Based in Austria, Plasser & Theurer was established in 1953 and is the recognised world leader in the design and manufacture of heavy on-track maintenance machinery. Today this market is supported by Plasser & Theurer’s partner firms and many agencies which have so far supplied over 14,000 machines to more than 100 countries.

Plasser South Africa is the local partner and agent for Plasser & Theurer machinery. Depending on circumstances, the company can either manufacture Plasser machines locally, import machines directly from Plasser & Theurer or a combination of the two. It provides full after sales service and technical support to machine owners.

Through active management of its transformation strategy over many years, the company has consistently achieved excellent BBBEE (Broad Based Black Economic Empowerment) results and will continue to do so. It currently holds a level 3 BBBEE compliance rating.

The superior quality of Plasser & Theurer’s products is legendary. Plasser South Africa’s quality management system complies with ISO9001 principles and the result is reflected in the long service life achieved from machines, the high levels of availability achieved and the high quality of the service that it provides.

Safety is of paramount importance and the company therefore maintains a sophisticated health and safety system which complies with OHSAS principles. The results are reflected in the good track record that the company has achieved over many years.
LOCAL PARTNER OF PLASSER & THEURER FOR:

- Consulting and new machine sales
- Plant Hire
- Machine leasing
- Spare part sales
- Operating and maintenance agreements
- Major component overhaul and machine refurbishment
- Training
- Technical support

PROVIDING MECHANISED TRACK CONSTRUCTION AND MAINTENANCE SOLUTIONS FOR:

- Track condition measuring
- Ballast tamping
- Ballast cleaning & spoil removal
- Ballast distribution and profiling
- Rail planing and grinding
- Flash butt rail welding
- Track construction
- Track renewal
- Turnout replacement
- Formation rehabilitation
- Overhead traction equipment maintenance and construction
DETAIL OF SERVICES OFFERED

Consulting

Having been a contractor for mechanised construction, maintenance and rehabilitation of railway track for over 57 years in Southern Africa, Plasser South Africa is qualified to provide clients with specialist advice to select the correct Plasser machinery and method of operation for the most cost effective solution for mechanised railway track maintenance, rehabilitation and construction in the region.

New Machine Sales

Plasser South Africa can offer any of the vast range of Plasser & Theurer machinery by either local manufacturing in its Johannesburg factory, importing or a combination of the two.

Plasser South Africa will commission new machines, provide on-site training to the machine operators and maintenance staff and provide applicable warranty support.

Plant Hire and Machine Leasing

Plasser South Africa owns an extensive fleet of machines which are supplied on a plant hire basis. Lease agreements will also be considered for long term contracts where feasible, to qualifying contractors. This may assist new entrants that are credible and have potential, to enter the market without needing immediate collateral and access to the high capital requirements.
**Spare Parts Sales**

Plasser South Africa keeps stock of a very wide range of items to provide an optimised service and response to customers and limit their machine’s downtime to an absolute minimum.

Major components such as tamping units, stabilising units, bogies, etc. are refurbished in-house and can be made available to customers on a service exchange basis.

**Contracting Support**

Due to the relatively small market, the industry for mechanised track maintenance in South Africa has transformed many times since 1959, and evolved to a point today where railway owners outsource their mechanised maintenance activities and focus on their core business. They no longer lease, hire or own any heavy on-track maintenance machines as they did before but contract out the full service to contractors specialising in this area.

This process has been hugely successful with contracts providing incentives for machine availability and high production. The result is that track maintenance machinery in South Africa produces some of the highest production figures and cost effective outputs in the world.

Plasser South Africa owns operates and maintains a fleet of mechanised track maintenance machines that are renowned in the industry for their high availability and reliability.

With its extensive knowledge and experience in contracting, Plasser South Africa is able to share its experience, transfer skills and provide top quality training to its clients.
DETAIL OF SERVICES OFFERED

Operating And Maintenance Agreements
Plasser South Africa offers a full range of operating and maintenance packages with varying degrees of involvement from the owner. The services can range from full time crews, operating and maintaining the machine on a daily basis to basic agreements where only selected support services are provided.

Major Component Overhaul
Plasser South Africa has a dedicated workshop for the refurbishing of major components such as tamping units, stabilising units, bogies, final drives, gearboxes, etc. Completed units are thoroughly tested, preserved and stored and made available to customers.

Machine Refurbishment
Machines in Southern Africa are generally extensively utilised and not much time is available for major servicing. In order to ensure optimum performance of the machine throughout its life cycle, it is necessary to refurbish it after each working cycle of approximately 5 years. Plasser South Africa has a well-equipped workshop and skilled staff to carry out the required work. During this process, the machine is completely disassembled, thoroughly inspected and rebuilt to efficiently operate for another 5 year cycle.
Training

Operating and maintaining of track maintenance machinery is highly specialised for which qualified staff is not freely available in the labour market. Plasser South Africa’s accredited training facility provides training in accordance with a formal curriculum for each category. Classroom training is presented by highly skilled technical staff; practical training is provided on site and assessments are carried out by in-house accredited assessors.

Technical Support

Machine owners have access to the wide range of expert specialised support services provided by Plasser South Africa. These include, but are not limited to the following technical support services offered by Plasser South Africa:

- Specialised technical personnel who are on call for emergency assistance.
- Assistance with the compilation of pro-active maintenance plans.
- Proposals for strategic stock holdings of spare parts and wearing parts.
- Planning and execution of mechanical and electrical audits at machines.
- Condition monitoring of and management of a major components replacement and refurbishment program.
- On-site and safe replacement of major components with specialised lifting equipment.
Ballast Cleaning Machines

Ballast screening is a vital part of track maintenance. Ballast screening is a laborious task that can only be done efficiently by mechanised methods (a ballast cleaning machine) and entails the separation and removal of the fine material from within the ballast bed and returning the re-usable ballast.

Depending on the ballast cleaning machine model and site conditions, the Plasser machines can excavate between 350 to 750 m³ of ballast per hour.

MACHINES OF CHOICE FOR SOUTHERN AFRICA

Track Infrastructure Measuring and Recording Cars

The data obtained from the Infrastructure Measuring and Recording Car allows railway management to plan their maintenance effectively according to line priority and availability and urgency of defects detected. The highly sophisticated contactless laser system measures various track, rail, ballast profile and overhead traction geometry parameters at speeds of up to 100 km/h. The results are analysed and made available in various standard or customised reports. The results of various runs of the machine can also be plotted on the same graph providing a visual representation of track condition change over time.

The Plasser IM2000 has been on contract for more than a decade with Transnet Freight Rail, consistently achieving almost 100% availability.

Track Infrastructure Measuring and Recording Cars
The ballast cleaner can be fitted with a wide cutterbar for screening switches and crossings or a narrow cutterbar for screening ballast in tunnels, bridges and other restricted areas.

The RM74 machines have been working in South Africa since 1979 and are much respected in South Africa for their high quality of work and production achieved. The new RM 74 BR-UHR is of the same specification as the machines currently in use. Plasser South Africa therefore has many years experience on this machine and various components are readily available.

The RM900 has been on contract for almost a decade and has proven its ability for high speed ballast cleaning which is essential for high traffic density lines. It is the highest production ballast cleaning machine that fits within the cape gauge vehicle structure gauge.

The new RM 80-750 S is a machine capable of production rates similar to the RM 900.
Ballast Regulating Machines

Ballast distribution and profiling machines are an efficient mechanised method used to box in and redistribute ballast.

Depending on the model, these machines can be equipped with a variety of equipment including:

- Shoulder ploughs which are adjustable both vertically and horizontally and can be adapted to suit any shoulder angle. All obstacles such as mast poles can be avoided without altering the shoulder angle and leaving heaps of ballast. The ploughs are pressed down hydraulically and held firmly against the ballast shoulder.

- Regulating ploughs consisting of tunnel shaped sheets over the rail area and fixed and adjustable baffles which can achieve a flow of ballast in any direction across the ballast profile.

- An optional sweeper unit consisting of a rotating sweeper brush inside a welded steel plate housing which sweeps the surplus ballast from the sleepers into the sleeper cribs or deposits surplus ballast either to the right or left side of the track.

The SSP 203 is a high production bi-directional machine equipped with all the equipment mentioned above.

A number of variations of Plasser ballast regulating machines have been in operation in South Africa for many years, working behind ballast cleaners, on construction sites and carrying out general maintenance while achieving excellent production rates and availability levels.
Material Conveying Systems

Depositing of spoil adjacent to the track during ballast cleaning is only possible to a limited extent. Apart from this being damaging to the environment, it may not be possible in restricted areas such as cuttings, tunnels and at station platforms where it has to be loaded onto spoil conveying systems for removal to suitable dumping sites.

The MFS spoil conveyor system is an open, high sided hopper wagon, with a floor mounted conveyor belt which covers the entire width of the machine with a storage capacity of 40 m³.

The rotation speed of this purpose designed and wear resistant conveyor belt can be controlled.

In addition, the hopper wagon is equipped with a slewing conveyor belt on the one end which operates independently from the floor conveyor belt to either transfer its load forward to the next wagon, or discharge its load to the side. Each unit is equipped with its own diesel engine to supply motive power to the conveyor belt.

An MFS train of spoil conveyor systems can be made up of any number of hoppers to suit.

The MFS system is also perfectly suited for the carriage and distribution of new ballast or backfill material. Where installed, the ballast offloading using the MFS system can be integrated with the ballast cleaning machine.

The MFS 40-4 spoil conveyor system has been in use in South Africa for many years and has proved to be exceptionally reliable and effective.
Tamping is the most frequent maintenance action on railway track. Tamping refers to lifting and correcting the longitudinal and vertical alignment of the track by squeezing ballast stone into the void created under the sleeper due to the lift. Tamping machines are either of the index or, for high production, continuous action design. Index tamping machines stop at every sleeper or sets of sleepers to be tamped whereas continuous action tamping machines separate the main frame and a satellite frame on which the tamping units are mounted to allow continuous motion of the main frame while the cyclic braking and acceleration for the tamping action is performed by the much lighter satellite frame. This together with the number of sleepers tamped per insertion determines the production of the machine. Many different specialised machines have been developed by Plasser & Theurer to address the various aspects of tamping but are basically divided between plain track and universal machines.

Plain Track Tamping Machines

Plain track tamping machines are more cost effective where turnouts are limited and/or where high speed tamping is required.

The 09-3X Dynamic Tamping Express continuous action tamping machine tamps three sleepers at a time using a total of 48 tines with a production rate of up to 55 sleepers per minute. These machines have been operating in South Africa for almost a decade, achieving the desired results on heavy haul and high traffic density lines.

The 08-series fills the gap where ultra high production tamping is not always required due to the lower demand by smaller rail networks. This index tamping machine is available with either 1 or 2 sleeper tamping units producing high quality at competitive unit costs. Similar machines have been operating for a number of decades in South Africa and have a proven track record for good quality, extreme reliability and maintainability.
Universal Tamping Machines

Universal tamping machines may be equipped with a combination of special features, depending on the intended application of the machine, such as sliding tamping units to find the best area to enter the ballast in the restricted turnouts, rotating tamping units to ensure right angles to the sleeper when the turnout section is tamped, a third rail lifting unit to allow uniform lifting across the whole turnout without stressing the fastenings and split tamping units with 16 tines which split in half (field side and gauge side) which can be individually lowered for unparalleled versatility. When plain track is tamped, the tamping units are locked in position.

These features are fitted to a variety of machines, each with a specialised function in mind. The 08-series is also offered with split tamping units and is the smallest in the range designed for cost effective day to day maintenance where high lifts and large slews are not required such as general freight lines.

The Unimat Universal Tamping machine is a heavy duty machine suitable for all types of work especially on heavy haul lines where high production capabilities and high lifts are required of heavy turnouts and where there are many turnouts on the line. These machines have a proven track record on the Coal Export Line where one has been on contract for the last decade on construction and maintenance projects, carrying out extensive lifting and slewing of heavy concrete turnouts and open track.

The 09-Dyna-C.A.T. is also a heavy duty machine with the added advantage of high production on plain track due to its continuous action feature and two sleeper tamping arrangement. It also incorporates integral dynamic track stabilising. These machines have achieved exceptional results on the Iron Ore Export Line and high density lines where they have been on contract for almost a decade, carrying out day to day maintenance of heavy concrete turnouts and open track.
Dynamic Ballast Stabilising Machines

The stabilising machine consists of two stabilising units between the axles/bogies of the machine that set the track in horizontal oscillation directed crosswise/laterally to the track whilst at the same time applying a controlled static vertical load. The stabilising machine therefore ‘beds’ the sleeper into the ballast.

Dynamic track stabilisation enhances the quality and durability of the track after ballast cleaning or tamping. It restores the track’s resistance to lateral displacement which traditionally required trains to compact the track bed with their weight while passing at a restricted speed for a period of time.

The homogeneous settlement with stabilisation is uniform over the length of the dynamically stabilised track which would otherwise occur unevenly under variable traffic loading. Maintenance intervals are therefore extended by up to 30% on average, confirmed by extensive research and experience.

The stabilising machine can either follow the tamping machine as a self-propelled vehicle, can be coupled to a continuous action tamping machine or can be integrated with the machine such as the Dyna-C.A.T. to offer unrivalled production, track quality and durability which reduces the unit costs of maintenance and minimises the disruption to traffic.

Stabilising machines have been extensively used in South Africa for several decades and have a proven track record for efficiency, productivity and reliability.
Flash Butt Welding Machines

Rail joints have always been a major cause of maintenance on rail track. Discontinuity of the track running surface produces dynamic impact loads causing greater stress on the ballast and subgrade which accelerates track wear and failure. The introduction of continuous welded rail has improved the geometric stability of the track. Using the butt welding process has further reduced rail surface discontinuities due to its limited change to the metallurgical character of the rail, producing a very high quality weld.

The Plasser & Theurer APT 1500 RA has many improved features including higher clamping forces, shorter welding durations, automatic alignment of the rails, the ability to perform closure welds and it is the only machine that fully complies with the European welding standard, EN14587-2 published in 2009.

Less costly machines are still available for lighter applications such as short rails and non-closure welding. Two of these machines (the K 355 APT) have been successfully operating in South Africa for almost two decades on construction and maintenance projects, welding all types of rails in-situ and in depots.

Overhead Traction Equipment (OHTE) Machines

OHTE machines are designed to give safe access to the electrical structure for maintenance. These machines have various auxiliary equipment to ensure the safety of staff and ease of handling, cleaning and replacing of OHTE components.

The MTW heavy motor tower for inspection, measuring and maintenance of OHTE is only one of a very large variety of such machines available from Plasser & Theurer. Similar machines have been operating in South Africa for longer than a decade, achieving exceptional results.
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