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Contact Person: Mr. Manish Patel

OFFER No.: S-IN-24-12193

SUBJECT OF THE OFFER: SHOT BLASTING MACHINE PC-320
DUST COLLECTOR
ELECTRIC EQUIPMENT

Validity: 29.07.2024

Prepared by:
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Place and date: Bangalore, 29.05.2024

Company description

Gostol TST India Pvt Ltd. (GOSTOL IN) is a leading Shot Blasting Machine manufacturer in India. As an OEM, we have a robust design of machines and world class manufacturing practices and we have an edge over other OEM in customizing the shot blasting machine according to customer's product requirement using insight gained from different applications across variety of different sectors. Our Machine housing is protected with wear-resistant Manganese steel or completely made from Manganese steel with extra protection on most exposed plates in case of Automatic machines. Manual blasting room buildings will be lined with wear resistant rubber lining for protection. Attention is also given to all other details like Dust collection, Abrasive recovery, Automation and also into every detail of surface preparation, assembly, training etc. Our machines are reliable, with very long lifetime and low maintenance costs. As a result of everything above, we have the best quality machine compared to any other manufacturer in India and around the world, assisted with our 24 x 7 Service and Spares back up.

We are in joint venture with **Gostol TST** of Slovenia since 2015 and since then we have been providing the best quality Shot Blasting Machines all over India to different sectors.

We represent the manufacturing facility for Gostol in India to cater Indian and South East Asian market.

We have presence all over India with sales and service branches located at strategic places for quick customer access.

With Gostol's joint venture, we offer an overall solution, as we have our own development, engineering, production and service department, In addition to that it allows us more flexible and adjustable regarding customer's needs. Gostol TST has a long tradition dating back to 1947. In the past Gostol TST co-operated with companies, such as DISA, Vogel and Schemmann and BMD. At that time, machines were developed, produced and sold under a foreign brand. Due to close co-operation with the German market, Gostol TST machines are designed according to German Engineering School.

References and Experience

Gostol TST have vast experience in development and production of shot blasting machines. Our company has more than 4000 references in different fields of engineering all over the world. Approximately 2,500 of these are shot blasting machines and more than 1,500 shot blasting machines are still in operation all over the world.

Note: Photos are for illustrative purpose only

I. EQUIPMENT DESCRIPTION

1. SHOT BLASTING MACHINE PC-320

• Transport system	Roller conveyor – Skew type
• Work pieces	Round Bar
• Work pieces material	20MNCR5, SAE8620, DIN.1.2343 (Tool & die steel) ,1.4021 (Stainless steel)
• Surface condition before shot blasting	Rusted/Scaling
• Max. Working diameter	250 mm
• Min. Working diameter	20 mm
• Max. Working length	12,000 mm
• Work piece max. Weight	2400 kg/6m
• Roller conveyor speed	**5-8 m/min**
• Throwing wheels	380 B
• Number of throwing wheels	3
• Quantity needed for first charging	3000 kg
• Cleaning of abrasive	Cascade Air cleaner
• Needed quantity of sucked-off air	10,000 m³/h
• Compressed air	6-7 bar
• Compressed air consumption	40-50 CFM
• Ambient temperature	+5°C ÷ +40°C
• Total connection power	66 kW

- Abrasive must be of good quality, normally steel round shot, hardness 46-48 HRC, dimensions between S 230 and S 390. If it is necessary to use a different type of shot, you need to study carefully all possible consequences as compatibility, performances, maintenance and running costs.

All removable and moving parts of the machine (doors, pipelines, throwing wheels, resting vestibule,) are colored in red color (RAL 3002), while all fixed parts in grey color (RAL 7024)

Manufacturer is not responsible for direct and indirect damage or bad operation of the equipment in case that work pieces that are shot blasted are not dry or they are greasy or covered with ice or snow.

Work pieces are by means of a crane or forklift/Crane loaded on the roller conveyor. When the work pieces are of shorter dimensions, these are initially loaded on for this purpose-prepared housings or frames with mesh. The Machine usually operates with automatic switching-on, shot blasting speed may be set. Shot-blasting starts in the moment when a work piece comes in the shot-blasting area of throwing wheels' operation, which provides for minimal wearing-out of throwing wheels parts, housing and rollers. When the work piece leaves the area of throwing wheels' operation, the supply of abrasive to throwing wheels through the pneumatic closures is stopped and thus, the shot blasting process is stopped.

Machine housing

- A robust welded construction made of Manganese steel of thickness 8 mm and profiles
- In the shot-blasting part on direct hit areas, it is protected with the screwed plates of manganese steel, of 8-10 mm thickness partition plates are made of manganese steel
- Doors for control and maintenance with safety switch
- Input sealing vestibule with a series of double curtains made of wearing out-resistant rubber
- Hardened Manganese rollers will be provided inside the blasting cabinet.

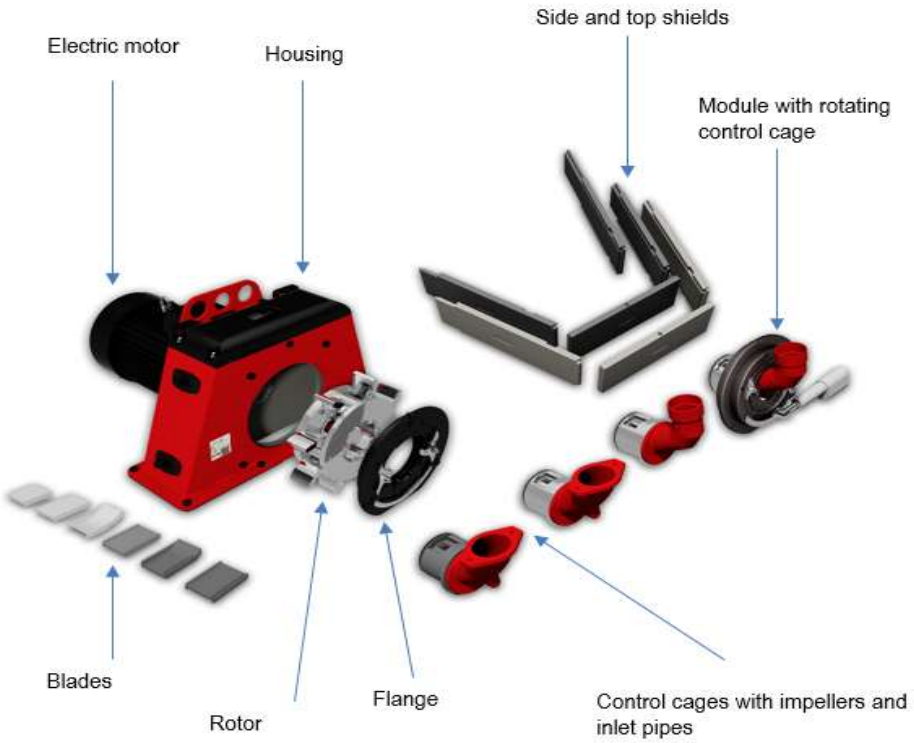
- At the exit, the abrasive is removed from the sheet metal and profiles, it contains a high-pressure fan centrifugal rotor – P=7.5 kW, Q=0,66 m³/s, p=3800 Pa

Throwing wheels

• Type of throwing wheel	380 B
• Number of throwing wheels	3 pieces
• Number of blades in a throwing wheel	8 pieces
• Blades type	i-straight
• Deviation from the blades' weight	±1.25 g
• Vibrations of two-plate rotor	max. 0.3 – 0.6 mm/s
• Material of the blades	**tool steel**
• Material of the control cage and impeller	**tool steel**
• Motor power	15 kW (with VFD)
• Abrasive ejection speed	80 m/s at 50 Hz
• Abrasive flow	250kg/min/throwing wheel at 50 Hz

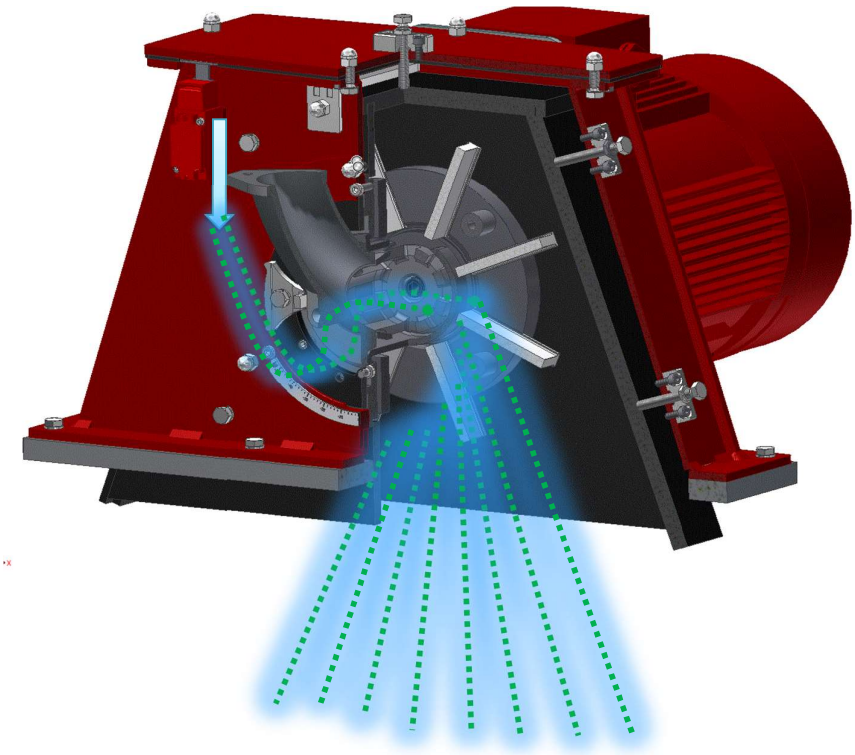
New ir-sm@rt wheel with long life-time

The shot blast wheels are central units of the shot-blasting machines as regards both its function and individual wearing component parts and thus very carefully dimensioned.
In addition to extraordinary characteristics, the construction of shot blast wheel ir-380-B provides for numerous configurations of component parts as well as smooth operation and easy maintenance.
The family of type ir shot blast wheel provides for optimal shot-blasting in a wide range of power and sizes of machines.



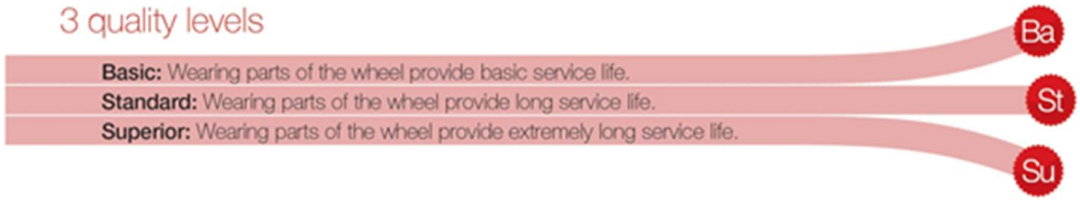
Specific characteristics of the ir-sm@rt wheel are

- High efficiency of input energy
- High shot-blasting power
- High resistance of wearing parts
- Large choice of different qualities of components according to the buyer's wishes
- Fast change of wearing-out parts
- Wide range of output abrasive velocity by adding frequency converter
- Smooth and still running
- Lower costs during machine lifetime
- Rotor rotations in both directions
- Installation in optional space position enabled by the revolvable inlet pipe
- Uniform abrasive distribution
- Easy replacement of a standard turbine with shot blast wheel ir-380-B



Trajectory travelling of the abrasive particle through the feed system through the impeller and then rotor with blades on the work piece.

3 Quality levels	Basic, Standard, Superior
Flexibility	Enables installation of different power of electric motors, different types and qualities of wearing parts (blades, control cage, inlet pipe, shields)
Universality of parts	All components of different qualities or types are replaceable. You can change / increase abrasive projection speed and improve your results.
Adaptable blast pattern	For different purpose: shot blasting of work pieces, constructions, shot peening.
Reversibility	The rotor is adequate for rotation in both directions.
Special applications	Are a module with rotating control cage, supply filter and trolley for wheels' assembly.
Energy consumption	Is decreased from 10% to 25%.
Lower abrasive consumption	Is achieved by using high-quality materials, consistency of the hot spot zone and increased speed of abrasive. Save also up to 25% of the abrasive costs.
Competitive prices of wheels and spare parts	We offer the best ratio between the price / quality and efficiency.
Fast change and easy maintenance	The time needed for change of wearing parts (blades, control cage, impeller and inlet pipe) is approx.. 15 minutes. There is a degree scale and a rotating flange by which you lock the ntrol cage position. The wheel has installed guard that holds the shield for it's easier and faster change.
Decreased wear-out, vibrations and noise level	The components are manufactured within narrow tolerances and durability of the screws is much longer, which is shown in quieter and smooth running and also lower vibrations of the wheel.
Increased productivity	Due to higher impact energy, e.g. up to 70%, the time needed for shot blasting process is shorter.
Straightened bearing assembly	The motors installed on the wheel are of special design with the straightened bearing assembly.
Energy savings	The motors correspond to the efficiency classes IE 2 or IE 3.
QR code	The wheel is equipped with a QR code, through which you can access to application with different useful information about the wheel / machine (service book, manuals, parts wearing time…). With this application you can easily order wheel spare parts.
Sensors system	It has been developed to control the wearing state of the wheel, to reduce the amount of spare parts for user, for quality assurance and quality control of the shot blasting process.
Blast pattern control	Blast pattern control is developed to control blast pattern, to control wear of control cage and to control angle of incidence of particles on the work piece. The sensor checks daily position of blast pattern. In case the sensor detects blast pattern offset from the desired area the control cage is automatically moved. With this system it is easier to control and ensure the same results of blasting / peening.
Regulation abrasive flow valve	Modular regulation abrasive flow valve enables controlled constant flow of abrasive (without hysteresis). Base valve has manually set of stroke from 0% to 100%. The valve in case of interruption of electrical power or compressed air closes automatically. The basic version of the valve can be upgraded with an automatic module to control the flow of abrasive.

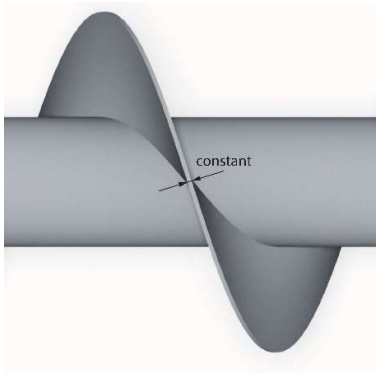


Longitudinal screw conveyor

- Of a robust design with a helix from structural steel of 5 mm thickness transports the abrasive up to the
- traversal screw conveyor
- Production process of the helix keeps a uniform thickness of a sheet metal along entire section. There are no micro fissures and micro tearing apart of the structure – long lifetime
- Bearings out of contact with abrasive, labyrinth seal
- In the shot-blasting part covered with manganese sheet metal
- Gear unit P=4 kW

Traversal screw conveyor

- Of a robust design with a helix from structural steel of 5 mm thickness transports the abrasive up to the bucket elevator
- Production process of the helix keeps a uniform thickness of a sheet metal along entire section. There are no micro fissures and micro tearing apart of the structure – long lifetime
- Bearings out of contact with abrasive, labyrinth seal
- Gear unit integrated with bucket elevator



Bucket elevator

- Lower part with the rotation controller, in case of belt sliding it turns off the drives
- Upper part with the driving gear P=7.5 kW with a brake and tensioning station
- Rubber elevator belt, strengthened with fibers. Grade EP 630 for higher strength.
- Welded buckets made of structural steel of 2-3 mm, without micro fissures – long lifetime
- Doors for control and maintenance
- Optimally determined power for transport and transmissions

Abrasive cascade air cleaner

- Removing all impurities, dust and damaged abrasive
- Screw conveyor which transports the abrasive from the elevator to the rotating sieve, P= 3 kW
- Rotating sieve with a helix on the inner side for removing of impurities and waste and with the helix on the external side for distribution of the abrasive along the entire width of the cleaner, which provides for the max. Efficiency of dedusting
- Abrasive falls in the bunker in a thin cascade, whereby it is blown with air

- Good setting of distribution of the abrasive along the entire width of the cleaner provides for the maximal efficiency of dedusting
- Maintenance doors

Machine dedusting pipeline

- Pre-separator ejecting rough dust and worn-out abrasive that relieves the filter and prolongs the lifetime of cartridges

Platform around the upper part of the elevator and cleaner, bunker, access ladder, fence

- It guarantees a safe and easy access during control and repairs.
- standard SIST EN ISO 14122-3:2002/A1:2010

Abrasive valves

- Number of valves 3 pieces
- Automatic opening with pneumatic cylinder
- Supply pipes of wear-resistant rubber up to throwing wheels

Roller conveyor in the machine

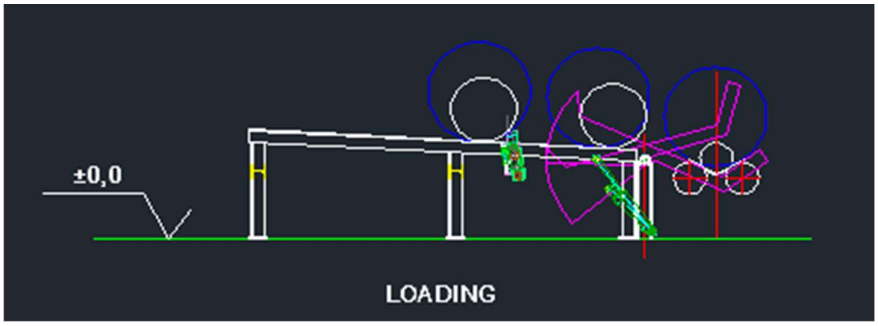
- Distance between rollers 300 mm, higher stability
- In the shot-blasting part the rollers are protected with the tampered wearing-out resistant material
- Drive with motor, P=3 kW X 2 –for both inlet and outlet roller conveyor
- Speed regulation with the frequency converter installed in the control cabinet

Inlet and outlet roller conveyor

- Inlet Length 12 m
- Outlet Length 12 m
- Distance between rollers 300 mm
- Max. loading capacity 2300 kg/6m
- Roller conveyor height 900 mm
- All rollers have a drive of central unit with chain

LOADING DEVICE ON INLET

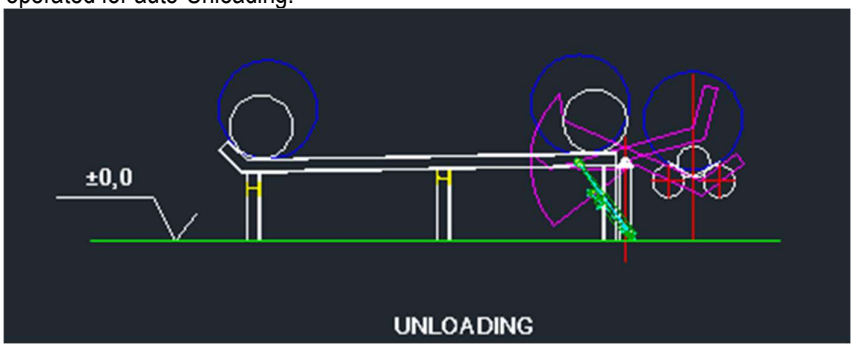
Devices (12 m long)
Max. load 2300 kg/device
Pneumatically operated for auto-loading.



Note: Photos are for illustrative purpose only

UNLOADING DEVICE ON OUTLET

Devices (12 m long)
Max. load 2300 kg/device
Pneumatically operated for auto-Unloading.



Note: Photos are for illustrative purpose only

2. DUST COLLECTOR:

- Fan type — centrifugal
- Number of cartridge — 12 pieces
- Total filter cartridge — 325x660
- Total filtering surface — 126 m^2
- Dust on outlet — max. 20 mg/m^3
- Fan capacity — 10,000 m^3/h
- Negative pressure — 150 mm of WG
- Motor power and efficiency — 15 kW
- Dust discharge — manually through flap
- Compressed air consumption — 40 – 50 CFM
- Compressed air provided by a buyer — 6-7 bar, oil and moisture free
- Compressed air quality — ISO 8573-1:2010 [4:4:3]

- Stable steel construction made of sheet metal strengthened with profiles
- It is composed of two parts, upper part with cartridge and lower part-hopper for dust discharge
- Doors for control and maintenance
- Automatic cleaning of cartridge
- Electronic regulation of length and blowing-out frequency
- Pipeline between filter and shot-blasting machine – **Buyer Scope**
- Fan fixed on the dust collector outlet side and connected with dust collector

3. ELECTRIC EQUIPMENT

ELECTRICAL TECHNICAL SPECIFICATION

Technical documentation

- Development and design with software WSCAD SUITE
- Symbol according to standard IEC 61346

- Production in A4 format

Process automation
Software packages – (Control equipment):

- Siemens S7-1200
- Mitsubishi FX5U

Main electrical switch board

- Housing frame with doors made of steel sheet metal, colour RAL 7035, protection level IP54
- Distribution system, busbars, fuses and internal cabinet lighting
- Elements and components of the power circuit – contactors, protective motor switches, bimetal relays and current transformers
- Main switch with the possibility of inclusion from outside and locking in switched-off position
- Elements and components of the control circuit – separating control transformer control relays, safety relays, time relays, circuit breakers
- Control equipment
- Frequency converters for the drive of roller conveyor installed in accordance with the manufacturer's recommendations
- Control and signalization with key buttons and lamps
- Display of overloading of throwing wheels with ammeters, working hours
- Connection terminals of the power and control circuit
- Conductors of different circuits and voltages have a specific colour and are marked in accordance with the plan with regard to the line conductor
- Electric cabinet on the external side is marked with the inscription plate with basic i (nominal voltage, current, power factory number,)
- Cabinet made in accordance with standard EN 60439-1

Producers of installed components

- Siemens, Mitsubishi, Schneider-Electric

SAFETY CONCEPT

- Machine safety is determined with the safety category on the basis of the risk assessment EN ISO 13849-1
- Safety switches, key button for emergency stop, end switches, which are used for safety purposes, have emergent opening of contacts and are marked in accordance with that.
- Protection of dangerous areas is carried out in the same way as the emergency stop with adequate component and safety modules.
- All conductors and equipment have flow and short circuit protection
- Potentials' equation

VERIFICATION

- Standard EN 60204 prescribes test to be made when the machine production is finished. Tests are carried by means of the measuring instrument Metrel Multiserviser XA MI 3321, corresponding to standard IEC 61557.
- A record is kept on testing measurements and results according to a specially prepared protocol
- A functional testing of the equipment operation in the manual and automatic mode of operation is carried out on each machine.

POWER SUPPLY AND CONNECTION

- According to the connection, grounding the power supply system is used: TN (TN-C, TN-C-S, TN-S).

- Power supply is carried out from the general network 3~, 415V, 50Hz.
  Permitted dynamic balance:
  Voltage between ± 10% of nominal voltage
  Frequency between ± 2% of nominal frequency
  In the states with different voltage or frequency the latter must be precisely determined
- Connection of the inlet cable directly to the main switch and connection terminal of the protective conductor which is marked with »PE«.

In case of the power supply of single-phase users, such as sockets, lighting, cooling fans, a neutral conductor is used, which has its own connection terminal »N

VIII. EQUIPMENT ASSEMBLY

- Supervision over assembly and machine start-up and required labour with material handling equipment's.
- In case of assembly process prolongation and additional travel costs caused not by our fault these will be additionally charged

Assembly conditions provided by a Buyer:

- Daily local transport overnight stays – engineering site – overnight stay (for all members of the seller's team)
- Work schedule 10 hours / day
- Contact person on the buyer's side (investor supervisor) responsible for the equipment technical assembly and start-up: contact person: x x, tel. Xx, fax. Xx, mob: xx, e-mail:x@x.
- Telephone for communication of the seller's personnel with the parent company + internet
- All documents needed for the equipment start-up.

Work conditions provided by a Buyer:

- Equipment unloading
- Warehouse of the equipment, protection against moisture, damages
- Prepare foundation pit and all masonry works. Foundations if needed with adequate load-bearing capacity and flatness of +/- 1cm per 3 m.
- Opening for the entry of equipment (according to the seller's instructions). In principle, the opening must be at least 4 m high and 4 wide.
- Facility completion and protection
- Energy connections to the usage ambient (air, gas, electricity 230/400 V)
- Electrical and pneumatic energy needed for assembly up to the main connection points on the equipment
- Raw materials for the equipment start-up and test start-up, quantity of the first charging of abrasive is 8 t
- Adequate work conditions (temp. at least 5˚C, without dust, without draughts…)
- Safety conditions on the assembly point
- Other means needed for effective and smooth assembly
- Inform the seller fourteen days before the assembly that the foundations and facility have been completed

III. EQUIPMENT TRANSPORT

BUYER SCOPE

IV. TOTAL AMOUNT FROM THE OFFER

Offer includes:

Equipment EXW Seller with Inlet and Outlet Conveyor	**INR 99,00,000/-**
Auto Loading and Unloading system	**Included in the price**
Supervision over assembly and putting into operation	**Included in the price**
Instructions for operation in English language	**Included in the price**
Other documentation or certificates (CE, certificates, declarations)	**Included in the price**
Packaging costs	**Included in the price**
Spare parts	**Not included in the price**
Transport costs	**Not included in the price**
GST/ All taxes	**Not included in the price**

TOTAL AMOUNT **INR 99,00,000/-**

The price includes:
- Technical documentation – lay-out
- Project of foundation pit with dimensions and floor load-bearing capacities
- Instructions for use and safe operation in English language

The price does not include:
- Transport
- Chimney & Ducting from machine to dust collector, Machine noise isolation
- Construction works, spare parts, Anchor bolts, Grouting
- Material handling equipment's for machine assembly
- Installation of grounding point for the machine
- Man power for machine assembly
- All Cables & Electric installation up to the control cabinet and from control cabinet to motors - work and material
- Compressed air installation up to the connection points on the equipment - work and material. Compressed air according to ISO8573-1:2010[4:4:3]
- Everything not expressly indicated in the offer.

V. EQUIPMENT DELIVERY TIME

At the moment 18-19 weeks after receiving the order and first advance payment. Before stipulation of a contract the delivery date must be reviewed and confirmed.

VI. GUARANTEE

Guarantee is valid for 12 months after the equipment start-up, but no longer than 14 months since the equipment delivery.
The guarantee is not valid for:
- Parts exposed to high wear out due to abrasive.
- Parts not supplied by Gostol TST
- All additional mending, repairing not carried out by Gostol TST

Terms of guarantee:
- Buyer agrees that in case of improper use or insufficient maintenance of the machine, Gostol TST does not guarantee the proper functioning of the machine.
- Buyer is obligated to inform Gostol TST in 48 hours of all damages that turned up during a guaranty period.

- Gostol TST is obliged to supply original spare parts for 10 years from the date of the equipment purchase at cost.

IX. TERMS OF PAYMENT

- 40% advance payment along with Purchase Order
- Balance 60% + 100% taxes against Proforma Invoice, before dispatch after successful inspection at our facility.

X. ORDER CANCELLATION

Cancellation of orders placed by the purchaser will not be applicable under normal circumstances. However, if the situation arises, then following cancellation charges will apply on the basis of receipt of intimation of order cancellation at our office from the date of purchase order.

A. Within 15 days - Forfeiture of 25 % of the advance amount paid.
B. Within 16 to 40 days - Forfeiture of 50 % of the advance amount paid.
C. Within 41 to 90 days - Forfeiture of 75 % of the advance amount paid.
D. 91 days and above - Forfeiture of 100 % of the advance amount paid.

IX. ENCLOSURES

Drawing P-XXXX

We are available to you for all additional information

Best regards,

Sales Department:
Aditya Ural

Director:
Thippeshappa