DB150®

USER MANUAL

The **Future** of **Surface Preparation**®

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A NOTICE TO INTERNATIONAL DISTRIBUTORS:

International Distributors are responsible for translation of the manual.

Please read and understand manual fully prior to operating any machinery.

TABLE OF CONTENTS

IMPORTANT

(Pertinent to blast machines)

WARNING

Before operating any abrasive blast cleaning equipment READ ALL operating and maintenance instructions. Personal protective equipment is REQUIRED when using this type of equipment. Operator MUST be equipped with heavy canvas or leather gloves, aprons, and arm protectors. Safety shoes and hearing protection MUST be worn when required. NIOSH approved air fed respirators (helmets) furnished with at least Grade D breathing air MUST be used for protection against dust inhalation. Air MUST be filtered and monitored for Carbon Monoxide.

DANGER.

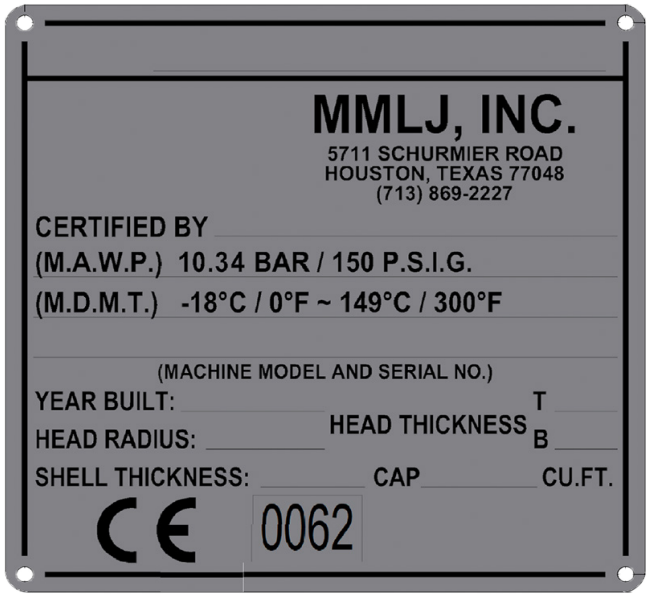
Use of Abrasive cleaning equipment with silica sands may produce a heavy concentration of silica dust. Breathing this dust can produce “Silicosis”, a permanent lung disease. Depending upon the object to be cleaned, blasting, even with non-silica abrasives, may release hazardous dust particles into the air that can cause permanent lung damage. Failure to use NIOSH approved air fed respirator (helmet) may cause SERIOUS lung DAMAGE. This warning, as to the proper use of an approved respirator (helmet), applies not only to the operator, but extends to all those working in or around the blasting area, such as pot tenders, painters, supervisors, etc.

CAUTION

Blast cleaning equipment and components are subjected to wear and deterioration.

- Keep your equipment in good operable condition.
- MAINTAIN nozzle control at all times during operation.
- INSPECT machine, nozzles, hoses, and couplings.
- WIRE all kwik-fit hose couplings together.
- Inspect, clean, or replace helmet lens and filters frequently.
- Ground equipment to AVOID electrical shock.
- DO NOT operate any machine without thorough knowledge of machine operation.
- End User to Install a required Safety Relieve Valve, to prevent the rise of pressure more than 10% of the set MAWP as required by ASME section VIII, Div.1.
- The Design max and min parameters should NOT be exceeded. Reference (Recommended CE Nameplate in the Instructions).

Carefully READ the INSTALLATION, OPERATING, AND MAINTENANCE directions supplied with the machine from the factory. If you do not have a copy, please contact your employer (supervisor) or MMLJ Inc.



IMPORTANTE

(Relativo a todos maquinas)

ADVERTENCIA

Antes de operar cualquiera de los equipos de limpieza con chorro abrasivo, LEA TODOS las instrucciones de operacion y mantenimiento. ES OBLIGATORIO usar equipo protector personal al manejar este tipo de equipos. El Operador DEBE. estar equipado con guantes, delantales y protectores de brazos de cuero 0 lona pesada. DEBEN usarse zapatos de seguridad y proteccion para los oldos cuando aSI se exija. Los respiradores (cascos) alimentados por aire, aprobados por NIOSH y que esten previstos de por 10 menos aire respi rable de Grado D, DEBEN ser usados como proteccion contra la inhalacion de polvo. El aire DEBE ser filtrado y controlado para detectar monoxide de carbono.

PELIGRO

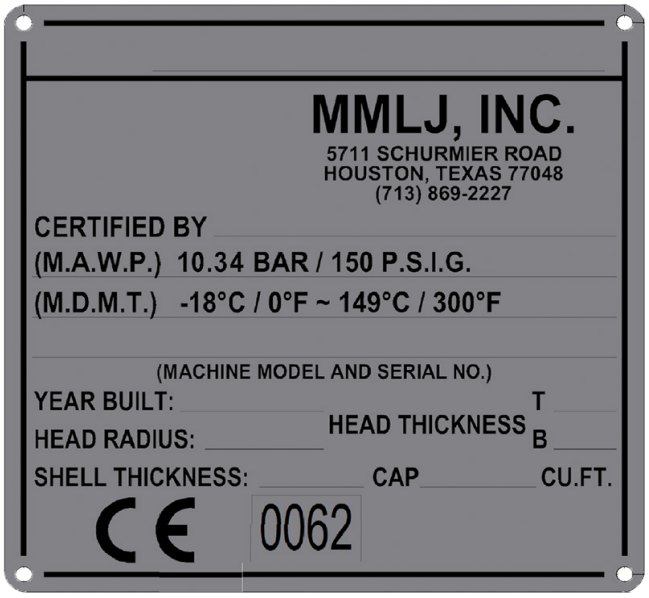
Es posible que el uso de los equipos de limpieza por abrasion con arenas sillceas provoque una concentracion pesada de polvo sillceo. Este polvo, al ser respirado, puede producir “silicosis”, que es una enfermedad pulmonar permanente. Dependiendo del objeto que va a limpiarse, es posible que la limpieza a chorro, aun con abrasives no silfceos, provoque el escape de partlculas de pohio pel igrosas en el aire que pueden causar dano pulmonar permanente. Si nose usan los respiradores (cascos) alimentados por aire, aprobados por NIOSH, puede provocarse un GRAVE DANO a los pulmones. Esta advertencia sabre el uso adecuado de un respirador (casco) aprobado no solo se aplica al operador sino que comprende a todos aquellos que trabajan en el area de limpieza a chorro, 0 al rededor de la misma, como por ejemplo los que vigilan los recipientes, los
pintores, supervisores, etc.

PRECAUCION

El equipo de limpieza a chorro y sus componentes estan sujetos a desgaste y deterioro.

- Mantenga su equipo en buenas condiciones deoperacion,
- MANTENGA el control de la boquilla en todo momenta durante la operacion.
- INSPECCIONE !a maquina, las boquillas, las mangueras y las uniones.
- ALAMBRE juntas todas las uniones de la manguera de rapido ajuste.
- Inspeccione, limpie 0 reemplace los lentes y fi ltros del casco frecuentemente.
- Conecte el equipo a tierra para EVITAR un shock electrico.
- NO opere ninguna maqu ina sin tener un detallado conocimiento de la operacion de la misma.
- El usuario final requiere instalar una válvula de alivio de presión de seguridad, para prevenir aumento de presión mas de el 10% del conjunto Presión de funcionamiento maxima permitida como se requiere por ASME (La sociedad Americana de ingenieros mecánicos) sección VIII, Div.1.
- El diseño máximo y mínimo parámetros NO debe ser excedido. Referencia (Recomendada CE La placa identificación en las instrucciones)

LEA cuidadosamente las instrucciones de INSTALACION, OPERACION Y MANTENIMIENTO que vienen incluidas de fabrica con la maquina. Si no tiene una copia, slrvase comunicarse con su empleador (supervisor) con MMLJ Inc.



BLAST POT WARRANTY

MMLJ, INC. LIMITED WARRANTY

IMPORTANT: Terms of Warranty

MMLJ, Inc. warrants that the product you have purchased is free from defects in materials or workmanship under normal use during the warranty period. Your sales receipt, showing the data of purchase for this product, is your proof of the date of purchase. This warranty is valid only if the product is assembled/installed according to the instructions included with the product. This warranty extends only to you, the original purchaser. It is not transferable to anyone who subsequently purchased the product from you.

During the warranty period, MMLJ, Inc. will repair or replace (at MMLJ, Inc.'s option) the product if it becomes defective or otherwise fails to conform to this Warranty under normal use. In repairing the product, MMLJ, Inc. may replace defective part with new, or at the option of MMLJ, Inc., serviceable used parts that are equivalent to new parts in performance. MMLJ, Inc. reserves the right to change manufacturers of any part to cover any existing warranty. This extends to items normally covered by a manufacturer other than MMLJ, Inc. used on this product within the first calendar year of purchase.

This warranty does not cover shipping charges; export taxes, custom duties and taxes, or any other charges associated with transportation of the parts or products. To obtain warranty service, you must contact MMLJ, Inc.'s customer service representative. Any parts determined to be defective must be brought to the attention of MMLJ, Inc. within 6 months of delivery of equipment. You must prepay any shipping charges, export taxes, custom duty taxes, or any other charges associated with transportation of the parts or product. In addition, you are responsible for insuring any parts or product shipped or returned. You assume the risk of loss during the shipment. You must present MMLJ, Inc. with proof-of-purchase documents (including the date of purchase). Any evidence of alteration, erasure, or forgery of proof-of-purchase documents will be cause to void this warranty.

The warranties listed above do not extend to any product that has been damaged or rendered defective (a) as a result of accident, misuse, or abuse (b) by the use of parts not manufactured or sold by MMLJ, Inc. and/or (c) by modification or improper installation of the product. Product on which the serial number has been defaced or removed is not eligible for warranty service. Should any product submitted for warranty service be found ineligible, an estimate of repair cost will be furnished and the repair will be made if requested by you upon MMLJ receipt of payment or acceptable arrangements for payment. Except, as expressly set forth in this warranty, MMLJ makes no other warranties, expressed or implied. This is the only express warranty applicable to Dustless Blasting® branded products. MMLJ does not assume, nor authorize anyone to assume for it any other express warranty.

BLAST POT, LIMITED LIFETIME WARRANTY:

This warranty applies only to pressure vessels manufactured by MMLJ, Inc. under the Dustless Blasting® brand name. This product is backed by a limited lifetime warranty, excluding only expendable parts such as gauges and valves (which are covered by manufacturer other than MMLJ, Inc.) and paint.

This Limited Warranty does not extend to any product that has been damaged or rendered defective (a) as a result of lack of maintenance, accident, misuse, or (b) abuse by the use of parts not manufactured or sold by MMLJ, Inc. and/or (c) by modification or improper installation of the product.

IMPORTANT: Third Party Warranties

For parts that are not covered by MMLJ, Inc., please contact our office and report the defect. MMLJ, Inc. will then proceed with the warranty process for the affected item on your behalf. All items not covered by MMLJ, Inc. will fall under a limited one year warranty free of manufacturer defects.

For more warranty information, visit www.DustlessBlasting.com/legal/warranties.
Please call our office for any questions on warranties or warrantied items.

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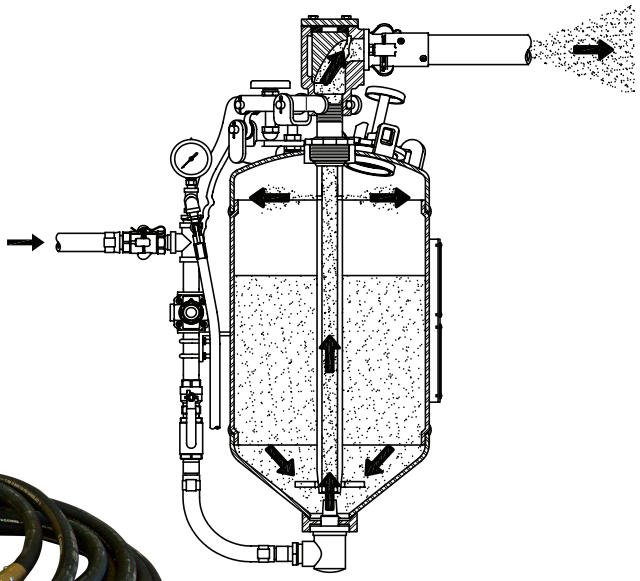
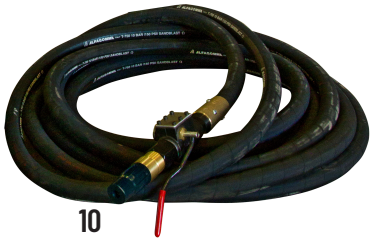
INSTALLATION AND OPERATING INSTRUCTIONS

PLEASE READ CAREFULLY BEFORE OPERATING





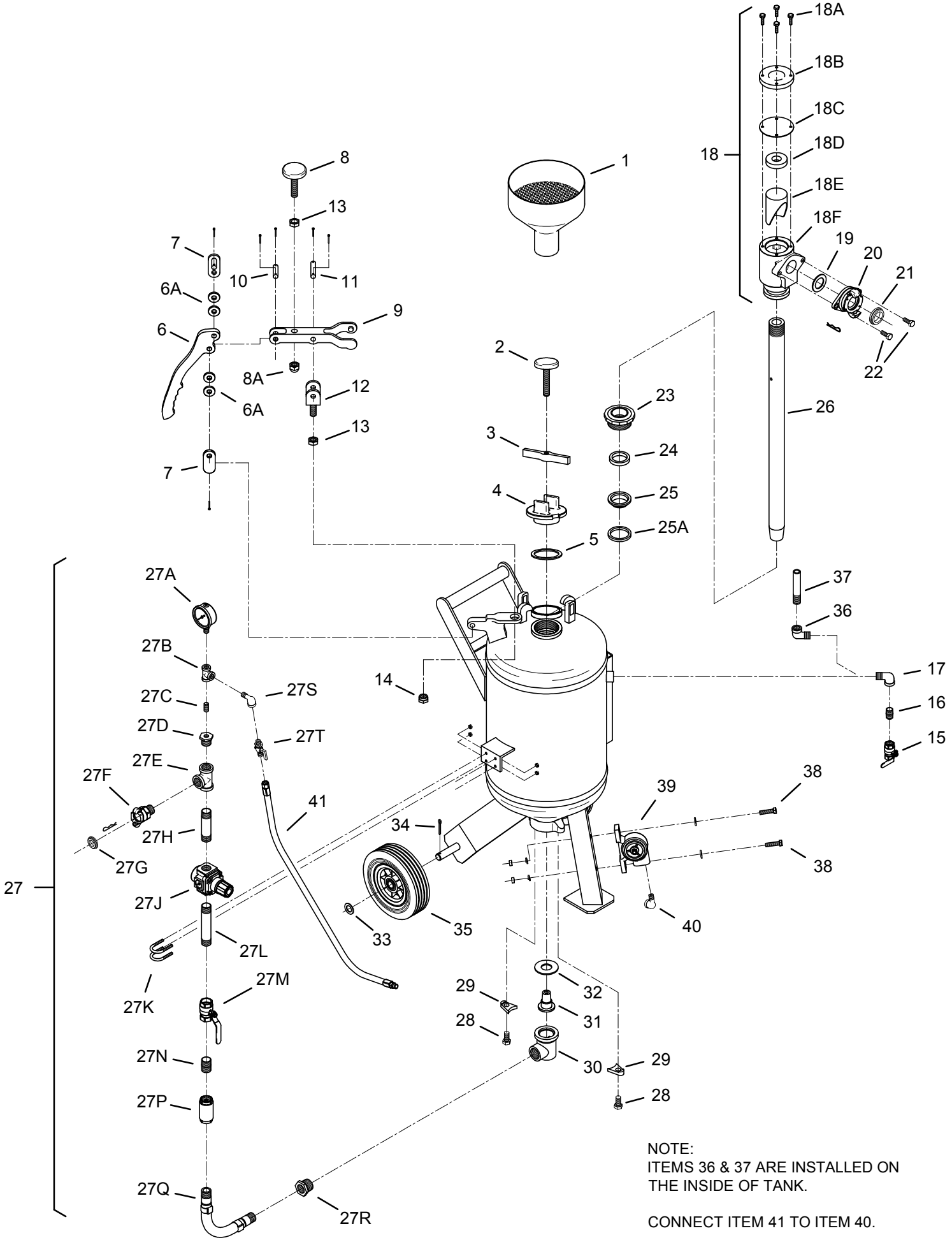
MODEL DB150 FIGURES

1. Blast Outlet
2. Fill Port
3. Compressed Air Inlet
4. Blowdown Valve
5. Air Inlet Valve
6. Compressed Air Pressure Gauge
7. Pressure Regulator
8. Vibrator Valve
9. Vibrator
10. Nozzle Head Shutoff Valve
11. Abrasive Control Lever
12. Abrasive Control Knob
13. Bottom Flange

Carefully read the INSTALLATION, OPERATING, and MAINTENANCE directions supplied with the machine from the factory. If you do not have a copy, please contact your employer (supervisor) or the MMLJ Inc. Company.

This system will mix clean water, rust inhibitor, and abrasive together. The **DB150** is designed to hold:

- 5 gallons of clean water
- 7 oz of Rust Inhibitor
- 50 lbs of Abrasive, mesh size approx. 40/70



NOTE:
ITEMS 36 & 37 ARE INSTALLED ON THE INSIDE OF TANK.

CONNECT ITEM 41 TO ITEM 40.

Item No.	Description	Part No.	Stock No.	Qty.
1	Fill Funnel		134125/001	1
2	Fill Cap Hold-Down Screw	AB-8	73464/001	1
3	Fill Cap Hold-Down Bar	C-11-1	131066/001	1
4	Fill Cap	C-14-1	131414/001	1
5	Fill Cap Gasket	C-13	131142/001	1
6	Abrasive Control Lever	AB-9	73500/001	1
6A	Abrasive Control Lever Washers	FBA		4
7	Connecting Link w/ Cotter Pins	AB-10	131133/001	1
8	Rocker Arm Adusting Screw	AB-8	73464/001	1
8A	Rocker Arm Acorn Nut	AB-8-N	134687/001	1
9	Rocker Arm	M-3	73481/001	1
10	Abrasive Lever Clevis Pin w/ Cotter Pins	AB-11-S	131070/001	1
11	Pedestal Clevis Pin w/ Cotter Pins	AB-12-S	131069/001	1
12	Rocker Arm Hinge Yoke	AB-75	131113/001	1
13	Pedestal Locking Nut/Fill Cap Hold-Down Screw Locking Nut	AB-75-C	22926/001	2
14	Rocker Arm Hinge Yoke Adusting Nut	AB-75-E	131094/001	1
15	1/2" Blow-Off Valve	C-30-AV-1	131385/001	1
16	1/2" Close Nipple		78251/001	1
17	1/2" 90 Degree Street Elbow	C-30-L-1	131869/001	1
18	Outlet Elbow Assembly Complete	M-17	72974/001	1
18A	Outlet Elbow Cap Bolts (4)	M-17-D	82563/001	1
18B	Outlet Elbow Cap	M-17-C	131054/001 1	
18C	Outlet Elbow Cap Gasket	M-17-G	131227/001	1
18D	Outlet Elbow Insert Gasket	M-23-G	131147/001	1
18E	Outlet Elbow Insert	M-23	73602/001	1
18F	Outlet Elbow Body	M-17-B	80789/001	1
19	Elbow Adapter Flat Gasket	KF-17-G	131149/001	1
20	Elbow Adapter, w/ Gasket	KF-17	80790/001	1
21	KF Series Coupling Gasket	KFG	131148/001	1
22	Elbow Adapter Bolt	KF-17-B	23858/001	2
23	Coupling Nut	M-5-1	131102/001	1
24	Coupling Nut Gasket	M-13	131226/001	1
25	Gasket	M-5-G	131225/001	1
25A	Seal (manufactured after 5/15/13)	M-6-S	131226/002	1
26	28" Outlet Pipe (1 5/8" O.D.)	NS-58-OP	131092/001NS	1
27	Air Inlet Assembly	HC-30-PR2	72886/002	1
27A	Gauge	SB-30-G	134366/001	1
27B	1/4" Tee	RC-19	131865/001	1
27C	1/4" Close Nipple		77094/001	1
27D	3/4" x 1/4" Bushing		131839/001	1
27E	3/4" Tee	HC-30-T	131866/001	1
27F	3/4" Crowfoot		132172/001	1
27G	Crowfoot Gasket	AMG-2	73850/001	1
27H	3/4" x 3" Nipple		131392/002	1
27J	3/4" Regulator		132055/001	1
27K	U-Bolt w/ Nuts	HC-29-3M	131585/001	2
27L	3/4" x 4" Nipple	HC-30-N	131392/001	1
27M	3/4" Ball Valve	AB-61-C	70239/001	1
27N	3/4" Close Nipple	RC-23	131859/001	1
27P	3/4" Check Valve		133051/001	1
27Q	3/4" Hose Assembly	72846/002	1	
27R	3/4" x 1" Bushing	AB-61-A	131860/001	1
27S	1/4" 90 Degree Street Elbow	RC-16	73813/001	1
27T	1/4" Air Cock	WH-21-C	73163/001	1
28	Air Inlet Body Lug Bolts (2)	AB-47-B	23879/005	1

Item No.	Description	Part No.	Stock No.	Qty.
29	Air Inlet Body Lug	AB-47	131231/001	2
30	Air Inlet Body	ABHD-1	73478/001	1
31	3/8" Air Inlet Nozzle	AB-1-NHD	131127/001	1
32	Air Inlet Body Gasket	AB-1-G	131228/001	1
33	Wheel Washer	C-33-W	72849/001	2
34	Wheel Cotter Pin	C-33-C	72848/001	2
35	Wheel	C-31-2	133730/001	2
36	1/2" 300# 90 Degree Elbow	C-16-T	132706/001	1
37	1/2" x 4" Nipple		131929/001	1
38	Vibrator Bolt, Washer, Lock Washer & Nut			2
39	Vibrator		133811/002	1
40	1/4" 90 Degree Street Elbow	RC-16	73813/001	1

Getting Started

A NOTE TO BLASTER

Before blasting, it is recommended that user reads through the entirety of this manual for proper operating procedures and important maintenance instructions.

Always inspect machine, nozzles, hoses, and couplings prior to blasting.

STEP 1. Connecting blast hose

Unroll blast hose and screw nozzle head shut off valve onto the blast hose. Then screw your chosen nozzle into the nozzle head shut off valve.

STEP 2. Filling the blast pot with abrasive

The DB150® is designed to hold:

- 5 gallons of clean water
- 7 oz of Rust Inhibitor
- 40 lbs of Abrasive, mesh size approx. 40/70

Unscrew and remove the fill cap lock and then remove the fill cap. Insert the fill funnel into the fill opening and pour in 5 gallons of water, 7oz of rust inhibitor (if blasting metal), and 50 lbs of recycled bottle glass or other blast media.

Remove the fill funnel and replate the fill cap.

Note: Your machine will use any type of abrasive or cleaning medium that sinks in water and is not water soluble.

STEP 3. Connect hoses and adjust abrasive lever

Attach blast hose to blast hose connection and insert safety pin. Connect the compressor air hose to the air inlet and insert safety pin.

Turn abrasive adjustment screw so that 3/4” to 1” of pipe is visible (this will not stay up until machine is pressurized).

STEP 4. Power up your compressor and start blasting

- Please refer to your compressor manufacturer’s manual for operating instructions and start up your compressor.
- The gauge will show pressure. Adjust the operating pressure with the valve behind the lower gauge.
- Open the vibrator valve and adjust until you feel maximum vibration on top of the machine. Make sure the blow down valve is closed and open the air inlet valve.

- Wear appropriate PPE gear.
- To activate blast hose, slowly pull back and hold the lever of the nozzle head shutoff valve.

Note: For best results, try different blast patterns and angles to find the best work flow.

STEP 5. Shutting Down

While the compressor is running, close the air inlet valve and open the blow down valve to release the pressure. Let the blast pot fully depressurize before turning off the compressor.

Note: If you turn the compressor off first, the pressure in the pot will backflow air, water, and media into other parts of the system, causing them to fail.

Maintaining your Blast Pot

CONSUMPTION CHART

No damage to the machine will occur by leaving water and media inside of it. However, due to the organics in the media, a foul smell can occur when left stagnant for longer than 24 hours. For this reason, when the machine will not be in use for an extended period of time, it is recommended that you remove water and media from machine either by blasting it out or by removing the bottom flange, air inlet jet, and gasket, and allowing it to drain.

FLUSHING BLAST POT OUT

Regularly flushing the pot avoids buildup on inside walls, which could inhibit the system. Once a month or so, you should rinse the pot out:

1. Fully depressurize machine.
2. Remove 2 bolts and 2 air inlet body lugs from bottom of machine.
3. Remove air inlet jet and gasket.
4. Push air inlet body and air hose out of the way.
5. Flush out inside of equipment with water.
6. Once finished, replace the gasket, inlet jet, and lugs and bolts.

BLASTING WEAR PARTS

Certain parts wear faster than others and will require regular maintenance and inspection depending on the method of blasting you are using as well as the abrasive you are blasting with. These items should be inspected for damage or wear, and replaced an average of 400 hours if dry-blasting, or 2000 hours if wet-blasting.

Wear items include but are not limited to:

- Hardened Elbow Insert
- Hardened Air Inlet Jet
- Hardened Pipe
- Flat Backed Pinch Hose Coupling
- Inlet Jet Gasket
- Elbow Insert Gasket
- Elbow Cap Gasket
- Nozzle

Troubleshooting

MEDIA BUILD UP INSIDE POT - ADJUSTING VIBRATOR VALVE

On the left side of your blast pot, a small brass petcock valve controls the vibrator speed. This vibrator valve must be open during blasting. Adjust it so that you feel maximum vibration at the head of the machine. This will ensure that all of the media gets “shaken” to the bottom of the tank.

Over time, you could experience abrasive buildup inside the pot which actually changes the harmonics of the pot. If the system is not feeding right, adjust the valve by turning it towards the off position to slow the vibrator down, allowing the pot to rattle more.

ABRASIVE NOT FLOWING CORRECTLY - Assuming proper Installation, air pressure, and abrasive.

Check media quality. Your machine is made to run with clean, high quality abrasive or media. Dirt will get muddy and clay will harden.

NOTHING IS COMING OUT OF THE NOZZLE

The blast nozzle may become clogged with debris or blast media. If this occurs, put the machine in the blowdown position, then remove the nozzle and inspect for a rock or other foreign material.

Please call the manufacturer directly with any additional maintenance questions.
1-800-727-5707 | support@dustlessblasting.com

Containment, Masking, and Nozzle Control

CONTAINMENT

To capture the blasting byproducts use heavy plastic or a tarp. Lay out your plastic and weigh the corners down, placing your project in the center. You can sweep up media or use simple curtains or barriers.

MASKING

Mask off any glass, chrome, rubber seals, wiring, electrical, or moving mechanical parts and anything else that looks delicate or like it shouldn't have water and grit inside it. Tape works the best for protecting small parts and pieces.

NOZZLE CONTROL

It is important to use the proper nozzle to achieve the best blasting results. Nozzle size is based on air compressor size.

NOZZLE KNOWLEDGE

SLV Nozzle

- Wide blast pattern
- All purpose nozzle

ST Nozzle

- Straight bore nozzle
- Tight blast pattern
- Detailed precision nozzle

Fan Nozzle

- Spreads blast pattern out to cover a rectangular area
- Perfect for brush blasting
- Low impact compared to other nozzles

XL Performance Nozzle

- Increases abrasive particle velocity
- Allows for increased standoff distance while improving production and efficiency

CLEANUP

Depending the amount of media used, plastic may be too heavy to move all at once. Cut it into sections and roll it up, or let the water evaporate to sweep or vacuum.

Switching from Wet Blasting to Dry Blasting

BLAST WET, DRY, OR WITH SODA (AIR DRYER AND COOLER REQUIRED)

To prepare your machine for dry blasting:

1. Blast all media and water out of machine.
2. Remove fill cap.
3. Turn on air dryer and cooler.
4. Open air inlet valve halfway and let air circulate through machine for 5-7 min or until completely dry.
5. Put fill cap back on machine and pressurize tank.
6. Run air through the machine just like you were blasting for 2-3 min.
7. Shine light in machine to be sure all moisture is gone from the bottom.
8. If no moisture, fill with 1 bag of dry abrasive. Fill the remainder of the way.

Note: Using media such as plastic bead, walnut shell, corn cob, or soda requires dry blasting.

Storing Machine

STORING MACHINE

If leaving unit for extended period of time, you should blast the water and media out of machine OR:

1. Fully depressurize machine.
2. Remove 2 bolts from bottom flange of machine.
3. Remove 2 lugs from bottom flange.
4. Push air inlet body and air hose out of the way.
5. Remove air inlet jet and gasket.
7. Flush out inside of equipment with water.

Once media and water are out of machine, reverse procedure:

1. Put gasket on air inlet jet.
2. Insert air inlet jet and gasket.
3. Put air inlet body up to bottom of machine.
4. Use lugs and bolts to secure casting.

STORING MACHINE IN WINTER

If storing your machine for the winter months, it is advised to take the following precautions to prevent damage from freezing.

- Open all of the ball valves on your unit to prevent moisture from freezing and expanding in the valve.

Note: If wet blasting in the winter time, consider the following:

- At 32°F add rubbing alcohol to the water tank at roughly a 1:100 gallon ratio. More alcohol can be added if necessary, up to 1:20 ratio.
- With a tarp, create a tent around the pot, pump, and moisture separator. Place a space heater inside the tent to keep warm.
- Empty tank and blow out hoses.

Choosing Blast Pressure

BLAST PRESSURE

Different materials and coatings call for different pressures or blasting distances. Thick metal can handle a lot of pressure, while sheet metal could be dented by using too much pressure. Simple paint may come off nicely with the nozzle far away, while tough undercoating may come off better with the nozzle closer.

The distance you hold the blast nozzle from the material affects the harshness and speed of the blast and changes the "blast pattern" size. If you hold the nozzle too far away, the blast pattern will be big, but the coating will come off too slowly. If you hold the nozzle too close, the coating will come off quickly, but the blast pattern will be small. With a tiny blast pattern you'll have to move your arms a lot more to cover some area, which is inefficient. The best things is to find a nice balance between blast pattern size and removal speed.

ADJUSTING BLAST PRESSURE

The Dustless Blasting® system allows you to easily change the blast pressure by turning one simple knob. The higher the pressure is, the higher your productivity. Obviously lower pressures are more gentle on whatever substrate you're blasting. If you need to blast on softer material or very thin metal, lowering the pressure is a good idea to prevent damage.

A clockwise rotation of the pressure regulator knob will increase the pressure, while a counter clockwise rotation will lower pressure. If you try to lower the pressure while the blast tank is pressurized, you'll need to either have someone blast simultaneously, or just open the blowdown valve slightly to release some of that pressure.

COMMON GUIDELINES

Marine

On thick steel like ship hulls, you can operate at about 150 PSI. Fiberglass requires a lower pressure — about 70 PSI — with a larger standoff distance.

Automotive

For most automotive uses, 120 PSI is ideal. Find a balance between blast pattern size, and speed.
For thick aluminum like a large trailer, you can blast at up to 150 PSI.

Graffiti Removal

For removing graffiti from a brick wall, use about 100 PSI so you don't etch the brick. The graffiti will still come off quickly at this low pressure.

Here is a chart of some suggested blast pressures:

	Fiberglass Boats	Brick	Metal (Auto)	Aluminum	Steel
Blast Pressure	70 PSI	100 PSI	100-120 PSI	120-150 PSI	150 PSI
Blast Distance	18-24 in.	18-24 in.	12-14 in.	12-20 in.	10-14 in.
Blast Pattern	Large	Large	Medium	Medium-Large	Medium

**The closer the nozzle is to the blast surface, the smaller the blast pattern .*

Choosing Abrasive

WHAT IS ABRASIVE?

Abrasive (also called media) is mixed with water inside the blast tank. When blasting, you propel this mixture towards a surface at high speed, to remove paint, rust, and other coatings.

TYPES OF ABRASIVE

Dustless Blasting® allows you to use a wide variety of abrasives, either wet or dry. For wet blasting, any abrasive that sinks in water and is not water soluble can be used. However, abrasives that are dirty or have a very inconsistent particle size can cause problems, such as sputtering or clogging of the machine.

We largely recommend crushed recycled bottle glass, because it's clean, inexpensive, environmentally friendly, and suited for a wide variety of jobs. Sometimes different abrasives are available simply based on geography.

A common question we get is "Can I use play sand?" The answer is NO. Play sand is not an industrial product, so it's not controlled and graded the way abrasives are. It won't behave predictably in your equipment, and you could wind up in loads of legal trouble, from the EPA to local municipalities. Most bags of play sand are explicitly marked "Not to be used for sandblasting".

ABRASIVE SHAPE

Basically, there are two different shapes: angular which has sharp edges, and round with no edges.

Angular abrasive has sharp edges which will cut into the substrate, leaving an anchor profile for the new finish to stick to. Examples of angular shaped media would be crushed glass, slags and garnet abrasives to name a few.

Round media is used mainly for cleaning or stripping while leaving the surface smooth. It will not rough up the surface or leave an anchor profile. Examples of round media would be glass beads, sugar sand and plastic pellets.

An anchor profile is a fancy way of describing the rough surface created during the blasting process. These peaks and valleys are usually measured in mils (1/1000 of an inch). One of the main causes of premature coating failure is an insufficient anchor profile. It’s a good idea to understand from the customer what he/she expects when you are done. Some people prefer an anchor profile, while others will want a smoother surface.

ANGULAR ROUND

For example, if you are stripping a car to be repainted, you'll probably want to leave an anchor profile for the new paint to adhere to. If you are simply cleaning calcium deposits from a pool — which will not be repainted — leaving a profile is unnecessary.

ABRASIVE SIZE

Most abrasive is measured with mesh size. During production, it gets shaken through various screens. These screens might have as little as 20 holes per square inch, or as many as 100. This means that 40/70 glass fits through the 40–70 holes per square inch screens. 20/40 glass is coarser than 40/70, and 60/100 glass is finer.

	Looks Like
20/40	
40/70	
60/100	

A common misconception is that the coarser glass will help you get through a job faster. It is true that 20/40 glass is slightly more aggressive than 40/70. However, because it's so coarse, you're only getting half as many particles of glass in the same size bag. You'll end up using twice as many bags to get the job done, which is not only expensive, but inefficient! It's a much better idea to increase abrasive density if you want to complete the job faster.

ABRASIVE DENSITY

Understanding the weight or bulk density of the media you are using will also help decide which is best for the process. The heavier the media, the more impact it has on the surface you are blasting. Imagine a golf ball and a ping pong ball. They are the same shape and size, but the golf ball is more dense. If you threw them at someone, the golf ball would hurt a lot more.

Crushed glass has a bulk density of 75-80 lbs per cubic foot— while garnet weighs around 145 lbs per cubic foot. So, the two abrasives at the same mesh size and blast pressure will have different results. A 40/70 crushed glass will be more “gentle” on the surface than the same mesh size of garnet at the same blast pressure.

The harder and heavier the abrasive is, the rougher the profile will be. Using larger, more coarse abrasives will decrease the run time in your machine. For example, if you are blasting with 40/70 crushed glass and decide to use a larger mesh size of 20/40 you will notice a decrease in run time. If both bags of abrasive are 50 lbs, there are fewer particles in the 20/40 mesh size bag than the 40/70. A larger mesh size will be more aggressive so it will have more of an impact to the surface you are blasting.

ABRASIVE HARDNESS

Generally, the harder the particle, the deeper the profile it will impart. Softer abrasives, like organic materials and plastics, are good for removing dirt, oil, grease and paint without removing any of the substrate or creating a profile.

ADJUSTING ABRASIVE SUPPLY

You will need to adjust media flow from time to time, when you are using different types of media or when you are switching between wet and dry blasting.

When wet blasting, start with outlet pipe 1/2 inch above locked position, and adjust in 1/16 inch increments until media runs out before water. Coarser media will require a higher outlet pipe setting.

When dry blasting, start with outlet pipe 3/8 inch above locked position and adjust in 1/16 inch increments until you reach the desired productivity to use ratio. Setting will be closer to 1/8 inch for fine media and up to 3/4 inch for coarse media.

COMPARISON CHART

Understanding the impact of different abrasives will help in deciding the best media for the job. The following chart will explain the characteristics of various media types.

	Description	Speed	Surface Profile	Surface Removal	Hardness	Bulk Density
Aluminum Oxide	Sharp, long lasting media for fast etching & profiling	Fast	High Etch	Yes	8 - 9	110 lbs/ft^3
Crushed Glass	Silica-Free, 100% recycled glass; efficient; economical stripping	Fast	Medium-High Etch	Slight	5 - 6	100 lbs/ft^3
Glass Beads	Round, soda-lime glass produces bright, satin finish; minimizes stress on part	Medium Fast	No Etch Satin Finish	Slight	5 - 6	95 lbs/ft^3
Silicon Carbide	Very hard, aggressive cutting media; ideal for stone, glass, and hard surfaces	Very Fast	Very High Etch	Yes	9 - 9.5	90 lbs/ft^3
Plastic Abrasives	Soft media designed for automotive & aerospace applications	Medium	No Etch Stripping	Slight	3 - 4	50 lbs/ft^3
Steel Shot	Carbon Steel, round spheres designed for polishing and peening	Medium	No Etch	No	40 - 51 HRC	230 lbs/ft^3
Steel Grit	Angular, carbon steel for fast stripping & aggressive cleaning	Medium Fast	High Etch	Moderate	40 - 65 HRC	260 lbs/ft^3
Corn Cob	Organic, soft media ideal for soft surfaces such as wood	Slow	No Etch	No	4 - 4.5	40 lbs/ft^3
Walnut Shells	Angular, organic grit for mildly aggressive stripping without damage to surface	Medium Slow	Low Etch	Very Slight	4.5 - 5	50 lbs/ft^3
Blast Sand	Angular, sharp edges that cut into substrate and leave an anchor profile	Medium Fast	High Etch	Yes	7	100 lbs/ft^3
Sugar Sand	Round media used for cleaning and stripping surface	Medium Fast	High Etch	Yes	6 - 7	100 lbs/ft^3
Garnet	Angular hard abrasive commonly used in place of silica sand	Very Fast	Very High Etch	Yes	7.5 - 8.5	85 lbs/ft^3
Soda Bicarbonate	Medium-sized abrasive used to blast smooth and strip suraced	Slow	No Etch	No	2.5	61 lbs/ft^3
Coal Slag	Angular by-product of coal; used for removal of coatings from steel and concrete	Medium Fast	High Etch	Yes	6 - 7	85 lbs/ft^3

RESOURCES

TRAINING | SAFETY | REPLACEMENT PARTS

For assistance with servicing your machine, visit:

service.DustlessBlasting.com

For replacement parts and accessories, visit:

store.DustlessBlasting.com

For training resources, visit:

support.DustlessBlasting.com

To submit a ticket or to find safety data sheets, business guides, authorization certificates, and warranty information, visit

www.DustlessBlasting.com/support

Toll Free: 1-800-727-5707
International: 1-713-869-2227
www.DustlessBlasting.com