



## Tunnel Washer – RJ-TWS

The RJ-TWS is an automated system for washing small containers and components such as food trays. These efficient tunnel washers can be manufactured with either a chain conveyor or an overhead track depending on the products being fed through the machine.

The standard RJ-TWS contains two stages, wash & rinse. During the wash stage, a heated aqueous detergent can be used to aid in the degreasing process. The solution is re-circulated and filtered back into the integral sump for reuse. The rinse section uses fresh water to remove any remaining cleaning solution.

The RJ-TWS has been installed at many facilities in order to automate repeatable decontamination processes. This has allowed our customers to drastically reduce running costs



**Fig. 1:** Tunnel Washer – RJ-TWS



**Fig. 2:** Clean vessels exiting an RJ-TWS

## Machine Construction

### Cabinet & Liquor Tanks

The integral fabrication is robustly constructed from 5mm stainless steel plate, consisting of two heated sumps located beneath a tunnel which contains jetted spray pipes and through which the conveyor traverses. As far as is practical the whole machine is insulated with 30mm mineral wool slabs, protected and held in position by an outer skin of 20 gauge stainless steel sheeting. The tunnel is fitted with the following:

1. A loading section, usually one basket or largest component length.
2. Three dead sections within the tunnel at the start middle and end to ensure the containment of the heated washing and rinsing solutions within the appropriate section of the machine.
3. A wash and rinse spray section containing all-around loops of spray pipes fitted with "15° Vee" pattern spray jets aligned such that the sprays merge, giving full coverage of the wash and rinse envelopes.
4. Two drain areas allowing drainage back to the source of the wash and rinse solutions.
5. An offload section, usually at least one workbasket or one component long.

### **Heating Electric**

Multiple 6 kW. stainless steel electric immersion type heaters are fitted to the sumps with a general adjustable thermostat control for each sump. (For rating see schedule) Where the machine is to be employed on short cycle continuous processing of heavy masses of cold metal, extra heaters may be fitted to compensate for the extra heat losses that will occur.

### **Low Water Heater Element Protection**

Low water level safety devices are incorporated into the control circuit to prevent damage to the heating elements, an indicator light located in the panel door will illuminate on low water condition. If low water condition is reached during cycle, the machine will stop.

### **Pumps and Jetting**

Close-coupled centrifugal type pumps are fitted to all machines, pumping into mild steel pipework to feed the rotating spray arms inside the cabinet. The rotating spray arms are fitted with removable spray jets to give a working pressure of approximately 5.0 to 6.0 bar\*. The jets have a Vee spray pattern, set in line so that the sprays converge to achieve maximum coverage of the wash area.

### **Extraction Fan**

A bifurcated steam extraction fan is fitted to the top of the cabinet, fully wired into cycle during the machine manufacture to give the correct sequence of the operation to assist natural thermal draught to clear the cabinet of steam when the door is open and to minimise heat losses during the cycle. The fan is actuated at the commencement of the drain time out period and will run continuously until the next cycle start unless deliberately stopped.

### **Filtration (*Option to fit fine particulate filtration to the delivery side of the wash pump*)**

All machines are fitted with coarse filtration baskets on the fluid return side, filtration on this side is necessarily coarse since fine mesh filters can quickly blind up causing pump starvation. Optionally, inline fine particulate filtration may be fitted to the delivery side of the pump consisting of a free-standing upright cylindrical vessel measuring 380mm. dia. x 1066mm. high containing three 762mm. long x 100mm. dia. perforated metal sleeves into which washable /renewable, graded polypropylene sock type filter elements are fitted. Washable element grading's range from 800 microns down to 100 microns. Renewal felt elements will filter down to 10 microns.

Fitting of inline filtration ensures that particulate is not recirculated to block spray jets and/or, re-deposit on the components, ensuring maximum cleaning

Efficiency is maintained at all times. The filter also prevents abrasive substances from entering the spinner arm bearings which are pressure lubricated by the cleaning solution, thus ensuring maximum life for these items and generally keeping maintenance requirements to a minimum.

### **Controls & Gauges**

A fully wired control panel is provided housed in an IP66 electrical enclosure containing all fuses, contactors, relays timers etc. The panel is mounted on the left hand side of the machine near the front as standard; any other preferred position should be clearly notified with order. A suitably rated electric isolator is provided, interlocked with the control panel door. The machine control buttons and

sequence indicator lights are all mounted on the control panel door. Gauges to indicate the working spray pressures and temperature in the sump are provided, mounted to the front of the machine.

ROTAJET MACHINE MODEL	RJ-TWS.55
<b>Materials of Construction</b> – Stainless Plate	5mm
<b>Wash Sump Capacity</b> (L)	1000
<b>Rinse Sump Capacity</b> (L)	450
<b>Particulate Filter Capacity</b> (L)	136
<b>Wash Sump Heating:</b> Electric (kW)	36
<b>Rinse Sump Heating:</b> Electric (kW)	18
<b>Wash Pump Rating:</b> Electric (kW)	5.5
<b>Rinse Pump Rating</b> (kW)	4.0
<b>Nominal Spray Pressure</b> (Bar)	3.0
<b>Effluent Discharge Pump Rating</b> (kW)	0.37*
<b>Extraction Fan Rating</b> (kW)	0.37*
<b>Oil Skimmer Motor Rating</b> (kW)	0.37*
<b>Machine Payload Envelope Height</b> (mm)	500
<b>Machine Payload Envelope Width</b> (mm)	500
<b>Footprint:</b> length x width (mm)	3500 x2000
<b>Loading and exiting height</b> (mm)	1120

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