Pro-Tech TOOLS

Pro-Tech TOOLS Mobile Sandblaster



Instructions for use

Translation of the original manual

Do not use the machine until you have read this manual and understood its contents and warnings. These warnings are provided for 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 or protect against carbon monoxide, 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.

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 (19) and press down on the safety valve (34) to release the pressure in the pipework. Ensure that the tank pressure gauge (16) 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 (16) reads zero.

INSTALLATION

1. Fitting the suction pipe (15). First, attach the pressure gauge (16) to the top of the suction pipe so that it is visible through the top of the tank. Then attach the throttle valve (19A) to the bottom of the pipe. Attach the coupling (21) to the throttle valve. Attach the connecting pipe (14) to the pipe.

2. Fitting the filter with water separator (18). Screw a coupling (17) onto each side of the filter. On one side, connect the air inlet valve (19) to the coupling (17), and then connect the connector with internal/external thread (20) to the other side of the air inlet valve. When you are ready to operate the sandblaster, connect the air hose from the compressor to the connector with internal/external thread (20).

3. Place the tank (01) on the table so that the four clips are facing upwards. Screw the filter with water separator (18) and its components into the opening on the side of the suction pipe. Then screw the open end of the connecting pipe (14), together with the suction pipe (15) and the pressure gauge (16), 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; fit the four components in the following order: coupling (17); abrasive metering valve (19B); coupling (17); and abrasive outlet pipe (23).

5. Fit the safety valve (34). When fitting this, choose one of the four nozzles (28). This is not a permanent choice, as you can change the nozzles depending on the job being carried out. Screw the adapter (26) onto the safety valve (34). Screw the seal (27) into the connection adapter, then fit the nozzle (28) and the nozzle cover nut (29).

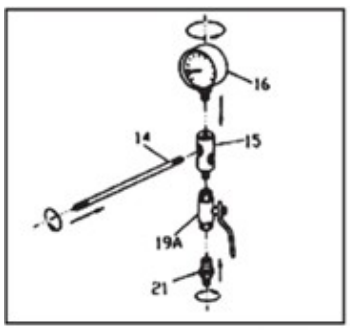
6. When connecting the abrasive feed valve assembly (step 4) and the assembly (step 5), proceed as follows. Slide the two hose clamps (24) onto both ends of the abrasive hose (25), slide one end of the hose onto the nipple on the abrasive outlet pipe (23) and the other end onto the adapter (26). Both ends of the hose should be securely fitted to the nipples. Slide the hose clamps along the hose towards both fittings and tighten the clamps very firmly.

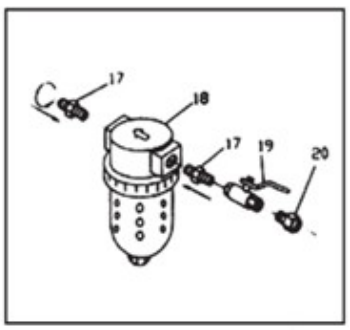
7. Secure both handlebars (06) to the tank using four flat-head screws (08), four washers (10) and four hexagonal nuts (09). Note: the ends of the handlebar bends must point upwards.

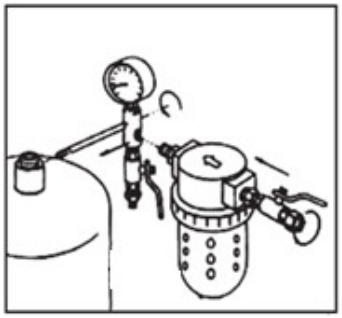
8. Locate the axle (05) and slide it through the holes on the sides of the handlebars (06). Fit one wheel (02) to each end of the axle and secure them in place using the cotter pins (03) and washers (30).

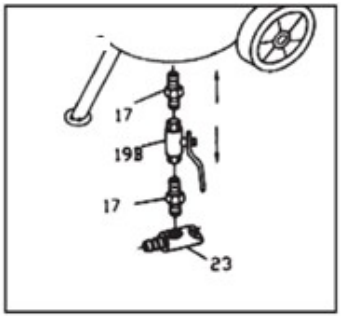
9. Slide the fixed leg (04) onto the bracket on the underside of the tank near the edge. Secure the leg to the tank with the final cotter pin (03).

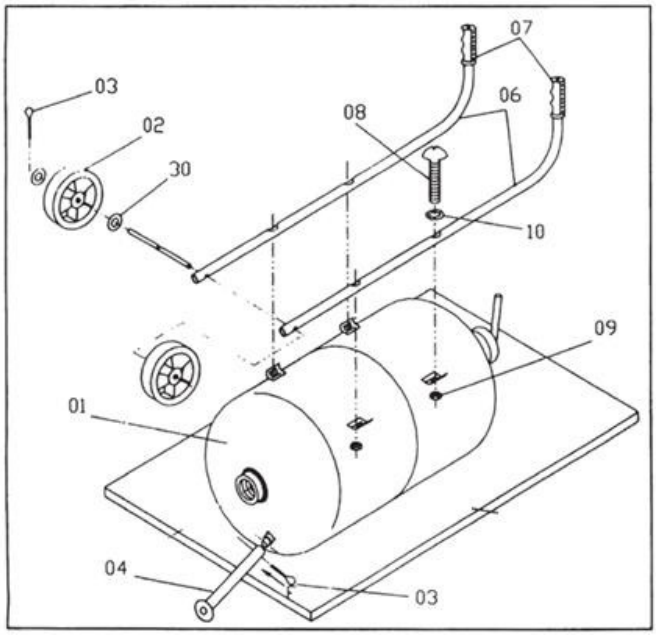
10. Before starting operation, check all connections and ensure thoroughly that they are all securely tightened and correctly fitted.

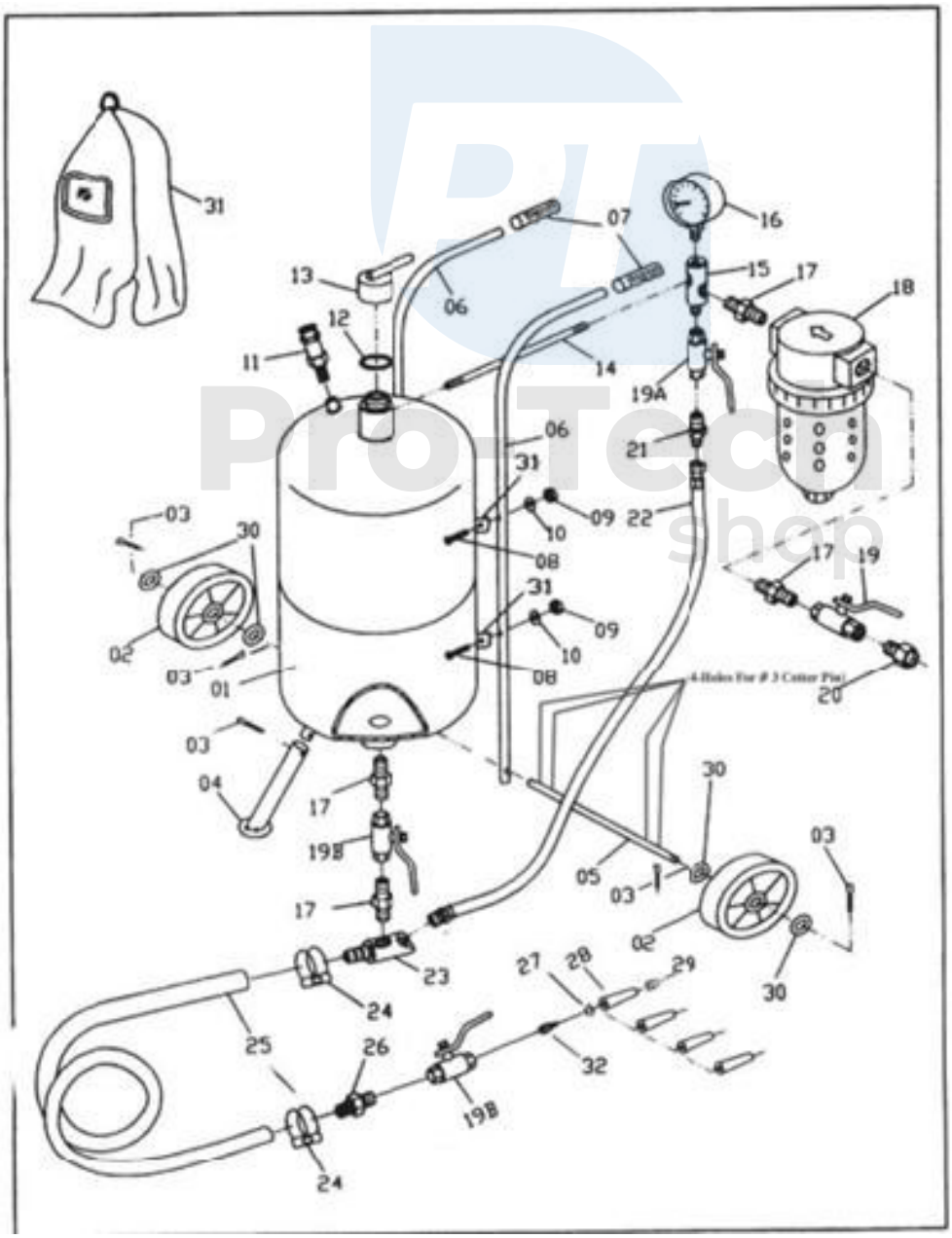









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PART	DESCRIPTION	QUANTITY	PART	DESCRIPTION	Quantity
01	TANK	1	19A	BRASS REGULATING VALVE, 0.95 cm (3/8")	1
02	WHEELS	2	19B	BRASS FEED VALVE FOR GRINDING WHEELS, 0.95 cm (3/8")	2
03	COLLAR PINS	5	20	MALE-FEMALE CONNECTOR	1
04	FIXED LEG	1	21	CLUTCH	1
05	AXLE	1	22	AIR HOSE	1
06	HANDLEBARS	2	23	OUTLET PIPES FOR ABRASIVE MATERIAL	1
07	HANDLES	2	24	CLAMPS	2
08	PNA SCREW	4	25	HOSE FOR ABRASIVE MATERIAL	1
09	HEX NUT	4	26	ADAPTER	1
10	WASHER	4	27	RUBBER NOZZLE SEAL	1
11	SAFETY VALVE	1	28	CERAMIC NOZZLE	4
12	O-ring	1	29	FRONT NUT	1
13	FILLER CAP	1	30	WASHER	4
14	CONNECTING PIPES	1	31	BONNET	1
15	INTAKE MANIFOLD	1	32	SAFETY VALVE ADAPTER	1
16	PRESSURE GAUGE	1	34	SAFETY VALVE	1
17	CLUTCH	4			
18	FILTER WITH WATER SEPARATOR	1			
19	BRASS AIR INLET VALVE, 0.95 cm (3/8")	1			

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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 equipment. 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 action on rusted metal and hard-to-remove paint. Scrap steel is popular because it leaves a very smooth finish. 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):

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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 an air pressure of between 65 and 125 PSI to ensure the best results.

LOADING ABRASIVE INTO THE HOPPER

1. Check that the abrasive is dry and will not block the feed valve (19B), the abrasive outlet pipe (23), the hose (25) 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 (19) to the 'off' position (horizontal).
4. Press down to open the nozzle safety valve (34).
5. Monitor the pressure gauge (16) and ensure it reads zero pressure.
6. Remove the filler cap (13) from the top of the tank.
7. Insert the funnel (31) 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 (18) will not be able to capture all the moisture in a 3/4-full hopper. It is better to reduce the amount of abrasive material, 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 (13).
9. Close the nozzle cap (19B) and open the air inlet valve (19).
10. When pressurising the tank from the compressor, listen for any air 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.

FURTHER MAINTENANCE TASKS:

1. You should make every effort to protect your air compressor from any damage that may arise as a result of blasting work. The best option is to position the compressor upwind of the blasting site; the greater the distance between them, the better. In addition, you should continue with standard compressor maintenance procedures.
2. Some parts of the blasting equipment wear out much faster than others; the parts requiring special attention are those through which the mixture of air and abrasive material flows, starting with the abrasive hose (25), through the metal liners and the safety valve (34), to the ceramic nozzles (28).
3. If air leaks occur in any of these parts, you should stop all work and identify what needs to be repaired or replaced. When the abrasive hose (25) is new, it has two layers of reinforcing fibres and a wall thickness of 6.35 mm. As a result of abrasion on the inner diameter, this wall gradually thins. One way to check the hose and other parts affected by blasting is to put on protective clothing. Then pressurise the system and close the nozzle cap (19). Listen for any air leaks and rectify any leaks before resuming operation. You may also notice areas on the hose where the wall has thinned significantly. These areas appear as blisters on the hose; if you find such a blister, obtain a new hose immediately. If this blister bursts, abrasive material will leak out from the side of the hose.

TIPS FOR TROUBLESHOOTING

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

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Insufficient air pressure:

The compressor is too small	Use a smaller nozzle
The inlet valves are not fully open	Open the valves
The nozzle 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	PT00234	PT00233
Model	FF-Q903	FF-Q902
Tank capacity	20 gal / approx. 76 l	10 gal / approx. 38 l
Operating pressure	60 – 125 PSI / 4.1 – 8.6 bar	60–125 PSI / 4.1–8.6 bar
Air consumption	6 – 25 CFM / approx. 170 – 708 l/min	6 – 25 CFM / approx. 170 – 708 l/min

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