ECOATECH

DRIVING INNOVATION

Ecoatech M2K and ULP Pre-Start Checklist

- **M2K:** higher pressure, larger air motor, 100cc lowers
- **ULP:** lower pressure, smaller air motor, 50cc lowers
- Perform before every shift.

Safety First

- Wear required **PPE**: safety glasses, gloves and hearing protection.
- **Release all pressure** before touching fittings, hoses or the MicroMix.
- Never point the MicroMix or spray lines at anyone.

Air Supply Check

> **Important:** Clean, dry compressed air is essential for equipment longevity and performance. Moisture or contaminants in the air supply will damage the air motor and reduce pump performance.

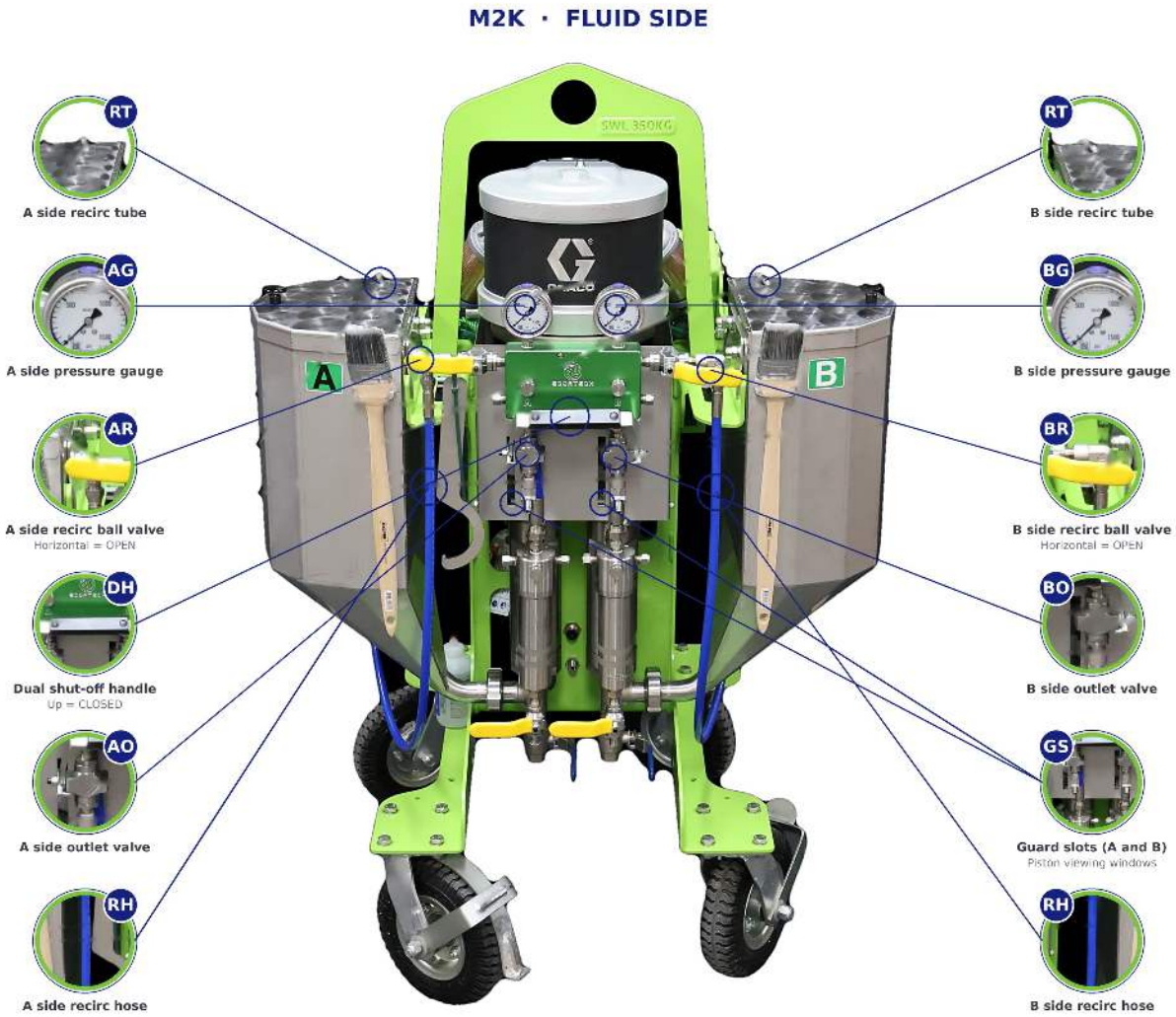
1. Connect air to the compressed air inlet (**AI**). Check supply pressure is correct.
2. Inspect air hoses and fittings for damage or leaks.

Component Identification

Each unit is shown from the fluid side and the air side. Each photo has its own key underneath, matching the codes on the photo.

> **Valve positions:** Recirc ball valves (AR, BR) are **open when horizontal** and **closed when vertical**. The dual shut-off handle (DH) is **closed when up**. On the MicroMix, the dual open/close handle (MH) is **closed when up** and the flush handle (FL) is **closed when straight forward**.

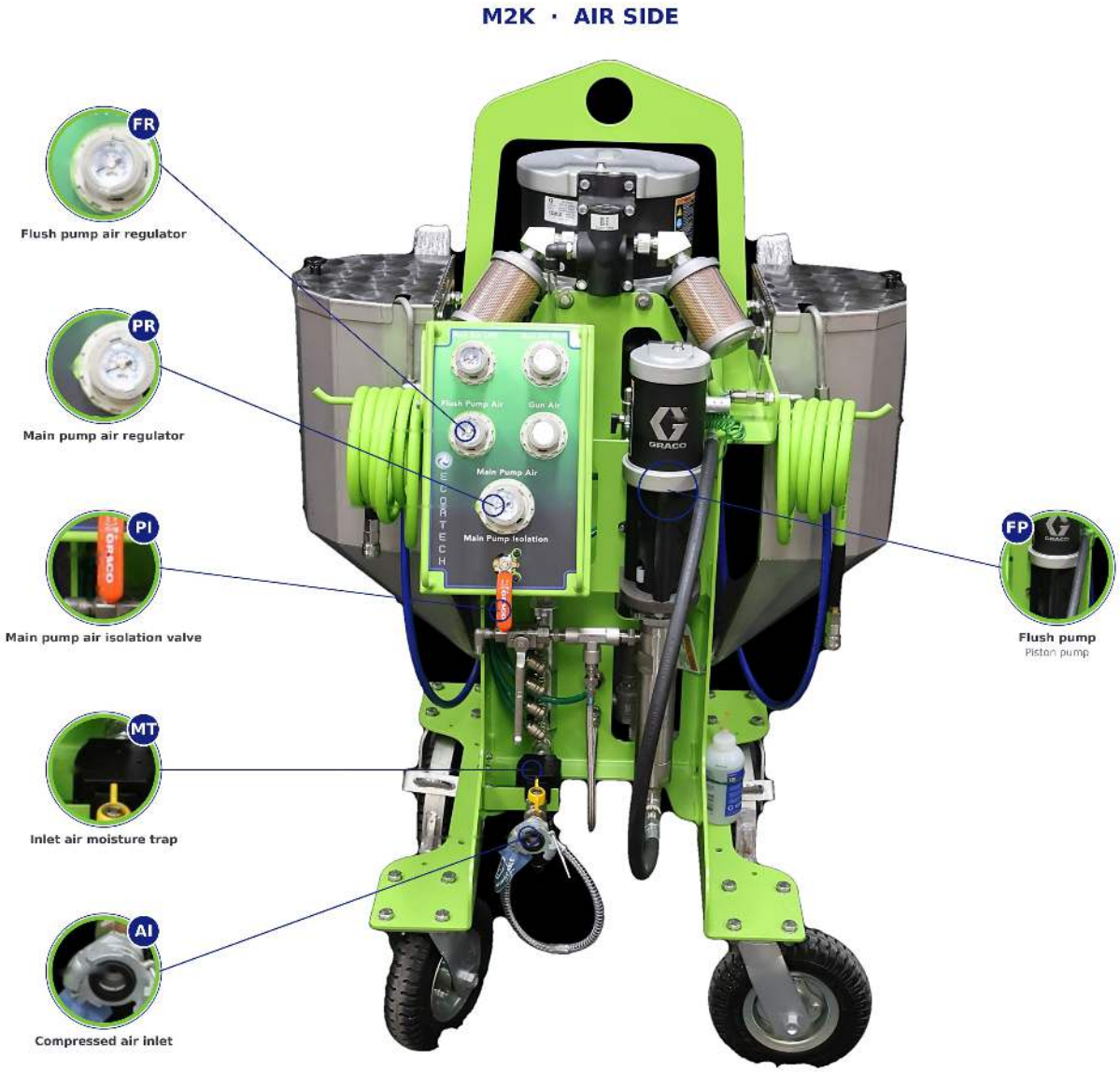
M2K



M2K fluid side key

Key	Component	Meaning
AR	A side recirc ball valve	**A** side **R**ecirc
BR	B side recirc ball valve	**B** side **R**ecirc
AG	A side pressure gauge	**A** side **G**auge
BG	B side pressure gauge	**B** side **G**auge
AO	A side outlet valve	**A** side **O**utlet
BO	B side outlet valve	**B** side **O**utlet

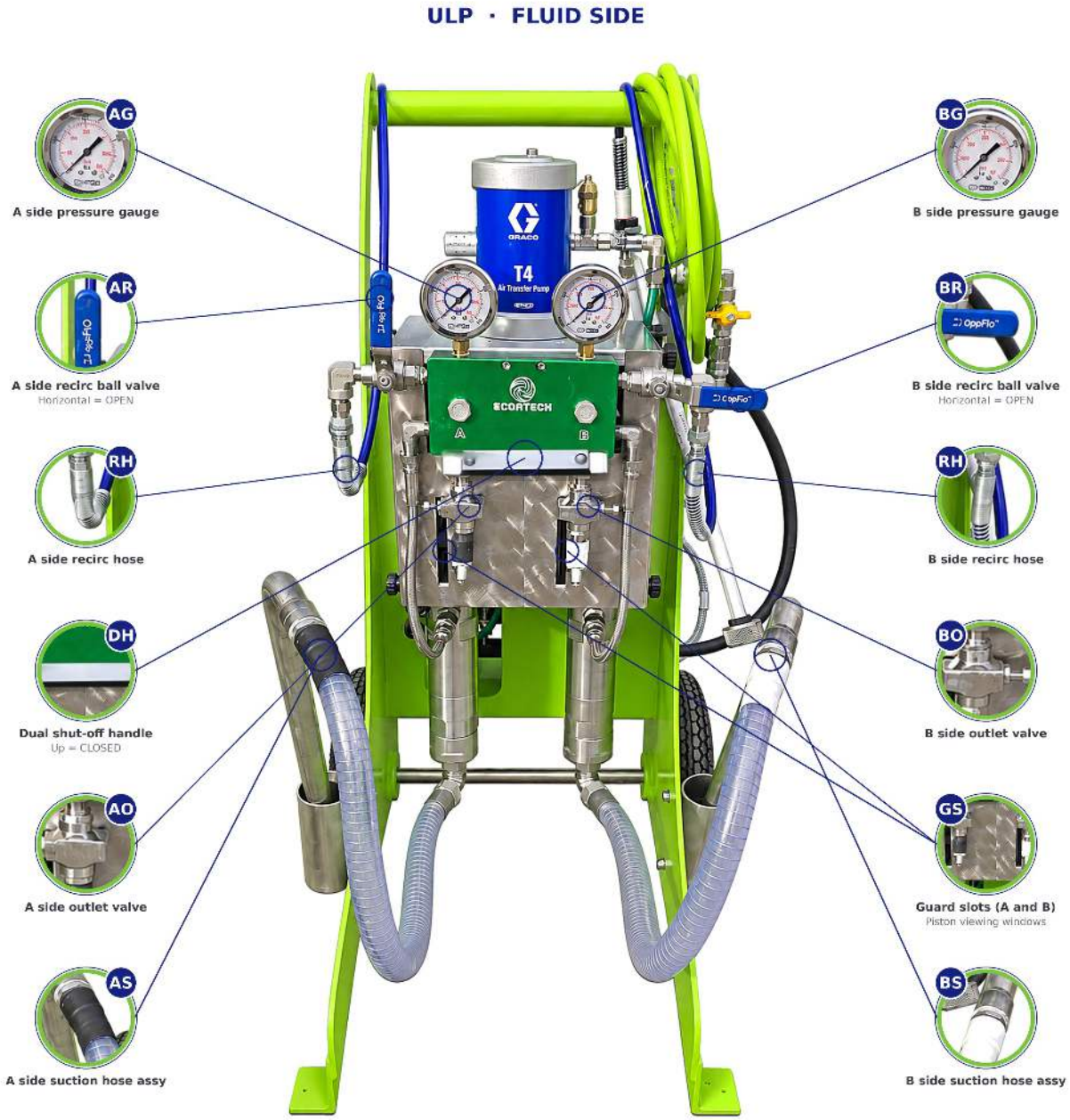
Key	Component	Meaning
DH	Dual shut-off handle	**D**ual **H**andle
GS	Guard slots (A and B), piston viewing windows	**G**uard **S**lot
RH	A side / B side recirc hose	**R**ecirc **H**ose
RT	A side / B side recirc tube	**R**ecirc **T**ube



M2K air side key

Key	Component	Meaning
AI	Compressed air inlet	**A**ir **I**nlet
MT	Inlet air moisture trap	**M**oisture **T**rap
PI	Main pump air isolation valve	**P**ump **I**solation
PR	Main pump air regulator	**P**ump **R**egulator
FR	Flush pump air regulator	**F**lush **R**egulator
FP	Flush pump (piston pump)	**F**lush **P**ump

ULP



ULP fluid side key

Key	Component	Meaning
AR	A side recirc ball valve	**A** side **R**ecirc
BR	B side recirc ball valve	**B** side **R**ecirc
AG	A side pressure gauge	**A** side **G**auge

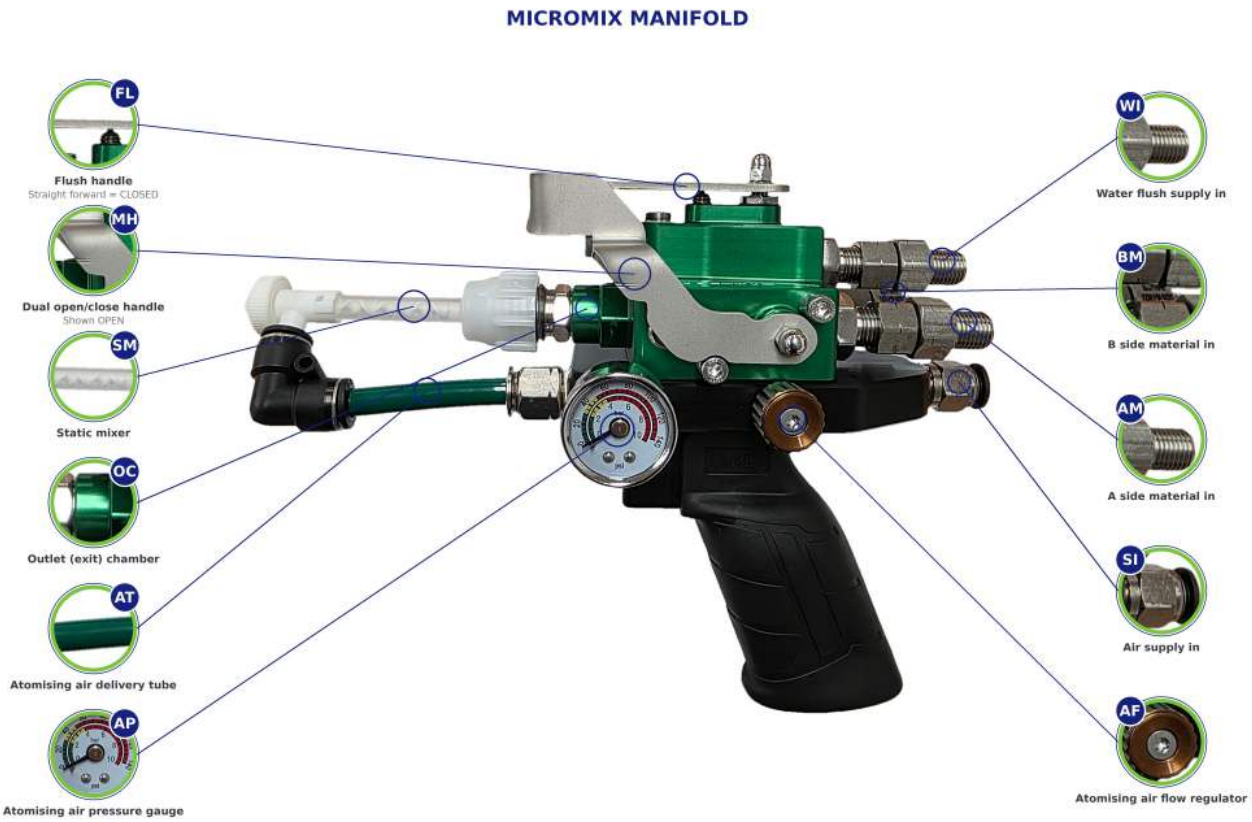
Key	Component	Meaning
BG	B side pressure gauge	**B** side **G**auge
AO	A side outlet valve	**A** side **O**utlet
BO	B side outlet valve	**B** side **O**utlet
DH	Dual shut-off handle	**D**ual **H**andle
GS	Guard slots (A and B), piston viewing windows	**G**uard **S**lot
RH	A side / B side recirc hose	**R**ecirc **H**ose
AS	A side suction hose assy	**A** side **S**uction
BS	B side suction hose assy	**B** side **S**uction



ULP air side key

Key	Component	Meaning
AI	Compressed air inlet	**A**ir **I**nlet
MT	Inlet air moisture trap	**M**oisture **T**rap
PI	Main pump air isolation valve	**P**ump **I**solation
PR	Main pump air regulator	**P**ump **R**egulator
FR	Flush pump air regulator	**F**lush **R**egulator
FP	Flush pump (diaphragm pump)	**F**lush **P**ump
FV	Flush pump outlet valve, water	**F**lush **V**alve

MicroMix



MicroMix key (MM = MicroMix manifold, whole unit)

Key	Component	Meaning
FL	Flush handle	**F**lush **L**ever
MH	Dual open/close handle	**M**icroMix **H**andle
OC	Outlet (exit) chamber	**O**utlet **C**hamber
SM	Static mixer	**S**tatic **M**ixer
AT	Atomising air delivery tube	**A**tomising **T**ube
AP	Atomising air pressure gauge	**A**tomising **P**ressure
AF	Atomising air flow regulator	**A**tomising **F**low
WI	Water flush supply in	**W**ater **I**n
AM	A side material in	**A** side **M**aterial
BM	B side material in	**B** side **M**aterial
SI	Air supply in	**S**upply **I**n

Step 1: Stall Test

- **Prime first:** the unit must be **fully primed with water** before starting the stall test.
- **Goal:** intake ball seals on the **downstroke**; piston ball seals on the **upstroke**.
- Test **each lower separately**.
- **Caution:** do not exceed the stall test pressure (**M2K 350 psi**, **ULP 150 psi**). One air motor drives both lowers, so loading one side unbalances the force.

A Side

1. Dual shut-off handle (**DH**) **up** (closed).
2. **Open** the B side recirc ball valve (**BR**). Leave open for the whole A side test.
3. Keep the A side recirc ball valve (**AR**) **closed**.
4. Using the main pump air regulator (**PR**), increase fluid pressure on the A side gauge (**AG**) to:
    - **M2K:** 350 psi
    - **ULP:** 150 psi

5. Crack open **AR very slightly**. Watch the A piston through the guard slot (**GS**).
6. **Upstroke:** let the piston rise slowly. Halfway up, **close AR**.
    - Piston stops and holds for 10 seconds = **piston ball OK**.
7. **Downstroke:** slowly open **AR** until the piston reverses. Halfway down, **close AR**.
    - Piston stops and holds for 10 seconds = **intake ball OK**.
8. Close the main pump air regulator (**PR**).
9. Slowly open **AR** to bleed pressure.
10. Confirm **AG and BG at zero**.

B Side

1. Repeat the A side steps on the B side, using **BR**, **BG** and the B guard slot (**GS**).
2. Keep **AR open** throughout.
3. Finish with **AG and BG at zero**.

If the Piston Won't Stop

1. **Check the recirc ball valve (AR or BR):** pull the recirc hose (**RH**).
    - Invert the recirc tubes (**RT**) so the **openings face up**.
    - Water coming out with the valve closed = **valve leaking**. Fix it.
2. **Valve OK? The fault is in the lower:**
    - **Creeps on upstroke** = piston ball not seating. Run hot water through, or strip the lower and inspect the piston ball.
    - **Travels on downstroke** = intake ball not seating (most common fault). Remove the intake housing bottom and check for dried material or debris.

Step 2: Water Prime Check

1. Unit should have been flushed with water last shift.
2. Check water level in **A and B hoppers**.

Step 3: Circulate Water

1. Pump to **circulation mode**.
2. Circulate water for **2 minutes**.

Step 4: Downstream Leak Test (MicroMix)

1. Set the unit to **spray mode**:
    - Recirc ball valves (**AR**, **BR**) **closed**.
    - Dual shut-off handle (**DH**) **down** (open).
    - MicroMix: dual open/close handle (**MH**) **up** and flush handle (**FL**) **straight forward**. This is the MicroMix closed position.
2. Using **PR**, pressurise the fluid lines and MicroMix (**MM**) to:
    - **M2K:** 350 psi
    - **ULP:** 150 psi
3. Remove the static mixer (**SM**).
4. Hold **MM vertical, nose up**. Check for water in the outlet chamber (**OC**).
5. Check **AG and BG** are holding.
6. Flush handle (**FL**) **straight forward (closed)**. Using **FR**, increase the flush pump (**FP**) to:
    - **M2K (piston pump):** 250 psi
    - **ULP (diaphragm pump):** 60 psi, with the flush pump outlet valve (**FV**) open
7. Hold **MM** vertical again. **No water** in **OC**.
8. Confirm the flush pump holds pressure:
    - **M2K (piston pump):** watch the **FP** piston. It must **not creep** up or down.
    - **ULP (diaphragm pump): FP** must **stall and stop cycling**. Any further strokes or air exhaust pulses = leak.

Hold time: pressure must hold for at least 10 seconds.

If the Leak Test Fails

1. **Stop.** Do not load EonCoat.
2. Release all pressure.
3. Find and fix the leak (water in **OC**, gauges dropping, or flush pump creeping or cycling).
4. Repeat the leak test until it passes.

Step 5: Ready to Load EonCoat

Only mix or load EonCoat when:

- [ ] All gauges back to **zero**
- [ ] All tests above **passed**

Item	Checked	Initials
Unit (M2K / ULP)		
Date / Shift		
Stall test: A side		
Stall test: B side		
Water prime		
Circulation (2 min)		
Leak test		
Gauges at zero, ready to load		

Revision 00 · 26 November 2026 · Ecoatech