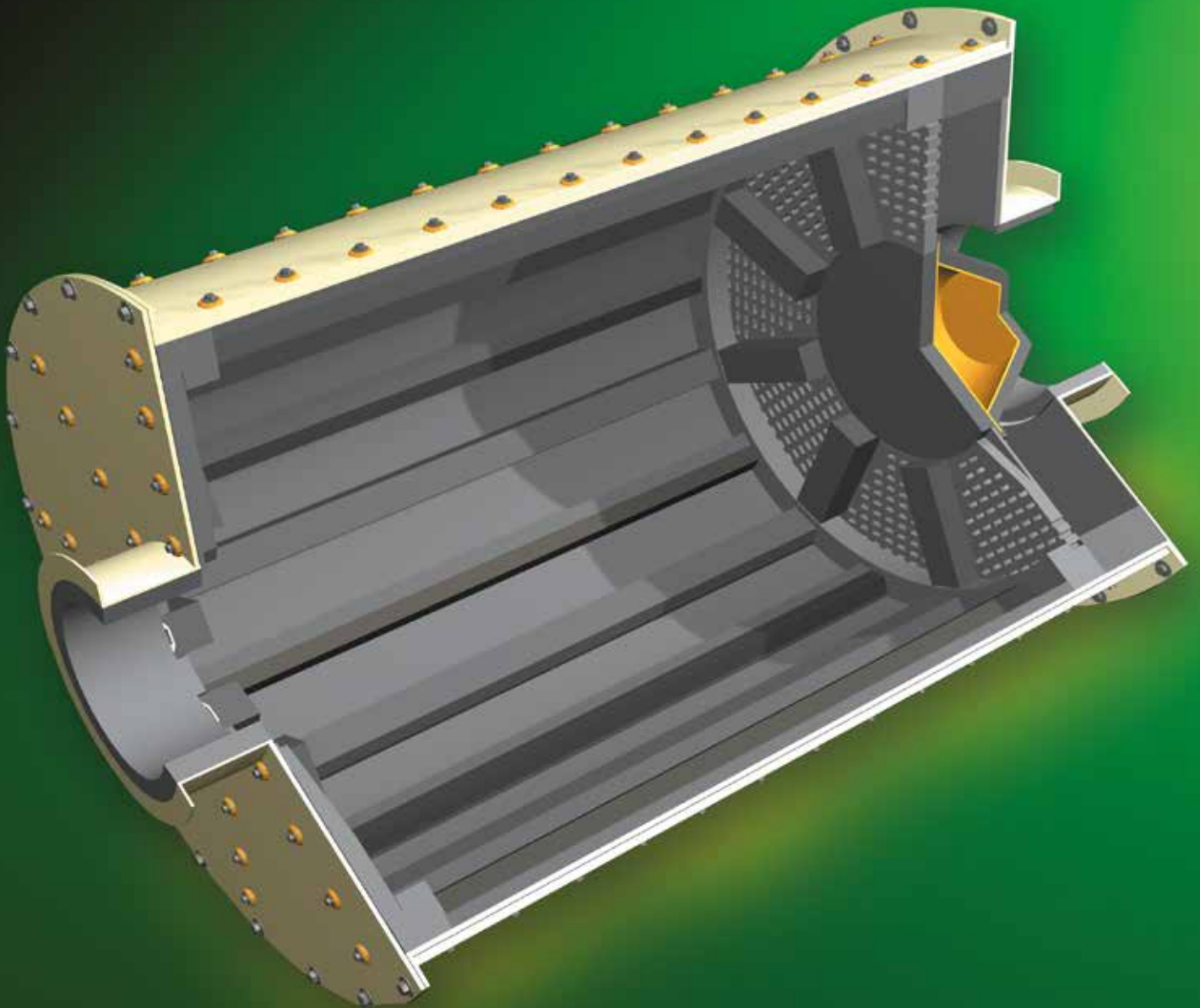




# **MULTOTEC**

Mill and Scrubber Linings



Your Specialist in Rubber Wear Linings

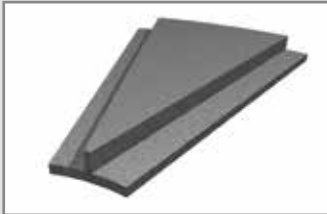


## Mill and Scrubber Linings



### 1. Shell Plates\*

The thickness of the Shell Plates can vary in order to increase mill capacity and/or liner life. The width is designed for optimum protection from the Lifter Bars.



### 3. Head Plates\*

Rubber Head Plates are available in various designs to combat sliding abrasion. Head Plates are designed to facilitate ease of installation and handling.



### 5. Pulp Lifters

Rubber lined Pulp Lifters are designed to provide the correct discharge of the pulp through the mill in order to minimise 'bottle-necks'.



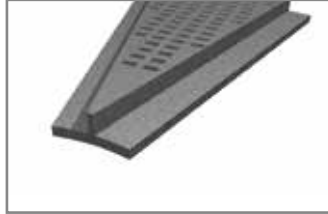
### 7. Centre Cones

Centre Cones can be designed in segments for ease of installation.



### 2. Lifter Bars\*

Lifter Bars are available in a range of widths, heights and rubber or composite profiles. Lifter Bars incorporating a steel insert are designed to provide maximum impact and abrasion resistance. MultoMet™ Lifter Bars have 'hardox' quenched and tempered plates whilst Heavy Duty MultoMet™ Lifter Bars have castings for larger ball mills and SAG mills.



### 4. Grate Plates

Heavy-duty Grate Plate designs are available for larger mills. The elastic property of rubber allows for smaller slots than steel grates whilst eliminating blinding problems. Available in a range of aperture sizes.



### 6. Trunnion & Bell Mouth Liners

Trunnion Liners are manufactured from a fabricated steel base, which are then rubber lined. Loose steel-backed rubber liners are also used in larger Trunnion and Bell Mouth linings.



### 8. Filling & Corner Segments

Filling and Corner Segments are designed to lock the Head Plates and Grate Plates into position and stop material racing in the corners.

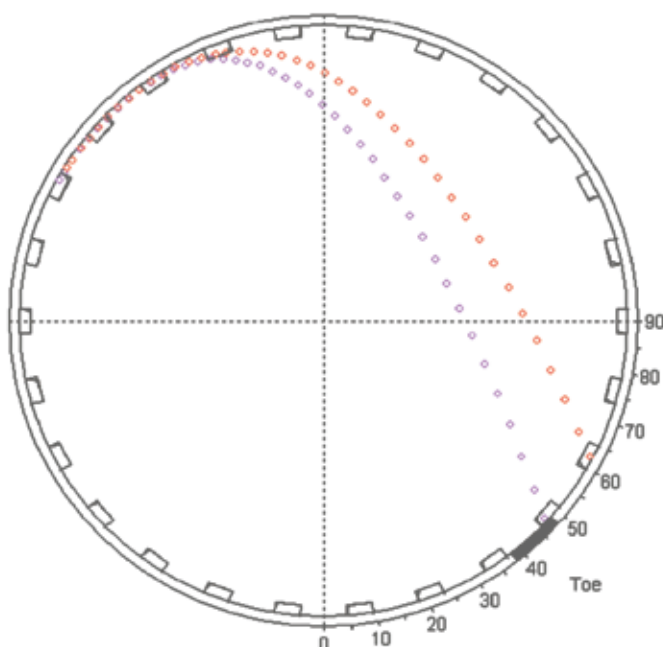
\*A range of rubber and composite designs are available.



## After Sales Service

## Mill Liner Design

Multotec uses computer simulation to provide optimum liner configuration that extends liner life and increases mill productivity.



#### Client Data

|                  |                        |
|------------------|------------------------|
| Ore Type         | Oxide                  |
| Mill Type        | SAG/Ball               |
| Feed Size        | 70% - 100 mm (max)     |
| Product Size     | 90% passing 150 micron |
| Feed Rate        | 100 Ton (dry)          |
| Circulating Load | 200% of feed           |
| Mill Temperature | Ambient                |

### Mill Data

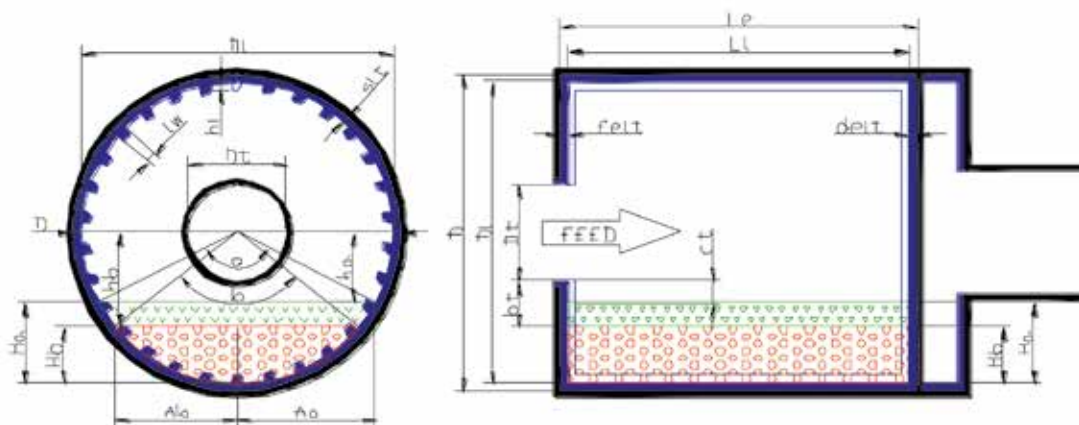
|                |          |
|----------------|----------|
| Mill Diameter  | 3 960 mm |
| Mill Length    | 5 200 mm |
| No. of Rows    | 26       |
| Mill Filing    | 30%      |
| Media Diameter | 50 mm    |

## Lifter Specification

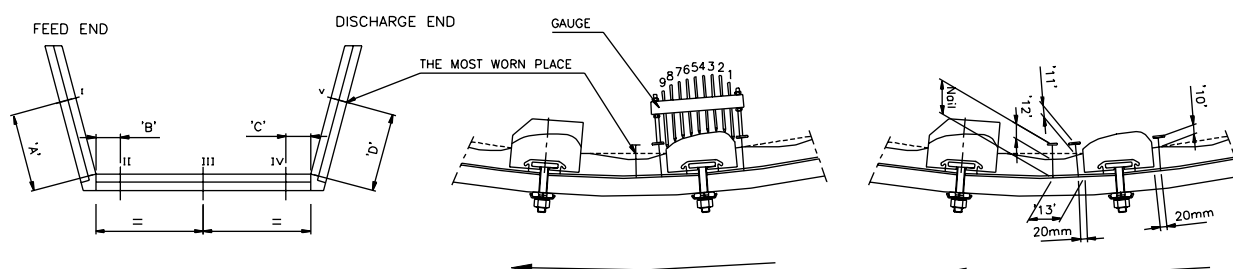
Units' mm & % crit. angle from base

|                                                                                   | Width | Height | Angle° | H2A | S/H  | Speed | Plate |
|-----------------------------------------------------------------------------------|-------|--------|--------|-----|------|-------|-------|
|  | 165   | 75     | 75     | 25  | 4.02 | 69.4  | 65    |
|  | 165   | 75     | 90     | 75  | 3.97 | 69.4  | 65    |

## Charge Volume Calculations



## Mill Lining Inspections and Report





### Mill/Scrubber Linings versus Steel

- Longer life due to less wear results in substantial cost savings.
- Lower product weight reduces downtime during installation and replacement, improving production while eliminating the need for a liner handler.
- Resilient material enables easy and safe installation as well as trouble free handling which reduces risk of injuries.
- Excellent sealing properties that reduce the risk of flushing behind lining and minimise gold lock up.
- Reduced blinding of Grate Plates resulting in increased throughput.

### Noise Reducing Properties of Rubber

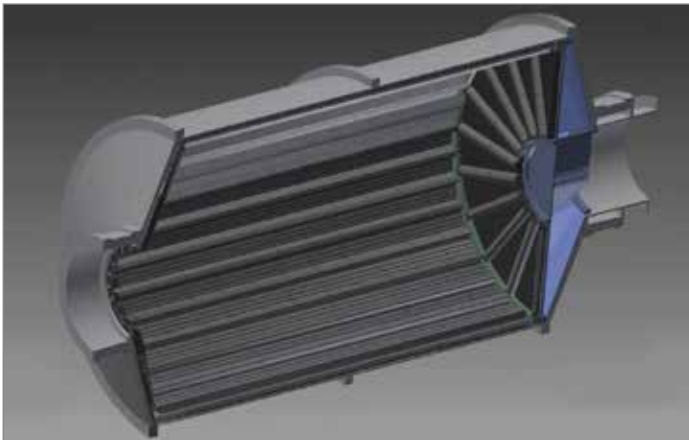
Rubber has the ability to absorb energy because it has high inner losses when exposed to dynamic strains. This means that the sound from a rubber surface decreases considerably. A rubber thickness of 40 mm or more reduces noise levels to the point where the use of earplugs is avoided.



## Hawkeye™

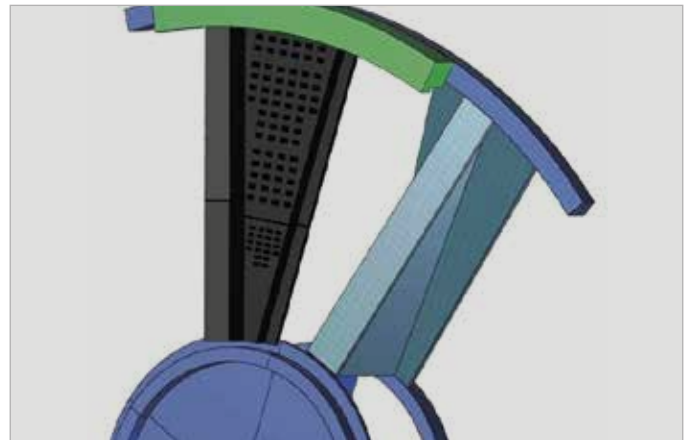
Hawkeye™ is a web-based system that has been developed at Multotec to capture and record wear and life data for Mill Liners. Measuring liner wear during operation and capturing this data on Hawkeye™ facilitates the accurate prediction of the next change out date as well as reduces the chances of unplanned stoppages.

Historical databases of liner life vs. tonnage treated can be analysed to determine design changes which will extend life. As the system is web-based, mine personnel have access to the information at any time to assist with activities such as order placement and budgeting.



## Additional Services

- AutoCAD and Inventor 3D Designs
- PLC controlled systems ensure consistent quality
- Highly qualified technical staff available to measure Mills/Scrubbers on site and to assist during the installation to ensure precise fitment of liners
- Multotec has the in-house process knowledge to analyse the Milling Circuit and optimise your production capabilities
- Multotec IBD (International Business Development) teams operate throughout Africa, adding value to a vast range of customers by reducing downtime and ultimately optimising plant efficiency with technical and back-up services, including Mill or Scrubber Liner inspections

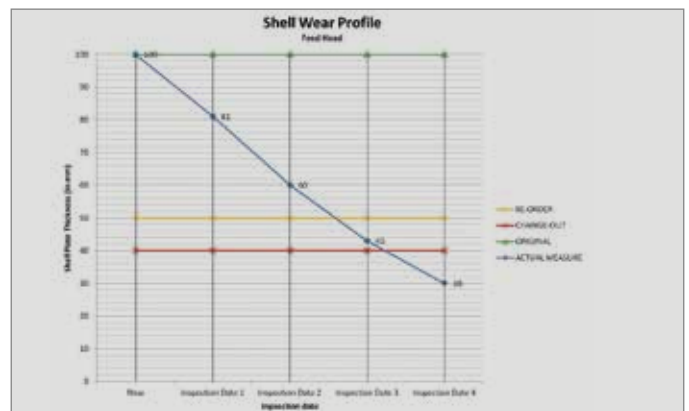
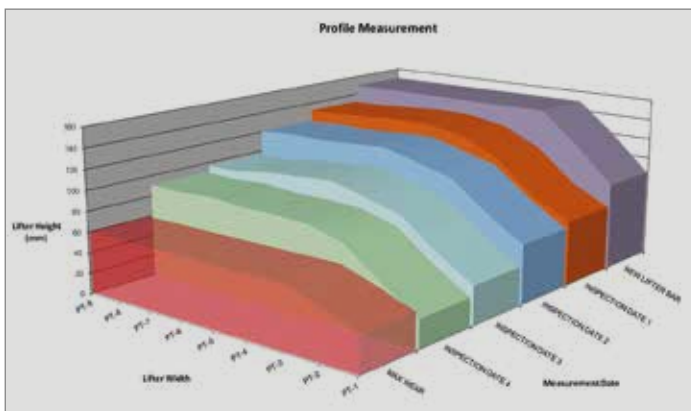


## Extensive Plant Monitoring

- Multotec's system for wear monitoring and liner life analysis
- Web-based so mine personnel have quick and easy access

## Efficient Planning

- Simple item display and mine stock codes enable easy ordering
- Comparative test liners are displayed to show longevity benefits of Multotec liners

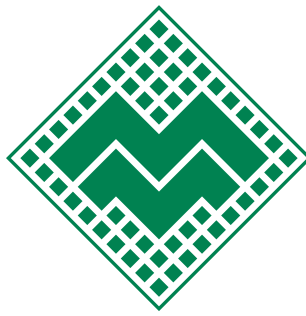


## Reduced Downtime

- Indicates where design changes can be made to extend liner life
- Prompts inspections
- Reduces chances of unplanned stoppages

## Accurate Data Capturing

- Cross reference tonnage and operating time with wear life
- Accurate prediction of next change out date



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| Screening Solutions | Mineral Processing Equipment |  
| Sampling Solutions | Wear Lining Solutions | Mill and Scrubber Linings |  
| Solid / Liquid Separation Solutions | Conveyor System Solutions |  
| Pumps | Process Water Treatment and Metals Recovery |



Multotec products are subject to continuous development and Multotec reserves the right to make changes to the specifications and design of its products without prior notification.