Consistency in Quality & Performance
“We are consistent in both quality and performance. This is what separates us from the rest”

Phillip Joseph
Managing Director

Manufacturing safety for over 30 years

Through many decades of manufacturing experience and unsurpassed knowledge through research and development, DBA has positioned itself as Australia’s most awarded manufacturer and a global leader in brake rotor manufacturing.

Through continuous improvements in engineering along with a thirst for innovation, DBA has managed to consistently re-define and deliver braking solutions for an extensive range of vehicle applications and conditions.

DBA XG-150 Cast Iron

After 30 years of design and development with race teams around the world, Disc Brakes Australia developed a proprietary cast iron formulation (XG-150) for use in all of its premium performance disc brake rotors.

DBA’s grey iron is rich in carbon and alloyed to produce excellent thermal characteristics, which is a key factor in the production of the casting. This is combined with our patented Kangaroo Paw ventilation design.

With a supersaturated solution of carbon in an iron matrix, the excess carbon precipitates out in the form of graphite flakes. The structural distribution of these graphite flakes provide excellent thermal properties, increasing the thermal shock resistance.

Also, when combined with DBA’s TSP process it allows the material to cope with rapid thermal cycling with core-heat levels reaching approximately 700°C and above.

The DBA developed TSP™ process, stress relieves the cast iron during the manufacturing process.

Unlike any other cast irons, the XG-150 formulation was developed to respond to the TSP process resulting in a rotor that is ideal for heavy duty braking and suitable for motorsport applications.

“From cast iron to the finished product – total control”

DBA XG-150 Cast Iron

Phillip Joseph
Managing Director

Mark Joseph
Sales & Marketing Director

AJAX Foundry

Anthony McKelvey
Manufacturing Director

Peter McKelvey
Sales Director

Raw Castings

Machining

Packaging & Distribution

Foundry

Packaging & Distribution

Machining

Raw Castings

Feature    Benefit

High thermal conductivity Reduced brake fade, improved heat dissipation Consistent brake pedal feel

Thermal Stability Minimises the risk of brake shudder/judder
Where expectations are exceeded

With disc brakes, as with any safety component, there can be no short-cuts. Drivers the world over demand DBA products for consistent, reliable and superior performance.

DBA ensures this by engineering discs that are far superior to generic and aftermarket counterparts.

How?

DBA sets the bar in quality, tolerances, premium metals and manufacturing equipment that delivers premium quality disc brake rotors.

The DBA difference

With years of experience in manufacturing and supplying Original Equipment, aftermarket and motorsport markets, DBA understands the materials, processes and tolerances required to produce a quality rotor.
Inspired within Australia’s heartland, DBA developed the Kangaroo Paw cooling system. This patented ventilation system provides a much more efficient method of keeping the rotors cool under the heaviest of braking applications. Using a series of 144 diamond and teardrop patterned pillars (or columns) instead of conventional straight cooling vanes, the design increases cooling efficiency by up to 20% when compared with most other conventional ventilated disc rotors. As well as providing cooler conditions, the Kangaroo Paw system also provides additional support to the friction face. This enables the rotor to maintain the fine tolerances over the life of the rotor better than a straight vane design, which can “balloon” and swell between the vanes when operating at high temperatures. The Kangaroo Paw pillars are evenly spread across the disc face and make the rotor stronger, more stable and more consistent in operation.

The ventilation system of a brake rotor is best described as the foundation and support between the friction surfaces.

### Feature Kangaroo Paw Straight Vane

| Surface Area | 12,917 mm² | 8,100 mm² | 37.3% less surface area |
| Weight | 8.26 kg | 7.68 kg | 7.25% less mass |
| No. of Pillars | 144 | 36 | 75% less support |

Other than material composition, another major factor that affects the thermal performance of brake rotors is the surface area within the ventilation design. The more surface area, the more heat that can be removed from the brake rotor.

The mass of the brake rotor also plays an important role. The greater the mass, the more heat that can be stored and must be dissipated, this is why the design of the Kangaroo Paw is so effective. This minimises the risk of brake fade and restores normal braking much sooner.

A recent discovery has found that “lightweight” inferior discs have reduced braking plate surface thickness. This is a common method employed to reduce manufacturing costs. The result is lower thermal mass causing unpredictable performance characteristics and sacrificing safety and longevity.

To view both the Australian made Kangaroo Paw and the competitors import product (straight vane) as per these exact images on these pages then visit this website: www.dba.com.au/compare
A new standard in slot design

DBA’s T2 has greater braking advantages over the traditional straight slot designs.

The Bi-Symmetrical curve slots dampen the vibration harmonics or noise, resulting in a quieter, more responsive and smoother brake pedal feel.

In addition, the T2 increases the number of out-gassing exit points, allowing friction gasses to escape and enhancing the pad life.

A new breed of performance braking

DBA’s T3 slot design is built on the T2 design but with an increased number of slots, taking it from 32 to 48 CNC machined slots.

The result is an even quieter, more responsive and smoother brake pedal feel. This is achieved from a series of tri-symmetrical ‘curved’ slots, which when aligned in a specific way, drastically dampen the vibration harmonics, that’s commonly associated with traditional straight slot (groove) rotor designs. The tri-symmetrical slots also increase the number of out-gassing exit points for brake pad friction gasses to escape through, further increasing the consistency and effectiveness of every brake stop.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Advantages</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
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T3 - Unique to the ClubSpec 4000 and 5000 series rotors
Better materials, better processes, better discs

The technologies employed by DBA are at the forefront of brake manufacturing and allow consumers to clearly identify why DBA discs are ultimately superior. The processes adopted by DBA through clever engineering allow consistent and premium performance characteristics, making DBA brake discs do what they do best, slow down vehicles!

Defining elements of DBA discs:

**Dimensionally Precise** – Most discs on the market are found to be ‘ground’ finished, but every DBA disc endures a special Cubic Boron Nitride (CBN) fine-turn process. The quality of the finish is measured as a surface roughness (engineering term Ra) in microns. One micron is 1 millionth of a metre (see diagram below). DBA rotors are machined to a maximum of 1.8 Ra or less.

**Cubic boron nitride (CBN) is known to be the second hardest material after diamond**

**Built for abuse** – DBA uses a process called thermal stability profiling (TSP) on all HD and CLUSPEC discs manufactured with XG-150. TSP re-aligns the micro-structure of the iron increasing density, resistance to extreme heat and reducing disc wear.

Additionally, thermo-graphic paint markings allow clear identification of disc temperature and disc performance.

**Premium discs, premium appeal** – The premium paint coating found on all DBA discs* in non-friction areas ensures corrosion protection. DBA discs maintain their originality, aid vehicle appearance and last longer against the elements.

**Performance metals** – Usually only found in high-end performance discs, XG-150 is a unique formulation developed for all DBA products. High carbon alloyed iron may look like regular iron found on standard discs, but DBA’s unique XG-150 iron formula has been tested the world over to the absolute limits of braking punishment.

*excludes street series OE replacement discs

Behind every great wheel should be a great brake disc

**How big is a Micron?**

A human hair (magnified in comparison)

1.8 Ra

Micron

**Cubic boron nitride (CBN) finishing ensures an even pad transfer layer deposition which is important for the modern brake pad. This leads to a better pedal feel and eliminates the possibility of pad ‘knock’**.
Superior components. Two piece 5000 series

6061-T6 Aerospace Grade Aluminium

DBA’s two-piece rotors incorporate Alumalite centre hats made from 6061-T6 Aerospace grade aluminium. This material reduces unsprung weight for improved suspension and handling performance. As well as allowing uniform expansion of the disc rotor during heavy use whilst reducing heat transfer in the hub bearings.

The Alumalite centre hat is affixed onto the rotor utilising NAS bolts and self locking nuts. Unlike normal high tensile bolts, NAS bolts are made to National Aerospace Standards out of an 8740 high tensile strength alloy steel and are produced to extremely tight tolerances. The bolts are tightened on with precision formed hexagon self locking nuts, also referred to as 6-point nuts, that also have an extremely high tensile strength. Each nut is coated with a silver plate, designed to withstand high temperatures.

The Alumalite centre hats are machined by DBA from a solid billet of light-weight 6061-T6 aerospace grade aluminium material. The finished centre hat is then anodised to protect it from corrosion.
100% confidence in fitment every time, not the cheap inferior alternative!
Australian engineered and quality assured to the highest possible standards for the safety of drivers the world over! Manufacturing to OEM standards are our minimum requirements. With added extras like protective paint coatings, T2 wiper slots extending pad life and X Gold catering for the big brake look!

These discs utilise High Carbon Alloyed Iron (XG-150) and Thermal Stability Profiling (TSP) allowing constant extreme heat cycles designed for those “late braking scenarios”. 4000 XS and 5000 XS provides improved braking performance, better brake pedal feel and with the benefit of looking the part as well.

Patented ‘Kangaroo Paw’ ventilation design*
Bi-Symmetrical T2 curve slots
Paint protection on non-friction areas
CBN (Cubic Boron Nitride) machine turned
Moisture proof corrosion protection packaging

Overview These discs utilise High Carbon Alloyed Iron (XG-150) and Thermal Stability Profiling (TSP) allowing constant extreme heat cycles designed for those “late braking scenarios”. 4000 XS and 5000 XS provides improved braking performance, better brake pedal feel and with the benefit of looking the part as well.

Patented ‘Kangaroo Paw’ ventilation design*
Bi-Symmetrical T2 curve slots
Paint protection on non-friction areas
CBN (Cubic Boron Nitride) machine turned
Moisture proof corrosion protection packaging

If you’re looking for the best replacement aftermarket discs available...Fit street series discs. Call DBA now.
Allow these discs to take the heat, don’t risk it with a standard set-up! Contact DBA today.
Sharing all the benefits of the HD and Survival 4x4 series, we are now witnessing the ultimate in performance direct OE replacement discs. Inclusive of a tri-symmetrical slot design dampening harmonics, increasing responsiveness and improving that all important ‘pedal feel’. The 6061-T6 Alumalite hats on the Club Spec 5000 T3 are critical for reducing wear and reducing weight. The Aerospace grade aluminium hats reduce unsprung weight, allow for uniform disc expansion and lower heat transfer from disc to hub.

Overview

*Patented ‘Kangaroo Paw’ ventilation design*
*Tri-Symmetrical T3 Slot*
*XG-150 High Carbon Alloyed Iron*
*TSP (Thermal Stability Profiling)*
*Protection paint on non friction surfaces*
*Heat paint markings*
*CBN (Cubic Boron Nitride) machine turned*
*Moisture proof corrosion protection packaging*

*Replacement rotor ring only*
*Supplied with 12 x NAS lock nuts*
*Patented ‘Kangaroo Paw’ ventilation design*
*XG-150 High Carbon Alloyed Iron*
*TSP (Thermal Stability Profiling)*
*Protection paint on non friction surfaces*
*Heat paint markings*
*CBN (Cubic Boron Nitride) machine turned*
*Moisture proof corrosion protection packaging*

*Replacement aluminium hats*
*Available in Black or Gold anodised finish*
*Supplied with complete set of NAS nuts/bolts*
*NAS = National Aerospace Standard*

4WD, Off-Road

Stage 7

Stage 8

Replacement Centre Hat

Replacement Rotor Ring

Driver Style Suitability

DAILY DRIVER / SHARED VEHICLE
DAILY DRIVER & AGGRESSIVE STREET DRIVING
COMMERCIAL
SHOW CAR
WEEKEND WARRIORS
MOTORSPORT

4WD vehicles often suffer significant brake fade and reduced performance when it comes to heavy towing, big downhill sections and disc cracking / shudder due to rapid heat changes during water crossings. DBA solves these safety and performance issues with the Survival Series T2 & 4000 series T3 rotors for extreme 4-wheel driving and / or towing. Looking for a visual upgrade mated to quality DBA discs, choose the Survival T2. Want all the benefits of the Club Spec series, look no further than the ultimate 4x4 OE replacement, the Survival series 4000 T3 discs!

This is the ultimate DBA disc upgrade. Contact DBA for track ready performance.

Heavy driving? Increased stress on 4x4 brakes off-road is a serious risk. Fit DBA 4X4 Survival discs today!
Ferodo ® DS Performance brake pads are designed for the driver who demands the ultimate in braking performance.

Designed to provide the kind of braking power normally associated with race cars – all without the need to build up and maintain high operating temperatures, which makes it a perfect option for performance street vehicles.

DS Performance has been developed to deliver great comfort, combining passenger car refinement with pedigree performance.

With rigorous testing and development including extensive road and race circuit trials, DBA have finally found the perfect brake pad match to compliment the CLUBSPEC range of performance brake rotors. To add to this, Ferodo ® DS Performance brake pads and CLUBSPEC rotors have been used as the preferred product of choice for over four years by V8 Race in all their vehicles.

✓ Track Level Friction for reduced stopping distance
✓ Excellent Performance in all conditions (hot/cold/wet/dry)
✓ Thermal under-layer eliminates fluid boil
✓ Low compressibility and wide thermal range
✓ Manufactured in Italy by Ferodo Racing Facility

The perfect partner in brake pads for DBA’s CLUBSPEC 4000/5000 series rotors
**Motorsport - important information**

There are many factors that directly affect the longevity of disc rotors and the safety of the driver when using a high performance street vehicle on a race track.

The major considerations are listed below:

**CORRECT BEDDING OF ROTORS**

Generally, experienced drivers will use their track rotors on the street with standard pads for a week or two before any track use. Driving in normal traffic conditions for 300 to 500 km (180 to 300 miles) is more effective and less likely to permanently fatigue the disc rotor material. If you are unable to utilize this method or prefer the accelerate and brake repetition shortcut, please warm your brakes up first. Drive for at least 3 to 5 kms (3 miles) with long braking. The thermal shock from braking at high speed on cold rotors WILL permanently fatigue your brakes.

**PAD SELECTION**

Standard street pads are NOT suitable for track day applications. Core temperatures of rotors used on track days are generally in the 460ºC to 600ºC (860ºF to 1110ºF) range and peak surface temperatures up to 800ºC (1472ºF) for 5 seconds or more. Street pads generally start to break down at 220ºC to 250ºC (430ºF to 460ºF), causing brake pad fade and glazing of the rotor surface. Also the pad structure is degraded in resulting poorer product performance.

**WARM UP & COOL DOWN**

Disc rotors must be preheated before track sprints to reduce the thermal shock from sudden high speed braking. The greater this difference in rotor temperature from when the pad is applied to when the pedal is released, is directly proportional to metal fatigue. This is also applicable after the event, when you exit the track. A cool down lap at reduced speed with lighter braking to lower the core temperature slowly, or if this is not possible, go for a short drive off the track for a few minutes. Do not "pull-up" immediately after exiting the track with hot brakes if you plan on using them again!

**POST TRACK DAY ROTOR INSPECTION**

All disc rotors should be inspected during and after track day events. This involves removing the rotor from the vehicle and inspecting the heat checking (surface cracking) and severe cracks from fatigue on the pad surfaces. If a suspected crack is found, rub the area with a light grade emery paper, 240 grit or higher, to confirm that it is a crack and not latching or arcing from the pad material. Pad etching looks similar to light cracking but will disappear with a light rub with emery paper. If the heat checking is advanced to the point where the surface cracks are clearly visible, discard the pair of rotors. One ideal method that should be adopted is to have two sets of rotors. One set for track use and one for street use. Changing to your street rotors after a track event encourages rotor inspection. Also, your street rotors can become your next track rotors with the advantage of being bedded in gradually. After the initial purchase of two sets of rotors you are still only replacing one set at a time. Users need to be mindful that in most motorsport applications the rotors can be deemed to have reached its usable life due to stress cracking well before it reaches minimum thickness at which point the rotor must be discarded.

**CORRECT BEDDING OF ROTORS**

**ROTOR TEMPERATURES**

Rotor temperature analysis is one method that can be used to enhance your driving technique. The use of thermo-graphic heat pads is the simplest method to record temperatures. To maintain optimal disc rotor life, the core temperatures should not exceed 500ºC (1110ºF). If you are exceeding this limit you should reconsider pad grades and driving technique. Take note of the core temperature when the brakes are applied in a corner and compare them to other drivers. One or two seconds of additional braking can make a substantial difference in rotor temperature and product life.

**Disc Pad Temperature Monitoring**

<table>
<thead>
<tr>
<th>Brake Pad Type</th>
<th>Maximum C.W.T.</th>
<th>Friction Class</th>
<th>Standard</th>
<th>Semi-Metal</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT 3</td>
<td>205ºC / 390ºF</td>
<td>FF</td>
<td>260ºC / 530ºF</td>
<td>400ºC / 752ºF</td>
<td>500ºC / 932ºF</td>
</tr>
<tr>
<td>DOT 4</td>
<td>225ºC / 433ºF</td>
<td>FF</td>
<td>250ºC / 450ºF</td>
<td>420ºC / 792ºF</td>
<td>500ºC / 932ºF</td>
</tr>
<tr>
<td>DOT 5.1</td>
<td>260ºC / 498ºF</td>
<td>FF</td>
<td>280ºC / 520ºF</td>
<td>450ºC / 842ºF</td>
<td>500ºC / 932ºF</td>
</tr>
<tr>
<td>DOT 4800</td>
<td>310ºC / 590ºF</td>
<td>FF</td>
<td>340ºC / 626ºF</td>
<td>500ºC / 932ºF</td>
<td>500ºC / 932ºF</td>
</tr>
</tbody>
</table>

**SAFE OPERATING TEMPERATURES OF BRAKE FLUID**

<table>
<thead>
<tr>
<th>Brake Fluid Type</th>
<th>A Wet Boiling Point</th>
<th>B Wet Boiling Point</th>
<th>C.W.T. = Continuous Working Temperature of brake fluid</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT 3</td>
<td>250ºC / 482ºF</td>
<td>320ºC / 608ºF</td>
<td>710ºC / 1299ºF</td>
</tr>
<tr>
<td>DOT 4</td>
<td>270ºC / 518ºF</td>
<td>340ºC / 644ºF</td>
<td>760ºC / 1389ºF</td>
</tr>
<tr>
<td>DOT 5.1</td>
<td>280ºC / 528ºF</td>
<td>350ºC / 662ºF</td>
<td>810ºC / 1491ºF</td>
</tr>
<tr>
<td>DOT 4800</td>
<td>310ºC / 590ºF</td>
<td>380ºC / 714ºF</td>
<td>860ºC / 1588ºF</td>
</tr>
</tbody>
</table>

**TRADEMARKS**

DBA® is a registered trademark of DBA Brakes Australia Pty Ltd, Australia.

**DBA® THERMO-GRAPHIC TEMPERATURE MONITORING**

- **Initial Colour**: Known as the factory virgin non-contaminated state.
- **Performance**: Known as the contaminated state, the difference between the two is the contaminant.
- **Red**: Known as the Josh Herman proprietary paint which was used with the paint manufacturer’s patented temperature sensitive ink. This paint reacts to the rotor material and the brake fluid.

<table>
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<tr>
<th>Brake Pad Type</th>
<th>DOT Colour</th>
<th>Brake Fluid Type</th>
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<tr>
<td>DOT 3</td>
<td>Orange</td>
<td>DOT 3</td>
</tr>
<tr>
<td>DOT 4</td>
<td>Red</td>
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</tr>
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<td>Yellow</td>
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</tr>
<tr>
<td>DOT 4800</td>
<td>White</td>
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**WARRANTY STATEMENT**

DBA's warranty will not apply in relation to any form of motor sport because it may be subjected to many variables that are not controllable (such as vehicle modifications, ie. wheels, tyres, suspension).

DBA's warranty will not apply in relation to: use of the product for any form of motorsport or speed trial. Whilst DBA promote it’s product for use in motor sport applications, DBA cannot warrant the product when used in any form of motor sport because it may be subjected to many variables that are not controllable (such as vehicle modifications, ie. wheels, tyres, suspension).

For more information, please feel free to contact DBA: info@dba.com.au
DBA’s Global Distribution Centres

Established for over 10 years and regarded as one of the leading disc brake rotor performance brands in North America.

Quality product, and uniquely Australian, visit dba.com.au for more information.

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