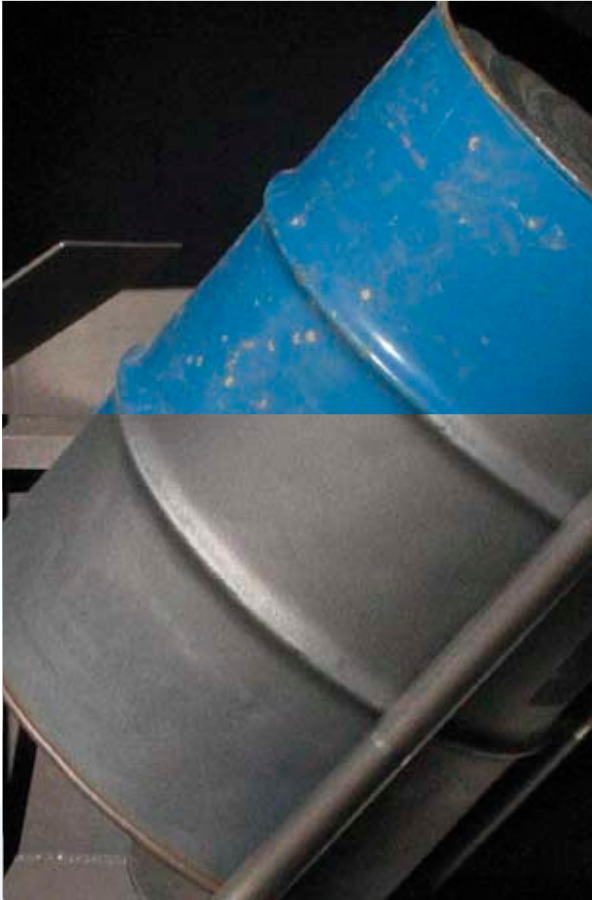


EQUIPMENT PROPOSAL AND SPECIFICATIONS

LSDB AUTOMATED PASS THROUGH DRUM BLASTER



Equipment Specifications

Main blast cabinet constructed from 1/4" mild steel.

Cast chrome liner in direct impact area's of shot.

Two (2) LS TurboShot™ impeller wheels rated at 25 H.P. each.

Each impeller equipped with eight replaceable impeller blades.

Impellers enclosed in wheelhouses lined with replaceable wear plate.

Digital ammeter allows monitoring of abrasive level within the blaster during operation.

Sealed 2" impeller bearings provide superior resistance to abrasive impingement.

Abrasive feed system including augers, collection hoppers, and a bucket elevator to reclaim steel shot.

39" from floor to top of table loading height

Vestibules constructed from 1/4" gauge steel in area's that are not impacted by steel shot.

Access door allows entry to blast cabinet for inspection and maintenance.

Access panels allow inspection and maintenance of augers and elevator mechanisms.

Electrical box/control panel positioned on blast cabinet.

Single point electrical hook-up.

Wired for 208/3/60 power, Cutler Hammer. (Approximatley 235 amps required)

NEMA 12 electrical enclosures.

All components UL and CSA registered.

Model DCC-15 Reverse Pulse dust collector (Ducting is not included)

5000 CFM dust collection capacity.

Full load of steel shot abrasive media provided.

Operations manual, maintenance guide, and wiring diagram is included.

Lifting hooks allow easy unloading of the blaster.

Equipment Overview:

The LS automated Drum Blaster is capable of shot cleaning approximately 750 closed end washed and clean drums per shift. This process includes a stacker on the entrance end of the blaster and a pneumatic up-ender on the exit end.

Blast Cabinet

The blast chamber (6 feet long) is constructed with 1/4" steel and is lined with cast chrome material to protect it from direct impact by the abrasive stream. A maintenance access door is located on the side of the cabinet to allow easy access to the interior for maintenance and inspection.

Impeller System

Two (2) 25 hp LS TurboShot™ impeller wheels propel the abrasive. Each wheel consists of eight replaceable long life blades mounted to a balanced hub. Each LS TurboShot™ wheel is driven by a Baldor TEFC motor rated at 25 HP. The hub spins on a drive shaft with sealed spherical bearings. These bearings prevent abrasive impingement, providing a much longer service life than other types. Each wheel assembly is contained within a wheel housing that is lined with replaceable alloy wear plate.

The blast cycle is continuous and does not stop while the machine is in operation.

Abrasive Feed System

To ensure a consistent blast profile a precise amount of abrasive must be continuously fed to each impeller wheel. The LS blaster uses a series of augers that run the length of the machine below the conveyor. These augers feed abrasive to a center abrasive sump area, which feeds the lower impeller wheels. The auger system does not require a pit under the machine.

A cross auger (3 HP) runs through the sump area to move abrasive to a lower hopper area where it is picked up by a bucket elevator (10 HP) and carried to an upper hopper located at the top of the elevator assembly. As the abrasive is cascaded from the elevator buckets to the hopper it passes through an air wash, which removes fines and other impurities from the abrasive media. The abrasive then feeds down abrasive resistant feed tubes to the impeller shot wheels.

To help contain the abrasive shot, hopper extensions with augers extend from both the ingress (1 HP) and egress (1 HP) ends of the machine. At the exit of the machine the function of the hopper is to catch abrasive that is carried out on the parts and return it to the cabinet. This is also where extra abrasive is stored and added to the machine. An automatic monitoring system detects when the machine is low on abrasive and starts the auger, bringing more abrasive to the system. This eliminates the need for an employee to continuously monitor the abrasive level.

Material Feed System

Load area will hold approximately seven (7) 55-gallon drums in the horizontal position. A sensor will activate a pneumatic indexer when the blaster is ready for a drum. Chains (heat treated) with Pushers will move the drum thru the blast system. Rollers (2 sets) are located in the blast chamber that will rotate the drum in the blast pattern. These rollers are 2" manganese shafts with urethane wheels and are variable speed (1.5 hp).

The drums will exit the blaster and be pushed into a vertical position, pneumatically, and directed by a sensor, for unloading purposes. A sensor will activate and stop the machine if the drum is not removed from the up-ender by the time the next drum is in the position to be placed in the vertical position.

Dust Collection System

All LS blasters include a dust collector system as standard equipment. The dust collector MUST be used when the machine is operating. This system includes one 15 HP dust collector, capable of 5000 CFM. The dust collector filters air pulled from the blast cabinet through a series of 4 cartridges to remove particulate of contamination and spent shot. The filter media used is very efficient, approaching 97% on 0.8 micron and 100% on 2 micron particulate. Extended legs are provided which accommodate the use of a 55-gallon drum for dust containment. (Ducting is not included)

At LS Industries we strive to determine the proper dust filtration and blow-off requirements of each machine we build. However, each customer's manufacturing facility has different environmental requirements and different requirements for the amount of residual dust that can be discharged after blasting. Since you, as the end user, are better informed to determine these requirements, LS Industries does not assume any responsibility for dust control after a machine has been accepted by you, following a successful test run at our facility.

Electrical Specifications

Unless otherwise specified at the time of order all LS blasters are wired to accept 208/3/60 power, approx. 235 amps. All motor starter and switch components are Cutler Hammer. Components are UL and CSA registered and all electrical enclosures are rated NEMA 12. A single point electrical connection is required. LS does not provide a main fusible disconnect (optional). LS will provide a detailed wiring diagram for review prior to shipment of the machine.

Controls

The main control panel of the blaster allows the operator to quickly and easily monitor and adjust the performance of the blaster. The main control panel includes a digital ammeter that can be set to display the load on either of the two-impeller motors. This figure can be used to determine the amount of abrasive in the system. A simple start/stop button controls the power supply.

Installation and Set-Up

Two (2) days included in the price. The LS blaster is designed to be easy to set up and use. The machine should be placed on a level surface, preferably concrete. No pit is required for this machine. If items such as the elevator or conveyor extensions must be removed for shipping, instructions on reinstallation of these items on site will be provided. When any reinstallation is complete, the dust collector should be attached to the blaster and the main electrical power line then connected to the blaster. At this point the blaster is ready to operate.

Machine Dimensions:

Length:	45'	Entrance vestibule:	8'
Width:	8'	Blast chamber:	6'
Height:	14'	Exit vestibule:	8'
Shipping height:	9'	Unload:	8'
Load:	15'		



Documentation:

Upon receipt of order, LS will provide detailed mechanical drawings of the machine showing the exact layout, utility connection locations, and operating dimensions of the equipment. No construction will begin until these drawings have been approved by the client and returned to LS. When the equipment is completed LS will provide operations and maintenance manuals with the machine, including wiring diagrams, operating instructions, troubleshooting, parts lists and maintenance schedule.

Shipping:

All equipment is shipped FOB Wichita, KS. LS is not responsible for any shipping costs, nor any damage to the machine incurred as a result of shipping. A drop deck flat bed trailer is required for transport of the machine. Complete shipping dimensions will be provided prior to the completion of the machine.

Price:**\$138,808.00**

Delivery: 12-16 weeks after receipt of order and 50% deposit

FOB: Wichita, KS 67214

Terms: 50% with purchase order, 40% before shipment, 10% net 30 days from ship date.

Shipping Weight: TBD

Options:

Fused Disconnect:

\$2,250.00

Performance Features and Benefits

LS TurboShot™ Indirect Drive Impeller

Why indirect drive impellers instead of direct drive? In one word - MAINTENANCE. The LS belt driven impeller uses spherical bearings that have a service life many times that of standard sealed bearings. The direct drive impeller cannot use spherical bearings as it must use oversized sealed bearings to support the weight of the motor and impeller mechanism.

Additionally, during operation vibration from the direct drive impeller is transmitted back up the motor shaft and into the motor causing premature motor failure. With the LS system the impeller motors are isolated from impeller vibrations extending the life of the motor. The belt drive system acts as a slip clutch allowing the impeller to stop turning should something block the impeller's rotation. With a direct drive wheel this would result in a burned out motor or a tripped overload relay.

Easy maintenance is another factor. The LS impeller can be serviced or completely replaced without removing the motor. With direct drive systems the motor must be removed any time the impeller or impeller bearings are being serviced. Almost every component of the LS impeller can be repaired, replaced or maintained using basic hand tools. It is quite simply the most durable, rugged design available today.

But can indirect or belt driven impellers provide the performance of a direct drive wheel? The LS impeller is capable of throwing 450 pounds of abrasive per minute. This is over 100 pounds more per minute than a standard direct drive impeller. More abrasive being thrown means more impact on the parts, a more thorough cleaning pattern, more thorough coverage and faster production speeds.

This is possible because the LS impeller, while turning at a slower rate than a comparable direct drive impeller, is much larger than its direct drive cousin. This larger impeller means more abrasive on the blades at any given time but, more importantly, it means that while the overall impeller rotation is slower, the speed at which the outside edge of the LS impeller blade is traveling is actually about the same as the smaller direct drive wheel. The result is a lot more abrasive being thrown and a lot more impact energy which is what really cleans the parts.

Another advantage of the LS impeller is the size of its effective blast pattern. Because the direct drive wheel must, by its very nature, be small, its "hot-spot" - that is, its area of maximum blast intensity, is very small. Manufacturers using the direct wheel attempt to overcome this by making the impellers adjustable with a control cage. At LS, we don't think you should have to adjust your machine to make it work, so we use an indirect direct wheel with a large homogeneous ovoid blast pattern that provides even, thorough blast coverage on all types of parts with no adjustment required.

It is easy to see that if your blast cleaning requirements call for reliable performance and a durable, rugged, easy to maintain design, the clear choice is LS Industries.

STANDARD TERMS AND CONDITIONS OF AN EQUIPMENT SALE

1. ACCEPTANCE

A. LS Industries' ("LS") "Standard Terms and Conditions Of An Equipment Sale" are an integral part of the Equipment Sale Proposal (for the sale of equipment or services described therein) to which they are attached and which LS submits to the Buyer ("Buyer"). Any contract that may arise from the Proposal, or any modifications or variations thereof, are expressly conditioned on Buyer's assent to these Terms and Conditions, to LS' review, and approval of Buyer's credit. The LS Proposal with the most current date supercedes all previous proposals, offers, agreements, understandings or conversations. Unless otherwise stated herein, Buyer has 30-days from the most current date on the Proposal to notify LS in writing at its Wichita, Kansas headquarters, of Buyer's offer to enter into a contract on the basis of the Proposal. Upon written confirmation from LS to Buyer that it has accepted Buyer's offer, a contract between Buyer and LS shall be formed as specified in the Proposal and its attachments.

2. DELIVERY/FREIGHT

A. Unless otherwise agreed, all orders are shipped collect and F.O.B.: 710 E. 17th Street, Wichita, Kansas, 67214, USA. LS' delivery of Equipment to carrier, at point of shipment, shall constitute delivery of such Equipment to Buyer and Buyer shall assume all risk for subsequent loss or damage. LS will ship equipment the most cost effective way or by a carrier of Buyer's choice.

B. Upon delivery of the Equipment by the carrier, Buyer shall inspect Equipment. If there is any damage or shortage, the Buyer must file a freight claim immediately with the carrier company. IF THE EQUIPMENT IS DAMAGED, DO NOT ACCEPT DELIVERY OF THE EQUIPMENT.

C. Buyer, typi\$P.O.R.y, has 15 days to file a claim for concealed damage. If Buyer determines that the carrier company damaged the Equipment, Buyer must request an inspection by the carrier company. Do not discard any of the packaging material. After the inspector determines the amount of the damage claim, it becomes the responsibility of the Buyer to either repair or replace the Equipment in accordance with the Warranty Policy.

3. TAXES

A. Any tax imposed on the sale of products shall be the responsibility of the Buyer/Sales Rep. Payment of all taxes of any nature whatsoever (except LS's income tax) and, if applicable, all duties, taxes and charges, are the responsibility of the Buyer/Sales Rep. If, as a result of any such sales, delivery, use, or transfer of Equipment by LS or Sales Rep, any such taxes, duties and charges are levied against LS, then Buyer/Sales Rep agrees to pay such taxes, duties and charges, to prepare all required reports in conjunction therewith, and to reimburse, indemnify, and hold LS harmless from all such taxes, penalties, duties, charges, attorney fees and costs incurred by or levied against LS. LS shall have the right at any time to separately bill the Buyer/Sales Rep for any tax LS may have been requested to pay. The only exceptions are shipments within the state of Kansas: a sales/use tax will be charged unless a valid tax-exempt certificate, prior to shipment, is provided to LS.

4. WARRANTY

A. LS Industries, Inc., ("LS") warrants for a period of twelve months from date of shipment by LS to the original purchaser ("Buyer") that Equipment manufactured by LS will be free from defects in materials and workmanship when installed and operated in accordance with the instructions in the Equipment manual. This Warranty does not cover any failure due to: accident; modification; tampering; abuse; normal wear and tear; shipping damage; deterioration or wear occasioned by chemicals, abrasion, corrosion or erosion; improper erection, operation, or maintenance; abnormal conditions of temperature or dirt; or operation of the Equipment above rated capacities or in an otherwise improper manner.

B. If within the one-year warranty period LS receives written notice at 710 E. 17th Street, Wichita, Kansas, 67214, USA, promptly after discovery by Buyer of any defect in material or workmanship in the Equipment warranted by LS herein, LS shall, at its sole option/discretion, either replace (F.O.B. LS's plant), or repair any defective part(s). If the defective part has a limited useful life, a charge for the replacement part will be prorated according to the amount of wear.

C. LS shall not be responsible for work done, materials furnished, or repairs made by others unless agreed to in writing after the proposed remedies have been made known to it. Buyer agrees to use reasonable care in the operation and maintenance of Equipment provided in accordance with the instructions in the Equipment manual.

DISCLAIMER OF IMPLIED WARRANTIES

D. THE FOREGOING LIMITED WARRANTY IS THE SOLE WARRANTY MADE BY LS. LS MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE OR OTHERWISE, WHICH EXTEND BEYOND THE FACE HEREOF, AND LS HEREBY DISCLAIMS ALL SUCH WARRANTIES.

E. UNDER NO CIRCUMSTANCES SHALL LS BE LIABLE TO BUYER OR ANY OTHER PERSON FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOSS OF PROFITS, LOSS OF USE, LOSS OF TIME, AND LOSS OF GOODWILL, WHETHER ARISING OUT OF BREACH OF WARRANTY, BREACH OF CONTRACT, OR OTHERWISE.

F. Any Equipment or components thereof that are not manufactured by LS, carry only the warranties given by the respective manufacturers thereof which warranties, LS will make available to Buyer to the extent permissible without recourse to LS.

5. INSTALLATION

A. Unless specified and quoted in the Proposal, the installation of the Equipment will be at the expense of the Buyer.

6. START UP

A. Unless specified and quoted in the accepted Proposal, the set-up of the Equipment will be at the expense of the Buyer. LS will provide the services of a technician for Equipment start up and will bill the Buyer at the rate of \$750.00 per day plus expenses: the cost of travel, meals and lodging. Equipment must be installed and ready to run prior to technician's arrival (Two week advanced, written notice is required, received and accepted by LS).

7. TERMS

A. Standard Equipment

To purchase Standard Equipment, the Buyer's payment schedule is as follows:

- 1) A current credit application for the Buyer must be on file.
- 2) A Deposit of 20% is required and must accompany the signed Equipment Proposal/order before Equipment is scheduled into LS' manufacturing process. Buyer's Purchase Order is acceptable with Deposit but not in lieu of Deposit.
- 3) Balance Due – Net 30 from date of shipment from LS plant.
- 4) A 3% Cash Discount will be given when Payment In Full accompanies the signed Equipment Proposal/Purchase Order.
- 5) Equipment purchased from LS and scheduled for shipment outside of the contiguous United States, requires full payment prior to actual shipment.

B. Non-Standard or Special Equipment

To purchase Non-Standard or Special Equipment, the Buyer's payment schedule is as follows:

- 1) A current credit application for the Buyer must be on file.
- 2) A Deposit of 50% of the total sale price is required and must accompany the signed Equipment Proposal/order before Equipment is scheduled into LS' manufacturing process. Buyer's Purchase Order is acceptable with Deposit but not in lieu of Deposit.
- 3) Prior to shipping, payment equal to 90% of the total sale price is required.
- 4) Balance Due – Net 30 from date of shipment from LS plant.
- 5) A 3% Cash Discount will be given when Payment In Full accompanies the signed Equipment Proposal/Purchase Order.

C. Exports

To purchase Equipment for export (outside of the contiguous United States), the Buyer's payment schedule is as follows:

- 1) A minimum deposit of 50% is required and must accompany the signed Equipment Proposal/order before Equipment is scheduled into LS' manufacturing process.
- 2) Equipment purchased from LS and scheduled for shipment outside of the contiguous United States, requires full payment prior to actual shipment.
- 3) Acceptable forms of payment are Irrevocable Letter of Credit and wire transfers. Buyer's Purchase Order is acceptable with Deposit but not in lieu of Deposit.

D. Lease

- 1) Customer lease programs are available from LS.
- 2) Other lease programs (Buyer initiated) must be approved by LS Industries.

- 3) An approved lease, with receipt of Equipment Purchase Order from lease company, is required and must accompany the signed Equipment Proposal/order before Equipment is scheduled into LS' manufacturing process.
- 4) A lease on non-standard equipment requires a deposit of 50% of the total sale price of the equipment with the order from either the customer or the leasing company. If customer makes the deposit, it will be refunded to customer when the leasing company pays LS Industries.

8. CANCELLATIONS

A. Buyer may cancel any Equipment order/contract only upon written notice to LS and only upon such terms as will indemnify and will reimburse LS for all losses resulting therefrom, including LS' direct costs incurred, overhead, loss of contract profits, costs, and expenses to which LS has become committed for fulfillment of the Equipment order/contract. Completed orders may not be canceled.

9. STORAGE

A. If Buyer declines or is unable to take delivery of Equipment at time(s) specified in the Equipment Proposal/order/contract, LS may have the equipment stored at Buyer's risk and account. Buyer will pay storage, handling and re-handling charges and continue to make payments according to the payment TERMS and CONDITIONS contained in the Equipment Proposal/order/contract.

10. PROPRIETARY MATERIAL

A. All drawings, patterns, specifications and information included in the Equipment Proposal/order/contract, and all information otherwise supplied by LS relating to the design, erection, operation and maintenance of the Equipment is the proprietary and/or confidential material of LS. Buyer shall not disclose such material or information except as required for Buyer to obtain service for the Equipment.

11. CHANGE ORDERS

A. Change Orders received after issuance of an Equipment Proposal/order/contract will be accepted by LS up to the time production commences. Change Orders after production has commenced may cause LS, at its option, to cancel production of the Equipment Proposal/order/contract or invoice the Buyer's account to compensate for lost time, lost revenues and/or inventory restocking costs.

12. COMPLIANCE OF SAFETY STANDARDS

A. It is LS' intention to comply with the Occupational Safety and Health Act of 1970, as LS understands it. However, since interpretations of this Act may vary, LS will not warrant or guarantee that the Equipment complies. LS shall have no obligation and shall not be responsible for any liability arising from violations of safety standards caused by location, operation or maintenance of the Equipment. Furthermore, LS shall not be liable for unauthorized use, combination, or association with any other equipment not manufactured by LS.

13. VALIDATION OF QUOTATIONS

A. Quotation issued by LS is valid for 30 calendar days unless otherwise specifically stated in the body of the quotation.

14. BONDS

A. In addition to the price specified in Equipment Proposal (Quotation), Buyer shall pay the cost of any Bonds that Buyer requires LS to obtain.

15. LIMITATIONS ON LIABILITY

A. In no event shall LS be liable for any special, indirect, incidental, consequential, or punitive damages of any character, including loss of productive facilities or equipment, lost profits, property damages, personal injuries, or irrespective of whether claims or actions for such damages are based upon contract, warranty, tort, strict liability or otherwise.

16. DUST COLLECTION

A. At LS Industries, we strive to determine the proper dust filtration and blow-off requirements of each machine we build. However, each customer's manufacturing facility has different environmental requirements and different requirements on the amount of residual dust that can be discharged after blasting. Since you, as the end user, are better informed to determine these requirements, LS Industries does not assume any responsibility for dust control once a machine has been accepted by you, the customer, after a successful test run at our facility.