

M2K Mix Manifolds

334625B

EN

For proportional mixing of plural component coatings. For professional use only.

Part 17D763 - M2K manifold

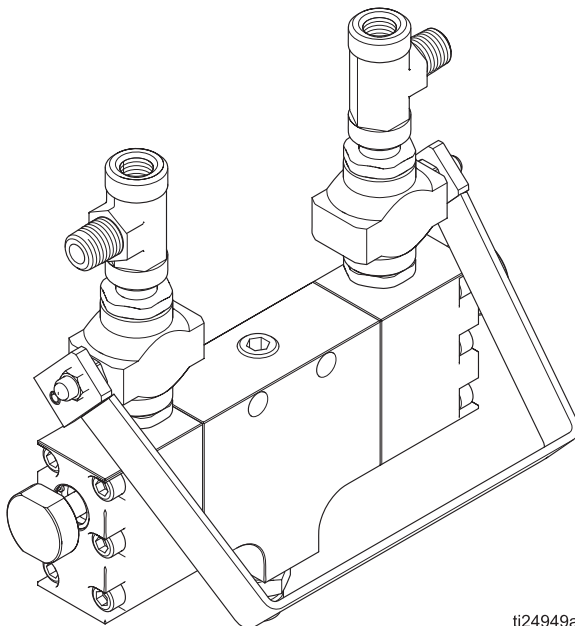
Part 24W861 - Remote M2K manifold

See page 2 for model information including maximum working pressure.



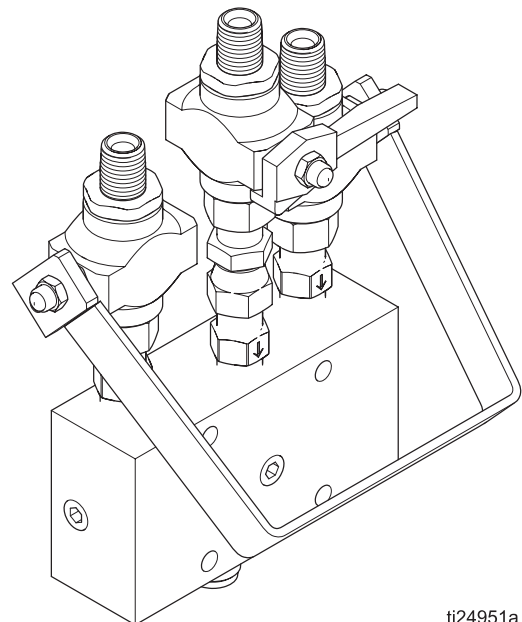
Important Safety Instructions

Read all warnings and instructions in this manual and in the M2K Spray Packages Instructions-Parts manual. Save all instructions.



ti24949a

Part No. 17D763



ti24951a

Part No. 24W861

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Related Manuals




Manual	Description
333309	M2K Spray Packages Instructions-Parts

Models

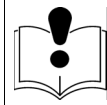
Part No.	Maximum Working Pressure psi (bar, MPa)	Description
17D763	3000 (206.8bar, 20.68 MPa)	Mechanical 2K Manifold
24W861	3000 (206.8bar, 20.68 MPa)	Remote M2K Manifold

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 WARNING	
	<p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc). • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Ground all equipment in the work area. See Grounding instructions. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. • If there is static sparking or you feel a shock, stop operation immediately. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.
	<p>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Do not spray without tip guard and trigger guard installed. • Engage trigger lock when not spraying. • Do not point gun at anyone or at any part of the body. • Do not put your hand over the spray tip. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses and couplings daily. Replace worn or damaged parts immediately.

! WARNING



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



MOVING PARTS HAZARD

Moving parts can pinch or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** in this manual. Disconnect power or air supply.



TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read MSDS's to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.



PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:

- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

Installation

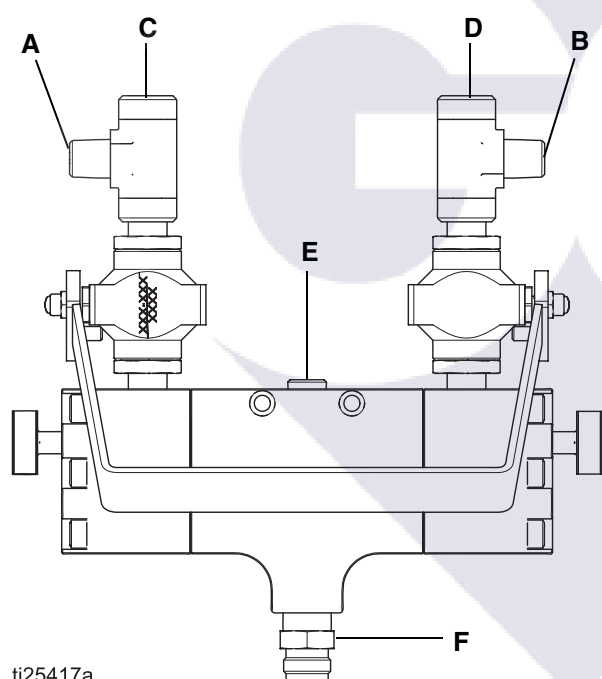
Mix manifold 17D763 is intended for use as a spray package or remote mounted manifold. It has a through check flushing feature that provides for an independent flush of resin and catalyst components from upstream of the fluid check valves. This ensures a clean flush and minimal maintenance from mixed material build up within the manifold.

The 24W861 manifold provides a more durable manifold for remote and portable manifold applications. It can be easily disassembled for cleaning or manifold porting and check valves.

For assistance in setting up a plural component system, you should contact your Graco distributor. This will help ensure that you select the proper type and size of equipment for your job.

Connection Inlets

M2K Manifold 17D763

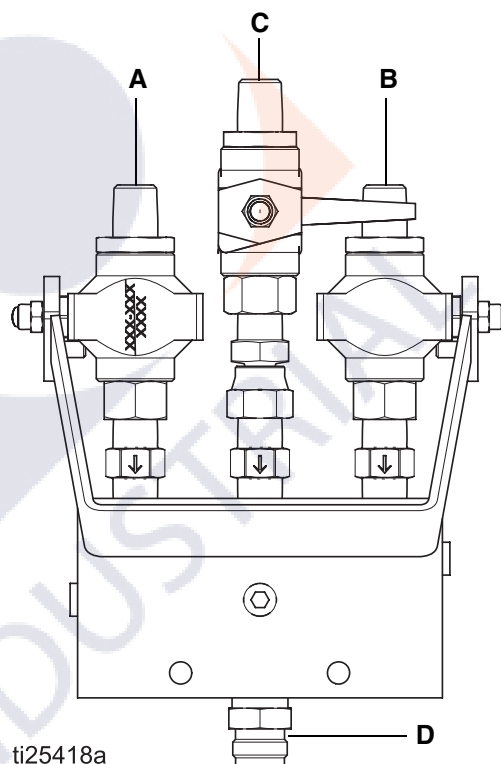


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A	A Component Fluid Inlet	1/4" NPT (m)
B	B Component Fluid Inlet	1/4" NPT (m)
C	A Gauge Port	1/4" NPT (f)
D	B Gauge Port	1/4" NPT (f)
E	Solvent Inlet Port	1/4" NPT (f)
F	Fluid Outlet Port	3/8" NPSM (m)

FIG. 1 M2K Manifold

Remote 2K Manifold 24W861






ti25418a

A	A Component Fluid Inlet	1/4" NPT (m)
B	B Component Fluid Inlet	1/4" NPT (m)
C	Solvent Inlet Port	1/4" NPT
D	Fluid Outlet Port	3/8" (m)

FIG. 2 Remote 2K Manifold

Grounding

						
<p>The equipment must be grounded to reduce the risk of static sparking. Static sparking can cause fumes to ignite or explode. Grounding provides an escape wire for the electric current.</p>						

The following are minimum grounding requirements for a basic electrostatic system. Your system may include other equipment or objects which must be grounded. Check your local electrical code for detailed grounding instructions. Your system must be connected to a true earth ground.

1. **Pump**
Use a ground wire and clamp as instructed in your pump instruction manual.
2. **Fluid Hoses**
Use only grounded hoses with a maximum of 50 feet (15 m) combined hose length to ensure grounding continuity.
3. **Spray gun, manifold, or dispensing valve**
Obtain grounding through connection to a properly grounded connection to a properly grounded fluid hose and sprayer.
4. **Object being sprayed**
According to local code.
5. **Supply Containers**
According to local code.
6. **All solvent pails**
Use only metal pails, which are conductive. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts the grounding continuity. All solvent pails used when flushing must be grounded according to local code.

NOTE: To maintain grounding continuity when flushing or relieving pressure, always hold a metal part of the gun firmly to the side of a grounded metal pail, then trigger the gun.

Connect a ground wire from a true earth ground to the mix manifold or the mix manifold mounting surface if there is electrical continuity between it and the mix manifold.

Follow the specific grounding instructions in the M2K Spray Package manual 333309. The system may have special grounding requirements for the mix manifold.

A ground wire and clamp, part no. 223547, is available from Graco.

Flush Before Using Equipment

The equipment was tested with lightweight oil, which is left in the fluid passages to protect parts. To avoid contaminating your fluid with oil, flush the equipment with a compatible solvent before using the equipment. See **Flushing**, page 7.

Operation

Start-up

The mixer manifold was tested in oil, which was left in to protect the manifold. Before operating, thoroughly flush the manifold to prevent contamination of the fluids.

Start and prime the solvent pump and check the flushing system before connecting the material hoses.

Push the actuating lever forward to open the material valves and back to close them.

Open the solvent valve and flush the mixing equipment immediately after closing the material valves, to prevent hardening in the mixer or dispenser.

Flushing

Follow the Flushing procedure in the M2K Spray Packages manual 333309.



To avoid fire and explosion, always ground equipment and waste container. To avoid injury from splashing, always flush at lowest possible pressure.

NOTICE

Flush the system frequently to prevent fluid from setting up in the dispensing equipment. Be sure there is adequate solvent supply before loading mixed material.

NOTES:

- Flush before changing colors, before fluid can cure in the equipment, at the end of the day, before storing, and before repairing equipment.
- Flush at the lowest pressure possible. Check connectors for leaks and tighten as necessary.
- Use a cleaning fluid that is compatible with the paint being sprayed and the equipment wetted parts.

Spraying

To spray the resin and hardener, turn on the supply pumps, if present. Then push the handle forward (DOWN) to the open position. To stop the flow, move the handle to the UP or closed position.

Manifold Functional Operation

See FIG. 3

Spray Position

- Common handle down “Spray Position”
- Solvent flush “A” closed
- “Solvent flush “B” closed

A and B material flows through A and B valves into mixing chamber. A and B stay separate until exiting the mix chamber.

Flush “B” Position

- Common handle up “Stand-by Position”
- Solvent flush “A” closed
- “Solvent flush “B” open

Solvent flows through the solvent flush “B” check into catalyst fluid passage. Then through catalyst B check through ID of catalyst tube into mix chamber and out of the manifold outlet port.

Flush “A” Position

- Common handle up “Stand-by Position”
- Solvent flush “A” open
- “Solvent flush “B” closed

Solvent flows through the solvent flush “A” check into resin fluid passage. Then through resin A check into the mix chamber around catalyst tube to manifold outlet port.

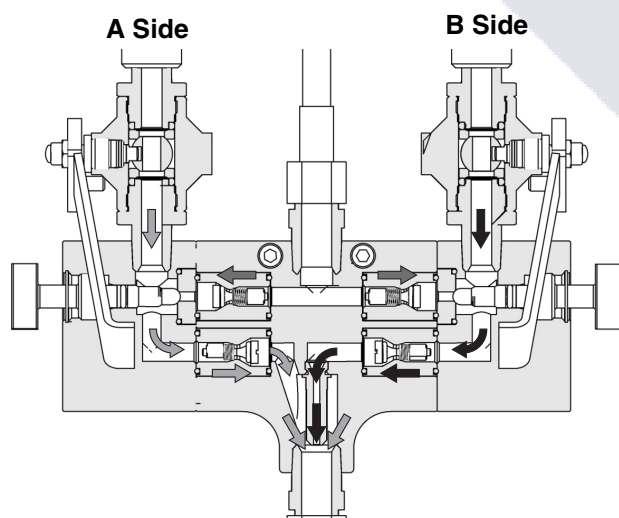


FIG. 3 Fluid flow through the manifold

Pressure Relief Procedure



Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Engage the gun trigger lock, if present.
2. Turn off the bleed-type master air valve and air to supply pumps, if present.
3. Disengage the gun trigger lock, if present.
4. Hold a metal part of the gun firmly to a grounded metal waste container. Trigger the gun to relieve fluid pressure.
5. Engage the trigger lock, if present.
6. Open all fluid drain valves in the system, having a waste container ready to catch the drainage. Leave the drain valve(s) open until you are ready to spray again.
7. If you suspect that pressure has not been fully relieved after following the steps above, check the following:
 - a. The spray tip may be completely clogged. Very slowly loosen the air cap retaining ring to relieve pressure in the cavity between the ball/seat shutoff and the plugged tip. Clear the tip orifice.
 - b. The gun fluid filter or the fluid hose may be completely clogged. Very slowly loosen the hose end coupling at the gun and relieve pressure gradually. Then loosen completely to clear the obstruction.
 - c. After following the steps above, if the spray tip or hose still seems completely clogged, very slowly loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. With tip removed, trigger gun into waste container.

Maintenance



M2K (17D763)

Disassemble Manifold

1. Remove the nipple fitting (13) from the manifold body (1).
2. Remove sparger tube (6) from the manifold body (1) using a 1/4" or 7 mm deep well socket.
3. Loosen the hex nut (14b) and remove the lever actuator (16) from the ball valves (14a).
4. Disconnect manifold ends (2) from the manifold body (1) by loosening the screws (11).
5. Remove the solvent valve handle (5) from the manifold ends (2). To remove handle, remove retaining ring (7) and thread out the valve (5) from the block.
6. Remove o-ring and o-ring back up ring (8, 9) from solvent handle (5).
7. Remove the needle seat valve(4) from the manifold ends (2).
8. Remove o-rings (10) from manifold ends (2).
9. Remove check valve (3) from the manifold body (1).
10. Remove o-rings (12) from the check valve (3).
11. Remove o-rings (8, 9) from solvent handle (5).

Assemble Manifold

1. Place o-rings (8, 9) on solvent handle (5), lubricate.
2. Place o-rings (12) onto check valve (3).
3. Install check valve (3) into the manifold body (1).
4. Place o-rings (10) into manifold ends (2).
5. Put valve needle seat (4) into manifold ends (2).
6. Insert the solvent valve handle (5) into the manifold ends (2).
7. Connect manifold ends (2) into the manifold body (1) and tighten with screws (11). Torque to 26 lb/in.
8. Place the lever actuator (16) onto the ball valves (14a) and secure with hex nut (14b).
9. Install sparger tube (6) into the manifold body (1). Torque to 90 lb/in.
10. Install the nipple fitting (13) into the manifold body (1).

Manifold Repair

NOTE: Repair kits are available for the manifold. Parts included in the kits are indicated with a †, for example (9†).

1. Relieve the Pressure.
2. Remove the twelve socket-head screws (2) to separate the two valve housings (8) from the manifold housing (7). Remove all parts from the housings.
3. Clean all parts thoroughly in a compatible solvent. Use a soft bristle brush to clean the manifold passageways.
4. Install the two check valve assemblies (9†) and valve seats (6†) in the manifold housing (7).
5. Install the needle valve (12), back-up ring (4**), and seal (3†) in each of the valve housings (8).
6. Install six socket-head screws (2) through one valve housing (8) and into the manifold housing (7), so the distance between the housings is 0.060 in. (1.5 mm).

7. Tighten the needle valve slightly, so that the tapered end centers in the seat (6) and holds its position.
8. Turn the six socket screws (2) oppositely and evenly to 60–70 in-lbs (6.7–7.9 Nm). Back off the needle valve (12) slightly.
9. Repeat step 8 as the torque will relax.

NOTICE

Be sure to tighten the six socket screws (2) evenly. The upper four screws, which surround the needle valve assembly (12), are critical in ensuring that the needle seats properly. If the bottom two screws are over-tightened, they will throw off the alignment.

10. Repeat the procedure from step 9 on the other valve housing (8).

Ball Valve Repair

NOTE: Repair Kit 217560 is available for the ball valves. Parts included in the kit are indicated with an asterisk, for example (18*).

When reassembling a ball valve (13 or 24), install the ball (18* or 29*) so that the round hole aligns with the main passageway of the valve body and the square hole aligns with the stem (21 or 32) passageway.

Troubleshooting

						
<p>To avoid serious injury, follow the Pressure Relief Procedure in your M2K Spray Package manual before cleaning, checking, or repairing equipment.</p>						

1. Relieve the pressure before you check or service any system equipment.
2. Check all possible causes and solutions in the Troubleshooting Chart before disassembling the manifold

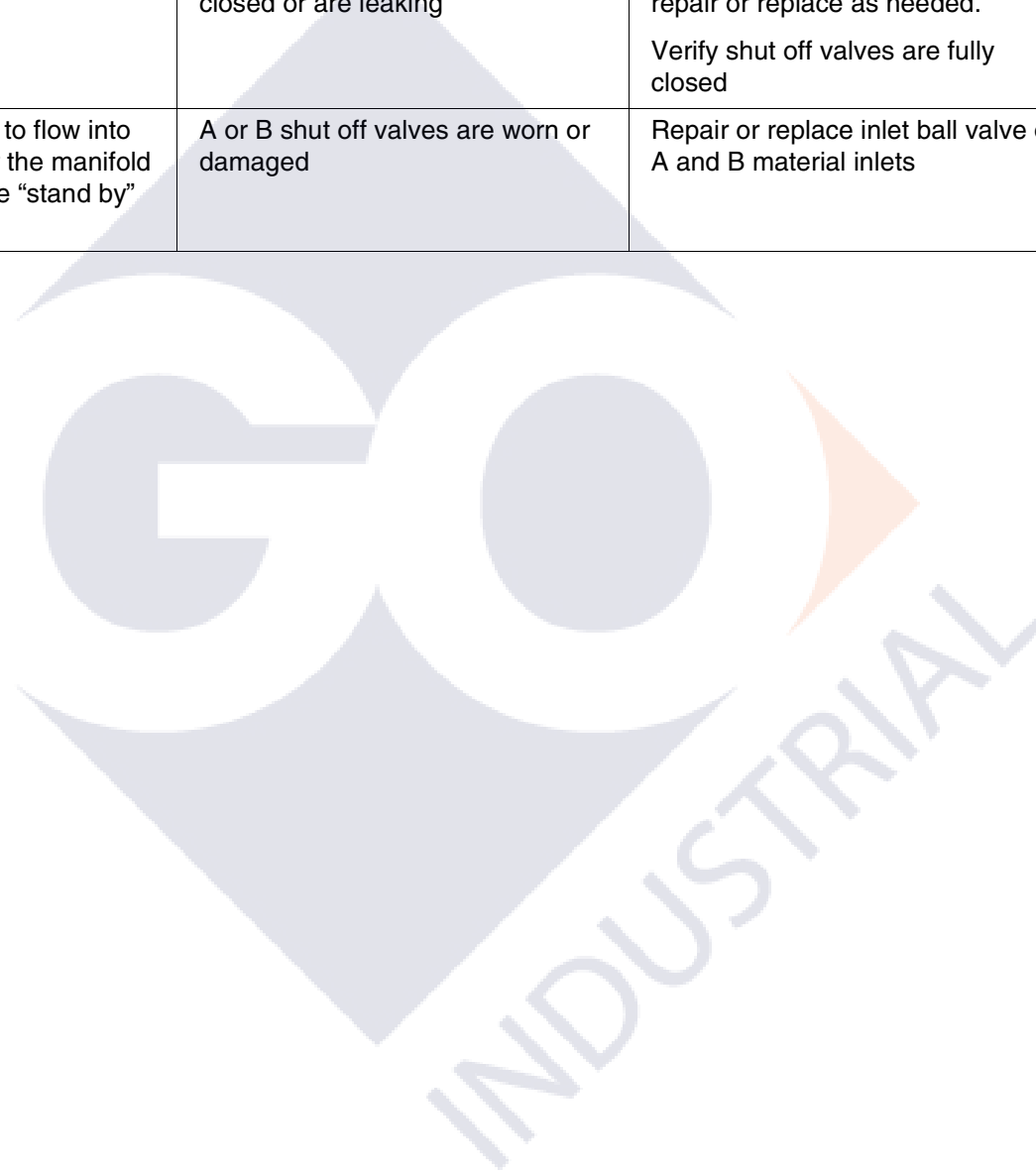
Isolate a Mixing Problem

A mixing problem can be caused by a problem with the pumps, as well as the mix manifold.

1. To isolate the problem, check for any visible leaks:
 - a. Are all air and fluid tubes and hoses properly connected?
 - b. Are supply pumps properly set?
 - c. Do the fluid supplies need refilling?

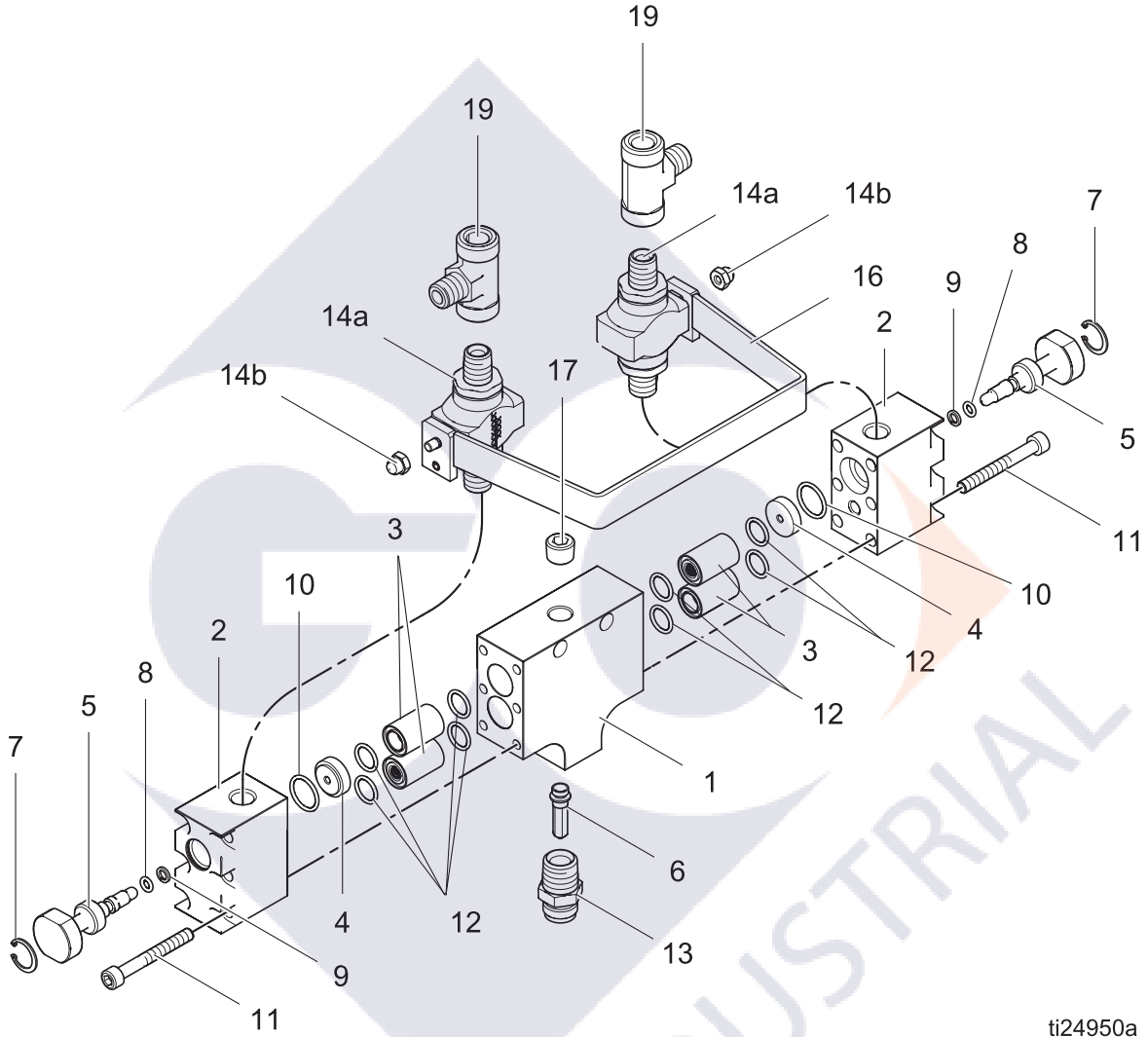
Problem	Cause	Solution
Little or no resin (A) output	The inlet to the pump is plugged	Clean the inlet, remove the obstruction
	The fluid supply container is empty	Refill the fluid supply
	The resin proportioning pump is not supplying flow or pressure.	Verify fluid supply to the proportioner.
	Fluid check valve is installed backwards on resin side of mix manifold.	Verify proportioner pump checks and seals are functioning correctly. Verify manifold check valves are installed correctly.
Little or no catalyst (B) output	The fluid inlet to the pump is plugged	Clean the inlet; remove the obstruction
	The fluid supply container is empty	Refill the fluid supply
	The catalyst proportioning pump is not supplying flow or pressure.	Verify fluid supply to the proportioner.
	Fluid check valve is installed backwards on catalyst side of mix manifold	Verify proportioner pump checks and seals are functioning correctly Verify manifold check valves are installed correctly
The mixed fluid will not flush out from manifold	Material has hardened in the mixing chamber.	Disassemble and clean or replace the mix manifold
	The solvent supply pump is not turned on or the solvent supply is empty	Verify solvent pump has air supply turned on and pressure regulator adjusted correctly, and solvent supply is full.
	The flush solvent being used is not compatible with the mixed materials	Use flush solvent recommended by the material supplier
	The solvent check valve is installed backwards.	Verify all fluid and check valves are installed correctly.

Problem	Cause	Solution
Resin (A) or Catalyst (B) fluid back flows into solvent supply line	Solvent supply valves are not fully closed or are leaking	Clean and inspect fluid valves, repair or replace as needed.
	Solvent check valves are leaking	Verify shut off valves are fully closed
Solvent flows into A or B fluid port and static mixer.	Solvent supply valves are not fully closed or are leaking	Clean and inspect fluid valves, repair or replace as needed. Verify shut off valves are fully closed
A or B fluid continues to flow into the mix manifold after the manifold handle is placed in the “stand by” position	A or B shut off valves are worn or damaged	Repair or replace inlet ball valve on A and B material inlets



Parts

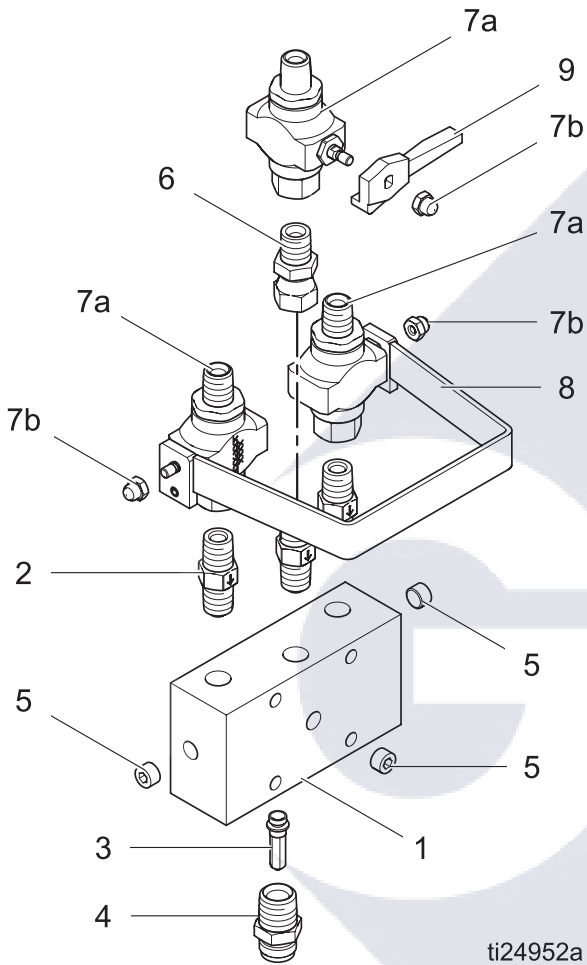
Part No. 17D763, for M2K Proportioner



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Ref. Part	Description	Qty.	Ref. Part	Description	Qty.
1	16Y787 MANIFOLD, body	1	12†	O-RING	8
2	16Y792 MANIFOLD, end	2	13	171195 FITTING, nipple	1
3†	----- VALVE, check	4	14a*	239018 VALVE, ball, sst	2
4†	SEAT, valve needle	2	14b	102310 NUT, hex. nylon cap	2
5	16Y838 HANDLE, valve, solvent	2	16	24W165 ACTUATOR, lever	1
6	16Y824 TUBE, sparger	1	17	101970 PLUG, pipe, hdls	1
7†	RING, retaining, int	2	19	185281 TEE, male	2
8†	RING, back-up, PTFE	2	†	These parts are included in Manifold Repair Kit 17D016 (purchase separately)	
9†	PACKING, o-ring	2	*	Recommended tool box spares	
10†	PACKING, o-ring	2			
11	117079 SCREW, shcs M6 x 50	12			

Part No. 24W861, Remote Mix Manifold for M2K Proportioner

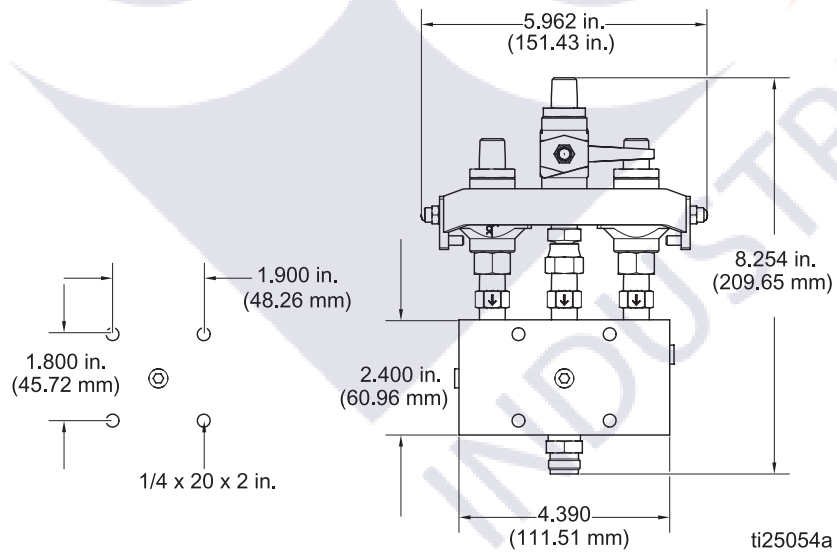
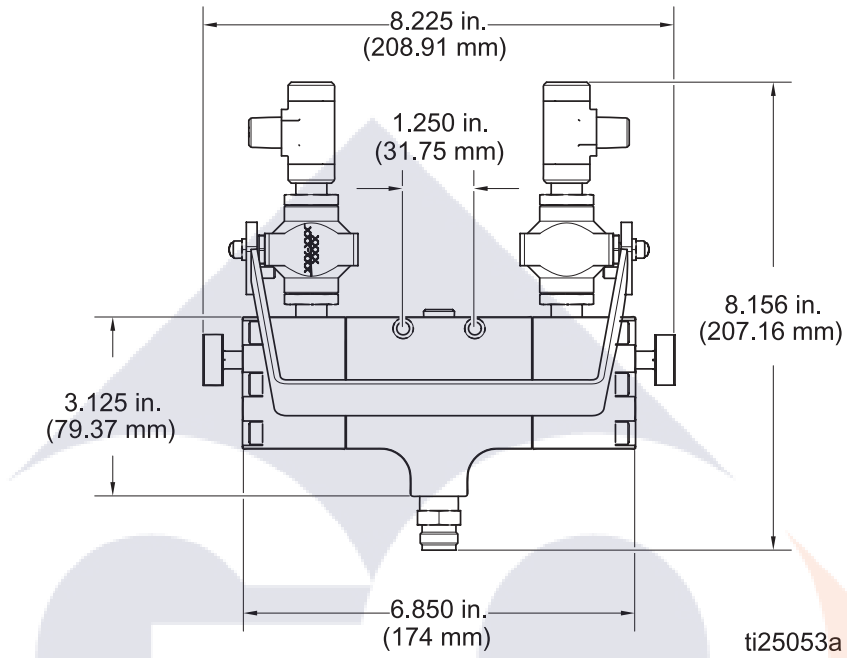


Ref.	Part	Description	Qty.
1	17C970	MANIFOLD, body	1
2★	24T310	VALVE, check	3
3	16Y824	TUBE, sparger	1
4	171195	FITTING, nipple	1
5	110208	PLUG, pipe, headless	3
6	24W865	FITTING, union, swivel, sst	1
7a★	24W863	VALVE, ball, sst, 1/4 npt	3
7b	102310	NUT, hex. nylon cap	3
8	24W862	ACTUATOR, lever	1
9	178747	LEVER, valve	1

★ Recommended tool box spares

ti24952a

Dimensions



Technical Data

M2K Mix Manifolds		
	US	Metric
Maximum fluid working pressure	3000 psi	206.8 bar (20.68 MPa)
Dispense Valve Fluid Inlet Size	1/4 npt	
Wetted Parts	303 SST, PTFE, perfluoroelastomer	
Weight		
Cart manifold (17D763)	7.27 lb.	3.23 kg
Remote (24W861)	6.46 lb	2.93 kg
Fluid Outlet	3/8 npsm(m)	



Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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For the latest information about Graco products, visit www.graco.com.

For patent information, see www.graco.com/patents.

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.

Phone: 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

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