Specification of Q3515 Shot Blasting Machine

Part I Processed workpieces and parameters

1	Max. Workpiece size (D*H)	Φ1500*650 mm
2	Chamber size (L*W*H)	Φ1600*750 mm
3	Max. loading weight	800 kgs
4	Finish level	Sa2-2.5 (GB8923-88)
5	Processing speed	Usually is 5-15 min
6	Surface roughness	20~75 μ (Depend on abrasive size)
7	Suggest abrasive	Steel cut wire, casting alloy shot: Φ0.8~1.5, abrasive supply valve max. flow: 500 kg/min. Abrasive loss: 0.0075 kg/m^2. Customer prepare steel shot.
8	Electric power supply	380V, 3P, 50HZ or Customized
9	Pit requirement	Waterproof
10	Layout of the machine	About 3.5*3*3.9 m (L*W*H) (Exclude dust collector)

Part II Technical data of Q3515 shot blasting machine

1	**Turntable system**	Dynamic load	1000 kgs
		Rotating speed	5 rpm
		Rotating motor power	2.2 kw
2	**Shot blasting system**	Blasting chamber	Material of protective linear: Mn13
			Material of the chamber: Q235
			Door: Manually
		Blasting wheel with inverter	Wheel quantity: 2 unit
			Blade structure: Straight line
			Blasting capacity: 2*180 kg/min
			Power: 2*11 kw
			Speed: 76 m/s
3	**Abrasive reclaim system**	Screw conveyor	Conveying capacity: 25 T/H Screw diameter: 250 mm Quantity: 1 set
		Bucket elevator	Lifting capacity: 25 T/H Lifting speed: 1.21 m/s Power: 3 kw Quantity: 1 set
		Separator	Quantity of separation: 25 T/H Air speed: 4-5 m/s Waste content: ≤1% (Full curtain and flow curtain type multistage winnowing) Quantity: 1 set
		Filtering material	Polyester film filter cartridge

4	Dust removal system	Fan power	4 kw
		Total pressure	2089 pa
		Ventilation volume	5600 m^3/h
		Bag quantity	4 pcs
		Filtering area	60 m^2
		Dust falling way	Automatic back pulse
		Filtering accuracy	1 μm
		Back Pulse Quantity	2 pcs
		Dust emission level	≤90 mg/m^3
5	**Electric control system**	One-button operation system, cables, low-voltage electric, automatic fault detection and alarm function, etc	
6	**Noise**	≤90 dB	
7	**Total electric power**	About 31.5 kw	
8	**Production time**	40 days	

Part Ⅲ Installation and After-sales Policies

3.1 Production and Delivery

Production is 40 days for the Q3515 shot blasting machine against the down payment received.

3.2 Installation, Commissioning, Training and Acceptance

- Seller will send one engineer to buyer's factory to supervise installation.
- Seller should provide training to buyer's relevant employee.
- Seller should test the machine to reach surface requirements indicated in the technical parameter.

- Buyer should afford the visa, insurance, return tickets, transportation, hotel and meals.
- Buyer should provide finished pits according to drawing by seller, necessary labor workers, and necessary tools, facilities, and powers.
- Buyer should sign on the "***Q3515 Testing and acceptance agreement***" after the successful trial.

3.3 After-sales Service

- One year guarantee time. Easily worn parts and spare parts are not included. (*stated in Q3515*)
- Extended guarantee will be available basted on mutual negotiation.
- Whole-life technical support. Any problem during using appears, will reply within 8 working hours with technical solution.
- Wear parts and spare parts will be available through the machine life. (stated in Q3515)

Part Ⅳ Technical specification of Q3515 shot blasting machine

4.1. Application

Q37 shot blasting machine is a specially designed machine used in the surface cleaning for various small and large jobs. It can realize the shot blasting automatically.

4. 2 Components and function

Q3515 shot blasting machine consists of blasting system, blasting chamber, abrasive circulation system (separator,

bucket elevator, screw conveyor), turntable system, dust collection system and electric control system.

4.2.1 Shot blasting system

Shot blasting system consists of blasting chamber and shot blasting machine assembly. The abrasive media like the steel shots, grits are applied on the metal surface driven by the centrifugal force from the blades. Workpieces will be de-rusted, cleaned and roughened in blasting system to reach customer's finishing level.

4.2.2 Blasting chamber

In the blasting chamber, the wall is protected by Mn13 material protection linear, which has high wear resistant performance. Chamber inside protection plate all adopt the high strength nut fixed and pressure on the inner of blasting chamber, easy tear open outfit replacement. Prolong service life, reduce the cost and reduce maintenance frequency. The steel grilling floor of blasting chamber can let abrasive fall through it freely and collected by screw conveyor.

4.2.3 Shot blasting machine assembly

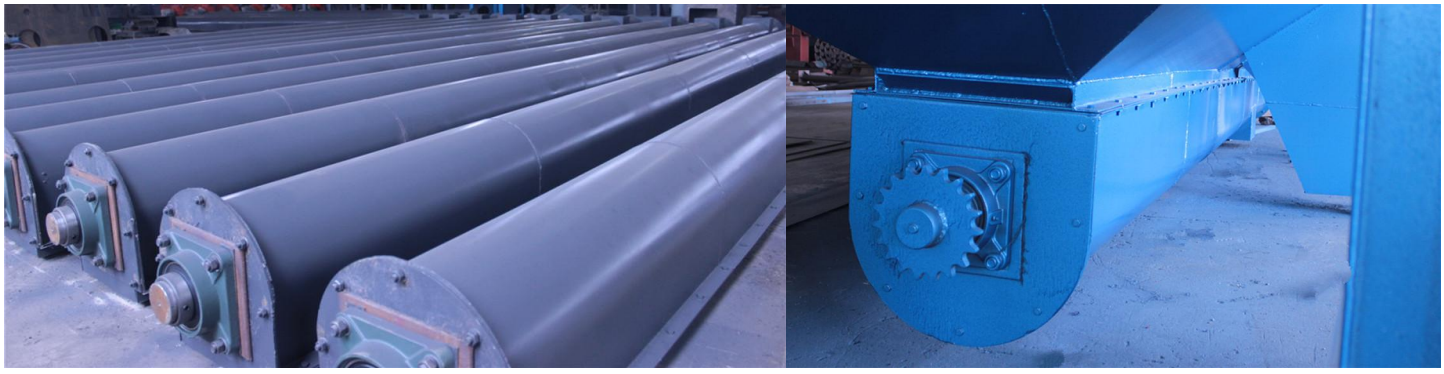
This machine has 2 set of high speed & performance blast wheels. One blast wheel has eight blades. It takes 5 to 10 minutes to replace 8 pieces of blades. Material of blades, control cage and distributor is Cr20S high-chromium cast iron which has long service life. Generally speaking, lifetime of blade is over 800 hours, and lifetime of impeller and control cage is over 1200 hours. All wear parts are the market most universal national standard parts.

4.2.4 Abrasive circulation system

The system includes following parts: hopper, abrasive flow pipe, abrasive control valves, screw conveyors, bucket elevator, separator.

4.2.4.1 Screw conveyor

Screw conveyor consists of cycloid needle wheel decelerator, screw axis, conveyor shell, bearing, etc. It is a standard transverse conveying device, an important part of abrasive circulating system. The screwing blade is made of 16Mn.



This unit is responsible for the abrasive delivered to the elevator. Screw conveyor located at the bottom of shot blasting chamber, the spiral blade welding in the drive shaft. Conveyor motor through cycloid speed reducer drive rotary screw conveyor, send abrasive to discharge outlet, then the mixed abrasive will be collected to elevator bottom. On both ends of the screw conveyor adopts triple seal protection, plus labyrinth seal cover in the interior of the end plate, middle with oil seal protection, end plate external insulate bearing and end plate. Once the abrasive and dust out, will drop from the end plate and bearing clearance, will not enter the bearing. Screw conveyor shaft with sensors detecting means, can detect the working state.

4.2.4.2 Bucket elevator

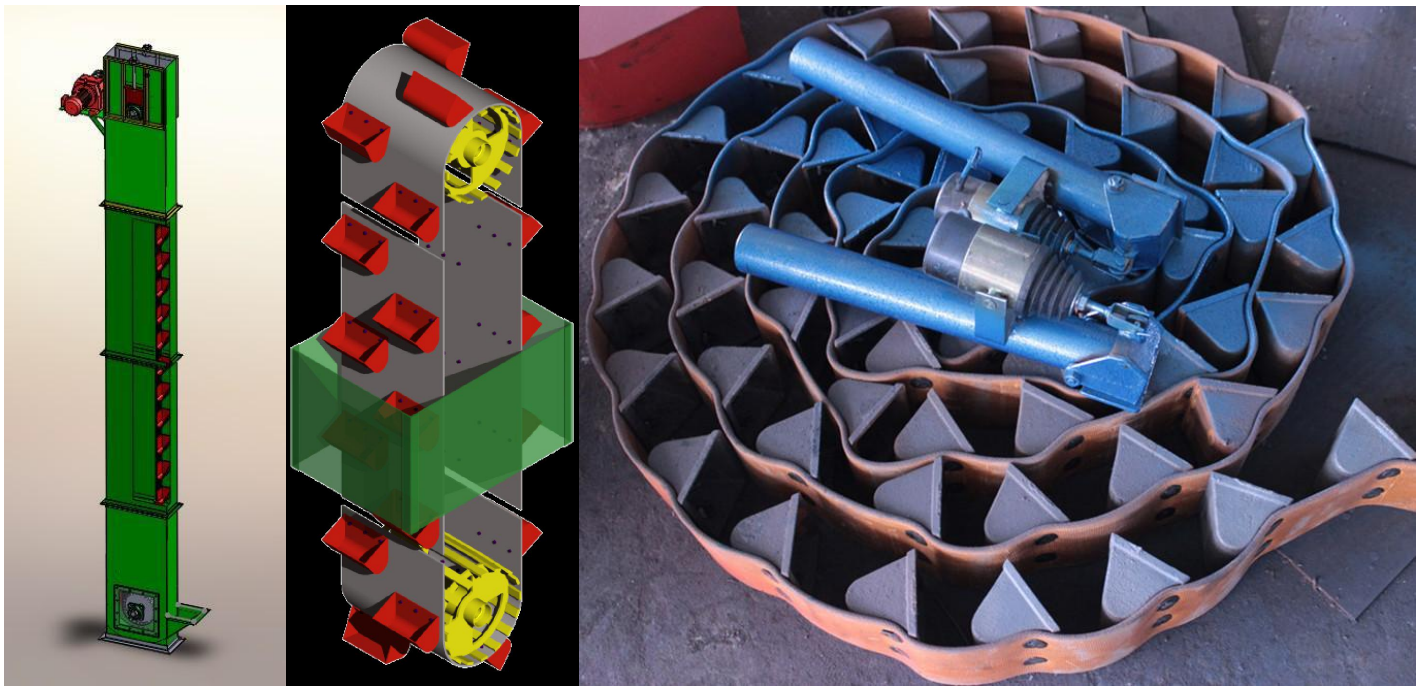
● Housing of bucket elevator is welded of steel plate.

There is a checking door for maintenance and replacing buckets at the bottom of the housing.

● The buckets are screwed to rubber belt which is stretched between two pulleys.

Belt material: Polyester.

● Consists of cycloid needle wheel decelerator, upper and bottom barrel, belt, bucket and tensioning device, etc



In operation, the hopper fixed on the conveyor belt sweeps the abrasive on the bottom, and send abrasive to the top, then by way of gravity centrifugation blanking. Using polyester wire core special belt, high strength, high tensile properties. Pulley using squirrel cage structure, middle is slightly raised, each spokes are processed by machining chamfering. Both to improve the promotion of friction between the belt and pulley, avoiding the old-fashioned light pulley slipping and sliding belt pulley on the injury, also reduces the lifting belt preload, extend the life; while avoiding scattered grit embed between the pulley and belt, affecting transmission.

Lifting capacity leaves 10% margin. Because the elevator blank by way of centrifugal gravity. Each time blanking, there will always be part of the abrasive down to the elevator, and therefore need appropriate to increase the lifting amount. With sensors detecting apparatus on the lower part of the elevator shaft, can detect the working state of elevator belt.

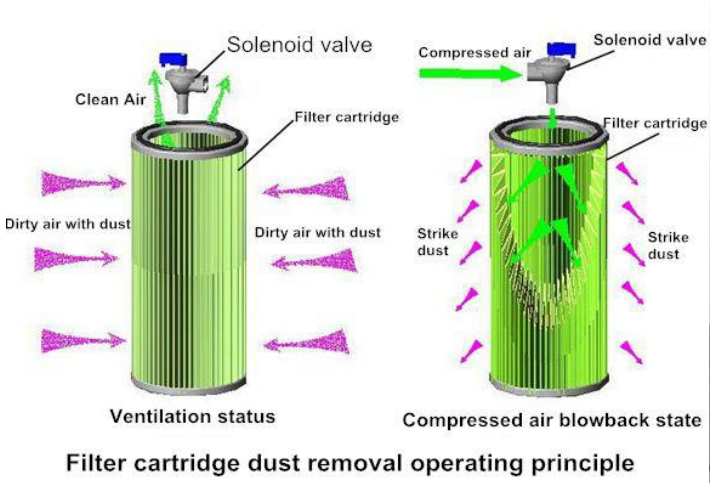
4.2.4.3 Separator

This machine uses most advanced full screen curtain air selection separator which includes selecting area, rotary screen drum, conveying screw, overfall sensor, abrasive stock bin and abrasive controlling valve. The abrasives mixture is conveyed into the separator screw via the elevator. Then the abrasive/sand mixture is carried out of the separator by the inner screw of the screening drum. The outer screw of the screening drum distributes the mixture along the separating are baffler of separator. Separating efficiency can reach 99.5%.

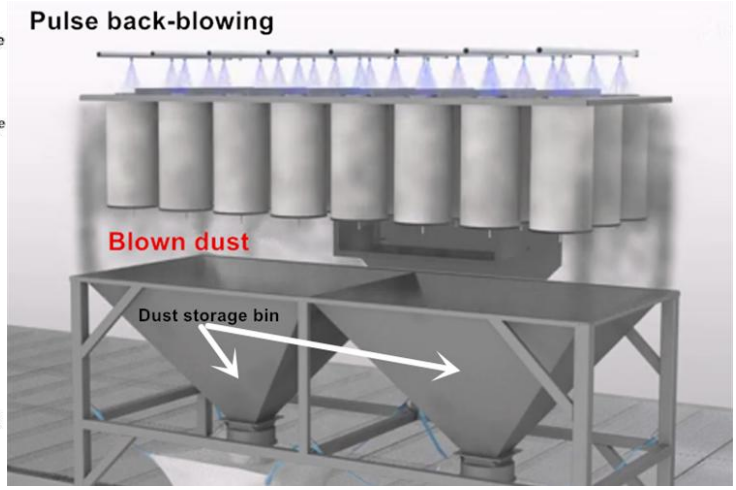
4.2.5 Turntable system

The turntable is installed inside the chamber shell, and its rotation is driven by a sprocket. It is made of flat steel welded into a mesh disc, and the wear-resistant cast iron plate with holes is laid on the surface, which can not only bear the wear of projectiles, but also prevent large pieces of material from falling into the chassis. In addition, a scraping plate is installed at the bottom of the mesh disc to collect the projectiles falling on the chassis and flow into the elevator through the chute.

4.2.6 Dust removal system



Filter cartridge dust removal operating principle



The dust removal system consists of ducting system and filter cartridge dust collector. The emission standard can be lower 90 g/m^3. It is the final dust collecting system. Stable and easy operation, low noise, high efficiency and easy maintenance. The main fan power 4 kw, ventilation quantity is 5600 m^3/h. Pulse blowback dust removing, cartridge can be easily removed for cleaning then re-use.

4.2.7 Electric control system

The electrical control system for three-phase AC frequency 50 HZ voltage 380 V power distribution, alarm device and overload protection device are available. To ensure the reliable operation of the equipment and the safety of operators, the shot blasting turbines, maintenance door and abrasive circulation system are equipped with electric interlock and self-locking system. Installed circulating system accident (Unexpected) abrasive supply blocking device and alarm device.

Pulse detector:

Pulse detector is installed in the screw spindle nose of abrasive separator, driven pulley spindle nose of elevator and spindle nose of each screw conveyor.

Composition: ◆Proximity switches; ❖Sensors semicircular iron.

Cause:

For the elevator, the biggest cause of failure is due to belt slippage caused by loose.
For screw conveyor: may be ◆ overloaded (abrasive blockage), ❖motor thermal protection.

Part V Manufacturer of main function parts and purchased parts

The components name	Manufacturers	Place of origin
Blasting assembly	Qingdao Zhiling Machinery Co., Ltd	Qingdao
Blasting chamber	Qingdao Zhiling	Qingdao
Turntable system	Qingdao Zhiling	Qingdao
Separator	Qingdao Zhiling	Qingdao
Elevator	Qingdao Zhiling	Qingdao
Screw conveyor	Qingdao Zhiling	Qingdao
Hopper, Baffle plate	Qingdao Zhiling	Qingdao
Electric control system	Qingdao Zhiling	Qingdao
Dust removal system	Qingdao Zhiling	Qingdao
Fan	Qingdao Zhiling	Qingdao
Main low-voltage apparatus	Chint	China
Blast wheel motor	China well-known brand	China
Speed reducer	China brand	Qingdao
Bearing house	HRB & ZWZ	China
Inverter	China well-known brand	China
Fault detection electric	China well-known brand	China

Part Ⅵ Each part thickness and material

Name	Material	Thickness (mm)
Directional sleeve	Cr20S High chromium	Casting profiled
Sub-blasting wheel	Cr20S High chromium	Casting profiled
Blade	Cr20S High chromium	Casting profiled
End protection plate	Cr20S High chromium	Forging profiled
Top protection plate	Cr20S High chromium	Casting profiled
Side protection plate	Cr20S High chromium	Casting profiled
Combined plate	40Cr	Forging profiled
Impeller	40Cr	Forging profiled
Outside chamber shell	Q235 Steel plate	4-6 mm (Key parts with U-steel reinforced)
Elevator, separator, screw, dust collector	Q235 Steel plate	2-3 mm (Key parts for steel reinforcement)
Blasting area protection plate	Mn13	8 mm
Protection plate nut	High chromium	Casting profiled
Screw blade	16Mn	4 mm