



# USER MANUAL

## PRESSURE SAND BLASTERS

### MODELS

**U100-0**

**U103-0**

**U100-S**

**U103-S**



**UNI-RAM CORPORATION • ONTARIO • CANADA**

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**INTRODUCTION**

Uni-ram holds many patents on designs used in its innovative products. Every machine is rigorously tested for compliance with stringent Quality Assurance standards. Follow the straight forward Operating Procedures closely in order to operate this machine safely and effectively. Ensure that this manual is readily available to the operator at all times. If you have any questions about the operation of this machine, contact:

North America:  
Uni-ram Technical Service  
1-800-417- 9133  
Other Continents:  
Contact Your Supplier

**CAUTIONS**

- The operator should wear protective clothing with a minimum of gloves and goggles
- Relieve the pressure in the tank when the unit is not in use
- Repair any air leaks as soon as possible to avoid serious damage

## PREPARATION

### **IMPORTANT: OPERATOR SHOULD WEAR PROTECTIVE CLOTHING**

*Note: Item numbers given below refer to the parts listing on page 4.*

1. On removal of sandblaster from carton, check for any transportation damage and make sure all parts and accessories are included.
2. Make sure the Air Shut Off Valve (Item 8) is closed.
3. Make sure the Sand Flow Control Valve (Item 11) is closed (handle in horizontal position).
4. Make sure the Nozzle End Shut Off Valve at the end of the Blast Hose is closed.
5. The choice of nozzle size is limited by the CFM air capacity of the compressor. For fast cutting or cleaning, the nozzle should be no larger than necessary to permit the compressor to maintain 80 pounds of pressure when blowing continuously. Thus, 1/8" nozzles are supplied as standard parts for the 1/2" sand hoses. This hose can be used for sand, steel grit and shot.
6. All sand should be dry and uniformly graded to about #30 screen size for use with 1/8", 3/32" or 7/64" nozzles. With larger nozzles, coarser grade grit, shot or beads may be used.
7. TO FILL THE SANDBLASTER – Make sure the Sand Flow Control Valve (Item 11) is closed, then:
  - a) Remove Filler Valve (Item 4) to make filling easier
  - b) Fill the tank from the top, making sure the abrasive is dry and running freely
  - c) Connect the air hose to the Air Shut Off Valve (Item 8)
  - d) Replace the Filler Valve and hold in place while you open the air valve and allow the tank to fully pressurize (about 20-30 seconds). The air pressure will then hold the Valve in place.

## OPERATING INSTRUCTIONS

1. WHEN YOU ARE READY TO SAND BLAST: Open the Nozzle End Shut Off Valve at end of the Blast Hose, then gradually open the Sand Flow Control Valve (Item 11). The valve first passes air only, then increasing amounts of sand. When you have enough sand for the desired cutting effect, operate with the Nozzle End Shut Off Valve if one is supplied. This valve is not for mixing and should be used either wide open or closed. NOTE: You can tell when a good operating level has been reached by the cutting effect of the abrasive when it hits the surface and by the "feeling" of the abrasive rebound force.
2. TO RELIEVE PRESSURE IN THE TANK: To refill or change nozzles etc, shut off the Air Shut Off Valve (Item 8). Open the Pressure Relief Valve (10-251F) by inserting a finger into the ring and pulling downward. IMPORTANT: It is recommended that the pressure be relieved whenever the unit is not being used because air held in the tank under pressure can cause moisture condensation which can clog the sand control valve. If the valve does get clogged, open the square-headed Drain Plug (Item 13) or the Filler Valve and agitate the abrasive with a rod or wire.
3. TO EMPTY THE SANDBLASTER: Relieve the pressure as above, remove the Filler Valve (Item 4) and open the Sand Control Valve (Item 11). Then remove the square-headed Drain Plug (Item 13) from the bottom of the tank to drain the abrasive. NOTE: With the Filler Valve removed, abrasive may be vacuumed out through the top of the tank.

**OPERATING INSTRUCTIONS (continued)**

4. OPERATING TIPS:

- a) Always operate with hose and control “wide open”. Adjustment for suitable abrasive flow should be made independently using the Sand Flow Control Valve (Item 11).
- b) Make sure you match the right combination of abrasive type and mesh size, nozzle size and air pressure to the particular job at hand.
- c) Nozzles should be changed whenever they wear sufficiently to lose their cutting power at lower than 80 PSI. Your efforts become inefficient after the nozzle orifice has worn to more than 1 1/2 times its original diameter.
- d) Use Tungsten Carbide nozzles for long, continuous operations.
- e) If the unit has a Moisture Filter, check and drain it periodically by opening the valve at the bottom while it is under pressure.
- f) Repair the cause of any air leakage as soon as possible to avoid serious damage.
- f) If an abrasive clog forms in the bottom of the tank, the Anti-clogging Valve (Item 17) may be used as follows to remove the blockage:
  - Open the Nozzle End Shut Off Valve and hold it open if necessary
  - Make sure the Sand Flow Control is open
  - Open the Air Shut Off Valve
  - Open and close the Anti-clogging Valve repeatedly to send a series of air “pulses” down through the tank. If the blockage remains, remove the Drain Plug (Item 13) and use a wire or rod to open the passage. For normal operation, leave the Anti-clogging Valve open.

5. REPLACEMENT OF HEAVY-WEAR PARTS: Keep a supply of quickly wearing consumable parts such as ceramic nozzles, seal blocks, nozzle holder washers, plastic hood lenses etc on hand. Purchase ahead of time if necessary.

6. NOZZLE SPECIFICATIONS: Sand and air consumption and the area cleaned depend on the type of abrasive, air pressure, nozzle size and the condition of the surface to be cleaned.

NOZZLE SIZE	MINIMUM COMPRESSOR	AIR USED (CFM AT 80 PSI)	SAND USED (LB PER HOUR)	AREA CLEANED (SQ FT PER MIN)
3/32"	5 HP	7	80 TO 100	0.5
1/8"	5 HP	30	200 TO 210	1 TO 1.5
5/32"	5 HP	30	200 TO 210	1 TO 1.5
3/16"	5-10 HP	45	300 TO 350	3.0 TO 3.5
1/4"	5-10 HP	80	500 TO 600	4.0 TO 4.5
5/16"	10-15 HP	125	800 TO 950	6.0 TO 7.0

7. MISCELLANEOUS:

- a) The pressure vessels are manufactured to ASME standards.
- b) All models come with a 1/2" ID Sand Hose.
- c) Nozzle sizes range from 3/32" to 5/16"
- d) Heavy steel grit or shot can be used with the 1/2" Sand Hose using 5/32" to 1/4" nozzles.
- e) For larger nozzles (3/16", 5/16") a 3/4" ID Sand Hose is recommended.

**SEAL BLOCK ADJUSTMENT:**

1. Proper adjustment is important to ensure efficient operation and prevent excessive wear of the Seal Block. To accommodate size variations in the manufacturing of ceramic nozzles, elongated adjustment holes are provided for seating the Seal Block. Fix the Seal Block in place by tightening the Seal Block Nut so that the end surface of the Nozzle is in close contact with the Seal Block when the Control Lever is in the closed position. There should be no gap between the two surfaces. Air leakage will be minimal but some noise from escaping air is normal.
2. Each Seal Block can be used four times by changing the surface used. To change the surface, loosen the lock nut and rotate the block to a new surface.
3. When a new nozzle is installed, the Seal Block must be readjusted to fit tightly against the new nozzle.

**SAFETY SHUT OFF CONTROL - U5000F**

1. OPERATION: To open the Control, squeeze the lever quickly. To close, release the lever quickly. To avoid exposing the Seal Block to abrasive, do not open or close the Control slowly. Use the U5000F as a working control only. When the job is finished, close the Sand Flow Control Valve (Item 11) and the Air Shut Off Valve (Item 8), then release the air pressure by opening the Pressure Relief Valve by inserting a finger into the ring and pulling downward.

**2. REPLACEMENT:**

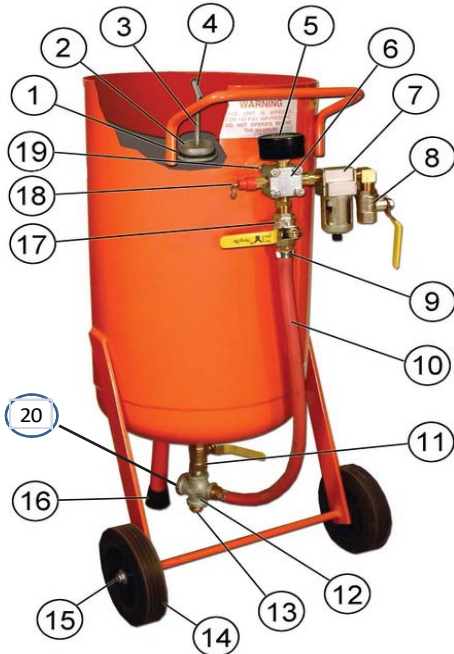
- a) Remove the Handle Tube from the Retainer Nut by turning the nut counter-clockwise.
- b) Make sure the end of the hose is cut flat and square.
- c) Apply grease to the outside of the hose for approximately 2 1/2" from the end.
- d) Insert the hose into the Handle Tube making sure it is pushed firmly into the tube approximately 2 1/2".
- e) Secure the hose using the six screws provided.
- f) Hold the Retainer Nut using a bench vise or vise grips and attach the Handle Tube by turning it clockwise with a pipe wrench. Make sure the Tube is firm and tight. The Seal Block is pre-adjusted at the factory to the Ceramic Nozzle supplied. If necessary, adjust the Seal Block as above to fit your nozzle and minimize air leakage.

**Uni-ram Pressure Sand Blasters are portable, rugged, efficient tools for removing dirt, rust, paint and other materials from all kinds of surfaces.**

**FEATURES, SPECIFICATIONS AND BREAKDOWN**

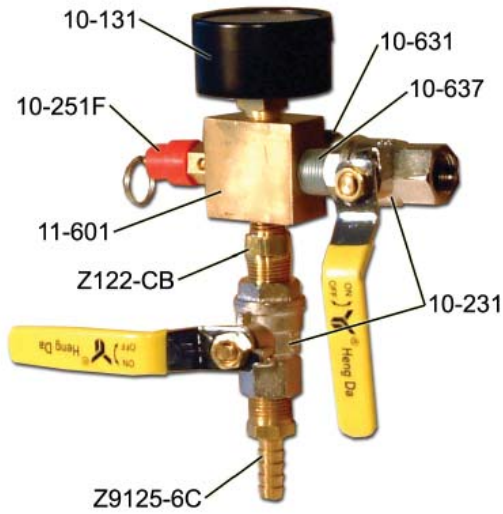
- SUITABLE FOR USE WITH MANY ABRASIVES INCLUDING: SILICA SAND, GLASS BEADS, METAL SHOT, ALUMINUM OXIDE, NUT SHELLS, BAKING SODA
- HEAVY DUTY 4-PLY HOSE
- DURABLE POWDER PAINT
- AIR INLET SHUT OFF VALVE
- MAINTENANCE-FREE REMOVEABLE FILLER PLUG
- PORTABLE WITH HEAVY DUTY WHEELS
- PRESSURE GAUGE
- WORKING PRESSURE: 125 PSI
- FUNNEL TOP DESIGN
- ABRASIVE FLOW CONTROL VALVE
- PRESSURE RELEASE VALVE (140 PSI)

MODEL	U100-0	U100-S	U103-0	U103-S
NOZZLE END SHUT OFF	NONE	U5000F	1/2" STEEL	U5000F
MOISTURE FILTER			X	X
QUICK COUPLINGS			X	X
CAPACITY (LB)	90-100	90-100	100-110	100-110
HOSE LENGTH (FT)	8	8	10	10
SHIPPING SIZE (W X D X H")	17X17X35	17X17X35	17X17X35	17X17X35
SHIPPING WEIGHT (LB/KG)	55/25	55/25	58/26.4	58/26.4
NO. OF NOZZLES (10-260)	2	2	3	3

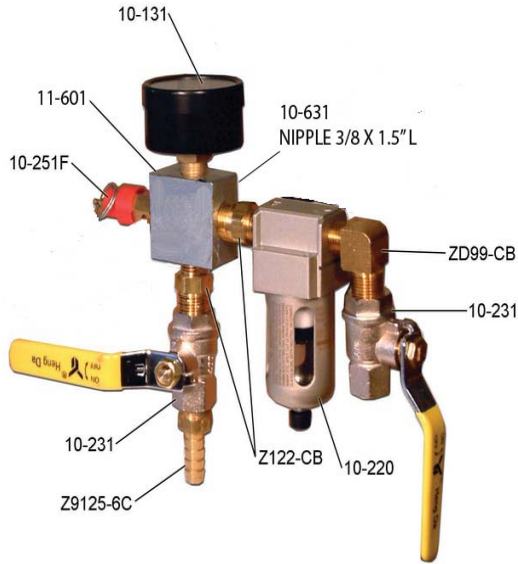


Item	Part No.	Description
1	10-121	O-Ring Gasket, Filler Plug
2	10-128	Filler Valve Plug Block
3	10-125	T-Handle Only
4	10-120	T -Handle Stem Filler Valve complete
5	10-131	Heavy Duty Pressure Gauge
6	12-601	Air Manifold Distributor Block
7	12-220	Moisture Filter (U103)
8	10-231	Air Shut Off Valve
9	10-245	Hose Clamp, 1&1/8"
10	11-241	Air Pressure Input Hose
11	10-171	Sand Flow Control Valve
12	10-176	Cross Union Connector
13	10-173	Drain Plug, Square Head
14	11-161	Wheel, 6" Heavy Duty
15	27-384	Wheel Cap, 1/2" Axle
16	10-168	Leg Support Ferrule
17	10-231	Anti-clogging Valve
18	10-251F	Pressure Release Valve (140 PSI)
19	11-640	Inlet Adapter, 4 Holes
20	10-180	QUICK COUPLING, 1/2" NPT

### KEY PARTS



U100-0 & U100-S



U103-0 & U103-S

NOTE: Not all parts shown are user serviceable. Contact Uni-ram Customer Service before ordering.

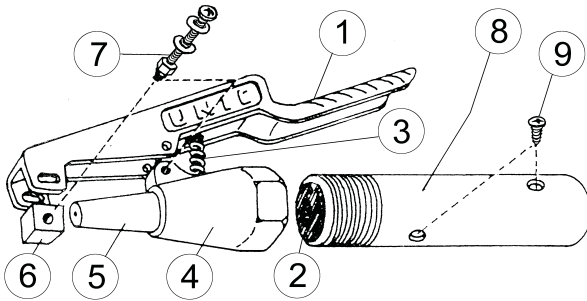
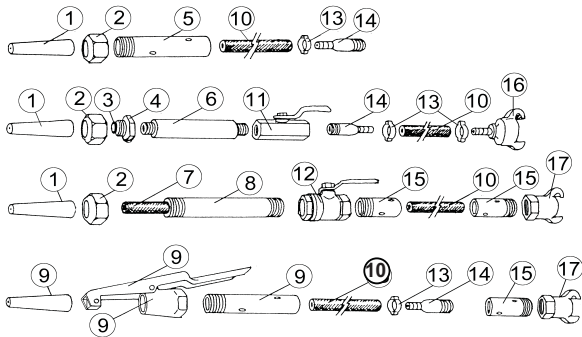


**REPLACEMENT HOSES, NOZZLES, HOODS AND ASSEMBLIES**

**HOSE ASSEMBLIES**

PART NUMBER	10-150	10-151
HOSE LENGTH (FT)	8	10
CONNECTORS	THREADED	QUICK
NOZZLE END ON/OFF CONTROL	NONE	1/2" STEEL
MODEL	U100-0/S**	U103-0

\*Also called "Safety Blast Hand Control", "dead man switch" or "squeezer gun".  
 \*\*For U100-S model, add U5000 Safety Shut Off



U5000F SAFETY SHUT OFF

**EXTENSION HOSES**

PART NO.	LENGTH	CONNECT
10-157	10'	QUICK
10-158	20'	QUICK
10-159	ANY	NONE

**CERAMIC NOZZLES**

PART NO.	ID (")	CFM @ 125 psi
#1 - 10-263	3/32	10
#1 - 10-260‡	1/8	28
#1 - 10-264	5/32	47
#1 - 10-261	3/16	70
#1 - 10-262	1/4	125
#1 - 10-265	5/16	187
#2 - 10-270	1/8	28

‡Standard size shipped with new equipment

**BLASTER HOSE**

10-159 Hose per Foot, 1/2" ID, 1" OD

**ITEM PART NO. DESCRIPTION**

1	10-260	Ceramic Nozzles (see below)
2	10-501	Nozzle Retainer Nut
3	10-516	Bushing, Rubber, Short
4	10-511	Reducer Holding Nut
5	50-401	Handle Tube, Plated
6	10-420	Handle Tube, Plastic Cover
7	10-517	Bushing, Rubber, Long
8	10-431	Handle Tube, Threaded
9	U5000F	Safety Shut Off (Hand Control)*
10	10-159	Hose per Foot, 1/2"ID/1"OD
11	10-230	On/Off Control, 1/2" Carbon Steel
13	10-246	Hose Clamp, Crimp Type, 1/2"
14	10-281	Hose Connector, Male, Barb
15	10-287	Hose Connector, Female, Tube
16	10-182	Quick Connect, Male, 1/2"
17	10-184	Quick Connect, Female

**ITEM PART NO. DESCRIPTION**

U5000	Safety Shut Off, Complete	
1	50-101	Lever Handle
2	50-501	Seal Washer
3	50-301	Return Spring
4	50-201	Retainer Nut
5	Ceramic Nozzles (see below)	
6	50-002	Seal Block
7	50-590	Bolt, Nut and Washer Assy
8	50-401	Handle Tube, Plated
9	50-411	Hose Retention Screws (4)

**HOODS and LENSES**

PART NO.	DESCRIPTION
10-300	Cotton hood with 4 lens
10-301	Cotton hood, 4 lens, h. hat
10-305	Lens for hood, 5x6.5", one
10-306	Lens, 5x6.5", Pkg of 10
10-400	Vinyl hood with back vent
10-401	Lens, single, 8.75x7.5"

**TUNGSTEN CARBIDE NOZZLES**

PART NO.	DESCRIPTION and ID (")
10-020S	Short Nozzle, 1/8
10-030S	Short Nozzle, 3/16
10-040	Long Nozzle, 1/4
10-040S	Short Nozzle, 1/4

## **Full Product Warranty**

These Uni-ram products have been engineered and manufactured to high performance standards. Each unit has been subjected to detailed factory testing before shipment.

This product comes with a one-year full warranty from the date of purchase. Uni-ram Corporation reserves the right to repair or replace the unit, free of charge, to the original purchaser if a part is found to be defective in material or workmanship as determined by factory service personnel. The items listed below under "Conditions of Warranty" as consumables are not covered.

Uni-ram reserves the right to direct the customer to ship the unit collect to the Uni-ram factory or to an approved Service Center for repair using the Uni-ram Return Goods Procedure or to repair the unit on-site. To prevent damage in transport, the purchaser must ship the unit in the original packaging or use alternate adequate packaging. All units must be shipped clean and free of solvent.

### **Conditions of Warranty:**

As Uni-ram Corporation has no control over the working conditions or circumstances under which the purchaser stores, handles or uses the product, Uni-ram makes no warranty or claim, either expressed or implied with respect to this product's fitness for any purpose or the result to be obtained from its use. This condition applies to the sale of all products and no representative or distributor of Uni-ram Corporation has the authority to waive or change these conditions.

This warranty applies only to the original purchaser and does not apply if the unit has been misused, overloaded, neglected, altered or used for any purpose other than those specified in the operating and installation instructions. Deterioration due to normal wear is not covered by this warranty. Damage due to accident, transportation, fire, floods or acts of God is also not covered. Units whose serial numbers have been altered or removed are not covered. The warranty is invalid if unauthorized abrasives are used in this unit. Unauthorized attempts at self-repair or alterations by the owner also invalidate this warranty. Interior or exterior finishes are not covered by this warranty.

Consumable Items are not covered by this warranty.

This warranty replaces all other warranties expressed or implied by statute or otherwise.

To make a claim, call Uni-ram Service at 1-800-417-9133 and quote the serial number of the unit.