

# CATALOGUE 2015

**alcon**

specialist brakes & clutches



*alcon*



# ABOUT US

## Star-studded History

Alcon was established in 1983 by engineer and sports car racer John Moore in order to make brakes for Audi Sport's Group B Quattro rally cars. Today the company provides braking solutions for the top echelons of motorsport, all from our factory and HQ in Tamworth. Our distributor network stretches across the globe, though, making Alcon accessible wherever you are.

## Motorsport Pedigree

Alcon's range of brake and clutch products is huge. It has been honed over 30 years of working at the top level of motorsport, from Audi Quattro Group B cars to the futuristic Formula E.

We use our specialist knowledge to create the best solution for every customer need. That's why we're the best at what we do.

## OEM giants

Alcon supplies braking solutions to some of the world's most prestigious marques, including Audi, Bentley, Brabus and Jaguar Land Rover.

Not only that, our products are found in some of the most extreme applications such as the 900bhp/tonne Ariel Atom 500 and the 225mph Noble M600.

## On the road

Our racing and OEM expertise is also available to owners upgrading their street cars for enhanced performance on road or track. Alcon Advantage Extreme brake kits and upgraded clutches give those wanting top performance the edge, with race options available for the serious petrol head. Providing ultimate braking performance in a direct replacement package, these kits make use of the technology behind Alcon's involvement in top level motorsport, including F1, World Rally Championship, NASCAR and Japanese GT racing.

## Special Vehicles

Armoured protection for VIPs, military vehicles, hybrid supercars, zero emission municipal trucks, low carbon taxis are just some of the applications for which Alcon has engineered bespoke brake and clutch solutions. With a wealth of experience in brake and clutch design, backed by our well-

equipped development facility, Alcon thrives on the challenge of devising innovative and unusual solutions for every application.

## Innovative. Futureproof

It's not just a case of what we do, but what we have the capability to do. Our research and development team is constantly working on finding the latest cutting-edge technology to give our brakes the winning advantage. As a result of our research, we're proud to be the sole supplier of brakes for the FIA Formula E Championship this year – just one example of the market-leading research and development we do.

**For more information on any of the work that we do, don't hesitate to contact one of our sales representatives:**



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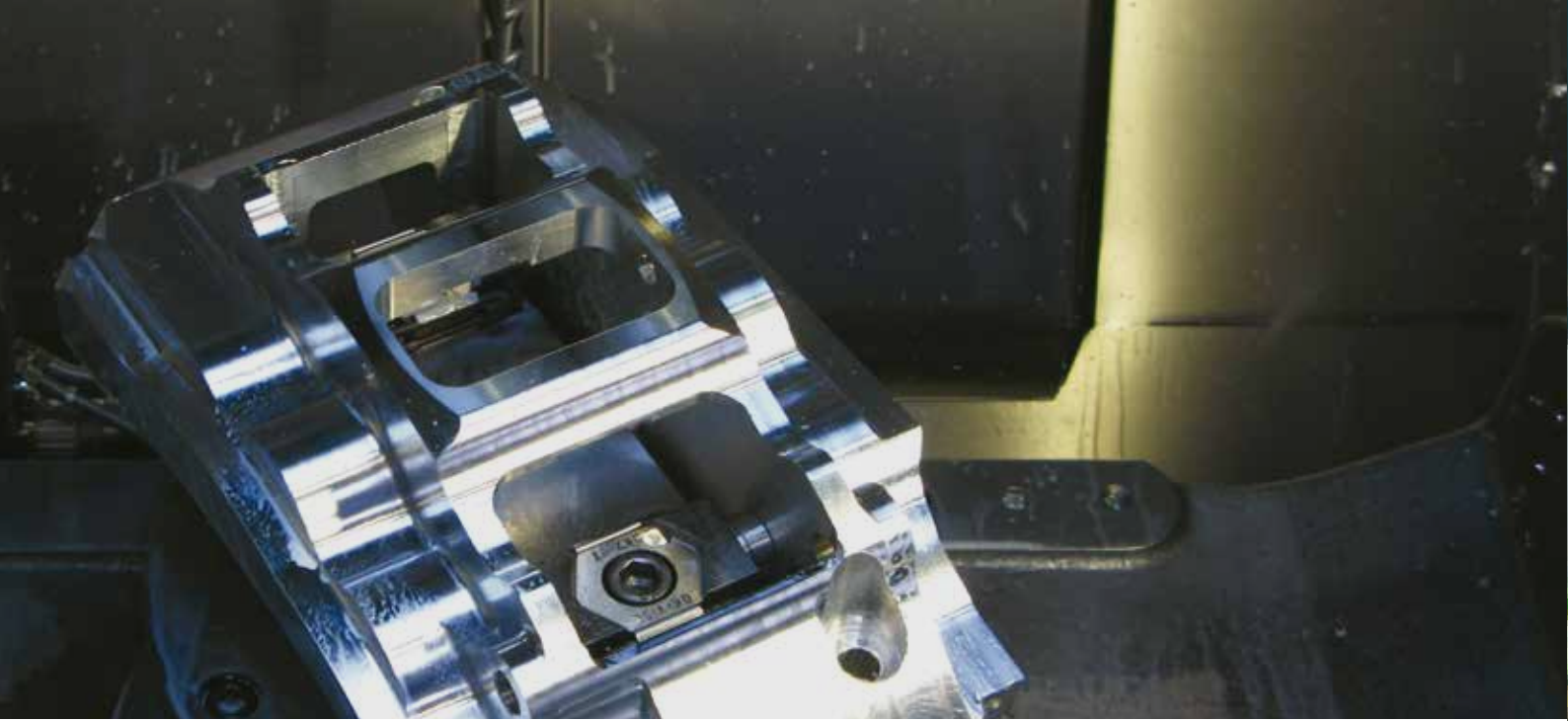
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# CALIPERS **introduction**

## Key features

- Differential piston diameters are used in all Alcon calipers in order to minimise pad taper wear.
- We use high temperature seals as standard on all of our calipers.
- Alcon uses top-quality materials throughout the range including billet aerospace-grade aluminium alloy and a hard anodised surface treatment where possible.
- Hard stainless steel wear plates protect the pad and caliper body in most of our racing calipers.

## Caliper seals

It's important to examine and replace racing caliper seals on a regular basis as they are subjected to very high operating temperatures. The life of the seal depends on the time it has spent at these temperatures, so it's important to keep the seals as cool as possible. We recommend the following:

- Calipers that regularly run up to 200°C – Re-seal after every

- other event.
- Calipers that regularly run between 200°C and 220°C – Re-seal as soon as possible
- Do not let the caliper 'soak' temperatures after the car has come to a standstill – for example, ensure the foot is lifted off the pedal.

## Caliper handing

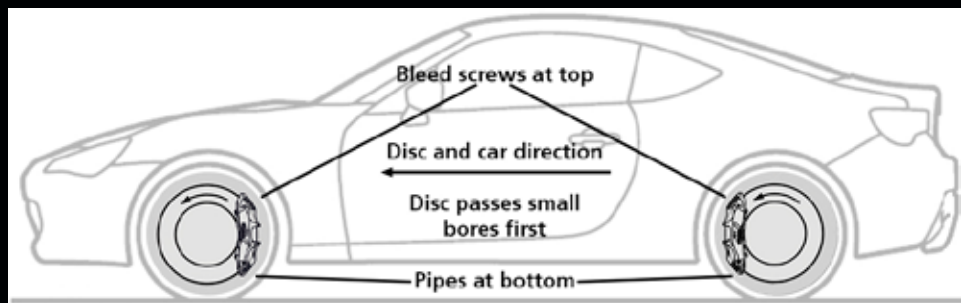
Both leading and trailing calipers are available, and are identifiable using the following abbreviations:

- RL – Right hand leading
- LL – Left hand leading
- RT – Right hand trailing
- LT – Left hand trailing

pipes must always be positioned at the bottom.

## Servicing and reconditioning

- Regular inspection and maintenance of calipers is vital in order to maintain brake efficiency and safety.
- Calipers should be cleaned with soapy water only to maintain seal life.
- Alcon offers a full reconditioning service, just get in touch.
- Spare parts including pistons, bleed screws etc. are available for all calipers – part numbers are listed on each product page.



Bleed screws must always be positioned at the top and discs must always pass the small piston first on differential bore calipers. Crossover

- Replacement seals should be soaked in brake fluid for at least 30 minutes prior to fitment.



# ADVANTAGE RANGE

## The basics

Alcon's Advantage Range calipers form the core of our product stable. They are designed to fit the majority of applications, from 13" Single Seater wheels to 18" GT, and everything in between.

Advantage Range products are kept in stock here at Alcon and therefore are available as and when our customers need them and, if we are out of stock, we can quickly fulfil

your order. This range is aimed at clubman and national level racers.

If there is anything you'd like to enquire about, or if you'd like to order a product, please get in touch with one of our sales representatives.

## Applications

Advantage Range calipers are available for a number of applications including, but not limited to:

- Single seater.
- Rally.
- Hill climb.
- GT.
- Touring car.
- One make series.
- Group N+.
- General race use.
- Saloon car.

If you're looking for a product not listed above, chances are we have something to suit - just get in touch.

# advantage range CRR280

## 2-piston radial mount R-type caliper

### Part numbers and handing

Disc thickness	Position	Ø44.45 pistons
22.9-25.4mm	Left hand trailing	CRR280/25-44LT
	Right hand trailing	CRR280/25-44RT
	Left hand leading	CRR280/25-44LL
	Right hand leading	CRR280/25-44RL

### Replacement parts

Item	Ø44.45 pistons
Seal Kit, axle set,	CSK45E900
Pistons, ALUMINIUM, each	PAS4448X553
Pistons, STAINLESS STEEL, each	PSS4426X600
AKB Springs, each	SSC3435X609
Bridge Pipe (each)	PSC3451X652
Bleed Screw, each	FSB0080X008
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015
Copper gasket	FCG0080X015

### Applications:

Rally rear, single seater, saloon car rear, hill climb



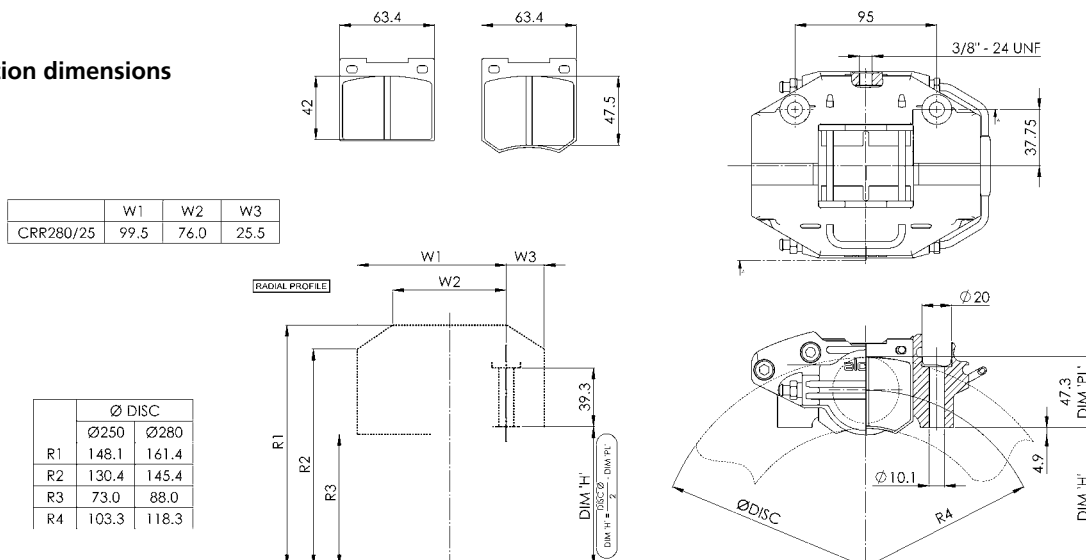
### Key features and benefits

- Radial mounting for maximum rigidity and firm, consistent pedal.
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- 2Kg Anti-knock back springs.
- Pad retaining wire for fast pad change.
- Stainless steel fluid transfer pipe.

### Specifications

- Disc diameter range: Ø250 to 280mm.
- Disc thickness range: 22.9 to 25.4mm.
- Fluid inlet 3/8-24 UNF (-3) female.
- Dry weight 1.35kg excluding pads.
- Alcon pad reference: 3451/42 area 49.2cm<sup>2</sup> per caliper, 3451/47 area 56.0cm<sup>2</sup> per caliper, 14mm thick, 63.4mm long.

### Installation dimensions



# advantage range CRR300

## 2-piston radial mount R-type caliper

### Applications:

Rally rear, single seater, saloon car rear, hill climb



### Key features and benefits

- Radial mounting for maximum rigidity and firm, consistent pedal.
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Pad retaining wire for fast pad change.
- Common leading/trailing installation by switching bleed screw and inlet.
- Internally ported, no external fluid transfer pipe.

### Specifications

- Disc diameter range: Ø250 to 300mm.
- Disc thickness range: 8 to 10mm.
- Fluid inlet 3/8-24 UNF (-3) female.
- Dry weight 0.97kg excluding pads.
- Alcon pad reference: 3451/42 area 49.2cm<sup>2</sup> per caliper, 3451/47 area 56.0cm<sup>2</sup> per caliper, 14mm thick, 63.4mm long.

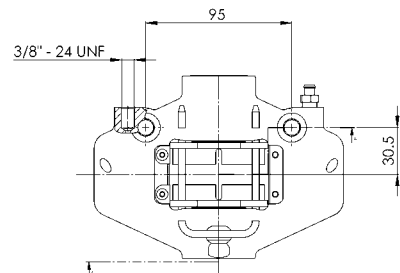
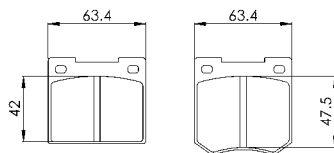
### Part numbers and handing

Disc thickness	Position	Ø28.6 pistons	Ø34.9 pistons
9.6 – 10.0	LH leading/trailing	CRR300/10-29L	CRR300/10-35L
	RH leading/trailing	CRR300/10-29R	CRR300/10-35R

### Replacement parts

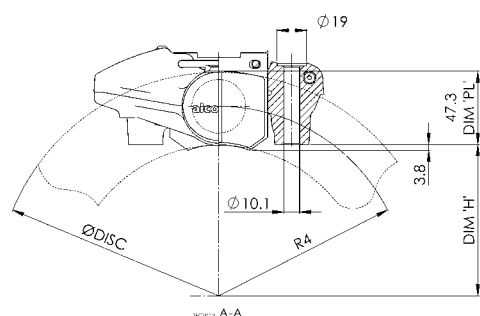
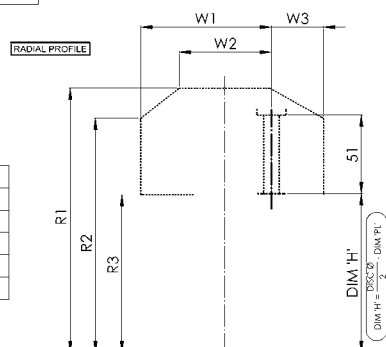
Item	Ø28.6 pistons	Ø34.9 pistons
Seal Kit, axle set,	CSK29E602	CSK35E900
Pistons, ALUMINIUM, each	PAS4471X732	PAS3435X556
Pistons, STAINLESS STEEL, each	PSS2926X600	PSS3526X600
AKB Springs, each	SSC3435X623	SSC3435X609
Wear Plates, caliper set	ASK4406X100.2	
Bleed Screw, each	FSB0080X008	
Inlet Adapter, 3/8 UNF male to male	FSA3435X630	
Copper gasket	FCG0080X015	

### Installation dimensions



	W1	W2	W3
CRR300/10	85.0	60.0	33.9

	Ø DISC		
	Ø250	Ø290	Ø300
R1	147.4	166.8	171.6
R2	127.0	147.0	152.0
R3	77.5	97.5	102.5
R4	103.0	123.0	128.0



# advantage range CLH304

## 4-piston lug mount H-type caliper

### Part numbers and handing

Disc thickness	Position	Ø38.1/41.3 pistons
22.9 - 25.4	LH trailing	CLH304/25-38/41LT
	RH trailing	CLH304/25-38/41RT
	LH leading	CLH304/25-38/41LL
	RH leading	CLH304/25-38/41RL

### Replacement parts

Item	Ø38.1/41.3 pistons
Seal Kit, axle set	CSK3841E900
Pistons, ALUMINIUM, each	PAS4438X551 PAS4441X551
Pistons, STAINLESS STEEL, each	PSS3828X600 PSS4128X600
AKB Springs, each	SSC3435X609
Bridge Pipe (each)	PSC4463X652
Bleed Screw, each	FSB0080X008
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015

**Applications:**  
Rally rear, Single seater, Saloon car rear, Hill climb



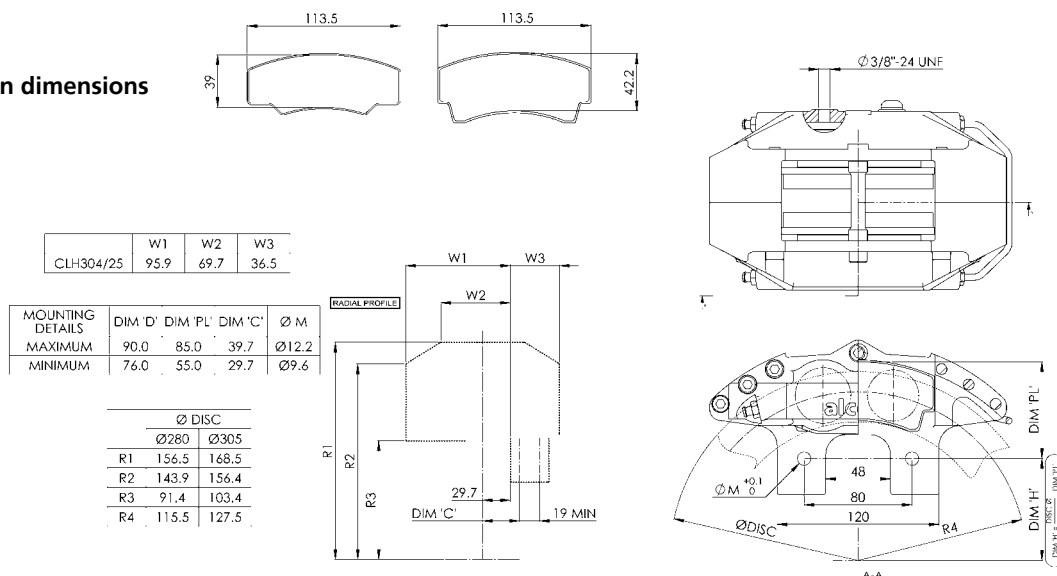
### Key features and benefits

- Supplied with lugs un-machined so customers can machine their own mounting holes within the limits specified below
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid
- 2Kg Anti-knock back springs
- Remove pad retainer bolt and sleeve to change pads
- Stainless steel fluid transfer pipe

### Specifications

- Disc diameter range: Ø250 to 304mm.
- Disc thickness range: 22.9 to 25.4mm.
- Fluid inlet 3/8-24 UNF (-3) female.
- Dry weight 2.2kg excluding pads.
- Alcon pad reference: 4463/39 area 80cm<sup>2</sup> per caliper, 4463/42 area 92cm<sup>2</sup> per caliper, 16mm thick, 113.5mm long.

### Installation dimensions





# advantage range CRH304

## 4-piston radial mount caliper

### Applications:

Rally rear, Single seater, Saloon car rear, Hill climb



### Key features and benefits

- Radial mount for maximum rigidity and firm, consistent pedal.
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- 2Kg Anti-knock back springs.
- Remove pad retainer bolt and sleeve to change pads.
- Stainless steel fluid transfer pipe.

### Specifications

- Disc diameter range: Ø250 to 304mm.
- Disc thickness range: 25.4 to 28mm.
- Fluid inlet 3/8"-24 UNF (-3) male.
- Dry weight 1.9kg excluding pads.
- Alcon pad reference: 4463/39 area 80cm<sup>2</sup> per caliper, 4463/42 area 92cm<sup>2</sup> per caliper, 16mm thick, 113.5mm long.

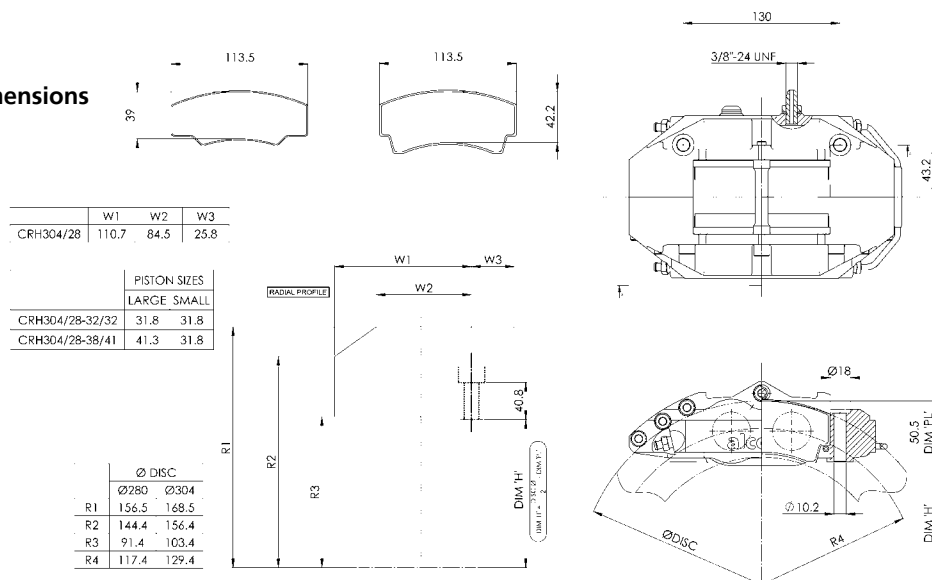
### Part numbers and handing

Disc thickness	Position	Ø38.1/41.3 pistons	Ø31.8/31.8 pistons
25.4-28	LH trailing	CRH304/28-38/41LT	CRH304/28-32/32LT
	RH trailing	CRH304/28-38/41RT	CRH304/28-32/32RT
	LH leading	CRH304/28-38/41LL	CRH304/28-32/32LL
	RH leading	CRH304/28-38/41RL	CRH304/28-32/32RL

### Replacement parts

Item	Ø38.1/41.3 pistons	Ø31.8/31.8 pistons
Seal Kit, axle set	CSK3841E900	CSK3232E900
Pistons, ALUMINIUM, each	PAS4438X551 PAS4441X551	PAS4471X741
Pistons, STAINLESS STEEL, each	PSS3828X600 PSS4128X600	PSS3228X600
AKB Springs, each	SSC3435X608	
Bridge Pipe (each)	PSC4463X653	
Bleed Screw, each	FSB0080X008	
Inlet Adapter, 3/8 UNF male to male	FSA3435X630	
Copper gasket	FCG0080X015	
Copper gasket	FCG0080X015	

### Installation dimensions



# advantage range CRB332

## 4-piston radial mount B-type caliper

### Part numbers and handing

Disc thickness	Position	Ø38.1/41.3 pistons	Ø31.8/31.8 pistons
26-30mm	LH trailing	CRB332/30-38/41LT	CRB332/30-32/32LT
	RH trailing	CRB332/30-38/41RT	CRB332/30-32/32RT
	LH leading	CRB332/30-38/41LL	CRB332/30-32/32LL
	RH leading	CRB332/30-38/41RL	CRB332/30-32/32RL
28-32mm	LH trailing	CRB332/32-38/41LT	CRB332/32-32/32LT
	RH trailing	CRB332/32-38/41RT	CRB332/32-32/32RT
	LH leading	CRB332/32-38/41LL	CRB332/32-32/32LL
	RH leading	CRB332/32-38/41RL	CRB332/32-32/32RL

### Replacement parts

Item	Ø38.1/41.3 pistons	Ø31.8/31.8 pistons
Seal Kit, axle set,	CSK3841E900	CSK3232E900
Pistons, ALUMINIUM each	PAS4438X551 PAS4441X551	PAS4471X741
Pistons, STAINLESS STEEL, each	PSS3828X600 PSS4128X600	PSS3228X600
AKB Springs, each	SSC3435X609	SSC3435X623
Wear Plates, caliper set	ASK4489X549.4	
Bridge Pipe, CRB332/30	PSC3468X672	
Bridge Pipe, CRB332/32	PSC3468X673	
Bleed Screw, each	FSB0080X008	
Inlet Adapter, 3/8 UNF male to male	FSA3435X630	
Copper gasket	FCG0080X015	

**Applications:**  
Rally rear, Group N+, Touring Car, general race use.



### Key features and benefits

- Radial mounting for maximum rigidity and firm, consistent pedal.
- Differential piston diameters that minimise pad taper wear.
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Fixed pad retainer bars to increase stiffness, remove caliper to change pads.

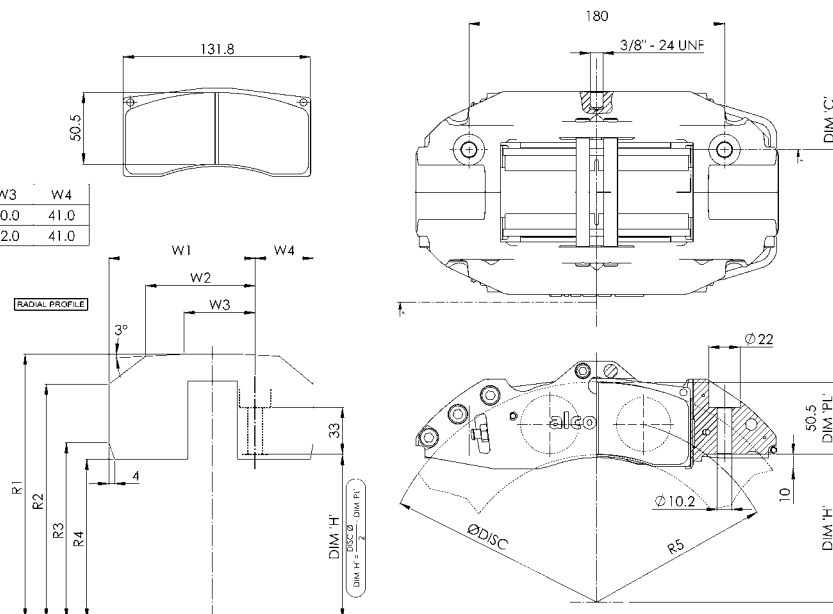
### Specifications

- Disc diameter range: Ø285 to 332mm.
- Disc thickness: CRB332/30 26-30mm, CRB332/32 28-32mm.
- Fluid inlet 3/8-24 UNF (-3) female.
- Dry weight 2.40kg excluding pads.
- Alcon pad reference: 4441 or 4423, 16mm thick, 132mm long, 50mm deep, area 133cm<sup>2</sup> per caliper.

### Installation dimensions

	DIM 'C'	W1	W2	W3	W4
CRB332/30	30	103.0	77.0	50.0	41.0
CRB332/32	31	105.0	79.0	52.0	41.0

	Ø DISC		
	Ø285	Ø310	Ø332
R1	164.5	175.6	186.6
R2	141.6	153.7	165.5
R3	101.6	113.0	124.4
R4	89.2	101.1	112.7
R5	117.2	129.3	141.1



# advantage range CLR280

## 2-piston lug mount R-type caliper

### Applications:

Rally rear, single seater, saloon car rear, hill climb



### Key features and benefits

- Supplied with lugs un-machined so customers can machine their own mounting holes within the limits specified below
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid
- 2Kg Anti-knock back springs
- Pad retaining wire for fast pad change
- Stainless steel fluid transfer pipe

### Specifications

- Disc diameter range: Ø250 to 280mm
- Disc thickness range: 9.6 to 22.0mm
- Fluid inlet 3/8-24 UNF (-3) female
- Dry weight 1.35kg excluding pads
- Alcon pad reference: 3451/42 area 49.2cm<sup>2</sup> per caliper, 3451/47 area 56.0cm<sup>2</sup> per caliper, 14mm thick, 63.4mm long

### Part numbers and handing

Disc thickness	Position	Ø34.9 pistons	Ø44.45 pistons
9.6 – 11.1	LH trailing	CLR280/11-35LT	N/A
	RH trailing	CLR280/11-35RT	
	LH leading	CLR280/11-35LL	
	RH leading	CLR280/11-35RL	
20.7-22.9	LH trailing	N/A	CLR280/21-44LT
	RH trailing		CLR280/21-44RT
	LH leading		CLR280/21-44LL
	RH leading		CLR280/21-44RL

### Replacement parts

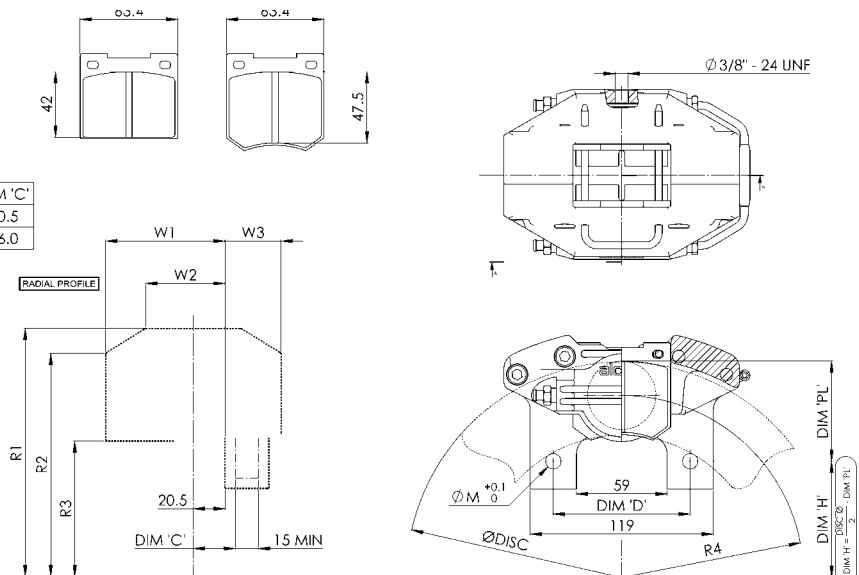
Item	Ø34.9 pistons	Ø44.45 pistons
Seal Kit, axle set	CSK35D900	CSK45E900
Pistons, ALUMINIUM (each)	PAS3435X556	PAS4448X553
Pistons, STAINLESS STEEL (each)	PSS3526X600	PSS4426X600
AKB Springs (each)	SSC3435X609	
Bridge Pipe CLR280/11 (each)	PSC3451X651	
Bridge Pipe CLR280/21 (each)	PSC3451X650	
Bleed Screw (each)	FSB0080X008	
Inlet Adapter, 3/8 UNF male to male	FSA3435X630	
Copper gasket	FCG0080X015	

### Installation dimensions

	W1	W2	W3	DIM 'C'
CLR280/11	77.5	51.5	36.5	20.5
CLR280/21	88.5	62.5	36.5	26.0

MOUNTING DETAILS	DIM 'D'	DIM 'PL'	Ø M
MAXIMUM	86.0	47.0	Ø9.6
MINIMUM	90.0	69.0	Ø12.2

	Ø DISC	
	Ø250	Ø280
R1	148.1	161.4
R2	130.4	145.4
R3	73.0	88.0
R4	103.3	118.3



# advantage range CRB343

## 4-piston radial mount B-type caliper

### Part numbers and handing

Disc thickness	Position	Ø38.1/41.3 pistons	Ø31.8/31.8 pistons
28-32mm	LH trailing	CRB343/32-38/41LT	CRB343/32-32/32LT
	RH trailing	CRB343/32-38/41RT	CRB343/32-32/32RT
	LH leading	CRB343/32-38/41LL	CRB343/32-32/32LL
	RH leading	CRB343/32-38/41RL	CRB343/32-32/32RL

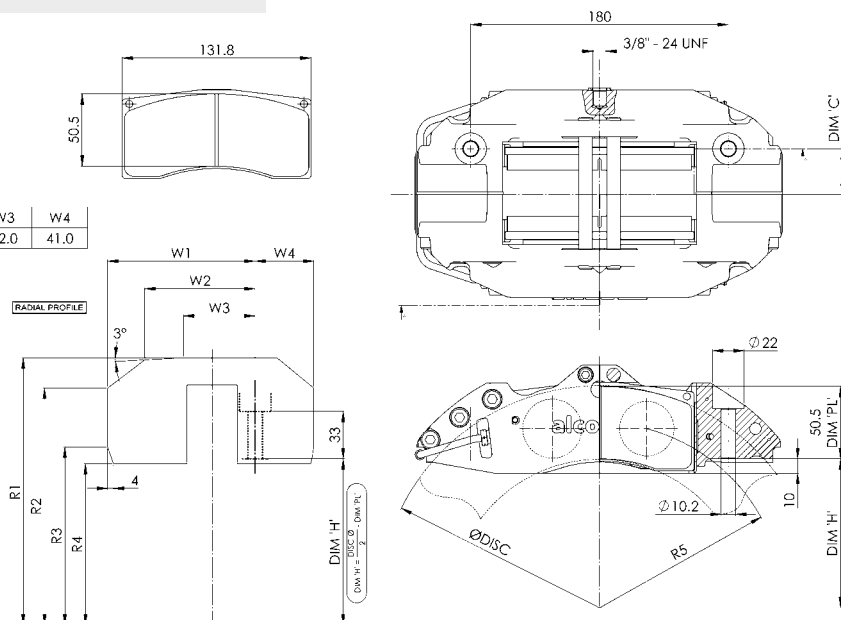
### Replacement parts

Item	Ø38.1/41.3 pistons	Ø31.8/31.8 pistons
Seal Kit, axle set,	CSK3841E900	CSK3232E900
Pistons, ALUMINIUM each	PAS4438X551 PAS4441X551	PAS4471X741
Pistons, STAINLESS STEEL, each	PSS3828X600 PSS4128X600	PSS3228X600
AKB Springs, each	SSC3435X609	SSC3435X623
Wear Plates, caliper set	ASK4489X549.4	
Bridge Pipe	PSC3468X673	
Bleed Screw, each	FSB0080X008	
Inlet Adapter, 3/8 UNF male to male	FSA3435X630	
Copper gasket	FCG0080X015	

### Installation dimensions

	DIM 'C'	W1	W2	W3	W4
CRB343/32	31	108	82	52.0	41.0

	Ø DISC	
	Ø332	Ø343
R1	187	194.5
R2	166	171.5
R3	124	129.5
R4	113	118.5
R5	141	146



**Applications:**  
Rally, Group N+, Touring car and general race use



### Key features and benefits

- Radial mounting for maximum rigidity and firm, consistent pedal.
- Differential piston diameters that minimise pad taper wear.
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Fixed pad retainer bars to increase stiffness, remove caliper to change pads

### Specifications

- Disc diameter range: Ø280 to 343mm
- Disc thickness range: 28 to 32mm
- Fluid inlet 3/8-24 UNF (-3) female
- Dry weight 2.40kg excluding pads
- Alcon pad reference: 4441 or 4423, 16mm thick, 132mm long, 50mm deep, area 133cm<sup>2</sup> per caliper

# advantage range CRB356

## 4-piston radial mount B-type caliper

**Applications:**  
General rasce use



### Key features and benefits

- Radial mount for maximum rigidity and firm, consistent pedal.
- Differential piston diameters that minimise pad taper wear.
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Central bridge with facility for cooling duct to direct air across the caliper to cool the outer half.

### Specifications

- Disc diameter range: Ø300 to 355mm.
- Disc thickness range: 28 to 32mm.
- Fluid inlet 3/8-24 UNF (-3) female.
- Dry weight 2.40kg excluding pads.
- Alcon pad reference: 4441 or 4423, 16mm thick, 132mm long, 50mm deep, area 133cm<sup>2</sup> per caliper.

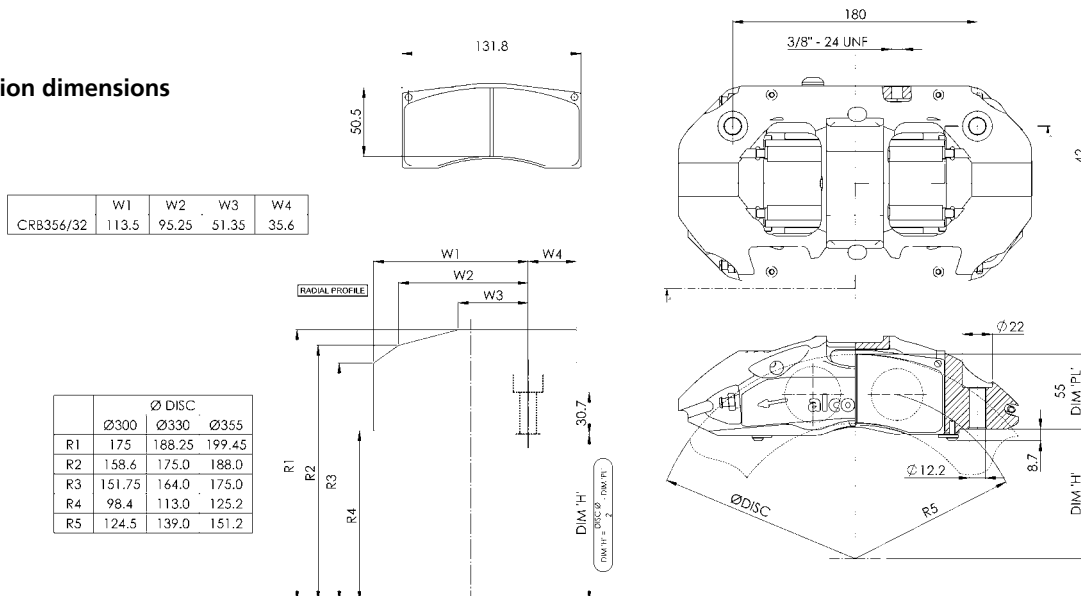
### Part numbers and handing

Disc thickness	Position	Ø38.1/41.3 pistons	Ø31.8/31.8 pistons
28-32mm	LH trailing	CRB356/32-38/41LT	CRB356/32-32/32LT
	RH trailing	CRB356/32-38/41RT	CRB356/32-32/32RT
	LH leading	CRB356/32-38/41LL	CRB356/32-32/32LL
	RH leading	CRB356/32-38/41RL	CRB356/32-32/32RL

### Replacement parts

Item	Ø38.1/41.3 pistons	Ø31.8/31.8 pistons
Seal Kit, axle set,	CSK3841E900	CSK3232E900
Pistons, ALUMINIUM each	PAS4438X551 PAS4441X551	PAS4471X741
Pistons, STAINLESS STEEL, each	PSS3828X600 PSS4128X600	PSS3228X600
AKB Springs, each	SSC3435X609	SSC3435X623
Wear Plates, caliper set	ASK4468X722.4	
Bridge Pipe, each	PSC4423X657	
Bleed Screw, each	FSB0080X008	
Inlet Adapter, 3/8 UNF male to male	FSA3435X630	
Copper gasket	FCG0080X015	

### Installation dimensions



# advantage range CRK355

## 4-piston radial mount K-type caliper

### Applications:

Rally, Group N+, Touring car and general race use

### Part numbers and handing

Disc thickness	Position	Ø38.1/38.1 pistons	Ø41.3/44.5 pistons
26-28mm	LH trailing	CRK355/28-38/38LT	N/A
	RH trailing	CRK355/28-38/38RT	
	LH leading	CRK355/28-38/38LL	
	RH leading	CRK355/28-38/38RL	
28-32mm	LH trailing	N/A	CRK355/32-41/44LT
	RH trailing		CRK355/32-41/44RT
	LH leading		CRK355/32-41/44LL
	RH leading		CRK355/32-41/44RL

### Replacement parts

Item	Ø38.1/38.1 pistons	Ø41.3/44.5 pistons
Seal Kit, axle set,	CSK3838E751	CSK4145E751
Pistons, ALUMINIUM each	PAH3828X400	PAS4441X555 PAS4448X551
Pistons, STAINLESS STEEL, each	N/A	PSS4133X600 PSS4433X600
AKB Springs, each	SSC3435X609	
Wear Plates, caliper set	ASK4476X526.4	
Bridge Pipe, CRK355/28	PSC4476X673	
Bridge Pipe, CRK355/32	PSC4476X655	
Bleed Screw, each	FSB0080X008	
Inlet Adapter, 3/8 UNF male to male	FSA3435X630	
Copper gasket	FCG0080X015	



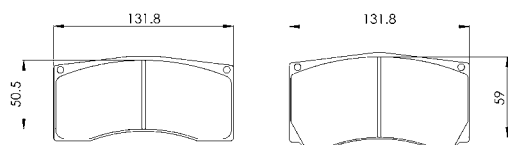
### Key features and benefits

- Radial mounting for maximum rigidity and firm, consistent pedal.
- Differential piston diameters that minimise pad taper wear.
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Remove pad retainer bolt and sleeve to change pad.

### Specifications

- Disc diameter range: Ø295 to 355mm
- Disc thickness range: CRK355/28 26 to 28mm. CRK355/32 28 to 32mm
- Fluid inlet 3/8-24 UNF (-3) female
- Dry weight 2.70kg excluding pads
- Alcon pad reference: 4441, 20mm thick, 132mm long, 50mm deep, area 133cm<sup>2</sup> per caliper or 4476, 20mm thick, 132mm long, 59mm deep, area 152cm<sup>2</sup> per caliper

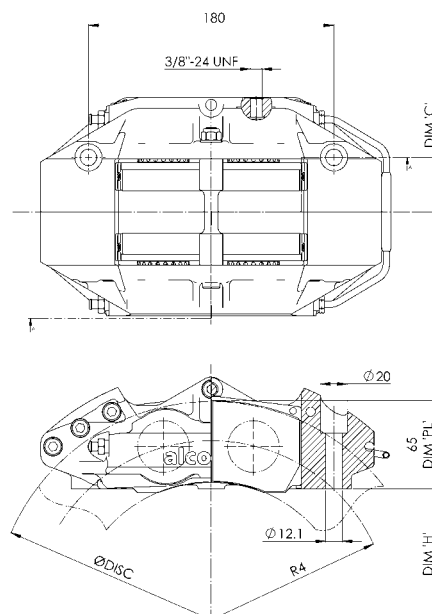
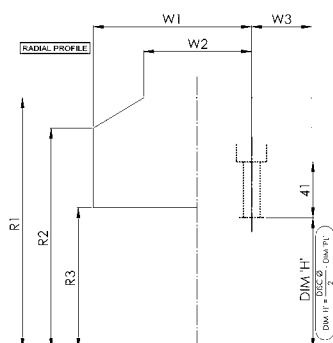
### Installation dimensions



	DIM 'C'	W1	W2	W3
CRK355/28	40.0	116.0	79.0	44.0
CRK355/32	42.0	120.0	83.0	44.0

	PISTON SIZES	
	LARGE	SMALL
CRK355/28-38/38	38.1	38.1
CRK355/32-41/44	41.3	44.5

	Ø DISC	
	Ø320	Ø355
R1	184.0	200.0
R2	161.7	177.0
R3	103.4	120.0
R4	131.25	148.2



# advantage range CR6380

## 6-piston radial mount caliper

### Applications:

Touring car, one make series and general race use



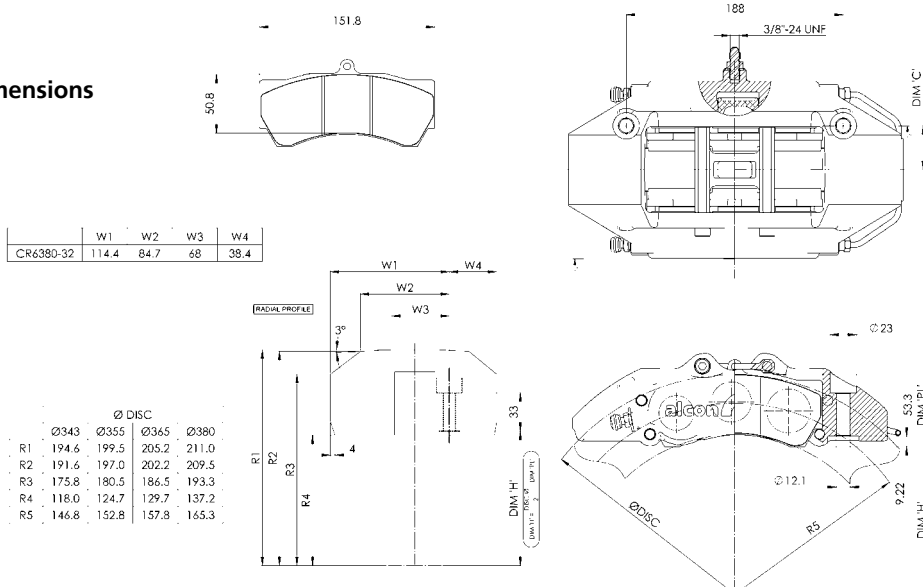
### Key features and benefits

- Radial mounting for maximum rigidity and firm, consistent pedal.
- Differential piston diameters that minimise pad taper wear
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Hard stainless steel pad support and abutment pins
- Bolted pad retainer to increase stiffness, remove retainer to change pads

### Specifications

- Disc diameter range: Ø343 to 380mm
- Disc thickness range: 30 to 32mm
- Fluid inlet 3/8"-24 UNF (-3) male
- Dry weight 3.50kg excluding pads
- Alcon pad reference: 4497, 18mm thick, 152mm long, 50.8mm deep, area 148cm<sup>2</sup> per caliper

### Installation dimensions



### Part numbers and handing

Disc thickness	Position	Ø30.2/34.9/38.1 pistons
30-32mm	LH trailing	CR6380/32-30/35/38LT
	RH trailing	CR6380/32-30/35/38RT
	LH leading	CR6380/32-30/35/38LL
	RH leading	CR6380/32-30/35/38RL

### Replacement parts

Item	Ø30.2/34.9/38.1
Seal Kit, axle set,	CSK303538E900
Pistons, ALUMINIUM, each	PAS4471X721 PAS4471X750 PAS4471X760
Pistons, STAINLESS STEEL, each	PSS2730X600 PSS3530X600 PSS3830X600
AKB Springs, each	SSC3435X608 (x2) SSC3435X602 (x4)
Bridge Pipe, each	PSC4497X661
Bleed Screw, each	FSB0080X008
Inlet Adapter, 3/8 UNF male to male	FSA3435X625
Copper gasket	FCG0080X015



# advantage range CR6400

## 6-piston radial mount caliper

### Part numbers and handing

Disc thickness	Position	Ø27.0/31.8/38.1 pistons
34-35.6mm	LH trailing	CR6400/35-27/32/38LT
	RH trailing	CR6400/35-27/32/38LT
	LH leading	CR6400/35-27/32/38LT
	RH leading	CR6400/35-27/32/38LT

**Applications:**  
GT and general race use



### Replacement parts

Item	Ø27.0/31.8/38.1 pistons
Seal Kit, axle set	CSK273238E900
Pistons, ALUMINIUM, each	PAS4471X701 PAS4471X743 PAS4471X761
Pistons, STAINLESS STEEL, each	PSS2733X600 PSS3233X600 PSS3833X600
AKB Springs, each	SSC3435X623 (x2) SSC3435X616 (x2) SSC3435X609 (x2)
Bridge Pipe (each)	PSC4489X676
Bleed Screw, each	FSB3430X689
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG3430X015

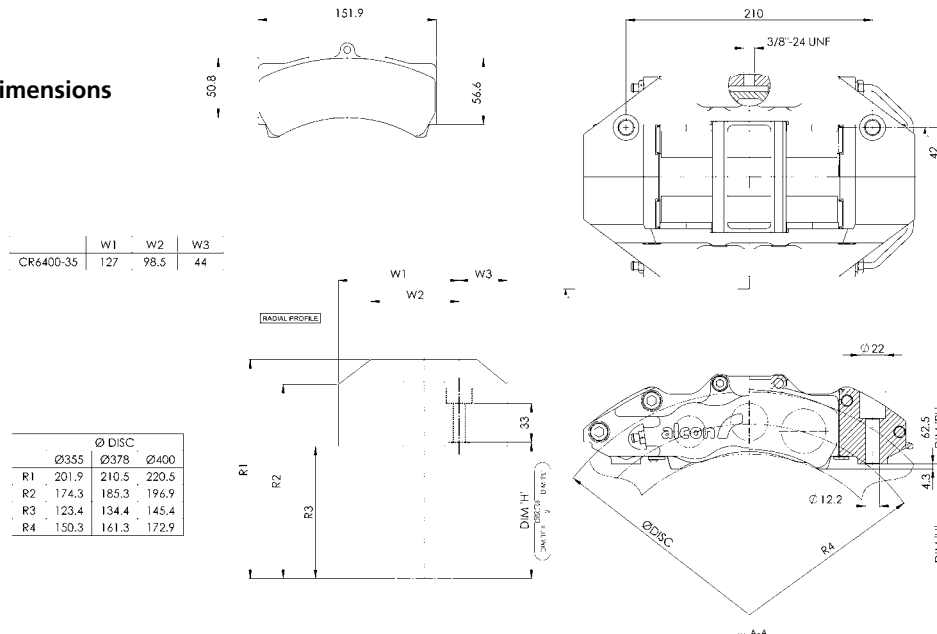
### Key features and benefits

- Billet aerospace grade aluminium alloy provides high strength and light weight.
- Differential piston diameters that minimise pad taper wear.
- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Bolted pad retainer to increase stiffness, remove retainer to change pads.

### Specifications

- Disc diameter range: Ø355 to 400mm.
- Disc thickness range: 34 to 35.6mm.
- Fluid inlet 3/8"-24 UNF (-3) female.
- Dry weight 3.1kg excluding pads.
- Alcon pad reference: 4489, 25mm thick, 152mm long, 50.8mm deep, area 152cm<sup>2</sup> per caliper or 54.0mm deep, area 155cm<sup>2</sup> per caliper.

### Installation dimensions







# MOTORSPORT RANGE

## The basics

Alcon's Motorsport Range calipers are aimed at motorsport professionals and teams competing on a global level. They represent the pinnacle of our technical expertise and are revered throughout the motorsport world. This range has led to an incredible number of wins across the motorsport disciplines, and serves as the flagship to our range. We work

with team engineers to provide the perfect solution for their individual needs and, where this can't be done with our existing product base, can develop new designs to fulfil the brief.

For more information about any of our products, or to order, please contact us.

## Applications

Motorsport Range calipers

are available for a number of applications including, but not limited to:

- WRC.
- R5 Rally.
- Rally Raid.
- World, Global and European Rallycross.
- WTCC and CTCC.
- GT.
- Japanese Championship Super Formula.



# GUIDE part numbering

**C A R 2349 H 24 XE S LL**

C: CALIPER

A: ALUMINIUM

I: IRON

R: RADIAL FIXING

L: LUG FIXING

CALIPER SERIES

HANDING

LL: LEFT LEADING

LT: LEFT TRAILING

RL: RIGHT LEADING

RT: RIGHT TRAILING

ABUTMENT MATERIAL

A: ALUMINIUM

S: STEEL

T: TITANIUM

Z: NO ABUTMENTS

## PISTON DIAMETERS (nominal)

A: 28.6/28.6	N: 4.1/3/47.6	YD: 27/31.8/34.9	AW: 31.8/34.9/41.3
B: 31.8/31.8	P: 4.4/5/44.5	AA: 25.4 (x12)	AN: 28.6/31.8/41.3
C: 31.8/34.9	R: 4.4/5/46.8	AB: 25.4 (x6)	AP: 28.6/31.8
D: 34.9/34.9	S: 4.4/5/47.6	AC: 25.4 (x4)/22.2 (x2)	AR: 28.6/34.9
E: 34.9/38.1	T: 22/25.4/30.2	AD: 30.2 (x6)	AS: 30.2 (x8)
F: 34.9/41.3	U: 36/38	AE: 28.6 (x2)/34.9 (x2)	AT: 27/28.6
G: 38.1/38.1	V: 22.2/25.4	AF: 26/31.8/36	AU: 33.3/38.1
H: 38.1/41.3	W: 33.3/38.1/44.5	AG: 28.6/33.3/36	AV: 48.0/48.0
J: 38.1/44.5	X: OTHER	AH: 40.0 (x4)	AW: 30.2/33.3
K: 41.3/41.3	Y: 27/31.8/38.1	AJ: 30.2/34.9	
L: 41.3/44.5	Z: 30.2/34.9/41.3	AK: 27.0/30.2	
M: 41.3/46.8	ZG: 30.2/34.9/38.1	AL: 28.6 (x8)	

## PISTON SPEC

	A: ALUMINIUM	D: CLIP IN INSERT	T: TITANIUM	V: TITANIUM (VENTILATED)	X: CLIP-IN INSERT	S: STAINLESS STEEL	COATING
ALUMINIUM							ANODISED (NO DESIGNATION)
TITANIUM							E: LOW FRICTION 1 A: LOW FRICTION 2
STAINLESS STEEL							E: LOW FRICTION

## SERIAL NUMBER

00-99



# motorsport range **CAR1249ZG06**

## 6-piston radial mount caliper

### Part numbers and handing

Disc thickness	Position	Ø30.2/34.9/38.1 pistons
30-32mm	LH trailing	CAR1249ZG06PESLT
	RH trailing	CAR1249ZG06PESRT
	LH leading	N/A
	RH leading	

### Replacement parts

Item	Ø30.2/34.9/38.1 pistons
Seal Kit, axle set,	CSK303538E751
Pistons, STAINLESS STEEL, each	PSV3027X250E PSV3527X250E PSV3827X250E
AKB Springs, each	SSC3435X609 (x4) SSC3435X623 (x2)
Wear Plates, each	PSC4423X300L (x2) PSC4423X300R (x2)
Bleed Screw, each	FSB3430X371
O Seal	SER0080X445
Copper gasket	FCG0080X015

**Applications:**  
Trophy Truck, Rally Raid



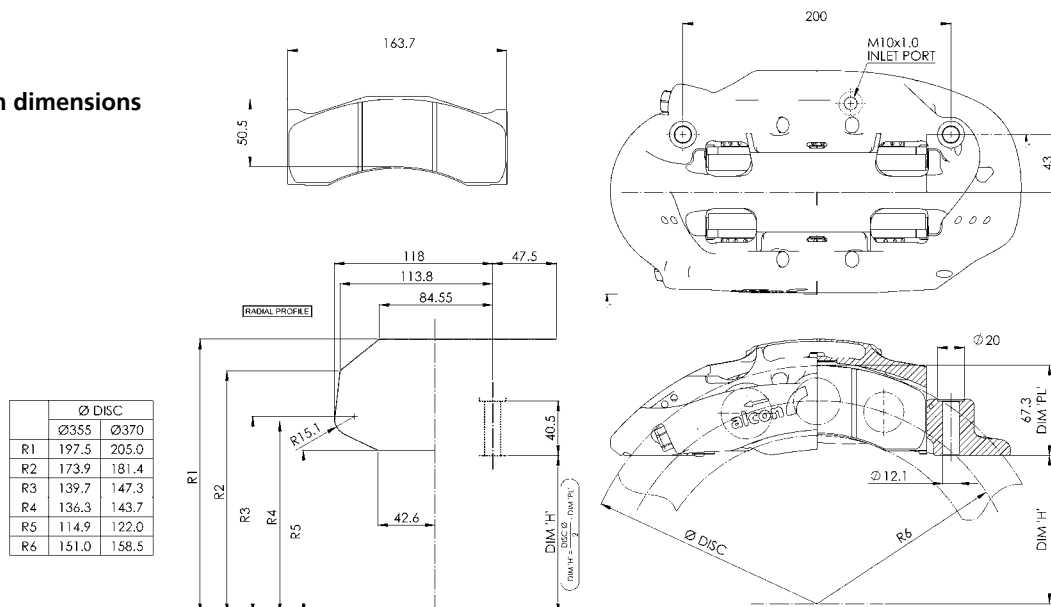
### Key features and benefits

- Cross drilled stainless steel pistons with wear resistant coating.
- Internally ported, no external fluid transfer pipe.
- Bleed screws recessed for protection and fitted with sealed caps to keep them clean.
- Fluid inlet positioned in the underside of the housing for protection.
- Central bridge with facility for cooling duct to direct air across the caliper to cool the outer half.

### Specifications

- Disc diameter range: Ø355 to 370mm.
- Disc thickness range: 30 to 32mm.
- Fluid inlet M10x1 female.
- Dry weight 2.53kg excluding pads.
- Alcon pad reference: 4494, 18mm thick, 164mm long, 50.5mm deep, area 164cm<sup>2</sup> per caliper.

### Installation dimensions



# motorsport range **CAR2349AE08**

## 4-piston radial mount caliper

**Applications:**  
GT rear



### Key features and benefits

- Radial mounting for maximum rigidity and firm, consistent pedal.
- Slotted titanium pistons with wear resistant coating.
- 2Kg Anti-knock back springs.
- Pad retaining wire for fast pad change.

### Specifications

- Disc diameter range: Ø330 to 355mm.
- Disc thickness range: 28 to 32mm.
- Fluid inlet 3/8"-24 UNF (-3) male.
- Dry weight 2.15kg excluding pads.
- Alcon pad reference: 4441 or 4423, 20.5mm thick, 132mm long, 50mm deep, area 133cm<sup>2</sup> per caliper.

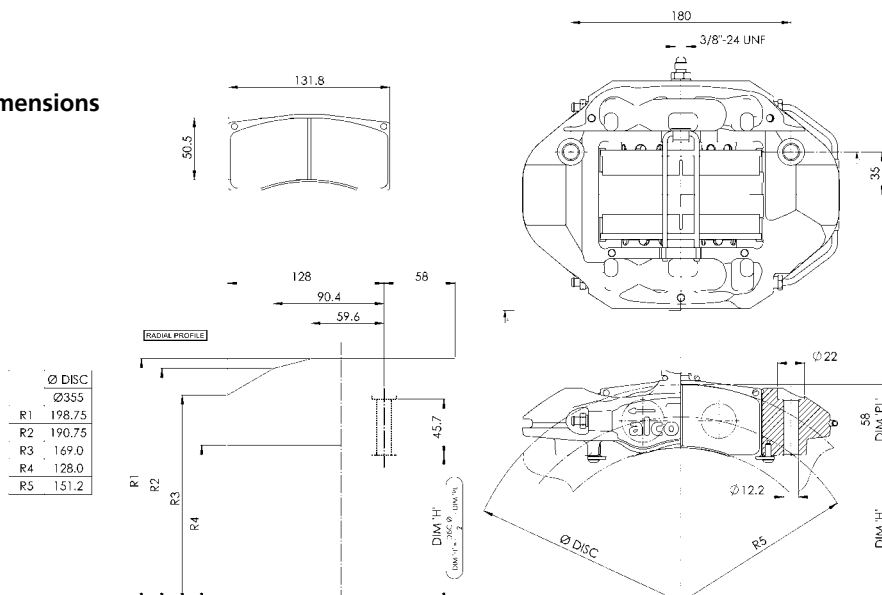
### Part numbers and handing

Disc thickness	Position	Ø28.6/34.9 pistons
28-32mm	LH trailing	CAR2349AE08VESLT
	RH trailing	CAR2349AE08VESRT
	LH leading	CAR2349AE08VESLL
	RH leading	CAR2349AE08VESRL

### Replacement parts

Item	Ø28.6/34.9 pistons
Seal Kit, axle set,	CSK2935E751
Pistons, TITANIUM, each	PTH2934X150E PTH3534X150E
AKB Springs, each	SSC3435X616 (x2) SSC3435X623 (x2)
Wear Plates, caliper set	PSC4423X100
Bridge Pipe, each	PSC4423X655
Bleed Screw, each	FSB3430X689
O Seal	SER0080X176
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015

### Installation dimensions



# motorsport range CAR2349H/B35

## 4-piston radial mount B-type caliper

### Applications:

R5 Rally, Global Rally X

### Part numbers and handing

Disc thickness	Position	Ø38.1/41.3 pistons	Ø31.8/31.8 pistons
29-33mm	LH trailing	CAR2349H35SSLT	CAR2349B35SSLT
	RH trailing	CAR2349H35SSRT	CAR2349B35SSRT
	LH leading	CAR2349H35SSLL	CAR2349B35SSLL
	RH leading	CAR2349H35SSRL	CAR2349B35SSRL

### Replacement parts

Item	Ø38.1/41.3 pistons	Ø31.8/31.8 pistons
Seal Kit, axle set,	CSK3841E751	CSK3232E751
Pistons, STAINLESS STEEL, each	PSS3827X600 PSS4127X600	PSS3227X600
AKB Springs, each	SSC3435X609 SSC4423X616	SSC3435X623
Wear Plates, caliper set	ASK4468X722.4	
Bridge Pipe, each	PSC4423X656	
Bleed Screw, each	FSB3430X371	
Inlet Adapter, 3/8 UNF male to male	FSA3435X630	
Copper gasket	FCG3430X015	



### Key features and benefits

- Stainless steel pistons to reduce heat transfer to brake fluid.
- High temperature seals.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Central bridge with facility for cooling duct to direct air across the caliper to cool the outer half.

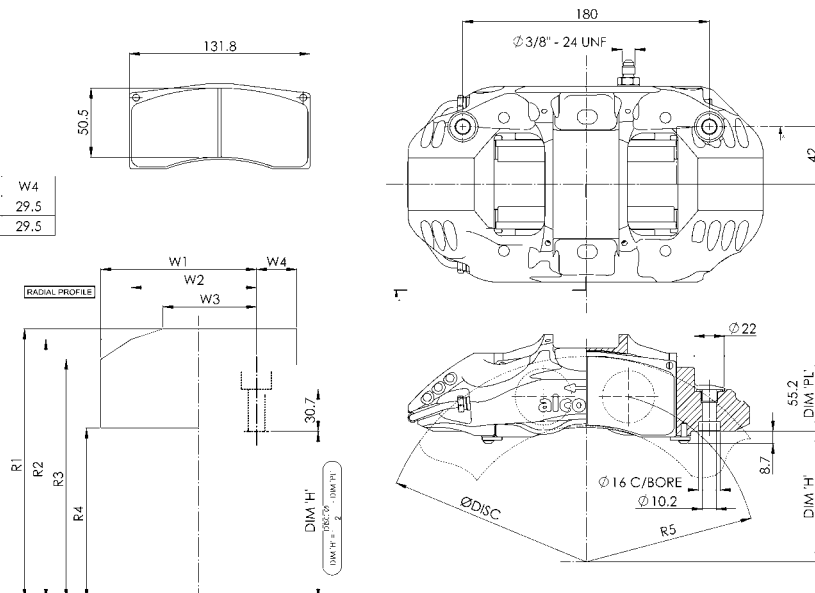
### Specifications

- Disc diameter range: Ø300 to 355mm.
- Disc thickness range: 29 to 33mm.
- Fluid inlet 3/8-24 UNF (-3) male.
- Dry weight 2kg excluding pads.
- Alcon pad reference: 4441 or 4423, 16mm thick, 132mm long, 50mm deep, area 129cm<sup>2</sup> per caliper.

### Installation dimensions

	W1	W2	W3	W4
CAR2349H33SS	113.5	91.5	68.2	29.5
CAR2349B33SS	113.5	91.5	68.2	29.5

	Ø DISC		
	Ø300	Ø330	Ø355
R1	173.0	186.4	197.7
R2	163.0	177.0	190.0
R3	153.0	165.0	175.5
R4	98.4	113.0	125.2
R5	124.4	139.0	151.2



# motorsport range **CAR2349H26**

## 4-piston radial mount monobloc caliper

**Applications:**  
WRC front Tarmac  
GRX



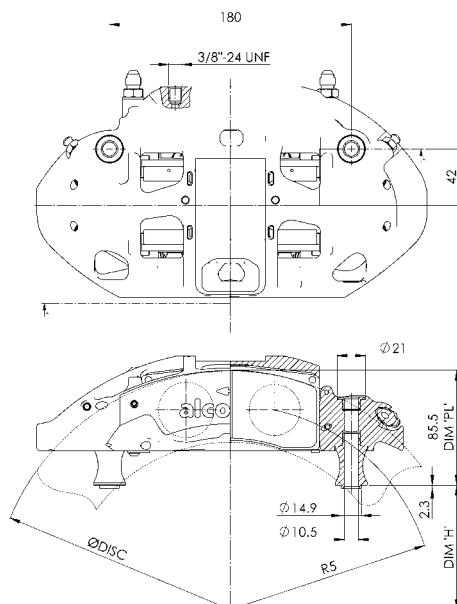
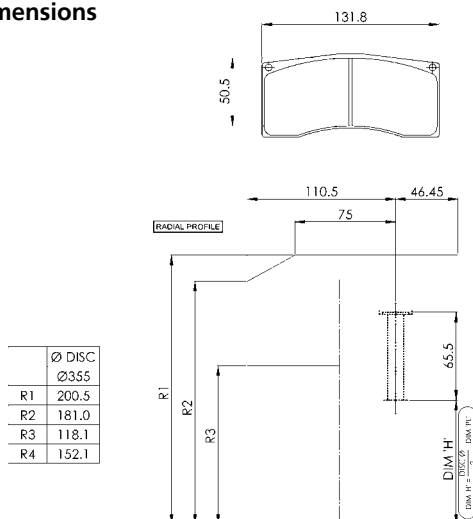
### Key features and benefits

- Integrated water cooling circuit that reduces caliper temperature by as much as 50°C
- Slotted titanium pistons with wear resistant coating
- Titanium inserts in piston ends provide thermal break to reduce heat transfer to fluid
- Internally ported, no external fluid transfer pipe
- 2Kg Anti-knock back springs
- Hard stainless steel wear plates
- Precision titanium bushes in both ends of the mounting holes
- Central bridge with facility for cooling duct to direct air across the caliper to cool the outer side

### Specifications

- Disc diameter range: Ø355 max
- Disc thickness range: 32 to 36mm
- Fluid inlet 3/8-24 UNF (-3) female
- Dry weight 2.1kg excluding pads
- Alcon pad reference: 4441 or 4423, 16mm thick, 132mm long, 50mm deep, area 129cm<sup>2</sup> per caliper

### Installation dimensions



### Part numbers and handing

Disc thickness	Position	Ø38.1/41.3 pistons
32-36mm	LH	CAR2349H26XESL
	RH	CAR2349H26XESR

### Replacement parts

Item	Ø38.1/41.3 pistons
Seal Kit, axle set	CSK3841E751
Pistons, TITANIUM, each	PTH3826X150E, PTH4126X151E
AKB Springs, each	SSC3435X609 (x2), SSC3435X616 (x2)
Wear Plates, each	PSC4423X300L (x2), PSC4423X300R (x2)
Bleed Screw, each	FSB3430X371
O Seal	SER0080X445
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015
Cooling Adapter, 3/8 male to 7/16 male	FAA3430X539



# motorsport range **CAR2349AW20**

## 4-piston radial mount caliper

**Applications:**  
WRC rear

### Part numbers and handing

Disc thickness	Position	Ø30.2/33.3 pistons
28-32mm	LH trailing	N/A
	RH trailing	
	LH leading	CAR2349AW20XESLL
	RH leading	CAR2349AW20XESRL

### Replacement parts

Item	Ø30.2/33.3 pistons
Seal Kit, axle set	CSK3033E751
Pistons, TITANIUM, each	PTH3027X150E PTH3327X150E
AKB Springs, each	SSC3435X623
Wear Plates, each	PSC4423X300L (x2) PSC4423X300R (x2)
Bleed Screw, each	FSB3430X371
O Seal	SER0080X445
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015



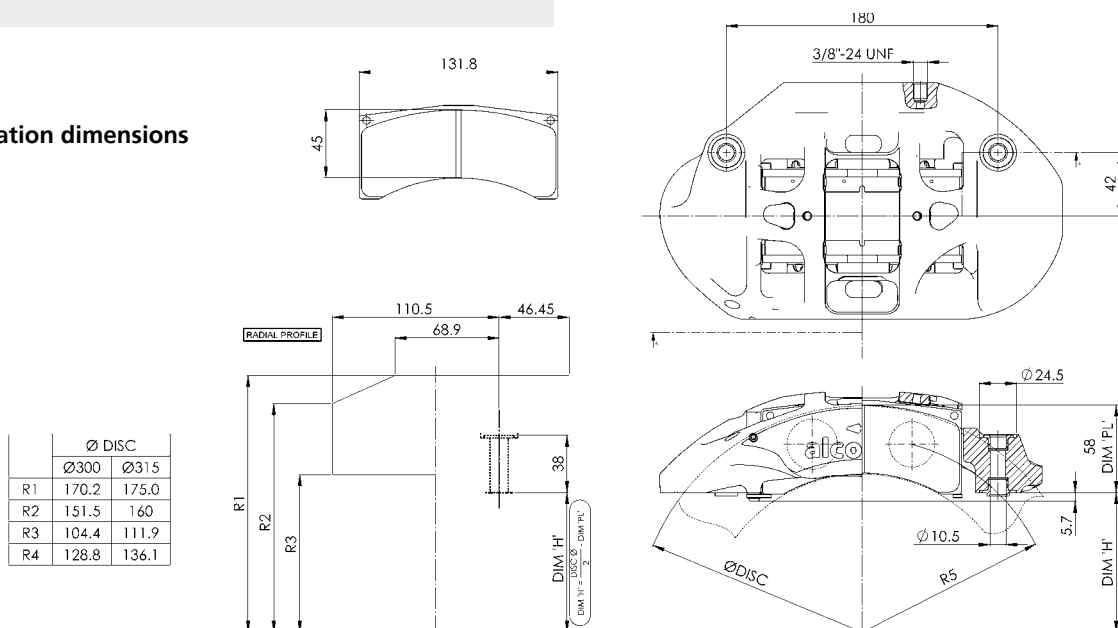
### Key features and benefits

- Slotted titanium pistons with wear resistant coating.
- Titanium inserts in piston ends provide thermal break to reduce heat transfer to fluid.
- Internally ported, no external fluid transfer pipe.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Precision titanium bushes in both ends of the mounting holes.

### Specifications

- Disc diameter range: Ø300 to 315mm.
- Disc thickness range: 28 to 32mm.
- Fluid inlet 3/8-24 UNF (-3) female.
- Dry weight 1.93kg excluding pads.
- Alcon pad reference: 4441 or 4423, 15mm thick, 132mm long, 45mm deep, area 120cm<sup>2</sup> per caliper.

### Installation dimensions





# motorsport range **CAR2349H19**

## 4-piston radial mount caliper

**Applications:**  
WRC front Gravel



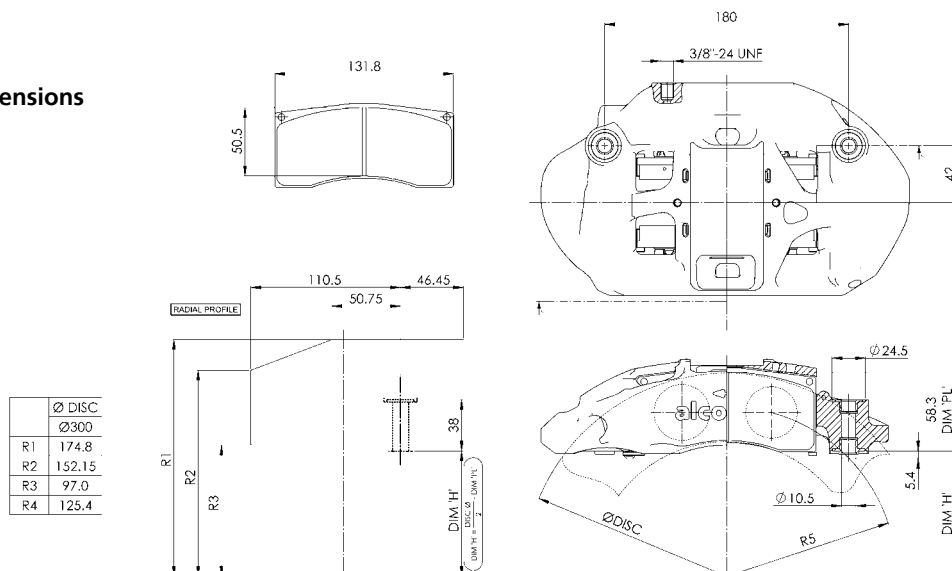
### Key features and benefits

- Slotted titanium pistons with wear resistant coating.
- Titanium inserts in piston ends provide thermal break to reduce heat transfer to fluid.
- Internally ported, no external fluid transfer pipe.
- 2Kg Anti-knock back springs.
- Precision titanium bushes in both ends of the mounting holes.
- Central bridge with facility for cooling duct to direct air across the caliper to cool the outer side.

### Specifications

- Disc diameter range: Ø300 max.
- Disc thickness range: 30 to 34mm.
- Fluid inlet 3/8"-24 UNF (-3) female.
- Dry weight 2.1kg excluding pads.
- Alcon pad reference: 4441 or 4423, 16mm thick, 132mm long, 50.5mm deep, area 129cm<sup>2</sup> per caliper.

### Installation dimensions



### Part numbers and handing

Disc thickness	Position	Ø38.1/41.3 pistons
30-34mm	LH trailing	CAR2349H19XESLT
	RH trailing	CAR2349H19XESRT
	LH leading	N/A
	RH leading	

### Replacement parts

Item	Ø38.1/41.3 pistons
Seal Kit, axle set	CSK3841E751
Pistons, TITANIUM, each	PTH3826X150E PTH4126X151E
AKB Springs, each	SSC3435X609 (x2) SSC3435X616 (x2)
Wear Plates, each	PSC4423X300L (x2) PSC4423X300R (x2)
Bleed Screw, each	FSB3430X371
O Seal	SER0080X445
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015



# motorsport range **CAR2349L41**

## 4-piston radial mount monobloc B-type caliper

**Applications:**  
Off road race

### Part numbers and handing

Disc thickness	Position	Ø41.3/44.5 pistons
28-32mm	LH trailing	CAR2349L41ASLT
	RH trailing	CAR2349L41ASRT
	LH leading	CAR2349L41ASLL
	RH leading	CAR2349L41ASRL



### Replacement parts

Item	Ø41.3/44.5 pistons
Seal Kit, axle set,	CSK4145E900
Pistons, ALUMINIUM each	PAS4441X551
PAS4448X554	SSC3435X623 (x4) SSC3435X616 (x2)
AKB Springs, each	SSC3435X609
Wear Plates, caliper set	ASK4468X722.4
Bridge Pipe, each	PSC4423X657
Bleed Screw, each	FSB0080X008
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015

### Key features and benefits

- Radial mounting for maximum rigidity and firm, consistent pedal.
- Forged aerospace grade aluminium alloy provides high strength and light weight.
- Stainless steel pistons.
- 2Kg Anti-knock back springs.
- Central bridge with facility for cooling duct to direct air across the caliper to cool the outer half.
- Internally drilled for increased protection.

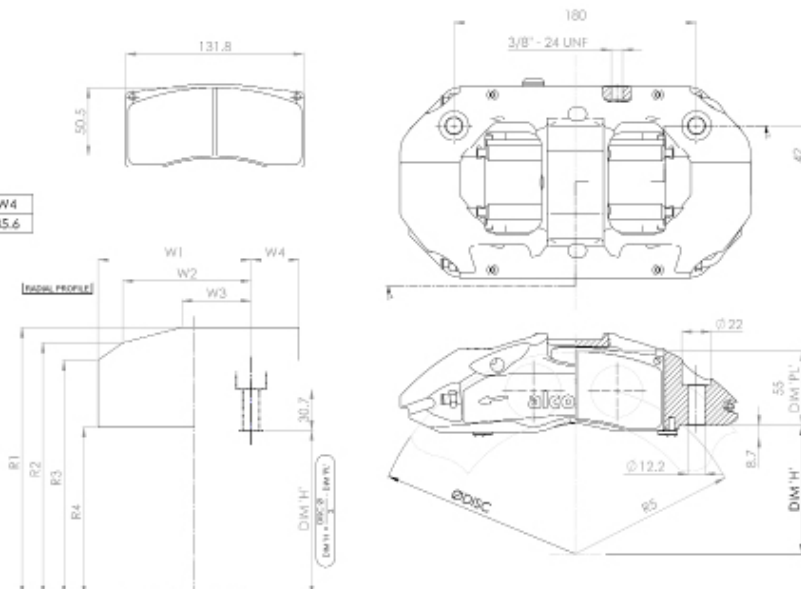
### Specifications

- Disc diameter range: Ø300 to 355mm.
- Disc thickness range: 28 to 32mm.
- Fluid inlet 3/8-24 UNF (-3) male
- Dry weight 2.40kg excluding pads.
- Alcon pad reference: 4441 or 4423, 16mm thick, 132mm long, 50mm deep, area 133cm<sup>2</sup> per caliper.

### Installation dimensions

	W1	W2	W3	W4
CAR2349L18	113.5	95.25	51.35	35.6

	Ø DISC		
	Ø300	Ø330	Ø355
R1	175	188.25	199.45
R2	158.6	175.0	188.0
R3	151.75	164.0	175.0
R4	98.4	113.0	125.2
R5	124.5	139.0	151.2



# motorsport range **CAR3249J05**

## 4-piston radial mount caliper

**Applications:**  
WTCC, CTCC



### Key features and benefits

- Ventilated stainless steel pistons with wear resistant coating.
- Internally ported, no external fluid transfer pipe.
- Common leading/trailing installation by switching bleed screw and inlet.
- 2Kg Anti-knock back springs.
- Central bridge with facility for cooling duct to direct air across the caliper to cool the outer side.

### Specifications

- Disc diameter range: Ø343 max.
- Disc thickness range: 34 to 36mm.
- Fluid inlet 3/8"-24 UNF (-3) male.
- Dry weight 2.1kg excluding pads.
- Alcon pad reference: 4432, 20mm thick, 139mm long, 48mm deep, area 126cm<sup>2</sup> per caliper.

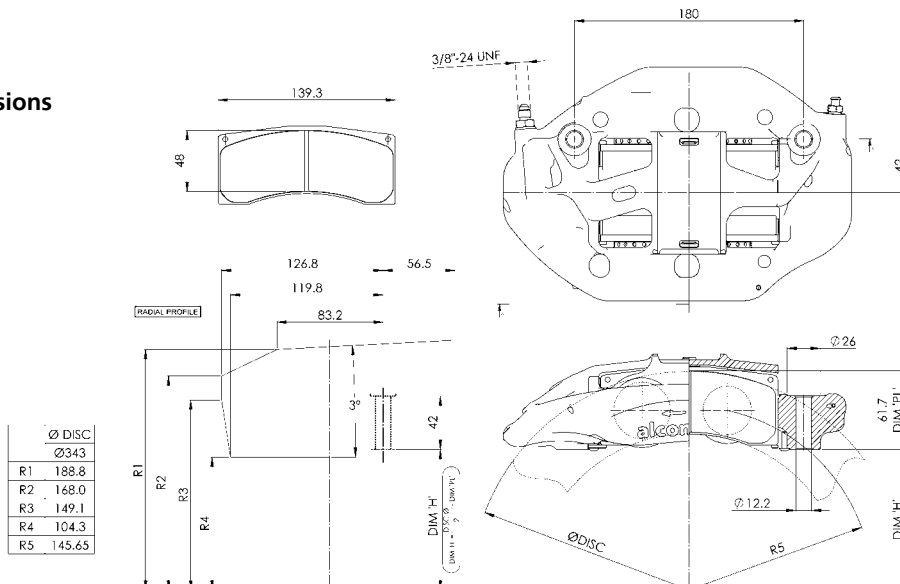
### Part numbers and handing

Disc thickness	Position	Ø38.1/44.5 pistons
34-36mm	LH trailing	CAR3249J05PSLT
	RH trailing	CAR3249J05PSLT
	LH leading	CAR3249J05PSLL
	RH leading	CAR3249J05PSRL

### Replacement parts

Item	Ø38.1/44.5 pistons
Seal Kit, axle set	CSK3845E751
Pistons, TITANIUM, each	PSV3833X250E PSV4533X255E
AKB Springs, each	SSC3435X609 (x2) SSC3435X616 (x2)
Wear Plates, each	PSC4432X106
Bleed Screw, each	FSB3430X689
O Seal	SER0080X176
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015

### Installation dimensions





# motorsport range **CAR3249J08**

## 4-piston radial mount monobloc caliper

Applications:  
WTCC

### Part numbers and handing

Disc thickness	Position	Ø38.1/44.5 pistons
32-36mm	LH trailing	CAR3249J08XESLT
	RH trailing	CAR3249J08XESLT

### Replacement parts

Item	Ø38.1/41.3 pistons
Seal Kit, axle set	CSK3845E751
Pistons, TITANIUM, each	PTH3833X151E PTH4533X151E
AKB Springs, each	SSC3435X609 (x2) SSC3435X616 (x2)
Wear Plates, each	PSC4432X106
Bleed Screw, each	FSB3430X689
O Seal	SER0080X176
Bridge pipe	PSC4432X119L (L/H caliper) PSC4432X119R (R/H caliper)
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015



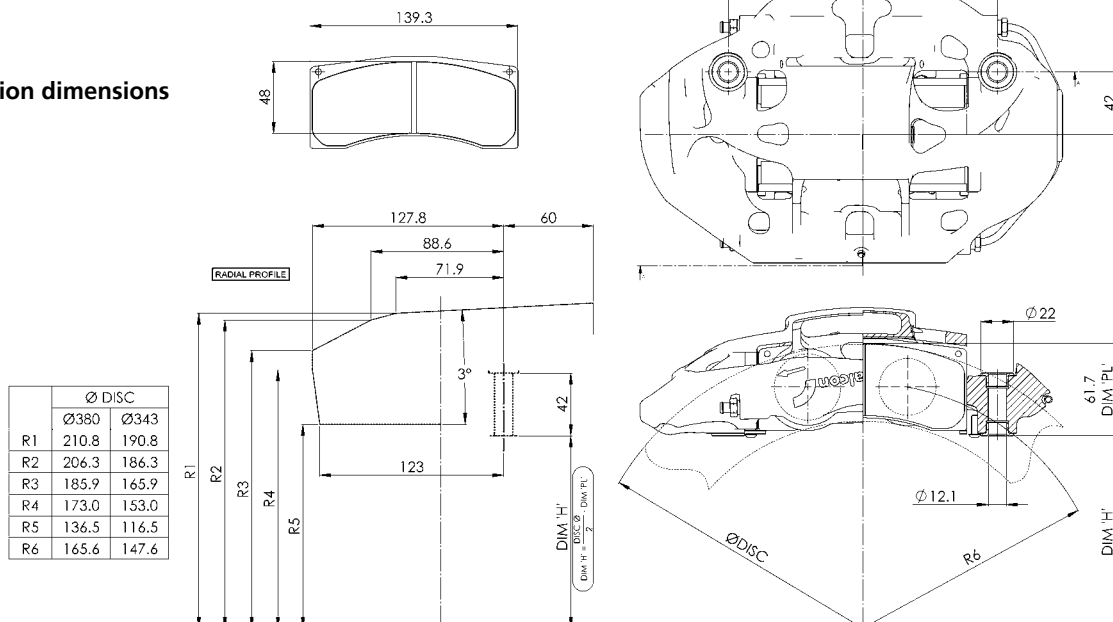
### Key features and benefits

- Radial mounting for maximum rigidity and firm, consistent pedal
- Ventilated titanium pistons with wear resistant coating
- High temperature seals
- 2Kg Anti-knock back springs
- Hard stainless steel wear plates
- Precision titanium bushes in both ends of the mounting holes
- Central bridge with integral cooling duct to direct air across the caliper to cool the outer side

### Specifications

- Piston diameters: Ø38.1 and Ø44.5
- Disc diameter range: Ø380 max
- Disc thickness range: 32 to 36mm
- Fluid inlet 3/8-24 UNF (-3) female
- Dry weight 1.95kg excluding pads
- Alcon pad reference: 4432, 20mm thick, 139mm long, 48mm deep, area 126cm<sup>2</sup> per caliper

### Installation dimensions



# motorsport range **CAR3249BC03**

## 6-piston radial mount monobloc caliper

### Applications:

Japanese Championship Super Formula



### Key features and benefits

- Radial mounting for maximum rigidity and firm, consistent pedal
- Ventilated titanium pistons with wear resistant coating
- Internally ported, no external fluid transfer pipe
- 2Kg Anti-knock back springs
- Hard stainless steel wear plates
- Central bridge with facility for cooling duct to direct air across the caliper to cool the outer side

### Specifications

- Disc diameter range: Ø285 max
- Disc thickness range: 28-30mm
- Fluid inlet M10x1.0 female
- Dry weight 1.9kg excluding pads
- Alcon pad reference: 4432, 18mm thick, 139mm long, 48mm deep, area 126cm<sup>2</sup> per caliper

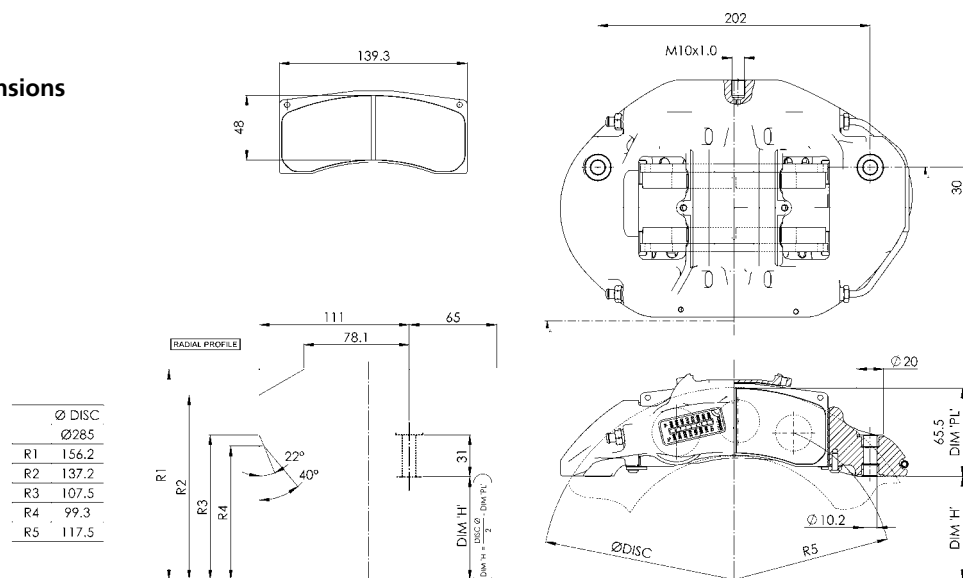
### Part numbers and handing

Disc thickness	Position	Ø27/31.8/36 pistons
28-29mm	LH trailing	CAR3249BC03TESLT
	RH trailing	CAR3249BC03TESRT

### Replacement parts

Item	Ø27/31.8/36 pistons
Seal Kit, axle set	CSK273236E751
Pistons, TITANIUM, each	PTH2732X150E, PTH3231X150E, PTH3631X150E
AKB Springs, each	SSC3435X623 (x4) SSC3435X616 (x2)
Wear Plates, each	PSC4432X109L PSC4432X109R
Bleed Screw, each	FSB3430X689
O Seal	SER0080X176
Bridge pipe, each	PSC4432X111L (LH caliper) PSC4432X111R (R/H caliper)
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015

### Installation dimensions



# motorsport range **CAR6849H24**

## 4-piston radial mount B-type caliper

**Applications:**  
Rally, R3 MAX

### Part numbers and handing

Disc thickness	Position	Ø38.1/41.3 pistons
32-36mm	LH trailing	CAR6849H24SSLT
	RH trailing	CAR6849H24SSRT
	LH leading	CAR6849H24SLL
	RH leading	CAR6849H24SSRL

### Replacement parts

Item	Ø38.1/41.3 pistons
Seal Kit, axle set	CSK3841E900
Pistons, ALUMINIUM, each	PAS4438X551 PAS4441X551
Pistons, STAINLESS STEEL, each	PSS3828X600 PSS4128X600
AKB Springs, each	SSC3435X609
Bridge Pipe (each)	ASK4489X549.4
Bleed Screw, each	PSC3468X733
Inlet Adapter, 3/8 UNF male to male	FSB0080X008
Copper gasket	FSA3435X630
Copper gasket	FCG0080X015



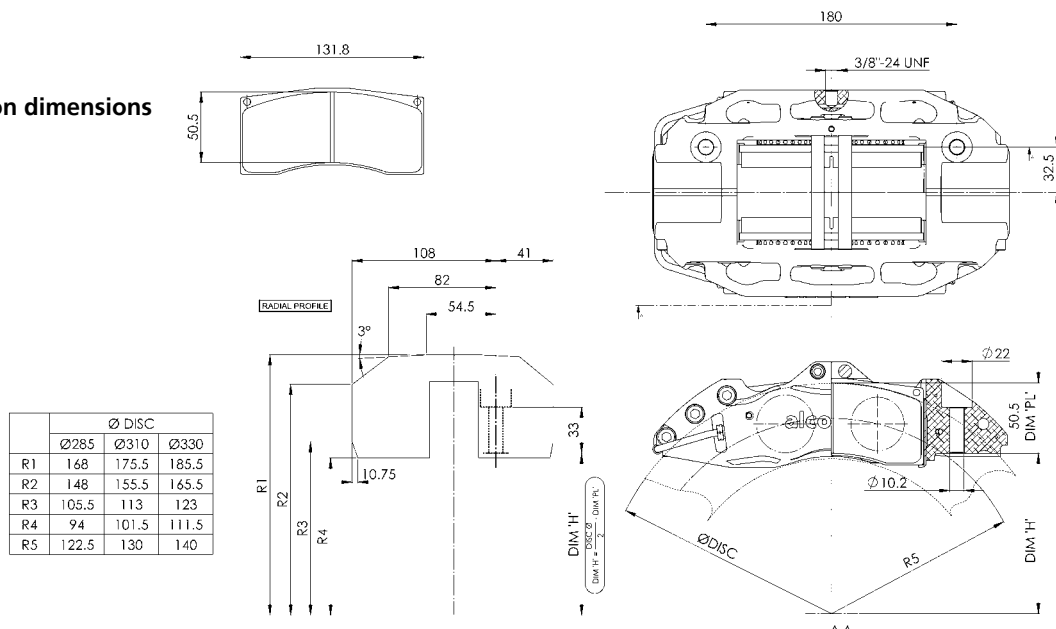
### Key features and benefits

- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- High temperature seals.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Fixed pad retainer bars to increase stiffness, remove caliper to change pads.

### Specifications

- Disc diameter range: Ø285 to 330mm
- Disc thickness range: 32-36mm
- Fluid inlet 3/8-24 UNF (-3) female
- Dry weight 2.50kg excluding pads
- Alcon pad reference: 4441 or 4423, 16mm thick, 132mm long, 50mm deep, area 133cm<sup>2</sup> per caliper

### Installation dimensions



# motorsport range **CAR8049AE07**

## 4-piston radial mount caliper

**Applications:**  
GT rear



### Key features and benefits

- Differential piston diameters that minimise pad taper wear
- Slotted titanium pistons with wear resistant coating
- 2Kg Anti-knock back springs
- Hard stainless steel wear plates
- Central bridge with facility for cooling duct to direct air across the caliper to cool the outer side

### Specifications

- Disc diameter range: Ø285 to 355mm.
- Disc thickness range: 28 to 32mm.
- Fluid inlet 3/8-24 UNF (-3) male.
- Dry weight 2.20kg excluding pads.
- Alcon pad reference: 4441 or 4423, 25mm thick, 132mm long, 49mm deep, area 133cm<sup>2</sup> per caliper.

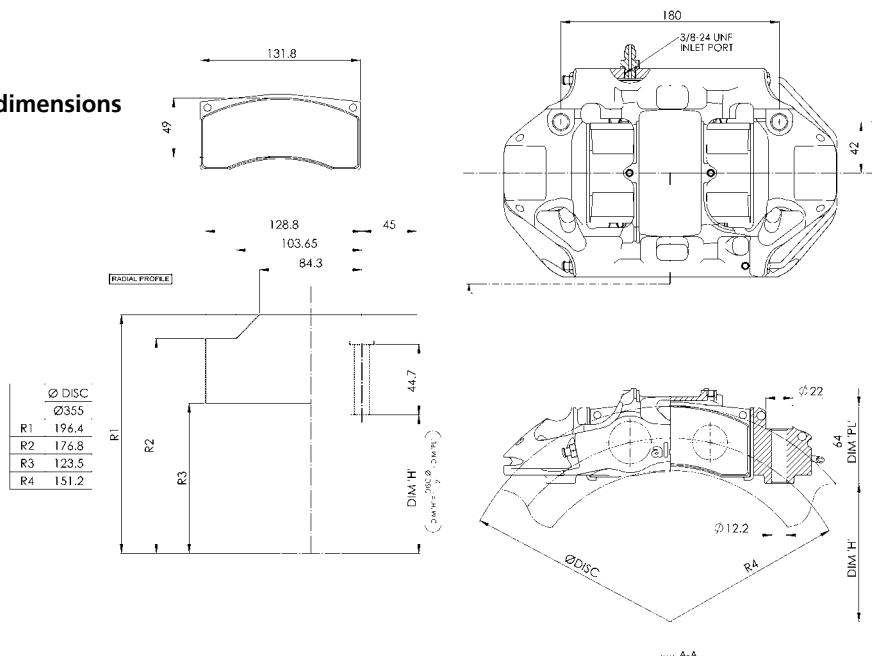
### Part numbers and handing

Disc thickness	Position	Ø28.6/34.9 pistons
28-32mm	LH trailing	CAR8049AE07TESLT
	RH trailing	CAR8049AE07TESRT
	LH leading	CAR8049AE07TESLL
	RH leading	CAR8049AE07TESRL

### Replacement parts

Item	Ø28.6/34.9 pistons
Seal Kit, axle set	CSK2935E751
Pistons, TITANIUM, each	PTH2936X150E PTH3536X150E
AKB Springs, each	SSC3435X616 (x2) SSC3435X623 (x2)
Wear Plates, each	ASC4480X537
Bridge Pipe, each	PSC4480X658
Bleed Screw, each	FSB3430X689
O Seal	SER0080X176
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015

### Installation dimensions



# motorsport range **CAR8949W52**

## 6-piston radial mount monobloc caliper

### Part numbers and handing

Disc thickness	Position	Ø33.3/Ø38.1/44.5 pistons
22-24mm	LH trailing	CAR8949W52SESLT
	RH trailing	CAR8949W52SESRT

### Replacement parts

Item	Ø33.3/Ø38.1/Ø44.5 pistons
Seal Kit, axle set	CSK333845E751
Pistons, STAINLESS, each	PSS3325X200E PSS3825X210E PSS4425X205E
AKB Springs, each	SSC3435X606 (x4) SSC3435X608 (x2)
Wear Plates, each	PSC4489X546L PSC4489X546R
Bleed Screw, each	FSB3430X371
O Seal	SER0080X176
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015

**Applications:**  
Off-road



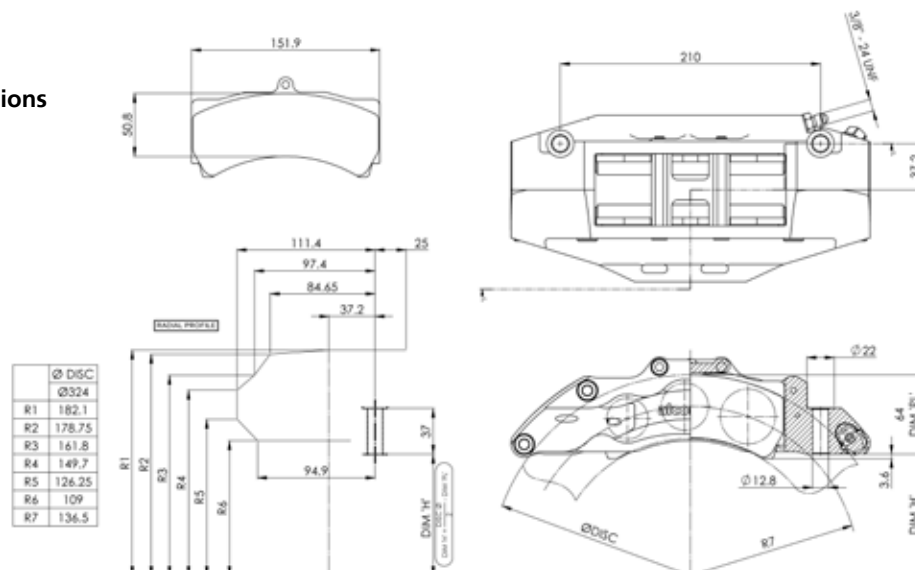
### Key features and benefits

- Differential piston diameters that minimise pad taper wear.
- Stainless steel pistons with wear resistant coating.
- High temperature seals.
- 3Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Removable central bridge for ease of pad change.
- Internally ported, no external fluid transfer pipe.

### Specifications

- Disc diameter range: Ø324 max.
- Disc thickness range: 22 to 24mm.
- Fluid inlet 3/8-24 UNF (-3) male.
- Dry weight 2.74kg excluding pads.
- Alcon pad reference: 4489, 16mm thick, 152mm long, 51mm deep, area 152cm<sup>2</sup> per caliper.

### Installation dimensions





# motorsport range **CAR8947Z06**

## 6-piston radial mount monobloc caliper

**Applications:**  
Sports car, GT



### Key features and benefits

- Billet aerospace grade aluminium alloy provides high strength and light weight.
- Differential piston diameters that minimise pad taper wear.
- Aluminium pistons with ventilated stainless steel inserts.
- 2Kg Anti-knock back springs.
- Stainless steel wear plates.
- Quick release pad retainer wire for ease of pad change.

### Specifications

- Disc diameter range: Ø355.6 max.
- Disc thickness range: 31 to 33mm.
- Fluid inlet 3/8-24 UNF (-3) male.
- Dry weight 2.9kg excluding pads.
- Alcon pad reference: 448, 16mm thick, 152mm long, 54mm deep, area 156cm<sup>2</sup> per caliper.

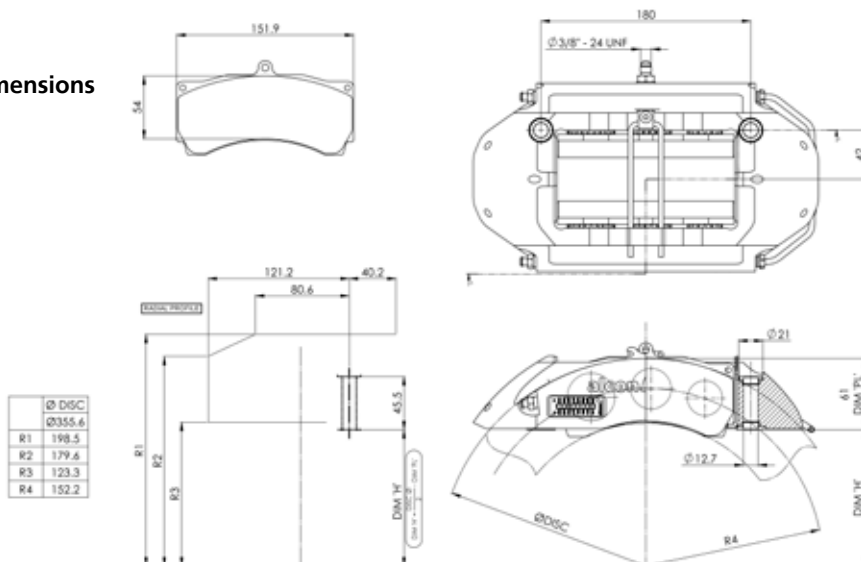
### Part numbers and handing

Disc thickness	Position	Ø30.2/Ø34.9/Ø41.3 pistons
31-33mm	LH trailing	CAR8947Z06DSLTL
	RH trailing	CAR8947Z06DSRTL
	LH leading	CAR8947Z06DSL
	RH leading	CAR8947Z06DSL

### Replacement parts

Item	Ø28.6/34.9/41.3 pistons
Seal Kit, axle set	CSK303541E751
Pistons, ALUMINIUM, each	PAH3029X400 PAH3529X400 PAH4129X400
AKB Springs, each	SSC3435X609 (x4) SSC3435X623 (x2)
Wear Plates, each	ASC4489X537
Bleed Screw, each	FSB0080X008
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015

### Installation dimensions



# motorsport range **CAR8959W10**

## 6-piston radial mount monobloc caliper

**Applications:**  
Off-road

### Part numbers and handing

Disc thickness	Position	Ø33.3/Ø38.1/44.5 pistons
35.5mm	LH trailing	CAR8959W10SESL
	RH trailing	CAR8959W10SESR

### Replacement parts

Item	Ø33.3/Ø38.1/Ø44.5 pistons
Seal Kit, axle set	CSK333845EW751-610
Pistons, STAINLESS, each	PSH3340X400E PSH3840X400E PSH4540X400E
AKB Springs, each	SSC3435X602 (x6)
Wear Plates, each	ASC4489X767 (x2)
Bleed Screw, each	FSB3430X371 (X2)
O Seal	SER0080X445
Inlet Adapter, 3/8 UNF male to male	FSA3435X630
Copper gasket	FCG0080X015 (x2)
Copper gasket	FCG0080X015



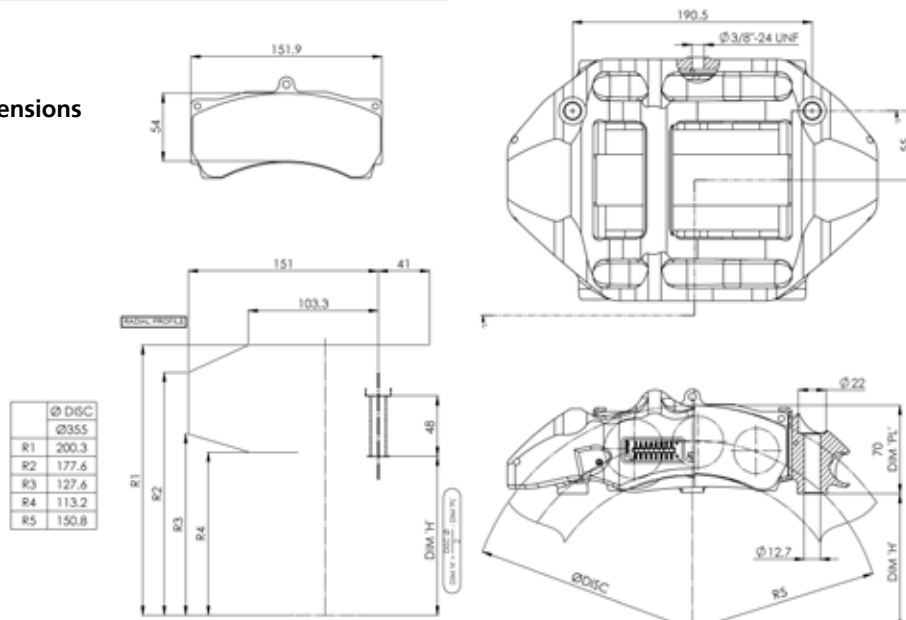
### Key features and benefits

- Aluminium pistons as standard, stainless steel pistons available as an option to reduce heat transfer to brake fluid.
- High temperature seals.
- 2Kg Anti-knock back springs.
- Hard stainless steel wear plates.
- Fixed pad retainer bars to increase stiffness, remove caliper to change pads.

### Specifications

- Disc diameter range: Ø285 to 330mm
- Disc thickness range: 32-36mm
- Fluid inlet 3/8-24 UNF (-3) female
- Dry weight 2.50kg excluding pads
- Alcon pad reference: 4441 or 4423, 16mm thick, 132mm long, 50mm deep, area 133cm<sup>2</sup> per caliper

### Installation dimensions



# motorsport range **CAR9549Y72**

## 6-piston radial mount caliper

**Applications:**  
GT front



### Key features and benefits

- Slotted titanium pistons with wear resistant coating.
- Internally ported, no external fluid transfer pipe.
- Common leading/trailing installation by switching bleed screw and blanking plug.
- Hard stainless steel wear plates.
- 2Kg Anti-knock back springs.
- Hinged pad retainer for fast pad change, also enhances caliper stiffness when closed.

### Specifications

- Disc diameter range: Ø355 to 380mm.
- Disc thickness range: 34 to 35.6mm.
- Fluid inlet 3/8-24 UNF (-3) male.
- Dry weight 2.58kg excluding pads.
- Alcon pad reference: 4495, 30mm thick, 163mm long, 54mm deep, area 166cm<sup>2</sup> per caliper.

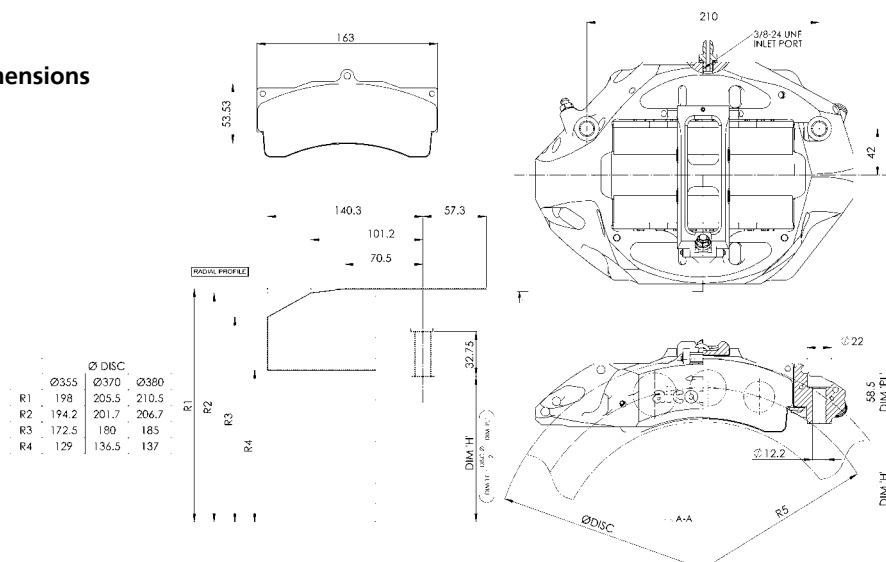
### Part numbers and handing

Disc thickness	Position	Ø27/31.8/38.1 pistons
34-35.6mm	LH trailing	CAR9549Y72TESLT
	RH trailing	CAR9549Y72TESRT
	LH leading	CAR9549Y72TESLL
	RH leading	CAR9549Y72TESRL

### Replacement parts

Item	Ø27/31.8/38.1 pistons
Seal Kit, axle set	CSK273238E751
Pistons, TITANIUM, each	PTH2739X150E PTH3239X150E PTH3839X150E
AKB Springs, each	SSC3435X609 SSC3435X616 SSC3435X623
Wear Plates, each	ASC4495X569
Bleed Screw, each	FSB3430X689
O Seal	SER0080X176
Copper gasket	FCG0080X015

### Installation dimensions



# motorsport range **CAR9549Y76**

## 6-piston radial mount caliper

**Applications:**  
GT front

### Part numbers and handing

Disc thickness	Position	Ø27/31.8/38.1 pistons
34-35.6mm	LH trailing	CAR9549Y76PESLT
	RH trailing	CAR9549Y76PESRT
	LH leading	CAR9549Y76PESLL
	RH leading	CAR9549Y76PESRL

### Replacement parts

Item	Ø27/31.8/38.1 pistons
Seal Kit, axle set	CSK273238E751
Pistons, STAINLESS STEEL, each	PSV2739X250E PSV3239X250E PSV3839X250E
AKB Springs, each	SSC3435X609 SSC3435X616 SSC3435X623
Wear Plates, each	ASC4495X578
Bleed Screw, each	FSB3430X689
O Seal	SER0080X176
Copper gasket	FCG0080X015



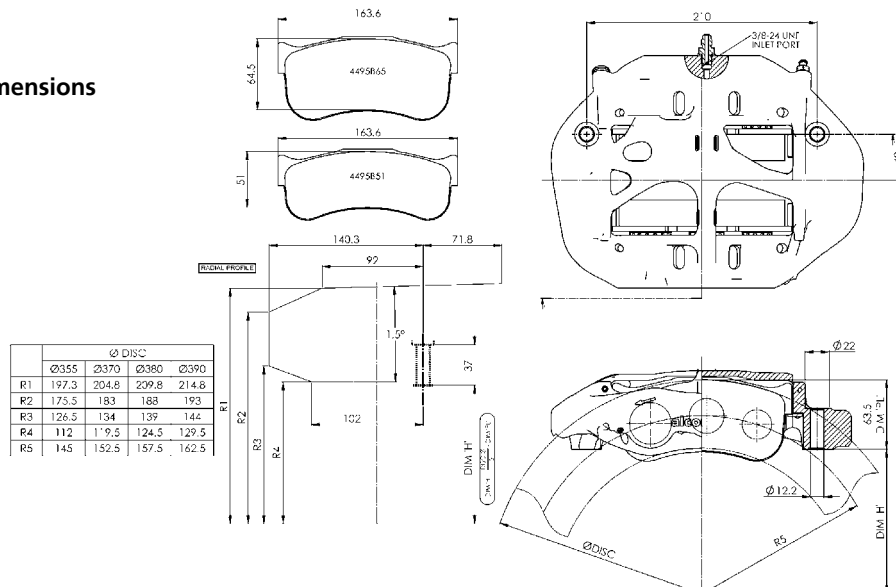
### Key features and benefits

- Ventilated stainless steel pistons with wear resistant coating.
- Internally ported, no external fluid transfer pipe.
- Common leading/trailing installation by switching bleed screw and blanking plug.
- Hard stainless steel wear plates.
- 2Kg Anti-knock back springs.

### Specifications

- Disc diameter range: Ø355 to 390mm.
- Disc thickness range: 34 to 35.6mm.
- Fluid inlet 3/8-24 UNF (-3) male.
- Dry weight 2.79kg excluding pads.
- Alcon pad 165mm long, 29mm thick, references: 4495B64, 64mm deep, area 186cm<sup>2</sup> per caliper, 4495B51, 51mm deep, area 151cm<sup>2</sup> per caliper.

### Installation dimensions





# Calipers **technical information**

## Caliper installation

- Refer to the relevant caliper installation drawing for tightening torque and use of sealants and adhesives.
- Check that the caliper is of the correct hand before fitting it to the upright.
- Assemble the pads into the caliper. When inserted, the pads must be free to move with minimum clearances of: 0.4mm (0.016") end to end, between each pad and the caliper housing 0.4mm (0.016") top to bottom, between each pad and the caliper cross tube.
- Assemble the caliper to the upright, with bleed screws uppermost. Tighten the caliper retaining nuts to the specified torque. Connect the hose to the caliper and tighten to the specified torque using a new copper crush washer every time. Do not overtighten the fitting. Check that under all combinations of suspension and steering movement, the braided hose does not become taut or twisted and that it does not touch any adjacent components. If necessary, re-align the hose.
- Check that the disc will rotate freely without any drag. With the caliper pistons pushed fully back into the bores and the bell clamped against the hub, there should be a minimum of 0.25mm (0.01") clearance between pad and pistons on each side of the caliper.
- To prevent overheating, clearance between the disc and caliper must not be less than 2mm (0.08") in all directions.

## Brake bleed procedure

Use a high performance ethylene

glycol based fluid such as Castrol Racing Fluid or, for higher temperature use, Castrol SRF. Do not use silicone brake fluid. Brake fluid is hygroscopic and the boiling point will reduce if it contains any moisture. For optimum performance, fluid should be changed regularly.

Each Alcon brake caliper has an optimum mounting angle, normally within plus or minus 5° of vertical, to prevent air from being trapped in the piston bores. Check with Alcon's technical department if the angular position is greater than 5° from vertical.

Ensure that the master cylinders are firmly fixed to a rigid bulkhead or cross member.

To avoid trapping air in the master cylinders, ensure that the fluid outlet port is uppermost. Preferably mount the cylinders level or with the push rod end slightly lower.

Avoid vertical loops in brake lines, which will trap air, particularly in the feed from the reservoir to the master cylinders.

To prevent a vacuum forming in the reservoir, there must be a breather hole in the cap.

## Bleeding procedure

1. Connect a bleed bottle and tube to each caliper bleed screw and fill the reservoir, leaving the reservoir cap off. Open the bleed screws of each caliper in turn to allow the system to gravity fill, until clean fluid can be seen in each bleed tube. Check that the fluid level in the reservoir does not fall below the outlet opening. Close all bleed screws.
2. Where dual master cylinders are used, bleed one front and one rear caliper together. For calipers with two bleed screws, bleed the outer side of the caliper first, followed by the inner side.
3. Never bleed the system by pumping the pedal until it is firm followed by opening the bleed screws. If there is air in the system, this procedure will aerate the fluid, making removal more difficult.
4. Air in the master cylinder primary and secondary chambers should escape to the reservoir via the feed line when the brake is off. If there are any restrictions in the feed line or reservoir connection that prevents air from escaping, air that remains in the feed line will be drawn back into the cylinder on the recuperation stroke. To minimise the restriction, dash 4 hose and fittings should be used for the feed line, particularly if the reservoir outlet is close to the cylinder inlet.
5. Open the outer bleed screw of a front and rear caliper and slowly depress the pedal to avoid fluid aeration, using the full master cylinder stroke. Close the bleed screws and let the pedal return fully to its original position to allow the master cylinder to recuperate fresh fluid from the reservoir. Do not allow the pedal to snap back, use a controlled rate of return. Rest for 5 seconds to allow the master cylinder to re-fill. Top up the reservoir as required. Repeat until no air is visible in the bleed tube. Depending on brake hose runs, a clear tube should be achieved within 3-5 strokes.
6. Repeat section 5 for the inner bleed screws of the front and rear caliper until no air is visible in the bleed tube.
7. Repeat sections 5 & 6 on the other side of the car.
8. Repeat sections 5, 6 & 7 if pedal travel is not satisfactory.
9. If the pedal is not firm after repeating the procedure, there must still be air in the system and an alternative procedure, back-



bleeding, is recommended. Using this method, a large volume of fluid and any air that is trapped in the system is returned to the reservoir via the master cylinder inlet port.

10. Fit thin pads, or preferably just pad backplates, to each caliper and slowly pump the pedal so that caliper pistons move forward to contact the pads. Working on one caliper at a time, squeeze the pistons back into the caliper, displacing fluid to the reservoir. The reservoir will fill with displaced fluid so it must be emptied to prevent it from overflowing. Repeat the procedure for each caliper and re-fit the original pads before pressurising the system with the brake pedal.
11. After bleeding, check the complete system for leaks before driving the car.
12. Recommended bleed screw torque (do not over-tighten bleed screws):
13. The aim when bleeding is to achieve a firm pedal that holds its position under a sustained pedal load. Re-bleeding the brakes after some running can further improve the pedal.
14. IMPORTANT - When the system is fully bled, the threaded rod of the balance bar should be at right angles to the master cylinder push rods when the normal maximum pedal load is applied.

caliper housing recorded with thermal stickers is the result of heat soak from the discs and pads after the car has stopped and is typically 30-40°C (86-104°F) higher than on-track temperature. To minimise heat soak, the driver should be encouraged to back off on the in-lap to allow the brakes to cool.

- Excessive temperature will also affect other components used in the caliper. If caliper temperature exceeds 210°C (410°F), the hardness of the caliper housing should be checked to ascertain if the temperature has permanently affected the tensile properties of the material. The recommended method is Rockwell B Scale using 1/16" Ball and load of 100 Kg.

Limits of use	Hardness (Rockwell B)
Hardness above, acceptable for re-use	59
Hardness between, acceptable, use with caution.	54 & 59
Hardness below, not acceptable for re-use, caliper to be scrapped off	335

- Recommended time at temperature before seals must be changed and hardness of caliper housing is checked is:

On track caliper temperature measured with brake fluid thermocouple	In pit caliper temperature measured with thermal stickers (heat soak)	Duration	Action
<150°C (302°F)	<180°C	48hrs	Change seals
150-180°C (302-356°F)	180-210°C (356-410°F)	8hrs	Change seals
180-210°C (356-410°F)	210-240°C (410-464°F)	3hrs	Change seals, check hardness of housing
210-240°C (410-464°F)	240-270°C (464-518°F)	Immediate	Change seals, check hardness of housing

- The elastomers used for brake caliper seals begin to deteriorate when exposed to temperatures above 150°C (300°F). However, the degree of deterioration is time dependent and seals can withstand exposure to temperatures up to 240°C (464°F) for a short time. Whilst seals will withstand such high temperatures for a short time without leaking, deterioration of the seal will affect caliper performance: Compression set causes a reduction in squeeze force and hence friction between the seal and bore, leading to an increase in pedal travel due to knock-off, a condition that is not recoverable without changing seals.

Seal extrusion occurs after prolonged use at elevated temperature. Brake line pressure causes the seal to be extruded between the piston and bore. Under close examination, the seal edge will appear 'nibbled', at the inside diameter. Severe degradation of the seals will eventually occur if calipers are continually used at extreme temperature. The combination of high temperature and brake line pressure causes tearing at the inner diameter of the seal and detachment of material. This can lead to fluid leakage and loss of brakes.

## Temperature effects

- Calipers must be regularly inspected for leaks and damage. Temperatures must be monitored at all times to prevent overheating.
- Ideally, on-track caliper temperatures, using thermocouples that measure fluid temperature, should be kept below 180°C (356°F) by effective use of ducted air. Surface temperature of the



## Pad changing

- Thoroughly clean the protruding pistons with brake cleaner before pushing the pistons back to fit new pads. Scotchbrite or similar abrasives should not be used to clean pistons as the coating may be removed from the piston.
- The pistons in Alcon calipers are ground to achieve close dimensional tolerance, roundness and surface finish. Friction between the piston and seal is lower with lubricated seals than with dry seals. Pistons and seals in Alcon calipers are assembled with a lubricant that evaporates at around 100°C (212°F), therefore piston retraction will increase as caliper temperature rises during normal use.
- The level of friction also helps to resist piston displacement due to disc run-out or suspension/hub deflection (knock-back). Typically, pistons will recover from displacement into the caliper by up to 0.5mm (0.02"), preventing increased lost travel at the pedal and maintaining a constant pedal position under all conditions. This feature means that a higher than normal force may be required to push pistons back into the caliper during a pad change.
- Note the importance of cleaning pistons during a pad change, to prevent debris being deposited in the seal/piston interface as pistons are pushed back. Debris will reduce seal to piston friction, and have an adverse effect on piston retraction.

## Caliper seal and seal groove function in Alcon seal in bore calipers

As well as retaining hydraulic pressure, the rubber seal performs several other key functions.

The seal must retract the piston when hydraulic pressure has decayed after braking, to prevent residual drag, which causes excessive temperature, pad wear and loss of speed. However retraction must be minimal to prevent excessive volume displacement and thus lost travel at the pedal and slower response at the caliper.

The seal also helps to resist piston displacement due to disc run-out, suspension deflection or severe vibrations, commonly referred to as knock-back. This is controlled by the seal squeeze force, which provides friction between the piston and seal. The resulting friction level must not adversely affect piston sliding force. Seal performance is affected by the following:

- Seal groove geometry
- Seal and seal groove diameter
- Friction between the piston and seal
- Seal material properties within the operating temperature range

When the caliper is fitted to the car and bleeding has been completed, the pistons must be re-set by pushing each piston back into the bore by a small amount. When the brakes are next applied, the pistons will move forward to contact the pads, which will energise the seals. When the brakes are released and pressure has decayed to zero, the seals will retract the pistons. Failure to create forward movement of the pistons may lead to off-brake drag.

## Advanced Seal Lubricant (ASL)

After new seals have been fitted in Alcon racing calipers using the standard assembly grease, it is normal to find that brake pedal travel is longer than usual during the first run, and it reduces with more running until it is short and firm.

This is due to the fact that piston retraction is excessive and friction between the seals and pistons is low. The seals need to bed-in to the grooves before piston retraction reduces to a normal level and friction between the seals and pistons increases to give the optimum piston control characteristics. The combination of line pressure and the temperature generated during installation runs is normally enough to bed-in the seals.

Alcon has developed an advanced fluid for conditioning new seals prior to assembly. Using this fluid, the seals will require no further bedding-in and pedal travel will be similar to a caliper that has been through a heat cycle.

Instructions for use

- Always shake the bottle before use.
- Soak new seals in the fluid for 24 hours before use.
- Remove the pistons and used seals from the caliper and thoroughly clean and de-grease the housing, removing all traces of any previously used grease or lubricant from the bores, seal grooves and pistons.
- Insert the seals into the seal grooves, smear a small amount of fluid on the outside of each piston and insert the pistons, pushing them fully into the bore.
- Part number 250ml bottle: MOB3430X886



# Brake discs introduction

## Disc choice

The following disc listings contain options available for virtually every application that we currently cater for. The list is based on our most popular models, but it's important to remember that many more size options are available – just get in contact with your sales representative for more information. We have provided all of the basic information that you should require, but if you'd like more information then please do get in touch.

The choice of a particular disc depends on the vehicle characteristics and the type of racing being done. If in doubt, our experienced staff will be more than capable of advising as to which discs may fulfil your requirements.

In certain classes of racing, brake equipment is homologated by the manufacturer with the FIA. In these classes, only equipment which has undergone this homologation process may be used, including disc specifications.

## Diameter and thickness

The diameter and thickness of a disc plays a major role in the stopping

power of that disc.

As a result, the largest diameter disc that can be installed in a particular wheel profile is used to maximise braking power. However low weight, poor tyre adhesion or required brake balance may sometimes limit the extent to which this rule applies.

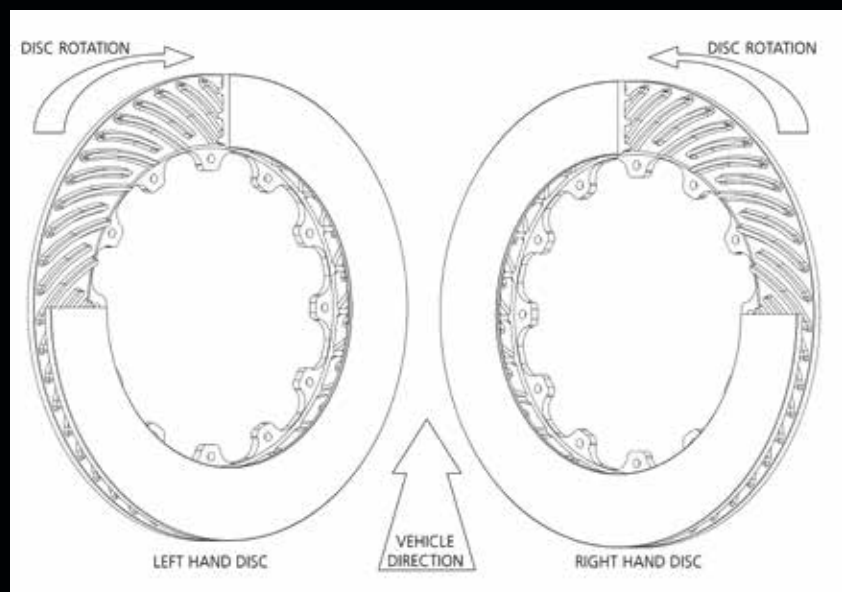
## Disc handing

The majority of our brake discs are handed in their installation. To install your disc with the correct handing, ensure that the cooling vanes run

back from the inside to outside diameters in the direction that the disc is rotating. The illustration below should explain this in more detail.

## Disc listings

Our product stable includes solutions for virtually every motorsport application we may come across. The listings below include a cross section of our discs, though many more are available – just speak to one of our sales representatives if the product you require is not listed.





# GUIDE part numbering

**D I V 2 2 3 5 X 5 3 5 C 3 6 L**

**D: DISC**

**I: IRON  
C: CARBON**

**S: SOLID  
V: VENTILATED**

**DISC MATERIAL**

2 = RC2036  
4 = RC2253

**DISC CASTING**

EG 135 = DIV2135

**HANDING**  
L: LEFT HAND  
R: RIGHT HAND

**NUMBER**  
(WHERE SPECIFIED)  
NUMBER OF CRESCENT OR CURVED  
GROOVES OR HOLES

**FACE TYPE**

A: GROOVED, AFFINIA SPECIFICATION  
B: GROOVED, CURVED  
C: GROOVED, CRESCENT  
D: DRILLED FACES  
G: GROOVED, STRAIGHT  
P: PLAIN  
S: S GROOVE

**SERIES NUMBER**  
001-999

**CONDITION**

X: NATURAL  
b: BEDED



# brake discs **MOTORSPORT**

## Application list

### Part numbers and measurements

Part Number	OD	ID	Thickness	No of holes	Hole Dia.	Hole PCD	Groove type	Notes
DIV2111X265L4	260	154	25	6	6.4	139.7	G	ESCORT MK2 ASPHALT FRONT
DIV2111X023	264	154	20.7	6	6.5	139.7	G	ESCORT MK2 GRAVEL FRONT
DIV2111X112G	267	184	25.4	8	6.4	165.1	G	
DIV2207X402S36	277.5	190	28	10	6.4	172	S36	
DIV2155X344L4	277.8	197.6	18	8	8.5	186	G	F3 DALLARA
DIV2155X341L4	277.8	198	16	8	8.5	186	G	F3 DALLARA FROM 2005
DIV2111X357L4	278	178	18	8	6.4	190.5	G	F3
DIV2154X325L4	280	174	30	8	6.4	146	G	
DIV2154X336L4	280	194	23	8	6.4	176.75	G	
DIV2207X387C20	285	194.5	27	10	SLOT	179	C20	SUBARU IMPREZA GROUP N COMMON REAR
DIV2154X254L4	285	182	25.4	8	6.4	158.75	G	
DIV2155X253G	286	202	20.7	8	6.4	177.8	G	
DIV2153X261G	290	200	28	12	6.4	177.8	G	
DIV2154X385B8	294.8	206.6	25.5	8	SLOT	189.85	B	MITSUBISH EVO 10 GRP N REAR BREMBO REPLACEMENT.
DIV2154X385L8	294.8	206.6	25.5	8	SLOT	189.85	G	MITSUBISH EVO 9 GRP N REAR BREMBO REPLACEMENT.
DIV2135X507C24	295	193.4	32	12	SLOT	177.8	C24	SUBARU IMPREZA GROUP N GRAVEL FRONT
DIV2207X390P	295	215	25.4	8	8	177.8	P	
DIV2215X559S36	300	194	33	12	6.4	177.8	S36	
DIV2215X542S36	300	194	32	12	6.4	177.8	S36	
DIV2235X561B8	300	193	32	8	SLOT	180.5	B	MITSUBISH EVO 10 GRP N GRAVEL FRONT BREMBO REPLACEMENT / 3.1mm INSET FACE

# brake discs **MOTORSPORT**

## Application list

### Part numbers and measurements

Part Number	OD	ID	Thickness	No of holes	Hole Dia.	Hole PCD	Groove type	Notes
DIV2215X587S36	300	194	31	12	6.4	177.8	S36	0.5mm RAISED FACE
DIV2135X505B5	300	193	30	8	SLOT	180.5	B	MITSUBISHI EVO 9 GRP N GRAVEL FRONT BREMBO REPLACEMENT.
DIV2135X505B8	300	193	30	8	SLOT	180.5	B	MITSUBISHI EVO 10 GRP N GRAVEL FRONT BREMBO REPLACEMENT
DIV2215X589S36	300	194	30	12	6.4	177.8	S36	1.0mm RAISED FACE
DIV2201X628S30	300	206	29	10	6.4	188	S30	0.5mm RAISED FACE
DIV2213X569G	300	195	28	12	6.4	175	G	
DIV2154X377C48	300	203	25.4	10	6.4	189	C48	
DIV2153X322B48	304	203	24	12	6.4	188	B	
DIV2213X513B8	305	198	32	12	6.4	182	B	
DIV2201X509C48	310	206	32	12	6.4	188	C48	
DIV2235X562C48	310	206	30	12	6.4	188	C48	
DIV2153X406C24	310	208	26	12	6.4	188	C24	
DIV2201X603S36	315	221	32	12	6.4	206	S36	
DIV2213X581C48	320	199	25	12	6.4	181	C48	
DIV2197X029S36	325	231	22.5	12	6.4	215	S36	
DIV2235X630S36	330	224	30	12	6.4	210	S36	
DIV2197X003C24	330	224	28	12	6.4	203.2	C24	
DIV2135X594S36	332	220	35.6	12	6.4	203.2	S36	
DIV2201X565S36	332	233	34	12	6.4	215	S36	
DIV2198X448C36	332	225	32	12	6.4	210	C36	



# brake discs **MOTORSPORT**

## Application list

### Part numbers and measurements

Part Number	OD	ID	Thickness	No of holes	Hole Dia.	Hole PCD	Groove type	Notes
DIV2198X564S36	332	233	32	12	6.4	215	S36	1.0mm RAISED FACE
DIV2198X483C36	332	233	28	12	6.4	210	C36	
DIV2213X531C24	335	233	32	12	6.4	214	C24	
DIV2213X532C24	335	235	30	12	6.4	214	C24	
DIV2213X530C24	335	233	28	12	6.4	214	C24	
DIV2175X634C24	343	235	32	12	6.4	213	C24	
DIV2175X463C24	350	244	28	12	6.4	228.6	C24	
DIV2216X780S48	350	255	31	12	6.4	233	S48	
DIV2202X220C48	355	245	35.5	12	6.4	228.6	C48	
DIV2216X770S36	355	249	32	12	6.4	233	S36	
DIV2202X599C48	355	259	30	12	6.4	235	C48	
DIV2202X835S36	355	250	35.6	12	6.4	231	S36	
DIV2175X836S36	355	250	35.6	12	6.4	231	S36	
DIV2175X837S36	355	222	35.6	12	6.4	204	S36	
DIV2202X835G	355	250	35.6	12	6.4	231	G	
DIV2175X836G	355	250	35.6	12	6.4	231	G	
DIV2175X837G	355	222	35.6	12	6.4	204	G	
DIV2202X684C24	360	248	36	12	6.4	234	C24	
DIV2202X773B	370	264	30	12	6.4	248	B	
DIV2211X639C48	375	261	35.6	12	8	247.5	C48	



# brake discs **MOTORSPORT**

## Application list

### Part numbers and measurements

Part Number	OD	ID	Thickness	No of holes	Hole Dia.	Hole PCD	Groove type	Notes
DIV2211X703S36	375	247	35.6	12	6.4	233	S36	
DIV2211X716S36	378	264	35.6	12	6.4	242	S36	
DIV2211X711G	380	267	35.6	12	6.4	250	G	
DIV2202X444C32	380	275	35	12	6.4	258	C32	
DIV2211X742S72	380	275	34	12	6.4	258	S72	
DIV2211X803S36	380	268	32	12	6.4	245	S36	
DIV2175X499L16	382	270	32	12	6.4	247	G	
DIV2211X001B24	390	278	35	12	6.4	265	B	
DIV2211X001S72	390	278	35	12	6.4	265	S72	

**This is just a small selection of the discs that we supply. For anything that falls outside of the listings here, please get in touch with one of our sales representatives.**



# brake discs **ADVANTAGE**

## Application list

Part Number	OD	ID	Thickness	No of holes	Hole Dia.	Hole PCD
DV256/25/47-6/140	256	162	25	6	6.4	140
DV267/21/56-6/140	267	154.9	21	6	6.4	140
DV278/16/45-8/176	278	188	16	8	8.4	176
DV280/23/44-8/177	280	192.75	23	8	6.4	177
DV280/25/42-12/178	280	197	25	12	6.4	178
DV280/25/53-8/159	280	174	25	8	6.4	159
DV295/25/53-12/178	295	189	25	12	6.4	178
DV295/28/53-12/178	295	189	28	12	6.4	178
DV304/25/51-12/178	304	203	25	12	6.4	178
DV304/28/55-12/178	304	195	28	12	6.4	178
DV315/28/50-12/203	315	215	28	12	6.4	203
DV325/28/53-12/203	325	220	28	12	6.4	203
DV330/32/55-12/203	330	220	32	12	6.4	203
DV343/28/55-12/218	343	233	28	12	6.4	218
DV343/32/55-12/218	343	233	32	12	6.4	218
DV355/28/54-12/235	355	248	28	12	6.4	235
DV355/32/54-12/235	355	248	32	12	6.4	235
DV378/32/48-12/260	378	282	32	12	6.4	260

# Discs technical information

## Disc groove types

Grooves in the surface of a brake disc perform three basic functions:

- To continuously refresh the brake pad surface by removing debris from the pad
- To increase initial friction between the disc and pads, producing more 'bite'.
- To prevent a build-up of gas produced by the pad constituents and break the boundary layer of hot air that adheres to the surfaces of the disc

More grooves generally mean that initial bite is higher, with a corresponding increase in pad wear. Noise also increases with the number of grooves.

The curved form of each groove produces a longer edge than would otherwise be achieved if the grooves were straight.

### S Grooves (S)

The groove is divided into short segments so that a continuous disc surface area is maintained, helping to reduce thermal distortion.

The curved form of each groove produces a longer edge than would otherwise be achieved if the grooves were straight. There is less grooving of the pad and disc surfaces with this design.

## Assembly procedure for Alcon bobbin drive discs

There are two types of bobbin available:

### Assembly procedure

1. Place the bobbin in the slots in bell, with the 'ears' of the bobbin at right angles to the outside diameter of the bell, unless otherwise specified.
2. Push the bolt through the bobbin so that it engages in the disc.
3. Apply a small amount of thread retainer, enough to cover 2-4 threads, to the portion of bolt protruding from the disc. Fit a nut onto each bolt and finger tighten.
4. Tighten the nuts in the sequence shown in Fig 3, rather than a rotational sequence, to the specified torque using the appropriate tools. Prevent the bolt from rotating

when applying the specified tightening torque to the nut. Do not hold the nut and tighten the bolt as it will cause the bobbin to rotate and the bell will lock up.

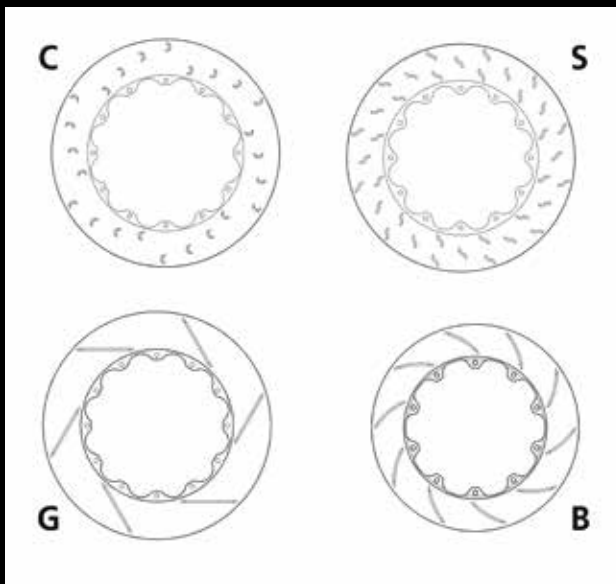
Where bobbins with integral studs are supplied (405 series bobbin) Alcon tool TSB3430X577 is available and is used to prevent the bobbin from rotating during tightening.

This tool can also be used to 'square' both 401 & 405 series bobbins after tightening to ensure the bell is not locked up. Once assembled, the bell should be a 'rattle' fit on the disc and bobbins.

Once assembly is complete, use feeler gauges to check that the float between the bobbin and bell is correct and uniform on all bobbins.

### General notes:

1. Ensure that all parts are clean and grease free
2. Approved thread retainer: Loctite 243 (Blue)
3. Tightening torque: 0.25" UNF 16-18Nm (11.8 – 13.3 lb ft)



### Straight (G) and Curved (B)

These are the traditional types of surface groove used for motorsport discs.

Note that the direction of the grooves is opposite to the vanes to minimise distortion and to eliminate thin sections that would assist crack propagation.

### Crescent (C)

The groove is divided into short segments so that a continuous disc surface area is maintained, helping to reduce thermal distortion.

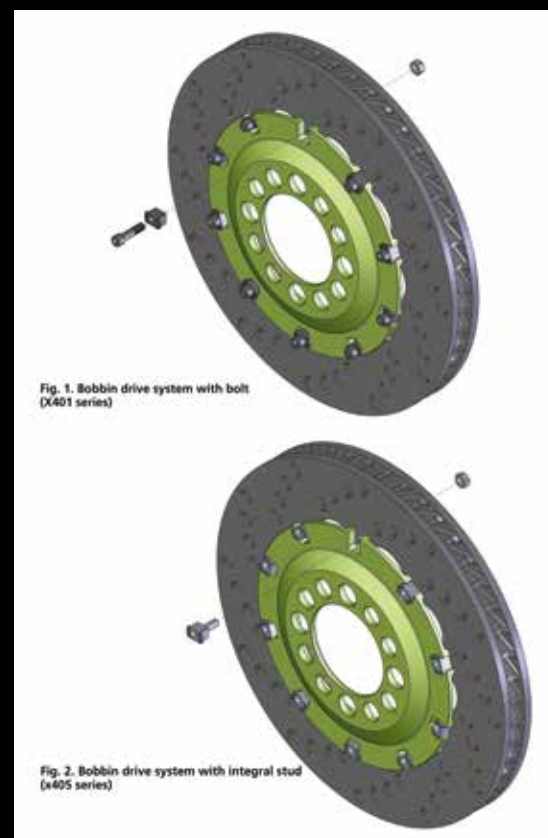


Fig. 1. Bobbin drive system with bolt (X401 series)

Fig. 2. Bobbin drive system with integral stud (X405 series)

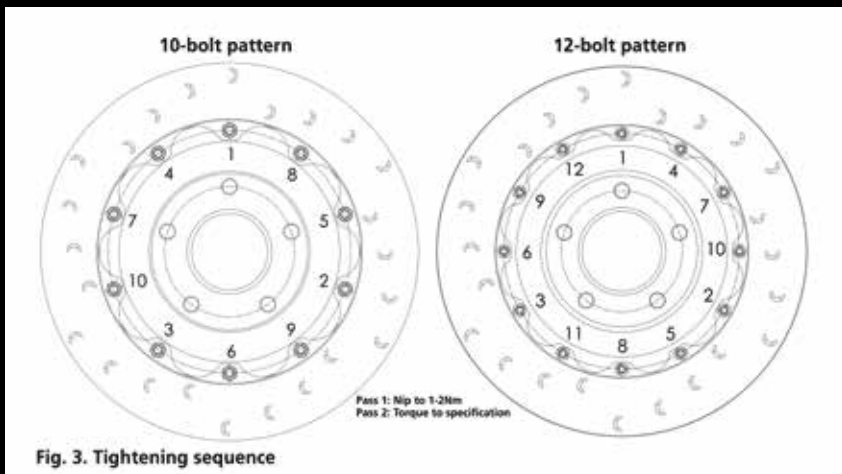


Fig. 3. Tightening sequence

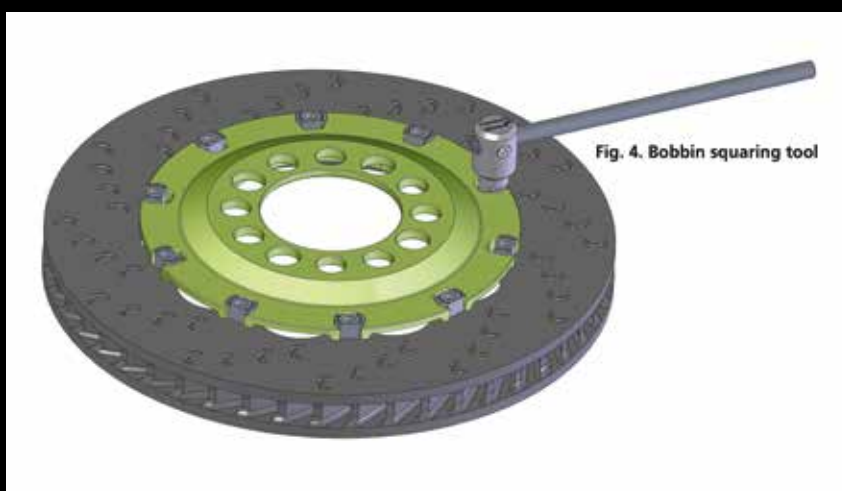


Fig. 4. Bobbin squaring tool

## Disc and pad bedding and running in

1. Pre-bedding at Alcon. Most discs and pads supplied by Alcon are pre-bedded to deposit an even transfer layer of friction material on to the surface of the disc and to thermally condition the disc. After the discs have been pre-bedded and allowed to cool, the disc and pads can be bolted on to the car and should be ready for competition use providing that the discs and pads are "run-in" correctly.
2. Use of pre-bedded discs in competition. Care needs to be taken during "running-in" to obtain the best performance and life from pre-bedded discs and pads. Lightweight discs are particularly sensitive to potential problems during use, failure to correctly

run-in the discs and pads can result in problems including Long pedal, poor feel and modulation, vibration, premature wear and disc cracking. Heavier-weight discs are more stable and less prone to these problems, due to the increased structural rigidity gained from 48 and 72 vane design and generally increased flange thickness. It is still advisable to run-in the discs carefully as per instructions to follow. To prevent these problems, an appropriate and proven "running-in" procedure needs to be followed during rallies, races and tests. We suggest that the following procedures are employed: 5 brake applies from slow speed and light pedal pressure to complete system check. 15 brake applies from 80 to 40 kph, light to moderate pedal pressure. (2.5 - 3.0

seconds, line pressure 20 bar) 15 brake applies from 120 to 60kph, light to moderate pedal pressure. (4.0 seconds, line pressure 20 bar)

## Disc warming

Irrespective of which friction materials are being used, pads and discs used in all forms of motorsport require a period of bedding-in before being used.

Discs and pads that are supplied as 'pre-bedded' as well as those that have been run before, must be brought up to temperature on the car before being used in test, qualifying or race conditions.

A suggested brake warming routine from cold is to carry out 3 stops from 120km/h to 40km/h followed by 6 or 7 stops from 160km/h to 40km/h, both at around at 0.5g. Brake ducts can be left fully open. During this procedure, disc surface temperature will rise gradually to around 370°C. Note that this is a disc warming procedure, to be repeated each time the car runs with cold brakes.

The actual procedure will vary depending on the circuit layout and can often begin exiting the pit lane on the out lap. A correctly warmed disc will have an even, grey layer of friction material with no sign of spots or blotches of friction material. Within a few additional laps the brake pedal should become firm and consistent as a transfer layer of pad material develops on each brake plate.

Failure to carry out a procedure to warm the brakes may lead to uneven deposition or spotting of friction material on the disc surfaces, causing vibration under braking. Uneven deposition also leads to uneven temperature distribution, which may cause the disc to permanently distort, and brake pedal travel to increase, particularly after a long run without the brakes being used.

Alternatively, the disc may crack prematurely due to an unequal distribution of thermal stresses around the disc.





## Alcon floating disc and bell assemblies

As with all premium performance lightweight racing products, disc assemblies demand a high level of care and maintenance in order to ensure that optimum brake performance is always achieved.

1. **Disc care**  
Generally, when disc mass is reduced, the operating temperature of the disc will increase. However, Alcon's turbulator disc is designed to dissipate heat more efficiently, resulting in lower disc temperatures than other discs of similar weight. The use of thermal paints allows disc cooling air supply to be monitored. As a guide, temperature of the inner and outer friction faces must be approximately the same at all times. If the temperature differential between each face differs by more than 20°-30°C, distortion of the disc is very likely, often leading to cracking of the friction faces and disc coning.
2. **Bell maintenance**  
The Alcon floating disc system is designed to allow even thermal expansion of the disc without constraint from the hub mounting components, thereby substantially reducing thermal stress on the disc. The amount of float is controlled in two directions: Linear clearance between each bobbin and its relative slot in the bell

Lateral clearance under the bobbin head. The parts must be in a good condition to ensure that the designated clearances are maintained during use. The bobbin contact surfaces of the bell must be inspected regularly. If the hard anodised surface in the slot area is damaged, with the anodising worn away, the disc will not float freely on the bell. Bell life may be extended by using a bell on the opposite side of the car, thus utilising the opposing load surface. Clean off any debris that may prevent the bobbin from sliding in the slot by Vaqua blasting and check the condition of the opposing face before proceeding. If both surfaces are in poor condition the bell must be replaced. Continued exposure to high temperature causes annealing of the aluminium, in which case wear is exaggerated due to softness of the base material. Extended use at high temperature can also lead to bell distortion, such that the assembly is no longer floating.

3. **Bobbin maintenance**  
The condition of the bobbin is equally important. Under normal use, bobbin surfaces can be cleaned by Vaqua blasting to remove debris, and the bobbin re-used several times. However, bobbins that have been used with a bell that has worn during service often have heavy deposition of debris that has adhered to the face; this debris prevents the bobbin from sliding in the slot,

such that float is eliminated, often causing vibration and sometimes associated with premature cracking of the disc.

## Conditions leading to cracking in cast iron brake discs

The performance of a brake disc is affected by:

- The speed with which heat is fed in.
- The speed with which heat can be dissipated.

These conditions are affected markedly by frictional characteristics, thermal conductivity and diffusivity; the final bulk temperature is affected by the total heat capacity of the entire braking system, which is proportional to the weight of the discs.

The speed with which heat can be dissipated is particularly dependent on the freedom with which air can flow around the brake.

To avoid disc cracking, the braking system must be designed around the maximum energy input to the disc, with careful consideration given to maximising the flow of cooling air. In addition, the type of friction material used can influence the formation of heat checking and major cracking, as some friction materials can result in much higher surface temperatures for a given power input and therefore this factor must also be considered.

Frequent checks must be made on the condition of the surfaces of the disc, and the discs must be changed if there is any doubt.



# Actuation **introduction**

## **Master cylinders**

Alcon's range of master cylinders covers the majority of race applications that we may encounter. They feature compact, cutting edge designs and are made from high-grade materials in all instances. Each master cylinder comes in a range of bore sizes to suit the requirement, please see breakdown of part numbers for more information on individual specifications.

## **Balance bars**

Alcon's balance bar range includes both pedal and bulkhead mountings, and are designed for use with specific master cylinders. Using either high-grade aluminium or steel housings, they are robust and durable and well up to the tests of both race and rally applications. See individual product listings for measurements and part numbers and, if in doubt, just get in touch.

## **Bias adjusters and valves**

Alcon also produces a range of anti knock-off valves, proportioning valves, and bias adjusters for customers' needs. Again crafted to Alcon's high standards, these are designed to be used in conjunction with Alcon master cylinders and calipers with all necessary information on each product listing.

# GUIDE master cylinder part numbering

## MAR 5 44 0 H M161 M A B

### FIXATION METHOD

- 1: VERTICAL FLANGE
- 3: THREADED NOSE
- 4: OFFSET FLANGE
- 5: SPHERICAL BEARING
- 6: TRUNNION END
- 8: LOW HYSTERESIS (VL SEAL)
- 9: NON STANDARD
- BLANK: NO FIXATION (EG. TANDEM)

### BORE

- SHORT SERIES**
- 20: 5/8" (15.9mm)
  - 21: 0.7" (17.8mm)
  - 22: 3/4" (19.05mm)
  - 23: 13/16" (20.6mm)
  - 24: 7/8" (22.2mm)
  - 25: 15/16" (23.8mm)
  - 26: 1.0" (25.4mm)
  - 27: 1 1/16" (27.0mm)
  - 28: 1 1/8" (28.6mm)
  - 29: 1 3/16" (30.2mm)
  - 30: 1 1/4" 31.8mm)

- METRIC**
- 41: 17mm
  - 42: 15.5mm
  - 43: 16mm
  - 44: 15.1mm
  - 45: 14.8mm
  - 46: 14.5mm
  - 47: 16.5mm
  - 48: 17.5mm

### PULL TYPE

- 148: 19mm BORE 12mm ROD
- 162: 19mm BORE 10mm ROD
- 173: 22mm BORE 14mm ROD
- 187: 22mm BORE 12mm ROD
- 203: 22mm BORE 9mm ROD
- 218: 25.4mm BORE 13mm ROD
- 234: 25.4mm BORE 10mm ROD

### 2 STAGE

- 04: 5/8" / 7/8"
- 15: 1 1/16" / 15/16"
- 16: 0.7" / 1.00"

- 61: 16.5 / 23.8
- 62: 16.5 / 22.2
- 63: 19.05 / 23.8

### SEAL TYPE

- SHORT**
- 0: LIP SEAL
  - 1: LIP SEAL WITH '0' SEAL SEC
  - 2: TEVES SEAL
  - 3: VL SEAL
  - 4: SEALS FOR USE WITH MINERAL OIL ONLY
  - 5: LIP SEAL PRIMARY, VL SEAL SECONDARY (2 STAGE)
- 2 STAGE**
- 0: 210psi BLOW OFF

### BEARING

- B: SPHERICAL BEARING FITTED

### SERIAL LETTER

- A, B, ETC.
- X: THIRD OUTLET

### OUTLET

- M: M10x1.0 OUTLET
- D: DUAL OUTLET
- (ALL OTHERS 3/8" UNF)

### PUSH ROD

- E178: 3/8" UNF x 178
- F115: 5/16" UNF x 115
- F160: 5/16" UNF x 160
- M115: M8x1.25 x 115
- M158: M10x1.0 x 160
- M160: M8x1.25 x 160
- M230: M10x1.25 x 230
- P160: PLAIN x 160
- C180: CLEVIS x 180
- X: FLANGED (NO THREAD)
- R172: RECESS X172 LONG (HONDA)
- R184: RECESS X184 LONG (HONDA)

### FLUID INLET

- A: INTEGRAL RESERVOIR
- B: 7/16" - 20UNF FEMALE
- C: PUSH ON STEM
- D: M14x1.5 FEMALE
- E: 3/4" x 16
- F: 3/8" x 24UNF MALE
- G: M12x1.0 FEMALE
- H: M10x1.0 FEMALE
- J: M14x1.5
- K: 3/8" - 24UNF FEMALE

# motorsport range **MAR52**

## Spherical bearing-mounted master cylinder

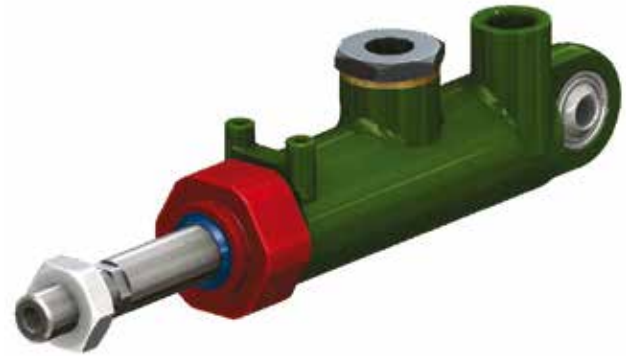
### Part numbers

Ø Bore	Part number
15.00 (0.590")	MAR5440HM161MAB
15.90 (0.625")	MAR5200HM161MAB
17.78 (0.700")	MAR5210HM161MAB
19.05 (0.750")	MAR5220HM161MAB
20.62 (0.812")	MAR5230HM161MAB
22.22 (0.875")	MAR5240HM161MAB
23.8 (0.937")	MAR5250HM161MAB
25.4 (1.00")	MAR5260HM161MAB

### Replacement parts

	Ø Bore	Service kit
<b>Seal kit, comprises: Primary Seal, Secondary Seal, Primary Seal Washer, Circlip, Spring and Wiper seal</b>	15.00	MAR5440SK
	15.90	MSK5200SK
	17.78	MSK5210SK
	19.05	MSK5220SK
	20.62	MSK5230SK
	22.22	MSK5240SK
	23.8	MSK5250SK
	25.4	MSK5260SK
<b>Spherical bearing</b>	BSS0089X392	
<b>Copper gasket 0.375 UNF</b>	FCG0080X015	

**Applications:**  
Race and rally



### Key features and benefits

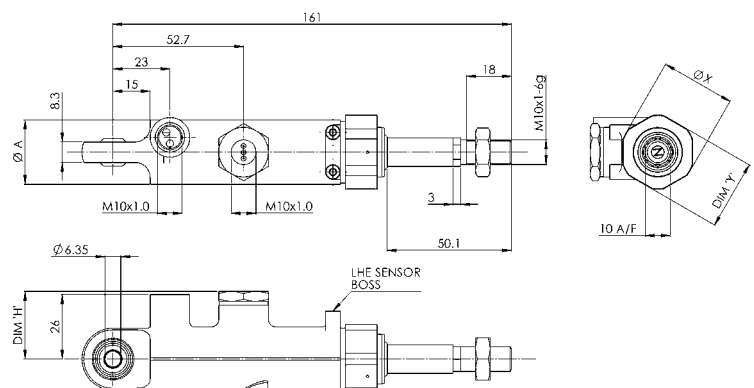
- Compact design push type master cylinder.
- Suitable for brake and clutch applications.
- 0.25" high grade spherical bearing allows the master cylinder to rotate with the arc of the pedal and offset of the balance bar to minimise side loads at the push rod.
- Breather port clearance (cut-off travel) calibrated during assembly to provide controlled lost travel.
- Scraper seal to prevent ingress of dust and debris.
- Non-standard push rods available on request.
- Integrated travel sensor SHM4917C available for accurate measurement of push rod travel in both front and rear circuits.

### Specifications

- Maximum stroke: 29.5mm.
- Breather port clearance 0.7mm-1.0mm. Versions available with larger breather port diameter for rally car handbrake.
- Fluid inlet port M10x1 Tightening torque 17-20Nm with a copper washer.
- Fluid outlet port M10x1 Tightening torque 17-20Nm with a copper washer.
- To avoid trapping air, install with the ports uppermost. The fluid outlet port must not be below the horizontal axis.
- Average weight 0.13Kg.

### Installation dimensions

NOM. BORE	PART NUMBER	ØA	DIM 'H'	ØX	DIM 'Y'	BREATHER PORT CLEARANCE
15.00 / 0.590"	MAR5440HM161MAB	26	27	30	28	0.7 / 1.0
15.9 / 0.625"	MAR5200HM161MAB					
17.8 / 0.700"	MAR5210HM161MAB					
19.05 / 0.750"	MAR5220HM161MAB					
20.62 / 0.812"	MAR5230HM161MAB					
22.22 / 0.875"	MAR5240HM161MAB	28	28.5	32	30	
23.81 / 0.937"	MAR5250HM161MAB	31.6		34	32	
25.4 / 1.000"	MAR5260HM161MAB	31.6		34	32	

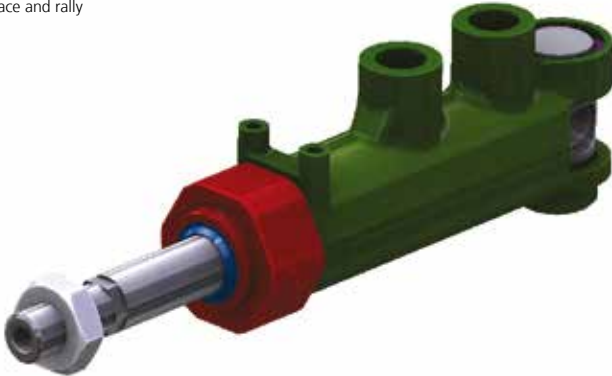


# motorsport range **MAR62**

## Trunnion-mounted master cylinder

### Applications:

Race and rally



### Key features and benefits

- Compact design push type master cylinder.
- The trunnion is mounted in needle roller bearings, providing minimal friction when adjusting front to rear brake bias.
- An Ø8mm DU Bearing reduces friction between the master cylinder and balance bar.
- Suitable for brake and clutch applications.
- Suitable for use with Alcon bulkhead mounted balance bar ref MPA3200X111.
- Breather port clearance (cut-off travel) calibrated during assembly to provide controlled lost travel.
- Scraper seal to prevent ingress of dust and debris.
- Non-standard push rods available on request.
- Integrated travel sensor SHM4917C available for accurate measurement of push rod travel in both front and rear circuits.

### Specifications

- Nominal stroke: 25.4mm.
- Breather port clearance 0.7mm-1.0mm. Versions available with larger breather port diameter for rally car handbrake.
- Recommended shaft diameter: Ø8 f7 Ø7.972/7.987.
- Fluid inlet port M10x1 Tightening torque 17-20Nm with a copper washer.
- Fluid outlet port M10X1 Tightening torque 17-20Nm with a copper washer.
- To avoid trapping air inside, install with the ports uppermost. The fluid outlet port must not be below the horizontal axis.
- Average weight 0.16Kg.

### Installation dimensions

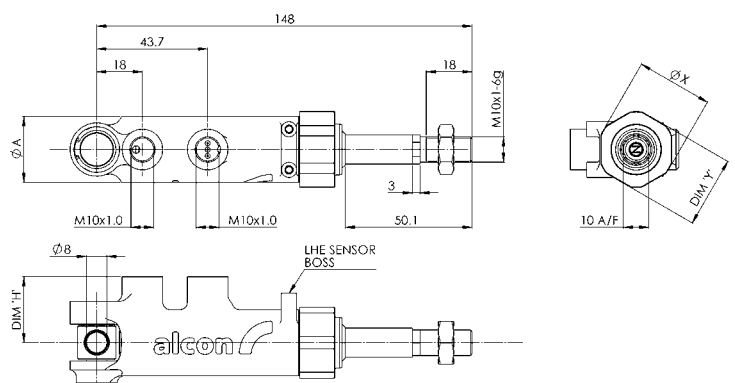
NOM. BORE	PART NUMBER	ØA	DIM 'H'	ØX	DIM 'Y'	BREATHER PORT CLEARANCE
15.00 / 0.590"	MAR6440HM148MA	26	26	30	28	0.7 / 1.0
15.9 / 0.625"	MAR6200HM148MA					
17.8 / 0.700"	MAR6210HM148MA					
19.05 / 0.750"	MAR6220HM148MA					
20.62 / 0.812"	MAR6230HM148MA					
22.22 / 0.875"	MAR6240HM148MA					
23.81 / 0.937"	MAR6250HM148MA	31.6	28.5	34	32	
25.4 / 1.000"	MAR6260HM148MA					

### Part numbers

Ø Bore	Part number
15.00 (0.590")	MAR6440HM148MA
15.90 (0.625")	MAR6200HM148MA
17.78 (0.700")	MAR6210HM148MA
19.05 (0.750")	MAR6220HM148MA
20.62 (0.812")	MAR6230HM148MA
22.22 (0.875")	MAR6240HM148MA
23.8 (0.937")	MAR6250HM148MA
25.4 (1.00")	MAR6260HM148MA

### Replacement parts

	Ø Bore	Service kit
<b>Seal kit, comprises: Primary Seal, Secondary Seal, Primary Seal Washer, Circlip, Spring and Wiper seal</b>	15.00	MAR5440SK
	15.90	MSK5200SK
	17.78	MSK5210SK
	19.05	MSK5220SK
	20.62	MSK5230SK
	22.22	MSK5240SK
	23.8	MSK5250SK
	25.4	MSK5260SK
<b>Copper gasket 0.375 UNF</b>		FCG0080X015





# motorsport range **MAR72**

## Tandem in-line master cylinder

**Applications:**  
Race and rally

### Part numbers

Ø Bore	Part number
15.90/15.90 (0.625")	MAR7200KC180A
17.78/17.78 (0.700")	MAR7210KC180A

### Replacement parts

	Ø Bore	Service kit
<b>Service kit, comprises 2 off:</b> Primary Seal, Secondary Seal, Primary Seal Washer, Gasket, Spring and Wiper seal	15.90	MAR7200SK
	17.78	MSK7210SK



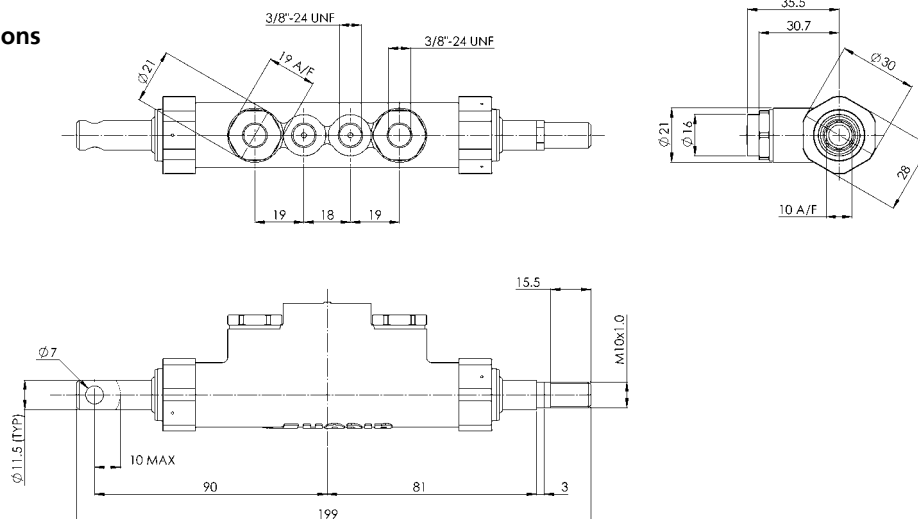
### Key features and benefits

- Compact design push type master cylinder with two separate circuits.
- Equal pressure generated in each circuit.
- Suitable for hand brake where regulations specify that the original diagonal split to the rear brakes must be retained.
- Hole in push rod at one end for compact installation using a clevis.
- Breather port clearance (cut-off travel) calibrated during assembly to provide controlled lost travel.
- Scraper seals to prevent ingress of dust and debris.
- Non-standard push rods available on request.

### Specifications

- Nominal stroke: 12mm per circuit.
- Breather port clearance 0.7mm-1.0mm. Versions available with larger breather port diameter.
- Fluid inlet port 0.375-24 UNF. Tightening torque 17-20Nm with a copper washer.
- Fluid outlet port 0.375-24 UNF. Tightening torque 17-20Nm with a copper washer.
- To avoid trapping air inside the master cylinder, install it with the ports uppermost.
- Average weight 0.26Kg.

### Installation dimensions

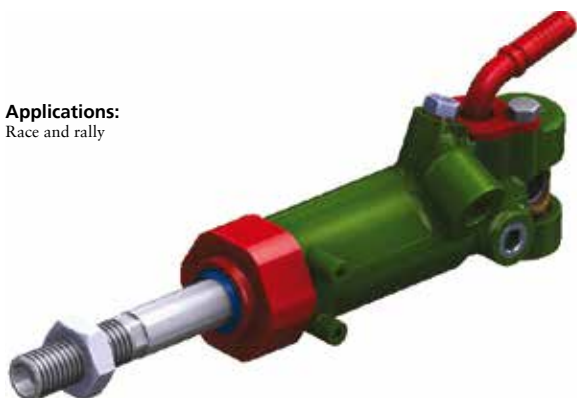


# motorsport range **MAR82**

## High efficiency master cylinder

### Applications:

Race and rally



### Key features and benefits

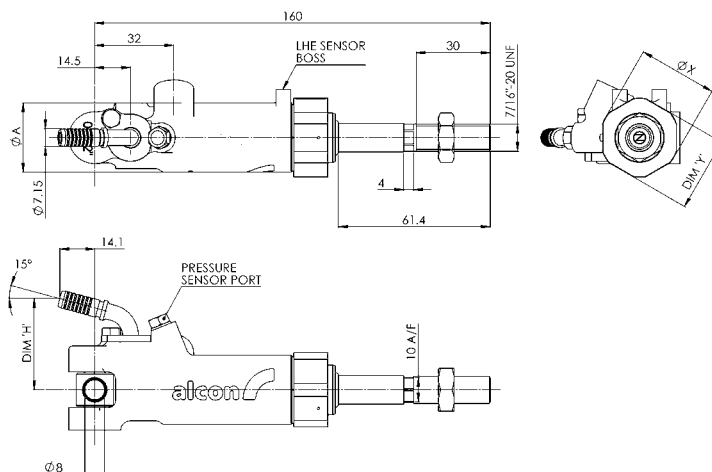
- Compact design push type master cylinder with a single low friction pressure seal in place of conventional primary and secondary lip seals.
- Integral Pressure Sensor port, suits Kulite or similar.
- Integral port for a removable Anti-Knock back valve capsule, with three versions available.
- Face seal closure (cut-off travel) calibrated during assembly to provide minimal lost travel.
- Trunnion mounted in needle roller bearings, providing minimal friction when adjusting front to rear brake bias.
- Scraper seal to prevent ingress of dust and debris.
- Suitable for brake and clutch applications.
- Suitable for use with Alcon PBA3300 series pedal box.
- Integrated travel sensor SHM4917C available for accurate measurement.

### Specifications

- Nominal stroke: 25.4mm.
- Face seal closure 0.4-0.6mm.
- Recommended shaft diameter:  $\varnothing 8$  f7  $\varnothing 7.972/7.987$ .
- Fluid outlet port rotatable  $\varnothing 7$  stem suits Goodridge hose.
- Fluid inlet port 3/8-24UNF Tightening torque 17-20Nm with a copper washer.
- Pressure sensor port 10-32UNF.
- To avoid trapping air inside, install with the ports uppermost. The fluid outlet port must not be below the horizontal axis.
- Average weight 0.24Kg.

### Installation dimensions

NOM. BORE	PART NUMBER	$\varnothing A$	DIM "H"	$\varnothing X$	DIM "Y"	BREATHER PORT CLEARANCE
17.8 / 0.700"	MAR8213CF160AS	28	36.9	32	30	0.7 / 1.0
19.05 / 0.750"	MAR8223CF160AS					0.7 / 1.0
20.62 / 0.812"	MAR8233CF160AS					0.7 / 1.0
22.22 / 0.875"	MAR8243CF160AS					0.7 / 1.0
23.81 / 0.937"	MAR8253CF160AS					0.7 / 1.0
25.4 / 1.000"	MAR8263CF160AS	31.6	34	32	0.7 / 1.0	



Part numbers	
$\varnothing$ Bore	Part number
17.78 (0.700")	MAR8213CF5160AS
19.05 (0.750")	MAR8223CF5160AS
20.62 (0.812")	MAR8233CF5160AS
22.22 (0.875")	MAR8243CF5160AS
23.8 (0.937")	MAR8253CF5160AS
25.4 (1.00")	MAR8263CF5160AS

Replacement parts		
Seal kit, comprises: Main Seal, 3 x O Seals, Centre Seal, Circlip, Spring and Wiper seal	$\varnothing$ Bore	Service kit
	17.78 (0.700")	MAR8213SK
	19.05 (0.750")	MAR8223SK
	20.62 (0.812")	MAR8233SK
	22.22 (0.875")	MAR8243SK
	23.8 (0.937")	MAR8253SK
	25.4 (1.00")	MAR8263SK
Inlet fitting 30°	SAM8200X106	
Inlet fitting 90°	SAM8200X108	
Copper gasket 0.375 UNF	FCG0080X015	
AKB Capsule, 58 psi	HAA8200X100A	
AKB Capsule, 44 psi	HAA8200X100B	
AKB Capsule, 26 psi	HAA8200X100C	

# motorsport range MO/MS series

## Flange mounted master cylinders

### Part numbers

Ø Bore	Vertical flange	60° offset flange
15.90 (0.625")	MS/625	MO/625
17.78 (0.700")	MS/700	MO/700
19.05 (0.750")	MS/750	MO/750
20.62 (0.812")	MS/812	MO/812
22.22 (0.875")	MS/875	MO/875

### Replacement parts

Item	Master cylinder	Ø Bore	Seal kit
Seal kit, comprises: Primary Seal, Secondary Seal, Primary Seal Washer, Piston, Gasket, Spring and Rubber Boot	MS/625 MO/625	15.90 (0.625")	MSK1200RK
	MS/700 MO/700	17.78 (0.700")	MSK1210RK
	MS/750 MO/750	19.05 (0.750")	MSK1220RK
	MS/812 MO/812	20.62 (0.812")	MSK1230RK
	MS/875 MO/875	22.22 (0.875")	MSK1240RK
Copper gasket 0.437 UNF	FCG0080X104		
Copper gasket 0.375 UNF	FCG0080X015		

**Applications:**  
Race and rally



MO Series - 60° offset flange

MS Series - vertical flange

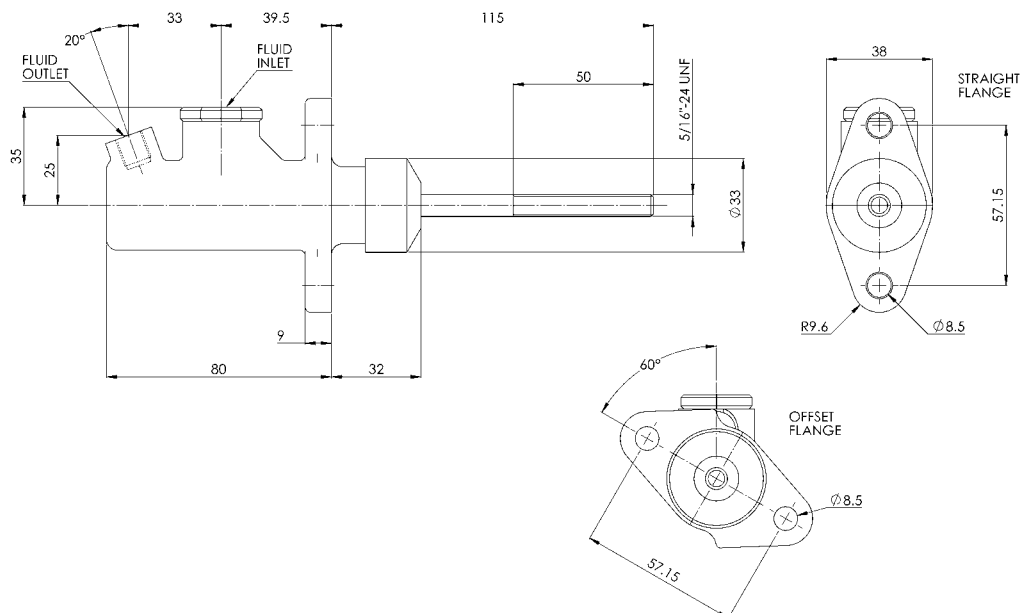
### Key features and benefits

- Suitable for brake and clutch applications
- Standard 57.2 (2.25") mounting centres, interchangeable with other manufacturers' master cylinders
- Breather port clearance (cut-off travel) calibrated during assembly to provide controlled lost travel
- Rubber dust excluder boot
- Non-standard push rods available on request
- Versions with non-captive push rods available on request

### Specifications

- Push rod length from flange is 115mm with 50mm thread length. Shorten push rod as required
- Fluid inlet port 0.437-20 UNF (-4) Tightening torque 18-22Nm with a copper washer
- Fluid outlet port 0.375-24 UNF (-3) Tightening torque 17-20Nm with a copper washer
- To avoid trapping air, install it with the ports uppermost. The fluid outlet port must not be below the horizontal axis
- Push rod angularity must not exceed 5° throughout the full travel
- Weight 0.31Kg

### Installation dimensions



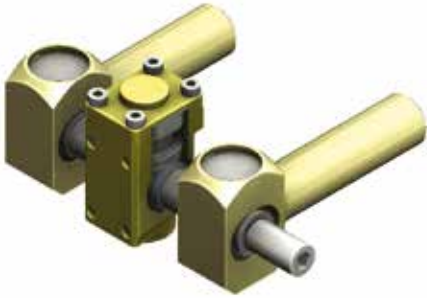


# motorsport range Balance bars

## Low friction balance bars

**Applications:**  
Race and Rally

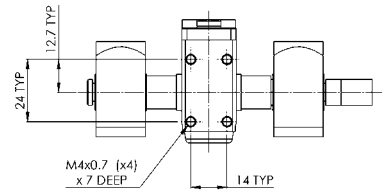
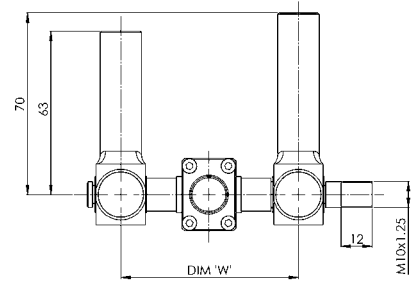
### MPA3200X107



Part no	Dim W
MPA3200X107.68	68mm
MPA3200X107.72	72mm

#### Key features and benefits

- Pedal mounting.
- Designed for use with Alcon MAR52 series master cylinder.
- Aluminium housing.
- Rod ends included, extra-long type.
- Cable adjuster connector M10x1.25.



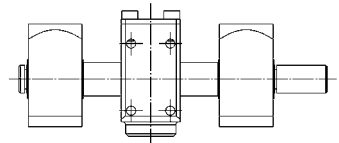
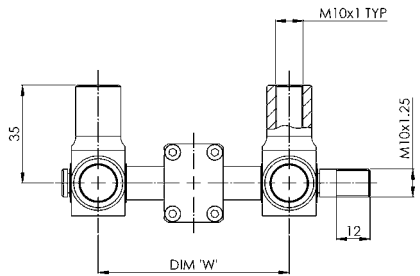
### MPA3200X110



Part no	Dim W
MPA3200X110.68	68mm
MPA3200X110.72	72mm

#### Key features and benefits

- Pedal mounting.
- Designed for use with Alcon MAR52 series master cylinder.
- Steel housing.
- Rod ends included, short type.
- Cable adjuster connector M10x1.25.



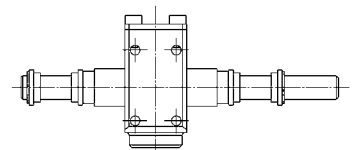
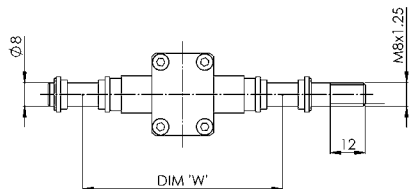
### MPA3200X111



Part no	Dim W
MPA3200X111.68	68mm
MPA3200X111.76	76mm

#### Key features and benefits

- Bulkhead mounting.
- Designed for use with Alcon MAR62 series master cylinder.
- Aluminium housing.
- Cable adjuster connector M8x1.25.





# motorsport range Bias adjusters

## Knurled and geared adjuster knobs

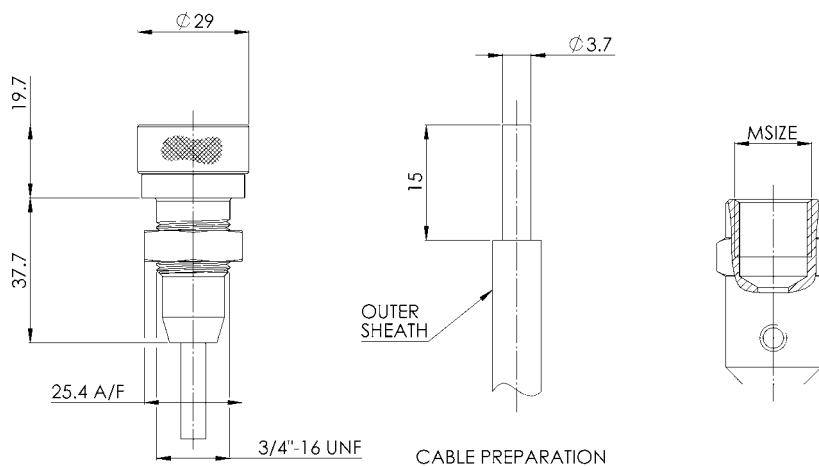
**Applications:**  
Race and Rally



Part no	Fitting size
AAB3430X548	M10x1.25
AAB3430X548A	M8x1.25
BAC3300X156	Ø8 with pin

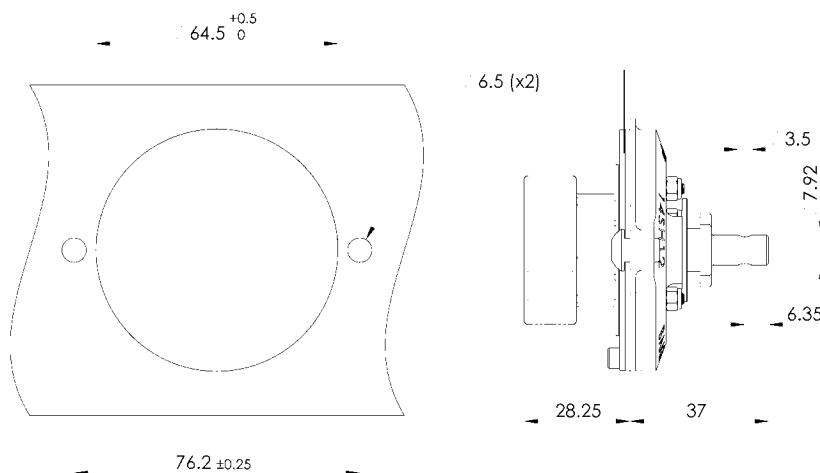
### Key features and benefits

- Supplied with 1.2m long Decabon cable and fitting retained by set screws, see above.
- Remove the fitting and trim the cable to the required length.
- Knurled adjuster knob, ¼ turn click stops.



### Key features and benefits

- Eliminates the need for the driver to remember the number of clicks.
- The indicator dial is geared to rotate with the adjuster knob in ¼ turn increments for visual indication of balance bar position.
- The indicator dial can be zeroed after setting the required front to rear brake bias.
- Cable not included.





# advantage range Valves

## Anti knock-off and proportional valves

**Applications:**  
Race and Rally

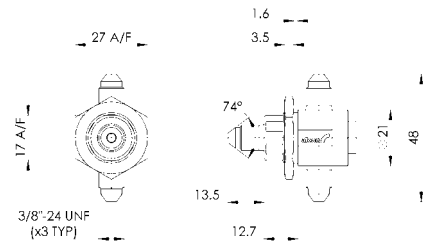
### Tee type



Part no	Brake off pressure rating
VAR3430X607A	172 kPa
VAR3430X607B	300 kPa
VAR3430X607C	40 kPa

#### Key features and benefits

- Brake on pressure 40kPa.
- Brake on flow rate 75 LOHM.
- Brake off pressure, see above.
- Brake off flow rate 1900 LOHM.



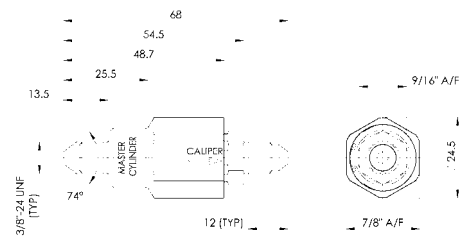
### In-line type



Part no	Brake off pressure rating
VAR3430X842A	172 kPa
VAR3430X842B	300 kPa

#### Key features and benefits

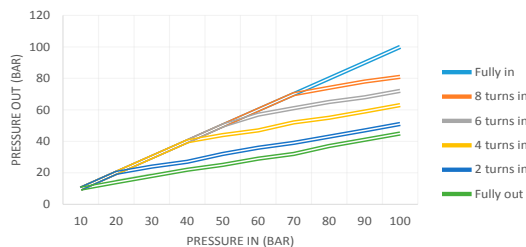
- Brake on pressure 40kPa.
- Brake on flow rate 75 LOHM.
- Brake off pressure, see above.
- Brake off flow rate 1900 LOHM.



### Proportioning valve

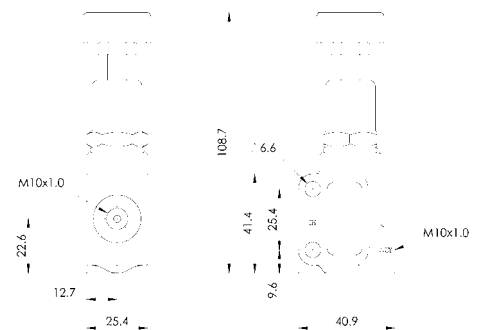


#### VAP3430X1126A



#### Key features and benefits

- Fluid inlet and outlet ports M10x1.
- Maximum working pressure 100 bar.
- Operating pressure range 7 to 70 bar.
- Pressure reduction ratio 2.6:1.





# CLUTCHES **introduction**

## Clutch choice

Our range of clutches includes options for a number of motorsport applications. If your requirement falls outside this, then get in touch.

The Alcon clutch range consists of three diameters:  $\varnothing 140$  (5.5"),  $\varnothing 184$  (7.25") and  $\varnothing 200$  (7.875"). The diameter of a clutch is determined by the driven plate diameter.

Smaller diameter clutches have less mass and inertia which allows faster engine acceleration and gear changes. Larger diameter clutches have a greater temperature resistance and will continue to function when smaller clutches will have overheated.

## Number of driven plates

The number of driven plates required depends on the diameter of the clutch, the clamp load, the engine torque and the application requirements. More plates increase the clutch height but allow for greater temperature resistance and reduced wear per plate.

## Friction Material

The Alcon range consists of three friction materials:

### Sintered

Sintered clutches are lightweight and have low inertia. They are generally used in lightweight circuit applications such as touring car or lower duty single seater. They also benefit from having a lower clutch height for the same number plates than the other friction materials.

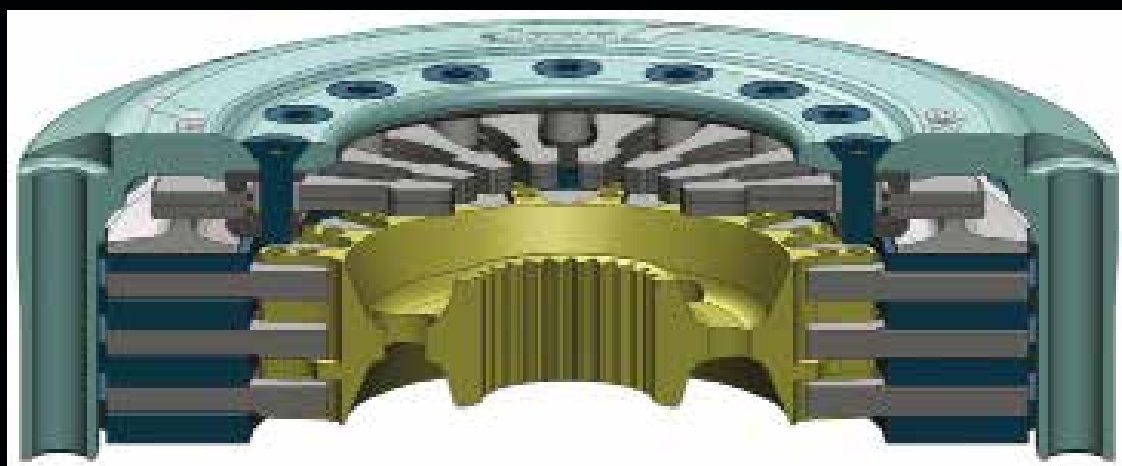
### Cerametallic

Cerametallic or "paddle" clutches have a greater temperature resistance than sinter. They are generally used in rally applications or

circuit applications with numerous standing stars. As a trade-off between inertia and temperature resistance the number pads can vary, e.g. 4 or 6.

### Carbon

Carbon clutches are used in high end applications e.g. Rallycross, Formula 1, Endurance racing, etc. They have very high temperature resistance and offer a significant reduction in weight and inertia when compared to metallic clutches. By using pressure plate "shims" in increasing thickness to compensate for carbon pack wear the clutch life can also be several times that of a metallic clutch. Alcon offer a recondition service for carbon clutches.



# GUIDE part numbering

KK C 140 2 H OR S R 01

CLUTCH ASSEMBLY

TYPE

C: CARBON  
R: RALLY (CERAMETALLIC)  
S: SINTERED

DIAMETER OF DRIVEN  
PLATES (mm)

NUMBER OF PLATES

PRESSURE PLATE

H: HIGH RATIO  
U: ULTRA HIGH RATIO

REVISION NUMBER

01: STANDARD DESIGN  
02-99: BESPOKE CUSTOMER VERSIONS

TYPE OF HUB DRIVE

R: RIGID (SINTERED/CERAMETALLIC)  
D: CARBON HUB 20 DRIVE LUGS  
W: CARBON HUB 12 DRIVE LUGS

FLYWHEEL TYPE

S: STEP TYPE (INTERNAL SPIGOT)  
P: POT TYPE (EXTERNAL SPIGOT)

SPRING LOAD DESIGNATION

OR: ORANGE  
SG: SINGLE GREY  
DG: DOUBLE GREY  
TG: TRIPLE GREY



# customer **NOTES**

# advantage range **KKS1402**

## ø140 (5.5") Twin plate race clutch

**Applications:**  
Circuit racing



### Specifications

	KKS1402HORSR01	KKS1402HDGSR01
Dynamic Torque Capacity Nm (lb/ft)	481 (355)	559 (411)
Release ratio	High	High
Assembly Weight inc. Driven Plate (Kg)	2.37	2.37
Assembly Inertia inc. Driven Plate (Kgm <sup>2</sup> )	0.0081	0.0081
Release Load New ø38 Bearing (kN)	2.3	2.9
Release Load New ø44 Bearing (kN)	2.6	3.2
Release Load New ø52 Bearing (kN)	2.9	3.5

Step flywheel part numbers shown. For Pot flywheel replace "SR" with "PR"  
Other hub configurations are available.

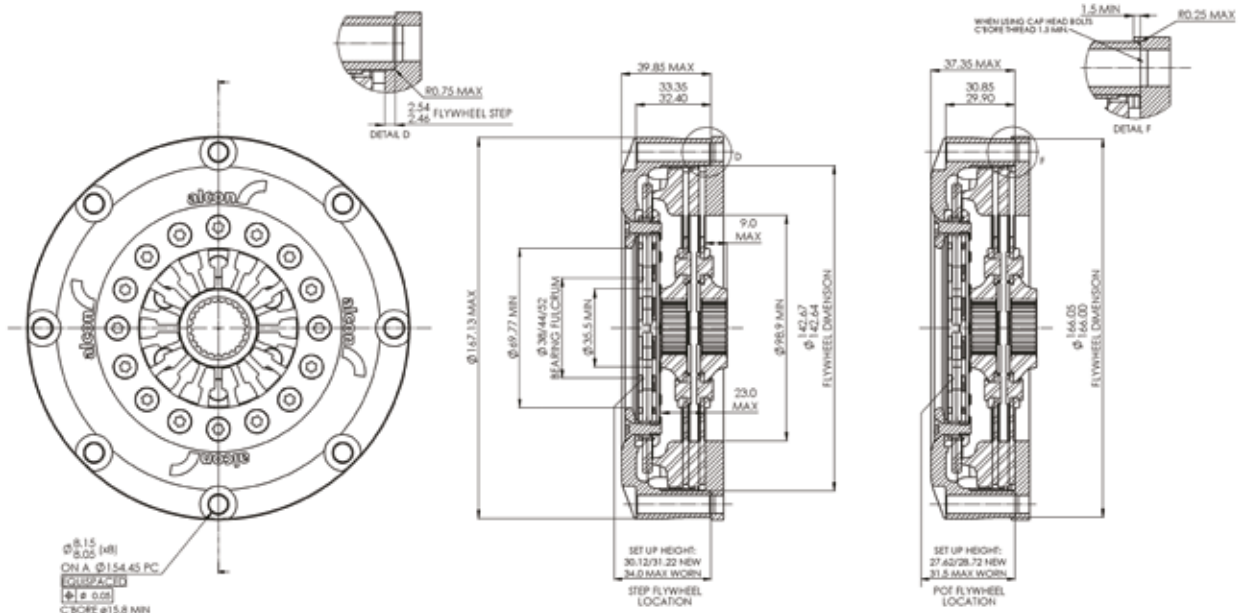
### Replacement parts

Part Number	KKS1402HORSR01	KKS1402HDGSR01
Pressure Plate (High Ratio)	KPS140L08H537	KPS140L08H537
Pressure Plate Thickness (mm)	13.7	13.7
Pressure Plate Fulcrum Dia (mm)	Ø117	Ø117
Floater plate	KPS140L08FX01	KPS140L08FX01

### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable plated finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers' products.
- Step and Pot flywheel mounting options available.

### Installation dimensions







# advantage range **KKS1404**

## ø140 (5.5") Four plate race clutch

**Applications:**  
Circuit racing



### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable plated finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers' products.
- Step and Pot flywheel mounting options available.

### Specifications

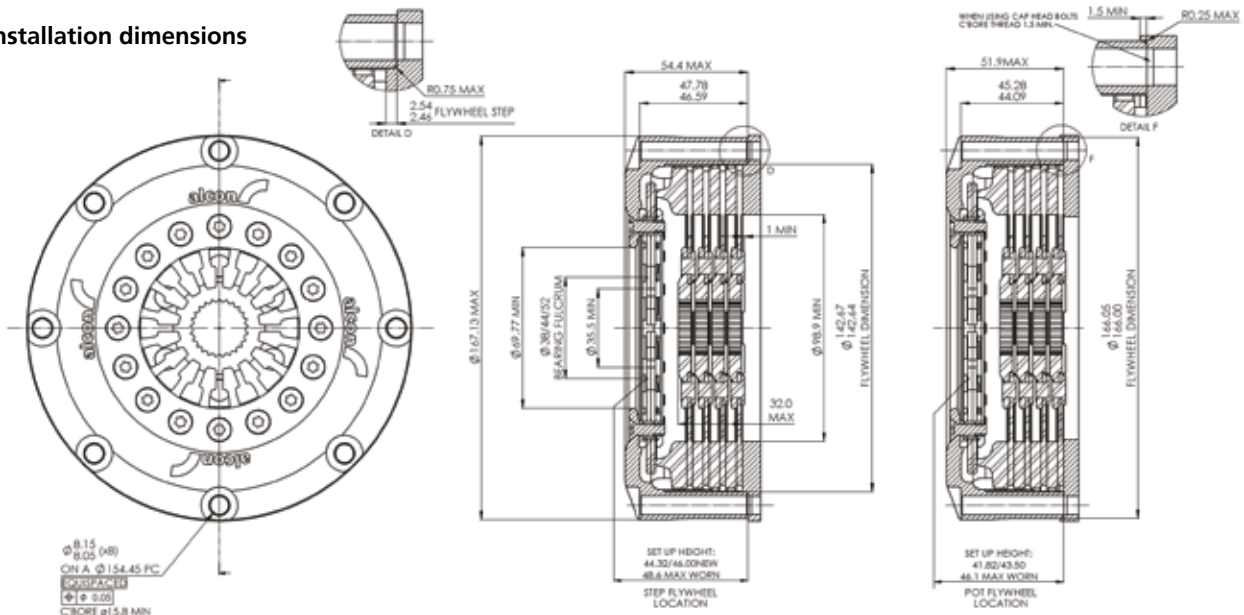
	KKS1404HORSR01	KKS1404HDGSR01
Dynamic Torque Capacity Nm (lb/ft)	962 (709)	1117 (822)
Release ratio	High	High
Assembly Weight inc. Driven Plate (Kg)	3.80	3.80
Assembly Inertia inc. Driven Plate (Kgm <sup>2</sup> )	0.0128	0.0128
Release Load New ø38 Bearing (kN)	2.3	2.9
Release Load New ø44 Bearing (kN)	2.6	3.2
Release Load New ø52 Bearing (kN)	2.9	3.5

Step flywheel part numbers shown. For Pot flywheel replace "SR" with "PR"  
Other hub configurations are available.

### Replacement parts

Part Number	KKS1404HORSR01	KKS1404HDGSR01
Pressure Plate (High Ratio)	KPS140L08H537	KPS140L08H537
Pressure Plate Thickness (mm)	13.7	13.7
Pressure Plate Fulcrum Dia (mm)	Ø117	Ø117
Floater plate	KPS140L08FX01	KPS140L08FX01

### Installation dimensions





# advantage range **KDS550**

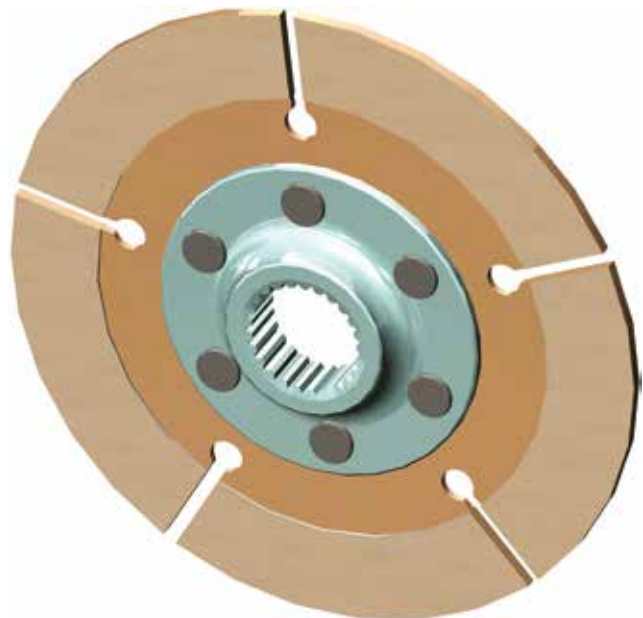
## ø140 (5.5") Race driven plates

**Applications:**  
General race use

### Part numbering

Spline Size	Ø	No. of Teeth	A Type 11.7mm long hub
21 x 18T	21	18	KDS550FA17X001
0.875" x 20T	22.2	20	KDS550FA25X001
24.25 x 21T	24.25	21	KDS550FA27X001
1.0" x 23T	25.4	23	KDS550FA30X001
1.0" x 24T	25.4	24	KDS550FA33X001
22 x 26T	22	26	KDS550FA35X001
1 5/32" x 26T	29.36	26	KDS550FA36X001

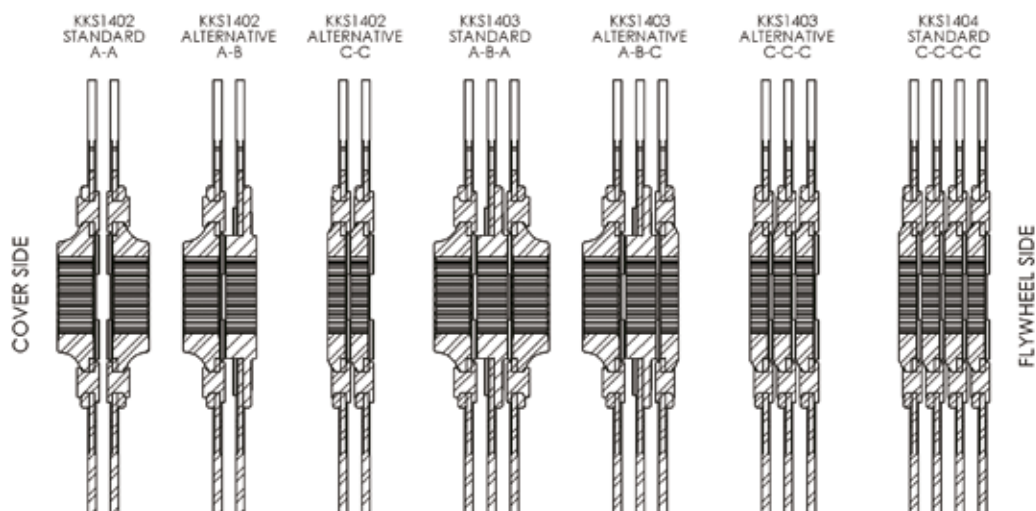
Spline Size	B Type 9.6mm long hub	B Type 5.6mm long hub	New Thickness
21 x 18T	KDS550FB17X001	KDS550FC17X001	2.63
0.875" x 20T	KDS550FB25X001	KDS550FC25X001	2.63
24.25 x 21T	KDS550FB27X001	KDS550FC27X001	2.63
1.0" x 23T	KDS550FB30X001	KDS550FC30X001	2.63
1.0" x 24T	KDS550FB33X001		2.63
22 x 26T	KDS550FB35X001		2.63
1 5/32" x 26T	KDS550FB36X001	KDS550FC36X001	2.63



### Key features and benefits

- Optimised design.
- Optimised hub length for low inertia with minimum hub wear.
- Sintered friction material for reduced inertia and lower cover height.
- Interchangeable with other manufacturers products.
- Various hub configurations available to provide increased hub to crank bolt clearance.
- 2.63mm plate thickness.

### Hub types



# advantage range **KKS1841**

## ø184 (7.25") Single plate race clutch

**Applications:**  
Circuit Racing



### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable hard anodised finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers' products.
- Step and Pot flywheel mounting options available.

### Specifications

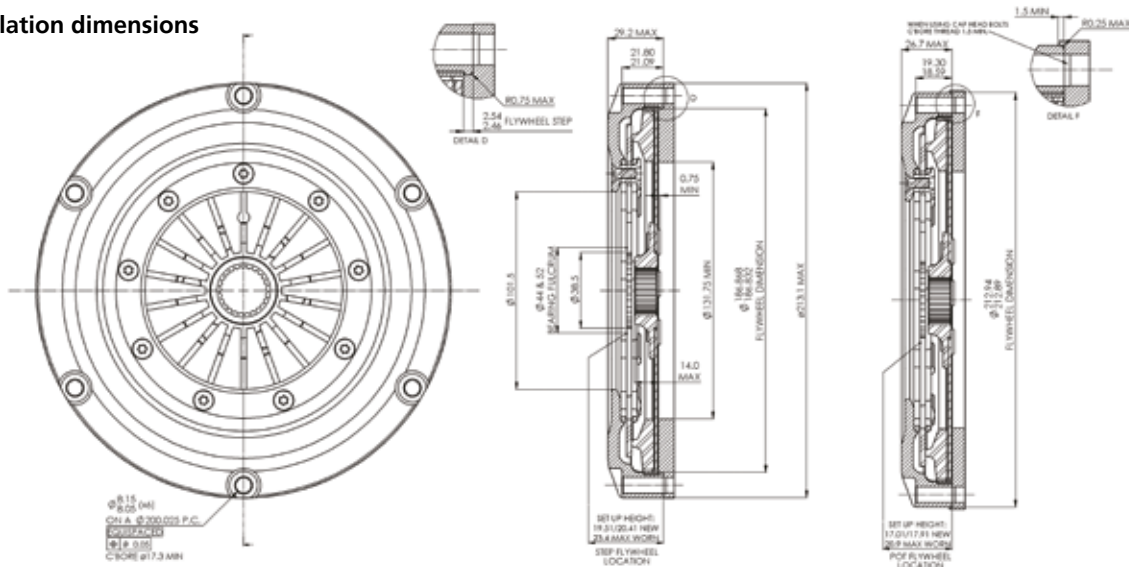
Part Number	Dynamic Torque Capacity Nm (lb/ft)	Release ratio	Assembly Weight inc. Driven Plate (Kg)	Assembly Inertia inc. Driven Plate (Kgm <sup>2</sup> )	Release Load New ø44 Bearing (kN)	Release Load New ø52 Bearing (kN)
KKS1841HDGSR01	334 (246)	High	2.50	0.0136	3.2	3.4
KKS1841HSGSR01	277 (204)	High	2.50	0.0136	2.6	2.8
KKS1841HORSR01	220 (162)	High	2.50	0.0136	2.1	2.25
KKS1841UDGSR01	440 (324)	Ultra	2.50	0.0136	3.2	3.4
KKS1841USGSR01	365 (269)	Ultra	2.50	0.0136	2.6	2.8
KKS1841UORSR01	290 (213)	Ultra	2.50	0.0136	2.1	2.25

Step flywheel part numbers shown. For Pot flywheel replace "SR" with "PR".  
Other hub configurations are available.

### Replacement parts

Part Number	Pressure Plate (High Ratio)	Pressure Plate (Ultra High Ratio)	Pressure Plate Thickness (mm)	Pressure Plate Fulcrum Dia (mm)
KKR1841HDGSR01	KPS184L6H444	N/A	11.25	ø157
KKS1841HSGSR01	KPS184L6H444		11.25	ø157
KKS1841HORSR01	KPS184L6H444		11.25	ø157
KKS1841UDGSR01	N/A	KPS184L6U444	11.25	ø152
KKS1841USGSR01		KPS184L6U444	11.25	ø152
KS1841UORSR01		KPS184L6U444	11.25	ø152

### Installation dimensions





# advantage range **KKS1842**

## ø184 (7.25") Twin plate race clutch

### Specifications

Part Number	Dynamic Torque Capacity Nm (lb/ft)	Release ratio	Assembly Weight inc. Driven Plates (Kg)	Assembly Inertia inc. Driven Plates (Kgm <sup>2</sup> )	Release Load New ø44 Bearing (kN)	Release Load New ø52 Bearing (kN)
KKS1842HDGSR01	668 (492)	High	3.40	0.0210	3.2	3.4
KKS1842HSGSR01	554 (407)	High	3.40	0.0210	2.6	2.8
KKS1842HORSR01	440 (324)	High	3.40	0.0210	2.1	2.25
KKS1842UDGSR01	880 (449)	Ultra	3.40	0.0210	3.2	3.4
KKS1842USGSR01	730 (537)	Ultra	3.40	0.0210	2.6	2.8
KKS1842UORSR01	580 (427)	Ultra	3.40	0.0210	2.1	2.25

Step flywheel part numbers shown. For Pot flywheel replace "SR" with "PR".  
Other hub configurations are available.

**Applications:**  
Circuit Racing



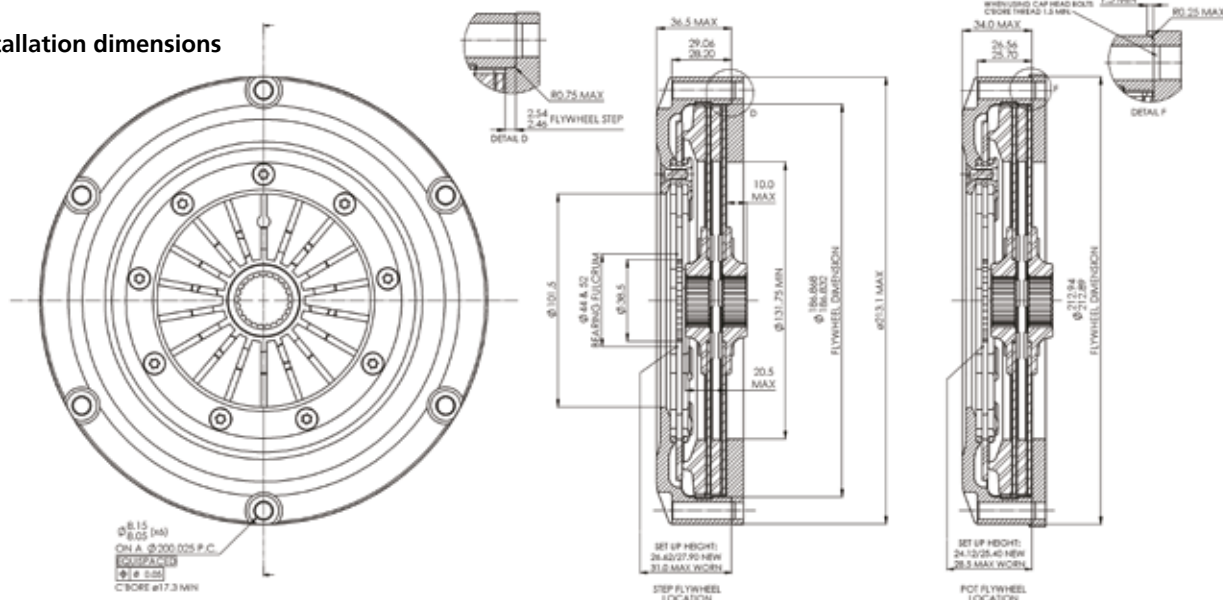
### Replacement parts

Part Number	Pressure Plate (High Ratio)	Pressure Plate (Ultra High Ratio)	Pressure Plate Thickness (mm)	Pressure Plate Fulcrum Dia (mm)	Floater Plates
KKR1842HDGSR01	KPS184L6H444	N/A	11.25	ø157	KPS184L6F180
KKS1842HSGSR01	KPS184L6H444		11.25	ø157	KPS184L6F180
KKS1842HORSR01	KPS184L6H444		11.25	ø157	KPS184L6F180
KKS1842UDGSR01	N/A	KPS184L6U444	11.25	ø152	KPS184L6F180
KKS1842USGSR01		KPS184L6U444	11.25	ø152	KPS184L6F180
KKS1842UORSR01		KPS184L6U444	11.25	ø152	KPS184L6F180

### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable hard anodised finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers' product.
- Step and Pot flywheel mounting options available.

### Installation dimensions



# advantage range **KKS1843**

## ø184 (7.25") Triple plate race clutch

**Applications:**  
Circuit Racing (High Torque Engines)



### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable hard anodised finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers' products.
- Step and Pot flywheel mounting options available.
- For use with KDS720\* range drive plates.

### Specifications

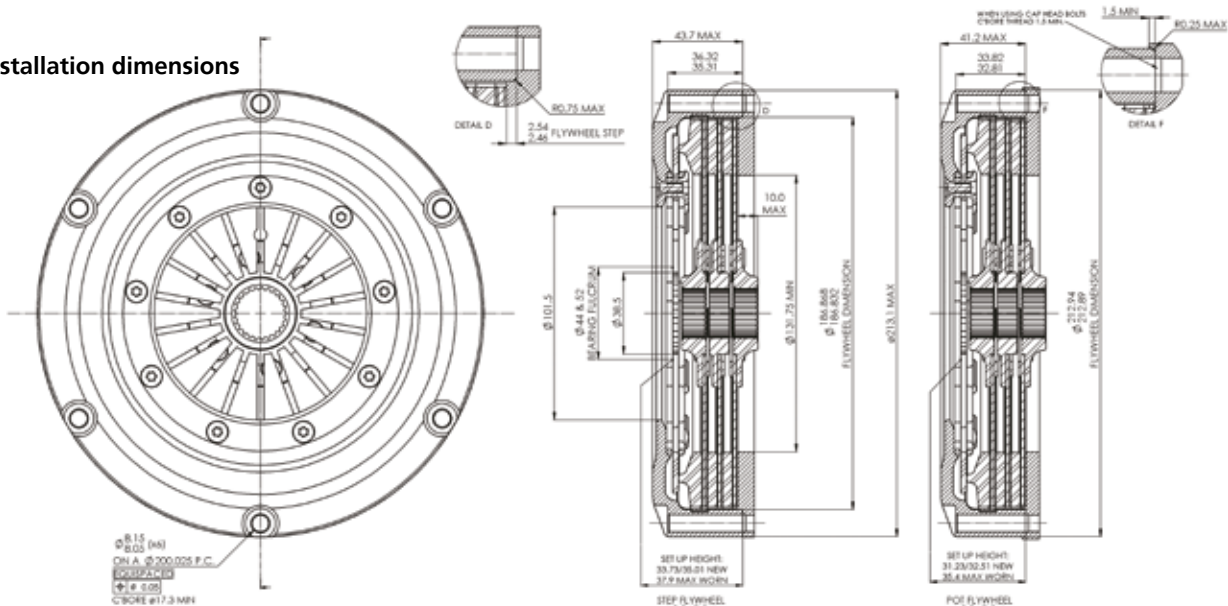
Part Number	Dynamic Torque Capacity Nm (lb/ft)	Release ratio	Assembly Weight inc. Driven Plates (Kg)	Assembly Inertia inc. Driven Plates (Kgm <sup>2</sup> )	Release Load New ø44 Bearing (kN)	Release Load New ø52 Bearing (kN)
KKS1843HDGSR01	1002 (739)	High	4.50	0.0267	3.2	3.4
KKS1843HSGSR01	831 (611)	High	4.50	0.0267	2.6	2.8
KKS1843HORSR01	660 (486)	High	4.50	0.0267	2.1	2.25
KKS1843UDGSR01	1320 (973)	Ultra	4.50	0.0267	3.2	3.4
KKS1843USGSR01	1095 (806)	Ultra	4.50	0.0267	2.6	2.8
KKS1843UORSR01	870 (641)	Ultra	4.50	0.0267	2.1	2.25

Step flywheel part numbers shown. For Pot flywheel replace "SR" with "PR".  
Other hub configurations available.

### Replacement parts

Part Number	Pressure Plate (High Ratio)	Pressure Plate (Ultra High Ratio)	Pressure Plate Thickness (mm)	Pressure Plate Fulcrum Dia (mm)	Release Load New ø44 Bearing (kN)
KKR1843HDGSR01	KPS184L6H444	N/A	11.25	ø157	KPS184L6F180
KKS1843HSGSR01	KPS184L6H444		11.25	ø157	KPS184L6F180
KKS1843HORSR01	KPS184L6H444		11.25	ø157	KPS184L6F180
KKS1843UDGSR01	N/A	KPS184L6U444	11.25	ø152	KPS184L6F180
KKS1843USGSR01		KPS184L6U444	11.25	ø152	KPS184L6F180
KKS1843UORSR01		KPS184L6U444	11.25	ø152	KPS184L6F180

### Installation dimensions





# advantage range **KDS720**

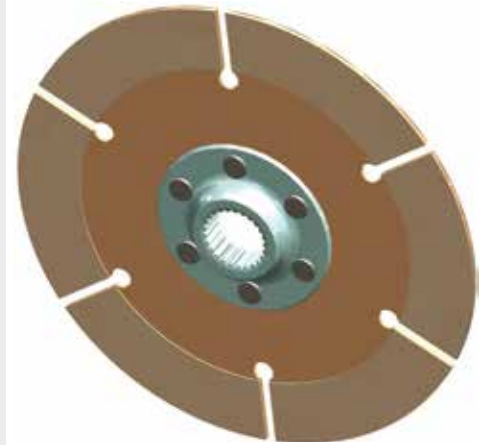
## ø184 (7.25") Race driven plates

**Applications:**  
General race use

### Part numbering

Spline Size	Ø	No. of Teeth	A Type 11.7mm long hub	B Type 9.6mm long hub	C Type 5.6mm long hub	New Thickness
1 1/8" x 10T	28.58	10	KDS720FA06X001	KDS720FB06X001	KDS720FC06X001	2.63
29 x 10T	29	10	KDS720FA10X001	KDS720FB10X001	KDS720FC10X001	2.63
25 x 14T	25	14	KDS720FA12X001	KDS720FB12X001	-	2.63
21 x 18T	21	18	KDS720FA17X001	KDS720FB17X001	-	2.63
7/8" x 20T	22.2	20	KDS720FA25X001	KDS720FB25X001	KDS720FC25X001	2.63
24.25 x 21T	24.25	21	KDS720FA27X001	KDS720FB27X001	-	2.63
29 x 21T	29	21	KDS720FA28X001	KDS720FB28X001	KDS720FC28X001	2.63
1.0" x 22T	25.4	22	KDS720FA29X001	KDS720FB29X001	-	2.63
1.0" x 23T	25.4	23	KDS720FA30X001	KDS720FB30X001	KDS720FC30X001	2.63
20.5 x 24T	20.5	24	KDS720FA32X001	-	-	2.63
1.0" x 24T	25.4	24	KDS720FA33X001	KDS720FB33X001	-	2.63
25.8 x 24T	25.8	24	KDS720FA86X001	-	-	2.63
22 x 26T	22	26	KDS720FA35X001	KDS720FB35X001	-	2.63
1 5/32" x 26T	29.36	26	KDS720FA36X001	KDS720FB36X001	-	2.63
1 1/4" x 29T	31.75	29	KDS720FA38X001	KDS720FB38X001	-	2.63

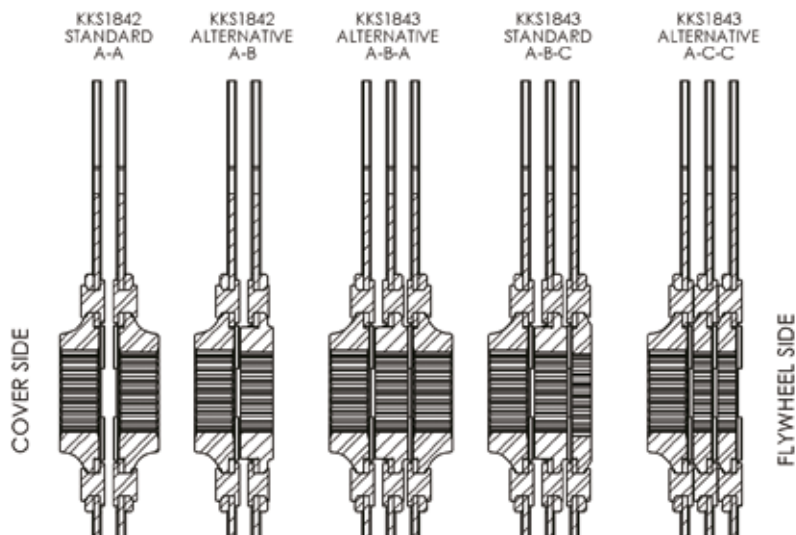
B-type and C-type driven plates can be used on the flywheel side of the clutch to provide increased hub to crank bolt clearance.



### Key features and benefits

- Optimised design.
- Optimised hub length for low inertia with minimum hub wear.
- Sintered friction material for reduced inertia and lower cover height.
- Interchangeable with other manufacturers' product.
- Various hub configurations available to provide increased hub to crank bolt clearance.
- 2.63mm plate thickness.
- For use with KKS184\* range clutch

### Hub types







# advantage range **KKR1402**

## ø140 (5.5") Twin plate rally clutch

### Specifications

	KKR1402HORSR01	KKR1402HDGSR01
Dynamic Torque Capacity Nm (lb/ft)	456 (336)	634 (466)
Release ratio	High	High
Assembly Weight inc. Driven Plates (Kg)	2.60	2.60
Assembly Inertia inc. Driven Plates (Kgm <sup>2</sup> )	0.0085	0.0085
Release Load New ø38 Bearing (kN)	2.3	2.9
Release Load New ø44 Bearing (kN)	2.6	3.2
Release Load New ø52 Bearing (kN)	2.9	3.5
Step flywheel part numbers shown. For Pot flywheel replace "SR" with "PR"		

### Replacement parts

Part Number	KKR1402HORSR01	KKR1402HDGSR01
Pressure Plate (High Ratio)	KPS140L08H450	KPS140L08H450
Pressure Plate Thickness (mm)	11.5	11.5
Pressure Plate Fulcrum Dia (mm)	ø117	ø117
Floater Plate	KPS140L08FX02	KPS140L08FX02

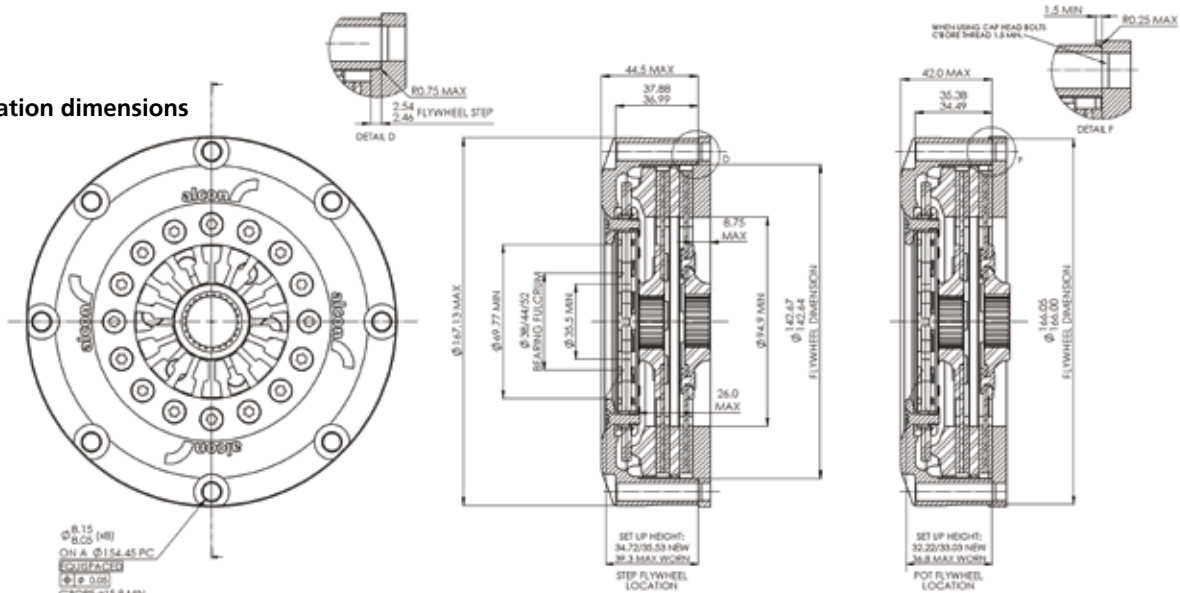
**Applications:**  
General rally use.



### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable plated finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers products.
- Step and Pot flywheel mounting options available.

### Installation dimensions







# advantage range **KDC550**

## ø140 (5.5") Rally driven plates

**Applications:**  
General rally use



### Part numbers

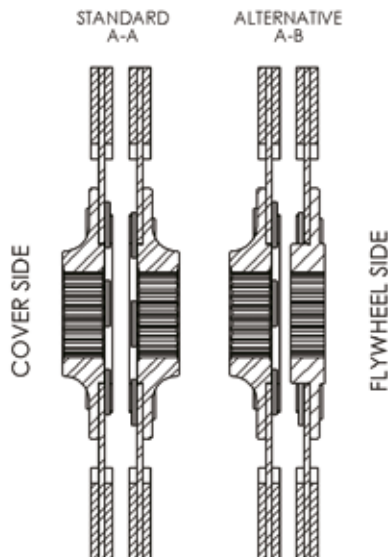
Spline Size	Ø	No. of Teeth	A Type 11.7mm long hub	B Type 9.6mm long hub	New Thickness	New Thickness
21 x 18T	21	18	KDC550FA17X001	KDC550FB17X001	6.0	2.63
7/8" x 20T	22.2	11.5	KDC550FA25X001	KDC550FB25X001	6.0	2.63
24.25 x 21T	24.25	21	KDC550FA27X001	KDC550FB27X001	6.0	2.63
1" x 23T	25.4	23	KDC550FA30X001	KDC550FB30X001	6.0	2.63
22 x 28T	22	28	KDC550FA95X001	KDC550FB95X001	6.0	2.63

**B-type and C-type driven plates can be used on the flywheel side of the clutch to provide increased hub to crank bolt clearance.**

### Key features and benefits

- Optimised design.
- Optimised hub length for low inertia with minimum hub wear.
- Cerametallic friction material for high energy capacity and increased wear rate.
- Interchangeable with other manufacturers' product.
- Various hub configurations available to provide increased hub to crank bolt clearance.
- 6mm plate thickness.

### Hub types





# advantage range **KKR1841**

## ø184 (7.25") Single plate rally clutch

### Specifications

Part Number	Dynamic Torque Capacity Nm (lb/ft)	Release ratio	Assembly Weight inc. Driven Plate (Kg)	Assembly Inertia inc. Driven Plate (Kgm²)	Release Load New ø44 Bearing (kN)	Release Load New ø52 Bearing (kN)
KKR1841HDGSR01	334 (246)	High	2.89	0.0168	3.2	3.4
KKR1841HSGSR01	277 (204)	High	2.89	0.0168	2.6	2.8
KKR1841HORSR01	220 (162)	High	2.89	0.0168	2.1	2.25
KKR1841UDGSR01	440 (324)	Ultra	2.89	0.0168	3.2	3.4
KKR1841USGSR01	365 (369)	Ultra	2.89	0.0168	2.6	2.8
KKR1841UORSR01	290 (213)	Ultra	2.89	0.0168	2.1	2.25

Step flywheel part numbers shown. For Pot flywheel replace "SR" with "PR".  
Other hub configurations are available.

### Applications:

General race, rally and hill climb use



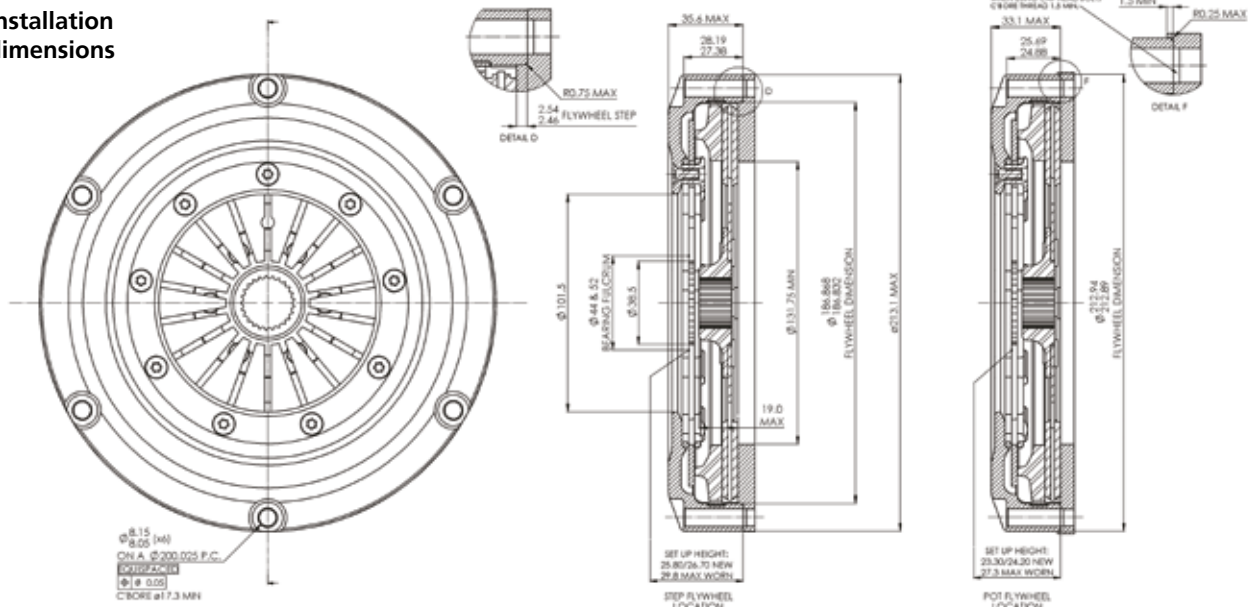
### Replacement parts

Part Number	Pressure Plate (High Ratio)	Pressure Plate (Ultra High Ratio)	Pressure Plate Thickness (mm)	Pressure Plate Fulcrum Dia (mm)
KKR1841HDGSR01	KPS184L6H511	N/A	13	ø157
KKR1841HSGSR01	KPS184L6H511		13	ø157
KKR1841HORSR01	KPS184L6H511		13	ø157
KKR1841UDGSR01	N/A	KPS184L6U511	13	ø152
KKR1841USGSR01		KPS184L6U511	13	ø152
KKR1841UORSR01		KPS184L6U511	13	ø152

### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable hard anodised finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers' products.
- Step and Pot flywheel mounting options available.

### Installation dimensions



# advantage range **KKR1842**

## ø184 (7.25") Twin plate rally clutch

### Applications:

General race, rally and hill climb use

### Specifications



Part Number	Dynamic Torque Capacity Nm (lb/ft)	Release ratio	Assembly Weight inc. Driven Plates (Kg)	Assembly Inertia inc. Driven Plates (Kgm <sup>2</sup> )	Release Load New ø44 Bearing (kN)	Release Load New ø52 Bearing (kN)
KKR1842HDGSR01	668 (492)	High	3.90	0.0225	3.2	3.4
KKR1842HSGSR01	554 (407)	High	3.90	0.0225	2.6	2.8
KKR1842HORSR01	440 (324)	High	3.90	0.0225	2.1	2.25
KKR1842UDGSR01	880 (649)	Ultra	3.90	0.0225	3.2	3.4
KKR1842USGSR01	730 (537)	Ultra	3.90	0.0225	2.6	2.8
KKR1842UORSR01	580 (427)	Ultra	3.90	0.0225	2.1	2.25

Step flywheel part numbers shown. For Pot flywheel replace "SR" with "PR".

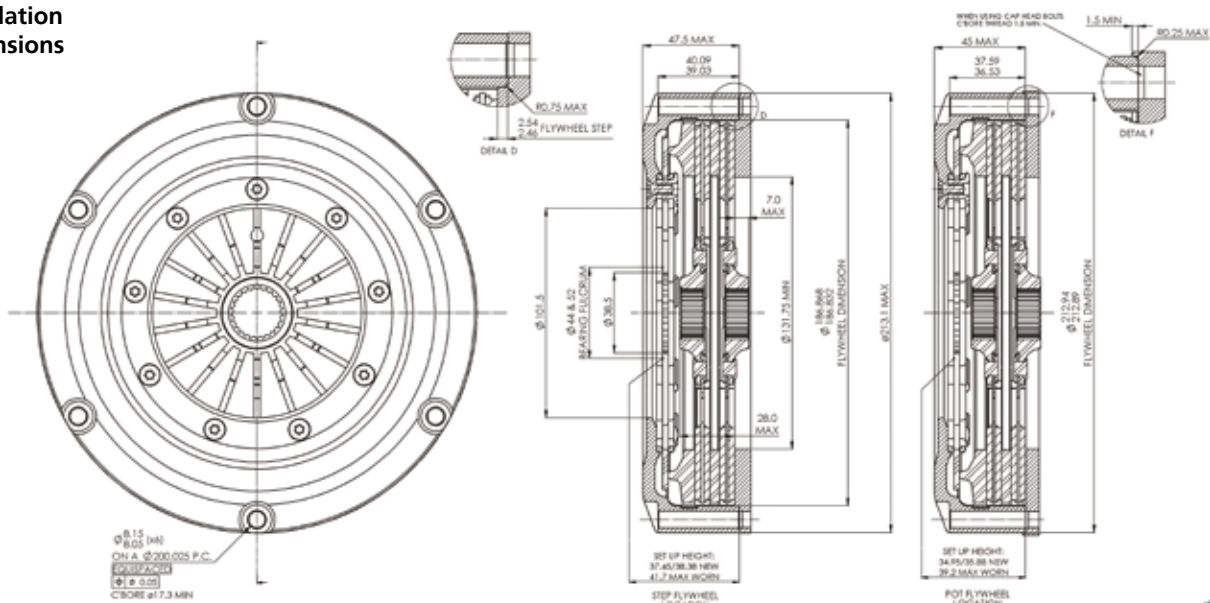
### Replacement parts

Part Number	Pressure Plate (High Ratio)	Pressure Plate (Ultra High Ratio)	Pressure Plate Thickness (mm)	Pressure Plate Fulcrum Dia (mm)	Release Load New ø44 Bearing (kN)
KKR1842HDGSR01	KPS184L6H511	N/A	13	ø157	KPS184L6F180
KKR1842HSGSR01	KPS184L6H511		13	ø157	KPS184L6F180
KKR1842HORSR01	KPS184L6H511		13	ø157	KPS184L6F180
KKR1842UDGSR01	N/A	KPS184L6U511	13	ø152	KPS184L6F180
KKR1842USGSR01		KPS184L6U511	13	ø152	KPS184L6F180
KKR1842UORSR01		KPS184L6U511	13	ø152	KPS184L6F180

### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable hard anodised finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers' products.
- Step and Pot flywheel mounting options available.

### Installation dimensions





# advantage range **KKR1842**

**ø184 (7.25") Twin plate rally clutch**  
(Low height for S2000 applications)

**Applications:**  
S2000 Applications

## Specifications

Part Number	KKR1842HORPR02	KKR1842HDGPR02
Dynamic Torque Capacity Nm (lb/ft)	520 (383)	786 (579)
Release ratio	High	High
Assembly Weight inc. Driven Plate (Kg)	3.75	3.75
Assembly Inertia inc. Driven Plate (Kgm <sup>2</sup> )	0.0220	0.0220
Release Load New ø44 Bearing (kN)	2.1	3.2
Release Load New ø52 Bearing (kN)	2.25	3.4

Inertia and weight figures based on a 6 paddle driven plates



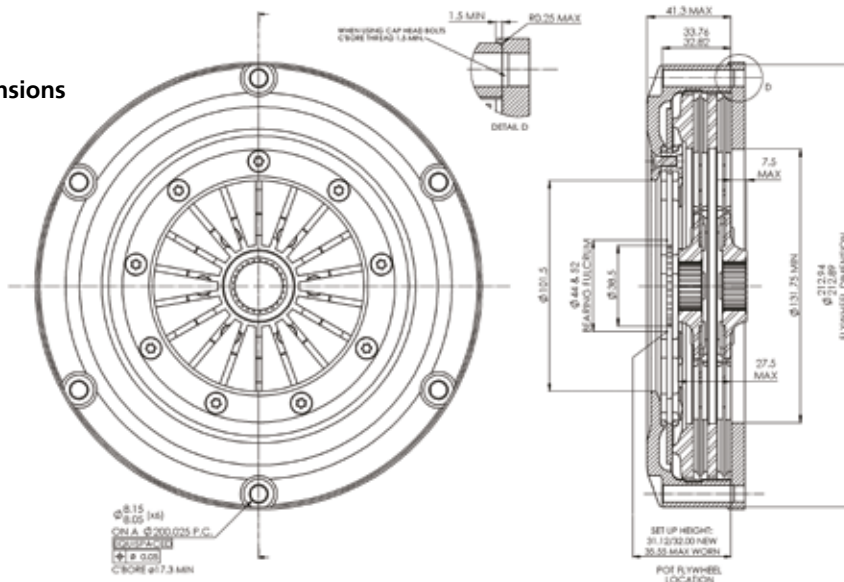
## Replacement parts

Part Number	KKR1842HORPR02	KKR1842HDGPR02
Pressure Plate (High Ratio)	KPS184L6H403	KPS184L6H403
Pressure Plate Thickness (mm)	10.25	10.25
Pressure Plate Fulcrum Dia (mm)	ø157	ø157
Floater Plates	KPS184L6F180	KPS184L6F180

## Key features and benefits

- Low height design using 6.8mm thick 6 pad driven plates.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable hard anodised finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers' product.
- Pot flywheel mounting.

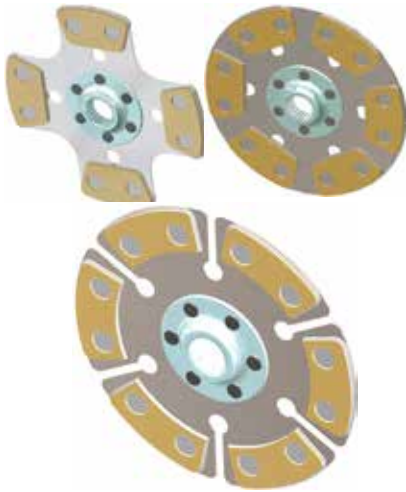
## Installation dimensions



# advantage range **KDC720**

## ø184 (7.25") Rally driven plates

**Applications:**  
General rally and circuit use



### Specifications

Spline Size	Ø	No. of Teeth	4 Pad - A Type 11.7mm long hub	6 Pad 15.0mm long hub	New Thickness
1.125" x 10T	28.58	10	KDC720406X010	-	7.2
29 x 10T	29	10	KDC720410X010	KDC720610X010	7.2
25 x 14T	25	14	-	KDC720612X010	7.2
21 x 18T	21	18	KDC720417X010	KDC720617X010	7.2
0.875" x 20T	22.2	20	KDC720425X010	KDC720625X010	7.2
24.25 x 21T	24.25	21	KDC720427X010	KDC720627X010	7.2
1.0" x 22T	25.4	22	KDC720429X010	KDC720629X010	7.2
1.0" x 23T	25.4	23	KDC720430X010	KDC720630X010	7.2
20.5 x 24T	20.5	24	-	KDC720632X010	7.2
1.0" x 24T	25.4	24	KDC720433X010	KDC720633X010	7.2
25.8 x 24T	25.8	24	-	KDC720686X010	7.2
22 x 26T	22	26	KDC720435X010	KDC720635X010	7.2
1 5/32" x 26T	29.36	26	-	KDC720636X010	7.2

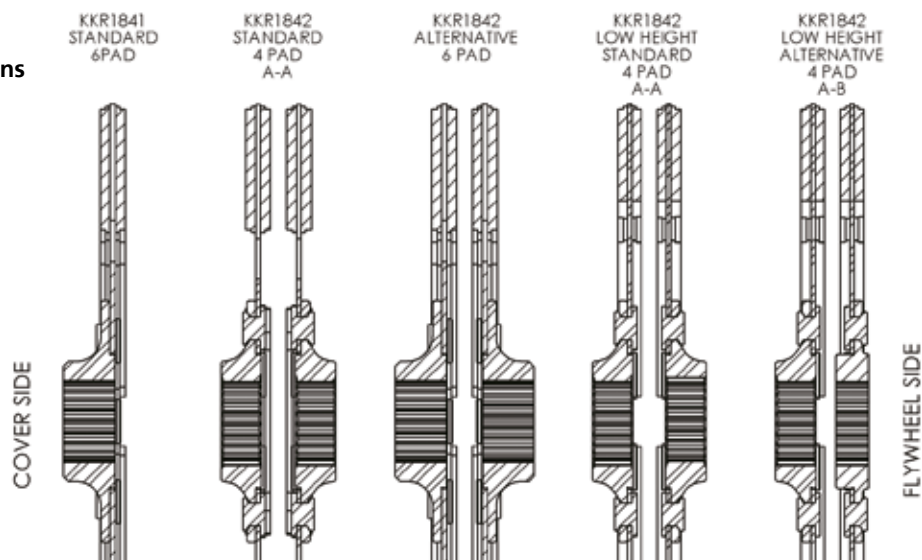
### Key features and benefits

- Optimised design.
- Optimised hub length for low inertia with minimum hub wear.
- Cerametallic friction material for high energy capacity and increased wear rate.
- Interchangeable with other manufacturers' product.
- Various hub configurations available to provide increased hub to crank bolt clearance.
- 4 and 6 pad options available.

### Driven Plates for low height cover S2000 applications

Spline Size	Ø	No. of Teeth	6 Pad - A Type 11.7mm long hub	6 Pad - B Type 9.6mm long hub	New Thickness
1.0" x 23T	25.4	23	KDC720630X006	KDC720630X007	6.8
25.8 x 24T	25.8	24	KDC720686X002	-	6.8

### Installation dimensions









# advantage range **KKC1404**

## ø140 (5.5") Four plate carbon clutch

**Applications:**  
GT, Endurance racing

### Specifications

	KKC1404HORSD01	KKC1404HDGSD01
Dynamic Torque Capacity Nm (lb/ft)	804 (592)	1120 (826)
Release ratio	High	High
Assembly Weight inc. Hub (Kg)	2.42	2.42
Assembly Inertia inc. Hub (Kgm <sup>2</sup> )	0.00784	0.00784
Driven Plates and Hub Inertia (Kgm <sup>2</sup> )	0.00168	0.00168
Release Load New ø38 Bearing (kN)	2.2	2.9
Release Load New ø44 Bearing (kN)	2.6	3.2
Release Load New ø52 Bearing (kN)	3.0	3.5



### Replacement pressure plate shims and hubs

Part Number	Thickness (mm)	Wear Compensation (mm)
KPS140L08H550	5.5	0
KPS140L08H600	6.0	0.5
KPS140L08H650	6.5	1.0
KPS140L08H700	7.0	1.5
KPS140L08H750	7.5	2.0
KPS140L08H800	8.0	2.5
KPS140L08H850	8.5	3.0
KPS140L08H900	9.0	3.5
KPS140L08H950	9.5	4.0

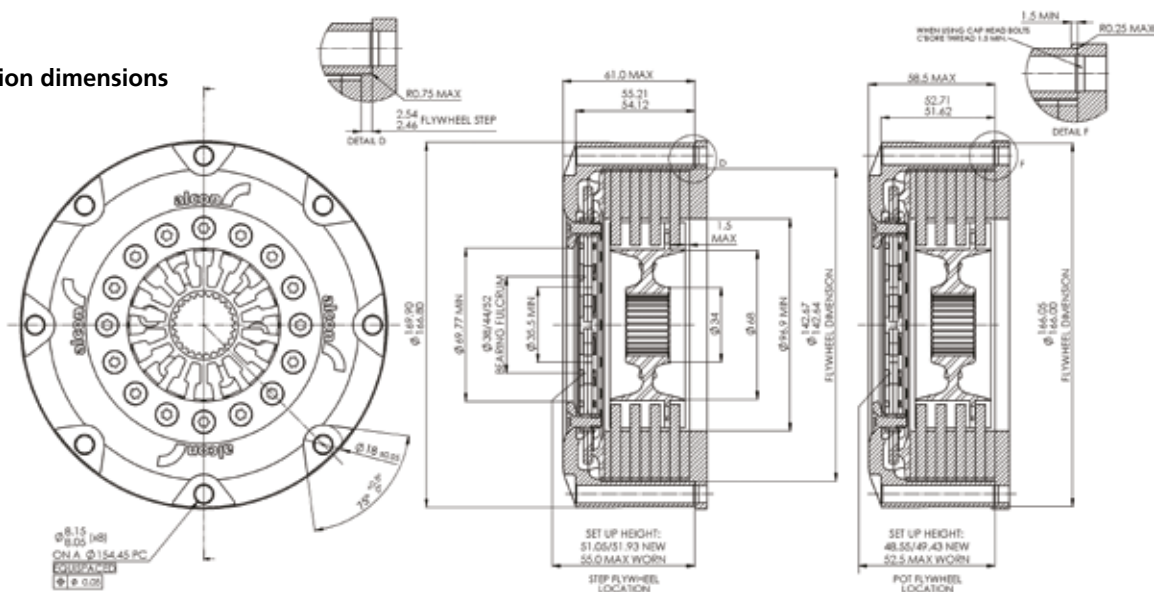
Part Number	Spline
KHSC20304X010	1.0" x 23T
KHSC20364X010	1 5/32" x 26T

Other spline sizes available on request

### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable plated finish.
- Significant reduction in weight and inertia compared to metallic clutches.
- Very high temperature resistance.
- No flywheel or pressure plate wear.

### Installation dimensions









# advantage range **KKC1843**

## ø184 (7.25") Triple plate carbon clutch

### Specifications

Part Number	Dynamic Torque Capacity Nm (lb/ft)	Release ratio	Assembly Weight inc. Hub (Kg)	Assembly Inertia inc. Hub (Kgm <sup>2</sup> )	Driven Plates and Hub Inertia (Kgm <sup>2</sup> )	Release Load New ø44 Bearing (kN)	Release Load New ø52 Bearing (kN)
KKC1843 HDGSW01	834 (615)	High	3.25	0.0177	0.0034	3.2	3.4
KKC1843 HSGSW01	709 (523)	High	3.25	0.0177	0.0034	2.6	2.8
KKC1843 HORSW01	642 (473)	High	3.25	0.0177	0.0034	2.1	2.25
KKC1843 UDGSW01	1068 (788)	Ultra	3.25	0.0177	0.0034	3.2	3.4
KKC1843 USGSW01	918 (677)	Ultra	3.25	0.0177	0.0034	2.6	2.8
KKC1843 UORSW01	801 (591)	Ultra	3.25	0.0177	0.0034	2.1	2.25

Step flywheel part numbers shown. For Pot flywheel replace "SR" with "PR".

**Applications:**  
GT, Rallycross use



### Replacement pressure plate shims and hubs

Part Number (High Ratio)	Part Number ( Ultra High Ratio)	Thickness (mm)	Wear Compensation (mm)
KPS184L12H274	KPS184L12U274	7.0	0
KPS184L12H294	KPS184L12U294	7.5	0.5
KPS184L12H314	KPS184L12U314	8.0	1.0
KPS184L12H334	KPS184L12U334	8.5	1.5
KPS184L12H354	KPS184L12U354	9.0	2.0
KPS184L12H374	KPS184L12U374	9.5	2.5
KPS184L12H394	KPS184L12U394	10.0	3.0

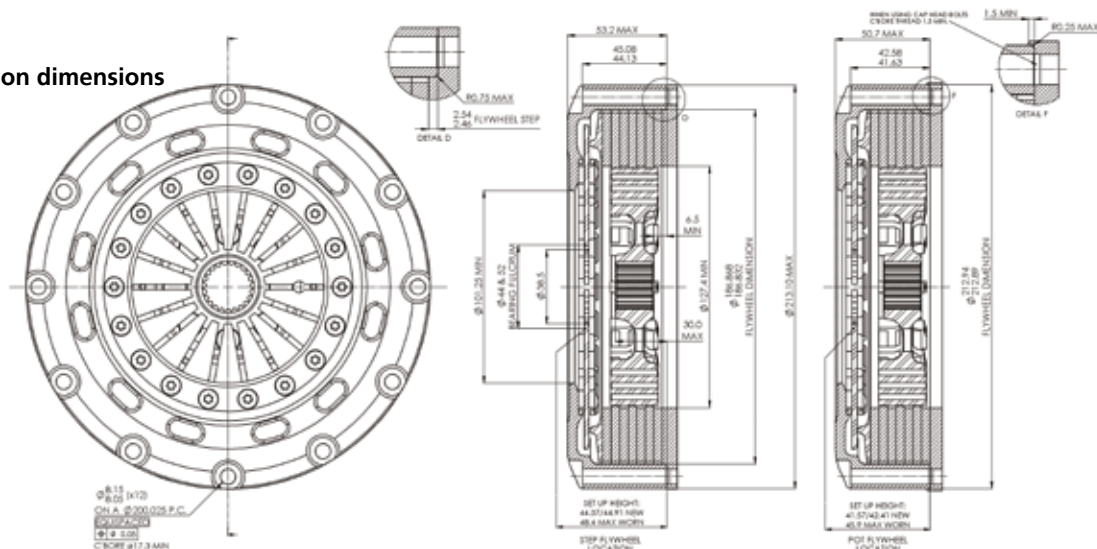
Part Number	Spline
KHSC12103X001	29 x 10T
KHSC12253X001	0.875" x 20T
KHSC12303X001	1.0" x 23T
KHSC12363X001	1 5/32" x 26T

Other spline sizes available on request

### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable plated finish.
- Significant reduction in weight and inertia compared to metallic clutches.
- Very high temperature resistance.
- No flywheel or pressure plate wear.

### Installation dimensions



# advantage range **KKR2001**

## Ø200 (7.87") Single plate rally clutch

**Applications:**  
General race and rally use



### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness billet cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable hard anodised finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers' product.
- Step and Pot flywheel mounting options available.

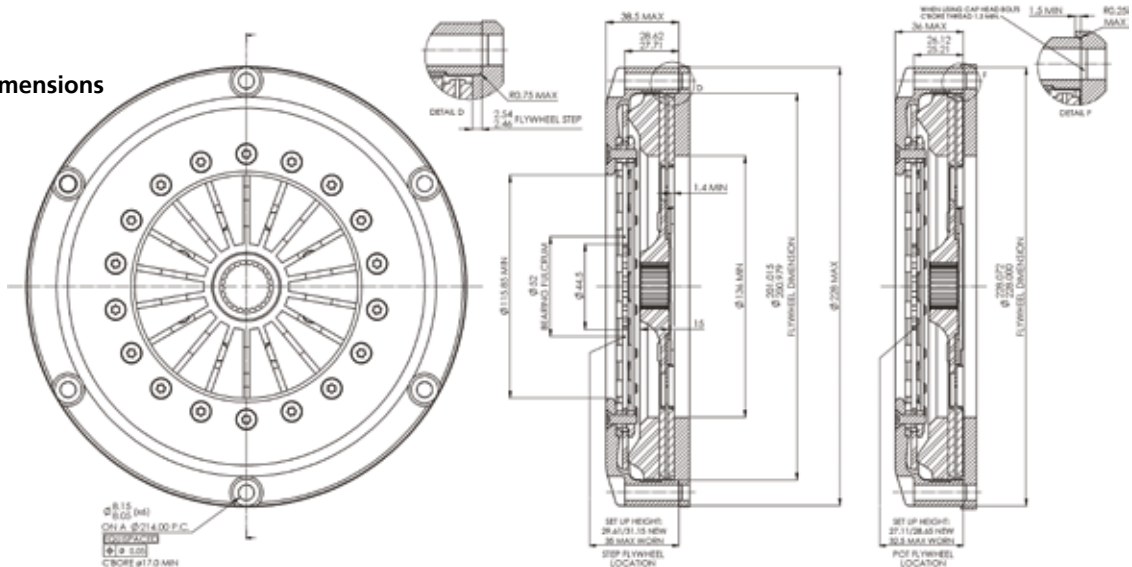
### Specifications

	KKR2001 UTGSR01	KKR2001 UDGSR01	KKR2001 HDGSR01
<b>Dynamic Torque Capacity Nm (lb/ft)</b>	457 (337)	412 (304)	370 (273)
<b>Release ratio</b>	Ultra	Ultra	High
<b>Assembly Weight inc. Driven Plate (Kg)</b>	3.60	3.60	3.60
<b>Assembly Inertia inc. Driven Plate (Kgm<sup>2</sup>)</b>	0.0025	0.0025	0.0025
<b>Release Load New ø52 Bearing (kN)</b>	2.8	2.6	2.6

### Replacement parts

Part number	KKR2001 UTGSR01	KKR2001 UDGSR01	KKR2001 HDGSR01
<b>Pressure Plate (High Ratio)</b>	N/A	N/A	KPS200L6H647
<b>Pressure Plate (Ultra High Ratio)</b>	KPS200L6U647	KPS200L6U647	N/A
<b>Pressure Plate Thickness (mm)</b>	16.5	16.5	16.5
<b>Pressure Plate Fulcrum Dia (mm)</b>	Ø174	Ø174	Ø178

### Installation dimensions





# advantage range **KKR2002**

## Ø200 (7.87") Twin plate rally clutch

### Specifications

Part Number	KKR2002 UTGSR01	KKR2002 UDGSR01	KKR2002 HDGSR01
Dynamic Torque Capacity Nm (lb/ft)	915 (674)	824 (608)	740 (546)
Release ratio	Ultra	Ultra	High
Assembly Weight inc. Plate (Kg)	4.60	4.60	4.60
Assembly Inertia inc. Plate (Kgm <sup>2</sup> )	0.036	0.036	0.036
Release Load New ø52 Bearing (kN)	2.8	2.6	2.6

### Replacement parts

Part Number	KKR2002 UTGSR01	KKR2002 UDGSR01	KKR2002 HDGSR01
Pressure Plate (High Ratio)	N/A	N/A	KPS200L6H535
Pressure Plate (Ultra High Ratio)	KPS200L6S535	KPS200L6S535	N/A
Pressure Plate Thickness (mm)	13.6	13.6	13.6
Pressure Plate Fulcrum Dia (mm)	Ø171	Ø171	Ø178
Floater Plates	KPS200L6F236	KPS200L6F236	KPS200L6F236

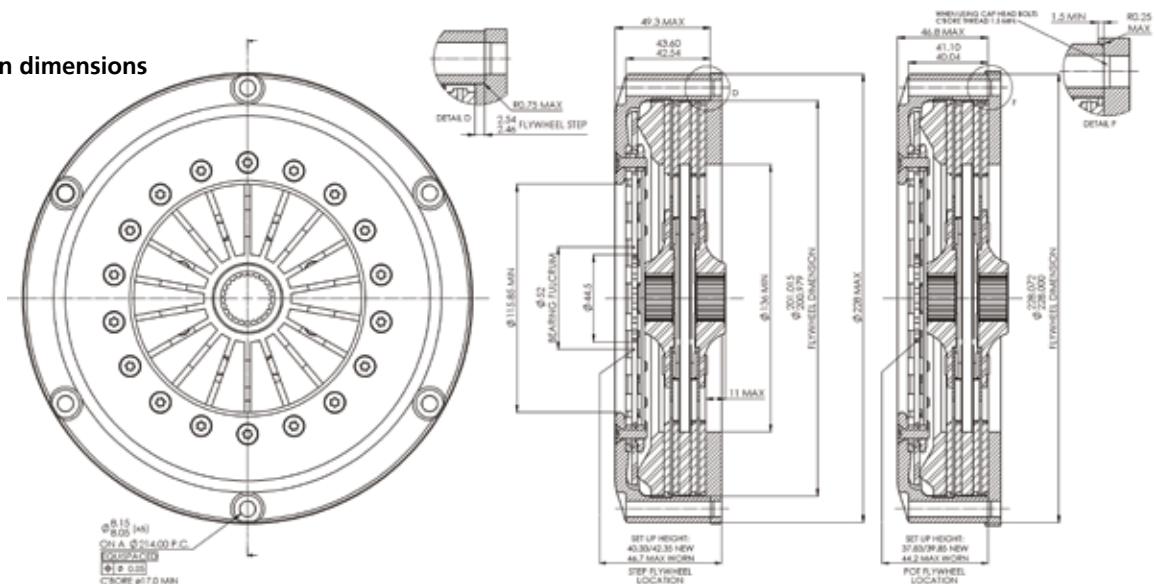
**Applications:**  
General race and rally use



### Key features and benefits

- Compact design for low weight and inertia.
- High stiffness billet cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable hard anodised finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturers' product.
- Step and Pot flywheel mounting options available.

### Installation dimensions

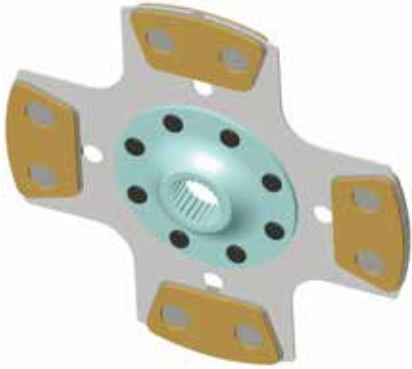


# advantage range **KDC7804**

## Ø200 (7.87") Rally driven plates

### Applications:

General rally and circuit use



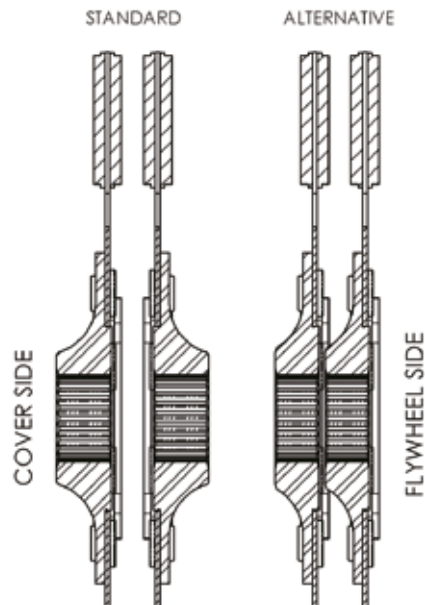
### Key features and benefits

- Optimised design.
- Optimised hub length for low inertia with minimum hub wear.
- Cerametallic friction material for high energy capacity and increased wear rate.
- Interchangeable with other manufacturers' product.
- Various hub configurations available to provide increased hub to crank bolt clearance.
- 7.6mm plate thickness.

### Driven Plates

Spline Size	Ø	No. of Teeth	Standard 15.0mm long hub	Alternative 12.0mm long hub	New Thickness
29 x 10T	29	10	KDC7804 10X001	-	7.6
25 x 14T	25	14	KDC7804 12X001	-	7.6
21 x 18T	21	18	KDC7804 17X005	-	7.6
0.875" x 20T	22.2	20	KDC7804 25X005	-	7.6
24.25 x 21T	24.25	21	KDC7804 27X004	-	7.6
29 x 21T	29	21	KDC7804 28X001	-	7.6
1.0" x 22T	25.4	22	KDC7804 29X002	-	7.6
1.0" x 23T	25.4	23	KDC7804 30X002	KDC7804 30X004	7.6
20.5 x 24T	20.5	24	KDC7804 32X002	-	7.6
24.25 x 24T	24.25	24	KDC7804 50X002	KDC7804 50X001	7.6
1.0" x 24T	25.4	24	KDC7804 33X001t	-	7.6
25.8 x 24T	25.8	24	KDC7804 86X002	-	7.6
22 x 26T	22	26	KDC7804 35X002	-	7.6
22 x 28T	22	28	KDC7804 95X001	-	7.6

### Installation dimensions





# advantage range **KSA**

## Clutch concentric slave cylinders

### Specifications

Part Number	Bearing Fulcrum Ø
KSA3813FX001	38mm
KSA4413FX001	44mm
KSA5213FX001	52mm

### Replacement parts

Part Number	Seal Kit	Bearing	Bearing Kit
<b>KSA3813 FX001</b>	SSK5035E601	KRB3835X001	KRB3835X001K
<b>KSA4413 FX001</b>	SSK5035E601	KRB4436X001	KRB4436X001K
<b>KSA5213 FX001</b>	SSK5035E601	KRB5240X001	N/A

**Applications:**  
General race and rally use



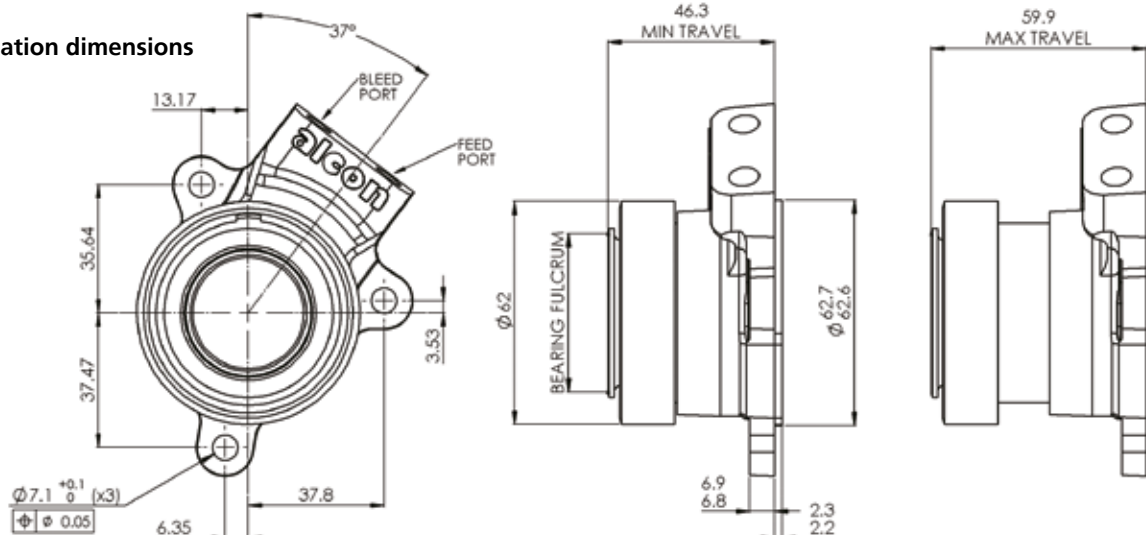
### Key features and benefits

- Light weight compact design
- High speed replaceable bearing included. (Self centering on KSA38 and KSA44 variants)
- Durable hard anodised finish.
- Low friction coated seal surfaces to reduce seal wear
- Replaces existing Saab type units.

### Specifications

- Effective area: 10.0cm<sup>2</sup>
- Operating pressure: 70bar (1015psi)
- Operating temperature range: -40°C to 120°C
- Hydraulic fluid: DOT4 or other non-silicon or mineral oil based fluid.
- Bleed and feed ports: 3/8-24 UNF-2B
- Dry weight: 310g including bearing
- Available stroke: 13.6mm

### Installation dimensions





# customer **NOTES**



# heavy duty range **KKRH1841**

## ø184 (7.25") Single plate heavy duty rally clutch

### Specifications

Disc thickness	Dynamic Torque Capacity (Nm)	Release ratio	Assembly Weight inc. Driven Plate (Kg)	Assembly Inertia inc. Driven Plate (Kg <sup>m</sup> ²)	Release Load New ø44 Bearing (kN)	Release Load New ø52 Bearing (kN)
KKRH1841-HDGSR01	334	High	3.02	0.0175	3.2	3.4
KKRH1841-HSGSR01	277	High	3.02	0.0175	2.6	2.8
KKRH1841-HORSR01	220	High	3.02	0.0175	2.1	2.25
KKRH1841-UDGSR01	440	Ultra	3.02	0.0175	3.2	3.4
KKRH1841-USGSR01	365	Ultra	3.02	0.0175	2.6	2.8
KKRH1841-UORSR01	290	Ultra	3.02	0.0175	2.1	2.25

### Applications:

Heavy duty race rally and hill climb



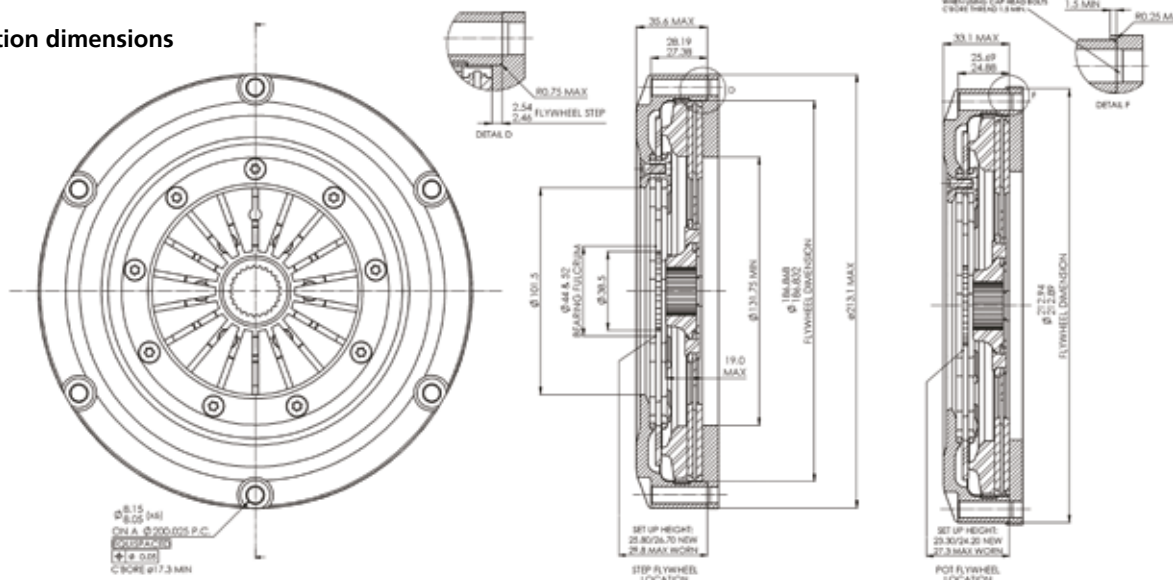
### Replacement parts

Part Number	Pressure Plate (High Ratio)	Pressure Plate (Ultra High Ratio)	Pressure Plate Thickness (mm)	Pressure Plate Fulcrum Dia (mm)
KKRH1841HDGSR01	KPS184L6H5102	N/A	13	ø157
KKRH1841HSGSR01	KPS184L6H5102		13	ø157
KKRH1841HORSR01	KPS184L6H5102		13	ø157
KKRH1841UDGSR01	N/A	KPS184L6U5102	13	ø152
KKRH1841USGSR01		KPS184L6U5102	13	ø152
KKRH1841UORSR01		KPS184L6U5102	13	ø152

### Key features and benefits

- Increased pressure plate mass for increased thermal capacity in heavy duty applications.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable hard anodised finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturer's product.
- Step and Pot flywheel mounting options available.

### Installation dimensions







# heavy duty range **KKSH1841**

## ø184 (7.25") Single plate heavy duty race clutch

### Specifications

Disc thickness	Dynamic Torque Capacity (Nm)	Release ratio	Assembly Weight inc. Driven Plate (Kg)	Assembly Inertia inc. Driven Plate (Kgm <sup>2</sup> )	Release Load New ø44 Bearing (kN)	Release Load New ø52 Bearing (kN)
KKSH1841-HDGSR01	334	High	2.65	0.0149	3.2	3.4
KKSH1841-HSGSR01	277	High	2.65	0.0149	2.6	2.8
KKSH1841-HORSR01	220	High	2.65	0.0149	2.1	2.25
KKSH1841-UDGSR01	440	Ultra	2.65	0.0149	3.2	3.4
KKSH1841-USGSR01	365	Ultra	2.65	0.0149	2.6	2.8
KKSH1841-UORSR01	290	Ultra	2.65	0.0149	2.1	2.25

**Applications:**  
Heavy duty circuit racing



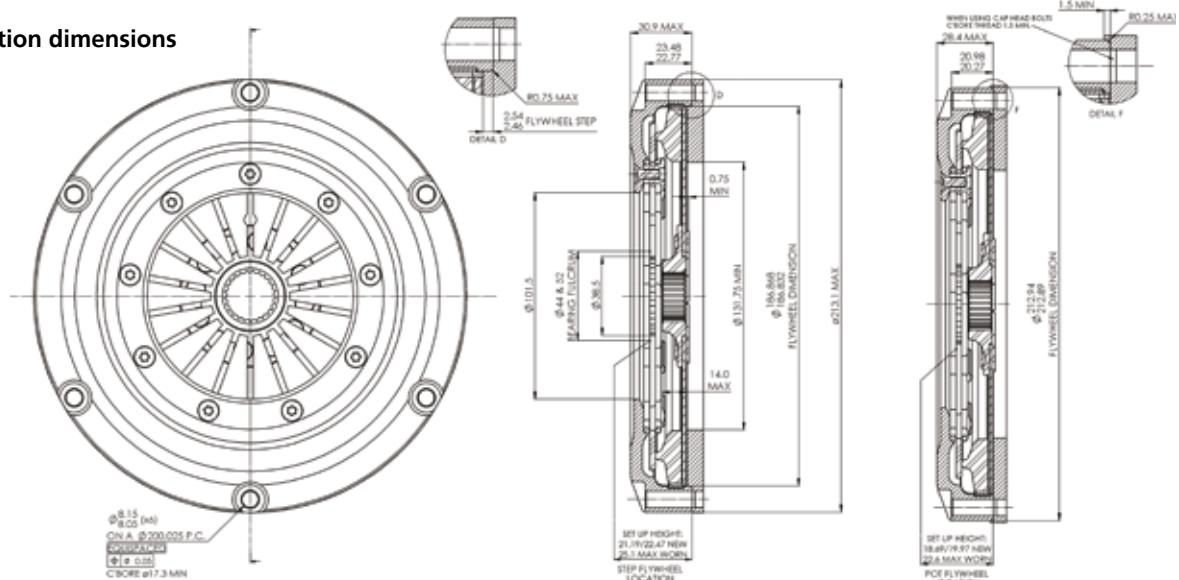
### Replacement parts

Part Number	Pressure Plate (High Ratio)	Pressure Plate (Ultra High Ratio)	Pressure Plate Thickness (mm)	Pressure Plate Fulcrum Dia (mm)
KKSH1841HDGSR01	KPS184L6H5102	N/A	13	ø157
KKSH1841HSGSR01	KPS184L6H5102		13	ø157
KKSH1841HORSR01	KPS184L6H5102		13	ø157
KKSH1841UDGSR01	N/A	KPS184L6U5102	13	ø152
KKSH1841USGSR01		KPS184L6U5102	13	ø152
KKSH1841UORSR01		KPS184L6U5102	13	ø152

### Key features and benefits

- Increased pressure plate mass for increased thermal capacity in heavy duty applications.
- High stiffness cover design for improved start line control.
- Open lug type design for improved cooling and dust removal.
- Durable hard anodised finish.
- Stainless steel wear plates fitted to cover legs.
- Interchangeable with other manufacturer's product.
- Step and Pot flywheel mounting options available.

### Installation dimensions







# heavy duty range **KDCH720**

ø184 (7.25") Heavy duty rally driven plates

## Specifications

Spline Size	Ø	No. of Teeth	11.7mm long hub	15.0mm long hub	New Thickness
29 x 10T	29	10	-	KDCH720610X001	7.2
25 x 14T	25	14	-	KDCH720612X001	7.2
1.0" x 22T	25.4	22	-	KDCH720629X001	7.2
1.0" x 23T	25.4	23	-	KDCH720630X001	7.2
25.8 x 24T	25.8	24	-	KDCH720686X001	7.2
22 x 26T	22	26	-	KDCH720635X001	7.2
29 x 26T	29	26	KDCH720685X001	-	7.2
1 5/32" x 26T	29.36	26	KDCH720636X002	KDCH720636X001	7.2

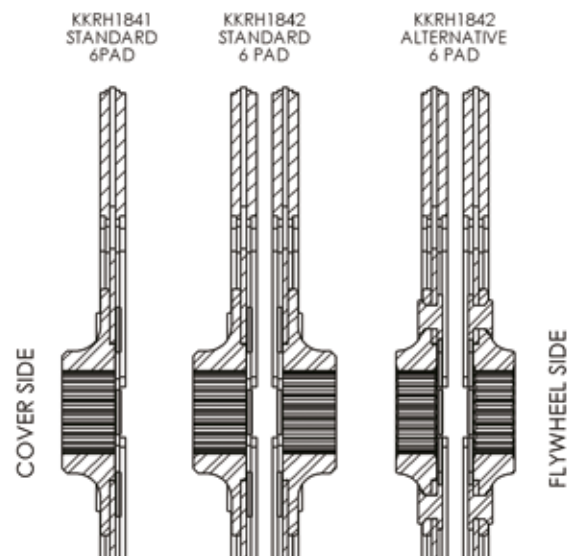
**Applications:**  
Heavy duty rally and circuit use



## Key features and benefits

- Optimised design with 12 rivet hub.
- Optimised hub length for low inertia with minimum hub wear.
- Cerametallic friction material for high energy capacity and increased wear rate.
- Interchangeable with other manufacturer's product.
- Various hub configurations available to provide increased hub to crank bolt clearance.
- 6 pad to maximise thermal capacity and wear in heavy duty applications..

## Hub configurations

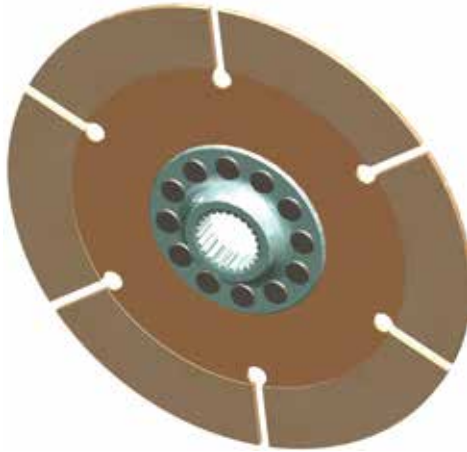




# heavy duty range **KDSH720**

## ø184 (7.25") Heavy duty race driven plates

**Applications:**  
Heavy duty race use



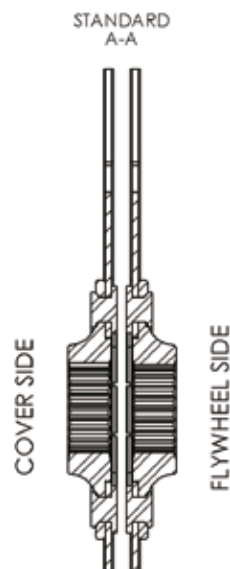
### Key features and benefits

- Optimised design with 12 rivet hub
- Optimised hub length for low inertia with minimum hub wear.
- Sintered friction material for reduced inertia and lower cover height.
- Interchangeable with other manufactures product.
- 2.63mm plate thickness.

### Specifications

Spline Size	Ø	No. of Teeth	11.7mm long hub	New Thickness
1 1/8" x 10T	28.58	10	KDSH720FA06X001	2.63
29 x 10T	29	10	KDSH720FA10X001	2.63
1.0" x 22T	25.4	22	KDSH720FA29X001	2.63
1.0" x 23T	25.4	23	KDSH720FA30X001	2.63
25.8 x 24T	25.8	24	KDSH720FA86X001	2.63
22 x 26T	22	26	KDSH720FA35X001	2.63

### Hub configurations



# Clutches terminology

## Terminology

**Diaphragm Spring:** A Belleville spring with release fingers on the inside diameter.

**Pressure plate:** The pressure plate has a fulcrum on one side that transmits the diaphragm spring load to the driven plate via its own friction face. Pressure plates are available with different fulcrum diameters (ratios). Increasing the ratio from High to Ultra High will result in an increase in clamp load and more travel required to release.

**Floater Plate:** Sometimes known as "intermediate" plates, floater plates are used in multi plate clutches and are positioned between the driven plates.

**Clamp Load:** The force applied

by the diaphragm spring on to the driven plates via the pressure plate and floater plates. The diaphragm spring strength and the pressure plate ratio determine the clamp load.

**Release load:** The force required by the release bearing on the diaphragm spring fingers to disengage the clutch. The release load increases as the clutch wears.

**Release bearing diameter:** The diameter of the release bearing that is in contact with the diaphragm spring fingers. Increasing the release bearing diameter will increase the release load and reduce the travel required to release the clutch.

**Torque Capacity:** This is the maximum recommended engine

torque of the application in which the clutch is fitted.

**Step Flywheel Location:** A step flywheel has a 2.5mm step from the friction surface down to the mounting surface. The inside diameter of the clutch cover legs locate on this step.

**Pot Flywheel Location:** A pot flywheel has the mounting surface and the friction surface on the same plane.

The outside diameter of the clutch cover legs locate on a register on the flywheel.

**Set up Height:** This is the height from the cover assembly mounting face to the top of the diaphragm spring fingers at the release bearing fulcrum diameter.

# Carbon/carbon clutches

Carbon/carbon clutches offer a significant reduction in weight and inertia and have a very high temperature resistance when compared to metallic clutches. Each clutch is individually matched and machined to match clamp load, set up height and release characteristic measurements recorded. The results of these tests are supplied with the clutch along with a build sheet.

It is important to save the build sheet as it includes thickness measurements of the carbon stack which will be required for clutch maintenance later on. Replacement copies of build sheets can be supplied by Alcon by quoting the serial number which is marked on one of the clutch cover legs.

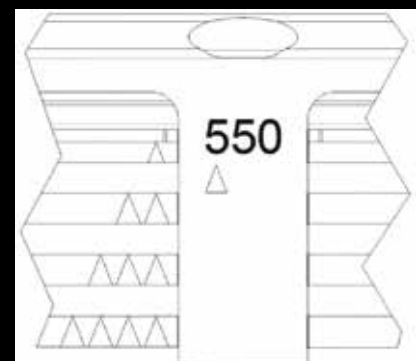
## Installation

Before installation onto the vehicle ensure:

- The clutch fits the flywheel correctly i.e. pot or step location, bolt PCD and diameter.
- The mounting bolts or studs are of the correct length.
- All parts are present and are fitted to the clutch in the correct order (see below).
- The carbon driven plates are free to move on the hub.
- The pressure plate and carbon floater plates are free to move on the cover legs.

The carbon plates must be installed in the clutch in the same position and orientation as when the clutch was originally built.

One of the clutch legs is marked with a serial no and a triangular orientation mark "△". (fig.1).

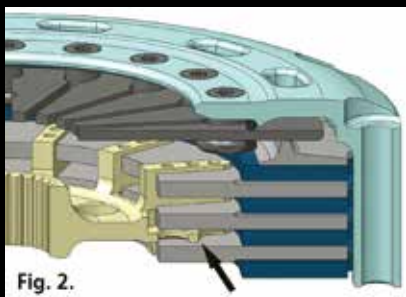


The floater plates are marked as "Λ", "ΛΛ", "ΛΛΛ" etc. Floater plate "Λ" is installed into the cover first next to the pressure plate and with its marking next to the marked cover leg. It must



also in line with the orientation mark. The other plates are fitted in numerical order either side of the driven plates with the highest number plate against the flywheel. (fig.1)

The driven plates are marked in the same way and must be fitted in the same sequence, i.e. "A" assembled into the cover first. Before fitting the last driven plate the hub must be fitted. The hub will have a "web" between the teeth to maintain hub engagement with the carbon pack. This "web" must be fitted towards the flywheel. (fig.2)



When fitting the clutch to the flywheel, a dummy input shaft should be used to centralise the clutch hub spline with the flywheel bearing.

**When mounting the clutch onto the flywheel and inserting the mounting bolts/studs, ensure the bottom floater plate is not allowed to become trapped between the cover legs and the flywheel.** As the clutch will be under load, tightening should be carried out half a turn at a time in a star like pattern. Recommended tightening torque for M8 and 5/16" is 22Nm (16 lbft).

When removing the dummy input shaft ensure that it moves freely before attempting to fit the gearbox. **When assembling the gearbox to the engine ensure the gearbox is not allowed to exert a bending load on the clutch hub as this could damage both the hub and the carbon plates.**

When the clutch is tightened

down on the flywheel to the correct torque, the diaphragm fingers should be almost flat. If the fingers are not flat the flywheel may be incorrect for the clutch e.g. pot instead of flat or an incorrect pressure plate thickness may have been used.

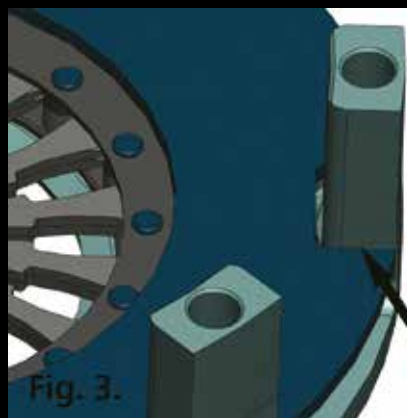
## Removal

Remove the clutch from the flywheel by releasing the bolts/nuts progressively in a star like pattern.

## Maintenance

Regular checks should be carried out for damage, excessive wear or contamination of the friction material by e.g. oil:

- Firstly clear out all dust from the clutch components using a vacuum cleaner and a brush.
- Carefully check the tightness of the spring retainer fixings but DO NOT break the Loctite.
- Check each carbon plate for damage and ensure they are all free to travel along the cover or hub.
- Carbon plate drive face wear should also be checked using feeler gauges. With the carbon floater plates in the clutch cover, measure the gap between the drive face and the clutch cover leg, (fig.3).



- With the carbon driven plates on the hub measure the gap

between the drive face and the hub, (fig.4). These gaps should be no more than 1mm.



- The diaphragm spring should be checked for "bluing" that would indicate excessive temperatures have been experienced. A diaphragm spring exposed to excessive temperatures can lose clamp load and should be returned to Alcon for Inspection.
- The diaphragm spring fingers should also be inspected for wear from the release bearing. It is normal to have some wear over the life of the clutch. If the wear is uneven or there are signs of localised heat then check the release unit / bearing for problems. Spin the release bearing, if it feels dry or has more resistance than normal replace it.
- Check the hub spline for wear. Worn spline teeth can be a result of a misalignment between the input shaft and the crankshaft. This could include a worn flywheel bearing or even the bell housing flexing during use. Having minimal spline engagement for high torque applications can also result in excessive spline teeth wear.
- Carbon stack wear: Additional pressure plate "shims" can be purchased to compensate for wear of the carbon plates and restore the original torque capacity of the clutch. Using a micrometer, measure the



thickness of each carbon plate in the centre of the friction area in 3 places 120° apart and calculate the mean value for each plate. These figures can then be added to the build sheet and then subtracted from the original as new figures to determine the carbon stack wear. As a general rule, the next thickness pressure plate should be used.

**Important: Do not fit a thicker pressure plate than appropriate**

**for the carbon stack height as this will cause the clutch to malfunction.**

- Ensure the carbon plates are reinstalled into the clutch in their original positions. Do not swap complete carbon packs between clutches.

## Reconditioning and Repair

Wear compensating pressure plate "shims" can be replaced by

the user.

If any other components require replacement, the clutch will require resetting and characterisation using Alcon's test rig and should be returned to Alcon. Clutches can be returned through your distributor, or if sent direct, contact Alcon first to obtain an RMA (Return Materials Authorization) number. The package must be identified with this number so it can be tracked through Alcon's system.

# Clutches range

			Max recommended torque capacity Nm (lbft)							
			OR Orange		SG Single Grey		DG Double Grey		TG Triple Grey	
Friction material	Flywheel Details	Diameter	HR	UHR	HR	UHR	HR	UHR	HR	UHR
Sintered	8 Bolt fixing	ø140 2 plt	481 (355)				559 (411)			
	8 Bolt fixing	ø140 3 plt	722 (532)				839 (617)			
	8 Bolt fixing	ø140 4 plt	962 (709)		1117 (822)					
	6 Bolt fixing	ø184 1 plt	220 (162)	290 (213)	277 (204)	365 (269)	334 (246)	440 (324)		
	6 Bolt fixing	ø184 2 plt	440 (324)	580 (427)	554 (407)	730 (537)	668 (492)	880 (649)		
	6 Bolt fixing	ø184 3 plt	660 (486)	870 (641)	831 (611)	1095 (806)	1002 (739)	1320 (973)		
Cerametallic	8 Bolt fixing	ø140 1 plt	228 (168)				317 (233)			
	8 Bolt fixing	ø140 2 plt	456 (336)				634 (466)			
	6 Bolt fixing	ø184 1 plt	220 (162)	290 (213)	277 (204)	365 (269)	334 (246)	440 (324)		
	6 Bolt fixing	ø184 2 plt	440 (324)	580 (427)	554 (407)	730 (537)	668 (492)	880 (649)		
	6 Bolt fixing	ø200 1 plt					370 (273)	412 (304)		457 (337)
	6 Bolt fixing	ø200 2 plt					740 (546)	824 (608)		915 (674)
Carbon	8 Bolt fixing	ø140 2 plt	402 (296)				518 (382)			
	8 Bolt fixing	ø140 3 plt	603 (444)				840 (619)			
	8 Bolt fixing	ø140 4 plt	804 (592)				1120 (826)			
	12 Bolt fixing	ø184 2 plt	428 (316)	534 (394)	473 (349)	612 (451)	556 (410)	712 (525)		
	12 Bolt fixing	ø184 3 plt	642 (473)	801 (591)	709 (523)	918 (677)	834 (615)	1068 (788)		





# Aftermarket **introduction**

## Brake kits

We use our extensive knowledge of specialist and performance braking solutions in all of our applications, including aftermarket brake kits. Our kits allow drivers to experience exceptional braking, suitable for fast road and track use. We produce a range of kits for different applications, from Advantage Extreme to the top-of-the-range Superkits. Each is available for a

variety of performance road car - see the following listings for more information.

## Advantage Extreme kits

Our Advantage Extreme brake kits are specifically engineered to give exceptional braking performance both on the road and on the track. Perfect for those who want that extra bit of

braking performance from their car, we provide a full upgrade kit which includes everything needed to fit it to the car.

## Superkits

The pinnacle of aftermarket brake upgrades, our Superkits are designed for those who need a little extra braking power and performance on the track. For more information, or to order, contact a sales representative.



# ADVANTAGE EXTREME

Alcon's Advantage Extreme brake kits are specifically engineered to give you exceptional braking performance.

## What's in the box?

The Advantage Extreme kit is supplied in two boxes, one for each hand, and includes all the parts that you will need:

- Special alloy disc and bell assembly
- Monobloc 4 or 6 piston caliper.
- Low noise, fade resistant pads.
- Brackets and fixings
- High performance brake fluid.

## Discs

Advantage Extreme discs have been engineered to produce optimum bite, thermal stability, and durability in an exceptionally high strength to low weight design. This has been achieved by combining a special Alcon-developed iron alloy disc with an aerospace specification alloy bell. Other disc benefits:

- Unique crescent grooves on friction faces provide the bite usually associated with drilled discs without the attendant durability problems.

- Directional curved cooling vanes for optimum cooling performance.
- Alcon's floating disc system (as used in the majority of applications) has been designed to allow thermal expansion of the disc throughout its life while minimising the tendency to judder.

## Pads

The low noise pads offer strong cold performance for start up and city driving and are specially formulated for excellent resistance to fade at elevated temperatures. This makes them perfect for those wanting performance on both track and road

## Calipers

Advantage Extreme calipers are gravity die cast for monobloc constructions using aluminium alloy for optimum strength and weight.

Other caliper benefits:

- Monobloc 4 or 6 piston design for high stiffness (firm pedal) with low weight.
- Piston bore sizes are staggered to ensure even pad wear.
- Pin-mounted pads provide low threshold pressure and low noise

Advantage Extreme brake kits are available for a range of vehicle applications - please see following listings.



# GUIDE part numbering

## F 97 ZG 02 - 19 F7 E

**AXLE**  
F: FRONT  
R: REAR

**CALIPER TYPE**  
98: 4 POT MONO  
97: 6 POT MONO  
36: 4 POT BOLTED

**PISTON DIAMETER**  
A: 28.6/28.6  
B: 31.8/31.8  
F: 34.9/41.3  
H: 38.1/41.3  
ZG: 30.2/34.9/38.1  
X: OTHER

**DISC SIZE**  
01: Ø343x32 (FLOATING)  
02: Ø365x32 (FLOATING)  
03: Ø343x28 (FIXED)  
04: Ø350x28 (FIXED)  
05: Ø330x25 (FIXED)  
06: Ø328x28 (FLOATING)  
07: Ø343x25 (FIXED)  
08: Ø343x32 (FIXED)

**ALCON VERSION**  
A  
B  
C  
D  
E

**PAD MATERIAL (FROM RC2101)**  
S2: OBTEC CC-75 (OBS)  
S3: OBTEC HP-25 (OBS)  
F4: FERODO DS2500  
P6: PAGID RS9-2  
S4: OBTEC CO-23 (OBS)  
F7: FERODO DS PERFORMANCE

**VEHICLE IDENTIFICATION**  
01: BMW E46 M3  
02: SUBARU IMPREZA WRX  
03: NISSAN 350Z  
04: AUDI S4  
05: PORSCHE 996  
06: BMW E90  
07: MITSUBISHI EVO 8&9  
08: NISSAN GTR R34  
09: VW GOLF 4, AUDI S3, SEAT CUPRA R  
10: AUDI TT (VW GOLF 4 PLATFORM)  
11: HONDA ACCORD CL7  
12: SUBARU IMPREZA STI  
14: AUDI TT (VW GOLF 4 PLATFORM)  
15: VW GOLF 5  
16: BMW MINI  
17: VAUXHALL ASTRA VXR  
18: HONDA CIVIC TYPE R (FN2 EURO SPEC)  
19: AUDI A4 B6/B7  
20: HONDA CIVIC TYPE R (FD2 JDM SPEC)  
21: PORSCHE CAYMAN  
22: SUBARU IMPREZA STI (MY09)  
23: MITSUBISHI EVO 10

# brake kits **ADVANTAGE EXTREME**

## Application list

### Part numbers and handing

Part Number	Application	Disc Size	Caliper	Orientation	Pad Material
F98H01-09F7E	AUDI A3 / S3 (VW GOLF 4 PLATFORM)	Ø343x32	4 Pot Mono	Leading	DS PERF
F98H01-15F7E	AUDI A3 / S3 (VW GOLF 5 PLATFORM)	Ø343x32	4 Pot Mono	Leading	DS PERF
F97ZG02-19F7E	AUDI A4 B6/B7	Ø365x32	6 Pot Mono	Trailing	DS PERF
F98H01-19F7A	AUDI A4 B6/B7	Ø343x32	4 Pot Mono	Trailing	DS PERF
F97Y01-24F7E	AUDI A4 B8	Ø343x32	6 Pot Mono	Trailing	DS PERF
F97Y02-24F7E	AUDI A4 B8	Ø365x32	6 Pot Mono	Trailing	DS PERF
F97Y02-24P6E	AUDI A4 B8	Ø365x32	6 Pot Mono	Trailing	RS9-2
F98H01-24F7E	AUDI A4 B8	Ø343x32	4 Pot Mono	Trailing	DS PERF
F97ZG02-19F7E	AUDI A6 C5	Ø365x32	6 Pot Mono	Trailing	DS PERF
F98H01-19F7A	AUDI A6 C5	Ø343x32	4 Pot Mono	Trailing	DS PERF
F97ZG02-19F7E	AUDI A6 C5 QUATTRO	Ø365x32	6 Pot Mono	Trailing	DS PERF
F98H01-19F7A	AUDI A6 C5 QUATTRO	Ø343x32	4 Pot Mono	Trailing	DS PERF
F98H01-10F7A	AUDI TT (VW GOLF 4 PLATFORM)	Ø343x32	4 Pot Mono	Leading	DS PERF
F97Y02-14F7E	AUDI TT (VW GOLF 5 PLATFORM)	Ø365x32	6 Pot Mono	Leading	DS PERF
F97ZG02-01F7E	BMW E46 M3 18" OE WHEEL	Ø365x32	6 Pot Mono	Trailing	DS PERF
R98B03-01F7D	BMW E46 M3 REAR	Ø343x28	4 Pot Mono	Trailing	DS PERF
F98H01-30F7E	BMW E81/E82	Ø343x32	4 Pot Mono	Trailing	DS PERF
F97Y02-06F7E	BMW E90/E92/E93 - NON M3	Ø365x32	6 Pot Mono	Trailing	DS PERF
F97Y02-06P6E	BMW E90/E92/E93 - NON M3	Ø365x32	6 Pot Mono	Trailing	RS9-2
F98H02-06F7E	BMW E90/E92/E93 - NON M3	Ø365x32	4 Pot Mono	Trailing	DS PERF
F98H02-06P6E	BMW E90/E92/E93 - NON M3	Ø365x32	4 Pot Mono	Trailing	RS9-2
R98B03-06F7D	BMW E90/E92/E93 - NON M3 REAR	Ø343x28	4 Pot Mono	Leading	DS PERF
R98B03-06P6D	BMW E90/E92/E93 - NON M3 REAR	Ø343x28	4 Pot Mono	Leading	RS9-2
R98B03-26F7D	BMW E90/E92/E93 - NON M3 REAR (E90/E92 - 320 & 325 MODELS)	Ø343x28	4 Pot Mono	Leading	DS PERF
R98B03-26P6D	BMW E90/E92/E93 - NON M3 REAR (E90/E92 - 320 & 325 MODELS)	Ø343x28	4 Pot Mono	Leading	RS9-2
F97Y02-27F7E	CORVETTE C6	Ø365x32	6 Pot Mono	Trailing	DS PERF
R98B08-27F7D	CORVETTE C6 (REAR)	Ø343x32	4 Pot Mono	Leading	DS PERF
F98H01-11F7E	HONDA ACCORD CL7	Ø343x32	4 Pot Mono	Leading	DS PERF

# brake kits **ADVANTAGE EXTREME**

## Application list

### Part numbers and handing

Part Number	Application	Disc Size	Caliper	Orientation	Pad Material
F98H01-11F7E	HONDA ACCORD CL7	Ø343x32	4 Pot Mono	Leading	DS PERF
F97Y01-20F7E	HONDA CIVIC TYPE R (FD2 JDM SPEC)	Ø343x32	6 Pot Mono	Leading	DS PERF
F97Y01-20P6E	HONDA CIVIC TYPE R (FD2 JDM SPEC)	Ø343x32	6 Pot Mono	Leading	RS9-2
F97Y01-18F7E	HONDA CIVIC TYPE R (FN2 EURO SPEC)	Ø343x32	6 Pot Mono	Leading	DS PERF
F97ZG02-29F7E	MERCEDES W204C	Ø365x32	6 Pot Mono	Trailing	DS PERF
R36A07-29F7D	MERCEDES W204C (REAR)	Ø343x25	4 Pot 2 Piece	Trailing	DS PERF
F97ZG02-23F7E	MINI COOPER R50	Ø365x32	6 Pot Mono	Leading	DS PERF
R36A03-23F7D	MINI COOPER R50 REAR	Ø343x28	4 Pot 2 Piece	Trailing	DS PERF
F97Y01-07F7E	MINI COOPER R50	Ø343x32	6 Pot Mono	Leading	DS PERF
F97Y02-07F7E	MINI COOPER R50	Ø365x32	6 Pot Mono	Leading	DS PERF
R36X05-07F7D	MINI COOPER R50 REAR	Ø330x25	4 Pot 2 Piece	Trailing	DS PERF
F97ZG02-03F7E	NISSAN 350Z	Ø365x32	6 Pot Mono	Leading	DS PERF
R98B04-03F7D	NISSAN 350Z REAR	Ø350x28	4 Pot Mono	Leading	DS PERF
F97ZG01-08F7E	NISSAN SKYLINE GTR R34	Ø343x32	6 Pot Mono	Leading	DS PERF
F97ZG02-08F7E	NISSAN SKYLINE GTR R34	Ø365x32	6 Pot Mono	Leading	DS PERF
R98B04-08F7D	NISSAN SKYLINE GTR R34 REAR	Ø350x28	4 Pot Mono	Leading	DS PERF
F98H01-09F7E	SEAT LEON CUPRA R (VW GOLF 4 PLATFORM)	Ø343x32	4 Pot Mono	Leading	DS PERF
F98H01-15F7E	SEAT LEON CUPRA R (VW GOLF 5 PLATFORM)	Ø343x32	4 Pot Mono	Leading	DS PERF
F97ZG01-28F7E	SUBARU BRZ	Ø343x32	6 Pot Mono	Leading	DS PERF
F97ZG02-28F7E	SUBARU BRZ	Ø365x32	6 Pot Mono	Leading	DS PERF
F98H01-28F7E	SUBARU BRZ	Ø343x32	4 Pot Mono	Leading	DS PERF
R36A07-28F7D	SUBARU BRZ REAR	Ø343x25	4 Pot 2 Piece	Trailing	DS PERF
R36X07-12F7D	SUBARU IMPREZA STi (MY05,06,07) REAR	Ø343x25	4 Pot 2 Piece	Trailing	DS PERF
R36A07-22F7D	SUBARU IMPREZA STi (MY08,09) REAR	Ø343x25	4 Pot 2 Piece	Trailing	DS PERF
F98H01-02F7E	SUBARU IMPREZA WRX	Ø343x32	4 Pot Mono	Trailing	DS PERF
F97ZG01-22F7E	SUBARU IMPREZA WRX / STi	Ø343x32	6 Pot Mono	Trailing	DS PERF
F97ZG02-22F7E	SUBARU IMPREZA WRX / STi	Ø365x32	6 Pot Mono	Trailing	DS PERF
R36X07-02F7D	SUBARU IMPREZA WRX REAR	Ø343x25	4 Pot 2 Piece	Trailing	DS PERF

# brake kits **ADVANTAGE EXTREME**

## Application list

### Part numbers and handing

Part Number	Application	Disc Size	Caliper	Orientation	Pad Material
F97ZG01-28F7E	TOYOTA FT86	Ø343x32	6 Pot Mono	Leading	DS PERF
F97ZG02-28F7E	TOYOTA FT86	Ø365x32	6 Pot Mono	Leading	DS PERF
F98H01-28F7E	TOYOTA FT86	Ø343x32	4 Pot Mono	Leading	DS PERF
R36A07-28F7D	TOYOTA FT86 REAR	Ø343x25	4 Pot 2 Piece	Trailing	DS PERF
F97ZG01-17F7A	VAUXHALL ASTRA H / VXR	Ø343x32	6 Pot Mono	Leading	DS PERF
F97ZG02-17F7A	VAUXHALL ASTRA H / VXR	Ø365x32	6 Pot Mono	Leading	DS PERF
F98H01-17F7A	VAUXHALL ASTRA H / VXR	Ø343x32	4 Pot Mono	Leading	DS PERF
F98H01-09F7E	VW BEETLE (VW GOLF 4 PLATFORM)	Ø343x32	4 Pot Mono	Leading	DS PERF
F98H01-09F7E	VW BORA (VW GOLF 4 PLATFORM)	Ø343x32	4 Pot Mono	Leading	DS PERF
F98H01-09F7E	VW GOLF 4	Ø343x32	4 Pot Mono	Leading	DS PERF
F98H01-15F7E	VW GOLF 5	Ø343x32	4 Pot Mono	Leading	DS PERF
F98H02-25P6D	VW GOLF 6	Ø365x32	4 Pot Mono	Leading	RS9-2

### Replacement discs

Part Number: left/ right	Disc O/D			Casting information		Mounting dimensions			Grooves	Bobbin Bolt Kits
	D1	W	D2	Air Gap	Vanes	N	ØM	PCD		
DIV2197X007C24L/R	328	28	224	12	48	10	9	202	24	BBK0625X006.10
DIV2197X006C24L/R	330	25	228	12	48	12	6.4	209	24	BBK0621X001.12
DIV2146X708C24L/R	343	32	233	18	48	12	6.4	218	24	BBK0621X001.12
DIV2175X521C24L/R	343	28	235	14	48	12	6.4	216	24	BBK0621X001.12
DIV2175X557C24L/R	343	32	235	14	48	10	9	213	24	BBK0625X006.10
DIV2175X607C24L/R	343	25	241	14	48	12	6.4	222	24	BBK0621X001.12
DIV2175X791C24L/R	343	32	232	14	48	10	slot	214	24	TBA
DIV2175X463C24L/R	350	28	244	14	48	12	6.4	228.6	24	BBK0621X001.12
DIV2175X576C24L/R	365	32	257	14	48	10	9	235	24	BBK0625X006.10
DIV2175X636C24L/R	365	32	248	14	48	10	9	226	24	BBK0625X006.10
DIV2175X768C24L/R	365	32	245	14	48	10	slot	223	24	TBA
DIV2202X576C24L/R	365	32	257	19	48	10	9	235	24	BBK0625X006.10



# brake kits **ADVANTAGE EXTREME**

## Application list

### Replacement disc application list

Part Number: left/right	Applications:
DIV2197X007C24L/R	BMW Mini One
DIV2197X006C24L/R	Mitsubishi Evo 8 & 9 rear
DIV2146X708C24L/R	CORVETTE C6 (REAR)
DIV2175X521C24L/R	BMW E46 M3 Rear, E90 rear (E90/E92 - 320 & 325), Mitsubishi Evo 10 Rear
DIV2175X557C24L/R	Subaru Impreza WRX, Sti (MY08,09) & BRZ, Mitsubishi Evo 8 & 9, Nissan Skyline GTR R34, VW Golf 4&5, Audi A3,A4 (B6/B7/B8) Seat Cupra R, Vauxhall Astra VXR, Toyota FT86, Honda Accord CL7, Civic type R
DIV2175X607C24L/R	Subaru Impreza WRX Rear, Sti(MY05,06,07,08,09), BRZ, Toyota FT86, Mercedes W204C rear.
DIV2175X791C24L/R	BMW E81/E82
DIV2175X463C24L/R	NISSAN SKYLINE GTR R34 , 350Z REAR
DIV2175X576C24L/R	BMW E46 M3 18" Wheel, E90, Subaru Impreza Sti (MY08, 09) BRZ, Mitsubishi Evo 8 & 9, Nissan Skyline GTR R34 & 350Z, Audi A4 (B6/B7/B8) Audi TT, VW Golf 5,Corvette C6, Toyota FT86, Porsche Cayman S.
DIV2175X636C24L/R	Mitsubishi Evo 10
DIV2175X768C24L/R	Mercedes W204C
DIV2202X576C24L/R	Vauxhall Astra VXR

## customer **NOTES**



# ADVANTAGE EXTREME RACE

## The background

While Alcon's Advantage Extreme brake kits offer exceptional braking performance for the fast road and track driver, sometimes our customers need that little bit extra. That's why we have developed our Advantage Extreme Race disc and bell upgrades. We currently have upgrades available for a selection of popular Advantage Extreme kits.

## What does it consist of?

The race upgrade consists of a fully floating disc and bell assembly, allowing for greater thermal expansion and thus less chance of disc cracking or warping when subjected to regular heavy track use. The existing disc can be swapped like-for-like with these upgrades.

## Who's it aimed at?

This upgrade is perfect for customers who are a little more 'enthusiastic' on the track and so need that added durability. The upgrade is designed for use with customers' existing Advantage Extreme caliper and mounting kit. The applications it is currently available for are listed opposite.



# brake kits **ADVANTAGE EXTREME**

## Race upgrade application list

### Part numbers and handing

Part Number	Application	Disc Size	HANDING
BAD2129X1411	BMW E46 M3		BELL
DIA2175X175S36L	BMW E46 M3	Ø365x32	L
DIA2175X175S36R	BMW E46 M3	Ø365x32	R
BAD2129X1412	VW GOLF 6		BELL
DIA2175X176S36L	VW GOLF 6	Ø365x32	L
DIA2175X176S36r	VW GOLF 6	Ø365x32	R
BAD2129X1413	BMW E90		BELL
DIA2175X177S36L	BMW E90	Ø365x32	L
DIA2175X177S36R	BMW E90	Ø365x32	R
BAD2129X1414	SUBARU STi		BELL
DIA2175X178S36L	SUBARU STi	Ø365x32	L
DIA2175X178S36R	SUBARU STi	Ø365x32	R
BAD2129X1415	MITSUBISHI EVO 8		BELL
DIA2175X179S36L	MITSUBISHI EVO 8	Ø365x32	L
DIA2175X179S36R	MITSUBISHI EVO 8	Ø365x32	R



# SUPERKITS

Designed to give you the ultimate braking performance, Superkits are the pinnacle of our aftermarket brake kits.

Owners of performance road cars often find that, under extreme conditions such as those achievable at the track, the limits of the standard OE brakes can be exceeded, sometimes resulting in a substantial deterioration brake performance. Alcon's Superkits have been designed specifically to stand up to the rigours of the track, both in durability and performance.

## Discs

The Alcon Superkit brake discs offer significant improvements in available brake torque, while still being lighter than the OE assemblies and so reducing inertia. The discs also offer increased thermal capacity over the OE setup and the crescent groove pattern allows for improved gas release, increased initial bite and improved durability. Alcon's floating disc system (as used in the majority of applications) has been designed to allow thermal expansion of

the disc throughout its life while minimising the tendency to judder.

## Calipers

Made from aluminium billet, the calipers have been designed to improve overall system efficiency whilst maintaining the original balance and OE actuation. The increased pad area and volume offers better temperature management and improved brake efficiency while the pistons have been positioned to offer the most even pad wear.

# brake kits SUPERKIT

## Application list

### Part numbers and handing

Part Number	Description	Front Calliper	Rear Calliper	Front disc Ø	Rear disc Ø	Groove Pattern	Pads
<b>BKC1759ZG01</b>	BRAKE KIT FR & RR NISSAN GTR R35	6 Pot Mono	6 Pot Mono	400 x 36	385 x 30	C	PAGID RS9-2
<b>BKC1759ZG03</b>	BRAKE KIT FR & RR NISSAN GTR R35	6 Pot Mono	6 Pot Mono	400 x 36	385 x 30	S	PAGID RS29
<b>BKC1759ZG05</b>	BRAKE KIT FR & RR NISSAN GTR R35	6 Pot Mono	6 Pot Mono	400 x 36	385 x 30	C	PAGID RS29
<b>BKC1759ZG07</b>	BRAKE KIT FR & RR NISSAN GTR R35	6 Pot Mono	6 Pot Mono	400 x 36	385 x 30	OBSOLETE	
<b>BKC1759ZG08</b>	BRAKE KIT FR & RR NISSAN GTR R35	6 Pot Mono	6 Pot Mono	400 x 36	385 x 30	C	PAGID RS9-2
<b>BKC1759ZG09</b>	BRAKE KIT FR & RR NISSAN GTR R35	6 Pot Mono	6 Pot Mono	400 x 36	385 x 30	S	PAGID RS29
<b>BKC1759ZG10</b>	BRAKE KIT FR & RR NISSAN GTR (CSiC)	6 Pot Mono	6 Pot Mono	400 x 36	385 x 30	D	CERAMIC
<b>BKC8759D08</b>	BRAKE KIT FR & RR NISSAN 370Z	6 Pot Mono	6 Pot Mono	400 x 36	385 x 30	C	PAGID RS9-2
<b>BKC1759ZG04</b>	BRAKE KIT FR & RR PORSCHE 997 TURBO	6 Pot Mono	6 Pot Mono	390 x 34	385 x 33	C	PAGID RS9-2
<b>BKC8759D07</b>	BRAKE KIT FR & RR BMW E90 M3	6 Pot Mono	4 Pot Mono	384 x34	370 x 30	C	PAGID RS9-2
<b>BKC8759D09</b>	BRAKE KIT FR & RR BMW E90/92 335i NON M3	6 Pot Mono	4 Pot Mono	384 x34	370 x 30	C	PAGID RS9-2
<b>BKC8759D11</b>	BRAKE KIT FR & RR BMW E60 M5			390 x 36	380 x 32	C	PAGID RS9-2
<b>BKC8759D12</b>	BRAKE KIT FR & RR BMW E90 M3	6 Pot Mono	4 Pot Mono	384 x34	370 x 30	C	PAGID RS29
<b>BKC8759D31</b>	BRAKE KIT FR & RR BMW E90/92 NON M3	6 Pot Mono	4 Pot Mono	384 x34	370 x 30	C	PAGID RS29
<b>BKF1759ZG13</b>	BMW 550i IRON DISC SUPERKIT	6 Pot Mono	N/A	394 x 36	N/A	C	PAGID RS9-2
<b>BKF1759ZG02</b>	AUDI RS6 FRONT SUPERKIT	6 Pot Mono	N/A	400 x 36	N/A	C	PAGID RS9-2



# ARMOURED introduction

A key area of our business is that of specialist brakes and clutches for armoured vehicles. Performance and durability, often in uncompromising surroundings, are pre-requisites for armoured vehicle braking solutions and something that Alcon prides itself on being able to offer.

## Applications

From armoured SUVs to MOD-spec military combat vehicles, our brake solutions are available for a number

of applications. They are designed and built to the highest specification, developed to withstand the perils of this line of work while providing excellent braking performance.

## Bespoke Engineering

Alcon is able to provide bespoke engineering systems from order to production intent parts within a 12 week lead-time, providing tailored performance braking systems to our

customers' exact requirements. In-house testing capabilities provide additional peace of mind.

Our customers, including the UN, have come to expect and rely upon our discretion, performance and reliability, and this is what makes us the first choice in armoured braking solutions.

Alcon have designed tried and tested packages using its extensive Motorsport and Performance OEM experience for a variety of vehicle platforms but have the capability to consider other requirements as and when our customers require .

# GUIDE part numbering

**C A R 2349 H 24 XE S LL**

**C: CALIPER**

**A: ALUMINIUM  
I: IRON**

**R: RADIAL FIXING  
L: LUG FIXING**

**CALIPER SERIES**

**HANDING**

LL: LEFT LEADING  
LT: LEFT TRAILING  
RL: RIGHT LEADING  
RT: RIGHT TRAILING

**ABUTMENT MATERIAL**

A: ALUMINIUM  
S: STEEL  
T: TITANIUM  
Z: NO ABUTMENTS

## PISTON DIAMETERS (nominal)

A: 28.6/28.6	N: 41.3/47.6	YD: 27.318/34.9	AM: 31.8/34.9/41.3
B: 31.8/31.8	P: 44.5/44.5	AA: 25.4(x2)	AN: 28.6/31.8/41.3
C: 31.8/34.9	R: 44.5/46.8	AB: 25.4(x6)	AP: 28.6/31.8
D: 34.9/34.9	S: 44.5/47.6	AC: 25.4(x4)/22.2(x2)	AR: 28.6/34.9
E: 34.9/38.1	T: 22/25.4/30.2	AD: 30.2(x6)	AS: 30.2(x8)
F: 34.9/41.3	U: 36/38	AE: 28.6(x2)/34.9(x2)	AT: 27/28.6
G: 38.1/38.1	V: 22.2/25.4	AF: 26/31.8/36	AU: 33.3/38.1
H: 38.1/41.3	W: 33.3/38.1/44.5	AG: 28.6/33.3/36	AV: 48.0/48.0
J: 38.1/44.5	X: OTHER	AH: 40.0(x4)	AW: 30.2/33.3
K: 41.3/41.3	Y: 27/31.8/38.1	AJ: 30.2/34.9	
L: 41.3/44.5	Z: 30.2/34.9/41.3	AK: 27.0/30.2	
M: 41.3/46.8	ZG: 30.2/34.9/38.1	AL: 28.6(x8)	

## PISTON SPEC

	ALUMINIUM	TITANIUM	STAINLESS STEEL
A: ALUMINIUM			
D: CLIP IN INSERT			
T: TITANIUM			
V: TITANIUM (VENTILATED)			
X: CLIP-IN INSERT			
S: STAINLESS STEEL			
E: LOW FRICTION			
E: LOW FRICTION			

## SERIAL NUMBER

00-99

# brake kits **ARMOURED**

## Application list

### BMW

750 E38 - 1994-2001

#### Front only kits

Front aluminium caliper and disc kit

Front - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKF7351L30	Front	370x37	DIA2175X060GL /R	41.3/44.5	CAR6454L20SSLT /RT	N/A		N/A	SSW3430X459

### Chevrolet

Suburban 2500 - 2007-2013

#### OE replacement discs & pads

Front - Direct replacment of original discs and pads

Rear - Direct replacment of original discs and pads

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
N/A	Front	325x38	DIV3430X953	N/A	N/A	N/A	PNS0084X434S.4	N/A	N/A
	Rear	330x29	DIV3430X954	N/A	N/A	N/A	PNS0084X435S.4	N/A	N/A

Tahoe 2006-2014 (GMT900)

#### OE replacement discs & pads

Front - Direct replacment of original discs and pads

Rear - Direct replacment of original discs and pads

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
N/A	Front	330x30	DIV3430X955	N/A	N/A	N/A	PNS0084X436S.4	N/A	N/A
	Rear	345x20	DIV3430X956	N/A	N/A	N/A	PNS0084X437S.4	N/A	N/A

### Ford

Expedition 2007 - 2011

#### Vehicle Kits

Front and rear caliper and disc kit (recommended for vehicles up to 5300kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Forged aluminium caliper assembly with large iron two-piece disc

Rear - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKC8759K26	Front	355x36	DIA2175X159C24L /R	6x41.3	CAR8759K12HRLT /RT	BSK4487X523	PNP4488X942S.4	N/A	SSW0080X914.4
	Rear	370x28	DIA2175X160C24L /R	4x38.1	CAR3659D37HSLT /RT	BSK4436X738	PNP4436X511S.4	N/A	

Expedition 2011 - Present

#### Vehicle Kits

Front and rear caliper and disc kit (recommended for vehicles up to 5300kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Forged aluminium caliper assembly with large iron two-piece disc

Rear - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKF7351L30	Front	355x36	DIA2175X159C24L /R	6x41.3	CAR8759K12HRLT /RT	BSK4487X522	PNP4488X942S.4	N/A	SSW0080X914.4
BKC8759K21	Rear	370x28	DIA2175X160C24L /R	4x38.1	CAR3659D37HSLT /RT	BSK4436X738	PNP4436X511S.4	N/A	

# brake kits **ARMOURED**

## Application list

### Raptor 2009-2014

#### Vehicle Kits

Front and rear iron caliper and disc kit (recommended for vehicles up to 5000kg armoured fully laden weight ECE13 class to be advised upon request.).

Front - cast iron caliper assembly with large iron two-piece disc  
Rear - Cast iron caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKC1559BE10	Front	347x36	DIA2175X180C24L / R	44.5/41.3/44.5	CIR1559BE07HZL / R	BSK4415X564	PNS4415X502.4	N/A	N/A
	Rear	360x32	DIV2175X812C24L / R	4x34.9	CIR5059D03HZLT / RT	BSK4450X562	PNS0084X449.4	N/A	

### Front only kits

Front iron caliper and disc kit (recommended for vehicles up to 4500kg armoured fully laden weight ECE13 class to be advised upon request.)

Front - cast iron caliper assembly with large iron one-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKF1559BE10	Front	347x36	DIA2175X180C24L/R	44.5/41.3/44.5	CIR1559BE07HZL / R	BSK4415X564	PNS4415X502.4	N/A	N/A

### Infinity

#### QX56 - 2010-Present

#### Vehicle Kits

Front and rear iron caliper and disc kit (recommended for vehicles up to 5000kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Cast iron caliper assembly with large iron one-piece disc  
Rear - Direct replacement of standard fit pads.

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKC1559P07	Front	370x36	DIV3430X965P	6x44.5	CIR1559P05HZZL /R	BSK4415X561	PNS4415X502.4	N/A	N/A
	Rear	N/A	N/A	N/A	N/A	N/A	PNS0084X448.4	N/A	

Front and rear iron caliper and disc kit (recommended for vehicles up to 5500kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Cast iron caliper assembly with large iron one-piece disc  
Rear - Cast iron caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKC1559P06	Front	370x36	DIV3430X965P	6x44.5	CIR1559P05HZZL /R	BSK4415X561	PNS4415X502.4	N/A	N/A
	Rear	370x28	DIA2175X173C24L /R	4x34.9	CIL5059D01HZZL /RL	N/A	PNF4450X700.4	N/A	

### Front only kits

Front iron caliper and disc kit (recommended for vehicles up to 5500kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - cast iron caliper assembly with large iron one-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKF1559P07	Front	370x36	DIV3430X965P	6x44.5	CIR1559P03HZZL /R	BSK4415X561	PNS4415X500.4	N/A	N/A

# brake kits **ARMOURED**

## Application list

### Landrover

#### Defender 90 1993 - Present

##### Vehicle Kits

Front and rear caliper and disc kit (recommended for vehicles up to 5000kg armoured fully laden weight as ECE13 N2 class vehicles).

**Important - only to be used on vehicles fitted with either a failure concious valve or ABS. Non-valved or Non ABS vehicles to be fitted with front kit only.**

Front - Cast iron caliper assembly with one piece grooved direct replacement disc

Rear - Cast aluminium caliper assembly with one piece grooved direct replacement disc.

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV01</b>	Front	298x24	DIV3430X812G	4x47.6	CAL4059AV01HZLT/RT	N/A	PNF0084X400.4	N/A	N/A
<b>BKR3659G19</b>	Rear	298x14	DIS3430X813G	4x38.1	CAL3659G03HSLT/RT	N/A	PNF4436X516S.4	N/A	

##### Front only kits

Front iron caliper kit (recommended for vehicles up to 4700kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - cast iron caliper assembly

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF40##</b>	Front	298x24	N/A	4x47.6	CAL4059AV01HZLT/RT	N/A	PNF0084X400.4	N/A	N/A

Front iron caliper and disc kit (recommended for vehicles up to 4500kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Cast iron caliper assembly with one piece grooved direct replacement disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV01</b>	Front	298x24	DIV3430X812G	4x47.6	CAL4059AV01HZLT/RT	N/A	PNF0084X400.4	N/A	N/A

### Defender 110 1993 - Present

##### Vehicle Kits

Front and rear caliper and disc kit (recommended for vehicles up to 5000kg armoured fully laden weight as ECE13 N2 class vehicles).

**Important - only to be used on vehicles fitted with either a failure concious valve or ABS. Non-valved or Non ABS vehicles to be fitted with front kit only.**

Front - Cast iron caliper assembly with one piece grooved direct replacement disc

Rear - Cast aluminium caliper assembly with one piece grooved direct replacement disc.

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV01</b>	Front	298x24	DIV3430X812G	4x47.6	CAL4059AV01HZLT/RT	N/A	PNF0084X400.4	N/A	N/A
<b>BKR3659G19</b>	Rear	298x14	DIS3430X813G	4x38.1	CAL3659G03HSLT/RT	N/A	PNF4436X516S.4	N/A	

Front and rear caliper and disc kit (recommended for vehicles up to 5000kg armoured fully laden weight as ECE13 N2 class vehicles).

**Important - only to be used on vehicles fitted with either a failure concious valve or ABS. Non-valved or Non ABS vehicles to be fitted with front kit only.**

Front - Cast iron caliper assembly with one piece grooved 30mm replacement disc

Rear - Cast aluminium caliper assembly with one piece grooved direct replacement disc.

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV04</b>	Front	298x30	DIV3430X862C24L/R	4x47.6	CIL4059AV05HZLT /RT	N/A	PNF0084X400.4	N/A	N/A
<b>BKR3659G19</b>	Rear	298x14	DIS3430X813G	4x38.1	CAL3659G03HSLT/RT	N/A	PNF4436X516S.4	N/A	



# brake kits **ARMoured**

## Application list

Front and rear caliper and disc kit (recommended for vehicles up to 5000kg armoured fully laden weight as ECE13 N2 class vehicles).

**Important - only to be used on vehicles fitted with either a failure conscious valve or ABS. Non-valved or Non ABS vehicles to be fitted with front kit only.**

Front - Cast iron caliper assembly with two piece grooved 30mm replacement disc  
Rear - Cast aluminium caliper assembly with one piece grooved direct replacement disc.

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV03</b>	Front	298x30	DIA2153X048GL/R	4x47.6	CIL4059AV05HZLT /RT	N/A	PNF0084X400.4	N/A	N/A
<b>BKR3659G19</b>	Rear	298x14	DIS3430X813G	4x38.1	CAL3659G03HSLT/RT	N/A	PNF4436X5165.4	N/A	

Front only kits

Front iron caliper kit (recommended for vehicles up to 4700kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - cast iron caliper assembly

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF40##</b>	Front	298x24	N/A	4x47.6	CAL4059AV01HZLT/RT	N/A	PNF0084X400.4	N/A	N/A

Front iron caliper and disc kit (recommended for vehicles up to 4500kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Cast iron caliper assembly with one piece grooved direct replacement disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV01</b>	Front	298x24	DIV3430X812G	4x47.6	CAL4059AV01HZLT/RT	N/A	PNF0084X400.4	N/A	N/A

Front iron caliper and disc kit (recommended for vehicles up to 4500kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Cast iron caliper assembly with one piece grooved 30mm replacement disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV04</b>	Front	298x30	DIV3430X862C24L /R	4x47.6	CIL4059AV05HZLT /RT	N/A	PNF0084X400.4	N/A	N/A
<b>BKF4059AV05</b>	Front	298x30	DIV3430X862C24L /R	4x47.6	CIL4059AV08HZLT /RT	N/A	PNS0084X426.4	N/A	N/A

Front iron caliper and disc kit (recommended for vehicles up to 4500kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Cast iron caliper assembly with two piece grooved 30mm replacement disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV03</b>	Front	298x30	DIA2153X048GL/R	4x47.6	CIL4059AV05HZLT /RT	N/A	PNF0084X400.4	N/A	N/A

### Defender 130 1993 - Present Vehicle Kits

Front and rear caliper and disc kit (recommended for vehicles up to 5000kg armoured fully laden weight as ECE13 N2 class vehicles).

**Important - only to be used on vehicles fitted with ABS. Non ABS vehicles to be fitted with front kit only.**

Front - Cast iron caliper assembly with one piece grooved direct replacement disc  
Rear - Cast aluminium caliper assembly with one piece grooved direct replacement disc.

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV01</b>	Front	298x24	DIV3430X812G	4x47.6	CAL4059AV01HZLT/RT	N/A	PNF0084X400.4	N/A	N/A
<b>BKR3659G19</b>	Rear	298x14	DIS3430X813G	4x38.1	CAL3659G03HSLT/RT	N/A	PNF4436X5165.4	N/A	

# brake kits **ARMOURED**

## Application list

Front and rear caliper and disc kit (recommended for vehicles up to 5000kg armoured fully laden weight as ECE13 N2 class vehicles).

**Important - only to be used on vehicles fitted with ABS. Non ABS vehicles to be fitted with front kit only.**

Front - Cast iron caliper assembly with one piece grooved 30mm replacement disc

Rear - Cast aluminium caliper assembly with one piece grooved direct replacement disc.

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV04</b>	Front	298x30	DIV3430X862C24L/R	4x47.6	CIL4059AV05HZLT /RT	N/A	PNF0084X400.4	N/A	N/A
<b>BKR3659G19</b>	Rear	298x14	DIS3430X813G	4x38.1	CAL3659G03HSLT/RT	N/A	PNF4436X516S.4	N/A	

Front and rear caliper and disc kit (recommended for vehicles up to 5000kg armoured fully laden as ECE13 N2 class vehicles).

**Important - only to be used on vehicles fitted with ABS. Non ABS vehicles to be fitted with front kit only.**

Front - Cast iron caliper assembly with one piece grooved 30mm replacement disc

Rear - Cast aluminium caliper assembly with one piece grooved direct replacement disc.

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV03</b>	Front	298x30	DIA2153X048GL/R	4x47.6	CIL4059AV05HZLT /RT	N/A	PNF0084X400.4	N/A	N/A
<b>BKR3659G19</b>	Rear	298x14	DIS3430X813G	4x38.1	CAL3659G03HSLT/RT	N/A	PNF4436X516S.4	N/A	

### Front only kits

Front iron caliper kit (recommended for vehicles up to 4700kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - cast iron caliper assembly

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF40##</b>	Front	298x24	N/A	4x47.6	CAL4059AV01HZLT/RT	N/A	PNF0084X400.4	N/A	N/A

Front iron caliper and disc kit (recommended for vehicles up to 4500kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Cast iron caliper assembly with one piece grooved direct replacement disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV01</b>	Front	298x24	DIV3430X812G	4x47.6	CAL4059AV01HZLT/RT	N/A	PNF0084X400.4	N/A	N/A

Front iron caliper and disc kit (recommended for vehicles up to 4500kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Cast iron caliper assembly with one piece grooved 30mm replacement disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV04</b>	Front	298x30	DIV3430X862C24L /R	4x47.6	CIL4059AV05HZLT /RT	N/A	PNF0084X400.4	N/A	N/A

Front iron caliper and disc kit (recommended for vehicles up to 4500kg armoured fully laden weight as ECE13 N2 class vehicles).

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4059AV03</b>	Front	298x30	DIA2153X048GL/R	4x47.6	CIL4059AV05HZLT /RT	N/A	PNF0084X400.4	N/A	N/A

### Discovery 3 (LR3, L319) 2004-2009

#### Discovery 4 - 2008 - Present

Front axle brake assemblies

Front original supply calipers and discs for new vehicles (installation to be verified)

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF1559P10</b>	Front	355x34	DIA2175X182C24L / R	6x44.5	CIR1559P03HZL/R	BSK4415X565	PNS4415X500.4	N/A	N/A

# brake kits **ARMOURED**

## Application list

### Lincoln

#### Navigator 2007 - 2011

##### Vehicle Kits

Front and rear caliper and disc kit (recommended for vehicles up to 5300kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Forged aluminium caliper assembly with large iron two-piece disc

Rear - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKC8759K26	Front	355x36	DIA2175X159C24L /R	6x41.3	CAR8759K12HRLT /RT	BSK4487X523	PNP4488X942S.4	N/A	SSW0080X914.4
	Rear	370x28	DIA2175X160C24L /R	4x38.1	CAR3659D37HSLT /RT	BSK4436X738	PNP4436X511S.4	N/A	

### Navigator 2011 - Present

##### Vehicle Kits

Front and rear caliper and disc kit (recommended for vehicles up to 5300kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Forged aluminium caliper assembly with large iron two-piece disc

Rear - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKC8759K21	Front	355x36	DIA2175X159C24L /R	6x41.3	CAR8759K12HRLT/RT	BSK4487X522	PNP4488X942S.4	N/A	SSW0080X914.4
	Rear	370x28	DIA2175X160C24L /R	4x38.1	CAR3659D37HSLT/RT	BSK4436X738	PNP4436X511S.4	N/A	

### Mercedes

#### G-Class - G55 (2009 - )

##### Front only kits

Front aluminium caliper and disc kit

Front - Forged aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKF8759D12	Front	365x36	DIA2175X147C24L/R	6x34.9	CAR8759D11HRLT/RL	BSK4487X520	PNF4488X925S.4	N/A	N/A

### S-Class (2005 - 2013)

##### Vehicle Kits

Front and rear caliper and disc kit

Front - Forged aluminium caliper assembly with large iron two-piece disc

Rear - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKC8759G02T	Front	370x36	DIA2175X102P.2	6x38.1	CAR8759G02HRLT/RT	N/A	PNF4488X922.4	MHA3430X685	N/A
	Rear	355x32	DIA2175X103P.2	4x38.1	CAR9850B17HRLT/RT	N/A	PNF4498X900S.4	MHA3430X709	

### Front only kits

Front and rear caliper and disc kit

Front - Forged aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKF8759G02	Front	370x36	DIA2175X102P.2	6x38.1	CAR8759G02HRLT/RT	N/A	PNF4488X922.4	MHA3430X685	N/A

# brake kits **ARMOURED**

## Application list

### S-Class (W221)(2005 - 2013)

#### Vehicle Kits

Front and rear caliper and disc kit.

Front - Forged aluminium caliper assembly with large iron two-piece disc

Rear - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKC8759G04	Front	370x36	DIA2175X102P.2	6x38.1	CAR8759G04HRLT /RT	N/A	PNF4488X922.4	MHA3430X685	N/A
	Rear	355x32	DIA2175X103P.2	4x38.1	CAR9850B17HRLT /RT	N/A	PNF4498X900S.4	MHA3430X709	

#### Front only kits

Front and rear caliper and disc kit.

Front - Forged aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKF8759G04	Front	370x36	DIA2175X102P.2	6x38.1	CAR8759G04HRLT /RT	N/A	PNF4488X922.4	MHA3430X685	N/A

### S-Class (Stretched) With uprated front upright (2005 - 2013)

#### Vehicle Kits

Front and rear caliper and disc kit.

Front - Forged aluminium caliper assembly with large iron two-piece disc

Rear - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKC8759G05	Front	370x36	DIA2175X119P.2	6x38.1	CAR8759G05HRLT /RT	N/A	PNF4488X922.4	MHA3430X685	N/A
	Rear	355x32	DIA2175X103P.2	4x38.1	CAR9850B17HRLT /RT	N/A	PNF4498X900S.4	MHA3430X709	

#### Front only kits

Front and rear caliper and disc kit.

Front - Forged aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKF8759G05	Front	370x36	DIA2175X119P.2	6x38.1	CAR8759G05HRLT /RT	N/A	PNF4488X922.4	MHA3430X685	N/A

### S-Class (W221S S600) (2005 - 2013)

#### Vehicle Kits

Front and rear caliper and disc kit.

Front - Forged aluminium caliper assembly with large iron two-piece disc

Rear - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKC8759G28	Front	370x36	DIA2175X102P.2	6x38.1	CAR8759G08HRLT /RT	N/A	PNF4488X922.4	MHA3430X685	N/A
	Rear	355x32	DIA2175X103P.2	4x38.1	CAR9850B17HRLT /RT	N/A	PNF4498X900S.4	MHA3430X709	

#### Front only kits

Front and rear caliper and disc kit.

Front - Forged aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
BKF8759G28	Front	370x36	DIA2175X102P.2	6x38.1	CAR8759G08HRLT /RT	N/A	PNF4488X922.4	MHA3430X685	N/A

# brake kits **ARMOURED**

## Application list

### S-Class (W220) (1999-2005)

#### Front only kits

Front and rear caliper and disc kit.

Front - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4464L11</b>	Front	360x37	DIA2146X208GL/GR	41.3/44.5	CAR6454L10SSLT/RT	N/A	PNP4450X528WVS	N/A	N/A

### Nissan

#### Patrol - 6th Generation 5.6 litre V8 (Y62, 2010-Present)

#### Vehicle Kits

Front and rear iron caliper and disc kit (recommended for vehicles up to 5500kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Cast iron caliper assembly with large iron one-piece disc

Rear - Direct replacement of standard fit pads.

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKC1559P07</b>	Front	370x36	DIV3430X965P	6x44.5	CIR1559P05HZL /R	BSK4415X561	PNS4415X502.4	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	PNS0084X448.4	N/A	

Front and rear iron caliper and disc kit (recommended for vehicles up to 5500kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - Cast iron caliper assembly with large iron one-piece disc

Rear - Cast iron caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKC1559P06</b>	Front	370x36	DIV3430X965P	6x44.5	CIR1559P05HZL /R	BSK4415X561	PNS4415X502.4	N/A	N/A
	Rear	370x28	DIA2175X173C24L /R	4x34.9	CIL5059D01HZLL /RL	N/A	PNS4450X701.4	N/A	

#### Front only kits

Front - cast iron caliper assembly with large iron one-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF1559P06</b>	Front	370x36	DIV3430X965P	6x44.5	CIR1559P05HZL /R	BSK4415X561	PNS4415X502.4	N/A	N/A

### Peugeot

#### 607 (1999 - 2010)

#### Front only kits

Front aluminium caliper and disc kit.

Front - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF9751ZG40</b>	Front	370x37	DIA2175X106C24L /R	30.2/34.9/38.1	CAR9751ZG34HRL/RL	BSK4497X712	PNP4497X851S	N/A	N/A

### Rolls Royce

#### SERAPH 1998-2002

#### Front only kits

Front - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF4464L13</b>	Front	370x37	DIA2175X060GL/R	41.3/44.5	CAR6454L20SSLT /RT	N/A	PNP4450X511S	N/A	SSW3430X459

# brake kits **ARMOURED**

## Application list

### Toyota

#### Landcruiser Century 1997 -

Front aluminium caliper and disc kit.

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF7351P26</b>	Front	355x32	DIA2175X019GL /R	44.5/44.5	CAR7351P16ASLT /RT	BSK4473X616	PNP4473X607S	N/A	SSW3430X343

#### Landcruiser HiLux 2005 -

##### Front only kits

Front aluminium caliper and disc kit (recommended for vehicle up to 4100kg armoured fully laden weight).

Front - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF7351L30</b>	Front	320x35	DIA2135X151GL /R	41.3/44.5	CAR7351L29HSLT /RT	BSK4473X616	PNP4473X637S	N/A	SAW0080X811

Front aluminium caliper and disc kit (recommended for vehicle up to 4500kg armoured fully laden weight).

Front - Cast aluminium caliper assembly with large iron one-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF9752ZG22</b>	Front	328x35	DIV2163X025GL /R	30.2/34.9/38.1	CAR9752ZG34HRLT /RT	N/A	PNP4497X551S.4	N/A	N/A

Front aluminium caliper and disc kit (recommended for vehicle up to 4200kg armoured fully laden weight).

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF7351P29</b>	Front	328x35	DIV2163X025GL /R	44.5/44.5	CAR7351P17ASLT /RT	BSK4473X613	PNP4473X639S	N/A	N/A

#### Landcruiser LC76/79 2007

##### Front only kits

Front aluminium caliper and disc kit (recommended for vehicle up to 4500kg armoured fully laden weight).

Front - Cast aluminium caliper assembly with large iron one-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF9752ZG22</b>	Front	328x35	DIV2163X025GL /R	30.2/34.9/38.1	CAR9752ZG34HRLT /RT	N/A	PNP4497X551S.4	N/A	N/A

Front aluminium caliper and disc kit (recommended for vehicle up to 4200kg armoured fully laden weight).

Front - Cast aluminium caliper assembly with large iron one-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF7351P29</b>	Front	328x35	DIV2163X025GL /R	44.5/44.5	CAR7351P17ASLT /RT	BSK4473X613	PNP4473X639S	N/A	N/A

#### Landcruiser LC78/79 2007-

##### Front only kits

Front aluminium caliper and disc kit (recommended for vehicle up to 4200kg armoured fully laden weight).

Front - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF7351P30</b>	Front	328x35	DIA2135X153GL /R	44.5/44.5	CAR7351P17ASLT /RT	BSK4473X613	PNP4473X637S	N/A	SSW0080X871

Front - Forged aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF8759G14</b>	Front	355x36	DIA2175X148GL /L	6x38.1	CAR8759G08HRLT/RT	BSK4487X521	PNF4488X920S.4	N/A	N/A

# brake kits **ARMOURED**

## Application list

### Landcruiser LC100 1998 -

Front aluminium caliper and disc kit (recommended for vehicle up to 4200kg armoured fully laden weight).  
Front - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF7351P22</b>	Front	328x35	DIA2135X149GL/R	4x44.5	CAR7351P17ASLT / RT	BSK4473X593	PNP4473X6375	N/A	N/A

### Landcruiser LC105 1998 -

Front aluminium caliper and disc kit (recommended for vehicle up to 4200kg armoured fully laden weight).

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF7351P27</b>	Front	328x35	DIA2135X148GL	4x44.5	CAR7351P17ASLT / RT	BSK4473X613	PNP4473X6375	N/A	N/A

### Landcruiser LC200 Vehicle Kits

Front and rear OE replacment disc and pad kits (recommended for vehicles up to 3500kg armoured fully laden weight as ECE13 M1 and N1 class vehicles).  
Direct replacement of standard fit discs and pads .

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKC40##</b>	Front	340x32	DIV3430X893GL /R	N/A	N/A	N/A	PNS0084X4225.4	MHA3430X761	N/A
	Rear	345x18	DIV3430X894GL /R	N/A	N/A	N/A	PNS0084X4205.4	MHA3430X745	

Front and rear iron caliper and disc kit (rec. for vehicles up to 5500kg armoured fully laden weight as ECE13 N2 class).

Front - cast iron caliper assembly with large iron one-piece disc  
Rear - Cast iron caliper assembly with large iron one-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKC40##</b>	Front	355x36	DIV3430X829C24L /R	6x41.3	CIR1559K02HZL /R	BSK4415X560	PNS4415X502.4	MHA3430X761	N/A
	Rear	370x28	DIV3430X964C24L /R	4x34.9	CIR5059D01HZLT /RT	BSK4450X560	PNS0084X449.4	MHA3430X745	
<b>BKC1559K02</b>	Front	355x36	DIV3430X829C24L /R	6x41.3	CIR1559K08HZL /R	BSK4415X560	PNS4415X502.4	MHA3430X761	N/A
	Rear	370x28	DIV3430X964C24L /R	4x34.9	CIR5059D01HZLT /RT	BSK4450X560	PNS0084X449.4	MHA3430X745	

Front and rear iron caliper and disc kit (recommended for vehicles up to 6000kg armoured fully laden weight as ECE13 N2 class vehicles).

Front - cast iron caliper assembly with large iron two-piece disc  
Rear - Cast iron caliper assembly with large iron one-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit
		Size	Part number	Size	Part number			
<b>BKC1559BE09</b>	Front	375x36	DIA2175X1024C24L/R	44.5/41.3/44.5	CIR1559BE06HZL/R	BSK4415X563	PNS4415X502.4	MHA3430X761
	Rear	370x28	DIV3430X964C24L/R	4x34.9	CIR5059D01HZLT/RT	BSK4450X560	PNS0084X449.4	MHA3430X745

### Front only kits

Front OE replacment disc and pad kits (recommended for vehicle up to 3250kg armoured fully laden weight).

Direct replacement of standard fit discs and pads .

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>DKF3430X893G</b>	Front	340x32	DIV3430X893GL /R	N/A	N/A	N/A	PNS0084X4225.4	MHA3430X761	N/A



# brake kits **ARMOURED**

## Application list

Front iron caliper and disc kit (recommended for vehicle up to 4500kg armoured fully laden weight).  
Front - cast iron caliper assembly with large iron one-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF1559K05</b>	Front	355x36	DIV3430X829C24L/R	6x41.3	CIR1559K04HZL/R	BSK4415X560	PNS4415X500.4	MHA3430X761	N/A

### Landcruiser Prado (J150) 2009-

#### Front only kits

Front aluminium caliper and disc kit.

Front - Cast aluminium caliper assembly with large iron two-piece disc

KIT	Axle	Disc		caliper		Bracket kit	Pad set	Hose kit	Spacer kit
		Size	Part number	Size	Part number				
<b>BKF9752ZG23</b>	Front	355x36	DIA2146X278GL/R	30.2/34.9/38.1	CAR9752ZG38HRLT	BSK4497X725	PNP4497X851S	N/A	SAW0080X795





# DEFENCE **introduction**

With 25 years of experience engineering brakes and clutches for specialist vehicles, including F1 and World Rally cars, armoured protection vehicles and prestige performance cars, Alcon is now establishing a presence in the defence sector, where it is applying its rapid engineering skills in support of the UK MOD's Urgent Operational Requirements. Since 2009, our Research and Development team has been working on creating the best brakes for defence vehicles.

## **Alcon in action**

A good example is the partnership between Alcon and Ricardo's Defence Systems and Technologies Group on the Snatch Vixen and WMIK upgrade programmes. In both cases the addition of armour protection, onboard power and payload enhancement raises gross vehicle weight by as much as 34% – from 3.5 to 4.7 tonnes. During testing Ricardo established that a brake upgrade would

be required in order to achieve acceptable caliper burst strength and braking torque/pedal effort. Ricardo approached Alcon in early October 2008 asking for support to define a solution, an opportunity that we seized.

Alcon's engineering team immediately ran calculations on the vehicle data and established that a new cast SG iron caliper design would be required to meet performance targets in a very restricted installation envelope.



A proposal for both prototype and production solutions was put forward and accepted by the end of that month, and prototype production was started immediately, with first supply being made just 4 weeks later.

Following the successful conclusion of on-vehicle prototype testing in January 2009 the go-ahead was given for full production parts. Over the ensuing couple of months the Alcon team worked under strict time compression to finalise the

design and associated quality plans. Alcon's rapid response suppliers manufactured and commissioned new casting tools, cast first off samples of the new caliper body, and completed machining trials. All other parts were either procured or scheduled through Alcon's own manufacturing facility.

In March 2009, a mere 8 weeks after receipt of the purchase order, Alcon delivered the first batch of production calipers for the Snatch Vixen and R-WMIK programmes.

## Branching out

Since then Alcon has added to its range of cast iron calipers and brake discs with a larger six-piston specification and several other variants still at the design stage – all configured especially for the rigours of defence applications.

If you would like to discuss how Alcon may be able to support your vehicle programme with rapidly engineered brake or clutch solutions please contact our Sales Team.



## OEM introduction

There's no better testament to quality than long-standing relationships with manufacturers of some of the best cars in the world. Alcon's expertise is highly sought after, which is why we have a prominent position within the performance OEM sector.

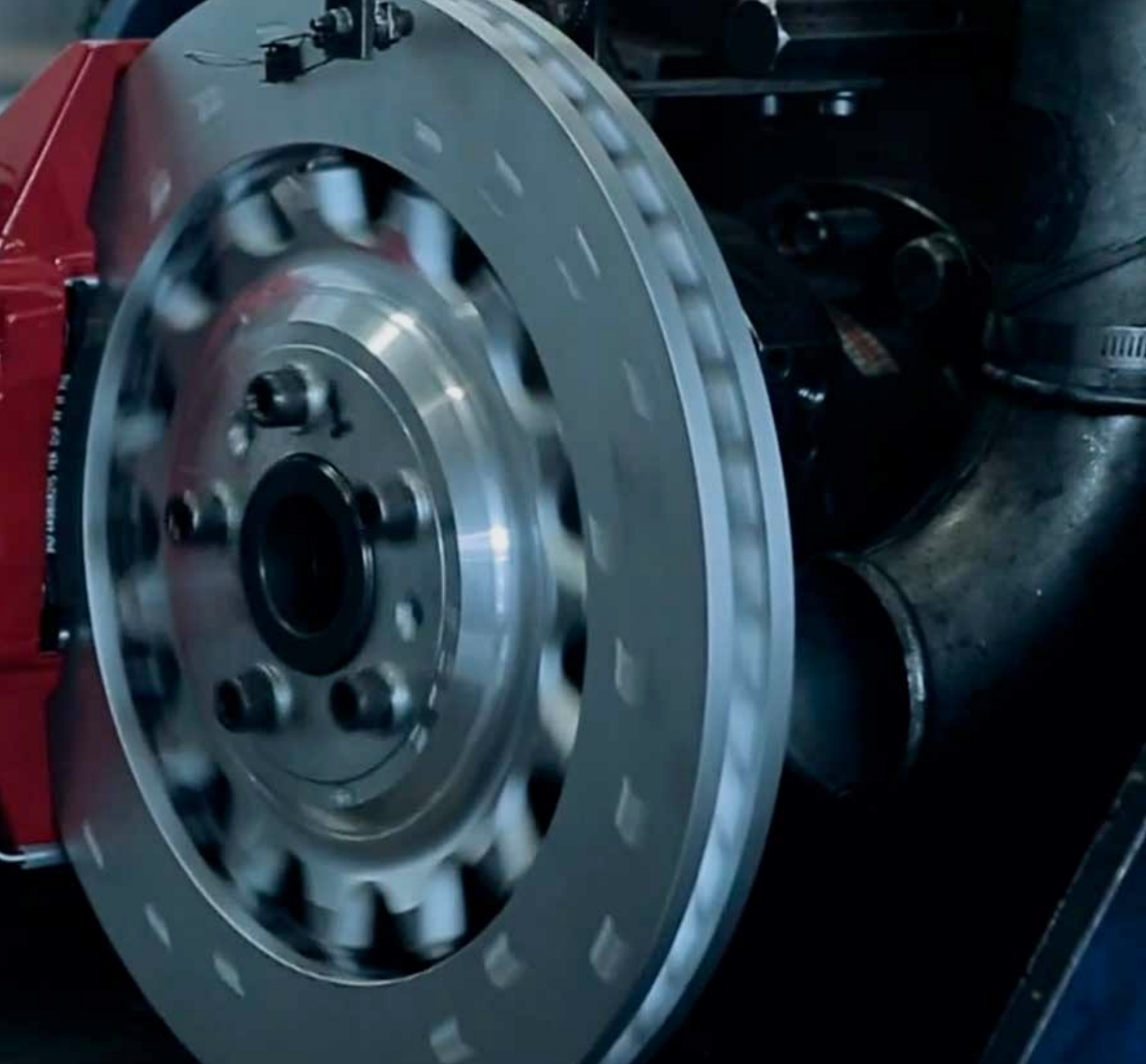
Alcon supplies braking solutions to some of the world's top car manufacturers, including Audi, Bentley, Brabus and Jaguar Land Rover. Not only that, our products are found in some of the most

extreme applications such as the 900bhp/tonne Ariel Atom 500 and the 225mph Noble M600.

At Alcon we know exactly what our customers require because we demand the same, and more, of the performance brakes we drive, race and engineer for world renowned drivers and racing teams. But don't just take our word for it. Our credibility in the OEM sector is synonymous with world class standards equal to Ford Q1 and Audi A-rated supplier performance.

### Brakes

Our expertise has made Alcon a prominent supplier to the performance OEM sector, supplying top quality brake kits to some of the most prestigious marques in the world. Our 30 years of motorsport knowledge means we can create products to any OEM requirement and specification. Alcon knows exactly what our customers require because we demand the same, and



more, of the cars we drive, race and engineer for world renowned drivers and racing teams.

Alcon's expertise is not just seen in our products, though; our service is second-to-none too. Our team of engineers can work to a range of requirements and specifications, offering unrivalled technical support at every step of the way. What's more, our rigorous testing and quality control will leave you safe in the knowledge that your project is in the right hands.

## Clutches

We're committed to putting all of our expertise behind everything we do, and this doesn't stop with our OEM clutches. With over 30 years' experience, you know that you're getting your OEM clutches from a quality company – a company that knows how to create quality products. With our extensive knowledge behind you, you can be sure that your OEM clutches will be both reliable and durable.

We can create clutches to almost any specification – just get in touch to talk through your requirements and get the ball rolling.

## Get in touch

If you'd like to find out more about the Performance OEM work that we do here at Alcon, or if you'd like to discuss an upcoming project with us, just get in touch with one of our sales representatives or email [info@alcon.co.uk](mailto:info@alcon.co.uk).



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