#### **Quick Fill Flange for Porsche 991 Cup & Cayman GT4 CS**

This quick fill flange takes the place of the standard equipment flush aviation fuel cap and flange found on Porsche 991 Cup and Cayman GT4 CS fuel tanks. Simply swap out the cap and flange for this quick fill version that accepts ATL and generic "red" bottle valves. Made by the same manufacturer/supplier to Porsche as the standard cap and flange which assures proper fit. Specifications: 101.6mm (4") PCD / 8 hole mounting 61.5mm (2.25") single connection. Gasket and hardware is included.

Porsche Fuel Tank Flange

RF-AA-009 \$349.00



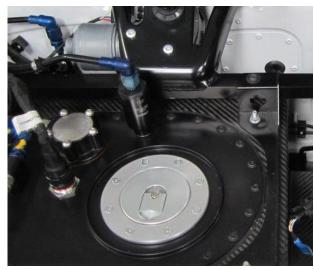


Photo of stock tank with Aviation type fuel cap and flange.





#### Ferrari 355/360 Transmission Water to Oil Heat Exchanger

This is a uprated water to oil heat exchanger that replaces the discontinued (NLA) Setrab #175913 170TOC / Ferrari #180846 unit found on various Ferrari 355/360 models. We managed to retain the overall standard outward dimensions (2.90" x 6.5" with M16 x 1.5 oil connections) while increasing the cooling capacity by fitting a larger surface area 70 tube core. Coolers are copper construction which has strength advantages over the standard brass unit. Now that these cars have more time and milage on them it pays to be preventive by replacing this type of cooler prior to failure which can cause extensive damage to both engine and transmission.

Ferrari 355/360 Transmission Cooler

part# FTC1

\$895.00







#### Adjustable Fuel Pressure Regulator

Designed for the demanding fuel delivery requirements of modern EFI engines, including high performance/modified and forced induction applications; this unit regulates fuel flow requirement, variable from 40-75 psi, and is both gasoline or alcohol compatible. Regulator features a boost/ vacuum port connection (5/32" barb) which will reference fuel pressure to manifold pressure, rasing with boost or reducing with vacuum at a 1:1 ratio. Additional 1/8" NPT provided for gauge or pressure line (plug provided). Fuel connections are (2) -8 ORB (3/4-16") and (1) -6 ORB (9/16"-18) - fittings sold separately below. Machined from high quality 6061-T6 aluminum and finished in black type II anodize. Mounting bracket included.

Adjustable (40-75psi) Fuel Pressure Regulator	FPR1	\$148.00
Additional Fittings:		
-6AN x -6 ORB (generally for return) -6AN x -8 ORB (use for inlet(s) if plumbing in -6AN) -8AN x -8 ORB (use for inlet(s) if plumbing in -8AN) -8AN plug (required for unused port if engine has only one fuel rail)	920-6 920-6-8 920-8 814-8	\$5.95 \$6.95 \$7.90 \$4.10



#### **Quick Connect TEE with -AN on Branch**

-AN size	barb size	part #	price
-6AN	5/16"	QCT5-6	\$41.50
-6AN	3/8"	QCT6-6	\$41.50
-8AN	5/16"	QCT5-8	\$41.50
-8AN	3/8"	QCT6-8	\$41.50

This TEE with -AN on branch and quick connect male/ female on run simply splices into a existing stock plumbing and is very useful for adding performance pumps or other components. Availble for either 5/16" or 3/8" tube size with either -6AN or -8AN male.

#### Female Metric x -AN Male Tube Adaptors

Metric male connections are most commonly concave flair which seal to "globeseal" type female hose ends. When dealing with hard line tubing found on some German and Japanese automotive fuel systems, the metric tube nut will be common M14 or M16 x 1.5 but the tube sealing flair will be convex DIN/ISO or "bubble flair". To address this issue we now make metric female (concave) to -AN male adaptors which make converting to -AN a snap.

M14 x 1.5 Female x -6AN Male AF14AN6C \$18.25 M16 x 1.5 Female x -6AN Male AF16AN6C \$18.25





#### Hose/Cable Cutter

Looking for something to make cutting hoses, even stainless braided, less of a chore? This is the type tool we use everyday in our shops to make hose cutting fast, precise and easy. Available in two sizes: small (12" handle) for up to -8AN and large (22" handle) will cut all sizes up to -20AN. Get a set of these and you will never dread cutting hose ever again!

Hose/Cable Cutter - Small (up to -8AN) HCC1 \$47.75

Hose/Cable Cutter - All sizes (up to -20AN) HCC2 \$69.00

### -AN Fitting Pre-Filters

These 250 micron filters install directly between 37° - AN male flair and -AN female hose end adding filtration for applications that prohibit using in-line filters. Especially good for keeping debris out of pump inlets. Easy to install, easy to clean and reuse.

-6AN / 250 micron filter	11-UF06	\$25.50
-8AN / 250 micron filter	11-UF08	\$25.50
-10AN / 250 micron filter	11-UF10	\$26.50
-12AN / 250 micron filter	11-UF12	\$27.50



#### RACING OIL FILTER MOUNT

This large format remote oil filter mount that uses generously sized 22mm inlet/ outlet which have greater flow capability over 1/2" NPT. The filter stand is four port type which allows for numerous configurations: left in/out, right in/out, right to left, or left to right. The mounting bracket can even be swapped to that the flow pattern can be switched if you need. All in all a very versatile piece. For filters choose any of the Fram (or alike) HP series racing filters in 13/16" thread. Hardware and (2) M22 plugs are included. Choose M22 x -12AN or -16AN male/male unions (sold separately). Note -16AN size fittings can only be used in right/left or left right cross configurations, not both in same side.

HD 4 Port Filter Mount	RFH4HD	\$99.00
uses 13/16" filter		

M22 x	-8AN	Fitting	M22AN08-SE	\$7.90ea
M22 x	-10AN	Fitting	M22AN10-SE	\$7.90ea
M22 x	-12AN	Fitting	M22AN12-SE	\$8.75ea
M22 x	-16AN	Fitting*	M22AN16-SE	\$9.60ea
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\*see note comment in description above.



#### **Specifications**

- All aluminum CNC machined housing
- ◆ Interchangeable flow patterns & mounting
- Large M22 x 1.5 ports are better flowing than 1/2" NPT
- Uses large can racing oil filters
- Includes mounting hardware & plugs
- Made in USA









#### Sandwich Plate Gauge Adaptor

Here's our new billet aluminum sandwich plate type gauge adaptor. Unit installs between block and oil filter or remote filter stand and oil filter providing (2) 1/8" NPT female ports and (1) 3/8" BSP\* port - can also be used to feed oil supply/ pressure to other devices. Plugs are provided for unused ports. Sandwich plate is 1.10" thick, so consider needing close to 1 1/4" additional space for the oil filter. It is also possible to stack this sandwich with an existing oil cooler sandwich, either under or over where space allows. Available for common 3/4"-16 and M20 x 1.5 filters - others available on request.



Gauge Adaptor Sandwich 3/4-16 TGASP2 \$65.00 Gauge Adaptor Sandwich M20 x 1.5 TGASP2F \$65.00

\*3/8" BSP is common to English made mechanical gauges. Also 3/8" NPT or M16 x 1.5 could be "cheated" into this port as thread/pitch is similar enough.



#### New Modern Fuel Compatible Hose

Fuel specific hose designed to handle modern fuels and high fuel system pressures. Hose incorporates a synthetic Flourelastomer liner making it compatible with racing fuels as well as ethanol based fuels (E85 and higher percentages), diesel/bio-diesel. Incorporated liner protects against hose deterioration that leads to fuel permeation (gas smell) and dry hardened hose. Hose is finished in an attractive black nylon braid with blue trace.

- ◆ Certified for use with E-85, diesel, bio-diesel, ethanol and alcohol based-fuels
- Recommended for use in fuel-injection applications
- ♦ 4 ply light weight construction with a thin inner wall synthetic (Flourelastomer) liner that protects against hose swelling and deformation at high temperatures.
- ♦ No more sour gas bleeding brittleness and premature degradation. Hose was developed and SAE tested to eliminate high levels of fuel permeation under extended and extreme conditions.
- ♦ 40% lighter than stainless braided racing hose.
- Hose is reinforced with a lightweight stainless steel braid for use in vacuum applications.
- ♠ Exceeded all SAE-30R9 tests for superior pressure tests, strength and support stability.
- ♦ AN compression style reusable fittings recommended. <u>Not to be used with AN cutter style</u> reusable fittings. Hose should not be submerged in fuel or used inside fuel tanks

Link to Hose Specs and Pricing



#### Thermostatic Sandwich Plate BRZ/FR-S/GT86

Mocal is first to the market with our thermostatic oil cooler sandwich plate kit for new 2.0L Subaru (FA20) powered BRZ/FR-S/GT86 type cars. We have been working for a number of months with tuners and race teams regarding the need for proper oil cooling on these engines, noting due to their high revving nature oil temps can reach levels that cause the engine management to reduce performance. Get the most from your standard or modified engine by adding a highly efficient Mocal or Setrab oil cooler and control oil flow with a genuine Mocal thermostatic sandwich plate. Built in thermostat (185 degree) accurately controls oil flow to the cooler allowing for quick engine warm up plus oil system protection in cold climates.

Kit for 2.0L (FA20) engine includes: sandwich plate w/built in thermostat, interlocking 25mm spacer required for proper height/clearance, lengthened 20mm x 1.5 filter extension, large section o-rings. Fluid connections are ORB 1/2" BSP available to either -8AN or -10AN sold separately below.



description	part#	price
Sandwich Plate Kit  20mm x 1.5" filter thread  Fluid Conne	SP1T-FA20	\$169.00
Union* 1/2" BSP X -10AN Union* 1/2" BSP x -8AN Seal* for Union *(2) required	BM810A BM808A DS13/16	\$7.25 \$7.25 0.90c

NOTE: For use with water to oil coolers, a non thermostatic version of this part is also available as part # SP1-FA20 (\$129.00)



## We assemble custom hoses



Need a hose made? We assemble all types of hoses AN -3 to -20, you provide the specifications and quantities and we do the rest. Choose from braided stainless or lightweight hose with reusable or swage-on hose ends; socketless hose with push-on or swage-on hose ends; stainless TFE lined hose with reusable or swage-on hose ends. Contact our sales department for a quote.



Although originally used on GM and Chrysler EFI fuel systems, these types of quick connects are turning up on all sorts of modern vehicle fluid systems, both domestic and foreign. The male and female half plug together sealing on two o-rings and are secured with a plastic clip retained in the female half of the connector.

#### Quick Connect Female x -6AN Male



-AN size	tube size	part #
-6AN -6AN	3/8" 5/16"	QCF-6 QCF5-6
Replace 5/16" size 3/8" size	Z800-005 Z800-006	

GM/Chrysler type EFI fuel systems, this female half quick connect plugs into male ends converting to -AN6 male. Note: clip included - plastic clips should be changed with each use.

#### **Quick Connect Male x -6AN Male**



-AN size	tube size	part #
-6AN	3/8"	QCM-6
-6AN	5/16"	QCM5-6

GM/Chrysler type EFI fuel systems, this male half quick connect plugs into female ends converting to -AN6 male.

Here is a selection of standard O.E. type GM/Chrysler fuel line female quick connectors. These are normally used with Nylon tubing, but can be fit to standard rubber 3/8" and 5/16" rubber hose with clamps. We can also swage this type of end into other types of hose as a custom job - inquire.

#### **Quick Connect 90 Degree**



5/16" 5/16" Z800-081 5/16" 3/8" Z800-092 3/8" 3/8" Z800-086	female size	barb size	part #
0.0 0.0 0.0	5/16"	3/8"	Z800-092

#### **Quick Connect Straight**



female size	barb size	part #
5/16"	5/16"	Z800-080
5/16"	3/8"	Z800-084
3/8"	3/8"	Z800-082

#### 30 and 60 degree Hose Ends

We are happy to announce the availability of 30 and 60 degree hose ends to our popular titanium and black hose end line. Now we have complete coverage of all angles which now include: straight, 30, 45, 60, 90, 120, 150, and 180 degree angles for either stainless braid and push-on hose.

#### 30 Degree Swivel Hose End



-AN size	part #	price \$
-4AN	T30-4	TBA
-6AN	T30-6	\$16.05
-8AN	T30-8	\$18.95
-10AN	T30-10	\$20.75
-12AN	T30-12	\$25.45
-16AN	T30-16	TBA
-20AN	T30-20	TBA

#### 60 Degree Swivel Hose End



	-AN size	part #	price \$
	-4AN	T60-4	TBA
	-6AN	T60-6	\$16.05
	-8AN	T60-8	\$16.45
	-10AN	T60-10	\$18.75
	-12AN	T60-12	\$21.90
	-16AN	T60-16	TBA
	-20AN	T60-20	TBA
- 1			

#### 30 Degree Push-on Hose End



part #	price \$
P30-4	ТВА
P30-6	\$14.40
P30-8	\$16.50
P30-10	\$19.30
P30-12	\$21.15
	P30-4 P30-6 P30-8 P30-10

#### 60 Degree Push-on Hose End



	-AN size	part #	price \$
	-4AN	P60-4	ТВА
ı	-6AN	P60-6	\$14.40
ı	-8AN	P60-8	\$16.50
ı	-10AN	P60-10	\$19.30
ı	-12AN	P60-12	\$21.15
- 1			

#### Male Y-Fitting

These multi purpose Y-Fittings are CNC machined from 6061-T6 aluminum and come in a variety of sizes. Stocking color is black, but we can offer alternate colors (red or blue) in minimum small batch quantities.

description	part #	price \$
MALE Y -3-3-3	73333	\$22.25
MALE Y -4-3-3	73433	\$22.25
<b>MALE Y -4-4-4</b>	73444	\$22.25
<b>MALE Y -6-4-4</b>	73644	\$27.90
<b>MALE Y -6-6-6</b>	73666	\$27.90
<b>MALE Y -8-6-6</b>	73866	\$31.60
<b>MALE Y -8-8-8</b>	73888	\$31.60
<b>MALE Y -10-8-8</b>	73188	\$34.90
MALE Y -10-10-10	73111	\$34.90
<b>MALE Y -12-8-8</b>	73288	\$39.80
<b>MALE Y -12-10-10</b>	73211	\$39.80
MALE Y -12-12-12	73222	\$42.75



FireFlex silicone jacketed fiberglass sleeving is the choice of professionals in motor racing and other industries where protection from constant temperatures approaching 500°F is mandatory. In aviation, almost every engine - turbine, turboprop or piston; civilian and military - uses FireFlex to protect critical hoses and wiring in the event of an engine compartment fire.

FireFlex fiberglass/silicone sleeving is engineered to protect plumbing (hoses), cables and wire harnesses from damage due to exposure to extreme heat, open flame, molten splash and welding sparks. The thick, high temperature fiberglass sleeve is jacketed with a non-permeable, heavy silicone coating that is flexible enough to follow tight radius curves, resists all automotive chemicals and solvents, and provides a substantial level of abrasion and puncture protection.

FireFlex is completely non-conductive, will not melt, delaminate, become brittle or support combustion under normal conditions, and provides a professional level solution to thermal protection needs in any application.



Silicone self-bonding, fire & water resistant tape for sealing end cuts.



Hose Size (I.D.)	part #	price \$
-3 TE (.25")	FF-3T	2.95 ft.
-4 TE (.38")	FF-4T	3.10 ft.
-4 TE (.38")	FF-4	3.20 ft.
-6AN (.63")	FF-6	4.05 ft.
-8AN (.75")	FF-8	4.30 ft.
-10AN (.88")	FF-10	4.85 ft.
-12AN (1.0")	FF-12	5.55 ft.
-16AN (1.25")	FF-16	6.05 ft.
-20AN (1.5")	FF-20	6.95 ft.

Additional price discounts apply for quantities over 30, 50 and 100 feet (each size). Diameters of up to 4" i.d. are available as special order (inquire with size requirement for price).

Silicone Tape	part #	price \$
36 foot roll	FFT-R	19.40
36 foot roll 1 foot length	FFT-1	1.00

#### **SPECIFICATIONS:**

Operating Temperatures: Minimum Continuous -65°F/-54°C, Maximum Continuous (MIL-I-23053) 500°F/260°C,

Melt (ASTM D-2117) 2.048°F/1,120°C

Flammability Rating: Non-Flammable Recommended Cutting: Scissor of Knife

Wall Thickness: .072"

Abrasion Resistance: Extermely High

Chemical Resistance: (1) No Effect, (2) Little Effect, (3) Affected, (4) More Affected, (5) Severely Affected
Aromatic Solvents (1), Alipahtic Solvents (1), Chlorinated Solvents (1), Weak Bases (1), Strong Bases (1), Salt Water (1),
Hydraulic Fluid (MIL-H-5606) (1), Lubricating Oil (MIL-A-8243) (1), De-Icing Fluid (MIL-A-8243) (1), Strong Acids (2),
Strong Oxidants (2), Esters/Keytones (1), UV Light (1), Petroleum (1), Fungus (ASTM G-21) (1), Salts (1).

#### Banjo Adaptors for Setrab Oil Coolers

Banjo type cooler adaptors are very handy for space limited installations with Setrab brand (22mm female bung) oil coolers. These new cooler adaptors are available in two sizes: 22mm x -10AN male and 22mm x 8AN male and measure only 1.75"off the top plate of the cooler, making them the most compact connection available. Components are lightweight, high strength aluminum, supplied in a black anodized finish. Made in USA, priced each.

description	part #	price \$
Banjo -10AN	BJ2210M	\$25.50
Banjo -8AN	BJ228M	\$25.50
Banjo Bolt M22	BJBM22	\$12.95
Seal/Washer*	DS-M22	.90c
*2 required		

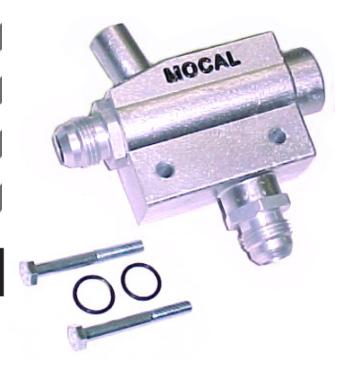
#### More Banjo Posibilities

Our GM LS type oil cooler take off with thermostat (see next page) is also tapped 22mm x 1.5 and can be fitted with one or two banjos in place of the straight union adaptors. This is particularly helpful in space limited installations. We have had a few customers, either using large tube headers or doing and engine swaps, that needed this configuration.



#### **Short Run Threaded Adaptors**

Looking for something strange that does not exist? We can help. First, we stock thousands of fittings and adaptors - far beyond the common items in most catalogs, and we have access to sources from around the world. Often customers come to us after being told what they require, "does not exist", only to find we either have, or can get, exactly what they want. The other option is to make it. We have the ability to manufacturer short runs (as little as 100 pieces) of most threaded fluid products and at competitive prices. Custom colors available too. Call for more information, or a quote.



#### **Chevy LS Series Thermostatic Oil Take-off**

With over a year in development and joint testing with GM, we are proud to announce our LS series thermostatic oil take-off plate. The Mocal thermostat is the first, and only, oil take off for the GM LS series engines to incorporate a thermostatic control that automatically regulates oil flow to connected cooling devices and is the answer when installing oil cooling on high performance engines that see street/ track use in varying climates and conditions. The thermo simply bolts in place of factory gauge sender and operates by bypassing oil until minimum temperature (200f) are met before sending full oil flow to the cooler(s). Units are threaded for M22 x 1.5 female oring boss fluid connections (included) with provision for factory M12 x 1.5 sender; includes required hardware and oring/gaskets.

application	port thread	part#	price
Chevy LS Series*	M22x1.5	AOTGM	\$183.00

\*1997 to present LS Series engines (Gen III/IV) include: LS1/LS6, LS2, LS3, LS7, L76/L92/L93, LQ4/LQ9, C5R and LSX Fittings for fluid connection are included (specify -8AN, -10AN or -12AN).

#### Remote Filter with Thermo Sandwich Plate?

We have been asked this question enough lately to discuss the option. Although not a concept we initially think of using a sandwich plate for, there is certainly no problem mounting one between a filter and remote filter stand (as pictured). As engine compartments become more and more cluttered and room around stock oil filter locations less generous, we see this concept catching on. Simply fit a takeoff plate in place of the stock oil filter and plumb hoses to the filter stand. Attach a thermo sandwich plate to the filter stand and screw on a filter connecting hoses from the sandwich plate to and from the cooler. This results in less hose connections than using one of our traditional in-line thermostats and likely takes up less space. So if plumbing for a remote filter is something you either want, or need, adding thermostatic oil control is no more difficult than screwing on sandwich plate. As there are many remote filter mount and takeoff plate options, feel free to contact us to discuss your needs.



#### **Lightweight Swivel Hose Ends for Teflon Hose**

Because today's fuels contain a wide variety of unpublished additives and increasing amounts of alcohol, accelerated hose degradation including: vapor, weeping, and swelling can occur with traditional rubber based hose products. This issue is best addressed by using PTFE (Teflon) lined hose which is inert to all fluids used in motor vehicles. This type of hose has long been the standard for -3AN and -4AN high pressure brake and hydraulic applications, however in the larger -6AN and -8AN sizes it lacks popularity due to a limited range of hose fittings (usually heavy steel non-swivel industrial type fittings). This is



why we are happy to announce the immediate availability of our range of -4AN, -6AN and -8AN light alloy swivel hose ends specific for industry standard PFTE (Teflon) lined stainless steel braided exterior hose. We are currently stocking fittings in our house color (black/silver) and will likely have (red/blue) in the near future.

Link to Hose

#### Straight Hose End For Teflon Hose



-AN size	part #	price \$
-4AN	TS-4T	\$6.65
-6AN	TS-6T	\$6.95
-8AN	TS-8T	\$8.20

#### 45 Degree Hose End For Teflon Hose



-AN size	part #	price \$
-4AN	T45-4T	\$13.75
-6AN	T45-6T	\$16.80
-8AN	T45-8T	\$20.55

swivel type hose end

#### 90 Degree Hose End For Teflon Hose



-AN size	part #	price \$
-4AN	T90-4T	\$13.75
-6AN	T90-6T	\$16.80
-8AN	T90-8T	\$20.55

swivel type hose end



#### In-Line Fuel Filters

We have often wondered why most fuel filters are so large, only to contain an element the size of a Quarter. Mocal address this issue with a series of fuel filters of minimal size and weight, and without sacrificing performance. Designed for the most demanding street or race applications, Mocal fuel filter assemblies are machined from durable 6061 billet aluminum; a Viton o-ring sealed single end cap design offers easy access to a cleanable 40 micron wire mesh bi-directional disk element with a flow rate of up to 95 GPM. The best part is their slim diameter (1 1/4") and compact overall length (2 1/2") allows them to fit almost anywhere. Fluid connections are available in -6AN or -8AN male and 5/16" or 3/8" push-on hose to fit even the most basic fuel systems. Weight is only 1.8oz (50g).

Fuel Filter (40m) -6AN Male	AF7-6	\$42.50
Fuel Filter (40m) -8AN Male	AF7-8	\$42.50
Fuel Filter (40m) 5/16" push-on	AF7-5P	\$42.50
Fuel Filter (40m) 3/8" push-on	AF7-6P	\$42.50

#### Stainless Braided Brake Hoses

BAT competition brake hoses incorporate a stainless braid exterior over a teflon interior to keep line expansion "flexing" to a minimum. This greatly reduces the "spongy" pedal feel common with standard rubber brake hoses. Our stainless lines are assembled from genuine Aeroquip AN-3 hose with premium (DOT approved) swage ends installed. All hoses include O.E. strut mount bushings and any required "bumpers" for a proper secure fit; we feel this is a very important feature - definitely not a situation where a zip-tie will do. We have a list of applications for most vehicles and can do custom specification lines with a supplied sample or drawing.



# B.A.T. Inc.

#### Performance Industry Trade Show 2013

PRI is the largest show of it's type anywhere in the world; with over 4,000 booths covering 1 million square feet. The 2013 show is in Indianapolis at Indiana Convention Center December 12th - 14th 2013. As this show is "trade" related, attendees must provide legitimate (automotive related) business credentials. BAT Inc. will be there representing Mocal Oil Control Systems in booth 4405. We hope to see you there!

**BAT** inc. 7630 Matoaka Road. Sarasota, FL 34243 • phone (941) 355-0005 • fax (941) 355-4683