rollinrackwasher.com

V-TAI · PTW-1900 Roll-in Rack Trolley Washer

PTW-1900 Installation Guide

Site survey, civil work, utility connections, commissioning

Document version 1.0

Manufacturer: Shenzhen Vtai Electrical Appliance Co., Ltd.

Email: info@v-tai.com · WhatsApp: +86 135 0962 3269

Website: rollinrackwasher.com

Document version: 1.0

Product: V-TAI PTW-1900 Roll-in Rack Trolley Washer

Manufacturer: Shenzhen Vtai Electrical Appliance Co., Ltd.

Contact: info@v-tai.com · +86 135 0962 3269

1. Pre-installation site survey

Before machine arrival, confirm the following at the install location. The V-TAI engineering team can perform a remote site survey from CAD drawings — submit to info@v-tai.com.

1.1 Floor space

Parameter	Specification
Machine footprint	1845 × 2050 mm
Door swing	1200 mm both sides (one side acts as loading, opposite as unloading)
Service clearance	1 m left + 1 m right + 600 mm rear
Total recommended footprint	**3500 × 4000 mm** (pit install), **3500 × 5500 mm** (ramp install)
Floor levelness	±2 mm over machine footprint
Floor load rating	Minimum 250 kg/m² (standard machine); 400 kg/m² if reinforced trolley option ordered

1.2 Ceiling and overhead

- Minimum ceiling height: **2900 mm** (machine 2650 mm + exhaust duct headroom)
- Vertical clearance above exhaust port: 250 mm minimum
- No sprinkler or low-hanging duct over machine envelope

1.3 Utility availability

Service	Specification	Notes
Electrical (electric heat)	380V / 3-phase / 50Hz / 100A breaker	60Hz / 208V / 480V variants available
Electrical (steam heat)	380V / 3-phase / 50Hz / 16A breaker	Steam version only
Water supply	3/4" cold, 2–4 bar dynamic	Soften if hardness > 12°dH
Steam supply	1" line, 8–10 bar saturated	Steam version only; ~35 kg/cycle
Drain	2" hot-water-rated, slope 1:50 to building stack	Grease trap upstream (code requirement)
Exhaust	Ø480 mm to exterior or steam-condensation hood	~60–80 m³/hour

1.4 Network (optional)

Ethernet RJ45 drop within 5 m of machine if integrating PLC with plant SCADA / MES (Modbus RTU, OPC-UA).

---

2. Civil work specifications

Two installation configurations. Choose ONE before machine arrival; civil work cannot be redone mid-project.

2.1 Pit installation (premium, 70% of professional installs)

The machine drops into a recessed floor pit so the chamber floor sits flush with the existing kitchen floor. Trolleys roll level in and out — no ramp resistance, no ergonomic load on operators.

Pit dimensions for PTW-1900:

- Pit footprint: 2000 × 2200 mm
- Pit depth: 250 mm
- Floor slope: 1:50 toward the chamber drain
- Finish: sealed concrete OR stainless steel pan liner
- Anchor points: 4 × M12 anchor bolts per machine corner (mark from CAD drawing supplied by V-TAI)

Civil scope of work:

1. Floor saw-cut along pit perimeter
2. Concrete excavation to 250 mm depth
3. Sub-base preparation (compacted aggregate 100 mm)
4. Drain re-routing if existing drain conflicts
5. Reinforced concrete pour, finished smooth and sloped
6. Sealing (food-grade epoxy or stainless liner)
7. Anchor bolt placement per V-TAI CAD

Cost estimate: USD $3,000–$8,000 depending on building type, local labor, and drain re-routing complexity.

2.2 Ramp installation (operationally flexible, 30% of installs)

The machine sits on the existing floor. A single-sided stainless ramp on the loading side bridges floor to chamber threshold. No civil work needed — relocatable if you move buildings.

Ramp specifications:

- Length: **1.5 m on the loading side only** (single-sided)
- Slope: 1:10 (10%)
- Material: SUS304 anti-slip diamond plate
- Height: 250 mm at chamber edge, 0 at floor edge
- Removable for chamber service access
- Standard accessory — shipped with the machine

Footprint impact:

- Pit install: 3500 × 4000 mm total area
- Ramp install: 3500 × 5500 mm total area (+1.5 m on the loading side)

Operational note: heavy loaded trolleys (200+ kg) may need a winch on the ramp. Ramp transition adds ~5–8 seconds to per-cycle load time vs pit installation.

---

3. Delivery & unpacking

3.1 What ships

The machine arrives in a wooden crate, FOB Shenzhen port:

- **Crate dimensions**: ~2100 × 2300 × 2800 mm
- **Crate weight**: ~840 kg (machine 720 kg + crate 120 kg)
- Crate is marked: **"PTW-1900 — Fragile — Keep Upright"**
- Forklift pockets on both long sides

3.2 Receiving inspection

Upon delivery:

1. Photograph the crate before opening — any visible damage must be claimed against the freight carrier within 7 days.
2. Open the crate top first; inspect the machine for transit damage.
3. Verify the contents against the included packing list:

- 1 × PTW-1900 main unit
- 1 × ramp (if ramp install)
- 1 × PLC operator manual (printed)
- 1 × spare nozzle kit (4 nozzles + cleaning tool)
- 1 × spare door gasket
- 1 × installation hardware bag (M12 anchor bolts × 4)
- 1 × commissioning checklist (this document, or quick-reference card)

3.3 Moving into position

- Move with forklift only (do not pry under the machine base)
- Use the supplied lifting eyes (4 × M16 on the machine top corners) for crane lifting
- Place gently — chamber rotation bearing is impact-sensitive
- Align to anchor bolts (pit install) OR center on ramp (ramp install)

---

4. Utility connections

Perform connections in this order: electrical → water → drain → steam (if applicable) → exhaust.

4.1 Electrical hookup

■■ **Lockout-tagout the supply breaker before connecting.** Only qualified electricians may perform electrical work.

1. Run 3-phase 380V cable from building distribution to machine rear connection box
2. Cable size: 6 mm² minimum for electric-heating PTW-1900 (70 kW)
3. Terminate L1, L2, L3, N, PE per the wiring diagram inside the connection box
4. Verify earth bond continuity (<1 Ω chassis to earth)
5. Apply power and confirm PLC powers up

4.2 Water supply

1. Connect 3/4" cold-water line to the inlet stub on machine rear
2. Install upstream isolation valve and water hammer arrestor
3. If hard water (>12°dH), water softener or RO pre-treatment upstream of machine
4. Pressurize and inspect all joints for leaks

4.3 Drain

1. Connect 2" drain line from machine bottom to building grease trap
2. Slope 1:50 minimum toward grease trap
3. Hot-water-rated PVC (Class 6) or stainless tubing
4. Install vacuum breaker if drain line rises above chamber bottom

4.4 Steam (steam version only)

1. Connect 1" steam line to inlet on machine left side
2. Install upstream pressure regulator (set to 8 bar)
3. Install steam trap on condensate return line
4. Pressurize and inspect for leaks

4.5 Exhaust

1. Connect Ø480 mm flexible duct from chamber top to exterior wall OR steam-condensation hood
2. Install backdraft damper at exterior wall termination
3. Slope duct downward away from machine to prevent condensation return

5. Commissioning

5.1 Pre-cycle checks

- ☐ All utilities connected and pressurized
- ☐ Chamber empty (no shipping protection foam left inside)
- ☐ Spray nozzles all installed and oriented correctly
- ☐ Door gasket seated evenly
- ☐ Chemical reservoirs filled (alkaline detergent + acid rinse)
- ☐ Drain valve confirmed open

5.2 First cycle (no-load validation)

1. Press **Power** on PLC; wait for boot screen
2. Select **Standard 6-min** cycle profile
3. Close doors, latch firmly
4. Press **Start**
5. Observe cycle phases:

- Pre-rinse (~45 sec): low-pressure water visible through chamber window
- Wash (~3 min 15 sec): high-pressure recirculation, detergent dosing audible
- Drain (~20 sec)
- Sanitization rinse (~1 min 30 sec): 82°C indicator illuminates
- Drain + dwell (~30 sec)

1. Cycle complete; doors auto-unlatch
2. Verify PLC cycle log shows: profile = Standard, wash temp peak, rinse temp peak ≥82°C, cycle duration ~6:00

5.3 Loaded validation cycle

1. Load a representative bakery rack trolley with 30 dirty sheet pans (or equivalent)
2. Repeat Standard 6-min cycle
3. After cycle: inspect 5 random trays for cleanliness — should be visually clean and dry-to-touch within 60 seconds
4. Document the cycle log CSV export to USB for plant records

5.4 Acceptance sign-off

The V-TAI commissioning engineer (or authorized service partner) will run a 5-cycle acceptance test and sign the **Acceptance Certificate** confirming:

- Machine achieves 82°C rinse on 5/5 cycles
- No leaks at any joint

- All PLC profiles execute correctly
- Operator trained (minimum 1 day-shift + 1 night-shift operator)

Acceptance Certificate is the warranty start-date document.

6. Operator training

Standard commissioning includes 1-day on-site operator training covering:

- PLC touch-screen interface walkthrough
- Cycle profile selection
- Daily startup and shutdown procedures
- End-of-shift drain and chamber wipe-down
- Detergent reservoir refill
- Basic troubleshooting (paper-jam-equivalent issues)

For extended training (multilingual, multi-shift, train-the-trainer), arrange in advance with the V-TAI sales team.

7. Post-installation contacts

- **Service hotline (China time)**: +86 135 0962 3269 (WhatsApp)
- **Service email**: info@v-tai.com
- **Spare parts**: 4-week lead time worldwide; 1-week for North American / EU stocked SKUs
- **Warranty registration**: complete the form sent with your Acceptance Certificate; submit to info@v-tai.com within 14 days of acceptance

This installation guide is provided as part of the V-TAI PTW-1900 standard delivery. For project-specific installation drawings, refer to your individual project's CAD packet.