

Features of Virnig Mfg. Inc. Pick-Up Broom include:

- Pick-Up Broom can operate in both forward and reverse.
- Equipped with a standard 5/8" x 6" bolt on reversible wear edge.
- Hood easily adjusts to compensate for wear of wafers.
- 15-25 gpm operating flow rate range and 2000 – 3500 psi operating pressure range.
- Easy exchange of wafers, do not have to disconnect hydraulic lines to change wafer sections.
- Standard wafer package is a 26" diameter poly/wire combination.
- Direct drive design with replaceable drive components.
- Optional Gutter Brush and Water Kit are available.
- Recommended for loaders with an operating capacity greater than 1500 lb.

CAUTION: On some brands of loaders, when the boom is raised to full height and broom fully rolled back, the broom hood may separate from the bucket. The broom is designed with stops to limit amount of separation but may possibly interfere with loader boom arms or cab. Care should be taken to avoid this situation.

Initial Use

- Read and understand all warning information in this manual before operating this attachment.
- Check that quick-tach on frame fits onto loader properly. Pins must engage through 3/8" plates at bottom of quick-tach.
- Slowly roll back attachment. Make sure there is no interference between attachment and loader.
- Connect lead hoses to standard flow hydraulics. Do not connect this attachment to high flow hydraulics.
- Make sure hoses do not pinch during roll back.
- Slowly roll bucket fully forward. Check that hoses are long enough so they do not stretch or bind.
- Never exceed the maximum attachment operating pressure of 3500 psi.
- With the Pick-Up Broom off of the ground, engage the auxiliary hydraulics using the "detent" position on the machine. Check the rotation of the broom (broom should be sweeping away from the machine or clockwise when looking from the motor end.) If this rotation does not match the "detent" position of your machine, switch the couplers on the lead hoses.
- Do not store Pick-Up Broom with weight on the wafers as this may deform the bristles reducing the sweeping efficiency.

Pick-Up Broom Hydraulic Motor Assembly

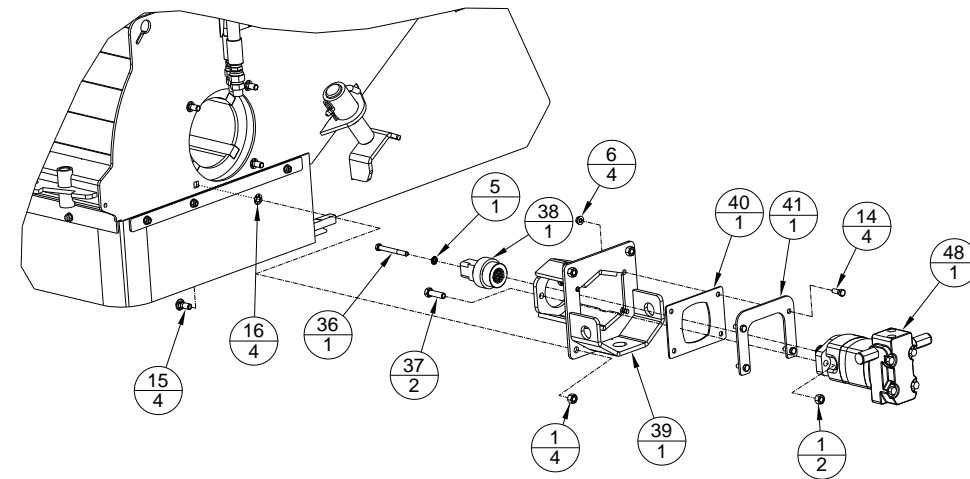


Figure 5.

Hydraulic Component Assembly

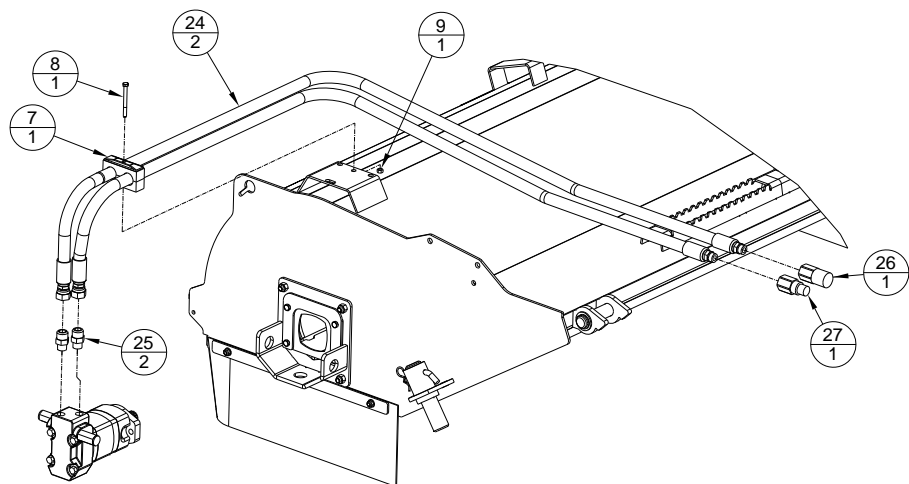


Figure 4.

Standard Coupler Configuration

- Connect female coupler to the motor outer port.
- Connect male coupler to the motor inner port.
- If the Standard Coupler Configuration does not match the machines "detent" position, the couplers can be switched.

Adjusting the Brush Pattern

- No initial adjustment of the brush pattern should be required. Periodic adjustment of the Pick-Up Broom head will ensure longer wafer life and more efficient operation.
- To check the brush pattern of the Pick-Up Broom, start the broom rotating, lower the boom arms of the machine to the stops and roll the bucket forward until the cutting edge is approximately ½"-1" off of the ground. Run the broom for about 10 seconds and lift the broom up and back away. For a correctly adjusted broom, there should be a clean strip about 2-4" wide where the brush was sweeping. If not, an adjustment needs to be made.
- If the pattern is less than 2-4", the broom head needs to be lowered. To do this, prop up the front of the broom to take the weight off of the adjustment shafts (Item #28, see Figure 1). Remove the bent leg pin (Item #29) and move the adjustment shaft to the next lower hole location. Reinstall the bent leg pin. Repeat procedure on other side of the Pick-Up Broom.
- Make sure both sides are evenly adjusted to ensure consistent wear across the width of the broom.

Operation

- Always follow safety and operating information in this manual.
- Always follow all safety and operating instructions of the loader.
- Never remove material deflectors or warning labels.
- Never operate a Pick-Up Broom unless you have been properly trained.
- Make sure all safety labels are in place, look in this manual for their locations.
- Do not sweep toward people, buildings, etc. that may be injured or damaged by flying debris.
- Always relieve hydraulic pressure of the machine before connecting or disconnecting hydraulic hoses.
- Clean any debris from attachment. Pay special attention to any debris in quick-tach area.
- The Pick-Up Broom is designed to be operated driving in the forward direction so that the brush sweeps debris away from the operator (brush spins clockwise when looking from the motor end). The brush will spin in the opposite direction and should be when sweeping and travelling backward.
- Do not change rotation direction of the broom without allowing the broom to come to a complete stop. Doing so may cause premature failure of components. Quickly changing rotation from forward to backward to forward may cause damage to drive components and/or motor.

Sweeping Recommendations

- Sweep with the wind whenever possible to provide more efficient operation and keep debris off of the operator.
- When driving forward, sweep in such a manner that the material being swept goes up and over the wafers and into the bucket (broom should be rotating clockwise looking from the motor end). This should be the “detent” position on the machines controls.
- When driving in reverse, sweep in such a manner that the material goes directly into the bucket (broom should be rotating counterclockwise looking from the motor end).
- When sweeping on rough terrain, reduce machine ground speed to minimize “bouncing” of broom head.
- The cutting edge of the bucket should be approximately $\frac{1}{2}$ ”-1” off of the ground during normal operation.
- Avoid excessive weight on the broom wafers. Brooms sweep with the tips of the wafers; therefore, the sweeping contact pattern should be about 2”-4”. Unnecessary weight promotes excessive wear and premature failure of wafers. Ensure the adjustment shafts are adjusted equally to provide consistent wafer wear.

Maintenance

*Before each use and after every 10 hours of operation

- Grease hinge pins and bearing (3 fittings on the Pick-Up Broom).
- Check for wear on wafers. If the outside diameter of the wafers is one half of the original diameter, the wafers need to be replaced. The original diameter of the wafers for the Pick-Up Broom is 26”.
- Make sure all safety labels are in place, look in this manual for locations.
- Check for loose, worn, or missing parts, repair or replace as needed.
- Remove any foreign debris such as string, wire, etc. that may have wrapped around the brush head.
- Inspect motor, valve, hydraulic fittings, and hoses for leaks and damage. Replace as needed. Make sure machine is shut off and hydraulic pressure is relieved before checking for leaks. Never use hands to check for high pressure hydraulic leaks.
- The pressure relief valves are preset and require no maintenance or adjustment. Unauthorized adjustment may cause damage to the motor. Please call Virnig Mfg. Inc. with any questions or problems regarding the pressure relief valves.
- Contact your dealer for any required replacement parts.

Pick-Up Broom Core and Shaft Assembly

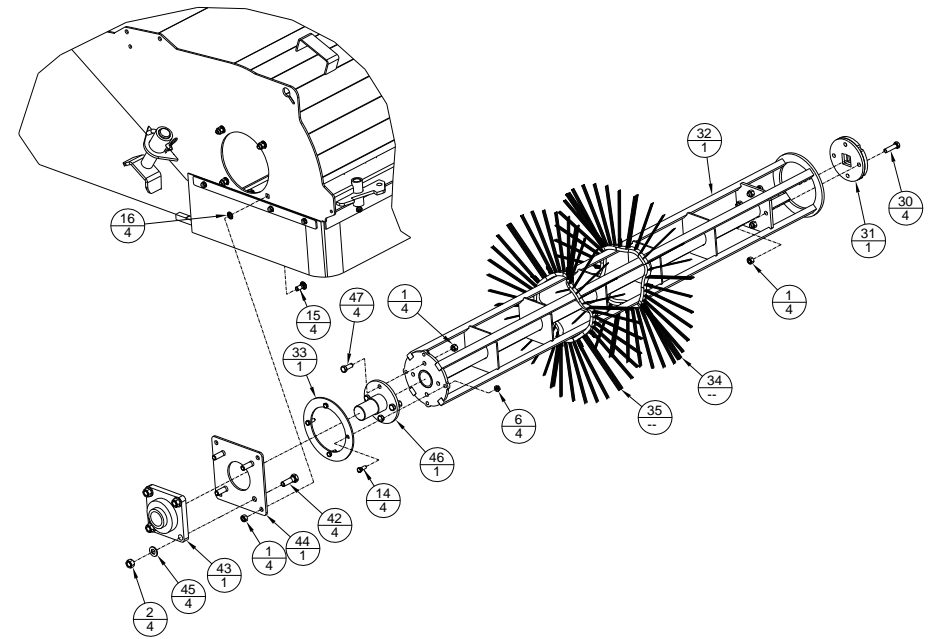


Figure 3.

Pick-Up Broom Pivot Assembly

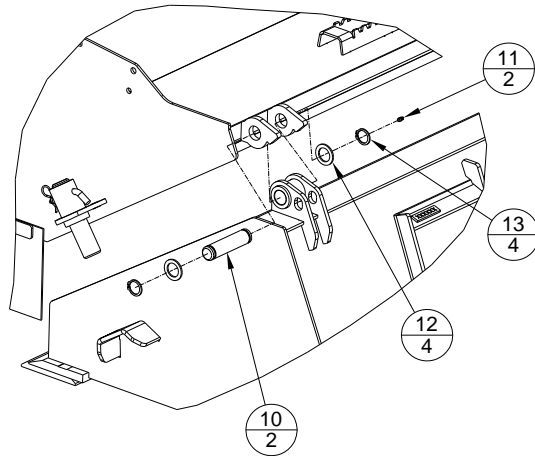


Figure 2.

Brush Replacement Procedure

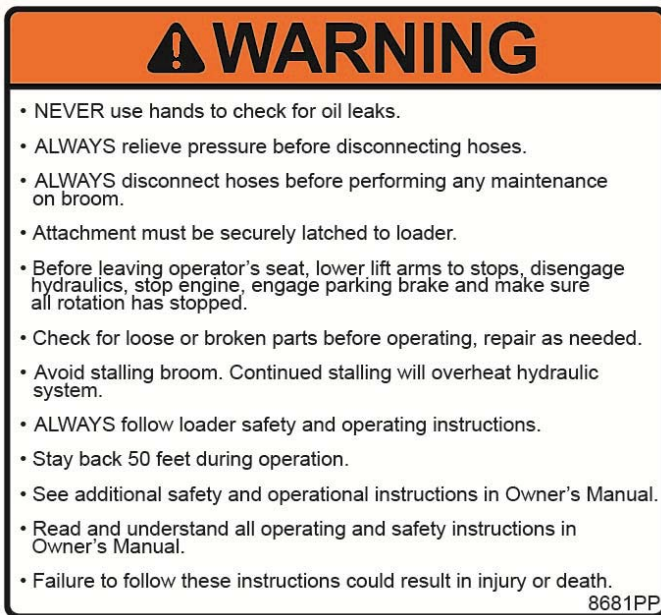
- Remove the lead hoses (Item #24, see Figure 4) from the hose clamp (Item #7).
- Remove the 4 nuts (Item #1, see Figure 5) holding the Hydraulic Motor Assembly and remove the Hydraulic Motor Assembly.
- Remove the 4 nuts (Item #1, see Figure 3) holding the Bearing Mount Plate and remove the bearing.
- The core should be free from the brush head. The core may have to be pushed toward the motor end to allow the bearing end Drum Engagement Plate Wdt (Item #46) to drop from the brush head. Lift brush head and remove to expose core.
- Remove the retaining plate (Item #33) from the end of the core (see Figure 3).
- Remove old brush sections. Inspect drive bars for indentations or excessive wear. Replace core cage if damage is evident.
- Inspect the Broom Drive Flange Weldment (Item #31, see Figure 3) for wear. If excessive wear or deformation is present, replace before reinstalling core.
- Stand core on end and install the new brush sections making sure the drive pins of the wafer engage one of the core drive bars. For a snug fit, install consecutive wafers so that the drive pins are 180° apart. Start with a poly wafer and alternate between poly and wire wafers until core is full. The last wafer should be poly also.
- Reinstall the retaining plate and lay core on ground. When handling the core, do not use the wafers to move the core.
- Lower brush head over core with new brush sections. The core may have to be pushed toward the motor end to allow the Drum Engagement Plate Wdt to bypass the hood side plate.
- Reinstall Bearing Mount Plate and bearing and secure with nuts.
- Before reinstalling motor, remove the 3/8" bolt (Item #36, see Figure 5) holding the Drive Adapter (Item #38) on the Hydraulic Motor (Item #48) and apply a thin layer of grease to the splines of the motor. Reinstall Drive Adapter to the Hydraulic Motor.
- Reinstall Hydraulic Motor Assembly and secure with nuts.
- Reinstall lead hoses in hose clamp.

Labels on Pick-Up Broom Attachment



8682PP – BROOM DANGER LABEL

This label has several important instructions for safe operation regarding flying object hazards and rotational hazards.



8681PP – BROOM WARNING LABEL

All bystanders must stay clear during operation.

This label has several important instructions that must be followed for safe operation of this attachment.

BROOM SPEED

FLOW RATE (gpm)	SPEED (rpm)
16	154
18	173
20	192
22	212
24	231

Speeds are the same for all widths.

Pick-Up Broom Main Assembly

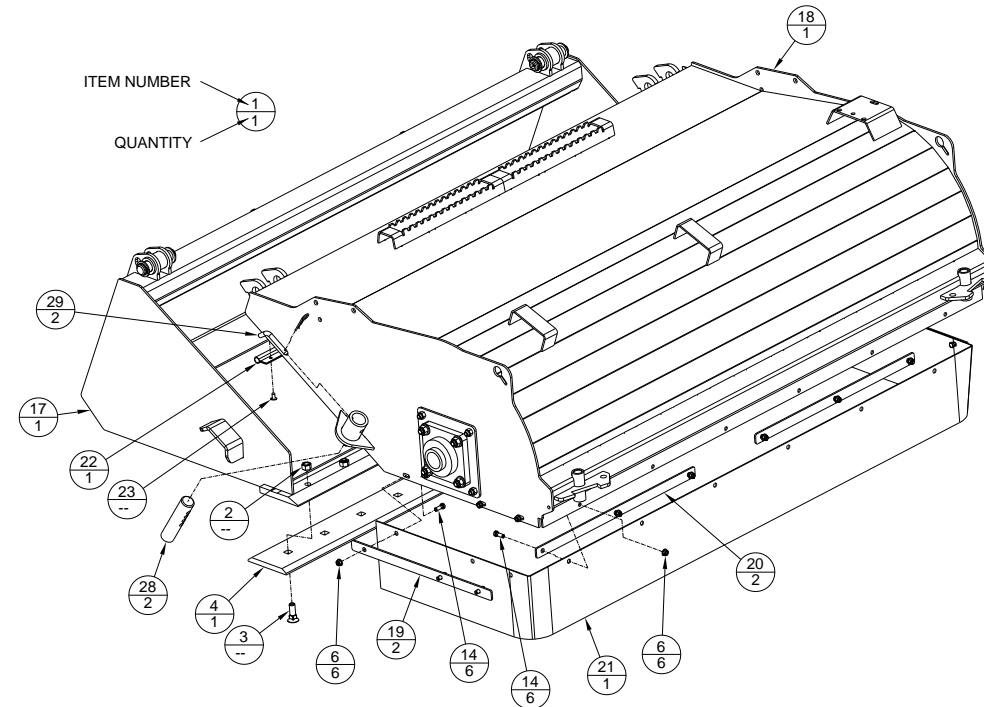


Figure 1.

Pick-Up Broom (PUB) Parts List (cont.)

ITEM	PART NO.	QTY	DESCRIPTION
41	8510VP	1	BROOM MOTOR SEAL RETAINER
42	7719PP	4	5/8"-11 X 2" LG HHCS
43	7773PP	1	2" BEARING W/4 HOLE FLANGE
44	7916VP	1	VAB BEARING MOUNT PLATE
45	7957PP	4	5/8" SAE FLAT WASHER
46	9107VW	1	DRUM ENGAGEMENT PLATE WDT
47	5226PP	4	1/2"-13 X 1 1/2" LG HHCS
48	9437PP	1	MOTOR ANGLE BROOM

A - See Table 1.

Table 1

MODEL	PUB60	PUB72	PUB84
5/8"-11 TOP LOCK NUT	14	16	18
5/8"-11 X 2" LG PLOW BOLT	10	12	14
BOLT ON EDGE 5/8" X 6"	8874VP	1192VP	1409VP
PUB BUCKET WELDMENT	10771VW	10723VW	10782VW
PUB HOOD WELDMENT	10774VW	10729VW	10785VW
PICK-UP BROOM RUBBER FLAP	8750PP	8467PP	8765PP
PICK-UP BROOM REAR SEAL	8751PP	8733PP	8766PP
5/16" RETAINER PICK-UP BROOM	8	10	12
PUB CORE WELDMENT	10778VW	10736VW	10789VW
NUMBER OF POLY WAFERS	15	18	21
NUMBER OF STEEL WAFERS	14	17	20
WAFER KIT (POLY/WIRE COMBO)	PWC60	PWC72	PWC84
WEIGHT (lb)	990	1120	1250

All poly wafers available, please contact your dealer.

Labels on Pick-Up Broom Attachment (cont.)



5264PP – CRUSH HAZARD WARNING LABEL

This label has several important instructions that must be followed for safe operation of this attachment.



5263PP – PINCH POINT WARNING LABEL

Always keep hands clear of pivot locations when loader hydraulic system is operational.



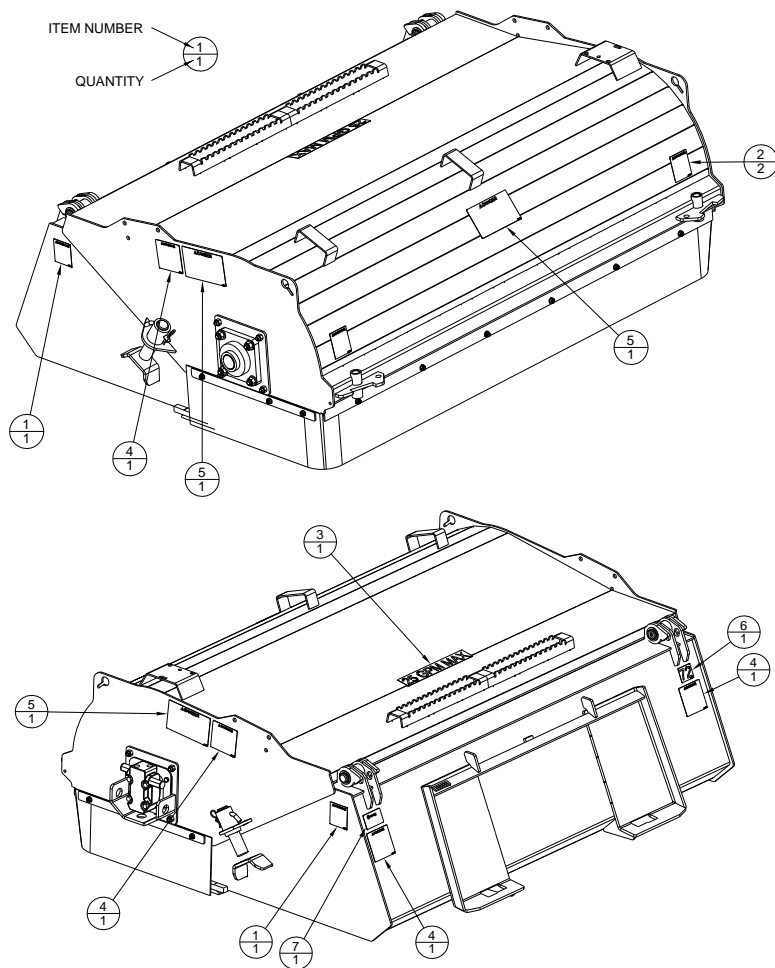
7490PP – 25 GPM MAX LABEL

This label indicates the maximum flow rate for this attachment.

Pick-Up Broom Label Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	5263PP	2	PINCH POINT WARNING LABEL
2	5264PP	2	CRUSH HAZARD WARNING LABEL
3	7490PP	1	25 GPM MAX LABEL
4	8681PP	4	BROOM WARNING LABEL
5	8682PP	3	BROOM DANGER LABEL
6*	9392PP	1	60 WIDTH LABEL
	9397PP		72 WIDTH LABEL
	9399PP		84 WIDTH LABEL
7	SERIALTAG	1	SERIAL NUMBER TAG

*Pick-Up Broom supplied with one, depending on width.



Pick-Up Broom (PUB) Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	1003PP	18	1/2"-13 REVERSE LOCK NUT
A 2	1008PP	--	5/8"-11 TOP LOCK NUT
A 3	1036PP	--	5/8"-11 X 2" LG PLOW BOLT
A 4	-----	1	BOLT ON EDGE 5/8" X 6"
5	1075PP	1	3/8" LOCK WASHER
6	6140PP	20	3/8"-16 TOP LOCK FLANGE NUT
7	8697PP	1	HOSE CLAMP ASSEMBLY 3/4" HOSE
8	10684PP	1	5/16"-18 X 3 1/4" LG HHCS
9	7672PP	1	5/16"-18 HEX NUT REV LOCK
10	7053VP	2	CLAMP PIVOT PIN RC30
11	1034PP	2	1/4"-28 STRAIGHT GREASE ZERK
12	1094PP	4	1 1/4" X 10GA MACH BUSHING
13	1095PP	4	1 1/4" EXTERNAL SNAP RING
14	7849PP	20	3/8"-16 X 1" LG HHCS
15	7964PP	8	1/2"-13 X 1 1/4" LG CB
16	7965PP	8	1/2" PUSHNUT BOLT RETAINER
A 17	-----	1	PUB BUCKET WELDMENT
A 18	-----	1	PUB HOOD WELDMENT
19	8455VP	2	RUBBER RETAINING STRIP SIDE
20	8456VP	2	RUBBER RETAINING STRIP FRONT
A 21	-----	1	PICK-UP BROOM RUBBER FLAP
A 22	-----	1	PICK-UP BROOM REAR SEAL
A 23	8865PP	--	5/16" RETAINER PICK UP BROOM
24	10764PP	2	HYD HOSE 3/4" X 144" LG 12MB TO 12FJX
25	9028PP	2	ADAPTER 12MJ TO 10MB
26	6734PP	1	COUPLER FEMALE 12FB
27	6735PP	1	COUPLER MALE 12FB
28	8870VP	2	PICK-UP BROOM ADJUSTMENT SHAFT
29	8873PP	2	1/2" X 3" LG BENT PIN W/CLIP
30	5149PP	4	1/2"-13 X 2" LG HHCS
31	10230VW	1	BROOM DRIVE FLANGE WELDMENT
A 32	-----	1	PUB CORE WELDMENT
33	8398VP	1	PICK-UP BROOM CAP MOTOR END
A 34	8478PP	--	WAFER 26 POLY
A 35	8479PP	--	WAFER 26 STEEL
36	6970PP	1	3/8"-16 X 3 1/2" LG HHCS
37	5225PP	2	1/2"-13 X 1 3/4" LG HHCS
38	7908VW	1	HYD MOTOR DRIVE ADAPTER WDT
39	10742VW	1	BROOM MOTOR CAN WELDMENT
40	8509PP	1	BROOM MOTOR RUBBER SEAL