



ON THE LEADERSHIP TRACK





On the leadership track through

passion, innovation and teamwork.

The Three Cornerstones

THAT DEFINE STONE INDIA

THE STONE INDIA VISION

Our vision is to pursue and consolidate our position of leadership through passion, innovation and teamwork.

THE STONE INDIA MISSION

Our mission is to maximise wealth creation for all the stake-holders of the company through supply of cost effective products, services and innovative solutions through integration of people, technology, processes and business systems.

THE STONE INDIA VALUES

Our values encompass every facet and discipline of our work. The business objectives and operations, as well as collective and individual behaviours of Stone India employees, are judged according to the following values:

- DISCIPLINE • STRETCH • TRUST • SUPPORT
- SPEED • DIVERSITY

The Mark of a Leader

A BRIEF BACKGROUND & COMPANY PROFILE



Stone India is the undisputed leader in Locomotive Brake Systems.



Stone India, a multi-product engineering company located in Kolkata, has been serving the Indian rail road industry for over eight decades. The company has recently setup a second greenfield manufacturing facility at Nalgarh, Himachal Pradesh.

A pioneer in brake systems and train lighting alternators, today Stone India is the undisputed leader in locomotive brake systems and has a wide range of mechanical and electrical products for the rail road industry.

Over the years, the company has grown from strength to strength. Today, Stone India is part of multi billion INR Duncan Goenka Group and employs around 400 people. It is an ISO 9001:2008 accredited company that can boast of cutting-edge manufacturing facilities, systems and practices. The company is committed to achieving international standards of performance in quality, costs and delivery. Stone India takes pride in its values and ethical business practices and is environment friendly.

Other than the corporate office and the manufacturing facilities in Kolkata, Stone India has branches and service centres located at all major towns and cities of India.

The journey of Stone India in the recent past has been one of meteoric growth, fuelled by the quest for excellence. In the process, the company has made an indelible mark in the industry - the mark of a leader.





The Qualities of Leadership

QUALITY POLICY & CODES OF BUSINESS PRINCIPLES

Our quality products ensure safe movement of people and goods by rail.

Following a set of well laid out Business Principles is integral to the functioning of Stone India. The Business Principles, reinforced by a unique Quality Policy, ensure unmatched customer satisfaction.

The Stone India Quality Policy

Every Stone India employee is trained to fully understand and to completely satisfy the customer's requirements.

Stone India is committed to deliver technology, products, services, and information that meet or exceed customer needs and expectations.

Stone India Quality Management Process (which utilizes actual performance data to drive continuous improvement), enables employees to fulfil these objectives.

The company's activities are guided by a code of ethics, which ensure that ideology is not compromised in the pursuit of success.

The Stone India codes of Business Principles

Standard of conduct

We are dedicated to integrity in all aspects of our business. We shall conduct our business with honesty and with respect for the interests of those with whom we have business relationships.

Conflicts of interest

We expect all employees to avoid personal activities and financial interests, which could be in conflict with their commitment to their jobs. Steps are taken to ensure that employees receive appropriate guidance in areas where such conflicts can arise.

Product assurance

We provide quality products and services that ensure safe movement of people and goods by rail and fully satisfy our customer needs. We consistently add value in terms of price and quality and work continuously to improve our products, internal processes and customer service.

Competition

We believe in fair play and support the development of appropriate competition laws. Employees receive guidance to ensure that they understand such laws and do not transgress Indian laws on the subject.

Reliability of financial reporting

Our accounting records and supporting documents are transparent and accurately describe the nature of the underlying transactions.



Stone India has collaborated with various global industry leaders for its high technology products.

International collaborations of Stone India

Stone India has collaborated with various global industry leaders for its high technology products. Among them are:

- Faiveley S.A., France for Pantographs
- SAB, Sweden for Slack Adjusters
- Wabco Westinghouse, USA (also known as WABTEC Corporation) for Brake System and Air Dryer of Diesel and Electric Locomotives
- Sumitomo Electrical Industries Ltd., Japan for Air Springs
- SMA Technologie AG, Germany for Converters
- Unique Manufacturing and Marketing for Bio-Toilets

- Tokai Rubber Industries, Japan for Conical Springs
- MZT Hepos AD, Macedonia for UIC compliant Relay Valve for Distributor Valves of Passenger Coach application
- MZT Hepos AD, Macedonia for Tread Brake Unit of High Horse Power Locomotives
- EMS Industries Pty. Ltd., South Africa for End of Train Telemetry System

Today, the Kolkata plant of Stone India has a fleet of 17 CNC machines for manufacturing of sophisticated components involving high precision and accuracy.



Leadership through Teamwork

UTILISING THE HUMAN RESOURCE POTENTIAL



Team Stone India can achieve the impossible...
because it dares to think out of the box



Stone India considers its employees to be its biggest asset. Motivating its workforce and encouraging a spirit of teamwork has propelled Stone India to the position of leadership in the industry.

At Stone India, employees are recruited and promoted purely based on merit. Furthermore, the employees are trained and continuously encouraged to achieve higher levels of qualification and competence. The authorities maintain regular dialogue with all the employees through standard procedures.

Stone India employees are provided with safe working conditions, given meaningful tasks and challenging goals and are empowered with appropriate authority and responsibility. The work environment fosters innovation, openness and leadership qualities.

At Stone India, success is always a true reflection of performance. The company continuously strives to improve the operating and financial performances.



Stone India Research & Development



Stone India serving Indian Railways for more than 8 decades.



Stone India, having its expertise in the pneumatic equipment arena has made a business diversification move towards the introduction of Electronic products to Indian railways.

The company has set up a new Electronic Design and Development facility in Kolkata which has all the latest development tools for PCB design, Embedded System Engineering, Prototyping, Solid Modelling etc. The work area is ESD safe. All electronic design & development activities comply with the latest IEEE protocol for software development and documentation. Stone India has also installed latest wave soldering machine for assembly of various electronic cards. The works is certified as per ISO 9001: 2008 and are now preparing for CMM certification for software development.

The company also has facilities like vibration test rig, heat chamber and humidity test chamber to witness the testing of products at various environmental conditions. Our engineers have designed test jigs for the testing of PCB's which are to be tested at various stages of the product development. Stone India has developed various electronic equipments at this new facility like Computer Controlled Brake System, End of Train Telemetry System, Fault Diagnostic and Control System, Vigilance Control Device and Converters of various ratings to name a few.

The concept of remote monitoring module which is a wireless network used for the communication between the equipment and server with help of GSM/GPRS application has been implemented in the various products.

Stone India Suspension Systems



AIR SPRING



LEVELLING VALVE



DEFLECTION INDICATION CUM BRAKE
APPLICATION DEVICE

AIR SPRING

Placing the body of the carriage on air pressure springs instead of the traditional helical suspension is a great move towards providing the passengers a trouble free and shock free ride. With the view to introduce air spring in rolling stock, Stone India has entered into a technical collaboration with Sumitomo Electric Industries, Japan to manufacture Air Springs in India.

The air spring gives a better ride and the fluctuations in the passenger load can be compensated by automatic adjustment of the pressure held inside its rubber and metal design. Equipment is provided with fail safe device 'emergency spring' which in the event of pressure drop holds the load of the coach, hence making it reliable suspension system. With the lower maintenance cost and high service life the product has got greater edge over the conventional helical spring suspension system.

AIR SUSPENSION CONTROL EQUIPMENT

Air suspension control equipment are used in conjunction with Air Springs to provide air balancing in different load conditions. Various equipment with different functions constitute air suspension control equipment. Leveling valve forms a critical component in the pneumatic circuit of the Air suspension system of the rail vehicle. The changing height of vehicle due to variations in passenger load in turn actuates the handle of leveling valve to allow flow of compressed air through the circuit into the air spring or release of compressed air from the air spring to atmosphere. Thus a fixed height of vehicle is always maintained irrespective of change of passenger load.

Other important Control equipment would be a set of Duplex check valve used between the pipeline connections of two air springs on the two sides of a bogie. Duplex check valve is so designed that whenever a pressure difference between two air springs exceeds a particular limit then it allows air to flow up to optimum height in the deflated Air Spring.

The installation lever along with other control equipments such as Drain Cock, Dirt Collector and different size Reservoirs help maintain an accurate assembly set to keep the Air Suspension system in working order for a comfortable and shock free travel experience.

DEFLECTION INDICATION CUM BRAKE APPLICATION DEVICE

Stone India had introduced various pneumatic systems to Indian Railways. With its expertise in the field of pneumatic equipment, Stone India has now developed Deflection indication cum Brake application device to be used in conjunction with Air suspension system which on the event of suspension failure will indicate the failure through audio and visual mode.

The proposed in-house made fail-safe system consists of DIBA valve mounted on the bogie frame, connected to either side of the Duplex Check Valve to the common brake pipe, the Air Whistle and the two Pneumatic Indicators. The system in the event of Air Spring failure activates the audio-visual indication system to show deflated condition and simultaneously vents brake pipe pressure, thereby applying brake in the entire train rake formation.

The system provides the solution to run air suspension fitted coaches at high speed by minimizing the chances of train mishaps which in turn ensures safe journey to commuters.

Stone India Railway Electronics Systems



CONVERTER



FAULT DIAGNOSTIC AND CONTROL SYSTEM

CONVERTER

It converts single phase variable input voltage to stabilized three phase voltage to cater 3 phase electric loads for ancillary function of ventilation, compressed air supply, oil pump & battery charging etc. It is direct replacement of Single phase to three phase ARNO Converter. Efficiency is greater than 94%. System is having on-line monitoring, diagnostics & data logging features, which helps in diagnostics Converters/Inverters of various power ratings from 2.5 KVA to 450 KVA. Various DC/AC Converters are designed and manufactured at our electronic product developmental cell.

VIGILANCE CONTROL DEVICE

Stone India has taken up an initiative towards introduction of safety item to Indian Railways which will help railways to avert the train disasters in case the drivers fail to respond to any of the pre-defined sets of action to be done by them.

The Vigilance Control Device (VCD) is for monitoring alertness of the engine crew through a multi-resetting fail-safe system which gets reset by specified normal operational activities of the crew, in addition to acknowledgement of the vigilance check by pressing a push button or pedal switch

provided for this purpose. Absence of the normal driving functions and the acknowledgement at specified intervals will activate Vigilance Control system to flash an indication which, if not acknowledged within a predefined interval, will cause audiovisual warning. If audiovisual warning is also not acknowledged within the set interval, it will result in emergency brake application. This also serves as a protection mechanism for locos handled by unauthorized persons getting into unattended loco cab.

With the train disasters increasing day by day, this will come as a big relief for railways to reduce unforeseen calamities to great extent.

FAULT DIAGNOSTIC AND CONTROL SYSTEM

The objective of the project "Microprocessor based Control and Fault Diagnostic System" is primarily to locate the faults occurring in the Locomotives for its correct maintenance. Tap Changer electric locomotives have conventional control and interlocking operations which are achieved through an array of Electro-mechanical and Electro-pneumatic relays and contactors. These relay based control involve a large amount of cabling which leads to the chances of

malfunction of loco. So, another objective of the system is to replace some existing relays and its corresponding interlocking logic with software to reduce the cost and complexity of wiring and to add certain diagnostic features for better maintenance of the loco.

The heart of the system is the microprocessor, which acquires the status of the relays, some analog parameters, processes the information and issues control outputs to operate and control the various electrical equipment inside the loco. It comes with inbuilt memory buffer to record the events and the faults for future assistance. With integrated GSM based Remote Monitoring system which on the event of any failure in loco alerts the experts present in the main server to assist the loco driver which is on the run. Hence, reducing the failure time of loco to large extent which leads to hassle-free drive.



END OF TRAIN TELEMETRY-CAB UNIT



VIGILANCE CONTROL DEVICE

END OF TRAIN TELEMETRY

End of Train Telemetry is here as a big relief to Train guards specially in tough conditions. It consists of PTS102 Pressure Telemetry System which is a set of train brake pressure monitoring equipment that is attached to the braking system of a train. When correctly connected the PTS102 will automatically monitor the brake pressure and report the status to the driver which in turn helps the driver to apply brake simultaneously from loco as well as from rear of the train. It triggers to open a valve on the brake pipe when an emergency application is called by the driver.

The Rear Unit, when operating in conjunction with the Front Unit, provides the locomotive driver with information about the conditions at the rear of the train that are important to the operation of the train.

It is battery powered and consists of a Cab unit, Rear unit and a set of GPS antennas to continuously monitor the status of the train length, brake and positioning etc.

LED BASED TRAIN DESTINATION SYSTEM

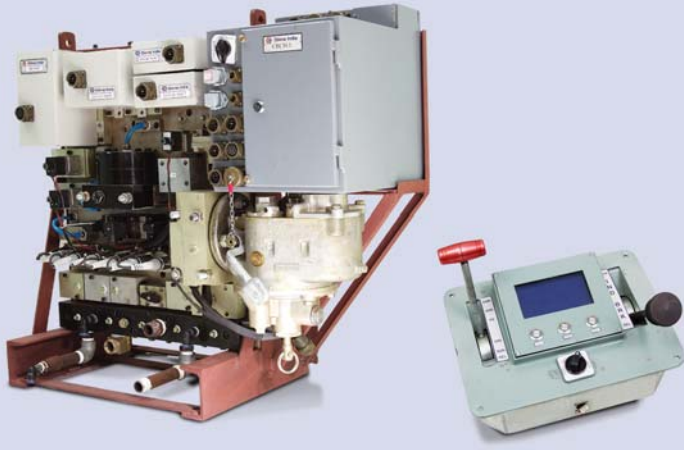
Stone India Limited at its Railway Electronics R & D setup has developed GPS enabled Destination Board Display system for railway application. This information system displays train number, train name, destination and starting station along with direction of journey and coach commercial abbreviations important for passengers boarding the station. The system comprises of LED display panel, microcontroller based VHF remote controlled CCU with built in GPS receiver which determines the current location of train using co-ordinates from geostationary satellite and displays the train's current location/station. It also consists of VHF based hand-held programmable remote control unit as the main controller for the data entry on coach control unit and also for the management of destination board. It has universal acceptance as it comes with the password protection facility for changing the coach control unit.

The system is light and of modular design and can display the information in many languages like Hindi, English or any other regional language. The system will enable passengers to get the train information at a glance.



END OF TRAIN TELEMETRY-REAR UNIT

Stone India Brake Systems



COMPUTERISED BRAKE SYSTEM



PANEL BRAKE SYSTEM

COMPUTERISED BRAKE SYSTEM

With the Brake equipment being made compact, here is an effort from Stone India Limited to provide a brake system incorporated with programmed circuits and electronically controlled valves to smartly access the Pneumatics for the efficient application of braking. Stone India has developed a microprocessor controlled brake system for locomotives. This system is designed, with in-house expertise of brake systems based on well proven 26L and 28LV platform, which is similar to the platform currently in use in EMD locomotive. The system incorporates a stand alone microprocessor controlling the brake system which communicates through RS-485 and CAN protocol, which are capable of communicating with other devices installed in modern locomotives.

The brake system is electronically controlled and includes a pneumatic back-up system, which, in the event of failure of the microprocessor or loss of power, will initiate full brake application automatically. It is a panel mounted compact & modular brake system, which is also suitable for retrofitment on existing locomotives of Indian Railways.

“COBS”, as designed by Stone India has universally accepted open communication protocol and can be easily interfaced with any host microprocessor based locomotive control system.

ELECTRO PNEUMATIC BRAKE SYSTEM

Stone India Limited has developed Electro Pneumatic brake system which provides simultaneous braking to all the coaches by transmitting the braking signal to each coach through electrical wires/wireless running for the whole length of the train. This system has edge over the conventional brake system which uses the air in the brake pipe as both a braking power source and means of communication.

Modern high speed trains need more efficient braking control to reduce the stopping distance and coupler force which can be achieved by introduction of this system.

ELECTRONICALLY CONTROLLED PNEUMATIC BRAKES

Electronically Controlled Pneumatic Brake is a new braking concept introduced on long Freight trains which reduces the braking distance, as brakes are applied simultaneously on each car of the train thereby enhances the efficiency of the braking system. The system is microprocessor controlled which constantly monitors brake pipe, reservoir tank and brake cylinder pressures and will also inform about the train completion status.

ECP Braking provides instantaneous response to the driver's commands on all vehicles, graduated release of brakes and continuous replenishment of reservoirs. With the new responsiveness of ECP braking, braking distances will be reduced which will allow shorter stopping distances and will, in turn, allow higher speeds.

PANEL BRAKE SYSTEM

The Tri-Plate Panel Mounted Brake System is mainly made out of Aluminium alloy plates specially machined and then sandwiched. These are used for compact assembly of brake valves thus saving the space as well as reduction of large number of pneumatic fittings. This is modular in concept as well as maintenance friendly.

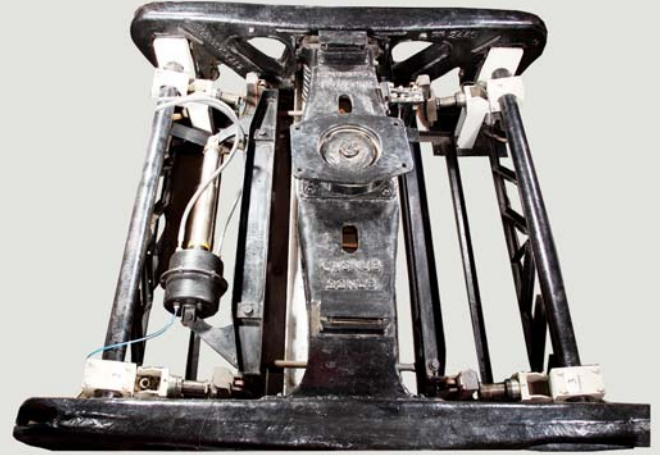
Stone India also supplies Vacuum Console Panel which is a compact unit housing the Vacuum Valves as well as the Filters and also a small panel comprising of other associated Valves related to Vacuum Brake System in the Locomotive. This eliminates dispersed fitment of Vacuum Valves in the Locomotive Brake System thus eliminating leakages as well as saving of space in the Locomotive.



TREAD BRAKE UNIT



BOGIE MOUNTED BRAKE SYSTEM



TREAD BRAKE UNIT

Stone India has been manufacturing Tread Brake Units for Diesel and Electric Locomotive application in India since 1995-96. A large number of TBUs of Stone India make are regularly under use in Indian Railways.

As a part of business diversification activities as well as for expansion activities we are now regularly manufacturing TBUs for High Horse Power Freight and Passenger Electric Locomotives.

Tread Brake Unit forms an important part of Locomotive Brake Group which works on the combined mechanical and pneumatic application principal. It consists of brake cylinder, internal leverage, slack adjusting mechanism and brake shoe assembled in a single unit. These are compact units manufactured of aluminium alloys after thorough checks and quality testing. Tread brake units are generally of two types - with parking brakes and without parking brakes. It has many internal features such as one way gap adjusting, anti compound system and easy brake shoe replacement along with the provision of Automatic parking brake.

BOGIE MOUNTED BRAKE SYSTEM

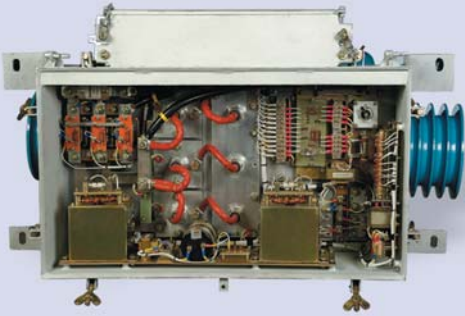
To reduce the complexity of connections and maintenance of the brake system, Stone India engineers have designed a Bogie Mounted Brake System which is equipped with inbuilt slack adjusting mechanism enabled brake cylinder, push rods and levers. The design and testing was thoroughly done in the state-of-art facilities available in campus to meet the exact demand of an efficient brake system.

The self adjusting brake cylinder has a unique feature of compensating slackness arising between wheel and brake shoe due to wear of brake shoe and wheel, thereby eliminating the need for the external slack adjuster and many linkages used for this purpose. It has a light weight K-type brake shoe made of composite material with increased coefficient of friction. Bell crank levers are used to achieve force leverage which eliminates the use of many big levers being used in conventional arrangement thus, increasing the efficiency of the whole system.

BRAKE SLACK ADJUSTER

The Slack Adjuster is a device for automatic adjustment of the clearance between Brake Block and Wheel Thread. Stone India manufactured Slack Adjusters are double acting i.e. it can either increase or decrease the slack depending upon the requirement. Both DRV2 and DRV2A Slack Adjusters are manufactured as per SAB Sweden design in models DRV2-600, DRV2-450, DRV2-300 as well as DRV2A-600 and DRV2A-450 for both Coach and Wagon application. In addition IRSA-600, IRSA-600J as well as IRSA-450 Slack Adjusters are also manufactured as per Indian Railway's standard design.

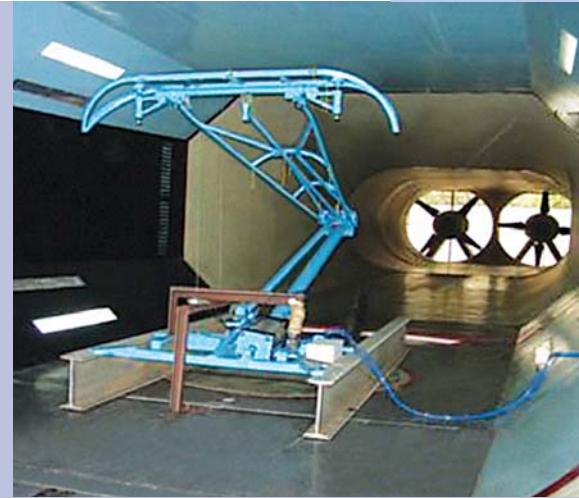
Stone India Power Collection Systems



POWER COLLECTION SYSTEM



PANTOGRAPH



OMNIVERSAL INTELIPANTO

TRAIN LIGHTING ALTERNATORS

Brushless Alternators for Self-Generating Coaches are manufactured for supplying the power to the Train Lighting for the conventional Coaches and also electrical load for Air Conditioned Coaches.

The capacity of the Alternator presently being manufactured varies from 3 KW to 25 KW both in 24 V and also 110 V DC.

Alternators are driven by Pulleys (Flat Belt/'V' Belt drive) which are also supplied as standard accessories along with Belt Tension Mechanism.

RECTIFIER REGULATOR UNIT

Rectifier Regulator units also supplied with the Alternators used for converting the AC to DC for Battery Charging and Train Lighting system.

PANTOGRAPH

Stone India is the pioneer in introducing Pantographs for Indian Railways in 1970s and large number of Freight and Passenger Electric Locomotives of Indian Railways are equipped with Stone India Pantographs. The high speed Passenger Electric Locomotives as per ABB design introduced in 1980s by Indian Railways are mounted with AM-92 Pantographs of Stone India make.

OMNIVERSAL INTELIPANTO

Stone India Ltd. has successfully designed and developed the improved Pantograph in a record time by indigenously using its own expertise and with its R & D setup using cutting edge simulation tools. The new design overcomes the challenge of balancing a high reach Pantograph in double stack container trains moving at a high speed in adverse wind conditions. The patented new series named as "Omniversal Intellipanto" has been supplied when other multinational companies failed to do so before commencement of the trial by Indian Railways in East Coast Railways which was witnessed by Japanese technical delegation.

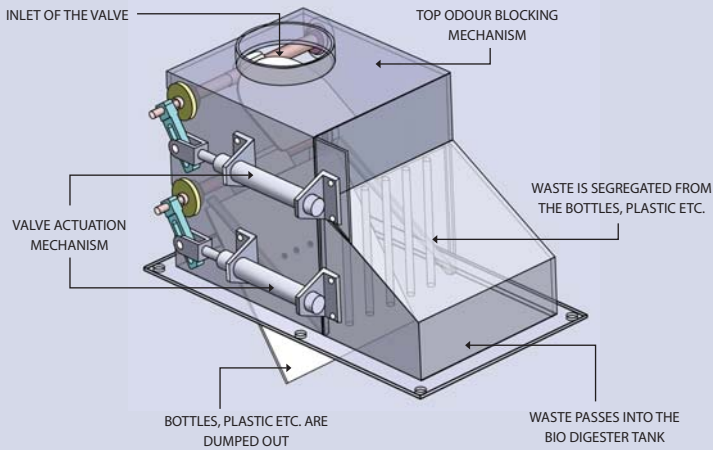
This pantograph has many added features such as operation under twin catenary height of 5.8 & 7.5 meters from rail level, auto



dropping feature at both catenary heights and auto upward-force adjustment to improve effective current collection in adverse conditions, thereby enabling reduction in energy consumption and allowing trains to run at much higher speeds.

This innovative product has grabbed a place in book of World Records and has been awarded as winner of World Technology Award for the year 2009 by World Records Academy.

Stone India Enbiolet

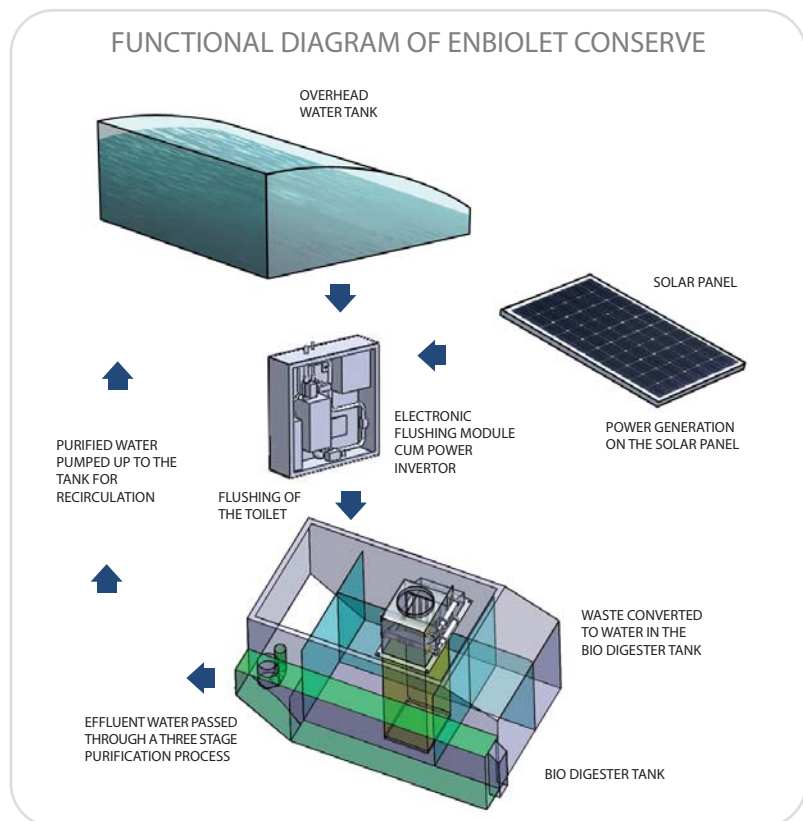


PICTORIAL DESCRIPTION OF THE FLAPPER VALVE CUM BOTTLE EJECTOR

The traditional method of disposing human waste is merely to deposit the waste onto the tracks using what is known as a 'Hopper Toilet'. The principal drawback is that it can be considered crude or unhygienic and poses a big health risk for the passengers and the people living near the tracks.

The issues of dealing with faecal matter is a significant problem for Railways and thus realising this need of today and for the future, Stone India has undertaken an environmentally clean Bio Toilet project along with the Indian Railways to supply the same instead of the conventional railway toilet system. System comprises of stainless steel Bio Digester Tanks that have been attached below the railway toilet outlet pipe in coaches. Thus, the waste is not discharged directly into the tracks but is retained in the Bio Digester tanks, where the Bio Media present digests the waste and converts them into water and gas. The waste in the form of water and gas is discharged out into the atmosphere.

Other features include Electronic controlled flush system to avoid water wastage and voice announcement system for passenger assistance. To avoid choking of the Bio Digester Tank the tank is fitted with bottle bypass mechanism to bypass non-degradable substances.



Stone Intermodal



Seamless Bimodal Transportation System

Stone Intermodal, a subsidiary of Stone India through its exclusive co-operation with RailRunner INC, NA introduces the new generation seamless bi-modal transportation in India.



RAILRUNNER HIGH-SPEED INTERMEDIATE BOGIE



40 FT. RAILRUNNER CHASSIS

NEW TECHNOLOGY. NEW MARKETS. A NEW WAY OF DOING BUSINESS.

RailRunner™ is a proven bi-modal transportation technology offering the efficiency of rail and flexibility of truck in one package. Using RailRunner's patented Rail Bogie and purposebuilt chassis system, containers can be transformed into rail vehicles without expensive cranes or large terminal facilities. RailRunner's Terminal Anywhere™ creates intermodal terminals with nothing more than a rail siding, gravel, and standard tractors. And building a RailRunner train requires no more skill than backing into a truck loading dock. With RailRunner, you can expand port services, penetrate new markets, feed railroad double stack trains, and develop new, cost effective methods of freight transportation.

THE RAILRUNNER BI-MODAL SYSTEM

Flexible. Affordable. Profitable.

RailRunner's bi-modal system can handle any standard freight container. The system has three main components - a RailRunner Rail Bogie, a RailRunner Rail Transition Bogie, and a RailRunner Chassis. Each component is carefully designed for ease of use, safety, and low-cost maintenance and operation. The system is flexible enough to adjust to your changing transportation requirements and durable enough to withstand the toughest freight conditions.

The RailRunner High-Speed Rail Bogie

RailRunner's Rail Bogie transforms RailRunner Chassis from highway equipment to a high-speed rail freight vehicle. Each bogie supports and connects two RailRunner Chassis. The bogie's patented wedge-shaped, bayonet design aligns the chassis to the bogie without lengthy jockeying by a tractor to position itself correctly.



53 FT. SPLINE RAILRUNNER CHASSIS



RAILRUNNER TRANSITION BOGIE

The RailRunner Rail Transition Bogie

RailRunner's Transition Bogie connects RailRunner Chassis/Container units to standard locomotives and railcars. One end has a standard knuckle coupler, the other a specially designed RailRunner Coupler. The RailRunner Coupler attaches to the lead RailRunner Chassis/Container. The knuckle coupler attaches to the locomotive or railcar. Each bogie has hand-bar, crossover tables and access ladders on both sides. Bogies use standard railroad equipment and can operate as dedicated trains or behind mixed freight trains.

RailRunner's High-Speed, Light-Weight Container Chassis

RailRunner Chassis travel like conventional highway equipment or run like railroad freight cars. The chassis carry any standard container and attach to tractors exactly like any over-the-road chassis. Minor RailRunner modifications produce minimal additional weight. RailRunner Chassis are also symmetrical : the same coupler is used on both sides. This speeds up terminal operations since equipment is not turned around to match different couplers. Each container takes three minutes to connect.

Terminal Anywhere

RailRunner's Terminal Anywhere capability allows RailRunner trains to be assembled

with minimal property and without expensive intermodal cranes or costly paving. All that is needed for a RailRunner terminal is a rail siding, a standard truck tractor, and gravel grading.

Low-Cost Operation

RailRunner's system is designed to be cost efficient in operation and maintenance. RailRunner Bogies use only standard, commercially available railcar equipment components for ease in parts repair and replacement. Each bogie is equipped with radial steering that mitigates wheel wear and extends product life.

Safety and Security

RailRunner has performed reliably and safely in actual freight operation field tests, mixed freight simulation, and controlled testing. All required AAR/TTCI testing requirements have been met or exceeded and the system operates safely up to speeds over 100 mph.

Fast and Easy to Use

RailRunner's unique coupling system and symmetrical chassis design make terminal operations easier than any other bi-modal system. Train assembly at the terminal is as simple as backing into a truck dock-no special training is required. The result is smooth and speedy terminal operations-each container takes only 3 minutes to be properly connected at the terminal.

Superior Ride Quality

RailRunner's air bag suspension system insures a smooth, damage-free ride. The air bags are mounted on the RailRunner Bogie rather than the chassis as in other bi-modal systems. This reduces the tare weight of the chassis and permits heavier payload efficiency.

Flexibility

RailRunner's flexibility can meet your freight transportation requirements no matter how challenging. The system handles any standard size container and can easily be modified for custom applications. RailRunner can quickly and easily be sized to accommodate changing freight volumes and is portable enough to move to other, more desirable locations as market conditions dictate.

REFRIGERATED RAIL TRANSPORT





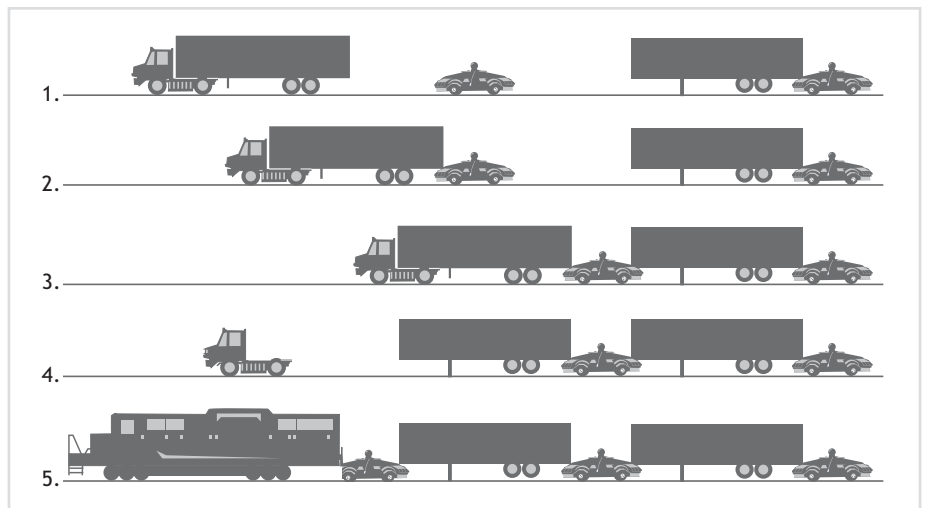
RAILRUNNER AUTO-RACK

TERMINAL OPERATIONS

RailRunner in action

The diagram below shows the simplicity and flexibility of RailRunner's bi-modal system in the terminal.

- Tractor backs entire second unit (Combined container, chassis, and bogie) to front of first chassis. As second bogie connects to first chassis, landing gear of first chassis raises clear of track. No manual rising of landing gear is required.
- Tractor disengages from chassis and repeats above process until entire RailRunner train is ready for locomotive.
- Rail Locomotive backs RailRunner Transition Bogie into RailRunner train. Air hoses are connected and air bags on all RailRunner Bogies are activated, further raising all chassis on train clear of rail and cushioning cargo. RailRunner train departs terminal.



Stone Solar



The green energy

Stone Solar, a wholly owned subsidiary of Stone India Limited, has taken on the responsibility to provide clean environment power generation solutions. In line with Stone India's Vision, Stone Solar will provide full-service, end to end Solar Power generation and solutions.

Solar Power Generation	Turnkey Contract Execution for Solar Farm	Solar Component Manufacturing - PV Module, Inverters
<p>To usher in green power generation to clean the environment, Stone Solar sets up off-grid as well as grid-connected solar power plants on residential and commercial establishment rooftops and vacant land in premium insolation areas in India e.g. Rajasthan, Gujarat, Andhra Pradesh and West Bengal. These solar power plants are grid connected in urban areas and off-grid in rural areas where power grids are not available.</p>	<p>Armed with the expertise of setting up solar power plants, both on rooftops and vacant land, grid connected and off grid, Stone Solar provides end to end full service to clients. These includes:</p> <ul style="list-style-type: none">● Design & Installation● Equipment selection● Solar system monitoring and maintenance● Energy efficiency● Solar lease & financing● Carbon Credit	<p>To support efficient and optimum installation and thereby generation of solar power from the plants Stone Solar is setting up a 25 MW PV module manufacturing unit, later to be expanded to 50 MW.</p> <p>Stone India will manufacture both off grid and grid-tie inverters from 5kw to 250kw range in its new state-of-the-art Electronic Manufacturing facility in close collaboration with a world leader in inverter manufacturing.</p>



STONE INDIA LIMITED

16, Taratalla Road, Kolkata 700 088, India

Ph.: + 91 33 2401 4661-8, Fax: + 91 33 2401 3451/4886

E-mail: info@stoneindia.co.in

www.stoneindia.co.in