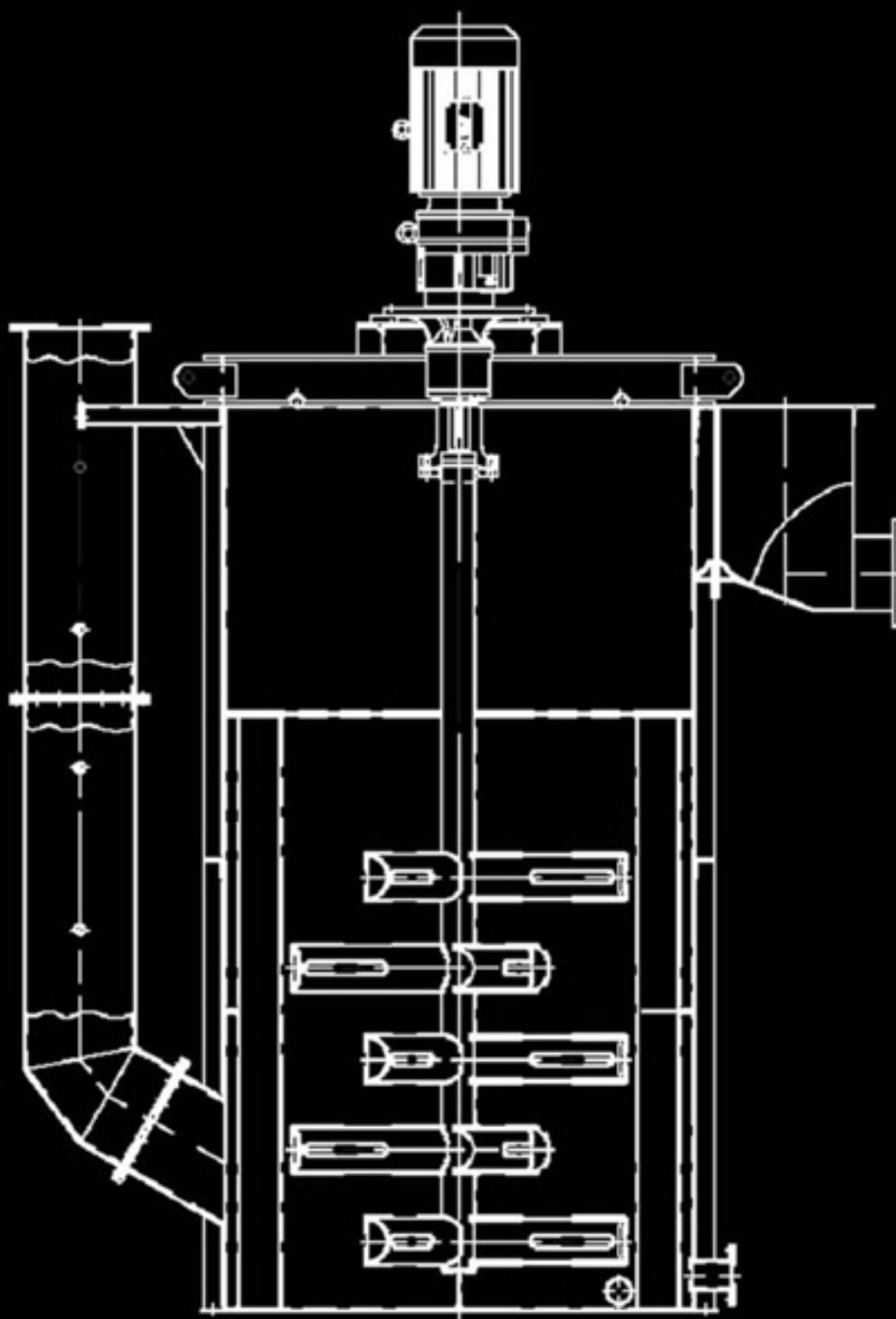




mip | PROCESS
TECHNOLOGIES

attrition scrubbers



unparalleled process solutions

www.mipprocess.com

OUR COMPANY

MIP Process Technologies (Pty) Limited is a South African Process Equipment sales and manufacturing company offering customised and innovative process solutions for the Mining, Minerals Processing and related industries. The 100% black-owned and black-managed company was established in 2007. MIP Process is accredited with Level 1 BEE Status, which is the highest that can be achieved. We pride ourselves on being truly customer-centric with unsurpassed levels of customer service.

MIP Process Technologies (Pty) Limited's mission is to be the preferred supplier of process equipment with an offering that is underpinned by:

- customer focus
- reliability
- innovation
- continuous improvement

We specialise in the supply of Process Equipment, but have the capability to assist with plant design around the Company's core technologies.

BACKGROUND TO ATTRITION SCRUBBERS

Attrition scrubbing is not a new concept – it has been used in the glass industry for numerous years to remove surface contaminants. The surface impurities are abraded and thus cleaned as inter-particle collisions take place.

APPLICATIONS

MIP Attrition scrubbers can be supplied for a variety of applications from mineral processing to water treatment. Some of industries where attritioning has proven successful include:

- Platinum
- Coal Fines
- Base Metals and Minerals
- Heavy Minerals and Beach Sands
- Silica Sand
- Lime Slaking
- Industrial Minerals

ATTRITION SCRUBBER TYPES AND SIZES

Pilot scale units start with laboratory scale 5 liter to pilot scale 200 litre units. Full scale standard sizes include; 0.5m³, 1m³, 2m³, 5m³, 10m³ and 20m³. As each unit is independent, we can provide for any configuration.

A retrofit service is offered to enhance performance of existing attrition scrubbers.

ENGINEERING STANDARDS

All engineering, design and construction is based on sound internationally approved engineering principles as well as practical applications.

Creating value through innovative superior designs and building of strong supply capabilities



•• AFTER-SALES SERVICE

MIP Process Technologies (Pty) Limited's products have been designed to ensure minimal maintenance with easily replaceable parts for minimum downtime.

All our products carry an eighteen (18) month warranty against the industry standard of twelve (12) months. This decreases the risk when buying MIP Process equipment. We offer an after-sales service and our Technical and Service departmental staff is available on a continuous seven (7) days a week basis to offer assistance. A team of process and mechanical engineers, who have experience in Coal, Base Metals, Platinum and Gold markets, are available. Field service technicians provide further support.

•• BENEFITS

A range of benefits is available to business partners when purchasing equipment from MIP Process.

The MIP Attrition Scrubber operates on the principle of creating more attritioning zones within the unit. Features and benefits of our attrition scrubbers include:

Feature	Benefits
Design specific	Minimal risk
Different tank designs	Optimised offering
Identical drive and tank	Reduced maintenance cost
By pass facilities	On plant flexibility
Low power consumption	Lower operating cost
Minimal wear	Longer life
Ease of operation	Maintenance friendly
Inspection manholes	Continuous monitoring
Multiple blades	No velocity degradation
Cost effective	Reduced capital cost
No scale-up risk	Recoveries achieved

Each attrition cell is fully rubber lined in accordance with wear resistance requirements. The units are designed with replaceable polyurethane in the high wear areas for ease of maintenance.

•• EQUIPMENT COMPONENTS

The main components of the Attrition scrubbers are the Tank and the Mechanism.

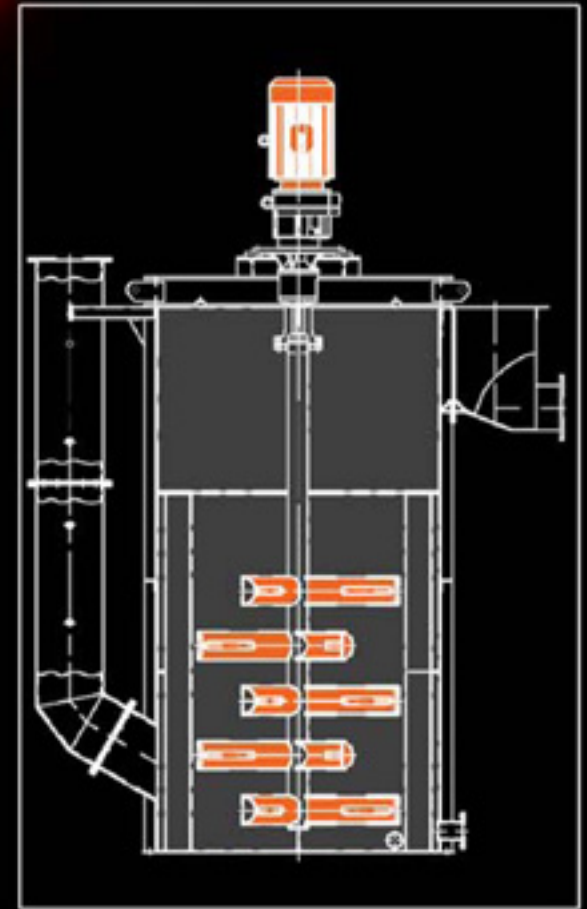
Tank

The tanks can be constructed from a variety of materials, the most common being carbon steel. Designs in stainless steel and exotic materials can be accommodated. The tank designs can be either:

- Square, built around an angle iron skeleton, or
- Round with a supported base

The tank inlet and discharge boxes are of bolted construction and are removable for easy installation and maintenance.

Tanks are rubber covered with dual colour rubber. Replaceable polyurethane pads are installed in high wear areas.





Chemineer HT Agitator



26m ϕ Thickener in operation



MIP-200 Flocculant Plant



30m² Linear Screen

Mechanism

The mechanism consists of multiple attrition zones that ensure every particle is exposed to the scrubbing action.

This is achieved through multiple blades that ensure the distance between the impellers is not less than 10mm. Velocity degradation is minimized. Conventional machines have a larger gap between impellers resulting in particles passing through without any scrubbing.

This design utilizes all power for scrubbing which means lower power consumption than conventional scrubbers.

Since the gap between the impellers on the laboratory scale and full scale are similar, the risk of scale-up is minimized with the MIP design.

Project Management

Owing to the high level of importance that MIP Process Technologies (Pty) Limited places on the delivery of each project, we ensure that each project has a world-class project management team. This is coupled with the resources of highly experienced subcontractors, for the different aspects of each project.

Low Investment

Our equipment design is robust to ensure it is still in operation many years from now. We realise that process conditions can change and make allowances for this.

Test Facility

A comprehensive test facility is available to our customers. Preliminary sizing can be done using our extensive database.

MIP Value Proposition

The MIP designs consider not only the customer's process data, but also the long-term mechanical performance, maximum circuit efficiency, availability and minimised operating costs.

•• PRODUCTS & SERVICES

MIP PROCESS TECHNOLOGIES strives to design and manufacture process equipment that is technically advanced, reliable and customised for each application. We believe that each ore body is different and 'fit for all design' is not necessarily the best solution. Our designs are simple yet robust and reliable. Our philosophy is to minimise the customer's total operating costs, thus minimising expenditure. The full product range includes:

- Attrition Scrubbers
- Clarifiers and Thickeners
- Chemineer range of Mixers and Agitators
- Flocculant and Reagent Make-up Plants
- Horizontal Linear Screens
- Moyno Progressive Cavity Pumps
- Slurry Samplers

•• CONTACT DETAILS

Physical

Ground Floor, The Business Centre,
8 Gemsbok Lane (off 12th Avenue), Rivonia, 2128

Postal

P.O. Box 677, Kelvin, 2054

Telephone No.

+27 (0)11 612-3217

Telefax No.

+27 (0)86 682-2394

E-Mail

sales@mipprocess.com

Website

www.mipprocess.com