

MECH-TEM Solutions (Pty) Ltd.

ENGINEERING CATALOG

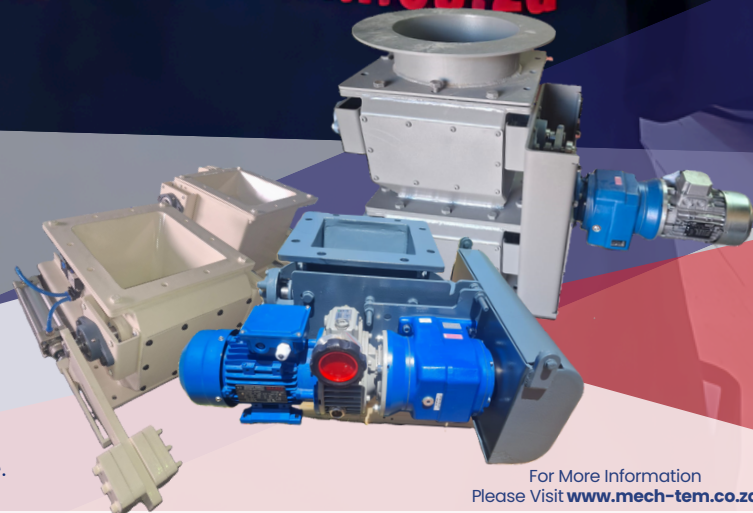
SECOND EDITION



B-BBEE
PROUD CONTRIBUTOR



www.mech-tem.co.za



Let's build something extraordinary together,
partner with **MECH-TEM Solutions** to engineer your future.

For More Information
Please Visit www.mech-tem.co.za

PROUDLY SOUTH AFRICAN • OEM MANUFACTURER • ISO RELIABILITY PARTNER

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PROVIDING SOLUTIONS TO HELP BUSINESS GROW

Mech-Tem Solutions is a proudly South African engineering company specializing in the design, manufacture and integration of bulk material handling equipment.

We focus on delivering reliable, cost-effective solutions that enhance plant performance and support long-term operational efficiency.

Our approach is built on partnership, transparency and a commitment to delivering measurable value.

Every project is guided by a “win-win” philosophy—ensuring our clients receive equipment and services that genuinely improve their operations.



OUR VISION

To be South Africa's leading engineering project management and equipment manufacturing partner —recognized for innovation, quality and dependable results.

WHO WE ARE

On-location With extensive experience across heavy, medium and light fabrication, Mech-Tem Solutions manages complex projects with precision and professionalism.

OUR FOCUS

We design & manufacture equipment that meets the highest standards of:

- **Performance** — engineered for real-world plant conditions
- **Cost-effectiveness** — optimized for long service life and low maintenance
- **Customer satisfaction** — tailored to specific material and process requirements
- **Innovation** — continuously improving designs and manufacturing methods
- **Environmental responsibility** — efficient, safe, and sustainable solutions
- **Quality & durability** — built to withstand industrial demands
- **Prompt delivery** — supported by streamlined production and project management

OUR MULTIDISCIPLINARY EXPERTISE ALLOWS US TO:

- Identify opportunities to improve plant efficiency
- Recommend alternative solutions where beneficial
- Execute projects safely, on time and to specification

OUR PRIMARY GOAL:

To supply equipment that is reliable, user-friendly and purpose-built for your plant.

OUR AREA OF EXPERTISE

We offer a broad range of engineering & material-handling solutions, including:

- **Rotary valve feeders**
- **Filtration bags & filtration services**
- **Screw conveyors**
- **Knife gates**
- **Lump breakers / finger crushers**
- **Flow control gates**
- **Valves & instrumentation**
- **Mechanical maintenance services**

We Keep Engineering on Track!

Mech-Tem Solutions supports fast-paced, high-demand industrial environments with practical engineering expertise, hands-on execution, and reliable project delivery.

Our team works confidently in live, operational facilities – ensuring every project runs safely, smoothly and on schedule from concept to commissioning.

We understand that downtime is costly.

That’s why our plant design philosophy focuses on efficiency, accessibility, maintainability and long-term performance.

INDUSTRIES WE SERVE

Our products and services support a wide range of industries, including, but not limited to:

- Agriculture
- Foundries
- Fertilizer production
- Flour mills
- Mining
- Glass manufacturing
- Textiles
- Pharmaceuticals
- Processing plants
- Plastics
- Cement production
- Tobacco
- Bulk loading & off-loading
- Power stations
- Pigments
- Lime & gypsum
- Pulp & paper
- Paint & coatings
- Chemicals
- Food processing

Our experience across these sectors allows us to design solutions that fit real-world plant conditions, withstand demanding environments and deliver measurable improvements.

END-TO-END PROJECT EXECUTION

We streamline operations by identifying improvement opportunities and implementing **practical, cost-effective engineering solutions**

Our services include:

- Equipment installation
- Mechanical, hydraulic, pneumatic & electrical maintenance
- Manufacturing and sourcing of custom spare parts
- On-site fitting and refurbishment

Every project is executed with a focus on **safety, precision and operational continuity**.



FABRICATION & WELDING SERVICES

CUSTOM DESIGN

We engineer systems based on material characteristics such as:

- **Particle size**
- **Density**
- **Abrasiveness**
- **Flowability**

THIS ENSURE EVERY SOLUTION IS OPTIMIZED FOR PERFORMANCE, RELIABILITY AND LONGEVITY.

ENGINEERED SYSTEMS

Our fabrication solutions integrate multiple components into complete, automated systems designed for:

- **Seamless Material Handling**
- **Improved Process Efficiency**
- **Reduced Maintenance Requirements**

PLANT ACCESSORIES & EQUIPMENT

STRUCTURAL ACCESSORIES FOR INDUSTRIAL & COMMERCIAL APPLICATIONS

Mech-Tem Solutions supplies a comprehensive range of durable, safety-focused structural components designed to enhance plant accessibility, operational efficiency, and long-term reliability.

Every accessory is engineered with precision and manufactured to withstand the demanding conditions of industrial environments.

Our structural solutions are custom-built to site requirements, ensuring seamless integration into existing facilities and compliance with industry standards.



DESIGN & PLANNING SERVICES

We provide complete plant design support, including:

- Process design
- Layout design
- Facility design
- Conveying

OUR EXPERTISE

- Engineering:** Efficient plant layouts, adhering to engineering standards.
- Drafting and Design:** 30+ years of experience delivering accurate designs.
- Operations Management:** Seamless plant operations.

OUR STRUCTURAL RANGE INCLUDES:

These components are built for long service life in demanding industrial environments.

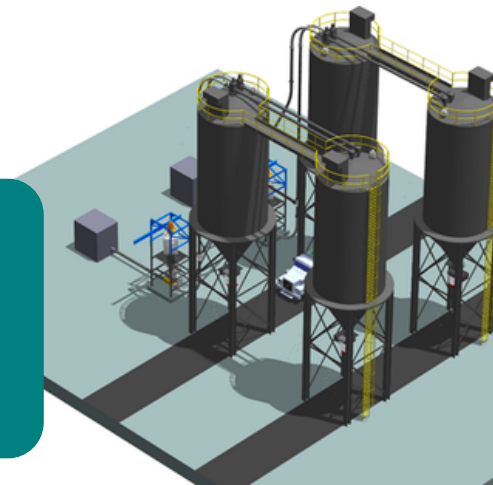
- Heavy-duty platforms and walkways
- Industrial staircases
- Cat ladders for vertical access
- Safety-compliant hand railings

CAPABILITIES

- Process design
- Layout design
- Facility design
- Material flow & logistics
- Automation & control systems

TURNKEY CAPABILITIES

- Our in-house team delivers:
- Plant layouts
 - PFDs
 - 3D modelling
 - Full drawing sets
 - Plant integration



PLANT ACCESSORIES STRUCTURAL ACCESSORIES

Category	Details
Overview	Structural components designed for safe access and support.
Operation	Provides stable walkways, platforms and access points.
Design Benefit	Engineered for industrial durability and compliance.
Applications	Plants • Factories • Silos • Processing Facilities
Key Benefit	Custom-built to site requirements with long service life.

SPECIALIZED FABRICATION SERVICES

STRUCTURAL FABRICATION

We manufacture robust frameworks and support structures using advanced cutting, forming, punching, shearing and welding techniques.

SITE WORK & FABRICATION

Our team performs on-site fabrication and installation to support plant upgrades, repairs, and operational requirements.

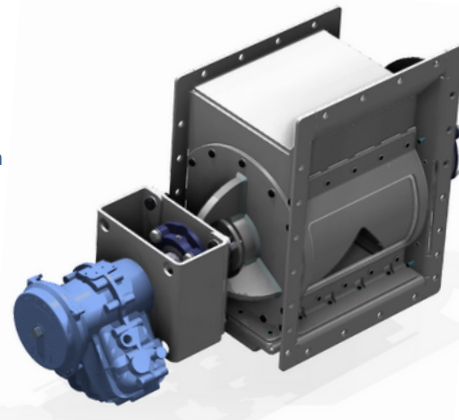
FABRICATION & WELDING SERVICES

- MIG, TIG and Arc welding
- Custom design based on material characteristics
- Engineered systems
- Structural fabrication
- On-site fabrication

FLOW CONTROL GATES

PRECISION FLOW REGULATION FOR BULK SOLIDS

Flow Control Gates are engineered to regulate the discharge of bulk materials from silos, bins, and air slide systems. They are widely used in cement plants, packaging lines, weighing systems and bulk loading applications, where accurate flow control is essential for process stability.



FLANGE OPTIONS

- Standard drilling per client request
- Recommended drilling available when

ACTUATION OPTIONS

- Pneumatic cylinder (standard)
- Pneumatic rotary actuator
- Electric rotary actuator
- Electric motor

CONSTRUCTION FEATURES

- Laser-cut plates for rigidity and accuracy
- Carbon steel drum (optional 304/316 stainless steel)
- Serviceable in place – drum and liners replaceable without removing the unit

Our gates are built for precision, durability and easy maintenance, ensuring reliable performance even in abrasive or high-duty environments.

THESE OPTIONS ALLOW SEAMLESS INTEGRATION INTO AUTOMATED OR MANUAL PLANT SYSTEMS.

Category	Details
Overview	Gate valve regulating discharge from silos and air slides.
Operation	Drum opens/closes via pneumatic or electric actuation.
Design Benefit	Replaceable liners and drum allow in-place servicing.
Applications	Cement • Packaging • Weighing • Bulk Loading • Production Lines
Key Benefit	Accurate flow control with durable, laser-cut construction.

Materials: Mild Steel, Stainless Steel 304/316
Standard Sizes: 200–600 mm
Other sizes available on request.

BUTTERFLY DAMPERS **LOW-PRESSURE FLOW CONTROL FOR DUCTING SYSTEMS**

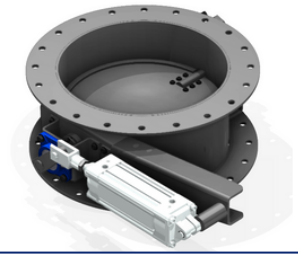
Butterfly Dampers provide reliable isolation and flow regulation in low-pressure air and ventilation systems. They are ideal for dust extraction, pneumatic conveying and general ducting applications. Our dampers are designed for smooth operation, minimal maintenance and long-term durability.

CUSTOM DESIGN

Butterfly Dampers provide isolation or flow regulation in low-pressure air systems.

ENGINEERED SYSTEMS

Our fabrication solutions integrate multiple components into complex, automated systems designed for seamless material handling and process efficiency.



Category	Details
Overview	Flow control damper for air and low-pressure conveying.
Operation	Pneumatic cylinder or manual lever rotates the flap.
Design Benefit	Maintenance-free seals and robust laser-cut construction.
Applications	Ducting • Ventilation • Pneumatic Conveying
Key Benefit	Available in slim or full-body designs for flexible installation.

Sizes: 200–600 mm

Shapes: Round (SANS 1123 flanges) or Square

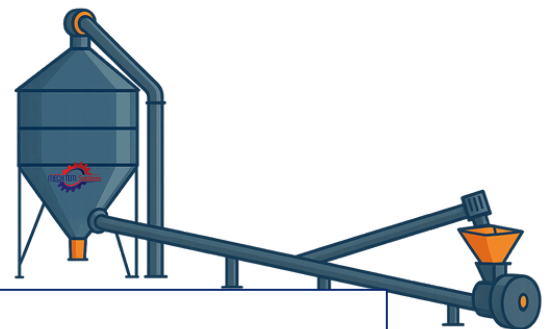
Materials: Mild Steel, Stainless Steel 304/316

SCREW CONVEYORS **EFFICIENT BULK MATERIAL HANDLING**

Screw Conveyors are ideal for transporting free-flowing materials such as grain, powders, cement, ash and pellets. Depending on configuration, they can also handle semi-free-flowing or sticky materials. Our conveyors are engineered for efficiency, reliability and reduced maintenance, making them a preferred choice for continuous industrial operations.

CAPABILITIES

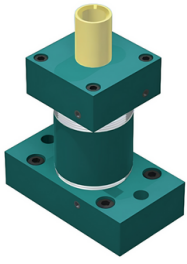
- Horizontal, inclined or vertical conveying
- Tube conveyors up to 9 m
- Trough conveyors up to 6 m
- Longer lengths available using piggy-back configurations
- Designed to minimize the need for hanger bearings



Category	Details
Overview	Mechanical conveyor for powders, grains, and bulk solids.
Operation	Rotating screw moves material horizontally, vertically, or at an incline.
Design Benefit	Long service intervals with minimal need for hanger bearings.
Applications	Grain • Cement • Powders • Wood Chips • Industrial Bulk Handling
Key Benefit	Custom lengths and configurations for plant-specific requirements.

Lengths: Up to 6 m (trough), 9 m (tube)

Standard Sizes (Trough): 200–600 mm



PNEUMATIC KNOCKERS

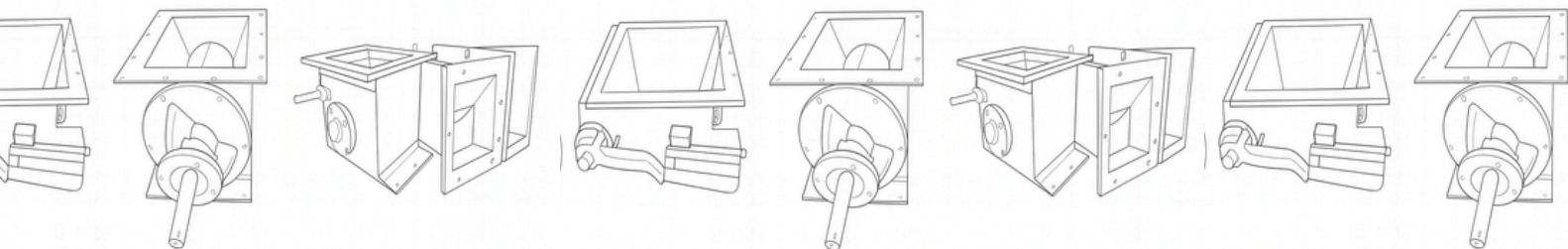
RELIABLE FLOW AID FOR CHALLENGING SILO APPLICATIONS

Pneumatic Knockers provide a cost-effective solution for silos experiencing bridging, rat-holing, or material buildup — especially where vibrators are ineffective. They deliver a controlled impact that restores material flow without damaging the silo structure.

Category	Details
Overview	Impact device that restores material flow in silos.
Operation	Delivers controlled hammer-like impulses via a brass piston.
Design Benefit	Protects silo walls using indirect impact through a steel base plate.
Applications	Ash • Grains • Pellets • Sawdust • Sand • Sugar • Plastic Shavings
Key Benefit	Simple, robust, low-maintenance solution for stubborn flow issues.

HOW THEY WORK

The knocker delivers a controlled impact similar to a manual hammer strike, using an indirect mechanism that protects the silo wall. A steel base plate ensures optimal force transfer without structural damage.



OVER-PRESSURE VALVES

PROTECTING SILOS & FILTERS FROM PRESSURE DAMAGE

Over-Pressure Valves are essential safety components designed to maintain stable, safe pressure levels inside silos, hoppers, and bulk storage systems. During filling or discharge, excess air can rapidly build up – risking structural damage, filter failure or product contamination.

Our valves provide automatic, reliable pressure relief, ensuring your plant remains protected at all times.



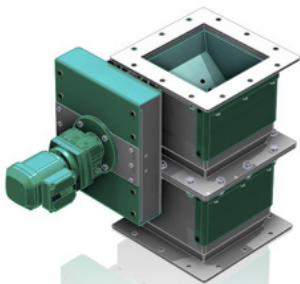
KEY FEATURES

- Gravity-operated design
- Built from robust materials for outdoor durability
- Large tolerances ensure reliable operation in harsh conditions
- Mild steel or stainless steel (304/316) construction

Category	Details
Overview	Gravity-operated valve balancing silo pressure.
Operation	Opens automatically to release excess air during filling/discharge.
Design Benefit	Large tolerances ensure reliable outdoor performance.
Applications	Silos • Hoppers • Bulk Storage Systems
Key Benefit	Prevents structural damage and protects filters.

Standard Flange Sizes: SANS 1123-600 and SANS 1123-1000

Standard Valve Sizes: 100NB, 150NB, 200NB, 250NB, 300NB, 350NB, 400NB, 500NB, 600NB
Custom sizes available.



SINGLE & DOUBLE FLAP VALVES

RELIABLE AIRLOCK & MATERIAL CONTROL FOR ABRASIVE APPLICATIONS

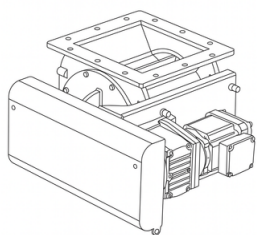
Single and Double Flap Valves are engineered for high-wear, abrasive, or difficult materials where rotary valves may jam, leak, or wear prematurely.

Their alternating flap design maintains an effective airlock while allowing continuous material discharge – making them ideal for **mining, cement, chemical and high-abrasion applications.**

Category	Details
Overview	Airlock valve for abrasive or high-wear materials.
Operation	Alternating flaps maintain seal while allowing material discharge.
Design Benefit	Wear-resistant chutes and excellent sealing under pressure differences.
Applications	Mining • Cement • Chemicals • High-abrasion bulk materials
Key Benefit	Superior sealing and durability compared to rotary valves.

Drive Options: Motorized, Pneumatic, Gravity

Materials: Mild Steel, Stainless Steel 304/316



ROTARY FEEDERS PRECISION FEEDING IN COMPACT SPACES

Rotary Feeders ensure controlled discharge of bulk materials from silos and hoppers, especially where space is limited. Each unit is engineered with tight machining tolerances for consistent performance.

Category	Details
Overview	Compact rotary airlock for controlled material discharge.
Operation	Precision-machined rotor minimizes leakage and ensures smooth feeding.
Design Benefit	Anti-jamming V-inlet improves reliability and prevents rotor blockage.
Applications	Filters • Cyclones • Dust Collectors • Pneumatic Conveying Systems
Key Benefit	Accurate dosing with airtight sealing for pneumatic systems.

Options:

- 6, 8, 10, or 12-blade rotors
- Blow-through or offset design
- Mild steel or full stainless steel (304/316)
- Wear-resistant or Teflon-coated blades

BULK MATERIAL HANDLING CONVEYING SYSTEMS

Bulk material handling conveying systems are essential for transporting materials efficiently in industrial settings. These systems are broadly categorized into two main types:

MECHANICAL CONVEYING SYSTEMS

Mechanical systems rely on physical components to move materials.

Common types include:

- **Belt Conveyors:** Ideal for continuous transport of bulk materials over long distances.
- **Screw Conveyors:** Suitable for moving granular or semi-solid materials.
- **Bucket Elevators:** Used for vertical lifting of bulk materials.
- **Chain Conveyors:** Effective for heavy-duty applications and abrasive materials.
- **Vibratory Conveyors:** Utilize vibration to move materials, often used for delicate or irregularly shaped items.



PNEUMATIC CONVEYING SYSTEMS

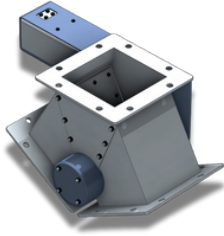
Pneumatic systems use air pressure or vacuum to transport materials through pipelines. **Pneumatic Knockers** provide a cost-effective solution for silos experiencing **bridging, rat-holing or material buildup** — especially where vibrators are ineffective. They deliver a controlled impact that restores material flow without damaging the silo structure.

Key types include:

- **Vacuum Conveying:** Draws materials through a pipeline using negative pressure.
- **Pressure Conveying:** Pushes materials using positive air pressure.
- **Dilute Phase Conveying:** Transports materials in a high-velocity, low-pressure air stream.
- **Dense Phase Conveying:** Moves materials in a low-velocity, high-pressure stream, ideal for fragile or abrasive materials.

OUR BULK MATERIAL HANDLING SYSTEMS ARE DESIGNED TO:

- Deliver exceptional outcomes for our clients
- Build meaningful, long-term careers for our people
- Provide fair value through efficient, well-engineered solutions
- Apply creative thinking and practical engineering to every challenge



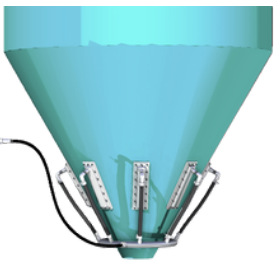
FLAP DIVERTERS RELIABLE FLOW DIRECTION FOR BULK SOLIDS

Flap Diverters direct gravity-fed materials from one inlet to two or three outlets. They are ideal for powders, pellets, flakes, and granules — offering smooth switching, minimal wear and safe operation.

Category	Details
Overview	Diverter valve for splitting material flow between multiple outlets.
Operation	Swivel flap moves beyond flow path to reduce wear and improve sealing.
Design Benefit	Removable access plate allows easy inspection and flap replacement.
Applications	Silos • Chutes • Conveyors • Dry Bulk Handling
Key Benefit	Lightweight, safe, and designed to prevent material wedging.

Standard Sizes: 200–600 mm
 Outlet Options: 30° or 45° (two-way or three-way)
 Materials: Mild Steel, Stainless Steel 304/316

SILO AERATION MANIFOLDS EFFICIENT FLOW PROMOTION FOR POWDERS & BULK SOLIDS



Aeration Manifolds improve material flow by injecting controlled air pulses between the silo wall and stored material. This prevents bridging, compaction, and flow blockages — especially in fine powders like cement, flour, lime and chemicals.

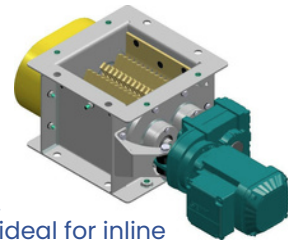
Category	Details
Overview	Air-pulse system promoting flow inside silos and hoppers.
Operation	Time-sequence controller activates aeration pads in intervals.
Design Benefit	Non-invasive installation with no internal silo access required.
Applications	Powders • Cement • Flour • Lime • Chemicals • Fine Bulk Solids
Key Benefit	Maintenance-free, robust, and compatible with any silo cone.

Configurations: 4-way, 6-way, 8-way
Materials: Carbon Steel or Stainless Steel

DOSING SCREWS PRECISION FEEDING FOR CONTROLLED APPLICATIONS

Dosing Screws deliver accurate, repeatable material dosing, making them ideal for industries requiring strict consistency such as food, pharmaceuticals, chemicals and additives.

Category	Details
Overview	Precision screw feeder for controlled dosing.
Operation	Tight-tolerance screw ensures consistent feed rate.
Design Benefit	Optional variable-speed motor for fine adjustment.
Applications	Food • Pharmaceuticals • Chemicals • Additives
Key Benefit	High accuracy and repeatability for sensitive processes.

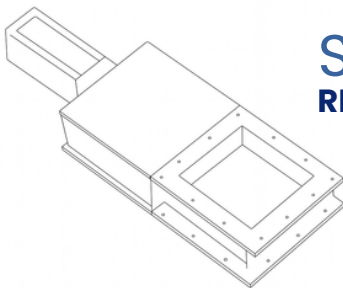
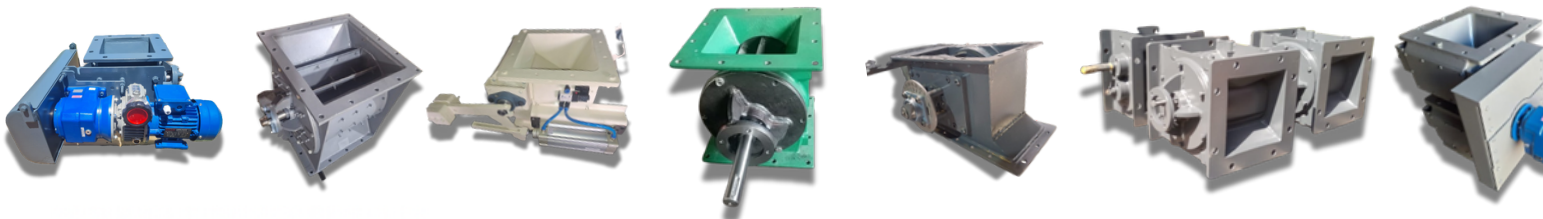


LUMP BREAKERS UNIFORM SIZE REDUCTION FOR PROCESSING LINES

Lump Breakers reduce agglomerated or oversized material into consistent, manageable pieces. Their low-speed, high-torque design ensures uniform reduction with minimal fines, making them ideal for inline processing.

Category	Details
Overview	Twin-shaft crusher for soft to abrasive materials.
Operation	Rotating pins or hammers crush material against stationary comb bars.
Design Benefit	Low-speed, high-torque design ensures uniform reduction.
Applications	Filter Cakes • Fertilizers • Fly Ash • Food • Chemicals
Key Benefit	Inline compatibility with rotary valves, screw conveyors, and more.

Materials: Mild Steel, Stainless Steel 304/316



SLIDE GATES RELIABLE SHUT-OFF FOR BULK MATERIAL FLOW

Slide Gates provide manual or automated shut-off for chutes, bins and conveyors. They are engineered for smooth operation, long service life and excellent sealing.

Category	Details
Overview	Hand-operated or automated gate for bulk material isolation.
Design Benefit	Replaceable bearings and inlet chute protect seals and extend lifespan.
Applications	Silos • Chutes • Conveyors • Bulk Handling Systems
Key Benefit	Fully sealed with 3–4 rows of gland packing to prevent dust leakage.

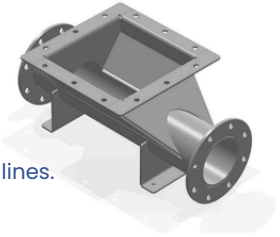
OPTIONS

- Hand-operated
- Chain-operated
- Pneumatic, hydraulic or motorized actuation
- Stainless steel 304/316 available

BLOW-THROUGH ADAPTERS

DISCHARGE ADAPTER FOR PNEUMATIC & VACUUM LINES

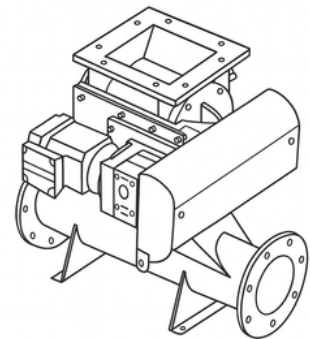
Blow-Through Adapters connect the discharge of rotary valves to pneumatic or vacuum conveying lines. They ensure smooth, efficient product transfer into conveying pipelines.



Model	Inlet Flange (Square/Round)	Blow-Through Flange
ABT-200-65-S	200; 200NB	65NB
ABT-250-80-S	250; 250NB	80NB
ABT-300-100-S	300; 300NB	100NB
ABT-350-100-S	350; 350NB	100NB
ABT-400-125-S	400; 400NB	125NB
ABT-500-150-S	500; 500NB	150NB
ABT-600-200-S	600; 600NB	200NB

Inlet Flanges: Square (MTS standard) or Round (SANS 1123-600 / 1123-1000)

Outlet Flanges: SANS 1123-600 or 1123-1000

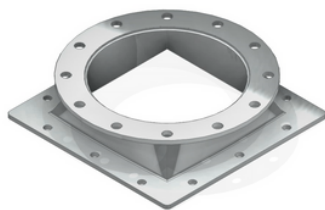


Standard Sizes:

200 → 200NB
 250 → 250NB
 300 → 300NB
 350 → 350NB
 400 → 400NB
 500 → 500NB
 600 → 600NB

SQUARE-TO-ROUND ADAPTERS

Square-to-Round Adapters allow seamless connection between MTS square flanges and standard round flanges.

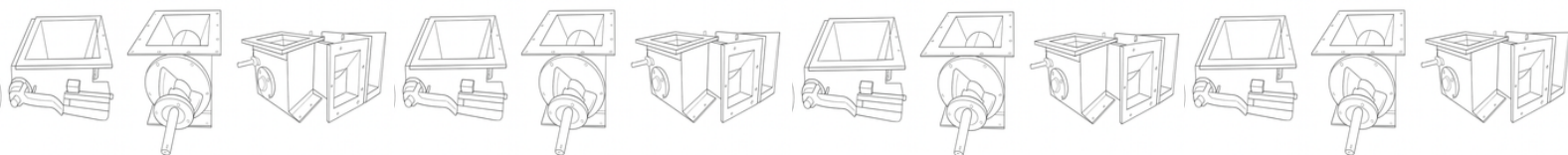


CHAIN WHEELS

CHAIN WHEELS PROVIDE REMOTE OPERATION FOR VALVES INSTALLED AT ELEVATED OR HARD-TO-REACH LOCATIONS.

Available Sizes:

- 300 mm (for 200, 250 & 300 units)
- 400 mm (for 350, 400, 500 & 600 units)



GEARBOXES • PUMPS • VALVES • PUMP STATIONS • SITE OPERATIONS

OUR SPECIALISTS ENSURE PRECISION & RELIABILITY.

Our expanding team of skilled consultants offers all the necessary tools, resources & technical information to empower you to make well-informed & effective decisions.

With our extensive experience in managing fast-paced and challenging live built environments, we ensure exceptional support and guidance every step of the way.

Whether you're looking for **complex technical industrial or engineering solutions, asset management service consulting or commodity sourcing**, our extensive network of professionals from diverse industries and backgrounds gives us a unique competitive advantage.

RSV GATE • WEDGE GATE • FIRE HYDRANTS • BUTTERFLY • DIAPHRAGM • AIR • PINC

Valves are mechanical devices that control the flow, pressure and direction of fluid within a system. They are used for stopping, starting and throttling fluid flow.

Diaphragm Valve

Category	Details
Overview	Flexible diaphragm controls flow by pressing against a seat.
Operation	Provides tight shut-off and excellent sealing.
Design Benefit	Ideal for handling corrosive or abrasive fluids.
Applications	Chemical Processing • Water Treatment • Pharmaceuticals • Food & Beverage
Key Benefit	Hygienic design with minimal leakage risk.

Air Valve

Category	Details
Overview	Designed to release trapped air or admit air into pipelines.
Operation	Automatically opens/closes based on pressure changes.
Design Benefit	Prevents vacuum formation and pipeline damage.
Applications	Water Distribution • Irrigation Systems • Sewage Networks
Key Benefit	Improves system efficiency and protects against pressure surges.



Pinch Valve

Category	Details
Overview	Uses a flexible tube or sleeve that is pinched to stop flow.
Operation	Simple design with minimal moving parts.
Design Benefit	Excellent for slurry, granular, or corrosive media.
Applications	Mining • Chemical Processing • Wastewater Treatment • Pulp & Paper
Key Benefit	Low maintenance and highly resistant to clogging.

Fire Hydrant

Category	Details
Overview	External valve providing access to water supply for firefighting.
Operation	Quick connection for hoses and firefighting equipment.
Design Benefit	Rugged construction for emergency use.
Applications	Municipal Water Systems • Industrial Sites • Fire Safety Infrastructure
Key Benefit	Reliable water access during fire emergencies.

INDUSTRIAL GEARBOX & PUMP REPAIRS

WE OFFER A WIDE RANGE OF INDUSTRIAL & MECHANICAL SOLUTIONS

- Water pumps
- Industrial gearboxes
- Valves
- Electrical motors
- Metal screw pumps
- Coupling sleeves
- Pinion gears
- Gear couplings
- Helical gears
- Ring gears
- Borehole installations
- Electrical motor rewinding
- Maintenance of all mechanical & Electrical installations



SPECIALIZED GEARBOX REPAIRS

BACKED BY EXPERT TESTING AND INSTALLATION SERVICES

Expert refurbishments for gearboxes, pumps and valves, extending to pump stations and site operations.

PUMPS

Bare Shaft Pumps

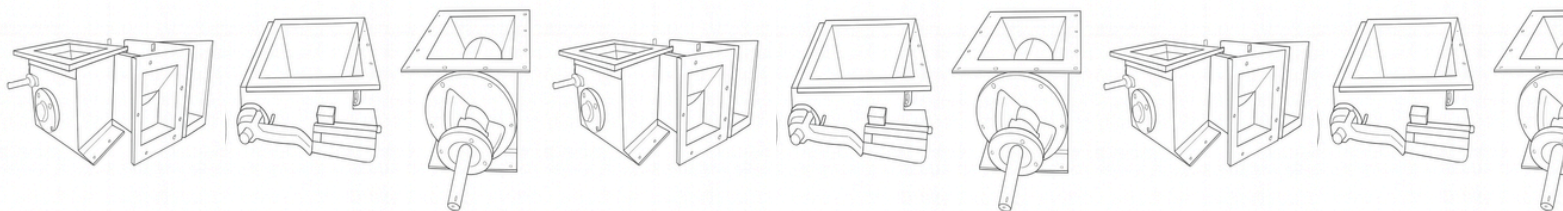
Category	Details
Overview	End suction and multistage pumps (vertical & horizontal).
Brands	KSB • Franklin • Grundfos • Mono • Orbit • CRI • Warman • Gorman Rupp • Rapid Pumps
Applications	Industrial • Mining • Treatment Plants • Farming
Key Benefit	Reliable performance across diverse heavy-duty applications.

BOREHOLE PUMPS & MOTORS

Category	Details
Overview	Borehole pumps and motors, including positive displacement designs.
Brands	Grundfos • Franklin • CRI • Vansan • Mono Borehole • Lowara
Applications	Industrial • Mining • Treatment Plants • Farming
Key Benefit	Efficient water extraction and dependable long-term operation.

SUBMERSIBLE PUMPS

Category	Details
Overview	Submersible pumps for water, sewage, and slurry.
Brands	KSB • Flygt • Hidrostral
Applications	Industrial • Mining • Sewer Systems • Farming
Key Benefit	Robust design for challenging fluid environments.



ADDITIONAL SERVICES

AT **MECH-TEM SOLUTIONS**, WE GO BEYOND FABRICATION.

We offer a wide range of complementary services designed to support plant operations, extend equipment lifespan and improve overall performance.

Whether you're upgrading, troubleshooting, or planning future expansions – our team is ready to deliver expert guidance, hands-on support and reliable results.

ENGINEERING SUPPORT

We provide on-site and remote engineering services to help clients optimise their systems and solve operational challenges.

- **On-site assessments**
- **System optimisation**
- **Troubleshooting and diagnostics**
- **Plant upgrades and retrofit**

Our goal is to ensure your plant runs efficiently, safely and with minimal downtime.

MAINTENANCE & REPAIR

We deliver precision-built components tailored to your plant's layout, process requirements and safety standards.

- **Structural steelwork**
- **Platforms, walkways, and access systems**
- **Custom chutes, hoppers, and transitions**
- **Precision-cut components**

Every item is fabricated to fit your plant perfectly and perform reliably.

PROJECT MANAGEMENT

We simplify procurement with local and international sourcing, ensuring you get the right parts, materials, and components – on time and within budget.

- **Custom spare parts**
- **Material selection guidance**
- **Vendor coordination**
- **Local and international sourcing**

We manage the details so you can focus on operations

PROJECT MANAGEMENT

Our project managers provide full oversight and coordination, ensuring your project is delivered on time, within scope, and to specification.

- **Timeline and resource planning**
- **Quality assurance**
- **Compliance and documentation**
- **Full project oversight**

We bring clarity, control and confidence to every stage of your project.

VALUE-ADDED SERVICES

Service	Details
Electrical Motor Repairs	Full repair and maintenance of industrial motors.
Pressure Testing	Safety and performance verification under operating conditions.
Welding & Sandblasting	Structural repair and surface preparation.

OUR PARTNERS

COLLABORATION THAT STRENGTHENS EVERY PROJECT

Mech-Tem Solutions works alongside trusted industry partners to deliver reliable, high-performance engineering solutions.

Our partnerships ensure access to:

- **Proven technologies**
- **High-quality components**
- **Specialized expertise**
- **Consistent supply chains**
- **Certified materials and equipment**

These relationships allow us to deliver turnkey solutions that meet strict performance, safety and compliance standards across multiple industries.

F & M ADVANCED FABRICATORS

PRECISION ENGINEERING. PROVEN EXPERTISE.

From titanium specialties to turnkey industrial installations, **our trusted partners** deliver fabrication excellence across every sector.

Whether you're scaling operations or upgrading legacy systems, we design, manufacture, and install components built for performance and durability.

FABRICATION CAPABILITIES INCLUDE:

- Titanium, stainless steel and alloy vessels
- Dimple jacket reactors, heat exchangers, pressure vessels
- Autoclaves, agitators, electrode seals (Y 89 – Y 35)
- Pipelines, hanger brackets, mantles
- Dairy, food & beverage equipment
- Screw conveyors, gravity fillers, pumps, hoppers
- Structural components, cable trays, steam pipes

**Engineered for complexity.
Delivered with confidence.**

Partner with F & M Advanced Fabricators — where precision meets reliability.



APS AFRICA — AIR PROCESS SOLUTIONS

SPECIALISTS IN AIR FILTRATION & PNEUMATIC SYSTEMS

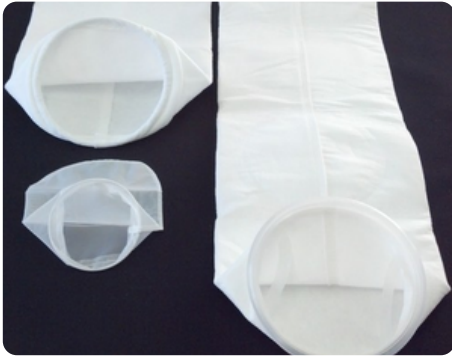
TOGETHER, WE DELIVER:

- Custom filtration systems
- Pneumatic conveying upgrades
- Dust suppression and air quality control
- Maintenance and retrofit services

APS Africa ensures your plant remains **compliant, efficient and environmentally responsible.**

Filter Bags & Cages

We set ourselves apart from competitors by supplying the right equipment for the job by taking in all Plant specifications as well as variables & combining that INFORMATION with the latest design technology to produce Custom Solutions for our clients.



Filter Bags

- Micron Rated Filter Bags
- Mono Filament or Needle Felt Filter Bags
- GAF Single Length or Double Length Filter Bags
- Flange or Snap Band Filter Bags

Fluid Bed Drier Bags

- Fluid Bed Drier Bags for Glatt FBDs

Dust Bags

- Tube Type with Snap Band or without
- Multi-pocket Available in all Materials Polyester
- Polyester with PTFE Membrane
- Aramid
- PPS
- Homopolymer Acrylic & Antistatics
- Multi-pocket Bags

Dalmatic Bags

- Material Polyester 500g/m with PTFE or High Temperature Arimid

FDA Approved Antistatic Materials



FILTER FOCUS BRAND OWNERSHIP

Filter Focus brand is a registered trademark, owned and managed by

ISO-Reliability Partners (Pty) Ltd. The original Filter Focus micro fine filter was meticulously developed by company founder Craig FitzGerald over the course of a decade; while having access to the largest mining operations in Southern Africa. The product was developed to far exceed current International fluid cleanliness standards, in the harshest of production and operating environments.

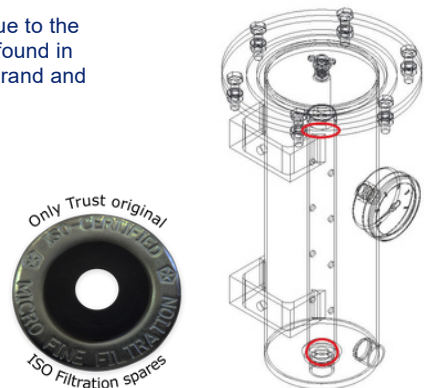
We have re-written ISO Cleanliness standards for in-operation lubricating oil and diesel fuels. Due to the unprecedented success of our fluid cleanliness solutions, fake copies of the product have been found in the market. Unscrupulous parties are attempting to ride on the success of the FILTER FOCUS brand and are supplying sub-standard products to an unsuspecting market.

How to identify FAKE copies

- Counterfeit copies make use of Black or Green PLASTIC end caps
- Fakes have reusable seals, called Top and Bottom O-rings.
- Plastic deforms under pressure and is not suitable for high efficiency filtration.
- Fakes are sub-standard quality and are fabricated under contaminated workshop conditions.

The ISO standard

- Only use ISO Certified micro fine filter elements with steel end caps.
- ISO Certified filter elements use permanent single use nitrile/viton seals.
- Remove all reused seals when using original ISO spare parts, location identified by red circles in wire diagram, remove from each filter insert.
- Follow ISO filtration service procedures for optimal performance operation.



Air Wizard Water Trap

Ultimate Equipment Protection - ISO Technical Publication 2025

- ISO-Reliability takes another step forward in bringing the market highly effective solutions for combating contamination in all its forms. The locally designed and patented in-line water trap is proudly manufactured in South Africa.
- The Air Wizard was designed and SABS tested to separate water, fluids, rust and particulates from pneumatic compressed air or gas lines.
- The Air Wizard is fitted with a unique patented Condensate Drain Mechanism. The mechanism allows collection and removal of condensate, oil, rust and any other foreign particle from the flow path with no unnecessary air loss during the automated cleaning and discharge cycle.
- This allows for peace of mind as the human factor has been eliminated thereby not requiring a person to open or close valves. ISO-Reliability's solution to clean compressed air is highly efficient, effective and consumable free.

Benefits of the Air Wizard

- The Air Wizard is designed to extract approximately 97% of free water in the system, which in turn reduces corrosion, protects tools, machinery and other equipment being driven by compressed air.
- Regular in-line filters and airline lubricators have less contamination to handle making these items more efficient with the added benefit of reduced maintenance and operational cost.

The Air Wizard is designed to act as a silencer, reducing sound emission to acceptable levels, whilst water and foreign contaminants are automatically drained from the system.



Contaminants removed include:

- ✓ Free water
- ✓ Water aerosol
- ✓ Water vapour
- ✓ Micro organisms
- ✓ Oil vapour

- ✓ Atmospheric particulate
- ✓ Rust
- ✓ Pipe scale
- ✓ Liquid oil
- ✓ Oil Aerosol



Ultimate Equipment Protection - ISO Technical Publication 2025

- ◆ The locally designed, patented in-line water trap is proudly manufactured in South Africa. ISO-Reliability takes another step forward in bringing the market highly effective solutions for combating contamination in all its forms.
- ◆ Our in-line water trap was designed and tested to separate water, fluids, rust and particulates from pneumatic compressed air or gas lines for mining and general industry.

The ISO in-line water trap is designed to extract approximately 97% of free water in the system, which in turn reduces corrosion, protects tools, machinery and other equipment being driven by compressed air.

Through incorporating Air Wizard into your compressed air system, the strain on regular in-line filters is greatly reduced.

Meet Our **Team**

THE PEOPLE BEHIND THE PERFORMANCE

At **Mech-Tem Solutions**, our greatest strength is our people.

Behind every project, every design and every manufactured component is a team of skilled engineers, fabricators, technicians and project specialists who are committed to delivering excellence.

We believe in hands-on leadership, transparent communication and a problem-solving mindset.

Our team works closely with clients to understand their challenges, identify opportunities and deliver solutions that make a measurable impact.



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WHY OUR TEAM STANDS OUT

- Technical expertise backed by real-world plant experience
- Fast response times and proactive communication
- Commitment to safety in every environment
- Precision workmanship from concept to commissioning
- A culture of continuous improvement

OUR PEOPLE ARE THE REASON **MECH-TEM SOLUTIONS** CONSISTENTLY DELIVERS RELIABLE, DURABLE AND PERFORMANCE-DRIVEN ENGINEERING SOLUTIONS.

THANK YOU FOR TAKING THE TIME TO EXPLORE MECH- TEM SOLUTIONS.

We are proud of the work we do and the partnerships we build.
Whether you need custom- engineered equipment, plant upgrades or complete project support,
our team is ready to deliver solutions that add real value to your operations.



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READY TO ELEVATE YOUR
OPERATIONS? **REACH OUT!!!**

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