

JUICE TREE ORANGE JUICE MACHINE MODEL 106-OJ

MANUFACTURED BY

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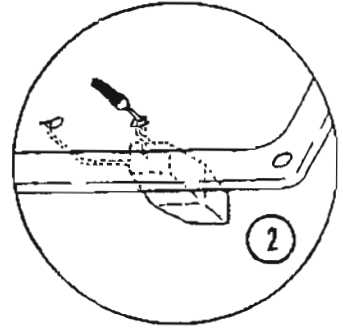
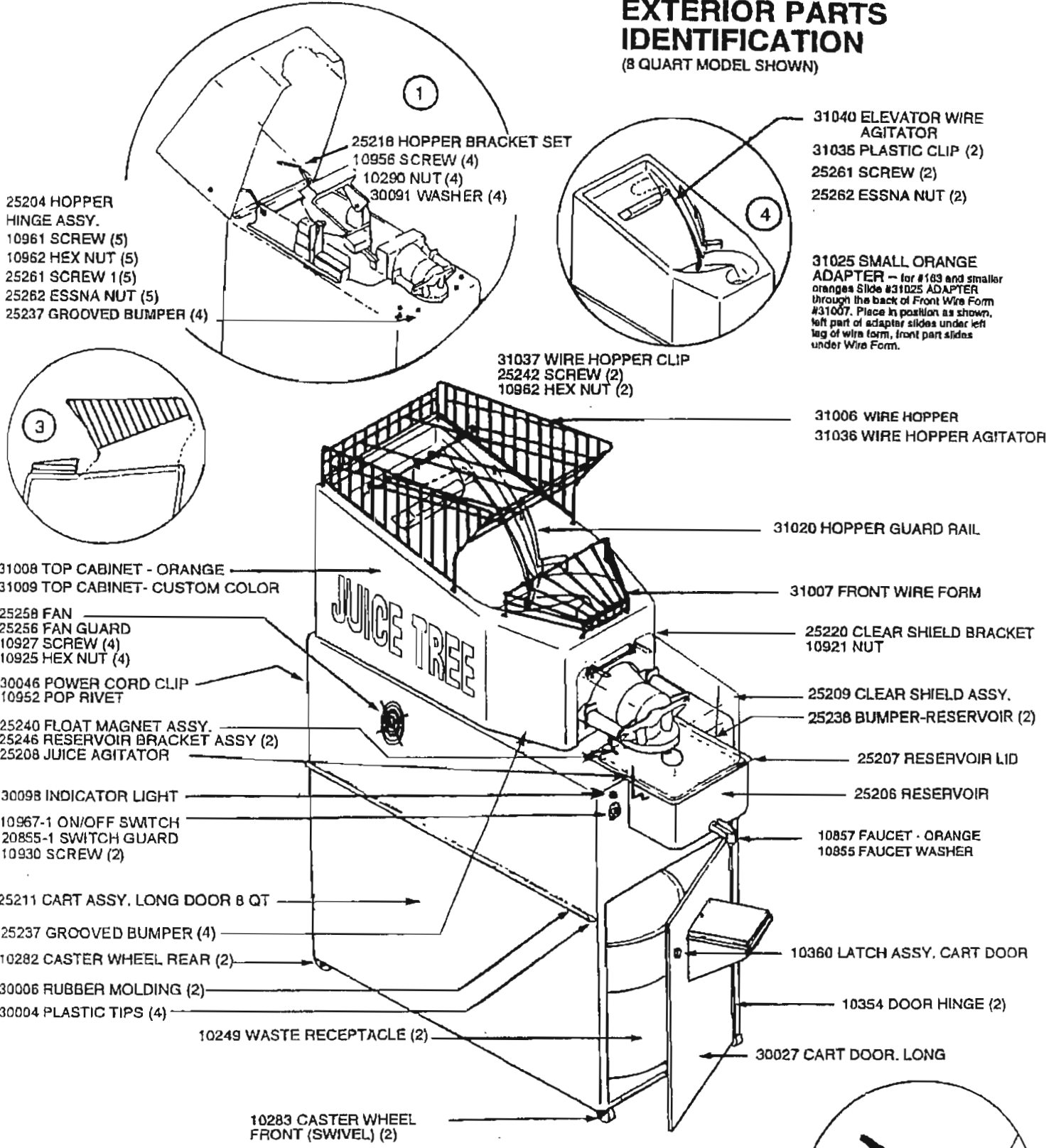
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MODEL 106-OJ EXTERIOR PARTS IDENTIFICATION

(8 QUART MODEL SHOWN)



VARIATIONS FOR 16 QUART LONG DOOR MODEL
30025 CART ASSY.
30026 CART DOOR
31021 RESEVOIR
31022 RESEVOIR LID
30107 RESEVOIR BRACKET ASSY. (2)
31026 JUICE AGITATOR

220 V VARIATIONS
20895 TRANSFORMER
25259 FAN

IMPORTANT — READ FIRST

Unpacking and Setting Up Instructions for the Juice Tree Model 106-OJ Orange Juice Machine

- 1) Remove cardboard box from wooden pallet by lifting box straight up.
- 2) Remove front 2 x 6 from wooden pallet and slide out machine
- 3) Remove parts and waste receptacles located inside cart.
- 4) Install door.
- 5) Raise top cabinet as indicated in Figure #1.
- 6) Cut and remove the straps holding pump pack. Lower top cabinet.
- 7) Remove squeezing head assembly from parts box, place on machine and install both squeezing head clips. Save the extra rubber cup (P/N 15690) for use as a spare.
- 8) Assemble reservoir cover and float magnet assembly as indicated in Figure #2.
- 9) Install clear splash shield assembly on machine.
- 10) Attach wire hopper to top of machine as indicated in Figure #3.
- 11) Lock elevator wire agitator into its hole in the front part of the elevator (Figure #4).
- 12) Replace waste receptacles in cart.
- 13) Remove (and save) Small Orange Adapter, except when squeezing oranges size 163 or smaller (Figure #4).

NOTE: Now your machine is unpacked, reassembled and ready for use. The safety factors designed in this orange juice machine do not allow it to operate unless the clear splash shield assembly is properly in place.

MODEL 106-OJ OPERATING INSTRUCTIONS

- 1) Before loading oranges in machine, check the following:
 - a) Waste containers are in place.
 - b) Rubber cup (P/N 15690) is on cup holder.
 - c) Squeezing head assembly is mounted on support tubes and squeezing head clips are in place.
 - d) Reservoir and float magnet assembly are securely mounted on machine.
 - e) Clear splash shield assembly is in proper position.
 - f) Faucet is turned off.
 - g) Machine is plugged into electrical receptacle.
 - h) Elevator wire agitator is locked into its hole in the front part of the elevator.
- 2) Load oranges into hopper. Turn machine on. The model 106 will accept fruit sizes 88-163, with sizes 113-138 preferred. Use Small Orange adapter only for oranges size 163 or smaller (see page 2, figure #4).
- 3) Machine will automatically squeeze oranges and automatically shut off when reservoir is full. Leave switch at the ON position for automatic restarting. Shut machine off when finished squeezing.
- 4) Before dispensing, rock agitator gently to stir up juice.
- 5) As juice is drawn from the reservoir, machine will automatically restart.
- 6) Proper cleaning is absolutely essential. Clean machine daily, as soon as possible after juicing to reduce cleaning time, discourage fruit flies and present a sanitary appearance to customers. Please refer to instructions on page 5.
- 7) **Always pull plug from power outlet before cleaning or servicing machine.**

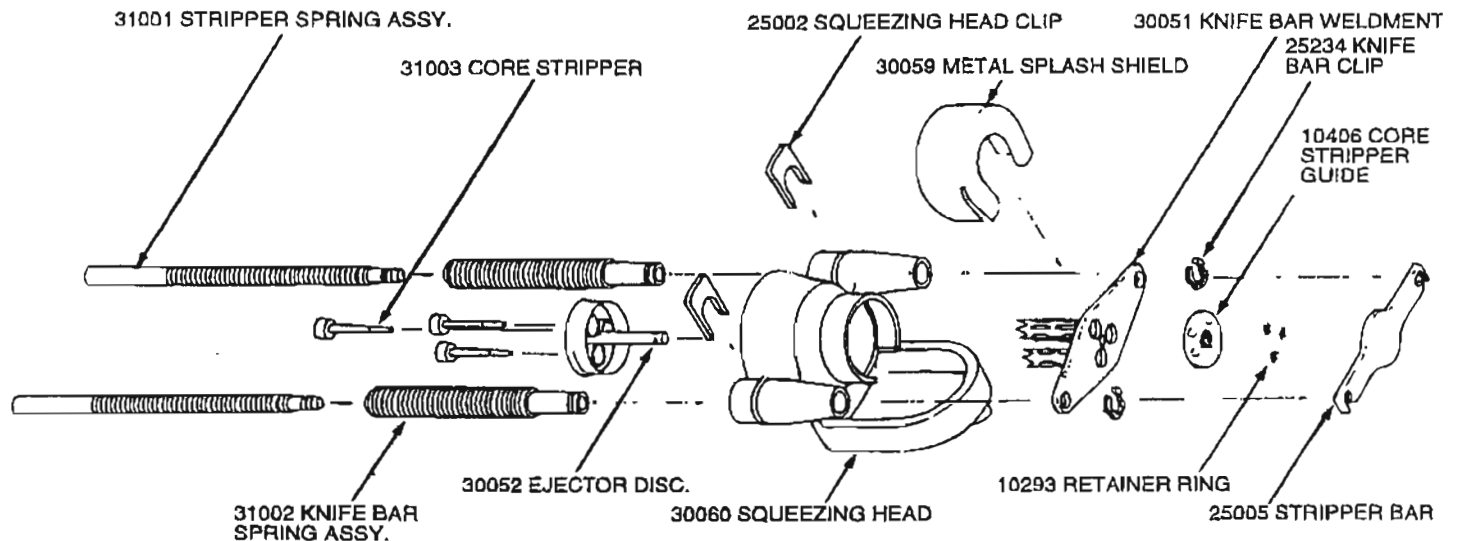
IMPORTANT

CHARACTERISTICS OF HYDRAULIC UNIT —

Because of the wide range of climates in which this orange juice machine is required to run, we have used an oil that will run well under the most temperatures. If your unit should be placed in an atmosphere below 60°F, you may experience a very sluggish initial start. Allow the unit to cycle approximately twenty (20) times before loading the oranges. This will allow the oil to warm and reduce viscosity. This oil will enable you to run the unit in an atmosphere in excess of 95°F. If your machine is located in an area between 75°F and 90°F, you should not experience any of these symptoms.

MODEL 106-OJ

31000 SQUEEZING HEAD ASSEMBLY IDENTIFICATION



CLEANING INSTRUCTIONS

- 1) Machine cleaning instructions:
 - a) Pull plug from power outlet.
 - b) Remove clear splash shield assembly.
 - c) Remove squeezing head assembly.
 - d) Remove reservoir and lid.
 - e) Unlatch elevator wire agitator and left top cabinet to cleaning position.
 - f) Thoroughly clean area exposed by removing the above parts with Juice Tree Cleaner. Clean and replace waste receptacles.
 - g) The shield, reservoir and lid can be easily cleaned as removed. The squeezing head assembly, however, should be partially disassembled and cleaned as explained in #2.

- 2) Squeezing head assembly cleaning instructions:
 - a) Remove metal splash shield.
 - b) Stand squeezing head assembly on stripper spring assemblies, depress and remove stripper bar.
 - c) Remove stripper spring assemblies.
 - d) Submerge all squeezing head assembly parts in a sanitizing solution and wash thoroughly.
 - e) Reassemble squeezing head assembly by reversing the above, insuring that core stripper guide is securely locked onto ejector disc shaft.
 - f) Reassemble machine in the following order:
 - 1) Pull down top cabinet to squeezing position.
 - 2) Latch elevator wire agitator in place.
 - 3) Replace reservoir and lid.
 - 4) Replace squeezing head assembly and both squeezing head clips.
 - 5) Replace clear splash shield assembly.

- 3) Clean up juice display and area around display and machine.

- 4) Wipe down hopper, drip tray, machine cabinet and cart with Juice Tree Cleaner and damp cloth.

- 5) "Steam" clean machine as often as needed, inside and out.

BEFORE CALLING A SERVICEMAN, MAKE THESE CHECKS...

THE BEST WAY TO ELIMINATE SERVICE CALLS IS TO MAINTAIN A CONSISTENT PROGRAM OF DAILY AND WEEKLY CLEANING. ALLOWING THE MACHINE TO ACCUMULATE DIRT, PULP AND DRIED JUICE WILL HASTEN OPERATING PROBLEMS.

If the machine has been cleaned properly, make these simple checks before calling a service man.

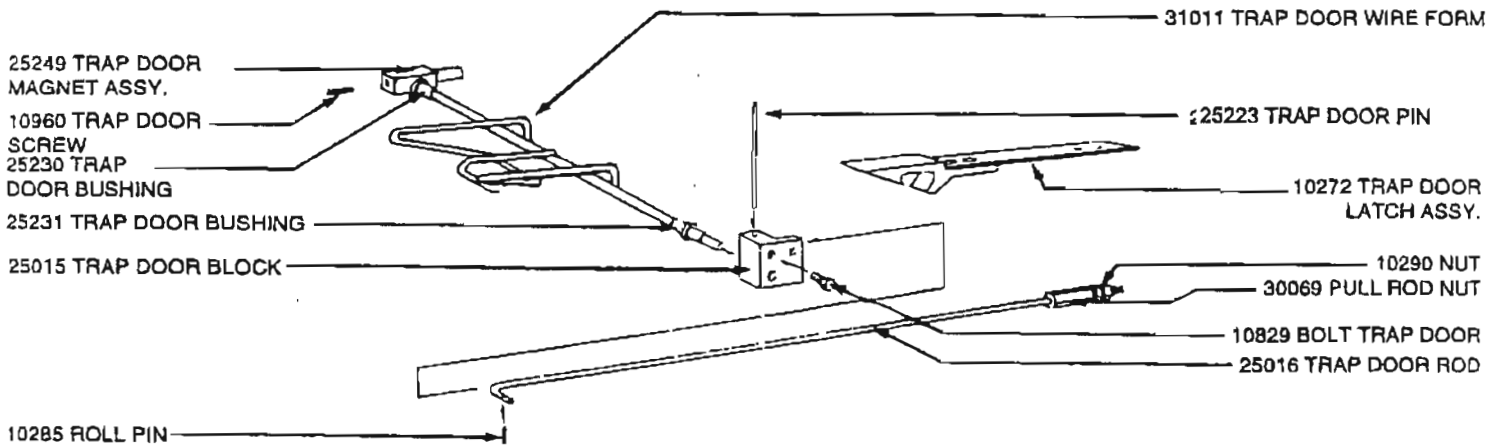
- 1) Machine won't start.
 - A) If indicator light is not on, check wall plug and building circuit breaker. If all OK call for service to check transformer.
 - B) If indicator light is on check the following:
 - 1) Reservoir is full of juice.
 - 2) Clear splash shield not properly in place or magnet missing.
 - 3) If buzzing or clicking is heard from this electrical enclosure, machine may not be getting sufficient power from wall plug.

- 2) Machine won't shut off with on-off switch.
 - A) On/off switch defective.
 - B) Position switch defective.
 - C) Trap door switch defective.
 - D) Float switch defective.
 - E) Contacts in relay stuck.

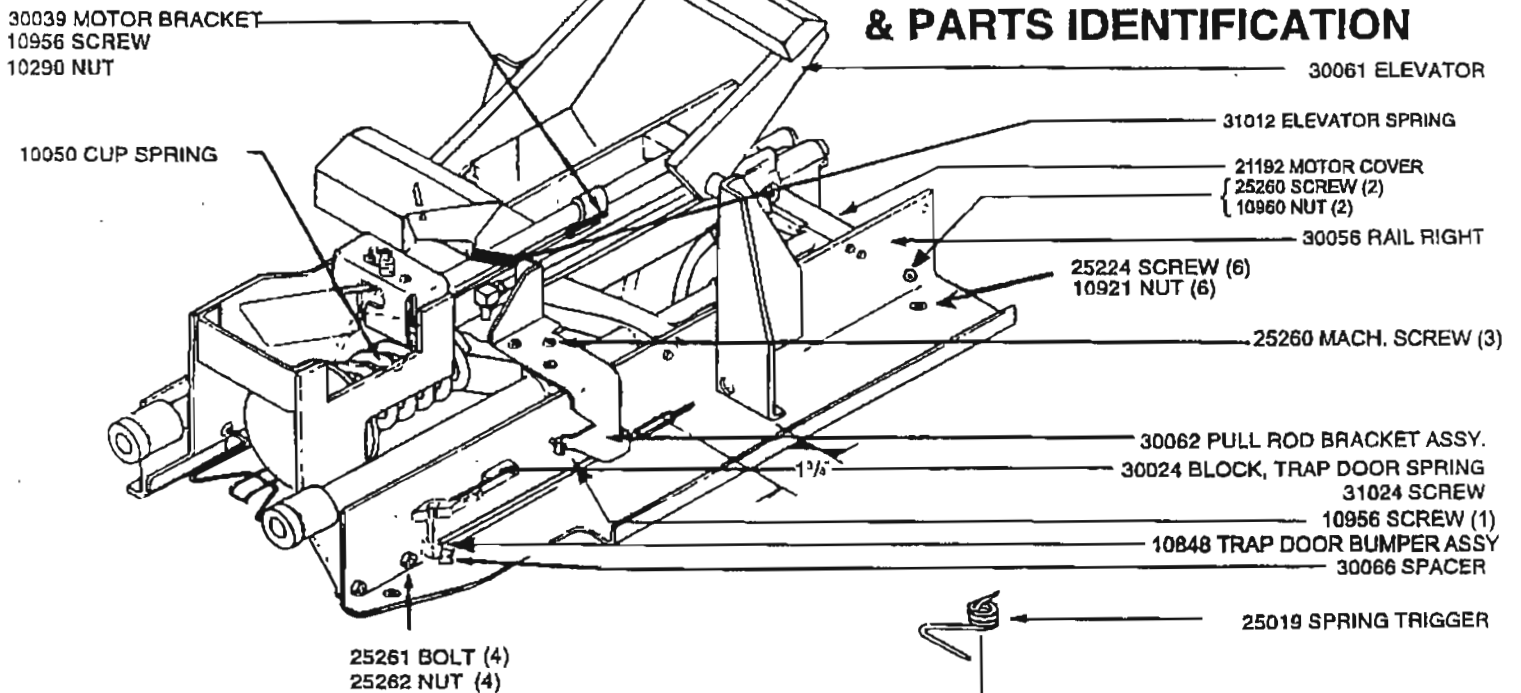
- 3) Machine will not shut off with clear shield off.
 - A) Shield switch is defective.
 - B) Contacts in relay stuck.

- 4)
 - A) Improper Feeding:
 - 1) Fruit drop may not be set properly or fruit drop spring may be broken.
 - B) Improper Squeezing and Ejection.
 - 1) Head is assembled improperly, or there are broken or missing parts in the squeezing head.
 - 2) Rubber cup may be punctured, broken or worn around the edges. Remove and replace with new rubber cup.
 - C) Unsqueezed Oranges:
 - 1) Trap door not latching correctly.
 - 2) Head assembly not assembled properly.
 - 3) Hydraulic pressure not set properly.
 - D) Improper Pressure — Pressure is adjusted by turning the pressure adjusting screw on back of machine. Tart, bitter juice may be caused by hydraulic pressure too high or fruit that is not yet ripe.
 - 1) If yield is low and fruit has a lot of juice, pressure is too low. Turn hydraulic adjusting screw one-quarter to one-half turn clockwise. This increases pressure.
 - 2) If fruit is torn and juice is completely squeezed out, pressure is too high. Turn hydraulic adjusting screw one-quarter to one-half turn counterclockwise. This will decrease the pressure.

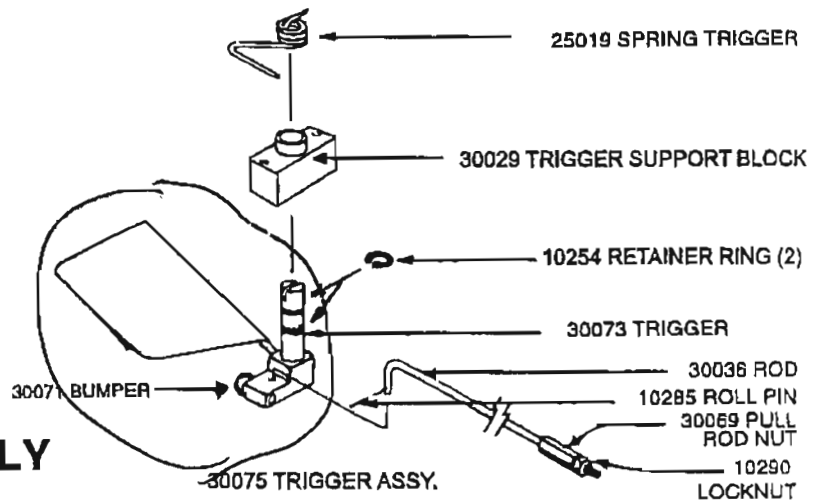
MODEL 106-OJ TRAP DOOR ASSEMBLY IDENTIFICATION



MODEL 106-OJ INTERIOR RIGHT SIDE VIEW & PARTS IDENTIFICATION

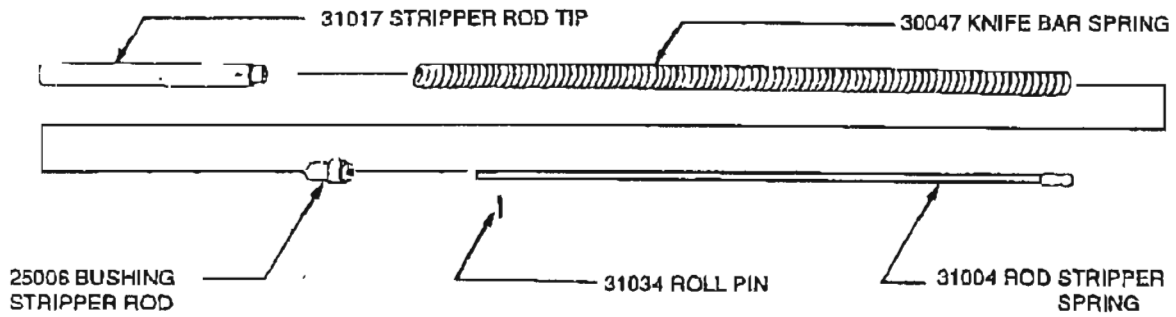


MODEL 106-OJ FRUIT DROP ASSEMBLY IDENTIFICATION

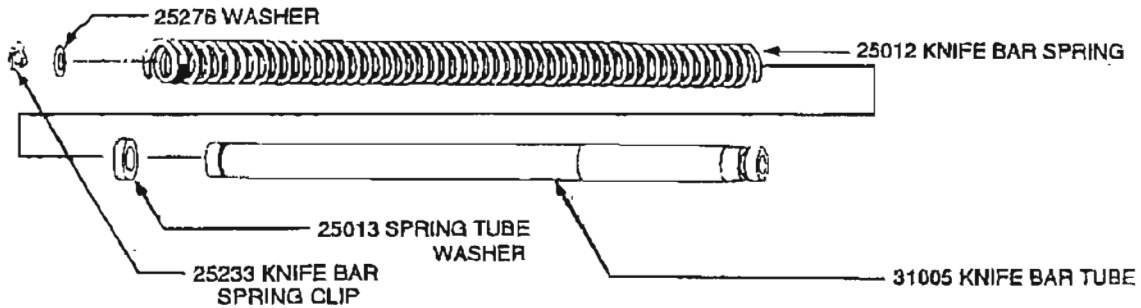


MODEL 106-OJ

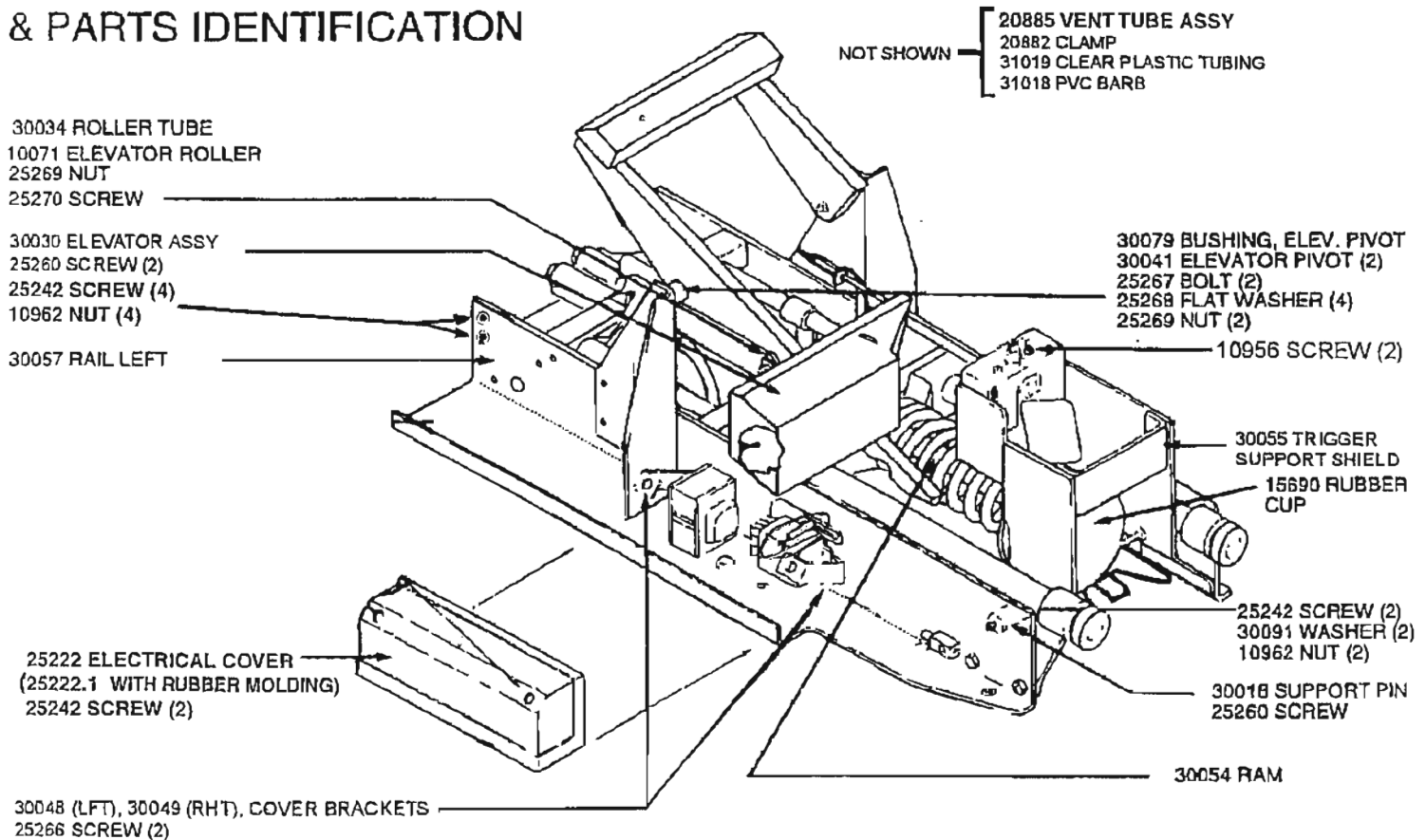
31001 STRIPPER SPRING ASSEMBLY



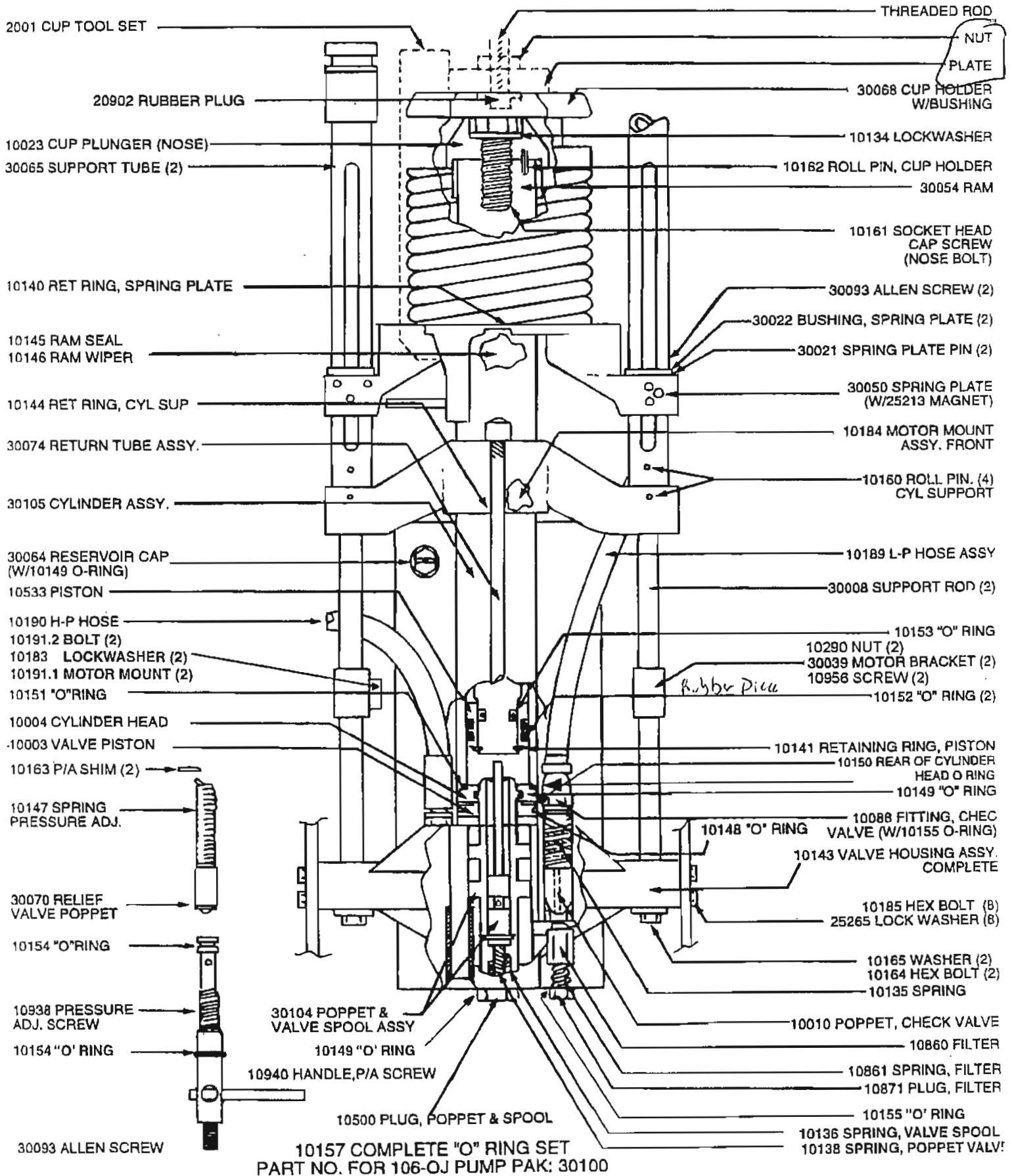
31002 KNIFE BAR SPRING ASSEMBLY



INTERIOR LEFT VIEW & PARTS IDENTIFICATION



MODEL 106-OJ HYDRAULIC PARTS IDENTIFICATION



MODEL 106-OJ

SYSTEM OPERATION & REPAIRS

If the following malfunctions occur during operation of the machine, generally, relatively simple field service can correct the problems. Prior to attempting to identify the specific problem, check the pump pack oil level and, if available, connect a 1000 PSI pressure gauge to gauge fitting located on the valve housing. Before attempting to repair the machine be sure the squeezing head is removed for easy access.

Oil level is checked with the ram fully retracted and the unit off. At this position the oil level should be 3/4" below the lower edge of the reservoir cap hole. USE ONLY MOBIL DTE 13M oil and add as required.

NOTE: Use of oils other than described above will damage the unit and void the warranty.

SEVERE OIL LEAKS, SEE HYDRAULIC TEARDOWN

1) **The ram shutters when retracting out of the squeezing head...**

- a) Replace the poppet valve spring (PN 10138). (See Hydraulic Teardown, Page 13)

CAUTION: It is very important to identify this problem, as continued operation will result in excessive wear and damage to other parts of the hydraulic system.

2) **The ram moves to the extended position and does not retract...**

If this is the problem, the ram will retract if the unit is turned off for 30 seconds and then restarted. An early symptom of this problem is that the squeezing dwell time is longer than the normal 1½ to 2 seconds.

- a) Remove 10871 plug, 10861 spring and 10860 filter. Clean filter thoroughly, then clean filter hole in valve housing.
- b) The check valve orifice may be contaminated. To clean, remove the return flex hose (right hand hose when viewed from rear of machine). Cap the open hose to prevent loss of fluid from reservoir. Remove fitting, spring (PN 10135) and check valve (PN 10010) located behind the fitting. Clean all parts, including check valve seat inside housing, reassemble and add oil if required.
- c) Excessive fluid leakage due to a damaged or worn Piston "O" Ring (PN 10152). This condition is more evident when machine is hot. (See Hydraulic Teardown for Procedure, Page 13).
- d) Contamination on valve spool or poppet valve. (See Hydraulic Teardown for Procedure, Page 13).
- e) Low pump output. (See Hydraulic Teardown for Procedure, Page 13).

3) **The ram is stopped in the retracted position and when power is applied it will not move...**

- a) Motor is running, but ram will not move. Unplug machine, remove cabinet, move ram to expose rubber cup 3/4 - 1" beyond the shield panel. *Check trap door and fruit drop adjustment. (See page 12).

- b) At the near fully retracted position there is a dead point in the cycle. If the machine is stopped at this exact position, the machine could hang-up. To clear, unplug and wait at least 30 seconds, then reapply power and machine will restart unless fruit trip assembly and/or trapdoor rods are misadjusted, or support rods are sticky. It may be necessary to move the ram either forward or backward manually with power cord pulled, then restart.
 - c) The ram stops on each retract stroke or in the retracted position. The poppet valve spring (PN 10138) is broken. Replace. (See Hydraulic Teardown, Page 13).
 - d) Contaminated oil is not allowing the valve spool assy (30104) to move freely. Remove and clean until free, then reassemble. (See Hydraulic Teardown, Page 13).
- 4) **The ram moves forward but retracts as soon as the cup spring starts to compress... This same problem can appear as partial compression of the cup with premature dwell and retraction.**
- a) There is contamination on the check valve preventing seating. Remove check valve (PN 10010) as in paragraph 2a (page 10). Clean thoroughly and reassemble.
 - b) The pump pack is inoperative. Return the pump pack to your distributor. (See Hydraulic Teardown, Page 13).
- 5) **The ram compresses the cup spring too slowly, or slowly and not fully compressed, but the retract cycle speed is normal.**
- a) Turn pressure adjusting screw to a gauge reading of 550 PSI.
 - b) The pressure adjustment screw (PN 10938) and relief valve poppet (PN 30070) may be contaminated. Remove both parts by turning pressure adjustment screw counter clockwise until disengaged. Take out valve and spring with magnet. There may be shimming washers behind the spring and care must be taken to reposition them properly during reassembly. Clean all parts, replace both "O" Rings on pressure adjustment screw and reassemble.
 - c) Check pressure. Screw 10938 pressure adjustment screw in until you reach no less than 650-700 PSI. Then unscrew to 550 PSI. Secure by inserting pin mid-range to allow adjustment higher or lower pressure.
 - d) Low output from hydraulic pump pack. This is most evident when unit is hot. If cleaning parts and replacing "O" Rings does not correct problem, remove power pack and return to distributor. (See Hydraulic Teardown, Page 13).
- 6) **The ram extends and retracts very, very slowly...**
- a) The pump pack output is low. Return pump pack to your distributor.
- 7) **Hydraulic buzzing occurs during the squeezing dwell cycle...**
- This problem is not severe and can be easily corrected. The unit will have an audible buzz in the squeezing or dwell portion of the cycle. This can also be felt by touching the low pressure hose (PN 10189) which will be vibrating.
- a) The pressure adjustment screw (PN 10938) is contaminated, clean per paragraph 5a (above).
 - b) If cleaning does not correct problem, replace both pressure adjustment screw and relief valve poppet with new parts. Reposition shim washers (PN 10163) and set pressure at 550 center position.

MODEL 106-OJ

MECHANICAL TEARDOWN & PARTS REPLACEMENT

Refer to illustrations - page 7 & 8.

1) TRAP DOOR ASSEMBLY ADJUSTMENT

- A) Adjustments are made by moving the pull rod nut (30069) either forward or backwards on the pull rod.
- Step 1: Unplug machine. Latch the trap door in the up position.
- Step 2: Loosen the locknut (10290) and adjust the pull rod nut, from the front edge of the elevator bracket to the rearward end of the pull rod nut, approximately 1³/₄" for the 106-OJ.
- Step 3: Tighten the locknut against the pull rod nut to ensure that it will remain in position.

2) FRUIT DROP ASSEMBLY

- a) Adjustments can be made with machine running; adjust (30069 pull rod nut) until trigger assembly plate (30073) outer tip edge is flush with shield. P/N 30055 (Refer to dotted line illustration on Page 7).
- b) Replacements: To remove fruit trip assembly, first stop machine, then unplug machine, then remove rubber cup. Remove locknut from end of pull rod, remove spring and "C" clip, then slide assembly down. (See Page 7 for fruit drop parts.) Reverse procedure to reassemble. Lever must be readjusted per Step A.

3) REMOVING THE CUP HOLDER

- a) Place the clamp (2000.1) flat inside surface over the back of the spring plate and the end with the radius groove over the cup holder. While holding the tool in place unscrew the nose bolt. The nose and bolt will come out together. Screw the threaded rod (2000.3) into the bolt hole tightly. Slide the cross plate (2000.2) down the threaded rod to the face of the cup holder. Tighten the nut on the cross plate until the clamp bar releases, then remove the clamp and slowly loosen the nut until the spring is decompressed. Remove tools, cup holder and spring. Reverse procedure to reassemble.

Make sure the bronze bushing inside the cup holder is aligned properly with shaft before tightening. Use locktite on cup screw before reinstalling.

Note: When reinstalling the cup holder, tighten the cross plate down to the point where the small instep on the tool will clamp down over the rear flange up the cup holder. This will allow the nose piece to be properly installed and located on the roll pin in the ram. After fully tightening the nose bolt, gently tap the tool off of the cup holder allowing spring pressure to seat the cup holder against the nose.

MODEL 106-OJ HYDRAULIC TEARDOWN

Refer to Illustrations - Page 9.

1) Removing valve housing to replace piston "O" Rings...

- a) Unplug machine, remove top cabinet.
- b) Remove white plastic strap from H.P. hose and remove L.P. hose.
NOTE: To check poppet, poppet spring only, remove large plug (10500). Place container to catch oil (See Paragraph 1d).
- c) Remove 4 bolts (10185) holding valve housing to rails.
- d) Place container or tray between valve housing and motor to catch oil drippings.
- e) Slowly unbolt housing from rods 30008 and slide housing back; this assembly is spring loaded and must be removed carefully.
- f) Slide cylinder head 10004, valve piston 10003 and valve spool assy 30104 out of housing as an assembly.
- g) To replace piston "O" Rings (PN 10152) remove snap ring (PN 10141), place hand and rag over cylinder and top tube openings and move ram forward sharply. Piston head (PN 10533) will slide off ram.
- h) Install all new "O" Rings before reassembly of housing to cylinder.
- i) Large spring 10136 must be placed in housing before valve assembly is installed. Spring must move valve assembly smoothly. Check before bolting housing to cylinder. Tighten bolts evenly when reassembling to rods.
- j) Check oil level. Plug in unit. The first few cycles will be erratic because of air locks.

2) Removing hydraulic power pack...

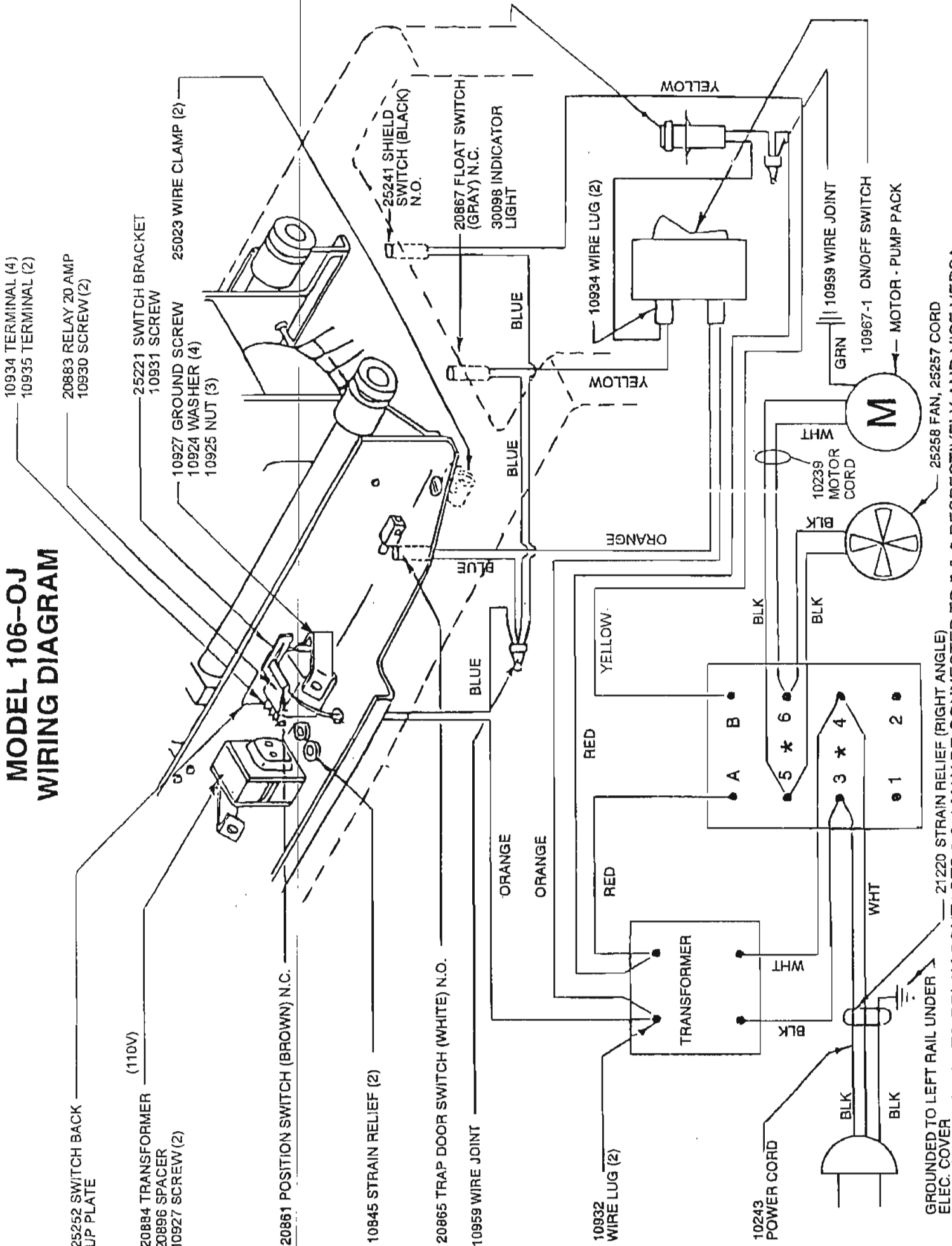
- a) Remove top cabinet.
- b) Remove elevator.
- c) Remove pull rod bracket.
- d) Remove 8 hydraulic screws (10185) holding unit in place.
- e) Lift unit up, block in place. Remove cover on motor and disconnect wires in motor.
- f) Pull out complete hydraulic unit.
- g) Unscrew both hoses, cap openings to prevent oil loss.
- h) Unbolt all three (3) motor mounts.
- i) Drain out as much oil as possible before shipping power pack back to distributor or factory; cap all openings securely.

3) Severe Oil Leaks...

- a) Leaks at front of ram cylinder require replacing seal and rings. (See Hydraulic Supplement). b) Leaks between motor and pump, return power pack to distributor.

- 4) Replace all "O" Rings on machine if valve housing is removed for any hydraulic malfunction (Kit #10157).

MODEL 106-OJ WIRING DIAGRAM



- 10934 TERMINAL (4)
- 10935 TERMINAL (2)
- 20883 RELAY 20 AMP
- 10930 SCREW (2)
- 25221 SWITCH BRACKET
- 10931 SCREW
- 25023 WIRE CLAMP (2)
- 10927 GROUND SCREW
- 10924 WASHER (4)
- 10925 NUT (3)

- 25252 SWITCH BACK UP PLATE
- 20884 TRANSFORMER (110V)
- 20896 SPACER
- 10927 SCREW (2)
- 20861 POSITION SWITCH (BROWN) N.C.
- 10845 STRAIN RELIEF (2)
- 20865 TRAP DOOR SWITCH (WHITE) N.O.
- 10959 WIRE JOINT

- 10932 WIRE LUG (2)
- 10243 POWER CORD
- 25241 SHIELD SWITCH (BLACK) N.O.
- 20867 FLOAT SWITCH (GRAY) N.C.
- 30098 INDICATOR LIGHT
- 10934 WIRE LUG (2)
- 10959 WIRE JOINT
- 10967-1 ON/OFF SWITCH
- MOTOR - PUMP PACK
- 25258 FAN, 25257 CORD

21220 STRAIN RELIEF (RIGHT ANGLE)
ELEC. COVER
*WIRING CONNECTED TO DELAY CONTACTS 3 & 4 MAY BE CONNECTED TO 5 AND VISE VERSA

MODEL 106-OJ

ELECTRICAL INFORMATION

24-VOLT MAGNETIC SWITCHES

SWITCHES

1. Position Switch

Mounted on left side of machine inside relay cover. Its function is to stop the machine with the rubber cup showing approx. $\frac{3}{4}$ -1" in front of the shield panel when either the main switch is turned off or the float switch is turned off. Adjustments are made by loosening the screw on position switch bracket, sliding the switch forward or backward to the correct setting. Retighten screw.

2. Float Switch

Mounted on left front side of machine near the reservoir. This switch stops the machine when the magnet on the float wire nears the switch. The switch is not adjustable. Adjustments are made by varying the angle of the float wire.

3. Trapdoor Switch

Mounted on left side of machine, behind trap door rod; magnet is fastened to trap door wire form. The switch function is to override the position switch when the main switch is turned on. Light in ON-OFF switch should come on when switch is in OFF position. When trapdoor is released, light should go out.

TRANSFORMER AND RELAY

1. ON THE LEFT SIDE OF THE MACHINE IS A SEALED WATERPROOF ELECTRICAL BOX, CONTAINING A 24-VOLT TRANSFORMER AND A RELAY. THESE PARTS CARRY LINE VOLTAGE & **SHOULD NOT BE OPENED BY ANYONE OTHER THAN AUTHORIZED SERVICE PERSONNEL.**

2. Transformer

The transformer changes line voltage (115 volts or 220 volts) to 24 volts A.C. for operation of the relay coil and magnetic switches only. Operation of the transformer is checked by plugging in the power cord then testing across the two (2) screw terminals of the transformer for 24 volts. The transformer can be replaced if necessary by: removing the terminals on the screws; disconnecting both black and white wires leading to the relay; removing the attachment screw at the rear of the metal bracket. Be sure to securely fasten new wires to proper terminals on the relay. See the wiring diagram, page 14.

3. Relay

The relay opens and closes the line voltage to the motor. It is activated by the 24 volt circuit from the magnetic switches through the transformer. It is **VERY IMPORTANT THAT ALL WIRES ARE ON THE PROPER TERMINALS** of the relay. (Refer to the wiring diagram). The relay can be replaced by removing all wires, then removing two (2) screws attached to rail.

“FRESH SQUEEZED” MERCHANDISING TIPS

1. Position machine by juice display to give your customers the association between the machine and the juice. Let them know your juice is really fresh squeezed.
2. Squeeze during busy shopping periods. The attention attracted by the machine and the aroma of fresh squeezed juice maximizes impulse sales and introduction of new customers to the product.
3. Display your fresh squeezed juice maintaining juice at 40° F or below. Never display fresh squeezed juice with frozen, canned or juice-from-concentrate.
4. Keep machine, display and surrounding area CLEAN.
5. Promote juice sales whenever appropriate with demonstrations, free samples, discount coupons, etc. Once customers get the taste for “fresh squeezed”, they rarely settle for anything less.
6. Use attention getting signs, posters, labels, etc. to dramatize your products.
7. Guarantee your customers a FRESH product. Juice should not be sold after the third day; it's best if the juice turns over daily.
8. Select the proper fruit for juicing. The desired size of oranges is 113-138, but the machine will accept any size fruit between 88-163 (the number of oranges in a 40 lb. box). Buy whichever size within this range that is least expensive. “Standard” or “juicing” grades (US#2) produce equal juice to the more expensive “choice” or “premium” (US#1) grade oranges.