

**44**  
YEARS

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SCAN HERE FOR QUICK  
ACCESS TO OUR WEBSITE

WWW.BSSCRADIATORS.CO.ZA



**BSSC**  
**RADIATORS**  
EST.80



OUTLASTS THE ENGINE  
IN WHICH IT COOLS

## COMPANY PROFILE

**44**  
YEARS





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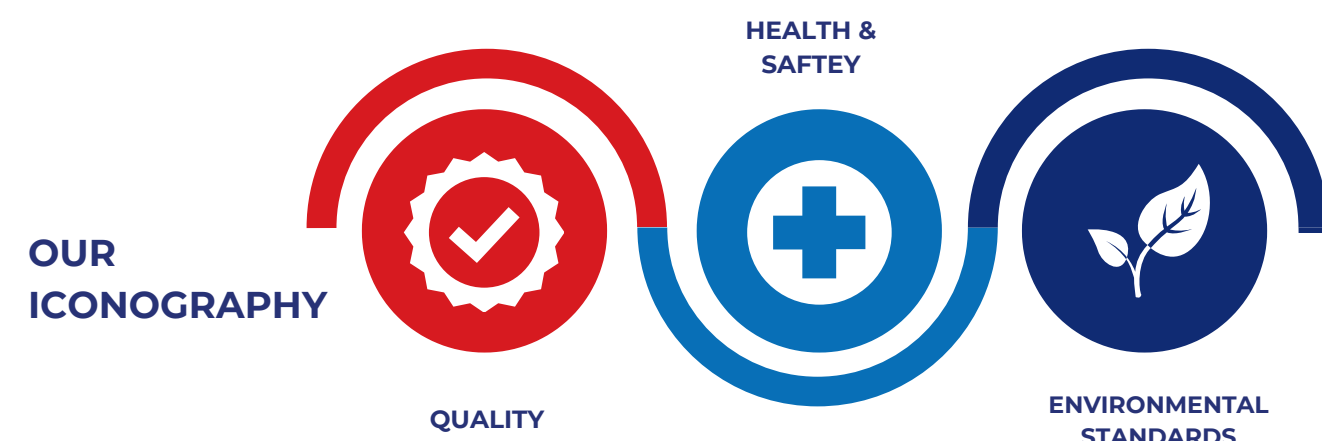


## OUR COMPANY

Welcome to BSSC Radiators a privately owned and proudly South African Company owned which was founded by Mr. Derek Bennett in the late 1980's, giving the company over 40 years of abounding and diverse experience in the in the mining industry.

This industry knowledge has since been transferred to his son and new CEO, Mr. Dillan Bennett, who brings a solution - focused approach, setting BSSC Radiators apart as a market leader in heat-transfer products and services.

Our competitive advantage is our Industry knowledge, solutions focused approach, and commitment to personalized services, Quality Standards, the latest innovative practices and reliability, allowing our customers and strategic partners to feel reassured with our complete turnkey capability.



## OUR VISION

- REMAIN A MARKET LEADER IN THE HEAT-TRANSFER INDUSTRY
- CONSTANTLY STRIVE TO DEVELOP MORE EFFICIENT COOLING SOLUTIONS
- AN UNCOMPROMISING DETERMINATION TO ACHIEVE A 'FIRST TIME, EVERY TIME' ETHOS

## OUR MISSION

- TO PROVIDE HIGH-GRADE SOLUTION-BASED HEAT TRANSFER PRODUCTS FOR OUR CLIENTS' REQUIREMENTS
- TO DESIGN HEAT-TRANSFER PRODUCTS THAT WILL IMPROVE THE COOLING SYSTEM CAPABILITIES FOR A HIGH OUTPUT AND LONG-LASTING LIFESPAN
- TO MAXIMISE CUSTOMER SATISFACTION BY PROVIDING A SUPERIOR SERVICE TO OUR CLIENTS IN A TIMELY AND PERSONALISED MANNER

## OUR CLIENTS

We pride ourselves in customer service with an extensive footprint in Africa.



We supply products and services to the following industries and sectors:

- Mining & Earthmoving**
- Plant Hire & Contractors**
- Industrial**
- Locomotive**
- Agricultural**
- Forestry**
- Transportation**
- Gas & Oil**
- Various OEMs**
- Other Radiator Outlets**

## OUR SERVICES

**COLLECTION & DELIVERY SERVICES**

**BREAKDOWN - "RADIATOR 911"**

**FIELD SERVICE - AVAILABLE 24/7**

**SERVICE EXCHANGE - PEX COMPONENTS**

## WARRANTY

Application	Type of Core	Repairs	Re-cores
On-Road	Conventional - Copper / Aluminium / Steel	12 Months	12 Months
Off-Road	Conventional - Copper / Aluminium / Steel	6 Months	6 Months
	Removable Tube - Copper / Aluminium	60 Months	60 Months
	Folded / Modular / Segmented	6 Months	6 Months

## SERVICE EXCHANGE PROGRAM

### YOUR SATISFACTION IS OUR COMMITMENT

BSSC Radiators is dedicated in providing our clients with heat transfer solutions for over 40 years. Our service exchange program enables our clients to have immediate access to a heat transfer solution for planned maintenance or emergency breakdown services.

### PLANNED MAINTENANCE PROGRAM

Fast-track your equipment repairs, minimize risk, and shorten your downtime with our service exchange program and avoid costly part availability issues, which has become a common problem in the mining industry.

- ✓ Effectively reduce mining equipment downtime
- ✓ Easier and safer maintenance for your fleet
- ✓ Guaranteed availability for planned maintenance
- ✓ Service exchange components on site ready for changeout

### EMERGENCY BREAKDOWN SERVICES “RADIATOR 911”

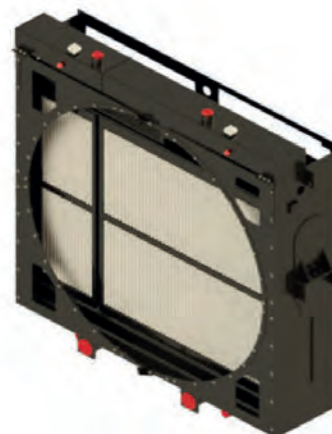
In emergency breakdown situations, our service exchange components are available for immediate delivery to site. In the event of insufficient stock availability, a 24/48-hour turnaround service within our capacity will be provided on a breakdown bases.

### SERVICE EXCHANGE PRODUCTS AND PARTS

BSSC Radiators have a comprehensive range of service exchange radiators, inter-coolers, various oil coolers, complete nose cone units, cooling packs and fans. As the demand continues to grow for this service, so does our range of service exchange parts.



**CAT 994H NOSE CONE UNIT**



**CAT 994H COMPLETE COOLING PACK**

## RESEARCH & DEVELOPMENT

### ENGINEERING

Our engineering team draws on more than 40 years of experience servicing the mining industry, ensuring delivery of the most efficient product, designed and manufactured to customer specifications.

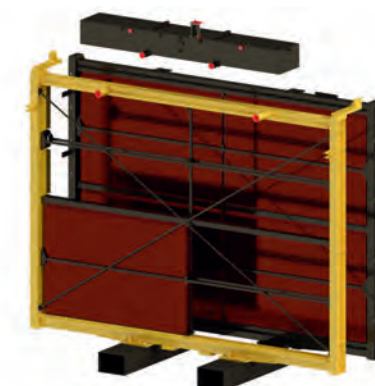
Taking your design specifications and our application knowledge, we develop each product as a fit-for-purpose solution, that meets all our clients' thermal requirements. Irrespective of the duty or application, we have the experience to optimise the heat transfer product for you.

### DESIGN - ADDING VALUE TO EVERY BLUEPRINT

We mechanically design every new heat transfer package using 3D AutoCAD Software. As part of the '5-step' process, we supply a 3D model to our customers for integration into their own designs. This resolves fitment delays when the final product is installed onsite, offering a complete 'turnkey' solution.

We have invested significantly in our capability for value engineering and optimising designs for cost, manufacture, reliability, operation, and serviceability. This manifests in our professional and user-friendly products.

- ✓ Dedicated drawing department
- ✓ Qualified draftsmen
- ✓ Various coded welders
- ✓ Full-fledged machine shop



**KOMATSU 960E-1/2 COOLING PACK  
AUTOCAD EXPLODED RENDERING**

### MANUFACTURING - WE'VE MADE PASSION OUR RAW MATERIAL

Our in-house fabrication capacity enables us to produce complex products with a high degree of quality control and short lead times as part of our solutions offering.

We can reliably produce customised products in low volumes while meeting all necessary compliance requirements, including material and dimensional specifications for our customers.

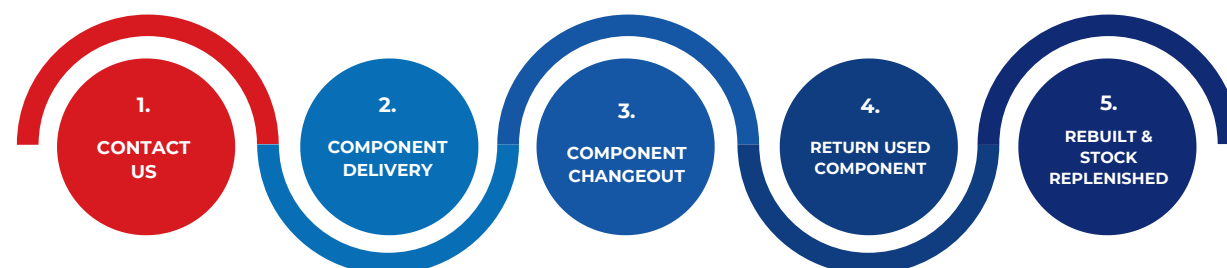
### WELDING - WE OFFER A WIDE RANGE OF FULLY COMPLIANT ENGINEERED SOLUTIONS

We have developed a vast array of qualified welding procedures and welders to support a wide variety of products. We can comply with project-specific standard requirements, be they international or local applications for specific vibration, durability, performance, corrosion protection and safety.

### INSTALLATION, TESTING & COMMISSIONING

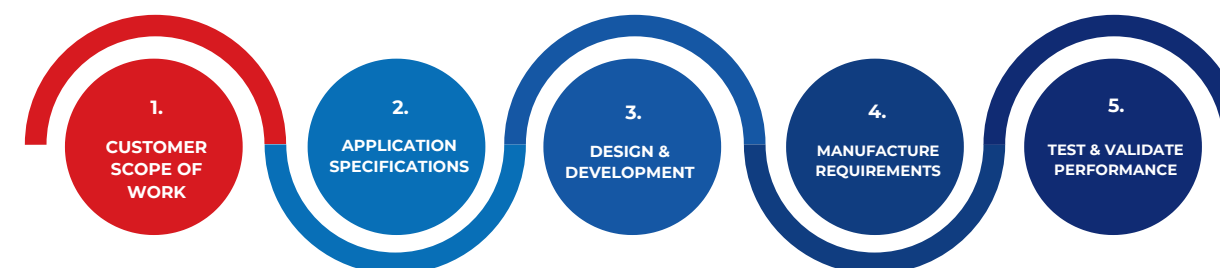
Our specialised heat transfer engineers offer an 'end-to-end' service experience beginning with the testing of your plant and equipment to understand the performance and upgrade options available, through to the installation and commissioning of the heat transfer system.

## OUR SERVICE EXCHANGE PROCESS



**“AN INNOVATIVE FLEET MAINTENANCE SOLUTION”**

## END-TO-END PROCESS



**“OUR HEAT-TRANSFER ENGINEERS HAVE THE SOLUTION FOR YOU”**



# GENERAL PRODUCT OVERVIEW

## VARIOUS AUTO-MOTIVE COOLERS

- ✓ Transmission Oil Coolers
- ✓ Hydraulic Oil Coolers
- ✓ Engine Oil Coolers
- ✓ Fuel Coolers

## TUBE AND SHELL COOLERS

For both in-plant and mobile equipment

## STANDARD OPERATING PRESSURES

Shell Side: (1000kPa)

Tube Side: (350kPa)

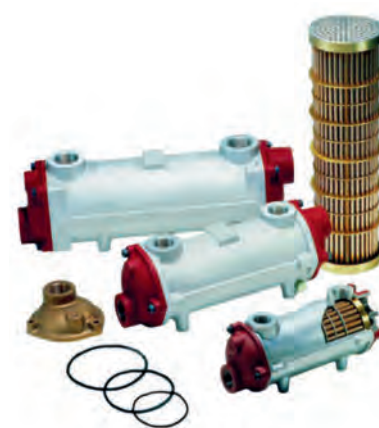
## MAXIMUM TEMPERATURE

Water: 110°C

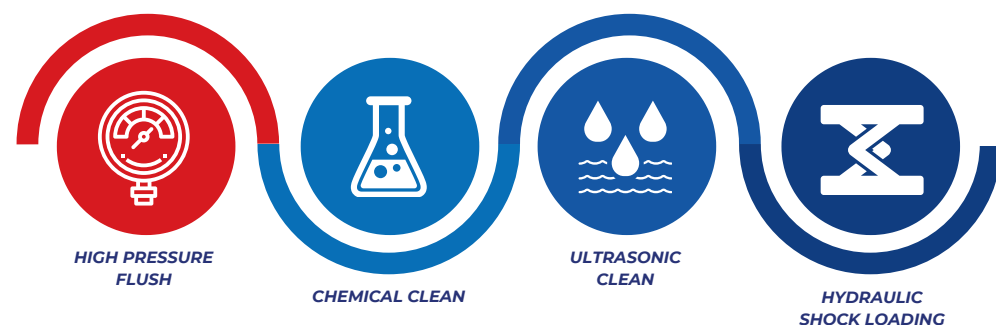
Oil: 135°C

## ADVANTAGES

- ✓ High pressure
- ✓ Various configurations of length and dimension
- ✓ Available in corrosion-resistant materials



## 4-STEP CLEANING PROCESS



## COMPRESSOR OIL COOLERS

BSSC Radiators have the necessary specialised in-house testing facilities available to successfully test compressor oil coolers.

## INTER-COOLERS | AFTER-COOLERS

BSSC Radiators specialises in a wide range of aluminium Air- Air products.

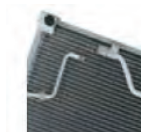
CONFIGURATIONS		TYPE
OPTION 1	PLASTIC TANKS/ALUMINIUM CORE	CRIMP ON
OPTION 2	COMPLETE ALUMINIUM UNIT	WELD ON



## AIR-CONDITIONING PRODUCTS AND PARTS

We supply new complete parts to OEM specifications

### CONDENSERS



### COMPRESSORS



### EVAPORATORS



### POLLEN FILTERS



### GAS R134A / R1234YF



### ACCESSORIES & TOOLING



## FAN DIVISION

We specialise in a wide range of earth moving fans, manufactured and repaired to OEM specifications.

TYPE	SUPPLY / SERVICE	BALANCING
STEEL	NEW COMPLETE, RE-BLADE OR RECONDITION	BALANCING REPORT
MULTI-WING	NEW COMPLETE, RE-BLADE OR RECONDITION	
VISCOUS-CLUTCH	NEW COMPLETE	N/A



STEEL



VISCOUS-CLUTCH



MULTI-WING

## ACCESSORIES

BSSC supplies accessories to the replacement aftermarket.



LEVER-VENT  
RADIATOR CAP



PRESSURE TEST  
KIT



ANTI-FREEZE



HOSES



COMBUSTION TEST  
KIT

WE OFFER ON-SITE TRAINING FOR THE ABOVE ACCESSORIES



# REMOVABLE TUBE-TYPE CORE

**BSSC RADIATORS REMOVABLE TUBE-TYPE CORE IS DESIGNED AND MANUFACTURED TO  
"OUTLAST THE ENGINE IN WHICH IT COOLS"**

## ADVANTAGES

### ON-SITE REPAIRABLE TO 100% COOLING CAPACITY

The removable tube is field-repairable and capable of being returned to 100% cooling capacity on-site often without having to remove the radiator out of the machine, saving on downtime and labour cost.

### ON-SITE REPAIRABLE TO 100% COOLING CAPACITY

Individual cooling tubes are fitted in galvanised header-plates with genuine Viton grommets. Grommets absorb vibration, stresses and thermal shock which cause rigid soldered seams to crack and leak.

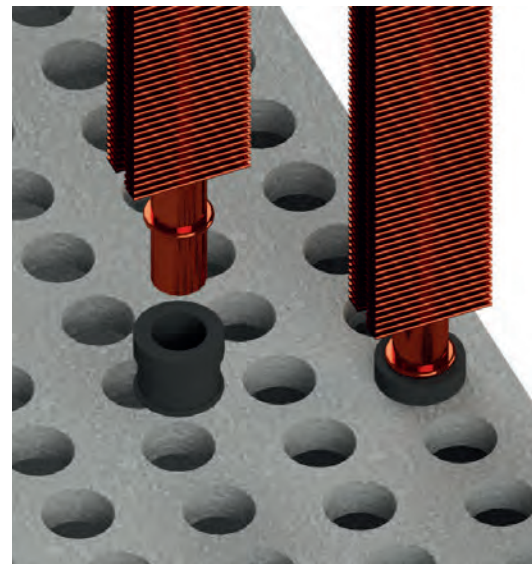
Maximum temperature: 250°C

### LOW MAINTENANCE

Tubes are arranged to create open passages so dirt and debris can blow through the core either with high pressure water or air.

### RETROFIT INSTALLATION

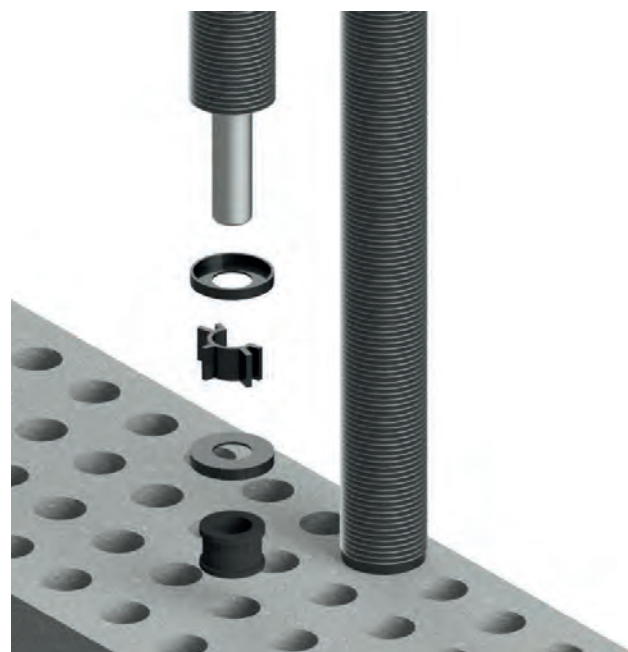
Convert your cooling pack to the removable tubetype core and save.



**STANDARD COPPER REMOVABLE TUBE**

## OVERVIEW

- ✓ FLEXIBLE GENUINE VITON GROMMETS
- ✓ RETROFIT INSTALLATIONS
- ✓ 5-YEAR WARRANTY
- ✓ LOW MAINTENANCE
- ✓ ON-SITE REPAIRABLE



**SPIRAL ALUMINIUM REMOVABLE TUBE**

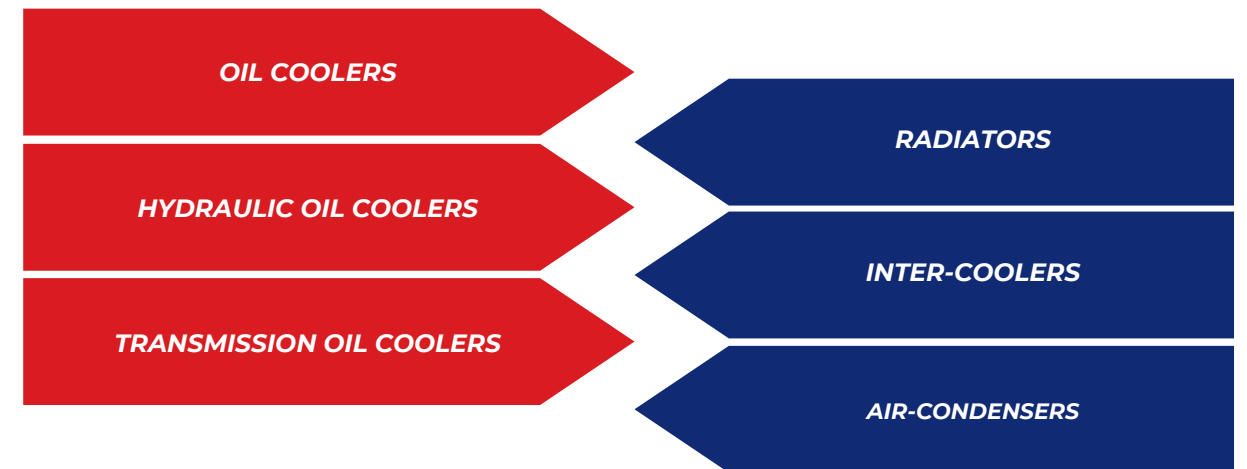


**44**  
YEARS

# WORLD OF ALUMINIUM

**WE SPECIALISE IN ALUMINIUM IN-HOUSE WELDING AND MANUFACTURING OF VARIOUS  
CORES, TANKS, AND FRAMEWORK.**

## OUR ALUMINIUM PRODUCTS



## BAR AND PLATE ALUMINIUM

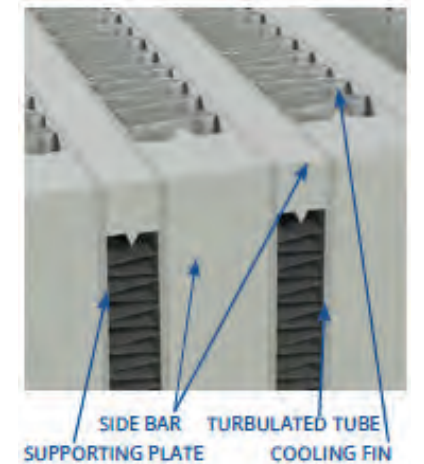
Features and benefits include:

The bar and plate configuration is extremely robust and resistant to external damage. It can withstand extreme operating pressures and offers superior heat-transfer capabilities.

Standard Operating Pressure: 3000kPa  
Maximum Temperatures: 220°C

## ADVANTAGES:

- ✓ EXTREMELY ROBUST
- ✓ HIGH PRESSURE HANDLING
- ✓ SUPERIOR HEAT-TRANSFER CAPABILITIES



## TUBE AND FIN ALUMINIUM

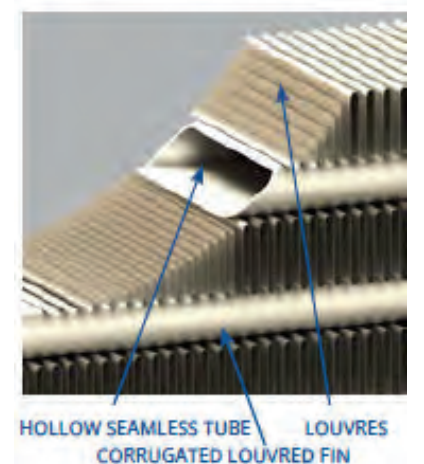
Features and benefits include:

The tube and fin aluminium configuration is extremely lightweight, and is offered in multiple row and fin density combinations, to provide less clogging and optimise system performance, whether a welded or extruded tube application.

Standard Operating Pressure: 100kPa  
Maximum Temperatures: 220°C

## ADVANTAGES:

- ✓ LIGHTWEIGHT
- ✓ LESS CLOGGING



**"OUR PRIORITY LIES IN OUR COOLING"**



# HEAT EXCHANGER DIVISION

*BSSC Radiators specialises in the manufacturing, reconditioning, and repairing of various in-plant heat exchanger components.*

## SHELL & TUBE HEAT EXCHANGERS



Constructed of a single tube or series of parallel tubes enclosed within a sealed cylindrical pressure vessel.

## AIR BLAST HEAT EXCHANGERS



This uses ambient air to cool process fluids as an extended surface heat exchanger.

## DOUBLE PIPE HEAT EXCHANGERS



The simplest heat exchanger design and configuration which consists of two or more concentric cylindrical pipes or tubes.

## GASKETED PLATE HEAT EXCHANGERS



Elastomeric gaskets seal the channels and direct fluids into alternate channels. This design allows easy cleaning and capacity modifications.

## PLATE HEAT EXCHANGERS



Paired plates which are stacked creates a channel through which fluid can flow creating multiple passages.

# INDUSTRIAL COOLING PACKS

INDUSTRIAL  
GENERATOR &  
COMPRESSOR  
SETS



INDUSTRIAL  
COOLING  
PACKS

**BSSC Radiators specializes in the manufacturing, reconditioning and repair of various heat transfer components found in stationary and mobile equipment.**



**"DON'T GET LEFT IN THE DARK"**



## SABS LOCAL CONTENT



### PROVING OUR CREDENTIALS

BSSC Radiators recently became the only radiator manufacturer in South Africa to receive a Local Content Verification Certificate from the South African Bureau of Standards (SABS).

As one of the major radiator suppliers to mines and transportation entities in the country, the certification validates the company's local content status in line with the soon-to-be-promulgated procurement bill which is before parliament at present. The certification shows that the company's use of local materials and skills is in line with the Department of Trade and Industry's (DTI) local content objectives.

According to BSSC Radiators director, Derek Bennett, the company is wholly South African and has been actively participating in the local economy for several decades. During this time, it has grown to become a major contender with a reputation for quality workmanship and world class manufactured goods that are designed to be tough enough for African conditions.

### PREFERRED OPTION

Not surprisingly, it has struck-up longstanding agreements with several mining and construction companies and has entered formal partnerships with a number of OEMs for alternative supply of cooling parts for equipment and trucks.

"In some ways the markets' move to quality and local content verification has come full circle for me as I was one of the key contributors to the cooling system standards that were formulated by the SABS more than 40 years ago. We are proud to have walked this long path with the standards authority and are equally proud to be taking the first steps with it in support of the important role that local manufacturing plays in developing the country's economy," says Derek.

This type of collaboration is equally important as it was then during a time when Derek hands over the reins of the company to his son, Dillan, himself already a veteran and expert in the design and development of radiators and cooling systems. Dillan has spent the past 13 years working shoulder-to-shoulder with his father in growing the company to its current stature.

**BSSC RADIATORS (PTY) LTD IS A VERIFIED MANUFACTURER OF  
LOCAL SOUTH AFRICAN PRODUCED PRODUCTS**

### FASTER TURNAROUND

"Local manufacture is the way to go for most equipment and transport users offering quicker turnaround times, properly specified materials for local conditions and local support of our products which is important when running round-the-clock operations like mines, rail and port infrastructure and trucks.

"The success of our business is based on quality and has set us up to compete with the best in the world. As a result, our next thrust will be into international markets and we are working closely with customers, as well as the DTI, to open channels to begin exporting our products around the world. Simultaneously, we are opening two new branches locally to shorten supply chains to our customers nearer to their operations which shows that we are growing from strength-to-strength," says Dillan.

During the certificate handover ceremony, the SABS chief operations officer, Lungelo Ntobongwana, praised the dedication of the BSSC Radiators team responsible for obtaining certification. It underpins the three main pillars of the drive to achieve higher local content targets including social upliftment, broader economic expansion and business sustainability.

### BUILDING RELATIONSHIPS

"Obtaining a Local Content Verification Certificate is beyond a compliance issue; it is a business imperative if we are to move the country forward. The certification process aims to provide a tangible measure of a company's local content and will assist in meeting future procurement targets, as well as directives set out by industries per charter or other requirements.

"But the benefits for customers go far beyond future legislation to more practical reasons for doing business locally. Shorter supply chains mean better lead times and availability of parts, as well as savings on associated costs. More importantly when dealing locally is that customers are not just numbers but rather foster relationships for better understanding of a customer's current and future requirements," he says.

Dillan concludes that the company is all about giving its customers what they want and need. The addition of the local contents' verification certificate provides them with the ability to meet current and future statutory requirements. "This is just the beginning and our new products will continue to build and improve on the use of local expertise and materials that will enable us to compete with the best in the world."

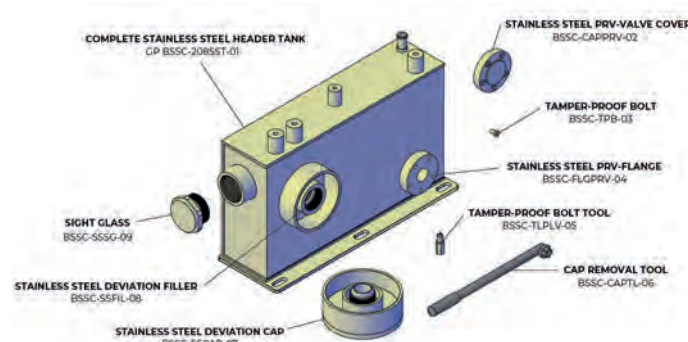


Left to right: Denesh Naidu (GM of SABS Certification), Lungelo Ntobongwana (Acting CEO of SABS), Dillan Bennett (CEO of BSSC Radiators), Derek Bennett (Founder of BSSC Radiators)



# HEADER TANK

**YOUR SAFETY IS OUR PRIORITY**



## PREVENTING INJURY TO HEAVY MACHINE OPERATORS

BSSC Radiators, a leading provider of engine cooling systems, has developed a groundbreaking solution to address safety concerns related to filling hot radiators in heavy equipment.

### CASE STUDY

This follows a special request from a longstanding customer concerned about the risk of injury caused to operators or assistants opening radiator filler caps of machines under pressure and getting badly burned in the process. With safety at the heart of the South African-based company, it tackled the challenge head-on and devised an ingenious system to prevent accidents and burns caused by pressure blowoff. Its patented safety filler system both prevents people without the specially designed tool from opening the cap, while additional safety mechanisms built into the device ensures a slow release of pressure with little risk of burns.

**Patent: 2023/04788**

#### PARTS LIST

GP BSSC-208SST-01  
BSSC-CAPPRV-02  
BSSC-TPB-03  
BSSC-FLGPRV-04  
BSSC-TLPLV-05  
BSSC-CAPTL-06  
BSSC-SSCAP-07  
BSSC-SSFIL-08  
BSSC-SSSG-09

#### PRESSURE BLAST

BSSC Radiators CEO, Dillan Bennett says the customer was operating underground mining equipment and found the pressure cap on the equipment's surge tank to be a safety concern and prone to dislodging under pressure. This could cause dangerous situations for operators and the company recognised the urgency of the problem and went back to the drawing board to develop a safer alternative solution.

The core of our innovation lies in the implementation of an alternative pressure release valve fixed on a flange. This design effectively moves the pressure away from the operator who fills the system and ensures their safety. To add an extra layer of security we also introduced a tamper-proof bolt unique to their system, which prevents unauthorized access and ensures that only trained personnel can open the pressure release valve.

"Furthermore, we incorporated a deviation system into the design which features a screw-on type cap made of durable stainless steel which has more threads for a better fit and preventing rusting. The cap contains deviation rings that gradually release trapped pressure as water flows through them, effectively eliminating the risk of sudden pressure release during system filling," says Dillan.

#### TRAINING

We offer on-site/off-site training for the above safety devices and accessories with certification.

**COMPLETE TANKS & PARTS ARE IMMEDIATELY AVAILABLE**

Use the above part numbers to order today and achieve better safety standards.



Award presented to BSSC Radiators (Pty) Ltd

## SAFE SOLUTIONS

With safety being of paramount importance, BSSC Radiators aims to revolutionize the industry by implementing their innovative solution and significantly reducing the risks associated with cooling system filling. By prioritising safety while enhancing operational efficiency, the company endeavours to create a safer working environment for operators in the mining industry.

"As with our radiators and other systems, we are already in the process of working with OEMs and dealers to offer these solutions to the market locally and abroad.

We remain committed to further development and adaptation of all cooling systems to meet the diverse needs of our customers and to find solutions to the industry's challenges," concludes Dillan.

## EASY RETROFIT

Technical sales manager, Morne Bouwer, part of the development team, explains that in order to complement their innovative solution, BSSC Radiators developed a specialised tool that accompanies the tamper-proof bolt, ensuring that only authorised individuals can access and operate the system.

This comprehensive approach not only improves safety but also minimizes the possibility of operators who are in a rush to make their daily quotas are not tempted to bypass procedures and open the system themselves in order to save time.

Most importantly, the system will be able to be retrofitted to almost any mobile and stationary underground and opencast mining equipments. Its design ensures that performance of the original cooling system is not adversely affected.



Eric Bruggeman (CEO of the South African Capital Equipment Export Council) & Dillan Bennett (CEO of BSSC Radiators)



Publishments: Cape Business News, Creamer Media Engineering news, Modern Mining, Mining Business Africa, Fore Runner, SABS.



## CERTIFICATIONS



SABS Local Content



SABS ISO/SANS 10276



TUV RHEINLAND ISO 9001



Proudly South African



Electra Mining - Safety Innovation Award



B-BBEE LEVEL 2

## AFFILIATIONS



## HALL OF FAME



CAT 793D



KOMATSU 960E - BEFORE



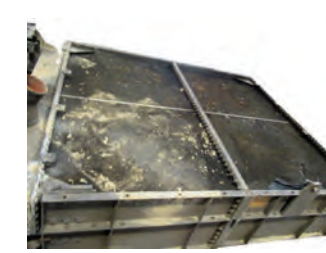
KOMATSU 960E - AFTER



HITACHI EH 5000AC-3  
BEFORE



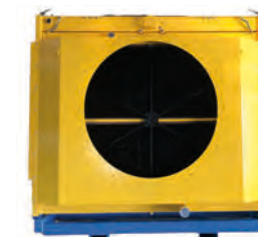
HITACHI EH 5000AC-3  
AFTER



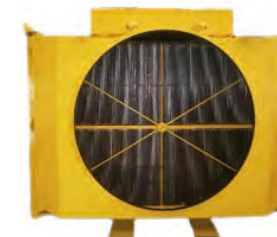
HITACHI EX 5500-6  
BEFORE



HITACHI EX 5500-6  
AFTER



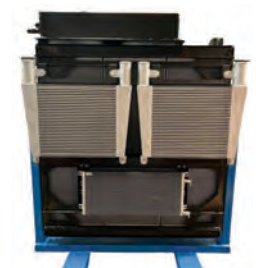
TEREX MT 4400



KOMATSU 930E



KOMATSU WE2350



CAT 777E

COMPLETE REBUILDS

CONVERSIONS

RECONDITIONS/RECORDS