Pro-Tech TOOLS

Pro-Tech TOOLS 19L Mobile Sand Blaster on Wheels



Instructions for use

Translation of the original instructions

Do not use the equipment until you have read this manual and understood its contents and warnings. These warnings are provided in the interests of the health and safety of the operator and those in the immediate vicinity. Keep this manual for future reference.

PRODUCT FEATURES

The sandblaster is a versatile device for cleaning or matting various types of surfaces. The sandblasting unit is a portable pressure vessel containing material which, when connected to a compressed air source (compressor), can be used for blasting.

WARNINGS REGARDING DUST

Inhaling silica sand dust can cause silicosis, a fatal lung disease. Inhaling dust during blasting work can also cause asbestosis or other serious or fatal diseases. Anyone carrying out blasting work, anyone handling substances containing toxic substances, or substances containing more than one per cent free crystalline silica, and anyone present in a dusty area must wear a NIOSH-approved air-supplied respirator that is in good working order. Harmful dust may remain suspended in the air long after blasting work has finished, which can cause serious injury or death.

Before removing your respirator, use an air quality monitor to check that the air is safe to breathe. Contact your local OHSA or NIOSH office to determine the correct respirator for your specific application.

Air-supplied respirators do not remove carbon monoxide or provide protection against it, even if the air is safe to breathe. Contact your local OHSA or NIOSH office to determine the appropriate respirator for your specific application.

Air-supplied respirators do not remove carbon monoxide (CO) or any other toxic gas, nor do they provide protection against them. Use carbon monoxide removal equipment and monitoring equipment in conjunction with a respirator to ensure Class D air quality. Comply with all applicable OSHA standards and OSHA Regulation 1910.134(d).

SAFETY PROCEDURES FOR BLASTING EQUIPMENT

1. When the blasting unit is under pressure, do not insert your fingers, any part of your body or any components into the area around the filler plug seal. Failure to keep body parts away from the filler plug area may result in serious injury.

2. Do not exceed the maximum working pressure. Failure to observe the maximum working pressure may cause the blasting unit to rupture, which could result in death or serious injury.

3. Everyone in the vicinity of the blasting equipment, including the operator, should correctly use and maintain a NIOSH-approved self-contained breathing apparatus, even after the blasting process has finished. Harmful dust may remain in the air long after the
blasting process, which may cause injury or death.

4. Before using the pressure blasting equipment: Put on safety goggles, gloves and a NIOSH-approved respirator. Always wear this protective equipment when operating and maintaining the blasting equipment. Although the equipment is fitted with a protective hood to shield you from flying particles whilst using the equipment, this hood does not provide protection against airborne particles. Anyone carrying out blasting work must use a properly maintained air-supplied respirator.

5. Wear thick, cuffed gloves to protect your hands.

6. Use protective screens to prevent people or objects from being struck by sprayed material, as dust can travel a considerable distance. Blast in a large, open area to minimise the build-up of abrasive material in surrounding areas.

7. Do not drag the abrasive tank behind the hose and do not allow the tank to tip over, as this could break the fittings, rendering the machine dangerous. Abrasive and air at pressures below 125 PSI have a very high destructive force. Never leave the machine under pressure unattended. In the event of an emergency, such as a burst blasting hose, switch off the machine immediately.

8. Before carrying out any maintenance cleaning, release the air from the tank via the inlet valve and disconnect the air supply. Care must be taken when removing the nozzle, as air pressure may still remain in the hose if the nozzle is capped.

9. To ensure safe operation, carry out the recommended preventive maintenance on the blasting machine's tank, remote control unit and accessories. Replace all worn parts before they fail. Immediate replacement of worn components is essential. Failure to replace worn components may expose the operator or bystanders to high-velocity blasting media and compressed air, which may cause serious injury.

10. Do not use any corrosive materials in the equipment. Use only clean and dry blasting media.

11. Do not repair the blasting hose. A repair will wear out quickly and may result in the blasting material being sprayed violently into the surrounding area.

A worn blasting hose may suddenly rupture. Couplings and nozzle holders may not grip a worn hose securely, which may cause them to tear off under pressure. Compressed air and blasting material escaping from a burst hose, or from disconnected couplings or nozzle holders, can cause serious injury.

12. Welding, grinding or drilling on the blasting equipment may weaken the pressure vessel. The pressure of the compressed air may cause a weakened blasting unit to burst, which could result in death or serious injury.

13. Always position the machine so that the outlet is directed away from any objects or people. Keep out of the path of the blasting material. It may be ejected at high speed. Impact from the blasting material may cause serious injury.

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14. The use of this equipment may generate static electricity. Do not use the equipment within 50 feet of any explosive or potentially explosive substances, or their vapours, as this may result in an explosion.

15. Do not use this equipment in any area that could be considered hazardous, or where flammable gases or liquids are present. Failure to follow this instruction may cause an explosion, which could result in serious injury.

16. Do not overfill the tank with abrasive. Do not fill it beyond 6 inches from the top edge of the tank.

17. BEFORE OPENING THE CONTAINER, release the air pressure from the abrasive tank. To do this, close the air inlet valve (31) and press the DEADMAN valve (25) downwards to release the pressure in the pipework. Ensure that the tank pressure gauge (9) reads zero before opening the tank.

18. MAINTAIN THE CORRECT AIR PRESSURE; a maximum of 125 PSI is recommended, and the pressure must not exceed 125 PSI. If the pressure exceeds 125 PSI, stop all work immediately and disconnect the air compressor to reduce the excess pressure. Do not investigate the pressure problem in the blasting unit until the pressure gauge (9) reads zero.

INSTALLATION

1. Fitting the suction pipe (12). First, attach the pressure gauge (9) to the top of the suction pipe so that it is visible through the top of the tank.

Next, fit the throttle valve (31) to the lower end of the pipe. Fit a connecting nipple to the throttle valve. Fit the connecting pipe (10) to the pipe.

2. Fitting the filter with water separator (9). Screw a coupling (11) onto each side of the filter. On one side, attach the air inlet valve (31) to the coupling (10) on one side of the filter, and then attach the connector with internal and external threads (8) to the other side of the air inlet valve. When you are

ready to operate the blasting unit, attach the air hose from the compressor to the connector with internal and external threads (8).

3. Place the tank (15) on the table so that the four clips are facing upwards. Screw the water-separating filter (9) and its components into the opening on the side of the suction pipe. Then screw the open end of the connecting pipe (10), together with the suction pipe (12) and the pressure gauge (9), into the threaded hole on the side of the filling pipe at the top of the tank. Once again, ensure that the pipe and pressure gauge are in a vertical position.

4. Fit the abrasive outlet valve into the opening at the bottom of the tank; secure the four parts in the following order: the connecting nipple (11); the abrasive metering valve (30); the connecting nipple (11); and the abrasive outlet pipe (12).

5. Fit the safety valve (25). When fitting this, choose one of the four nozzles (27). This is not a permanent choice, as you can change the nozzles depending on the task at hand. Screw the adapter (23) into the safety valve (25). Fit the seal (26) into the connecting nipple, then add the nozzle (27) and the nozzle cover nut (28).

6. When connecting the abrasive feed valve assembly to the unit, proceed as follows: Slide two hose clamps (22) onto each end of the abrasive hose (21), slide one end of the hose onto the coupling on the abrasive outlet pipe (12) and the other end onto the adapter (23). Both ends of the hose should be securely seated on the couplings. Slide the hose clamps along the hose towards the respective couplings and tighten the clamps very firmly.

7. Attach both handles (06) to the tank using four flat-head screws (02), four washers and four hexagonal nuts. Note: ensure the ends of the handlebar bend are pointing upwards.

8. Locate the axle (29) and slide it through the holes on the sides of the handles (06). Fit one wheel (16) onto each end of the axle and secure them in place using the cotter pins (14) and washers (34).

9. Slide the fixed leg (17) onto the bracket on the underside of the tank near the edge. Secure the leg to the tank with the final cotter pin (14).

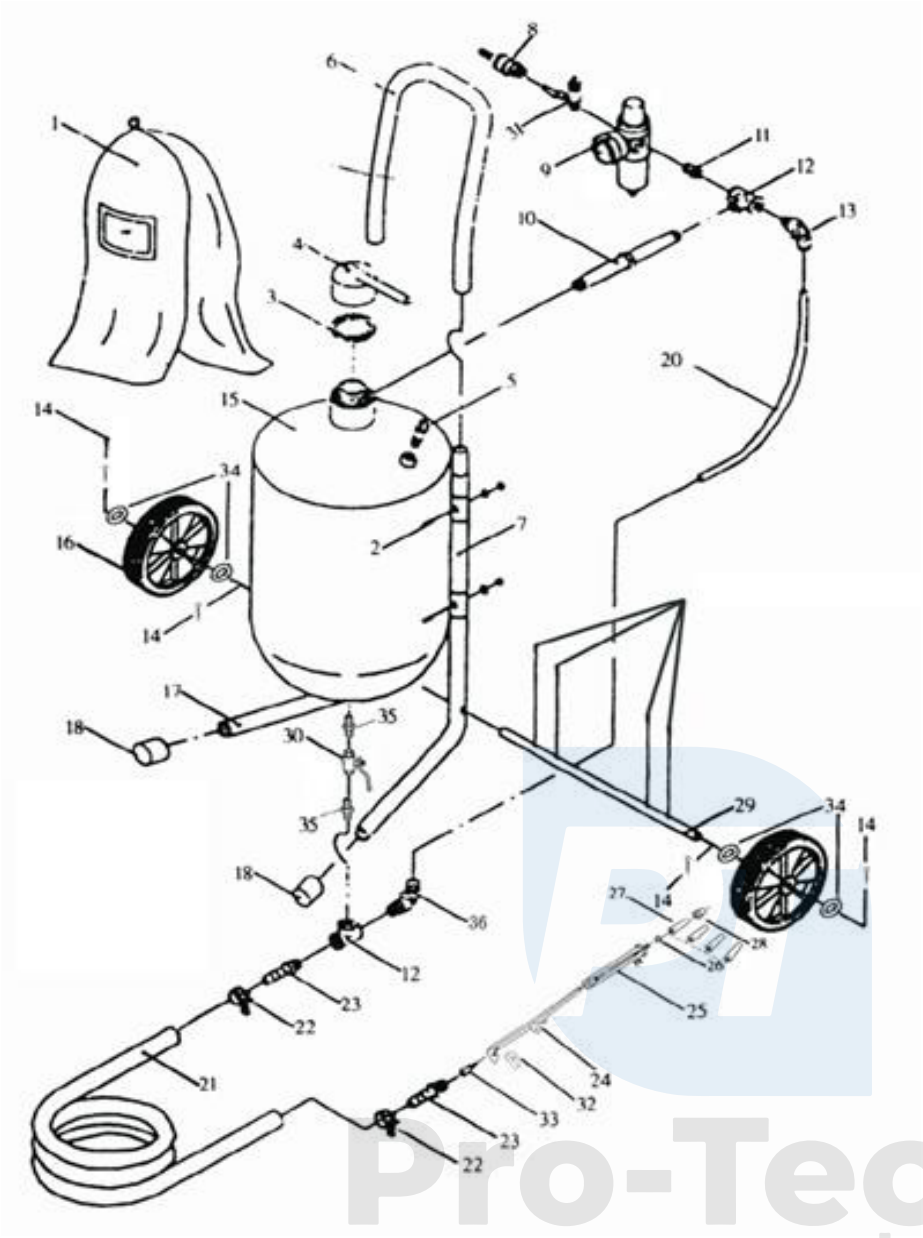
10. Before starting operation, check all connections and ensure that they are all securely tightened and correctly fitted.

WARNING

1. Pay particular attention to the ABRASIVE HOSE (21), the SAFETY VALVE (25) and the NOZZLE (27), as these wear out much more quickly than other components.

2. The ABRASIVE HOSE must be replaced if leaks develop in its side walls or blisters appear on the surface. If either of these problems occurs, do not use the hose.

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Part number	Description	Quantity	Part number	Description	Quantity
1	Protective hood	1	18	Leg end cap	2
2	Screw	4			
3	O-ring	1	20	Air hose	1
4	Filling cap	1	21	Abrasive hose	1
5	Safety valve	1	22	Hose clamp	2
6	Handle	1	23	Hose adapter	2
7	Left leg	1	24	Trigger assembly	1

8	Connector	1	25	Safety valve	1
9	Filter with pressure gauge and water separator	1	26	Rubber seal	1
10	Connecting pipe	1	27	Ceramic nozzle	4
11	Connector	1	28	Front nut	1
12	Intake manifold	2	29	Spindle	1
13	Knee joint	2	30	Abrasive feed valve	1
14	Countersunk screw	4	31	Ball valve	1
15	Tank	1	32	Sealing block	1
16	Wheel	2	33	Valve adapter	1
17	Right leg	1	34	Washer	4
			35	Coupling	2

OPERATING INSTRUCTIONS

1. Connect the air hose to the inlet valve. The manufacturer recommends using an air hose with an internal diameter of at least 1.27 cm. Using an air hose with an internal diameter of less than 1.27 cm will restrict the air flow and impair the operation of the unit. Before introducing air, ensure that the inlet valve and the nozzle valve are in the OFF position. With the safety valve closed and the filling plug securely tightened, open the air inlet valve to pressurise the system. The operating range of the unit is 60 to 125 PSI. Once you have selected the correct nozzle, insert it into the mounting base. Place it against the base plate, slide the locking nut onto the nozzle and tighten it by hand.

The nozzle may become blocked.

2. The manufacturer recommends a fine abrasive with a grain size similar to that of table salt. This ensures the correct flow rate.

3. When the blasting unit is pressurised and the abrasive flow control valve at the bottom of the unit is closed, open the ball valve to allow air to flow through the bypass hose to the bottom of the unit. Then hold the abrasive hose by the nozzle holder sleeve, with the nozzle pointing away from the machine and the operator, quickly press the safety valve until it is fully open, and adjust the control valve at the bottom of the tank so that the abrasive is introduced into the air stream. Slowly open the flow control valve until the abrasive material is just visible. Once the flow control valve is set to the required value, further adjustment should only be necessary when changing the grit size of the abrasive material, or when using a nozzle with a different internal diameter. Opening the flow control valve too far will cause the hose or nozzle to become blocked.

For optimum performance, the safety valve should be opened and closed quickly.

WARNING!

If ‘twist-on’ type air hose couplings are used, they must be secured with safety pins or wire to prevent accidental disconnection whilst the equipment is under pressure. Disconnecting the hose whilst the equipment is under pressure may cause serious injury.

Caution! Do not fill the pressure vessel to within 15 cm of its upper edge. If the hose accidentally disconnects during use, the contents may spray out.

See the WARNINGS regarding the respiratory tract at the start of this manual.

TYPES OF ABRASIVE MATERIAL

Black Beauty

Black Beauty is used to remove paint and rust from steel, such as car bodies, tanks or heavy machinery. Black Beauty is superior to silicon as it contains only 1% free silicon, has faster cutting properties, can be reused, contains no moisture and does not clump or absorb moisture.

Steel scrap

Scrap steel has an exceptionally fast cutting effect on rusted metal and hard-to-remove paint. Scrap steel is popular because it leaves a very smooth surface. Its price is comparable to that of most other specialised abrasive materials. Steel grit is recommended for use in recycling systems or booths.

Glass beads

Glass beads are used to create a satin or matt finish. Glass beads are recommended for use in recycling systems or blasting booths.

Aluminium oxide

Aluminium oxide is a high-quality abrasive material that is sharper than sand (not recommended) and cuts twice as fast as sand. It leaves a smooth, pit-free surface. Aluminium oxide is coarser than glass beads and can be reused. It is one of the most cost-effective abrasive materials you can use in any recycling systems or blasting cabinets.

Plastic grit

Used primarily for removing aluminium and glass fibres. Excellent for paint removal. Recommended for use in blasting chambers as it produces very little dust. It works quickly, has a long service life and improves visibility in the chamber.

RECOMMENDATIONS FOR AIR COMPRESSORS:

To ensure the air compressor operates efficiently, follow these instructions:
1. Use a smaller nozzle to regulate air consumption.
2. Do not blast continuously. Stop blasting from time to time to allow the compressor to cool down. No compressor is designed for continuous operation at full speed. Operate at 70 per cent of the rated power.
3. Use an air hose with a diameter of at least 1.27 cm. If your compressor produces excessive moisture, we recommend using a moisture separator.
4. Keep dust and abrasive material generated during blasting away from the air compressor. Observe the maximum air pressure for the blasting equipment and either set the compressor to operate within these limits or use a pressure-reducing valve to reduce the air pressure to an appropriate level.

USE OF ABRASIVES (ABRASIVE MATERIALS):

1. If there is moisture in the abrasive material, this may, over time, damage the blasting machine's hopper or cause the system to become blocked. To avoid this problem, keep the abrasive material and the air from the compressor dry.
2. If the abrasive is damp, sieve it and dry it before use.
3. Do not leave the blasting material in the tank after blasting, as it may absorb moisture and impair the performance of the blasting equipment.
4. Store abrasive materials in a dry place; do not place them directly on the ground or on a concrete floor, but on a wooden base.
5. If the air humidity is too high, blasting work may not be suitable at that time.
6. Consider using different grades or types of blasting material to prevent the nozzle from becoming blocked due to high moisture content.
7. Do not use sand.

COMPRESSED AIR SUPPLY REQUIREMENTS

Abrasive blasting requires a large volume of air at high pressure. The efficiency of your blasting equipment may be adversely affected by using an air supply hose that is too small, insufficient air pressure, or a nozzle that is too large.

Inner diameter of the hose	Hose length	Internal diameter of the nozzle	CFM at 110 PSI	Abrasive consumption per hour
0.95 cm (3/8")	15 m	0.24 cm (3/32")	6	27.22 kg
0.95 cm (3/8")	7.5 m	0.28 cm (7/64")	12	45.36 kg

1.27 cm (1/2")	15 m	0.32 cm (1/8")	15	68.04 kg
1.27 cm (1/2")	7.5 m	0.36 cm (9/64")	20	90.72 kg

We recommend that an air pressure of between 65 and 110 PSI will ensure the best results.

LOADING ABRASIVE INTO THE TANK

1. Check that the abrasive is dry and will not block the feed valve (30), the abrasive outlet pipe (12), the hose (21) or any other components.
2. Wear protective clothing, a full-face mask and a respirator approved to MSHA/NIOSH standards.
3. Turn the air supply valve (31) to the 'off' position (horizontal).
4. Press down to open the nozzle safety valve (25).
5. Check the pressure gauge (9) and ensure it reads zero pressure.
6. Remove the filler cap (4) from the top of the tank.
7. Insert the funnel (19) and pour the abrasive into the funnel. Ensure you pour a sufficient quantity into the tank to carry out the job. However, for a large job, fill the tank only to 3/4 capacity and top it up as required to complete the job.

TIP: If the air humidity is 90/100%, the water separator (9) will not be able to capture all the moisture in a 3/4-full tank. It is better to use a smaller amount of abrasive, top it up more frequently and empty the water separator more often. This will reduce the risk of the bottom of the hopper or the pipe becoming blocked.

8. Once the tank has been filled with the correct amount of abrasive, close the filler cap (4).
9. Close the nozzle cap (30) and open the air inlet valve (31).
10. When you start pressurising the tank from the compressor, listen carefully to check that no air is escaping from the filler cap. Rectify any leaks before starting operation.

MAINTENANCE

WARNING!

Failure to follow the instructions below before carrying out any maintenance may result in serious injury or death due to a sudden release of compressed air:

- Depressurise the blasting unit.
- Shut off and mark the compressed air supply.
- Bleed the compressed air supply line to the blasting gun.

Worn components must be replaced immediately. Failure to replace worn components may expose the operator or bystanders to high-velocity blasting material and compressed air, which may result in death or serious injury.

Leaks around couplings and nozzle holders indicate worn or loose parts. Nozzle holders and couplings that are not securely fitted to the hose, and nozzles that are not securely fitted in the nozzle holders, may become detached under pressure. The impact of nozzles, couplings, hoses, or abrasive material, as well as parts that have become detached under pressure, can cause serious injury.

To ensure a long and effective service life, it is strongly recommended that you follow these procedures:

1. Replace all hose adaptors intended exclusively for the flow of abrasive materials at regular intervals (after 5–6 months of normal use or after 10–15 hours of intensive industrial use).
2. Replace the abrasive hose when it begins to soften, or if the medium is leaking from it, or if air is escaping around the hose or the handle.
3. Replace the nozzle when it becomes worn.
4. After replacing the nozzle, it may be necessary to adjust the sealing block.

TROUBLESHOOTING TIPS

PROBLEM/CAUSE	**POSSIBLE SOLUTION**
Fluctuations in air flow:	
Air pressure too low	See the section 'Insufficient air pressure'
Too much abrasive material	Adjust the abrasive material valve
Excessive media consumption:	

The abrasive material valve is open too wide	Close it slightly
The air pressure is too low	Check the pressure gauge

Clogging and blockage of the blasting material flow:

Contaminants in the abrasive material	Clean and sieve it
The abrasive material is too coarse	Use a finer grain size
Nozzle blockages	Use a larger nozzle
Nozzle plugs	Adjust the media valve
Damp abrasive material	Dry the abrasive material; bleed the water from the air

Moisture in the abrasive media:

Wet abrasive material	Replace or use dry abrasive material
Water in the air	Drain water from the air pipes
Water in the tank	Empty, dry and refill

Damp weather:

Low humidity	Keep the abrasive material as dry as possible
Moderate humidity	Use a dryer or moisture separator
High humidity	If possible, avoid operating during this period

Overloaded compressor:

The compressor is too small	Limit the operating time
Nozzle diameter too large	Use a smaller size
Too many leaks in the pipework	Seal and tighten the pipework
Holes in the abrasive hose	Replace the hose
Clogged air filter on the compressor	Clean

Insufficient air pressure:

The compressor is too small	Use a smaller nozzle
The inlet valves are not fully open	Open the valves
The nozzle size is too large	Use a smaller size
Leaks in the pipework	Seal and tighten the pipework
Holes in the hose for abrasive materials	Replace the hose
Clogged air filter on the compressor	Clean the filter
The seal is worn or dirty	Clean or replace the seal

Insufficient flow of abrasive material:

The gun hopper is empty	Fill the tank
Moisture in the abrasive material	Dry the abrasive material
Insufficient air pressure	Check the system
Kink in the abrasive hose	Straighten the hose
Contaminants in the abrasive material	Clean or sieve the abrasive material

TECHNICAL SPECIFICATIONS

Product code:
PT09916 Model: FF-
Q901
Tank capacity: 5 gal / approx. 19 l
Working pressure: 60 – 125 PSI / 4.1 – 8.6 bar
Air consumption: 6 – 25 CFM / approx. 170 – 708 l/min