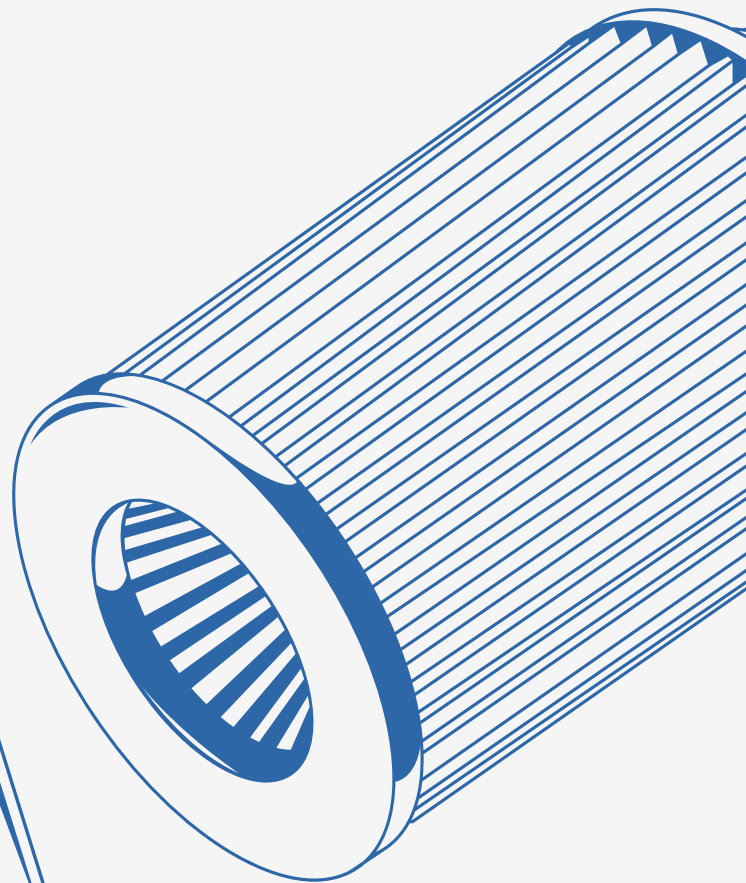
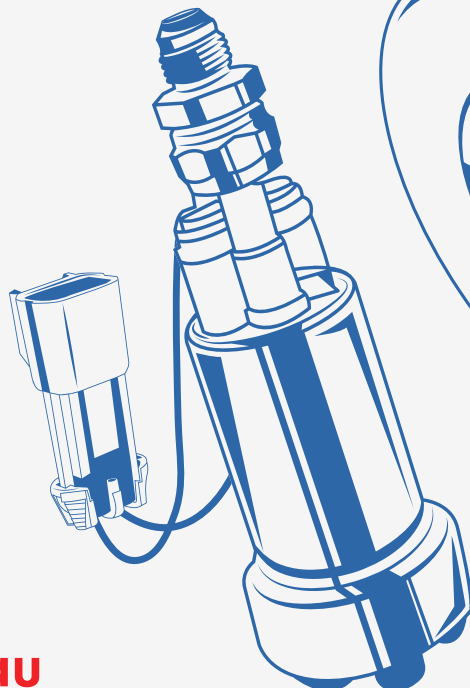
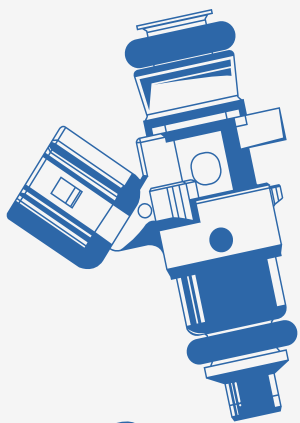




**Performance**



[patrap.com.au](http://patrap.com.au)

**EDITION  
03**

## Welcome to Premier Auto Trade's Performance Catalogue!

This edition is jam packed with over 4,500 part numbers fine-tuned by our local team of technical experts.

High quality components built for the Performance market by Premier Auto Trade, the leader in Engine Management. With a large portion of products designed in-house by the local product team, which are imported and wholesaled.

To ensure best fit for each application PAT works closely with suppliers to ensure they're constantly innovating and improving their product portfolio. Products are sourced from all around the world, including Australia, New Zealand, USA, Germany, Italy, United Kingdom, Singapore, Japan, China, Taiwan and Vietnam.

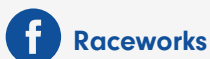
The PAT development process on selected parts include the initial drawing and concept stage, through to engineering and launching the final market ready product. In-house design products include ignition coil brackets, pressure testing tools, fuel rails, tanks and so much more.

We have a comprehensive product range which includes but is not limited to fuel, air and fluid management components, filtration, motor sport vehicle preparation, engine management and electrical components.



For further information on warranty visit [patrap.com.au](http://patrap.com.au).

Follow us on social media to keep up to date with all the latest Raceworks and PAT Performance product releases and news.



For a full list of our resellers and stockists visit [patrap.com.au/where-to-buy/](http://patrap.com.au/where-to-buy/)





## SEE OUR PRODUCTS ON YOUTUBE

**BENNY'S CUSTOM WORKS** – [bennyscustomworks.com](http://bennyscustomworks.com)  [youtube.com/bennyscustomworks](https://youtube.com/bennyscustomworks)

- Have a look at Benny aka Mechanical Stig's cool builds including the Barra Powered Cresta, IS600 and S13!



**THE SKID FACTORY** – [theskidfactory.com](http://theskidfactory.com)  [youtube.com/theskidfactory](https://youtube.com/theskidfactory)



- Al and Woody need no introduction!
- Check out their cool builds including the Cummins Powered Patrol, 1UZ Powered Volvo, 1JZ Powered Torana, 1UZ Powered Fairlane and many more!



**SEE OUR PRODUCTS ON YOUTUBE**

**HOME BUILT BY JEFF** ▶ [youtube.com/homebuiltbyjeff](https://youtube.com/homebuiltbyjeff)

- Jeff Micklem, a one man show building cars in his garage. Jeff has a go at literally every single aspect of car restoration!
- Check out his Porsche 911, Datsun 240Z and Ferrari powered Alfa 105 builds, with more to come!



**HACKSHOP GARAGE** – [hackshopgarage.com.au](https://hackshopgarage.com.au) ▶ [youtube.com/hackshopgarage](https://youtube.com/hackshopgarage)



- Michael and Nathan work on some super cool cars at home in the shed!
- Have a look at their Turbo NF Fairlane, LS1 Swapped HQ Kingswood aka LSQ, and LS1 Swapped BMW E30 nicknamed the GMW!



## SEE OUR PRODUCTS ON YOUTUBE

**FULLBOOST** – [fullboost.com.au](http://fullboost.com.au)  [youtube.com/fullboost](https://youtube.com/fullboost)

- One of the longest running Australian Automotive YouTube channels, the Oxley brothers have been providing content online from the performance car scene for over 20 years!
- Check out the Barra Power Commodore, nicknamed NOMANG, the T350 Ramp Truck, nicknamed TOWNADO and other projects coming soon...



**STREET MACHINE**  [youtube.com/streetmachinetv](https://youtube.com/streetmachinetv)



- Running alongside the popular Street Machine Magazine, Scott and Kian turn spanners on builds for 'Carnage' on YouTube.
- Take a look at their MX5, previously LS1 powered and named MX5.7, now Barra powered, their 1JZ powered Volvo, nicknamed Trolvo. L67 Powered VN Commodore, nicknamed Supermang and many more!



## SEE OUR PRODUCTS ON YOUTUBE

**HOON TV** – [hoontv.com.au](http://hoontv.com.au)  [youtube.com/hoontv](https://youtube.com/hoontv)

- Mark Boxer has been in the Australian automotive performance scene for many many years.
- These days he works in filming, but still loves to turn spanners on various projects including his Falcon Drag Ute, and "Frank The Tank", his LS Powered Landcruiser Panelvan.



**MOTIVE VIDEO** – [motivedvd.com](http://motivedvd.com)  [youtube.com/MotiveVideo](https://youtube.com/MotiveVideo)



- Anybody and everybody in the Australian performance car scene knows Andrew Hawkins!
- Videos have been uploaded to the channel since 2009, with DVD content previously.
- Cars to check out on the Motive Video channel include Andrews WRX and R32 GT-R, with various other projects currently on the go, including a Skeleton Turbo Falcon!



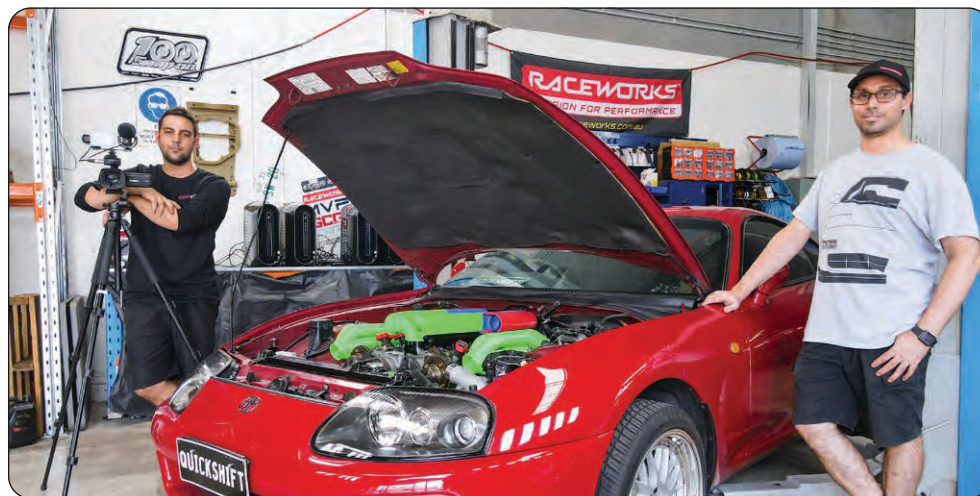
## SEE OUR PRODUCTS ON YOUTUBE

**BUILT NOT BOUGHT** – [builtnotbought.com.au](http://builtnotbought.com.au)  [youtube.com/speyles](https://youtube.com/speyles)

- Sam Eyles has been into muscle cars since he was a young teenager.
- As a late teen, he bought his first Nissan Patrol, and took a liking to it's ability to take him anywhere.
- From there he started merging his love for Aussie Holdens and V8s, with offroading.
- Be sure to check out his latest Patrol, and custom 80 series Land Cruiser that's currently in the build...



**QUICKSHIFT.TV**  [youtube.com/QUICKSHIFTtv](https://youtube.com/QUICKSHIFTtv)



- Tristan from WTFAuto and his friend Shane push the boundaries with car builds on YouTube, with prototyping/fabrication of many custom parts to achieve the result.
- Check out 'Supra Supreme', a twin turbo V12 Supra being built for the street, and their new project, a Lamborghini Urraco.

**PREMIER AUTO TRADE**  [youtube.com/premierautotrade](https://youtube.com/premierautotrade)

- Our own YouTube Channel!
- Be sure to check out hose assembly how-to videos, and various other videos on the PAT Performance range!



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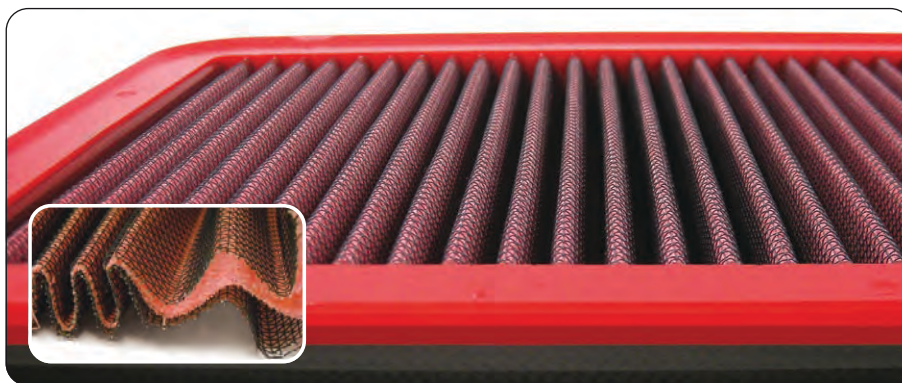
**BMC Air Filters, designed and manufactured in Italy, were originally developed in association with the Ferrari F1 team.**

**BMC Air Filters demonstrate the highest quality, performance and reliability and have no equal in the market.**

The unique construction of BMC Air Filters results in both increased power and improved fuel economy.

The BMC Air Filter is composed of a metallic mesh containing an oiled four ply cotton filtration material. This ensures a high level of filtering efficiency with guaranteed containment of all impurities down to 7 microns, where paper filters generally only offer filtration of particles of 10 microns.

A traditional paper filter must be replaced regularly during routine maintenance whilst the BMC Air Filter is reusable and has a general life-span equal to that of the vehicle.



**IN ADDITION TO THE EXTENSIVE RANGE OF UNIVERSAL CONICAL FILTERS AND CARBON AIRBOXES, BMC ALSO SUPPLY DIRECT-FIT REPLACEMENT FILTERS FOR THE FOLLOWING VEHICLES AND MORE...**

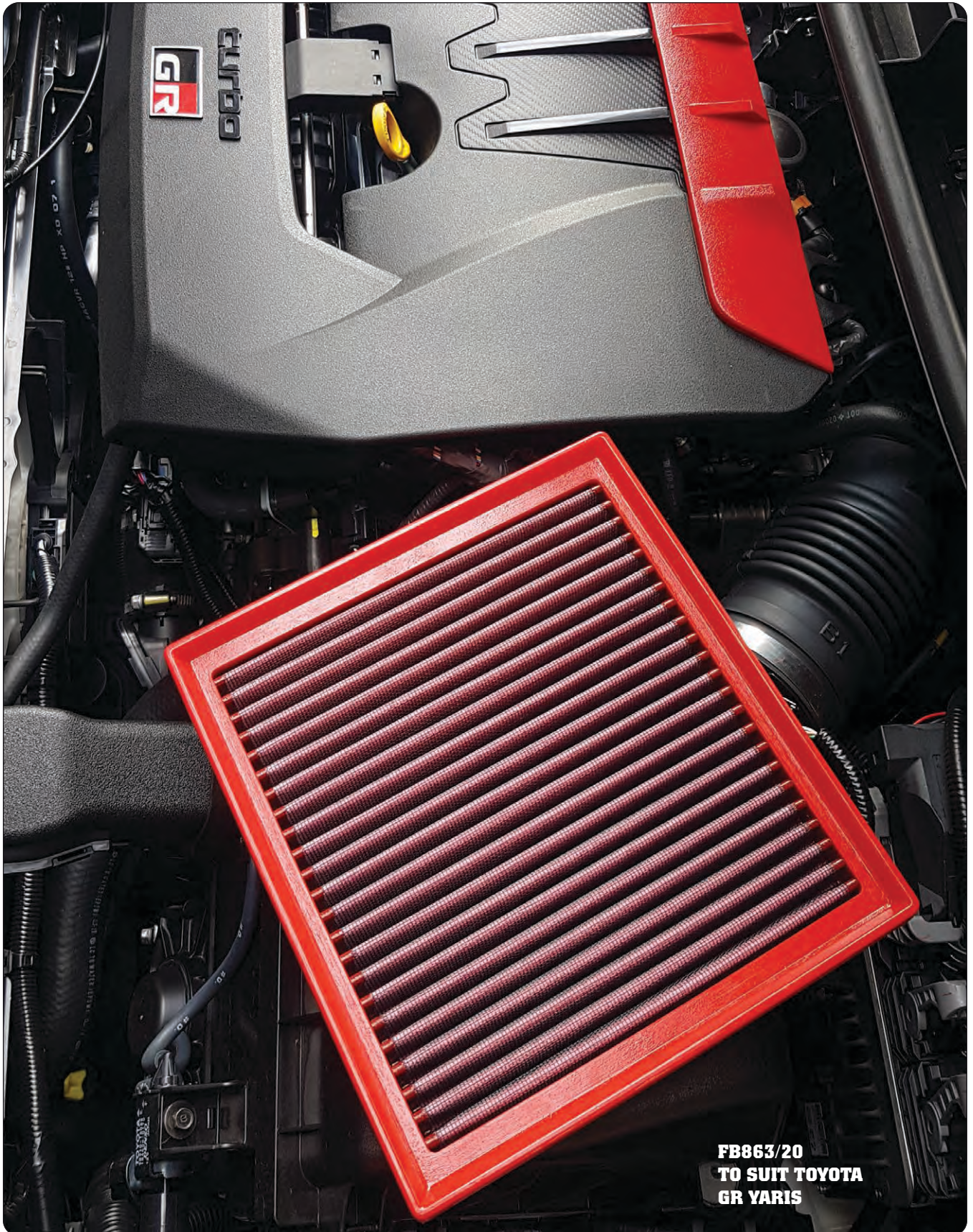
■ Abarth	■ Daihatsu	■ Infiniti	■ Maserati	■ Porsche	■ Volvo
■ Alfa Romeo	■ Dodge	■ Isuzu	■ Maybach	■ Proton	■ Skoda
■ Aston Martin	■ Ferrari	■ Jaguar	■ Mazda	■ Renault	■ Ssangyong
■ Audi	■ Fiat	■ Jeep	■ McLaren	■ Rolls Royce	■ Subaru
■ Bentley	■ Ford	■ Kia	■ Mercedes Benz	■ SAAB	■ Suzuki
■ BMW	■ Great Wall	■ Lamborghini	■ MG	■ Skoda	■ Toyota
■ Chevrolet	■ Holden	■ Lancia	■ Mini	■ Smart	■ Volkswagen
■ Chrysler	■ Honda	■ Land Rover	■ Mitsubishi	■ Subaru	■ Volvo
■ Citroen	■ Hummer	■ Lexus	■ Nissan	■ Suzuki	
■ Daewoo	■ Hyundai	■ Lotus	■ Peugeot	■ Toyota	

For the most up to date listings and to find a suitable filter for your vehicle please visit [www.bmcairfilter.com.au](http://www.bmcairfilter.com.au)





## AIR FILTERS



**FB863/20  
TO SUIT TOYOTA  
GR YARIS**





## AIR FILTERS

- All BMC Conical Filters include a Worm Drive Hose Clamp
- Crankcase Filters have a plastic top

### CRANKCASE VENT / BREATHER FILTERS

Part No.	Inlet Size (mm)	Length (mm)
FBSA12-40	12	40
FBSA16-40	16	40
FBSA20-40	20	40
FBSA25-40	25	40
FBSA30-40	30	40



FBSA20-40

- Single Air Filters have a polyurethane top

### SINGLE AIR CONICAL / POD FILTERS

Part No.	Inlet Size (mm)	Overall Length (mm)	Base Dia. (mm)	Top Dia. (mm)
FBSS50-100	50	100	105	84
FBSS50-128	50	149	107	87
FBSS50-150	50	171	107	84
FBSS60-85	60	104	85	62
FBSS60-128	60	149	107	87
FBSA60-110	60	156	152	138
FBSS60-150	60	174	108	87
FBSA60-140	60	186	152	138
FBSA70-110	70	155	152	138
FBSS70-128	70	151	107	87
FBSA70-140	70	186	152	138
FBSS70-150	70	175	115	87
FBSA76-110	76	153	152	138
FBSA76-140	76	183	150	134
FBSA80-110	80	156	151	138
FBSA80-124P	80	142	115	77
FBSA80-140	80	186	152	138
FBSA85-140	85	186	152	137
FBSA100-110	100	156	152	138
FBSA100-140	100	185	152	138
FBSA110-110	110	153	150	138
FBSA110-140	110	183	150	138



FBSA70-110



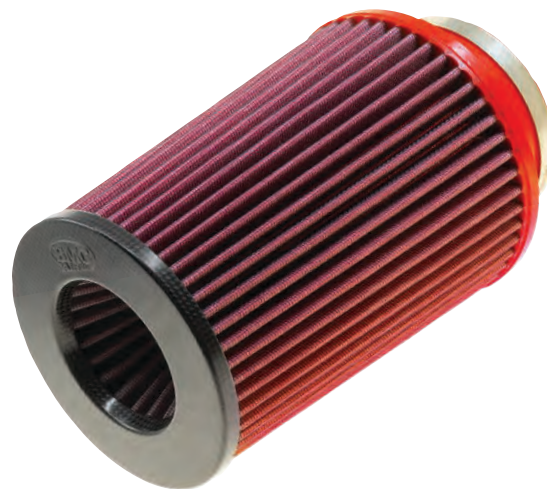
FBSA76-140



## AIR FILTERS

### TWIN AIR CONICAL / POD FILTERS

Plastic Top Part No.	Metal Top Part No.	Inlet Size (mm)	Overall Length (mm)	Base Dia. (mm)	Top Dia. (mm)
FBTS50-150P	FBTS50-150	50	174	108	85
FBTS60-150P	FBTS60-150	60	179	108	84
FBTW60-140P	FBTW60-140	60	183	150	134
FBTS70-150P	FBTS70-150	70	179	108	84
FBTW70-140P	FBTW70-140	70	185	152	134
FBTW76-140P	FBTW76-140	76	186	151	134
-	FBTW76-200	76	246	151	134
-	FBTW80-80	80	100	130	119
FBTW80-151P	-	80	170	127	86
FBTW80-140P	FBTW80-140	80	186	151	134
FBTW85-140P	FBTW85-140	85	185	152	134
FBTW90-140P	FBTW90-140	90	186	150	134
-	FBTW90-200	90	246	151	134
FBTW100-140P	FBTW100-140	100	186	152	134
FBTW100-200P	FBTW100-200	100	243	150	134
FBTW110-140P	FBTW110-140	110	186	152	134
FBTW141-206P	FBTW141-206	141	230	191	134
FBTW141-230P	FBTW141-230	141	254	191	134



FBTW100-200C

- Twin air filters with carbon top also available, in addition to angled neck filters, filters with sensor port holes and filters with no neck
- See [bmcairfilters.com](http://bmcairfilters.com) for more details

## FILTER REGENERATION PRODUCTS



WA200-500

- Includes detergent and a Regenerative Fluid aerosol spray dispenser

**BMC Air Filters are reusable and have a general life-span equal to that of the vehicle.**



WA250-500

- Includes detergent and a Regenerative Fluid liquid dispenser



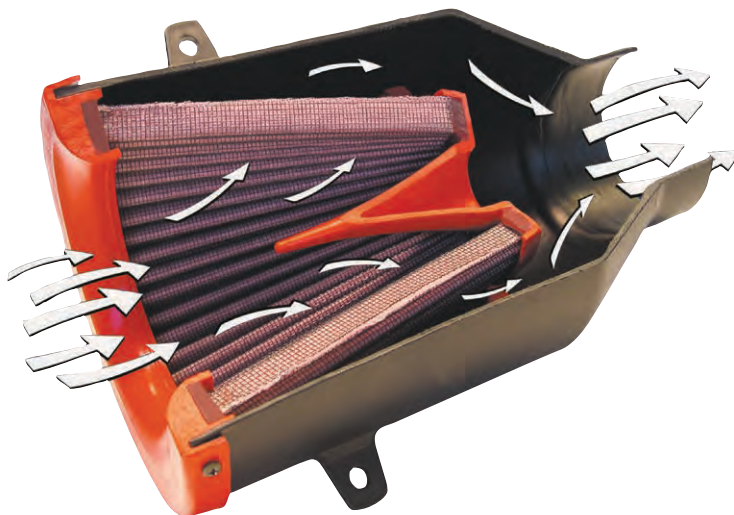


## AIR FILTERS

### DIA – DIRECT INTAKE AIR SYSTEM

The **DIRECT INTAKE AIR SYSTEM** consists of a plastic air box containing an air flow deflector and a reusable filtering element.

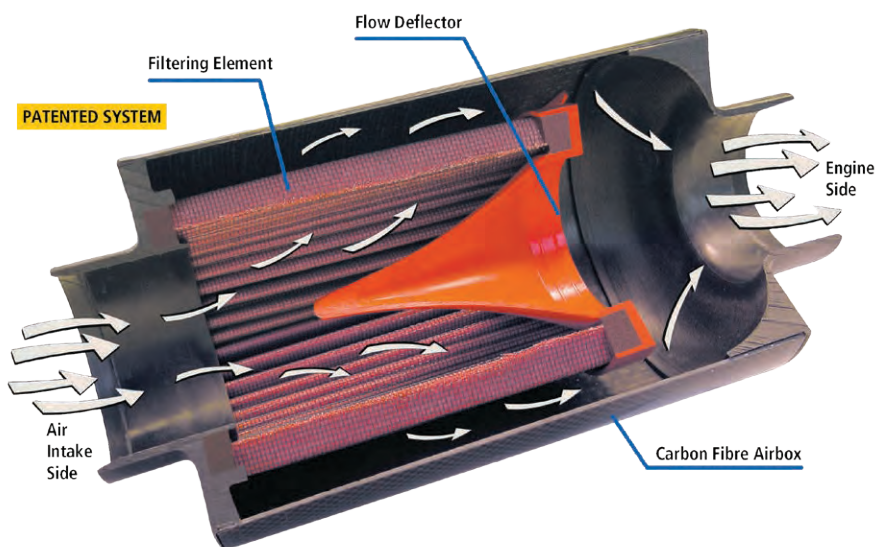
- Ensures aspirated air is carried to the engine at a higher speed and capacity in respect to traditional systems
- Provides significant gains in engine performance
- The universal kits contain a flexible tube to carry fresh air to the inside of the air box, a connector sleeve and two reducers to allow installation in standard applications
- The DIA is available in two universal versions (up to and above 1600cc)



### CDA – CARBON DYNAMIC AIRBOX

The **CARBON DYNAMIC AIRBOX** is a patented system that replaces the car's original airbox.

- Carbon fibre airbox containing a washable filtering element
- Dynamic over-boosting, using dynamic effect of the air produced by the car speed
- Air flow is accelerated due to the air flow deflector inside the carbon fibre airbox
- Air is thermally insulated inside the carbon airbox and then conveyed to the engine
- The CDA filtration system is connected to a frontal air intake via a flexible aluminium tube
- Greater air flow, higher pressure and colder air
- With a CDA, air is channelled directly to the filter, thermally insulated inside the carbon airbox and then conveyed to the engine through an air flow deflector with minimum loss of power (patented system)
- The CDA is available in two universal versions (up to and above 1600cc) and a large variety of vehicle specific kits





## AIR FILTERS

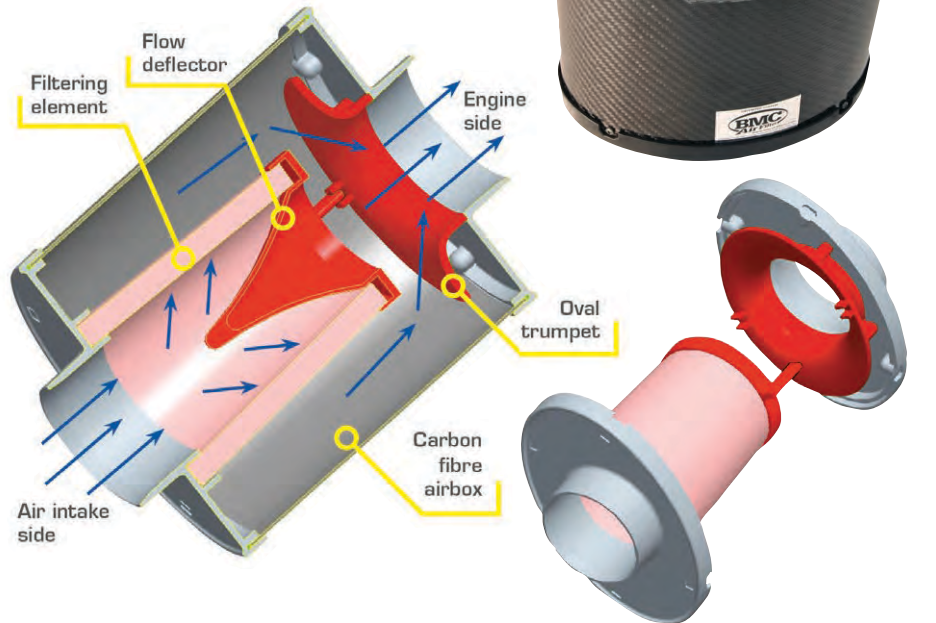
### OTA – OVAL TRUMPET AIRBOX

The **OVAL TRUMPET AIRBOX** is an oval-shaped airbox in carbon that replaces the original airbox.

- Complete sport air aspiration and filtration system for road and race cars
- Air filter with re-generable material and high filtration efficiency
- High thermal insulation 5 layer carbon fibre airbox
- Sophisticated inner system for the channelling, conveyance and increase of airflow
- Innovative shaped "Trumpet" system increases dynamic conveyance and air quantity to the engine
- Provides a sports sound

The Oval Trumpet Airbox reduces the pressure drop along the engine aspiration line and takes advantage of the potential of the dynamic pressure of the air caused by the speed of the moving car.

The OTA is available in several universal versions (up to and above 1600cc) and a large variety of vehicle specific kits.



### CRF – CARBON RACING FILTER

BMC's high performance sports **CARBON RACING FILTER** is designed for road and competition vehicles.

- Designed and produced by the BMC Racing and Advanced Composite Division, derived directly from the world of racing
- Manufactured with pre-impregnated carbon materials which are cured in an autoclave
- Optimises the flow dynamics of the direct air into the engine, maintaining constant airbox pressure
- Extended filtration surface, increased permeability and low airflow resistance
- Special multi-layer filtration material in RACE configuration
- Made to interface directly with the original airbox

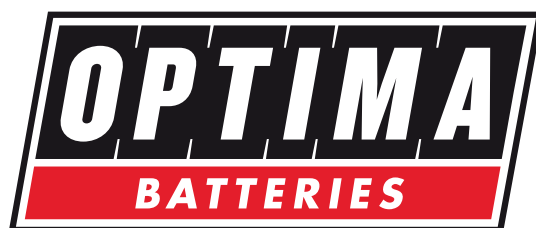
The Crf Air Filter optimises the flow dynamics of the direct air into the engine, designed to use the entire available volume of the standard airbox thanks to the extended filtration surface.

The CRF has been created from extensive experience in the racing sector, created for those who require maximum return and performance from their vehicle.

For more details and listings on DIA, CDA, OTA and CRF, please visit [www.bmcairfilter.com](http://www.bmcairfilter.com)







**Optima Batteries are the ultimate power source, for ultimate performance.**

**They are more dense than other batteries, with increased plate surface area.**

Their fully sealed design ensures that they're Non-Spillable, and they are housed in a virtually indestructible case of military-grade pure polypropylene.



#### YELLOW-TOP BATTERIES

Item Code	Case Size	Volts	CCA	RC/AH (20)	Weight (Kg)	Width (mm)	Length (mm)	Height (mm)
D27F	GRP 27	12V	830	140RC	27.3	173	309	225
D31A	GRP 31	12V	900	155RC	27.3	173	330	241
D31T	GRP 31	12V	900	155RC	27.3	173	330	241
D34	GRP 34	12V	750	120RC	16	175	254	199
D34/78	GRP 34/78	12V	750	120RC	24.1	175	254	200
D35	GRP 35	12V	650	98RC	19.6	175	238	199
D51RT1	GRP 51	12V	450	66RC	11.8	129	238	228
D51RT2	GRP 51	12V	450	66RC	16.6	129	238	228
D51T1	GRP 51	12V	450	66RC	11.8	129	238	228
D51T2	GRP 51	12V	450	66RC	11.8	129	238	228
D75/25	GRP 75/25	12V	650	98RC	19.9	175	238	201
DH6	DIN66H	12V	800	140RC	24.49	175	190	278



- Optima Yellow-Top have up to 3x longer life, and increased vibration resistance than similar batteries on the market, with up to 900 cold cranking amps
- Designed as a combination battery, they are suitable for both deep cycle and engine starting applications, and handle many more cycles than traditional batteries

#### WARRANTY

Passenger Vehicle / Light Truck (Non-Commercial)	36 Months FREE Replacement
Commercial	12 Months FREE Replacement
Deep Cycle Applications / Car Audio	Not Covered



## RED-TOP BATTERIES

Item Code	Case Size	Volts	CCA	RC/AH (20)	Weight (Kg)	Width (mm)	Length (mm)	Height (mm)
25	GRP 25	12V	720	90RC	14.5	175	240	198
34	GRP 34	12V	800	100RC	17.3	175	254	198
34R	GRP 34R	12V	800	100RC	17.7	175	254	199
34/78	GRP 34/78	12V	800	100RC	14.5	175	254	200
35	GRP 35	12V	720	90RC	15.1	175	238	199
75/25	GRP 75/25	12V	720	90RC	15.1	175	238	201
6V	19L	6V	800	100RC	17.3	90	254	208



- Optima Red-Top have up to 3x longer life, and 15x vibration resistance
- Designed to provide the ultimate engine starting power

### WARRANTY

Passenger Vehicle / Light Truck (Non-Commercial)	36 Months FREE Replacement
Commercial	12 Months FREE Replacement
Deep Cycle Applications / Car Audio	Not Covered

## BLUE-TOP BATTERIES

Item Code	Case Size	Volts	CCA	RC/AH (20)	Weight (Kg)	Width (mm)	Length (mm)	Height (mm)
34M	GRP 34	12V	800	100RC	19.6	175	254	199
D34M	GRP 34	12V	750	120RC	24.5	175	254	199
D27M	GRP 27	12V	800	140RC	27.3	173	309	225
D31M	GRP 31	12V	900	155RC	27.3	173	330	241



- Optima Blue-Top, the Marine version of the Yellow-Top
- Deep cycle and starting
- Maintenance free
- Extreme vibration resistance and cycle life

### WARRANTY

Consumer Applications	24 Months FREE Replacement
Commercial Applications	12 Months FREE Replacement
Series String Applications WITH Approved Battery Management System	1 Month FREE Replacement
Series String Applications WITHOUT Approved Battery Management System	1 Month FREE Replacement
Use of 34M in Deep Cycle / Car Radio	Not Covered

## RACEWORKS – BILLET ALUMINIUM BATTERY MOUNT

### ALY-114BK

- Suits all GRP 34 Optima Batteries



## CLAMPS

### T-BOLT CLAMPS

- Raceworks T-Bolt Clamps are made of 304 stainless steel and contain rolled edges, smooth contact surfaces and multiple high-penetration spot welds, all of which are critical for ensuring a consistent seal in boosted high-temperature applications

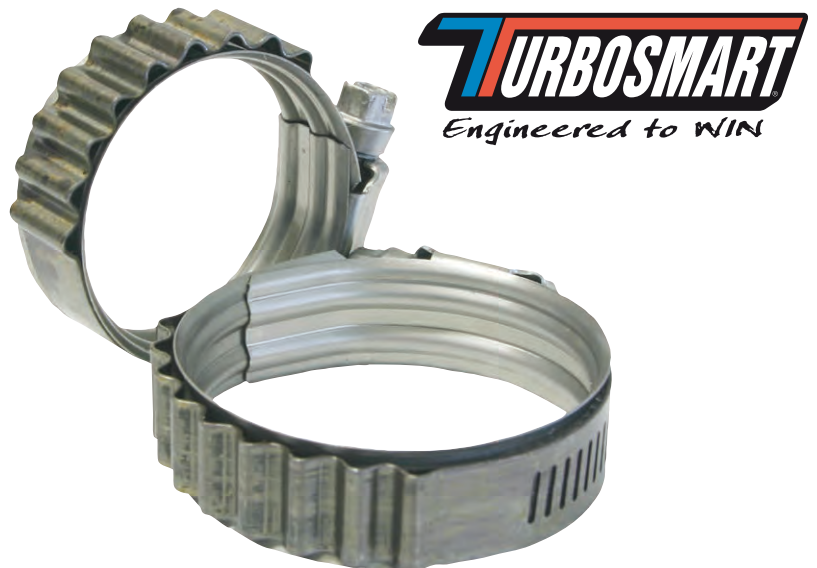


Part No.	Size Range (mm)	Suits Silicone Hoses (Inch)
RWC-100	32 – 37	0.875 and 1.00
RWC-125	39 – 44	1.125 and 1.25
RWC-150	44 – 52	1.375 and 1.50
RWC-175	50 – 58	1.75 and 1.625
RWC-200	57 – 65	2.00
RWC-225	63 – 71	2.25 and 2.375
RWC-250	70 – 78	2.50 and 2.625
RWC-275	77 – 85	2.75
RWC-300	83 – 91	3.00
RWC-325	90 – 98	3.25
RWC-350	95 – 103	3.50
RWC-375	102 – 110	3.75
RWC-400	110 – 118	4.00
RWC-450	121 – 129	4.50
RWC-500	134 – 142	5.00
RWC-600	159 – 167	6.00



### MURRAY TURBO SEAL CONSTANT TENSION CLAMPS

Part No.	Size Range (mm)	Suits Silicone Hoses (Inch)
TS-HCT-M033	28 – 38	0.75 – 1.00
TS-HCT-M042	35 – 48	1.00 – 1.50
TS-HCT-M050	41 – 60	1.25 – 1.75
TS-HCT-M062	50 – 73	1.625 – 2.50
TS-HCT-M075	64 – 86	2.25 – 3.00
TS-HCT-M081	70 – 92	2.50 – 3.00
TS-HCT-M100	95 – 117.5	3.50 – 4.00





## CLAMPS

### PIPE CLAMPS

- Raceworks Pipe Clamps are made from 6063-T6 lightweight aluminium
- Contains two weld on ferrules that are both double O-ring grooved offering a perfect seal and flexibility
- Designed for all types of applications including intercooler piping, air intake piping and more
- They are a 4pc kit; two aluminium weld ferrules, a seal ring and outer clamp
- Stainless Steel Weld Ferrule kits available for stainless steel piping



Size (Inch)	Black Part No.	Polished Part No.	Maximum Pipe Angle	Maximum Pressure PSI
2.0	IPC-200ABK	IPC-200A	2°	400
2.5	IPC-250ABK	IPC-250A	2°	400
3.0	IPC-300ABK	IPC-300A	2°	400
3.5	IPC-350ABK	IPC-350A	2°	400
4.0	IPC-400ABK	IPC-400A	2°	400
5.0	IPC-500ABK	IPC-500A	2°	400



IPC-350ABK

### ACCESSORIES

#### STAINLESS WELD FERRULES

Size (Inch)	Part No.
2.0	IPC-200F-SS
2.5	IPC-250F-SS
3.0	IPC-300F-SS
3.5	IPC-350F-SS
4.0	IPC-400F-SS
5.0	IPC-500F-SS



#### 4PK REPLACEMENT O-RING KITS

Size (Inch)	Part No.
2.0	IPC-200-ORING
2.5	IPC-250-ORING
3.0	IPC-300-ORING
3.5	IPC-350-ORING
4.0	IPC-400-ORING
5.0	IPC-500-ORING



■ For Throttle Body Adapters, refer to page 157

## CLAMPS

### V-BAND CLAMPS

- Raceworks V-Band Clamps are made of 304 stainless and contain male and female ferrules for a better seal
- Wrapped around them is a Premium Quick Release Clamp with a non-nylon locking nut, ensuring it stands up to extremely high exhaust temperatures



Size (Inch)	Part No.
2.0	VBC-200
2.5	VBC-250
3.0	VBC-300
3.5	VBC-350
4.0	VBC-400





## COOLING FANS

- **Maradyne Champion Series electric fans are designed for moving air through a radiator under various driving conditions**
- Unlike a mechanical fan that can't spin very quickly when an engine is idle, Maradyne fans are able to move up to 2170CFM during idling conditions, which is when you need it most
- Electric fans also have the least impact on power and offer increased fuel economy. Unlike other brands which may have similar airflow with a lower Watt motor due to a more aggressive blade profile, Maradyne stick with conventional Higher Watt motors and a Flatter Blade profile, which ensures less load on the motor and a much longer lifetime



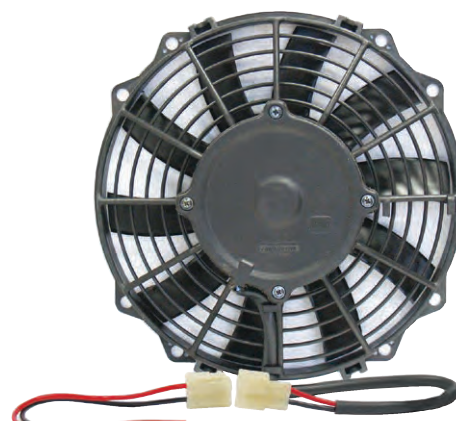
**M073K**

- 7" 12V Fan
- Airflow at 0" static : 375cfm
- 6.5A Current Draw
- Mounting Kit Included
- Reversible Skew Blade
- Pusher/Puller
- 130W IP68 Sealed Motor
- Mounting Depth : 62.2mm (2.48")



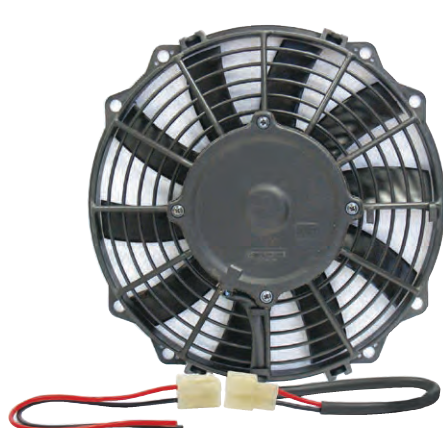
**M083K**

- 8" 12V Fan
- Airflow at 0" static : 450cfm
- 8.1A Current Draw
- Mounting Kit Included
- Reversible Skew Blade
- Pusher/Puller
- 130W IP68 Sealed Motor
- Mounting Depth : 63.1mm (2.48")



**M093K**

- 9" 12V Fan
- Airflow at 0" static : 790cfm
- 7.7A Current Draw
- Mounting Kit Included
- Reversible Skew Blade
- Pusher/Puller
- 130W IP68 Sealed Motor
- Mounting Depth : 63.1mm (2.48")



**M103K**

- 10" 12V Fan
- Airflow at 0" static : 950cfm
- 7.9A Current Draw
- Mounting Kit Included
- Reversible Skew Blade
- Pusher/Puller
- 130W IP68 Sealed Motor
- Mounting Depth : 63.1mm (2.48")



**M113K**

- 11" 12V Fan
- Airflow at 0" static : 1110cfm
- 7.4A Current Draw
- Mounting Kit Included
- Reversible Skew Blade
- Pusher/Puller
- 130W IP68 Sealed Motor
- Mounting Depth : 63.1mm (2.48")



**M122K**

- 12" 12V Fan
- Airflow at 0" static : 1548cfm
- 13.3A Current Draw
- Mounting Kit Included
- Reversible Skew Blade
- Pusher/Puller
- 225W IP68 Sealed Motor
- Mounting Depth : 81mm (3.19")

## COOLING FANS



### M123K

- 12" 12V Fan
- Airflow at 0" static : 1155cfm
- 7.7A Current Draw
- Mounting Kit Included
- Reversible Skew Blade
- Pusher/Puller
- 130W IP68 Sealed Motor
- Mounting Depth : 63.1mm (2.48")



### M142K

- 14" 12V Fan
- Airflow at 0" static : 2135cfm
- 17.2A Current Draw
- Mounting Kit Included
- Reversible Skew Blade
- Pusher/Puller
- 225W IP68 Sealed Motor
- Mounting Depth : 81mm (3.19")



### M146K

- 14" 12V Fan
- Airflow at 0" static : 1555cfm
- 10.1A Current Draw
- Mounting Kit Included
- Reversible Skew Blade
- Pusher/Puller
- 160W IP68 Sealed Motor
- Mounting Depth : 73mm (2.87")



### M162K

- 14" 12V Fan
- Airflow at 0" static : 2170cfm
- 18A Current Draw
- Mounting Kit Included
- Reversible Skew Blade
- Pusher/Puller
- 225W IP68 Sealed Motor
- Mounting Depth : 81mm (3.19")





## ELECTRICAL WIRING, CONNECTORS AND LOOMS

- When setting up a performance car, it doesn't take long for spliced, crimped and soldered wires to make a mess of the engine bay; why not do it right the first time?
- Raceworks offers a comprehensive range of Wiring Connectors and Looms
- Our **Plusquip** range complements the offering with consumables and the **PAT Premium** range consists of a large range of **Deutsch Connectors**

### O2 SENSOR LOOM EXTENSIONS (PRE-CAT)



#### CPS-059

- Early Holden – 355mm

##### CPS-059 SUITS THESE VEHICLES

- VS 3.8L and 3.8L Supercharged\*
- VT 3.8L Supercharged, 5.0L and 5.7L
- VU 5.7L
- VX 3.8L Supercharged and 5.7L
- VY 3.8L\*
- VY 3.8L Supercharged and 5.7L
- WH 3.8L Supercharged and 5.7L
- WK 3.8L, 3.8L Supercharged and 5.7L
- 02-04 Monaro (6cyl and V8)

*\*Applies to certain VIN's  
Please contact us for more details*



#### CPS-060

- Late Holden V8 – 410mm

##### CPS-060 SUITS THESE VEHICLES

- VZ 5.7L and 6.0L
- VE 6.0L and 6.2L
- WL 5.7L and 6.0L
- WM 6.0L and 6.2L
- 05-07 Monaro



#### CPS-061

- Late Holden V6 – 300mm

##### CPS-061 SUITS THESE VEHICLES

- VZ 3.6L
- VE 3.6L\*
- WL 3.6L
- WM 3.6L\*

*\*Applies to certain VIN's  
Please contact us for more details*



#### CPS-063

- Ford AU onwards – 390mm



#### CPS-148

- Holden V8 – 320mm

##### CPS-148 SUITS THESE VEHICLES

- VF 6.2L (2016 onwards)
- WN 6.2L (2016 onwards)
- H2 Hummer (Pre 2006)
- H3 Hummer (2008 onwards)



## ELECTRICAL WIRING, CONNECTORS AND LOOMS

### FORD BARRA SPECIFIC LOOMS



**CPS-170**

- BA/BF Throttle Motor Drive Extension – 520mm



**CPS-171**

- BA/BF TPS Extension – 600mm



**CPS-172**

- BA/BF → FG Throttle Body Conversion – 220mm



**CPS-069**

- BA/BF MAP Conversion Loom (non turbo to turbo) – 445mm



**CPS-173**

- BA/BF Turbo 5 Bar MAP Conversion with original Air Temp Sensor Loom – 350mm



**CPS-174**

- FG Turbo 5 Bar MAP conversion with original Air Temp Sensor Loom – 350mm

### WIRING HEAT PROOF SLEEVING



- Black silicone based sleeving as used on many of the looms above, 3M in length
- **RWM-051-03MM** – 3mm I.D.
- **RWM-051-04MM** – 4mm I.D.
- **RWM-051-06MM** – 6mm I.D.
- For Braided Expandable Sleeving, refer to page 204

### IGNITION COIL HARNESS EXTENSION LOOM



**CPS-187** Doing an LS Conversion? Or simply relocating coils?

- 1200mm long
- Goes in between main harness and Ignition Coil Harness
- Suits all LS engines/looms from Holden / HSV

## ELECTRICAL WIRING, CONNECTORS AND LOOMS

### 90° SILICONE TERMINAL BOOTS



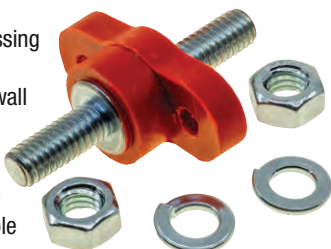
#### VPR-017

- Black and red silicone pair
- Ideal for protecting both positive and negative terminals

### BULKHEAD THROUGH STUD

#### VPR-058

- Designed for passing power through a bulkhead/firewall
- 3/8" UNC Stud
- 250A Rated
- Panel Mountable Post also available – VPR-060



### SPECIALIST CABLE TIES

- There's a home for cable ties even in the highest end motorsport!
- Raceworks carry a range of specialist cable ties, with either a mounting head, or push mount
- Both are 200mm long and sold in a pack of 100



#### VPR-006

#### VPR-007

### TESA CLOTH TAPE

#### VPR-059

- 19mm x 20M
- Flame retardant
- -40 – +150°C rated
- Acrylic adhesive
- Non abrasive



### FIREWALL GROMMETS

#### FIREWALL GROMMETS – STRAIGHT

Firewall Hole Size	Max Total Wire Diameter	Part No.
25mm	8mm	VPR-015-25MM
32mm	10mm	VPR-015-32MM
61mm	20mm	VPR-015-61MM
65mm	20mm	VPR-015-65MM

#### FIREWALL GROMMETS – 90°

Firewall Hole Size	Max Total Wire Diameter	Part No.
37mm	8mm	VPR-016-37MM
41mm	10mm	VPR-016-41MM
60mm	16mm	VPR-016-60MM



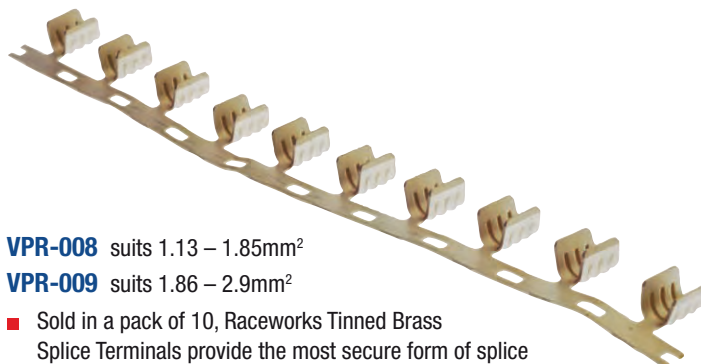
### BRAIDED EXPANDABLE SLEEVING

Normal Size	Expanded Diameter	Length	Part No.
3mm	6.4mm	15M	VPR-001
6mm	11.1mm	12M	VPR-002
9mm	15.9mm	10M	VPR-003
12mm	25.4mm	5M	VPR-004
19mm	31.8mm	5M	VPR-005

- Ensures cable protection while giving the wiring loom cables a professional finish
- Resistant to chemical degradation, UV and abrasion
- Halogen free
- We recommend you cut with a hot knife for a neat finish



### TINNED BRASS SPLICE TERMINALS



**VPR-008** suits 1.13 – 1.85mm<sup>2</sup>

**VPR-009** suits 1.86 – 2.9mm<sup>2</sup>

- Sold in a pack of 10, Raceworks Tinned Brass Splice Terminals provide the most secure form of splice connection, significantly more reliable than soldering!



## ELECTRICAL WIRING, CONNECTORS AND LOOMS

### IN-TANK WIRING AND TERMINALS



#### FSA-500

- Stainless Bulk Head Terminals
- Rated to 10A on a plastic bulkhead, or 15A on a steel/aluminium bulkhead
- Commonly used for fuel pumps
- E85 safe ■ Sold as a pair

#### FSA-499

- Stainless High Current Bulkhead Terminals
- 25A rated with plastic bulkhead, or 30A rated with steel/aluminium bulkhead commonly used for Fuel Pumps
- E85 safe ■ Sold as a pair

#### FSA-095

- 34A continuous rated
- Includes 2x1M lengths of Milspec Tefzel wire
- E200 Viton Heatshrink and eyelet terminals
- Safe for ethanol and alcohol based fuels

#### 6 Pin Bulkhead Kit

- Current Rating – 30A @ 85°C, 18A @ 100°C
- Viton O-Ring Sealed
- Aluminium weld on – **ALY-139-A**
- Steel weld on – **ALY-139-S**
- Bolt on – **ALY-141BK**



### FUEL PUMP HARD WIRING KITS

- Used when adding, or simply re-wiring Fuel Pumps
- Includes a long power cable for Battery in engine bay, and a short power cable for Battery in boot
- Medium Duty (20A) – **RWM-052**
- Heavy Duty, Twin Pumps (40A Total) – **RWM-053**



**RWM-052**

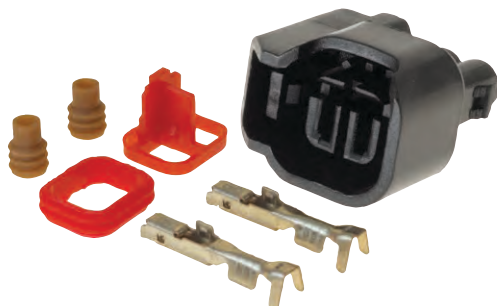


**RWM-053**



## ELECTRICAL WIRING, CONNECTORS AND LOOMS

### INJECTOR CONNECTOR PLUG SETS



**CPS-023**  
■ USCAR



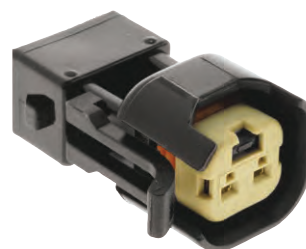
**CPS-035**  
■ BOSCH



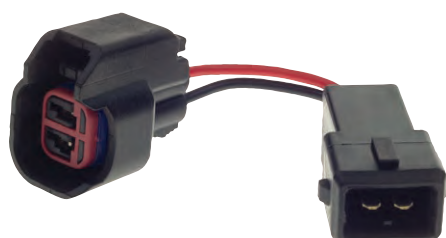
**CPS-057**  
■ DENSO



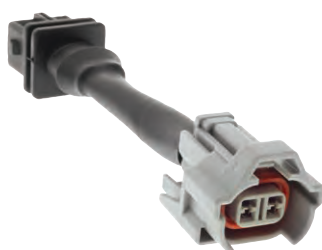
**CPS-070**  
■ Right Angled Boot suits **CPS-035**



**CPS-045**  
■ Bosch Harness - USCAR Injector ■ Solid



**CPS-162**  
■ Bosch Harness – USCAR Injector ■ Wired



**CPS-115**  
■ Bosch Harness – Denso Injector ■ Wired



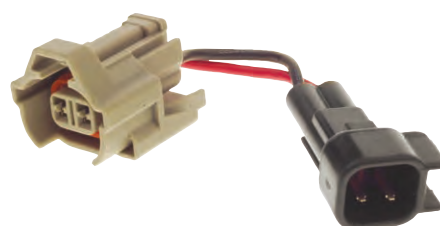
**CPS-058**  
■ USCAR Harness - Bosch Injector ■ Solid



**CPS-164**  
■ USCAR Harness - Bosch Injector ■ Wired



**CPS-160**  
■ USCAR Harness - Denso Injector ■ Solid



**CPS-116**  
■ USCAR Harness - Denso Injector ■ Wired

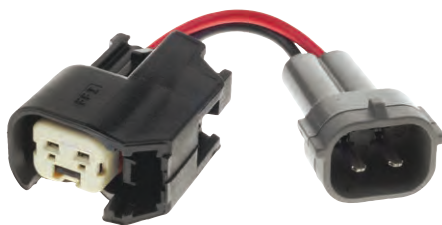
## ELECTRICAL WIRING, CONNECTORS AND LOOMS

### INJECTOR CONNECTOR PLUG SETS



**CPS-141**

- Denso Harness – USCAR Injector
- Solid



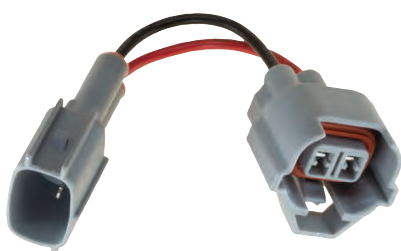
**CPS-112**

- Denso Harness – USCAR Injector
- Wired



**CPS-114**

- Denso Harness – Bosch Injector
- Wired



**CPS-176**

- Toyota Harness – Denso Injector
- Wired



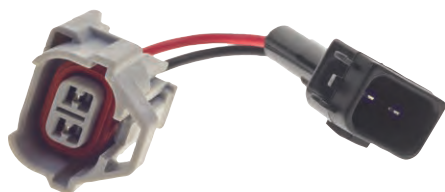
**CPS-177**

- Toyota Harness – Bosch Injector
- Wired



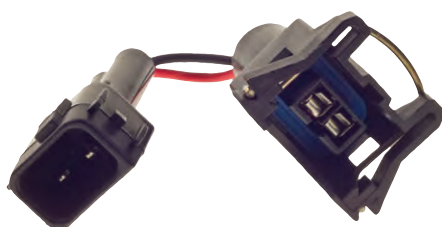
**CPS-178**

- Toyota Harness – USCAR Injector
- Wired



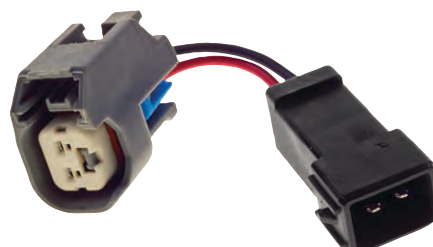
**CPS-161**

- Honda OBD2 Harness – Denso Injector
- Wired



**CPS-163**

- Honda OBD2 Harness – Bosch Injector
- Wired



**CPS-169**

- Honda OBD2 Harness – USCAR Injector
- Wired

## DEUTSCH CONNECTORS

**ALL PAT DEUTSCH CONNECTORS ARE GENUINE, NOT 'DEUTSCH STYLE'.** Deutsch connectors are manufactured from a high quality thermoplastic, offering excellent corrosion resistance. They feature a wide operating temperature range, secure locking mechanisms, and a positive contact retention system. The included weatherproof seals are resistant to most common industrial and engine fluids, and are designed to work with multiple wire gauges. For a breakdown of starter kit contents, please visit [www.raceworks.com.au](http://www.raceworks.com.au)

### DEUTSCH CONNECTORS – DT SERIES

Part No.	Description
CPS-125	2way Kit
CPS-126	3way Kit
CPS-127	4way Kit
CPS-128	6way Kit
CPS-129	8way Kit
CPS-130	12way Kit
CPS-179	Flange Mount 2way Kit
CPS-180	Flange Mount 3way Kit
CPS-181	Flange Mount 4way Kit
CPS-182	Flange Mount 6way Kit
CPS-183	Flange Mount 8way Kit
CPS-184	Flange Mount 12way Kit
CPS-131	Starter Kit / Assortment

### DEUTSCH CONNECTOR DT SPECIFICATIONS

Series	DT
Housing	Thermoplastic
Seal	Silicone Rubber
Wedgelocks	Thermoplastic
Contact Size	16
Contact Rating	13A @ 125°C
Shock	50G
Vibration	20G rms 10–2000Hz
Operating Temperature	-55°C to 125°C

- Mounting Clips, Insulators/Boots, Dust Caps and Backsheels can be ordered, contact us for more details
- For assembly instructions, refer to page 231
- For a breakdown of CPS-131 contents, head to [raceworks.com.au](http://raceworks.com.au)

CPS-131



CPS-125



CPS-126



CPS-127



CPS-128



CPS-129



CPS-130



CPS-179



CPS-180



CPS-181



CPS-182



CPS-183



CPS-184

### DEUTSCH TOOLS

- For DT Crimper and Pin Removal Tools refer to page 191





## DEUTSCH CONNECTORS

### DEUTSCH CONNECTORS – DTM SERIES

Part No.	Description
CPS-118	2way Kit
CPS-119	3way Kit
CPS-120	4way Kit
CPS-121	6way Kit
CPS-122	8way Kit
CPS-123	12way Kit

#### DEUTSCH CONNECTOR DTM SPECIFICATIONS

Series	DTM
Housing	Thermoplastic
Seal	Silicone Rubber
Wedgelocks	Thermoplastic
Contact Size	20
Contact Rating	7.5A @ 125°C
Shock	50G
Vibration	20G rms 10–2000Hz
Operating Temperature	-55°C to 125°C

- Mounting Clips, Insulators/Boots, Dust Caps and Backsheels can be ordered, contact us for more details
- For assembly instructions, refer to page 231



CPS-118

CPS-119

CPS-120



CPS-121

CPS-122

CPS-123



CPS-124

- For a breakdown of CPS-124 contents, head to [raceworks.com.au](http://raceworks.com.au)

#### DEUTSCH TOOLS

- For DTM Crimper and Pin Removal Tools refer to page 191



### DEUTSCH CONNECTORS – DTP SERIES

Part No.	Description
CPS-524	2way Kit
CPS-525	4way Kit

#### DEUTSCH CONNECTOR DTP SPECIFICATIONS

Series	DTP
Housing	Thermoplastic
Seal	Silicone Rubber
Wedgelocks	Thermoplastic
Contact Size	12
Contact Rating	25A @ 125°C
Shock	50G
Vibration	20G rms 10–2000Hz
Operating Temperature	-55°C to 125°C



CPS-524

CPS-525

#### DEUTSCH TOOLS

- For DTP Crimper and Pin Removal Tools refer to page 191
- For assembly instructions, refer to page 231



## DEUTSCH CONNECTORS

### DEUTSCH CONNECTORS – HD30 SERIES

**Deutsch HD30 connectors** take the same technology as used in thermoplastic Deutsch connectors, and add extra functionality through the use of up to 47 pins, and the ability to mount to a bulkhead/firewall. HD30 use aluminium housings, and are secured using a twist-lock, with IP67 protection.

#### DEUTSCH CONNECTOR HD30 SPECIFICATIONS

<b>Series</b>	<b>HD30</b>
Housing	Thermoplastic
Seal	Silicone Rubber
Shock	50G
Vibration	20G rms 10–2000Hz
Operating Temperature	-55°C to 125°C



CPS-505

#### HD30 WIRING INFORMATION

Size	Wire Size	Recommended Strip Length	Current Rating
12	12-14AWG ( 2.0 – 3.0mm <sup>2</sup> )	5.6 – 7.2mm	25A @ 125°C
16	14AWG ( 1.0 – 2.0mm <sup>2</sup> )	6.4 – 8.0mm	13A @ 125°C
20	20 AWG ( 0.2 – 0.5mm <sup>2</sup> )	4.0 – 5.5mm	7.5A @ 125°C

#### HD30 CONTACTS INFORMATION

Shell Size	Mounting Hole Diameter	Contacts	Wire Seal Colour	Recommended Wire O.D.	Part No.
18	38mm	8x Size 12	Green	3.40 – 4.32mm	<b>CPS-503</b>
18	38mm	14x Size 16	Green	2.54 – 3.40mm	<b>CPS-533</b>
18	38mm	21x Size 20	Green	1.02 – 2.41mm	<b>CPS-535</b>
24	43mm	16x Size 12	Green	3.40 – 4.32mm	<b>CPS-505</b>
24	43mm	6x Size 12	Blue	2.46 – 4.01mm for Size 12	<b>CPS-507</b>
		13x Size 16		1.35 – 3.05mm for Size 16	
24	43mm	4x Size 12	Blue	2.46 – 4.01mm for Size 12	<b>CPS-509</b>
		17x Size 16		1.35 – 3.05mm for Size 16	
24	43mm	23x Size 16	Blue	1.35 – 3.05mm	<b>CPS-511</b>
24	43mm	4x Size 12	Blue	2.46 – 4.01mm for Size 12	<b>CPS-513</b>
		19x Size 16		1.35 – 3.05mm for Size 16	
		6x Size 20		1.02 – 2.41mm for Size 20	
24	43mm	31x Size 16	Blue	1.35 – 3.05mm	<b>CPS-515</b>
24	43mm	5x Size 16	Blue	1.35 – 3.05mm for Size 16	<b>CPS-537</b>
		42x Size 20		1.02 – 2.41mm for Size 20	

#### DEUTSCH TOOLS

- Strain Relief Backshells available, contact us for more information
- For assembly instructions, refer to page 231
- For Crimpers and Pin Removal Tools refer to page 191



## DEUTSCH CONNECTORS

### DEUTSCH CONNECTORS – HDP20 SERIES

**Deutsch HDP20 connectors** take the same technology as used in grey thermoplastic Deutsch connectors, and add extra functionality through the use of up to 47 pins, and the ability to mount to a bulkhead/firewall. HDP20 are secured using a twist-lock, with IP67 protection.

#### DEUTSCH CONNECTOR HDP20 SPECIFICATIONS

Series	HDP20
Housing	Thermoplastic
Seal	Silicone Rubber
Shock	50G
Vibration	20G rms 10–2000Hz
Operating Temperature	–55°C to 125°C



**CPS-506**

#### HDP20 WIRING INFORMATION

Size	Wire Size	Recommended Strip Length	Current Rating
12	12 – 14AWG (2.0 – 3.0mm <sup>2</sup> )	5.6 – 7.2mm	25A @125°C
16	14AWG (1.0 – 2.0mm <sup>2</sup> )	6.4 – 8.0mm	13A @125°C
20	20 AWG (0.2 – 0.5mm <sup>2</sup> )	4.0 – 5.5mm	7.5A @125°C

#### HDP20 CONTACTS INFORMATION

Shell Size	Mounting Hole Diameter	Contacts	Wire Seal Colour	Recommended Wire O.D.	Part No.
18	38mm	8x Size 12	Green	3.40 – 4.32mm	<b>CPS-504</b>
18	38mm	14x Size 16	Blue	1.35 – 3.05mm	<b>CPS-534</b>
18	38mm	21x Size 20	Green	1.02 – 2.41mm	<b>CPS-536</b>
24	43mm	16x Size 12	Green	3.40 – 4.32mm	<b>CPS-506</b>
24	43mm	6x Size 12	Green	3.40 – 4.32mm for Size 12	<b>CPS-508</b>
		13x Size 16		2.54 – 3.40mm for Size 16	
24	43mm	4x Size 12	Blue	2.46 – 4.01mm for Size 12	<b>CPS-510</b>
		17x Size 16		1.35 – 3.05mm for Size 16	
24	43mm	23x Size 16	Blue	1.35 – 3.05mm	<b>CPS-512</b>
24	43mm	4x Size 12	Blue	2.46 – 4.01mm for Size 12	<b>CPS-514</b>
		19x Size 16		1.35 – 3.05mm for Size 16	
		6x Size 20		1.02 – 2.41mm for Size 20	
24	43mm	31x Size 16	Blue	1.35 – 3.05mm	<b>CPS-516</b>
24	43mm	5x Size 16	Blue	1.35 – 3.05mm for Size 16	<b>CPS-538</b>
		42x Size 20		1.02 – 2.41mm for Size 20	

#### DEUTSCH TOOLS

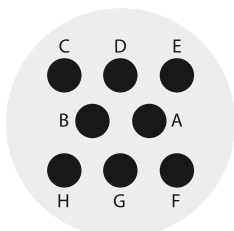
- Strain Relief Backshells available, contact us for more information
- For assembly instructions, refer to page 231
- For Crimpers and Pin Removal Tools refer to page 191



## DEUTSCH CONNECTORS – SHELL SIZE ARRANGEMENTS

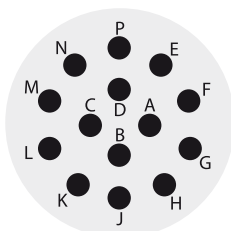
### 18 SHELL SIZE ARRANGEMENTS

**18-8**



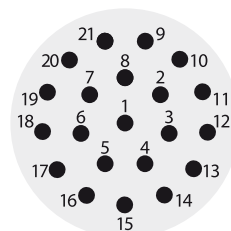
8 x size 12

**18-14**



14 x size 16

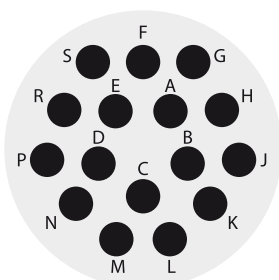
**18-21**



21 x size 20

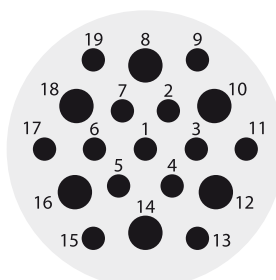
### 24 SHELL SIZE ARRANGEMENTS

**24-16**



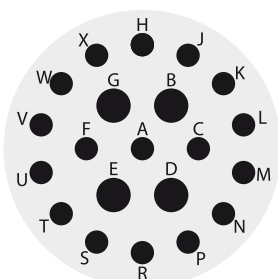
16 x size 12

**24-19**



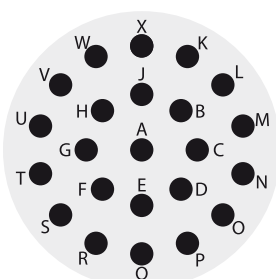
6 x size 12, 13 x size 16

**24-21**



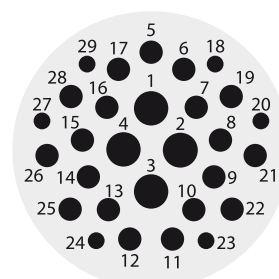
4 x size 12, 17 x size 16

**24-23**



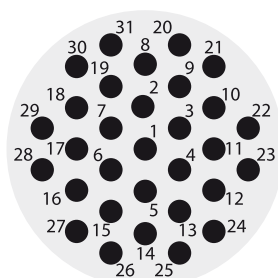
23 x size 16

**24-29**



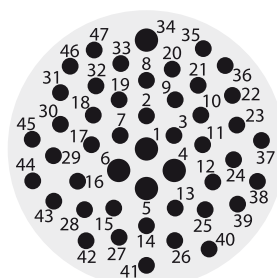
4 x size 12, 19 x size 16, 6 x size 20

**24-31**



31 x size 16

**24-47**



5 x size 16, 42 x size 20



## DEUTSCH CONNECTORS

### DEUTSCH CONNECTORS – HD30 AND HDP20 SERIES ACCESSORIES



**CPS-517**

■ Shell 18 Insulator



**CPS-518**

■ Shell 24 Insulator



**CPS-540**

■ Shell 24 Insulator,  
Right Angled



**CPS-519**

■ Shell 18 Plug  
Protective Cap



**CPS-520**

■ Shell 24 Plug  
Protective Cap



**CPS-521**

■ Shell 18 Receptacle  
Protective Cap



**CPS-522**

■ Shell 24 Receptacle  
Protective Cap



**CPS-523**

■ Size 12-16  
Sealing Plugs 5pk



**CPS-526**

■ Size 20  
Sealing Plugs 5pk

### DEUTSCH CONNECTOR SPARES



**CPS-527**

■ Size 12 Pins 20pk



**CPS-529**

■ Size 16 Pins 20pk



**CPS-531**

■ Size 20 Pins 20pk



**CPS-528**

■ Size 12 Sockets 20pk



**CPS-530**

■ Size 16 Sockets 20pk



**CPS-532**

■ Size 20 Sockets 20pk



## FUEL SYSTEM COMPONENTS

Premier Auto Trade has been dealing with Fuel System Components for over 20 years. In this time, the performance range has grown to include everything fuel system related from the tank all the way to the intake manifold, from industry leading brands such as **Ti Automotive, Bosch Motorsport, VDO, Siemens and Raceworks**. PAT Fuel Components are supporting modifications, and facilitate other performance upgrades including forced induction, increased boost, different fuel types and surge protection.

## TECH TIP – ARE INTANK PUMPS BETTER THAN EXTERNAL PUMPS?

Modern day in-tank pumps are more compact, and generally quieter in operation. They also use intank strainers, meaning an extra pre-pump Fuel Filter is not required. They don't need to be gravity-fed, or require a pre-pump. In motorsport applications, some prefer to use external pumps as they can be easily accessed for inspection/maintenance. Both intank and external have their appropriate applications.

### EFI FUEL PUMPS – INTANK



#### EFP-015M

- Icon 040 Style
- 205LPH @ 3Bar
- 60mm dia
- Ext Check Valve
- 7A @ 3Bar Current Draw



#### EFP-320

- Denso 195131-9520
- 240LPH @ 3Bar
- 38mm dia
- Int Check Valve
- 10A @ 3Bar Current Draw
- 8mm outlet



#### EFP-476

- Ti Automotive F10000302
- 250LPH @ 3Bar
- E85 safe
- No Check Valve
- 10A @ 3Bar Current Draw
- 36.5mm dia ■ 8mm outlet



#### EFP-057

- Ti Automotive GSS341
- 255LPH @ 3Bar
- Int Check Valve
- 8A @ 3Bar Current Draw
- 39mm dia
- 8mm outlet



#### EFP-058

- Ti Automotive GSS342
- 255LPH @ 3Bar
- Int Check Valve
- 8A @ 3Bar Current Draw
- 39mm dia
- 8mm outlet



#### EFP-264

- Ti Automotive GSS340
- 255LPH @ 3Bar
- Int Check Valve
- 8A @ 3Bar Current Draw
- 39mm dia
- 8mm outlet



#### EFP-501

- Raceworks
- 340LPH @ 3Bar
- Int Check Valve
- 13A @ 3Bar Current Draw
- 38mm dia
- E85 safe
- 8mm outlet



#### EFP-500

- Raceworks
- 340LPH @ 3Bar
- Int Check Valve
- 13A @ 3Bar Current Draw
- 39mm dia
- E85 safe ■ 10mm outlet



#### EFP-624

- Ti Automotive GSS350
- 350LPH @ 3Bar
- Int Check Valve
- 12A @ 3Bar Current Draw
- 8mm outlet



#### EFP-625

- Ti Automotive GSS351
- 350LPH @ 3Bar
- Int Check Valve
- 12A @ 3Bar Current Draw
- 8mm outlet



#### EFP-626

- Ti Automotive GSS352
- 350LPH @ 3Bar
- Int Check Valve
- 12A @ 3Bar Current Draw
- 8mm outlet

## FUEL PUMPS

### EFI FUEL PUMPS – INTANK



#### EFP-324

- Ti Automotive F90000262
- 400LPH @ 3Bar
- Int Check Valve
- 14.5A @ 3Bar Current Draw
- 40mm Minor Dia ■ 10mm outlet



#### EFP-287

- Ti Automotive F90000267
- 415LPH @ 3Bar ■ E85 safe
- Int Check Valve
- 11A @ 3Bar Current Draw
- 40mm Minor Dia ■ 10mm outlet



#### EFP-452

- Ti Automotive F90000274
- 415LPH @ 3Bar ■ E85 safe
- Int Check Valve
- 16A @ 3Bar Current Draw
- 40mm Minor Dia ■ 10mm outlet



#### EFP-530

- Ti Automotive F90000285
- 465LPH @ 3Bar ■ E85 safe
- Int Check Valve
- 17A @ 3Bar Current Draw
- 40mm Minor Dia
- 10mm outlet



#### EFP-622

- TI Automotive F90000295
- 540LPH @ 3Bar ■ E85 safe
- No Check Valve
- 16.5A @ 3Bar Current Draw
- 40mm Minor Dia
- 10mm outlet

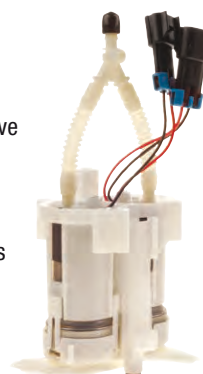


#### EFP-723

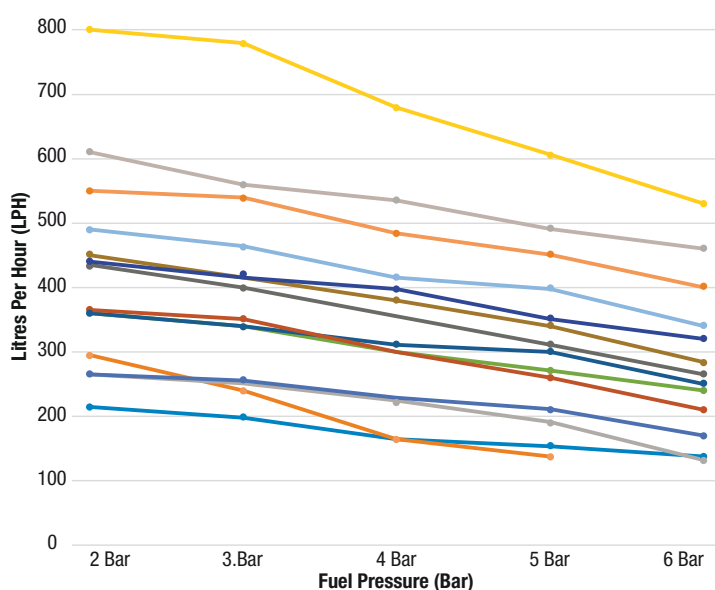
- Ti Automotive
- Brushless Pump and Controller
- 560LPH @ 3Bar ■ E85 safe
- No Check Valve
- 9A @ 3Bar Current Draw
- 38.5mm dia ■ 10mm outlet
- Methanol safe

#### EFP-426

- Ti Automotive TCA948
- 790 LPH @ 3Bar
- Twin Pumps
- E85 safe
- Int Check Valves
- 34A @ 3Bar Current Draw
- 10mm outlet



### EFI IN-TANK FUEL PUMP FLOW (LPH)



Part No.	2 Bar	3 Bar	4 Bar	5 Bar	6 Bar
EFP-015M	214.5	198	165	154	137.5
EFP-320	295	240	165	137.5	
EFP-476	265	250	225	190	132
EFP-057/058/264	265	255	228	210	170
EFP-501	360	340	300	270	240
EFP-500	360	340	310	300	250
EFP-624/625/626	365	350	300	260	210
EFP-324	435	400	355	310	265
EFP-287	450	415	379	340	284
EFP-452	440	415	398	350	320
EFP-530	490	465	415	398	340
EFP-622	550	540	485	450	400
EFP-723	610	560	535	490	460
EFP-426	800	780	680	605	530

## FUEL PUMPS

### EFI FUEL PUMPS – INTANK E85 SAFE TUBING AND ACCESSORIES



- 8-10mm I.D.
- FSA-093** – 120mm length
- FSA-083** – 250mm length



- 8mm I.D.
- FSA-091** – 160mm length
- FSA-092** – 225mm length



- 10mm I.D.
- FSA-089** – 160mm length
- FSA-090** – 240mm length
- FSA-084** – 480mm length



- EQP-029**
- Plastic Hose Fitment Tool
  - Suitable for Fuel Pump outlets With or Without Barbs



- EQP-020**
- Double Ear Clamp Pliers



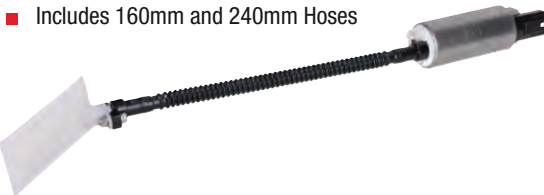
- CLE-404**
- Double Ear Clamps
  - Suits 8mm Hose



- CLE-405**
- Double Ear Clamps
  - Suits 10mm hose



- FSA-518**
- Intank Strainer Extension Kit E85 safe
  - Suits pumps in the chart at right, highlighted in **Red**
  - Includes 160mm and 240mm Hoses



- EQP-030**
- Plusquip Fuel Tank Lock Ring Tool
  - 2-Jaw and 3-Jaw Kit
  - Suits Retaining Nuts 75–160mm diameter

### TECH TIP – WHICH EFI PUMPS IN THE RANGE ARE ABLE TO LIFT FUEL ON THE INLET SIDE, MORE THAN 1–2" ?

The following pumps are able to draw the fuel vertically, a maximum of 2 feet\*  
(\*Subject to various factors, including line size, fuel temperature and ground elevation).

EFI IN-TANK		EFI EXTERNAL	
<b>EFP-057</b>	(Ti Automotive GSS341)	<b>EFP-082</b>	(Ti Automotive GSL393)
<b>EFP-058</b>	(Ti Automotive GSS342)	<b>EFP-108</b>	(Pierburg 7.22156.50.0)
<b>EFP-264</b>	(Ti Automotive GSS340)	<b>EFP-204</b>	(Ti Automotive GSL392)
<b>EFP-624</b>	(Ti Automotive GSS350)	<b>EFP-485</b>	(Pierburg 7.00228.51.0)
<b>EFP-625</b>	(Ti Automotive GSS351)	<b>EFP-637</b>	(Ti Automotive GSL394)
<b>EFP-626</b>	(Ti Automotive GSS352)	<b>EFP-706</b>	(Ti Automotive GSL396)

### TECH TIP – ARE ANY PERFORMANCE PUMPS SUITABLE FOR USE WITH DIESEL?

There are various Pumps in the range that will work with Diesel, but the only Pumps which are recommended and warranted for use with Diesel are PIERBURG Pumps.

Flow figures and current draw ratings are not available for Diesel however, but it can be expected that the pump will flow less and draw more current with Diesel due to its higher viscosity.

## FUEL PUMPS

### EFI FUEL PUMPS – STRAINERS AND SLEEVES



#### FSA-097

- Universal
- 60x60mm 90° Strainer



#### FPS-067

- Universal
- 130x58mm 45° Strainer



#### FPS-051

- Universal, equivalent to GSS341/GSS342 Strainer
- 90x43mm 45° Strainer



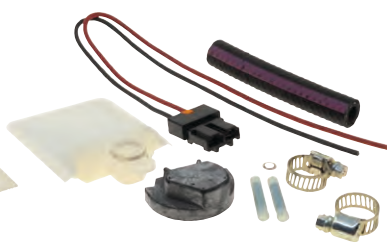
#### FPS-025

- Universal
- 88x55mm Semi Circle Strainer



#### FPS-069

- Universal, equivalent to Ti Automotive 460/525 Strainer
- 85x75mm 90° Strainer



#### 400-766

- Fitting Kit
- Suits GSS341/GSS351
- To Suit Nissan S13/180SX



#### 400-791

- Fitting Kit
- Suits GSS342/GSS352
- To Suit 94-07 WRX/Sti



#### 400-847

- Fitting Kit suits GSS342/GSS352
- To Suit EVO 4-9



#### 400-848

- Fitting Kit
- Suits GSS342/GSS352
- To Suit MX-5 NA



#### 400-1182

- Fitting Kit
- Suits GSS342/GSS352
- To Suit DC2/DC5 Integra, EG/EK/EM Civic, 5th Gen Prelude, MX-5 NB, 300ZX Z32

#### 400-1182

- Fitting Kit suits GSS341/GSS351
- To Suit 1st Gen NSX, 2nd Gen CRX, 3rd/4th Gen Prelude, S4/S5 RX-7, SW20 MR-2, Supra 70/80 Series

**FOR INTANK WIRING  
AND HIGH CURRENT  
BULKHEAD TERMINALS,  
SEE PAGE 34**



#### FSA-021

- Rubber Sleeve suits Ti Automotive GSL Series
- 110mm L
- 55mm O.D.
- 43mm I.D.



#### FSA-505

- Foam Sleeve suits Ti Automotive GSS Series
- 75mm L
- 45mm O.D.
- 40mm I.D.



#### FSA-507

- Rubber Sleeve suits Ti Automotive F9 Series
- 55mm L
- 55mm O.D.
- 41mm I.D.



## FUEL PUMPS

### EFI FUEL PUMPS – EXTERNAL 43mm DIA



- EFP-082** ■ Ti Automotive GSL393  
 ■ 135 LPH @ 3Bar ■ 7A @ 3Bar Current Draw  
 ■ Int Check Valve ■ M10x1.0 Ports

- EFP-637** ■ Ti Automotive GSL394  
 ■ 182 LPH @ 3Bar ■ 7A @ 3Bar Current Draw  
 ■ Int Check Valve ■ M10x1.0 Ports

- EFP-204** ■ Ti Automotive GSL392  
 ■ 255 LPH @ 3Bar ■ 8A @ 3Bar Current Draw  
 ■ Int Check Valve ■ M10x1.0 Ports

- EFP-706** ■ Ti Automotive GSL396  
 ■ 350LPH @ 3Bar ■ 12A @ 3Bar Current Draw  
 ■ Int Check Valve ■ M10 x 1.0 Ports

### TI AUTOMOTIVE GSL SERIES INLET AND OUTLET FITTINGS

- Banjo Bolt – RWF-301-03ABK or RWF-301-03SS
- 5/16" Barb – RWF-414-M10-05BK
- 3/8" Barb – RWF-414-M10-06BK  
Two Steel Versions of this included with pumps
- 1/2" Barb – RWF-414-M10-08BK
- AN-6 Male Flare – RWF-729-06BK or **RWF-729-06SS**
- AN-8 Male Flare – RWF-729-08BK or **RWF-729-08SS**

### EFP-108

- Pierburg 7.22156.50.0
- 200 LPH @ 3Bar
- 5A @ 3Bar Current Draw
- E85 safe
- Int Check Valve
- Inlet – 15mm Barb
- Outlet – 8mm Right Angled Barb



### EFP-108 INLET FITTINGS

- AN-8 Male Flare Adapter – RWF-717-08-M15BK
- AN-10 Male Flare Adapter – **RWF-717-10-M15BK**

### EFP-108 OUTLET FITTINGS

- AN-6 Male Flare Adapter – **RWF-717-06-M8BK**

### RACEWORKS RECOMMENDED OPTION

Always use the least restrictive Inlet Hose and fitting possible.  
**\*Fittings highlighted in Red are the recommended Fittings by Raceworks.**

### EFP-485

- Pierburg (Ti) 7.00228.51.0
- 360LPH @ 3Bar
- E85 safe
- 12.5A @ 3Bar Current Draw
- Int Check Valve
- Inlet – 15mm Barb
- Outlet – M10x1.0



### EFP-485 INLET FITTINGS

- AN-10 Male Flare – **RWF-717-10-M15BK**, this is included with pump
- AN-8 Male Flare – RWF-717-08-M15BK

### EFP-485 OUTLET FITTINGS

- 5/16" Barb – RWF-414-M10-05BK  
Steel version of this included with pump
- 3/8" Barb – RWF-414-M10-06BK
- 1/2" Barb – RWF-414-M10-08BK
- AN-6 Male Flare – **RWF-729-06SS**, this is included with pump
- AN-8 Male Flare – **RWF-729-08SS**

### 43mm I.D. FUEL PUMP BRACKETS



### ALY-088BK

- Single

- Mounting thread M6 x 1.0 with 13mm thread depth

### ALY-089BK

- Twin

- Mounting thread M6 x 1.0 with 13mm thread depth



\*Aligns with Raceworks Surge Tanks

## FUEL PUMPS

### EFI FUEL PUMPS – EXTERNAL 60mm DIA



#### EFP-506

- Raceworks 044 Style
- 300 LPH @ 3Bar
- 12A @ 3Bar Current Draw
- Ext Check Valve
- Inlet – M18x1.5
- Outlet – M12x1.5



#### EFP-502

- Raceworks 044 Style
- 310 LPH @ 3Bar
- 11A @ 3Bar Current Draw
- Ext Check Valve
- Inlet – M18x1.5
- Outlet – M12x1.5

#### EFP-506 AND EFP-502 INLET FITTINGS

- Female AN-8 Swivel – RWF-906-08-M18BK
- 5/16" Barb – RWF-414-M18-05BK
- 3/8" Barb – RWF-414-M18-06BK
- 1/2" Barb – RWF-414-M18-08BK
- 5/8" Barb – RWF-414-M18-10BK/  
RWF-417-M18-10BK
- AN-6 Male Flare – RWF-734-06BK
- AN-8 Male Flare – RWF-734-08BK
- AN-10 Male Flare – **RWF-734-10BK**
- AN-12 Male Flare – **RWF-734-12BK**
- Intank Strainer Kit – FSA-094

#### RACEWORKS RECOMMENDED OPTION

Always use the least restrictive  
Inlet hose and fitting possible.

\*Fittings highlighted in Red are the  
recommended fittings by Raceworks.

#### EFP-506 AND EFP-502 OUTLET FITTINGS

##### USING INCLUDED CHECK VALVE

- AN-6 Male Flare Banjo Kit – RWF-724-044-06BK
- AN-8 Male Flare Banjo Kit – RWF-724-044-08BK
- 5/16" Barb Banjo Kit – RWF-807-044-05BK
- 3/8" Barb Banjo Kit – RWF-807-044-06BK

##### USING HIGH FLOW INLINE CHECK VALVE

- AN-6 Male Flare – **RWF-612-06BK**
- AN-8 Male Flare – **RWF-612-08BK**

##### USING NO CHECK VALVE

- AN-6 Male Flare Adapter – RWF-731-06BK
- AN-8 Male Flare Adapter – RWF-731-08BK
- AN-10 Male Flare Adapter – RWF-731-10BK
- 5/16" Barb Adapter – RWF-414-M12-05BK
- 3/8" Barb Adapter – RWF-414-M12-06BK
- 1/2" Barb Adapter – RWF-414-M12-08BK
- Banjo Bolt – RWF-724-06ABK

### TECH TIP – WHAT IS A CHECK VALVE?

Also known as a One-Way Valve, a Check Valve allows flow in one direction only, and prevents back flow (reverse flow).

This is important when staging fuel pumps, or running multiple fuel pumps in the case of a pump failure.

It also ensures that fuel pressure in the line is maintained, allowing the engine to start faster even if the fuel system has not been sufficiently primed.

### 60mm I.D. FUEL PUMP BRACKETS



#### ALY-001BK

- Single
- Aligns with Raceworks Surge Tanks



#### ALY-003BK

- Twin
- Aligns with Raceworks Surge Tanks



#### ALY-002BK

- Billet Twin – 3mm spacer required under Raceworks Upright Surge Tanks if directly connected

## FUEL PUMPS

### EFI FUEL PUMPS – EXTERNAL 52/60mm DIA



#### EFP-716

- Bosch 0 580 254 044
- 330LPH @ 8Bar
- 10.5A @ 3Bar Current Draw
- E85 safe
- Ext Check Valve
- Inlet – M14 x 1.5
- Outlet – M10 x 1.0
- 52mm dia
- Includes 60mm O.D. Plastic Sleeve

#### EFP-716 INLET FITTINGS

- 3/8" Barb – RWF-414-M14-06BK
- 1/2" Barb – RWF-414-M14-08BK
- AN-6 Male Flare – RWF-732-06BK
- AN-8 Male Flare – RWF-732-08BK
- AN-10 Male Flare – **RWF-732-10BK**

#### WITH INCLUDED M18X1.5 ADAPTER

- Female AN-8 Swivel – RWF-906-08-M18BK
- 5/16" Barb – RWF-414-M18-05BK
- 3/8" Barb – RWF-414-M18-06BK
- 1/2" Barb – RWF-414-M18-08BK
- 5/8" Barb – RWF-414-M18-10BK / RWF-417-M18-10BK
- AN-6 Male Flare – RWF-734-06BK
- AN-8 Male Flare – RWF-734-08BK
- AN-10 Male Flare – RWF-734-10BK
- AN-12 Male Flare – RWF-734-12BK
- Intank Strainer Kit – FSA-094

#### RACEWORKS RECOMMENDED OPTION

Always use the least restrictive Inlet hose and fitting possible.  
\*Fittings highlighted in Red are the recommended fittings by Raceworks.

#### EFP-716 OUTLET FITTINGS

##### USING INCLUDED CHECK VALVE

- AN-6 Male Flare Banjo Kit – RWF-724-044-06BK
- AN-8 Male Flare Banjo Kit – RWF-724-044-08BK
- 5/16" Barb Banjo Kit – RWF-807-044-05BK
- 3/8" Barb Banjo Kit – RWF-807-044-06BK

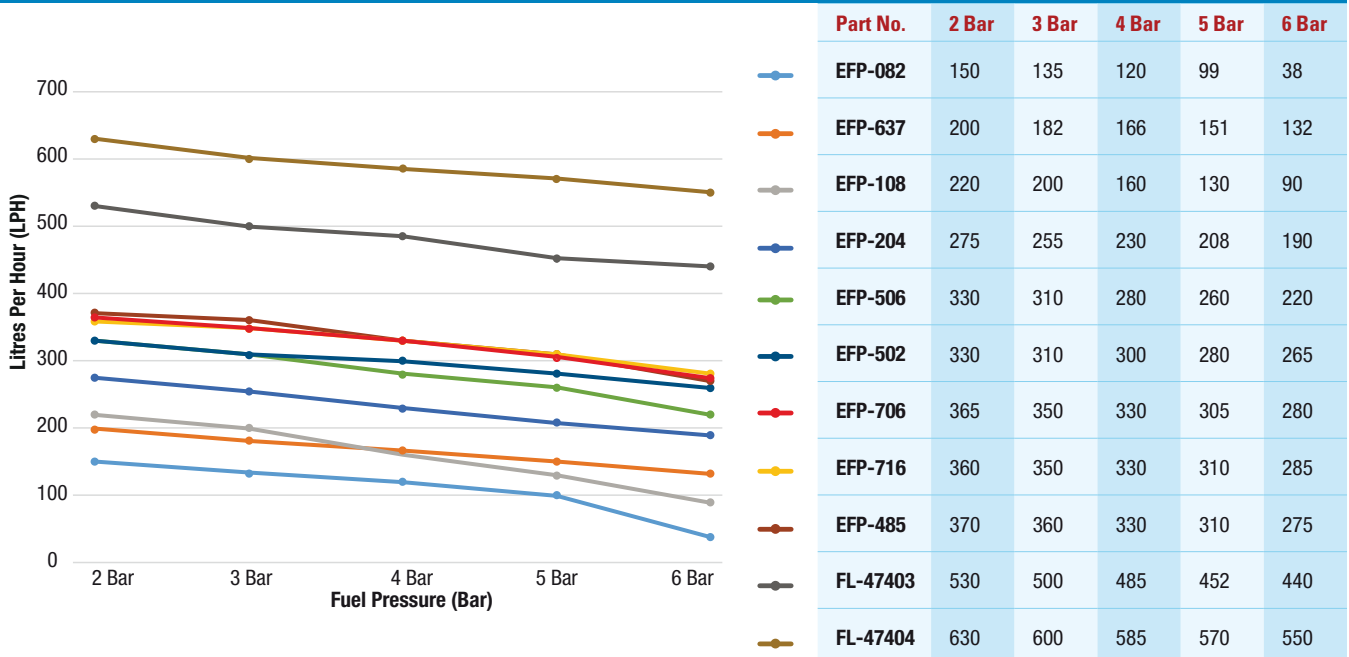
##### USING HIGH FLOW INLINE CHECK VALVE

- AN-8 Male Flare – **RWF-606-08BK**

##### USING NO CHECK VALVE

- Banjo Bolt – RWF-301-03ABK or RWF-301-03SS
- 5/16" Barb – RWF-414-M10-05BK
- 3/8" Barb – RWF-414-M10-06BK
- 1/2" Barb – RWF-414-M10-08BK
- AN-6 Male Flare – RWF-729-06BK or RWF-729-06SS
- AN-8 Male Flare – RWF-729-08BK or RWF-729-08SS

### EFI EXTERNAL FUEL PUMP FLOW (LPH)





## FUEL PUMPS

### EFI FUEL PUMPS – EXTERNAL BRUSHLESS

#### FL-47403

- Fuelab Brushless
- Integrated Controller
- 500LPH @ 3Bar
- E85 safe
- 8-16V Compatible
- Integrated Billet Aluminium Mount
- No check valve
- 7A @ 3Bar Current Draw
- 250LPH, 350LPH and 600LPH versions also available\*
- AN-8 ORB ports

#### INLET / OUTLET ADAPTER FITTINGS

- AN-8 Male Flare Straight – RWF-920-08BK
- AN-6 Male Flare Straight – RWF-920-06-08BK
- AN-10 Male Flare Straight – RWF-920-10-08BK / RWF-920-10-08SS
- AN-12 Male Flare Straight – RWF-920-12-08BK
- AN-8 Male Flare Straight Long – RWF-920-08LBK
- AN-8 Male Flare 45° – RWF-923-08BK
- AN-8 Male Flare 90° – RWF-922-08BK
- AN-10 Male Flare 90° – RWF-922-10-08BK
- AN-8 Male ORB – RWF-921-08-08BK
- AN-6 Male ORB – RWF-921-06-08BK
- AN-10 Female AN Swivel – RWF-907-10-08SS
- AN-6 Female AN Swivel – RWF-907-06-08BK
- 3/8" Barb Straight – RWF-414-08-06BK
- 1/2" Barb Straight – RWF-414-08-08BK
- 3/8" Barb 90deg – RWF-415-08-06BK
- 1/2" Barb 90deg – RWF-415-08-08BK



#### TECH TIP –

#### WHY USE A BRUSHLESS PUMP?

**BRUSHLESS PUMPS ARE EXTREMELY EFFICIENT.**

The FL-47403, when used in a 13.5V system, flows 600LPH @ free flow, 500LPH @ 3Bar and is still flowing 415LPH @ 100Psi.

What's more amazing, is that at 100Psi, the current draw is still less than 14A!

Brushless Pumps also have a longer lifetime, without brushes that would normally wear and require replacement. What does this efficiency translate to in a performance application? Less draw on the electrical system/alternator, meaning less load on the engine.



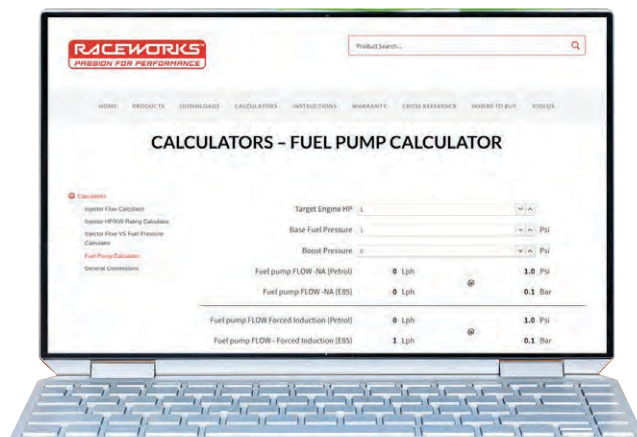
## TECH TIP – WHAT FUEL PUMP/S DO I NEED TO SUPPORT MY POWER INCREASE?

### USE THE ONLINE RACEWORKS CALCULATOR.

Know your goal. Having more fuel than is required means it will simply be returned to the tank, heating it in the process.

Consider staging multiple pumps to control the amount of fuel that is circulating and reduce this amount when not required.

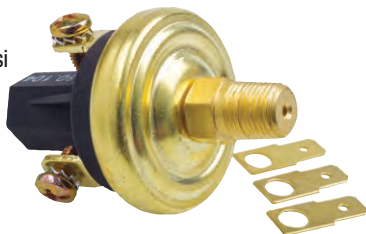
This can be done through a programmable ECU, or via an adjustable pressure switch below.



## ADJUSTABLE PRESSURE SWITCH

### RWM-001

- 3.1–7psi, preset at 4psi
- Contains N/O and N/C contacts
- 1/8" NPT Thread
- Includes Dust Boot



## TECH TIP – CAN YOU USE EFI PUMPS FOR LOW PRESSURE APPLICATIONS?

**ABSOLUTELY. THIS IS COMMONLY DONE** – provided a Return Style Fuel Pressure Regulator is used, that can bypass enough fuel.

All fuel pumps (EFI Pumps included) will flow more at low pressure than they will at high pressure. Check the low pressure rating on the pump of choice, and the bypass rate of the regulator to verify.

## LOW PRESSURE FUEL PUMPS

### EFP-086

- Pierburg 7.21440.53.0
- 110LPH @ Free Flow ■ E85 safe
- 38mm dia ■ 8mm Inlet/Outlet
- 6V Compatible, with reduced flow



### EFP-089

- Pierburg 7.21088.62.0
- 220LPH @ Free Flow ■ E85 safe
- 38mm dia ■ In-Tank ■ 8mm outlet
- Connector Plug Available Separately CPS-168



### EFP-293

- Pierburg 7.21440.78.0
- 120LPH @ Free Flow ■ E85 safe
- 38mm dia ■ 12mm Inlet ■ 8mm outlet



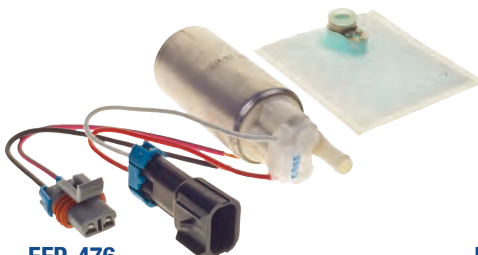
### EFP-291M

- ICON (Carter Style)
- 270LPH @ Free Flow
- 1/4" NPT Inlet/Outlet
- Includes 10mm Barbs



### EFP-476

- Ti Automotive F10000302
- 295LPH @ Free Flow ■ E85 safe
- 365mm dia ■ In-Tank ■ 8mm outlet



### EFP-495

- Ti Automotive GSL395 ■ 165LPH @ Free Flow
- 43mm dia ■ M10x1.0 inlet/outlet
- Includes 10mm Barbs



### EFP-600

- Raceworks Red (Holley Style)
- 367LPH @ Freeflow
- 3/8" NPT Inlet/Outlet



### EFP-601

- Raceworks Blue (Holley Style)
- 416LPH @ Freeflow
- 3/8" NPT Inlet/Outlet



### EFP-602

- Raceworks Black (Holley Style)
- 530LPH @ Freeflow
- 3/8" NPT Inlet/Outlet
- E85 safe



**FOR FUEL CELLS AND SURGE TANKS, SEE PAGE 175**
**PUMP HANGERS AND WELD RINGS**
**ALY-131BK** suits 39-40mm dia Pumps

**ALY-132BK** suits 38mm dia Pumps

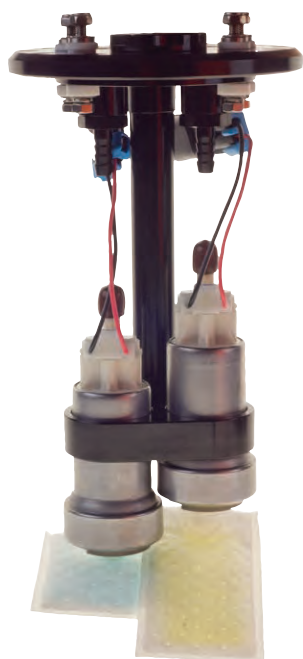
- Dual Stainless Electrical Terminals with PTFE Seals, allowing the pumps to be staged
- AN-8 ORB Ports
- Anodised in black
- Viton O-Rings supplied with PTFE Intank Hose and Stainless Clamps
- Single/Twin Pump Hanger
- Height adjustable
- Originally designed as a drop-in unit for Raceworks Fuel Cells
- Contains Fuel Filler
- Can also be used as a universal hanger
- Suits tanks 180-250mm in height
- For merging two outlets into a single fuel line, it is recommended to use twin **RWF-922-08BK** fittings, **RWF-939-08-08BK** Y-Block, and **RWF-909** series fitting for Return port


**ALY-131BK COMPATIBILITY LIST**

Raceworks	Ti Automotive (Walbro)
EFP-500	EFP-057 (GSS341)
	EFP-058 (GSS342)
	EFP-264 (GSS340)
	EFP-287 (F90000267)*
	EFP-324 (F90000262)*
	EFP-452 (F90000274)*
	EFP-530 (F90000285)*
	EFP-622 (F90000295)*
	EFP-624 (GSS350)
	EFP-625 (GSS351)
	EFP-626 (GSS352)

**ALY-132BK COMPATIBILITY LIST**

Raceworks	Denso	Pierburg
EFP-501	EFP-320 (195131-9520)	EFP-089 (7.21088.62.0)

**TI AUTOMOTIVE F SERIES PUMP COMPATIBILITY**


- \*Ti Automotive F Series pumps don't sit level, due to Raceworks Fuel Cell Filler holes being too small to install the pumps – therefore, use one pump with FPS-067 45° strainer
- Ensure both strainers are bottomed out on the tank floor F Series pumps will happily lift 1.5"
- This method is tested and proven to work successfully



- Fitted with Twin **EFP-500** Pumps



- Fitted with Twin **EFP-089** Pumps

**WELD RINGS FOR UNIVERSAL USE**

**ALY-119-A** Aluminium

**ALY-119-S** Steel

- See [raceworks.com.au](http://raceworks.com.au) for dimensions

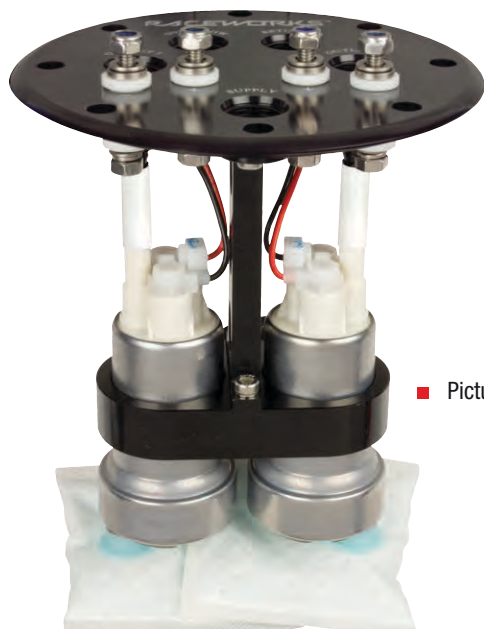


**FOR FUEL CELLS AND SURGE TANKS, SEE PAGE 175**

**PUMP HANGERS AND WELD RINGS**

**ALY-086BK**

- Single/Twin Pump Hanger
- As found in our **ALY-083BK** Surge Tank
- Can also be used as a universal hanger
- Suits tanks 180-220mm in height
- Dual Stainless Electrical Terminals with PTFE Seals, allowing the pumps to be staged
- AN-8 ORB Ports
- Anodised in black
- Viton O-Rings supplied with PTFE Intank Hose and Stainless Clamps
- Suits 39-40mm dia Pumps



- Pictured with Twin **EFP-287** Pumps

**ALY-086BK COMPATIBILITY LIST**

Raceworks	Ti Automotive (Walbro)
EFP-500	EFP-057 (GSS341)
	EFP-058 (GSS342)
	EFP-264 (GSS340)
	EFP-287 (F90000267)
	EFP-324 (F90000262)
	EFP-452 (F90000274)
	EFP-530 (F90000285)
	EFP-622 (F90000295)
	EFP-624 (GSS350)
	EFP-625 (GSS351)
	EFP-626 (GSS352)

**WELD RING**



- **ALY-085-A** Aluminium
- **ALY-085-S** Steel
- See [raceworks.com.au](http://raceworks.com.au) for dimensions

**DROP-IN UPGRADE FUEL PUMP MODULE**

**EFP-529**

- Ti Automotive (USA)
- Suits Ford Mustang V8 2015 onwards
- 13% more flow over factory
- Designed for tuned aspirated vehicles



## FUEL PUMPS

### MRA CONVERSION KITS

**Raceworks Module Reservoir Assembly Conversion Kits**, allow a modern EFI Fuel Pump module to be retrofitted to an older factory or custom made fuel tank. This provides a simple solution when doing EFI conversions on older vehicles. As part of the MRA, you get a swirl pot, pump, level sender and in some cases a Fuel Pressure Regulator. The kits come with rings that you bolt or weld to your tank, then drop the module in and bolt it down. A super simple and neat solution.



#### VE Commodore MRA

- With Steel Weld Ring **FSA-502**
- With Aluminium Weld Ring **FSA-509**
- Bolt in Kit **FSA-517**
- Dead end 4Bar system (58psi)
- Built in Fuel Pressure Regulator
- Suitable for Tanks 155mm to 180mm High
- Fuel Level Sender Resistance 40-250 Ohms
- Fuel Pump flows 115LPH @ 4Bar with a 9A Current Draw
- Includes Aluminium Top Clamp Ring, Stainless Cap Screws and washers, fuel safe seal, 3/8" Quick Disconnect to Barb fitting and Electrical Connector



#### BA Falcon MRA

- With Steel Weld Ring **FSA-508**
- With Aluminium Weld Ring **FSA-512**
- Bolt in Kit **FSA-516**
- Return system
- Suitable for Tanks 180mm to 215mm high
- No Fuel Level Sender
- Fuel Pump flows 185LPH @ 3Bar with an 8A Current Draw
- Includes Aluminium Top Clamp Ring, Stainless Cap Screws and washers, fuel safe seal, 3/8" and 5/16" Quick Connect Adapters and Electrical Connector

#### VT Commodore MRA

- With Steel Weld Ring **FSA-503**
- With Aluminium Weld Ring **FSA-510**
- Bolt in Kit **FSA-515**
- Return system
- Suitable for Tanks 255mm to 310mm High
- Fuel level sender resistance 39-246 Ohms
- Fuel Pump flows 145LPH @ 3Bar with an 8A current draw
- Includes Aluminium Top Clamp Ring, Stainless Cap Screws and Washers, Fuel Safe Seal, 3/8" and 5/16" Quick disconnect to Barb Fittings and Electrical Connector



#### VX Commodore MRA

- With Steel Weld Ring **FSA-504**
- With Aluminium Weld Ring **FSA-511**
- Bolt in Kit **FSA-514**
- Dead end 4Bar system (58psi)
- Built in Fuel Pressure Regulator
- Suitable for Tanks 255mm to 310mm High
- Fuel Level Sender Resistance 39-246 Ohms
- Fuel Pump flows 160LPH @ 4Bar with an 8A Current Draw
- Includes Aluminium Top Clamp Ring, Stainless Cap Screws and washers, fuel safe seal, 3/8" and 5/16" Quick Disconnect to Barb fittings and Electrical Connector



■ For Alternative Quick Disconnect fittings, refer to page 130

## FUEL FILTERS

### INLINE FILTERS WITH BARBS



- 5/16" Barbs **ALY-098** ■ 3/8" Barbs **ALY-099**
- 30 Micron sintered bronze elements
- E85 safe
- Body length 65mm
- Maximum flow rate @ 3Bar – 270LPH\*
- For mounting, use **RWF-158-25MM P-Clips**

#### ALY-100

- Replacement 30 Micron Sintered Bronze Element
- Lifetime / Washable



### REPLACEMENT BILLET FILTER ELEMENTS

	Part No.
10 Micron	<b>ALY-082-10</b>
40 Micron	<b>ALY-082-40</b>
75 Micron	<b>ALY-082-75</b>
100 Micron	<b>ALY-082-100</b>
Replacement O-Ring	<b>RWM-007</b>

- Raceworks also do this Filter combined with a Bosch Fuel Pressure Regulator, see page 47 for more details
- \*Maximum flow rates measured with a pressure drop across the filter of 2psi

### BILLET INLINE FILTERS



- Stainless elements
- E85 safe
- Body length 140mm
- 50mm dia
- AN-10 ORB Ports

### BILLET INLINE FILTERS

	Part No.	Maximum Flow Rate @ 3Bar*
10 Micron	<b>ALY-077-10BK</b>	1500LPH
40 Micron	<b>ALY-077-40BK</b>	1800LPH
75 Micron	<b>ALY-077-75BK</b>	2100LPH
100 Micron	<b>ALY-077-100BK</b>	2400LPH
Housing Only	<b>ALY-077BK</b>	–

### INLET / OUTLET FITTINGS

AN-6 Male Flare Straight	<b>RWF-920-06-10BK</b>
AN-8 Male Flare Straight	<b>RWF-920-08-10BK</b>
AN-10 Male Flare Straight	<b>RWF-920-10BK</b>
AN-10 Male Flare Straight Long	<b>RWF-920-10LBK</b>
AN-12 Male Flare Straight	<b>RWF-920-12-10BK</b>
AN-10 Male Flare 45deg	<b>RWF-923-10BK</b>
AN-8 Male Flare 90deg	<b>RWF-922-08-10BK</b>
AN-10 Male Flare 90deg	<b>RWF-922-10BK</b>
AN-12 Male Flare 90deg	<b>RWF-922-12-10BK</b>
AN-6 Banjo Kit	<b>RWF-909-06-10BK</b>
AN-8 Banjo Kit	<b>RWF-909-08-10BK</b>
AN-10 Banjo Kit	<b>RWF-909-10BK</b>
AN-10 Female AN Swivel	<b>RWF-907-10BK</b>
AN-10 Male Flare with NPT Port	<b>RWF-904-10BK</b>
AN-8 ORB	<b>RWF-921-08-10BK</b>
AN-10 ORB	<b>RWF-921-10-10BK</b>
5/16" Barb Straight	<b>RWF-414-10-05BK</b>
3/8" Barb Straight	<b>RWF-414-10-06BK</b>
1/2" Barb Straight	<b>RWF-414-10-08BK</b>
5/8" Barb Straight	<b>RWF-414-10-10BK</b>
3/8" Barb 90Deg	<b>RWF-415-10-06BK</b>
1/2" Barb 90Deg	<b>RWF-415-10-08BK</b>



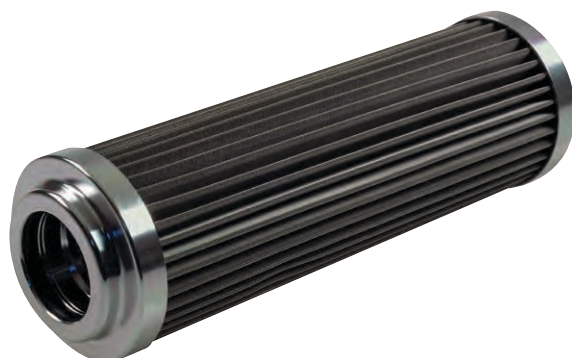
## FUEL FILTERS

### PRO BILLET INLINE FILTER HOUSING



#### ALY-077BKL

- Body length 200mm
- 50mm dia
- AN-12 ORB ports



#### INLET / OUTLET FITTINGS

AN-6 Male Flare Straight	RWF-920-06-12BK
AN-8 Male Flare Straight	RWF-920-08-12BK
AN-10 Male Flare Straight	RWF-920-10-12BK
AN-12 Male Flare Straight	RWF-920-12BK
AN-12 Male Flare Straight Long	RWF-920-12LBK
AN-16 Male Flare Straight	RWF-920-16-12BK
AN-12 Male Flare 45°	RWF-923-12BK
AN-12 Male Flare 90°	RWF-922-12BK

#### STAINLESS E85 SAFE FILTER ELEMENTS

	Part No.	Maximum Flow Rate @ 3Bar*
10 Micron	ALY-082-10L	2200LPH
40 Micron	ALY-082-40L	2600LPH
75 Micron	ALY-082-75L	3000LPH
Replacement O-Ring	RWM-007	

- \*Maximum flow rates measured with a pressure drop across the filter of 2psi

**TECH TIP –**  
**WHICH MICRON LEVEL IS SUITABLE,**  
**AND WHERE SHOULD FILTERS**  
**BE SITUATED?**

The lower the micron level, the finer the particle it filters, but the more restrictive the filter is on flow. One way to offset this, is by going for a larger Filter with more surface area, giving you extra flow. Raceworks recommend a 100 or 75 Micron Filter for use pre-pump, and a 40 or 10 Micron Filter for use post-pump (Pre Injectors).

### 50mm DIA FILTER BRACKET

- Includes optional spacer for mounting a filter directly to a Raceworks Surge Tank

#### ALY-076BK



## FUEL PRESSURE REGULATORS AND GAUGES

### FUEL PRESSURE REGULATOR ADAPTERS SUITS BOSCH REGULATORS



#### ALY-135BK

- Raceworks FPR Adapter
- Houses a Bosch Pot Style Regulator (not included and found below)
- 3 x AN-6 ORB Ports
- Optional 1/8" NPT Gauge Port

#### ALY-176BK

- Raceworks Billet Inline Filter Endcap
- Houses a Bosch Pot Style Regulator (not included and found below)
- AN-10 ORB outlet to engine
- AN-6 ORB return port
- This end cap combines a regulator and Fuel Filter into one super neat unit – see images to the right
- This unit would commonly be mounted in the rear of the vehicle near the fuel pump, meaning a short return line is used, and the fuel system operates as a Dead End System



- Suitable fittings can be found on page 51

### BOSCH REGULATORS

#### FPR-044

- Bosch 3Bar Regulator
- Bypass rate of 350LPH



#### FPR-050

- Bosch 4Bar Regulator
- Bypass rate of 350LPH



## FUEL PRESSURE REGULATORS AND GAUGES

### EFI ADJUSTABLE PRESSURE REGULATORS

- All PAT Performance Adjustable Fuel Pressure Regulators feature Gauge Ports and Boost Reference Ports
- They all rise at a rate of 1:1 ■ Turbosmart, Fuelab and Raceworks Regulators are E85 Safe

#### FPR-501BK

- Raceworks
- 3xAN-6 Ports
- Bypass rate of 550LPH
- 40-75psi Base Pressure



#### FPR-502BK

- Raceworks
- 3xAN-10 Ports
- Bypass Rate of 550LPH
- 40-75psi Base Pressure



#### FPR-068

- Sard
- 2x1/8" NPT Ports
- 1/8" BSPT Gauge Port, for NPT Adapter see page 114
- Bypass rate of 800LPH
- 29-116psi Base Pressure
- Black also available



#### FL-53501-1

- Fuelab ■ 3xAN-6 Ports
- Bypass rate of 570LPH
- 25-90psi Base Pressure



#### FL-54501-1

- Fuelab ■ 2xAN-6 Ports ■ Inline Regulator
- Bypass rate of 570LPH
- 25-90psi Base Pressure



#### FL-51501-1

- Fuelab ■ 2xAN-10 Ports ■ AN-6 Return
- Bypass Rate of 570LPH
- 25-90psi Base Pressure

#### TS-0401-1102

- Turbosmart
- FPR800
- 3x1/8" NPT Ports
- Bypass Rate of 800LPH
- 30-90psi Base Pressure
- Other colours available



#### TS-0401-1104

- Turbosmart
- FPR1200
- 3xAN-6 Ports
- Bypass Rate of 1200LPH
- 30-90psi Base Pressure
- Other colours available



#### TS-0401-1106

- Turbosmart
- FPR2000
- 3xAN-8 Ports
- Bypass Rate of 2000LPH
- 30-90psi Base Pressure
- Other colours available



#### FL-56501-1

- Fuelab
- 3xAN-10 Ports
- Bypass Rate of 1800LPH
- 20-65psi Base Pressure



#### FL-56504-1

- Fuelab
- 3xAN-10 Ports
- Bypass Rate of 1800LPH
- 40-85psi Base Pressure



### TECH TIP – HOW IS AN EFI FUEL PRESSURE REGULATOR PLUMBED?

In OE applications, Pressure Regulators generally have an Inlet and Return/Outlet port. Aftermarket regulators operate the same way, but in almost all applications, add a second inlet port. These two inlet ports can also be used as outlets, and have no direction. This extra inlet/outlet port allows the aftermarket regulator to be mounted on either the fuel feed line, or return line. What is critical, is the return port on the bottom of the regulator, which must be plumbed back to the fuel or surge tank, and not blocked under any circumstances.

- Suitable Fittings can be found on page 51



## FUEL PRESSURE REGULATORS AND GAUGES

### EFI FUEL PRESSURE GAUGES

#### FSA-506BK

- Raceworks
- 0-100psi



#### TS-0402-2023

- Turbosmart
- 0-100psi
- 0-7Bar



#### FL-71511

- Fuelab
- 0-120psi
- 0-8Bar



**NOTE:** All PAT Performance EFI Fuel Pressure Gauges have a 1/8" NPT Thread, and fit all Raceworks, Turbosmart and Fuelab Regulators

### TECH TIP – MAINTAINING LIQUID FILLED GAUGES

Over time liquid filled pressure gauges may build up pressure that can affect their accuracy.

It is recommended that periodically you disconnect the gauge, place it face down and remove the rubber grommet to release any pressure that has built up. This will ensure that they read as accurately as possible.



### TECH TIP – CORRECT WAY TO FIT GAUGES



When installing fuel pressure gauges, you may hold the gauge body to start the thread. Once the thread is engaged, **DO NOT** tighten the gauge using the gauge body. A spanner **MUST** be used on the brass fitting to tighten, to ensure the gauge doesn't twist off the brass body causing damage.



## FUEL PRESSURE REGULATORS AND GAUGES

### LOW PRESSURE / CARBY ADJUSTABLE PRESSURE REGULATORS

#### FL-51503-1

- Fuelab
- Return style reg
- 4.0 – 12psi
- AN-10 Ports
- AN-6 return
- 570LPH bypass rate



#### FL-56502-1

- Fuelab
- Return style reg
- 4.0 – 12psi
- AN-10 Ports
- 1200LPH bypass rate



#### FL-57501-1

- Fuelab
- Blocking type
- 4.5 – 9psi
- AN-6 Ports
- 300LPH flow capacity



#### FL-55501-1

- Fuelab
- Blocking type
- 4.0 – 12psi
- AN-8 Ports
- 380LPH flow capacity



#### FL-55502-1

- Fuelab
- Blocking type
- 1 – 3psi
- AN-8 Ports
- 285LPH flow capacity



### LOW PRESSURE / CARBY FUEL PRESSURE GAUGE

#### FL-71502

- Fuelab
- 0 – 15psi



### TECH TIP –

### HOW IS A CARBURETTOR FUEL PRESSURE REGULATOR PLUMBED?

Low Pressure Regulators are available in two different styles, Blocking Type and Return Style. Return Style Regulators are plumbed the same way as EFI regulators on the previous page. Blocking Type regulators work differently. There is no return line. The inlet is always on the bottom of the Regulator. The two side ports are outlets. These can feed twin carbs, or one side port can be blocked or adapted to use a Low Pressure Gauge.

■ Suitable fittings can be found on the next page

## FUEL PRESSURE REGULATORS AND GAUGES

### 1/8" NPT ADAPTER FITTINGS

AN-4 Male Flare Straight	RWF-380-04SS
AN-6 Male Flare Straight	RWF-816-06-02BK
AN-8 Male Flare Straight	RWF-816-08-02BK
AN-4 Male Flare 45°	RWF-823-04BK
AN-6 Male Flare 45°	RWF-823-06-02BK
AN-4 Male Flare 90°	RWF-822-04BK
AN-6 Male Flare 90°	RWF-822-06-02BK
1/4" Barb Straight	RWF-421-02-04BK
5/16" Barb Straight	RWF-421-02-05BK
1/4" Barb 45°	RWF-422-02-04BK
5/16" Barb 45°	RWF-422-02-05BK
1/4" Barb 90°	RWF-423-02-04BK
5/16" Barb 90°	RWF-423-02-05BK
1/8" NPT Male	RWF-911-02BK
1/8" NPT Female Extension	RWF-372-02BK
1/8" NPT Female 45°	RWF-915-02BK
1/8" NPT Female 90°	RWF-914-02BK
M10x1.0 Female	RWF-925-02-M10SS
Int Hex Plug	RWF-932-02SS

### AN-8 ORB ADAPTER FITTINGS

AN-6 Male Flare Straight	RWF-920-06-08BK
AN-8 Male Flare Straight	RWF-920-08BK
AN-8 Male Flare Straight Long	RWF-920-08LBK
AN-10 Male Flare Straight	RWF-920-10-08SS
AN-12 Male Flare Straight	RWF-920-12-08BK
AN-8 Male Flare 45°	RWF-923-08BK
AN-8 Male Flare 90°	RWF-922-08BK
AN-10 Male Flare 90°	RWF-922-10-08BK
AN-6 Banjo Kit	RWF-909-06-08BK
AN-8 Banjo Kit	RWF-909-08BK
AN-6 Female AN Swivel	RWF-907-06-08BK
AN-8 Female AN Swivel	RWF-907-10-08SS
AN-10 Male Flare with NPT Port	RWF-904-10-08BK
AN-6 ORB Male	RWF-921-06-08BK
AN-8 ORB Male	RWF-921-08-08BK
AN-10 ORB Male	RWF-921-02-10BK
5/16" Barb Straight	RWF-414-08-05BK
3/8" Barb Straight	RWF-414-08-06BK
1/2" Barb Straight	RWF-414-08-08BK
5/16" Barb 90°	RWF-415-08-05BK
3/8" Barb 90°	RWF-415-08-06BK
1/2" Barb 90°	RWF-415-08-08BK
1/8" NPT Female Port	RWF-813-08-02BK
M10x1.0 Female Port	RWF-813-08-M10BK
Int Hex Plug	RWF-814-08BK
Ext Hex Plug	RWF-813-08BK

### AN-6 ORB ADAPTER FITTINGS

AN-4 Male Flare Straight	RWF-920-04-06BK
AN-6 Male Flare Straight	RWF-920-06BK
AN-6 Male Flare Straight Long	RWF-920-06LBK
AN-8 Male Flare Straight	RWF-920-08-06BK
AN-10 Male Flare Straight	RWF-920-10-06BK
AN-6 Male Flare 45°	RWF-923-06BK
AN-6 Male Flare 90°	RWF-922-06BK
AN-8 Male Flare 90°	RWF-922-08-06BK
AN-6 Banjo Kit	RWF-909-06BK
AN-6 Female AN Swivel	RWF-907-06BK
AN-6 ORB Male	RWF-921-06-06BK
AN-8 ORB Male	RWF-921-06-08BK
5/16" Barb Straight	RWF-414-06-05BK
3/8" Barb Straight	RWF-414-06-06BK
5/16" Barb 90°	RWF-415-06-05BK
3/8" Barb 90°	RWF-415-06-06BK
1/8" NPT Female Port	RWF-813-06-02BK
M10x1.0 Female Port	RWF-813-06-M10BK
Int Hex Plug	RWF-814-06BK
Ext Hex Plug	RWF-813-06BK

### AN-10 ORB ADAPTER FITTINGS

AN-6 Male Flare Straight	RWF-920-06-10BK
AN-8 Male Flare Straight	RWF-920-08-10BK
AN-10 Male Flare Straight	RWF-920-10BK
AN-10 Male Flare Straight Long	RWF-920-10LBK
AN-12 Male Flare Straight	RWF-920-12-10BK
AN-10 Male Flare 45°	RWF-923-10BK
AN-8 Male Flare 90°	RWF-922-08-10BK
AN-10 Male Flare 90°	RWF-922-10BK
AN-12 Male Flare 90°	RWF-922-12-10BK
AN-6 Banjo Kit	RWF-909-06-10BK
AN-8 Banjo Kit	RWF-909-08-10BK
AN-10 Banjo Kit	RWF-909-10BK
AN-10 Female AN Swivel	RWF-907-10BK
AN-10 Male Flare with NPT Port	RWF-904-10BK
AN-8 ORB Male	RWF-921-08-10BK
AN-10 ORB Male	RWF-921-10-10BK
5/16" Barb Straight	RWF-414-10-05BK
3/8" Barb Straight	RWF-414-10-06BK
1/2" Barb Straight	RWF-414-10-08BK
5/8" Barb Straight	RWF-414-10-10BK
3/8" Barb 90°	RWF-415-10-06BK
1/2" Barb 90°	RWF-415-10-08BK
1/8" NPT Female Port	RWF-813-10-02BK
Int Hex Plug	RWF-814-10BK
Ext Hex Plug	RWF-813-10BK



## FUEL PULSATION DAMPERS



**FPR-117**

■ Bosch

- Can be used on the end of the Raceworks Fuel Filter using **ALY-176BK**
  - Can also be used inline on a Hose using **ALY-135BK**
    - Refer to page 47 for Housings



**ALY-057-08BK**

■ Raceworks ■ AN-8 ORB

- Suitable for mounting on Fuel Pressure Regulators, Fuel Rails, or inline on a Fuel Hose



**ALY-057-06BK**

- Raceworks ■ AN-6 ORB
- Suitable for mounting on Fuel Pressure Regulators, Fuel Rails, or inline on a Fuel Hose



### TECH TIP –

### WHAT ARE FUEL PULSATION DAMPERS?

A Fuel Pulsation Damper is used to smoothen the Fuel Pressure and regulate the oscillation of fuel caused by the injectors opening and closing. It uses a diaphragm to absorb pulses in the fuel. They are commonly used in OE applications, and in performance applications can be useful if fuel pressure isn't stable. This is more common when there isn't rubber hose present in the fuel system, which helps to absorb pulsations, more so than PTFE or Hard Line. Pulsations may also be increased with larger injectors.

## FUEL RAILS

Raceworks Fuel Rails facilitate the fitment of modern Top Feed Injectors. They provide a larger diameter bore for more flow, supporting significant increases in power. The use of threaded AN fittings provides a convenient high-flow plumbing solution with an impressive finish.

### FUEL RAILS TO SUIT CHEVROLET / HOLDEN



ALY-012BK



ALY-015BK



ALY-016BK



ALY-032BK



ALY-017BK

### FUEL RAILS TO SUIT CHEVROLET / HOLDEN SPECIFICATIONS

Part No.	Suits Engines	Injector Upper O-Ring Diameter	Injector Length	End Ports	Centre Port	Injectors On Page
ALY-012BK	RB30E/RB30ET (3.0L)	14mm	Full Length	AN-8	AN-6	69
ALY-015BK	304 (5.0L)	14mm	Full Length	AN-8	—	70
ALY-016BK	LS1 (5.7L)	14mm	Full Length	AN-8	AN-8	67
ALY-017BK	LS2/LS3/L76/L77/L98 (6.0/6.2L)	14mm	Short	AN-8	AN-8	71
ALY-032BK	LS7 (7.0L)	14mm	Short and 3/4 Length	AN-8	AN-8	71

## FUEL RAILS

### FUEL RAILS TO SUIT FORD



ALY-108BK

ALY-011BK

### FUEL RAILS TO SUIT FORD SPECIFICATIONS

Part No.	Suits Vehicle	Injector Upper O-Ring Diameter	Injector Length	End Ports	Centre Port	Injectors On Page
ALY-107BK	EF-BF Falcon (4.0L)	14mm	Short	AN-8	AN-6	68
ALY-108BK	EF-BF Falcon (4.0L)	14mm	3/4 Length	AN-8	AN-6	68
ALY-011BK	FG Falcon Turbo (4.0L)	14mm	3/4 Length	AN-8	AN-6	67

### FUEL RAILS TO SUIT MAZDA



ALY-095BK

ALY-019BK

ALY-020BK

### FUEL RAILS TO SUIT MAZDA SPECIFICATIONS

Part No.	Suits Vehicle	Injector Upper O-Ring Diameter	Injector Length	End Ports	Injectors On Page
ALY-095BK	Cosmo JC 13BT	14mm	Full Length	AN-8	73
ALY-019BK	RX-7 S4/5 13BT	14mm	Full Length	AN-8	73
ALY-020BK	RX-7 S6/7/8 13BT	14mm	Full Length	AN-8	73

### TECH TIP – WHEN SHOULD A FUEL RAIL BE TWIN FED?

In OE applications, Fuel rails are almost always fed at one end, and returned back to tank from the other. When significantly increasing flow/power many choose to 'twin feed' the rail.

That is, inlet at both ends, and return in the middle. This is more commonly done on longer 6cyl fuel rails. The thought process is that the fuel needs to travel less distance in the rail, which distributes the fuel more evenly to the injectors. Our recommendation is that, under 700HP in a short rail or 1000HP in a long rail, single entry is sufficient, and keeps the fuel flowing smoothly in one direction.



## FUEL RAILS

### FUEL RAILS TO SUIT NISSAN



ALY-029BK



ALY-031BK



ALY-030BK



ALY-012BK



ALY-033BK



ALY-034BK



ALY-035BK



ALY-039BK



ALY-028BK



ALY-036BK

### FUEL RAILS TO SUIT NISSAN SPECIFICATIONS

Part No.	Suits Engine	Injector Upper O-Ring Diameter	Injector Length	End Ports	Centre Port	Injectors On Page
ALY-029BK	RB25DE/RB25DET (2.5L)	14mm	Short, 3/4 or Full Length	AN-8	AN-6	77
ALY-031BK	RB25DE/RB25DET NEO (2.5L)	14mm	3/4 or Full Length	AN-8	AN-6	78
ALY-030BK	RB26DETT (2.6L)	14mm	Full Length	AN-8	AN-6	78
ALY-012BK	RB30E (3.0L)	14mm	Full Length	AN-8	AN-6	69
ALY-033BK	SR20DE/DET (2.0L)	14mm	Short, 3/4 or Full Length	AN-8	AN-6	76
ALY-034BK	SR20DE/DET VCT (2.0L)	14mm	Short	AN-8	AN-8	76
ALY-035BK	SR20VE P11 (2.0L)	14mm	Short	AN-8	AN-6	76
ALY-039BK	FJ20E/FJ20ET (2.0L)	14mm	Full Length w/ Extended Nose	AN-8	AN-6	77
ALY-028BK	TB45E (4.5L)	14mm	Short	AN-8	AN-6	77
ALY-036BK	TB48DE (4.8L)	14mm	Full Length	AN-8	—	77

## FUEL RAILS

### FUEL RAILS TO SUIT MITSUBISHI



ALY-025BK



ALY-026BK

#### FUEL RAILS TO SUIT MITSUBISHI SPECIFICATIONS

Part No.	Suits Vehicle	Injector Upper O-Ring Diameter	Injector Length	End Ports	Centre Port	Injectors On Page
ALY-025BK	EVO IV-IX 4G63T (2.0L)	14mm	Full Length	AN-8	AN-8	75
ALY-026BK	EVO X 4B11T (2.0L)	14mm	Full Length	AN-10	—	75

### FUEL RAILS TO SUIT SUBARU



ALY-122BK



ALY-096BK



ALY-097BK

#### FUEL RAILS TO SUIT SUBARU SPECIFICATIONS

Part No.	Suits Vehicle	Injector Upper O-Ring Diameter	Injector Length	End Ports	Injectors On Page
ALY-122BK	BRZ (2.0L)	14mm	Short	AN-8	79
ALY-096BK	WRX EJ20 V3/4 (2.0L)	14mm	Short w/ Extended Nose	AN-8	78
ALY-097BK	WRX EJ20 V5/6 (2.0L)	14mm	Short w/ Extended Nose	AN-8	78

## FUEL RAILS

### FUEL RAILS TO SUIT TOYOTA



ALY-122BK

ALY-040BK

### FUEL RAILS TO SUIT TOYOTA SPECIFICATIONS

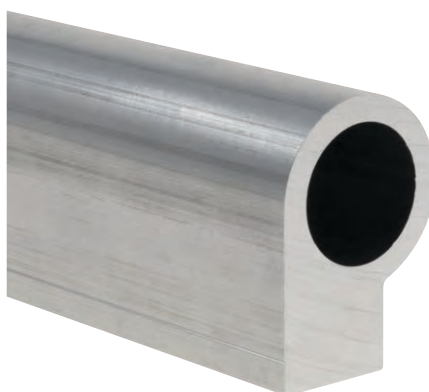
Part No.	Suits Vehicle	Injector Upper O-Ring Diameter	Injector Length	End Ports	Centre Port	Injectors On Page
ALY-122BK	86 (2.0L)	14mm	Short	AN-8	—	79
ALY-040BK	Supra 2JZGTE (3.0L)	14mm	Short, 3/4 or Full Length	AN-8	AN-8	79

### BARE EXTRUSION

**Looking to make your own Fuel Rail?** Raceworks have an extensive range of Fuel Rail Extrusion and Mounting Hardware. Ensure you consult an expert with appropriate machinery to perform this task!



A-Series



A-Series Large Bore



C-Series

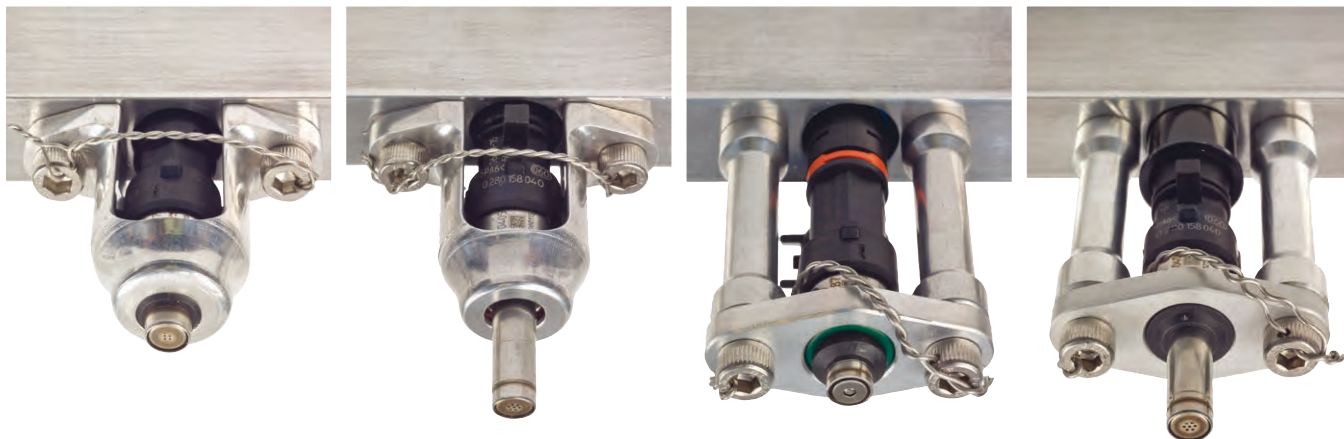
### SPECIFICATIONS

Part No.	Series	Length	Suits	Bore Size	Profile
ALY-084	A Series	600mm	5cyl, I6, V10 and V12	17.2mm	Rounded
ALY-109	A Series	400mm	I3, 4cyl, Flat6, V6 and V8	17.2mm	Rounded
ALY-110	A Series Large Bore	600mm	5cyl, I6, V10 and V12	20mm	Rounded
ALY-111	A Series Large Bore	400mm	I3, 4cyl, Flat6, V6 and V8	20mm	Rounded
ALY-006	C Series	600mm	5cyl, I6, V10 and V12	16mm	Square
ALY-007	C Series	400mm	I3, 4cyl, Flat6, V6 and V8	16mm	Square



## FUEL RAILS

### EXTERNAL INJECTOR MOUNTS



External Injector Mounts, complete with Stainless Steel Cap Screws pre-drilled for use with the included lock wire

- Injectors NOT Included with Mounts
- Suits Short Injector **ALY-093**
- Suits 3/4 Length Injector **ALY-094**



**ALY-150**



**ALY-146**

- Individual Mounts used for adding extra injectors or plumbing injectors without a fuel rail
- Has a 1/4" NPT inlet
- Screw On Mounts have an M16x2.0 thread
- Install with the supplied O-ring and seal using Loctite Primer 7649 and Thread Sealer 577
- Injectors NOT Included with Mounts

#### EXTERNAL INJECTOR MOUNTS

Part No.	Suits Injector Length	Type
ALY-145	Full Length	Weld On
ALY-146	3/4 Length	Weld On
ALY-147	Short	Weld On
ALY-148	Full Length	Screw On
ALY-149	3/4 Length	Screw On
ALY-150	Short	Screw On



## FUEL RAILS

### FUEL RAIL EXTRUSION MOUNTING HARDWARE



#### Fuel Rail CLEVISES

##### ALY-112

- Use with our posts to mount your extrusion
- Supplied with an M4 screw to go through rail
- Use an M6 Cap screw down through post
- Suitable for use with A-Series and A-Series Large Bore extrusion
- C-series requires minor filing of the clevis



#### Fuel Rail POSTS

- Fuel Rail Posts have a 7mm thick base that you can machine to fine-tune length
- Includes a cap screw

##### FUEL RAIL POSTS

Part No.	Length
ALY-113-34MM	34mm
ALY-113-41MM	41mm
ALY-113-46MM	46mm
ALY-113-55MM	55mm
ALY-113-58MM	58mm
ALY-113-62MM	62mm
ALY-113-74MM	74mm
ALY-113-86MM	86mm

### LOWER INJECTOR BOSSES

- All Raceworks Injector Bosses suit 14mm Injector Lower O-Rings



##### ALY-044BK

- 6 Pack suits Nissan R33 RB25 and S14/S15 SR20



##### ALY-051BK

- 4 Pack suits Nissan S13 SR20



##### ALY-045BK

- 4 Pack suits Mazda RX7 13BT S4 onwards



##### ALY-046BK

- 6 Pack suits Toyota 1JZ/2JZ



##### RWF-989-99-A

- Aluminium Weld Boss

## FUEL INJECTORS

### INJ-158

- Bosch EV14 312cc
- 3/4 Length
- USCAR Connector
- 14mm Upper O-Ring
- 15mm Lower O-Ring
- Ethanol / Methanol safe



### INJ-215

- Bosch EV6 324cc
- 3/4 Length
- Bosch Connector
- 14mm O-Rings



### INJ-307

- Bosch EV14 347cc
- Short with Extended Nose
- Bosch Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-189

- Bosch EV14 354cc
- Short
- USCAR Connector
- 14mm Upper O-Ring
- 15mm Lower O-Ring
- Ethanol / Methanol safe



### INJ-007

- Bosch EV6 382cc
- Full Length
- Bosch Connector
- 14mm O-Rings



### INJ-142

- Denso 410cc
- 3/4 Length
- Denso Connector
- 11mm Upper O-Ring
- Square Section Lower Seal IJO-027 available separately



### INJ-035

- Bosch EV6 443cc
- Full Length
- Bosch Connector
- 14mm O-Rings



### INJ-106

- Denso 450cc
- Full Length
- Denso Connector
- 11mm Upper O-Ring
- Square Section Lower Seal IJO-027 available separately



### INJ-346

- Bosch EV6 453cc
- 3/4 Length
- Bosch Connector
- 14mm O-Rings



### INJ-029

- SMP 485cc
- Full Length
- D-JET Connector
- Hose Tail Upper
- Square Section Lower Seal IJO-029 available separately



### INJ-300

- Bosch EV14 495cc
- Short with Extended Nose
- Bosch Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-197

- Bosch EV14 500cc
- Short
- USCAR Connector
- 14mm Upper O-Ring
- 15mm Lower O-Ring
- Ethanol / Methanol safe



### INJ-198

- Bosch EV14 547cc
- Full Length
- USCAR Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-138

- Denso 550cc
- Full Length
- Denso Connector
- 11mm Upper O-Ring
- Square Section Lower Seal IJO-027 available separately



### INJ-161

- Bosch EV14 550cc
- 3/4 Length
- USCAR Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-098

- Siemens Deko IV 587cc
- 3/4 Length
- USCAR Connector
- 14mm O-Rings
- Ethanol safe



## TECH TIP – WHAT SIZE INJECTORS SHOULD I UPGRADE TO?

Injectors are a supporting modification. Our recommendation is to size them for the application, meaning don't use a larger injector unless it's required. A smaller injector will facilitate more precise tuning. For example, a 1% increase in duty cycle on a 500cc injector will add less fuel than the same increase on a 2200cc injector. You can find injector size calculators at [raceworks.com.au/calculators/](http://raceworks.com.au/calculators/)



## FUEL INJECTORS

### INJ-372

- Bosch EV14 621cc
- 3/4 Length
- USCAR Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-297

- Bosch EV14 627cc
- 3/4 Length with Extended Nose
- Bosch Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-022

- Siemens Dekal IV 668cc
- Full Length
- Bosch Connector
- 14mm O-Rings
- Ethanol safe



### INJ-022-11MM

- Siemens Dekal IV 668cc
- Full Length
- Bosch Connector
- 11mm Upper O-Ring
- Square Section Lower Seal
- Ethanol safe



### INJ-030

- Siemens Dekal IV 668cc
- Short
- Bosch Connector
- 14mm O-Rings
- Ethanol safe



### INJ-296

- Bosch EV14 731cc
- 3/4 Length
- Denso Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-301

- Bosch EV14 731cc
- Short
- USCAR Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-302

- Bosch EV14 731cc
- Short with Extended Nose
- Bosch Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-110

- Siemens Dekal IV 875cc
- Full Length
- Bosch Connector
- 14mm O-Rings
- Ethanol safe



### INJ-110-11MM

- Siemens Dekal IV 875cc
- Full Length
- Bosch Connector
- 11mm Upper O-Ring
- Square Section Lower Seal
- Ethanol safe



### INJ-162

- Siemens Dekal IV 875cc
- Short
- Bosch Connector
- 14mm O-Rings
- Ethanol safe



### INJ-208

- Bosch EV14 980cc
- Short with Extended Nose
- Bosch Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-213

- Bosch EV14 980cc
- 3/4 Length
- Uses Raceworks Lower Sleeve
- Bosch Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-506-11MM

- Bosch EV14 980cc
- Short with Extended Nose
- Bosch Connector
- 11mm Top O-Ring
- Square Section Lower Seal
- Ethanol / Methanol safe



### INJ-505-11MM

- Raceworks 980cc
- Modified Bosch EV14
- Full Length
- USCAR Connector
- 11mm Upper O-Ring
- Square Section Lower Seal
- Ethanol / Methanol safe



### INJ-505

- Raceworks 980cc
- Modified Bosch EV14
- Full Length
- USCAR Connector
- 14mm O-Rings
- Ethanol / Methanol safe



**TECH TIP – MY TUNER HAS ASKED ME TO GET A 60LB INJECTOR. HOW DO I CONVERT THIS TO CC?**

- The imperial units are pounds/hour
- The metric version is cubic centimetres/minute
- You can easily convert between these two at [raceworks.com.au/calculators/general-conversions/](http://raceworks.com.au/calculators/general-conversions/)

## FUEL INJECTORS

### INJ-501

- Raceworks 980cc
- Modified Bosch EV14
- 3/4 Length
- USCAR Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-500

- Raceworks 1100cc
- Modified Bosch EV14
- Short
- USCAR Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-502

- Raceworks 1200cc
- Modified Bosch EV14
- Short with Extended Nose
- Bosch Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-503

- Raceworks 1200cc
- Modified Bosch EV14
- 3/4 Length
- Uses Raceworks Lower Sleeve
- Bosch Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-504

- Raceworks 1200cc
- Modified Bosch EV14
- 3/4 Length
- Denso Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-504-11MM

- Raceworks 1200cc
- Modified Bosch EV14
- 3/4 Length
- Denso Connector
- 11mm Upper O-Ring
- Square Section Lower Seal
- Ethanol / Methanol safe



### INJ-223

- Raceworks (Bosch Motorsport) EV14 1500CC
- Short
- Bosch Connector
- 14mm O-Rings
- Ethanol / Methanol safe



### INJ-004

- Bosch EV14 1600cc
- Full Length
- Bosch Connector
- 14mm O-Rings
- CNG Injector
- Not Warranted for Liquid Fuels



### INJ-139

- Bosch EV14 2200cc
- Short
- Denso Connector
- 14mm O-Rings
- CNG Injector
- Not Warranted for Liquid Fuels



### INJ-318

- Bosch EV14 2200cc
- Short
- USCAR Connector
- 14mm O-Rings
- CNG Injector
- Not Warranted for Liquid Fuels



### INJ-329

- Bosch EV14 2200cc
- 3/4 Length
- Bosch Connector
- 14mm O-Rings
- CNG Injector
- Not Warranted for Liquid Fuels



### INJ-102

- Siemens Dekka IV 2433cc
- Full Length
- Bosch Connector
- 14mm O-Rings
- Low Impedance
- Ethanol / Methanol safe



## TECH TIP –

### HOW ARE RACEWORKS INJECTORS DIFFERENT FROM OTHER INJECTORS ON THE MARKET?

Injectors marked as Raceworks on pages 61–62, start off as a Bosch EV14 injector, before being flow tested/matched dynamically.

The injectors are bed in with 10,000 pulses, before being flowed at 3 different fuel pressures, 25 different pulse widths, and 10 different voltages. They are flowed individually and not in a batch, to accurately represent their operation in a vehicle.

They are then batched which results in a flow variance of  $\pm 1.5\%$ . This is especially important as injectors get larger.

Certain injectors are physically modified for ease of installation. Others are modified for additional flow. In addition to them being de-capped, they are precisely drilled to improve their spray pattern, an important step that is left out by many other brands.

Each set is sold with their relevant datasheet, and plug and play data for Ford and GM applications is available.

## FUEL INJECTOR ACCESSORIES

### FUEL INJECTOR EXTENSIONS



ALY-047BK



ALY-048BK



ALY-049BK



ALY-050BK



IJC-500

Part No.	Quantity	Application	Top O-Ring
ALY-047BK-4	4	3/4 Length – Full Length	11mm
ALY-047BK-6	6	3/4 Length – Full Length	11mm
ALY-048BK-4	4	3/4 Length – Full Length	14mm
ALY-048BK-6	6	3/4 Length – Full Length	14mm
ALY-049BK-4	4	Short – Full Length	11mm
ALY-049BK-6	6	Short – Full Length	11mm
ALY-050BK-4	4	Short – Full Length	14mm

Part No.	Quantity	Application	Top O-Ring
ALY-050BK-6	6	Short – Full Length	14mm
ALY-105BK-4	4	Short – 3/4 Length	11mm
ALY-105BK-6	6	Short – 3/4 Length	11mm
ALY-106BK-4	4	Short – 3/4 Length	14mm
ALY-106BK-6	6	Short – 3/4 Length	14mm
IJC-500	8pk Retaining Clips	Secures the extension to the injector. Not required in all applications but are recommended	

### TECH TIP – CAN YOU USE EXTENSIONS ON THE BOTTOM OF AN INJECTOR TO RAISE THE ELECTRICAL CONNECTOR HEIGHT?

This is not recommended, as it will affect the spray pattern of the injector. This is one of the reasons PAT has an extensive range of injectors in all three lengths, rather than simply using short injectors with extensions for every application.

### TECH TIP – ARE FILTER BASKETS REQUIRED IN EXTENSIONS OR INJECTORS?

Filter Baskets were commonly used in traditional EV1 injectors. They can be used in modern EV6 or EV14 style injectors, but these injectors have a strainer built in, therefore Filter Baskets aren't required, and in very high flow situations, can reduce flow.



Short with Extended Nose



Short



3/4 Length



Full Length



## FUEL INJECTOR ACCESSORIES

### FUEL INJECTOR LOWER SLEEVES

#### ALY-168BK

- Allows a Bosch Extended Nose Injector to be converted to a longer conventional Injector



ALY-168BK-4 Qty 4

ALY-168BK-6 Qty 6

#### FSA-501BK

- Converts a Bosch Extended Nose Injector to be a longer conventional Injector with square section lower seal
- Common in many Japanese applications



FSA-501BK-4 Qty 4



FSA-501BK-6 Qty 6



## FUEL INJECTOR ACCESSORIES

### HOSETAIL ADAPTER



#### ALY-166

- Allows the use of modern Injectors with 14mm Top O-Rings, to be converted for use with hose tails
- Commonly found in many early-EFI vehicles such as Nissan RB30 and FJ20
- Includes Retaining Clip, and suitable for Injectors with an upper clip groove



### FUEL INJECTOR REPLACEMENT O-RINGS



IJO-001



IJO-003



IJO-032



IJO-027



IJO-030

#### REPLACEMENT O-RINGS APPLICATIONS

Part No.	Qty	Application
IJO-001	10	Universal 14mm
IJO-001-25	25	Universal 14mm
IJO-001-100	100	Universal 14mm
IJO-001-1000	1,000	Universal 14mm
IJO-003	10	Universal 11mm
IJO-003-25	25	Universal 11mm
IJO-003-100	100	Universal 11mm
IJO-032	10	Universal 15mm
IJO-032-25	25	Universal 15mm

#### REPLACEMENT O-RINGS APPLICATIONS

Part No.	Qty	Application
IJO-027	10	Universal Square Section Lower Seals 15.8mm
IJO-027-25	25	Universal Square Section Lower Seals 15.8mm
IJO-027-100	100	Universal Square Section Lower Seals 15.8mm
IJO-030	10	Universal Square Section Lower Seals 14.7mm
IJO-030-25	25	Universal Square Section Lower Seals 14.7mm
IJO-030-100	100	Universal Square Section Lower Seals 14.7mm

All PAT Performance Injector Seals are E85 safe

### INJECTOR LOWER ADAPTER



#### ALY-075

- Suits Bosch EV14 Injectors in Honda B Series Engines

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## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
BMW E30 323i/325i		M20B23/M20B25 Inline6
BMW E36 325i/328i/M3		M50B25/M52B28/S50B30 Inline6
FORD FALCON EA-AU		Inline 6
FORD FALCON EA-EL		V8
FORD FALCON BA-BF		32V V8
FORD FALCON FG		Boss V8
HOLDEN COMMODORE VN-VY		V6
HOLDEN COMMODORE VT-VZ		LS1 V8
SIZE	PART NO.	ACCESSORIES REQUIRED
312cc	INJ-158	ALY-048BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
324cc	INJ-215	ALY-048BK
354cc	INJ-189	ALY-050BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
382cc	INJ-007	Direct Fit
443cc	INJ-035	Direct Fit
495cc	INJ-300	ALY-048BK ALY-168BK
547cc	INJ-198	CPS-045, CPS-162 or CPS-023
587cc	INJ-098	ALY-048BK CPS-045, CPS-162 or CPS-023
627cc	INJ-297	ALY-168BK
668cc	INJ-022	Direct Fit
731cc	INJ-302	ALY-048BK ALY-168BK
875cc	INJ-110	Direct Fit
980cc	INJ-213	ALY-048BK
1100cc	INJ-500	ALY-050BK CPS-045, CPS-162 or CPS-023
1200cc	INJ-503	ALY-048BK
1500cc	INJ-223	ALY-050BK

VEHICLE		ENGINE
BMW E46 328ci/330ci		M52TUB28/M54B30 Inline6
FORD FALCON FG/FG-X		Barra Non-Turbo Inline6
SIZE	PART NO.	ACCESSORIES REQUIRED
495cc	INJ-300	ALY-106BK
627cc	INJ-297	Direct Fit
731cc	INJ-302	ALY-106BK
980cc	INJ-208	ALY-106BK
1200cc	INJ-502	ALY-106BK

VEHICLE		ENGINE
BMW E46 M3		S54B32 Inline6
SIZE	PART NO.	ACCESSORIES REQUIRED
324cc	INJ-215	IJO-006 Lower O-Rings
453cc	INJ-346	IJO-006 Lower O-Rings

VEHICLE		ENGINE
FORD FALCON FG/FG-X		Barra Turbo Inline6
SIZE	PART NO.	ACCESSORIES REQUIRED
453cc	INJ-346	Direct Fit
495cc	INJ-300	ALY-168BK
550cc	INJ-161	CPS-045, CPS-162 or CPS-023
587cc	INJ-098	CPS-045, CPS-162 or CPS-023
621cc	INJ-372	CPS-045, CPS-162 or CPS-023
668cc	INJ-030	ALY-106BK
731cc	INJ-302	ALY-168BK
875cc	INJ-162	ALY-106BK
980cc	INJ-213	Direct Fit
1100cc	INJ-500	ALY-106BK CPS-045, CPS-162 or CPS-023
1200cc	INJ-503	Direct Fit
1500cc	INJ-223	ALY-106BK

## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
FORD FALCON BA-BF		Barra Inline 6
FORD TERRITORY SX-SY II		Barra Inline 6
WITH STANDARD FUEL RAIL		
SIZE	PART NO.	ACCESSORIES REQUIRED
312cc	INJ-158	ALY-048BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
324cc	INJ-215	ALY-048BK
354cc	INJ-189	ALY-050BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
382cc	INJ-007	Direct Fit
443cc	INJ-035	Direct Fit
495cc	INJ-300	ALY-048BK ALY-168BK
547cc	INJ-198	CPS-045, CPS-162 or CPS-023
587cc	INJ-098	ALY-048BK CPS-045, CPS-162 or CPS-023
627cc	INJ-297	ALY-168BK
668cc	INJ-022	Direct Fit
731cc	INJ-302	ALY-048BK ALY-168BK
875cc	INJ-110	Direct Fit
980cc	INJ-213	ALY-048BK
1100cc	INJ-500	ALY-050BK CPS-045, CPS-162 or CPS-023
1200cc	INJ-503	ALY-048BK
1500cc	INJ-223	ALY-050BK

VEHICLE		ENGINE
FORD FALCON BA-BF		Barra Inline 6
FORD TERRITORY SX-SY II		Barra Inline 6
WITH RACEWORKS ALY-107BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
354cc	INJ-189	CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
500cc	INJ-197	CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
668cc	INJ-030	Direct Fit
731cc	INJ-301	CPS-045, CPS-162 or CPS-023
875cc	INJ-162	Direct Fit
1100cc	INJ-500	CPS-045, CPS-162 or CPS-023
1500cc	INJ-223	Direct Fit
WITH RACEWORKS ALY-108BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
312cc	INJ-158	CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
324cc	INJ-215	Direct Fit
453cc	INJ-346	Direct Fit
495cc	INJ-300	ALY-168BK
550cc	INJ-161	CPS-045, CPS-162 or CPS-023
587cc	INJ-098	CPS-045, CPS-162 or CPS-023
621cc	INJ-372	CPS-045, CPS-162 or CPS-023
731cc	INJ-302	ALY-168BK
980cc	INJ-213	Direct Fit
1200cc	INJ-503	Direct Fit

## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
FORD FALCON AU		V8
FORD FALCON BA-BF		24V V8
FORD FALCON FG-X		Coyote Supercharged V8
FORD FOCUS LR-LV		Duratec 2.0L 4cyl
FORD MUSTANG		Coyote V8
MAZDA MX-5 NC		Inline 4
SIZE	PART NO.	ACCESSORIES REQUIRED
312cc	INJ-158	ALY-048BK IJO-001 Lower O-Rings
324cc	INJ-215	ALY-048BK CPS-058, CPS-164 or CPS-035
354cc	INJ-189	ALY-050BK IJO-001 Lower O-Rings
382cc	INJ-007	CPS-058, CPS-164 or CPS-035
443cc	INJ-035	CPS-058, CPS-164 or CPS-035
500cc	INJ-197	ALY-050BK IJO-001 Lower O-Rings
547cc	INJ-198	Direct Fit
587cc	INJ-098	ALY-048BK
627cc	INJ-297	CPS-058, CPS-164 or CPS-035 ALY-168BK
731cc	INJ-301	ALY-050BK
875cc	INJ-110	CPS-058, CPS-164 or CPS-035
980cc	INJ-505	Direct Fit
1100cc	INJ-500	ALY-050BK
1200cc	INJ-504	ALY-048BK CPS-116, CPS-160 or CPS-057
1500cc	INJ-223	ALY-050BK CPS-058, CPS-164 or CPS-035

VEHICLE		ENGINE
HOLDEN COMMODORE VL		RB30 Inline 6
NISSAN SKYLINE R31		RB30 Inline 6
WITH STANDARD FUEL RAIL		
SIZE	PART NO.	ACCESSORIES REQUIRED
443cc	INJ-035	ALY-166
485cc	INJ-029	CPS-052 IJO-030
668cc	INJ-022	ALY-166
875cc	INJ-110	ALY-166
2433cc	INJ-102	ALY-166
WITH RACEWORKS ALY-012BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
312cc	INJ-158	ALY-048BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
324cc	INJ-215	ALY-048BK
354cc	INJ-189	ALY-050BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
382cc	INJ-007	Direct Fit
443cc	INJ-035	Direct Fit
495cc	INJ-300	ALY-048BK ALY-168BK
547cc	INJ-198	CPS-045, CPS-162 or CPS-023
587cc	INJ-098	ALY-048BK CPS-045, CPS-162 or CPS-023
627cc	INJ-297	ALY-168BK
668cc	INJ-022	Direct Fit
731cc	INJ-302	ALY-048BK ALY-168BK
875cc	INJ-110	Direct Fit
980cc	INJ-213	ALY-048BK
1100cc	INJ-500	ALY-050BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
1200cc	INJ-503	ALY-048BK
1500cc	INJ-223	ALY-050BK
2433cc	INJ-102	Direct Fit



## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
HOLDEN COMMODORE VN-VS		V8
WITH STANDARD FUEL RAILS		
SIZE	PART NO.	ACCESSORIES REQUIRED
443cc	INJ-035	Direct Fit
668cc	INJ-022	Direct Fit
875cc	INJ-110	Direct Fit
WITH RACEWORKS ALY-015BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
312cc	INJ-158	ALY-048BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
324cc	INJ-215	ALY-048BK
354cc	INJ-189	ALY-050BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
382cc	INJ-007	Direct Fit
495cc	INJ-300	ALY-048BK ALY-168BK
547cc	INJ-197	ALY-050BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
550cc	INJ-198	CPS-045, CPS-162 or CPS-023
587cc	INJ-098	ALY-048BK CPS-045, CPS-162 or CPS-023
627cc	INJ-297	ALY-168BK
668cc	INJ-022	Direct Fit
731cc	INJ-302	ALY-048BK ALY-168BK
875cc	INJ-110	Direct Fit
980cc	INJ-213	ALY-048BK
1100cc	INJ-500	ALY-050BK CPS-045, CPS-162 or CPS-023
1200cc	INJ-503	ALY-048BK
1500cc	INJ-223	ALY-050BK

VEHICLE		ENGINE
HOLDEN COMMODORE VT		5.0L V8
SIZE	PART NO.	ACCESSORIES REQUIRED
312cc	INJ-158	ALY-048BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
324cc	INJ-215	ALY-048BK
354cc	INJ-189	ALY-050BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
382cc	INJ-007	Direct Fit
495cc	INJ-300	ALY-048BK ALY-168BK
500cc	INJ-197	ALY-050BK CPS-045, CPS-162 or CPS-023 IJO-001 Lower O-Rings
547cc	INJ-198	CPS-045, CPS-162 or CPS-023
587cc	INJ-098	ALY-048BK CPS-045, CPS-162 or CPS-023
627cc	INJ-297	ALY-168BK
668cc	INJ-022	Direct Fit
731cc	INJ-302	ALY-048BK ALY-168BK
875cc	INJ-110	Direct Fit
980cc	INJ-213	ALY-048BK
1100cc	INJ-500	ALY-050BK CPS-045, CPS-162 or CPS-023
1200cc	INJ-503	ALY-048BK
1500cc	INJ-223	ALY-050BK

## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
HOLDEN COMMODORE VZ-VE		V6
SIZE	PART NO.	ACCESSORIES REQUIRED
312cc	INJ-158	Direct Fit
324cc	INJ-215	CPS-058, CPS-164 or CPS-035
347cc	INJ-307	ALY-168BK CPS-058, CPS-164 or CPS-035
354cc	INJ-189	ALY-050BK IJO-001 Lower O-Rings
453cc	INJ-346	CPS-058, CPS-164 or CPS-035
500cc	INJ-197	ALY-050BK IJO-001 Lower O-Rings
550cc	INJ-161	Direct Fit
587cc	INJ-098	Direct Fit
621cc	INJ-372	Direct Fit
668cc	INJ-030	ALY-106BK CPS-058, CPS-164 or CPS-035
731cc	INJ-301	ALY-106BK
980cc	INJ-501	Direct Fit
1100cc	INJ-500	ALY-106BK
1200cc	INJ-504	CPS-116, CPS-160 or CPS-057
1500cc	INJ-223	ALY-106BK CPS-058, CPS-164 or CPS-035

VEHICLE		ENGINE
HOLDEN COMMODORE VZ-VF		L76/L77/L98/LS3/LSA V8
HSV W427 VE		LS7 V8
SIZE	PART NO.	ACCESSORIES REQUIRED
500cc	INJ-197	Direct Fit
668cc	INJ-030	CPS-058, CPS-164 or CPS-035 IJO-032 Lower Orings
731cc	INJ-301	IJO-032 Lower Orings
1100cc	INJ-500	IJO-032 Lower Orings
1500cc	INJ-223	CPS-058, CPS-164 or CPS-035 IJO-032 Lower O-Rings

VEHICLE		ENGINE
HOLDEN COMMODORE VZ-VE		LS2 V8
WITH STANDARD FUEL RAILS		
SIZE	PART NO.	ACCESSORIES REQUIRED
324cc	INJ-215	CPS-058, CPS-164 or CPS-035 IJO-032 Lower Orings
347cc	INJ-307	ALY-168BK CPS-058, CPS-164 or CPS-035 IJO-032 Lower Orings
354cc	INJ-189	ALY-106BK
500cc	INJ-197	ALY-106BK
550cc	INJ-161	IJO-032 Lower Orings
587cc	INJ-098	IJO-032 Lower Orings
621cc	INJ-372	IJO-032 Lower Orings
668cc	INJ-030	ALY-106BK CPS-058, CPS-164 or CPS-035 IJO-032 Lower Orings
731cc	INJ-301	ALY-106BK IJO-032 Lower Orings
980cc	INJ-501	Direct Fit IJO-032 Lower Orings
1100cc	INJ-500	ALY-106BK IJO-032 Lower Orings
1200cc	INJ-504	CPS-116, CPS-160 or CPS-057 IJO-032 Lower O-Rings
1500cc	INJ-223	ALY-106BK CPS-058, CPS-164 or CPS-035 IJO-032 Lower O-Rings
WITH RACEWORKS ALY-017BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
500cc	INJ-197	Direct Fit
668cc	INJ-030	CPS-058, CPS-164 or CPS-035 IJO-032 Lower Orings
731cc	INJ-301	IJO-032 Lower Orings
1100cc	INJ-500	IJO-032 Lower Orings
1500cc	INJ-223	CPS-058, CPS-164 or CPS-035 IJO-032 Lower O-Rings

## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
HONDA CIVIC EK/EM		B16 Inline 4
HONDA INTEGRA DC2 TYPE-R		B18 Inline 4
SIZE	PART NO.	ACCESSORIES REQUIRED
312cc	INJ-158	ALY-047BK CPS-169 or CPS-023 ALY-075
550cc	INJ-161	ALY-047BK CPS-169 or CPS-023 ALY-075
621cc	INJ-372	ALY-047BK CPS-169 or CPS-023 ALY-075
731cc	INJ-296	ALY-047BK CPS-161 or CPS-057 ALY-075
980cc	INJ-501	ALY-047BK CPS-169 or CPS-023 ALY-075
1100cc	INJ-500	ALY-049BK CPS-169 or CPS-023 ALY-075
1200cc	INJ-504	ALY-047BK CPS-161 or CPS-057 ALY-075
1500cc	INJ-223	ALY-049BK CPS-163 or CPS-035 ALY-075

VEHICLE		ENGINE
HONDA CIVIC EP3 TYPE-R		K20A2
HONDA INTEGRA DC5 TYPE-R		K20A2
SIZE	PART NO.	ACCESSORIES REQUIRED
324cc	INJ-215	CPS-163 or CPS-035
347cc	INJ-307	ALY-168BK CPS-163 or CPS-035
550cc	INJ-161	CPS-169 or CPS-023
587cc	INJ-098	CPS-169 or CPS-023
621cc	INJ-372	CPS-169 or CPS-023
668cc	INJ-030	ALY-106BK CPS-163 or CPS-035
731cc	INJ-296	CPS-161 or CPS-057
980cc	INJ-213	CPS-163 or CPS-035
1100cc	INJ-500	ALY-106BK CPS-169 or CPS-023
1200cc	INJ-504	CPS-161 or CPS-057
1500cc	INJ-223	ALY-106BK CPS-163 or CPS-035

VEHICLE		ENGINE
MAZDA FAMILIA		BPT/BPD Inline4
MAZDA MX-5 NA-NB		Inline 4
TOYOTA ALTEZZA SXE10		Inline 4
TOYOTA LANDCRUISER		1FZ-FE Inline 6
TOYOTA MR2 AW11		4A-GZE Inline 4
TOYOTA SOARER		1UZ-FE Non-VVT-i Inline 6
TOYOTA STARLET GT EP82		4E-FTE Inline 4
TOYOTA SUPRA JZA80		2JZ-GE Non-VVT-i Inline 6
TOYOTA CHASER JZX100		1JZ-GTE VVT-i Inline 6
TOYOTA MARK II JZX100		1JZ-GTE VVT-i Inline 6
TOYOTA SOARER JZZ30		1JZ-GTE VVT-i Inline 6
SIZE	PART NO.	ACCESSORIES REQUIRED
354cc	INJ-189	ALY-049BK CPS-112, CPS-141 or CPS-023 IJO-027
450cc	INJ-106	IJO-027
500cc	INJ-197	ALY-049BK CPS-112/CPS-141 or CPS-023 IJO-027
550cc	INJ-138	IJO-027
587cc	INJ-098	ALY-047BK CPS-112/CPS-141 or CPS-023 IJO-027
668cc	INJ-022-11MM	CPS-114 or CPS-035
731cc	INJ-296	ALY-047BK IJO-027
875cc	INJ-110-11MM	CPS-114 or CPS-035
980cc	INJ-505-11MM	CPS-112/CPS-141 or CPS-023
1100cc	INJ-500	ALY-049BK CPS-112/CPS-141 or CPS-023 IJO-027
1200cc	INJ-504	ALY-047BK IJO-027
1500cc	INJ-223	ALY-049BK CPS-114 or CPS-035 IJO-027



## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
MAZDA RX-7 FC3S		13B-T
WITH STANDARD FUEL RAILS		
SIZE	PART NO.	ACCESSORIES REQUIRED
500cc	INJ-197	ALY-049BK CPS-141, CPS-112 or CPS-023 IJO-027
550cc	INJ-138	IJO-027
587cc	INJ-098	ALY-047BK CPS-141, CPS-112 or CPS-023 IJO-027
668cc	INJ-022-11MM	CPS-114 or CPS-035
731cc	INJ-296	ALY-047BK IJO-027
875cc	INJ-110-11MM	CPS-114 or CPS-035
980cc	INJ-208	ALY-047BK FSA-501BK CPS-114 or CPS-035
1100cc	INJ-500	ALY-049BK CPS-141, CPS-112 or CPS-023 IJO-027
1200cc	INJ-502	ALY-047BK FSA-501BK CPS-114 or CPS-035
1500cc	INJ-223	ALY-049BK IJO-027 CPS-114 or CPS-035

VEHICLE		ENGINE
MAZDA RX-7 FC3S		13B-T
WITH RACEWORKS ALY-019BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
500cc	INJ-197	ALY-050BK CPS-141, CPS-112 or CPS-023 IJO-001 Lower O-Rings
547cc	INJ-198	CPS-141, CPS-112 or CPS-023
627cc	INJ-297	ALY-168BK CPS-114 or CPS-035
668cc	INJ-022	CPS-114 or CPS-035
731cc	INJ-301	ALY-050BK CPS-141, CPS-112 or CPS-023
875cc	INJ-110	CPS-114 or CPS-035
980cc	INJ-505	CPS-141, CPS-112 or CPS-023
1100cc	INJ-500	ALY-050BK CPS-141, CPS-112 or CPS-023
1500cc	INJ-223	ALY-050BK CPS-114 or CPS-035

VEHICLE		ENGINE
MAZDA RX-7 FD3S		13B-REW
WITH RACEWORKS ALY-020BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
875cc	INJ-110	CPS-114 or CPS-035
980cc	INJ-505	CPS-141, CPS-112 or CPS-023
1100cc	INJ-500	ALY-050BK CPS-141, CPS-112 or CPS-023
1500cc	INJ-223	ALY-050BK CPS-114 or CPS-035

VEHICLE		ENGINE
MAZDA COSMO JC		13B-RE
WITH RACEWORKS ALY-095BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
627cc	INJ-297	ALY-168BK CPS-114 or CPS-035
731cc	INJ-296	ALY-048BK
875cc	INJ-110	CPS-114 or CPS-035
980cc	INJ-505	CPS-112, CPS-141 or CPS-023
1100cc	INJ-500	ALY-050BK CPS-112, CPS-141 or CPS-023 IJO-001 Lower O-Rings
1200cc	INJ-504	ALY-048BK
1500cc	INJ-223	ALY-050BK CPS-114 or CPS-035

## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
MITSUBISHI LANCER CE-CH		Inline 4
MITSUBISHI GALANT/LEGNUM		V6 Twin Turbo
SUBARU FORESTER SF GT		EJ205 Flat-4 Turbo
SUBARU FORESTER SG/SH XT 05		EJ255 Flat-4 Turbo
SUBARU IMPREZA WRX GD-GK		Flat-4 Turbo
SUBARU LIBERTY 3RD GEN		EJ208 Flat-4 Twin Turbo
SUBARU LIBERTY 4TH GEN		EJ255 Flat-4 Turbo
SUBARU LIBERTY 4TH GEN		EZ30R H-6
SUBARU LIBERTY 5TH GEN		EJ255 Flat-4 Turbo
SUBARU LIBERTY 5TH GEN		EZ36D H-6
SIZE	PART NO.	ACCESSORIES REQUIRED
354cc	INJ-189	ALY-105BK IJO-027 CPS-141, CPS-112 or CPS-023
410cc	INJ-142	Direct Fit
500cc	INJ-197	ALY-105BK IJO-027 CPS-141, CPS-112 or CPS-023
668cc	INJ-030	ALY-105BK CPS-114 or CPS-035 IJO-027
731cc	INJ-301	ALY-105BK IJO-027 CPS-141, CPS-112 or CPS-023
875cc	INJ-162	ALY-105BK CPS-114 or CPS-035 IJO-027
980cc	INJ-506-11MM	CPS-114 or CPS-035 IJO-001 Lower O-Rings FSA-501BK
1100cc	INJ-500	ALY-105BK IJO-027 CPS-141, CPS-112 or CPS-023
1200cc	INJ-504-11MM	Direct Fit
1500cc	INJ-223	ALY-105BK CPS-114 or CPS-035

VEHICLE		ENGINE
MITSUBISHI EVO 1-3		4G63T Inline 4
MITSUBISHI RVR		4G63T Inline 4
NISSAN 180SX/SILVIA		CA18 Inline 4
NISSAN CEFIRO A31		RB20 Inline 6
NISSAN PATROL GQ		TB42E Inline 6
NISSAN PULSAR Gti-R		SR20DET Inline 4
TOYOTA AE86		4A-GE 16V Inline 4
TOYOTA COROLLA AE93		4A-GE 16V Inline 4
TOYOTA MR2 AW11		4A-GE Inline 4
SIZE	PART NO.	ACCESSORIES REQUIRED
587cc	INJ-098	ALY-047BK CPS-045, CPS-162 or CPS-023 IJO-027
668cc	INJ-022-11MM	Direct Fit
731cc	INJ-296	ALY-047BK CPS-115 or CPS-057 IJO-027
875cc	INJ-110-11MM	Direct Fit
980cc	INJ-505-11MM	CPS-045, CPS-162 or CPS-023
1100cc	INJ-500	ALY-049BK CPS-045, CPS-162 or CPS-023 IJO-027
1200cc	INJ-504	ALY-047BK CPS-115 or CPS-057 IJO-027
1500cc	INJ-223	ALY-049BK IJO-027

## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
MITSUBISHI EVO 4-9		4G63T Inline 4
WITH STANDARD FUEL RAIL		
SIZE	PART NO.	ACCESSORIES REQUIRED
587cc	INJ-098	ALY-047BK CPS-045, CPS-162 or CPS-023 IJO-027
668cc	INJ-022-11MM	Direct Fit
731cc	INJ-296	ALY-047BK CPS-115 or CPS-057 IJO-027
875cc	INJ-110-11MM	Direct Fit
980cc	INJ-505-11MM	CPS-045, CPS-162 or CPS-023
1100cc	INJ-500	ALY-049BK CPS-045, CPS-162 or CPS-023 IJO-027
1200cc	INJ-504	ALY-047BK CPS-115 or CPS-057 IJO-027
1500cc	INJ-223	ALY-049BK IJO-027
WITH RACEWORKS ALY-025BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
587cc	INJ-098	ALY-048BK CPS-045, CPS-162 or CPS-023 IJO-027
627cc	INJ-297	FSA-501BK
668cc	INJ-022	IJO-027
731cc	INJ-302	ALY-048BK FSA-501BK
875cc	INJ-110	IJO-027
980cc	INJ-208	ALY-048BK FSA-501BK
1100cc	INJ-500	ALY-050BK CPS-045, CPS-162 or CPS-023 IJO-027
1200cc	INJ-502	ALY-048BK FSA-501BK
1500cc	INJ-223	ALY-050BK IJO-027

VEHICLE		ENGINE
MITSUBISHI EVO X		Inline 4
WITH STANDARD FUEL RAIL		
SIZE	PART NO.	ACCESSORIES REQUIRED
627cc	INJ-297	CPS-114 or CPS-035
731cc	INJ-302	CPS-114 or CPS-035 ALY-106BK
980cc	INJ-208	CPS-114 or CPS-035 ALY-106BK
1200cc	INJ-502	CPS-114 or CPS-035 ALY-106BK
WITH RACEWORKS ALY-026BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
627cc	INJ-297	CPS-114 or CPS-035 ALY-048BK
731cc	INJ-302	CPS-114 or CPS-035 ALY-050BK
980cc	INJ-208	CPS-114 or CPS-035 ALY-050BK
1200cc	INJ-502	CPS-114 or CPS-035 ALY-050BK



## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
NISSAN 180SX/SILVIA S13		SR20 Inline 4
NISSAN PULSAR N14/N15		SR20 Inline 4
WITH RACEWORKS ALY-033BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
453cc	INJ-346	CPS-501 or CPS-035
500cc	INJ-197	CPS-500 or CPS-023 IJO-001 Lower O-Rings
550cc	INJ-161	CPS-500 or CPS-023
587cc	INJ-098	CPS-500 or CPS-023
621cc	INJ-372	CPS-500 or CPS-023
627cc	INJ-297	CPS-501 or CPS-035 ALY-168BK
668cc	INJ-030	CPS-501 or CPS-035
731cc	INJ-296	CPS-502 or CPS-057
875cc	INJ-162	CPS-501 or CPS-035
980cc	INJ-213	CPS-501 or CPS-035
1100cc	INJ-500	CPS-500 or CPS-023
1200cc	INJ-504	CPS-502 or CPS-057
1500cc	INJ-223	CPS-501 or CPS-035

VEHICLE		ENGINE
NISSAN 200SX/SILVIA S14/S15		SR20 Inline 4
WITH RACEWORKS ALY-034BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
500cc	INJ-197	CPS-500 or CPS-023 IJO-001 Lower O-Rings
668cc	INJ-030	CPS-501 or CPS-035
731cc	INJ-301	CPS-500 or CPS-023 IJO-001 Lower O-Rings
875cc	INJ-162	CPS-501 or CPS-035
1100cc	INJ-500	CPS-500 or CPS-023
1500cc	INJ-223	CPS-501 or CPS-035

VEHICLE		ENGINE
NISSAN PRIMERA P11		SR20 Inline 4
WITH RACEWORKS ALY-035BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
500cc	INJ-197	CPS-500 or CPS-023 IJO-001 Lower O-Rings
668cc	INJ-030	CPS-501 or CPS-035
731cc	INJ-301	CPS-500 or CPS-023 IJO-001 Lower O-Rings
875cc	INJ-162	CPS-501 or CPS-035
1100cc	INJ-500	CPS-500 or CPS-023
1500cc	INJ-223	CPS-501 or CPS-035



## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
NISSAN PATROL GU		TB45E Inline 6
WITH RACEWORKS ALY-028BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
500cc	INJ-197	CPS-500 or CPS-023 IJO-001 Lower O-Rings
668cc	INJ-030	CPS-501 or CPS-035
731cc	INJ-301	CPS-500 or CPS-023
875cc	INJ-162	CPS-501 or CPS-035
1100cc	INJ-500	CPS-500 or CPS-023
1500cc	INJ-223	CPS-501 or CPS-035

VEHICLE		ENGINE
NISSAN PATROL GU		TB48DE Inline 6
WITH RACEWORKS ALY-036BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
443cc	INJ-035	CPS-114 or CPS-035
500cc	INJ-197	ALY-050BK CPS-112, CPS-141 or CPS-023 IJO-001 Lower O-Rings
547cc	INJ-198	CPS-112, CPS-141 or CPS-023
587cc	INJ-098	ALY-048BK CPS-112, CPS-141 or CPS-023
627cc	INJ-297	CPS-114 or CPS-035 ALY-168BK
668cc	INJ-022	CPS-114 or CPS-035
731cc	INJ-296	ALY-048BK
875cc	INJ-110	CPS-114 or CPS-035
980cc	INJ-505	CPS-112, CPS-141 or CPS-023
1100cc	INJ-500	ALY-050BK CPS-112, CPS-141 or CPS-023
1200cc	INJ-504	ALY-048BK
1500cc	INJ-223	ALY-050BK CPS-114 or CPS-035

VEHICLE		ENGINE
NISSAN SKYLINE DR30		FJ20 Inline 4
WITH STANDARD FUEL RAIL		
SIZE	PART NO.	ACCESSORIES REQUIRED
443cc	INJ-035	ALY-166
485cc	INJ-029	CPS-052 IJO-030
668cc	INJ-022	ALY-166
875cc	INJ-110	ALY-166
2433cc	INJ-102	ALY-166
WITH RACEWORKS ALY-039BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
627cc	INJ-297	ALY-048BK
731cc	INJ-302	ALY-050BK
980cc	INJ-208	ALY-050BK
1200cc	INJ-502	ALY-050BK

VEHICLE		ENGINE
NISSAN SKYLINE R33		RB25 Inline 6
NISSAN STAGEA WGNC34		RB25 Inline 6
WITH RACEWORKS ALY-029BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
500cc	INJ-197	CPS-500 or CPS-023 IJO-001 Lower O-Rings
668cc	INJ-030	CPS-501 or CPS-035
731cc	INJ-301	CPS-500 or CPS-023
875cc	INJ-162	CPS-501 or CPS-035
1100cc	INJ-500	CPS-500 or CPS-023
1500cc	INJ-223	CPS-501 or CPS-035

## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
NISSAN SKYLINE GT-R		RB26 Inline 6
NISSAN STAGEA WGNC34		RB26 Inline 6
WITH STANDARD FUEL RAIL		
SIZE	PART NO.	ACCESSORIES REQUIRED
495cc	INJ-300	ALY-047BK FSA-501BK
587cc	INJ-098	ALY-047BK CPS-045, CPS-162 or CPS-023 IJO-027
668cc	INJ-022-11MM	Direct Fit
731cc	INJ-302	ALY-047BK FSA-501BK
875cc	INJ-110-11MM	Direct Fit
980cc	INJ-505-11MM	CPS-045, CPS-162 or CPS-023
1100cc	INJ-500	ALY-049BK CPS-045, CPS-162 or CPS-023 IJO-027
1200cc	INJ-504	ALY-047BK CPS-115 or CPS-057 IJO-027
1500cc	INJ-223	ALY-049BK IJO-027
WITH RACEWORKS ALY-030BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
443cc	INJ-035	IJO-027
495cc	INJ-300	ALY-048BK FSA-501BK
547cc	INJ-198	CPS-045, CPS-162 or CPS-023 IJO-027
587cc	INJ-098	ALY-048BK CPS-045, CPS-162 or CPS-023 IJO-027
627cc	INJ-297	FSA-501BK
668cc	INJ-022	IJO-027
731cc	INJ-302	ALY-048BK FSA-501BK
875cc	INJ-110	IJO-027
980cc	INJ-208	ALY-048BK FSA-501BK
1100cc	INJ-500	ALY-050BK CPS-045, CPS-162 or CPS-023 IJO-027
1200cc	INJ-502	ALY-048BK FSA-501BK
1500cc	INJ-223	ALY-050BK IJO-027
2433cc	INJ-102	IJO-027

VEHICLE		ENGINE
NISSAN SKYLINE R34		RB25 Neo Inline 6
NISSAN STAGEA WGC34		RB25 Neo Inline 6
WITH RACEWORKS ALY-031BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
453cc	INJ-346	CPS-114 or CPS-035
495cc	INJ-300	CPS-114 or CPS-035 IJO-027
550cc	INJ-161	CPS-112, CPS-141 or CPS-023
587cc	INJ-098	CPS-112, CPS-141 or CPS-023
621cc	INJ-372	CPS-112, CPS-141 or CPS-023
668cc	INJ-022	CPS-114 or CPS-035
731cc	INJ-296	Direct Fit
875cc	INJ-110	CPS-114 or CPS-035
980cc	INJ-213	CPS-114 or CPS-035
1200cc	INJ-504	Direct Fit

VEHICLE		ENGINE
SUBARU IMPREZA MY97/MY98		EJ20G Flat-4 Turbo
WITH RACEWORKS ALY-096BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
731cc	INJ-302	CPS-114 or CPS-035
980cc	INJ-208	CPS-114 or CPS-035
1200cc	INJ-502	CPS-114 or CPS-035

VEHICLE		ENGINE
SUBARU IMPREZA MY99/MY00		EJ205/EJ207 Flat-4 Turbo
WITH RACEWORKS ALY-097BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
731cc	INJ-302	CPS-114 or CPS-035
980cc	INJ-208	CPS-114 or CPS-035
1200cc	INJ-502	CPS-114 or CPS-035



## FUEL INJECTOR UPGRADE GUIDE

VEHICLE		ENGINE
TOYOTA ARISTO		2JZ-GTE Non VVT-i Inline 6
		2JZ-GTE VVT-i Inline 6
TOYOTA SUPRA		2JZ-GTE Non VVT-i Inline 6
		2JZ-GTE VVT-i Inline 6
WITH RACEWORKS ALY-040BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
500cc	INJ-197	ALY-106BK CPS-112, CPS-141 or CPS-023 IJO-001 Lower O-Rings
550cc	INJ-161	ALY-048BK CPS-112, CPS-141 or CPS-023
587cc	INJ-098	ALY-048BK CPS-112, CPS-141 or CPS-023
621cc	INJ-372	ALY-048BK CPS-112, CPS-141 or CPS-023
668cc	INJ-030	ALY-106BK CPS-114 or CPS-035
731cc	INJ-301	ALY-106BK CPS-112, CPS-141 or CPS-023
875cc	INJ-162	ALY-106BK CPS-114 or CPS-035
980cc	INJ-213	ALY-048BK CPS-114 or CPS-035
1100cc	INJ-500	ALY-106BK CPS-112, CPS-141 or CPS-023
1200cc	INJ-504	ALY-048BK
1500cc	INJ-223	ALY-106BK CPS-114 or CPS-035

VEHICLE		ENGINE
TOYOTA 86		Flat-4
SUBARU BRZ		Flat-4
WITH STANDARD FUEL RAILS		
SIZE	PART NO.	ACCESSORIES REQUIRED
980cc	INJ-506-11MM	CPS-114 or CPS-035
WITH RACEWORKS ALY-122BK FUEL RAIL KIT		
SIZE	PART NO.	ACCESSORIES REQUIRED
495cc	INJ-300	CPS-114 or CPS-035 IJO-027
731cc	INJ-302	CPS-114 or CPS-035 IJO-027
980cc	INJ-208	CPS-114 or CPS-035 IJO-027
1200cc	INJ-502	CPS-114 or CPS-035 IJO-027



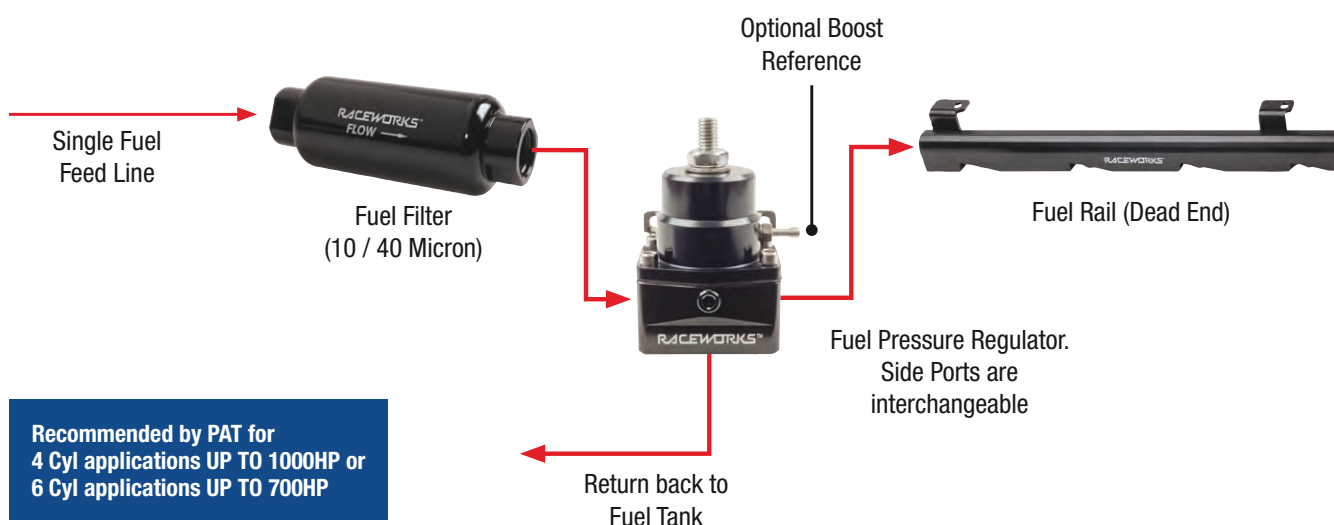
## EFI FUEL SYSTEM PLUMBING GUIDE – INLINE 4 / 6 ENGINE

**TECH TIP –**  
**WHICH IS THE BEST WAY**  
**TO PLUMB A FUEL SYSTEM?**  
**EVERYONE HAS**  
**THEIR OWN OPINION!**

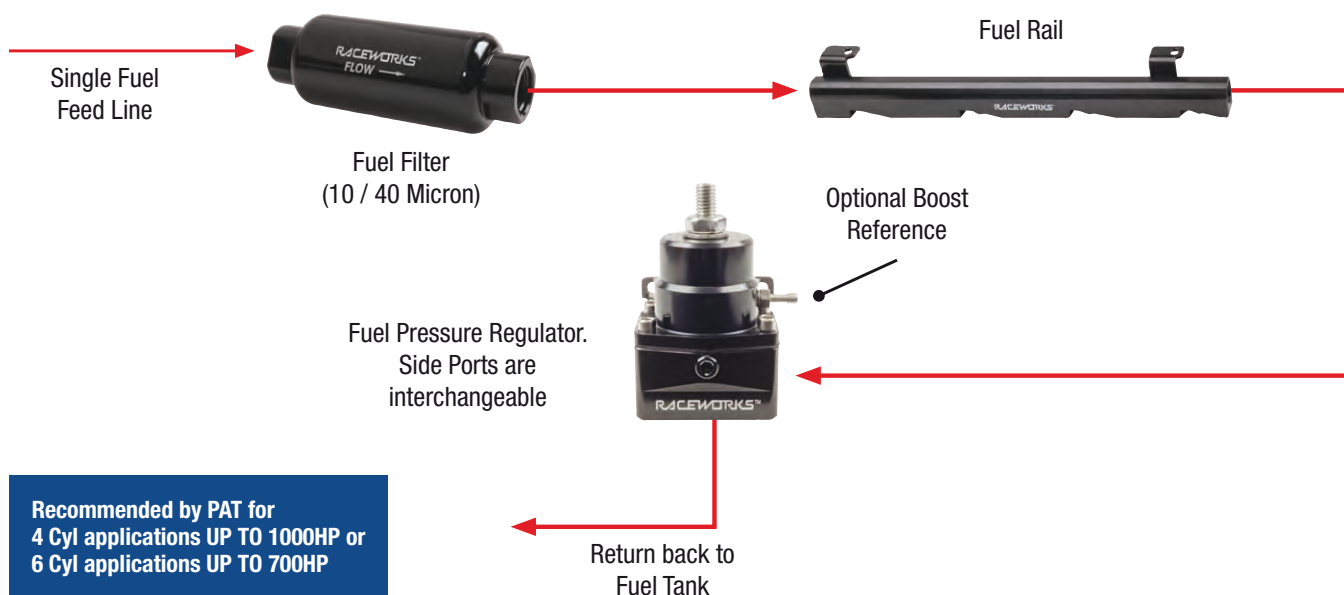
Some will argue that a dead end system is better as the fuel lines don't suffer from as much heat soak. Others say a regulator after the fuel rail will have better control of the fuel pressure, and act like a pulsation damper if placed near the rail.

In our experience, both options work well, however we do find in Forced Inducted applications, the regulator operates more effectively near the engine with a boost reference, as opposed to the opposite end of the vehicle without a boost reference.

### OPTION 1 – DEAD END – SINGLE ENTRY

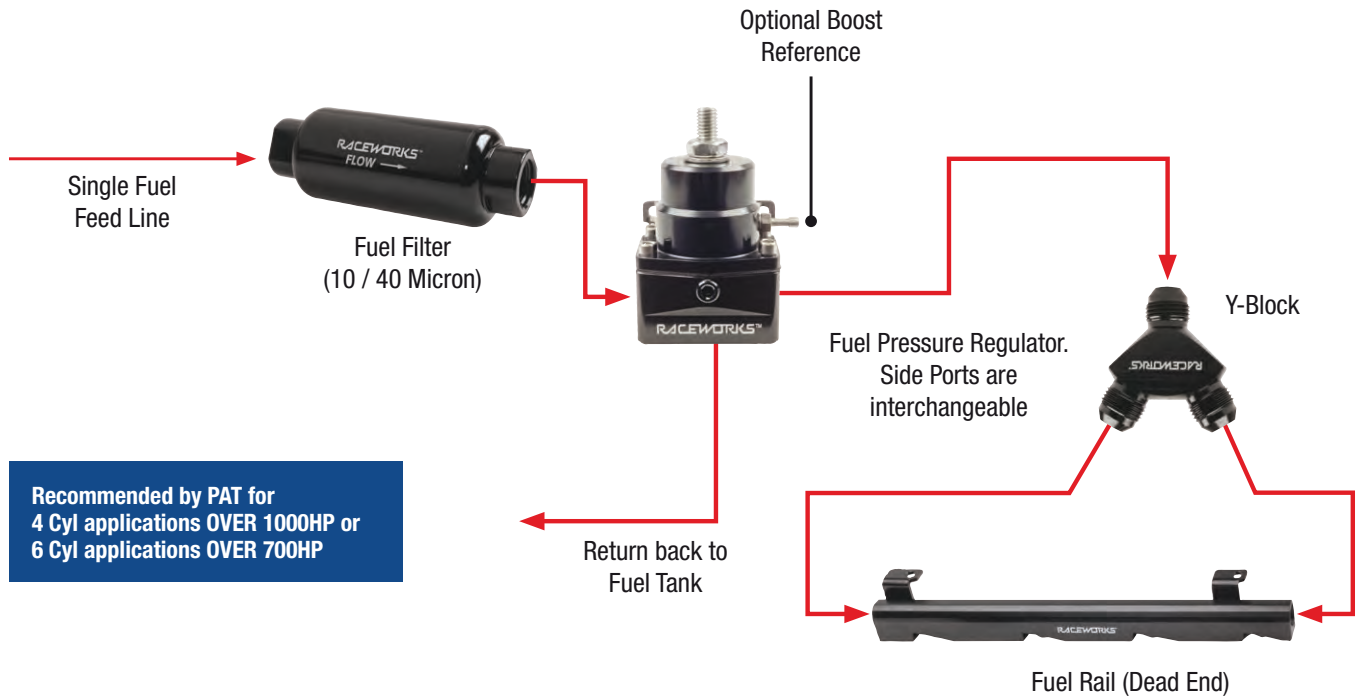


### OPTION 2 – RETURN SYSTEM – SINGLE ENTRY

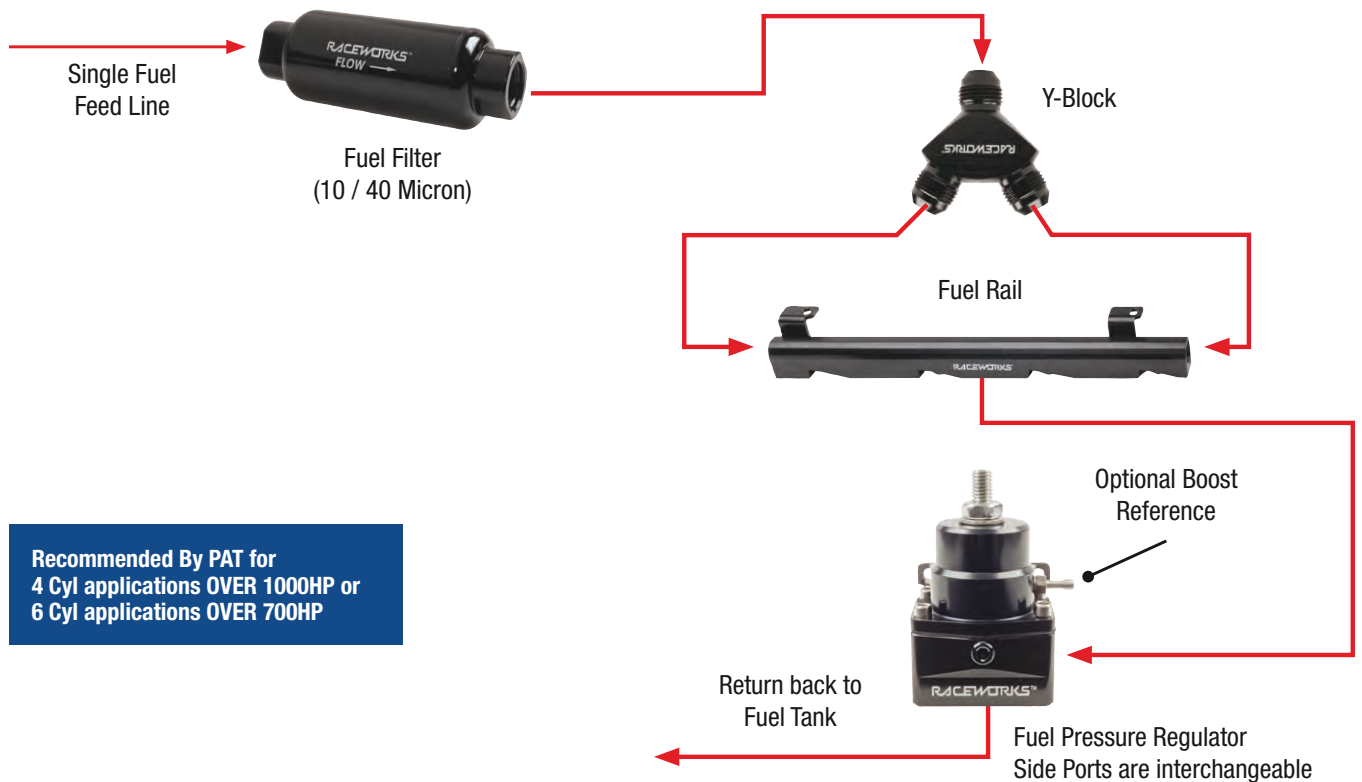


## EFI FUEL SYSTEM PLUMBING GUIDE – INLINE 4 / 6 ENGINE

### OPTION 3 – DEAD END – TWIN ENTRY



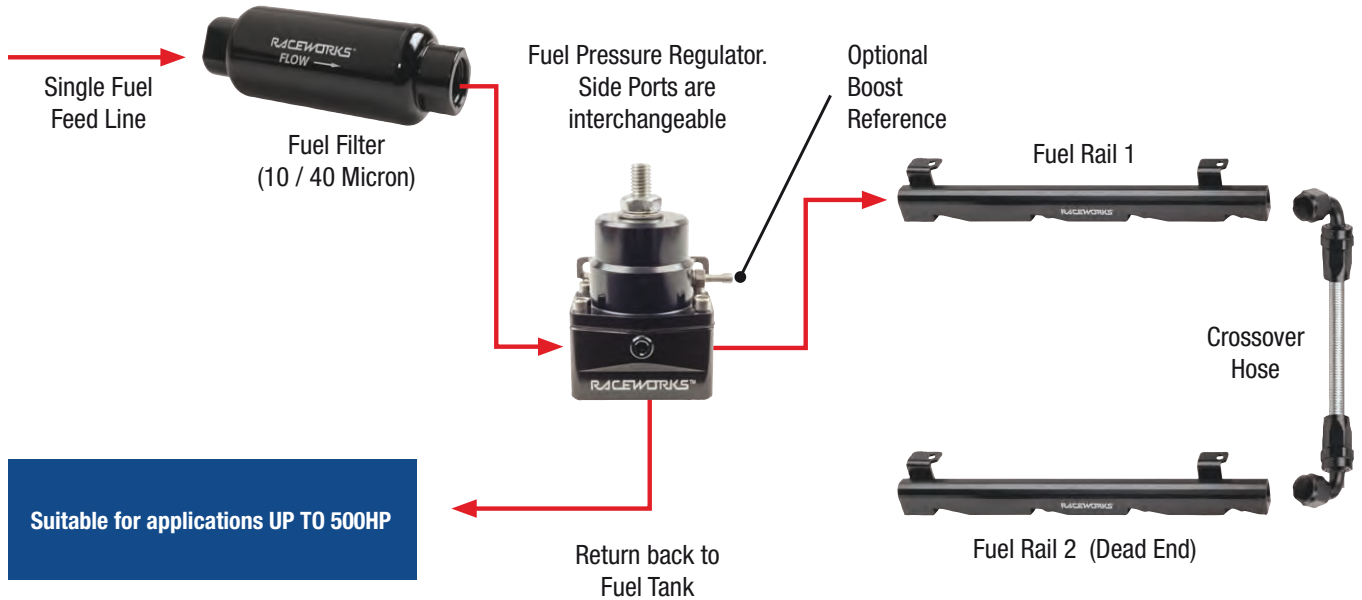
### OPTION 4 – RETURN SYSTEM – TWIN ENTRY



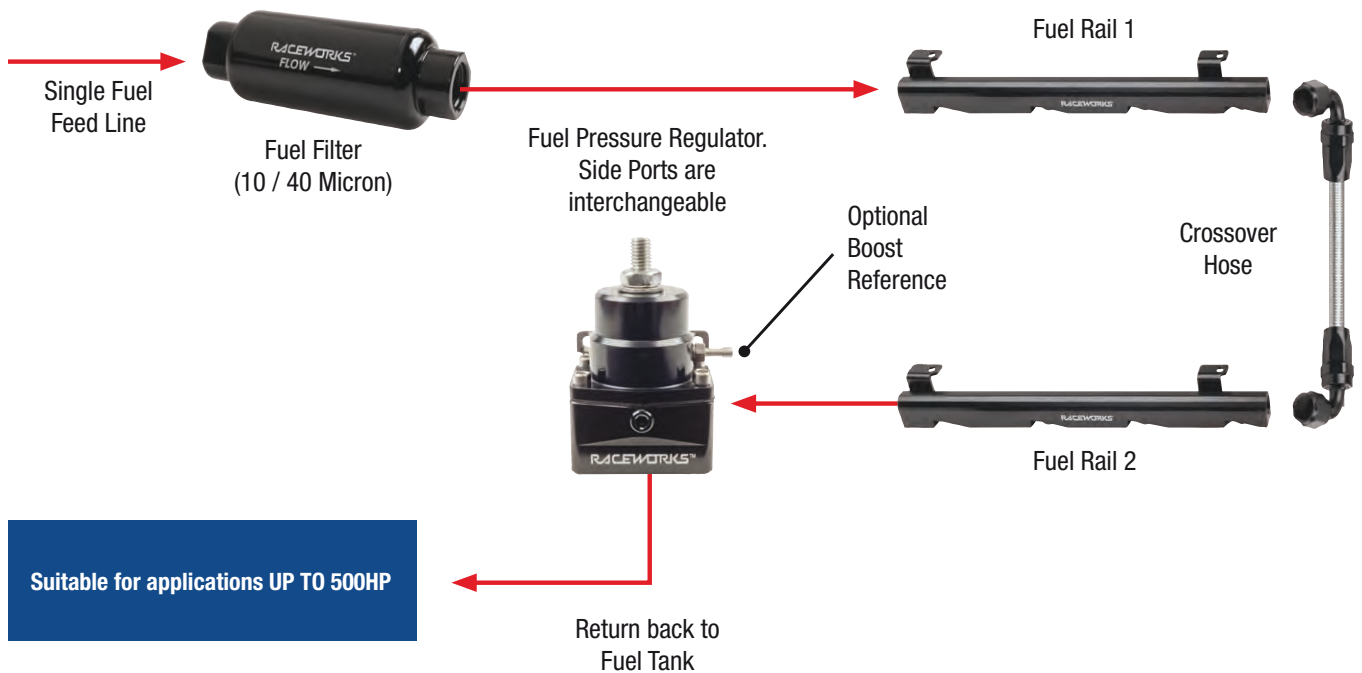


## EFI FUEL SYSTEM PLUMBING GUIDE – V6 / V8 ENGINE

### OPTION 1 – DEAD END – CROSSOVER

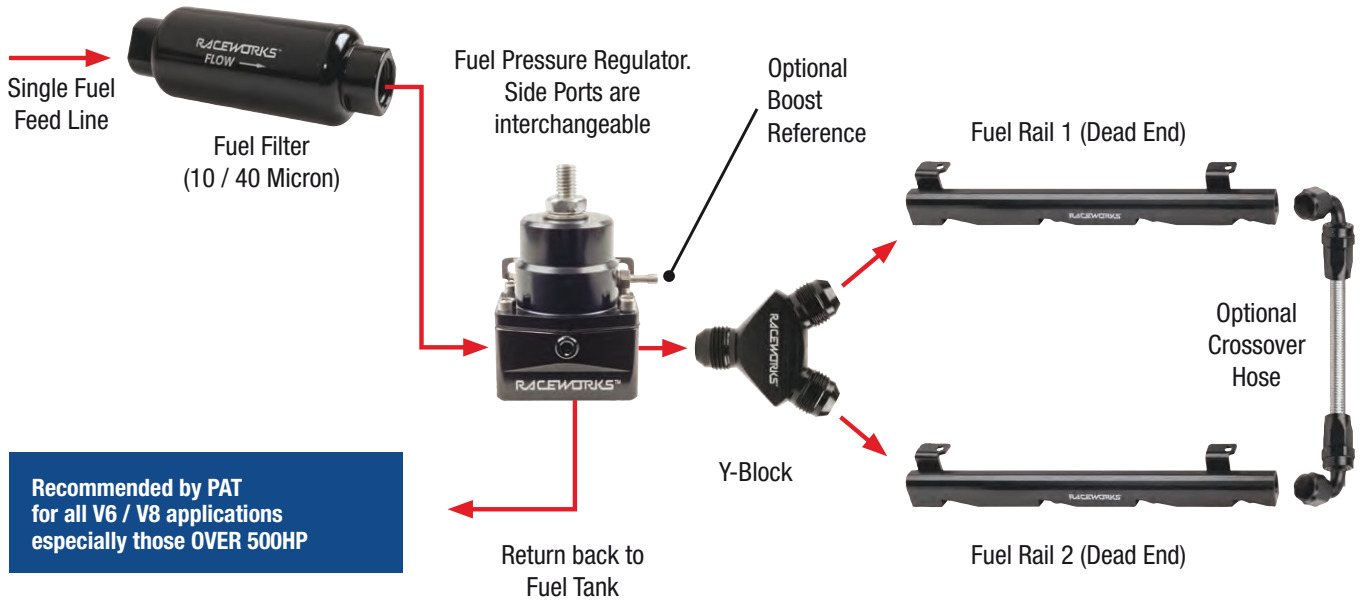


### OPTION 2 – RETURN SYSTEM – CROSSOVER

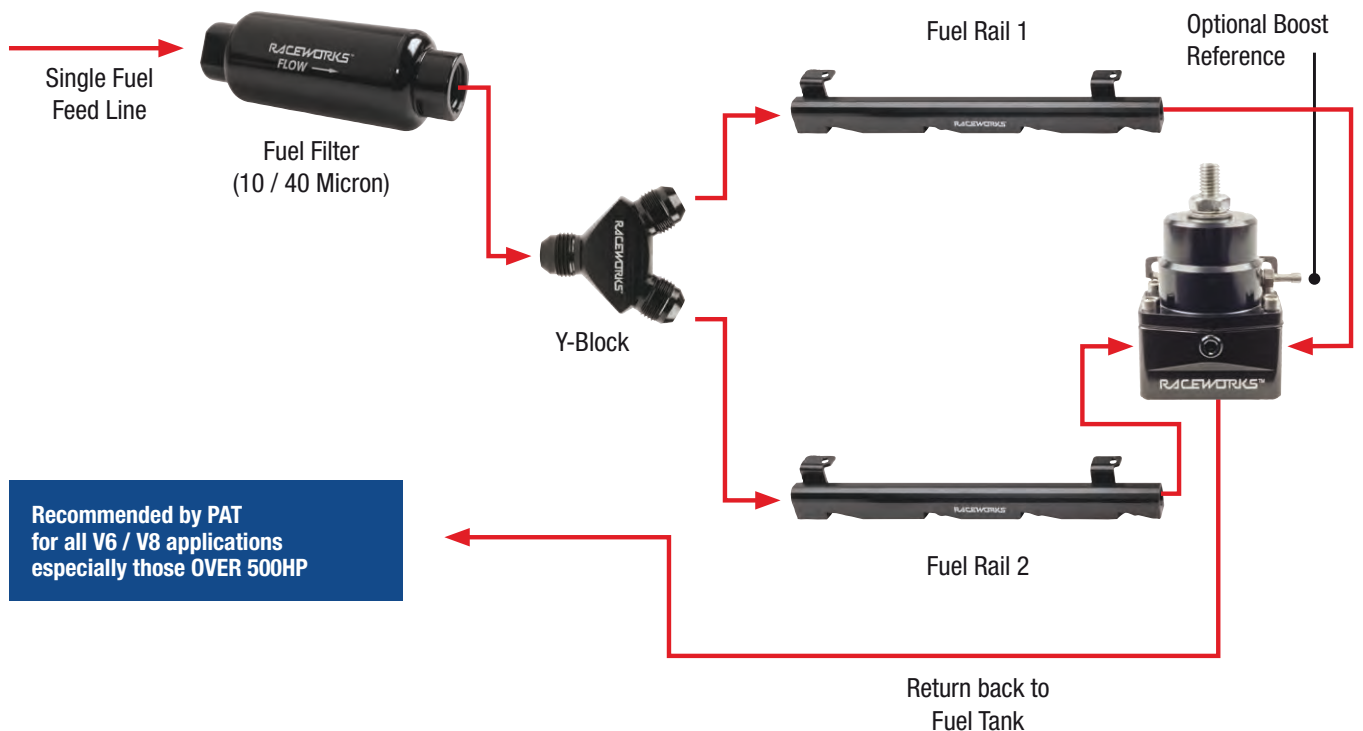


## EFI FUEL SYSTEM PLUMBING GUIDE – V6 / V8 ENGINE

### OPTION 3 – DEAD END WITH Y BLOCK



### OPTION 4 – RETURN SYSTEM – Y BLOCK



## FUEL SYSTEM KIT RECOMMENDATIONS

### ENTRY LEVEL E85 KIT – OFFROAD USE

Description	Part No.	Qty
Fuel Pump	EFP-506	1
Surge Tank	ALY-121BK	1
Fuel Pump Hard Wiring Kit	RWM-052	1
Fuel Pump Outlet Adapter Fitting	RWF-724-044-06BK	1
Surge Tank Adapter Fittings	RWF-920-06BK	3
Hose Ends for Surge Tank	RWF-401-06BK	1
	RWF-403-06BK	3
Bulkhead Plate for Boot Floor	RWF-838-04BK	1
Bulkhead Fittings, Suits Bulkhead Plate	RWF-836-06BK	4
Hose Ends for Bulkheads	RWF-401-06BK	4
	RWF-403-06BK	4
Lift Pump	EFP-089	1
Lift Pump Electrical Connector	CPS-168	1
E85 safe Fuel Hose	RWH-400-06-10M	1
P Clips for Main Fuel Line (5packs)	RWF-158-16MM	4
Fuel Filter	ALY-077-10BK	1
Fuel Filter Bracket	ALY-076BK	1
Fuel Filter Adapter Fittings	RWF-920-06-10BK	2
Hose Ends for Fuel Filter	RWF-401-06BK	2
Fuel Pressure Regulator	FPR-501BK	1
Fuel Pressure Gauge	FSA-506BK	1
Optional 90° Fuel Pressure Gauge Adapter	RWF-914-02BK	1
Fuel Pressure Regulator Adapter Fittings	RWF-920-06BK	3
Optional Fuel Pressure Regulator Blanking Plug	RWF-814-06BK	1
Hose Ends for Fuel Pressure Regulator	RWF-401-06BK	1
	RWF-403-06BK	2
Optional 45° Hose Ends	RWF-402-06BK	4

### 3BAR BASE PRESSURE APPROXIMATE POWER RATINGS AT THE FLYWHEEL

Description	Petrol / Gasoline	E85
Naturally Aspirated	880HP / 650KW	720HP / 535KW
Up To 1 Bar Boost	660HP / 490KW	550HP / 410KW
1 to 2 Bar Boost	620HP / 460KW	510HP / 380KW

- For road use please consult with an engineer as to the requirements / regulations in your particular State / Territory





## FUEL SYSTEM KIT RECOMMENDATIONS

### MIDRANGE KIT – OFFROAD USE

Description	Part No.	Qty
Fuel Pumps	EFP-506	2
Surge Tank	ALY-159BK	1
Fuel Pumps Hard Wiring Kit	RWM-053	1
Fuel Pump Outlet One Way Valves	RWF-612-08BK	2
Fuel Log (Outlet)	RWF-940-08BK	1
	RWF-920-08BK	1
Surge Tank Adapter Fittings	RWF-920-06-08BK	2
	RWF-920-08BK	1
Hose Ends for Surge Tank	RWF-201-08BK	2
	RWF-201-06BK	2
Bulkhead Plate for Boot Floor	RWF-838-04BK	1
Bulkhead Fittings, suits Bulkhead Plate	RWF-836-06BK	2
	RWF-836-08BK	2
Hose Ends for Bulkheads	RWF-203-06BK	4
	RWF-203-08BK	4
Lift Pump	EFP-089	1
Lift Pump Electrical Connector	CPS-168	1
PTFE Fuel Hose	RWH-200-08-10M	1
P Clips for Main Fuel Line (5packs)	RWF-158-14MM	4
Fuel Filter	ALY-077-10BK	1
Fuel Filter Bracket	ALY-076BK	1
Fuel Filter Adapter Fittings	RWF-920-08-10BK	2
Hose Ends for Fuel Filter	RWF-201-08BK	2
Fuel Pressure Regulator	TS-0401-1104	1
Fuel Pressure Gauge	FSA-506BK	1
Optional 90° Fuel Pressure Gauge Adapter	RWF-914-02BK	1
Fuel Pressure Regulator Adapter Fittings	RWF-920-08-06BK	3
Optional Fuel Pressure Regulator Blanking Plug	RWF-814-06BK	1
Hose Ends for Fuel Pressure Regulator	RWF-201-08BK	1
	RWF-203-08BK	2
Optional 45° Hose Ends	RWF-202-06BK	4
	RWF-202-08BK	4

### 3BAR BASE PRESSURE APPROXIMATE POWER RATINGS AT THE FLYWHEEL

Description	Petrol / Gasoline	E85
Naturally Aspirated	1770HP / 1320KW	1440HP / 1075KW
Up To 1 Bar Boost	1320HP / 985KW	1090HP / 810KW
1 to 2 Bar Boost	1240HP / 925KW	1010HP / 750KW

- For road use please consult with an engineer as to the requirements / regulations in your particular State / Territory



## FUEL SYSTEM KIT RECOMMENDATIONS

### HIGH END E85 KIT – OFFROAD USE

Description	Part No.	Qty
Fuel Pumps	EFP-622	2
Surge Tank	ALY-083BK	1
Fuel Pumps Hard Wiring Kit	RWM-053	1
Surge Tank Adapter Fittings	RWF-920-08BK	3
One Way Valves	RWF-607-08BK	2
Fuel Log (Outlet)	RWF-937-08BK	1
	RWF-920-08BK	1
Surge Tank Hose Ends	RWF-139-08-08BK	4
Bulkhead Plate for Boot Floor	RWF-838-04BK	1
Bulkhead Fittings, suits Bulkhead Plate	RWF-836-08BK	4
Hose Ends for Bulkheads	RWF-139-08-08BK	6
	RWF-103-08BK	2
Lift Pump	EFP-476	1
Hose for Lift Pump and Engine Bay	RWH-140-08-5M	1
Hard Line (Main Fuel Hose)	RWH-600-08	2
Line Separators	RWF-148-12MM	6
	RWF-156-12MM	6
Fuel Filter	ALY-077-10BKL	1
	ALY-082-10L	1
Fuel Filter Brackets	ALY-076BK	2
Fuel Filter Adapter Fittings	RWF-920-08-12BK	2
Hose Ends for Fuel Filter	RWF-619-08-08BK	1
	RWF-101-08BK	1
Fuel Pressure Regulator	TS-0401-1106	1
Fuel Pressure Gauge	FSA-506BK	1
Optional 90° Fuel Pressure Gauge Adapter	RWF-914-02BK	1
Fuel Pressure Regulator Adapter Fittings	RWF-920-08BK	3
Optional Fuel Pressure Regulator Blanking Plug	RWF-814-08BK	1
Hose Ends for Fuel Pressure Regulator	RWF-101-08BK	1
	RWF-103-08BK	2
Optional 45° Hose Ends	RWF-102-08BK	2

### 3BAR BASE PRESSURE APPROXIMATE POWER RATINGS AT THE FLYWHEEL

Description	Petrol / Gasoline	E85
Naturally Aspirated	3080HP / 2300KW	2500HP / 1865KW
Up To 1 Bar Boost	2300HP / 1715KW	1900HP / 1415KW
1 to 2 Bar Boost	2100HP / 1565KW	1720HP / 1280KW

- For road use, please consult with an engineer as to the requirements / regulations in your particular State / Territory



## CARBURETTOR ACCESSORIES

### CARBURETTOR FUEL LINE KITS

Raceworks Carby Fuel Line Kits are available in a black hard anodised finish with black PTFE AN-8 Hose and Fittings. They contain a 1/8" NPT Port with Blanking Plug, which can be used with a Fuel Pressure Gauge if required.



Suits Carburettor	Thread	Part No.
Holley	7/8" – 20	RWF-160-08BK
Demon	9/16" – 24	RWF-161-08BK
Dominator	7/8" – 20	RWF-162-08BK
Holley HP and QFT	3/4" – 16	RWF-165-08BK

■ See page 131 for Carburettor Adapter Fittings

### CARBURETTOR THROTTLE CABLE BRACKETS



Bolt Pattern	Bolt Hole Spacing	Part Number
4150	142.6mm	ALY-118BK
4500	136.7mm	ALY-117BK

### CARBURETTOR LINKAGES – STAINLESS STEEL

Stainless Steel for Maximum Corosion Protection, Raceworks Carburettor Linkage Kits contain M5 threads and offer 20mm of adjustment. Designed to give a more positive throttle pedal feel when the factory linkage is worn out/sloppy.



Length	Size Range	Part Number
2.75"	56-76mm	RWM-016-275
3.75"	81-101mm	RWM-016-375
4.75"	106-126mm	RWM-016-475
5.75"	131-151mm	RWM-016-575
6.75"	156-176mm	RWM-016-675
7.75"	181-201mm	RWM-016-775
8.75"	206-226mm	RWM-016-875
9.75"	231-251mm	RWM-016-975
10.75"	256-276mm	RWM-016-1075
11.75"	281-301mm	RWM-016-1175
12.75"	306-326mm	RWM-016-1275





## NITROUS ACCESSORIES

### BOTTLE BRACKETS – SUITS 10 / 15LB 7" DIAMETER BOTTLES



ALY-142BK

### BILLET NITROUS FILTER



### BOTTLE ADAPTER 7/8"–14



### BOTTLE ADAPTER 1-1/32"–14 SUITS GEN II BOTTLES



### 140 MICRON STAINLESS STEEL ELEMENT

AN	Part No.
-4	ALY-144-04BK
-6	ALY-144-06BK

### STAINLESS STEEL

AN	Part No.
-4	RWF-760-04SS
-6	RWF-760-06SS

### STAINLESS STEEL

AN	Part Number
-4	RWF-759-04SS
-6	RWF-759-06SS

■ For Nitrous Pressure Sensors, see page 155

### NITROUS DECALS

- Suitable for use in Motorsport Australia, AASA, ANDRA and IHRA sanctioned events



VPR-027



## AN HOSE OVERVIEW

### BRAID OVER RUBBER

- Maximum operating pressure of 500psi (Sizes up to AN-12), and 350psi above AN-12
- Temperature range -40°C to 150°C
- Recommended for use with fuels\*, oils, synthetic lubricants, air and coolant
- \*Fuels include E85 and methanol
- Not to be used inside a Fuel Tank, or with Brake Fluids



#### 100 Series

- Stainless steel braid
- Raw stainless finish

#### 120 Series

- Nylon braid
- Matt black finish

#### 140 Series

- Stainless steel braid
- Shiny black finish

### BRAID OVER PTFE

- Maximum operating pressure of 1200psi (AN-12)
- Temperature range -70°C to 250°C
- The best Hose to use for Fuels, due to no permeation of fuel smell
- Suitable for use with oils, synthetic lubricants, air, coolant, brake fluid, power steering, automatic transmission, vacuum and nitrous
- 200 Series Hose can be used intank



#### 200 Series

- Stainless steel braid
- Raw stainless finish

#### 230 Series

- Stainless steel braid
- Shiny black finish

#### 240 Series

- Nylon braid
- Matt black finish

### RUBBER

- Maximum operating pressure of 250psi
- Temperature range -40°C to 100°C
- Well priced AN Hose solution suitable for use with fuels\*, oils, coolant, water and air
- Not suitable for vacuum, brake fluid, power steering or automatic transmission lines



#### 400 Series

- Push lock
- Not suitable for intank use

### CLEAR PVC REINFORCED



#### 700 Series

- Breather Hose
- For low pressure applications
- Temperature range 5°C to 70°C
- Can be used with water

### HARDLINE

- Suitable for use with all Automotive Fluids and Lubricants



#### 300 Series

- Steel / stainless steel

#### 600 Series

- Raw aluminium

#### 620 Series

- Black aluminium with raw inner

## HOSES AND FITTINGS

### FLEXIBLE HOSE TEMPERATURE GUIDE

CELCIUS	TEMPERATURE			FAHRENHEIT	HOSE TYPE		
250				482			
240				464			
230				446			
220				428			
210				410			
200				392			
190				374			
180				356			
170				338			
160				320			
150				302			
140				284			
130				266			
120				248			
110				230			
100				212			
90				194			
80				176			
70				158			
60				140			
50				122			
40				104			
30				86			
20				68			
10				50			
0				32			
-10				14			
-20				-4			
-30				-22			
-40				-40			
-50				-58			
-60				-76			
-70				-94			

The temperature values in this guide are an estimation. Various factors can results in temperatures outside of those specified being experienced.



## HOSES AND FITTINGS

### 100 SERIES STAINLESS BRAIDED RUBBER HOSE

- **Raceworks 100 Series Stainless Braided Hose** is resistant to high pressure, temperature, abrasion and corrosion
- The internal Hose is a reinforced Chlorinated Polyethylene (CPE) synthetic rubber with a black double outer braid. Suitable for use with regular fuel, E85, E10, methanol, oils, synthetic lubricants and coolant
- All Raceworks products come with a 2 year warranty
- Temperature range: -40°C to 150°C ■ Ethanol and methanol safe
- For Hose maintenance info, see page 233



AN	1M Length Part No.	5M Length Part No.	10M Length Part No.	30M Length Part No.	Pressure psi		Inside Dia		Outside Dia		Weight (g/m)	Bend Radius	
					Operating	Burst	(Inch)	(mm)	(Inch)	(mm)		(Inch)	(mm)
-4	RWH-100-04-1M	RWH-100-04-5M	RWH-100-04-10M	RWH-100-04-30M	1000	6000	7/32	5.5	7/16	11.1	151	1	25
-6	RWH-100-06-1M	RWH-100-06-5M	RWH-100-06-10M	RWH-100-06-30M	1000	6000	11/32	8.7	9/16	13.8	196	1-19/64	33
-8	RWH-100-08-1M	RWH-100-08-5M	RWH-100-08-10M	RWH-100-08-30M	1000	5000	7/16	11.1	5/8	15.7	253	1-11/16	43
-10	RWH-100-10-1M	RWH-100-10-5M	RWH-100-10-10M	RWH-100-10-30M	1000	5000	9/16	14.2	13/16	20.8	365	2-3/32	53
-12	RWH-100-12-1M	RWH-100-12-5M	RWH-100-12-10M	RWH-100-12-30M	1000	3750	11/16	17.4	15/16	23.9	471	2-23/64	60
-16	RWH-100-16-1M	RWH-100-16-5M	RWH-100-16-10M	RWH-100-16-30M	750	2500	7/8	22.2	13/64	30.5	567	4-1/8	105
-20	RWH-100-20-1M	RWH-100-20-5M	RWH-100-20-10M	RWH-100-20-20M*	500	2000	1-1/8	28.5	1-13/32	35.8	850	6-19/64	160

\*AN-20 comes in 20M, not 30M

### 120 SERIES BLACK NYLON BRAIDED RUBBER HOSE

- **Raceworks 120 Series Nylon Braided Hose** is lighter and less abrasive than traditional stainless steel braided hose
- It is resistant to high pressure, temperature, abrasion and corrosion
- The internal hose is a reinforced Chlorinated Polyethylene (CPE) synthetic rubber with a lightweight black nylon outer braid
- Suitable for use with regular fuel, E85, E10, methanol, oils, synthetic lubricants and coolant
- All Raceworks products come with a 2 year warranty
- Temperature range: -40°C to 150°C ■ Ethanol and methanol safe
- For Hose maintenance info, see page 233



AN	1M Length Part No.	5M Length Part No.	10M Length Part No.	30M Length Part No.	Pressure psi		Inside Dia		Outside Dia		Weight (g/m)	Bend Radius	
					Operating	Burst	(Inch)	(mm)	(Inch)	(mm)		(Inch)	(mm)
-6	RWH-120-06-1M	RWH-120-06-5M	RWH-120-06-10M	RWH-120-06-30M	500	2000	11/32	8.7	9/16	13.8	157	1-19/64	33
-8	RWH-120-08-1M	RWH-120-08-5M	RWH-120-08-10M	RWH-120-08-30M	500	2000	7/16	11.1	5/8	15.7	198	1-11/16	43
-10	RWH-120-10-1M	RWH-120-10-5M	RWH-120-10-10M	RWH-120-10-30M	500	2000	9/16	14.2	13/16	20.8	275	2-3/32	53
-12	RWH-120-12-1M	RWH-120-12-5M	RWH-120-12-10M	RWH-120-12-30M	500	2000	11/16	17.4	15/16	23.9	324	2-23/64	60
-16	RWH-120-16-1M	RWH-120-16-5M	RWH-120-16-10M	RWH-120-16-30M	350	1400	7/8	22.2	13/64	30.5	414	4-1/8	105
-20	RWH-120-20-1M	RWH-120-20-5M	RWH-120-20-10M	RWH-120-20-20M*	350	1400	1-1/8	28.5	1-13/32	35.8	567	4-21/64	110

\*AN-20 comes in 20M, not 30M

**TECH TIP –**  
**ARE RACEWORKS HOSES / HOSE ENDS**  
**COMPATIBLE WITH OTHER MANUFACTURERS**  
**EQUIVALENT HOSES / HOSE ENDS?**

Raceworks cannot guarantee compatibility with other brands. Each manufacturer makes their Hose and Hose Ends to precise measurements and tolerances. It is recommended that Raceworks Hose is only used with matching Raceworks Hose Ends.

## HOSES AND FITTINGS

### 140 SERIES BLACK STAINLESS BRAIDED RUBBER HOSE

- Raceworks 140 Series Black Stainless Braided Hose is resistant to high pressure, temperature, abrasion and corrosion
- The internal Hose is a reinforced Chlorinated Polyethylene (CPE) synthetic rubber with a black double outer braid. Suitable for use with regular fuel, E85, E10, methanol, oils, synthetic lubricants and coolant
- All Raceworks products come with a 2 year warranty
- Temperature range: -40°C to 150°C ■ Ethanol and methanol safe
- For Hose maintenance info, see page 233



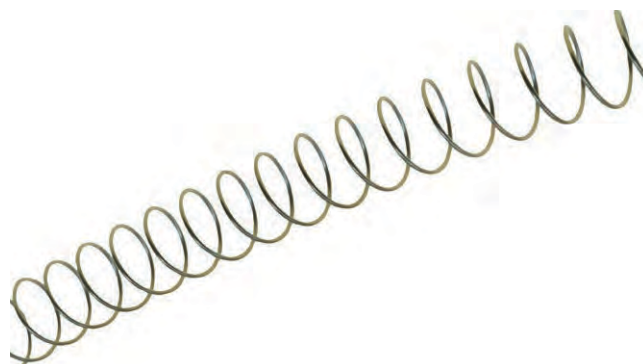
AN	1M Length Part No.	5M Length Part No.	10M Length Part No.	30M Length Part No.	Pressure psi		Inside Dia		Outside Dia		Weight (g/m)	Bend Radius	
					Operating	Burst	(Inch)	(mm)	(Inch)	(mm)		(Inch)	(mm)
-4	RWH-140-04-1M	RWH-140-04-5M	RWH-140-04-10M	RWH-140-04-30M	1000	6000	7/32	5.5	7/16	11.1	160	1-3/8	35
-6	RWH-140-06-1M	RWH-140-06-5M	RWH-140-06-10M	RWH-140-06-30M	1000	6000	11/32	8.7	9/16	13.8	210	1-9/16	40
-8	RWH-140-08-1M	RWH-140-08-5M	RWH-140-08-10M	RWH-140-08-30M	1000	5000	7/16	11.1	5/8	15.7	226	2	51
-10	RWH-140-10-1M	RWH-140-10-5M	RWH-140-10-10M	RWH-140-10-30M	1000	5000	9/16	14.2	13/16	20.8	350	2-5/32	55
-12	RWH-140-12-1M	RWH-140-12-5M	RWH-140-12-10M	RWH-140-12-30M	1000	3750	11/16	17.4	15/16	23.9	405	2-23/64	60
-16	RWH-140-16-1M	RWH-140-16-5M	RWH-140-16-10M	RWH-140-16-30M	750	2500	7/8	22.2	13/64	30.5	550	3-17/32	90
-20	RWH-140-20-1M	RWH-140-20-5M	RWH-140-20-10M	RWH-140-20-20M*	500	2000	1-1/8	28.5	1-13/32	35.8	580	4-1/8	105

\*AN-20 comes in 20M, not 30M

### HOSE INNER SUPPORT SPRINGS

- Commonly used in vacuum applications, or when a tight bend is required
- It's very important in vacuum applications that free flowing bends are used as opposed to tight radius to avoid hoses kinking
- Suits 100 / 120 / 140 Series Hose

Part No.	Suits AN	Length
RWM-057-12	-12	1M
RWM-057-16	-16	1M



### 100 / 120 / 140 SERIES HOSE ENDS

- Raceworks supply two ranges of Hose Ends that suit the 100 / 120 / 140 Series Hose
- 100 Series are Cutter Hose Ends, which cut a thread onto the hose outer
- 110 Series are Taper Hose Ends, which require the Hose to be pushed in and seated on a taper. For this reason, 110 Series Hose ends are easier to install. Since they don't cut the thread, the gripping force is less than that of 100 Series. For this reason, we recommend Taper Hose Ends for lower pressure applications, and 100 Series Hose Ends can be used for both low or high pressure applications
- Both are manufactured from 6063-T6 grade aluminium
- All Raceworks Hose Ends are hardcoat anodised for maximum protection, and full flow to provide uninhabited fluid movement
- All Raceworks products come with a 2 year warranty



RWF-101-08BK (Cutter)



RWF-111-08BK (Taper)



## 100 / 120 / 140 SERIES CUTTER HOSE ENDS



CUTTER STRAIGHT HOSE ENDS	
AN	Part No.
-4	RWF-101-04BK
-6	RWF-101-06BK
-8	RWF-101-08BK
-10	RWF-101-10BK
-12	RWF-101-12BK
-16	RWF-101-16BK
-20	RWF-101-20BK



CUTTER 30° HOSE ENDS	
AN	Part No.
-4	RWF-107-04BK
-6	RWF-107-06BK
-8	RWF-107-08BK
-10	RWF-107-10BK
-12	RWF-107-12BK
-16	RWF-107-16BK



CUTTER 45° HOSE ENDS	
AN	Part No.
-4	RWF-102-04BK
-6	RWF-102-06BK
-8	RWF-102-08BK
-10	RWF-102-10BK
-12	RWF-102-12BK
-16	RWF-102-16BK
-20	RWF-102-20BK



CUTTER 60° HOSE ENDS	
AN	Part No.
-4	RWF-108-04BK
-6	RWF-108-06BK
-8	RWF-108-08BK
-10	RWF-108-10BK
-12	RWF-108-12BK
-16	RWF-108-16BK



CUTTER 90° HOSE ENDS	
AN	Part No.
-4	RWF-103-04BK
-6	RWF-103-06BK
-8	RWF-103-08BK
-10	RWF-103-10BK
-12	RWF-103-12BK
-16	RWF-103-16BK
-20	RWF-103-20BK



CUTTER 120° HOSE ENDS	
AN	Part No.
-4	RWF-104-04BK
-6	RWF-104-06BK
-8	RWF-104-08BK
-10	RWF-104-10BK
-12	RWF-104-12BK
-16	RWF-104-16BK



CUTTER 150° HOSE ENDS	
AN	Part No.
-4	RWF-105-04BK
-6	RWF-105-06BK
-8	RWF-105-08BK
-10	RWF-105-10BK
-12	RWF-105-12BK
-16	RWF-105-16BK



CUTTER 180° HOSE ENDS	
AN	Part No.
-4	RWF-106-04BK
-6	RWF-106-06BK
-8	RWF-106-08BK
-10	RWF-106-10BK
-12	RWF-106-12BK
-16	RWF-106-16BK



## 100 / 120 / 140 SERIES TAPER HOSE ENDS



**TAPER STRAIGHT HOSE ENDS**

AN	Part No.
-4	RWF-111-04BK
-6	RWF-111-06BK
-8	RWF-111-08BK
-10	RWF-111-10BK
-12	RWF-111-12BK
-16	RWF-111-16BK



**TAPER 30° HOSE ENDS**

AN	Part No.
-4	RWF-117-04BK
-6	RWF-117-06BK
-8	RWF-117-08BK
-10	RWF-117-10BK
-12	RWF-117-12BK
-16	RWF-117-16BK



**TAPER 45° HOSE ENDS**

AN	Part No.
-4	RWF-112-04BK
-6	RWF-112-06BK
-8	RWF-112-08BK
-10	RWF-112-10BK
-12	RWF-112-12BK
-16	RWF-112-16BK



**TAPER 60° HOSE ENDS**

AN	Part No.
-4	RWF-118-04BK
-6	RWF-118-06BK
-8	RWF-118-08BK
-10	RWF-118-10BK
-12	RWF-118-12BK
-16	RWF-118-16BK



**TAPER 90° HOSE ENDS**

AN	Part No.
-4	RWF-113-04BK
-6	RWF-113-06BK
-8	RWF-113-08BK
-10	RWF-113-10BK
-12	RWF-113-12BK
-16	RWF-113-16BK



**TAPER 120° HOSE ENDS**

AN	Part No.
-4	RWF-114-04BK
-6	RWF-114-06BK
-8	RWF-114-08BK
-10	RWF-114-10BK
-12	RWF-114-12BK
-16	RWF-114-16BK



**TAPER 150° HOSE ENDS**

AN	Part No.
-4	RWF-115-04BK
-6	RWF-115-06BK
-8	RWF-115-08BK
-10	RWF-115-10BK
-12	RWF-115-12BK
-16	RWF-115-16BK



**TAPER 180° HOSE ENDS**

AN	Part No.
-4	RWF-116-04BK
-6	RWF-116-06BK
-8	RWF-116-08BK
-10	RWF-116-10BK
-12	RWF-116-12BK
-16	RWF-116-16BK

### TOOLS AND HOW TO

- **Cutters and Installation Tool**  
see page 188
- **Fitting Instructions**  
see pages 221 and 225



## HOSES AND FITTINGS

### 200 SERIES STAINLESS BRAIDED PTFE HOSE

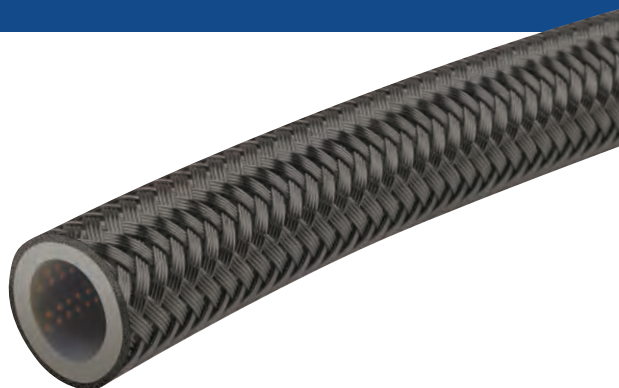
- **Raceworks 200 Series Stainless Braided Hose** is constructed from a PTFE inner tube that is compatible with all fuels, oils, nitrous, this includes brake and clutch fluids
- The PTFE tube is covered by a stainless steel outer cover that is durable and resistant to abrasion and expansion
- PTFE Hose is the best option for use on fuel systems as it won't allow the permeation of fuel smell, has the highest pressure and temperature rating and is the lightest of the Raceworks flexible hoses
- All Raceworks products come with a 2 year warranty
- Temperature range: -70°C to 250°C ■ Ethanol and methanol safe
- For Hose maintenance info, see page 233



AN	1M Length Part No.	5M Length Part No.	10M Length Part No.	30M Length Part No.	Pressure psi		Inside Dia		Outside Dia		Weight (g/m)	Bend Radius	
					Operating	Burst	(Inch)	(mm)	(Inch)	(mm)		(Inch)	(mm)
-3	RWH-200-03-1M	RWH-200-03-5M	RWH-200-03-10M	RWH-200-03-30M	3000	10000	1/8	3.1	1/4	6.4	66	55/64	22
-4	RWH-200-04-1M	RWH-200-04-5M	RWH-200-04-10M	RWH-200-04-30M	3000	10000	3/16	4.7	5/16	7.9	85	1	25
-6	RWH-200-06-1M	RWH-200-06-5M	RWH-200-06-10M	RWH-200-06-30M	2500	9000	5/16	7.9	15/32	11.8	139	1-19/64	33
-8	RWH-200-08-1M	RWH-200-08-5M	RWH-200-08-10M	RWH-200-08-30M	2000	7000	13/32	10.5	17/32	13.3	176	1-11/16	43
-10	RWH-200-10-1M	RWH-200-10-5M	RWH-200-10-10M	RWH-200-10-30M	1500	5000	17/32	13.4	41/64	16.2	222	2-3/32	53
-12	RWH-200-12-1M	RWH-200-12-5M	RWH-200-12-10M	RWH-200-12-30M	1200	4500	41/64	16.2	49/64	19.3	246	4-17/32	115

### 230 SERIES BLACK STAINLESS BRAIDED PTFE HOSE

- **Raceworks 230 Series Black Stainless Braided Hose** is constructed from a PTFE inner tube that is compatible with all fuels, oils, nitrous, this includes brake and clutch fluids
- The PTFE tube is covered by a stainless steel outer cover that is durable and resistant to abrasion and expansion
- PTFE hose is the best option for use on fuel systems as it won't allow the permeation of fuel smell, has the highest pressure and temperature rating, and is the lightest of the Raceworks flexible hoses
- All Raceworks products come with a 2 year warranty
- Temperature range: -70°C to 250°C ■ Ethanol and methanol safe
- For hose maintenance info, see page 233



AN	1M Length Part No.	5M Length Part No.	10M Length Part No.	30M Length Part No.	Pressure psi		Inside Dia		Outside Dia		Weight (g/m)	Bend Radius	
					Operating	Burst	(Inch)	(mm)	(Inch)	(mm)		(Inch)	(mm)
-3	RWH-230-03-1M	RWH-230-03-5M	RWH-230-03-10M	RWH-230-03-30M	3000	10000	1/8	3.1	1/4	6.4	64	55/64	22
-4	RWH-230-04-1M	RWH-230-04-5M	RWH-230-04-10M	RWH-230-04-30M	3000	10000	3/16	4.7	5/16	7.9	77	1-1/32	26
-6	RWH-230-06-1M	RWH-230-06-5M	RWH-230-06-10M	RWH-230-06-30M	2500	9000	5/16	7.9	15/32	11.8	120	1-1/2	38
-8	RWH-230-08-1M	RWH-230-08-5M	RWH-230-08-10M	RWH-230-08-30M	2000	7000	13/32	10.5	17/32	13.3	140	1-7/8	48
-10	RWH-230-10-1M	RWH-230-10-5M	RWH-230-10-10M	RWH-230-10-30M	1500	5000	17/32	13.4	41/64	16.2	202	2-7/16	62
-12	RWH-230-12-1M	RWH-230-12-5M	RWH-230-12-10M	RWH-230-12-30M	1200	4500	41/64	16.2	49/64	19.3	248	3-5/32	80

## HOSES AND FITTINGS

### 240 SERIES BLACK NYLON BRAIDED PTFE HOSE

- Raceworks 240 Series Black Nylon Braided Hose is constructed from a PTFE inner tube that is compatible with all fuels, oils and nitrous, this includes brake and clutch fluids
- The nylon outer cover is more resistant to abrasion than Stainless Braided hoses
- PTFE hose is the best option for use on fuel systems as it won't allow the permeation of fuel smell, has the highest pressure and temperature rating, and is the lightest of the Raceworks flexible hoses
- All Raceworks products come with a 2 year warranty
- Temperature range: -70°C to 250°C ■ Ethanol and methanol safe
- For hose maintenance info, see page 233



AN	1M Length Part No.	5M Length Part No.	10M Length Part No.	30M Length Part No.	Pressure psi		Inside Dia		Outside Dia		Weight (g/m)	Bend Radius	
					Operating	Burst	(Inch)	(mm)	(Inch)	(mm)		(Inch)	(mm)
-3	RWH-240-03-1M	RWH-240-03-5M	RWH-240-03-10M	RWH-240-03-30M	3000	10000	1/8	3.1	1/4	6.4	66	1-3/8	35
-4	RWH-240-04-1M	RWH-240-04-5M	RWH-240-04-10M	RWH-240-04-30M	3000	10000	3/16	4.7	5/16	7.9	85	1-1/16	27
-6	RWH-240-06-1M	RWH-240-06-5M	RWH-240-06-10M	RWH-240-06-30M	2500	9000	5/16	7.9	15/32	11.8	113	1-37/64	40
-8	RWH-240-08-1M	RWH-240-08-5M	RWH-240-08-10M	RWH-240-08-30M	2000	7000	13/32	10.5	17/32	13.3	142	1-57/64	48
-10	RWH-240-10-1M	RWH-240-10-5M	RWH-240-10-10M	RWH-240-10-30M	1500	5000	17/32	13.4	41/64	16.2	255	3-5/32	80
-12	RWH-240-12-1M	RWH-240-12-5M	RWH-240-12-10M	RWH-240-12-30M	1200	4500	41/64	16.2	49/64	19.3	284	4-23/32	120

### 260 SERIES STAINLESS BRAIDED PTFE HOSE WITH BLACK PVC COVER

- Raceworks 260 Series Black Nylon Braided Hose is constructed from a PTFE inner tube that is compatible with all oils, including brake and clutch fluids
- The PTFE tube is covered by a stainless steel outer cover that is then covered with a black PVC cover for extra durability, and resistance to abrasion and expansion
- All Raceworks products come with a 2 year warranty
- Temperature range: -70°C to 250°C ■ Ethanol and methanol safe
- For hose maintenance info, see page 233



AN	1M Length Part No.	5M Length Part No.	10M Length Part No.	Pressure psi		Inside Dia		Outside Dia		Weight (g/m)	Bend Radius	
				Operating	Burst	(Inch)	(mm)	(Inch)	(mm)		(Inch)	(mm)
-3	RWH-260-03-1M	RWH-260-03-5M	RWH-260-03-10M	3000	10000	9/64	3.6	9/32	7.35	1-1/32	26	22

## TECH TIP – TRYING TO IDENTIFY A HOSE THAT'S ALREADY TERMINATED?

Use our Braided Hose Gauge. Applicable for hoses from AN-3 to AN-12.



RWT-034BK



RWT-034RD



## HOSES AND FITTINGS

### 200 / 230 / 240 / 260 SERIES HOSE ENDS

- Raceworks supply two ranges of PTFE Hose Ends
- Most commonly used are the **Hardcoat Anodised Black Aluminium Full-Flow Hose Ends**, these provide a very smooth flow path for the fluid
- The second type available are **forged Stainless Steel Hose Ends**. These are recommended for use in hot environments, on a performance car most commonly found on a turbocharger, where an anodised aluminium fitting may discolour. Being forged, they are lower profile than Aluminium Hose ends, and are great for tight-space applications
- All Raceworks products come with a 2 year warranty



PTFE STRAIGHT HOSE ENDS		
AN	Material	Part No.
-3	Aluminium	RWF-201-03BK
-3	Stainless Steel	RWF-201-03SS
-4	Aluminium	RWF-201-04BK
-4	Stainless Steel	RWF-201-04SS
-6	Aluminium	RWF-201-06BK
-6	Stainless Steel	RWF-201-06SS
-8	Aluminium	RWF-201-08BK
-10	Aluminium	RWF-201-10BK
-12	Aluminium	RWF-201-12BK

PTFE 30° HOSE ENDS		
AN	Material	Part No.
-4	Aluminium	RWF-207-04BK
-6	Aluminium	RWF-207-06BK
-8	Aluminium	RWF-207-08BK
-10	Aluminium	RWF-207-10BK
-12	Aluminium	RWF-207-12BK

PTFE 45° HOSE ENDS		
AN	Material	Part No.
-3	Aluminium	RWF-202-03BK
-3	Stainless Steel	RWF-202-03SS
-4	Aluminium	RWF-202-04BK
-4	Stainless Steel	RWF-202-04SS
-6	Aluminium	RWF-202-06BK
-6	Stainless Steel	RWF-202-06SS
-8	Aluminium	RWF-202-08BK
-10	Aluminium	RWF-202-10BK
-12	Aluminium	RWF-202-12BK



PTFE 60° HOSE ENDS		
AN	Material	Part No.
-4	Aluminium	RWF-208-04BK
-6	Aluminium	RWF-208-06BK
-8	Aluminium	RWF-208-08BK
-10	Aluminium	RWF-208-10BK
-12	Aluminium	RWF-208-12BK

PTFE 90° HOSE ENDS		
AN	Material	Part No.
-3	Aluminium	RWF-203-03BK
-3	Stainless Steel	RWF-203-03SS
-4	Aluminium	RWF-203-04BK
-4	Stainless Steel	RWF-203-04SS
-6	Aluminium	RWF-203-06BK
-6	Stainless Steel	RWF-203-06SS
-8	Aluminium	RWF-203-08BK
-10	Aluminium	RWF-203-10BK
-12	Aluminium	RWF-203-12BK

PTFE 120° HOSE ENDS		
AN	Material	Part No.
-4	Aluminium	RWF-204-04BK
-6	Aluminium	RWF-204-06BK
-8	Aluminium	RWF-204-08BK
-10	Aluminium	RWF-204-10BK
-12	Aluminium	RWF-204-12BK

## HOSES AND FITTINGS

### 200 / 230 / 240 / 260 SERIES HOSE ENDS



#### TOOLS AND HOW TO

- **Cutters and Installation Tool**  
see page 188
- **Fitting Instructions** see page 222

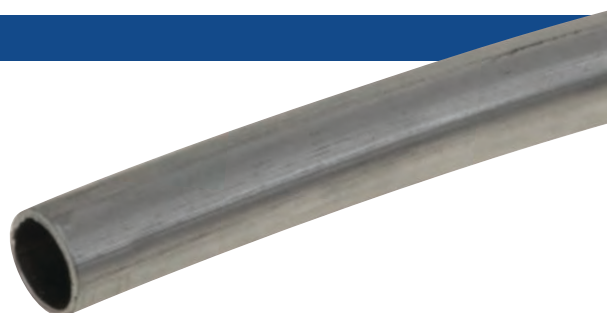


PTFE 150° HOSE ENDS		
AN	Material	Part No.
-4	Aluminium	RWF-205-04BK
-6	Aluminium	RWF-205-06BK
-8	Aluminium	RWF-205-08BK
-10	Aluminium	RWF-205-10BK
-12	Aluminium	RWF-205-12BK

PTFE 180° HOSE ENDS		
AN	Material	Part No.
-4	Aluminium	RWF-206-04BK
-6	Aluminium	RWF-206-06BK
-8	Aluminium	RWF-206-08BK
-10	Aluminium	RWF-206-10BK
-12	Aluminium	RWF-206-12BK

### 300 SERIES STEEL / STAINLESS STEEL HARD LINE

- **Raceworks 300 Series Hard Line** is commonly used for brake and clutch lines in small sizes, and various fluids in larger sizes including Fuels and Oils
- There are requirements in some states for road vehicles to have Steel or Stainless Steel Hard Lines for Fuel
- It is strongly recommended that a **Raceworks RWT-014 Tube Straightener** is used with these products
- All Raceworks products come with a 2 year warranty



AN	7M Length Part No.	Material	Inside Dia (Inch)	Inside Dia (mm)	Outside Dia (Inch)	Outside Dia (mm)	Wall Thickness (mm)
-3	RWH-300-03S	Steel	9/64	3.55	3/16	4.75	0.6
-3	RWH-300-03SS	Stainless Steel	9/64	3.55	3/16	4.75	0.6
-6	RWH-300-06SS	Stainless Steel	5/16	8.08	3/8	9.5	0.71
-8	RWH-300-08SS	Stainless Steel	7/16	11.10	1/2	12.7	0.8



AN-3 HOSE ENDS	
Description	Part No.
Description	Part Number
3/8"-24 Inverted Flare Tube Nut	RWF-364-SS
7/16"-24 Inverted Flare Tube Nut	RWF-365-SS
AN-3 Tube Nuts with Integrated Sleeves	RWF-390-03SS

AN-6 HOSE ENDS	
Description	Part No.
SS Hex Male Flare Weld On	RWF-999-06-SSH
Straight Female Adapter	RWF-619-06-06BK
Straight Male Adapter	RWF-618-06-06BK
90° Female Adapter	RWF-139-06-06BK
90° Male Adapter	RWF-137-06-06BK

AN-8 HOSE ENDS	
Description	Part No.
SS Hex Male Flare Weld On	RWF-999-08-SSH
Straight Female Adapter	RWF-619-08-08BK
Straight Male Adapter	RWF-618-08-08BK
90° Female Adapter	RWF-139-08-08BK
90° Male Adapter	RWF-137-08-08BK

- For fitting instructions see pages 224 and 228
- For AN-6/AN-8 Tube Nuts and Sleeves, see page 103

## 400 SERIES PUSH LOCK RUBBER HOSE

- Raceworks 400 Series Rubber Hose has an inner liner of Nitrile which is reinforced with braid made from high tensile synthetic textile cord to give it extra strength
- Raceworks 400 Series is safe for use with E85, methanol, oils, lubricants and coolant
- Recommended for use on low pressure/temperature applications. If using in high pressure or temperatures above 70°C, we recommend securing hose ends with a clamp
- All Raceworks products come with a 2 year warranty
- Hose is not submersible ■ Temperature range: -40C to 150C ■ Ethanol and methanol safe ■ For hose maintenance info, see page 233



AN	1M Length Part No.	5M Length Part No.	10M Length Part No.	30M Length Part No.	Pressure psi Op. Burst	Inside Dia (Inch) (mm)	Outside Dia (Inch) (mm)	Weight (g/m)	Bend Radius (Inch) (mm)	Suitable Clamp
-4	RWH-400-04-1M	RWH-400-04-5M	RWH-400-04-10M	RWH-400-04-30M	250 750	1/4 6.4	29/64 11.6	99g	1-3/16 30	CLE-405
-5	RWH-400-05-1M	RWH-400-05-5M	RWH-400-05-10M	RWH-400-05-30M	250 750	5/16 7.9	9/16 14.2	140g	1-3/8 35	CLE-406
-6	RWH-400-06-1M	RWH-400-06-5M	RWH-400-06-10M	RWH-400-06-30M	250 750	3/8 9.5	5/8 15.8	175g	1-37/64 40	CLE-407
-8	RWH-400-08-1M	RWH-400-08-5M	RWH-400-08-10M	RWH-400-08-30M	250 750	1/2 12.7	3/4 19.1	237g	2-11/64 55	CLE-409
-10	RWH-400-10-1M	RWH-400-10-5M	RWH-400-10-10M	RWH-400-10-30M	250 750	5/8 15.8	15/16 22.9	296g	2-7/16 62	CLE-411
-12	RWH-400-12-1M	RWH-400-12-5M	RWH-400-12-10M	RWH-400-12-30M	250 750	3/4 19.1	1-1/32 26.2	353g	3-35/64 90	CLE-413

## 400 SERIES HOSE ENDS

- Raceworks 400 Series Hose Ends are manufactured from 6063-T6 grade aluminium
- All Raceworks hose ends are hardcoat anodised for maximum protection, and full flow to provide uninhabited fluid movement
- Female swivel hose end ensures ease of fitment once 400 Series Hose has been connected ■ All Raceworks products come with a 2 year warranty



PUSH LOCK STRAIGHT HOSE ENDS	
AN	Part No.
-4	RWF-401-04BK
-5 (-6 Swivel)	RWF-401-05BK
-6	RWF-401-06BK
-8	RWF-401-08BK
-10	RWF-401-10BK
-12	RWF-401-12BK

PUSH LOCK 30° HOSE ENDS	
AN	Part No.
-4	RWF-407-04BK
-6	RWF-407-06BK
-8	RWF-407-08BK
-10	RWF-407-10BK
-12	RWF-407-12BK

PUSH LOCK 45° HOSE ENDS	
AN	Part No.
-4	RWF-402-04BK
-5 (-6 Swivel)	RWF-402-05BK
-6	RWF-402-06BK
-8	RWF-402-08BK
-10	RWF-402-10BK
-12	RWF-402-12BK



PUSH LOCK 60° HOSE ENDS	
AN	Part No.
-4	RWF-408-04BK
-6	RWF-408-06BK
-8	RWF-408-08BK
-10	RWF-408-10BK
-12	RWF-408-12BK

PUSH LOCK 90° HOSE ENDS	
AN	Part No.
-4	RWF-403-04BK
-5 (-6 Swivel)	RWF-403-05BK
-6	RWF-403-06BK
-8	RWF-403-08BK
-10	RWF-403-10BK
-12	RWF-403-12BK

PUSH LOCK 120° HOSE ENDS	
AN	Part No.
-4	RWF-404-04BK
-6	RWF-404-06BK
-8	RWF-404-08BK
-10	RWF-404-10BK
-12	RWF-404-12BK



## HOSES AND FITTINGS

### 400 SERIES HOSE ENDS



#### PUSH LOCK 150° HOSE ENDS

AN	Part No.
-4	RWF-405-04BK
-6	RWF-405-06BK
-8	RWF-405-08BK
-10	RWF-405-10BK
-12	RWF-405-12BK

#### PUSH LOCK 180° HOSE ENDS

AN	Part No.
-4	RWF-406-04BK
-6	RWF-406-06BK
-8	RWF-406-08BK
-10	RWF-406-10BK
-12	RWF-406-12BK

#### PUSH LOCK HOSE JOINERS

AN	Part No.
-4	RWF-410-04BK
-5	RWF-410-05BK
-6	RWF-410-06BK
-8	RWF-410-08BK
-10	RWF-410-10BK
-12	RWF-410-12BK

### TECH TIP –

### SHOULD FLEXIBLE HOSES BE MADE TO THE EXACT LENGTH REQUIRED?

**No – Hoses need to move under pressure and should not be tight**

- Hoses are often connected to engine parts which can move also
- They shouldn't be under tension when installed, and shouldn't be twisted
- Hoses should be made a little longer than need be to allow for some flex
- Smooth bend radius' should be used when possible, to avoid kinks which restrict flow

### TOOLS AND HOW TO

- Fitting Instructions see page 223
- 400 Series Hose Cutters and EQP-020 Crimping Tool see page 189



### TECH TIP – DO RACEWORKS “FULL FLOW” HOSE ENDS HAVE ANY INTERNAL DIAMETER REDUCTION?

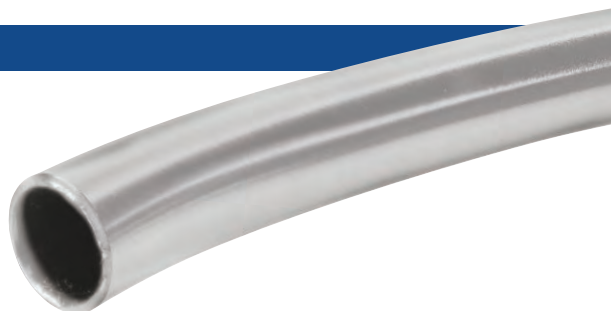
- Raceworks hose ends are machined using 6063-T6 aluminium extrusion, and then bent to desired angle
- The photo below shows AN-10, AN-12 and AN-16 90° hose ends that have been cut open in the middle of the bend
- The internal diameters are 12.6mm, 15.0mm and 20.5mm respectively
- All within 0.3mm or 99% of their diameter on the end of the fitting
- While some may argue that a size reduction makes little to no difference over a short distance, Raceworks have special procedures in place at time of manufacturing to ensure the inside of the bend maintains its shape and diameter



## HOSES AND FITTINGS

### 600 SERIES ALUMINIUM HARD LINE

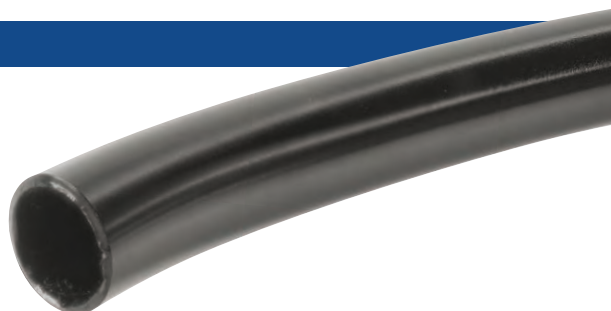
- Raceworks 600 Series Aluminium Hard Line is extruded from lightweight, seamless aluminium tube
- Available in a raw finish in four sizes, it can be either bent by hand or with a bender
- All Raceworks products come with a 2 year warranty
- Wall thickness of 1mm
- Ethanol and methanol safe



AN	7M Length Part No.	Pressure psi		Inside Diameter		Outside Diameter		Weight (g/m)
		Operating	Burst	(Inch)	(mm)	(Inch)	(mm)	
-5	RWH-600-05	1400	2100	15/64	5.9	5/16	7.9	61
-6	RWH-600-06	1100	1700	19/64	7.5	3/8	9.5	75
-8	RWH-600-08	550	1100	27/64	10.7	1/2	12.7	104
-10	RWH-600-10	420	550	35/64	13.9	5/8	15.8	128

### 620 SERIES BLACK ALUMINIUM HARD LINE

- Raceworks 620 Series Aluminium Hard Line is extruded from lightweight, seamless aluminium tube
- Available in four sizes, it is anodised in black on the outside only
- It can be either bent by hand or with a bender. The use of a bender results in less distortion of the shape of the tube, and as a result less creasing of the anodising
- All Raceworks products come with a 2 year warranty
- Wall thickness of 1mm ■ Ethanol and methanol safe



AN	7M Length Part No.	Pressure psi		Inside Diameter		Outside Diameter		Weight (g/m)
		Operating	Burst	(Inch)	(mm)	(Inch)	(mm)	
-5	RWH-620-05	1400	2100	15/64	5.9	5/16	7.9	61
-6	RWH-620-06	1100	1700	19/64	7.5	3/8	9.5	75
-8	RWH-620-08	550	1100	27/64	10.7	1/2	12.7	104
-10	RWH-620-10	420	550	35/64	13.9	5/8	15.8	128

### TECH TIP –

**RACEWORKS CNC MACHINED ALUMINIUM PRODUCTS ARE 6063-T6 GRADE. MOST OTHER MANUFACTURERS ADVERTISE 6061-T6. WHAT IS THE DIFFERENCE?**

- 6061 is easier to machine to a nice finish, but not quite as good for anodising and forming.
- They both have the same ability to be rolled and welded, and have the same levels of corrosion resistance.
- Raceworks therefore choose the Raw Billet Material that results in the best quality hardcoat anodising possible.

## HOSES AND FITTINGS



**ALY-083BK  
WITH RWH-600  
HARD LINE**



## HOSES AND FITTINGS



AN MALE FLARE STRAIGHT TUBE ADAPTERS		
AN	Tube	Part No.
-5	5/16"	RWF-618-06-05BK
-6	3/8"	RWF-618-06-06BK
-8	1/2"	RWF-618-08-08BK
-10	5/8"	RWF-618-10-10BK

AN FEMALE SWIVEL STRAIGHT TUBE ADAPTERS		
AN	Tube	Part No.
-5	5/16"	RWF-619-06-05BK
-6	3/8"	RWF-619-06-06BK
-8	1/2"	RWF-619-08-08BK
-10	5/8"	RWF-619-10-10BK

AN MALE FLARE 90° TUBE ADAPTERS		
AN	Tube	Part No.
-6	3/8"	RWF-137-06-06BK
-8	1/2"	RWF-137-08-08BK
-10	5/8"	RWF-137-10-10BK



AN FEMALE SWIVEL 90° TUBE ADAPTERS		
AN	Tube	Part No.
-6	3/8"	RWF-139-06-06BK
-8	1/2"	RWF-139-08-08BK
-10	5/8"	RWF-139-10-10BK

TUBE SLEEVES (2PK)		
AN	Tube	Part No.
-5	5/16"	RWF-819-05BK
-6	3/8"	RWF-819-06BK
-8	1/2"	RWF-819-08BK
-10	5/8"	RWF-819-10BK

AN TUBE NUTS (2PK)		
AN	Tube	Part No.
-6	3/8"	RWF-818-06BK
-8	1/2"	RWF-818-08BK
-10	5/8"	RWF-818-10BK

AN HEX MALE FLARE WELD ONS		
AN	Tube	Part No.
-6	3/8"	RWF-999-06-AH
-8	1/2"	RWF-999-08-AH
-10	5/8"	RWF-999-10-AH

■ \*AN-5 Tube Sleeve is used with AN-6 Tube Nut

### 700 SERIES REINFORCED CLEAR PVC BREATHER HOSE

- Raceworks 700 Series Clear Breather Hose is perfect for applications that require a window as to what is taking place inside the hose
- Commonly used for low pressure applications such as breather hoses and water hoses, Raceworks hoses are reinforced to prevent kinking, and maintain their shape
- All Raceworks products come with a 2 year warranty
- Temperature range: 5°C to 70°C ■ Not fuel safe
- For hose maintenance info, see page 233



AN	1M Length Part No.	Inside Diameter		Outside Diameter		Weight (g/m)	Bend Radius	
		(Inch)	(mm)	(Inch)	(mm)		(Inch)	(mm)
-8	RWH-700-08-1M	1/2	12.7	47/64	18.4	160	1-3/16	30
-10	RWH-700-10-1M	5/8	15.9	27/32	21.5	180	1-3/8	35
-12	RWH-700-12-1M	3/4	19.1	1-1/32	26.2	380	1-9/16	40
-16	RWH-700-16-1M	1	25.4	1-7/32	30.9	400	1-25/32	45
-20	RWH-700-20-1M	1-1/4	31.8	1-17/32	39.0	550	2-3/4	70

## HOSES AND FITTINGS

### HEX HOSE FINISHERS

Inside Dia	Inside Dia	Part No.
12.8mm	1/2"	RWF-150-13MM
14.3mm	9/16"	RWF-150-14MM
15.8mm	5/8"	RWF-150-16MM
17.5mm	11/16"	RWF-150-18MM
20.6mm	13/16"	RWF-150-21MM
23.8mm	15-16"	RWF-150-24MM
28.5mm	1-1/8"	RWF-150-29MM
31.1mm	1-7/32"	RWF-150-31MM
38.1mm	1-1/2"	RWF-150-38MM
44.5mm	1-3/4"	RWF-150-45MM
49.2mm	1-15/16"	RWF-150-49MM



### BARB ADAPTER FITTINGS



#### AN FEMALE SWIVEL TO BARB STRAIGHT

AN	Barb	Part No.
-3	3/16"	RWF-411-03BK
-6	5/16"	RWF-411-06-05BK
-6	1/2"	RWF-411-06-08BK
-6	3/8"	RWF-411-06BK
-8	5/16"	RWF-411-08-05BK
-8	3/8"	RWF-411-08-06BK
-8	1/2"	RWF-411-08BK
-10	5/16"	RWF-411-10-05BK
-10	3/8"	RWF-411-10-06BK
-10	1/2"	RWF-411-10-08BK
-10	5/8"	RWF-411-10BK
-10	3/4"	RWF-411-10-12BK

#### AN FEMALE SWIVEL TO BARB 45°

AN	Barb	Part No.
-6	5/16"	RWF-412-06-05BK
-6	3/8"	RWF-412-06BK
-8	3/8"	RWF-412-08-06BK
-8	1/2"	RWF-412-08BK

#### AN FEMALE SWIVEL TO BARB 90°

AN	Barb	Part No.
-6	5/16"	RWF-413-06-05BK
-6	3/8"	RWF-413-06BK
-8	3/8"	RWF-413-08-06BK
-8	1/2"	RWF-413-08BK
-10	5/16"	RWF-413-10-05BK
-10	3/8"	RWF-413-10-06BK
-10	1/2"	RWF-413-10-08BK
-10	5/8"	RWF-413-10BK
-10	3/4"	RWF-413-10-12BK

## BARB ADAPTER FITTINGS



AN ORB TO BARB STRAIGHT

AN	Barb	Part No.
-4	3/8"	RWF-414-04-06BK
-6	5/16"	RWF-414-06-05BK
-6	3/8"	RWF-414-06-06BK
-8	5/16"	RWF-414-08-05BK
-8	3/8"	RWF-414-08-06BK
-8	1/2"	RWF-414-08-08BK
-10	5/16"	RWF-414-10-05BK
-10	3/8"	RWF-414-10-06BK
-10	1/2"	RWF-414-10-08BK
-10	5/8"	RWF-414-10-10BK
-12	1/2"	RWF-414-12-08BK
-12	5/8"	RWF-414-12-10BK

AN ORB TO BARB 90°

AN	Barb	Part No.
-6	5/16"	RWF-415-06-05BK
-6	3/8"	RWF-415-06-06BK
-8	5/16"	RWF-415-08-05BK
-8	3/8"	RWF-415-08-06BK
-8	1/2"	RWF-415-08-08BK
-10	3/8"	RWF-415-10-06BK
-10	1/2"	RWF-415-10-08BK
-12	1/2"	RWF-415-12-08BK
-12	5/8"	RWF-415-12-10BK

AN MALE FLARE TO BARB STRAIGHT

AN	Barb	Part No.
-6	5/16"	RWF-717-06-05BK
-6	3/8"	RWF-717-06BK
-8	3/8"	RWF-717-08-06BK
-8	5/8"	RWF-717-08-10BK
-8	1/2"	RWF-717-08BK
-10	1/2"	RWF-717-10-08BK
-10	5/8"	RWF-717-10BK



METRIC MALE TO BARB STRAIGHT

Metric	Barb	Part No.
M10 x1.0	5/16"	RWF-414-M10-05BK
M10 x1.0	3/8"	RWF-414-M10-06BK
M10 x1.0	1/2"	RWF-414-M10-08BK
M12x1.5	5/16"	RWF-414-M12-05BK
M12x1.5	3/8"	RWF-414-M12-06BK
M12x1.5	1/2"	RWF-414-M12-08BK
M14x1.5	3/8"	RWF-414-M14-06BK
M14x1.5	1/2"	RWF-414-M14-08BK
M18x1.5	5/16"	RWF-414-M18-05BK
M18x1.5	3/8"	RWF-414-M18-06BK
M18x1.5	1/2"	RWF-414-M18-08BK
M18x1.5	5/8"	RWF-414-M18-10BK

METRIC MALE TO BARB 90°

Metric	Barb	Part No.
M18x1.5	5/8"	RWF-417-M18-10BK

NPT MALE TO BARB STRAIGHT

NPT	Barb	Part No.
1/8"	4mm	RWF-421-02-M4BK
1/8"	3/16"	RWF-421-02-03BK
1/8"	1/4"	RWF-421-02-04BK
1/8"	5/16"	RWF-421-02-05BK
1/8"	3/8"	RWF-421-02-06BK
1/4"	1/4"	RWF-421-04-04BK
1/4"	5/16"	RWF-421-04-05BK
1/4"	3/8"	RWF-421-04-06BK
3/8"	1/4"	RWF-421-06-04BK
3/8"	5/16"	RWF-421-06-05BK
3/8"	3/8"	RWF-421-06-06BK
3/8"	1/2"	RWF-421-06-08BK
3/8"	5/8"	RWF-421-06-10BK
1/2"	3/8"	RWF-421-08-06BK
1/2"	1/2"	RWF-421-08-08BK
1/2"	5/8"	RWF-421-08-10BK
1/2"	3/4"	RWF-421-08-12BK



## HOSES AND FITTINGS

### BARB ADAPTER FITTINGS



#### NPT MALE TO BARB 90°

NPT	Barb	Part No.
1/8"	3/16"	RWF-423-02-03BK
1/8"	1/4"	RWF-423-02-04BK
1/8"	5/16"	RWF-423-02-05BK
1/4"	3/8"	RWF-423-04-06BK
3/8"	5/16"	RWF-423-06-05BK
3/8"	3/8"	RWF-423-06-06BK
3/8"	1/2"	RWF-423-06-08BK
1/2"	1/2"	RWF-423-08-08BK
1/2"	5/8"	RWF-423-08-10BK
1/2"	3/4"	RWF-423-08-12BK

#### NPT MALE TO BARB 45°

NPT	Barb	Part No.
1/8"	3/16"	RWF-422-02-03BK
1/8"	1/4"	RWF-422-02-04BK
1/8"	5/16"	RWF-422-02-05BK
1/4"	3/8"	RWF-422-04-06BK
3/8"	1/2"	RWF-422-06-08BK
1/2"	5/8"	RWF-422-08-10BK

### COMPRESSION LOCK ADAPTER FITTINGS

- **Compression Lock Fittings** allow you to convert a Barb fitting to an AN Male Flare
- Using a Viton O-Ring internally, they are very handy for adapting barbs on fuel pumps and various other components to AN

#### NPT MALE TO BARB 45°

AN	Suits Barb	Part No.
-6	5/16" / 8mm	RWF-717-06-M8BK
-6	3/8" / 10mm	RWF-717-06-M10BK
-8	15mm	RWF-717-08-M15BK
-10	15mm	RWF-717-10-M15BK



## HOSES AND FITTINGS

### BARB JOINERS



STRAIGHT		
Barb	Material	Part No.
3mm	Aluminium	RWF-850-03MM
4mm	Aluminium	RWF-850-04MM
5mm	Aluminium	RWF-850-05MM
6mm	Aluminium	RWF-850-06MM
8mm	Aluminium	RWF-850-08MM
10mm	Aluminium	RWF-850-10MM

TEE		
Barb	Material	Part No.
3mm	Aluminium	RWF-851-03MM
4mm	Aluminium	RWF-851-04MM
5mm	Aluminium	RWF-851-05MM
6mm	Aluminium	RWF-851-06MM
8mm	Aluminium	RWF-851-08MM
10mm	Aluminium	RWF-851-10MM



## HOSES AND FITTINGS

### M10 x 1.0 PORT ADAPTERS (SUITS BOSCH SENSORS)

- Each of these adapters has a special Inverted Flare to suit Bosch Pressure/Temp Sensors



AN FEMALE SWIVEL TO AN MALE		
AN Female	AN Male	Part No.
-10	-10	RWF-140-10-M10BK



AN MALE FLARE UNION	
AN	Part No.
-10	RWF-141-10-M10BK



METRIC REDUCER	
Metric Male	Part No.
M12x1.5	RWF-912-M12-M10BK



AN ORB REDUCERS	
AN ORB	Part No.
-6	RWF-813-06-M10BK
-8	RWF-813-08-M10BK



NPT MALE ADAPTER		
NPT	Material	Part No.
1/8"	Stainless Steel	RWF-925-02-M10SS
1/8"	Aluminium	RWF-925-02-M10BK



BSPT MALE ADAPTER		
BSPT	Material	Part No.
1/8"	Stainless Steel	RWF-926-02-M10SS

- \*BSPT adapter has a groove machined into the outer hex to easily identify NPT vs BSPT

### METRIC AND UNF ADAPTER FITTINGS



UNF MALE TO AN MALE FLARE			
UNF	AN	Material	Part No.
7/16"-24	-3	Stainless Steel	RWF-355-03SS
7/16"-24	-4	Stainless Steel	RWF-355-04SS

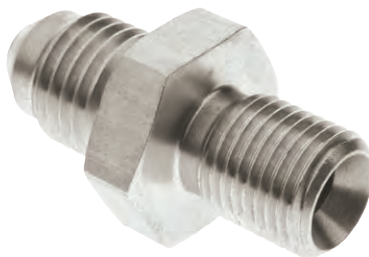


METRIC MALE TO AN FEMALE SWIVEL			
Metric	AN	Material	Part No.
M18x1.5	-8	Aluminium	RWF-906-08-M18BK



## HOSES AND FITTINGS

### METRIC ADAPTER FITTINGS



### TECH TIP – WHAT DOES DUAL SEAL MEAN?

Dual Seal means the metric side of the fitting can either seal using the supplied washer or an inverted flare.

#### METRIC TO AN MALE FLARE

Metric	AN	Material	Part No.	Metric	AN	Material	Part No.
M8x1.0 (Dual Seal)	-3	Stainless Steel	RWF-349-03SS	M12x1.5	-4	Aluminium	RWF-731-04BK
M8x1.0 (Dual Seal)	-4	Stainless Steel	RWF-349-04SS	M12x1.5	-6	Aluminium	RWF-731-06BK
M8x1.25 (Dual Seal)	-3	Stainless Steel	RWF-349-03-02SS	M12x1.5	-8	Aluminium	RWF-731-08BK
M8x1.25 (Dual Seal)	-4	Stainless Steel	RWF-349-04-02SS	M12x1.5	-10	Aluminium	RWF-731-10BK
M10x1.0 (Dual Seal)	-3	Stainless Steel	RWF-351-03SS	M14x1.25	-4	Aluminium	RWF-732-04-01BK
M10x1.0 (Dual Seal)	-4	Stainless Steel	RWF-351-04SS	M14x1.25	-6	Aluminium	RWF-732-06-01BK
M10x1.0	-4	Aluminium	RWF-729-04BK	M14x1.5	-4	Aluminium	RWF-732-04BK
M10x1.0	-6	Aluminium	RWF-729-06BK	M14x1.5	-6	Aluminium	RWF-732-06BK
M10x1.0	-6	Stainless Steel High Flow	RWF-729-06SS	M14x1.5	-8	Aluminium	RWF-732-08BK
M10x1.0	-8	Aluminium	RWF-729-08BK	M14x1.5	-10	Aluminium	RWF-732-10BK
M10x1.0	-8	Stainless Steel High Flow	RWF-729-08SS	M16x1.5	-6	Aluminium	RWF-733-06BK
M10x1.25 (Dual Seal)	-3	Stainless Steel	RWF-352-03SS	M16x1.5	-8	Aluminium	RWF-733-08BK
M10x1.25 (Dual Seal)	-4	Stainless Steel	RWF-352-04SS	M16x1.5	-10	Aluminium	RWF-733-10BK
M10x1.25	-4	Aluminium	RWF-744-04BK	M16x1.5	-12	Aluminium	RWF-733-12BK
M10x1.25	-6	Aluminium	RWF-744-06BK	M18x1.5	-6	Aluminium	RWF-734-06BK
M10x1.25	-8	Aluminium	RWF-744-08BK	M18x1.5	-8	Aluminium	RWF-734-08BK
M10x1.5 (Dual Seal)	-3	Stainless Steel	RWF-356-03SS	M18x1.5	-10	Aluminium	RWF-734-10BK
M10x1.5	-4	Aluminium	RWF-745-04BK	M18x1.5	-12	Aluminium	RWF-734-12BK
M10x1.5	-6	Aluminium	RWF-745-06BK	M20x1.5	-6	Aluminium	RWF-735-06BK
M10x1.5	-8	Aluminium	RWF-745-08BK	M20x1.5	-8	Aluminium	RWF-735-08BK
M12x1.0 (Dual Seal)	-4	Stainless Steel	RWF-357-04SS	M20x1.5	-10	Aluminium	RWF-735-10BK
M12x1.0	-4	Aluminium	RWF-730-04-01BK	M20x1.5	-12	Aluminium	RWF-735-12BK
M12x1.0	-6	Aluminium	RWF-730-06-01BK	M22x1.5	-6	Aluminium	RWF-736-06BK
M12x1.25	-3	Stainless Steel	RWF-358-03SS	M22x1.5	-8	Aluminium	RWF-736-08BK
M12x1.25 (Dual Seal)	-4	Stainless Steel	RWF-358-04SS	M22x1.5	-10	Aluminium	RWF-736-10BK
M12x1.25	-4	Aluminium	RWF-730-04BK	M22x1.5	-12	Aluminium	RWF-736-12BK
M12x1.25	-6	Aluminium	RWF-730-06BK				
M12x1.25	-8	Aluminium	RWF-730-08BK				
M12x1.5 (Dual Seal)	-4	Stainless Steel	RWF-359-04SS				

## HOSES AND FITTINGS

### AN ORB ADAPTER FITTINGS



#### AN MALE FLARE TO AN ORB

AN Male Flare	AN ORB	Material	Part No.	AN Male Flare	AN ORB	Material	Part No.
-3	-4	Aluminium	RWF-920-03-04BK	-10	-6	Aluminium	RWF-920-10-06BK
-4	-4	Aluminium	RWF-920-04BK	-10	-8	Aluminium	RWF-920-10-08BK
-4	-6	Aluminium	RWF-920-04-06BK	-10	-8	Stainless Steel (High Flow)	RWF-920-10-08SS
-4	-8	Aluminium	RWF-920-04-08BK	-10	-10	Aluminium	RWF-920-10BK
-4	-10	Aluminium	RWF-920-04-10BK	-10	-12	Aluminium	RWF-920-10-12BK
-6	-4	Aluminium	RWF-920-06-04BK	-10	-16	Aluminium	RWF-920-10-16BK
-6	-6	Aluminium	RWF-920-06BK	-12	-8	Aluminium	RWF-920-12-08BK
-6	-8	Aluminium	RWF-920-06-08BK	-12	-10	Aluminium	RWF-920-12-10BK
-6	-10	Aluminium	RWF-920-06-10BK	-12	-12	Aluminium	RWF-920-12BK
-6	-12	Aluminium	RWF-920-06-12BK	-12	-16	Aluminium	RWF-920-12-16BK
-8	-4	Aluminium	RWF-920-08-04BK	-16	-10	Aluminium	RWF-920-16-10BK
-8	-6	Aluminium	RWF-920-08-06BK	-16	-12	Aluminium	RWF-920-16-12BK
-8	-8	Aluminium	RWF-920-08BK	-16	-16	Aluminium	RWF-920-16BK
-8	-10	Aluminium	RWF-920-08-10BK	-20	-16	Aluminium	RWF-920-20-16BK
-8	-12	Aluminium	RWF-920-08-12BK	-20	-20	Aluminium	RWF-920-20BK



## HOSES AND FITTINGS

### AN ORB ADAPTER FITTINGS



#### AN MALE FLARE TO AN ORB LONG

AN Male Flare	AN ORB	Part No.
-6	-6	RWF-920-06LBK
-8	-8	RWF-920-08LBK
-10	-10	RWF-920-10LBK
-12	-12	RWF-920-12LBK

#### AN MALE FLARE TO ORB 45°

AN Male Flare	AN ORB	Part No.
-4	-4	RWF-923-04BK
-6	-6	RWF-923-06BK
-8	-8	RWF-923-08BK
-10	-10	RWF-923-10BK
-12	-12	RWF-923-12BK

#### AN MALE FLARE TO ORB 90°

AN Male Flare	AN ORB	Part No.
-4	-4	RWF-922-04BK
-6	-6	RWF-922-06BK
-8	-6	RWF-922-08-06BK
-8	-8	RWF-922-08BK
-8	-10	RWF-922-08-10BK
-10	-8	RWF-922-10-08BK
-10	-10	RWF-922-10BK
-12	-10	RWF-922-12-10BK
-12	-12	RWF-922-12BK



#### AN ORB UNIONS AND REDUCERS

AN ORB	AN ORB	Part No.
-6	-6	RWF-921-06-06BK
-6	-8	RWF-921-06-08BK
-8	-8	RWF-921-08-08BK
-8	-10	RWF-921-08-10BK
-10	-10	RWF-921-10-10BK

#### AN ORB TO AN FEMALE SWIVEL

AN ORB	AN Female Swivel	Material	Part No.
-6	-6	Aluminium	RWF-907-06BK
-8	-6	Aluminium	RWF-907-06-08BK
-10	-8	Stainless Steel (High Flow)	RWF-907-10-08SS
-10	-10	Aluminium	RWF-907-10BK





## HOSES AND FITTINGS

### AN MALE FLARE TO NPT MALE ADAPTER FITTINGS

#### AN TO NPT STRAIGHT

AN	NPT	Material	Part No.	AN	NPT	Material	Part No.
-3	1/16"	Stainless Steel	RWF-380-03-01SS	-10	3/8"	Aluminium	RWF-816-10-06BK
-3	1/8"	Stainless Steel	RWF-380-03SS	-10	1/2"	Aluminium	RWF-816-10BK
-3	1/8"	Aluminium	RWF-816-03BK	-10	3/4"	Aluminium	RWF-816-10-12BK
-3	1/4"	Aluminium	RWF-816-03-04BK	-12	1/2"	Aluminium	RWF-816-12-08BK
-4	1/16"	Stainless Steel	RWF-380-04-01SS	-12	3/4"	Aluminium	RWF-816-12BK
-4	1/8"	Stainless Steel	RWF-380-04SS	-12	1"	Aluminium	RWF-816-12-16BK
-4	1/8"	Aluminium	RWF-816-04BK	-16	3/4"	Aluminium	RWF-816-16-12BK
-4	1/4"	Aluminium	RWF-816-04-04BK	-16	1"	Aluminium	RWF-816-16BK
-4	3/8"	Aluminium	RWF-816-04-06BK	-20	1"	Aluminium	RWF-816-20-16BK
-6	1/8"	Aluminium	RWF-816-06-02BK	-20	1-1/4"	Aluminium	RWF-816-20BK
-6	1/4"	Aluminium	RWF-816-06BK				
-6	3/8"	Aluminium	RWF-816-06-06BK				
-6	1/2"	Aluminium	RWF-816-06-08BK				
-6	3/4"	Aluminium	RWF-816-06-12BK				
-8	1/8"	Aluminium	RWF-816-08-02BK				
-8	1/4"	Aluminium	RWF-816-08-04BK				
-8	3/8"	Aluminium	RWF-816-08BK				
-8	1/2"	Aluminium	RWF-816-08-08BK				
-8	3/4"	Aluminium	RWF-816-08-12BK				



#### AN TO NPT 45°



AN	NPT	Part No.	AN	NPT	Part No.
-3	1/8"	RWF-823-03BK	-8	3/8"	RWF-823-08BK
-4	1/8"	RWF-823-04BK	-8	1/2"	RWF-823-08-08BK
-4	1/4"	RWF-823-04-04BK	-10	3/8"	RWF-823-10-06BK
-6	1/8"	RWF-823-06-02BK	-10	1/2"	RWF-823-10BK
-6	1/4"	RWF-823-06BK	-12	1/2"	RWF-823-12-08BK
-6	3/8"	RWF-823-06-06BK	-12	3/4"	RWF-823-12BK
-6	1/2"	RWF-823-06-08BK	-16	1"	RWF-823-16BK

#### AN TO NPT 90°



AN	NPT	Part No.	AN	NPT	Part No.
-3	1/8"	RWF-822-03BK	-10	3/8"	RWF-822-10-06BK
-3	1/4"	RWF-822-03-04BK	-10	1/2"	RWF-822-10BK
-4	1/8"	RWF-822-04BK	-10	3/4"	RWF-822-10-12BK
-4	1/4"	RWF-822-04-04BK	-12	1/2"	RWF-822-12-08BK
-4	3/8"	RWF-822-04-06BK	-12	3/4"	RWF-822-12BK
-6	1/8"	RWF-822-06-02BK	-16	3/4"	RWF-822-16-12BK
-6	1/4"	RWF-822-06BK	-16	1"	RWF-822-16BK
-6	3/8"	RWF-822-06-06BK			
-6	1/2"	RWF-822-06-08BK			
-8	1/4"	RWF-822-08-04BK			
-8	3/8"	RWF-822-08BK			
-8	1/2"	RWF-822-08-08BK			

## HOSES AND FITTINGS

### AN FEMALE SWIVEL TO NPT MALE SWIVEL ADAPTER FITTINGS

#### AN TO NPT 90°



AN	NPT	Part No.	AN	NPT	Part No.
-3	1/8"	RWF-623-03BK	-10	3/8"	RWF-623-10-06BK
-4	1/8"	RWF-623-04BK	-10	1/2"	RWF-623-10BK
-4	1/4"	RWF-623-04-04BK	-12	1/2"	RWF-623-12-08BK
-6	1/8"	RWF-623-06-02BK	-12	3/4"	RWF-623-12BK
-6	1/4"	RWF-623-06BK			
-6	3/8"	RWF-623-06-06BK			
-8	1/4"	RWF-623-08-04BK			
-8	3/8"	RWF-623-08BK			
-8	1/2"	RWF-623-08-08BK			

### NPT PORT ADAPTERS

#### AN FEMALE SWIVEL TO AN MALE



AN Female	AN Male	NPT	Material	Part No.
-3	-3	1/8"	Stainless Steel	RWF-140-03SS
-3	-3	1/8"	Aluminium	RWF-140-03BK
-4	-4	1/8"	Stainless Steel	RWF-140-04SS
-4	-4	1/8"	Aluminium	RWF-140-04BK
-6	-6	1/8"	Aluminium	RWF-140-06BK
-8	-8	1/8"	Aluminium	RWF-140-08BK
-10	-10	1/8"	Aluminium	RWF-140-10BK
-12	-12	1/8"	Aluminium	RWF-140-12BK
-16	-16	1/8"	Aluminium	RWF-140-16BK



AN MALE TO AN MALE			
AN Male	AN Male	NPT	Part No.
-3	-3	1/8"	RWF-141-03BK
-4	-4	1/8"	RWF-141-04BK
-6	-6	1/8"	RWF-141-06BK
-8	-8	1/8"	RWF-141-08BK
-10	-10	1/8"	RWF-141-10BK
-12	-12	1/8"	RWF-141-12BK
-16	-16	1/8"	RWF-141-16BK

AN ORB MALE		
AN ORB	NPT	Part No.
-6	1/8"	RWF-813-06-02BK
-8	1/8"	RWF-813-08-02BK
-10	1/8"	RWF-813-10-02BK
-12	1/8"	RWF-813-12-02BK

## HOSES AND FITTINGS

### NPT PORT ADAPTERS



#### AN MALE FLARE TO AN ORB MALE

AN Male Flare	AN ORB	NPT	Part No.
-10	-8	1/8"	RWF-904-10-08BK
-10	-10	1/8"	RWF-904-10BK

#### METRIC MALE TO NPT FEMALE

Metric	NPT	Part No.
M12x1.5	1/8"	RWF-912-M12-1-02BK
M12x1.25	1/8"	RWF-912-M12-2-02BK
M14x1.5	1/8"	RWF-912-M14-1-02BK
M16x1.5	1/8"	RWF-912-M16-1-02BK
M18x1.5	1/8"	RWF-912-M18-1-02BK



#### OIL PRESSURE TEE / GAUGE ADAPTER

Male	Female On End	Female On Side	Material	Part No.
1/8" NPT	1/8" NPT	1/8" NPT	Stainless Steel	RWF-808-02SS
1/4" NPT	1/4" NPT	1/8" NPT	Stainless Steel	RWF-808-04SS
1/8" BSPT	1/8" BSPT	1/8" NPT	Stainless Steel	RWF-809-02SS
M10 x 1.0	M10 x 1.0	1/8" NPT	Stainless Steel	RWF-811-M10SS
M14 x 1.5	M14 x 1.5	1/8" NPT	Stainless Steel	RWF-811-M14SS
M16 x 1.5	M16 x 1.5	1/8" NPT	Stainless Steel	RWF-811-M16SS
M18 x 1.5	M18 x 1.5	1/8" NPT	Stainless Steel	RWF-811-M18SS

#### NPT FEMALE TO AN MALE FLARE

NPT Female	AN Male	Part No.
1/8"	-4	RWF-370-04BK



#### BSPT MALE TO NPT FEMALE

BSPT	NPT	Part No.
1/8"	1/8"	RWF-370-02-02BK



## HOSES AND FITTINGS

### NPT ADAPTERS



FEMALE COUPLER	
NPT	Part No.
1/8"	RWF-910-02BK
1/4"	RWF-910-04BK
3/8"	RWF-910-06BK

FEMALE TEE	
NPT	Part No.
1/8"	RWF-917-02BK
1/4"	RWF-917-04BK
3/8"	RWF-917-06BK

MALE UNION	
NPT	Part No.
1/8"	RWF-911-02BK
1/4"	RWF-911-04BK
3/8"	RWF-911-06BK



45° FEMALE – MALE ELBOW	
NPT	Part No.
1/8"	RWF-915-02BK
1/4"	RWF-915-04BK
3/8"	RWF-915-06BK

90° FEMALE – MALE ELBOW	
NPT	Part No.
1/8"	RWF-914-02BK
1/4"	RWF-914-04BK
3/8"	RWF-914-06BK

MALE – FEMALE REDUCERS		
NPT Male	NPT Female	Part No.
1/4"	1/8"	RWF-912-04-02BK
3/8"	1/8"	RWF-912-06-02BK
3/8"	1/4"	RWF-912-06-04BK
1/2"	1/8"	RWF-912-08-02BK
1/2"	1/4"	RWF-912-08-04BK
1/2"	3/8"	RWF-912-08-06BK
3/4"	1/4"	RWF-912-12-04BK
3/4"	3/8"	RWF-912-12-06BK
3/4"	1/2"	RWF-912-12-08BK



NPT EXTENSION		
NPT	Overall Length	Part No.
1/8"	40mm	RWF-372-02BK

## HOSES AND FITTINGS

### AN TO BSP ADAPTER FITTINGS



AN TO BSPP		
AN	BSPP	Part No.
-4	1/8"	RWF-817-04-02BK
-4	1/4"	RWF-817-04-04BK
-4	3/8"	RWF-817-04-06BK
-6	1/8"	RWF-817-06-02BK
-6	1/4"	RWF-817-06-04BK
-6	3/8"	RWF-817-06-06BK
-6	1/2"	RWF-817-06-08BK
-8	1/4"	RWF-817-08-04BK
-8	3/8"	RWF-817-08-06BK
-8	1/2"	RWF-817-08-08BK
-10	3/8"	RWF-817-10-06BK
-10	1/2"	RWF-817-10-08BK
-10	3/4"	RWF-817-10-12BK
-12	1/2"	RWF-817-12-08BK
-12	3/4"	RWF-817-12-12BK

AN TO BSPT		
AN	BSPT	Part No.
-4	1/8"	RWF-817-04-02TBK
-6	1/8"	RWF-817-06-02TBK
-6	1/4"	RWF-817-06-04TBK
-6	3/8"	RWF-817-06-06TBK
-8	3/8"	RWF-817-08-06TBK
-8	1/2"	RWF-817-08-08TBK
-10	3/8"	RWF-817-10-06TBK
-10	1/2"	RWF-817-10-08TBK
-10	3/4"	RWF-817-10-12TBK

- BSPT Adapters are machined with a groove in the hex to easily identify BSPT vs NPT.



## HOSES AND FITTINGS

### AN UNIONS, ELBOWS AND EXTENSIONS



AN FEMALE SWIVEL TO  
AN FEMALE SWIVEL STRAIGHT

AN	Part No.
-3	RWF-131-03BK
-4	RWF-131-04BK
-6	RWF-131-06BK
-8	RWF-131-08BK
-10	RWF-131-10BK
-12	RWF-131-12BK
-16	RWF-131-16BK

AN FEMALE SWIVEL TO  
AN FEMALE SWIVEL REDUCER

AN	AN	Part No.
-6	-8	RWF-131-06-08BK
-8	-10	RWF-131-08-10BK
-10	-12	RWF-131-10-12BK

AN FEMALE SWIVEL TO  
AN FEMALE SWIVEL 45°

AN	Part No.
-3	RWF-132-03BK
-4	RWF-132-04BK
-6	RWF-132-06BK
-8	RWF-132-08BK
-10	RWF-132-10BK
-12	RWF-132-12BK
-16	RWF-132-16BK



AN FEMALE SWIVEL TO  
AN FEMALE SWIVEL 90°

AN	Part No.
-3	RWF-133-03BK
-4	RWF-133-04BK
-6	RWF-133-06BK
-8	RWF-133-08BK
-10	RWF-133-10BK
-12	RWF-133-12BK
-16	RWF-133-16BK

AN FEMALE SWIVEL TO  
AN FEMALE SWIVEL 180°

AN	Part No.
-6	RWF-136-06BK
-8	RWF-136-08BK
-10	RWF-136-10BK
-12	RWF-136-12BK



## HOSES AND FITTINGS

### AN UNIONS, ELBOWS AND EXTENSIONS



AN FEMALE TO MALE EXTENSION		
AN	Length	Part No.
-3	29mm	RWF-952-03BK
-4	34mm	RWF-952-04BK
-6	38mm	RWF-952-06BK
-8	42mm	RWF-952-08BK
-10	48mm	RWF-952-10BK
-12	52mm	RWF-952-12BK



AN FEMALE SWIVEL TO MALE 45° ELBOW		
AN	Material	Part No.
-3	Stainless Steel	RWF-142-03SS
-4	Aluminium	RWF-142-04BK
-4	Stainless Steel	RWF-142-04SS
-6	Aluminium	RWF-142-06BK
-8	Aluminium	RWF-142-08BK
-10	Aluminium	RWF-142-10BK
-12	Aluminium	RWF-142-12BK
-16	Aluminium	RWF-142-16BK



AN FEMALE SWIVEL TO MALE 90° ELBOW		
AN	Material	Part No.
-3	Stainless Steel	RWF-143-03SS
-4	Aluminium	RWF-143-04BK
-4	Stainless Steel	RWF-143-04SS
-6	Aluminium	RWF-143-06BK
-8	Aluminium	RWF-143-08BK
-10	Aluminium	RWF-143-10BK
-12	Aluminium	RWF-143-12BK
-16	Aluminium	RWF-143-16BK



AN MALE FLARE UNION STRAIGHT	
AN	Part No.
-3	RWF-815-03BK
-4	RWF-815-04BK
-6	RWF-815-06BK
-8	RWF-815-08BK
-10	RWF-815-10BK
-12	RWF-815-12BK
-16	RWF-815-16BK



AN MALE FLARE UNION 45°	
AN	Part No.
-3	RWF-827-03BK
-4	RWF-827-04BK
-6	RWF-827-06BK
-8	RWF-827-08BK
-10	RWF-827-10BK
-12	RWF-827-12BK



AN MALE FLARE UNION 90°	
AN	Part No.
-3	RWF-821-03BK
-4	RWF-821-04BK
-6	RWF-821-06BK
-8	RWF-821-08BK
-10	RWF-821-10BK
-12	RWF-821-12BK

## HOSES AND FITTINGS

### AN REDUCERS AND EXPANDERS



AN MALE FLARE – AN MALE FLARE		
AN	AN	Part No.
-4	-3	RWF-815-04-03BK
-6	-4	RWF-815-06-04BK
-8	-6	RWF-815-08-06BK
-10	-6	RWF-815-10-06BK
-10	-8	RWF-815-10-08BK
-12	-6	RWF-815-12-06BK
-12	-8	RWF-815-12-08BK
-12	-10	RWF-815-12-10BK
-16	-10	RWF-815-16-10BK
-16	-12	RWF-815-16-12BK
-20	-12	RWF-815-20-12BK
-20	-16	RWF-815-20-16BK

AN FEMALE TO AN MALE FLARE REDUCER		
AN Female	AN Male	Part No.
-4	-3	RWF-950-04-03BK
-6	-4	RWF-950-06-04BK
-8	-6	RWF-950-08-06BK
-10	-6	RWF-950-10-06BK
-10	-8	RWF-950-10-08BK
-12	-8	RWF-950-12-08BK
-12	-10	RWF-950-12-10BK
-16	-12	RWF-950-16-12BK

AN FEMALE TO AN MALE FLARE EXPANDER		
AN Female	AN Male	Part No.
-3	-4	RWF-951-03-04BK
-4	-6	RWF-951-04-06BK
-6	-8	RWF-951-06-08BK
-8	-10	RWF-951-08-10BK
-10	-12	RWF-951-10-12BK
-12	-16	RWF-951-12-16BK

### AN TEE FITTINGS



AN MALE FLARE TEE	
AN	Part No.
-3	RWF-824-03BK
-4	RWF-824-04BK
-6	RWF-824-06BK
-8	RWF-824-08BK
-10	RWF-824-10BK
-12	RWF-824-12BK
-16	RWF-824-16BK

AN MALE FLARE TEE WITH SWIVEL ON BRANCH	
AN	Part No.
-3	RWF-144-03BK
-4	RWF-144-04BK
-6	RWF-144-06BK
-8	RWF-144-08BK
-10	RWF-144-10BK
-12	RWF-144-12BK
-16	RWF-144-16BK

AN MALE FLARE TEE WITH SWIVEL ON RUN	
AN	Part No.
-3	RWF-145-03BK
-4	RWF-145-04BK
-6	RWF-145-06BK
-8	RWF-145-08BK
-10	RWF-145-10BK
-12	RWF-145-12BK
-16	RWF-145-16BK

## HOSES AND FITTINGS

### AN TEE FITTINGS AND Y BLOCKS



AN MALE FLARE TEE  
WITH NPT MALE ON BRANCH

AN	NPT	Part No.
-3	1/8"	RWF-825-03BK
-4	1/8"	RWF-825-04BK
-6	1/4"	RWF-825-06BK
-8	3/8"	RWF-825-08BK
-10	1/2"	RWF-825-10BK
-12	3/4"	RWF-825-12BK
-16	1"	RWF-825-16BK

AN MALE FLARE TEE  
WITH NPT MALE ON RUN

AN	NPT	Part No.
-3	1/8"	RWF-826-03BK
-4	1/8"	RWF-826-04BK
-6	1/4"	RWF-826-06BK
-8	3/8"	RWF-826-08BK
-10	1/2"	RWF-826-10BK
-12	3/4"	RWF-826-12BK
-16	1"	RWF-826-16BK

STRAIGHT Y BLOCKS –  
AN MALE FLARE TO AN FEMALE SWIVEL

AN Male	AN Females	Part No.
-6	-8	RWF-146-08-06BK
-8	-10	RWF-146-10-08BK



AN MALE FLARE Y BLOCKS

Single AN	Twin AN	Part No.
-3	-3	RWF-930-03-03BK
-4	-3	RWF-930-04-03BK
-4	-4	RWF-930-04-04BK
-6	-4	RWF-930-06-04BK
-6	-6	RWF-930-06-06BK
-8	-6	RWF-930-08-06BK
-8	-8	RWF-930-08-08BK
-10	-8	RWF-930-10-08BK
-10	-10	RWF-930-10-10BK
-12	-8	RWF-930-12-08BK
-12	-10	RWF-930-12-10BK
-12	-12	RWF-930-12-12BK
-16	-16	RWF-930-16-16BK

STRAIGHT Y BLOCKS – AN MALE FLARE

Single AN	Twin AN	Part No.	Single AN	Triple AN	Part No.
-8	-6	RWF-934-08-06BK	-10	-6	RWF-935-10-06BK

STRAIGHT Y BLOCKS –  
AN FEMALE ORB TO AN FEMALE SWIVEL

AN Female Swivels	AN Female Orb	Part No.
-6	-8	RWF-939-06-08BK
-8	-8	RWF-939-08-08BK
-8	-10	RWF-939-08-10BK





## HOSES AND FITTINGS

### AN BULKHEADS



AN MALE FLARE STRAIGHT	
AN	Part No.
-3	RWF-832-03BK
-4	RWF-832-04BK
-6	RWF-832-06BK
-8	RWF-832-08BK
-10	RWF-832-10BK
-12	RWF-832-12BK
-16	RWF-832-16BK
-20	RWF-832-20BK

AN MALE FLARE 45°	
AN	Part No.
-3	RWF-837-03BK
-4	RWF-837-04BK
-6	RWF-837-06BK
-8	RWF-837-08BK
-10	RWF-837-10BK
-12	RWF-837-12BK
-16	RWF-837-16BK

AN MALE FLARE 90°	
AN	Part No.
-3	RWF-833-03BK
-4	RWF-833-04BK
-6	RWF-833-06BK
-8	RWF-833-08BK
-10	RWF-833-10BK
-12	RWF-833-12BK
-16	RWF-833-16BK



AN BULKHEAD NUT	
AN	Part No.
-3	RWF-924-03BK
-4	RWF-924-04BK
-6	RWF-924-06BK
-8	RWF-924-08BK
-10	RWF-924-10BK
-12	RWF-924-12BK
-16	RWF-924-16BK
-20	RWF-924-20BK

AN BULKHEAD INSERT SUITS BULKHEAD PLATES	
AN	Part No.
-6	RWF-836-06BK
-8	RWF-836-08BK
-10	RWF-836-10BK

AN BULKHEAD PLATES	
Size	Part No.
2way	RWF-838-02BK
3way	RWF-838-03BK
4way	RWF-838-04BK

### AN BULKHEAD TEE

#### AN MALE FLARE WITH TEE ON BRANCH



AN	Part No.
-3	RWF-834-03BK
-4	RWF-834-04BK
-6	RWF-834-06BK
-8	RWF-834-08BK
-10	RWF-834-10BK
-12	RWF-834-12BK
-16	RWF-834-16BK

#### AN MALE FLARE WITH TEE ON RUN



AN	Part No.
-3	RWF-804-03BK
-4	RWF-804-04BK
-6	RWF-804-06BK
-8	RWF-804-08BK
-10	RWF-804-10BK
-12	RWF-804-12BK
-16	RWF-804-16BK

## HOSES AND FITTINGS

### PLUGS AND CAPS



AN IN-HEX ORB PLUG	
AN	Part No.
-3	RWF-814-03BK
-4	RWF-814-04BK
-6	RWF-814-06BK
-8	RWF-814-08BK
-10	RWF-814-10BK
-12	RWF-814-12BK

AN ORB PLUG	
AN	Part No.
-3	RWF-813-03BK
-4	RWF-813-04BK
-6	RWF-813-06BK
-8	RWF-813-08BK
-10	RWF-813-10BK
-12	RWF-813-12BK
-16	RWF-813-16BK

AN FLARE PLUG	
AN	Part No.
-3	RWF-806-03BK
-4	RWF-806-04BK
-6	RWF-806-06BK
-8	RWF-806-08BK
-10	RWF-806-10BK
-12	RWF-806-12BK
-16	RWF-806-16BK



AN FLARE CAP	
AN	Part No.
-3	RWF-820-03BK
-4	RWF-820-04BK
-6	RWF-820-06BK
-8	RWF-820-08BK
-10	RWF-820-10BK
-12	RWF-820-12BK
-16	RWF-820-16BK

PLASTIC AN PLUG (5PK)	
AN	Part No.
-4	RWF-806-04PL
-6	RWF-806-06PL
-8	RWF-806-08PL
-10	RWF-806-10PL
-12	RWF-806-12PL

PLASTIC AN CAP (5PK)	
AN	Part No.
-4	RWF-820-04PL
-6	RWF-820-06PL
-8	RWF-820-08PL
-10	RWF-820-10PL
-12	RWF-820-12PL



NPT PLUGS		
NPT	Material	Part No.
1/16"	Aluminium	RWF-932-01BK
1/8"	Aluminium	RWF-932-02BK
1/8"	Stainless Steel	RWF-932-02SS
1/4"	Aluminium	RWF-932-04BK
3/8"	Aluminium	RWF-932-06BK
1/2"	Aluminium	RWF-932-08BK
3/4"	Aluminium	RWF-932-12BK
1"	Aluminium	RWF-932-16BK



METRIC PLUGS	
Metric	Part No.
M10x1.0	RWF-814-M10-1BK
M10x1.25	RWF-814-M10-2BK
M12x1.5	RWF-814-M12-1BK
M12x1.25	RWF-814-M12-2BK
M14x1.5	RWF-814-M14-1BK
M16x1.5	RWF-814-M16-1BK
M18x1.5	RWF-814-M18-1BK

## HOSES AND FITTINGS

### BANJOS



METRIC BOLTS			
Thread	Length	Material	Part No.
M10 x 1.0	20mm	Stainless Steel	RWF-301-03SS
M10 x 1.0	23mm	Aluminium	RWF-301-03ABK
M10 x 1.25	20mm	Stainless Steel	RWF-302-03SS
M10 x 1.25	20mm	Aluminium	RWF-302-03ABK
M10 x 1.25	23mm	Aluminium	RWF-302-03ALBK
M10 x 1.5	23mm	Aluminium	RWF-304-03ABK
M10 x 1.5	25mm	Stainless Steel	RWF-304-03SS
M12 x 1.0	31mm	Stainless Steel	RWF-301-04SS
M12 x 1.25	20mm	Aluminium	RWF-723-06ABK
M12 x 1.25	31mm	Stainless Steel	RWF-302-04SS
M12 x 1.5	20mm	Aluminium	RWF-724-06ABK
M12 x 1.5	31mm	Stainless Steel	RWF-304-04SS
M14 x 1.25	22mm	Aluminium	RWF-725-05ABK
M14 x 1.5	22mm	Aluminium	RWF-725-06ABK
M14 x 1.5	26mm	Stainless Steel	RWF-725-06SS
M16 x 1.5	22mm	Stainless Steel	RWF-713-06SS
M16 x 1.5	24mm	Aluminium	RWF-713-06ABK

IMPERIAL BOLTS			
Thread	Length	Material	Part No.
3/8" -20	29/32"	Aluminium	RWF-722-03ABK
3/8" -24	25/32"	Stainless Steel	RWF-300-03SS
3/8" -24	29/32"	Aluminium	RWF-305-03ABK
7/16" /20	29/32"	Aluminium	RWF-722-04ABK
7/16" /20	63/64"	Stainless Steel	RWF-300-04SS
7/16" -24	3/4"	Aluminium	RWF-300-05ABK
7/16" -24	25/32"	Stainless Steel	RWF-300-05SS
7/16" -24	29/32"	Aluminium	RWF-300-05ALBK
1/2" -20	7/8"	Aluminium	RWF-727-06ABK
9/16" -18	29/32"	Aluminium	RWF-728-06ABK
9/16" -24	29/32"	Aluminium	RWF-722-06ABK

■ Each Raceworks Banjo Bolt includes 2 Washers



## HOSES AND FITTINGS

### BANJOS



#### AN ADAPTERS STRAIGHT

I.D.	AN	Material	Part No.
10.2mm	-3	Stainless Steel	RWF-310-03SS
10.2mm	-3	Aluminium	RWF-718-03ABK
10.2mm	-4	Stainless Steel	RWF-310-04SS
10.5mm	-4	Aluminium	RWF-718-04ABK
10.5mm	-6	Aluminium	RWF-718-06ABK
11.2mm	-3	Stainless Steel	RWF-311-03SS
11.2mm	-4	Stainless Steel	RWF-311-04SS
12.2mm	-3	Stainless Steel	RWF-314-03SS
12.2mm	-4	Stainless Steel	RWF-314-04SS
12.5mm	-4	Aluminium	RWF-719-04ABK
12.5mm	-6	Aluminium	RWF-719-06ABK
14.5mm	-4	Aluminium	RWF-720-04ABK
14.5mm	-6	Aluminium	RWF-720-06ABK
14.5mm	-8	Aluminium	RWF-720-08ABK
16.5mm	-6	Aluminium	RWF-163-06ABK

#### AN ADAPTERS 20°

I.D.	AN	Material	Part No.
10.2mm	-3	Stainless Steel	RWF-312-03SS
10.2mm	-4	Stainless Steel	RWF-312-04SS
11.2mm	-3	Stainless Steel	RWF-316-03SS
11.2mm	-4	Stainless Steel	RWF-316-04SS

#### AN ADAPTERS 45°

I.D.	AN	Material	Part No.
10.2mm	-3	Stainless Steel	RWF-332-03SS
10.2mm	-4	Stainless Steel	RWF-332-04SS
11.2mm	-3	Stainless Steel	RWF-335-03SS
11.2mm	-4	Stainless Steel	RWF-335-04SS
12.2mm	-3	Stainless Steel	RWF-336-03SS
12.2mm	-4	Stainless Steel	RWF-336-04SS



#### AN ADAPTERS 90°

I.D.	AN	Material	Part No.
10.2mm	-3	Stainless Steel	RWF-313-03SS
10.2mm	-4	Stainless Steel	RWF-313-04SS
11.2mm	-3	Stainless Steel	RWF-319-03SS
11.2mm	-4	Stainless Steel	RWF-319-04SS
12.2mm	-3	Stainless Steel	RWF-309-03SS
12.2mm	-4	Stainless Steel	RWF-309-04SS



#### BARB ADAPTER STRAIGHT

I.D.	Barb	Part No.
12.5mm	5/16"	RWF-807-05BK

#### LOW PROFILE AN ORB – AN MALE FLARE KITS

AN MALE FLARE	AN ORB	Part No.
-6	-6	RWF-909-06BK
-8	-8	RWF-909-08BK
-10	-10	RWF-909-10BK
-6	-8	RWF-909-06-08BK
-6	-10	RWF-909-06-10BK
-8	-10	RWF-909-08-10BK

## HOSES AND FITTINGS

### BRAKE FITTINGS

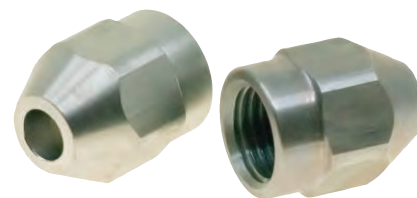
■ For 3/16" Hard Line, see page 98



HARD LINE CLAMPS (PK10)	
Suits Hard Line	Part No.
AN-3	RWF-295-03SS



INVERTED FLARE TUBE NUTS SUIT AN-3 HARD LINE (PK2)	
Thread	Part No.
3/8"-24	RWF-364-SS
7/16"-24	RWF-365-SS



TUBE NUTS WITH INTEGRATED SLEEVES SUIT AN-3 HARD LINE (PK2)	
Size	Part No.
AN-3	RWF-390-03SS



INVERTED FLARE UNION	
Thread	Part No.
3/8"-24	RWF-371-SS
7/16"-24	RWF-376-SS
M10 x 1.0	RWF-373-SS



INVERTED FLARE TEE WITH MOUNT	
Thread	Part No.
3/8"-24	RWF-385-SS



RETAINING C CLIPS (PK2)	
Part No.	
RWF-230-S	



90° BRAKE HOSE MOUNTING BRACKET (PK2)	
Part No.	
RWF-230-01S	



FEMALE INVERTED FLARE TO AN MALE FLARE WITH LOCATOR		
Female Thread	AN Male	Part No.
3/8"-24	-3	RWF-270-03SS
3/8"-24	-4	RWF-270-04SS
7/16"-24	-3	RWF-271-03SS
7/16"-24	-4	RWF-271-04SS
M10 x 1.0	-3	RWF-272-03SS



FEMALE INVERTED FLARE TO AN-3 PTFE HOSE WITH LOCATOR	
Female Thread	Part No.
3/8"-24	RWF-230-03SS
7/16"-20	RWF-234-03SS
M10 x 1.0	RWF-231-03SS
M10 x 1.25	RWF-232-03SS
M10 x 1.5	RWF-236-03SS

### TOOLS AND HOW TO

■ For Brake Flare Tool Kit see page 228

## HOSES AND FITTINGS

### BRAKE FITTINGS



AN-3 PTFE TEE WITH AN MALE FLARE  
ON BRANCH AND MOUNT

**Part No.**

RWF-261-03-03SS



AN-3 PTFE TEE WITH MOUNT

**Part No.**

RWF-261-03SS



AN-3 MALE FLARE TEE WITH MOUNT

**Part No.**

RWF-325-03SS



STAINLESS AN BULKHEAD STRAIGHT

**AN**

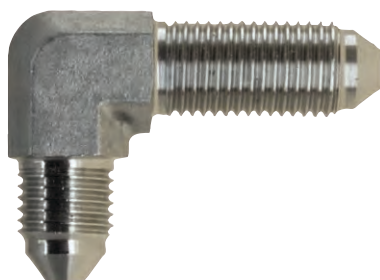
**Part No.**

-3

RWF-320-03SS

-4

RWF-320-04SS



STAINLESS AN BULKHEAD 90°

**AN**

**Part No.**

-3

RWF-323-03SS

-4

RWF-323-04SS



STAINLESS AN BULKHEAD NUT

**AN**

**Part No.**

-3

RWF-924-03SS

-4

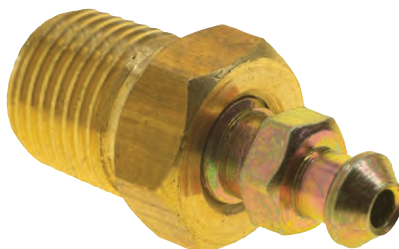
RWF-924-04SS



AN-6 BRAKE BOOSTER ONE WAY VALVE  
WITH 13/16" GROMMET

**Part No.**

RWF-609-06BK



1/8" NPT BLEEDER NIPPLE ADAPTER

**Part No.**

RWF-936-02S



## HOSES AND FITTINGS

### VALVES



ALUMINIUM ONE WAY VALVES		
Inlet	Outlet	Part No.
6mm Barb	6mm Barb	FSA-027
8mm Barb	8mm Barb	FSA-028
10mm Barb	10mm Barb	FSA-029
AN-6 Male Flare	AN-6 Male Flare	RWF-610-06BK
AN-8 Male Flare	AN-8 Male Flare	RWF-610-08BK
AN-10 Male Flare	AN-10 Male Flare	RWF-610-10BK
AN-12 Male Flare	AN-12 Male Flare	RWF-610-12BK
AN-8 ORB	AN-8 Male Flare	RWF-607-08BK
M12x1.5	AN-6 Male Flare	RWF-612-06BK
M12x1.5	AN-8 Male Flare	RWF-612-08BK

ROLL OVER BULKHEAD VALVES	
AN	Part No.
AN-6	RWF-611-06BK
AN-8	RWF-611-08BK
AN-10	RWF-611-10BK

ROLL OVER INLINE VALVES	
AN	Part No.
AN-6	RWF-614-06BK
AN-8	RWF-614-08BK
AN-10	RWF-614-10BK



SHUT OFF VALVE		
AN	Internal Thread	Part No.
-6	3/8" BSPP	RWF-650-06BK
-8	3/8" BSPP	RWF-650-08BK
-10	3/8" BSPP	RWF-650-10BK

DRAIN TAP	
AN	Part No.
-10	RWF-615-10-ABK

- Drain taps contain a 1/8" NPT Port at the bottom for optional plumbing of a drain hose

### TECH TIP – WHAT IS THE PURPOSE OF ROLL OVER VALVES, THE DIFFERENCE BETWEEN BULKHEAD STYLE AND INLINE STYLE, AND HOW DO I PLUMB THEM?

The purpose of a Roll Over Valve is to cut off the supply of air/oxygen to a fuel tank in the event of a vehicle roll over, and to prevent fuel pouring out of the Fuel Tank Breather. It is therefore used as part of the tank breather system.

Both styles of Raceworks valves must be mounted with the AN Male Flare facing in the upwards direction. They operate using a ball bearing that locates in a seat when turned upside down. The bulkhead style can be mounted under a boot floor, with a hose that runs from the top of the Fuel Tank to the valve, generally via one or two loops to prevent fuel pushing through the hose under hard acceleration, brakes or cornering.

The inline valve can be installed inline anywhere on this same breather hose. It is commonly fitted on top of a bulkhead fitting that mounts to the boot floor, and has a breather filter underneath. This is the preferred option, as it means the fuel tank won't be subject to dust if the car goes down a dirt road/comes off a racetrack and into the kitty litter.

## HOSES AND FITTINGS

### ASSORTED ADAPTERS



OIL DRAIN ADAPTERS			
AN ORB Port	Hole Centres	Suits	Part No.
-8	38-44mm (Slotted)	Universal	RWF-463-01BK
-10	38-44mm (Slotted)	Universal	RWF-463-04BK
-10	50.8mm	T3-T4	RWF-463-02BK
-10	52.4mm	Precision	RWF-463-03BK

OIL RESTRICTORS (5PK)	
AN	Part No.
-3	RWF-399-03-5
-4	RWF-399-04-5

■ For installation instructions, see page 232

STAINLESS STEEL POWER STEERING ADAPTERS			
Thread	Style	AN	Part No.
1/2"-20	Inverted Flare	-6	RWF-703-06SS
5/8"-18	Inverted Flare	-6	RWF-704-06SS
11/16"-18	Inverted Flare	-6	RWF-705-06SS
M14 x 1.5	O-Ring Bump Tube	-6	RWF-740-06SS
M16 x 1.5	O-Ring Bump Tube	-6	RWF-741-06SS
M18 x 1.5	O-Ring Bump Tube	-6	RWF-742-06SS



BREATHER ADAPTERS			
AN	Push-In Dia	Suits Engine	Part No.
-8	20.0mm	Ford Barra (BA-FG) Front	RWF-708-08FBK
-8	20.5mm	Ford Barra (BA-FG) Rear	RWF-708-08RBK
-10	N/A (Screw In)	Nissan RB30	RWF-708-10-M19BK
-10	15.5mm-15.8mm (tapered)	Nissan RB25	RWF-708-10-01BK
-10	15.9mm-16.2mm (tapered)	Nissan RB26	RWF-708-10-02BK
-12	21.3-21.8mm (tapered)	Nissan RB26	RWF-708-10-03BK
-10	21.3-21.8mm (tapered)	Nissan SR20	RWF-708-12-03BK
-10	25.4mm	Universal 1" Grommet	RWF-708-10-50BK

BOLT IN BANJO BREATHER BULKHEAD	
AN	Part No.
-10	RWF-777-10BK



STAINLESS STEEL DIFF BREATHER WITH BRONZE ELEMENT	
Thread	Part No.
1/8" NPT	RWF-464-02SS

## HOSES AND FITTINGS

### ASSORTED ADAPTERS



TRANSMISSION ADAPTERS			
Thread	AN	Angle	Part No.
1/8" NPT	-6	Straight	RWF-816-06-02BK
1/8" NPT	-8	Straight	RWF-816-08-02BK
1/8" NPT	-6	45°	RWF-823-06-02BK
1/8" NPT	-6	90°	RWF-822-06-02BK
1/4" NPT	-6	Straight	RWF-816-06BK
1/4" NPT	-8	Straight	RWF-816-08-04BK
1/4" NPT	-6	45°	RWF-823-06BK
1/4" NPT	-6	90°	RWF-822-06BK
1/4" NPT	-8	90°	RWF-822-08-04BK
1/4" NPS	-6	Straight	RWF-816-06-NPSBK
1/4" NPS	-8	Straight	RWF-816-08-NPSBK
M12 x 1.5	-6	Straight	RWF-731-06BK
M12 x 1.5	-8	Straight	RWF-731-08BK
M14 x 1.5	-6	Straight	RWF-732-06BK
M14 x 1.5	-8	Straight	RWF-732-08BK
N/A (Push In 16.4mm dia. O-Ring O.D is 17.4mm)	-8	90°	RWF-922-ZF-08BK
N/A (Push In 18.8mm dia. O-Ring O.D is 19.6mm)	-8	90°	RWF-922-6R-08BK

TRANSMISSION ADAPTERS		
Transmission	In	Out
Powerglide – OEM	Upper 1/8" NPT	Lower 1/8" NPT
Powerglide – Dedenbear	Upper 1/4" NPT	Lower 1/4" NPT
TH200C Metric, 200-4R	Lower 1/4" NPT	Upper 1/4" NPT
TH250, TH350	Upper 1/4" NPT	Lower 1/4" NPT
TH400	Upper 1/4" NPS	Lower 1/4" NPS
700-4R, 4L60, 4L60E	Upper 1/4" NPS	Lower 1/4" NPS
4L80E 1991-1996	Upper 1/4" NPT	Lower 1/4" NPT
4L80E, 4L85E 1997-On	Rear 1/4" NPT	Front 1/4" NPT
AOD	Lower 1/4" NPT	Upper 1/4" NPT
AODE, 4R70W	Upper 1/4" NPT	Lower 1/4" NPT
E40D, 4R100	Upper 1/4" NPT	Lower 1/4" NPT
Torqueflite	Rear 1/8" NPT	Front 1/8" NPT
Trimatic	Rear 1/8" NPT	Front 1/8" NPT
Jatco 3 speed	Rear M12 x 1.5	Front M12 x 1.5
Jatco 4 speed	Rear M14 x 1.5	Front M14 x 1.5
Ford 6R	Push in 18.8mm dia	Push in 18.8mm dia
Ford ZF 6HP26	Push in 16.4mm dia	Push in 16.4mm dia

### DRY-BREAK FITTINGS

- Tested to 2000psi ■ Viton seals are not safe for brake/clutch fluids ■ Buna must be used for this application



AN DRY-BREAK FITTINGS			
AN	Body	Type	Part No.
-3	-3	Buna	RWF-QR101-03BBK
-4	-3	Buna	RWF-QR101-04BBK
-6	-8	Viton	RWF-QR101-06VBK
-8	-8	Viton	RWF-QR101-08VBK
-10	-12	Viton	RWF-QR101-10VBK

AN DRY-BREAK BULKHEAD FITTINGS			
AN	Body	Type	Part No.
-3	-3	Buna	RWF-QR103-03BBK
-4	-3	Buna	RWF-QR103-04BBK
-6	-8	Viton	RWF-QR103-06VBK
-8	-8	Viton	RWF-QR103-08VBK
-10	-12	Viton	RWF-QR103-10VBK



## HOSES AND FITTINGS

### ASSORTED ADAPTERS



#### FUEL RAIL ADAPTERS

Suits	Hole Centres	Outlet	O-Ring Dia (mm)	Part No.
Subaru and Toyota	39.1mm	AN-6 Male Flare	11mm	RWF-680-01BK
Mazda, Nissan and Subaru	32.0mm	AN-6 Male Flare	11mm	RWF-680-02BK
Mitsubishi EVO 8/9	39.0mm	AN-6 Male Flare	15.9mm	RWF-680-03BK
Ford Turbo 6	Clip In	1/8" NPT	26mm and 10mm	RWF-680-04BK
Mazda and Toyota	Screw-In M12x1.25	AN-6 Male Flare	—	RWF-680-05BK
Honda B Series	39.0mm	AN-6 Male Flare	15mm	RWF-680-09BK

#### QUICK CONNECT FUEL ADAPTERS – FEMALE EFI TO AN

AN	Connector	Angle	Material	Part No.
-6	5/16"	Straight	Billet Aluminium	RWF-805-06-05BK
-6	3/8"	Straight	Billet Aluminium	RWF-805-06-06BK
-8	3/8"	Straight	Billet Aluminium	RWF-805-08-06BK
-6	5/16"	Straight	Aluminium with Plastic Insert	RWF-715-06-05BK
-6	3/8"	Straight	Aluminium with Plastic Insert	RWF-715-06-06BK
-8	3/8"	Straight	Aluminium with Plastic Insert	RWF-715-08-06BK
-6	5/16"	90°	Billet Aluminium	RWF-803-06-05BK
-6	3/8"	90°	Billet Aluminium	RWF-803-06-06BK
-8	3/8"	90°	Billet Aluminium	RWF-803-08-06BK
-6	5/16"	90°	Aluminium with Plastic Insert	RWF-812-06-05BK
-6	3/8"	90°	Aluminium with Plastic Insert	RWF-812-06-06BK
-8	3/8"	90°	Aluminium with Plastic Insert	RWF-812-08-06BK

#### QUICK CONNECT FUEL ADAPTERS – MALE EFI TO AN

AN	Connector	Angle	Material	Part No.
-6	5/16"	Straight	Aluminium	RWF-716-06-05BK
-6	3/8"	Straight	Aluminium	RWF-716-06-06BK
-8	3/8"	Straight	Aluminium	RWF-716-08-06BK
-6	5/16"	90°	Aluminium	RWF-810-06-05BK
-6	3/8"	90°	Aluminium	RWF-810-06-06BK
-8	3/8"	90°	Aluminium	RWF-810-08-06BK

#### QUICK CONNECT FUEL ADAPTERS – FEMALE EFI TO BARB

Barb	Connector	Angle	Material	Part No.
5/16"	5/16"	Straight	Plastic	RWF-715-05-05P
5/16"	3/8"	Straight	Plastic	RWF-715-06-05P
3/8"	3/8"	Straight	Plastic	RWF-715-06-06P
5/16"	5/16"	90°	Plastic	RWF-812-05-05P
5/16"	3/8"	90°	Plastic	RWF-812-06-05P
3/8"	3/8"	90°	Plastic	RWF-812-06-06P

## HOSES AND FITTINGS

### ASSORTED ADAPTERS



#### REPLACEMENT PLASTIC INSERTS SUIT FEMALE EFI ADAPTERS

Suits Connector	Part No.
5/16"	RWM-003
3/8"	RWM-004

#### CARBURETTOR ADAPTERS – AN MALE FLARE

AN	Thread	Suits	Part No.
-6	7/8"-20	Holley	RWF-700-06BK
-8	7/8"-20	Holley	RWF-700-08BK
-6	9/16"-24	Holley/ Demon	RWF-701-06BK
-8	9/16"-24	Holley/ Demon	RWF-701-08BK
-6	3/4"-16	Holley HP/QFT	RWF-920-06-08BK
-8	3/4"-16	Holley HP/QFT	RWF-920-08BK

#### CARBURETTOR ADAPTERS – AN FEMALE SWIVEL (LONG)

AN	Thread	Suits	Part No.
-8	7/8"-20	Holley	RWF-710-08BK
-8	9/16"-24	Holley/ Demon	RWF-711-08BK
-8	3/4"-16	Holley HP/QFT	RWF-712-08BK

### WELD ON FITTINGS



#### 7/16" K-TYPE EGT WITH CAPS

Material	Part No.
Steel	RWF-989-04-S
Stainless Steel	RWF-989-04-SS

#### PUSH LOCK ALUMINIUM

AN	Part No.
AN-6	RWF-989-406-A
AN-8	RWF-989-408-A
AN-10	RWF-989-410-A
AN-12	RWF-989-412-A

#### BARB ALUMINIUM

Size	Part No.
4mm	RWF-989-M4-A
5mm	RWF-989-M5-A
6mm	RWF-989-M6-A
8mm	RWF-989-M8-A
3/8"	RWF-989-506-A
1/2"	RWF-989-508-A
5/8"	RWF-989-510-A
3/4"	RWF-989-512-A

## HOSES AND FITTINGS

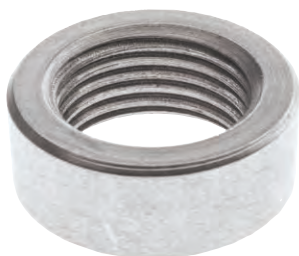
### WELD ON FITTINGS



AN FEMALE ORB		
AN	Material	Part No.
-3	Aluminium	RWF-990-03-A
-3	Stainless Steel	RWF-990-03-SS
-4	Aluminium	RWF-990-04-A
-4	Stainless Steel	RWF-990-04-SS
-6	Aluminium	RWF-990-06-A
-6	Stainless Steel	RWF-990-06-SS
-8	Aluminium	RWF-990-08-A
-8	Stainless Steel	RWF-990-08-SS
-10	Aluminium	RWF-990-10-A
-10	Stainless Steel	RWF-990-10-SS
-12	Aluminium	RWF-990-12-A
-12	Stainless Steel	RWF-990-12-SS
-16	Aluminium	RWF-990-16-A
-16	Stainless Steel	RWF-990-16-SS

AN FEMALE FLARE		
AN	Material	Part No.
-4	Aluminium	RWF-996-04-A
-6	Aluminium	RWF-996-06-A
-8	Aluminium	RWF-996-08-A
-10	Aluminium	RWF-996-10-A
-12	Aluminium	RWF-996-12-A

FILLERS AND CAPS		
I.D.	Cap Gender	Part No.
1.0"	Female	RWF-460-16-ABK
1.0"	Male	RWF-461-16-ABK
1.5"	Female	RWF-460-24-ABK
1.5"	Male	RWF-461-24-ABK
2.0"	Female	RWF-460-32-ABK
2.0"	Male	RWF-461-32-ABK



BSPT FEMALE		
BSPT	Material	Part No.
1/8"	Aluminium	RWF-987-02-A
1/8"	Stainless Steel	RWF-987-02-SS

NPT FEMALE		
NPT	Material	Part No.
1/8"	Aluminium	RWF-997-02-A
1/8"	Steel	RWF-997-02-S
1/8"	Stainless Steel	RWF-997-02-SS
1/4"	Aluminium	RWF-997-04-A
1/4"	Steel	RWF-997-04-S
3/8"	Aluminium	RWF-997-06-A
3/8"	Steel	RWF-997-06-S
1/2"	Aluminium	RWF-997-08-A
1/2"	Steel	RWF-997-08-S
3/4"	Aluminium	RWF-997-12-A
3/4"	Steel	RWF-997-12-S

METRIC FEMALE		
Thread	Material	Part No.
M12 x 1.5	Aluminium	RWF-990-M12-A
M14 x 1.5	Aluminium	RWF-990-M14-A
M14 x 1.5	Stainless Steel	RWF-990-M14-SS
M18 x 1.5	Steel	RWF-989-M18-S
M18 x 1.5	Steel (Stepped)	RWF-989-M18-S-S
M18 x 1.5	Stainless Steel	RWF-989-M18-SS
M18 x 1.5	Stainless Steel (Stepped)	RWF-989-M18-SS-S



STEEL OXYGEN SENSOR PLUG	
Thread	Part No.
M18 x 1.5	RWF-806-M18-S



## HOSES AND FITTINGS

### WELD ON FITTINGS



AN MALE FLARE

AN	Material	Part No.	AN	Material	Part No.
-3	Aluminium	RWF-999-03-A	-10	Aluminium	RWF-999-10-A
-3	Steel	RWF-999-03-S	-10	Steel	RWF-999-10-S
-3	Stainless Steel	RWF-999-03-SS	-10	Stainless Steel	RWF-999-10-SS
-4	Aluminium	RWF-999-04-A	-12	Aluminium	RWF-999-12-A
-4	Steel	RWF-999-04-S	-12	Steel	RWF-999-12-S
-4	Stainless Steel	RWF-999-04-SS	-12	Stainless Steel	RWF-999-12-SS
-6	Aluminium	RWF-999-06-A	-16	Aluminium	RWF-999-16-A
-6	Steel	RWF-999-06-S	-16	Steel	RWF-999-16-S
-6	Stainless Steel	RWF-999-06-SS	-16	Stainless Steel	RWF-999-16-SS
-8	Aluminium	RWF-999-08-A	-20	Aluminium	RWF-999-20-A
-8	Steel	RWF-999-08-S	-20	Steel	RWF-999-20-S
-8	Stainless Steel	RWF-999-08-SS	-20	Stainless Steel	RWF-999-20-SS

AN MALE FLARE WITH HEX  
(SUITS HARD LINE)

AN	Material	Part No.
-6	Aluminium	RWF-999-06-AH
-6	Stainless Steel	RWF-999-06-SSH
-8	Aluminium	RWF-999-08-AH
-8	Stainless Steel	RWF-999-08-SSH
-10	Aluminium	RWF-999-10-AH



1" STEEL DIFF FILLER WITH ALUMINIUM CAP

Cap Gender	Part No.
Male	RWF-461-S-ABK

BILLET ALUMINIUM RADIATOR NECKS

Size	I.D. (mm)	O.D. (mm)	Part No.
Small	32	43	RWF-462-01-A
Large	40	57	RWF-462-02-A

BILLET RADIATOR CAP COVERS  
WITH 1.1BAR CAP

Size	Part No.
Small	ALY-066BK
Large	ALY-067BK

## HOSES AND FITTINGS

### FITTING ACCESSORIES



#### PANEL MOUNTABLE LINE SEPARATOR

I.D.	Part No.
6.4mm	RWF-148-6MM
7.9mm	RWF-148-8MM
9.5mm	RWF-148-10MM
11.1mm	RWF-148-11MM
12.7mm	RWF-148-12MM
13.5mm	RWF-148-13MM
14.3mm	RWF-148-14MM
15.9mm	RWF-148-16MM
16.7mm	RWF-148-17MM
19.1mm	RWF-148-19MM
20.6mm	RWF-148-21MM
23.8mm	RWF-148-24MM
25.4mm	RWF-148-25MM

#### COMPACT LINE SEPARATOR

I.D.	Part No.
6.4mm	RWF-156-6MM
7.9mm	RWF-156-8MM
9.5mm	RWF-156-10MM
11.1mm	RWF-156-11MM
12.7mm	RWF-156-12MM
13.5mm	RWF-156-13MM
14.3mm	RWF-156-14MM
15.9mm	RWF-156-16MM
16.7mm	RWF-156-17MM
19.1mm	RWF-156-19MM
20.6mm	RWF-156-21MM
23.8mm	RWF-156-24MM
25.4mm	RWF-156-25MM
30.5mm	RWF-156-31MM
35.8mm	RWF-156-36MM

#### ALUMINIUM P-CLAMPS

I.D.	Part No.
6.4mm	RWF-157-6MM
7.9mm	RWF-157-8MM
9.5mm	RWF-157-10MM
11.1mm	RWF-157-11MM
12.7mm	RWF-157-12MM
14.3mm	RWF-157-14MM
15.9mm	RWF-157-16MM
19.1mm	RWF-157-19MM
20.8mm	RWF-157-21MM
23.8mm	RWF-157-23MM
26.2mm	RWF-157-26MM
30.5mm	RWF-157-31MM
35.8mm	RWF-157-36MM



#### CUSHIONED P-CLIPS (5PK)

I.D.	Part No.
6.4mm	RWF-158-6MM
7.9mm	RWF-158-8MM
9.4mm	RWF-158-9MM
11.0mm	RWF-158-11MM
12.7mm	RWF-158-13MM
13.5mm	RWF-158-14MM
15.9mm	RWF-158-16MM
19.1mm	RWF-158-19MM
25.4mm	RWF-158-25MM
28.6mm	RWF-158-28MM
31.8mm	RWF-158-32MM
38.1mm	RWF-158-38MM

## HOSES AND FITTINGS

### FITTING ACCESSORIES

	BILLET P CLAMPS	CUSHIONED P CLIPS	LINE SEPARATOR	PANEL MOUNTABLE LINE SEPARATOR
<b>100 / 140 SERIES</b>				
AN-4	RWF-157-11MM	RWF-158-11MM	RWF-156-11MM	RWF-148-11MM
AN-6	RWF-157-14MM	RWF-158-14MM	RWF-156-13MM	RWF-148-13MM
AN-8	RWF-157-16MM	RWF-158-16MM	RWF-156-16MM	RWF-148-16MM
AN-10	RWF-157-21MM	-	RWF-156-21MM	RWF-148-21MM
AN-12	RWF-157-23MM	RWF-158-25MM	RWF-156-24MM	RWF-148-24MM
AN-16	RWF-157-31MM	RWF-158-28MM	RWF-156-31MM	-
AN-20	RWF-157-36MM	RWF-158-38MM	RWF-156-36MM	-
<b>120 SERIES</b>				
AN-6	RWF-157-14MM	RWF-158-14MM	RWF-156-13MM	RWF-148-13MM
AN-8	RWF-157-16MM	RWF-158-19MM	RWF-156-16MM	RWF-148-16MM
AN-10	RWF-157-21MM	RWF-158-25MM	RWF-156-21MM	RWF-148-21MM
AN-12	RWF-157-23MM	RWF-158-25MM	RWF-156-24MM	RWF-148-24MM
AN-16	RWF-157-31MM	RWF-158-32MM	RWF-156-31MM	-
AN-20	RWF-157-36MM	RWF-158-38MM	RWF-156-36MM	-
<b>200 / 230 / 240 / 260 SERIES</b>				
AN-3	RWF-157-6MM	RWF-158-6MM	RWF-156-6MM	RWF-148-6MM
AN-4	RWF-157-8MM	RWF-158-8MM	RWF-156-8MM	RWF-148-8MM
AN-6	RWF-157-12MM	RWF-158-13MM	RWF-156-11MM	RWF-148-11MM
AN-8	RWF-157-14MM	RWF-158-14MM	RWF-156-13MM	RWF-148-13MM
AN-10	RWF-157-16MM	RWF-158-16MM	RWF-156-16MM	RWF-148-16MM
AN-12	RWF-157-19MM	RWF-158-19MM	RWF-156-19MM	RWF-148-19MM
<b>400 SERIES</b>				
AN-4	RWF-157-11MM	RWF-158-13MM	RWF-156-11MM	RWF-148-11MM
AN-5	RWF-157-14MM	RWF-158-14MM	RWF-156-13MM	RWF-148-13MM
AN-6	RWF-157-16MM	RWF-158-16MM	RWF-156-16MM	RWF-148-16MM
AN-8	RWF-157-19MM	RWF-158-19MM	RWF-156-19MM	RWF-148-19MM
AN-10	RWF-157-23MM	RWF-158-25MM	RWF-156-24MM	RWF-148-24MM
AN-12	RWF-157-26MM	RWF-158-28MM	RWF-156-25MM	RWF-148-25MM
<b>300 / 600 / 620 SERIES</b>				
AN-5	RWF-157-8MM	RWF-158-8MM	RWF-156-8MM	RWF-148-8MM
AN-6	RWF-157-10MM	RWF-158-9MM	RWF-156-10MM	RWF-148-10MM
AN-8	RWF-157-12MM	RWF-158-13MM	RWF-156-12MM	RWF-148-12MM
AN-10	RWF-157-16MM	RWF-158-16MM	RWF-156-16MM	RWF-148-16MM
<b>700 SERIES</b>				
AN-8	RWF-157-16MM	RWF-158-16MM	RWF-156-16MM	RWF-148-16MM
AN-10	RWF-157-21MM	-	-	RWF-148-21MM
AN-12	RWF-157-26MM	RWF-158-25MM	RWF-156-25MM	RWF-148-25MM
AN-16	RWF-157-31MM	RWF-158-28MM	RWF-156-31MM	-
AN-20	-	-	-	-



## HOSES AND FITTINGS

### FITTING ACCESSORIES



ALUMINIUM WASHERS (5PK)			
Size	ID	OD	Part No.
-3 to -16 (70pce)			<b>RWF-901-KIT</b>
AN-3	9.8mm	15.9mm	<b>RWF-901-03</b>
M10	10.5mm	16.0mm	<b>RWF-901-M10</b>
AN-4	11.2mm	17.3mm	<b>RWF-901-04</b>
M12	12.0mm	18.0mm	<b>RWF-901-M12</b>
AN-6	14.4mm	20.3mm	<b>RWF-901-06</b>
M16	16.0mm	22.0mm	<b>RWF-901-M16</b>
M18	18.2mm	24.0mm	<b>RWF-901-M18</b>
AN-8	19.5mm	24.7mm	<b>RWF-901-08</b>
AN-10	22.3mm	28.5mm	<b>RWF-901-10</b>
AN-12	27.1mm	33.6mm	<b>RWF-901-12</b>
AN-16	33.6mm	41.0mm	<b>RWF-901-16</b>

PTFE WASHERS (5PK)			
AN	ID	OD	Part No.
-3 to -16 (70pce)			<b>RWF-903-KIT</b>
-3	9.8mm	15.9mm	<b>RWF-903-03</b>
-4	11.0mm	16.0mm	<b>RWF-903-04</b>
-6	14.0mm	20.0mm	<b>RWF-903-06</b>
-8	19.0mm	25.0mm	<b>RWF-903-08</b>
-10	22.0mm	28.0mm	<b>RWF-903-10</b>
-12	27.0mm	33.0mm	<b>RWF-903-12</b>
-16	33.5mm	40.0mm	<b>RWF-903-16</b>

COPPER WASHERS (5PK)		
ID	OD	Part No.
8 to 18mm (70pce)		<b>RWF-179-KIT</b>
8.0mm	13.8mm	<b>RWF-179-8MM</b>
10.0mm	16.0mm	<b>RWF-179-10MM</b>
11.0mm	16.9mm	<b>RWF-179-11MM</b>
12.0mm	18.0mm	<b>RWF-179-12MM</b>
14.0mm	20.0mm	<b>RWF-179-14MM</b>
16.0mm	22.0mm	<b>RWF-179-16MM</b>
18.0mm	24.0mm	<b>RWF-179-18MM</b>



DOWTY SEALS (5PK)		
ID	OD	Part No.
8 to 20mm (70pce)		<b>RWF-180-KIT</b>
8.0mm	13.8mm	<b>RWF-180-8MM</b>
10.0mm	16.0mm	<b>RWF-180-10MM</b>
12.0mm	18.0mm	<b>RWF-180-12MM</b>
14.0mm	20.0mm	<b>RWF-180-14MM</b>
16.0mm	22.0mm	<b>RWF-180-16MM</b>
18.0mm	25.0mm	<b>RWF-180-18MM</b>
20.0mm	28.0mm	<b>RWF-180-20MM</b>

BUNA N (NITRILE) O-RINGS (5PK)			
AN	ID	OD	Part No.
-3 to -16 (80pce)			<b>RWF-178-KIT</b>
-3	7.5mm	10.7mm	<b>RWF-178-03</b>
-4	9.0mm	12.4mm	<b>RWF-178-04</b>
-6	12.0mm	15.6mm	<b>RWF-178-06</b>
-8	16.1mm	20.5mm	<b>RWF-178-08</b>
-10	19.2mm	24.0mm	<b>RWF-178-10</b>
-12	23.5mm	29.7mm	<b>RWF-178-12</b>
-16	29.5mm	35.5mm	<b>RWF-178-16</b>
-20	37.0mm	43.4mm	<b>RWF-178-20</b>



TUBE ADAPTER REPLACEMENT OLIVES (5PK)	
AN	Part No.
-5	<b>RWF-297-05</b>
-6	<b>RWF-297-06</b>
-8	<b>RWF-297-08</b>
-10	<b>RWF-297-10</b>



PTFE REPLACEMENT OLIVES (5PK)	
AN	Part No.
-3	<b>RWF-299-03</b>
-4	<b>RWF-299-04</b>
-6	<b>RWF-299-06</b>
-8	<b>RWF-299-08</b>
-10	<b>RWF-299-10</b>
-12	<b>RWF-299-12</b>

## IGNITION

### IGNITION COILS WITH BUILT-IN IGNITER MODULE



#### IGC-037M

- To suit LS1
- Icon (By PAT)
- Plug Kit – **CPS-044**



#### IGC-326

- To suit LS2 / LS3 / LSA
- Delphi
- Plug Kit – **CPS-051**



#### IGC-507

- IGN-1A ■ Genuine Mercury
- Plug Kit – **CPS-539**  
(Also included with IGC-507)



#### IGC-048

- To suit Yaris
- Bosch
- Plug Kit – **CPS-136**



#### IGC-048M

- To suit Yaris
- Icon (By PAT)
- Plug Kit – **CPS-136**



#### IGC-247

- To suit Audi R8
- Bosch
- Plug Kit – **CPS-153**

#### IGC-389

- To suit 370Z
- PAT Premium
- Plug Kit – **CPS-140**

#### IGC-480

- To suit R35 GT-R
- Hitachi
- Plug Kit – **CPS-140**



## IGNITION

### ELECTRONIC IGNITION COILS



**IGC-136M**

■ Icon (By PAT) Barrel Coil



**IGC-139M**

■ Icon (By PAT) Barrel Coil



**IGC-138**

■ HEC716 Bosch Transformer



**IGC-173**

■ HEC715 Bosch Transformer

### POINTS IGNITION COILS



**IGC-243**

■ Bosch GT40



**IGC-257**

■ Bosch GT40R



## IGNITION

### IGNITION COIL CONVERSIONS



**IGC-508**

- Bracket and R35 GT-R Coils to suit EVO 4-9 (No Wiring)

**ALY-136BK**

- Bracket to suit R35 GT-R Coils on RB20, RB25 Non-Neo and RB26

**ALY-143BK**

- Bracket to suit R35 GT-R Coils on RB25 Neo
- For R35 GT-R coils, see Page 137



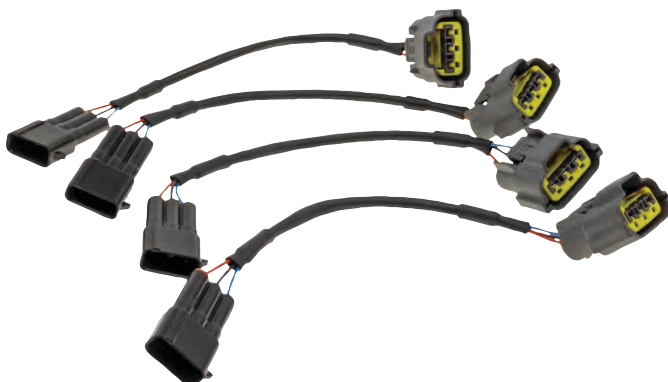
**VPR-055**

- Plug and Play Harness to suit **IGC-508** EVO 4-9



**IGC-509**

- Bracket and R35 GT-R Coils to suit Subaru EJ Series (No Wiring)



**VPR-056**

- Plug and Play Harness to suit **IGC-509** Subaru EJ Series



**VPR-057**

- Patch Loom for Subaru GC8 (Use with **VPR-056**)



## IGNITION

### ELECTRONIC DISTRIBUTORS



HOLDEN	
Part No.	To Suit
DIS-124A	6cyl (149/161/173/179/186/202)*
DIS-006A	V8 253/308*
DIS-007A	V8 304 (VN-VP Blue Plug)
DIS-008A	V8 304 (VR-VS Black Plug)
DIS-009A	V8 304 (VT Series 1)

\*Certain engines require  
a points to electronic conversion

CHEVROLET	
Part No.	To Suit
DIS-110A	V8 HEI
DIS-130A	SBC and BBC

FORD	
Part No.	To Suit
DIS-126A	Windsor 289 302 11.5mm HEI
DIS-127A	Windsor 351 13.0mm HEI
DIS-128A	Windsor 289 302 11.5mm
DIS-113A	EFI Windsor 11mm Shaft
DIS-003A	Cleveland 302 351 12.5mm Shaft
DIS-118A	Cleveland 351 13.0mm Shaft

### DENSO SPARK PLUGS



Type	Nickel	Iridium Power	Iridium Tough	Iridium Racing	Iridium TT
Centre Electrode	2.5mm	0.4mm	0.4mm	0.4mm	0.4mm
Resistor	Most Types	All Types	All Types	All Types	All Types
High Performance	+	++++	++++	+++++	+++++
Fuel Saving	Good	Best	Best	-	Best
Life Time (General Guide)	20,000km	20,000km	100,000km	-	100,000km

### SPARK PLUG HEAT RANGE CROSSOVER

DENSO	9	14	16	20	22	24	27	31
NGK	2	4	5	6	7	8	9	10
BOSCH	10	9	8	7,6	5	4	3	2
CHAMPION	18	16, 14	12, 11	10, 9	8, 7	6, 63, 61	4, 59	55



## IGNITION

### DENSO SPARK PLUGS

■ Common performance applications listed below, please ask us for other vehicles / applications

Vehicle Manufacturer	Vehicle Model	Vehicle Series	Vehicle Engine	Spark Plug	Plug Type	NGK Cross Ref	Colder Alternative
<b>BMW</b>	323i	E30	M20B23	W16EP-U	Nickel	BP5ES	W20EP-U
	325i	E30	M20B25	W16TT	Nickel	ZGR5A	W20TT
	325i / 328i	E36	M50B25/M52B28	K20TXR	Nickel	BKR6EK	IK22
	M3	E36	S50B30	IXU22	Iridium Power	PKR7A	IXU24
	328ci / 330ci	E46	M52TUB28/M54B30	K20TXR	Nickel	BKR6EQU	IK22
	M3	E46	S54B32	IXU24	Iridium Power	DCPR8EKP	IXU27
<b>FORD</b>	Falcon	XW-XE	351 Cleveland	T20P-U	Nickel	BP6FS	ITF22
	Falcon	EA-AU	Inline 6	IW20TT	Iridium TT	BPR6EIX-11	IW22
	Falcon	EA-EL	V8	T16PR-U15	Nickel	BPR5FS-15	ITF20TT
	Falcon	AU	V8	IT20TT	Iridium TT	TR55IX	IT22
	Falcon	BA-BF	Barra 182/190	IK20	Iridium Power	IFR6T11	IK22
	Falcon	BA-BF	Barra 240T	IK20TT	Iridium TT	FR6EI-11	VK22 (Requires Re-Gapping)
	Falcon	BF	Barra 245T	IK20TT	Iridium TT	BKR6EIX-P	VK22 (Requires Re-Gapping)
	Falcon	BA/BF	Boss 260/290/302	IT20TT	Iridium TT	TR5IX / BPR6EFIX-10	IT22
	Falcon	FG-FGx	Ecoboost	ITV20TT	Iridium TT	ILTR6G8G	ITV22
	Falcon	FG-FGx	Barra 270T	IK20TT	Iridium TT	IFR6T11	IK22
	Falcon	FG	Boss 290	IT20TT	Iridium TT	—	IT22
	Fiesta XR4	WQ	Duratec N4JB	IT20TT	Iridium TT	ITR6F13	IT22
	Focus	LR-LV	Duratec	IT20TT	Iridium TT	ITR6F13	IT22
	Focus XR5	LS-LV	B5254T	IKH20TT	Iridium TT	ILFR6B	IKH22
	Mustang	FM	Coyote	ITV20TT	Iridium TT	—	ITV22
	Territory	SX-SY II	Barra 245T	IK20TT	Iridium TT	BKR6EIX-P	IK22
<b>HOLDEN</b>	Monaro	HT-HQ	350 Chev	W16PR-U	Nickel	BP5FS	W20PR-U
	Commodore	VL	RB30ET	IQ20TT	Iridium TT	BCPR6EIX-11	IQ22
	Commodore	VN-VT	304	T20EPR-U	Nickel	BPR6EF	IT22
	Commodore	VS-VY	L67	T20EPR-U15	Nickel	BPR6EF-13	IT22
	Commodore	VT-VZ	LS1	IT16TT	Iridium TT	PZTR5A-15	IT20TT
	Commodore	VZ-VF	LS2/L76/L77/L98/LS3	IT16TT	Iridium TT	IZTR5B11	IT20TT
<b>HONDA</b>	Integra Type R	DC2	B18C	IK22G	Iridium Power	PFR7G-11S	IK24
	Integra Type R	DC5	K20A	IK22G	Iridium Power	IFR7G-11KS	IK24
	S2000	AP1	F20C	IK22G	Iridium Power	PFR7G-11S	IK24
	Accord Euro	CL	K24A	IK20TT	Iridium TT	IZFR6K11	IK22
	Accord Euro	CU	K24A	VXUHC22G	Iridium Tough	ILZKR7B11GS	—
<b>HYUNDAI</b>	Excel	X3	G4FK	K16PR-U11	Nickel	BKR5ES-11	K20PR-U11
<b>LEXUS</b>	IS F	USE20R	2URGSE	IKBH20TT	Iridium TT	DFH6B-11A	—

## IGNITION

### DENSO SPARK PLUGS

■ Common performance applications listed below, please ask us for other vehicles / applications

Vehicle Manufacturer	Vehicle Model	Vehicle Series	Vehicle Engine	Spark Plug	Plug Type	NGK Cross Ref	Colder Alternative
MAZDA	3 MPS	BK	L3VDT	ITV20	Iridium Power	ILTR6A-8G	ITV22
	3 MPS	BL	L3VDT	ITV20	Iridium Power	SILTR6A7G	ITV22
	6 MPS	GG	L3VDT	ITV20	Iridium Power	ILTR6A-8G	ITV22
	Familia	BG	BPT	IK20	Iridium Power	BKR6E-11	IK22
	MX5	NA-NB	BP	K16PR-U11	Nickel	BKR5E-11	K20PR-U11
	MX5	NB	BPT	IK16TT	Iridium TT	—	IK20TT
	MX5	NC	LF-DE	ITV20	Iridium Power	ILTR6A-13G	ITV22
	RX7	SA	12A	IRE01-27	Iridium Racing	BR813L	IRE01-31
	RX7	FC	13B-T	IRE01-31 / IRE01-27	Iridium Racing	BUR9EQ / BUR7EQ	IRE01-31
	RX7	FD	13B-REW	IRE01-27	Iridium Racing	BUR7EQP / BUR9EQP	IRE01-31
	RX8	FE	13B RENESIS	IRE01-31 / IRE01-27	Iridium Racing	RE7C-L / RE9B-T	IRE01-31
MITSUBISHI	Lancer EVO	II – III	4G63T	IW22	Iridium Power	BP7ES	IW24
	Lancer EVO	V	4G63T	IW22	Iridium Power	PGR7A	IW24
	Lancer EVO	VI	4G63T	IW22	Iridium Power	IGR7A	IW24
	Lancer EVO	VII – VIII	4G63T	IW22	Iridium Power	IGR7A-G	IW24
	Lancer EVO	IX	4G63T	IKH22	Iridium Power	ILFR7H	IKH24
	Galant/Legnum	EC5A / EC5W	6A13T	IK20TT	Iridium TT	PFR6J	IK22
NISSAN	180SX / Silvia	S13	CA18DET	IQ20TT	Iridium TT	PFR6A11	IQ22
	180SX / Silvia	S13	SR20DET	IK20TT	Iridium TT	PFR6B-9	IK22
	200SX / Silvia	S14 / S15	SR20DET	IK20TT	Iridium TT	PFR6B-9	IK22
	Skyline	DR30	FJ20ET	IW20TT	Iridium TT	BPR6EIX-11	IW22
	Skyline	R32-R34	RB26DETT	IQ20TT	Iridium TT	PFR6A-11	IQ22
	Skyline	R33	RB25DET	IK16TT	Iridium TT	PFR5G-11	IK20TT
	Skyline	R34	RB25DET NEO	IK20TT	Iridium TT	PFR6G-11	IK22
	GT-R	R35	VR38DETT	VDCH22F	Iridium Tough	DILKAR8A8	FXE24HR11 (Requires Re-Gapping)
	350Z	Z33	VQ35DE	IKH16TT	Iridium TT	PLFR5A-11	IKH20TT
	350Z	Z33	VQ35HR	IXEH22TT	Iridium TT	DF7H-11B	FXE24HR11
	370Z	Z34	VQ37VHR	FXE24HR11	Iridium	DF8H-11B	VXEBH27
	300ZX	Z32	VG30DETT	IK20TT	Iridium TT	PFR6B-11	IK22
	Pulsar GTI-R	N14	SR20DET	IK22	Iridium Power	PFR7B-9	IK24
SUBARU	Impreza WRX	GC – GD	EJ20	IK20TT	Iridium TT	PFR6G	IK22
	Impreza WRX	GD / G3	EJ25	IKH20TT	Iridium TT	ILFR6B	IKH22
	Impreza WRX	V1	FA20	IXEH22TT	Iridium TT	ILKAR8H6	FXE24HR11
	BRZ	ZC6	FA20D	VXEBH27	Iridium Tough	—	—
TOYOTA	Corolla	AE111	4A-GE 20V	IK20TT	Iridium TT	BKR6EP-11	IK22
	Corolla Sportivo / Celica	ZZE123 / ZZR231	2ZZGE	IK20TT	Iridium TT	IFR6T11	IK22
	MR2	SW20	3SGTE	IK20TT	Iridium TT	BKR6EP-8	IK22
	Soarer	UZZ31	1UZFE	IK20TT	Iridium TT	BKR6EP-11	IK22
	Mark II / Chaser	JZX100	1JZ GTE	IK20TT	Iridium TT	BKR6EKP-11	IK22
	Supra	JZA80	2JZ GTE	IK20TT	Iridium TT	BKR6EP-11	IK22
	Supra	JZA80	2JZ GTE VVT-i	IK20TT	Iridium TT	BKR6EKP-11	IK22
	86	ZN6	4UGSE	VXEBH27	Iridium Tough	—	—
VW	Golf GTI / R	MK 6	CCZB / CDLC	IK22	Iridium Power	PFR7S8EG	IK24
	Scirocco R	1S	CDLC	IK22	Iridium Power	PFR7S8EG	IK24

## OIL

### BILLET LIFETIME OIL FILTERS



Thread	Part No.
13/16"-16	ALY-115-1316BK
3/4"-16	ALY-115-34BK
M20x1.5	ALY-115-M20BK
M22x1.5	ALY-115-M22BK

- Included with 30 Micron stainless steel elements, suitable for use with light – medium weight oils
- Includes Anti-Drain Back Valve, and Opener Tool (used in a vice)
- 60 Micron elements also available separately, suitable for heavy weight oils (25W50 and thicker)

### OIL FILTER REPLACEMENT ELEMENTS



Micron	Part No.
30	ALY-116-30
60	ALY-116-60

### OIL FILTER APPLICATION GUIDE

13/16"- 16	3/4"- 16	M20X1.5	M22X1.5
Holden V8 (253, 304, 308)	Ford EA-AU	Honda B Series/K Series	Ford BA V8
Chev V8 (LS1, LS2)	Ford BA I6	Honda Civic FK8	Ford BF/FG
	Ford Focus RS	Honda S2000	Ford Mustang V8
	Ford Focus ST	Mazda MX5 NA-NB	Chev V8 (L98, L76, L77, LS3, LSA)
	Holden Commodore VL I6	Mazda RX7	
	Mazda MX5 NC-ND	Mitsubishi EVO 1-10	
	Nissan Silvia/180SX	Mitsubishi Legnum EC5W	
	Nissan Pulsar GTiR	Nissan 200SX	
	Nissan Skyline RB25/RB26	Nissan 350Z/370Z	
	Toyota Altezza 3SGE BEAMS	Nissan GT-R R35	
	Toyota Celica/MR2 3SGTE	Subaru BRZ	
	Toyota Corolla 4AGE/2ZZGE	Subaru EJ Series	
	Toyota Soarer 1UZFE/1JZGTE	Subaru FA Series	
	Toyota Supra 2JZGTE	Toyota 86	



## OIL

### OIL FILTER SPIN ON ADAPTERS



*\*Fittings  
not included*



- Suitable for oil filter relocations
- Large internal bore which promotes high flow and low restriction, and a Double O-Ring provides a leak-free seal
- Use with suitable adapter

Ports	Part No.
AN-10 ORB	ALY-165BK

### STAINLESS INSERT SUITS OIL FILTER SPIN ON ADAPTERS



Thread	Part No.
13/16"-16	ALY-165-1316SS
3/4"-16	ALY-165-34SS
M20x1.5	ALY-165-M20SS
M22x1.5	ALY-165-M22SS

### SIDE ENTRY REMOTE OIL FILTER MOUNT



- Utilises 4 x AN-10 ORB Ports
- 3/4"-16 thread
- Includes 2 x AN-10 Male Flare Adapters and 2 x AN-10 Plugs

**ALY-153BK**



*\*Shown attached to oil filter (not included)*

## OIL

### OIL PRESSURE REGULATORS



Specifications	Part Number
OPR T40 40PSI – Blue	TS-0801-1001
OPR T40 40PSI – Black	TS-0801-1002

### TURBO FEED INLINE OIL FILTER



- 44 Micron stainless steel element

Inlet	Outlet	Brand	Part No.
AN-4 Male Flare	AN-4 Male Flare	Raceworks	ALY-183BK
AN-4 Male Flare	AN-4 Male Flare	Turbosmart	TS-0804-1002
AN-4 ORB	AN-4 Male Flare	Turbosmart	TS-0804-1003

### TECH TIP – WHAT IS AN OIL PRESSURE REGULATOR, AND CAN ONE REGULATOR BE USED WITH TWIN TURBOCHARGERS?

An OPR is used to control the flow of oil and regulate the oil pressure at 40psi for your ball bearing turbocharger. It replaces the oil restrictor, which can be prone to blockage due to their extremely small orifice, leading to oil starvation and failure. In most applications, one OPR can be used with twin turbochargers. This is done using a Tee or Y-Block. In this scenario, Turbosmart recommend that both engine oil and turbo oil pressures are checked after installation to ensure correct operation. If either pressure isn't optimal, a second OPR may be added. This is a rare occurrence.





## SENSORS

### ACCELERATOR PEDAL SENSORS



**APS-003**

- Pedal Position Sensor (Twin Sensors), 6pin, 128° of travel
- Aisan ■ Plug Kit – **CPS-144**

**APS-008**

- Accelerator Pedal (Twin Sensors), steel linkage, 6pin
- Hella ■ Plug Kit – **CPS-143**

**APS-502**

- Accelerator Pedal (Twin Sensors), plastic linkage, 6pin, 16° travel (~= 70mm)
- Bosch ■ Plug Kit – **CPS-191**

### AIR FLOW METERS ( MASS AIR FLOW SENSORS )

**AFM-128**

- Nissan R35 GT-R
- Hitachi
- Plug Kit – **CPS-135**



## SENSORS

### AIR / MANIFOLD PRESSURE SENSORS – UNIVERSAL WITH BARB INLET



#### MAP-026

- 1.05 Bar GM style (4mm Barb)
- Delphi
- Plug Kit – **CPS-132**



#### MAP-003

- 2.00 Bar GM style (4mm Barb)
- Supported boost level 14.5psi
- Raceworks ■ Plug Kit – **CPS-043**



#### MAP-004

- 3.00 Bar GM style (4mm Barb)
- Supported boost level 29.0psi
- Delphi ■ Plug Kit – **CPS-043**



#### MAP-172

- 1.15 Bar motorsport (5mm barb)
- Raceworks
- Plug Kit – included (replacement is **CPS-119**)

#### MAP-171

- 2.50 Bar motorsport (5mm barb)
- Supported boost level 21.7psi
- Raceworks
- Plug Kit – included (replacement is **CPS-119**)

#### MAP-170

- 3.00 Bar motorsport (5mm Barb)
- Supported boost level 29.0psi
- Raceworks
- Plug Kit – included (replacement is **CPS-119**)

#### MAP-067

- 4.00 Bar motorsport (5mm barb)
- Supported boost level 43.5psi
- Raceworks
- Plug Kit – included (replacement is **CPS-119**)

### AIR / MANIFOLD PRESSURE SENSORS – UNIVERSAL THREADED

- It is recommended that NPT sensors are remote mounted to reduce the vibration through the sensor – see page 159 for remote mounting options



#### MAP-500

- 4.00 Bar motorsport 1/8" NPT
- Supported boost level 43.5psi
- Raceworks
- Plug Kit – included (replacement is **CPS-119**)

#### MAP-501

- 5.00 Bar motorsport 1/8" NPT
- Supported boost level 58.0psi
- Raceworks
- Plug Kit – included (replacement is **CPS-119**)



#### MAP-117

- 5.00 Bar motorsport 1/8" NPT
- Supported boost level 58.0psi
- Variomh Eurosensor
- Plug Kit – included (replacement is **CPS-010**)

#### MAP-129

- 8.00 Bar motorsport 1/8" NPT
- Supported boost level 101.5psi
- Variomh Eurosensor
- Plug Kit – Included (replacement is **CPS-010**)



## SENSORS

### AIR / MANIFOLD PRESSURE SENSORS – TO SUIT GM / HOLDEN



**MAP-016**

- 2.0 Bar suits LS1
- Supported boost level 14.5psi
- Raceworks ■ Plug Kit – **CPS-065**



**MAP-114**

- 2.7 Bar suits LS 6.0/6.2L
- Supported boost level 24.6psi
- Bosch ■ Plug Kit – **CPS-067**

### AIR / MANIFOLD PRESSURE SENSORS – TO SUIT FORD / VARIOUS



**MAP-055**

- 2.5 Bar Bosch TMAP
- Supported boost level 21.7psi
- Plug Kit – **CPS-068**



**MAP-056**

- 3.0 Bar Bosch TMAP
- Supported boost level 29.0psi
- Plug Kit – **CPS-068**



**MAP-099**

- 4.0 Bar Bosch TMAP
- Supported boost level 43.5psi
- Plug Kit – **CPS-068**

### ALUMINIUM WELD FLANGE

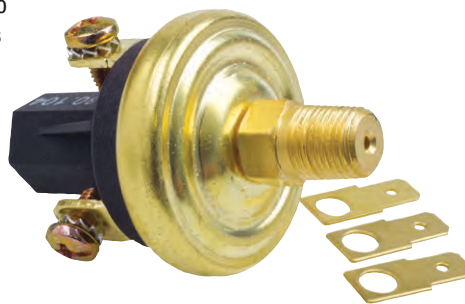


**ALY-140**

- Aluminium Weld Flange to suit Bosch TMAP Sensors



### ADJUSTABLE PRESSURE SWITCH



**RWM-001**

- VDO Adjustable Pressure Switch 3.1–7.0ps, preset at 4psi
- Contains N/O and N/C contacts
- 1/8" NPT thread
- Commonly used for staging fuel pumps
- Includes dust boot

## SENSORS

### COLLECTOR KITS

- Used for engines with individual throttle bodies, these kits utilise equal length Hoses, ensuring that each vacuum pulse arrives at the collector at the correctly timed intervals
- The kits contain stainless nipples to be fitted to each intake runner or throttle body at the exact same location/distance from the throttle butterfly
- Unlike a Vacuum Rail which contains a large air volume, the collector and small diameter vacuum hoses keeps the volume to a minimum, preventing the signal being dampened (slowed down), causing any delays in the signal



ALY-054-4



ALY-054-6



ALY-054-8

### AIR TEMPERATURE SENSORS



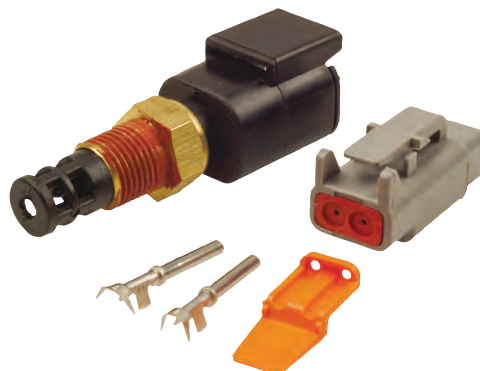
ATS-003

- M14x1.5 open tip
- ACDelco
- Plug Kit – **CPS-013**



ATS-005

- 3/8" NPT Delco style open tip
- PAT Premium
- Plug Kit – **CPS-013**



ATS-026

- 1/8" NPT motorsport open tip
- Raceworks
- Plug Kit – included (replacement is **CPS-118**)



ATS-500

- 1/8" NPT Raceworks
- Stainless steel motorsport grade
- Temperature range: -30 to 150°C
- Plug Kit – included (replacement is **CPS-118**)

## SENSORS

### BOOST CONTROL SOLENOIDS

#### MAC VALVES



**TS-0301-3003**

■ 3 Port ■ Turbosmart



**ALY-163BK**

■ Billet Bracket suits 3 Port



**TS-0301-3003 in ALY-163BK**



**TS-0301-2003**

■ 4 Port ■ Turbosmart



**ALY-164BK**

■ Billet Bracket suits 4 Port



**TS-0301-2003 in ALY-164BK**

#### PIERBURG



**EVS-042**

■ 2 Port ■ Plug Kit – CPS-035



**EVS-046**

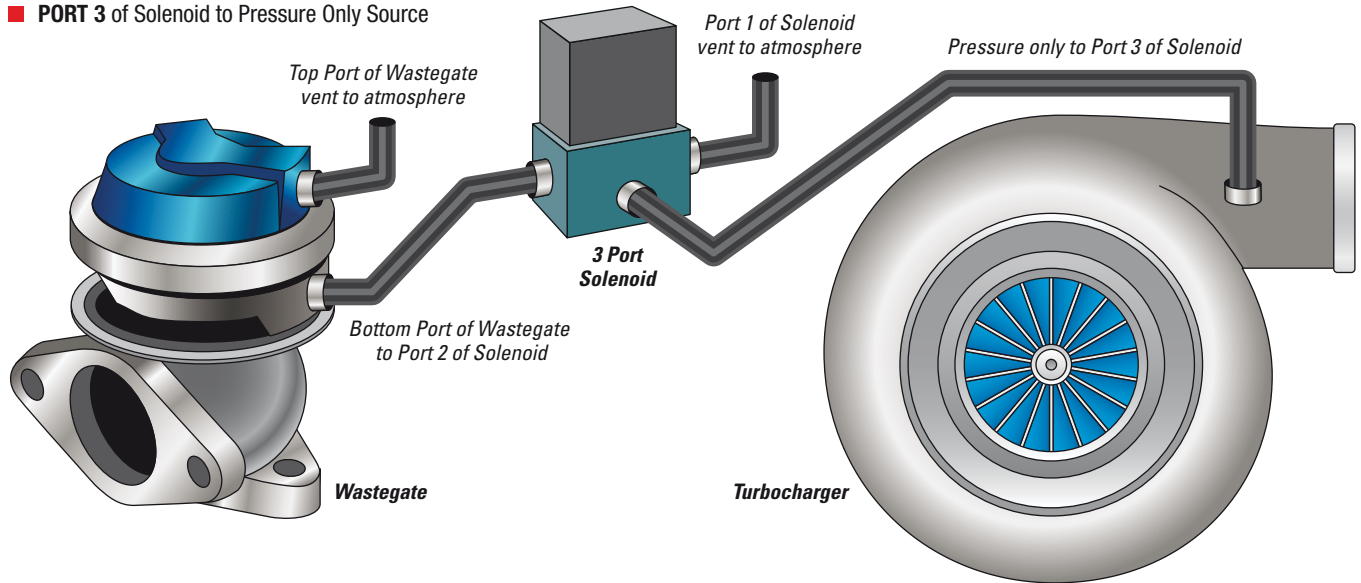
■ 3 Port ■ Plug Kit – CPS-035

## SENSORS

### 3 PORT MAC VALVE CONNECTION METHOD

#### Single Port, Single Solenoid, Single Turbo Connection Method

- **PORT 1** of Solenoid Vent to Atmosphere
- **PORT 2** of Solenoid to Bottom Port of Wastegate
- **PORT 3** of Solenoid to Pressure Only Source

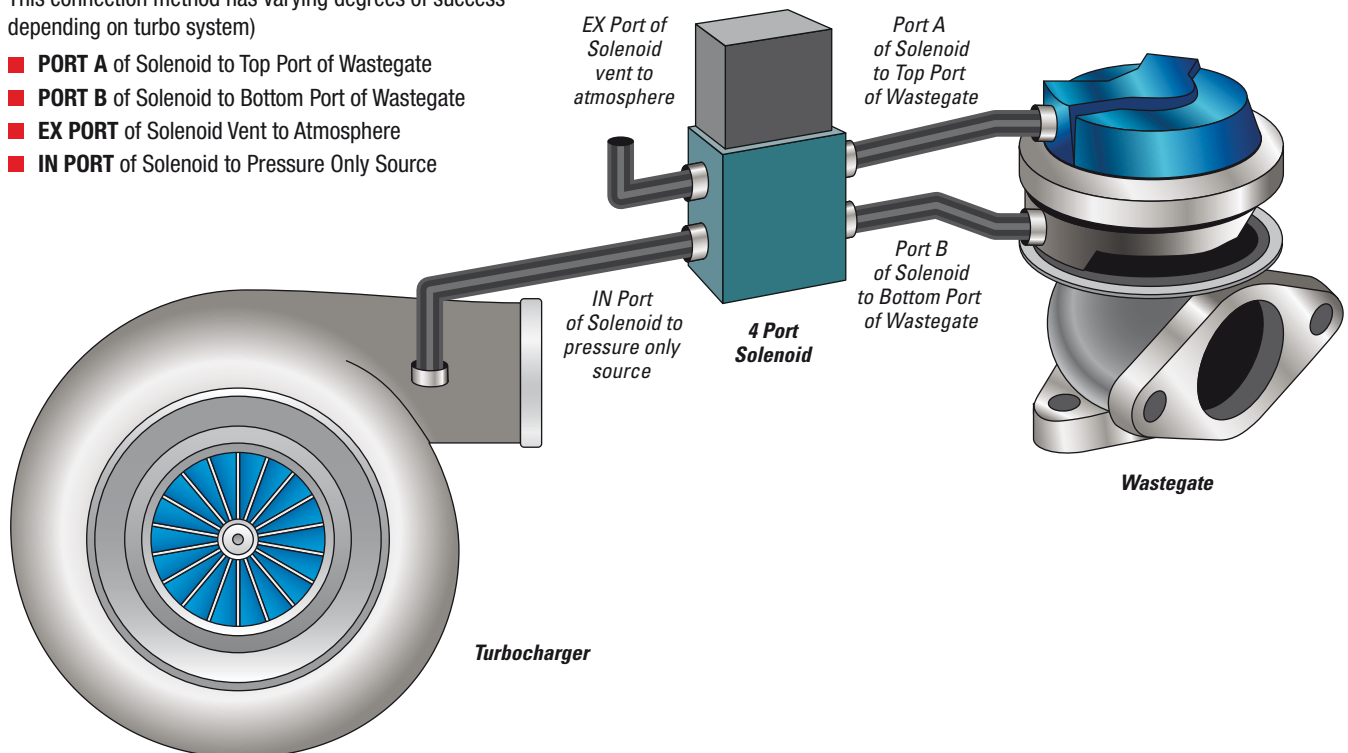


### 4 PORT MAC VALVE CONNECTION METHOD

#### Two Port, Single 4 Port Solenoid, Single Turbo Connection Method

(For obtaining a wide range of boost pressures e.g. 5 – 40psi. This connection method has varying degrees of success depending on turbo system)

- **PORT A** of Solenoid to Top Port of Wastegate
- **PORT B** of Solenoid to Bottom Port of Wastegate
- **EX PORT** of Solenoid Vent to Atmosphere
- **IN PORT** of Solenoid to Pressure Only Source





## SENSORS

### ENGINE POSITION SENSORS

#### RELUCTOR SENSOR AND ACCESSORIES



**CAS-410**

- Bosch Sensor
- Plug Kit – **CPS-017**



**ALY-179**

- Aluminium Sensor Mount to suit **CAS-410**



**ALY-180-S**

- 60-2 Billet Steel Trigger Wheel
- Diameter 6.39"

#### HALL SENSOR AND ACCESSORIES

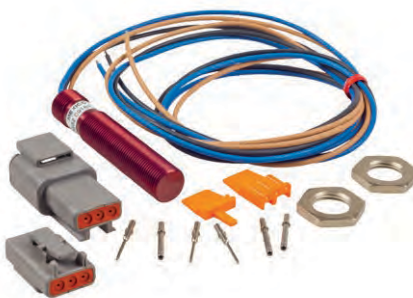


**ALY-182-S**

- 36-1 Steel Trigger Wheel 8.25in

**ALY-181-S**

- 36-1 Steel Trigger Wheel 6.75in



**HAL-501**

- ZF (Cherry) Red
- Included (replacement is **CPS-119**)



**HAL-502**

- ZF (Cherry) Stainless
- Included (replacement is **CPS-119**)

### TECH TIP – WHAT IS THE DIFFERENCE BETWEEN A RELUCTOR SENSOR AND A HALL SENSOR?

- Both Reluctor and Hall Sensors are used for trigger/position.
- Reluctor Sensors provide a trigger to the ECU via 2 wires (positive and negative).
- Hall Sensors add a third wire (power) and provide a simple square wave signal to the ECU.
- The Reluctor signal is more complex, and it's voltage output varies with trigger speed. The noise generated by the sensor is higher, and the exact triggering edge that the ECU calculates the ignition timing off is more complicated to interpret.
- The Reluctor Sensor works well in high temperature environments however, often in excess of 200°C, where the Hall Sensor doesn't like temperatures higher than approximately 90°C.
- Hall Sensors like an air gap of around 1mm, where Reluctor Sensors are much more sensitive, and need a very small air gap of approximately 0.25mm.

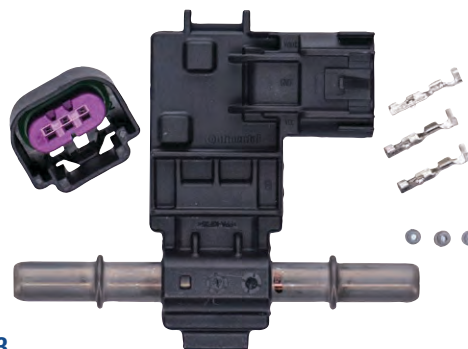
## SENSORS

### ETHANOL CONTENT AND FUEL TEMPERATURE SENSORS



#### FSA-022

- Continental Large Body Ethanol Content and Fuel Temperature Sensor
- Contains Integrated Mount and 3/8 Quick Connect Fittings
- Connector Plug Kit is included, replacement is **CPS-133**
- For suitable fittings, see page 130



#### FSA-023

- Continental Compact Body Ethanol Content and Fuel Temperature Sensor
- Uses 3/8 Quick Connect Fittings, for mounting, use **ALY-151BK**
- Connector Plug Kit is included, replacement is **CPS-133**
- For suitable fittings, see page 130



#### FSA-023 in ALY-151BK



#### ALY-151BK

- Raceworks Billet Bracket
- Suits **FSA-023**

### TECH TIP – SHOULD A FLEX FUEL SENSOR BE INSTALLED ON THE FUEL FEED LINE OR RETURN LINE?

- Flex Fuel Sensors will operate correctly on either the Fuel Feed Line or Return Line.
- Fuel flows so quickly, and so much is returned when not under load, that the time delay for the sensor to read and react in either location is negligible.
- They must be installed after any surge tanks, and not before.
- On bigger fuel systems, they can restrict flow. Therefore it is not uncommon to see them mounted with a Y block either side, and run in parallel with either the Feed Line or Return Line.

### EXHAUST GAS TEMPERATURE



#### EGT-001

- 1/4" diameter, 90° K type thermocouple
- Enclosed tip
- 20 gauge wire
- 1.8M lead with mini connector

- For EGT Weld Ons, see page 131

## SENSORS

### FLUID / WASTEGATE PRESSURE

- It is recommended that NPT sensors are remote mounted to reduce the vibration through the sensor – see page 159 for remote mounting options



#### OPS-508

- 30psi Variohm Eurosensor ■ 1/8" NPT
- Commonly used for coolant pressure and carby fuel pressure
- May also be used with air and oil
- Connector Plug included, replacement is **CPS-010**



#### OPS-504

- 100psi Variohm Eurosensor ■ 1/8" NPT
- Commonly used for fuel pressure
- May also be used with air and oil
- Connector Plug included, replacement is **CPS-010**



#### OPS-505

- 145psi Bosch Sensor ■ M10x1.0
- May be used with fuel, air and oil
- Connector Plug Kit is **CPS-067**
- See page 108 for M10 adapters



#### OPS-131

- 145psi and -40 – 140°C
- Bosch combination Pressure and Temp Sensor
- M10x1.0
- May be used with fuel, air and oil
- Connector Plug Kit is **CPS-151**
- See page 108 for M10 adapters



#### OPS-507

- 145psi Raceworks Motorsport Sensor
- 1/8" NPT
- May be used with fuel, air and oil
- Connector Plug Included, replacement is **CPS-119**



#### OPS-130

- 150psi Variohm Eurosensor ■ 1/8" NPT
- May be used with fuel, air and oil
- Connector Plug included, replacement is **CPS-010**

#### OPS-503

- 250psi Variohm Eurosensor ■ 1/8" NPT
- May be used with fuel, air and oil
- Connector Plug included, replacement is **CPS-010**

#### OPS-501

- 500psi Variohm Eurosensor ■ 1/8" NPT
- Commonly used for trans pressure
- May also be used with air, fuel and oil
- Connector plug included, replacement is **CPS-010**



## SENSORS

### BRAKE / NITROUS PRESSURE SENSORS

- It is recommended that NPT sensors are remote mounted to reduce the vibration through the sensor – see page 159 for remote mounting options



#### OPS-151

- 2000psi Variohm Eurosensor 1/8" NPT
- Plug Kit – included (replacement is CPS-010)



#### OPS-506

- 2000psi Bosch Sensor M10x1.0
- Plug Kit – CPS-067
- See page 108 for M10 adapters

### FLUID TEMPERATURE

#### FLUID TEMPERATURE SENSORS



#### CTS-131

- 1/8" NPT Raceworks
- Temperature range: -20 to 160°C
- Plug Kit – included, replacement is CPS-118



#### CTS-015

- M12x1.5 Bosch
- Temperature range: -40 to 130°C
- Plug Kit – CPS-035



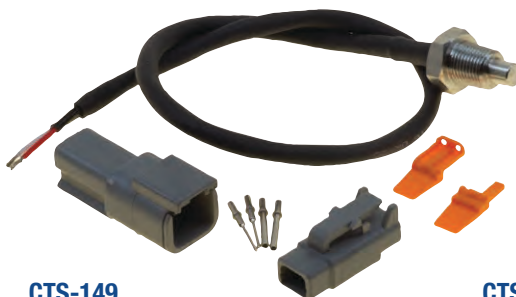
#### CTS-016

- 3/8" NPT Delco Style
- Temperature range: -40 to 150°C
- Plug Kit – CPS-012



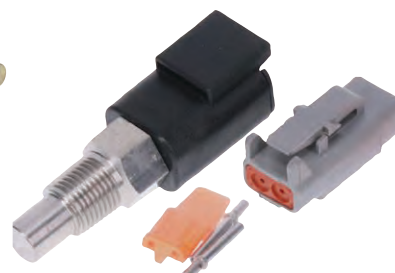
#### CTS-029

- M12x1.5 Delco Style
- Temperature range: -40 to 150°C
- Plug Kit – CPS-012



#### CTS-149

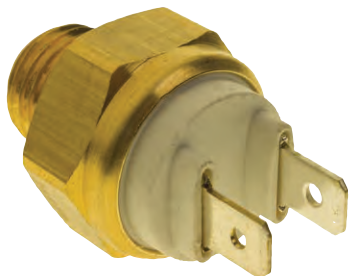
- 1/8" NPT Variohm
- Temperature range -40 to 230°C
- Plug Kit – included, replacement is CPS-118



#### CTS-500

- 1/8" NPT Raceworks
- Stainless Steel Motorsport Grade
- Temperature range: -30 to 150°C
- Plug Kit – included, replacement is CPS-118

#### FLUID TEMPERATURE SWITCHES



#### CFS-031

- M14x1.5
- ON temperature – 95°C
- OFF temperature – 90°C



#### CFS-079

- M14x1.5
- ON temperature – 100°C
- OFF temperature – 95°C



## SENSORS

### KNOCK SENSORS



**KNS-018**

- Bosch 0 261 231 006
- Mounting bolt size – 8mm (5/16")
- Plug Kit – **CPS-035**



**KNS-027**

- Bosch 0 261 231 045
- Mounting bolt size – 8mm (5/16")
- Plug Kit – **CPS-035**



**KNS-063**

- Bosch 0 261 231 188
- Mounting bolt size – 8mm (5/16")
- Plug Kit – **CPS-035**

### WIDEBAND OXYGEN SENSORS



**EGO-136**

- Bosch LSU 4.2 ■ Loom length – 675mm
- Harness Side Plug Kit – **CPS-098**



**EGO-512**

- Bosch LSU 4.9 ■ Loom length – 525mm
- Harness Side Plug Kit – **CPS-099**



**EGO-514**

- Bosch LSU 4.9 ■ Loom length – 975mm
- Harness Side Plug Kit – **CPS-099**



**EGO-895**

- Bosch LSU 4.9 Motorsport Version
- Loom length 800mm
- Harness Side Plug Kit – **CPS-099**



**EGO-328**

- NTK LZA08-H5 ■ Loom length – 295mm.
- Harness Side Plug Kit – **CPS-196**



**EGO-808**

- NTK LZA09-E1 ■ Loom length – 410mm
- Harness Side Plug Kit – **CPS-196**

■ For Oxygen Sensor Loom Extensions, see page 21

## SENSORS

### THROTTLE BODIES – DRIVE BY WIRE



#### TB0-136

- Pierburg Throttle Motor
- Used with individual Throttle Bodies
- Inbuilt TPS
- Connector Kits are **CPS-017** and **CPS-035**



#### TB0-503

- Bosch 32mm Throttle Body
- Commonly used as an Electronic Blow Off Valve
- Mounting PCD 70.71mm
- Includes Plug Kit, replacement Plug is **CPS-147**
- Aluminium Weld Flange available separately – **ALY-188**



#### TB0-150

- Bosch 60mm Throttle Body
- Mounting PCD 84.85mm
- Includes Plug Kit, replacement Plug is **CPS-147**
- Aluminium Weld Flange available separately – **ALY-189**



#### TB0-135

- Bosch 68mm Throttle Body
- Mounting PCD 92mm
- Connector Plug Kit is **CPS-147**
- Aluminium Weld Flange available separately – **ALY-160**



#### TB0-500

- Bosch 74mm Throttle Body
- Mounting PCD 99mm
- Includes Plug Kit, replacement Plug is **CPS-147**
- Aluminium Weld Flange available separately – **ALY-137**



#### TB0-501

- Bosch 82mm Throttle Body
- Mounting PCD 106mm
- Includes Plug Kit, replacement Plug is **CPS-147**
- Aluminium Weld Flange available separately – **ALY-138**



#### TB0-089

- GM 90mm Throttle Body
- Connector Plug Kit is **CPS-146**



### THROTTLE BODY AND PIPE CLAMP NOT INCLUDED

For Pipe Clamps, see page 17

#### ALY-187BK

- 3.00" Raceworks Pipe Clamp Adapter
- Suits FG Turbo Throttle Bodies

#### ALY-178BK

- 3.00" Raceworks Pipe Clamp Adapter
- Suits **TB0-500**

#### ALY-177BK

- 3.50" Raceworks Pipe Clamp Adapter
- Suits **TB0-501**

## SENSORS

### THROTTLE POSITION SENSORS



#### TPS-106

- Raceworks Motorsport ■ Bolt spacing – 28.0mm
- Rotation direction looking into sensor keyway – clockwise
- Plug Kit – included, replacement is **CPS-017**



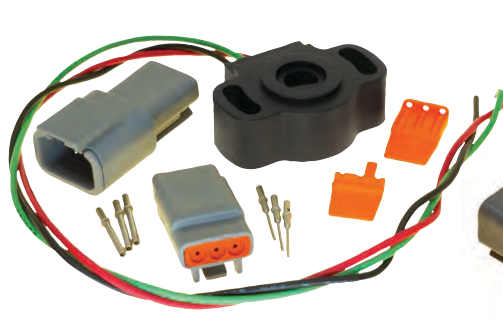
#### TPS-107

- Raceworks Motorsport ■ Bolt spacing – 28.0mm
- Rotation direction looking into sensor keyway – counter clockwise
- Plug Kit – included, replacement is **CPS-017**



#### TPS-500

- Variohm Contactless
- Bolt spacing – 32.0mm
- Rotation direction looking into sensor keyway – dual rotation (2 sensors, no overlap)
- Plug Kit – included, replacement is **CPS-121**



#### TPS-501

- Raceworks Motorsport
- Bolt spacing – 33.0mm
- Rotation direction looking into sensor keyway – single rotation, reversible mounting (CW and CCW)
- Plug Kit – included, replacement is **CPS-119**



#### TPS-502

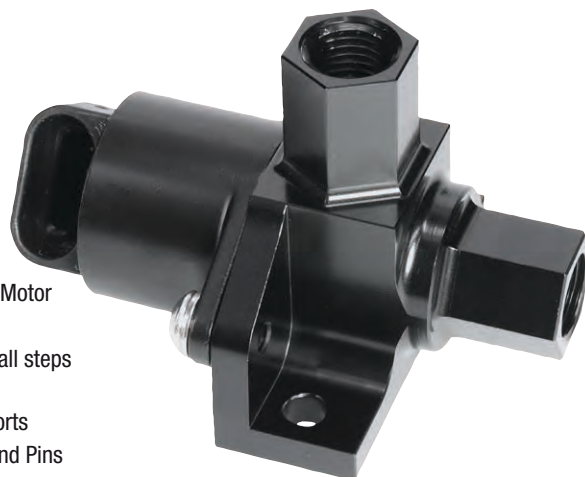
- Variohm Contactless
- Bolt spacing – 32.0mm
- Rotation direction looking into sensor keyway – dual rotation (2 sensors, with overlap for drive by wire apps)
- Plug Kit – included, replacement is **CPS-121**

### IDLE SPEED CONTROL



#### ALY-056BK

- 4 Wire Stepper Motor
- ECU controlled
- Operates in small steps from 0 – 255
- 2 x 1/4" NPT Ports
- Includes Plug and Pins





## SENSORS

### ACCESSORIES (REMOTE SENSOR MOUNTS)



#### ALY-152-2BK

- Remote Sensor Mount, 2 way
- Contains 6x 1/8" NPT Ports, 3 per channel
- Includes 2x 1/8" NPT Blanking Plugs



#### ALY-152-4BK

- Remote Sensor Mount, 4 way
- Contains 12x 1/8" NPT Ports, 3 per channel
- Includes 4x 1/8" NPT Blanking Plugs

- Useful for remote mounting sensors that suffer from vibration when mounted on an engine
- Simplifies wiring in the engine bay by keeping all the sensors in one location
- Examples of mounts fitted with sensors, pressure gauges and bleeder valves are shown at right



### ACCESSORIES (REMOTE SENSOR MOUNTS)

#### RWM-005

- 1/8" NPT Sensor Flexible Hose Extension Kit
- 450mm/18" in length
- Includes male and female NPT Adapters
- AN-4 Hose and P-Clips



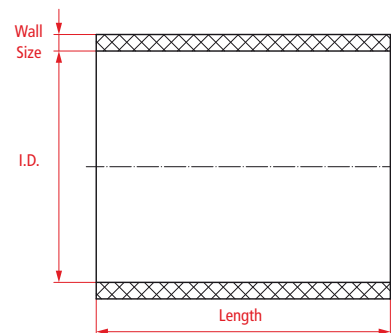
#### RWM-017

- M10x1.0 Sensor Mount Kit
- AN-4
- Can be used with **RWM-005**
- Suitable for Bosch Pressure Sensors



## SILICONE HOSE

- **Raceworks Silicone Hose** is manufactured from the highest grade materials, to ensure that the strictest OEM and performance specifications are surpassed
- All Hoses feature solid 5mm walls constructed from 4-ply reinforced silicone polyester, offering burst pressures of up to 348psi
- All hoses are UV, ozone and electrochemically resistant to avoid fading and separation
- All Raceworks products come with a 2 year warranty
- Temperature Rating : -40 to +180°C
- Raceworks Silicone Hose is not fuel safe

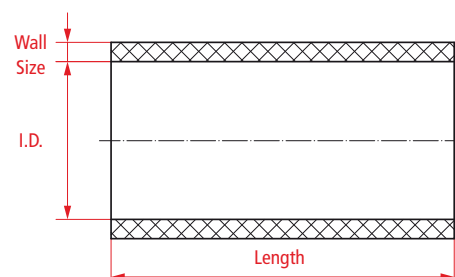


### STRAIGHT SILICONE JOINER

Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure
0.50"	13mm	SHS-050BE	SHS-050BK	60	348 psi
0.75"	19mm	SHS-075BE	SHS-075BK	60	348 psi
1.00"	25mm	SHS-100BE	SHS-100BK	60	348 psi
1.25"	32mm	SHS-125BE	SHS-125BK	60	305 psi
1.50"	38mm	SHS-150BE	SHS-150BK	60	305 psi
1.75"	44mm	SHS-175BE	SHS-175BK	60	305 psi
2.00"	51mm	SHS-200BE	SHS-200BK	75	218 psi
2.25"	57mm	SHS-225BE	SHS-225BK	75	174 psi
2.50"	63mm	SHS-250BE	SHS-250BK	75	174 psi
2.75"	70mm	SHS-275BE	SHS-275BK	75	174 psi
3.00"	76mm	SHS-300BE	SHS-300BK	75	174 psi
3.25"	83mm	SHS-325BE	SHS-325BK	90	174 psi
3.50"	89mm	SHS-350BE	SHS-350BK	90	145 psi
3.75"	95mm	SHS-375BE	SHS-375BK	90	145 psi
4.00"	102mm	SHS-400BE	SHS-400BK	90	145 psi
4.50"	114mm	SHS-450BE	SHS-450BK	90	145 psi
5.00"	127mm	SHS-500BE	SHS-500BK	90	145 psi
6.00"	152mm	SHS-600BE	SHS-600BK	90	145 psi



## SILICONE HOSE



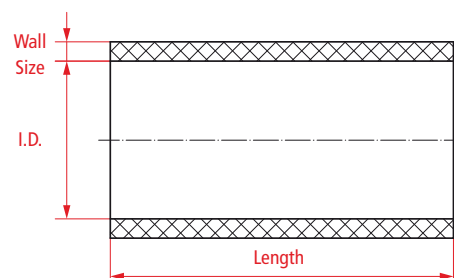
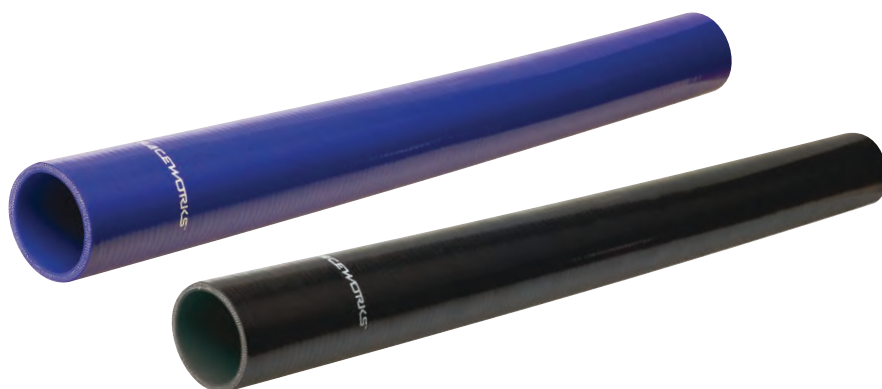
### STRAIGHT SHORT LENGTH SILICONE HOSE

Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure
1.75"	44mm	SHS-175BES	SHS-175BKS	127mm	305 psi
2.00"	51mm	SHS-200BES	SHS-200BKS	127mm	218 psi
2.25"	57mm	SHS-225BES	SHS-225BKS	127mm	174 psi
2.50"	63mm	SHS-250BES	SHS-250BKS	127mm	174 psi
2.75"	70mm	SHS-275BES	SHS-275BKS	127mm	174 psi
3.00"	76mm	SHS-300BES	SHS-300BKS	127mm	174 psi
4.00"	102mm	SHS-400BES	SHS-400BKS	127mm	145 psi

### STRAIGHT MEDIUM LENGTH SILICONE HOSE

Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure
0.50"	13mm	-	SHS-050BKM	254	348 psi
1.00"	25mm	-	SHS-100BKM	254	348 psi
1.25"	32mm	-	SHS-125BKM	254	305 psi
1.50"	38mm	-	SHS-150BKM	254	305 psi
1.75"	44mm	-	SHS-175BKM	254	305 psi
2.00"	51mm	SHS-200BEM	SHS-200BKM	254	218 psi
2.25"	57mm	SHS-225BEM	SHS-225BKM	254	174 psi
2.50"	63mm	SHS-250BEM	SHS-250BKM	254	174 psi
2.75"	70mm	SHS-275BEM	SHS-275BKM	254	174 psi
3.00"	76mm	SHS-300BEM	SHS-300BKM	254	174 psi
3.25"	83mm	-	SHS-325BKM	254	174 psi
3.75"	95mm	-	SHS-375BKM	254	145 psi
4.00"	102mm	SHS-400BEM	SHS-400BKM	254	145 psi
4.50"	114mm	-	SHS-450BKM	254	145 psi
5.00"	127mm	-	SHS-500BKM	254	145 psi
6.00"	152mm	-	SHS-600BKM	254	145 psi

## SILICONE HOSE



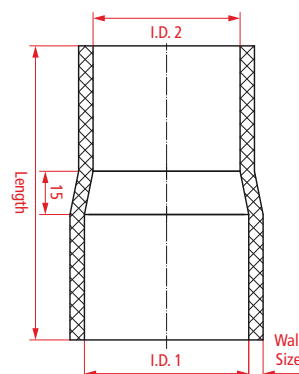
### STRAIGHT LONG LENGTH SILICONE HOSE

Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure
0.50"	13mm	—	SHS-050BKL	610	348 psi
0.75"	19mm	—	SHS-075BKL	610	348 psi
1.00"	25mm	—	SHS-100BKL	610	348 psi
1.25"	32mm	—	SHS-125BKL	610	305 psi
1.50"	38mm	—	SHS-150BKL	610	305 psi
1.75"	44mm	—	SHS-175BKL	610	305 psi
2.00"	51mm	—	SHS-200BKL	610	218 psi
2.25"	57mm	—	SHS-225BKL	610	174 psi
2.50"	63mm	—	SHS-250BKL	610	174 psi
2.75"	70mm	—	SHS-275BKL	610	174 psi
3.00"	76mm	—	SHS-300BKL	610	174 psi
3.25"	83mm	SHS-325BEL	SHS-325BKL	610	174 psi
3.50"	89mm	—	SHS-350BKL	610	145 psi
3.75"	95mm	SHS-375BEL	SHS-375BKL	610	145 psi
4.00"	102mm	—	SHS-400BKL	610	145 psi
4.50"	114mm	SHS-450BEL	SHS-450BKL	610	145 psi
5.00"	127mm	—	SHS-500BKL	610	145 psi
6.00"	152mm	SHS-600BEL	SHS-600BKL	610	145 psi





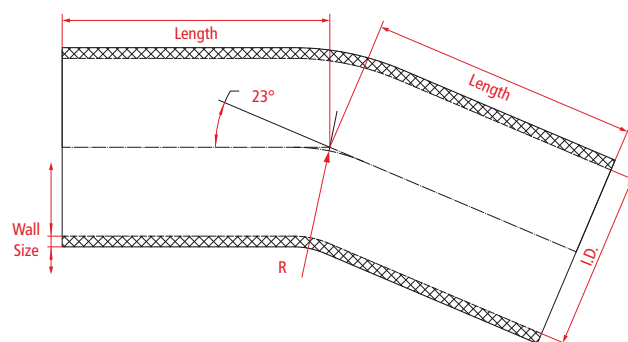
## SILICONE HOSE



### STRAIGHT REDUCER

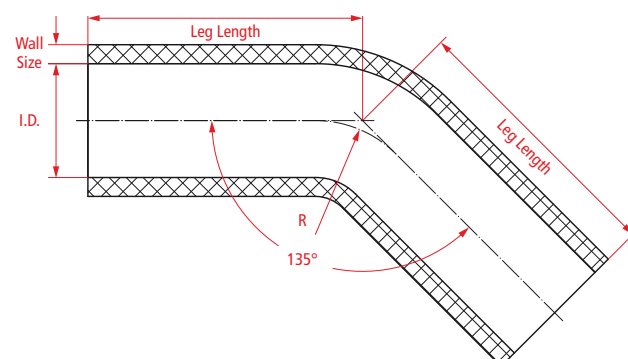
Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure
0.50" – 0.75"	13 – 19mm	–	SHR-050075BK	102	348 psi
0.75" – 1.00"	19 – 25mm	–	SHR-075100BK	102	348 psi
1.00" – 1.25"	25 – 32mm	SHR-100125BE	SHR-100125BK	102	305 psi
1.00" – 1.50"	25 – 38mm	SHR-100150BE	SHR-100150BK	102	305 psi
1.00" – 1.75"	25 – 44mm	SHR-100175BE	SHR-100175BK	102	305 psi
1.00" – 2.00"	25 – 51mm	SHR-100200BE	SHR-100200BK	102	305 psi
1.25" – 1.50"	32 – 38mm	–	SHR-125150BK	102	305 psi
1.25" – 1.75"	32 – 44mm	SHR-125175BE	SHR-125175BK	102	305 psi
1.50" – 1.75"	38 – 44mm	–	SHR-150175BK	102	305 psi
1.50" – 2.00"	38 – 51mm	SHR-150200BE	SHR-150200BK	102	305 psi
1.75" – 2.00"	44 – 51mm	–	SHR-175200BK	102	305 psi
1.75" – 2.25"	44 – 57mm	SHR-175225BE	SHR-175225BK	102	218 psi
2.00" – 2.25"	51 – 57mm	SHR-200225BE	SHR-200225BK	102	218 psi
2.00" – 2.50"	51 – 63mm	SHR-200250BE	SHR-200250BK	102	218 psi
2.00" – 2.75"	51 – 70mm	SHR-200275BE	SHR-200275BK	102	218 psi
2.00" – 3.00"	51 – 76mm	SHR-200300BE	SHR-200300BK	102	218 psi
2.25" – 2.50"	57 – 63mm	SHR-225250BE	SHR-225250BK	102	174 psi
2.25" – 2.75"	57 – 70mm	SHR-225275BE	SHR-225275BK	102	174 psi
2.25" – 3.00"	57 – 76mm	SHR-225300BE	SHR-225300BK	102	174 psi
2.50" – 2.75"	63 – 70mm	SHR-250275BE	SHR-250275BK	102	174 psi
2.50" – 3.00"	63 – 76mm	SHR-250300BE	SHR-250300BK	102	174 psi
2.50" – 3.25"	63 – 83mm	–	SHR-250325BK	102	174 psi
2.75" – 3.00"	70 – 76mm	SHR-275300BE	SHR-275300BK	102	174 psi
2.75" – 3.25"	70 – 83mm	SHR-275325BE	SHR-275325BK	102	174psi
2.75" – 3.50"	70 – 89mm	SHR-275350BE	SHR-275350BK	102	174 psi
3.00" – 3.25"	76 – 83mm	SHR-300325BE	SHR-300325BK	102	174 psi
3.00" – 3.50"	76 – 89mm	SHR-300350BE	SHR-300350BK	102	174 psi
3.00" – 3.75"	76 – 95mm	SHR-300375BE	SHR-300375BK	102	174 psi
3.00" – 4.00"	76 – 102mm	SHR-300400BE	SHR-300400BK	102	174 psi
3.25" – 3.50"	83 – 89mm	SHR-325350BE	SHR-325350BK	102	174 psi
3.25" – 3.75"	82 – 95mm	SHR-325375BE	SHR-325375BK	102	174 psi
3.25" – 4.00"	83 – 102mm	SHR-325400BE	SHR-325400BK	102	174 psi
3.50" – 3.75"	89 – 95mm	SHR-350375BE	SHR-350375BK	102	145 psi
3.50" – 4.00"	89 – 102mm	SHR-350400BE	SHR-350400BK	102	145 psi
3.50" – 4.50"	89 – 114mm	SHR-350450BE	SHR-350450BK	102	145 psi
3.75" – 4.00"	95 – 102mm	SHR-375400BE	SHR-375400BK	125	145 psi
3.75" – 4.50"	95 – 114mm	SHR-375450BE	SHR-375450BK	125	145 psi
4.00" – 4.50"	102 – 114mm	–	SHR-400450BK	125	145 psi
4.00" – 5.00"	102 – 127mm	–	SHR-400500BK	125	145 psi
4.50" – 5.00"	114 – 127mm	SHR-450500BE	SHR-450500BK	125	145 psi
5.00" – 6.00"	127 – 152mm	SHR-500600BE	SHR-500600BK	125	145 psi

## SILICONE HOSE



### 23° ELBOW

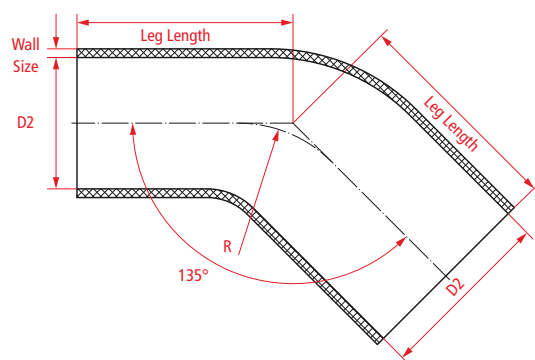
Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure	Centre Line Radius
2.00"	51mm	—	SHE-023-200BK	125 x 125	218 psi	51mm
2.25"	57mm	SHE-023-225BE	SHE-023-225BK	125 x 125	174 psi	57mm
2.50"	63mm	SHE-023-250BE	SHE-023-250BK	125 x 125	174 psi	63mm
2.75"	70mm	SHE-023-275BE	SHE-023-275BK	125 x 125	174 psi	70mm
3.00"	76mm	SHE-023-300BE	SHE-023-300BK	125 x 125	174 psi	76mm
3.25"	82mm	SHE-023-325BE	SHE-023-325BK	125 x 125	174 psi	82mm
3.50"	89mm	SHE-023-350BE	SHE-023-350BK	125 x 125	145 psi	89mm
3.75"	95mm	SHE-023-375BE	SHE-023-375BK	125 x 125	145 psi	95mm
4.00"	102mm	SHE-023-400BE	SHE-023-400BK	125 x 125	145 psi	102mm



### 45° ELBOW

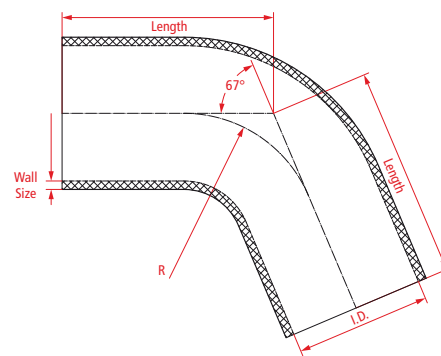
Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure	Centre Line Radius
0.50"	13mm	SHE-045-050BE	SHE-045-050BK	102 x 102	348 psi	13mm
0.75"	19mm	SHE-045-075BE	SHE-045-075BK	102 x 102	348 psi	19mm
1.00"	25mm	SHE-045-100BE	SHE-045-100BK	102 x 102	348 psi	25mm
1.25"	32mm	SHE-045-125BE	SHE-045-125BK	125 x 125	305 psi	32mm
1.50"	38mm	SHE-045-150BE	SHE-045-150BK	125 x 125	305 psi	38mm
1.75"	44mm	SHE-045-175BE	SHE-045-175BK	125 x 125	305 psi	44mm
2.00"	51mm	SHE-045-200BE	SHE-045-200BK	125 x 125	218 psi	51mm
2.25"	57mm	SHE-045-225BE	SHE-045-225BK	125 x 125	174 psi	57mm
2.50"	63mm	SHE-045-250BE	SHE-045-250BK	125 x 125	174 psi	63mm
2.75"	70mm	SHE-045-275BE	SHE-045-275BK	125 x 125	174 psi	70mm
3.00"	76mm	SHE-045-300BE	SHE-045-300BK	125 x 125	174 psi	76mm
3.25"	83mm	SHE-045-325BE	SHE-045-325BK	125 x 125	145 psi	83mm
3.50"	89mm	SHE-045-350BE	SHE-045-350BK	125 x 125	145 psi	89mm
3.75"	95mm	SHE-045-375BE	SHE-045-375BK	125 x 125	145 psi	95mm
4.00"	102mm	SHE-045-400BE	SHE-045-400BK	152 x 152	145 psi	102mm
4.50"	114mm	SHE-045-450BE	SHE-045-450BK	152 x 152	145 psi	114mm
5.00"	127mm	SHE-045-500BE	SHE-045-500BK	152 x 152	145 psi	127mm

## SILICONE HOSE



### 45° ELBOW REDUCER

Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure	Centre Line Radius
1.00" – 1.50"	25 – 38mm	SHE-045-100150BE	SHE-045-100150BK	102 x 102	305 psi	38mm
1.50" – 1.75"	38 – 44mm	–	SHE-045-150175BK	125 x 125	305 psi	38mm
1.50" – 2.00"	38 – 51mm	SHE-045-150200BE	SHE-045-150200BK	125 x 125	305 psi	38mm
2.00" – 2.25"	51 – 57mm	SHE-045-200225BE	SHE-045-200225BK	125 x 125	218 psi	51mm
2.00" – 2.50"	51 – 63mm	SHE-045-200250BE	SHE-045-200250BK	125 x 125	218 psi	51mm
2.00" – 3.00"	51 – 76mm	SHE-045-200300BE	SHE-045-200300BK	125 x 125	174 psi	51mm
2.25" – 2.50"	57 – 63mm	–	SHE-045-225250BK	125 x 125	174 psi	57mm
2.50" – 2.75"	63 – 70mm	SHE-045-250275BE	SHE-045-250275BK	125 x 125	174 psi	63mm
2.50" – 3.00"	63 – 76mm	SHE-045-250300BE	SHE-045-250300BK	125 x 125	174 psi	63mm
2.75" – 3.00"	70 – 76mm	SHE-045-275300BE	SHE-045-275300BK	125 x 125	174 psi	70mm
3.00" – 3.50"	76 – 89mm	SHE-045-300350BE	SHE-045-300350BK	125 x 125	145 psi	76mm
3.00" – 3.75"	76 – 95mm	SHE-045-300375BE	SHE-045-300375BK	152 x 152	145 psi	76mm
3.00" – 4.00"	76 – 102mm	SHE-045-300400BE	SHE-045-300400BK	152 x 152	145 psi	76mm
3.50" – 3.75"	89 – 95mm	SHE-045-350375BE	SHE-045-350375BK	152 x 152	145 psi	89mm
3.50" – 4.00"	89 – 102mm	SHE-045-350400BE	SHE-045-350400BK	152 x 152	145 psi	89mm
3.75" – 4.00"	95 – 102mm	SHE-045-375400BE	SHE-045-375400BK	152 x 152	145 psi	89mm
4.00" – 5.00"	102 – 127mm	–	SHE-045-400500BK	152 x 152	145 psi	102mm

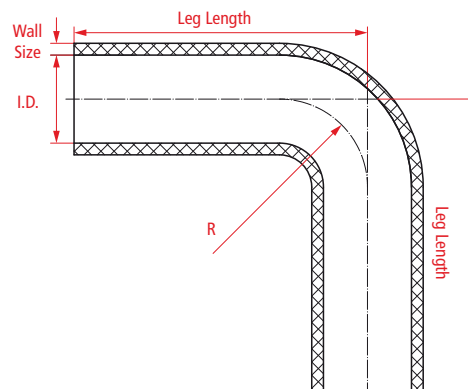


### 67° ELBOW

Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure	Centre Line Radius
2.00"	51mm	SHE-067-200BE	SHE-067-200BK	125 x 125	218 psi	50.5mm
2.25"	57mm	SHE-067-225BE	SHE-067-225BK	125 x 125	174 psi	53.5mm
2.50"	63mm	SHE-067-250BE	SHE-067-250BK	125 x 125	174 psi	56.5mm
2.75"	70mm	SHE-067-275BE	SHE-067-275BK	125 x 125	174 psi	60mm
3.00"	76mm	SHE-067-300BE	SHE-067-300BK	125 x 125	174 psi	63mm
3.25"	82mm	SHE-067-325BE	SHE-067-325BK	125 x 125	174 psi	66mm
3.50"	89mm	SHE-067-350BE	SHE-067-350BK	125 x 125	145 psi	69.5mm
3.75"	95mm	SHE-067-375BE	SHE-067-375BK	125 x 125	145 psi	72.5mm
4.00"	102mm	SHE-067-400BE	SHE-067-400BK	125 x 125	145 psi	76mm



## SILICONE HOSE

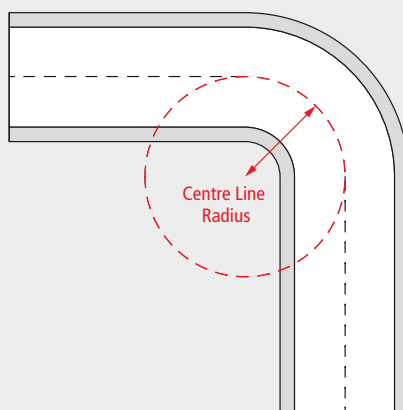


### 90° ELBOW

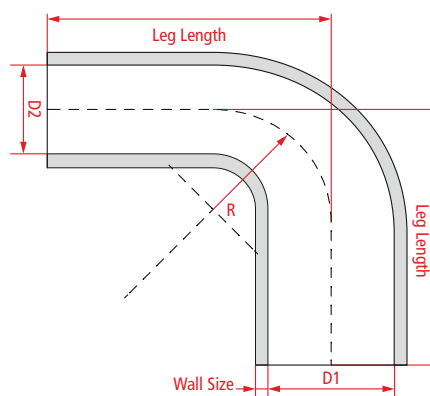
Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure	Centre Line Radius
0.50"	13mm	—	SHE-090-050BK	102 x 102	348 psi	60mm
0.75"	19mm	—	SHE-090-075BK	102 x 102	348 psi	60mm
1.00"	25mm	SHE-090-100BE	SHE-090-100BK	102 x 102	348 psi	60mm
1.25"	32mm	SHE-090-125BE	SHE-090-125BK	125 x 125	305 psi	60mm
1.50"	38mm	SHE-090-150BE	SHE-090-150BK	125 x 125	305 psi	60mm
1.75"	44mm	SHE-090-175BE	SHE-090-175BK	125 x 125	305 psi	60mm
2.00"	51mm	SHE-090-200BE	SHE-090-200BK	125 x 125	218 psi	60mm
2.25"	57mm	SHE-090-225BE	SHE-090-225BK	125 x 125	174 psi	60mm
2.50"	63mm	SHE-090-250BE	SHE-090-250BK	125 x 125	174 psi	63mm
2.75"	70mm	SHE-090-275BE	SHE-090-275BK	125 x 125	174 psi	70mm
3.00"	76mm	SHE-090-300BE	SHE-090-300BK	125 x 125	174 psi	76mm
3.25"	83mm	SHE-090-325BE	SHE-090-325BK	125 x 125	145 psi	83mm
3.50"	89mm	SHE-090-350BE	SHE-090-350BK	125 x 125	145 psi	89mm
3.75"	95mm	—	SHE-090-375BK	152 x 152	145 psi	95mm
4.00"	102mm	SHE-090-400BE	SHE-090-400BK	152 x 152	145 psi	102mm
4.50"	114mm	—	SHE-090-450BK	152 x 152	145 psi	114mm
5.00"	127mm	SHE-090-500BE	SHE-090-500BK	152 x 152	145 psi	127mm

### TECH TIP – WHAT IS CENTRE LINE RADIUS?

Centre Line Radius is the bend radius at the centre of the bend. Example below.



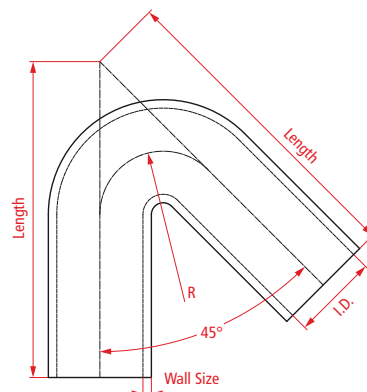
## SILICONE HOSE



### 90° ELBOW REDUCER

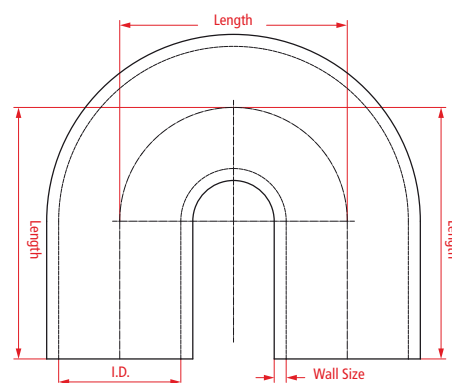
Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure	Centre Line Radius
1.00" – 1.25"	25 – 32mm	SHE-090-100125BE	SHE-090-100125BK	125 x 125	305 psi	60mm
1.00" – 1.50"	25 – 38mm	SHE-090-100150BE	SHE-090-100150BK	125 x 125	305 psi	60mm
1.50" – 1.75"	38 – 44mm	SHE-090-150175BE	SHE-090-150175BK	125 x 125	305 psi	60mm
1.50" – 2.00"	38 – 51mm	SHE-090-150200BE	SHE-090-150200BK	125 x 125	218 psi	60mm
1.75" – 2.00"	44 – 51mm	–	SHE-090-175200BK	125 x 125	218 psi	60mm
2.00" – 2.25"	51 – 57mm	–	SHE-090-200225BK	125 x 125	218 psi	60mm
2.00" – 2.50"	51 – 63mm	SHE-090-200250BE	SHE-090-200250BK	125 x 125	218 psi	60mm
2.00" – 2.75"	51 – 70mm	–	SHE-090-200275BK	125 x 125	174 psi	60mm
2.00" – 3.00"	51 – 76mm	SHE-090-200300BE	SHE-090-200300BK	125 x 125	174 psi	60mm
2.25" – 2.50"	57 – 63mm	–	SHE-090-225250BK	125 x 125	174 psi	60mm
2.25" – 2.75"	57 – 70mm	–	SHE-090-225275BK	125 x 125	174 psi	60mm
2.50" – 2.75"	63 – 70mm	–	SHE-090-250275BK	125 x 125	174 psi	63mm
2.50" – 3.00"	63 – 76mm	SHE-090-250300BE	SHE-090-250300BK	125 x 125	174 psi	63mm
2.75" – 3.00"	70 – 76mm	SHE-090-275300BE	SHE-090-275300BK	125 x 125	174 psi	70mm
3.00" – 3.25"	76 – 83mm	–	SHE-090-300325BK	125 x 125	145 psi	76mm
3.00" – 3.50"	76 – 89mm	SHE-090-300350BE	SHE-090-300350BK	145 x 145	145 psi	76mm
3.00" – 3.75"	76 – 95mm	SHE-090-300375BE	SHE-090-300375BK	145 x 145	145 psi	76mm
3.00" – 4.00"	76 – 102mm	SHE-090-300400BE	SHE-090-300400BK	145 x 145	174 psi	76mm
3.25" – 4.00"	83 – 102mm	–	SHE-090-325400BK	145 x 145	145 psi	83mm
3.50" – 3.75"	89 – 95mm	SHE-090-350375BE	SHE-090-350375BK	145 x 145	145 psi	89mm
3.50" – 4.00"	89 – 102mm	SHE-090-350400BE	SHE-090-350400BK	145 x 145	145 psi	89mm
3.75" – 4.00"	95 – 102mm	SHE-090-375400BE	SHE-090-375400BK	145 x 145	145 psi	95mm
4.00" – 5.00"	102 – 127mm	–	SHE-090-400500BK	145 x 145	145 psi	102mm

## SILICONE HOSE



### 135° ELBOW

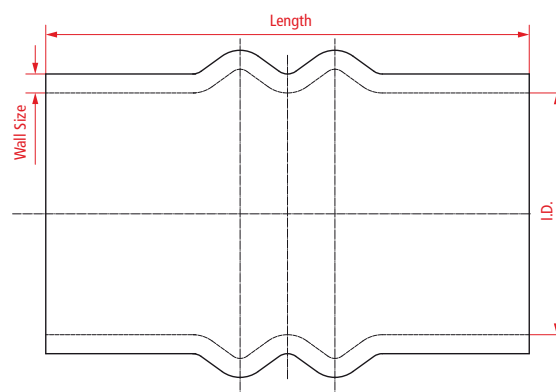
Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure	Centre Line Radius
2.00"	51mm	–	SHE-135-200BK	187×187	218 psi	45.5mm
2.25"	57mm	SHE-135-225BE	SHE-135-225BK	187×187	174 psi	48.5mm
2.50"	63mm	SHE-135-250BE	SHE-135-250BK	187×187	174 psi	51.5mm
2.75"	70mm	SHE-135-275BE	SHE-135-275BK	187×187	174 psi	55mm
3.00"	76mm	–	SHE-135-300BK	187×187	174 psi	58mm
3.25"	82mm	SHE-135-325BE	SHE-135-325BK	187×187	174 psi	61mm
3.50"	89mm	SHE-135-350BE	SHE-135-350BK	187×187	145 psi	64.5mm
3.75"	95mm	SHE-135-375BE	SHE-135-375BK	187×187	145 psi	67.5mm
4.00"	102mm	–	SHE-135-400BK	187×187	145 psi	71mm



### 180° ELBOW

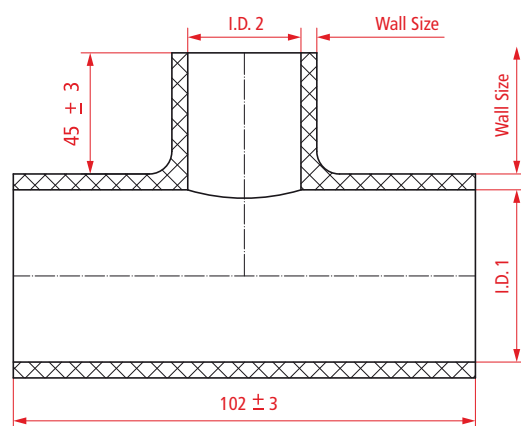
Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure	Centre Line Radius
1.50"	38mm	SHE-180-150BE	SHE-180-150BK	105	174 psi	50mm
2.00"	51mm	–	SHE-180-200BK	105	174 psi	50mm
2.25"	57mm	SHE-180-225BE	SHE-180-225BK	105	174 psi	53mm
2.50"	63mm	–	SHE-180-250BK	105	174 psi	53mm
2.75"	70mm	SHE-180-275BE	SHE-180-275BK	110	174 psi	65mm
3.00"	76mm	–	SHE-180-300BK	115	174 psi	68mm
3.25"	82mm	SHE-180-325BE	SHE-180-325BK	115	174 psi	69mm
3.50"	89mm	SHE-180-350BE	SHE-180-350BK	115	145 psi	69mm
4.00"	102mm	–	SHE-180-400BK	115	145 psi	75mm

## SILICONE HOSE



### DOUBLE HUMP

Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure
2.00"	51mm	–	SHH-200BK	102	218 psi
2.25"	57mm	SHH-225BE	SHH-225BK	102	174 psi
2.50"	63mm	–	SHH-250BK	102	174 psi
2.75"	70mm	SHH-275BE	SHH-275BK	102	174 psi
3.00"	76mm	–	SHH-300BK	102	174 psi
3.25"	83mm	SHH-325BE	SHH-325BK	102	145 psi
3.50"	89mm	–	SHH-350BK	102	145 psi
3.75"	95mm	SHH-375BE	SHH-375BK	102	145 psi
4.00"	102mm	–	SHH-400BK	102	145 psi



### TEE

Inner Dia. Imperial	Inner Dia. Metric	Part No. Blue	Part No. Black	Length mm	Min. Burst Pressure
2.00" ID 1.50" SPOUT	51 – 38mm	SHT-200150BE	SHT-200150BK	102 x 45	218 psi
2.25" ID 1.50" SPOUT	57 – 38mm	SHT-225150BE	SHT-225150BK	102 x 45	174 psi
2.50" ID 1.00" SPOUT	63 – 25mm	SHT-250100BE	SHT-250100BK	102 x 45	174 psi
2.50" ID 1.50" SPOUT	63 – 38mm	SHT-250150BE	SHT-250150BK	102 x 45	174 psi
2.75" ID 1.50" SPOUT	70 – 38mm	SHT-275150BE	SHT-275150BK	102 x 45	174 psi
3.00" ID 1.00" SPOUT	76 – 25mm	–	SHT-300100BK	102 x 45	174 psi
3.00" ID 1.50" SPOUT	76 – 38mm	SHT-300150BE	SHT-300150BK	102 x 45	174 psi



## SILICONE HOSE

### VACUUM FITTING KIT



### SHV-FIT

■ Suits 4mm Vacuum Hose

### VACUUM HOSE

Inner Dia	3M Part No. Blue	3M Part No. Black	8M Part No. Blue	8M Part No. Black	15M Part No. Black	Wall Thickness	Brand	Suitable Clamp
3mm	SHV-003BE	SHV-003BK	SHV-003BEM	SHV-003BKM	SHV-003BKL	3mm	Raceworks	CLE-403
3mm	TS-HV0303-BE	TS-HV0303-BK*	—	—	—	2.5mm	Turbosmart	TS-HCS-003
4mm	SHV-004BE	SHV-004BK	SHV-004BEM	SHV-004BKM	SHV-004BKL	3mm	Raceworks	CLE-404
4mm	TS-HV0403-BE	TS-HV0403-BK*	—	—	—	2.5mm	Turbosmart	—
5mm	SHV-005BE	SHV-005BK	SHV-005BEM	SHV-005BKM	SHV-005BKL	3mm	Raceworks	CLE-404
5mm	TS-HV0503-BE	TS-HV0503-BK*	—	—	—	2.5mm	Turbosmart	TS-HCS-005
6mm	SHV-006BE	SHV-006BK	SHV-006BEM	SHV-006BKM	SHV-006BKL	3mm	Raceworks	CLE-405
6mm	TS-HV0603-BE	TS-HV0603-BK*	—	—	—	2.5mm	Turbosmart	TS-HCS-006
8mm	SHV-008BE	SHV-008BK	—	—	SHV-008BKL	4mm	Raceworks	CLE-407
10mm	—	SHV-010BK	—	—	SHV-010BKL	4mm	Raceworks	CLE-409

■ \*Reinforced Hose also available, change 'TS-HV' to 'TS-HVR'



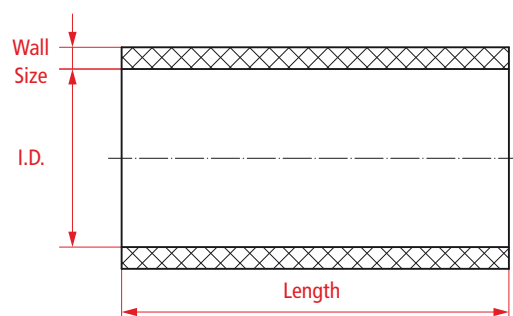
## ALUMINIUM TUBE

- **Premier Auto Trade** have introduced a new range of high quality aluminium tube. Made from 6063-T6 grade aluminium, our tube is suitable for all forms of intake including aspirated, turbocharged and supercharged applications. In some drag-racing only applications, Aluminium Tube is also used for exhaust. Aluminium Tube is much lighter than steel or stainless steel pipes, and offer excellent corrosion resistance.



### STRAIGHT

Outer Dia. Imperial	Outer Dia. Metric	Part No.	Length	Wall Thickness
1.25"	31.8mm	ITS-125L	610mm	1.6mm
1.50"	38.1mm	ITS-150L	610mm	1.6mm
2.00"	50.8mm	ITS-200L	610mm	1.6mm
2.50"	63.5mm	ITS-250L	610mm	2.0mm
3.00"	76.2mm	ITS-300L	610mm	2.0mm
3.50"	88.9mm	ITS-350L	610mm	2.0mm
4.00"	101.6mm	ITS-400L	610mm	2.0mm
5.00"	127.0mm	ITS-500L	610mm	2.0mm



### TRANSITION CONE

Outer Dia. Imperial	Outer Dia. Metric	Part No.	Length mm	Wall Thickness
2.00" – 5.00"	50.8 – 127.0mm	ITT-200500	4.0" (101.6mm)	2.0mm



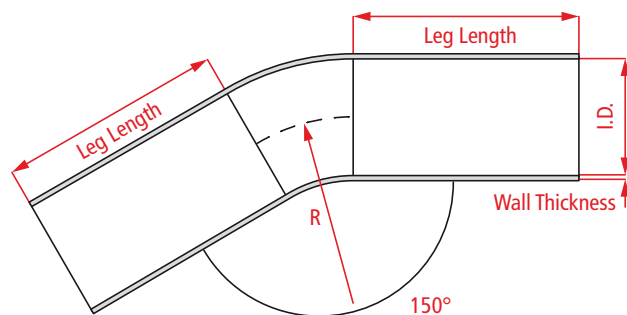
### DONUT

- **Raceworks Donuts** are Tight Radius 5052 Grade aluminium, and welded on the outside only
- They all feature a 41mm dia hole in the centre

Tube Dia. Imperial	Tube Dia. Metric	Part No.	Wall Thickness	Centre Line Radius
2.0"	50.8mm	ITD-200	2.0mm	45.9mm
2.5"	62.0mm	ITD-250	2.0mm	51.5mm
3.0"	76.0mm	ITD-300	2.0mm	58.5mm
3.5"	89.0mm	ITD-350	2.0mm	65.0mm
4.0"	101.0mm	ITD-400	2.0mm	71.0mm
5.0"	127.0mm	ITD-500	2.0mm	85.0mm

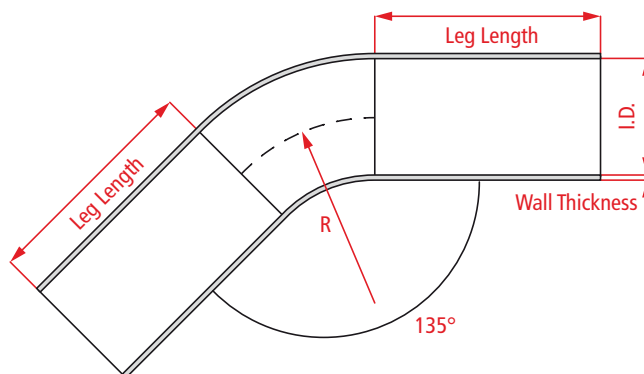


## ALUMINIUM TUBE



### 30° DEGREE

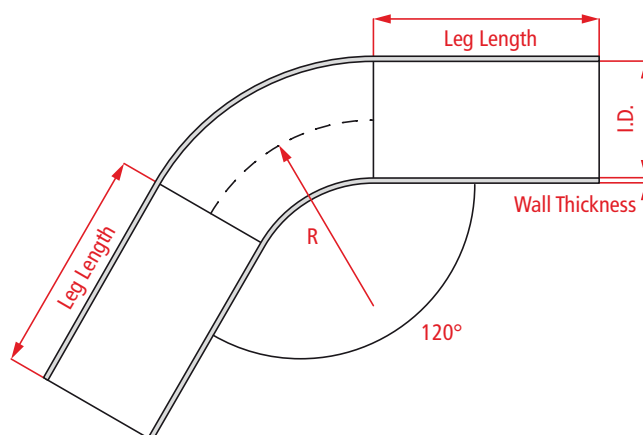
Outer Dia. Imperial	Outer Dia. Metric	Part No.	Leg Length mm	Wall Thickness	Centre Line Radius
2.00"	50.8mm	ITE-030-200	140mm	1.6mm	76.2mm
2.50"	63.5mm	ITE-030-250	140mm	2.0mm	96.8mm
3.00"	76.2mm	ITE-030-300	140mm	2.0mm	114.3mm
4.00"	101.6mm	ITE-030-400	185mm	2.0mm	152.8mm



### 45° DEGREE

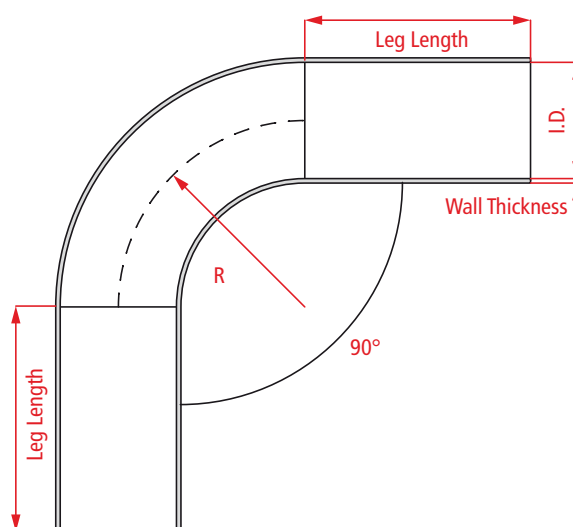
Outer Dia. Imperial	Outer Dia. Metric	Part No.	Leg Length mm	Wall Thickness	Centre Line Radius
1.25"	31.8mm	ITE-045-125	140mm	1.6mm	47.7mm
1.50"	38.1mm	ITE-045-150	140mm	1.6mm	57.1mm
2.00"	50.8mm	ITE-045-200	140mm	1.6mm	76.2mm
2.50"	63.5mm	ITE-045-250	140mm	2.0mm	96.8mm
3.00"	76.2mm	ITE-045-300	140mm	2.0mm	114.3mm
3.50"	88.9mm	ITE-045-350	165mm	2.0mm	133.5mm
4.00"	101.6mm	ITE-045-400	185mm	2.0mm	152.8mm
5.00"	127.0mm	ITE-045-500	185mm	2.0mm	190.5mm

## ALUMINIUM TUBE



### 60° DEGREE

Outer Dia. Imperial	Outer Dia. Metric	Part No.	Leg Length mm	Wall Thickness	Centre Line Radius
2.00"	50.8mm	ITE-060-200	140mm	1.6mm	76.2mm
2.50"	63.5mm	ITE-060-250	140mm	2.0mm	96.8mm
3.00"	76.2mm	ITE-060-300	140mm	2.0mm	114.3mm
4.00"	101.6mm	ITE-060-400	185mm	2.0mm	152.8mm

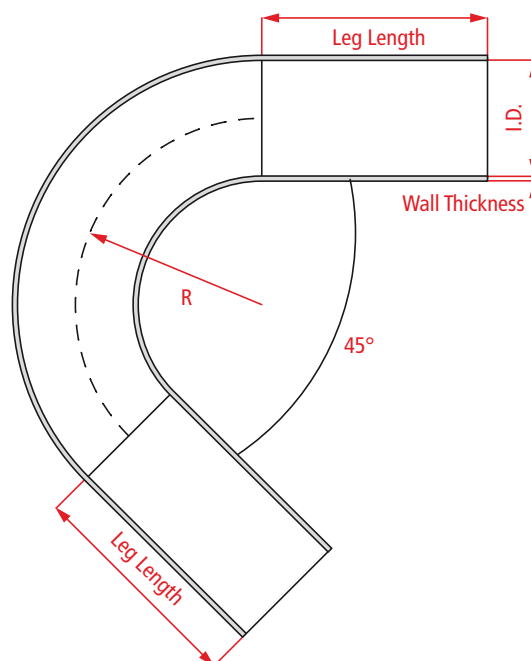


### 90° DEGREE

Outer Dia. Imperial	Outer Dia. Metric	Part No.	Leg Length mm	Wall Thickness	Centre Line Radius
1.25"	31.8mm	ITE-090-125	140mm	1.6mm	47.7mm
1.50"	38.1mm	ITE-090-150	140mm	1.6mm	57.1mm
2.00"	50.8mm	ITE-090-200	140mm	1.6mm	76.2mm
2.50"	63.5mm	ITE-090-250	140mm	2.0mm	96.8mm
3.00"	76.2mm	ITE-090-300	140mm	2.0mm	114.3mm
3.50"	88.9mm	ITE-090-350	165mm	2.0mm	133.5mm
4.00"	101.6mm	ITE-090-400	185mm	2.0mm	152.8mm
5.00"	127.0mm	ITE-090-500	185mm	2.0mm	190.5mm

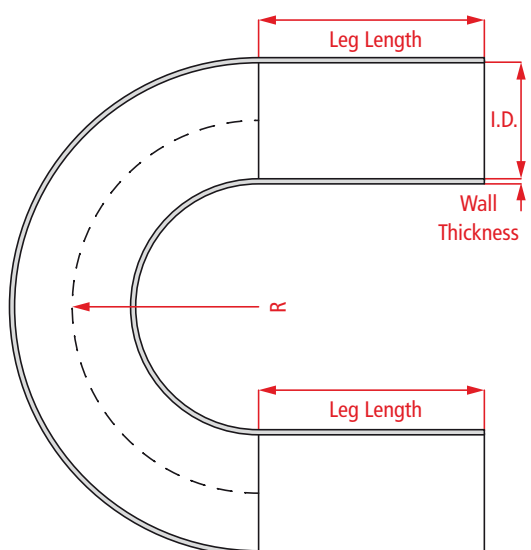


## ALUMINIUM TUBE



### 135° DEGREE

Outer Dia. Imperial	Outer Dia. Metric	Part No.	Leg Length mm	Wall Thickness	Centre Line Radius
2.00"	50.8mm	ITE-135-200	140mm	1.6mm	76.2mm
2.50"	63.5mm	ITE-135-250	140mm	2.0mm	96.8mm
3.00"	76.2mm	ITE-135-300	140mm	2.0mm	114.3mm
4.00"	101.6mm	ITE-135-400	185mm	2.0mm	152.8mm



### 180° DEGREE

Outer Dia. Imperial	Outer Dia. Metric	Part No.	Leg Length mm	Wall Thickness	Centre Line Radius
2.00"	50.8mm	ITE-180-200	140mm	1.6mm	76.2mm
2.50"	63.5mm	ITE-180-250	140mm	2.0mm	96.8mm
3.00"	76.2mm	ITE-180-300	140mm	2.0mm	114.3mm
4.00"	101.6mm	ITE-180-400	185mm	2.0mm	152.8mm

## TANKS

### SURGE TANKS – 39-40MM INTERNAL PUMPS

Part No.	Volume	Number of Pumps	Mounting Orientation	Suits Pump Diameter	AN ORB Ports	Includes	Height	Width	Depth
ALY-083BK	2-6-2.8L (Single or Twin Pumps)	1-2	Upright	39-40mm	5 x AN-8	PTFE Intank Hose and Clamps	225mm*	195mm	195mm

\*Doesn't include fittings or terminals



ALY-083BK

■ Example of dual pump set-up.



#### ALY-083BK COMPATIBILITY LIST

- EFP-500 (Raceworks)
- Ti Automotive GSS340/GSS341/GSS342
- Ti Automotive GSS350/GSS351/GSS352
- Ti Automotive F90000262 and F90000267
- Ti Automotive F90000274, F90000285 and F90000295
- ALY-083BK supports hose ends up to 150°



■ Replacement Pump O-ring available **RWM-006**



#### RWF-937-08BK

- Single Outlet Log suits ALY-083BK and ALY-086BK
- Includes AN-8 ORB Plug
- Contains 2x AN-8 ORB Outlet Ports and 2x AN Female Swivels as Inlets

## TANKS

- Surge Tanks ensure reliable and constant fuel delivery for your vehicle, by holding fuel in a enclosure, preventing fuel slosh/fuel running away from the pickup during sustained lateral loads. This may be acceleration, braking or cornering. Raceworks Surge Tanks are crafted to meet the most extreme conditions, welded from 5052 aluminium before being anodised in a tough black finish.

### SURGE TANKS – 60MM INTERNAL PUMPS

Part No.	Volume	Number of Pumps	Mounting Orientation	Suits Pump Diameter	AN ORB Ports	Includes	Height	Width	Depth
ALY-121BK	2L	1	Upright	60mm (044)	3 x AN-6	Intank Strainer Kit	168mm*	132mm**	132mm
ALY-159BK	3L	2	Sideways	60mm (044)	4 x AN-8	1 x AN-8 ORB Plug	135mm	215mm**	164mm*

\*Doesn't include pumps or fittings  
\*\*Doesn't include mounting brackets



ALY-121BK



ALY-159BK



### ALY-121BK / ALY-159BK COMPATIBILITY LIST

- EFP-502 (Raceworks)
- EFP-506 (Raceworks)



- Replacement Pump O-ring available **RWM-056**

- When mounting these tanks with the pump laying flat, it is recommended to use **RWF-417-M18-10BK Inlet Fittings**, see page 105



## TANKS

### SURGE TANKS – EXTERNAL PUMPS

Part No.	Volume	Outlets	Mounting Orientation	AN ORB Ports	Includes	Height	Width	Depth
ALY-124BK	2.5L	2	Upside Down (Undercar)	5 x AN-8 and 2 x AN-10 Female Flare Ports	2 x AN-8 ORB Plugs	150mm	150mm**	390mm*

■ Dimensions don't include mounting brackets or fittings



ALY-124BK



RWF-940-08BK

- Single Outlet Log suits **ALY-124BK**, **ALY-158BK** and **ALY-159BK**
- Contains 2x AN-8 ORB Outlet Ports and 2x AN Female Swivels as Inlets

### TECH TIP – HOW DO YOU PLUMB A SURGE TANK?

Overflow and Pressure Regulator Return Line are interchangeable. Some believe that minimising restriction on the return line is best. Either setup will work well. PAT's preference is as pictured.

← Overflow Back to Fuel Tank

Return from Fuel Pressure Regulator

Supply from Lift Pump (Fuel Tank)  
filtered using Intank Strainer  
or 75 / 100 Micron Inline Fuel Filter

← To Fuel Pump



### DIRECT MOUNTING COMPATIBILITY LIST

#### ALY-124BK with Single/Twin Pumps

With ALY-002BK Bracket and RWF-734-10BK Fittings:

- Raceworks EFP-502 ■ Raceworks EFP-506

With ALY-002BK Bracket and RWF-732-10BK Fittings:

- Bosch 0 580 464 200 EFP-716

With ALY-055BK Bracket, RWF-728-08SS  
and RWF-951-08-10BK Fittings:

- Ti Automotive GSL392 EFP-204
- Ti Automotive GSL393 EFP-082
- Ti Automotive GSL394 EFP-637

With ALY-055BK Bracket and RWF-717-10-M15BK Fitting:

- Pierburg 7.22156.50.0 EFP-108

With ALY-055BK Bracket:

- Pierburg 7.50012.50.0 EFP-485

■ Above recommendations don't include fittings on the Pump/s outlet side



## TANKS

### SURGE TANKS – EXTERNAL PUMPS

Part No.	Volume	Outlets	Mounting Orientation	AN ORB Ports	Includes	Height	Width	Depth
ALY-068BK	1.5L	1	Vertical (Upright / Upside Down)	3 x AN-6 and 1 x AN-8	3 x AN-6 Male Flare, 1 x AN-8 Male Flare, 3 x 3/8" Barbs and 1 x 1/2" Barb Adapters	206mm*	108mm**	108mm**
ALY-158BK	2.5L	1–3	Upright	3 x AN-8 and 3 x AN-10	3 x AN-8 Male Flare Adapters, 2 x AN-10 Male Flare Adapters and 2 x AN-10 ORB Plugs	264mm*	108mm**	121.5mm**

■ Dimensions don't include mounting brackets or fittings



ALY-068BK



ALY-158BK

### DIRECT MOUNTING COMPATIBILITY LIST

#### ALY-068BK with a Single Pump.

With ALY-001BK Bracket and RWF-906-08-M18BK Fitting:

- Raceworks EFP-502 ■ Raceworks EFP-506

With ALY-001BK Bracket, RWF-907-10-08SS and RWF-732-10BK Fittings:

- Bosch 0 580 464 200 EFP-716

With ALY-088BK Bracket, RWF-729-06SS and RWF-907-06-08BK Fittings:

- Ti Automotive GSL392 EFP-204
- Ti Automotive GSL393 EFP-082
- Ti Automotive GSL394 EFP-637

With ALY-088BK Bracket, RWF-717-10-M15BK and RWF-907-10-08SS Fittings:

- Pierburg 7.22156.50.0 EFP-108

With ALY-088BK Bracket and RWF-907-10-08SS Fitting:

- Pierburg 7.50012.50.0 EFP-485

#### ALY-158BK with Single / Twin Pumps.

With ALY-001BK / ALY-003BK Bracket, RWF-920-08-10BK and RWF-906-08-M18BK Fittings:

- Raceworks EFP-502 ■ Raceworks EFP-506

With ALY-001BK / ALY-003BK Bracket, RWF-907-10BK and RWF-732-10BK Fittings:

- Bosch 0 580 464 200 EFP-716

With ALY-088BK / ALY-089BK Bracket, RWF-729-08SS and RWF-131-08-10BK Fittings:

- Ti Automotive GSL392 EFP-204
- Ti Automotive GSL393 EFP-082
- Ti Automotive GSL394 EFP-637

With ALY-088BK / ALY-089BK Bracket, RWF-717-10-M15BK and RWF-907-10BK Fittings:

- Pierburg 7.22156.50.0 EFP-108

With ALY-088BK / ALY-089BK Bracket and RWF-907-10BK Fittings:

- Pierburg 7.50012.50.0 EFP-485



■ Above recommendations don't include fittings on the Pump/s outlet side

## TANKS

### CATCH CANS – EXTERNAL BREATHERS

- A Catch Can is an essential step in removing PCV oil before it enters the combustion chamber. All Raceworks Catch Cans are internally baffled, while providing unrestricted flow and breathing capacity to maintain efficiency and prevent intake carbon build-up. Crafted to meet the most extreme conditions, Raceworks tanks are robot welded from 5052 aluminium.

Part No.	Volume	Usable Volume (Below Ports)	AN Ports	Included	Overall Height	Tank Body Height	Width	Depth
ALY-130BK	0.5L	0.3L	3 x AN-10 ORB	AN-10 ORB Plug	150mm	120mm*	65mm**	65mm*
ALY-129BK	1.0L	0.7L	AN-12 Male Flare On Top, 2 x AN-8 ORB On Front***, AN-10 ORB On Bottom	AN-12 Breather, AN-10 Drain Tap	279mm	160mm*	80mm**	80mm*
ALY-155BK	1.6L	1.1L	2 x AN-12 Male Flare On Top 2 x AN-12 ORB On Front	AN-10 ORB on Bottom 2 x AN-12 Breathers and AN-10 Drain Tap	279mm	160mm*	130mm**	80mm*
ALY-074BK	2.0L	1.3L	2 x AN-12 Male Flare On Top, 2 x AN-12 ORB On Front, AN-10 ORB On Bottom	2 x AN-12 Breathers, AN-10 Drain Tap	279mm	160mm*	110mm**	110mm*
ALY-156BK	2.7L	2.0L	2 x AN-12 Male Flare On Top 2 x AN-12 ORB On Front	AN-10 ORB on Bottom 2 x AN-12 Breathers and AN-10 Drain Tap	307mm	190mm*	160mm**	90mm*
ALY-065BK	3.5L	2.9L	2 x AN-12 Male Flare On Top, 2 x AN-12 ORB On Front, AN-10 ORB On Bottom	2 x AN-12 Breathers, AN-10 Drain Tap	370mm	250mm*	120mm**	120mm*

\*Doesn't include fittings

\*\*Doesn't include mounting brackets

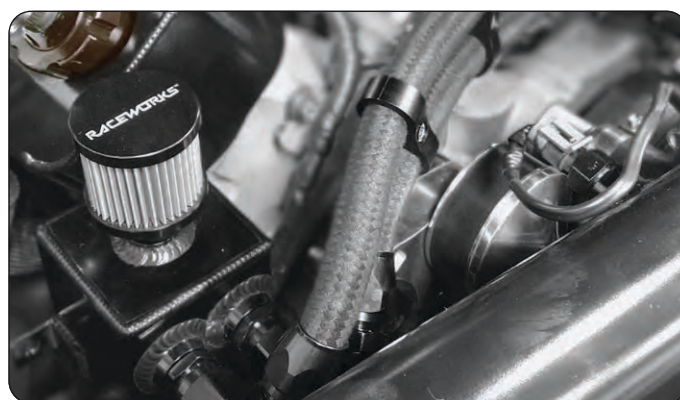
\*\*\* For AN-10 or 5/8" Breather Line Applications, use RWF-920-10-08SS Thin Wall Fittings, providing the same flow as a AN-10 Port



ALY-130BK



ALY-129BK



ALY-155BK



ALY-074BK



ALY-156BK



ALY-065BK

## TANKS

### CATCH CANS – REPLACEMENT BREATHERS



ALY-087BK

Part Number	AN Female Flare	Diameter	Body Height
ALY-058BK	-8	53mm	50mm
ALY-087BK	-10	53mm	50mm
ALY-101BK	-10	78mm	73mm
ALY-161BK	-12	53mm	50mm
ALY-069BK	-12	78mm	73mm

- All Raceworks AN Breathers are anodised black
- For Push-On Breathers, see BMC on page 10

### TECH TIP – HOW DO YOU PLUMB A CATCH CAN?

AN-12 Breather/s.  
Can be replaced with an AN-12 hose and plumbed back to intake for sealed system applications.

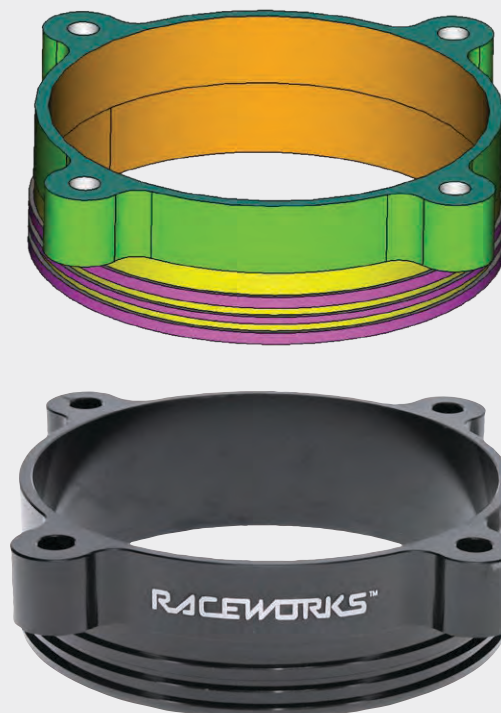
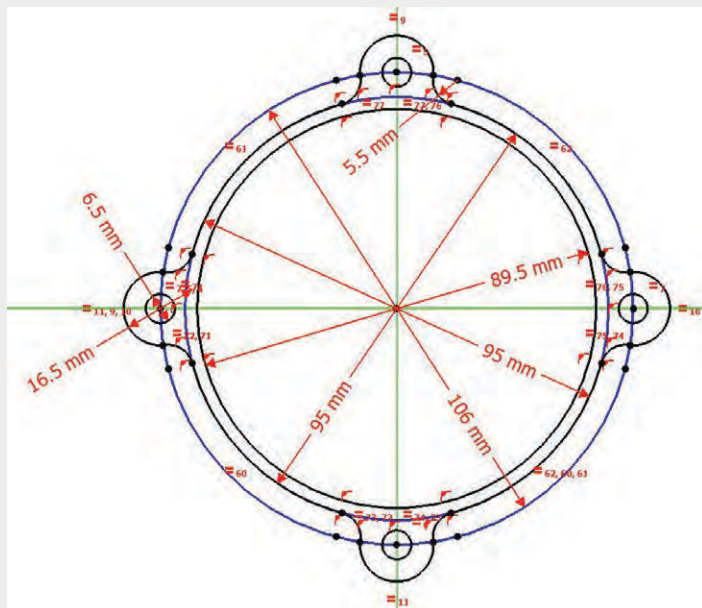
Inlets.  
Hoses run to  
Rocker Cover Breather Port/s.

AN-12 Drain Tap.  
Can be replaced with an AN-12 hose drained to sump if required.



### TECH TIP – DID YOU KNOW THAT MANY RACEWORKS PRODUCTS ARE DESIGNED, PROTOTYPED AND TESTED IN-HOUSE?

- The staff at Premier Auto Trade are constantly working on new products
- Here you can see an ALY-177BK in its initial design phase
- It's then rendered, 3D printed, tested before being CNC machined





## TANKS

### CATCH CANS – INTERNAL BREATHERS

- New to the range are Raceworks Catch Cans with internal breathers
- These tanks can't be plumbed back to the intake, however they offer a neat, compact, stealth solution for your engine bay!
- Included are both a drain tap or ORB plug, and T-Bolt style mounting clamp
- Optional Billet Clamps are also available



#### ALY-133BK

- 1L Breather Tank with twin AN-12 ORB Ports (Y-Shaped)
- Internally baffled
- Includes T-Bolt Mounting Clamp, AN-10 Drain Tap and AN-10 ORB Plug



#### ALY-134BK

- 1L Breather Tank with twin AN-10 ORB Ports (straight)
- Internally baffled
- Includes T-Bolt Mounting Clamp, AN-10 Drain Tap and AN-10 ORB Plug

### OPTIONAL BILLET BRACKET



#### ALY-053BK

- Optional Billet Bracket
- Replaces T-Bolt Clamp



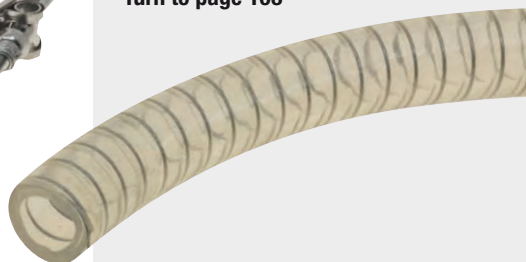
#### ALY-053BK and ALY-134BK



- Tank breathes on the underside of the lid

**TECH TIP –**  
**DID YOU KNOW**  
**WE SELL CLEAR**  
**BREATHER HOSE?**

See what your engine is pushing out!  
Turn to page 103





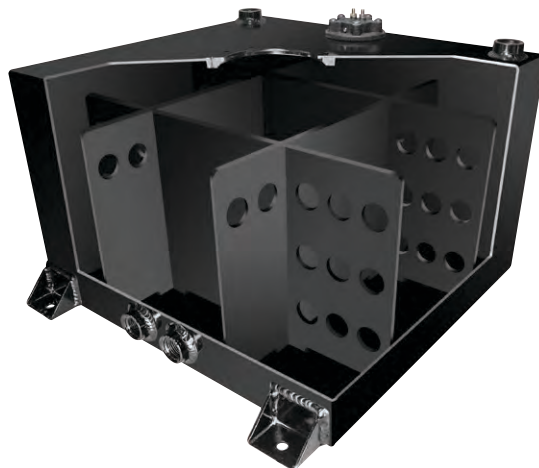
## TANKS

### FUEL CELLS

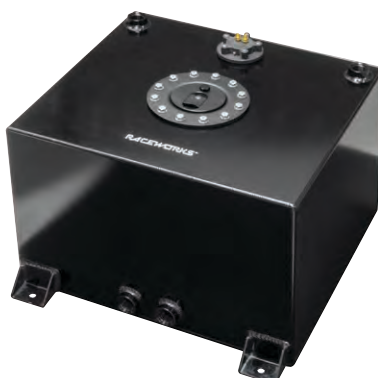
- Raceworks Fuel Cells have been crafted to meet the most extreme racing and performance demands. All cells are seamlessly robot welded from 5052 aluminium
- Reliable fuel delivery is your number one priority at the track; our small 5 Gallon Cell is sumped and foam filled, while all the larger sizes have aluminium internal baffles and are available as both sumped or flat bottom. This prevents fuel slosh and starvation during lateral loads. All Cells contain a 0-90 Ohm Fuel Sender, which is E85 safe. The cells are anodised in black inside and out, making them durable and resistant to corrosion
- They all contain 4 x AN-10 ORB Ports

Part Number	Volume Litres	Volume Gallons	Bottom	Width	Depth	Height
ALY-162BK	19	5	Sumped	300mm	260mm*	260mm*
ALY-170BK	38	10	Flat Bottom	410mm	380mm*	260mm*
ALY-171BK	38	10	Sumped	410mm	380mm*	260mm*
ALY-172BK	57	15	Flat Bottom	510mm	460mm*	260mm*
ALY-173BK	57	15	Sumped	510mm	460mm*	260mm*
ALY-174BK	76	20	Flat Bottom	610mm	510mm*	260mm*
ALY-175BK	76	20	Sumped	610mm	510mm*	260mm*

\*Excludes Sump and Fittings



ALY-162BK



ALY-170BK



ALY-171BK



ALY-172BK



ALY-173BK



ALY-174BK



ALY-175BK

## TANKS

### FUEL CELL ACCESSORIES



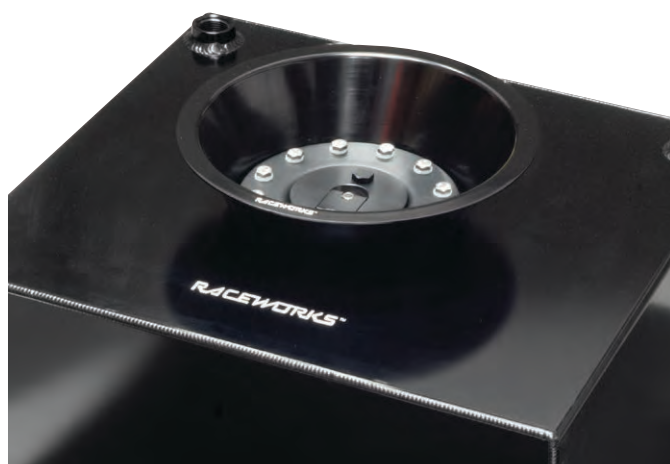
**ALY-169BK**

- Fuel Cell Splash / Spill Tray
- Suits all Raceworks Fuel Cells



**ALY-120BK**

- Screw on Cap Filler, replaces Latching Style Filler
- Internal O-Ring Seal
- Includes FSA-100 Cork Gasket
- Suits all Raceworks Fuel Cells



■ Splash Tray fitted



■ Splash Tray and Screw-On Cap Filler fitted



■ Screw-On Cap Filler fitted



■ Splash Tray and In-Tank Hanger fitted



## TANKS

### FUEL CELL ACCESSORIES



**ALY-081**

- E85 safe Fuel Cell Foam
- Measurements – 514 x 90 x 110mm
- Prevents fuel slosh
- Must be visually inspected regularly



**ALY-080**

- 0–90 Ohm Replacement Sender
- Includes aluminium Threaded Ring for use inside tank
- Depth – 255mm
- Overall length – 285mm



**ALY-079BK**

- 45° Filler with screw on cap
- Includes FSA-100 Gasket and Ring for use inside tank



**ALY-078BK**

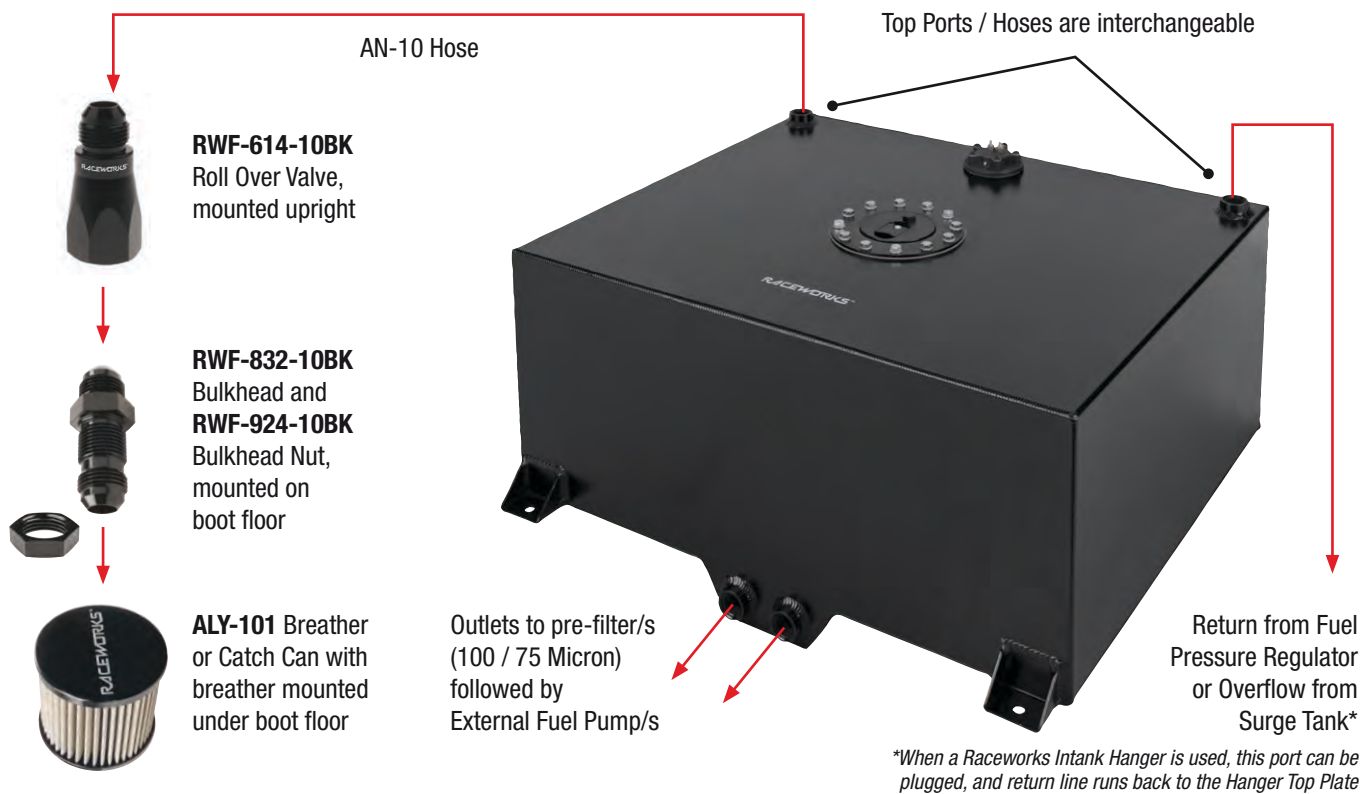
- Replacement Fuel Cell Filler Cap and FSA-100 Gasket
- Replacement O-ring available **RWM-028**



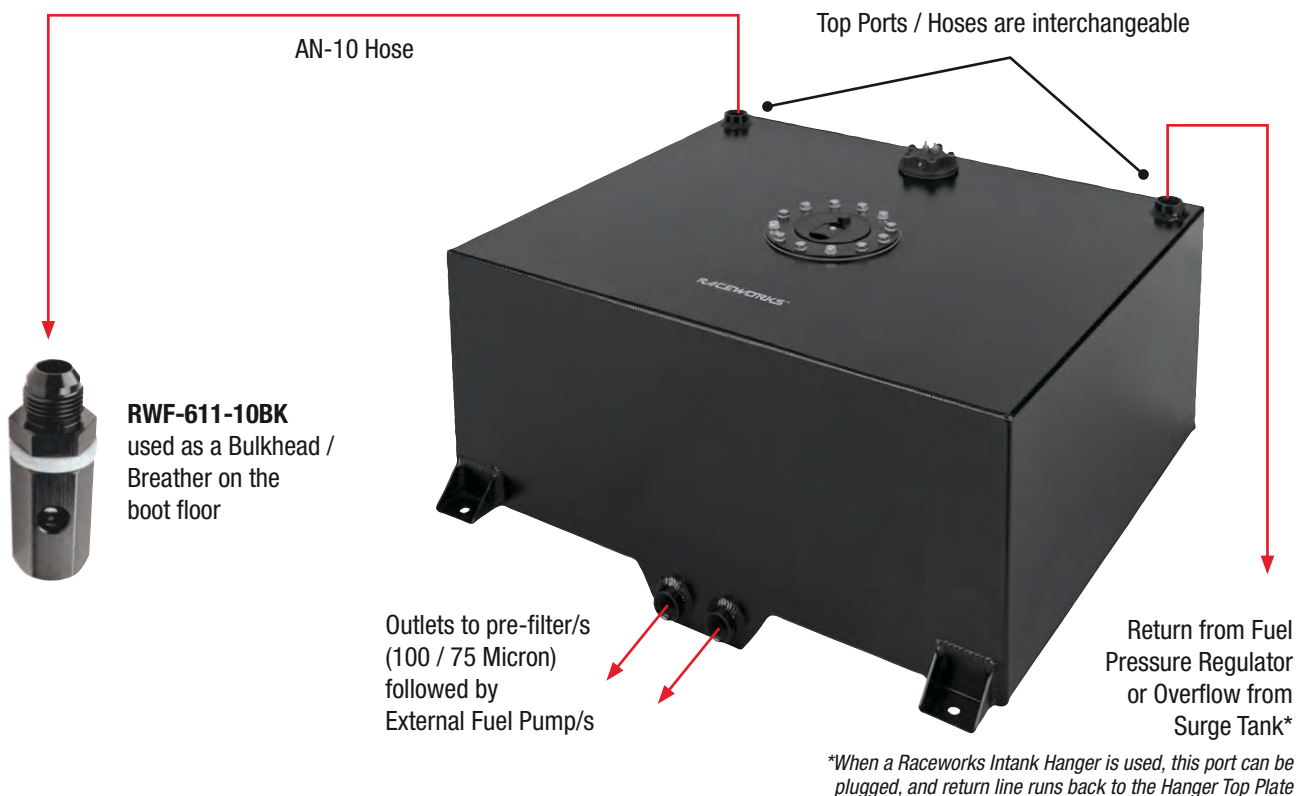
## TECH TIP – HOW DO YOU PLUMB A FUEL CELL?

### FUEL CELL OPTION 1 – INLINE ROLL OVER VALVE

RECOMMENDED BY RACEWORKS



### FUEL CELL OPTION 2 – BULKHEAD / ROLL OVER VALVE





## TANKS

### EXPANSION TANKS



#### ALY-123BK

- 1.8L capacity
- Suitable for use when the radiator isn't the highest point of the cooling system
- Robot welded from 5052 aluminium
- 1.1 Bar Cap
- level indicator window on one side
- 3 x AN-6 ORB Ports
- Dimensions excluding cap, window, fittings and brackets  
Height : 200mm Width : 120mm  
Depth : 80mm

### RECOVERY TANKS

- Raceworks Recovery Tanks are robot welded from 5052 aluminium, and are suitable for both recovery and purge cooling systems  
They include a Billet Cap and Internal Breather Tube



#### ALY-070BK

- 1.0L capacity
- 2 x AN-4 ORB Ports
- Includes 2 x 3/8" Barb Adapters
- Height : 180mm
- Width excluding brackets : 89mm
- Depth : 89mm



#### ALY-071BK

- 2.0L capacity
- 2 x AN-4 ORB Ports
- Includes 2 x 3/8" Barb Adapters
- Height : 360mm
- Width excluding brackets : 89mm
- Depth : 89mm

### POWER STEERING TANKS



#### ALY-126BK

- 0.8L capacity
- Internally baffled
- Billet Screw On Cap
- AN-6 and AN-10 ORB Ports
- Includes 3/8" Barb and 3/4" Barb Adapters
- Breather Filter integrated into Screw-On Cap
- Body height : 120mm
- Width excluding brackets : 87mm
- Depth : 87mm

### WASHER TANKS



#### ALY-127BK

- 1.5L Horizontal Washer Tank with Motor
- Billet Screw On Cap
- Width : 211mm
- Height excluding brackets and motor : 102mm
- Depth : 82mm



#### ALY-128BK

- 1.5L Vertical Washer Tank with Motor
- Billet Screw On Cap
- Width excluding brackets : 102mm
- Height excluding cap and motor : 211mm
- Depth : 82mm

## TOOLS

### VICE JAWS AND WRENCHES

- **Raceworks AN Vice Jaws are designed to securely hold AN Fittings during the assembly process.** Hard anodised billet aluminium or nylon in construction, they don't scratch the anodising on your fittings, and are held firmly in place on your vice using the inbuilt magnets. The Wrenches follow the same principle of being made of soft aluminium, to ensure your fittings maintain a scratch-free finish!



**RWT-002RD**

- Red aluminium AN Vice Jaws



**RWT-002BK**

- Black aluminium AN Vice Jaws



**RWT-028BK**

- Black premium aluminium AN Vice Jaws
- Contains flats on one side, useful when doing elbows or very large sizes



**RWT-003**

- Nylon Vice Jaws



**RWT-007BK**

- Adjustable aluminium AN Wrench
- AN-3 to AN-12



**RWT-026**

- Billet aluminium Combination Spanners
- 5 piece. AN-4 to AN-12



**RWT-027**

- Billet aluminium Combination Spanners
- 8 piece. AN-3 to AN-20

## TOOLS

### BRAIDED HOSE TOOLS

- **Braided Hose can be cut using a grinder or a pair of Braided Hose Cutters.** The advantage of Braided Hose Cutters is they leave no mess and are created with rounded jaws to apply an even force around the hose. The process of creating a braid-over-rubber or braid-over-ptfe can then be simplified using the below Hose Installation Tool or PTFE Olive Installation Tool. Finally, Braided Hose Gauges are available to identify a hose that isn't in its packaging!



**RWT-010**

- AN-3 to AN-20 Cutters



**RWT-012**

- Cutter / Taper style Hose Installation Tool
- Used with 100 / 120 / 140 Series Hoses ■ AN-4 to AN-12
- For usage instructions, see page 225



**RWT-034BK**

- Braided Hose Gauge
- Used to identify series and size of Raceworks Braided Hose



**RWT-016BK**

- PTFE Hose Olive Installation Tool
- AN-3, AN-4, AN-6 and AN-8
- Used with 200, 230, 240 and 260 Series Hoses
- For usage instructions, see page 222

### HOSE PRESSURE TEST KITS



**RWT-034RD**

- Braided Hose Gauge
- Used to identify series and size of Raceworks Braided Hose



**RWT-016BK**

- Contain two male flare plugs with NPT Ports, a Schrader valve and pressure gauge
- Pressurise the hose, allow to sit, and monitor pressure drop on gauge

AN	Part No.
-6	RWT-032-06BK
-8	RWT-032-08BK
-10	RWT-032-10BK

## TOOLS

### RUBBER HOSE TOOLS



**RWT-009**

■ AN-4 to AN-12 Hose Cutters



**EQP-020**

■ Hose Clamp Pliers ■ Suits Single and Twin Ear EFI Clamps

### HARD LINE TOOLS

- Raceworks Hard Line (Aluminium, Steel and Stainless Steel) is sold coiled in 7M lengths. The tools are available to **straighten the line** (essential, especially with Stainless Steel Line), **cut the line neatly** (very important when using tube adapters with compression olives), and **flare the line** suitable for use with Brakes, or other fluids when combined with Tube Nuts and Sleeves to make an AN line
- For usage instructions of the tools below, see pages 224 and 228



**RWT-013**

■ Pipe Cutting Tool

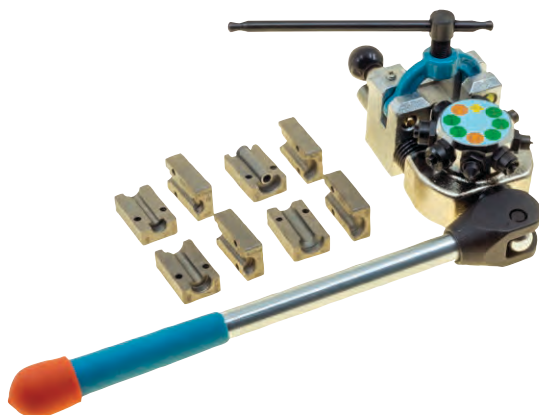
■ AN-3 – AN-10 ■ 3/16" – 5/8"



**RWT-014**

■ Tube Straightener

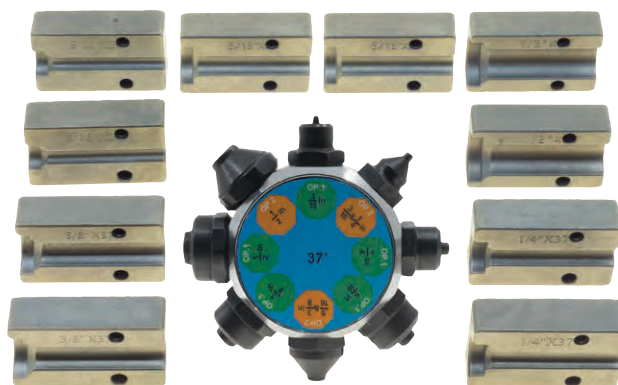
■ AN-3 – AN-8 ■ 3/16" – 1/2" ■ Mounts in a Vice



**RWT-023**

■ Single/Double Flare Tool Kit

■ 45° for brake lines ■ Comes in a black carry case  
■ Includes dies for 3/16", 1/4", 5/16" and 3/8" hard lines



**RWT-033**

■ 37° dies and head

■ Suits RWT-023 Kit ■ Use with AN tube nuts and sleeves  
■ Includes dies for 3/16", 1/4", 5/16" and 3/8" hard lines



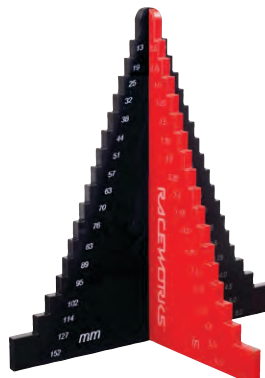
## TOOLS

### INTAKE



#### RWT-017

- Tube Bead Roller
- Suitable for aluminium, steel and stainless steel
- 0.75" – 6.0" diameter pipe
- Creates a bead approximately 2mm tall and 6mm wide
- Material thickness:  
Aluminium – up to 2.0mm  
Steel/Stainless Steel – up to 1.25mm
- For usage instructions, see page 227



#### RWT-018

- Silicone Hose Gauge
- Suits 0.5 – 6.0" Silicone Hoses
- 0.25" increments

### THREAD IDENTIFICATION KITS

- Raceworks have three thread identification kits in the range, suitable for common performance applications. These include metric, imperial/AN and tapered threads (NPT and BSPT). The testers are CNC machined from stainless steel, and contain both a male and female.



#### RWT-019 – 12pce Metric

- |              |              |              |
|--------------|--------------|--------------|
| ■ M8 x 1.0   | ■ M10 x 1.5  | ■ M14 x 1.25 |
| ■ M8 x 1.25  | ■ M12 x 1.0  | ■ M14 x 1.5  |
| ■ M10 x 1.0  | ■ M12 x 1.25 | ■ M16 x 1.5  |
| ■ M10 x 1.25 | ■ M12 x 1.5  | ■ M18 x 1.5  |



#### RWT-020 – 12pce Imperial/AN

- |                     |                        |
|---------------------|------------------------|
| ■ 3/8" – 20         | ■ 9/16" – 24           |
| ■ 3/8" – 24 (AN-3)  | ■ 3/4" – 16 (AN-8)     |
| ■ 7/16" – 20 (AN-4) | ■ 7/8" – 14 (AN-10)    |
| ■ 7/16" – 24        | ■ 1-1/16" – 12 (AN-12) |
| ■ 1/2" – 20         | ■ 1-5/16" – 12 (AN-16) |
| ■ 9/16" – 18 (AN-6) | ■ 1-5/8" – 12 (AN-20)  |



#### RWT-021 – 12pce Tapered Thread

- |             |            |
|-------------|------------|
| ■ 1/8" BSPT | ■ 1/8" NPT |
| ■ 1/4" BSPT | ■ 1/4" NPT |
| ■ 3/8" BSPT | ■ 3/8" NPT |
| ■ 1/2" BSPT | ■ 1/2" NPT |
| ■ 3/4" BSPT | ■ 3/4" NPT |
| ■ 1/16" NPT | ■ 1" NPT   |

## DEUTSCH TOOLS

### CRIMPERS



#### RWT-022

- Deutsch Contact Size – 12

#### RWT-004

- Deutsch Contact Size – 16

#### RWT-005

- Deutsch Contact Size – 20

### REMOVAL TOOLS



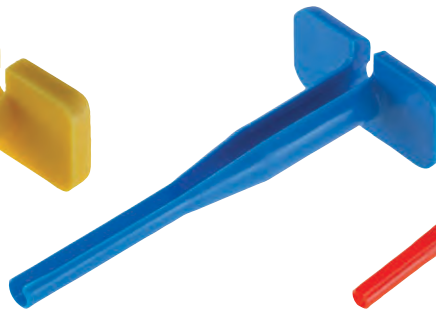
#### RWT-006

- Deutsch Contact Size – Multi
- Suits Deutsch Series – DT / DTM / DTP



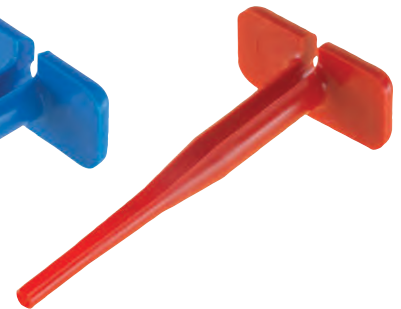
#### RWT-029

- Deutsch Contact Size – 12
- Suits Deutsch Series – HD30 / HDP20



#### RWT-030

- Deutsch Contact Size – 16
- Suits Deutsch Series – HD30 / HDP20



#### RWT-031

- Deutsch Contact Size – 20
- Suits Deutsch Series – HD30 / HDP20





## TURBO ACCESSORIES

### TECH TIP – WHAT IS THE CORRECT BLOW-OFF VALVE FOR MY CAR?

Blow-Off Valve	Wheel HP Rating	Piston / Valve	Diameter
Kompact	Up to 400	28mm	1.0"
Type 5	Up to 600	38.1mm	1.5"
Big Bubba	Up to 1500	50.8mm	2.0"
Race Port	Up to 2500	50.8mm	2.0"
Power Port	Up to 3000+	63.5mm	2.5"

#### KOMPACT (UP TO 400HP)



Part No. Dual Port	Part No. Plumb Back	Specifications
TS-0203-1021	TS-0203-1221	Universal – 20mm
TS-0203-1022	TS-0203-1222	Universal – 25mm
TS-0203-1023	TS-0203-1223	Universal – 34mm

#### TYPE 5 (UP TO 600HP)

Colour	Part No. Dual Port	Part No. Plumb Back	Part No. Supersonic	Part No. Vee-Port Pro	Specifications
Blue	TS-0205-1061	TS-0205-1261	-	-	Universal 32mm
Black	TS-0205-1062	TS-0205-1262	-	-	Universal 32mm
Blue	TS-0205-1071	TS-0205-1271	TS-0205-1300	TS-0205-1130	Universal 38mm
Black	TS-0205-1072	TS-0205-1272	TS-0205-1301	TS-0205-1131	Universal 38mm



Type 5 Dual Port



Type 5 Supersonic



Type 5 Plumb Back



Type 5 Vee Port Pro

## TURBO ACCESSORIES

### BIG BUBBA (UP TO 1500HP)



Colour	Part No. Bubba Sonic	Part No. Plumb Back
Blue / Silver	TS-0204-1301	TS-0204-1201
Black Silver	TS-0204-1302	TS-0204-1202
Sleeper (All Black)	TS-0204-1303	TS-0204-1203

### RACE PORT (UP TO 2500HP)



Colour	Part No. Standard	Part No. Supercharger	Part No. With Sensor Cap
Blue	TS-0204-1131	TS-0204-1151	TS-0204-1231
Black	TS-0204-1132	TS-0204-1152	TS-0204-1232
Purple	TS-0204-1133	-	-
Red	TS-0204-1134	-	-

### POWER PORT (UP TO 2500HP)



Colour	Part No. Standard	Part No. Supercharger	Part No. With Sensor Cap
Blue	TS-0207-1001	-	TS-0207-1101
Black	TS-0207-1002	TS-0204-1103	TS-0207-1102



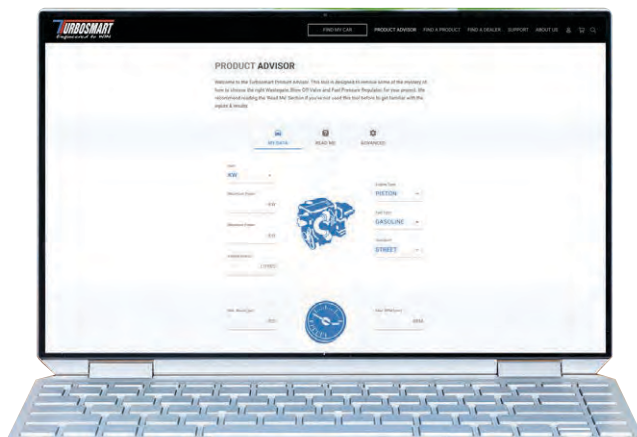
## TURBO ACCESSORIES

### TECH TIP – WHAT IS THE CORRECT WASTEGATE FOR MY CAR?

#### THE GENERAL RULE:

- A Big Turbo / Low Boost = Bigger Wastegate
- A Big Turbo / High Boost = Smaller Wastegate
- A Small Turbo / High Boost = Smaller Wastegate
- A Small Turbo / Low Boost = Bigger Wastegate

For a more accurate selection, head to [turbosmart.com/product-advisor/](http://turbosmart.com/product-advisor/)



### GEN-V WASTEGATES – STANDARD

- As all Turbosmart Gen-V Wastegates are included with all the springs in the box, listed below are the 14psi pre-configured variants (can be configured to any of the available pressures by swapping springs)

Colour	Part No. Ultra-Gate38	Part No. Comp-Gate40	Part No. Hyper-Gate45	Part No. Hyper-Gate45 Lite	Part No. Pro-Gate50	Part No. Power-Gate60
Blue	TS-0551-1011	TS-0552-1011	TS-0553-1011	-	TS-0554-1011	TS-0555-1011
Black	TS-0551-1012	TS-0552-1012	TS-0553-1012	TS-0553-1612	TS-0554-1012	TS-0555-1012
Purple	TS-0551-1013	TS-0552-1013	TS-0553-1013	-	TS-0554-1013	TS-0555-1013
Red	TS-0551-1014	TS-0552-1014	TS-0553-1014	-	TS-0554-1014	TS-0555-1014



Ultra-Gate38



Comp-Gate40



Hyper-Gate45



Hyper-Gate45 Lite



Pro-Gate50



Power-Gate60

## TURBO ACCESSORIES

### GEN-V WASTEGATES – MOTORSPORT



Comp-Gate40



Hyper-Gate45

- As all Turbosmart Gen-V Wastegates are included with all the springs in the box, listed below are the 14psi pre-configured variants (can be configured to any of the available pressures by swapping springs)

Colour	Part No. Comp-Gate40	Part No. Hyper-Gate45
Blue	TS-0552-1101	TS-0553-1101
Black	TS-0552-1102	TS-0553-1102

### GEN-V WASTEGATES – COMPRESSED GAS

Colour	Part No. Comp-Gate40	Part No. Hyper-Gate45	Part No. Pro-Gate50	Part No. Power-Gate60
Blue	TS-0552-1201	TS-0553-1201	TS-0554-1201	TS-0555-1201
Black	TS-0552-1202	TS-0553-1202	TS-0554-1202	TS-0555-1202

- Compressed Gas Wastegates come pre-configured as 5psi



### GEN-V WASTEGATES – HIGH PRESSURE

- \*High Pressure Wastegates come pre-configured as 35psi

Colour	Part No. Ultra-Gate38	Part No. Comp-Gate40	Part No. Hyper-Gate45
Black	TS-0551-1312	TS-0552-1312	TS-0553-1312



Ultra-Gate38



Comp-Gate40



Hyper-Gate45

## TURBO ACCESSORIES

### GEN-V WASTEGATES – SENSOR CAPS

Colour	Part No. WG38/40	Part No. WG38/40 CG	Part No. WG45/50	Part No. WG45/50 CG	Part No. WG60	Part No. WG60 CG
Blue	TS-0550-3023	TS-0550-3063	TS-0550-3025	TS-0550-3065	TS-0550-3027	TS-0550-3067
Black	TS-0550-3022	TS-0550-3062	TS-0550-3024	TS-0550-3064	TS-0550-3026	TS-0550-3066



WG38/40



WG38/40 CG



WG45/50



WG45/50 CG



WG60



WG60 CG

### GEN-V WASTEGATES – ELECTRONIC

Part No. Comp-Gate40	Part No. Hyper-Gate45	Part No. Pro-Gate50	Part No. Power-Gate60
TS-0552-1502	TS-0553-1502	TS-0554-1502	TS-0555-1502



Comp-Gate40



Hyper-Gate45



Pro-Gate50



Power-Gate60

### WASTEGATE MOUNTING ACCESSORIES

#### GEN 4

##### ■ GEN 4 – 38mm

Weld Flanges – Stainless	TS-0501-2001
Weld Flanges – Mild Steel	TS-0501-2002
2pk SS Gaskets	TS-0501-3002
Valve Seat	TS-0501-3103

##### ■ GEN 4 – 40mm

Inlet Weld Flange	TS-0505-3001
Outlet Weld Flange	TS-0505-3002
Valve Seat	TS-0505-3003
Inlet V-Band	TS-0505-3004
Outlet V-Band	TS-0505-3005

##### ■ GEN 4 – 45mm

Inlet Weld Flange	TS-0504-3001
Outlet Weld Flange	TS-0504-3002
Valve Seat	TS-0504-3003
Inlet V-Band	TS-0504-3004
Outlet V-Band	TS-0504-3005

##### ■ GEN 4 – 50mm / 50mm Lite

Inlet Weld Flange	TS-0502-3001
Outlet Weld Flange	TS-0502-3002
Valve Seat	TS-0502-3003
Inlet V-Band	TS-0502-3004
Outlet V-Band	TS-0502-3005

##### ■ GEN 4 – 60mm

Inlet Weld Flange	TS-0503-3001
Outlet Weld Flange	TS-0503-3002
Valve Seat	TS-0503-3003
Inlet V-Band	TS-0503-3004
Outlet V-Band	TS-0503-3005

#### GEN 5

##### ■ GEN 5 – 38mm

Weld Flanges – Stainless	TS-0501-2001
Weld Flanges – Mild Steel	TS-0501-2002
2pk SS Gaskets	TS-0501-3002
Valve Seat	TS-0551-3001

##### ■ GEN 5 – 40mm

Inlet Weld Flange	TS-0505-3001
Outlet Weld Flange	TS-0505-3002
Valve Seat	TS-0552-3001
Inlet V-Band	TS-0552-3003
Outlet V-Band	TS-0552-3004

##### ■ GEN 5 – 45mm / 45mm Lite

Inlet Weld Flange	TS-0504-3001
Outlet Weld Flange	TS-0504-3002
Valve Seat	TS-0553-3001
Inlet V-Band	TS-0553-3003
Outlet V-Band	TS-0552-3003

##### ■ GEN 5 – 50mm

Inlet Weld Flange	TS-0502-3001
Outlet Weld Flange	TS-0502-3002
Valve Seat	TS-0554-3001
Inlet V-Band	TS-0554-3003
Outlet V-Band	TS-0554-3004

##### ■ GEN 5 – 60mm

Inlet Weld Flange	TS-0503-3001
Outlet Weld Flange	TS-0503-3002
Valve Seat	TS-0555-3001
Inlet V-Band	TS-0555-3003
Outlet V-Band	TS-0555-3004



## TURBO ACCESSORIES

### MANUAL BOOST CONTROLLERS



TS-0101-1001



TS-0101-1002

### E-BOOST STREET



TS-0302-1002

■ Size – 1/4 DIN ■ Pressure rating – 40PSI

### ELECTRONIC E-BOOST2 CONTROLLERS



Size	Pressure Rating	Face Colour	Bezel Colour	Solenoid Ports	Part Number
60mm	60PSI	White	Silver	3	TS-0301-1001
60mm	60PSI	White	Black	3	TS-0301-1014
60mm	60PSI	Black	Silver	3	TS-0301-1002
60mm	60PSI	Black	Black	3	TS-0301-1003
60mm	60PSI	Black	Black	4	TS-0301-1103
60mm	120PSI	Black	Black	3	TS-0301-1120
60mm	120PSI	Black	Black	4	TS-0301-1121
66mm	60PSI	Silver	Silver	3	TS-0301-1004
66mm	60PSI	White	Black	3	TS-0301-1005
66mm	60PSI	Black	Silver	3	TS-0301-1013
66mm	60PSI	Black	Black	3	TS-0301-1011

### GAUGES



Part Number	Specifications
TS-0701-1011	30PSI Electric Boost Only Gauge
TS-0701-1012	60PSI Electric Boost Only Gauge
TS-0701-1013	4 Bar Boost only Gauge
TS-0701-3011	Transmission Temperature Gauge - Fahrenheit
TS-0701-2011	Exhaust Gas Temperature Gauge - Fahrenheit
TS-0740-1002	L Bracket 3 Gauge Mount
TS-0101-2023	30PSI Mechanical Boost/Vac Gauge
TS-0101-2025	2BAR Mechanical Boost/Vac Gauge
TS-0101-2024	Gauge Mounting Cup 52mm

**FOR TURBOSMART OIL PRESSURE REGULATORS, SEE PAGE 145**



## TURBO ACCESSORIES

### APPLICATION GUIDE

Make	Model	Series	Blow Off Valve	Internal Wastegate Actuator
<b>AUDI</b>				
	S3	8P1	TS-0223-1063 – Kompact EM Dual Port	TS-0645-2052 – 5psi
			TS-0223-1263 – Kompact EM Plumb Back	
	RS3	8V	TS-0223-1063 – Kompact EM Dual Port	-
			TS-0223-1263 – Kompact EM Plumb Back	
	TT S/ TT RS	8J3	TS-0223-1063 – Kompact EM Dual Port	-
			TS-0223-1263 – Kompact EM Plumb Back	
<b>BMW</b>				
	135i/1M	E82	TS-0203-1050 – Kompact Dual Port Kit	
			TS-0203-1250 – Kompact Plumb Back Kit	
	M135i	F20	TS-0223-1092 – Kompact EM Dual Port	
			TS-0223-1292 – Kompact EM Plumb Back	
	M2	F87	TS-0223-1094 – Kompact EM Dual Port	-
			TS-0223-1294 – Kompact EM Plumb Back	
	335i/435i	E92/F30/F80/F32	TS-0223-1092 – Kompact EM Dual Port	-
			TS-0223-1292 – Kompact EM Plumb Back	
<b>FORD</b>				
	Falcon Turbo	BA/BF/FG	TS-0203-1022 – Kompact Dual Port	TS-0622-1052 – 5psi
			TS-0203-1222 – Kompact Plumb Back	TS-0622-1072 – 7psi
				TS-0622-1122 – 12psi
	Fiesta	MK7/MK8 ST	TS-0223-1078 – Kompact EM Dual Port	TS-0622-7072 – 7psi
			TS-0223-1278 – Kompact EM Plumb Back	
	Focus	XR5 2nd Gen	TS-0203-1061 – Kompact Dual Port	TS-0622-2072 – 7psi
			TS-0203-1261 – Kompact Plumb Back	
		RS MK2	TS-0203-1061 – Kompact Dual Port	TS-0622-3072 – 7psi
			TS-0203-1261 – Kompact Plumb Back	
		ST MK3	TS-0203-1061 – Kompact Dual Port	TS-0622-5072 – 7psi
			TS-0203-1261 – Kompact Plumb Back	
		RS MK3	TS-0203-1064 – Kompact Dual Port	TS-0622-9122 – 12psi
			TS-0203-1264 – Kompact Plumb Back	
	Territory Turbo	SY	TS-0203-1022 – Kompact Dual Port	TS-0622-1052 – 5psi
			TS-0203-1222 – Kompact Plumb Back	TS-0622-1072 – 7psi
				TS-0622-1122 – 12psi
<b>HONDA</b>				
	Civic	FK2 Type R	TS-0203-1017 – Kompact Supersonic	-
<b>HYUNDAI</b>				
	I30	N	TS-0203-1036 – Kompact Dual Port	-
<b>KIA</b>				
	Stinger	GT	TS-0203-1025 – Kompact Dual Port	-

- Only common vehicles listed here, if you don't find your vehicle listed, please visit [Turbosmart.com](http://Turbosmart.com)
- Application data to be used as a guide only – correct at time of print – please visit [Turbosmart.com](http://Turbosmart.com) for the most up to date vehicle fitment data

## TURBO ACCESSORIES

### APPLICATION GUIDE

Make	Model	Series	Blow Off Valve	Internal Wastegate Actuator
<b>MAZDA</b>				
	3 MPS	BK	TS-0205-1010 – Type 5 Dual Port	TS-0610-1072 – 7psi
			TS-0205-1310 – Type 5 Supersonic	TS-0610-1182 – 18psi
			TS-0203-1009 – Kompact Dual Port	TS-0610-1222 – 22psi
			TS-0203-1209 – Kompact Plumb Back	
	6 MPS	GG	TS-0205-1010 – Type 5 Dual Port	TS-0610-1072 – 7psi
			TS-0205-1310 – Type 5 Supersonic	TS-0610-1182 – 18psi
			TS-0203-1009 – Kompact Dual Port	TS-0610-1222 – 22psi
			TS-0203-1209 – Kompact Plumb Back	
	MX5	NB SE	TS-0203-1022 – Kompact Dual Port	-
			TS-0203-1222 – Kompact Plumb Back	-
<b>MITSUBISHI</b>				
	Lancer	EVO 1-8	TS-0203-1023 – Kompact Dual Port	TS-0601-1102 – 10psi
			TS-0203-1223 – Kompact Plumb Back	TS-0601-1142 – 14psi
			TS-0215-1023 – Smart Port Dual Port	TS-0601-1182 – 18psi
				TS-0601-1222 – 22psi
				TS-0601-1242 – 24psi
	Lancer	EVO 9	TS-0215-1023 – Smart Port Dual Port	TS-0601-2102 – 10psi
			TS-0203-1023 – Kompact Dual Port	TS-0601-2142 – 14psi
			TS-0203-1223 – Kompact Plumb Back	TS-0601-2182 – 18psi
				TS-0601-2222 – 22psi
				TS-0601-2242 – 24psi
				TS-0601-2262 – 26psi
		EVO X	TS-0203-1023 – Kompact Dual Port	TS-0601-3102 – 10psi
			TS-0203-1223 – Kompact Plumb Back	TS-0301-3122 – 12psi
			TS-0215-1023 – Smart Port Dual Port	TS-0601-3142 – 14psi
				TS-0601-3182 – 18psi
				TS-0601-3222 – 22psi
				TS-0601-3242 – 24psi
<b>NISSAN</b>				
	GTR	R35	TS-0215-1027 – Smart Port Dual Port	TS-0615-2072 – 7psi
				TS-0615-2192 – 19psi
				TS-0615-2242 – 24psi
	Patrol	Y61 ZD30	TS-0304-1002 – Race Port Kit	TS-0615-4072 – 7psi
		Y61 TD42	TS-0304-1002 – Race Port Kit	TS-0615-5072 – 7psi
	Skyline GTS-T	R32/R33	TS-0203-1026 – Kompact Dual Port	-
			TS-0203-1226 – Kompact Plumb Back	-
	Skyline GT-T	R34	TS-0203-1026 – Kompact Dual Port	-
			TS-0203-1226 – Kompact Plumb Back	-
			TS-0205-1026 – Type 5 Dual Port	-
	Skyline GT-R	R32/R33/R34	TS-0205-1026 – Type 5 Dual Port	TS-0615-6072 – 7psi
			TS-0204-1162 – Race Port Kit	TS-0615-6142 – 14psi

- Only common vehicles listed here, if you don't find your vehicle listed, please visit [Turbosmart.com](http://Turbosmart.com)
- Application data to be used as a guide only – correct at time of print – please visit [Turbosmart.com](http://Turbosmart.com) for the most up to date vehicle fitment data.

## TURBO ACCESSORIES

### APPLICATION GUIDE

Make	Model	Series	Blow Off Valve	Internal Wastegate Actuator
<b>SUBARU</b>				
	Forester	SG XT	TS-0205-1016 – Type 5 Dual Port	TS-0605-5072 – 7psi
			TS-0205-1216 – Type 5 Plumb Back	
			TS-0205-1316 – Type 5 Supersonic	
			TS-0203-1015 – Kompact Dual Port	
			TS-0203-1215 – Kompact Plumb Back	
		SJ XT	TS-0215-1018 – Smart Port Dual Port	TS-0605-3072 – 7psi
			TS-0203-1037 – Kompact Smart Port Dual Port	
	Levorg	SJ	TS-0215-1018 – Smart Port Dual Port	TS-0605-3072 – 7psi
			TS-0203-1037 – Kompact Smart Port Dual Port	
	WRX	GC8 EJ205	TS-0203-1016 – Kompact Dual Port	TS-0605-5072 – 7psi
		GD/GG EJ205	TS-0205-1016 – Type 5 Dual Port	TS-0605-5072 – 7psi
			TS-0205-1216 – Type 5 Plumb Back	
			TS-0205-1316 – Type 5 Supersonic	
			TS-0203-1015 – Kompact Dual Port	
			TS-0203-1215 – Kompact Plumb Back	
		GH EJ255	TS-0205-1010 – Type 5 Dual Port	TS-0605-2052 – 5psi
			TS-0205-1310 – Type 5 Supersonic	
			TS-0203-1010 – Kompact Dual Port	
			TS-0203-1210 – Kompact Plumb Back	
		VA FA20F	TS-0215-1018 – Smart Port Dual Port	TS-0605-3072 – 7psi
			TS-0203-1037 – Kompact Smart Port Dual Port	
	WRX Sti	GC8 EJ207	TS-0203-1016 – Kompact Dual Port	-
		GR/VA EJ257	TS-0205-1016 – Type 5 Dual Port	TS-0605-1072 – 7psi
			TS-0205-1216 – Type 5 Plumb Back	
			TS-0205-1316 – Type 5 Supersonic	
			TS-0203-1015 – Kompact Dual Port	
			TS-0203-1215 – Kompact Plumb Back	
<b>VOLKSWAGEN</b>				
	Golf	MK V/Vi Gti/R	TS-0223-1063 – Kompact EM Dual Port	TS-0645-2052 – 5psi
			TS-0223-1263 – Kompact EM Plumb Back	
		Mk Vii Gti/R	TS-0223-1063 – Kompact EM Dual Port	-
			TS-0223-1263 – Kompact EM Plumb Back	
	Scirocco	R	TS-0223-1063 – Kompact EM Dual Port	TS-0645-1052 – 5psi
			TS-0223-1263 – Kompact EM Plumb Back	

- Only common vehicles listed here, if you don't find your vehicle listed, please visit [Turbosmart.com](http://Turbosmart.com) ■ Application data to be used as a guide only – correct at time of print – please visit [Turbosmart.com](http://Turbosmart.com) for the most up to date vehicle fitment data.

## INTAKE

**RACEWORKS™**  
PASSION FOR PERFORMANCE

### TURBO PROTECTOR SCREENS

Diameter	Part Number
4.0"	RWM-015-400
5.0"	RWM-015-500
6.0"	RWM-015-600





## ELECTRICAL

### BATTERY MASTER SWITCH WITH FIELD CUT

#### VPR-010

- Designed to eliminate the possibility of the alternator circuit being damaged due to a voltage surge that can occur with the use of a heavy duty single circuit master switch
- When turned to the OFF position, the engine won't run due to the power to the ignition relay or ignition coil circuit being cut. This prevents engine "run on" and is an important safety factor in competition use
- In addition, and to ensure the main vehicle electrical circuit is fully discharged, the included resistor bleeds any residual voltage to ground



### BATTERY MASTER SWITCH REMOTE CABLE KITS



**VPR-011** 2.2m

**VPR-012** 4.0m

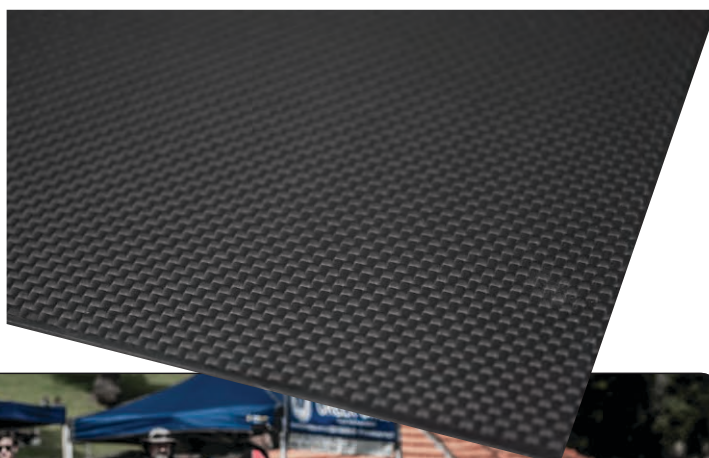
- Contains a seal at the top of the cable to prevent the cable seizing up, and a multistrand hybrid stainless steel wire and teflon liner
- A necessity for any car built for competition use

## FABRICATION

### CARBON FIBRE SHEET

Thickness	Weight	Part No.
1mm	284g	VPR-018-1MM
2mm	567g	VPR-018-2MM
3mm	850g	VPR-018-3MM

- Matte finish
- Used for fabrication of motorsport components such as canards and interior panels
- 500 x 400mm in size





## HEAT CONTROL PRODUCTS

### TITANIUM EXHAUST WRAP

Roll Length	Part No.
15ft (4.5M)	VPR-031-15FT
30ft (9.1M)	VPR-031-30FT
50ft (15.2M)	VPR-031-50FT

- 2" in width, Raceworks Titanium Wrap is engineered to be stronger and more durable without the need to pre-wet the roll before installation.
- Being a raw finish, there is no loss of colour over time
- Withstands a direct heat of 980°C and intermittent heat of 1371°C

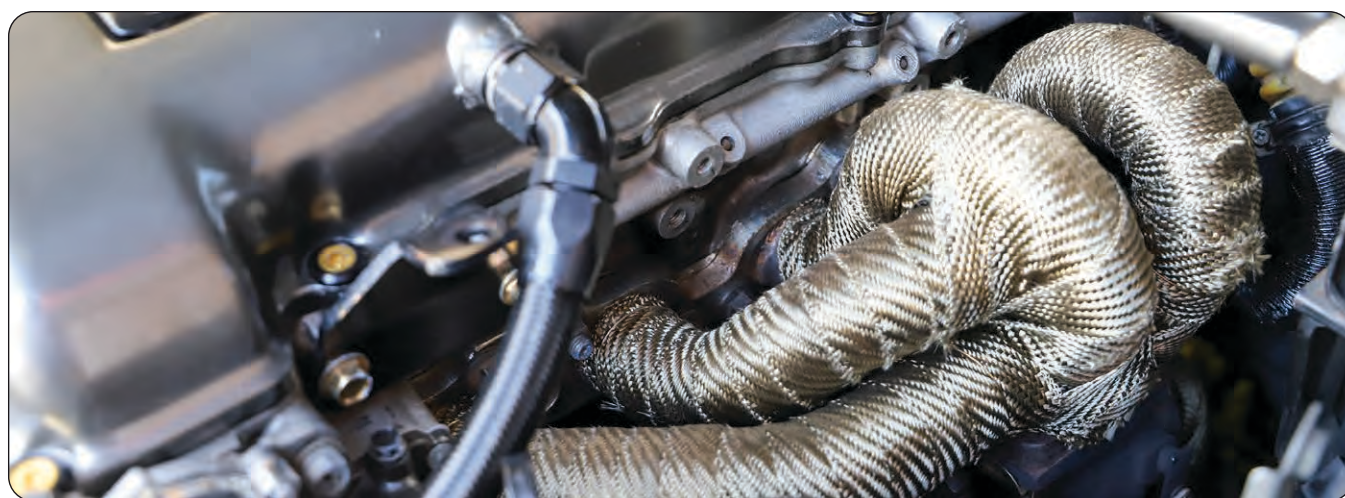


*Lengths provided in this chart are approximate and calculated using 50% overlap.*

*We recommend you add 180mm (0.59 ft) for every bend of less than 90°, and 400mm (1.31 ft) for every bend 90° or greater.*

### EXHAUST WRAP LENGTH GUIDE

Tube Dia	Tube Length	VPR-031 Wrap Length Required
1" (25.4mm)	10" (254mm)	0.680M (2.23 ft)
1-1/8" (28.6mm)	10" (254mm)	0.725M (2.38 ft)
1-1/4" (31.8mm)	10" (254mm)	0.794M (2.61 ft)
1-3/8" (34.9mm)	10" (254mm)	0.852M (2.80 ft)
1-1/2" (38.1mm)	10" (254mm)	0.927M (3.04 ft)
1-5/8" (41.3mm)	10" (254mm)	0.986M (3.24 ft)
1-3/4" (44.5mm)	10" (254mm)	1.061M (3.48 ft)
1-7/8" (47.6mm)	10" (254mm)	1.128M (3.70 ft)
2" (50.8mm)	10" (254mm)	1.187M (3.89 ft)
2-1/8" (54.0mm)	10" (254mm)	1.253M (4.11 ft)
2-1/4" (57.2mm)	10" (254mm)	1.320M (4.33 ft)
2-1/2" (63.5mm)	10" (254mm)	1.462M (4.80 ft)
2-3/4" (69.9mm)	10" (254mm)	1.596M (5.24 ft)
3" (76.2mm)	10" (254mm)	1.721M (5.65 ft)
3-1/2" (88.9mm)	10" (254mm)	1.997M (6.55 ft)
4" (101.6mm)	10" (254mm)	2.264M (7.43 ft)



### SPARK PLUG BOOT HEATSHIELDS

- Sold in a 4 Pack, Raceworks Titanium Spark Plug Heatshields/Boots are flexible and can fit straight or angle ended leads
- They can be used in tight locations, and act as a spark insulator to reduce misfires
- Easy to install and non-flammable
- 150mm long and 1" internal diameter
- Withstand 260°C direct heat and 1100°C radiant heat

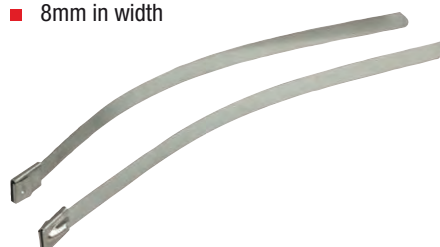


VPR-036

### STAINLESS STEEL LOCKING TIES

Length	Part No.
200mm	VPR-030-200MM
350mm	VPR-030-350MM

- Sold in a 2 Pack, Raceworks 316 Stainless Locking Ties are available in two lengths
- 8mm in width





## HEAT CONTROL PRODUCTS

### TURBO BEANIES / BLANKETS

- Extreme Duty Turbo Beanies are constructed using a high temperature titanium material
- Rated to 1000°C both internal and external
- Included with optional springs

Suits	For Use With Wastegate	Hot Side Diameter Inch	Raceworks Part No.
GT25/T28 and T3	Internal	5 – 6	RWM-046
GT25/T28 and T3 Reverse Rotation	Internal	5 – 6	RWM-046-R
GT30/35/40	External	6 – 7.5	RWM-047
GT30/35/40 Reverse Rotation	External	6 – 7.5	RWM-047-R
T04 and GT42	External	7.5 – 8.5	RWM-048
T04 and GT42 Reverse Rotation	External	7.5 – 8.5	RWM-048-R
GT45/47	External	8.5 – 10.5	RWM-049
GT45/47 Reverse Rotation	External	8.5 – 10.5	RWM-049-R





## HEAT CONTROL PRODUCTS

### SILICONE / FIBREGLASS HEAT SLEEVING

- **Raceworks Fibreglass Heat Sleevings** is constructed using a fibreglass braid, and covered in a black silicone rubber. It forms a protective barrier in high heat environments. Withstands a continuous operating temperature of 260°C, and has a maximum short term exposure of 1100°C.

Internal Diameter	1.0M Part No.	15M Part No.
3mm / 1/8"	RWM-051-03MM	-
4mm / 5/32"	RWM-051-04MM	-
6mm / 15/64"	RWM-051-06MM	-
8mm / 5/16"	RWM-051-08MM	RWM-051-08MM-15M
12mm / 1/2"	RWM-051-12MM	RWM-051-12MM-15M
16mm / 5/8"	RWM-051-16MM	RWM-051-16MM-15M
19mm / 3/4"	RWM-051-19MM	RWM-051-19MM-15M
22mm / 7/8"	RWM-051-22MM	RWM-051-22MM-15M
25mm / 1"	RWM-051-25MM	RWM-051-25MM-15M



### RACEWORKS HOSE APPLICATION GUIDE

100 / 120 / 140 Series	Part No.
-4	RWM-051-12MM
-6	RWM-051-12MM
-8	RWM-051-16MM
-10	RWM-051-19MM
-12	RWM-051-22MM
-16	RWM-051-25MM
-20	-
200 / 230 / 240 Series	Part No.
-3	RWM-051-08MM
-4	RWM-051-08MM
-6	RWM-051-12MM
-8	RWM-051-12MM
-10	RWM-051-16MM
-12	RWM-051-19MM
400 Series	Part No
-4	RWM-051-12MM
-5	-
-6	RWM-051-16MM
-8	RWM-051-19MM
-10	RWM-051-22MM
-12	RWM-051-25MM



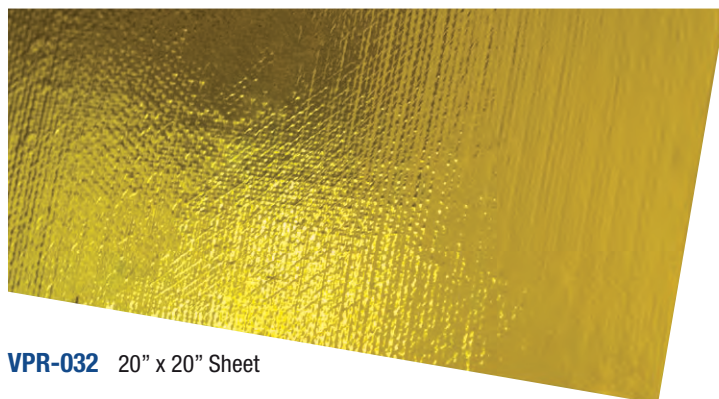
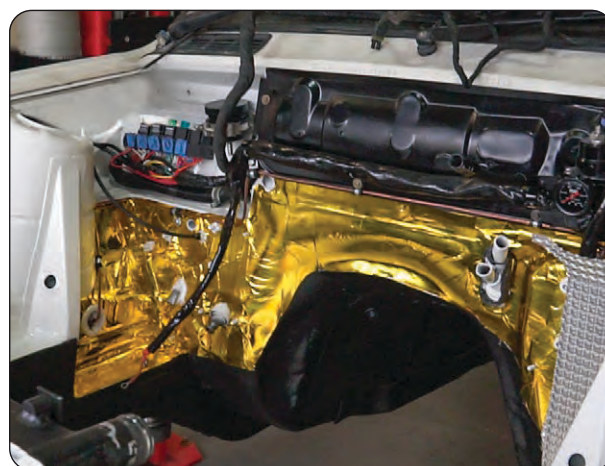
## HEAT CONTROL PRODUCTS

### GOLD REFLECTIVE HEATSHIELD

- Raceworks Gold Reflective Sheeting/Tape is lightweight and easily applied
- Commonly used on firewalls, intake pipes, fuel cells, engine covers, under bonnets, engine compartments, seat bottoms and more
- Rated to a direct heat of 450°C, however the adhesive is rated to 160°C



**VPR-033** 2" x 30FT (9.1M) Roll



**VPR-032** 20" x 20" Sheet



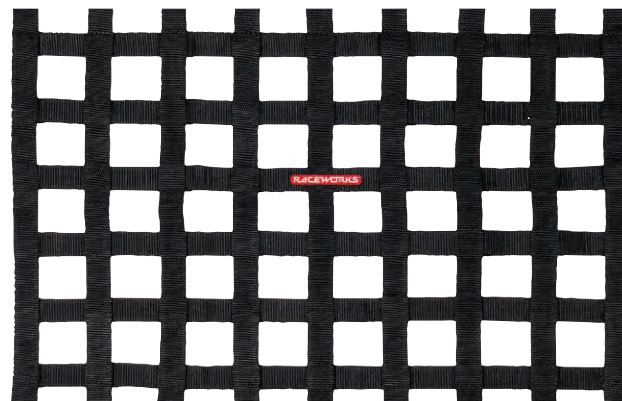


## SAFETY

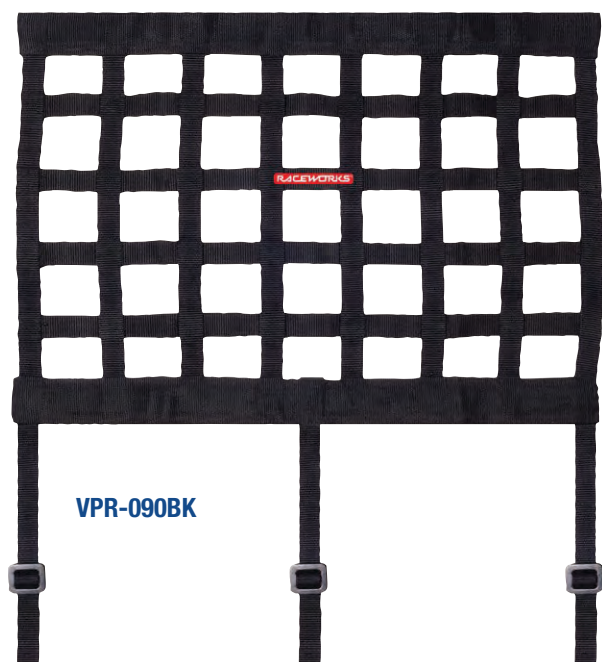
### WINDOW NETS

Width	Height	Top	Bottom	Colour	Part No.
24"	18"	Loop Style	Loop Style	Black	VPR-070BK
24"	18"	Loop Style	Loop Style	Red	VPR-070RD
22" at top, 26" at bottom	17"	Loop Style	Loop Style	Black	VPR-080BK
22" at top, 26" at bottom	17"	Loop Style	Loop Style	Red	VPR-080RD
24"	18"	Loop Style	Straps (for Side Intrusion Bars)	Black	VPR-090BK

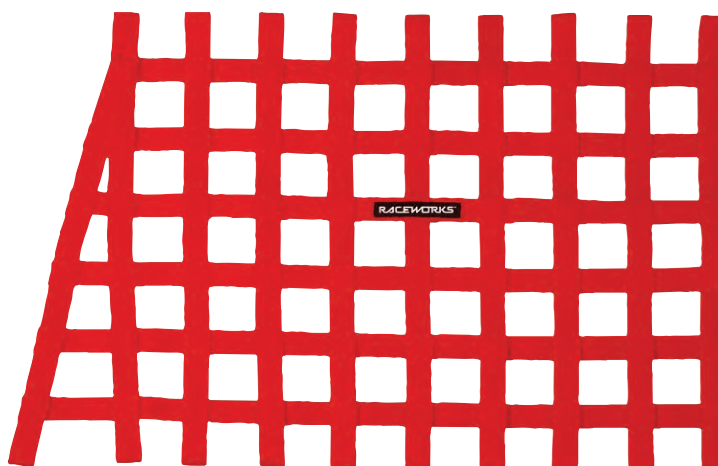
- Raceworks has introduced three styles of window nets, all of which are SFI/Motorsport Australia approved. They contain 1" wide webbing with a double overlap construction for maximum durability
- Fitting Kits available



VPR-070BK



VPR-090BK



VPR-080RD



VPR-069

### WINDOW NET FITTING KIT – 24"

- Manufactured to Motorsport Australia specification
- Fast acting spring loaded design
- Includes top and bottom mounts and split pins for bottom rod
- Compulsory in sedan racing classes at state level or above

## SAFETY

### ARM RESTRAINTS

- Raceworks Arm Restraints are SFI approved



**VPR-068**

### BALACLAVAS

- Raceworks Balaclavas are double layer and constructed from 50% Nomex and 50% FR Rayon. They carry FIA approval, of the 8856-2000 Standard.



**VPR-049** Natural



**VPR-050** Black

### HARNESS ACCESSORIES



**VPR-096**

- Snap Hook Harness End
- Suits 2" Belts



**VPR-097**

- Snap Hook Harness End
- Suits 3" Belts



**VPR-098**

- Harness Eyebolt
- Short thread (23mm) 7/16" thread



**VPR-099**

- Harness Eyebolt
- Long thread (50mm) 7/16" thread
- Includes spring washer, nut and large diameter steel flat washer



**VPR-095**

- Harness / Seat Belt Mount.
- Steel Motorsport Australia Approved mount
- Zinc plated to 96HR salt spray spec



## SAFETY

### LATCH AND LINK HARNESSSES

**Raceworks Latch and Link Harnesses are SFI Approved.** They are suitable for Motorsport Australia use at majority of tracks, excluding international events and are available with either 3" shoulder belts, or 2-3" Tapered Shoulder Belts for use with a HANS device. PAT recommends you check the SFI eligibility with the relevant event organiser.



#### VPR-100BK

- 5 point
- 3" Black belts
- Black pull straps
- Black metal hardware
- Bolt-in ends
- SFI approved



#### VPR-100RD

- 5 point
- 3" Red belts
- Black pull straps
- Black metal hardware
- Bolt-in ends
- SFI approved



#### VPR-110BK

- 5 point
- Black belts
- Black pull straps
- Black metal hardware
- Snap hook ends
- 2-3" Hans compatible shoulder belts
- SFI approved



#### VPR-110RD

- 5 point
- Red belts
- Black pull straps
- Black metal hardware
- Snap hook ends
- 2-3" Hans compatible shoulder belts
- SFI approved

## SAFETY

### CAM LOCK HARNESSES

Raceworks Cam Lock Harnesses come in both SFI and FIA Approved variants. SFI are suitable for use at majority of Motorsport Australia events. PAT recommends you check the eligibility of the harness with the relevant event organiser. FIA belts are approved at all Motorsport Australia events including international events. Harnesses are available with either 3" shoulder belts, or 2-3" Tapered Shoulder Belts for use with a HANS device.



#### VPR-120BK

- 4 point
- 3" Black belts
- Black metal hardware
- Snap hook ends
- FIA approved



#### VPR-120RD

- 4 point
- 3" Red belts
- Black metal hardware
- Snap hook ends
- FIA approved



#### VPR-130BK

- 6 point
- 3" Black belts
- Black pull straps
- Black metal hardware
- Bolt-in ends
- SFI approved



#### VPR-130RD

- 6 point
- 3" Red belts
- Black pull straps
- Black metal hardware
- Bolt-in ends
- SFI approved

## SAFETY

### CAM LOCK HARNESSES



**VPR-140BK**

- 6 point
- 3" Black belts
- Black pull straps
- Black u loops
- Black metal hardware
- Snap hook ends
- FIA approved



**VPR-140RD**

- 6 point
- 3" Red belts
- Black pull straps
- Black u loops
- Black metal hardware
- Snap hook ends
- FIA approved



**VPR-150BK**

- 6 point
- Black belts
- Black pull straps
- 2-3" Hans compatible shoulder belts
- Black u loops
- Black pull loops
- Black metal hardware
- Snap hook ends
- FIA approved



**VPR-150RD**

- 6 point
- Red belts
- Black pull straps
- 2-3" Hans compatible shoulder belts
- Black u loops
- Black pull loops
- Black metal hardware
- Snap hook ends
- FIA approved



## RACE CAR PREPARATION

### FLEXIBLE TOW STRAPS



- Motorsport Australia approved.
- 250mm in length.
- Available in 12 colours

Colour	Part No.
Blue	VPR-021BE
Black	VPR-021BK
Camouflage	VPR-021CF
Digital Camouflage	VPR-021DCF
Gold	VPR-021GD
Green	VPR-021GN
Orange	VPR-021OR
Pink	VPR-021PK
Purple	VPR-021PU
Red	VPR-021RD
Silver	VPR-021SR
Yellow	VPR-021YL



### RIGID TOW HOOKS

- Motorsport Australia Spec Tow Hook.
- 4.0mm thick steel.
- Powder coated signal red.
- Short 175mm **VPR-019**
- Long 300mm **VPR-020**



### SEAT MOUNTS

Material	Finish	No. of Vertical Mounting Holes	Weight (pair)	Height	Length	Width	Seat Mounting Hole Size	Seat Mounting Slots Centre to Centre	Part No.
3.5mm Carbon Steel (FIA Approved)	Powder Coated Black	3	2.5kg	125mm	360mm	55mm	One end 15w x 10h mm. Other end 9mm dia Hole	290mm	VPR-051
3.0mm Mild Steel	Powder Coated Black	5	1.72kg	110mm	390mm	68mm	18w x 10h mm	290mm	VPR-052
3.0mm Mild Steel	Powder Coated Black	5	2.28kg	160mm	360mm	54mm	One end 18w x 9h mm. Other end 9mm dia Hole	290mm	VPR-053
6.0mm 6061 T5 Grade Aluminium	Natural	5	1.5kg	125mm	400mm	50mm	15w x 10h mm	290mm	VPR-054



VPR-051



VPR-052



VPR-053



VPR-054

## RACE CAR PREPARATION

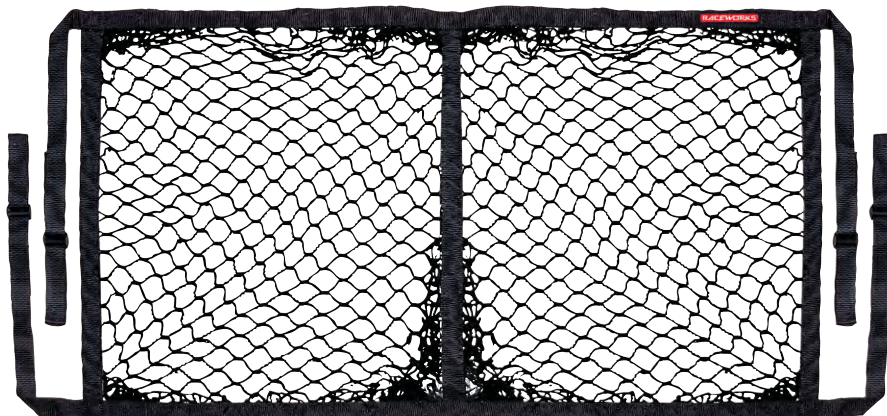
**VPR-047**  
**NET / MESH**  
**HELMET HAMMOCK**



### HELMET HAMMOCKS

- Often seen in rally cars but can be used in all types of motorsport, Helmet Hammocks attach to the roll cage behind the seats, and keep two helmets in good condition during transport.

**VPR-047** net / mesh



**VPR-048** fabric





## RACE CAR PREPARATION

### RACE CAR DECALS

#### DECAL SHEET

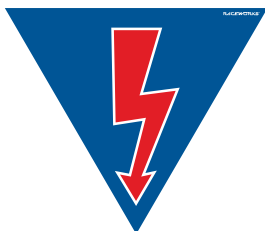
##### VPR-022

- Contains all the regulation stickers you need and more, for your race car.
- Motorsport Australia and AASA approved.

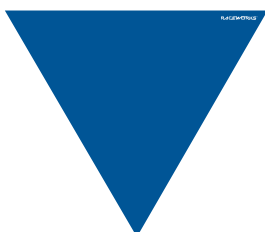
#### MOTORSPORT AUSTRALIA MISCELLANEOUS DECALS

- Separate Battery Isolation and Battery Location Stickers.

##### VPR-023



##### VPR-024



#### NITROUS DECALS

- Suitable for use in Motorsport Australia, AASA, ANDRA and IHRA sanctioned events.

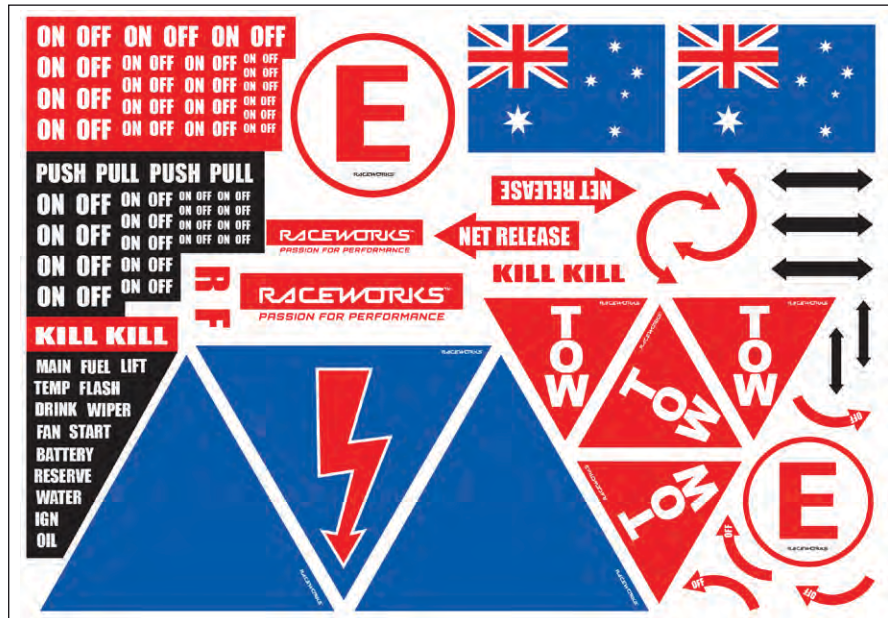
##### VPR-027



#### MOTORSPORT AUSTRALIA DOOR NO. WHITE BOX

##### VPR-028

- 460 x 380mm



### MOTORSPORT AUSTRALIA DAY GLO WINDSCREEN NUMBERS

- Motorsport Australia Regulation Size. 15cm. Fluoro Yellow.

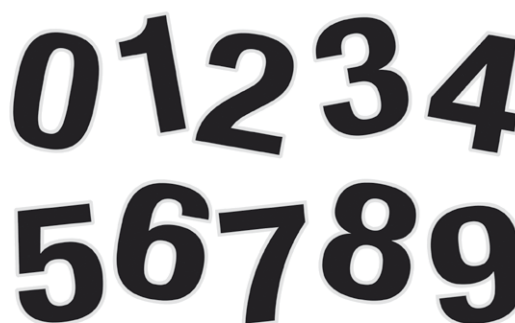
Number	Part No.
0	VPR-025-0
1	VPR-025-1
2	VPR-025-2
3	VPR-025-3
4	VPR-025-4
5	VPR-025-5
6	VPR-025-6
7	VPR-025-7
8	VPR-025-8
9	VPR-025-9



### MOTORSPORT AUSTRALIA DOOR NUMBERS

- Motorsport Australia Sedan Regulation Size. 28cm. Black.

Number	Part No.
0	VPR-026-0
1	VPR-026-1
2	VPR-026-2
3	VPR-026-3
4	VPR-026-4
5	VPR-026-5
6	VPR-026-6
7	VPR-026-7
8	VPR-026-8
9	VPR-026-9





## RACE CAR PREPARATION

### STEERING WHEELS

Raceworks have introduced a range of Motorsport Steering Wheels, designed for offroad use.

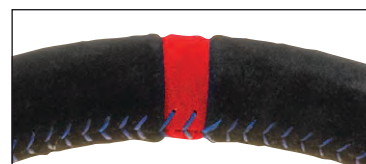
- Available in 350mm in either a Flat or Deep Dish design, they come in both Genuine Leather or Genuine Suede.
- They contain a 6x70mm bolt pattern, similar to other brands such as Grant, NRG, OMP, Sparco and Momo.
- The wheels come without any accessories, however both blanking plates and horn buttons are available.
- Suede Wheels have a Red Top Indicator.
- Leather Wheels are more plain with a Black Indicator.

#### FLAT STEERING WHEELS

Size (mm)	Material	Top Indicator	Stitching Colour	Part No.
350	Leather	Black	Black	VPR-194BK
350	Leather	Black	Red	VPR-194RD
350	Leather	Black	Blue	VPR-194BE
350	Leather	Black	Grey	VPR-194GY
350	Leather	Black	Orange	VPR-194OR
350	Leather	Black	Yellow	VPR-194YL
350	Suede	Red	Black	VPR-195BK
350	Suede	Red	Red	VPR-195RD
350	Suede	Red	Blue	VPR-195BE
350	Suede	Red	Grey	VPR-195GY
350	Suede	Red	Orange	VPR-195OR
350	Suede	Red	Yellow	VPR-195YL

#### DEEP DISH STEERING WHEELS

Size (mm)	Material	Top Indicator	Stitching Colour	Part No.
350	Leather	Black	Black	VPR-196BK
350	Leather	Black	Red	VPR-196RD
350	Leather	Black	Blue	VPR-196BE
350	Leather	Black	Grey	VPR-196GY
350	Leather	Black	Orange	VPR-196OR
350	Leather	Black	Yellow	VPR-196YL
350	Suede	Red	Black	VPR-197BK
350	Suede	Red	Red	VPR-197RD
350	Suede	Red	Blue	VPR-197BE
350	Suede	Red	Grey	VPR-197GY
350	Suede	Red	Orange	VPR-197OR
350	Suede	Red	Yellow	VPR-197YL



VPR-196RD pictured with optional VPR-198 Centre Plate



VPR-197BE pictured with optional VPR-199 Horn Button



### STEERING WHEEL ACCESSORIES



VPR-198

- Blanking Plate for Steering Wheels.
- Commonly used on race cars that don't have a horn.



VPR-199

- Horn Button for Steering Wheels.

## MERCHANDISE

### RACEWORKS CLOTHING



#### SHORT SLEEVE T-SHIRTS

Colour	Size	Part No.
Grey	S	MER-574
Grey	M	MER-575
Grey	L	MER-576
Grey	XL	MER-577
Grey	2XL	MER-578
Grey	3XL	MER-579
Grey	4XL	MER-591
Grey	5XL	MER-592
Black	S	MER-583
Black	M	MER-584
Black	L	MER-585
Black	XL	MER-586
Black	2XL	MER-587
Black	3XL	MER-588
Black	4XL	MER-589
Black	5XL	MER-590

#### LONG SLEEVE T-SHIRTS

Colour	Size	Part No.
Black	S	MER-598
Black	M	MER-599
Black	L	MER-600
Black	XL	MER-601
Black	2XL	MER-602
Black	3XL	MER-603

■ More images can be found at [Raceworks.com.au](https://Raceworks.com.au)

[patrap.com.au](https://patrap.com.au)

## MERCHANDISE

### RACEWORKS CLOTHING



#### HOODIES

Colour	Size	Part No.
Black	S	MER-525
Black	M	MER-526
Black	L	MER-527
Black	XL	MER-528
Black	2XL	MER-529
Black	3XL	MER-530
Black	4XL	MER-531
Black	5XL	MER-532

#### SOFT SHELL JACKETS

Colour	Size	Part No.
Black	S	MER-500
Black	M	MER-501
Black	L	MER-502
Black	XL	MER-503
Black	2XL	MER-504
Black	3XL	MER-505

■ More images can be found at [Raceworks.com.au](http://Raceworks.com.au)



## MERCHANDISE

### RACEWORKS CLOTHING



#### BEANIES

Part No.

MER-566

#### STRAW HATS

Part Number

MER-580

#### CAPS

Peak	Part No.
Curved	MER-581
Flat	MER-582

#### KIDS CAPS

Part No.
MER-512

#### KIDS T-SHIRTS

Colour	Size	Part No.
Black	2	MER-506
Black	4	MER-507
Black	6	MER-508
Black	8	MER-509
Black	10	MER-510
Black	12	MER-511



■ More images can be found at [Raceworks.com.au](https://Raceworks.com.au)

## MERCHANDISE

### WORKSHOP BANNERS



RACEWORKS WORKSHOP BANNER	
Dimensions	Part No.
2000 x 660mm	MER-078

### RACEWORKS STICKERS



RACEWORKS RED	
Dimensions	Part No.
400 x 70mm	MER-103
700 x 110mm	MER-104
1500 x 200mm	MER-119



RACEWORKS PASSION RED	
Dimensions	Part No.
400 x 90mm	MER-115
700 x 160mm	MER-117



RACEWORKS BLACK	
Dimensions	Part No.
400 x 70mm	MER-113
700 x 110mm	MER-114

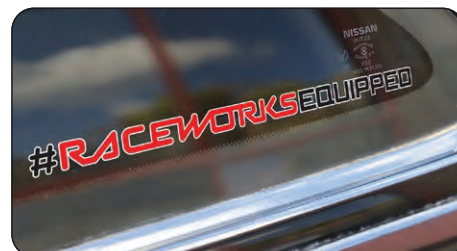


RACEWORKS PASSION BLACK	
Dimensions	Part No.
400 x 90mm	MER-116
700 x 160mm	MER-118

### #RACEWORKSEQUIPPED

RACEWORKS EQUIPPED RED+BLACK	
Dimensions	Part No.
200 x 12mm	MER-105
400 x 24mm	MER-106
700 x 42mm	MER-107

- All Stickers are outdoor UV safe laminated vinyl





# 100 / 120 / 140 SERIES HOSE FITTING

**RACEWORKS™**  
PASSION FOR PERFORMANCE

## TOOLS REQUIRED

- Hose Cutters
- Masking Tape
- Vice
- Vice Jaws
- AN Spanner (Adjustable or combination)
- Spray Lubricant



RWT-010



RWT-027

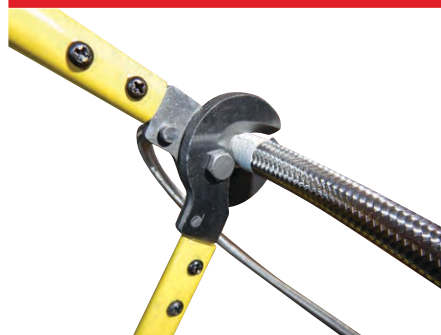


RWT-007BK



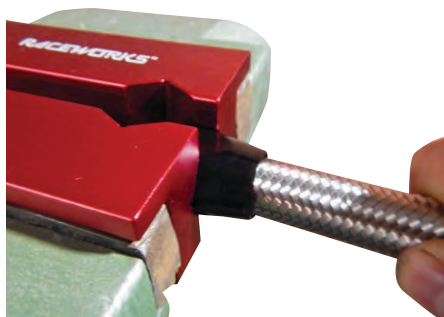
RWT-002RD / RWT-002BK /  
RWT-003 or RWT-028BK

## STEP 1



Wrap Hose with masking tape to prevent braid fraying, and cut to desired length with hose cutters

## STEP 2



Remove tape from hose. Undo the socket from the hose end and secure in vice using the side of your Vice Jaws, with the threaded end facing in towards the vice away from your hose.

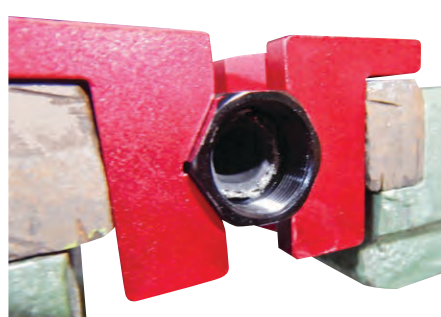
Push hose into the socket using a twisting motion, until the hose is just short of the socket threads. If braid is fraying and not inserting into socket properly, you may leave a **single layer** of masking tape on the hose to prevent this from happening.

## STEP 3



Apply a layer of masking tape onto the hose next to the socket to detect if the hose moves out of the socket during the assembly process.

## STEP 4



Remove the hose and socket from the vice, rotate and secure back into the vice.

Lubricate the threads inside the socket, and on the hose end.

Push the hose end into the socket and engage the threads.

Be careful not to cross thread.

## STEP 5



Using an AN spanner, tighten the hose end on the socket until there is a gap of approximately 1mm between the socket and hose end.

Ensure that the hose doesn't move out of the socket while doing this by observing the tape from Step 3.

## STEP 6



Align the flats on the socket / hose end for a professional looking finish.

## STEP 7



Remove from the vice and repeat at the other end as necessary.



# 200 / 230 / 240 / 260 SERIES HOSE FITTING

**RACEWORKS™**  
PASSION FOR PERFORMANCE

## TOOLS REQUIRED

- Hose Cutters
- Masking Tape
- Vice
- Vice Jaws
- PTFE Hose Olive Installation Tool
- AN Spanner (Adjustable or combination)
- Spray Lubricant



## STEP 1



Wrap Hose with masking tape to prevent braid fraying, and cut to desired length with hose cutters

## STEP 2



Undo the socket from the hose end and slide the socket over the hose, taking note of which end of the socket is threaded and needs to be joined to the hose end.

## STEP 3



Dismantle Olive Installation Tool and identify the correct shaft for the desired size.

## STEP 4



Install the Olive onto the tool, with the tapered section of the olive facing the hose.

## STEP 5



Push the tool into the PTFE liner of the hose, rounding it and seating the olive over the liner, and under the outer braid.

## STEP 6



View of the olive seated in place.

## STEP 7



Slide the socket over the end of the hose to expose the thread.  
Spray the threads with lubricant.

## STEP 8



Fit the hose end into your vice jaws.  
Spray the threads with lubricant.

## STEP 9



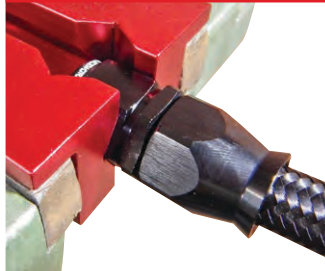
Push the hose over the nipple on the hose end, and engage the threads.  
Be careful not to cross thread.

## STEP 10



Using an AN spanner, tighten the hose / socket on the hose end, until there is a gap of approximately 1mm between the socket and hose end.

## STEP 11



Align the flats on the socket / hose end for a professional looking finish.

## STEP 12



Remove from the vice and repeat at the other end as necessary.

# 400 SERIES HOSE FITTING

**RACEWORKS™**  
PASSION FOR PERFORMANCE

## TOOLS REQUIRED

- Hose Cutters
- Vice
- Vice Jaws
- AN Spanner (Adjustable or combination)
- Small container with hot water



RWT-009



RWT-026



RWT-002RD /  
RWT-002BK /  
RWT-003 or  
RWT-028BK



RWT-007BK

## STEP 1



Cut hose to desired length with hose cutters, and fit hose end into vice jaws.

## STEP 2



Fit hose end into Vice Jaws. Soak the end of the hose in hot water for 30 seconds to soften (Do not use oil or grease as they won't dry).

## STEP 3



Quickly shake as much water off the hose as possible, before pushing the hose over the barb, until it seats snugly under the trim ring. Try and push the hose all the way on in one smooth motion.

## STEP 4



This shows the hose correctly fitted so that it sits snugly under the trim ring.

## STEP 5



Remove from the Vice and repeat at the other end as necessary.



# 600 / 620 SERIES HARD LINE HOSE FITTING

**RACEWORKS™**  
PASSION FOR PERFORMANCE

## TOOLS REQUIRED

- Pipe Cutting Tool
- Vice
- Vice Jaws
- 2x AN Spanners (adjustable or combination)
- Spray Lubricant



RWT-013



RWT-026

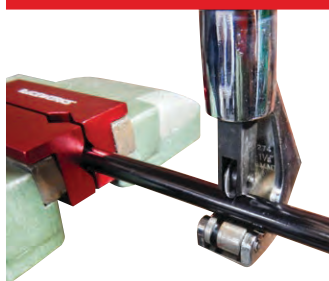


RWT-002RD /  
RWT-002BK /  
RWT-003 or  
RWT-028BK



RWT-007BK

## STEP 1



Rotate pipe cutter around hard line at desired length, gradually tightening, until the pipe is neatly cut.

## STEP 2



Use the deburring tool that is on the top of the cutter. Rotate it inside the hard line to deburr the edge.

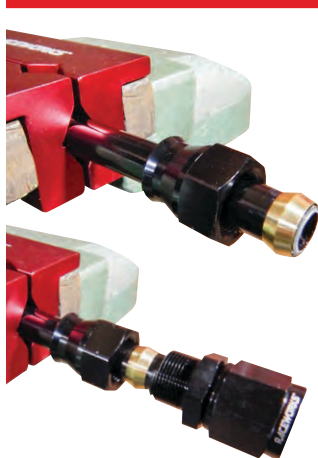
## STEP 3



Sit the line in your vice with the end protruding out of the side, and be careful not to crush the line.

Slide the socket over the line, and take note of which end of the socket is threaded and needs to be joined to the hose end.

## STEP 4



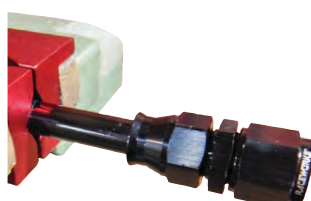
Slide the olive over the line, followed by your hose end. Make sure the hose end bottoms out on the line (if you look inside the hose end you will see a seat that is machined).

## STEP 5



Spray the threads with lubricant. Hold the hose end still with one hand, and turn the socket with the other until it is hand tight.

## STEP 6



Hold the socket with one spanner, and turn the hose end with another, approximately one turn until it feels snug.

## STEP 7



Remove from the vice and repeat at the other end as necessary.



# RWT-012 – 100 / 120 / 140 SERIES HOSE INSTALLATION KIT

**RACEWORKS™**  
PASSION FOR PERFORMANCE

## TOOLS REQUIRED

- RWT-012 Hose Installation Kit
- Masking Tape
- Hose Cutters
- AN Spanner (adjustable or combination)
- Spray Lubricant



RWT-010



RWT-026



RWT-012



RWT-007BK

## EXAMPLE AN-10 HOSE



In this example we are assembling an AN-10 Hose.

## STEP 1



Wrap Hose with masking tape to prevent braid fraying, and cut to desired length with hose cutters.

## STEP 2



Identify the correct hose and fitting holders for the size of hose being assembled.

## STEP 3



Install the socket holder into the round housing.

## STEP 4



Insert the socket into the socket holder.

## STEP 5



Reassemble socket holder.

## STEP 6



Remove the hose holder upper clamp and place the hose in. You may leave a single layer of masking tape on the hose, or remove it. In this example, we have removed it.

## STEP 7



Clamp the hose holder down, tight!

## STEP 8



Turn the handle on the far left, winding the hose into the socket.

# RWT-012 – 100 / 120 / 140 SERIES HOSE INSTALLATION KIT

**RACEWORKS™**  
PASSION FOR PERFORMANCE

## STEP 9



Once wound in, remove hose holder.

## STEP 10



Remove top of Socket Holder, allowing hose and socket to be released.

## STEP 11



Ensure hose is seated in correct position, just shy of the fine threads.

## STEP 12



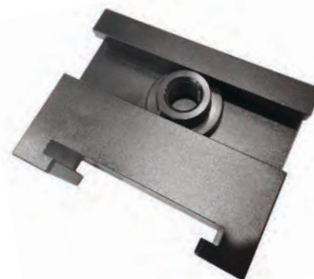
Unwind socket holder off shaft.

## STEP 13



Slide hose holder off leaving a bare platform.

## STEP 14



Get soft jaws ready, and slide nut into the rear of the left soft jaw.

## STEP 15



Slide the soft jaw on and thread the shaft onto the nut.

## STEP 16



Slide the right hand soft jaw on to the base.

## STEP 17



Secure the hose and socket inside the soft jaws.

## STEP 18



Lubricate the threads, before pushing the hose end into the socket, engaging the threads.  
Make sure you don't cross thread!

## STEP 19



Tighten the hose end using your AN spanner, until tight. You will know once it's tight enough as hose will start to rotate. You may hold hose with your left hand and tighten an extra half turn.

## STEP 20



Remove from vice, and repeat process on the other end of the hose.



# RWT-017 TUBE BEAD ROLLER

**RACEWORKS™**  
PASSION FOR PERFORMANCE

## TOOLS REQUIRED

■ RWT-017 Tube Bead Roller ■ Vice

### STEP 1



Mount the bead roller securely in the right hand side of your vice.

### STEP 2



Unwind the Tri-Shaped Handle on top, insert tube between the rollers on the left hand side, and wind the tri-shaped handle back down, to hold the tube in place.

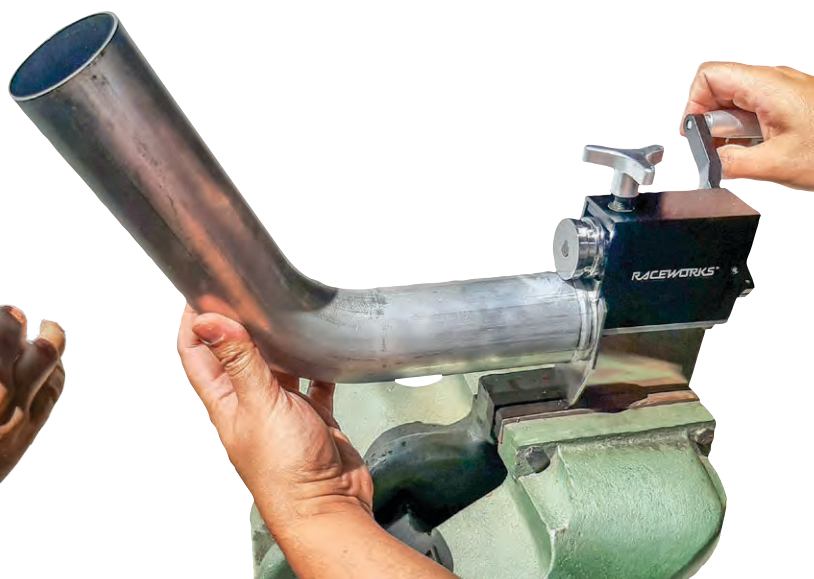
Do not apply a large amount of pressure at this stage.

### STEP 3



Supporting the tube with your left hand, turn the handle on the right to begin the bead roll process. For best results, take your time and gradually apply more pressure to the tri-shaped handle on top.

### STEP 4

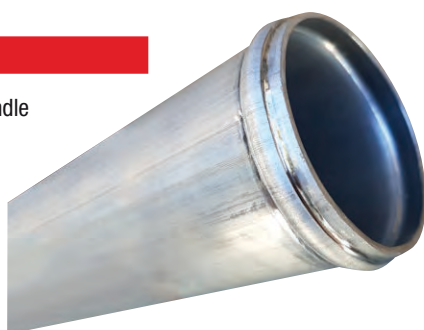


Complete this process until bead is rolled.

### STEP 5

Release the pressure on the tri-shaped handle and remove the tube.

Your bead is now rolled.





# RWT-023 BRAKE FLARE TOOL

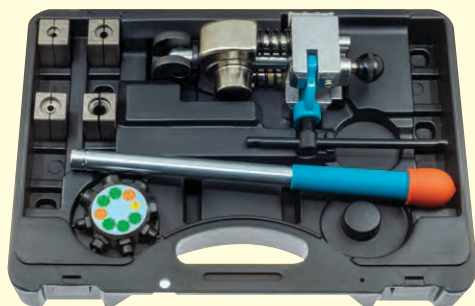
**RACEWORKS™**  
PASSION FOR PERFORMANCE

## TOOLS REQUIRED

- RWT 023 – Brake Flare Tool
- Pipe Cutting Tool ■ Vice

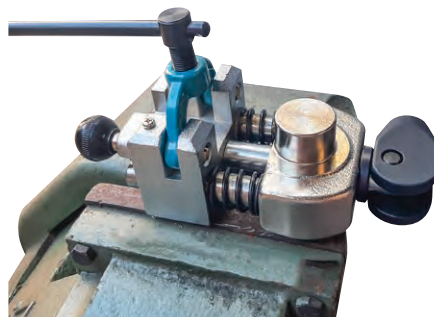


RWT-013



RWT-023

## STEP 1



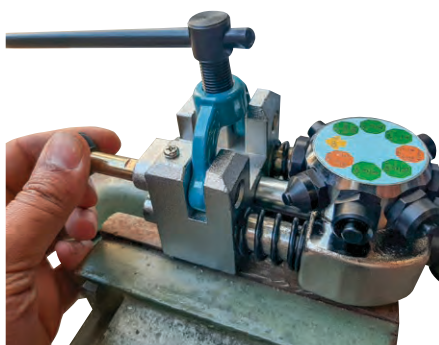
Mount the main unit in your vice.

## STEP 2



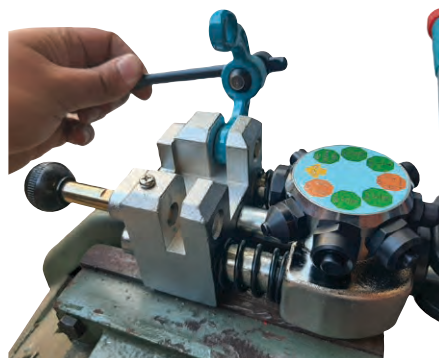
Click the turret into place and push the handle into its holder.

## STEP 3



Slide the locking pin back.

## STEP 4



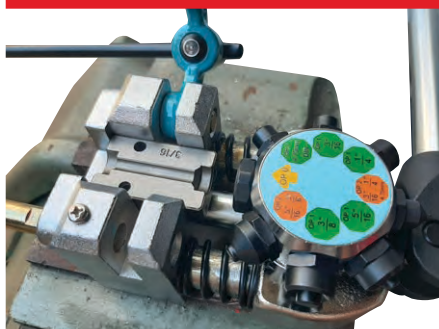
Swing the die press out of the way.

## STEP 5



Select the suitable dies for your tube.  
In this example we are flaring 3/16" steel hard line for brakes.

## STEP 6



Fit the lower die. Note the 45° taper end is used for a double flare.

## STEP 7



Use your cutting tool to cut the hard line in the desired location.

## STEP 8



Deburr the hard line using the deburring tool on top of the cutter.

## STEP 9



Identify which fittings you will be using on your brake line.

Top right are AN-3 tube nuts with integrated sleeves. These require RWT-033 dies.

Bottom left are inverted flare tube nuts which we will use in this example.

## STEP 10

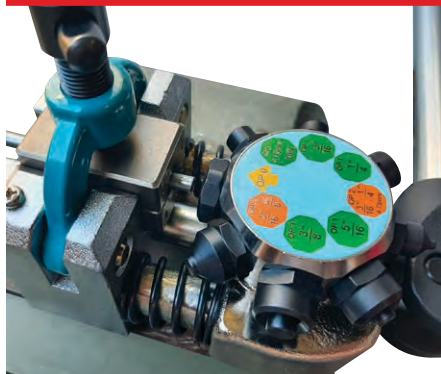


Slide your tube nut onto the line before flaring!

# RWT-023 BRAKE FLARE TOOL

**RACEWORKS™**  
PASSION FOR PERFORMANCE

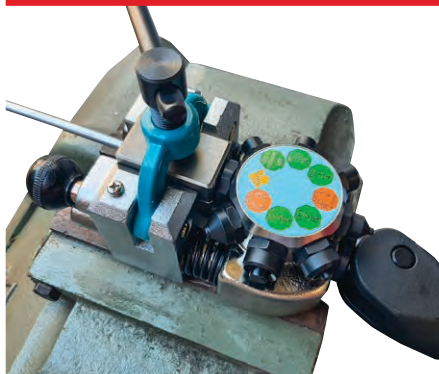
## STEP 11



Slide your tube nut back out of the way and insert your line into the dies. Move the die press into place and lock it in with the locking pin.

Do not apply a large amount of pressure at this stage. Set the turret to "Operation 0".

## STEP 12



Pull back on your handle, which will seat the line into place, ready for flaring.

## STEP 13



Apply a reasonable amount of pressure to the die press by turning the black handle.

## STEP 14



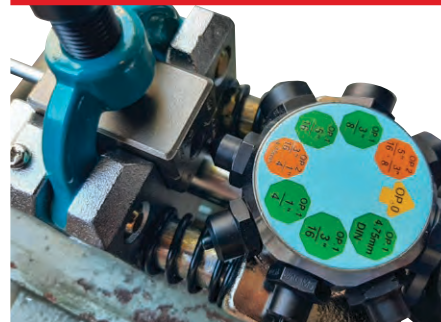
Turn the Turret to "Operation 1".

## STEP 15



Pull back on the handle to make your first flare.

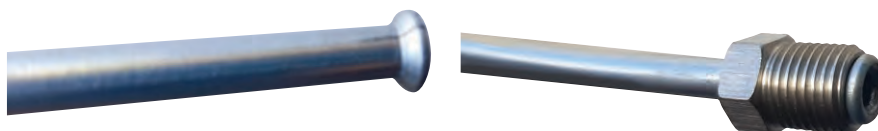
## STEP 16



Turn the Turret to "Operation 2". Pull back on the handle and make your second flare.

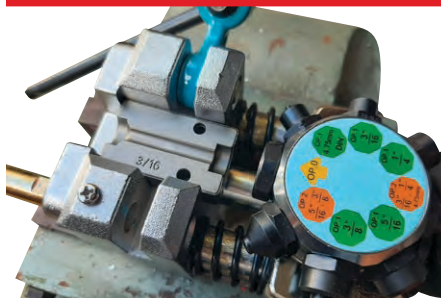
## STEP 17

Disassemble the die press and remove your double flared line.



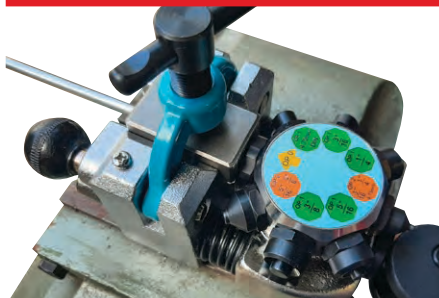
## RWT-023 INSTRUCTIONS (CONTINUED) – BUBBLE / BALL FLARE INSTRUCTIONS

## STEP 1



Follow a similar process to the Double Flare, but use the **square** side of the dies, instead of the 45° tapered side.

## STEP 2



Setup the tube for flaring using "Operation 0".

## STEP 3



Followed by "Operation 1". Note, we don't use Operation 2 for the Bubble Flare.

## STEP 4

Disassemble and you have a completed bubble flare!





# RWT-033 37° DIES FOR FLARE TOOL

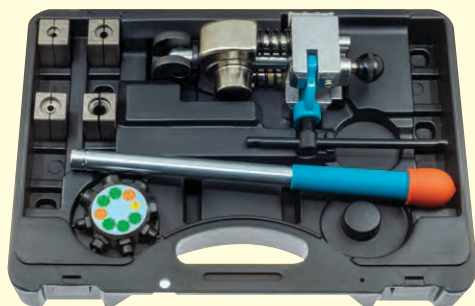
**RACEWORKS™**  
PASSION FOR PERFORMANCE

## TOOLS REQUIRED

- RWT 023 – Brake Flare Tool
- Pipe Cutting Tool ■ Vice



RWT-013



RWT-023

## STEP 1



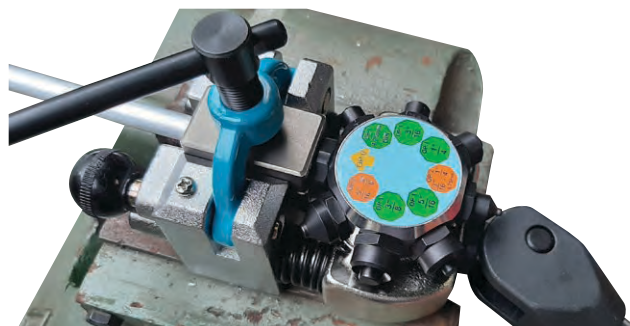
Follow the RWT-023 instructions on page 204, to setup the flaring tool, cut and debur your hard line. Select the suitable 37° dies for your size of hard line. In this example we are using **RWH-600-06**.

## STEP 2



Slide your Tube nut over the hard line first, followed by the Tube Sleeve. Ensure your thread on the nut, and larger diameter section on the sleeve is facing the end of the line that you have cut.

## STEP 3



Fit the line in your dies. Use the 45° turret initially with "Operation 0", to set up the line ready for flaring.

## STEP 4



Switch the turret to the 37° version, and set it to "Operation 1".

## STEP 5



Complete "Operation 1".

## STEP 6



Follow "Operation 1" with "Operation 2".

## STEP 7



Disassemble Die Press. You now have a flared AN Hard Line.



## CRIMP TOOL INSTRUCTIONS



1. Ensure tool is reset by completely depressing handles.
2. Strip insulation from wire.
3. Insert contact into the appropriate size tool, barrel up.



4. Depress handles until contact is held, but not crimped.

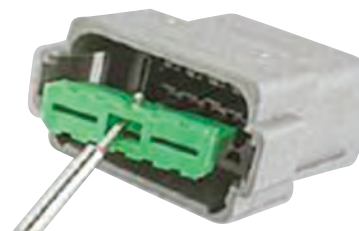


5. Place the stripped end of the wire in the crimp barrel, ensuring there are no stray wire strands and fully depress tool handles.

## REMOVING INTERNAL WEDGEHOOKS

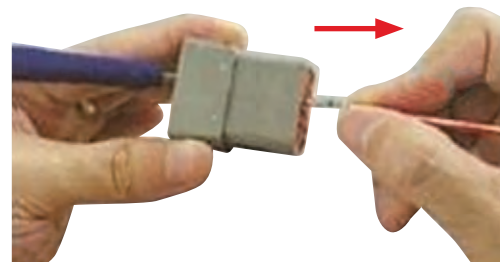


Wedgehook Removal Tool  
Part No. RWT-006



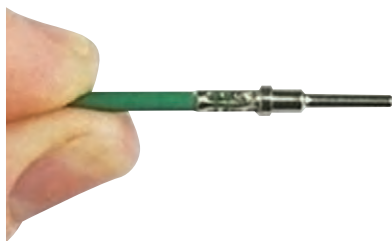
1. Use the end of the tool to hook the wedgehook as shown.
2. With wedgelock sufficiently hooked, firmly pull wedgelock out of connector body.

## REMOVING INDIVIDUAL CONTACTS

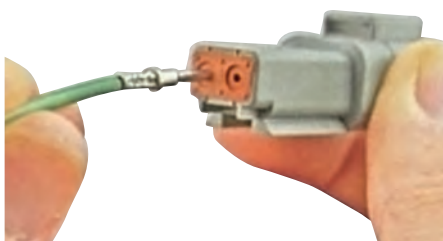


1. Use flat edge of tool to lift tab holding contact.
2. With contact tab held open, gently pull contact out.

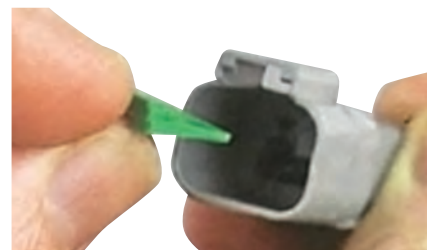
## CONTACT INSERTION INSTRUCTIONS FOR CPS-118 TO CPS-131



1. Hold crimped contact approximately 25mm behind the contact barrel.

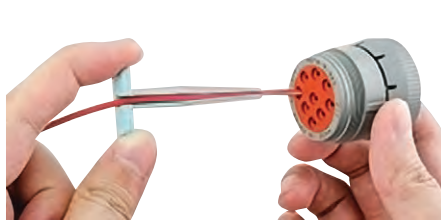


2. Hold connector with rear grommet toward the contact. Push contact into connector grommet until a click is felt. Gently pull back to confirm contact is locked in place.



3. Once all contacts are in place, insert wedgelock. The wedgelock will snap into place securing the contacts.

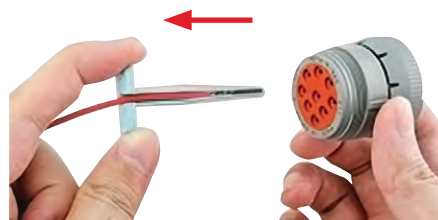
## CONTACT REMOVAL TOOL INSTRUCTIONS



1. With the rear insert toward you, snap appropriate size removal tool over the wire of contact to be removed.



2. Slide tool along the wire into the insert cavity until it engages the contact and resistance is felt.

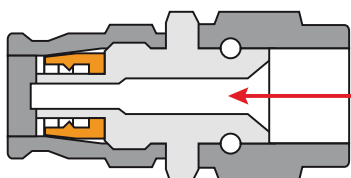


3. Pull contact wire assembly and removal tool out of connector. Do not twist the removal tool when inside the connector.

## RWF-399 OIL RESTRICTOR FITTING

### STEP 1

AN Hose End



Disconnect your hose end from the AN Male Flare Adapter.

### STEP 2

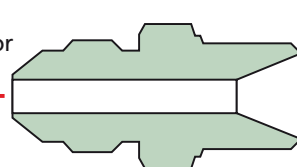
Restrictor



Insert the Restrictor into the hose end until it seats.

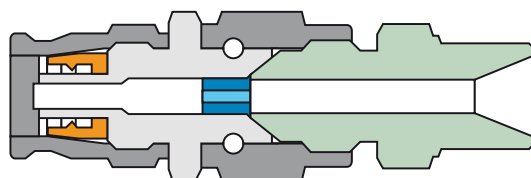
### STEP 3

AN Male Flare



Re-attach hose end to AN Male Flare Adapter, taking care that the Restrictor does not fall out.

Assembled



## LIST OF TERMS

Term	Description
AN	Army / Navy
BSPP	British Standard Pipe Parallel
BSPT	British Standard Pipe Tapered
NPT	National Pipe Thread
NPS	National Pipe Straight
ORB	O-Ring Boss
SFI	Sema Foundation Inc
Motorsport Australia	Previously known as CAMS
CC (Injectors)	Cubic Centimetres/min
LPH	Litres Per Hour

## COMMON CONVERSIONS

Measurement	Conversion
1 US Gallon Per Hour (GPH)	3.79 Litres Per Hour (LPH)
1 Litre Per Hour (LPH)	0.26 US Gallons Per Hour (GPH)
1 Horsepower (HP)	0.75 Kilowatts (KW)
1 Kilowatt (KW)	1.34 Horsepower (HP)
1 Cubic Centimetre Per Minute (CC)	0.1 Pounds Per Hour (Lb)
1 Pound Per Hour (Lb)	10.5 Cubic Centimetres Per Minute (CC)
1 Gram Per Minute (g/min) N-Heptane	1.46 Cubic Centimetres Per Minute in Petrol (cc/min)
1 Cubic Centimetres Per Minute in Petrol (cc/min)	0.68 Grams Per Minute (g/min) N-Heptane
1° Celcius	33.8° Fahrenheit
1° Fahrenheit	-17.22° Celcius
1 Pound Per Square Inch (PSI)	0.07 Bar
1 Bar	14.5 Pounds Per Square Inch (PSI)
	100 Kilopascals
1 Inch	25.4 Millimetres (mm)
1 Millimetre (mm)	0.04 Inches

## HOSE MAINTENANCE / SERVICE LIFE

- Raceworks hoses should be inspected regularly for leaks, abrasion, kinking or any other signs of wear
- Hoses may be cleaned with compressed air, or turpentine. Alternatively, warm water may be used
- Plug the end of hoses using plastic plugs when not in use, keeping the hoses free of dirt and debris



**Hoses have a service life, which is dependent on many factors including the following:**

### BEND RADIUS



- The life of the hose may be shortened when bent tighter than the bend radius specified for the relevant hose in this catalogue

### VACUUM APPLICATIONS



- Large applications should use a Raceworks Internal Coil Spring Support
- If this isn't used, the life of the hose may be reduced

### PRESSURE



- Guide for operating pressure should be followed
- Burst pressure values are from a test environment whereby the hoses haven't been subject to these high pressures for a long period of time
- Pressure surges also need to be taken into account, which may not be readable on common pressure gauges

### TEMPERATURE



- Operating temperatures are specified for each series of hose
- It is recommended to choose a hose with some temperature headroom, to account for unexpected rises in temperature
- Continuous use of hoses at or close to their maximum temperature rating may shorten their life

### CHEMICAL RESISTANCE



- Be mindful of cleaning chemicals used on vehicles
- Exposure of hoses to too harsh of a chemical may lead to degradation and a shortened life

### FLUIDS



- All Raceworks hoses except 700 series are compatible with ethanol/methanol fuels
- Be mindful that these fuels are extremely corrosive and hydroscopic, this means it absorbs water from the atmosphere which can contaminate the fuel system and lead to corrosion
- Fuel stabilisers may help, but the best way is to flush and store with regular unleaded/gasoline



## INJECTOR FLOW CALCULATOR

- Calculate how much injector flow is required for a particular application, assisting with injector selection

### Calculators

#### Injector Flow Calculator

Injector HP/KW Rating  
Calculator

Injector Flow VS Fuel  
Pressure Calculator

Fuel Pump Calculator

General Conversions

**Target Engine HP**   **No. of Cylinders**   **B.S.F.C value**   **Max Duty Cycle %  
(usually no higher than 80%)**

800   ▾ ▴   8   ▾ ▴   .66   ▾ ▴   80   ▾ ▴

### Injector Flow

LB/Hr   82.5

CC   866

### Examples of Brake Specific Fuel Consumption (BSFC)

#### Naturally Aspirated:

Gasoline – .45 to .50

E85 – .63 to .70

Methanol – .9 to 1.0

#### Forced Induction:

Gasoline – .60 to .65

E85 – .84 to .91

Methanol – 1.8 to 2.0

## INJECTOR HP / KW RATING CALCULATOR

- The reverse of the calculator above – Injector flow is known, what power figure can they support?

### Calculators

#### Injector Flow Calculator

#### Injector HP/KW Rating Calculator

Injector Flow VS Fuel  
Pressure Calculator

Fuel Pump Calculator

General Conversions

**Injector Flow Rate**   **Injector Flow Rate**   **B.S.F.C value**   **Max Duty Cycle %  
CC**   **Lb/hr**   **(usually no higher than 80%)**

1500   ▾ ▴   142.9   ▾ ▴   0.875   ▾ ▴   85   ▾ ▴

Numbers Of Injectors   4   ▾ ▴

HP Per Injector   138.8

Total Estimated Engine HP   555

Total Estimated Engine KW   414

### Examples of Brake Specific Fuel Consumption (BSFC)

#### Naturally Aspirated:

Gasoline – .45 to .50

E85 – .63 to .70

Methanol – .9 to 1.0

#### Forced Induction:

Gasoline – .60 to .65

E85 – .84 to .91

Methanol – 1.8 to 2.0

## INJECTOR FLOW VS FUEL PRESSURE CALCULATOR

- I have 1000cc injectors, what will they flow approximately under boost (increased fuel pressure)?

### Calculators

Injector Flow Calculator

Injector HP/KW Rating  
Calculator

Injector Flow VS Fuel  
Pressure Calculator

Fuel Pump Calculator

General Conversions

Rated Flow (cc)	Rated Fuel Pressure (bar)	Actual Fuel Pressure (bar)
1000	3	5

Actual Injector Flow Rate
LB/Hr
CC

LB/Hr

123.0

CC

1291

## FUEL PUMP CALCULATOR

- I know how much power I want to make, how much fuel flow do I need?

### Calculators

Injector Flow Calculator

Injector HP/KW Rating  
Calculator

Injector Flow VS Fuel  
Pressure Calculator

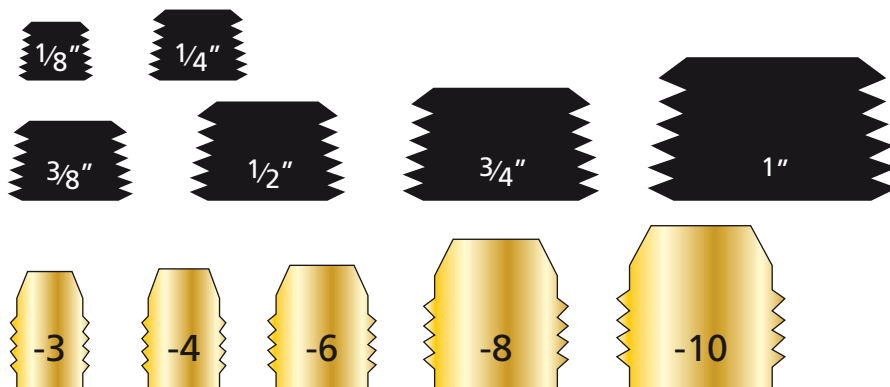
Fuel Pump Calculator

General Conversions

Target Engine HP	500	
Base Fuel Pressure	60	Psi
Boost Pressure	20	Psi
Fuel pump FLOW -NA (Petrol)	<b>175</b> Lph	<b>60.0</b> Psi
Fuel pump FLOW -NA (E85)	<b>215</b> Lph	<b>4.1</b> Bar
Fuel pump FLOW Forced Induction (Petrol)	<b>210</b> Lph	<b>80.0</b> Psi
Fuel pump FLOW - Forced Induction (E85)	<b>256</b> Lph	<b>5.5</b> Bar

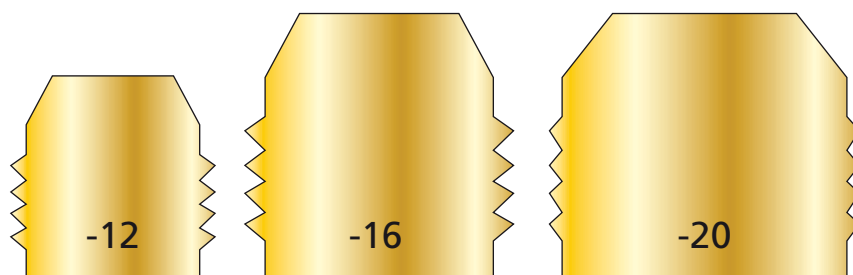
#### MALE NPT SIZE CHART

NPT	Threads Per Inch
1/8"	27
1/4"	18
3/8"	18
1/2"	14
3/4"	14
1"	11.5



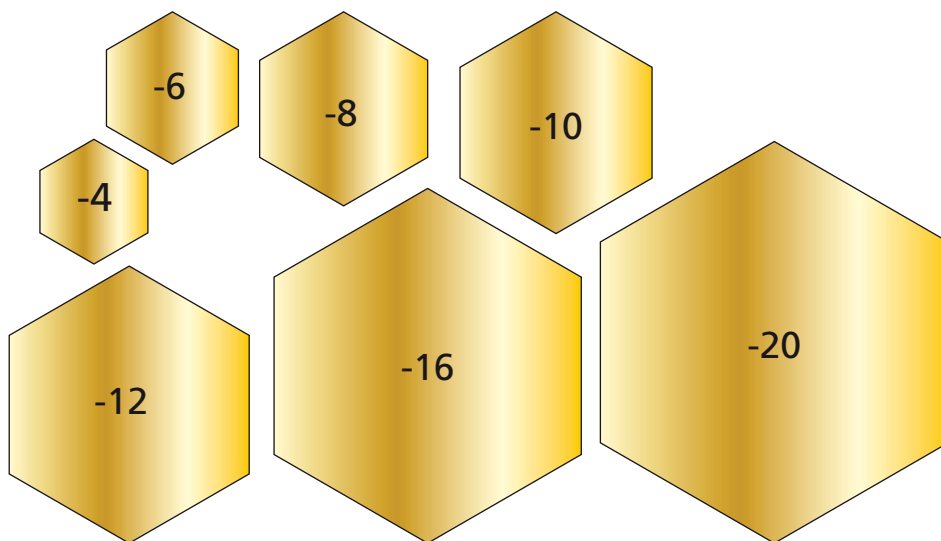
#### MALE AN SIZE CHART

AN Size	Thread Size
-3	3/8" x 24
-4	7/16" x 20
-6	9/16" x 18
-8	3/4" x 16
-10	7/8" x 14
-12	1-1/16" x 12
-16	1-5/16" x 12
-20	1-5/8" x 12

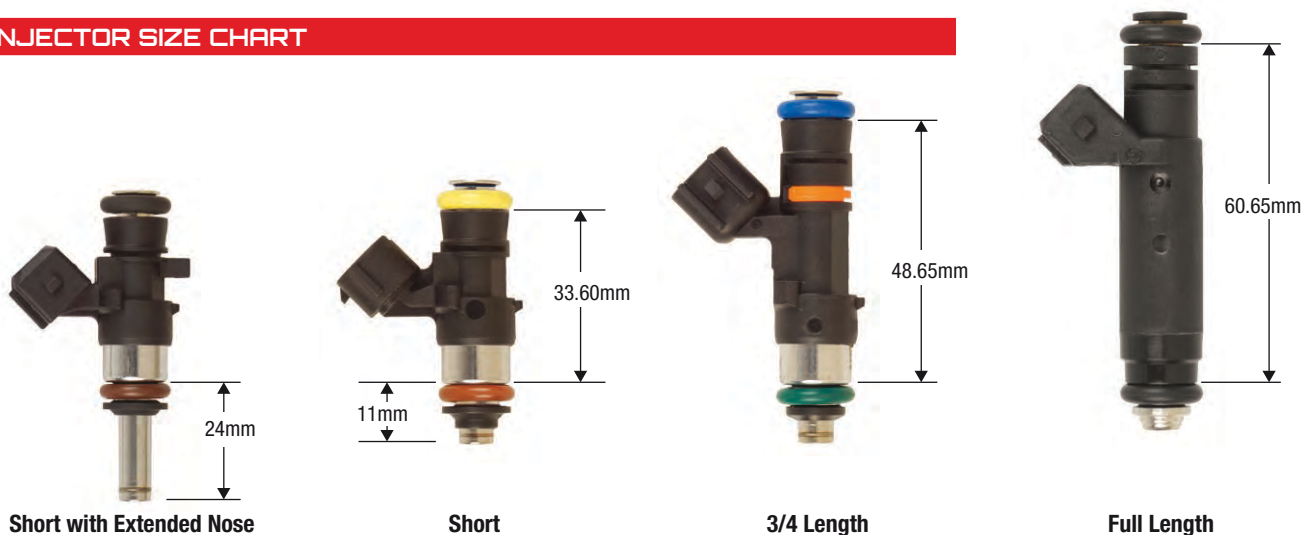


#### AN HEX NUT SIZE CHART

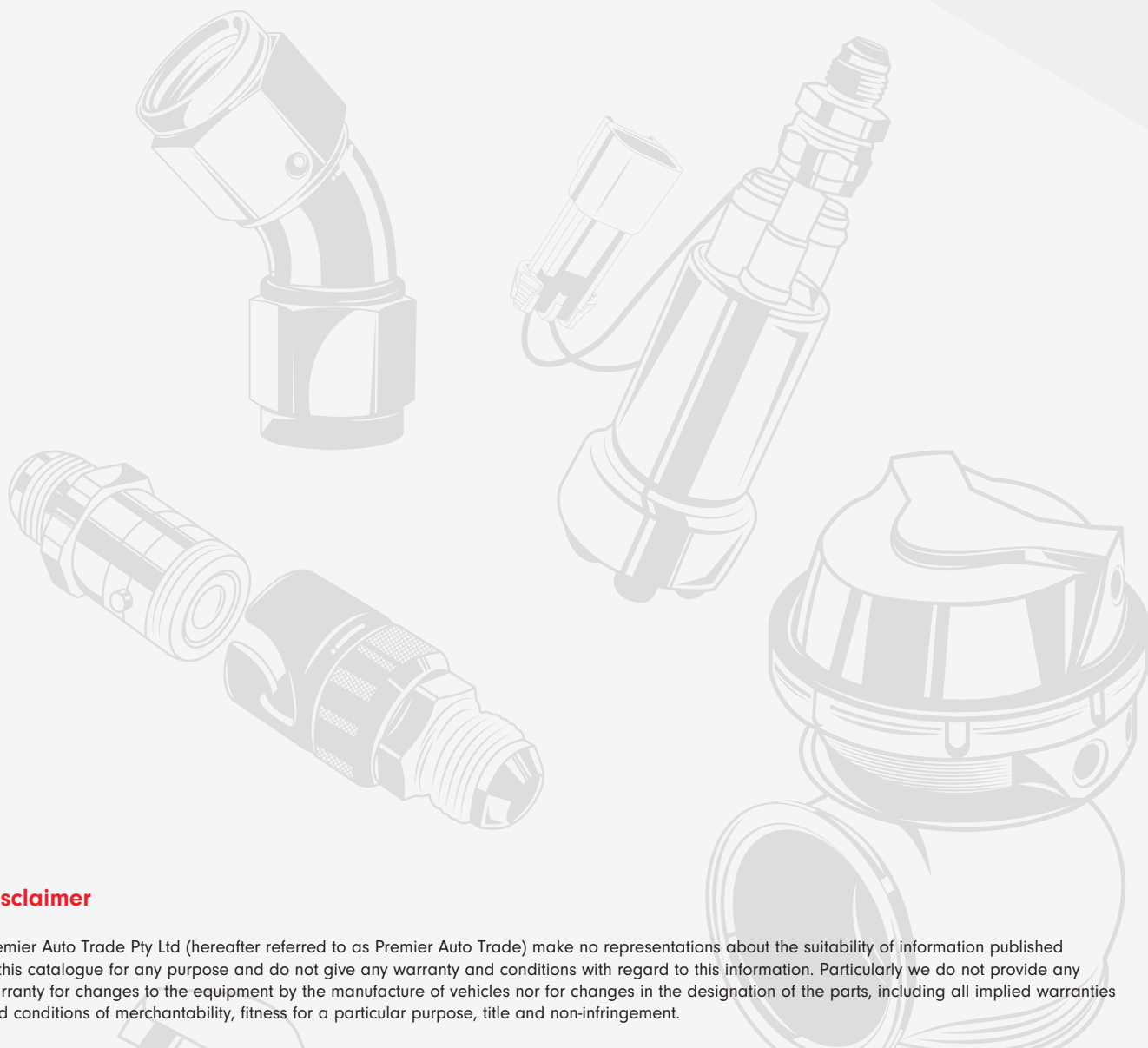
AN Size	Hex Size
-4	9/16"
-6	11/16"
-8	7/8"
-10	1"
-12	1-1/4"
-16	1-1/2"
-20	1-13/16"



#### INJECTOR SIZE CHART







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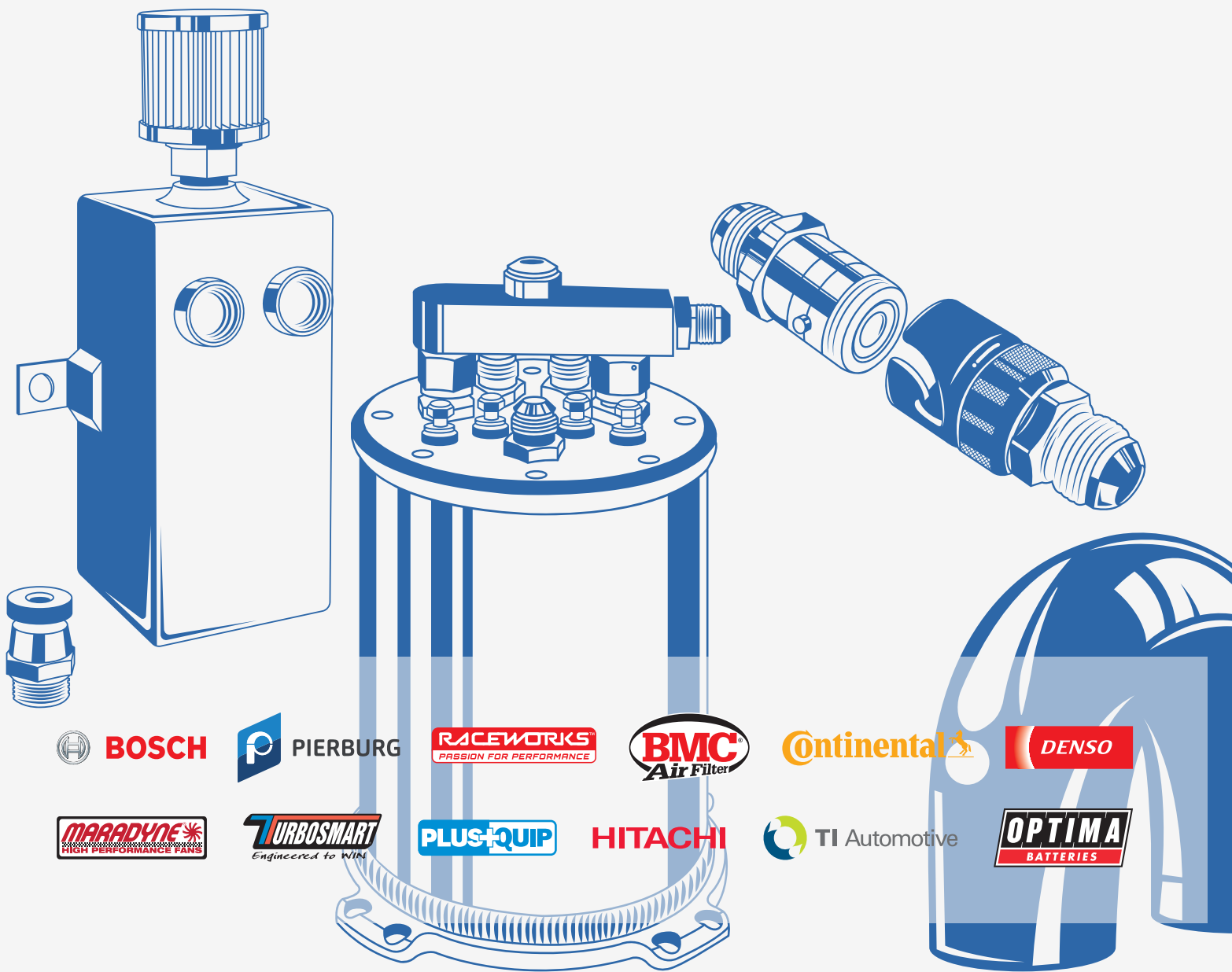
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