Cylinder Mounting Bracket
J13	Ring Support	J30	Cylinder Stud
J14	1/4-20 x 5/8 Socket Flat Head	J31	Cylinder Stud
J15	Ring Support	J33	1/2 Lock Washer
J16	Stop Screw	J34	1/2-13 x 1 1/4 Hex Head Cap Screw
		J35	Counter

PARTS LIST AND EXPLODED DRAWINGS

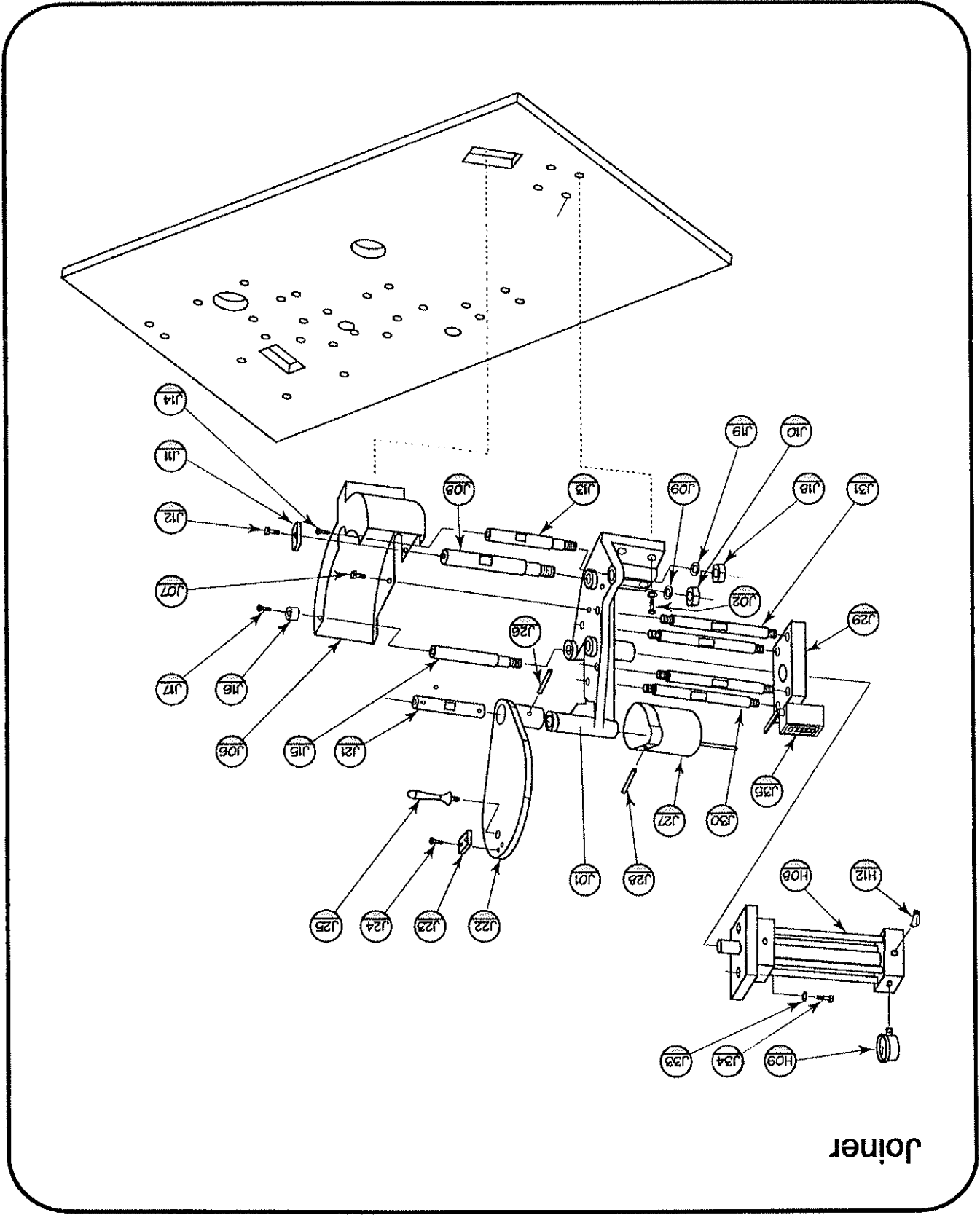
ULTRA 8

RECTIFIER DETAILS

Detail No.	Description
(AJ)	10-24 x 1/2 Fillister Hd Mach Screw
(XX)	5/16-18 x 1 Socket Set Screw
C242	(for locating only) Adjusting Nut
C243	5/8-18 Jam Nut R.H.
C245	Rectifier Mounting Ring
C246	3/8-16 x 1 1/4 Hex Hd Mach Cap Screw
C247	Rectifier Head
C248	3/8-16 x 1 1/4 Hex Hd Mach Cap Screw
C250	Crank Lever
C252	Shoulder Bolt
C253	Rectifier Base Cover
C254	10-24 x 5/16 Fillister Hd Mach Screw
C255	Rectifier Guard
C256	10-24 x 5/16 Fillister Hd Mach Screw
C259	Small Capsule Hopper
C262	Capsule Hopper
C263	Hopper Gate
C264	Knurl Nut
S01	Switch Activator
S02	Set Screw
S03	Pivot Bearing
S04	Pivot Mounting Screw
S05	Spring Shaft Gate
S06	Spring Retainer
S07	Spring Retainer Mounting Screw
S08	Safety Gate Shaft
S09	Front Grill

Detail No.	Description
98	Gate Lifter
101	Gate
102	Rectifier Block Plate
104	Magazine
111	Sector Shaft
114	Push Blade
118	Horizontal Guide Plate
119	Horizontal Sector Rack
121	Vertical Sector Rack
122	Vertical Guide Plate
125	Bracket Hopper
126	Sector
129	Rack Guide Bracket
130	Rectifier Raceway
131	Capsule Slide
133	Rectifier Block
148	Tube Bracket
177	Guide for #122 Taper Pin
(A3)	10-24 x 3/8 Fillister Hd Mach Screw
(M)	10-24 x 5/8 Fillister Hd Mach Screw
(AA)	8-32 x 3/8 Socket Head Cap Screw
(AB)	1/8 x 5/8 Dowel Pin
(AC)	10-24 x 1-1/8 Fillist. Hd Mach Screw
(AD)	6-32 x 1/8 Round Head Cap Screw
(AE)	10-24 x 5/16 Fillister Hd Mach Screw
(AF)	10-24 x 7/8 Fillister Hd Mach Screw
(AG)	

SECTION 10



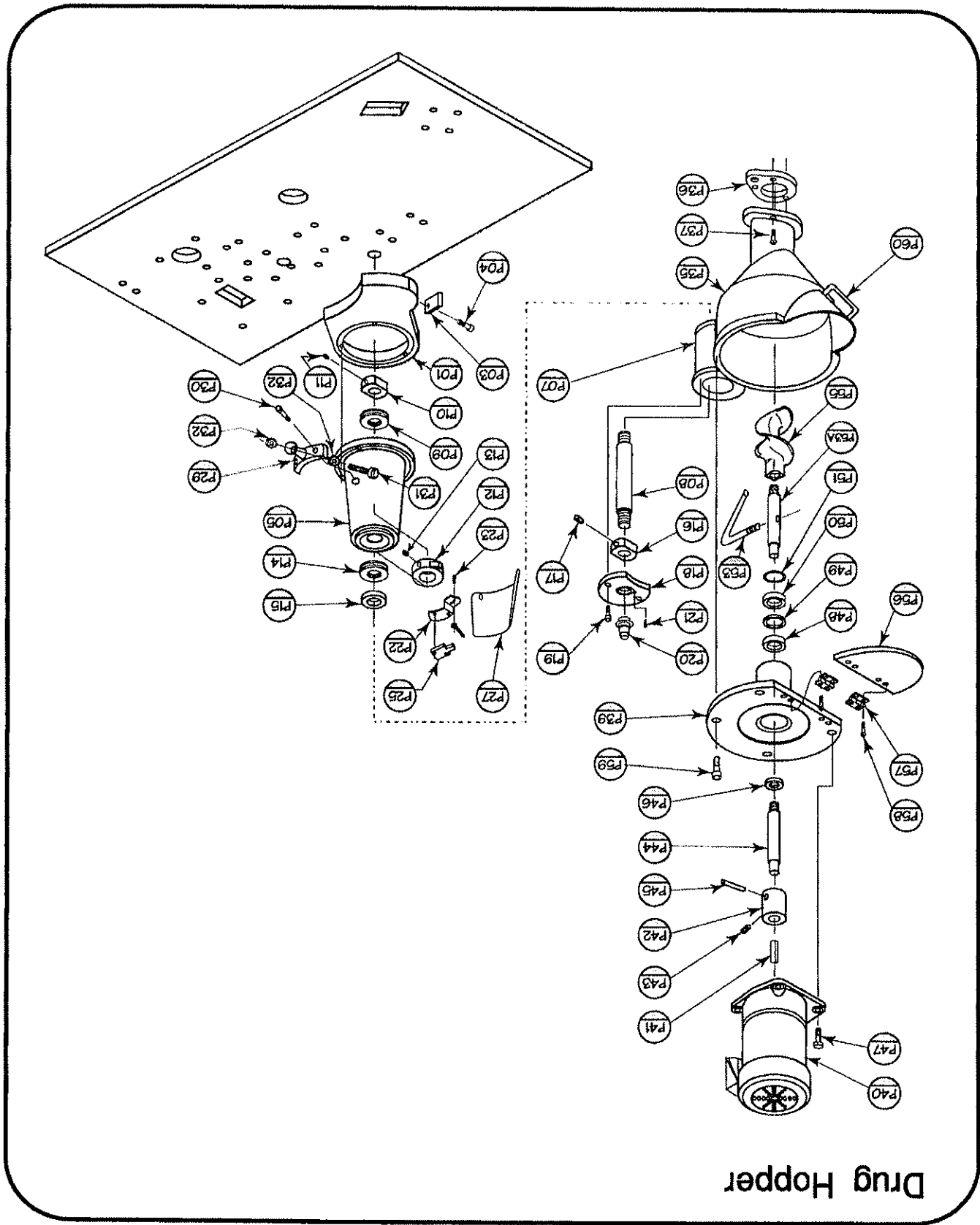
DRUG HOPPER DETAILS

SECTION 10

Detail No.	Description
P31	Hopper Base Plate
P32	Fill Adjustment Stop Nut
P32	Fill Adjustment Stop Nut
P35	Hopper Drug
P36	Hopper Plate
P37	10-24 x 1 Button Head Screw
P39	Hopper Top
P40	Motor Drug Hopper
P41	Motor Key
P42	Motor Shaft Coupling
P43	5/16-18 x 1/4 Socket Hd Cap Screw
P44	Auger Shaft
P45	Dowel Pin
P46	Thrust Bearing
P47	3/8-16 x 1 Hex Hd Cap Screw
P48	Auger Shaft Bearing
P49	Auger Shaft Spacer
P50	Auger Shaft Bearing
P51	Retaining Ring
P53	Stirring Arm
P53A	Auger Shaft
P55	Auger
P56	Hopper Lid
P57	Hinge (2)
P58	6-32 x 1/4 Socket Flat Head Screw
P59	5/16-18 x 1/4 Hex Hd Cap Screw
P60	Drug Hopper Handle

PLS B0001 (insoluble)
 0554

Detail No.	Description
P01	Hopper Base Plate
P03	Hopper Stop Drug
P04	3/8-16 x 1/2 Hex Hd Socket Screw
P05	Hopper Base
P06	5/16-18 x 3/4 Hex Hd Cap Screw
P07	Top - Hopper Base (if separate)
P08	Pivot Shaft
P09	Thrust Bearing
P10	Shaft Nut Pivot
P11	3/8-16 x 1/2 Socket Set Screw
P12	Switch Activator
P13	3/8-16 x 3/8 Socket Set Screw
P14	Thrust Bearing
P15	Thrust Bearing
P16	Shaft Nut Pivot
P17	3/8-16 x 3/8 Socket Set Screw
P18	Cover Plate
P19	1/4-20 x 3/8 Hex Hd Cap Screw
P20	Disconnect Electrical
P21	6-32 x 1/4 Socket Flat Head Screw
P22	Micro Switch Bracket
P23	10-24 x 1 Button Fillist. Hd Mach. Screw
P25	Switch Micro
P27	Hopper Base Cover Plate
P29	Hopper Stop Bracket
P30	1/4-20 x 3/4 Hex Hd Cap Screw

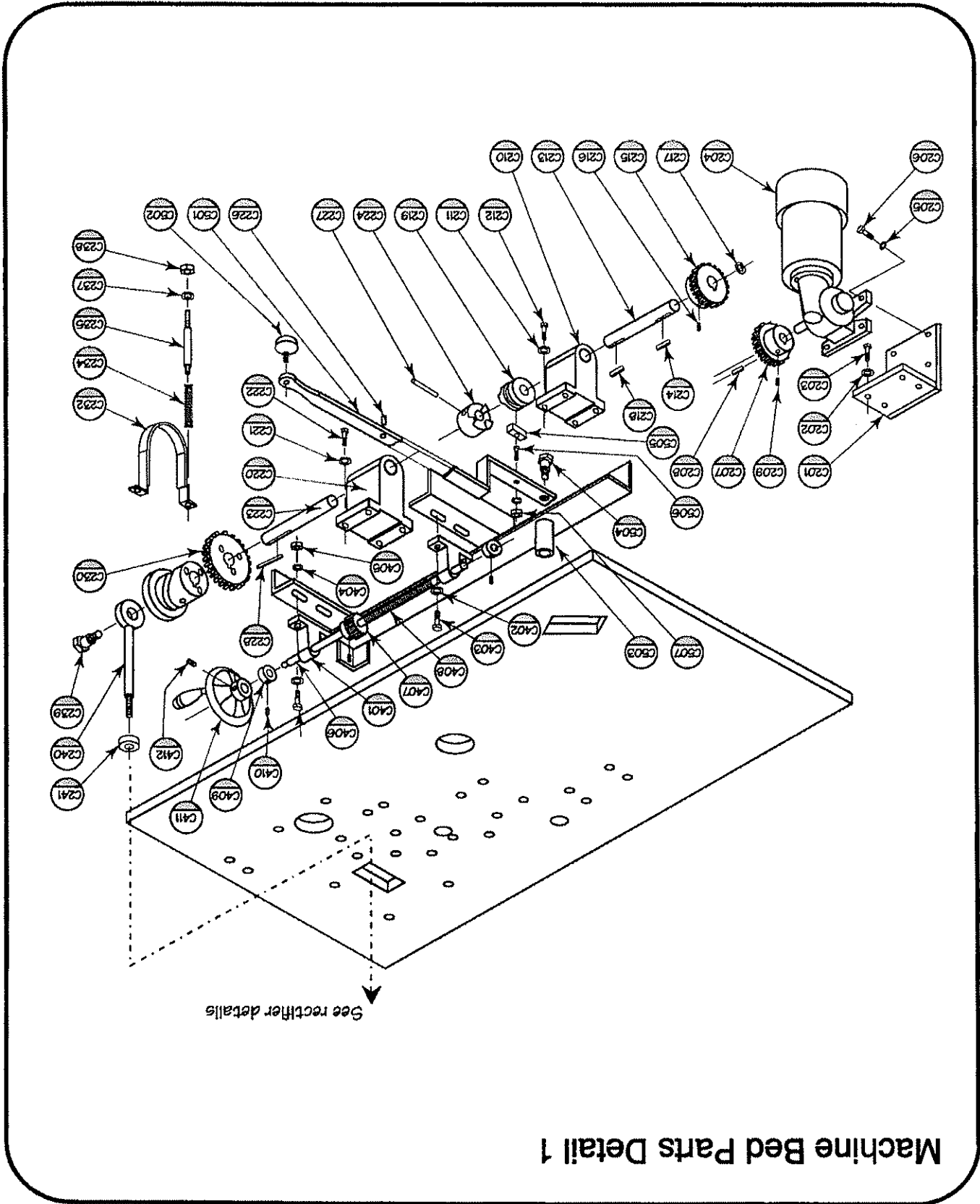


MACHINE BED PARTS DETAIL 1

SECTION 10

Detail No.	Description
C230	Gear
C232	Friction Collar
C234	Spring
C235	Friction Collar Shaft
C237	1/4 Lock Washer
C238	1/4-20 Hex Nut
C239	Shoulder Bolt
C240	Connecting Rod
C241	5/16-18 Jam Nut LH
C401	Spindle Bearing
C402	3/8 Lock Washer
C403	5/16-18 x 1 Socket Head Cap Screw
C404	5/16 Lock Washer
C405	5/16 Hex Nut
C406	Hand Wheel Spindle
C407	Gear
C408	Hand Wheel Spindle Spring
C409	Spindle Collar
C410	1/4-20 x 3/8 Socket Set Screw
C411	Manual Hand Wheel
C412	Set Screw
C501	Clutch Handle
C502	Clutch Handle Knob
C503	Clutch Handle Stud
C504	Shoulder Bolt
C505	Gear Shifter
C506	Gear Shifter Stud
C507	1/4-20 Hex Nut

Detail No.	Description
C201	Motor Mounting Bracket
C202	3/8 Lock Washer
C203	3/8-16 x 1 Hex Hd Cap Screw
C204	Rectifier Drive Motor <i>XX6M102521</i>
C205	3/8 Lock Washer
C206	3/8-16 x 1 Hex Hd Cap Screw
C207	Gear
C208	Key
C209	1/4-20 x 3/8 Socket Set Screw
C210	Spindle Bearing
C211	3/8 Lock Washer
C212	3/8-16 x 1 1/2 Hex Hd Cap Screw
C213	Crank Shaft
C214	Key Shaft
C215	Gear
C216	1/4-20 x 3/8 Socket Set Screw
C217	Snap Ring
C218	Key
C219	Table Drive Clutch
C220	Spindle Bearing
C221	3/8 Lock Washer
C222	3/8-16 x 1 1/2 Hex Hd Cap Screw
C223	Shaft Crank
C224	Table Drive Clutch
C226	5/16-18 x 1 Socket Set Screw
C227	Clutch Dowel Pin
C228	Key
C229	Cam Crank



See rectifier details

Machine Bed Parts Detail 1

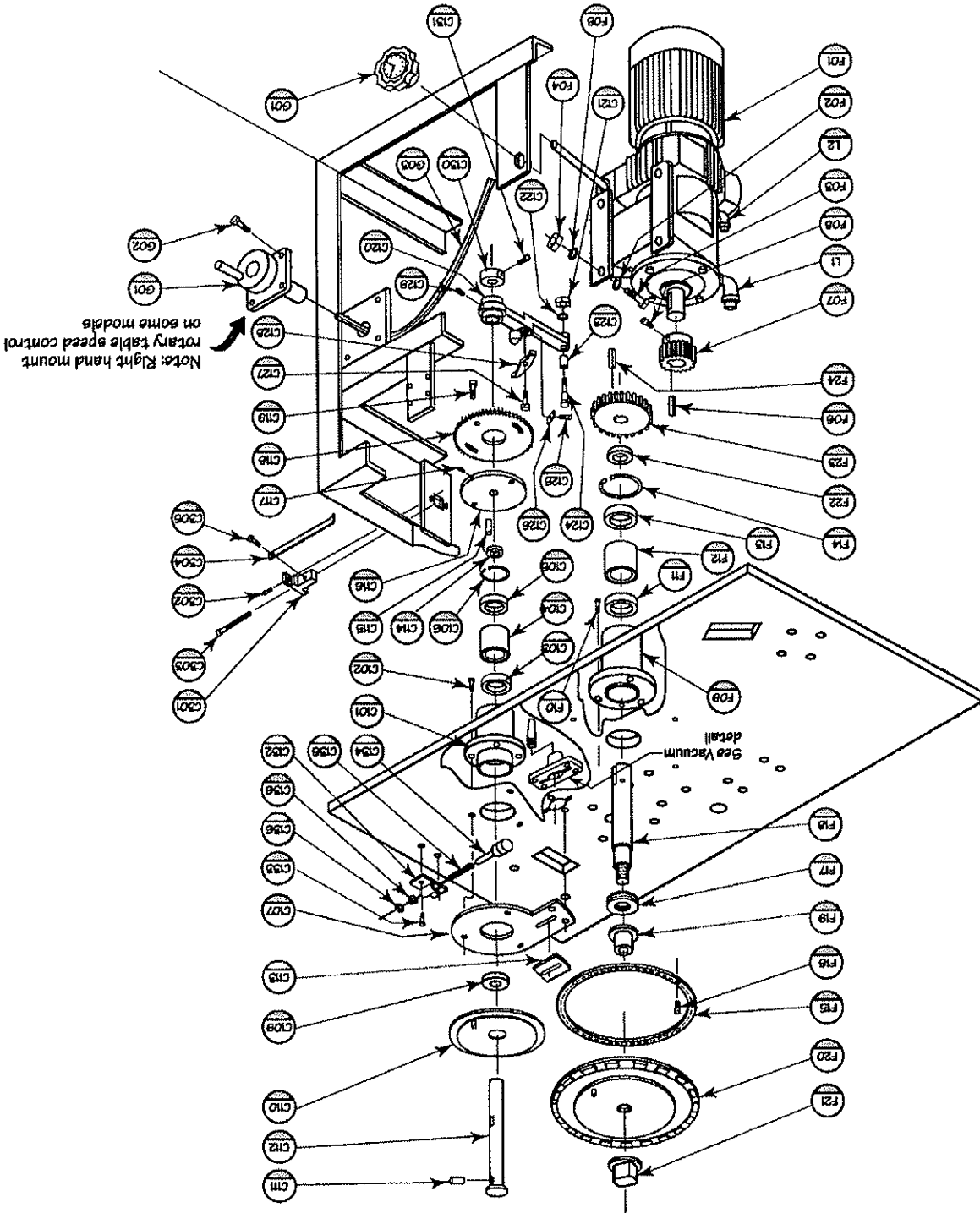
MACHINE BED PARTS DETAIL 2

SECTION 10

Detail No.	Description
C301	Ratchet Blade Holder
C302	1/4-20 x 3/4 Socket Cap Screw
C303	10-24 x 1 Socket Set Screw
C304	Ratchet Blade
C305	10-24 x 5/8 Button Head Screw
F01	Drive Motor Rotary Table
F02	3/8-16 Lock Washer
F03	3/8-16 Hex Hd Cap Screw
F04	3/8-16 Hex Nut
F05	3/8 Lock Washer
F06	Key
F07	Drive Gear
F08	5/16-18 x 3/8 Socket Set Screw
F09	Bearing Housing
F10	3/8-16 x 1 Hex Hd Cap Screw
F11	Bearing
F12	Bearing
F13	Bearing
F14	Snap Ring
F15	Rotary Table Seal
F16	10-24 x 1/2 Socket Flat Head
F17	Thrust Bearing
F18	Rotary Table Shaft
F19	Rotary Table Bushing
F20	Rotary Table
F21	Rotary Table Shaft Nut
F22	Bearing
F23	Rotary Table Gear
F24	Key
G01	Speed Adjusting Dial (specify location of your speed control - either center mount or right hand mount)
G02	1/4-20 x 3/4 Hex Hd Cap Screw
G03	Gear Box Cable
L1	Lubrication Point
L2	Lubrication Point

Detail No.	Description
C101	Bearing Housing
C102	3/8-16 x 1 Hex Hd Cap Screw
C103	Bearing
C104	Bearing Spacer
C105	Bearing
C106	Snap Ring
C107	Ring Carrier Plate
C109	Spacer
C110	Ring Carrier
C111	Ring Carrier Shaft Pin
C112	Ring Carrier Shaft
C113	Vacuum Leather
C114	Spacer
C115	Key
C116	Ratchet Wheel Hub
C117	Set Screw
C118	Ratchet Wheel
C119	1/4-20 x 3/4 Socket Set Screw
C120	Ratchet Lever
C121	1/4-20 Hex Nut
C122	1/4 Lock Washer
C123	Cam Roller
C124	Roller Shoulder Bolt
C125	10-24 x 3/8 Fillister Hd Cap Screw
C126	Ratchet Spring Clip
C127	Ratchet Pawl Shoulder Bolt
C128	Ratchet Pawl
C129	1/4-20 x 3/8 Socket Set Screw
C130	Lock Collar
C131	1/4-20 x 3/8 Socket Set Screw
C132	Brake Tip Bracket
C133	1/4-20 x 3/4 Hex Hd Cap Screw
C134	Brake Tip
C135	Brake Tip Spring
C136	3/8-16 Hex Jam Nut

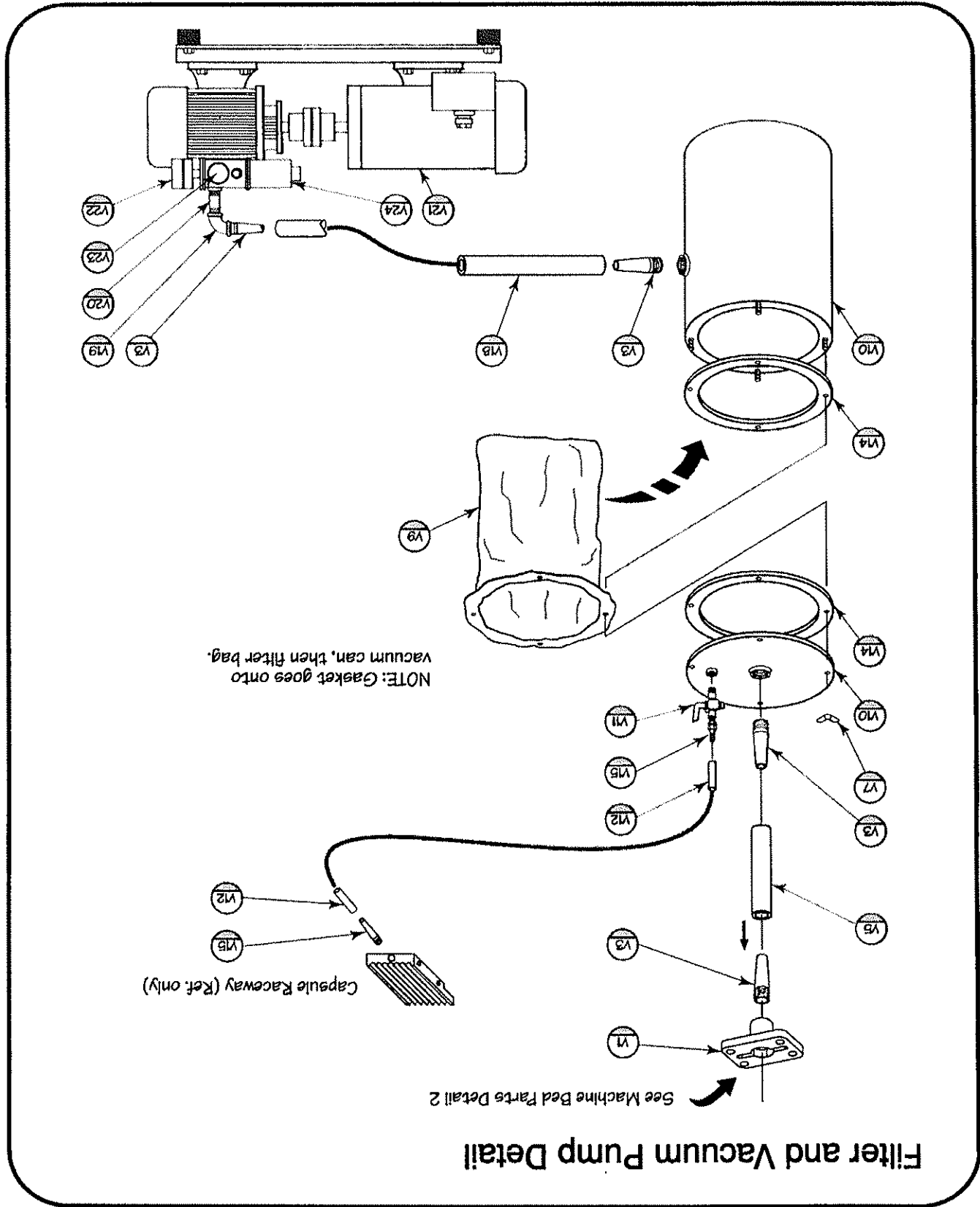
MACHINE BED PARTS Detail 2

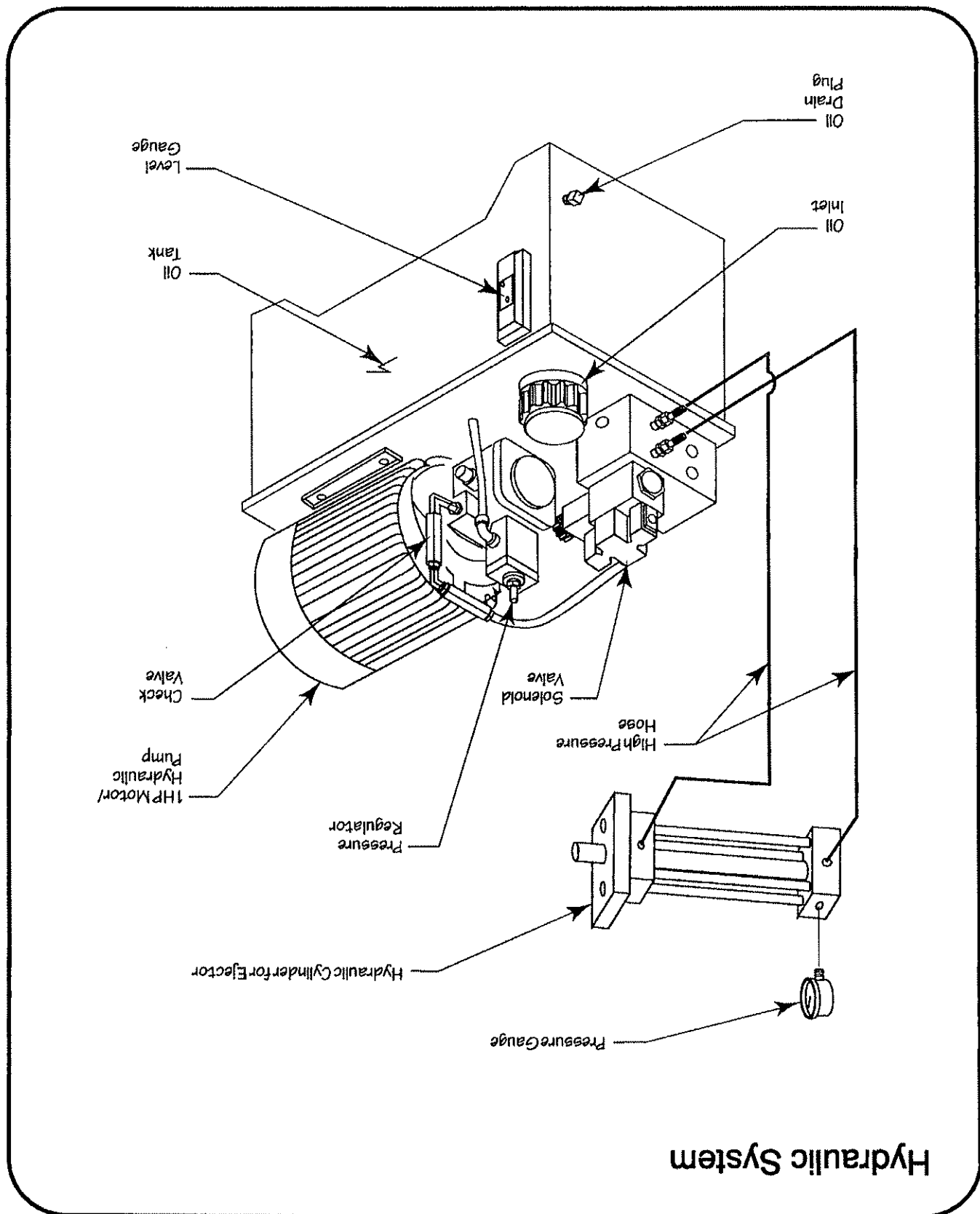


SECTION 10

FILTER AND VACUUM PUMP DETAILS

Detail No.	Description	Detail No.	Description
V01	Vacuum Pipe Bracket	V14	Gasket
V03	Vacuum Pipe	V15	Hose Fitting
V05	Vacuum Hose (Ring Carrier)	V18	Vacuum Hose (Pump)
V07	Wing Nut (4)	V19	Elbow
V09	Vacuum Bag	V20	Pipe Nipple
V10	Vacuum Can and Lid	V21	Vacuum Pump Motor
V11	Valve	V22	Vacuum Gauge
V12	Vacuum Hose (Faceway)	V23	Vacuum Control
		V24	Vacuum Filter





Hydraulic System

TO ORDER PARTS OR SERVICE

In The U.S., Call: 1 800 845-6973
In Canada, Call: 1 800 545-0879

REBUILD SERVICE
&
FIELD SERVICE

ACCESSORIES AVAILABLE

TFR - 8
Four Auger Styles
Cap Fill Ring Holder
Ultra 8 Operator's Manual
Ultra 8 Video
Capsule Hopper Extension

CAPSUGEL®

DIVISION OF WARNER-LAMBERT

535 North Emerald Road
Greenwood, SC 29646