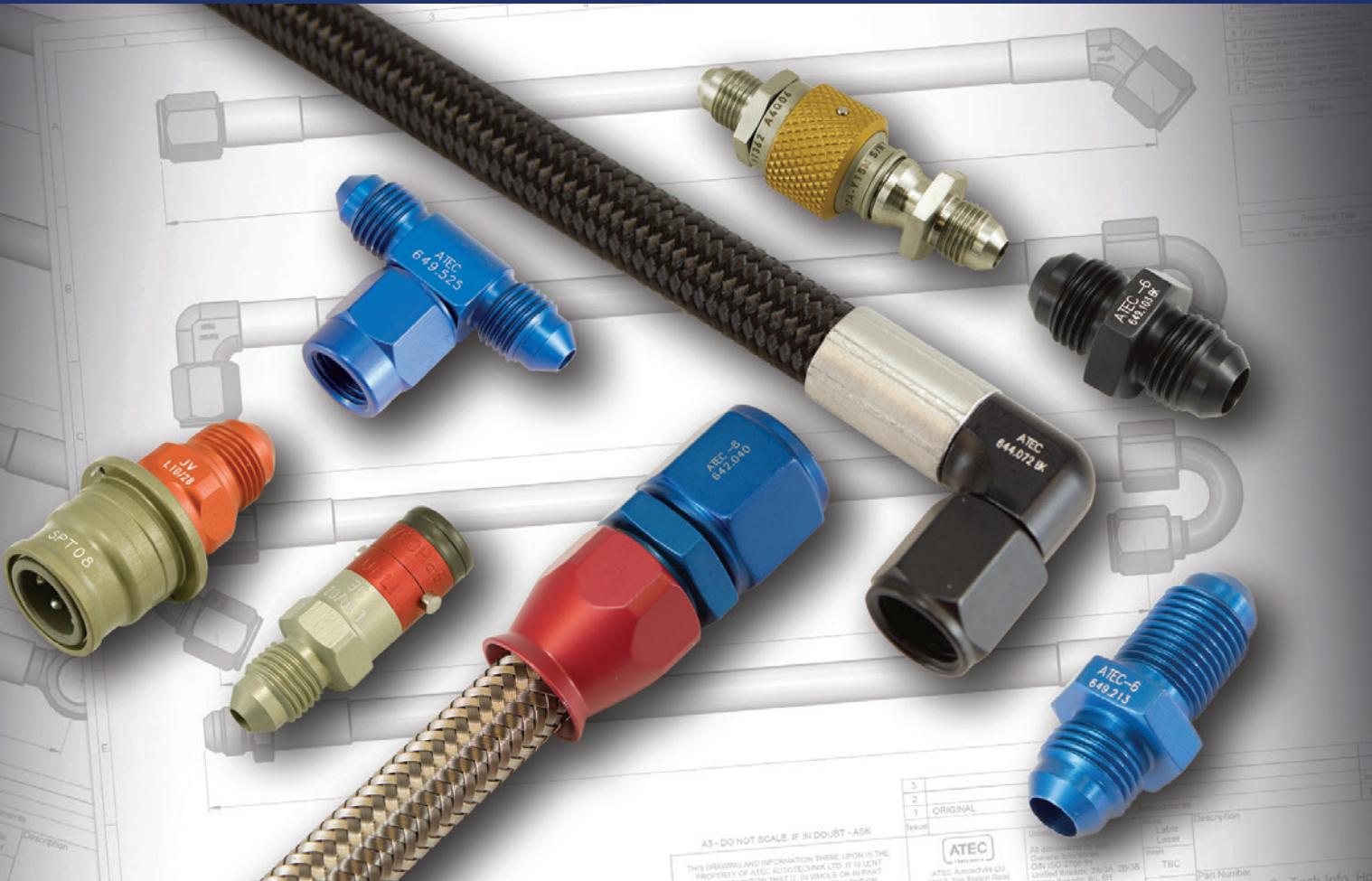


» Issue 2



## Total Performance, Total Control

35 years of industry experience  
German precision engineering  
Unrivalled design & manufacturing excellence  
Off-the-shelf & bespoke components  
The industry standard for fluid transfer systems  
ISO accredited to 9001

[atecautotechnic.com](http://atecautotechnic.com)

# About us

**Established in 1979 in Neustadt, in the Rheinland-Pfalz region of Germany and in Silverstone in 1997. With the UK office based in Brackley at the Heart of the "Motorsport Valley" in the UK, we are recognized as being at the forefront in the development of products for the fluid transfer market.**

All our hose ends and fittings are manufactured in our factory in Germany where product integrity can be guaranteed.

ATEC have an extremely well equipped machine shop facility as well as CNC bending, welding and brazing facilities on site. ATEC only use material sourced from the leading suppliers to the highest possible specifications ensuring every product that leaves the factory is of the highest standard.

Both locations carry extensive stocks of standard parts on the shelf which includes huge range of unique adaptors, tee pieces, banjos and bolts. In addition to our standard range of products we produce bespoke components and assemblies to tight deadlines for a range customers with exacting standards.

ATEC pursue constant product development working with the highest levels ensuring an innovative approach to any installation.

ATEC are also stockists of Staubli & Symetric dry breaks and suppliers of all leading Motorsport brands including Parker, Bosch, Adel Wiggins, Stratoflex, Setrab and Mocal.

We hope you enjoy using our new catalogue and website look forward to hearing from you soon!

## ATEC Facilities:

### Germany

ATEC Autotechnik GmbH H.Q.,  
Assembly & Global Stores

ATEC Autotechnik GmbH  
Design & Production

### United Kingdom

ATEC Autotechnic Ltd.  
Assembly & Design

## Representation:

Austria  
Belgium  
Denmark  
Finland  
Greece  
Italy  
Norway  
Portugal  
Sweden  
Switzerland

# }} Our Mission

At ATEC we are committed to manufacturing the best flexible hoses, hard-lines and fittings for racing cars. Confidence in our product and satisfaction in our service are core to our beliefs.

We work closely with our customers and suppliers to forge strong working relationships. This ensures products and projects are delivered on time, right first-time.

Our operational systems are externally checked and meet the requirements of the ISO9001 standard. We continually review our business model, seeking opportunities to improve our processes.

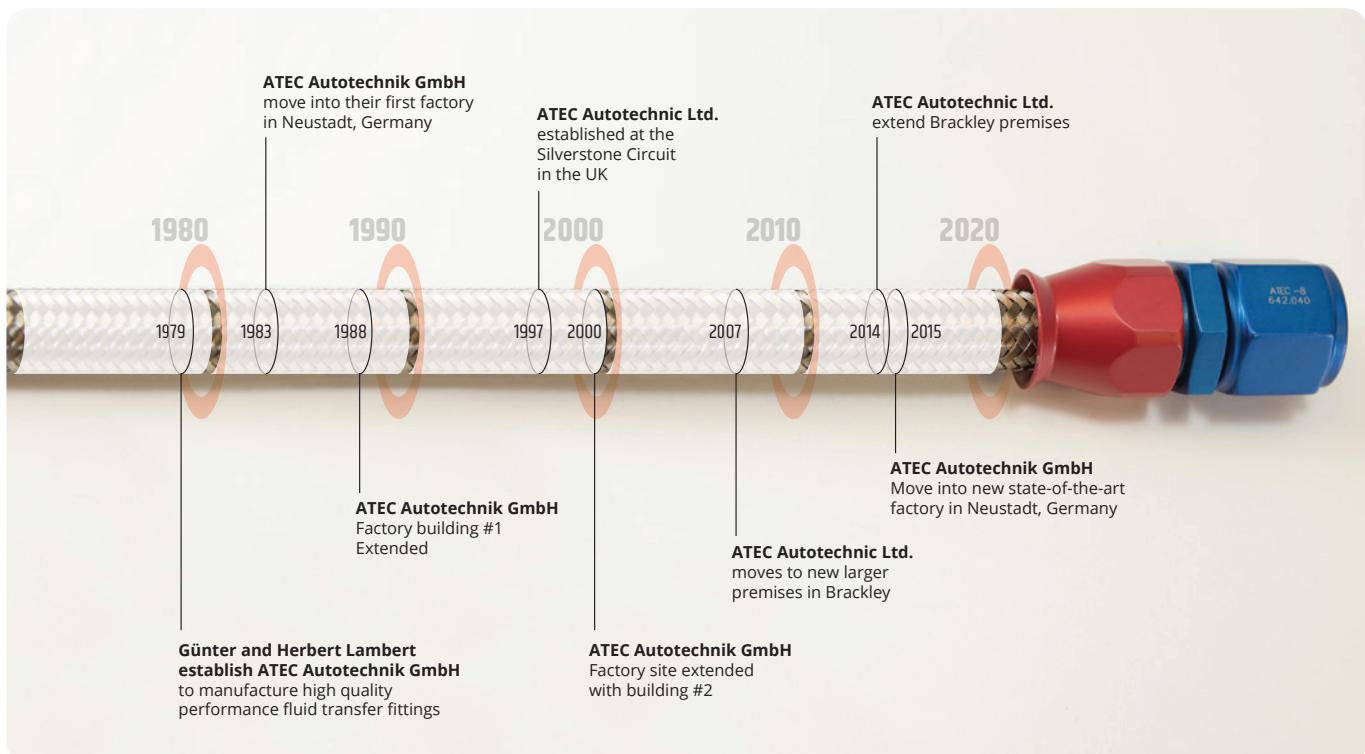
Our staff are fully aware of our business process and are encouraged to actively provide input into the development and improvement of systems.

The management team establish quality objectives which support the implementation of this policy. They are regularly reviewed and revised as part of our program of continual improvement.

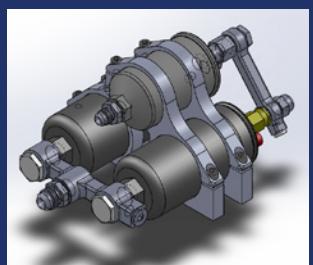
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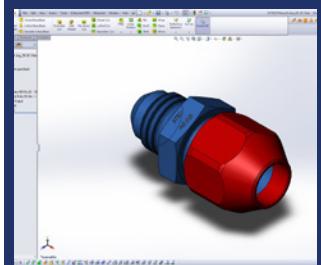
# }} Our Timeline



# » Our Services



Design



3D Modelling



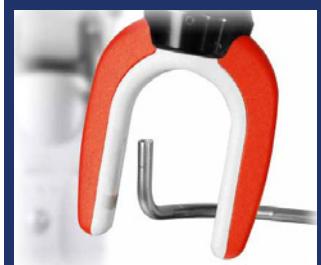
CNC Tube Bending



In-house Machining



In-house Titanium Welding



Contactless Measuring



In-house Inspection



In-house Laser Etching



Automated Tube Flaring



Assembly



Bespoke Parts & Fittings



Quick Disconnect Servicing

## Environmental Policy

**ATEC** is committed to leading the industry in minimising the impact of its activities on the environment. The key points of its strategy to achieve this are:

- Minimise waste by evaluating operations and ensuring they are as efficient as possible
- Minimise toxic emissions through the selection and use of its vehicle fleet and the source of its power
- Actively promote recycling both internally and amongst its customers and suppliers
- Source and promote a product range to minimise the environmental impact of both production and distribution
- Meet or exceed all the environmental legislation that relates to the Company

**Rainer Hatzenbühler** Director of ATEC Autotechnic

## How to Order

### Telephone:

Please call to speak to our technical sales team.  
Lines open 09:00 – 17:00

Germany: +49 (0)6327 97890  
UK: +44 (0)1280 704 525

### Online:

Visit us online to request a quotation.

### Visit Us

If you are in the area why not come and see us. Located in Neustadt Germany, only a short drive from Hockenheim Race Circuit and in Brackley near Silverstone Race Circuit, we can supply your Test or Race day needs.

### Delivery

We've got a service to suit all your parcel delivery requirements, be it local, national or international. We work with industry leading couriers to cater for all options.

# 400 & 410 Series Smooth Bore Rubber Hose

The 'industry standard' for years, ATEC 400 series hose is a premium quality Stainless Steel braided synthetic rubber hose. Suitable for use with fuels (excluding use in a cockpit environment), oils and coolants, when matched with ATEC high quality hose ends our 400 series hose will prove a reliable and durable assembly.



400 / 410 SERIES

## 400 SERIES

### Nitrile Hose, Seamless HSP®

Elastomer Hose with Stainless Steel Braid. Aircraft Quality meets the requirements of MIL-H-83797

**Not to be used for fuel inside a cockpit**

### Application

Fuel, Methanol Oil, Water, Coolant

**Inner Core** Reinforced Synthetic Rubber  
**Braid** Hard Drawn Stainless Steel Wire  
**Operating Temp.** -46°C to +150°C (-51°F to 302°F)



Hose Size	Inner Dia		Outer Dia		Working Pressure		Burst Pressure		Min Bend Radius		Weight	Part No.
	mm	In	mm	in	bar	psi	bar	psi	mm	in	kg/m	
Dash 4	5.56	0.219	11.13	0.438	69	1000	414	6000	50.80	2.00	0.167	643.185
Dash 6	8.73	0.344	13.89	0.547	69	1000	414	6000	63.50	2.50	0.201	643.186
Dash 8	11.12	0.438	16.28	0.641	69	1000	345	5000	88.90	3.50	0.271	643.187
Dash 10	14.27	0.562	20.24	0.797	69	1000	345	5000	101.60	4.00	0.348	643.188
Dash 12	17.47	0.688	23.82	0.928	69	1000	259	3750	114.30	4.50	0.421	643.189
Dash 16	22.22	0.875	29.36	1.156	52	750	172	2500	139.70	5.50	0.552	643.190
Dash 20	28.70	1.125	36.49	1.437	35	500	138	2000	203.20	8.00	0.732	643.191

## 410 SERIES

### Hose, Synthetic Rubber (CPE)

With Integral Stainless Steel Reinforced Synthetic Rubber with Lightweight Fibre Outer Braid

**Not to be used for fuel inside a cockpit**

### Application

Fuel, Methanol Oil, Water, Coolant

**Inner Core** Reinforced Synthetic Rubber  
**Braid** Lightweight Fibre Braid  
**Operating Temp.** -46°C to +150°C (-51°F to 302°F)



Hose Size	Inner Dia		Outer Dia		Working Pressure		Burst Pressure		Min Bend Radius		Weight	Part No.
	mm	In	mm	in	bar	psi	bar	psi	mm	in	kg/m	
Dash 4	5.56	0.219	11.17	0.44	34	500	138	2000	50.8	2.00	0.112	643.903
Dash 6	8.71	0.343	14.22	0.56	34	500	138	2000	63.5	2.50	0.141	643.904
Dash 8	11.13	0.438	17.02	0.67	34	500	138	2000	88.9	3.50	0.179	643.905
Dash 10	14.29	0.562	20.83	0.82	34	500	138	2000	101.6	4.00	0.231	643.906
Dash 12	17.46	0.688	24.38	0.96	24	350	97	1400	114.3	4.50	0.372	643.907
Dash 16	22.23	0.875	29.21	1.15	24	350	97	1400	139.7	5.50	0.476	643.908

## 8001

### 00° Hose End

Re-usable Hose End Cutter Type Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size	Red/Blue	Black
Dash 6	Dash 6	643.001	643.001BK
Dash 8	Dash 8	643.002	643.002BK
Dash 10	Dash 10	643.003	643.003BK
Dash 12	Dash 12	643.004	643.004BK
Dash 16	Dash 16	643.005	643.005BK

## 4001

### 00° Hose End

Re-usable Hose End Compression Type Aluminium Anodised Red/Blue or Black

Hose Size	Thread Size	Part No. Red/Blue/Black
Dash 4	Dash 4	643.000
Dash 4	Dash 4	643.000BK
Dash 6	Dash 6	643.301
Dash 8	Dash 8	643.302
Dash 10	Dash 10	643.303
Dash 12	Dash 12	643.304
Dash 16	Dash 16	643.305
Dash 20	Dash 20	643.006



# 400 & 410 Series Smooth Bore Rubber Hose

**4001X**

## 00° Hose End with Double Female Take Off

Re-usable Hose End Compression Type Aluminium Anodised Red/Blue



Hose Size	Thread Size #1	Thread Size #2	Part No.
Dash 6	Dash 6	M8x1 / M10x1	643.600
Dash 8	Dash 8	M8x1 / M10x1	643.601
Dash 10	Dash 10	M8x1 / M10x1	643.602
Dash 12	Dash 12	M8x1 / M10x1	643.603
Dash 16	Dash 16	M8x1 / M10x1	643.604
Dash 20	Dash 20	M8x1 / M10x1	643.605
Dash 6	Dash 6	M10x1 / M10x1	643.606
Dash 8	Dash 8	M10x1 / M10x1	643.607
Dash 10	Dash 10	M10x1 / M10x1	643.608
Dash 12	Dash 12	M10x1 / M10x1	643.609
Dash 16	Dash 16	M10x1 / M10x1	643.610
Dash 20	Dash 20	M10x1 / M10x1	643.611

**4045**

## 45° Block Hose End

Re-usable Hose End Compression Type Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size	Part No. Red/Blue	Part No. Black
Dash 4	Dash 4	643.306	643.306BK
Dash 6	Dash 6	643.052	643.052BK
Dash 8	Dash 8	643.054	643.054BK
Dash 10	Dash 10	643.056	643.056BK
Dash 12	Dash 12	643.058	643.058BK
Dash 16	Dash 16	643.060	643.060BK

**8045**

## 45° Block Swivel Hose End

Re-usable Hose End Cutter Type Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size	Part No. Red/Blue	Part No. Black
Dash 6	Dash 6	643.051	643.051BK
Dash 8	Dash 8	643.053	643.053BK
Dash 10	Dash 10	643.055	643.055BK
Dash 12	Dash 12	643.057	643.057BK
Dash 16	Dash 16	643.059	643.059BK

**4090**

## 90° Block Hose End

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size	Part-No. Red/Blue	Part No. Black
Dash 4	Dash 4	643.340	643.340BK
Dash 6	Dash 4	643.341	-
Dash 6	Dash 6	643.023	-
Dash 8	Dash 8	643.025	-
Dash 10	Dash 10	643.027	-
Dash 12	Dash 12	643.029	-
Dash 16	Dash 16	643.031	-

**8090**

## 90° Block Swivel Hose End

Re-usable Hose End Cutter Type Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size #1	Thread Size #2	Part No.
Dash 6	Dash 6	M8x1 / M10x1	643.600
Dash 8	Dash 8	M8x1 / M10x1	643.601
Dash 10	Dash 10	M8x1 / M10x1	643.602
Dash 12	Dash 12	M8x1 / M10x1	643.603
Dash 16	Dash 16	M8x1 / M10x1	643.604
Dash 20	Dash 20	M8x1 / M10x1	643.605
Dash 6	Dash 6	M10x1 / M10x1	643.606
Dash 8	Dash 8	M10x1 / M10x1	643.607
Dash 10	Dash 10	M10x1 / M10x1	643.608
Dash 12	Dash 12	M10x1 / M10x1	643.609
Dash 16	Dash 16	M10x1 / M10x1	643.610
Dash 20	Dash 20	M10x1 / M10x1	643.611

**4031**

## 30° Swept Hose End

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue



Hose Size	Thread Size	Part No. Red/Blue	Part No. Black
Dash 20	Dash 20	643.288	

**4031**

## 30° Swept Swivel Hose End

Re-usable Hose End Compression Type Aluminium Anodised Red/Blue or Black

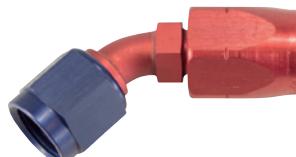


Hose Size	Thread Size	Part No. Red/Blue	Part No. Black
Dash 6	Dash 6	643.290	643.290BK
Dash 8	Dash 8	643.291	643.291BK
Dash 10	Dash 10	643.292	643.292BK
Dash 12	Dash 12	643.293	643.293BK
Dash 16	Dash 16	643.294	643.294BK

**4046**

## 45° Swept Hose End

Re-usable Hose End Compression Type Aluminium Anodised Red/Blue



Hose Size	Thread Size	Part No.
Dash 6	Dash 6	643.114
Dash 8	Dash 8	643.116
Dash 10	Dash 10	643.118
Dash 12	Dash 12	643.120
Dash 16	Dash 16	643.122
Dash 20	Dash 20	643.085

**4046**

## 45° Swept Swivel Hose End

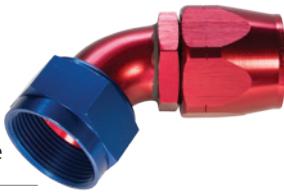
Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size	Part-No. Red/Blue	Part No. Black
Dash 6	Dash 6	643.113	643.113BK
Dash 8	Dash 8	643.115	643.115BK
Dash 10	Dash 10	643.117	643.117BK
Dash 12	Dash 12	643.119	643.119BK
Dash 16	Dash 16	643.121	643.121BK

**4061****60° Swept Hose End**

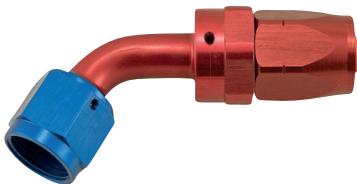
Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue



Hose Size	Thread Size	Part No.
Dash 20	Dash 20	643.289

**4061****60° Swept Swivel Hose End**

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size	Part No. Red/Blue	Part No. Black
Dash 6	Dash 6	643.295	643.295BK
Dash 8	Dash 8	643.296	643.296BK
Dash 10	Dash 10	643.297	643.297BK
Dash 12	Dash 12	643.298	643.298BK
Dash 16	Dash 16	643.299	643.299BK

**4091****90° Swept Hose End**

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue



Hose Size	Thread Size	Part No.
Dash 4	Dash 4	643.095
Dash 6	Dash 6	643.075
Dash 8	Dash 8	643.077
Dash 10	Dash 10	643.079
Dash 12	Dash 12	643.081
Dash 16	Dash 16	643.083
Dash 20	Dash 20	643.084

**4091****90° Swept Swivel Hose End**

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size	Part No. Red/Blue	Part No. Black
Dash 6	Dash 6	643.074	643.074BK
Dash 8	Dash 8	643.076	643.076BK
Dash 10	Dash 10	643.078	643.078BK
Dash 12	Dash 12	643.080	643.080BK
Dash 16	Dash 16	643.082	643.082BK

**4120****120° Swept Hose End**

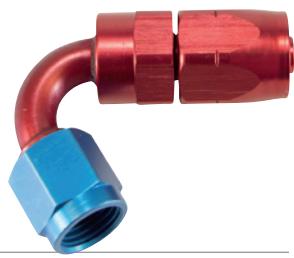
Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue



Hose Size	Thread Size	Part No.
Dash 6	Dash 6	643.087
Dash 8	Dash 8	643.089
Dash 10	Dash 10	643.091
Dash 12	Dash 12	643.093

**4120****120° Swept Swivel Hose End**

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size	Part No. Red/Blue	Part No. Black
Dash 6	Dash 6	643.086	643.086BK
Dash 8	Dash 8	643.088	643.088BK
Dash 10	Dash 10	643.090	643.090BK
Dash 12	Dash 12	643.092	643.092BK
Dash 16	Dash 16	643.094	643.094BK

**4150****150° Swept Hose End**

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue



Hose Size	Thread Size	Part No.
Dash 6	Dash 6	643.101
Dash 8	Dash 8	643.103
Dash 10	Dash 10	643.105
Dash 12	Dash 12	643.107

**4150****150° Swept Swivel Hose End**

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size	Part No. Red/Blue	Part No. Black
Dash 6	Dash 6	643.100	643.100BK
Dash 8	Dash 8	643.102	643.102BK
Dash 10	Dash 10	643.104	643.104BK
Dash 12	Dash 12	643.106	643.106BK
Dash 16	Dash 16	643.108	643.108BK

**4180****180° Swept Hose End**

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue



Hose Size	Thread Size	Part No.
Dash 6	Dash 6	643.126
Dash 8	Dash 8	643.128
Dash 10	Dash 10	643.130
Dash 12	Dash 12	643.132

**4180****180° Swept Swivel Hose End**

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue or Black



Hose Size	Thread Size	Part No. Red/Blue	Part No. Black
Dash 6	Dash 6	643.125	643.125BK
Dash 8	Dash 8	643.127	643.127BK
Dash 10	Dash 10	643.129	643.129BK
Dash 12	Dash 12	643.131	643.131BK
Dash 16	Dash 16	643.133	643.133BK

## 400 & 410 Series Smooth Bore Rubber Hose

**8001**

### 00° Metric Hose End

Re-usable Hose End Cutter Type  
Aluminium Anodised Black/Gold



Hose Size	Thread Size	Part No.
Dash 6	M12x1,5	643.010
Dash 6	M14x1,5	643.011
Dash 6	M16x1,5	643.012
Dash 6	M18x1,5	643.008
Dash 6	M22x1,5	643.009
Dash 8	M14x1,5	643.019
Dash 8	M16x1,5	643.013
Dash 8	M18x1,5	643.014
Dash 10	M18x1,5	643.141
Dash 10	M22x1,5	643.015
Dash 10	M24x1,5	643.016
Dash 12	M26x1,5	643.021
Dash 12	M27x1,5	643.017
Dash 12	M30x1,5	643.020
Dash 16	M30x1,5	643.018

**8001**

### 00° Metric Hose End

Re-usable Hose End Compression Type  
Aluminium Anodised Black/Gold



Hose Size	Thread Size	Part No.
Dash 4	M12x1,5	643.007

**4045**

### 45° Metric Block Hose End

Re-usable Hose End, Non Swivel  
Compression Type Aluminium Anodised Black/Gold



Hose Size	Thread Size	Part No.
Dash 4	M12x1,5	643.049

**4090**

### 90° Metric Block Hose End

Re-usable Hose End, Non Swivel  
Compression Type,  
Aluminium Anodised Black/Gold



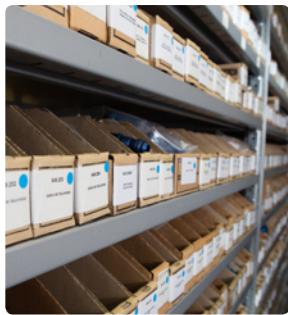
Hose Size	Thread Size	Part No.
Dash 4	M12x1,5	643.047

## Huge range

Available in stock

Here at ATEC we carry an extensive range of standard parts available off-the-shelf, including unique adaptors, tee pieces, banjo and bolt fittings. Call or email us today for more information.

[sales@atecautotechnic.com](mailto:sales@atecautotechnic.com)



**8045**

### 45° Metric Block Swivel Hose End

Re-usable Hose End Cutter Type  
Aluminium Anodised Black/Gold

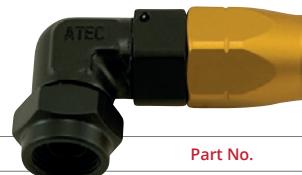


Hose Size	Thread Size	Part No.
Dash 6	M12x1,5	643.063
Dash 6	M14x1,5	643.064
Dash 6	M16x1,5	643.061
Dash 6	M18x1,5	643.062
Dash 6	M22x1,5	643.065
Dash 8	M14x1,5	643.072
Dash 8	M16x1,5	643.066
Dash 8	M18x1,5	643.067
Dash 10	M22x1,5	643.068
Dash 10	M24x1,5	643.069
Dash 12	M26x1,5	643.096
Dash 12	M27x1,5	643.070
Dash 12	M30x1,5	643.073
Dash 16	M30x1,5	643.071

**8090**

### 90° Metric Block Swivel Hose End

Re-usable Hose End Cutter Type  
Aluminium Anodised Black/Gold



Hose Size	Thread Size	Part No.
Dash 6	M12x1,5	643.034
Dash 6	M14x1,5	643.035
Dash 6	M16x1,5	643.044
Dash 6	M18x1,5	643.045
Dash 6	M22x1,5	643.046
Dash 8	M14x1,5	643.036
Dash 8	M16x1,5	643.037
Dash 8	M18x1,5	643.038
Dash 10	M22x1,5	643.039
Dash 10	M24x1,5	643.040
Dash 12	M22x1,5	643.048
Dash 12	M26x1,5	643.097
Dash 12	M27x1,5	643.041
Dash 12	M30x1,5	643.043
Dash 16	M30x1,5	643.042

### Metric Tee Swivel Hose End

Re-usable Hose End  
Cutter Type, Aluminium  
Anodised Black/Gold



Hose Size	Thread Size #1 Male	Thread Size #2	Part No.
Dash 6	M14x1,5	M14x1,5 Male	643.143
Dash 6	M14x1,5	M14x1,5 Female	643.144

**4001**

### 00° Male Wiggins Hose End

Re-usable Hose End Compression Type  
Aluminium Anodised Red/Black or Black



Hose Size	Wiggins Size	Part No. Red/Black	Part No. Black
Dash 6	Dash 8	643.500	643.500BK
Dash 8	Dash 8	643.501	643.501BK
Dash 10	Dash 10	643.502	643.502BK
Dash 12	Dash 12	643.503	643.503BK
Dash 16	Dash 16	643.504	643.504BK
Dash 20	Dash 20	643.505	643.505BK

**4046**

### 45° Male Wiggins Swept Swivel Hose End

Re-usable Hose End Compression Type,  
Aluminium Anodised Red/Black or Black



Hose Size	Wiggins Size	Part No. Red/Black	Part No. Black
Dash 6	Dash 8	643.520	643.520BK
Dash 8	Dash 8	643.521	643.521BK
Dash 10	Dash 10	643.522	643.522BK
Dash 12	Dash 12	643.523	643.523BK
Dash 16	Dash 16	643.524	643.524BK
Dash 20 <i>Non Swivel</i>	Dash 20	643.525	-

**4091**

### 90° Male Wiggins Swept Swivel Hose End

Re-usable Hose End Compression Type,  
Aluminium Anodised Red/Black or Black



Hose Size	Wiggins Size	Part No. Red/Black	Part No. Black
Dash 6	Dash 8	643.540	643.540BK
Dash 8	Dash 8	643.541	643.541BK
Dash 10	Dash 10	643.542	643.542BK
Dash 12	Dash 12	643.543	643.543BK
Dash 16	Dash 16	643.544	643.544BK
Dash 20 <i>Non Swivel</i>	Dash 20	643.545	643.545BK

**4001**

### 00° Female Wiggins Hose End

Re-usable Hose End Compression Type,  
Aluminium Anodised Red/Black or Black



Hose Size	Wiggins Size	Part No. Red/Black	Part No. Black
Dash 6	Dash 8	643.400	643.400BK
Dash 8	Dash 8	643.401	643.401BK
Dash 10	Dash 10	643.402	643.402BK
Dash 12	Dash 12	643.403	643.403BK
Dash 16	Dash 16	643.404	643.404BK
Dash 20	Dash 20	643.405	643.405BK

**4046**

### 45° Female Wiggins Swept Swivel Hose End

Re-usable Hose End Compression Type  
Aluminium Anodised Red/Black or Black



Hose Size	Wiggins Size	Part No. Red/Black	Part No. Black
Dash 6	Dash 8	643.420	643.420BK
Dash 8	Dash 8	643.421	643.421BK
Dash 10	Dash 10	643.422	643.422BK
Dash 12	Dash 12	643.423	643.423BK
Dash 16	Dash 16	643.424	643.424BK
Dash 20 <i>Non Swivel</i>	Dash 20	643.425	-

**4091**

### 90° Female Wiggins Swept Swivel Hose End

Re-usable Hose End  
Compression Type, Aluminium  
Anodised Red/Black or Black



Hose Size	Wiggins Size	Part No. Red/Black	Part No. Black
Dash 6	Dash 8	643.440	643.440BK
Dash 8	Dash 8	643.441	643.441BK
Dash 10	Dash 10	643.442	643.442BK
Dash 12	Dash 12	643.443	643.443BK
Dash 16	Dash 16	643.444	643.444BK
Dash 16	Dash 24	643.446	643.446BK
Dash 20 <i>Non Swivel</i>	Dash 20	643.445	-

**4120**

### 120° Female Wiggins Swept Swivel Hose End

Re-usable Hose End Compression Type,  
Aluminium Anodised Red/Black or Black

Hose Size	Wiggins Size	Part No. Red/Black	Part No. Black
Dash 6	Dash 8	643.450	643.450BK
Dash 8	Dash 8	643.451	643.451BK
Dash 10	Dash 10	643.452	643.452BK
Dash 12	Dash 12	643.453	643.453BK
Dash 16	Dash 16	643.454	643.454BK
Dash 20 <i>Non Swivel</i>	Dash 20	643.455	-

**4150**

### 150° Female Wiggins Swept Swivel Hose End

Re-usable Hose End Compression Type,  
Aluminium Anodised Red/Black or Black

Hose Size	Wiggins Size	Part No. Red/Black	Part No. Black
Dash 6	Dash 8	643.470	643.470BK
Dash 8	Dash 8	643.471	643.471BK
Dash 10	Dash 10	643.472	643.472BK
Dash 12	Dash 12	643.473	643.473BK
Dash 16	Dash 16	643.474	643.474BK
Dash 20 <i>Non Swivel</i>	Dash 20	643.475	-

### 00° Banjo Hose End

Re-usable Hose End Cutter Type  
Aluminium Anodised Red/Blue,  
Black or Black/Gold



Hose Size	Banjo Size	Part No. Red/Blue	Part No. Black	Part No. Black/Gold
Dash 6	d 12 mm x h 12 mm	643.150	643.150BK	643.202
Dash 6	d 13,2 mm - 1/4" BSP x h 12 mm	643.174	643.174BK	-
Dash 6	d 14 mm x h 12 mm	643.151	643.151BK	643.203
Dash 6	d 16 mm x h 16 mm	643.154	643.154BK	643.204
Dash 6	d 18 mm x h 20 mm	643.156	643.156BK	643.205
Dash 6	d 19,3 mm x h 20 mm	-	-	643.209
Dash 8	d 12 mm x h 12 mm	643.161	643.161BK	-
Dash 8	d 14 mm x h 12 mm	643.162	643.162BK	-
Dash 8	d 16 mm x h 16 mm	643.159	643.159BK	-
Dash 8	d 18 mm x h 16 mm	-	-	643.206
Dash 8	d 18 mm x h 20 mm	643.160	643.160BK	-
Dash 10	d 16 mm x h 16 mm	643.163	643.163BK	643.207
Dash 10	d 18 mm x h 20 mm	643.164	643.164BK	643.208
Dash 10	d 22 mm x h 25 mm	643.165	643.165BK	-
Dash 10	d 24 mm x h 25 mm	643.168	643.168BK	-
Dash 10	d 26 mm x h 27 mm	643.166	643.166BK	-
Dash 12	d 20 mm x h 20 mm	643.167	643.167BK	-

### 00° Banjo Hose End

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue, Black, Black/Gold or Stainless Steel



### 00° Big Ball Banjo Hose End

Re-usable Hose End Cutter Type, Aluminium Anodised Red/Blue, Black or Black/Gold



### 00° Big Ball Banjo Hose End

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue, Black or Black/Gold



### 00° Extended Banjo Hose End

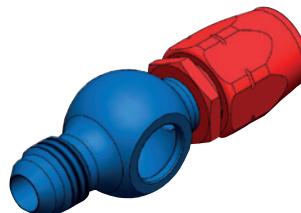
Re-usable Hose End Cutter Type, Aluminium Anodised Red/Blue or Black



Hose Size	Banjo Size	Part No. Red/Blue	Part No. Black
Dash 6	d 12 mm x h 12 mm	643.169	643.169BK
Dash 6	d 14 mm x h 12 mm	643.170	643.170BK
Dash 6	d 16 mm x h 16 mm	643.171	643.171BK
Dash 8	d 16 mm x h 16 mm	643.172	643.172BK
Dash 8	d 18 mm x h 20 mm	643.173	643.173BK

### 00° Big Ball Banjo Hose End with JIC Male Take Off

Re-usable Hose End Cutter Type, Aluminium Anodised Red/Blue or Black



Thread Size	Banjo Size	Hose Size	Part No. Red/Blue	Part No. Black
Dash 3 JIC Male	d 12 mm x h 18 mm	Dash 6	643.175	643.175BK
Dash 4 JIC Male	d 12 mm x h 18 mm	Dash 6	643.176	643.176BK
Dash 6 JIC Male	d 12 mm x h 18 mm	Dash 6	643.177	643.177BK
Dash 3 JIC Male	d 14 mm x h 18 mm	Dash 6	643.178	643.178BK
Dash 4 JIC Male	d 14 mm x h 18 mm	Dash 6	643.179	643.179BK
Dash 6 JIC Male	d 14 mm x h 18 mm	Dash 6	643.180	643.180BK

### 00° Big Ball Banjo Hose End with Metric Male Take Off

Re-usable Hose End Cutter Type, Aluminium Anodised Black/Gold



Thread Size	Banjo Size	Hose Size	Part No. Black/Gold
M12x1,5 Male	d 12 mm x h 18 mm	Dash 6	643.194
M14x1,5 Male	d 12 mm x h 18 mm	Dash 6	643.196
M12x1,5 Male	d 14 mm x h 18 mm	Dash 6	643.195
M14x1,5 Male	d 14 mm x h 18 mm	Dash 6	643.197

### 00° Big Ball Banjo Hose End with Metric Female Take Off

Aluminium Anodised Black/Gold



Thread Size	Banjo Size	Hose Size	Part No. Black/Gold
M10x1	d 14 mm x h 18 mm	Dash 6	643.215
M12x1,5	d 14 mm x h 18 mm	Dash 6	643.216

### 00° Big Ball Banjo Hose End with Imperial Female Take Off

Aluminium Anodised Blue/Red



Thread Size	Banjo Size	Hose Size	Part No. Blue/Red
3/8x24 UNF	d 22 mm x h 20 mm	Dash 6	643.217

## How to guide

On page 77

Follow our step-by-step guide for correctly fitting a hose end to our 400/410 series hose



## 90° Carburettor Banjo Hose End

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue or Black



Banjo Size	Hose Size	Part No. Red/Blue	Part No. Black
d 16 mm x h 12 mm	Dash 6	643.230	643.230BK

## 90° Carburettor Banjo Tee Hose End

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue or Black



Banjo Size	Hose Size	Part No. Red/Blue	Part No. Black
d 16 mm x h 12 mm	Dash 6	643.231	643.231BK

## 90° Carburettor Banjo Tee Hose End with Male JIC Take Off

Re-usable Hose End Compression Type, Aluminium Anodised Red/Blue or Black



Thread Size Male	Banjo Size	Part No. Hose Size	Part No. Red/Blue	Part No. Black
Dash 6 JIC	d 16 mm x h 12 mm	Dash 6	643.232	643.232BK

## Hose Finisher

Re-usable Hose End to suit 400 & 410 Series Hose, Aluminium Anodised Red, Black or Gold



Hose Size	Part No. Red	Part No. Black	Part No. Gold
Dash 4, Ø-12 mm	649.591	649.591BK	649.591GD
Dash 6, Ø-14 mm	649.592	649.592BK	649.820
Dash 8, Ø-16 mm	649.593	649.593BK	649.821
Dash 10, Ø-21 mm	649.594	649.594BK	649.822
Dash 12, Ø-24 mm	649.595	649.595BK	649.823
Dash 16, Ø-29 mm	649.596	649.596BK	649.824
Dash 20, Ø-36 mm	649.597	649.597BK	649.825

## Tools for the job?

Get the right tools, everything you need to do the job on page 76



## 00° Male JIC Push Fit Hose End

Re-usable Hose End, Aluminium Anodised Blue or Black



Thread Size Male	Hose Size	Part No. Blue	Part No. Black
Dash 3 JIC	8.2 mm Barb	650.542	-
Dash 6 JIC	8.2 mm Barb	649.586	649.586BK
Dash 6 JIC	9.2 mm Barb	649.587	649.587BK

## 00° Male Metric Push Fit Hose End

Re-usable Hose End, Aluminium Anodised Black

Thread Size Male	Hose Size	Part No. Black
M12x1.5	9.2 mm Barb	650.547
M14x1.5	9.2 mm Barb	650.548
M18x1.5	9.2 mm Barb	650.549

## 4001

## 00° JIC Push Fit Hose End

Re-usable Hose End, Aluminium Anodised Red/Blue or Black



Thread Size	Hose Size	Part No. Red/Blue	Part No. Black
Dash 3	6.5 mm Barb	650.504	650.504BK
Dash 4	6.5 mm Barb	649.590	649.590BK
Dash 6	6.5 mm Barb	650.546	650.546BK
Dash 6	8.2 mm Barb	649.588	649.588BK
Dash 6	9.2 mm Barb	649.589	649.589BK
Dash 8	10.5 mm Barb	649.985	649.985BK
Dash 8	13.2 mm Barb	650.541	650.541BK
Dash 10	13.2 mm Barb	649.986	649.986BK
Dash 12	13.2 mm Barb	649.995	649.995BK
Dash 10	14.2 mm Barb	650.543	-
Dash 12	17.5 mm Barb	650.535	650.535BK
Dash 10	19.2 mm Barb	650.545	-
Dash 16	22.0 mm Barb	650.536	650.536BK

## 4045

## 45° Block JIC Push Fit Hose End

Re-usable Hose End, Aluminium Anodised Blue or Black



Thread Size Female	Hose Size	Part No. Blue	Part No. Black
Dash 4	6.5 mm Barb	650.540	650.540BK
Dash 6	8.2 mm Barb	649.987	649.987BK
Dash 8	10.5 mm Barb	649.988	649.988BK
Dash 10	13.2 mm Barb	649.989	649.989BK

## 4090

## 90° Block JIC Push Fit Hose End

Re-usable Hose End, Aluminium Anodised Blue or Black



Thread Size Female	Hose Size	Part No. Blue	Part No. Black
Dash 4	6.5 mm Barb	650.537	650.537BK
Dash 6	8.2 mm Barb	643.260	643.260BK
Dash 6	9.2 mm Barb	649.866	649.866BK
Dash 8	10.5 mm Barb	643.261	643.261BK
Dash 10	13.2 mm Barb	649.981	649.981BK
Dash 12	17.2 mm Barb	649.849	649.849BK

5091

**00° Banjo Push Fit Hose End**

Re-usable Hose End,  
Aluminium Anodised Blue or Black



Banjo Size	Hose Size	Part No. Blue	Part No. Black
d 10 mm x 11.2 mm0	6.5 mm Barb	650.628	650.628BK
d 11.2 mm - 7/16" x h 12 mm	8.2 mm Barb	650.613	650.614
d 12 mm x h 12 mm	8.2 mm Barb	650.608	-
d 14 mm x h 12 mm	8.2 mm Barb	650.607	-
d 14 mm x h 14 mm	8.2 mm Barb	649.991	649.991BK
d 12 mm x h 12 mm	9.2 mm Barb	649.992	-
d 18 mm x h 20 mm	13.2 mm Barb	649.993	649.993BK

840

**00° NPT Male Spigot Hose End**

Re-usable Hose End,  
Aluminium Anodised Blue or Black



Thread Size	Hose Size	Part No. Red/Blue	Part No. Black
1/8x27 NPT	6.35 mm - Dash 4	646.010	646.010BK
1/4x18 NPT	9.53 mm - Dash 6	646.011	646.011BK
3/8x18 NPT	12.70 mm - Dash 8	646.012	646.012BK
1/2x14 NPT	15.88 mm - Dash 10	646.013	646.013BK
3/4x14 NPT	17.50 mm - Dash 12	646.014	646.014BK

844

**45° NPT Male Spigot Hose End**

Re-usable Hose End,  
Aluminium Anodised Blue or Black



Thread Size	Hose Size	Part No. Blue	Part No. Black
1/8x27 NPT	6.35 mm - Dash 4	646.020	646.020BK
1/4x18 NPT	9.53 mm - Dash 6	646.021	646.021BK
3/8x18 NPT	12.70 mm - Dash 8	646.022	646.022BK
1/2x14 NPT	15.88 mm - Dash 10	646.023	646.023BK
3/4x14 NPT	15.88 mm - Dash 10	646.024	646.024BK

842

**90° NPT Male Spigot Hose End**

Re-usable Hose End,  
Aluminium Anodised Blue or Black



Thread Size	Hose Size	Part No. Blue	Part No. Black
1/8x27 NPT	6.35 mm - Dash 4	646.030	646.030BK
1/4x18 NPT	9.53 mm - Dash 6	646.031	646.031BK
3/8x18 NPT	12.70 mm - Dash 8	646.032	646.032BK
1/2x14 NPT	15.88 mm - Dash 10	646.033	646.033BK
3/4x14 NPT	17.50 mm - Dash 12	646.034	646.034BK

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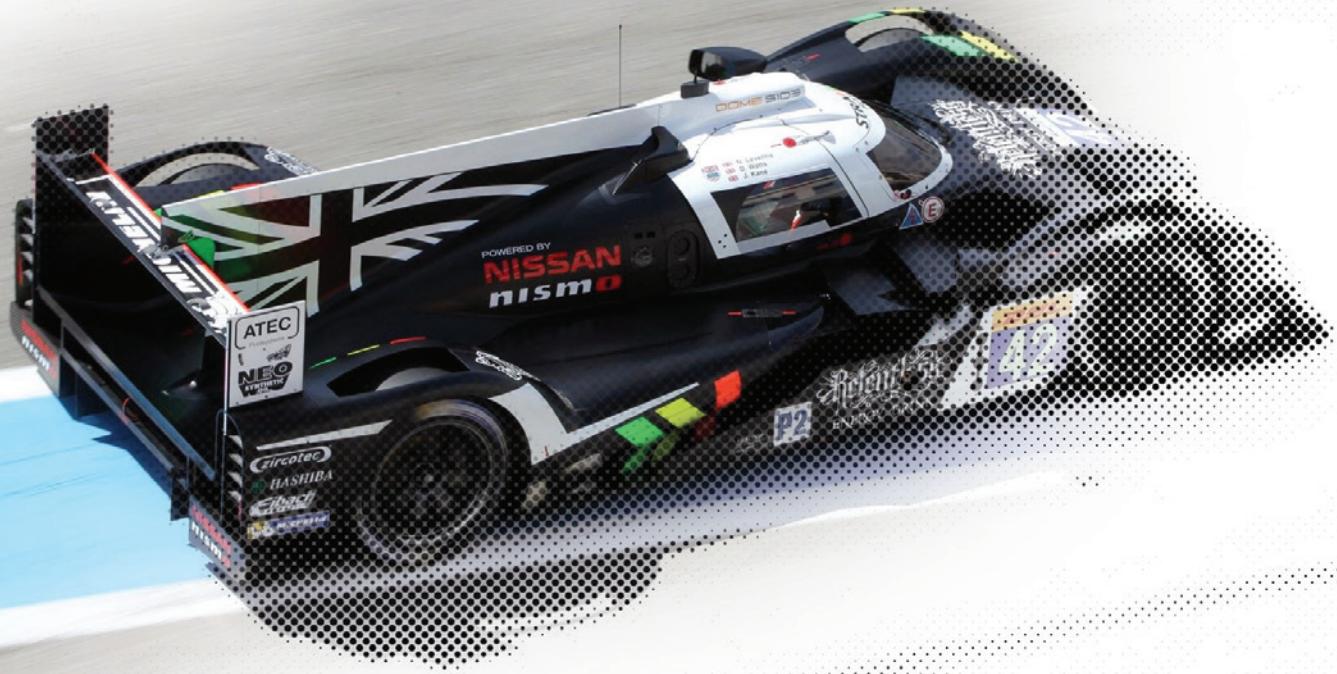
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## Can't find it?

For special fittings or non  
listed parts please call or email us



# 600 Series Smooth Bore PTFE Hose

Impervious to most commonly used racecar fluids and offering high burst pressures and good resistance to temperatures, 600 series Stainless Steel braided PTFE hose is ideal for use in brake and clutch systems, fuel systems (including cockpit areas where synthetic rubber hoses breathe vapour) and hydraulic systems.



## 600 SERIES

### Hose - PTFE 600 Series

A Premium quality hose designed for medium to high pressure applications

#### Application

Brakes, Clutch, Gearbox Hydraulics, Diff, Power Steering, Air, Water Bleed, Instrumentation, Sensor & Gauge Lines, Water Injection Systems

#### Inner Core

Smooth Bore Extruded PTFE with Anti-Static Liner

#### Braid

AISI 304S 15 Hard Drawn Stainless Steel Wire

#### Operating Temp.

-60°C to +260°C (-76°F to 500°F)



Hose Size	Inner Dia		Outer Dia		Working Pressure		Burst Pressure		Min Bend Radius		Weight	Vacuum Rating	Part No.
	mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	in/hg	
Dash 3	3.40	0.134	6.17	0.243	321	4655	966	14010	50.8	2.00	0.06	28	642.140
Dash 4	4.67	0.184	8.00	0.315	276	4003	828	12009	50.8	2.00	0.12	28	642.050
Dash 6	8.00	0.315	11.70	0.460	241	3495	724	10501	101.6	4.00	0.16	28	642.051
Dash 8	8.94	0.352	12.30	0.484	219	3176	655	9500	133.0	5.25	0.20	28	642.052

## 600 SERIES

### Hose - PTFE 600 Series with Clear PVC Cover

A Premium quality hose designed for medium to high pressure applications

#### Application

Brakes, Clutch, Gearbox Hydraulics, Diff, Power Steering, Air, Water Bleed, Instrumentation, Sensor & Gauge Lines, Water Injection Systems

#### Inner Core

Smooth Bore Extruded PTFE with Anti-Static Liner

#### Braid

AISI 304S 15 Hard Drawn Stainless Steel Wire

#### Operating Temp.

-60°C to +260°C (-76°F to 500°F)



Hose Size	Inner Dia		Outer Dia		Working Pressure		Burst Pressure		Min Bend Radius		Weight	Vacuum Rating	Part No.
	mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	in/hg	
Dash 3	3.40	0.134	6.17	0.243	321	4655	966	14010	50.8	2.00	0.06	28	642.141

## 6001

### 00° Hose End

Re-usable Hose End, Aluminium Anodised Red/Blue or Black, Stainless Steel, Zinc Plated Steel or Chrome Plated Steel



Hose Size	Thread Size	Part No. Red/Blue	Part No. Black	Part No. S/Steel	Part No. Zinc	Part No. Chrome
Dash 2	Dash 2	-	-	642.033	-	-
Dash 3	Dash 3	642.101	642.101BK	642.100	6001-03P	6001-03Z
Dash 3	Dash 4	-	-	642.093	-	-
Dash 4	Dash 4	642.000	642.000BK	642.164	6001-04P	6001-04Z
Dash 6	Dash 6	642.020	642.020BK	642.170	6001-06P	-
Dash 8	Dash 8	642.040	642.040BK	642.037	-	-

## 441

### 00° Male Hose End

Re-usable Hose End, Stainless Steel, Zinc Plated Steel or Chrome Plated Steel



Hose Size	Thread Size	Part No. S/Steel	Part No. Zinc	Part No. Chrome
Dash 3	Dash 3 JIC	642.087	441-03P	441-03Z

## 443

### 00° Bulkhead Male Hose End

Re-usable Hose End, Stainless Steel, Zinc Plated Steel or Chrome Plated Steel



Hose Size	Thread Size	Part No. S/Steel	Part No. Zinc	Part No. Chrome
Dash 3	Dash 3 JIC Bulkhead	642.092	443-03P	443-03Z

## 443BNP

### 00° Bulkhead Male with Bleed Nipple Hose End

Re-usable Hose End, Steel Zinc Plated or Chrome Plated



Hose Size	Thread Size	Part-No. Zinc	Part No. Chrome
Dash 3	3/8x24 UNF Bulkhead	443-03PBN	443-03ZBN

# 600 Series Smooth Bore Rubber Hose

**440**

## 00° Male Hose End

Re-usable Hose End, Steel Zinc Plated or Chrome Plated



## 00° Male Hose End

Re-usable Hose End, Stainless Steel



**442**

## 00° Male Hose End

Re-usable Hose End, Stainless Steel, Zinc Plated Steel or Chrome Plated Steel



**445**

## 00° Male Hose End

Re-usable Hose End, Chrome Plated Steel



**446**

## 00° Bulkhead Male Hose End

Re-usable Hose End, Stainless Steel, Zinc Plated Steel or Chrome Plated Steel



**704**

## 00° Bulkhead Female Hose End

Re-usable Hose End, Chrome Plated Steel

**Use with Locknut 2K8686Z**



**6045**

## 45° Block Hose End

Re-usable Hose End, Stainless Steel



**6645**

## 45° Block Swivel Hose End

Re-usable Hose End, Aluminium Anodised Red/Blue, Black or Stainless Steel



**6046**

## 45° Swept Tube Hose End

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel



**6646**

## 45° Swept Swivel Tube Hose End

Re-usable Hose End, Stainless Steel



**6090**

## 90° Block Hose End

Re-usable Hose End, Stainless Steel



**6690**

## 90° Block Swivel Hose End

Re-usable Hose End, Aluminium Anodised or Stainless Steel



**6091**

## 90° Swept Tube Hose End

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel



**6691****90° Swept Swivel Tube Hose End**

Re-usable Hose End, Stainless Steel

**Hose Size****Thread Size****Part-No.  
S/Steel**

Dash 8	Dash 8	642.039
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**6120****120° Swept Tube Hose End**

Re-usable Hose End, Stainless Steel

**Thread Size****Hose Size****Part-No.  
S/Steel**

Dash 3	Dash 3	6120-03C
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**6150****150° Swept Tube Hose End**

Re-usable Hose End, Stainless Steel

**Hose Size****Thread Size****Part-No.  
S/Steel**

Dash 3	Dash 3	6150-03C
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**6180****180° Swept Tube Hose End**

Re-usable Hose End, Stainless Steel

**Hose Size****Thread Size****Part-No.  
S/Steel**

Dash 3	Dash 3	6180-03C
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**321****00° BSP Hose End**

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel

**Hose Size****Thread Size****Part-No.  
Zinc****Part No.  
Chrome**

Dash 3	1/8" BSP	321-03P	321-03Z
Dash 4	1/4" BSP	321-04P	321-04Z

**323****00° BSP Male Hose End**

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel

**Hose Size****Thread Size****Part-No.  
Zinc****Part No.  
Chrome**

Dash 3	1/8" BSP	323-03P	323-03Z
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**331****45° BSP Swept Tube Hose End**

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel

**Hose Size****Thread Size****Part-No.  
Zinc****Part No.  
Chrome**

Dash 3	1/8" BSP	331-03P	331-03Z
Dash 4	1/4" BSP	331-04P	331-04Z

**332****90° BSP Swept Tube Hose End**

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel

**Hose Size****Thread Size****Part-No.  
Zinc****Part No.  
Chrome**

Dash 3	1/8" BSP	332-03P	332-03Z
Dash 4	1/4" BSP	332-04P	332-04Z

**758****00° Fixed UNF/JIC Female Circlip Bulkhead Hose End**

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel

**Hose Size****Thread Size****Part-No.  
Zinc****Part No.  
Chrome**

Dash 3	3/8x24 UNF Concave Seat	758-03-03P	758-03-03Z
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**759****00° Fixed UNF/JIC Female Circlip Bulkhead Hose End**

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel

**Hose Size****Thread Size****Part-No.  
Zinc****Part No.  
Chrome**

Dash 3	3/8x24 UNF Convex Seat	759-03-03P	759-03-03Z
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**758****00° Fixed Metric Female Circlip Bulkhead Hose End**

Re-usable Hose End, Stainless Steel, Black Steel, Zinc Plated Steel or Chrome Plated Steel

**Hose Size****Thread Size****Part-No.  
S/Steel****Part No.  
B/Steel****Part No.  
Zinc****Part No.  
Chrome**

Dash 3	M10x1.0 Concave Seat	642.094	642.090	758-03-31P	758-03-31Z
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**759****00° Fixed Metric Female Circlip Bulkhead Hose End**

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel

**Hose Size****Thread Size****Part-No.  
Zinc****Part No.  
Chrome**

Dash 3	M10x1.0 Convex Seat	759-03-31P	759-03-31Z
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**00° Fixed Metric Female Circlip Bulkhead Hose End**

Re-usable Hose End, Aluminium Anodised Black

**Hose Size****Thread Size****Part-No.  
Black**

Dash 3	M10x1.0 Concave Seat	642.096
Dash 4	M10x1.0 Concave Seat	642.095

# 600 Series Smooth Bore Rubber Hose

**749**

## 00° Fixed Metric Female Bulkhead Hose End

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel



Use with Locknut 2K8686Z

Hose Size	Thread Size	Part-No. Zinc	Part No. Chrome
Dash 3	M10x1.0 Concave Seat	749-03-31P	749-03-31Z

**750**

## 00° Fixed Metric Female Bulkhead Hose End

Re-usable Hose End, Zinc Plated Steel or Chrome Plated Steel



Use with Locknut 2K8686Z

Hose Size	Thread Size	Part-No. Zinc	Part No. Chrome
Dash 3	M10x1.0 Convex Seat	750-03-31P	750-03-31Z

**6001VW**

## 00° Metric Fixed Female Hose End

Re-usable Hose End, Aluminium Anodised Black/Gold or Black or Zinc Plated Steel or Chrome Plated Steel



Hose Size	Thread Size	Part No. Black/Gold	Part No. Black	Part No. Zinc	Part No. Chrome
Dash 3	M10x1.0 Concave Seat	649.664	649.664BK	6001-31PVW	6001-31ZVW

**6001**

## 00° Metric Hose End

Re-usable Hose End, Aluminium Anodised Black/Gold or Black



Hose Size	Thread Size	Part-No. Black/Gold	Part No. Black
Dash 4	M12x1.5	642.005	642.005BK
Dash 6	M12x1.5	642.025	642.025BK
Dash 6	M14x1.5	642.026	642.026BK
Dash 6	M16x1.5	642.065	642.065BK
Dash 8	M18x1.5	642.060	642.060BK

**6645**

## 45° Metric Block Swivel Hose End

Re-usable Hose End, Aluminium Anodised Black/Gold or Black



Hose Size	Thread Size	Part-No. Black/Gold	Part No. Black
Dash 4	M12x1.5	642.006	642.006BK
Dash 6	M12x1.5	642.027	642.027BK
Dash 6	M14x1.5	642.028	642.028BK
Dash 6	M16x1.5	642.066	642.066BK
Dash 8	M18x1.5	642.061	642.061BK

**6690**

## 90° Metric Block Swivel Hose End

Re-usable Hose End, Aluminium Anodised Black/Gold or Black



Hose Size	Thread Size	Part-No. Black/Gold	Part No. Black
Dash 4	M12x1.5	642.007	642.007BK
Dash 6	M12x1.5	642.029	642.029BK
Dash 6	M14x1.5	642.030	642.030BK
Dash 6	M16x1.5	642.067	642.067BK
Dash 8	M18x1.5	642.062	642.062BK

**5091**

## 00° Banjo Hose End

Re-usable Hose End, Aluminium Anodised Red/Blue, Black, Black/Gold, Zinc Plated Steel, Chrome Plated Steel or Stainless Steel



Hose Size	Banjo Size	Part-No. Red/Blue	Part No. Black	Part No. Black/Gold	Part No. Zinc	Part No. Chrome	Part No. S/Steel
Dash 3	d 8 mm x h 10 mm	-	-	-	-	-	642.109
Dash 3	d 10 mm (3/8" UNF) x h 8 mm	-	-	-	5091-03P	5091-03Z	-
Dash 3	d 10 mm x h 12 mm	642.117	642.117BK	642.108	-	-	642.110
Dash 3	d 11.2 mm (7/16" UNF) x h 12 mm	-	-	-	-	-	642.115
Dash 3	d 11.2 mm (7/16" UNF) x h 12.3 mm	-	-	-	5091-03-04P	5091-03-04Z	-
Dash 3	d 12 mm x h 12 mm	-	-	-	-	-	642.114
Dash 4	d 8 mm x h 10 mm	642.104	642.104BK	642.105	-	-	642.369
Dash 4	d 10 mm (3/8" UNF) x h 12.3 mm	-	-	-	5091-04-03P	5091-04-03Z	-
Dash 4	d 10 mm x h 11.2 mm	642.010	642.010BK	642.300	-	-	-
Dash 4	d 10 mm x h 12 mm	-	-	-	-	-	642.370
Dash 4	d 11.2 mm (7/16" UNF) x h 11.2 mm	642.012	642.012BK	642.301	-	-	-
Dash 4	d 11.2 mm (7/16"UNF) x h 15.7 mm	-	-	-	5091-04P	5091-04Z	-
Dash 4	d 12 mm x h 12 mm	642.011	642.011BK	642.302	-	-	-
Dash 4	d 13.2 mm (1/4" BSP) x h 12 mm	642.107	642.107BK	-	-	-	-
Dash 4	d 14 mm x h 12 mm	-	-	642.106	-	-	-
Dash 6	d 12 mm x h 12 mm	642.013	642.013BK	642.305	-	-	642.380
Dash 6	d 13.2 mm (1/4" BSP) x h 12 mm	642.017	642.017BK	642.306	-	-	-
Dash 6	d 14 mm x h 12 mm	642.014	642.014BK	642.307	-	-	642.381
Dash 6	d 16 mm x h 16 mm	642.015	642.015BK	642.308	-	-	-
Dash 6	d 18 mm x h 20 mm	642.016	642.016BK	642.309	-	-	-
Dash 8	d 14 mm x h 18 mm	-	-	-	-	-	642.382
Dash 8	d 18 mm x h 20 mm	642.019	642.019BK	-	-	-	-

**00° Extended Banjo with M10x1 Female Take-Off Hose End**

Re-usable Hose End  
Aluminium Anodised Black/Gold



Hose Size	Banjo Size	Take Off Female	Part No. Black/Gold
Dash 6	d 12 mm x h 18 mm	M10x1	642.314
Dash 6	d 14 mm x h 18 mm	M10x1	642.315

**15° Banjo Hose End**

Re-usable Hose End, Stainless Steel



Hose Size	Banjo Size	Part No. S/Steel
Dash 3	d 10 mm x h 12 mm	642.008

**Can't find it?**

For special fittings or non listed parts please call or email us

**15° Extended Banjo Hose End**

Re-usable Hose End, Aluminium Anodised Red/Blue or Stainless Steel



Hose Size	Banjo Size	Part No. Red/Blue	Part No. S/Steel
Dash 3	d 8 mm x h 10 mm	-	642.113
Dash 3	d 10 mm x h 8 mm	642.009	-

**5092****00° Extended Banjo Hose End**

Re-usable Hose End,  
Aluminium Anodised Red/Blue, Black, Black/Gold, Zinc Plated Steel,  
Chrome Plated Steel or Stainless Steel



Hose Size	Banjo Size	Shank Size	Part-No. Red/Blue	Part No. Black	Part No. Black/Gold	Part No. Zinc	Part No. Chrome	Part No. S/Steel
Dash 3	d 8 mm x h 8 mm	14mm	-	-	-	-	-	642.112
Dash 3	d 10 mm (3/8" UNF) x h 8 mm Short Shank	14 mm	-	-	-	5092-03P	5092-03Z	-
Dash 3	d 10 mm x h 8 mm Short Shank	14 mm	642.124	642.124BK	-	-	-	-
Dash 3	d 10 mm x h 11 mm Short Shank	14 mm	642.118	642.118BK	-	-	-	-
Dash 3	d 10 mm x h 8 mm	19.5mm	642.402	642.402BK	642.404	-	-	-
Dash 3	d 11.2 mm (7/16" UNF) x h 12 mm	-	-	-	-	5092-03-04P	5092-03-04Z	-
Dash 3	d 12 mm x h 12 mm	-	-	-	-	5092-03-M12P	5092-03-M12Z	-
Dash 4	d 12 mm x h 12 mm	23 mm	-	-	-	-	-	642.372

**5093****20° Extended Banjo Hose End**

Re-usable Hose End,  
Aluminium Anodised Red/Blue, Black, Zinc Plated Steel, Chrome  
Plated Steel or Stainless Steel



Hose Size	Banjo Size	Part-No. Red/Blue	Part No. Black	Part No. Zinc	Part No. Chrome	Part No. S/Steel
Dash 3	d 10 mm (3/8" UNF) x h 8 mm	-	-	5093-03P	5093-03Z	5093-03C
Dash 3	d 10 mm x h 8 mm	642.405	642.405BK	-	-	-
Dash 3	d 10 mm x h 11.2 mm	642.403	642.403BK	-	-	-
Dash 3	d 11.2 mm (7/16" UNF) x h 12 mm	-	-	5093-03-04P	5093-03-04Z	-
Dash 3	d 12 mm x h 12 mm	-	-	5093-03-M12P	5093-03-M12Z	-

**5094****45° Extended Banjo Hose End**

Re-usable Hose End,  
Zinc Plated Steel, Chrome Plated Steel or Stainless Steel



Hose Size	Banjo Size	Part-No. Zinc	Part No. Chrome	Part No. S/Steel
Dash 3	d 10 mm (3/8" UNF)x h 8 mm	5094-03P	5094-03Z	5094-03C

**5095**

## 00° Double Banjo Hose End

Re-usable Hose End,  
Aluminium Anodised Red/Blue, Black, Black/Gold, Zinc Plated  
Steel, Chrome Plated Steel or Stainless Steel



Hose Size	Banjo Size	Part-No. Red/Blue	Part No. Black	Part No. Black/Gold	Part No. Zinc	Part No. Chrome	Part No. S/Steel
Dash 3 2x	d 10 mm (3/8" UNF) x h 12 mm	-	-	-	5095-03P	5095-03Z	-
Dash 3 2x	d 10 mm x h 12 mm	642.122	642.122BK	642.123	-	-	642.120
Dash 3 2x	d 11.2 mm (7/16" UNF) x h 12mm	-	-	-	5095-03-04P	5095-03-04Z	-
Dash 4 2x	d 10 mm x h 14 mm	642.157	642.157BK	642.158	-	-	-
Dash 4 2x	d 14 mm x h 12 mm	-	-	642.159	-	-	-
Dash 6 2x	d 16 mm x h 16 mm	642.320	642.320BK	-	-	-	-

**5096**

## 90° Double Banjo Hose End

Re-usable Hose End,  
Aluminium Anodised Red/Blue,  
Black or Stainless Steel



Hose Size	Banjo Size	Part No. Red/Blue	Part No. Black	Part No. S/Steel
Dash 3 2x	d 10 mm x h 12 mm	642.413	642.413BK	642.130
Dash 4 2x	d 10 mm x h 12 mm	642.125	642.125BK	-
Dash 4 2x	d 12 mm x h 14 mm	642.126	642.126BK	-
Dash 6 2x	d 12 mm x h 12.3 mm	642.127	642.127BK	-
Dash 8 2x	d 12 mm x h 18 mm	642.128	-	-

**5097**

## 20° Side Bent Extended Banjo Hose End

Re-usable Hose End,  
Zinc Plated Steel, Chrome Plated  
Steel or Stainless Steel



Hose Size	Banjo Size	Part No. Zinc	Part No. Chrome	Part No. S/Steel
dash 3	d 10 mm x h 8 mm	5097-03P	5097-03Z	5097-03C

**5098**

## 00° Extended Double Banjo Hose End

Re-usable Hose End,  
Chrome Plated Steel  
or Stainless Steel



Hose Size	Banjo Size	Part No. Chrome	Part No. S/Steel
dash 3	d 10 mm x h 8 mm	5098-03Z	5098-03C

## Tools for the job?

Get the right tools, everything you need  
to do the job on page 76



**1205**

## Replacement Olives

To Suit 600 Series Hose,  
Aluminium, Brass or  
Stainless Steel



Hose Size	Part No. Aluminium	Part No. Brass	Part No. S/Steel
dash 3	642.135	642.133	642.134
dash 4	642.045	642.046	-
dash 6	642.049	642.047	642.136
dash 8	642.138	642.048	642.137

# Hardline Tube System

Perfect for airjack and fuel systems, the ATEC Hardline system utilises lightweight Hycot® aluminium tubing with a polyamide coating, and a wide range of compression-style end fittings. Aluminium hardline offers a weight saving over traditional stainless braided hoses and can allow for neater solutions in tight applications.



## Aluminium Hardline

Black, Polyamid coated AlMn1 F13



Tube Outer Dia.	Tube Inner Dia.	Part No.
5 mm	3 mm	649.909
6 mm	4 mm	647.243
8 mm	6 mm	647.052
10 mm	8 mm	647.053
10 mm	7.6 mm	647.239
12 mm	10 mm	647.240
15 mm	12.6 mm	647.241
18 mm	15.52 mm	647.242

## Product Specs

For full hardline tube specification visit: [atecautotechnic.com](http://atecautotechnic.com)



## 00° Bulkhead Tube Joiner

Reusable Aluminium Hardline Fitting, Aluminium Anodised Red/Blue, Black or Black/Gold

Tube Dia. #1	Tube Dia. #2	Part No. Red/Blue	Part No. Black	Part No. Black/Gold
8 mm	8 mm	647.003	647.003BK	647.001
10 mm	10 mm	647.002	647.002BK	647.000
12 mm	12 mm	647.158	647.158BK	-
18 mm	18 mm	647.262	-	-



## 45° Bulkhead Tube Joiner

Reusable Aluminium Hardline Fitting, Aluminium Anodised Red/Blue, Black or Black/Gold

Tube Dia. #1	Tube Dia. #2	Part No. Red/Blue	Part No. Black	Part No. Black/Gold
8 mm	8 mm	647.179	647.179BK	647.177
10 mm	10 mm	647.180	647.180BK	647.178



## 90° Bulkhead Tube Joiner

Reusable Aluminium Hardline Fitting, Aluminium Anodised Red/Blue, Black or Black/Gold

Tube Dia. #1	Tube Dia. #2	Part No. Red/Blue	Part No. Black	Part No. Black/Gold
8 mm	8 mm	647.046	647.046BK	647.047
10 mm	10 mm	647.045	647.045BK	647.048
12 mm	12 mm	647.156	647.156BK	-
15 mm	15 mm	647.225	-	-

## Bulkhead Tube Tee

Reusable Aluminium Hardline Fitting, Aluminium Anodised Red/Blue, Black or Black/Gold

Tube Dia. #1	Tube Dia. #2	Tube Dia. #3	Part No. Red/Blue	Part No. Black
8 mm	8 mm	8 mm	647.149	647.149BK
10 mm	10 mm	10 mm	647.085	647.085BK



## 00° Tube Joiner

Reusable Aluminium Hardline Fitting, Aluminium Anodised Red/Blue, Black or Black/Gold

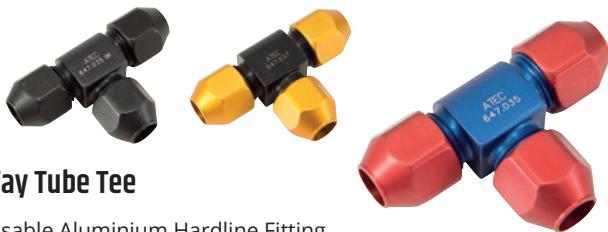
Tube Dia. #1	Tube Dia. #2	Part No. Red/Blue	Part No. Black	Part No. Black/Gold
8 mm	8 mm	647.016	647.016BK	647.018
10 mm	10 mm	647.015	647.015BK	647.017
10 mm	8 mm	-	647.019BK	647.019
12 mm	12 mm	647.014	647.014BK	-

## Need Help?

For product advice and technical assistance call our sales team direct



# Hardline Tube System



## 3 Way Tube Tee

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue, Black or Black/Gold

Tube Dia. #1	Tube Dia. #2	Tube Dia. #3	Part No. Red/Blue	Part No. Black	Part No. Black/Gold
6 mm	6 mm	6 mm	647.034	647.034BK	-
8 mm	8 mm	8 mm	647.036	647.036BK	647.038
8 mm	10 mm	8 mm	647.116	647.116BK	-
10 mm	10 mm	10 mm	647.035	647.035BK	647.037
12 mm	12 mm	12 mm	647.039	647.039 BK	-

## 4 Way Tube Tee

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue, Black or Black/Gold

Tube Dia. #1	Tube Dia. #2	Tube Dia. #3	Tube Dia. #4	Part No. Red/Blue	Part No. Black	Part No. Black/Gold
8 mm	8 mm	8 mm	8 mm	647.125	647.125BK	647.127
8 mm	8 mm	8 mm	10 mm	647.124	647.124BK	-
10 mm	10 mm	10 mm	10 mm	647.126	647.126BK	647.128

## 00° Banjo Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue, Black or Black/Gold

Banjo Size	Tube Dia.	Part No. Red/Blue	Part No. Black	Part No. Black/Gold
d 12 mm x h 18 mm	8 mm	647.075	647.075BK	647.200
d 14 mm x h 18 mm	8 mm	647.076	647.076BK	647.201
d 12 mm x h 12 mm	10 mm	647.084	647.084BK	647.205
d 12 mm x h 18 mm	10 mm	647.077	647.077BK	647.202
d 14 mm x h 18 mm	10 mm	647.078	647.078BK	647.203
d 16.7 mm x h 16 mm	10 mm	-	-	647.204
d 12 mm x h 18 mm	12 mm	647.079	647.079BK	-
d 14 mm x h 18 mm	12 mm	647.080	647.080BK	-

## 00° Banjo Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue, Black or Black/Gold

Banjo Size	Tube Dia.	Part No. Red/Blue	Part No. Black	Part No. Black/Gold
d 12 mm x h 18 mm	8 mm	647.100	647.100BK	647.104
d 14 mm x h 18 mm	8 mm	647.102	647.102BK	647.106
d 12 mm x h 18 mm	10 mm	647.101	647.101BK	647.105
d 14 mm x h 18 mm	10 mm	647.103	647.103BK	647.107

## 00° Banjo Tube Fitting with JIC Male Take Off



Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue

Thread Size	Banjo Size	Tube Dia	Part No. Red/Blue
Dash 6 JIC Male	d 14 mm x h 18 mm	10 mm	647.109
Dash 6 JIC Male	d 12 mm x h 18 mm	12 mm	647.110
Dash 8 JIC Male	d 14 mm x h 18 mm	12 mm	647.111



## 00° Tube Weld On Fitting

Aluminium AlMgSi1 Hardline Fitting,  
Aluminium Anodised Red, Black or Gold

Tube Dia.	Part No. Red	Part No. Black	Part No. Gold
8 mm	647.064	647.064BK	647.066
10 mm	647.065	647.065BK	647.067

## Replacement Tube Olives

Aluminium

Tube Dia.	Part No.
6 mm	647.074
8 mm	647.081
10 mm	647.082
12 mm	647.083
15 mm	647.249
18 mm	647.299



## Replacement Tube Sockets

Aluminium Anodised  
Red, Black or Gold

Tube Dia.	Part No. Red	Part No. Black	Part No. Gold
6 mm	647.129	647.129BK	-
8 mm	647.130	647.130BK	647.120
10 mm	647.131	647.131BK	647.121
12 mm	647.132	647.132BK	-
15 mm	647.248	-	-



## 00° BSP Male Tube Fitting Self Centring Washer Seat on BSP Male Side

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Black/Gold

Thread Size Male	Tube Dia.	Part No. Black/Gold
BSP (G) 1/4"	10 mm	647.068
BSP (G) 3/8"	10 mm	647.069
BSP (G) 1/2"	10 mm	647.142
BSP (G) 1/2"	12 mm	647.141



### 00° JIC Bulkhead Male Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue, Black or Stainless Steel

Thread Size Male	Tube Dia.	Part No. Red/Blue	Part No. Black	Part No. S/Steel
Dash 4 JIC Bulkhead	6 mm	647.008	647.008BK	-
Dash 4 JIC Bulkhead	8 mm	647.163	647.163BK	-
Dash 6 JIC Bulkhead	8 mm	647.006	647.006BK	-
Dash 6 JIC Bulkhead	10 mm	647.005	647.005BK	647.007
Dash 8 JIC Bulkhead	12 mm	647.153	647.153BK	-
Dash 10 JIC Bulkhead	15 mm	647.222	-	-
Dash 12 JIC Bulkhead	18 mm	647.260	-	-
Dash 16 JIC Bulkhead	22 mm	647.280	-	-

### 45° JIC Bulkhead Male Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Thread Size Male	Tube Dia.	Part No. Red/Blue	Part No. Black
Dash 4 JIC Bulkhead	8 mm	647.164	647.164BK
Dash 6 JIC Bulkhead	8 mm	647.011	647.011BK
Dash 6 JIC Bulkhead	10 mm	647.010	647.010BK
Dash 8 JIC Bulkhead	12 mm	647.154	647.154BK
Dash 10 JIC Bulkhead	15 mm	647.223	-
Dash 12 JIC Bulkhead	18 mm	647.261	-

### 90° JIC Bulkhead Male Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Thread Size Male	Tube Dia.	Part No. Red/Blue	Part No. Black
Dash 4 JIC Bulkhead	8 mm	647.165	647.165BK
Dash 6 JIC Bulkhead	8 mm	647.041	647.041BK
Dash 6 JIC Bulkhead	10 mm	647.040	647.040BK
Dash 8 JIC Bulkhead	12 mm	647.155	647.155BK
Dash 10 JIC Bulkhead	15 mm	647.224	-

### 00° JIC Male Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Thread Size Male	Tube Dia.	Part No. Red/Blue	Part No. Black
Dash 4 JIC	6 mm	647.022	647.022BK
Dash 4 JIC	8 mm	647.169	647.169BK
Dash 6 JIC	8 mm	647.021	647.021BK
Dash 6 JIC	10 mm	647.020	647.020BK
Dash 8 JIC	10 mm	647.140	647.140BK
Dash 8 JIC	12 mm	647.170	647.170BK
Dash 10 JIC	15 mm	647.221	-
Dash 12 JIC	18 mm	647.250	-
Dash 16 JIC	22 mm	647.270	-

### 00° JIC Female Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Thread Size Female	Tube Dia.	Part No. Red/Blue	Part No. Black
Dash 4 JIC	6 mm	647.024	647.024BK
Dash 4 JIC	8 mm	647.166	647.166BK
Dash 6 JIC	8 mm	647.025	647.025BK
Dash 6 JIC	10 mm	647.072	647.072BK
Dash 8 JIC	12 mm	647.150	647.150BK

### 45° JIC Female Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Thread Size Female	Tube Dia.	Part No. Red/Blue	Part No. Black
Dash 4 JIC	8 mm	647.167	647.167BK
Dash 6 JIC	8 mm	647.183	647.183BK
Dash 6 JIC	10 mm	647.181	647.181BK
Dash 8 JIC	12 mm	647.151	647.151BK

### 90° JIC Female Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Thread Size Female	Tube Dia.	Part No. Red/Blue	Part No. Black
Dash 4 JIC	6 mm	647.028	647.028BK
Dash 4 JIC	8 mm	647.168	647.168BK
Dash 6 JIC	8 mm	647.029	647.029BK
Dash 6 JIC	10 mm	647.032	647.032BK
Dash 8 JIC	10 mm	647.027	647.027BK
Dash 8 JIC	12 mm	647.152	647.152BK

### Tube Tee - Female JIC On the Side

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Tube Dia. #1	Thread Size Female	Tube Dia. #2	Part No. Red/Blue	Part No. Black
8 mm	Dash 4 JIC	8 mm	647.096	647.096BK
8 mm	Dash 6 JIC	8 mm	647.088	647.088BK
10 mm	Dash 4 JIC	10 mm	647.114	647.114BK
10 mm	Dash 6 JIC	10 mm	647.091	647.091BK
12 mm	Dash 8 JIC	12 mm	647.161	647.161BK
8 mm	Dash 4 JIC	10 mm	647.113	647.113BK

### Tube Tee - Male JIC On the Side

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Tube Dia. #1	Thread Size Male	Tube Dia. #2	Part No. Red/Blue	Part No. Black
6 mm	Dash 4 JIC	6 mm	647.092	647.092BK
10 mm	Dash 6 JIC	10 mm	647.098	647.098BK

### Tube Tee - Female JIC On the Run

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue



Thread Size Female	Tube Dia. #1	Tube Dia. #2	Part No. Red/Blue
Dash 4 JIC	8 mm	8 mm	647.097
Dash 6 JIC	8 mm	8 mm	647.119

## Tube Tee - Male JIC On the Run

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Thread Size Male	Tube Dia. #1	Tube Dia. #2	Part No. Red/Blue	Part No. Black
Dash 6 JIC	10 mm	10 mm	647.115	647.115BK

## Tube Tee - Male JIC On the Run and Side

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black

Thread Size #1 Male	Thread Size #2 Male	Tube Dia. #1	Part No. Red/Blue	Part No. Black
Dash 6 JIC	Dash 6 JIC	10 mm	647.118	647.118BK

## Tube Tee - 2x Male JIC On the Run

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Thread Size #1 Male	Tube Dia. #1	Thread Size #2 Male	Part No. Red/Blue	Part No. Black
Dash 8 JIC	12 mm	Dash 8 JIC	647.117	647.117BK

## Bulkhead Tee - Bulkhead Male JIC On the Side

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Red/Blue or Black



Tube Dia. #1	Thread Size Male	Tube Dia. #2	Part No. Red/Blue	Part No. Black
6 mm	Dash 4 JIC Bulkhead	6 mm	647.058	647.058BK
6 mm	Dash 6 JIC Bulkhead	6 mm	647.059	647.059BK
8 mm	Dash 4 JIC Bulkhead	8 mm	647.095	647.095BK
8 mm	Dash 6 JIC Bulkhead	8 mm	647.086	647.086BK
10 mm	Dash 6 JIC Bulkhead	10 mm	647.090	647.090BK
12 mm	Dash 8 JIC Bulkhead	12 mm	647.162	647.162BK

## 00° Metric Bulkhead Male Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Black/Gold



Thread Size Male	Tube Dia.	Part No. Black/Gold
M12x1.5 Bulkhead	8 mm	647.171
M14x1.5 Bulkhead	8 mm	647.061
M14x1.5 Bulkhead	10 mm	647.060
M18x1.5 Bulkhead	12 mm	647.159

## 45° Metric Bulkhead Male Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Black/Gold



Thread Size Male	Tube Dia.	Part No. Black/Gold
M12x1.5 Bulkhead	8 mm	647.172
M14x1.5 Bulkhead	8 mm	647.056
M14x1.5 Bulkhead	10 mm	647.055

## 90° Metric Bulkhead Male Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Black/Gold



Thread Size Male	Tube Dia.	Part No. Black/Gold
M12x1.5 Bulkhead	8 mm	647.173
M14x1.5 Bulkhead	8 mm	647.042
M14x1.5 Bulkhead	10 mm	647.043

## 00° Metric Male Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Black/Gold



Thread Size Male	Tube Dia.	Part No. Black/Gold
M14x1.5	8 mm	647.071
M12x1.5	10 mm	647.143
M14x1.5	10 mm	647.070
M18x1.5	10 mm	647.063
M18x1.5	12 mm	647.062

## 00° Metric Female Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Black/Gold



Thread Size Female	Tube Dia.	Part No. Black/Gold
M12x1.5	8 mm	647.174
M14x1.5	8 mm	647.026
M14x1.5	10 mm	647.073

## 45° Metric Female Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Black/Gold



Thread Size Female	Tube Dia.	Part No. Black/Gold
M12x1.5	8 mm	647.175
M14x1.5	8 mm	647.184
M14x1.5	10 mm	647.182

## 90° Metric Female Tube Fitting

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Black/Gold



Thread Size Female	Tube Dia.	Part No. Black/Gold
M14x1.5	8 mm	647.031
M14x1.5	10 mm	647.030
M18x1.5	10 mm	647.013

## Tube Tee - Metric Female On the Side

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Black/Gold



Tube Dia. #1	Thread Size Female	Tube Dia. #2	Part No. Black/Gold
8 mm	M14x1.5	8 mm	647.089
10 mm	M14x1.5	10 mm	647.094

## Bulkhead Tee - Metric Bulkhead Male On the Side

Reusable Aluminium Hardline Fitting,  
Aluminium Anodised Black/Gold



Tube Dia. #1	Thread Size Male	Tube Dia. #2	Part No. Black/Gold
8 mm	M14x1.5 Bulkhead	8 mm	647.087
10 mm	M14x1.5 Bulkhead	10 mm	647.093

# Hardline Brake System

ATEC's hardline brake system offers a durable and neat installation which can help contribute to a firmer brake pedal as there's none of the expansion issues that can be found when using a traditional flexible hose system. A wide range of end fittings, tee pieces and banjos are available to aid every installation.



## Brake Hardline

Steel PA-Coated, Black,  
Supplied in straight lengths  
up to 3m.

Diameter	Part No. Steel
5.20 mm	649.911



## Male Tube Nuts - Metric

To Suit 4.76 mm (3/16") Hardline,  
Aluminium Anodised Black,  
Stainless Steel or Steel

Thread Size	Part No. Black	Part No. S/Steel	Part No. Steel
M10x1	649.456	649.826	649.912
M10x1 Long	649.903	650.818	-
M12x1	649.458	650.832	649.919



## Male Tube Nuts - Metric

To Suit 5.20 mm Hardline,  
Aluminium Anodised Black,  
Stainless Steel or Steel

Thread Size	Part No. Black	Part No. S/Steel	Part No. Steel
M10x1	650.825	650.843	650.824
M10x1 Long	-	650.844	650.841
M12x1	650.836	650.845	650.842

## Male Tube Nuts - Imperial

To Suit 4.76 mm (3/16") Hardline,  
Aluminium Anodised Black or  
Stainless Steel

Thread Size	Part No. Black	Part No. S/Steel
UNF 3/8"-24	649.899	650.826
UNF 3/8"-24 Long	-	650.833



## Male Tube Nut Cap - Metric

To Suit M10x1 Form F,  
Aluminium Anodised Black

Thread Size Female	Part No. Black
M10x1	650.859



## Bleed Nipple - Metric

90° Seat,  
Aluminium Anodised Black,  
Stainless Steel or Steel

Thread Size	Part No. Black	Part No. S/Steel	Part No. Steel
M10x1	649.668	649.901	649.900
M10x1 Long	650.822	-	-
M10x1 O-Ring Grooved	649.926	-	-

## Bleed Nipple - Imperial

90° Seat,  
Aluminium Anodised Black

Thread Size	Part No. Black
3/8"-24 UNF	649.459



## Bleed Nipple Silicone Cap

Black EPDM  
*Note: Bleed Nipple not included*

Part No.
188.050

## 00° Tube Joiner

For Flare DIN74234 Form F,  
Without Mounting Lugs,  
Aluminium Anodised Black or  
Stainless Steel

Thread Size Female	Part No. Black	Part No. S/Steel
2x M10x1	649.891	650.834



## 00° Tube Joiner

For Flare DIN74234 Form F,  
With Mounting Lugs Aluminium  
Anodised Black or Stainless Steel

Thread Size Female	Part No. Black	Part No. S/Steel
2x M10x1	649.904	650.893

## 00° Bulkhead Tube Joiner

For Flare DIN74234 Form F,  
Bulkhead Mounted on the Female Side,  
Aluminium Anodised Black or Stainless Steel



Thread Size Female	Thread Size Female	Part No. Black	Part No. S/Steel
2x M10x1	-	649.453	649.902
M10x1	3/8"-24 UNF	649.915	-

## 90° Bulkhead Tube Joiner

For Flare DIN74234 Form F,  
Bulkhead Mounted on the Female Side,  
Aluminium Anodised Black or Stainless Steel

Thread Size Female	Part No. Black	Part No. S/Steel
2x M10x1	649.910	650.861
2x M12x1	650.828	-



## 00° Bulkhead Adaptor

For Flare DIN74234 Form F,  
Bulkhead Mounted on JIC Male Side,  
Aluminium Anodised Black  
or Stainless Steel



Thread Size Male	Thread Size Female	Part No. Black	Part No. S/Steel
Dash 3 JIC Bulkhead	M10x1	649.916	649.944



## 00° Bulkhead Adaptor - Bulkhead on Female Side

For Flare DIN74234 Form F,  
Bulkhead Mounted on the Female Side,  
Aluminium Anodised Black or  
Stainless Steel

Thread Size Female	Thread Size Male	Part No. Black	Part No. S/Steel
M10x1	Dash 3 JIC	649.452	649.906

## 90° Bulkhead Adaptor - Bulkhead on Male Side

For Flare DIN74234 Form F,  
Bulkhead Mounted on the Male Side,  
Aluminium Anodised Black  
or Stainless Steel



Thread Size Female	Thread Size Male	Part No. Black	Part No. S/Steel
M10x1	Dash 3 JIC	649.450	649.905

## 3 Way Tube Tee

For Flare DIN74234 Form F,  
Without Mounting Lugs,  
Aluminium Anodised Black



Thread Size Female	Part No. Black
3x M10x1	649.296

## 3 Way Tube Tee

For Flare DIN74234 Form F, With Mounting Lugs,  
Aluminium Anodised Black  
or Stainless Steel

*Mounts are to suit M5 Bolts or Studs*



Thread Size Female	Part No. Black	Part No. S/Steel
3x M10x1	649.295	650.862
3x M12x1	-	649.848

## 4 Way Tube Tee

For Flare DIN74234 Form F,  
With Mounting Lugs,  
Aluminium Anodised Black

*Mounts are to suit M5 Bolts or Studs*



Thread Size Female	Part No. Black
4x M10x1	649.923

## 4 Way Distribution Tube Tee - 2 Way

For Flare DIN74234 Form F,  
With Mounting Lugs,  
Aluminium Anodised Black

*Mounts are to suit M5 Bolts or Studs*



Thread Size #1 Female	Thread Size #2 Female	Part No. Black
2x M10x1	2x M10x1	650.422

## 4 Way Tube Tee

For Flare DIN74234 Form F,  
With Mounting Lugs,  
Aluminium Anodised Black

*Mounts are to suit M5 Bolts or Studs*



Thread Size Female	Part No. Black
4x M10x1	649.267

## 5 Way Tube Tee

For Flare DIN74234 Form F,  
With Mounting Lugs,  
Aluminium Anodised Black

*Mounts are to suit M5 Bolts or Studs*



Thread Size Female	Part No. Black
5x M10x1	649.268

## 4 Way Tube Tee with Bleed Nipple

For Flare DIN74234 Form F, With Mounting Lugs,  
Aluminium Anodised Black

*Includes 1 Bleed Nipple*

*Mounts are to suit M5 Bolts or Studs*



Thread Size Female	Part No. Black
4x M10x1	649.661

## 5 Way Tube Tee with Bleed Nipple

For Flare DIN74234 Form F,  
With Mounting Lugs,  
Aluminium Anodised Black

*Includes 1 Bleed Nipple*

*Mounts are to suit M5 Bolts or Studs*



Thread Size Female	Part No. Black
5x M10x1	649.659

**Bulkhead Tee - Bulkhead On the Side**

For Flare DIN74234 Form F,  
Bulkhead Mounted,  
Aluminium Anodised Black



Thread Size Female	Part No. Black
3x M10x1	649.454

**Bulkhead Tee - Bulkhead On the Run**

For Flare DIN74234 Form F,  
Bulkhead Mounted,  
Aluminium Anodised Black



Thread Size Female	Part No. Black
3x M10x1	649.455

**Bulkhead Tee - Bulkhead on the Leg**

For Flare DIN74234 Form F,  
Bulkhead Mounted,  
Aluminium Anodised Black



Thread Size Female	Part No. Black
3x M10x1	649.914

**4 Way Bulkhead Tee**

For Flare DIN74234 Form F,  
Bulkhead Mounted,  
Aluminium Anodised Black



Thread Size Female	Part No. Black
4x M10x1	649.660

**Bulkhead Tee - Bulkhead  
On the Side**

For Flare DIN74234 Form F,  
Bulkhead Mounted on the Male JIC Side,  
Aluminium Anodised Black



Thread Size Female	Thread Size Male	Thread Size Female	Part No. Black
M10x1	Dash 3 JIC	M10x1	649.451

**Bulkhead Tee - Bulkhead  
On the Run**

For Flare DIN74234 Form F,  
Bulkhead Mounted on the Male JIC Side,  
Aluminium Anodised Black



Thread Size Female	Thread Size Female	Thread Size Male	Part No. Black
M10x1	M10x1	Dash 3 JIC	649.457

**Can't find it?**

For special fittings or non  
listed parts please call or email us

**Bulkhead Tee - Bulkhead On the Leg**

For Flare DIN74234 Form F,  
Bulkhead Mounted on the Male JIC Side,  
Aluminium Anodised Black



Thread Size Male	Thread Size Female	Thread Size Female	Part No. Black
Dash 3 JIC	M10x1	M10x1	649.908

**90° Female/Female Adaptor**

For Flare DIN74234 Form F,  
Aluminium Anodised Black  
or Stainless Steel



Thread Size Female	Thread Size Female Swivel	Part No. Black	Part No. S/Steel
M10x1	Dash 3 JIC	649.666	649.946

**3 Way Tee - Female JIC  
On the Side**

For Flare DIN74234 Form F,  
Aluminium Anodised Black or  
Stainless Steel



Thread Size Female	Thread Size Female Swivel	Thread Size Female	Part No. Black	Part No. S/Steel
M10x1	Dash 3 JIC	M10x1	649.667	649.889

**00° Banjo Tube Adaptor**

For Flare DIN74234 Form F,  
Aluminium Anodised Black or  
Stainless Steel



Banjo Size	Thread Size Female	Part No. Black	Part No. S/Steel
d 10 mm x h 12 mm	M10x1	649.298	649.924
d 11.2 (7/16" UNF) mm x h 12 mm	M10x1	649.301	-
d 12 mm x h 12 mm	M10x1	649.263	649.302
d 14 mm x h 12 mm	M10x1	649.918	-
d 10 mm x h 12 mm	M12x1	650.639	-
d 12 mm x h 12 mm	M12x1	649.264	650.634

**00° Double Banjo Tube Adaptor**

For Flare DIN74234 Form F,  
Aluminium Anodised Black



Thread Size Female	Banjo Size	Thread Size Female	Part No. Black
M10x1	d 10 mm x h 12 mm	M10x1	649.299
M10x1	d 12 mm x h 12 mm	M10x1	649.262

**90° Double Banjo Tube Adaptor**

For Flare DIN74234 Form F,  
Aluminium Anodised Black



Thread Size Female	Banjo Size	Thread Size Female	Part No. Black
M10x1	d 10 mm x h 12 mm	M10x1	649.300
M10x1	d 12 mm x h 12 mm	M10x1	649.669

### Banjo Bolt - Metric with Female Take-Off

Port for Flare DIN74234 Form F,  
M10x1 Form F Female  
Aluminium Anodised Black



Thread Size Male	Thread Length	Port Size Female	Part No. Black
M10x1	20 mm	M10x1	649.925
M10x1	25 mm	M10x1	649.663

### Banjo Bolt - Imperial with Female Take-Off

Port for Flare DIN74234 Form F,  
M10x1 Form F Female  
Aluminium Anodised Black



Thread Size Male	Thread Length	Port Size Female	Part No. Black
3/8"-24 UNF	20 mm	M10x1	649.654
7/16"-20 UNF	25 mm	M10x1	649.665

### 00° Metric Adaptors to Female DIN74234 Form F



Aluminium Anodised Black or Titanium (Tin Coated)

Thread Size Male	Thread Size Female	Hex Size	Part No. Black	Part No. Titanium
M10x1	M10x1	14 mm	-	650.700
M10x1	M10x1	15 mm	649.655	-
M12x1	M10x1	17 mm	649.907	-
M12x1.5	M10x1	17 mm	649.942	-
M14x1.5	M10x1	19 mm	649.943	-

### 00° Imperial Adaptors to Female DIN74234 Form F



Aluminium Anodised Black or Titanium

Thread Size Male	Thread Size Female	Hex Size	Part No. Black	Part No. S/Steel	Part No. Titanium
3/8"-24 UNF	M10x1	14 mm	649.656	650.270	650.387
7/16"-20 UNF	M10x1	15 mm	649.657	-	-
7/16"-20 UNF	M10x1	5/8"	-	649.658	-

### 00° NPT Adaptors to Female DIN74234 Form F



Aluminium Anodised Black

Thread Size Male	Thread Size Female	Hex Size	Part No. Black
1/8" NPT	M10x1	14 mm	649.913

# Huge range

Available in stock

Here at ATEC we carry an extensive range of standard parts available off-the-shelf, including unique adaptors, tee pieces, banjo and bolt fittings. Call or email us today for more information.

[sales@atecautotechnic.com](mailto:sales@atecautotechnic.com)



### Shut off Valve

With EPDM Seals,  
Aluminium Anodised Black

Thread Size	Thread Size	Part No. Black
M10x1 Form F Female	M10x1 Form F Female	648.200
Dash 3 JIC Male	Dash 3 JIC Male	648.201

### Tube Spacers

Suitable for tubes up to 6mm OD,  
Blue Silicone

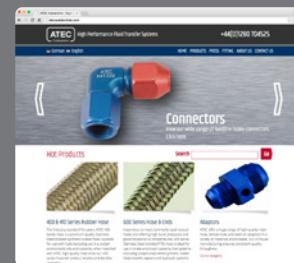


Size	Part No. Blue
Single / 1 Rohr	648.124
Double / 2 Rohre	648.125
Triple / 3 Rohre	648.126

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Build your list of requirements online from any mobile device, using the new ATEC responsive website. Submit your list to our team who will respond with your quotation.



# Smooth Bore PTFE Bleed Hose System

A quick and easy to assemble system, using simple push-fit hose ends which feature durable and chemical resistant PTFE hose. Ideal for low pressure bleed lines and sight tubes.



## Transparent PTFE Hose

Bleed System, PTFE

Hose Size (ODxID)	Part No.
6x4 mm	646.240
8x6 mm	646.243
10x8 mm	646.241
12x10 mm	646.242



**2001**

## 00° Hose End

Bleed System, Aluminium Anodised, Blue/Red, Black or Black/Gold

Hose Size	Thread. Size Female	Part No. Blue/Red	Part No. Black	Part No. Black/Gold
6x4 mm	Dash 2 JIC	646.210	-	-
6x4 mm	Dash 3 JIC	646.204	646.204BK	646.205



**2001**

## 00° Male Hose End

Bleed System, Aluminium Anodised, Blue/Red, Black or Black/Gold

Hose Size	Thread. Size Male	Part No. Blue/Red	Part No. Black	Part No. Black/Gold
6x4 mm	M10x1	646.202	646.202BK	646.203



**2045**

## 45° Block Hose End

Bleed System, Aluminium Anodised, Blue/Red, Black or Black/Gold

Hose Size	Thread. Size Female	Part No. Blue/Red	Part No. Black	Part No. Black/Gold
6x4 mm	Dash 3 JIC	646.206	646.206BK	646.207



**2045**

## 00° Weld On Fitting

Bleed System, Aluminium Anodised Sockets, Red, Black or Gold

Hose Size	Part No. Red	Part No. Black	Part No. Gold
6x4 mm	646.200	646.200BK	646.201



**2090**

## 90° Block Hose End

Bleed System, Aluminium Anodised, Blue/Red, Black or Black/Gold

Hose Size	Thread. Size Female	Part No. Blue/Red	Part No. Black	Part No. Black/Gold
6x4 mm	Dash 3 JIC	646.208	646.208BK	646.209



**2090**

Bleed System, Aluminium Anodised Sockets, Red, Black or Gold

Hose Size	Part No. Red	Part No. Black	Part No. Gold
6x4 mm	646.211	646.211BK	646.212



### 00° Banjo Hose End

Bleed System,  
Aluminium Anodised, Blue/Red, Black or Black/Gold

Hose Size	Banjo Size	Part No. Blue/Red	Part No. Black	Part No. Black/Gold
6x4 mm	d 10mm x h 10mm	646.215	646.215BK	646.216

## Huge Range In-stock NOW

We have extensive stocks of standard parts on the shelf, including a huge range of unique adaptors , tee pieces, banjo's and bolts.

**Call for more information.**



### 00° Double Banjo Hose End

Bleed System,  
Aluminium Anodised, Blue/Red, Black or Black/Gold

Hose Size	Banjo Size	Part No. Blue/Red	Part No. Black	Part No. Black/Gold
6x4 mm	d 10 mm x h 10 mm	646.217	646.217BK	646.218

### Replacement Tube Sockets

Bleed System, Aluminium Anodised, Red, Black or Gold

Hose Size	Part No. Red	Part No. Black	Part No. Gold
6x4 mm	646.248	646.248BK	646.249



# Adaptors

ATEC's high-quality male-to-male, female-to-male and weld-on adaptors come in a wide range of materials and thread sizes. Our in-house manufacturing ensures consistently high quality throughout.


**815**

## Adaptor Dash Male to Dash Male

Aluminium Anodised Blue, Black, Stainless Steel or Steel

Thread Size #1	Thread Size #2	Hex Size	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Steel
Dash 2	Dash 2	13 mm	649.815	649.815BK	649.816	-
Dash 3	Dash 3	14 mm	649.101	649.101BK	649.110	649.111
Dash 4	Dash 4	17 mm	649.102	649.102BK	649.112	-
Dash 5	Dash 5	17 mm	649.100	649.100BK	-	-
Dash 6	Dash 6	19 mm	649.103	649.103BK	649.113	649.817
Dash 8	Dash 8	24 mm	649.104	649.104BK	-	-
Dash 10	Dash 10	27 mm	649.105	649.105BK	-	-
Dash 12	Dash 12	32 mm	649.106	649.106BK	-	-
Dash 16	Dash 16	41 mm	649.107	649.107BK	-	-
Dash 20	Dash 20	46 mm	650.259	-	-	-

**815x**

## Adaptor Dash Male to Dash Male with Female Take Off

Aluminium Anodised Blue or Black



Thread Size #1	Thread Size #2	Port Size	Hex Size	Part No. Blue	Part No. Black
Dash 4	Dash 4	M8x1	27 mm	650.838	650.838BK
Dash 6	Dash 6	M10x1	25.4 mm (1")	650.500	650.500BK
Dash 6	Dash 6	M12x1.5	30 mm	650.369	650.369BK
Dash 6	Dash 6	M14x1.5	30 mm	650.370	650.370BK
Dash 8	Dash 8	M8x1	30 mm	650.850	-
Dash 8	Dash 8	M10x1	30 mm	650.811	650.811BK
Dash 10	Dash 10	M10x1	32 mm	650.815	650.815BK
Dash 16	Dash 12	M10x1	36 mm	650.502	650.502BK
Dash 16	Dash 16	M10x1	36 mm	650.503	650.503BK
Dash 6	Dash 6	1/8" NPT	25.4 mm (1")	650.501	650.501BK
Dash 10	Dash 10	1/8" NPT	32 mm	650.812	650.812BK

**815x**

## Adaptor Dash Male to Dash Male with Double Female Take Off



Aluminium Anodised Blue or Black

Thread Size #1	Thread Size #2	Port Size 180° Opposite	Hex Size	Part No. Blue	Part No. Black
Dash 8	Dash 8	2x M10x1	30 mm	650.809	650.809BK
Dash 16	Dash 16	2x M10x1	36 mm	650.892	-
Dash 6	Dash 6	1x M10x1, 1x 1/8" NPT	27 mm	-	650.895BK

## Adaptor UNF Male to Dash Male

Self Centering Washer Seat on UNF Male Side,  
Aluminium Anodised Blue, Black, Stainless Steel or Steel



Thread Size #1	Thread Size #2	Hex Size	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Steel
5/16"-24 UNF	Dash 3	13 mm	650.869	-	-	-
3/8"-24 UNF	Dash 3	14 mm	649.071	649.071BK	649.070	649.077
3/8"-24 UNF L	Dash 3	14 mm	-	-	650.288	-
3/8"-24 UNF *	Dash 3	14 mm	-	-	650.840	-
3/8"-24 UNF	Dash 4	14 mm	649.072	649.072BK	649.082	649.078
7/16"-20 UNF	Dash 3	15mm	649.074	649.074BK	-	-
7/16"-20 UNF	Dash 4	15 mm	649.075	649.075BK	-	-
7/16"-20 UNF	Dash 3	17 mm	-	-	649.073	649.079
7/16"-20 UNF	Dash 4	17 mm	-	-	649.083	649.080
9/16"-18 UNF	Dash 3	19 mm	650.837	650.837BK	649.051	-
9/16"-18 UNF	Dash 4	19 mm	650.813	650.813BK	649.052	-
9/16"-18 UNF	Dash 6	19 mm	650.323	650.323BK	649.053	650.265
9/16"-18 UNF	Dash 8	22 mm	649.049	649.049BK	-	-
3/4"-16 UNF**	Dash 3	22 mm	650.831	650.831BK	-	-
3/4"-16 UNF**	Dash 4	22 mm	650.851	650.851BK	-	-
3/4"-16 UNF	Dash 6	24 mm	-	-	649.055	-
3/4"-16 UNF	Dash 8	24 mm	649.050	649.050BK	650.359	-
7/8"-14 UNF	Dash 4	27 mm	650.871	650.871BK	-	-
1 1/16"-12 UN	Dash 8	32 mm	650.324	-	-	-
1 1/16"-12 UN	Dash 10	32 mm	650.292	-	-	-
1 1/16"-12 UN	Dash 12	32 mm	649.054	-	-	-
1 1/16"-12 UN	Dash 16	36 mm	650.284	650.284BK	-	-
1 1/16"-12 UN	Dash 20	46 mm	650.285	-	-	-
1 5/16"-12 UN	Dash 10	41 mm	650.266	-	-	-
1 5/16"-12 UN	Dash 16	38 mm	649.056	-	-	-

L = Long (12mm) \* = Standard Washer Seat for port SAE J1826 \*\*= Seat According MS33656

## Adaptor NPT Male to Dash Male End

Aluminium Anodised Blue, Black or Stainless Steel



Thread Size #1	Thread Size #2	Hex Size	Part No. Blue	Part No. Black	Part No. S/Steel
1/8" NPT	Dash 3	13 mm	649.750	649.750BK	649.767
1/8" NPT	Dash 4	13 mm	649.751	649.751BK	650.315
1/8" NPT	Dash 6	15 mm	649.753	649.753BK	-
1/4" NPT	Dash 3	14 mm	-	-	649.812
1/4" NPT	Dash 3	15 mm	649.763	649.763BK	-
1/4" NPT	Dash 4	15 mm	649.752	649.752BK	-
1/4" NPT	Dash 4	17 mm	-	-	649.813
1/4" NPT	Dash 6	17 mm	649.762	649.762BK	-
1/4" NPT	Dash 8	17 mm	-	-	650.287
1/4" NPT	Dash 8	19 mm	649.756	649.756BK	-
3/8" NPT	Dash 3	19 mm	650.804	650.804BK	-
3/8" NPT	Dash 4	19 mm	650.827	650.827BK	-
3/8" NPT	Dash 6	19 mm	649.754	649.754BK	-
3/8" NPT	Dash 8	22 mm	649.757	649.757BK	-
3/8" NPT	Dash 10	24 mm	649.758	649.758BK	-
1/2" NPT	Dash 3	22 mm	649.799	649.799BK	-
1/2" NPT	Dash 4	22 mm	649.769	649.769BK	-
1/2" NPT	Dash 6	22 mm	649.764	649.764BK	-
1/2" NPT	Dash 8	22 mm	649.755	649.755BK	-
1/2" NPT	Dash 10	24 mm	649.145	649.145BK	-
1/2" NPT	Dash 12	27 mm	649.760	649.760BK	650.350
3/4" NPT	Dash 10	27 mm	649.768	649.768BK	-
3/4" NPT	Dash 12	30 mm	649.759	649.759BK	-
3/4" NPT	Dash 16	36 mm	649.761	649.761BK	650.351
1" NPT	Dash 12	36 mm	650.852	650.852BK	650.352
1" NPT	Dash 16	36 mm	650.853	650.853BK	650.353
1 1/4" NPT	Dash 20	46 mm	650.896	-	-
1 1/2" NPT	Dash 16	46 mm	-	-	650.354

## Adaptor BSP (G) Male to Dash Male

Self Centering Washer Seat on BSP (G) Male Side,  
Aluminium Anodised Blue, Black, Stainless Steel or Steel



Thread Size #1	Thread Size #2	Hex Size	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Steel
1/8" BSP (G)	Dash 3	14 mm	649.146	649.146BK	649.089	649.956
1/8" BSP (G)	Dash 4	14 mm	649.131	649.131BK	649.090	-
1/8" BSP (G)	Dash 6	17 mm	650.269	650.269BK	650.320	650.800
1/4" BSP (G)	Dash 3	17 mm	649.142	649.142BK	649.958	649.957
1/4" BSP (G)	Dash 4	17 mm	649.132	649.132BK	649.959	-
1/4" BSP (G)	Dash 6	17 mm	649.133	649.133BK	649.961	649.960
1/4" BSP (G)	Dash 8	22 mm	649.135	649.135BK	-	-
1/4" BSP (G)	Dash 10	24 mm	650.806	650.806BK	-	-
3/8" BSP (G)	Dash 3	22 mm	649.147	649.147BK	649.962	649.963
3/8" BSP (G)	Dash 4	22 mm	649.128	649.128BK	649.969	-
3/8" BSP (G)	Dash 6	22 mm	649.134	649.134BK	649.966	649.964
3/8" BSP (G)	Dash 8	22 mm	649.136	649.136BK	649.967	649.968
3/8" BSP (G)	Dash 10	24 mm	649.008	649.008BK	-	-
1/2" BSP (G)	Dash 3	27 mm	-	-	650.380	-
1/2" BSP (G)	Dash 4	27 mm	-	-	650.361	-
1/2" BSP (G)	Dash 6	27 mm	649.129	649.129BK	650.378	-
1/2" BSP (G)	Dash 8	27 mm	649.137	649.137BK	650.381	-
1/2" BSP (G)	Dash 10	27 mm	649.130	649.130BK	-	-
1/2" BSP (G)	Dash 12	27 mm	649.139	649.139BK	650.395	-
1/2" BSP (G)	Dash 16	46 mm	-	-	650.802	-
5/8" BSP (G)	Dash 6	30 mm	-	-	650.396	-
5/8" BSP (G)	Dash 10	30 mm	649.138	649.138BK	-	-
5/8" BSP (G)	Dash 12	30 mm	649.140	649.140BK	-	-
3/4" BSP (G)	Dash 3	32 mm	-	-	650.379	-
3/4" BSP (G)	Dash 4	32 mm	-	-	650.373	-
3/4" BSP (G)	Dash 6	32 mm	-	-	650.321	-
3/4" BSP (G)	Dash 8	32 mm	649.046	649.046BK	650.372	-
3/4" BSP (G)	Dash 10	32 mm	649.144	649.144BK	-	-
3/4" BSP (G)	Dash 12	32 mm	649.141	649.141BK	-	-
3/4" BSP (G)	Dash 16	36 mm	649.143	649.143BK	-	-
1" BSP (G)	Dash 6	38 mm	649.048	649.048BK	650.376	-
1" BSP (G)	Dash 8	38 mm	649.037	649.037BK	-	-
1" BSP (G)	Dash 10	38 mm	650.890	-	-	-
1" BSP (G)	Dash 12	38 mm	649.043	-	650.260	-
1" BSP (G)	Dash 16	36 mm Shoulder ø41.5 mm	-	-	650.820	-
1" BSP (G)	Dash 16	38 mm	649.042	-	-	-
1" BSP (G)	Dash 20	46 mm	650.857	-	650.830	-
1 1/2" BSP (G)	Dash 12	46 mm Shoulder ø55 mm	-	-	650.355	-
1 1/2" BSP (G)	Dash 16	46 mm Shoulder ø55 mm	650.356	-	650.357	-
1 1/2" BSP (G)	Dash 20	46 mm Shoulder ø55 mm	650.886	-	-	-
2" BSP (G)	Dash 16	46 mm Shoulder ø70 mm	-	-	650.819	-
1/8" BSPT	Dash 3	14 mm	-	-	650.360	-

**Adaptor Metric Male to JIC Male**

Self Centering Washer Seat on Metric Male Side,  
Aluminium Anodised Blue, Black, Stainless Steel or Steel



Thread Size #1	Thread Size #2	Hex Size	Additional Info	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Steel
M6x1	Dash 3	13 mm	-	-	-	650.897	-
M6x1	Dash 4	13 mm	-	650.888	-	-	-
M7x1	Dash 3	13 mm	60° Concave	-	-	-	650.953
M7x1	Dash 4	13 mm	60° Concave	-	-	-	650.954
M8x1	Dash 2	13 mm	-	650.325	-	649.934	-
M8x1	Dash 3	13 mm	-	649.150	649.150BK	649.093	-
M8x1	Dash 4	13 mm	-	649.152	649.152BK	649.091	-
M8x1.25	Dash 3	13 mm	-	649.149	649.149BK	-	-
M10x1	Dash 2	14 mm	-	650.326	-	650.250	-
M10x1	Dash 3	14 mm	-	649.153	649.153BK	649.095	649.096
M10x1	Dash 3	14 mm	Taper Thread / Kegelgewinde	-	-	650.384	-
M10x1	Dash 4	14 mm	-	649.154	649.154BK	649.094	650.289
M10x1	Dash 4	14 mm	ISO 6149	-	-	650.346	-
M10x1	Dash 5	14 mm	-	-	-	649.973	-
M10x1	Dash 6	17 mm	-	649.204	649.204BK	649.921	649.920
M10x1	Dash 3	13 mm	60° Convex	-	-	650.952	-
M10x1.25	Dash 3	14 mm	-	649.155	649.155BK	649.097	649.098
M10x1.25	Dash 4	14 mm	-	649.156	649.156BK	-	-
M10x1.25	Dash 6	17 mm	-	649.205	649.205BK	-	-
M10x1.5	Dash 3	14 mm	-	649.151	649.151BK	650.367	-
M10x1.5	Dash 4	14 mm	-	-	-	650.393	-
M10x1.5	Dash 6	17 mm	-	650.332	650.332BK	650.399	-
M12x1	Dash 3	17 mm	-	649.157	649.157BK	649.099	-
M12x1	Dash 4	17 mm	-	649.158	649.158BK	649.927	-
M12x1	Dash 4	17 mm	60° Convex	-	-	-	650.801
M12x1	Dash 6	17 mm	-	649.159	649.159BK	649.928	-
M12x1.25	Dash 4	17 mm	-	650.261	650.261BK	650.392	-
M12x1.25	Dash 6	17 mm	-	649.206	649.206BK	650.870	-
M12x1.5	Dash 3	17 mm	-	649.160	649.160BK	649.930	649.938
M12x1.5	Dash 4	17 mm	-	649.161	649.161BK	649.929	-
M12x1.5	Dash 4	17 mm	ISO 6149	-	-	650.347	-
M12x1.5	Dash 6	17 mm	-	649.162	649.162BK	649.932	649.085
M12x1.5	Dash 8	19 mm	-	649.163	649.163BK	650.293	-
M12x1.75	Dash 3	17 mm	-	-	-	650.847	-
M12x1.75	Dash 4	17 mm	-	-	-	650.849	-
M14x1	Dash 6	19 mm	-	650.336	-	-	-
M14x1	Dash 6	19 mm	ET 10 mm	-	-	650.397	-
M14x1.25	Dash 6	19 mm	-	649.207	649.207BK	-	-
M14x1.5	Dash 2	19 mm	-	650.327	-	-	-
M14x1.5	Dash 3	19 mm	-	649.164	649.164BK	649.933	-
M14x1.5	Dash 4	19 mm	-	649.165	649.165BK	649.931	649.947
M14x1.5	Dash 4	19 mm	ISO 6149	-	-	650.348	-
M14x1.5	Dash 6	19 mm	-	649.166	649.166BK	649.935	649.086
M14x1.5	Dash 6	19 mm	60° Concave	-	-	650.864	-
M14x1.5	Dash 6	19 mm	ISO 6149	-	-	650.349	-
M14x1.5	Dash 8	19 mm	Taper Thread / Kegelgewinde	-	-	650.286	-
M14x1.5	Dash 8	22 mm	-	649.167	649.167BK	-	649.948
M14x1.5	Dash 10	24 mm	-	649.208	649.208BK	650.872	-
M15x1.5	Dash 6	22 mm	-	-	-	650.884	-
M16x1	Dash 6	22 mm	-	650.338	-	-	-
M16x1.5	Dash 3	22 mm	-	649.168	649.168BK	650.319	-
M16x1.5	Dash 4	22 mm	-	649.169	649.169BK	649.937	-
M16x1.5	Dash 6	22 mm	-	649.170	649.170BK	649.936	649.087
M16x1.5	Dash 6	22 mm	60° Concave	-	-	650.877	-
M16x1.5	Dash 8	22 mm	-	649.171	649.171BK	649.939	-
M16x1.5	Dash 8	22 mm	60° Concave	650.814	-	-	-
M16x1.5	Dash 10	24 mm	-	649.172	649.172BK	-	-
M16x1.5	Dash 10	24 mm	60° Concave	-	-	650.889	-
M16x1.5	Dash 12	27 mm	-	649.811	649.811BK	-	-
M17x1.5	Dash 6	24 mm	-	-	-	650.885	-
M18x1	Dash 12	27 mm	-	650.345	-	-	-
M18x1.5	Dash 3	22 mm	-	649.173	649.173BK	-	-
M18x1.5	Dash 4	22 mm	-	649.174	649.174BK	650.855	-
M18x1.5	Dash 6	22 mm	-	649.175	649.175BK	650.829	-
M18x1.5	Dash 8	22 mm	-	649.176	649.176BK	649.940	649.955
M18x1.5	Dash 10	24 mm	-	649.177	649.177BK	650.876	-
M18x1.5	Dash 12	27 mm	-	649.178	649.178BK	650.358	-
M20x1.5	Dash 3	24 mm	-	649.179	-	-	-
M20x1.5	Dash 4	24 mm	-	649.180	-	-	-
M20x1.5	Dash 6	24 mm	-	649.181	-	-	-
M20x1.5	Dash 8	24 mm	-	649.182	649.182BK	649.941	-

Continued...

# Adaptors

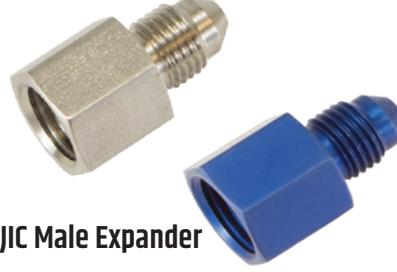
## Adaptor Metric Male to JIC Male, Continued...

Thread Size #1	Thread Size #2	Hex Size	Additional Info	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Steel
M20x1.5	Dash 10	27 mm	-	649.183	649.183BK	-	-
M20x1.5	Dash 12	30 mm	-	649.184	649.184BK	-	-
M22x1.5	Dash 3	27 mm	-	649.185	-	-	-
M22x1.5	Dash 4	27 mm	-	649.186	-	-	-
M22x1.5	Dash 6	27 mm	-	649.187	649.187BK	650.873	-
M22x1.5	Dash 8	27 mm	-	649.188	649.188BK	-	-
M22x1.5	Dash 10	27 mm	-	649.189	649.189BK	-	-
M22x1.5	Dash 12	30 mm	-	649.190	649.190BK	649.974	-
M22x1.5	Dash 16	36 mm	-	649.191	649.191BK	-	-
M24x1.5	Dash 6	30 mm	-	649.192	649.192BK	-	-
M24x1.5	Dash 8	30 mm	-	649.193	649.193BK	-	-
M24x1.5	Dash 10	30 mm	-	649.194	649.194BK	-	-
M24x1.5	Dash 12	30 mm	-	649.195	649.195BK	-	-
M24x1.5	Dash 16	36 mm	-	649.039	649.039BK	-	-
M26x1.5	Dash 6	32 mm	-	650.334	650.334BK	-	-
M26x1.5	Dash 10	32 mm	-	649.196	649.196BK	-	-
M26x1.5	Dash 12	32 mm	-	649.197	649.197BK	-	-
M26x1.5	Dash 16	36 mm	-	649.198	649.198BK	-	-
M26x1.5	Dash 20	46 mm	-	649.199	649.199BK	-	-
M27x1.5	Dash 6	32 mm	-	650.335	-	-	-
M27x1.5	Dash 6	32 mm	60° Concave	-	-	650.878	-
M30x1.5	Dash 6	36 mm	-	649.040	-	-	-
M30x1.5	Dash 8	36 mm	-	649.041	-	-	-
M30x1.5	Dash 10	36 mm	-	649.200	649.200BK	-	-
M30x1.5	Dash 12	36 mm	-	649.201	649.201BK	-	-
M30x1.5	Dash 16	36 mm	-	649.202	649.202BK	650.279	-
M30x1.5	Dash 20	46 mm	-	649.203	649.203BK	-	-
M32x1.5	Dash 16	36 mm	-	-	-	650.881	-
M36x1.5	Dash 12	46 mm	ET=15	650.281	-	-	-
M36x1.5	Dash 16	46 mm	ET=15	650.282	-	-	-
M36x1.5	Dash 20	46 mm	ET=15	650.283	-	-	-

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## Adaptor JIC Female to JIC Male Expander

JIC Seats,

Aluminium Anodised Blue, Black or Stainless Steel

Thread Size #1 Female	Thread Size #2 Male	Hex Size	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 2	Dash 2	13 mm	-	-	650.130
Dash 3	Dash 2	14 mm	-	-	649.998
Dash 3	Dash 3	14 mm	-	-	650.134
Dash 4	Dash 2	14 mm	-	-	650.137
Dash 4	Dash 3	14 mm	650.300	650.300BK	649.979
Dash 4	Dash 4	14 mm	-	-	650.138
Dash 6	Dash 4	17 mm	650.301	650.301BK	650.856
Dash 8	Dash 6	22 mm	650.302	650.302BK	-
Dash 10	Dash 4	1" / 25.4 mm	650.142	650.142BK	-
Dash 10	Dash 6	1" / 25.4 mm	650.303	650.303BK	-
Dash 10	Dash 8	1" / 25.4 mm	650.304	650.304BK	-
Dash 12	Dash 6	32 mm	650.305	650.305BK	-
Dash 12	Dash 8	32 mm	650.306	650.306BK	-
Dash 12	Dash 10	32 mm	650.307	650.307BK	-
Dash 16	Dash 12	38 mm	650.308	650.308BK	-

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## Adaptor Equal Metric Male to Metric Male

Self Centering Washer Seat & 60° Concave Seats,  
Aluminium Anodised Black or Stainless Steel

Thread Size #1 Male	Thread Size #2 Male	Hex Size	Additional Info.	Part No. Black	Part No. S/Steel
M10x1	M10x1	14 mm	-	-	650.251
M10x1	M10x1	14 mm	Convex / Convex	-	650.868
M12x1.5	M12x1.5	17 mm	-	649.653	-
M14x1.5	M14x1.5	19 mm	-	649.652	-
M16x1.5	M16x1.5	22 mm	-	649.791	-
M18x1.5	M18x1.5	24 mm	-	649.650	-
M22x1.5	M22x1.5	27 mm	-	649.651	-
M24x1.5	M24x1.5	30 mm	-	649.792	-
M26x1.5	M26x1.5	32 mm	-	649.797	-
M27x1.5	M27x1.5	32 mm	-	649.793	-
M30x1.5	M30x1.5	36 mm	-	649.794	-

Can't find it?

For special fittings or non listed parts please call or email us

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## Adaptor Un-equal Metric Male to Metric Male

Self Centering Washer Seat & 60° Concave Seats  
Aluminium Anodised Black, Stainless Steel or Steel

Thread Size #1 Male	Thread Size #2 Male	Hex Size	Part No. Black	Part No. S/Steel	Part No. Steel
M10x1	M8x1	14 mm	-	-	650.271
M10x1	M12x1.5	14 mm	649.770	-	-
M10x1	M12x1.5	17 mm	-	-	650.274
M10x1	M14x1.5	17 mm	649.789	-	-
M10x1	M16x1.5	22 mm	-	-	650.272
M10x1	M18x1.5	22 mm	-	-	650.273
M12x1	M12x1.5	17 mm	649.773	-	-
M12x1	M14x1.5	17 mm	649.774	-	-
M12x1	M14x1.5	19 mm	-	-	650.275
M12x1	M18x1.5	22 mm	-	-	650.276
M12x1.25	M14x1.5	17 mm	650.268	-	-
M12x1.5	M14x1.5	19 mm	649.771	-	-
M12x1.5	M16x1.5	22 mm	649.795	-	-
M12x1.5	M18x1.5	24 mm	649.772	-	-
M14x1.5	M16x1.5	22 mm	649.775	650.858	650.277
M14x1.5	M18x1.5	22 mm	-	-	650.278
M14x1.5	M18x1.5	24 mm	649.776	-	-
M14x1.5	M22x1.5	27 mm	649.777	-	-
M16x1.5	M18x1.5	22 mm	649.779	-	-
M16x1.5	M22x1.5	27 mm	649.780	-	-
M16x1.5	M24x1.5	30 mm	649.781	-	-
M18x1.5	M22x1.5	27 mm	649.782	-	-
M18x1.5	M24x1.5	27 mm	649.819	-	-
M18x1.5	M27x1.5	30 mm	649.783	-	-
M20x1.5	M14x1.5	24 mm	649.784	-	-
M20x1.5	M16x1.5	24 mm	649.818	-	-
M20x1.5	M18x1.5	24 mm	649.790	-	-
M20x1.5	M22x1.5	24 mm	649.788	-	-
M20x1.5	M27x1.5	30 mm	649.785	-	-
M22x1.5	M24x1.5	30 mm	649.796	-	-
M22x1.5	M26x1.5	30 mm	649.798	-	-
M22x1.5	M27x1.5	32 mm	649.786	-	-
M27x1.5	M30x1.5	36 mm	649.787	-	-
M30x1.5	M22x1.5	36 mm	649.827	-	-
M30x1.5	M26x1.5	36 mm	650.389	-	-

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## NPT Male to Metric Male

Aluminium Anodised Black

Thread Size #1	Thread Size #2	Hex Size	Part No. Blue	Part No. Black	Part No. S/Steel
1/8" NPT	M14x1.5	15 mm	-	650.290	-
1/4" NPT	M18x1.5	19 mm	-	649.766	-
1/2" NPT	M18x1.5	22 mm	-	649.765	-

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## Adaptor BSP (G) Male to Metric Male

Self Centering Washer Seat & 60° Concave Seats, Aluminium Anodised Black



Thread Size #1 Male	Thread Size #2 Male	Hex Size	Part No. Black
1/8" BSP (G)	M12x1,5	14 mm	649.877
1/4" BSP (G)	M12x1	17 mm	650.362
1/4" BSP (G)	M12x1,5	17 mm	649.807
1/4" BSP (G)	M14x1,5	17 mm	649.800
1/4" BSP (G)	M18x1,5	24 mm	649.801
3/8" BSP (G)	M12x1,5	22 mm	649.878
3/8" BSP (G)	M14x1,5	22 mm	649.802
3/8" BSP (G)	M18x1,5	22 mm	649.803
3/8" BSP (G)	M22x1,5	24 mm	649.881
3/4" BSP (G)	M24x1,5	32 mm	650.264
1/2" BSP (G)	M14x1,5	27 mm	649.804
1/2" BSP (G)	M18x1,5	27 mm	649.805
1/2" BSP (G)	M22x1,5	27 mm	649.806
5/8" BSP (G)	M18x1,5	30 mm	649.809
3/4" BSP (G)	M18x1,5	32 mm	649.882
3/4" BSP (G)	M22x1,5	32 mm	649.883

## Taper Plug Adaptor Metric Male Tapered to Metric Male

Metric Taper, Aluminium Anodised Black



## Taper Plug Adaptor Metric Male Tapered to Dash Male

Metric Taper, Aluminium Anodised Blue



## Port Adaptor Metric Male to JIC Male

Self Centering Washer Seat on Metric Male Side, Aluminium Anodised Blue



Thread Size #1 Male	Thread Size #2 Male	Hex Size	Part No. Blue
M24x1,5T	Dash 6	19 mm	649.641
M24x1,5T	Dash 6	17 mm shoulder 25 mm	649.839
M22x1,5	Dash 6	17 mm shoulder 27 mm	649.840

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## Port Plug Adaptor Metric Male to Metric Female

Self Centering Washer Seat on Metric Male Side  
Aluminium Anodised Black, Stainless Steel or Steel



Thread Size #1 Male	Thread Size #2 Female	Hex Size	Additional Info.	Part No. Black	Part No. S/Steel	Part No. Steel
M8x1	M10x1	14 mm	-	-	650.875	-
M10x1	M8x1	14 mm	ISO 6149	-	650.874	-
M10x1,5	M10x1	17 mm	-	-	-	650.144
M12x1,5	M10x1	17 mm	-	-	-	650.145
M14x1,5	M8x1	19 mm	-	649.876	-	-
M14x1,5	M10x1	17 mm	-	-	-	650.146
M16x1,5	M10x1	19 mm	-	-	-	650.147
M16x1,5	M12x1,5	22 mm	-	649.874	-	-
M18x1,5	M10x1	22 mm	-	-	-	650.148
M18x1,5	M14x1,5	22 mm	-	649.870	-	-
M20x1,5	M14x1,5	24 mm	-	649.872	-	-
M22x1,5	M12x1,5	27 mm	-	649.875	-	-
M22x1,5	M14x1,5	27 mm	-	649.871	-	-
M22x1,5	M16x1,5	27 mm	-	-	-	650.149
M24x1,5	M14x1,5	27 mm	-	649.873	-	-
M24x1,5	M16x1,5	27 mm	-	649.885	-	-

# Adaptors

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## Adaptor JIC Female to Metric Male

Self Centering Washer Seat on Metric Male Side,  
Stainless Steel



Thread Size #1 Female	Thread Size #2 Male	Hex Size	Part No. S/Steel
Dash 2	M8x1	13 mm	650.133
Dash 3	M8x1	14 mm	650.136
Dash 4	M8x1	14 mm	650.139
Dash 6	M10x1	17 mm	650.140

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## Adaptor BSP (G) Female to JIC Male

Aluminium Anodised Blue, Stainless Steel or Steel



Thread Size #1 Female	Thread Size #2 Male	Hex Size	Additional Info.	Part No. Blue	Part No. S/Steel	Part No. Steel
1/4" BSP (G)	Dash 4	17 mm	-	650.254	-	-
1/4" BSP (G)	Dash 6	17 mm	-	-	649.844	-
3/8" BSP (G)	Dash 8	22 mm	-	-	649.997	-
1" BSP (G)	Dash 16	41 mm	-	-	650.891	-
1/4" BSP (G)	Dash 6	17 mm	Face Sealing	-	-	650.391

## Adaptor Metric Female to JIC Male

Aluminium Anodised Blue or Stainless Steel



Thread Size #1 Female	Thread Size #2 Male	Hex Size	Additional Info.	Part No. Blue	Part No. S/Steel
M10x1	Dash 3	14 mm	Face Sealing	650.257	-
M10x1	Dash 3	14 mm	Convex Seat	-	649.843
M10x1	Dash 3	14 mm	Washer	-	650.821

## Adaptor for Pressure-Sensor Metric/BSP Male to Metric Female

Aluminium Anodised Black



Thread Size #1 Male	Thread Size #2 Female	Hex Size	Part No. Black
M12x1.5	M10x1	17 mm	649.297
M14x1.5	M10x1	19 mm	649.292
1/4" BSP	M10x1	17.3mm	649.293

## Bulkhead for Pressure-Sensor JIC Male to Metric Female

Aluminium Anodised Black



Thread Size #1 Male	Thread Size #2 Female	Hex Size	Part No. Black
Dash 3	M10x1	19 mm	649.294

## Adaptor Metric Swivel Female

### to JIC Male



Aluminium Anodised Black

Thread Size #1 Female	Thread Size #2 Male	Hex Size	Part No. Black
M12x1.5	Dash 3	17 mm	649.972
M12x1.5	Dash 4	17 mm	650.382
M14x1.5	Dash 3	19 mm	649.970
M14x1.5	Dash 4	19 mm	650.383
M16x1.5	Dash 3	22 mm	649.971

## Adaptor JIC Swivel Female to JIC Male / BSP (G) Male



Aluminium Anodised Blue or Black

Thread Size #1 Female	Thread Size #2 Male	Hex Size	Part No. Blue	Part No. Black
Dash 2	Dash 3	13 mm	650.525	650.525BK
Dash 3	Dash 4	13 mm	650.522	650.522BK
Dash 3	Dash 6	11/16"	650.521	650.521BK
Dash 4	Dash 6	17 mm	650.523	650.523BK
Dash 6	Dash 3	11/16"	650.520	650.520BK
Dash 6	Dash 6	11/16"	650.366	650.366BK
Dash 6	Dash 10	1"	650.524	650.524BK
Dash 8	Dash 8	22 mm	650.532	650.532BK
Dash 12	Dash 16	36 mm	650.519	-
Dash 16	Dash 20	46 mm	650.531	650.531BK
Dash 16	1" BSP (G)	38 mm	650.816	-
Dash 20	Dash 16	46 mm	650.530	650.530BK

## Adaptor JIC Swivel Female to Metric Male



Self Centering Washer Seat on Metric Male Side,  
Aluminium Anodised Blue or Black

Thread Size #1 Female	Thread Size #2 Male	Hex Size	Part No. Blue	Part No. Black
Dash 6	M14x1.5	19 mm	650.365	650.365BK
Dash 16	M30x1.5	36 mm	650.529	650.529BK

## Adaptor Metric Swivel Female to JIC Male



Aluminium Anodised Blue or Black

Thread Size #1 Female	Thread Size #2 Male	Hex Size	Part No. Blue	Part No. Black
M30x1.5	Dash 12	36 mm	650.527	650.527BK
M30x1.5	Dash 16	36 mm	650.528	650.528BK

## JIC Male Weld On



Hex Base, No Centralising Spigot,  
Aluminium 6061, 6082, Stainless Steel or Steel

Thread Size	Hex Size	Part No. 6061/82	Part No. S/Steel	Part No. Steel
Dash 2	14 mm	-	649.748	-
Dash 3	14 mm	649.678	649.686	650.571
Dash 4	17 mm	649.679	649.687	650.572
Dash 6	19 mm	649.680	649.685	649.689
Dash 8	22 mm	649.681	649.688	650.573
Dash 10	24 mm	649.682	649.697	650.115
Dash 12	32 mm	649.683	649.698	650.575
Dash 16	36 mm	649.684	649.699	650.576
Dash 20	46 mm	650.116	649.739	650.577

**JIC Male Weld On**

Round Base, with Centralising Spigot,  
Aluminium 6061, 6082 or Steel



Thread Size	Additional Info.	Part No. 6061/82	Part No. Steel
Dash 3	ø15 mm	650.100	-
Dash 4	ø16 mm	650.101	-
Dash 6	ø20 mm	650.102	650.108
Dash 8	ø22 mm	650.103	650.109
Dash 10	ø26 mm	650.104	-
Dash 12	ø31 mm	650.105	-
Dash 16	ø38 mm	650.106	-

**Metric Male Weld On**

Hex Base, No Centralising Spigot,  
Aluminium 6061, 6082 or Stainless Steel



Thread Size	Hex Size	Part No. 6061/82	Part No. S/Steel
M10x1	14 mm	-	650.863
M12x1.5	17 mm	649.670	649.810
M14x1.5	19 mm	649.671	649.749
M16x1.5	22 mm	649.672	649.744
M18x1.5	24 mm	649.673	649.743
M22x1.5	27 mm	649.674	649.741
M24x1.5	27 mm	649.675	650.110
M26x1.5	32 mm	650.111	650.112
M27x1.5	32 mm	649.676	-
M30x1.5	36 mm	649.677	650.113
M45x1.5	46 mm	650.256	-

**UNF Female Weld On**

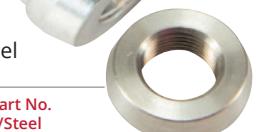
Round Base, with Centralising Spigot,  
Aluminium 6061 or 6082



Thread Size	Additional Info.	Part No. 6061/82
3/8"-24 UNF	ø20 mm	650.114
7/16"-20 UNF	ø21 mm	650.562
9/16"-18 UNF	ø24 mm	650.563
3/4"-16 UNF	ø28 mm	650.564
7/8"-14 UNF	ø31 mm	650.565
1 1/16"-12 UN	ø37 mm	650.566
1 5/16"-12 UN	ø44 mm	650.567

**Metric Female Weld On**

Round Base, with Centralising Spigot,  
Aluminium 6061, 6082 or Stainless Steel



Thread Size	Additional Info.	Part No. 6061/82	Part No. S/Steel
M8x1	ø18 mm	649.746	650.561
M10x1	ø20 mm	649.690	649.740
M12x1	ø22 mm	650.117	-
M12x1,5	ø22 mm	649.691	-
M14x1,5	ø24 mm	649.692	-
M18x1,5	ø28 mm	649.693	-
M22x1,5	ø30 mm	649.694	-
M30x1,5	ø39 mm	649.747	-

**BSP (G) Female Weld On**

Round Base, with Centralising Spigot  
Aluminium 6061, 6082 or Stainless Steel



Thread Size	Additional Info.	Part No. 6061/82	Part No. S/Steel
1/8" BSP (G)	ø 20 mm	650.505	650.506
1/4" BSP (G)	ø 23 mm	650.507	650.508





# Bulkhead Adaptors

Available in blue or black anodised aluminium in a variety of angles and in 2 different length options, and also available in Stainless Steel and zinc plated steel. All made to the high quality that our customers have come to expect.



## 00° JIC Bulkhead Short

Aluminium Anodised Blue, Black, Stainless Steel or Zinc Plated Steel



Thread Size	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Zinc
Dash 3	649.210	649.210BK	649.209	649.211
Dash 4	649.212	649.212BK	649.218	-
Dash 6	649.213	649.213BK	649.219	-
Dash 8	649.214	649.214BK	649.222	-
Dash 10	649.215	649.215BK	-	-
Dash 12	649.216	649.216BK	650.591	-
Dash 16	649.217	649.217BK	-	-

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## 00° JIC Bulkhead Long

Aluminium Anodised Blue or Black



Thread Size	Part No. Blue	Part No. Black
Dash 3	650.510	650.510BK
Dash 4	650.511	650.511BK
Dash 6	650.512	650.512BK
Dash 8	650.513	650.513BK
Dash 10	650.514	650.514BK
Dash 12	650.515	650.515BK
Dash 16	650.516	650.516BK

## 45° JIC Bulkhead Short

Aluminium Anodised Blue, Black or Stainless Steel



Thread Size	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 3	649.225	649.225BK	649.226
Dash 4	-	-	649.227
Dash 6	649.231	649.231BK	649.228

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## 45° JIC Bulkhead Long

Aluminium Anodised Blue, Black or Zinc Plated Steel



Thread Size	Part No. Blue	Part No. Black	Part No. Steel
Dash 3	-	-	649.229
Dash 4	649.230	649.230BK	-
Dash 6	649.239	649.239BK	-
Dash 8	649.232	649.232BK	-
Dash 10	649.233	649.233BK	-
Dash 12	649.234	649.234BK	-
Dash 16	649.235	649.235BK	-

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## 90° JIC Bulkhead Short

Aluminium Anodised Blue, Black or Stainless Steel



Thread Size	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 3	649.250	649.250BK	649.261
Dash 4	-	-	649.271
Dash 6	649.253	649.253BK	649.270

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## 90° JIC Bulkhead Long

Aluminium Anodised Blue, Black or Zinc Plated Steel



Thread Size	Part No. Blue	Part No. Black	Part No. Zinc
Dash 3	649.879	649.879BK	649.251
Dash 4	649.252	649.252BK	-
Dash 6	649.269	649.269BK	-
Dash 8	649.254	649.254BK	-
Dash 10	649.255	649.255BK	-
Dash 12	649.256	649.256BK	-
Dash 16	649.257	649.257BK	-

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## JIC Bulkhead Tee with Bulkhead on the Side

Aluminium Anodised Blue, Black, Stainless Steel or Zinc Plated Steel



Thread Size	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Zinc
Dash 3	649.240	649.240BK	649.248	649.247
Dash 4	649.241	649.241BK	-	-
Dash 6	649.242	649.242BK	-	-
Dash 8	649.243	649.243BK	-	-
Dash 10	649.244	649.244BK	-	-
Dash 12	649.245	649.245BK	-	-
Dash 16	649.246	649.246BK	-	-

## Bulkhead Adaptors

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### JIC Bulkhead Tee with Bulkhead on the Run

Aluminium Anodised Blue or Black



Thread Size	Part No. Blue	Part No. Black
Dash 3	650.440	650.440BK
Dash 4	650.441	650.441BK
Dash 6	650.442	650.442BK
Dash 8	650.443	650.443BK
Dash 10	650.444	650.444BK
Dash 12	650.445	650.445BK
Dash 16	650.446	650.446BK

### 00° Metric Bulkhead

Aluminium Anodised Black



Thread Size	Part No. Black
M12x1.5	649.275
M14x1.5	649.276
M16x1.5	649.274
M18x1.5	649.273
M22x1.5	649.277
M24x1.5	649.272
M26x1.5	649.224
M27x1.5	649.278
M30x1.5	649.279

### 45° Metric Bulkhead

Aluminium Anodised Black



Thread Size	Part No. Black
M12x1.5	649.238
M14x1.5	649.236
M22x1.5	649.237

### 90° Metric Bulkhead

Aluminium Anodised Black



Thread Size	Part No. Black
M12x1.5	649.258
M14x1.5	649.259
M22x1.5	649.260

### Metric Bulkhead Tee with Bulkhead on the Side

Aluminium Anodised Black



Thread Size	Part No. Black
M12x1.5	649.220
M14x1.5	649.221

**Can't find it?**

For special fittings or non listed parts please call or email us

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### Imperial Bulkhead Nuts



Aluminium Anodised Blue, Black, Stainless Steel, Zinc Plated or Chrome Plated

Thread Size	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Zinc	Part No. Chrome
Dash 3 - 3/8"-24UNF	649.030	649.030BK	924.03C	924.03P	924.03Z
Dash 4 - 7/16"-20UNF	649.329	649.329BK	649.033	649.026	-
Dash 6 - 9/16"-18UNF	649.331	649.331BK	649.034	-	-
Dash 8 - 3/4"-16UNF	649.332	649.332BK	649.021	-	-
Dash 10 - 7/8"-14UNF	649.333	649.333BK	-	-	-
Dash 12 - 1 1/16"-12UN	649.334	649.334BK	650.557	-	-
Dash 16 - 1 5/16"-12UN	649.335	649.335BK	-	-	-
Dash 20 - 1 5/8"-12UN	650.291	-	-	-	-

### Metric Bulkhead Nuts



Aluminium Anodised Blue, Black or Stainless Steel

Thread Size	Part No. Blue	Part No. Black	Part No. S/Steel
M12x1.5	649.327	649.342	-
M14x1.5	649.709	649.330	-
M15x1	-	649.705	649.706
M16x1.5	649.708	649.700	649.707
M18x1.5	649.716	649.701	-
M20x1.5	-	649.326	-
M22x1.5	-	649.343	-
M24x1.5	-	649.702	-
M27x1.5	-	649.703	-
M30x1.5	-	649.704	-

### Imperial Bulkhead Washers



Aluminium, Yellow Chromated

Thread Size	Part No.
Dash 3	649.319
Dash 4	649.320
Dash 5	649.304
Dash 6	649.321
Dash 8	649.322
Dash 10	649.323
Dash 12	649.324
Dash 16	649.325

### Metric Bulkhead Washers



Aluminium, Yellow Chromated

Thread Size	Part No.
M12	649.306
M14	649.307
M15	649.710
M16	649.711
M18	649.712
M22	649.305
M24	649.713
M27	649.714
M30	649.715

# Tee Pieces & Elbows

We offer a wide range of Tee Pieces and Y-Pieces with a broad choice of male and female combinations in both JIC and Metric threads. Some are available with a mounting lug enabling the Tee to be securely attached. Elbows and female-female double nuts are available in JIC and Metric threads.



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## Equal JIC Tee

Aluminium Anodised Blue, Black or Stainless Steel



Run Thread #1 Size	Side Thread #2 Size	Run Thread #3 Size	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 2	Dash 2	Dash 2	649.861	-	650.900
Dash 3	Dash 3	Dash 3	649.535	649.535 BK	649.850
Dash 4	Dash 4	Dash 4	649.536	649.536 BK	649.851
Dash 6	Dash 6	Dash 6	649.537	649.537 BK	649.852
Dash 8	Dash 8	Dash 8	649.538	649.538 BK	-
Dash 10	Dash 10	Dash 10	649.539	649.539 BK	-
Dash 12	Dash 12	Dash 12	649.540	649.540 BK	-
Dash 16	Dash 16	Dash 16	649.541	649.541 BK	-
Dash 20	Dash 20	Dash 20	650.679	-	-

824

## Equal JIC Tee

With Mounting Lug,  
Aluminium Anodised Blue or Stainless Steel



Run Thread #1 Size	Side Thread #2 Size	Run Thread #3 Size	Part No. Blue	Part No. S/Steel
Dash 3	Dash 3	Dash 3	-	649.542
Dash 6	Dash 6	Dash 6	650.409	-
Dash 8	Dash 8	Dash 8	650.401	-

824

## Un-Equal JIC Tee

Aluminium Anodised Blue,  
Black or Stainless Steel



Run Thread #1 Size	Side Thread #2 Size	Run Thread #3 Size	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 2	Dash 3	Dash 3	-	-	650.901
Dash 2	Dash 4	Dash 4	-	-	650.902
Dash 3	Dash 4	Dash 4	-	-	650.903
Dash 3	Dash 6	Dash 6	-	-	650.904
Dash 4	Dash 3	Dash 4	-	-	650.449
Dash 4	Dash 6	Dash 6	-	-	650.905
Dash 6	Dash 4	Dash 4	650.400	650.400 BK	650.684
Dash 6	Dash 3	Dash 6	649.845	649.845 BK	650.447
Dash 6	Dash 4	Dash 6	649.846	649.846 BK	-
Dash 8	Dash 6	Dash 6	650.403	-	-
Dash 8	Dash 6	Dash 8	650.654	-	-

## Can't find it?

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listed parts please call or email us



925

## Equal JIC Tee with Swivel Female on the Side

Aluminium Anodised Blue, Black,  
Stainless Steel or Titanium



Run Thread #1 Size Male	Side Thread #2 Size Female	Run Thread #3 Size Male	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Titanium
Dash 3	Dash 3	Dash 3	649.525	649.525 BK	649.524	650.652
Dash 4	Dash 4	Dash 4	649.526	649.526 BK	649.854	-
Dash 6	Dash 6	Dash 6	649.527	649.527 BK	649.855	-
Dash 8	Dash 8	Dash 8	649.528	649.528 BK	-	-
Dash 10	Dash 10	Dash 10	649.529	649.529 BK	-	-
Dash 12	Dash 12	Dash 12	649.523	649.523 BK	-	-
Dash 16	Dash 16	Dash 16	649.522	649.522 BK	-	-
Dash 20	Dash 20	Dash 20	650.656	-	-	-

925

## Un-Equal JIC Tee with Swivel Female on the Side

Aluminium Anodised Blue or Black



Run Thread #1 Size Male	Side Thread #2 Size Female	Run Thread #3 Size Male	Part No. Blue	Part No. Black
Dash 3	Dash 6	Dash 3	650.421	650.421 BK
Dash 6	Dash 6	Dash 4	650.420	650.420 BK
Dash 6	Dash 4	Dash 6	650.428	650.428 BK
Dash 8	Dash 6	Dash 8	650.676	-

926

## Equal JIC Tee with Swivel Female on the Run

Aluminium Anodised Blue, Black  
or Stainless Steel



Run Thread #1 Size Female	Side Thread #2 Size Male	Run Thread #3 Size Male	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 2	Dash 2	Dash 2	-	-	650.910
Dash 3	Dash 3	Dash 3	649.515	649.515 BK	649.514
Dash 4	Dash 4	Dash 4	649.516	649.516 BK	649.857
Dash 6	Dash 6	Dash 6	649.517	649.517 BK	649.858
Dash 8	Dash 8	Dash 8	649.518	649.518 BK	-
Dash 10	Dash 10	Dash 10	649.519	649.519 BK	-
Dash 12	Dash 12	Dash 12	649.520	649.520 BK	-
Dash 16	Dash 16	Dash 16	650.665	650.665 BK	-

**926**

## Un-Equal JIC Tee with Swivel Female on the Run

Aluminium Anodised Blue or Stainless Steel



Run Thread #1 Size Male	Side Thread #2 Size Male	Run Thread #3 Size Female	Part No. Blue	Part No. S/Steel
Dash 2	Dash 3	Dash 3	-	650.911
Dash 2	Dash 4	Dash 4	-	650.912
Dash 3	Dash 3	Dash 4	650.670	-
Dash 3	Dash 4	Dash 4	-	650.913
Dash 3	Dash 6	Dash 6	650.414	650.914
Dash 4	Dash 3	Dash 4	650.669	-
Dash 4	Dash 4	Dash 6	650.410	-
Dash 4	Dash 6	Dash 6	650.411	650.915
Dash 6	Dash 3	Dash 6	650.413	-
Dash 6	Dash 4	Dash 6	650.412	-
Dash 8	Dash 6	Dash 8	650.429	-
Dash 10	Dash 3	Dash 10	649.864	-
Dash 12	Dash 6	Dash 12	649.865	-
Dash 12	Dash 10	Dash 12	649.867	-

**926**

## Equal JIC Tee with Swivel Female on the Run & the Side

Aluminium Anodised Blue, Black or Stainless Steel



Run Thread #1 Size Female	Side Thread #2 Size Female	Run Thread #3 Size Male	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 2	Dash 2	Dash 2	-	-	650.920
Dash 3	Dash 3	Dash 3	650.418	650.418 BK	650.923
Dash 4	Dash 4	Dash 4	-	-	650.926
Dash 6	Dash 6	Dash 6	650.404	650.404 BK	-
Dash 8	Dash 8	Dash 8	650.674	650.674 BK	650.675

**926**

## Un-Equal JIC Tee with Swivel Female on the Run & the Side

Aluminium Anodised Blue, Black or Stainless Steel



Run Thread #1 Size Male	Side Thread #2 Size Female	Run Thread #3 Size Female	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 2	Dash 3	Dash 3	-	-	650.921
Dash 6	Dash 6	Dash 3	650.685	-	-
Dash 2	Dash 4	Dash 4	-	-	650.922
Dash 3	Dash 4	Dash 4	-	-	650.924
Dash 6	Dash 6	Dash 4	-	-	650.419
Dash 6	Dash 3	Dash 6	650.666	650.666 BK	-
Dash 3	Dash 6	Dash 6	-	-	650.925
Dash 4	Dash 6	Dash 6	-	-	650.927
Dash 10	Dash 10	Dash 6	650.438	-	-
Dash 12	Dash 10	Dash 12	649.896	-	-

**926**

## Equal JIC Tee with Double Swivel on the Run & Male JIC on the Side

Aluminium Anodised Blue or Stainless Steel



Run Thread #1 Size Female	Side Thread #2 Size Male	Run Thread #3 Size Female	Part No. Blue	Part No. S/Steel
Dash 3	Dash 3	Dash 3	-	650.944
Dash 4	Dash 4	Dash 4	650.671	650.681
Dash 6	Dash 6	Dash 6	649.856	-
Dash 12	Dash 12	Dash 12	650.448	-

**926**

## UN-Equal JIC Tee with Double Swivel on the Run & Male JIC on the Side

Aluminium Anodised Blue



**927**

## Equal JIC Female Swivel Tee

Aluminium Anodised Blue or Stainless Steel

Run Thread #1 Size Female	Side Thread #2 Size Female	Run Thread #3 Size Female	Part No. Blue	Part No. S/Steel
Dash 2	Dash 2	Dash 2	-	650.935
Dash 3	Dash 3	Dash 3	-	650.406
Dash 4	Dash 4	Dash 4	-	650.407
Dash 16	Dash 16	Dash 16	650.408	-

**927**

## Un-Equal JIC Female Swivel Tee

Stainless Steel



Run Thread #1 Size Female	Side Thread #2 Size Female	Run Thread #3 Size Female	Part No. S/Steel
Dash 2	Dash 3	Dash 3	650.936
Dash 2	Dash 4	Dash 4	650.937
Dash 3	Dash 4	Dash 4	650.938
Dash 3	Dash 6	Dash 6	650.939
Dash 4	Dash 6	Dash 6	650.940

## Tee JIC Male to JIC Male with Metric Female Port on the Side



Aluminium Anodised Blue, Black or Stainless Steel

Run Thread #1 Size Male	Side Thread #2 Size Female	Run Thread #3 Size Male	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. S/Steel ISO 6149
Dash 3	M 10x1	Dash 3	650.425	650.425 BK	650.423	650.424
Dash 4	M 10x1	Dash 4	650.426	650.426 BK	-	-
Dash 6	M 10x1	Dash 6	650.427	650.427 BK	-	-
Dash 16	M 14x1.5	Dash 16	650.417	-	-	-

## Tee JIC Female to JIC Male with Metric Female Port on the Side



Aluminium Anodised Blue, Black or Stainless Steel

Run Thread #1 Size Female	Side Thread #2 Size Female	Run Thread #3 Size Male	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. S/Steel ISO 6149
Dash 3	M 8x1	Dash 3	-	-	-	650.686
Dash 3	M 10x1	Dash 3	650.430	-	650.434	-
Dash 4	M 8x1	Dash 4	-	-	-	650.687
Dash 4	M 10x1	Dash 4	650.431	-	-	650.435
Dash 6	M 6x1	Dash 6	650.436	-	-	-
Dash 6	M 10x1	Dash 6	650.432	650.432 BK	-	-
Dash 8	M 10x1	Dash 8	650.433	-	-	-
Dash 10	M 10x1	Dash 10	650.437	-	-	-

### Tee JIC Male to JIC Male with Metric Female Port on the Side

With Mounting Lug,  
Aluminium Anodized Blue or Black



Run Thread #1 Size Male	Side Thread #2 Size Female	Run Thread #3 Size Male	Part No. Blue	Part No. Black
Dash 6	M 10x1	Dash 6	649.290	649.290 BK

### Tee Metric Male to Metric Male with Metric Female Port on the Side

With Mounting Lug, Aluminium Anodized Black



Run Thread #1 Size Male	Side Thread #2 Size Female	Run Thread #3 Size Male	Part No. Black
M 14x1.5	M 10x1	M14x1.5	649.291

### Tee JIC Male to JIC Male with UNF Female Port on the Run

Aluminium Anodized Blue



Run Thread #1 Size Female	Side Thread #2 Size Male	Run Thread #3 Size Male	Part No. Blue
Dash 3	Dash 3	Dash 3	649.863

824

### Equal Metric Tee

Aluminium Anodized Black



Run Thread #1 Size Male	Side Thread #2 Size Male	Run Thread #3 Size Male	Part No. Black
M12x1.5	M12x1.5	M12x1.5	649.530
M 14x1.5	M 14x1.5	M 14x1.5	649.543
M 18x1.5	M 18x1.5	M 18x1.5	649.531
M 22x1.5	M 22x1.5	M 22x1.5	649.532
M 27x1.5	M 27x1.5	M 27x1.5	649.533
M 30x1.5	M 30x1.5	M 30x1.5	649.534

### Tee Metric Male to Metric Male with JIC Male on the Side

Aluminium Anodized Black



Run Thread #1 Size Male	Side Thread #2 Size Male	Run Thread #3 Size Male	Part No. Black
M12x1.5	Dash 3	M12x1.5	650.405

925

### Equal Metric Tee with Swivel Female on the Side

Aluminium Anodized Black



Run Thread #1 Size Male	Side Thread #2 Size Female	Run Thread #3 Size Male	Part No. Black
M12x1.5	M12x1.5	M12x1.5	649.548
M14x1.5	M14x1.5	M14x1.5	649.544
M18x1.5	M18x1.5	M18x1.5	649.549

925

### Un-Equal Metric Tee with Swivel Female on the Side

Aluminium Anodized Black



Run Thread #1 Size Male	Side Thread #2 Size Female	Run Thread #3 Size Male	Part No. Black
M14x1.5	M14x1.5	M12x1.5	649.887

925

### Tee Metric Male with JIC Swivel Female on the Side

Aluminium Anodized Black



Run Thread #1 Size Male	Side Thread #2 Size Female	Run Thread #3 Size Male	Part No. Black
M14x1.5	Dash 6	M14x1.5	649.888
M14x1.5	Dash 8	M14x1.5	650.402

926

### Equal Metric Tee with Swivel Female on the Run

Aluminium Anodized Black



Run Thread #1 Size Female	Side Thread #2 Size Male	Run Thread #3 Size Male	Part No. Black
M12x1.5	M12x1.5	M12x1.5	649.546
M14x1.5	M14x1.5	M14x1.5	649.545
M18x1.5	M18x1.5	M18x1.5	649.547

### JIC Male Y-Pieces

Without Mounting Lugs  
Aluminium Anodized Blue or Black



Run Thread #1 Size Male In	Side Thread #2 Size Male	Run Thread #3 Size Male	Part No. Blue	Part No. Black
Dash 4	Dash 4	Dash 4	649.828	650.280
Dash 4	Dash 6	Dash 4	649.834	-
Dash 6	Dash 6	Dash 6	-	649.286
Dash 8	Dash 8	Dash 8	-	650.099

### JIC Male Y-Pieces

With Mounting Lugs  
Aluminium Anodized Blue or Stainless Steel



Run Thread #1 Size Male	Side Thread #2 Size Male	Run Thread #3 Size Male	Part No. Blue	Part No. S/Steel
Dash 3	Dash 3	Dash 3	649.280	649.829
Dash 4	Dash 4	Dash 4	649.281	-
Dash 6	Dash 6	Dash 6	649.832	-

### JIC Male Y-Pieces with JIC Male Takeoff

Without Mounting Lugs  
Aluminium Anodized Black



Thread #1 Size Male	Thread #2 Size Male In	Thread #3 Size Male	Take Off Size Male	Part No. Black
Dash 6	Dash 6	Dash 6	Dash 3	649.283

## JIC Male Y-Pieces with Female Swivel on the Side

Without Mounting Lugs  
Aluminium Anodized Black



## JIC Male Y-Pieces with Female Swivel on the Side and JIC Male Takeoff

Without Mounting Lugs  
Aluminium Anodized Black



## JIC Male Y-Pieces with Female Swivel on the Side and Metric Female Takeoff

Without Mounting Lugs  
Aluminium Anodized Black



## Metric Male Y-Pieces

Without Mounting Lugs  
Aluminium Anodized Black



## Metric Male Y-Pieces

With Mounting Lugs  
Aluminium Anodized Black



## Metric Male Y-Pieces with JIC Male Takeoff

Without Mounting Lugs  
Aluminium Anodized Black



## Metric Male Y-Pieces with Female Swivel on the Side

Without Mounting Lugs  
Aluminium Anodized Black



## Metric Male Y-Pieces with Female Swivel on the Side and JIC male Takeoff

Without Mounting Lugs  
Aluminium Anodized Black



## JIC 4 Way Tee with JIC Female Swivel on the Side

Aluminium Anodized Black



## JIC 4 Way Tee

With Mounting Lugs  
Aluminium Anodized Black



## 915

## Equal JIC Double Nut

Aluminium Anodized Blue,  
Black or Stainless Steel



Thread #1 Size Female	Thread #2 Size Female	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 2	Dash 2	650.119	-	649.027
Dash 3	Dash 3	649.336	649.336 BK	649.028
Dash 4	Dash 4	649.337	649.337 BK	650.123
Dash 6	Dash 6	649.338	649.338 BK	649.022
Dash 8	Dash 8	649.339	649.339 BK	-
Dash 10	Dash 10	649.340	649.340 BK	-
Dash 12	Dash 12	649.341	649.341 BK	-
Dash 16	Dash 16	649.344	649.344 BK	-
Dash 20	Dash 20	649.328	-	-

## 915

## Un-Equal JIC Double Nut

Aluminium Anodized  
Blue, Black or Stainless Steel



Thread #2 Size Female	Thread #1 Size Female	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 2	Dash 3	-	-	650.120
Dash 2	Dash 4	-	-	650.121
Dash 3	Dash 4	-	-	650.122
Dash 3	Dash 6	-	-	650.125
Dash 4	Dash 6	649.346	649.346 BK	650.124
Dash 6	Dash 8	649.345	649.345 BK	-

**915****Equal Metric Double Nut**

Aluminium Anodised Black



Thread #1 Size Female	Thread #2 Size Female	Part No. Black
M12x1.5	M12x1.5	650.550
M14x1.5	M14x1.5	649.599
M16x1.5	M16x1.5	650.551
M18x1.5	M18x1.5	650.552
M22x1.5	M22x1.5	649.598
M24x1.5	M24x1.5	650.553
M26x1.5	M26x1.5	650.558
M27x1.5	M27x1.5	650.554
M30x1.5	M30x1.5	650.555

**823****45° JIC Male Elbow**Block Fitting,  
Aluminium Anodized Blue or Black

Thread #1 Size Male	Thread #2 Size Male	Part No. Blue	Part No. Black
Dash 3	Dash 3	650.010	650.010 BK
Dash 4	Dash 4	650.011	650.011 BK
Dash 6	Dash 6	650.012	650.012 BK
Dash 8	Dash 8	650.013	650.013 BK
Dash 10	Dash 10	650.014	650.014 BK
Dash 12	Dash 12	650.015	650.015 BK
Dash 16	Dash 16	650.016	650.016 BK

**823****45° JIC Female Double Nut**Block Fitting,  
Aluminium Anodized Blue or Black

Thread #1 Size Female	Thread #2 Size Female	Part No. Blue	Part No. Black
Dash 3	Dash 3	650.020	650.020 BK
Dash 4	Dash 4	650.021	650.021 BK
Dash 6	Dash 6	650.022	650.022 BK
Dash 8	Dash 8	650.023	650.023 BK
Dash 10	Dash 10	650.024	650.024 BK
Dash 12	Dash 12	650.025	650.025 BK

**823****45° JIC Female to Male Elbow**Block Fitting,  
Aluminium Anodized Blue or Black

Thread #1 Size Female	Thread #2 Size Male	Part No. Blue	Part No. Black
Dash 3	Dash 3	650.040	650.040 BK
Dash 4	Dash 4	650.041	650.041 BK
Dash 6	Dash 6	650.042	650.042 BK
Dash 8	Dash 8	650.043	650.043 BK
Dash 10	Dash 10	650.044	650.044 BK
Dash 12	Dash 12	650.045	650.045 BK
Dash 20	Dash 20	650.046	650.046 BK

**821****90° JIC Male Elbow**Block Fitting,  
Aluminium Anodized Blue or Black

Thread #1 Size Male	Thread #2 Size Male	Part No. Blue	Part No. Black
Dash 3	Dash 3	650.000	650.000 BK
Dash 4	Dash 4	650.001	650.001 BK
Dash 6	Dash 6	650.002	650.002 BK
Dash 8	Dash 8	650.003	650.003 BK
Dash 10	Dash 10	650.004	650.004 BK
Dash 12	Dash 12	650.005	650.005 BK
Dash 16	Dash 16	650.006	650.006 BK

**821****90° JIC Female Double Nut**

Block Fitting, Aluminium Anodized Blue, Black or Stainless Steel



Thread #1 Size Female	Thread #2 Size Female	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 3	Dash 3	650.030	650.030 BK	650.060
Dash 4	Dash 4	650.031	650.031 BK	-
Dash 6	Dash 6	650.032	650.032 BK	-
Dash 8	Dash 8	650.033	650.033 BK	-
Dash 10	Dash 10	650.034	650.034 BK	-
Dash 12	Dash 12	650.035	650.035 BK	-
Dash 20	Dash 20	650.062	650.062 BK	-

**821****90° JIC Female Double Nut**

Swept Tube Fitting, Aluminium Anodized Red/Blue



Thread #1 Size Female	Thread #2 Size Female	Part No. Red/Blue
Dash 6	Dash 6	650.029
Dash 8	Dash 8	650.039
Dash 10	Dash 10	650.038
Dash 12	Dash 12	650.037
Dash 16	Dash 16	650.036

**821****Equal 90° JIC Female to Male Elbow**

Block Fitting, Aluminium Anodized Blue, Black or Stainless Steel



Thread #1 Size Female	Thread #2 Size Male	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 3	Dash 3	650.050	650.050 BK	650.058
Dash 4	Dash 4	650.051	650.051 BK	650.064
Dash 6	Dash 6	650.052	650.052 BK	-
Dash 8	Dash 8	650.053	650.053 BK	-
Dash 10	Dash 10	650.054	650.054 BK	-
Dash 12	Dash 12	650.055	650.055 BK	-
Dash 16	Dash 16	650.061	-	-
Dash 20	Dash 20	650.065	-	-

**821****Un-Equal 90° JIC Female to Male Elbow**

Block Fitting, Aluminium Anodized Blue, Black or Stainless Steel



Thread #1 Size Female	Thread #2 Size Male	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 3	Dash 2	-	-	650.063
Dash 6	Dash 4	650.056	650.056 BK	-
Dash 8	Dash 10	650.057	-	-

**How to guide**

On page 77

Follow our step-by-step guide for correctly fitting a hose end to our 600 series hose



821

### Un-Equal 90° JIC Female to Metric Male Elbow

Block Fitting,  
Aluminium Anodized Black

Thread #1 Size Female	Thread #2 Size Male	Part No. Black
Dash 6	M14x1.5	650.059



823

### 45° NPT Male to JIC Male Elbow

Block Fitting, Aluminium Anodized Blue

Thread #1 Size Male	Thread #2 Size Male	Part No. Blue
1/8" NPT	Dash 3	650.150
1/8" NPT	Dash 4	650.151
1/4" NPT	Dash 4	650.152
3/8" NPT	Dash 4	650.153
1/4" NPT	Dash 6	650.154
3/8" NPT	Dash 6	650.155
1/2" NPT	Dash 6	650.156
1/4" NPT	Dash 8	650.157
3/8" NPT	Dash 8	650.158
1/2" NPT	Dash 8	650.159
3/4" NPT	Dash 8	650.160
3/8" NPT	Dash 10	650.161
1/2" NPT	Dash 10	650.162
3/4" NPT	Dash 10	650.163
1" NPT	Dash 12	650.164
3/4" NPT	Dash 12	650.165
1" NPT	Dash 16	650.167
1" NPT	Dash 16	650.168



821

### Un-Equal 90° Metric Male Swivel to JIC Male Elbow

Block Fitting, Aluminium  
Anodized Blue or Black

Thread #1 Size Male	Thread #2 Size Male	Part No. Blue	Part No. Black
M12x1.5	Dash 6	650.071	650.071 BK
M14x1.5	Dash 6	-	649.578
M22x1.5	Dash 10	-	649.582
M22x1.5	Dash 12	-	650.080



821

### Equal 90° Metric Male Swivel to Metric Male Elbow

Block Fitting,  
Aluminium Anodized Black

Thread #1 Size Male	Thread #2 Size Male	Part No. Black
M22x1.5	M22x1.5	649.583



821

### Un-Equal 90° BSP Male Swivel to JIC Male Elbow

Block Fitting,  
Aluminium Anodized Black

Thread #1 Size Male	Thread #2 Size Male	Part No. Black
1/2" BSP	Dash 12	649.579



821

### Un-Equal 90° NPT Male Swivel to JIC Male Elbow

Block Fitting,  
Aluminium Anodized Blue or Black

Thread #1 Size Male	Thread #2 Size Male	Part No. Blue	Part No. Black
1/4" NPT	Dash 6	650.073	650.073 BK
1/2" NPT	Dash 10	-	649.585



822

### 90° NPT Male to JIC Male Elbow

Block Fitting, Aluminium  
Anodized Blue



Thread #1 Size Male	Thread #2 Size Male	Part No. Blue
1/8" NPT	Dash 3	650.173
1/8" NPT	Dash 4	650.174
1/4" NPT	Dash 4	650.175
3/8" NPT	Dash 4	650.176
1/2" NPT	Dash 4	650.177
1/8" NPT	Dash 6	650.178
1/4" NPT	Dash 6	650.179
3/8" NPT	Dash 6	650.180
1/2" NPT	Dash 6	650.181
1/4" NPT	Dash 8	650.182
3/8" NPT	Dash 8	650.183
1/2" NPT	Dash 8	650.184
3/4" NPT	Dash 8	650.185
3/8" NPT	Dash 10	650.186
1/2" NPT	Dash 10	650.187
3/4" NPT	Dash 10	650.188
3/8" NPT	Dash 12	650.189
1/2" NPT	Dash 12	650.190
3/4" NPT	Dash 12	650.191
1" NPT	Dash 12	650.192
3/4" NPT	Dash 16	650.193
1" NPT	Dash 16	650.194
1 1/4" NPT	Dash 16	650.195

## Caps & Plugs

On pages 49-50

Products in this section are often used with our range of Aluminium caps and plugs



# Banjo Adaptors

Our wide range of male and female threaded banjo adaptors are available in a variety of materials and sizes.



**776**

## 00° Banjo Adaptor, JIC

Aluminium Anodised Blue, Black, Stainless Steel or Steel



Thread Size Male	Banjo Size	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Steel
Dash 3	d= 8mm - h= 10mm	649.003	649.003 BK	649.004	-
Dash 3	d= 10mm - h= 11.2mm	649.470	649.470 BK	-	-
Dash 3	d= 10mm - h= 12mm	-	-	649.009	649.002
Dash 3	d= 12mm - h= 12mm	649.471	649.471 BK	649.006	-
Dash 3	d= 14mm - h= 12mm	649.472	649.472 BK	650.621	-
Dash 3	d= 14.4mm (9/16" UNF) - h= 12mm	650.635	650.635 BK	-	-
Dash 4	d= 10mm - h= 12mm	649.474	649.474 BK	649.010	-
Dash 4	d= 11.2mm (7/16" UNF) - h= 11.2mm	649.475	649.475 BK	-	-
Dash 4	d= 12mm - h= 12mm	649.476	649.476 BK	649.012	-
Dash 4	d= 14mm - h= 12mm	649.477	649.477 BK	650.629	-
Dash 6	d= 12mm - h= 12mm	649.479	649.479 BK	650.633	-
Dash 6	d= 14mm - h= 12mm	649.480	649.480 BK	650.637	-
Dash 6	d= 14.4mm (9/16" UNF) - h= 12mm	649.499	649.499 BK	650.624	-
Dash 6	d= 16mm - h= 16mm	649.481	649.481 BK	650.630	-
Dash 6	d= 18mm - h= 20mm	649.467	649.467 BK	650.631	-
Dash 8	d= 12mm - h= 18mm	649.482	649.482 BK	-	-
Dash 8	d= 14mm - h= 18mm	649.483	649.483 BK	-	-
Dash 8	d= 16mm - h= 16mm	649.484	649.484 BK	650.606	-
Dash 8	d= 18mm - h= 20mm	649.485	649.485 BK	-	-
Dash 8	d= 22mm - h= 25mm	650.622	650.622 BK	-	-
Dash 8	d= 24mm - h= 25mm	650.623	650.623 BK	-	-
Dash 10	d= 16mm - h= 20mm	649.486	649.486 BK	-	-
Dash 10	d= 18mm - h= 20mm	649.487	649.487 BK	-	-
Dash 10	d= 20mm - h= 20mm	649.488	649.488 BK	-	-
Dash 10	d= 22mm - h= 25mm	649.489	649.489 BK	-	-
Dash 10	d= 24mm - h= 25mm	650.627	650.627 BK	-	-

**776**

## 00° Big Ball Banjo Adaptor, JIC

Aluminium Anodised Blue or Black



Thread Size Male	Banjo Size	Part No. Blue	Part No. Black
Dash 6	d= 12mm - h= 18mm	649.468	649.468 BK
Dash 6	d= 14mm - h= 18mm	649.469	649.469 BK

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## Tools for the job?

Get the right tools, everything you need to do the job on page 76



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## 15° Banjo Adaptor, JIC

Aluminium Anodised Blue, Black or Stainless Steel



Thread Size Male	Banjo Size	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 3	d= 10mm - h= 12mm	649.303	649.303 BK	649.977

**776**

## 00° Extended Neck Banjo Adaptor, JIC

Aluminium Anodised Blue, Black or Stainless Steel



Thread Size Male	Banjo Size	Length	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 3	d= 8mm - h= 8mm	24mm	-	-	649.005
Dash 5	d= 12mm - h= 12mm	30mm	649.014	649.014 BK	-
Dash 5	d= 14mm - h= 12mm	30mm	649.015	649.015 BK	-
Dash 6	d= 12mm - h= 12mm	30mm	-	-	650.638
Dash 6	d= 14mm - h= 12mm	41mm	649.491	649.491 BK	-
Dash 6	d= 14mm	41mm	649.492	649.492 BK	-
Dash 8	(9/16"UNF) - h= 18mm	42mm	649.478	649.478 BK	-
Dash 10	d= 18mm - h= 20mm	52mm	649.493	649.493 BK	-
Dash 10	d= 20mm - h= 20mm	-	649.490	649.490 BK	-

**776**

## 00° Banjo Adaptor, Metric

Aluminium Anodised Black



Thread Size Male	Banjo Size	Part No. Black
M14x1.5	d= 12mm - h= 12mm	649.498
M14x1.5	d= 14mm - h= 12mm	649.494
M14x1.5	d= 16mm - h= 16mm	649.495
M14x1.5	d= 18mm - h= 20mm	649.463
M16x1.5	d= 18mm - h= 20mm	650.632
M18x1.5	d= 18mm - h= 20mm	649.464
M22x1.5	d= 18mm - h= 20mm	649.460

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## 00° Banjo Adaptor, Metric

Aluminium Anodised Black



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## 00° Double Banjo Adaptor, Metric

Aluminium Anodised Black



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## 00° Extended Neck Banjo Adaptor, Metric

Aluminium Anodised Black

Thread Size Male	Banjo Size	Length	Part No. Black
M22x1.5	d= 18mm - h= 20mm	35mm	649.017

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## 00° Double Banjo Adaptor, JIC

Aluminium Anodised  
Blue or Black



Thread #1 Size Male	Banjo Size	Thread #2 Size Male	Part No. Blue	Part No. Black
Dash 3	d= 10mm - h= 11mm	Dash 3	649.500	649.500 BK
Dash 4	d= 10mm - h= 11mm	Dash 4	649.976	649.976 BK
Dash 4	d= 11.2mm (7/16" UNF) - h= 11mm	Dash 4	649.965	649.965 BK
Dash 4	d= 12mm - h= 12mm	Dash 4	649.501	649.501 BK
Dash 4	d= 12mm - h= 12mm	Dash 6	649.506	649.506 BK
Dash 4	d= 14mm - h= 12mm	Dash 6	649.507	649.507 BK
Dash 6	d= 12mm - h= 12mm	Dash 6	649.502	649.502 BK
Dash 6	d= 14mm - h= 12mm	Dash 6	649.503	649.503 BK
Dash 6	d= 13.2mm (1/4" BSP) - h= 18mm	Dash 6	649.975	649.975 BK
Dash 6	d= 14.4mm (9/16" UNF) - h= 12mm	Dash 6	650.636	650.636 BK

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## 00° Big Ball Double Banjo Adaptor, JIC

Aluminium Anodised  
Blue, Black or Stainless Steel



Thread #1 Size Male	Banjo Size	Thread #2 Size Male	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 6	d= 12mm - h= 18mm	Dash 6	649.504	649.504 BK	650.600
Dash 6	d= 14mm - h= 18mm	Dash 6	649.505	649.505 BK	650.601
Dash 8	d= 12mm - h= 18mm	Dash 8	-	-	650.602
Dash 8	d= 14mm - h= 18mm	Dash 8	-	-	650.603

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## 00° Double Banjo Adaptor, JIC, Metric

Aluminium Anodised  
Blue or Black



Thread #1 Size Male	Banjo Size	Thread #2 Size Female	Part No. Blue	Part No. Black
Dash 4	d= 10mm - h= 11mm	M10x1	649.011	649.011 BK

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## 00° Double Banjo Adaptor, Metric

Aluminium Anodised Black



**779**

## 00° Big Ball Double Banjo Adaptor, Metric

Aluminium Anodised Black



**779**

## 00° Big Ball Double Banjo Adaptor, Metric Male/Female

Aluminium Anodised Black



**779**

## 90° Double Banjo Adaptor, JIC

Steel, Plated



**776**

## 00° Banjo Adaptor with Fixed JIC Female Port

Aluminium Anodised Blue or Black



**776**

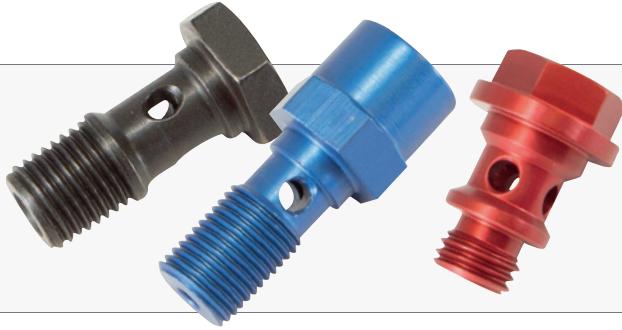
## 00° Banjo Adaptor with JIC Swivel Female

Aluminium Anodised Blue



# Banjo Bolts

A wide selection of imperial, metric and BSP threaded banjo bolts, some available with male or female take offs to allow for connection to other items such as pressure sensors.



**775**

## Banjo Bolt Form A. Imperial

Aluminium Anodised Blue, Black, Stainless Steel or Chrome Plated Steel.



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## Banjo Bolt Form A. Metric

Aluminium Anodised Blue, Black, Stainless Steel, Plated Steel, Chrome Plated Steel or Titanium.



Thread Size	Description	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Steel	Part No. Chrome	Part No. Titanium
M8x1	Length 17mm	-	649.350	-	-	-	-
M8x1	Length 19mm	-	649.361	-	649.365	-	649.364
M10x1	Length 19mm	649.351	649.351BK	650.238	649.406	-	649.020
M10x1	Length 20mm	-	-	-	-	992-03-31Z	-
M10x1	Length 21mm	649.575	649.575BK	-	649.378	-	-
M10x1	Length 25mm	649.404	649.404BK	649.409	-	992-03-31LZ	-
M10x1.25	Length 19mm	649.407	649.407BK	-	649.408	-	-
M12x1	Length 25mm	649.352	649.352BK	649.447	649.367	-	-
M12x1	Length 31mm	649.390	649.390BK	-	-	-	-
M12x1	Length 38mm	649.389	649.389BK	-	-	-	-
M12x1.25	Length 25mm	649.380	649.380BK	649.448	-	-	-
M12x1.5	Length 25mm	649.353	649.353BK	649.440	649.368	-	-
M12x1.5	Length 31mm	649.391	649.391BK	649.441	-	-	-
M12x1.5	Length 38mm	649.393	649.393BK	649.394	-	-	-
M14x1.25	Length 25mm	-	-	650.218	-	-	-
M14x1.25	Length 31mm	650.213	-	-	-	-	-
M14x1.5	Length 25mm	649.354	649.354BK	649.442	649.369	-	-
M14x1.5	Length 31mm	649.392	649.392BK	649.443	-	-	-
M14x1.5	Length 38mm	649.395	649.395BK	-	-	-	-
M14x1.5	Length 50mm	649.397	649.397BK	-	-	-	-
M16x1.5	Length 29mm	649.379	649.379BK	649.449	649.370	-	-
M16x1.5	Length 33mm	649.399	649.399BK	-	-	-	-
M18x1.5	Length 33mm	649.356	649.356BK	650.249	649.371	-	-
M20x1.5	Length 39mm	649.357	649.357BK	-	649.372	-	-
M22x1.5	Length 39mm	649.358	649.358BK	-	649.373	-	-
M24x1.5	Length 39mm	649.359	649.359BK	-	649.374	-	-
M26x1.5	Length 45mm	649.360	649.360BK	-	649.375	-	-

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## Banjo Bolt Form A. BSP (G)

Aluminium Anodised Blue, Black or Stainless Steel.



Thread Size	Description	Part No. Blue	Part No. Black	Part No. S/Steel
1/4" BSP	Length 25mm	649.445	649.445 BK	649.024
1/4" BSP	Length 31mm	649.446	649.446 BK	-
3/8" BSP	Length 29mm	649.362	-	-
3/8" BSP	Length 35mm	-	-	650.236

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## Banjo Bolt Form B. Imperial

Aluminium Anodised Blue, Black, Stainless Steel or Plated Steel.



Thread Size	Description	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Steel
3/8"-24 UNF	Length 19mm	650.206	650.206 BK	650.203	-
3/8"-24 UNF	Length 21mm	650.200	650.200 BK	649.402	-
3/8"-24 UNF	Length 22mm	-	-	-	649.403
3/8"-24 UNF	Length 25mm	-	-	-	649.414
3/8"-24 UNF	Length 31.7mm	-	-	-	649.387
3/8"-24 UNF	Length 35.4mm	650.210	650.210 BK	649.400	649.401
7/16"-20 UNF	Length 21mm	-	-	-	649.410
7/16"-20 UNF	Length 25mm	-	-	-	649.363

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## Banjo Bolt Form B. BSP (G)

Stainless Steel.



Thread Size	Description	Part No. S/Steel
1/8" BSP	Length= 21mm	649.025

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## Banjo Bolt Form B. Metric

Aluminium Anodised Blue, Black, Stainless Steel, Steel Plated, Zinc Plated or Chrome Plated.



Thread Size	Description	Part No. Blue	Part No. Black	Part No. S/Steel	Part No. Steel	Part No. Zinc	Part No. Chrome
M6x0.75	L 16mm	-	-	650.247	-	-	-
M8x1	L 17mm	-	-	649.376	-	-	-
M8x1	L 19mm	-	-	649.377	-	-	-
M10x1	L 19mm	650.205	650.205 BK	650.204	-	-	-
M10x1	L 20mm	-	-	-	-	992-03-31P	992-03-31Z
M10x1	L 21mm	650.201	650.201 BK	649.405	-	-	-
M10x1	L 22mm	-	-	-	649.366	-	-
M10x1	L 32.5mm	-	-	649.574	-	-	-
M10x1	L 35.4mm	649.550	649.550 BK	649.553	649.551	-	-
M10x1.25	L 19mm	-	-	650.234	-	-	-
M10x1.25	L 21mm	-	-	650.233	-	-	-
M10x1.25	L 21mm h 8mm	650.240	-	-	-	-	-
M10x1.25	L 22mm h 12mm	650.202	650.202 BK	-	-	-	-
M10x1.25	L 25mm	-	-	649.382	-	-	-
M10x1.25	L 31mm	650.241	-	-	-	-	-
M10x1.25	L 35.4mm	-	-	649.552	-	-	-
M12x1.5	L 25mm	-	-	650.208	-	-	-

# Banjo Bolts

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## Banjo Bolt Form A. Metric with JIC Male Take Off

Aluminium Anodised Blue or Black.



Thread Size	Description	Take Off Size Male	Part No. Blue	Part No. Black
M10x1	Length= 19mm	Dash 3	649.415	649.415 BK
M10x1	Length= 21mm	Dash 4	649.557	649.557 BK
M10x1	Length= 25mm	Dash 4	649.444	649.444 BK
M12x1	Length= 25mm	Dash 3	649.429	649.429 BK
M12x1	Length= 25mm	Dash 4	649.430	649.430 BK
M12x1.25	Length= 25mm	Dash 3	649.425	649.425 BK
M12x1.5	Length= 25mm	Dash 3	649.416	649.416 BK
M12x1.5	Length= 31mm	Dash 3	649.570	649.570 BK
M12x1.5	Length= 25mm	Dash 4	649.417	649.417 BK
M12x1.5	Length= 31mm	Dash 4	649.554	649.554 BK
M12x1.5	Length= 25mm	Dash 6	649.418	649.418 BK
M12x1.5	Length= 31mm	Dash 6	649.426	649.426 BK
M14x1.5	Length= 25mm	Dash 3	649.419	649.419 BK
M14x1.5	Length= 31mm	Dash 3	649.555	649.555 BK
M14x1.5	Length= 25mm	Dash 4	649.420	649.420 BK
M14x1.5	Length= 31mm	Dash 4	649.556	649.556 BK
M14x1.5	Length= 25mm	Dash 6	649.421	649.421 BK
M14x1.5	Length= 31mm	Dash 6	649.427	649.427 BK
M16x1.5	Length= 29mm	Dash 3	649.422	649.422 BK
M16x1.5	Length= 29mm	Dash 4	649.423	649.423 BK
M16x1.5	Length= 29mm	Dash 6	649.424	649.424 BK

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## Banjo Bolt Form A. Metric with Metric Male Take Off

Aluminium Anodised Black.



Thread #1 Size	Description	Take Off Size Male	Part No. Black
M12x1.5	Length= 25mm	M12x1.5	649.439
M12x1.5	Length= 31mm	M12x1.5	649.438
M12x1.5	Length= 25mm	M14x1.5	649.432
M12x1.5	Length= 31mm	M14x1.5	649.433
M14x1.5	Length= 25mm	M12x1.5	649.436
M14x1.5	Length= 31mm	M12x1.5	649.437
M14x1.5	Length= 25mm	M14x1.5	649.434
M14x1.5	Length= 31mm	M14x1.5	649.435

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## Banjo Bolt Form B. Imperial with JIC Male Take Off

Stainless Steel.



Thread #1 Size	Description	Take Off Size Male	Part No. S/Steel
3/8"-24 UNF	Length= 25mm	Dash 3	650.223

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## Banjo Bolt Form B. Metric with JIC Male Take Off

Stainless Steel.



Thread #1 Size	Description	Takeoff Size Male	Part No. S/Steel
M10x1	Length= 21mm	Dash 3	649.428
M10x1	Length= 21mm	Dash 4	649.383

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## Banjo Bolt Form B. Imperial with Female Take Off Port to DIN 74234 Form "F"

Aluminium Anodised Blue or Stainless Steel.



Thread #1 Size	Description	Take Off Size Female	Part No. Blue	Part No. S/Steel
3/8"-24 UNF	Length= 19mm	M10x1 DIN 74234	650.244	-
3/8"-24 UNF	Length= 21mm	M10x1 DIN 74234	650.220	650.226

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## Banjo Bolt Form B. Metric with Female Take Off Port to DIN 74234 Form "F"

Stainless Steel.



Thread #1 Size	Description	Take Off Size Female	Part No. S/Steel
M10x1	Length= 21mm	M10x1 DIN 74234	649.982
M10x1	Length= 35.4mm	M10x1 DIN 74234	650.228

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## Banjo Bolt Form B. Imperial with Female Take Off Port

Aluminium Anodised Blue or Stainless Steel.



Thread #1 Size	Description	Take Off Size Female	Part No. Blue	Part No. S/Steel
3/8"-24 UNF	Length = 31mm	M10x1	650.245	-
3/8"-24 UNF	Length = 32.5mm	M10x1	-	650.229
3/8"-24 UNF	Length = 21mm	Dash 3 JIC	-	650.224
3/8"-24 UNF	Length = 21mm	1/8" BSP	650.219	-

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## Banjo Bolt Form B. Metric with Female Take Off Port

Aluminium Anodised Blue, Black or Stainless Steel.



Thread #1 Size	Description	Take Off Female	Part No. Blue	Part No. Black	Part No. S/Steel
M10x1	Length = 19mm	M10x1	650.242	-	-
M10x1.25	Length = 19mm	M10x1	650.243	-	-
M10x1	Length = 31mm	M10x1	650.246	-	-
M12x1.5	Length = 25mm	M12x1.5	-	650.248	-
M10x1	Length = 21mm	M10x1 ISO6149	-	-	649.983
M10x1	Length = 21mm	Dash 3	-	-	650.227

## Banjo Bolt for Carburetors

Aluminium Anodised Red or Black



Thread Size	To Suit	Part No. Red	Part No. Black
M12x1.5	WEBER	650.217	650.217 BK
M12x1.25	DELLORTO, SOLEX	650.887	650.887 BK

## Banjo Bolt "High Flow"

Aluminium Anodised Blue or Black



Thread Size	Description	Part No. Blue	Part No. Black
M12x1.25	For Banjo ø16mm	-	650.216
M12x1.5	For Banjo ø16mm	650.215	650.215 BK

# Caps & Plugs

Metal caps and plugs available in anodised aluminium, stainless steel or zinc plated steel. Certain threads are also available with a choice of hex head or socket head. We also offer plastic options when the durability/pressure sealing capabilities of metal versions is not required.

**806**

## Plug, Hex. Head - JIC

Aluminium Anodised Blue, Black or Stainless Steel



Thread Size	Part No. Blue	Part No. Black	Part No. S/Steel
Dash 2 JIC	649.607	649.607BK	650.711
Dash 3 JIC	649.600	649.600BK	650.707
Dash 4 JIC	649.601	649.601BK	649.841
Dash 6 JIC	649.602	649.602BK	649.842
Dash 8 JIC	649.603	649.603BK	650.705
Dash 10 JIC	649.604	649.604BK	-
Dash 12 JIC	649.605	649.605BK	-
Dash 16 JIC	649.606	649.606BK	-
Dash 20 JIC	649.649	-	-

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## Plug, Hex. Head - UNF

Aluminium Anodised Blue or Black



Thread Size	Part No. Blue	Part No. Black
3/8"-24UNF	649.952	649.952BK

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## Plug, Hex. Head - Metric

Aluminium Anodised Black, Stainless Steel or Steel



Thread Size	Part No. Black	Part No. S/Steel	Part No. Steel
M6x1	649.608	-	-
M8x1	649.642	649.643	-
M8x1.25	649.618	-	-
M10x1	649.609	649.647	649.644
M10x1.5	649.619	-	-
M12x1	-	650.299	-
M12x1.25	649.648	-	-
M12x1.5	649.610	-	-
M14x1.25	-	650.296	-
M14x1.5	649.611	650.706	-
M16x1.5	649.612	650.708	-
M18x1.5	649.616	650.295	-
M22x1.5	649.613	-	-
M24x1	650.720	-	-
M24x1.5	649.614	-	-
M26x1.5	649.639	-	-
M27x1.5	649.615	-	-
M30x1.5	649.617	-	-

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## Plug, Hex. Head - BSP (G)

Aluminium Anodised Black or Stainless Steel



Thread Size	Part No. Black	Part No. S/Steel
1/8" BSP (G)	649.950	650.298
1/4" BSP (G)	650.294	650.297
3/8" BSP (G)	649.951	-

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## Plug, Socket Head - Imperial

Aluminium Anodised Blue or Black



Thread Size	Part No. Blue	Part No. Black
3/8"-24 UNF	188.150BL	188.150BK
7/16"-20 UNF	188.116BL	188.116BK
9/16"-18 UNF	188.151BL	188.151BK
3/4"-16 UNF	188.152BL	188.152BK
7/8"-14 UNF	188.153BL	188.153BK
1 1/16"-12 UN	188.154BL	188.154BK

## Plug, Socket Head - Metric

Aluminium Anodised Black or Stainless Steel



Thread Size	Part No. Black	Part No. S/Steel
M8x1	188.100	188.108
M8x1.25	188.113	-
M10x1	188.101	188.109
M10x1.5	188.118	-
M12x1	188.115	-
M12x1.5	188.102	-
M12x1.75	188.111	-
M14x1.5	188.103	-
M16x1.5	188.104	-
M18x1.5	188.105	188.110
M20x1.5	188.106	-
M22x1.5	188.107	-
M27x1.5	188.112	-
M30x1.5	188.114	-

## Plug, Socket Head - BSP (G)

Aluminium Anodised Black

Thread Size	Part No.
1/8" BSP (G)	188.132
1/4" BSP (G)	188.133
3/8" BSP (G)	188.131
1/2" BSP (G)	188.130
3/4" BSP (G)	188.134

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## Plug, Socket Head - NPT

Aluminium Anodised Blue



Thread Size	Part No.
1/16" NPT	188.120
1/8" NPT	188.121
1/4" NPT	188.122
3/8" NPT	188.123
1/2" NPT	188.124
3/4" NPT	188.125

## Plug, Push In

Aluminium Anodised Red or Titanium

Thread Size	Part No. Red	Part No. Titanium
Dash 2, d= 6.70mm h= 7.60mm	E00257	E00136
Dash 3, d= 8.70mm h= 9.12mm	E00258	E00399
Dash 4, d= 10.00mm h= 9.95mm	E00259	-
Dash 6, d= 13.00mm h= 12.00mm	E00260	-

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## Cap - JIC

Aluminium Anodised Blue/Red, Black or Stainless Steel



Thread Size	Part No. Blue/Red	Part No. Black	Part No. S/Steel
Dash 2 JIC	649.627	649.627BK	650.712
Dash 3 JIC	649.620	649.620BK	649.954
Dash 4 JIC	649.621	649.621BK	650.710
Dash 5 JIC	649.628	649.628BK	-
Dash 6 JIC	649.622	649.622BK	649.980
Dash 8 JIC	649.623	649.623BK	-
Dash 10 JIC	649.624	649.624BK	-
Dash 12 JIC	649.625	649.625BK	-
Dash 16 JIC	649.626	649.626BK	-
Dash 20 JIC	649.629	649.629BK	-

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## Cap - Metric

Aluminium Anodised Black



Thread Size	Part No.
M12x1.5	649.630
M14x1.5	649.631
M16x1.5	649.632
M18x1.5	649.636
M22x1.5	649.633
M24x1.5	649.634
M26x1.5	649.638
M27x1.5	649.635
M30x1.5	649.637

## ATEC-Plug for Symetrics Nipple

Designed for protection during travel, Aluminium Anodised Red



Size	Part No.
Dash 2	655.109
Dash 3	655.114
Dash 4	655.115
Dash 6	655.118

## ATEC-Plug for Symetrics Coupler

Designed for protection during travel, Aluminium Anodised Red



## ATEC-Cap for Symetrics Nipple

Designed for protection during travel, fitted with key ring for easy removal, Aluminium Anodised Red



## ATEC-Cap for Symetrics Coupler

Designed for protection during travel, fitted with key ring for easy removal, Aluminium Anodised Red



## ATEC-Pressure Cap for Symetrics Nipple

Secondary Seal for prefix 47xx & 57xx  
Aluminium Anodised Red or Black



Size	Part No. Red	Part No. Black
Dash 2	655.116	655.116BK
Dash 4	655.117	-



## Plug - JIC

For Workshop and Storage  
use Plastic - LDPE



## Plug - Metric

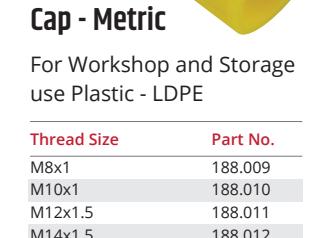
For Workshop and Storage  
use Plastic - LDPE

Thread Size	Part No.
Dash 2	188.029
Dash 3	188.030
Dash 4	188.031
Dash 6	188.032
Dash 8	188.033
Dash 10	188.034
Dash 12	188.035
Dash 16	188.036



## Cap - JIC

For Workshop and Storage  
use Plastic - LDPE



## Cap - Metric

For Workshop and Storage  
use Plastic - LDPE

Thread Size	Part No.
Dash 2	188.007
Dash 3	188.000
Dash 4	188.001
Dash 6	188.002
Dash 8	188.003
Dash 10	188.004
Dash 12	188.005
Dash 16	188.006



## Cap - Push fit

For Workshop and Storage use -  
PVC (80° Shore), Black

Dimensions	Part No.
d= 5.26mm L= 19.05mm WT= 0.96mm	188.060
d= 6.35mm L= 25.40mm WT= 0.96mm	188.061
d= 7.95mm L= 19.05mm WT= 1.52mm	188.062
d= 8.71mm L= 19.05mm WT= 0.96mm	188.063
d= 10.31mm L= 19.05mm WT= 1.39mm	188.066
d= 13.49mm L= 19.05mm WT= 1.52mm	188.064
d= 15.88mm L= 25.40mm WT= 1.52mm	188.065



## Cap - Banjo

For Workshop and Storage use - PVC, Yellow

Dimensions	Part No.
Ball d= 14.00mm h= 8.00mm	BCWJ-08
Ball d= 17.00mm h= 10.00mm	BCWJ-10
Ball d= 20.00mm h= 12.00mm	BCWJ-12

# Sealing Washers

ATEC stock a complete range of sealing washers to fit UNF, Metric and BSP fittings.



## Sealing Washer - UNF (Dash)

### Aluminium

Size	Part No.
Dash 3	649.310
Dash 4	649.311
Dash 5	649.304
Dash 6	649.309
Dash 8	649.308
Dash 10	649.347
Dash 12	649.348
Dash 16	649.349



## Sealing Washer - UNF (Dash)

### Copper

Size	Part No.
Dash 3	649.310C
Dash 4	649.311C



## Sealing Washer - Metric

### Aluminium

Size	Part No.
8x12x1 mm	649.720
10x14x1 mm	649.312
12x16x1.5 mm	649.313
14x18x1.5 mm	649.314
16x22x1.5 mm	649.315
18x22x1.5 mm	649.316
20x24x1.5 mm	649.721
22x27x1.5 mm	649.722
24x30x2 mm	649.723
26x32x2 mm	649.724
30x36x2 mm	649.725



## Sealing Washer - Metric

### Copper

Size	Part No.
6x10x1 mm	649.718
8x12x1 mm	649.719
10x14x1 mm	649.727
12x16x1.5 mm	649.728
14x18x1.5 mm	649.729
16x22x1.5 mm	649.730
18x22x1.5 mm	649.731
20x24x1.5 mm	649.732
22x27x1.5 mm	649.733
24x30x2 mm	649.734
26x32x2 mm	649.735
30x36x2 mm	649.736



## Sealing Washer - BSP (G)

### Aluminium

Size	Part No.
1/8" BSP (G)	649.737
1/4" BSP (G)	649.317
3/8" BSP (G)	649.318
1/2" BSP (G)	649.726
5/8" BSP (G)	991.000
3/4" BSP (G)	991.001
1" BSP (G)	991.002



## Sealing Washer - BSP (G)

### Copper

Size	Part No.
1/8" BSP (G)	991.010
1/4" BSP (G)	991.011
3/8" BSP (G)	991.012
1/2" BSP (G)	991.013
5/8" BSP (G)	991.014
3/4" BSP (G)	991.015
1" BSP (G)	649.717



## Sealing Washer - Stat-O-Seal - UNF

Aluminium-Washer with integrated Rubber O-Ring

Size	Part No.
3/16" UNF	648.600
1/4" UNF	649.601
5/16" UNF	648.602
3/8" UNF	648.603
7/16" UNF	648.604
1/2" UNF	648.605
9/16" UNF	648.606
5/8" UNF	648.607
3/4" UNF	648.608
7/8" UNF	648.609



## Sealing Washer - Dowty Seal - UNF (Dash)

Zinc Plated Mild Steel with Nitrile Seal

Size	Part No.
7/16" UNF	400-009-4490-41
1/2" UNF	400-021-4490-41
9/16" UNF	400-010-4490-41
3/4" UNF	400-024-4490-41
7/8" UNF	400-026-4490-41
1 1/16" UN	400-028-4490-41
1 5/16" UN	400-030-4490-41
1 5/8" UN	400-032-4490-41



## Sealing Washers

### Sealing Washer - Dowty Seal - UNF (Dash) SELF CENTERING

Zinc Plated Mild Steel with Nitrile Seal

Size	Part No.
1/2" UNF	400-821-4490-41
5/8" UNF	400-869-4490-41
7/8" UNF	400-826-4490-41
1 1/16" UN	400-871-4490-41
1 5/16" UN	400-830-4490-41
1 5/8" UN	400-832-4490-41



### Sealing Washer - Dowty Seal - BSP (G)

Aluminium-Washer with integrated Nitrile Seal

Size	Part No.
1/8" BSP (G)	400-020-4490-41
1/4" BSP (G)	400-021-4490-41
3/8" BSP (G)	400-023-4490-41
1/2" BSP (G)	400-025-4490-41
5/8" BSP (G)	400-026-4490-41
3/4" BSP (G)	400-027-4490-41
7/8" BSP (G)	400-029-4490-41
1" BSP (G)	400-030-4490-41
1 1/4" BSP (G)	400-032-4490-41



### Sealing Washer - Dowty Seal - Metric SELF CENTERING

Zinc Plated Mild Steel with Nitrile Seal

Size	Part No.
M5	400-204-4490-41
M6	400-206-4490-41
M8	400-213-4490-41
M10	400-217-4490-41
M12	400-222-4490-41
M13	400-224-4490-41
M14	400-227-4490-41
M15	400-228-4490-41
M16	400-229-4490-41
M18	400-232-4490-41
M20	400-233-4490-41
M21	400-234-4490-41
M22	400-236-4490-41
M24	400-238-4490-41
M27	400-240-4490-41

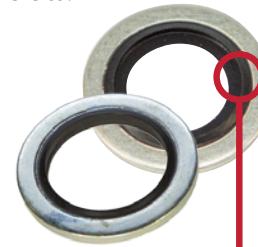


## Technical Specification

Bonded Dowty Seals are available with or without the Self Centralising lip. The lip is there to:

- Eliminate Seal Offset
- Eliminate Leaks
- Ease of Installation
- Reduce Assembly time
- Captive Assembly

For more information on alternative seal compounds and metal outer rings please contact us.



Self Centering  
Rubber Seals



# Wiggins Couplings

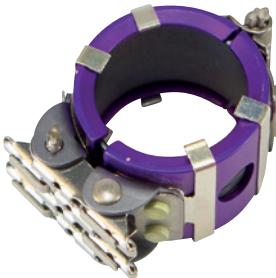
Providing a reliable flexible tube connection, Adel Wiggins Clamshell Couplings are ideal for use with low pressure fabricated aluminium water/oil systems, their secure locking system allows for one-handed installation where necessary. We manufacture compatible weld ferrules, sleeves, blanking caps and plugs as well as a range of adaptors to convert traditional threaded ports to Wiggins.



**W991**

## Wiggins Clamp

With Electrical Bonding Contacts and Aluminium Sleeve



**W991**

## Wiggins Clamp

Without Electrical Bonding Contacts With Aluminium Sleeve

Wiggins Size	Part No.
Dash 8	654.320
Dash 10	654.321
Dash 12	654.322
Dash 16	654.323
Dash 20	654.324

Wiggins Size	Part No.
Dash 8	654.350
Dash 10	654.351
Dash 12	654.352
Dash 16	654.353
Dash 20	654.354
Dash 24	654.355
Dash 28	654.356
Dash 32	654.357
Dash 40	654.358
Dash 48	654.359
Dash 56	654.360
Dash 64	654.361



## Sleeves for Wiggins Clamps

Aluminium or Stainless Steel

Wiggins Size	Part No. Aluminium	Part No. S/Steel
Dash 8	654.030	654.018
Dash 10	654.031	654.019
Dash 12	654.032	654.020
Dash 16	654.033	654.021
Dash 20	654.034	654.022
Dash 24	654.035	654.023
Dash 28	654.036	654.024
Dash 32	654.037	654.025
Dash 40	654.038	654.026
Dash 48	654.039	654.027
Dash 56	654.040	654.028
Dash 64	654.041	654.029



**Can't find it?**

For special fittings or non listed parts please call or email us



## Sleeves for Wiggins Clamps

With Internal Shoulder, Aluminium Anodised, Black



Wiggins Size	Part No.
Dash 8	654.042
Dash 10	654.043
Dash 12	654.044
Dash 16	654.045
Dash 20	654.046
Dash 24	654.047
Dash 32	654.048

## O-Ring for Wiggins Flange

Compound: FKM (Viton) or HNBR



Wiggins Size	Part No. FKM	Part No. HNBR
Dash 8	654.143	654.130
Dash 10	654.144	654.131
Dash 12	654.145	654.132
Dash 16	654.146	654.133
Dash 20	654.147	654.134
Dash 24	654.148	654.135
Dash 28	654.149	654.136
Dash 32	654.137	-
Dash 40	654.138	-
Dash 48	654.139	-
Dash 56	654.140	-
Dash 64	654.141	-

## Male Weld On

Aluminium AA6061



Tube Inner Diameter	Wiggins Size	Part No.
ID= 12.70mm	Dash 8	654.085
ID= 15.88mm	Dash 10	654.086
ID= 19.05mm	Dash 12	654.087
ID= 25.40mm	Dash 16	654.088
ID= 31.75mm	Dash 20	654.089
ID= 38.10mm	Dash 24	654.090
ID= 44.45mm	Dash 28	654.091
ID= 50.80mm	Dash 32	654.092
ID= 67.13mm	Dash 40	654.093
ID= 76.20mm	Dash 48	654.097
ID= 88.90mm	Dash 56	654.095
ID= 101.60mm	Dash 64	654.096

## Male Weld On

Aluminium AA6061



Tube Outer Diameter	Wiggins Size	Part No.
OD= 10.00mm	Dash 8	654.084
OD= 12.70mm	Dash 8	E00119
OD= 15.88mm	Dash 10	E00120
OD= 19.05mm	Dash 12	E00121
OD= 25.40mm	Dash 16	E00122
OD= 31.75mm	Dash 20	E00123
OD= 70.00mm	Dash 48	654.094

## Cap for Male Wiggins

Aluminium Anodised, Red

Wiggins Size	Part No.
Dash 8	654.100
Dash 10	654.101
Dash 12	654.102
Dash 16	654.103
Dash 20	654.104
Dash 24	654.105
Dash 28	654.106
Dash 32	654.107
Dash 40	654.108
Dash 48	654.109
Dash 56	654.110
Dash 64	654.111



## 00° Wiggins Flange Adaptor, Male Wiggins to Metric Male

Aluminium Anodised, Blue or Black

Thread Size	Wiggins Size	Part No. Blue	Part No. Black
M16x1.5	Dash 8	-	654.220
M18x1.5	Dash 8	-	654.221
M14x1.5	Dash 10	-	654.269
M18x1.5	Dash 10	-	654.222
M22x1.5	Dash 10	-	654.223
M18x1.5	Dash 12	-	654.224
M22x1.5	Dash 12	-	654.225
M24x1.5	Dash 12	654.226	-
M26x1.5	Dash 16	-	654.227
M30x1.5	Dash 16	-	654.228
M30x1.5	Dash 20	-	654.229



## 00° Wiggins Flange Adaptor, Male Wiggins to BSP (G) Male

Aluminium Anodised, Black or Stainless Steel

Thread Size	Wiggins Size	Part No. Black	Part No. S/Steel
1" BSP (G)	Dash 12	-	654.246
1" BSP (G)	Dash 16	654.218	654.247
1" BSP (G)	Dash 20	654.215	654.248
1 1/2" BSP (G)	Dash 20	-	654.249



## 00° Reducing Adaptor, Male Wiggins to Male Wiggins

Aluminium Anodised, Black

Wiggins Size	Wiggins Size	Part No. Black
Dash 20	Dash 16	654.217



## 00° Ferrule Adaptor, Female JIC Swivel

Aluminium Anodised, Black

Thread Size	Wiggins Size	Part No. Black
Dash 16	Dash 16	654.216

## 00° Wiggins Flange Adaptor, Female JIC Swivel

Aluminium Anodised, Black

Thread Size	Wiggins Size	Part No. Black
Dash 16	Dash 16	654.232

## 00° Wiggins Flange Adaptor, Male JIC

Aluminium Anodised, Black

Thread Size	Wiggins Size	Part No. Black
Dash 8	Dash 8	654.280

## 00° Wiggins Ferrule Adaptor, Female Wiggins to Metric Male

Aluminium Hardcoat, Hard Anodise, Blue or Black



## 00° Wiggins Ferrule Adaptor, Female Wiggins to BSP (G) Male

Aluminium Anodised, Black

Thread Size	Wiggins Size	Part No. Black
1" BSP (G)	Dash 20	654.214
1 1/2" BSP (G)	Dash 20	654.213



# Hose Coverings

A range of coverings providing protection against radiant heat and heatshrink tubing providing abrasion protection to both the hose and the area around it.



Hose Coverings

## Fire Sleeve



Fibreglass Liner with Integral Silicone Coating, Non Flammable, Temperature Resistant up to 1100°C/15min, Orange Silicone

Size	ID	To Suit 400 Series Hose	To Suit 600 Series Hose	Part No.
4	6mm	-	-	648.415
5	8mm	-	-3	648.416
6	9mm	-	-4	648.417
7	11mm	-	-	648.418
8	12mm	-	-	648.419
9	14mm	-4	-6	648.420
10	15mm	-6	-8	648.421
11	17mm	-	-	648.422
12	19mm	-8	-	648.423
13	20mm	-	-	648.424
14	22mm	-	-	648.425
15	23mm	-	-	648.426
16	25mm	-10	-	648.427
18	28mm	-12	-	648.428
20	31mm	-	-	648.429
22	34mm	-16	-	648.430
24	38mm	-20	-	648.431

## Silicone Tape for Fire Sleeve



Self-Fusing Silicone Tape, Orange Silicone or Grey Silicone

Size Width	Part No. Orange	Part No. Grey
25.4mm	648.440	648.441

## Kevlar® Heat Sleeve



Kevlar Lined with Aluminium Cover, Temperature Resistant up to 300°C, Aluminium

To Suit Hose	ID	Part No.
Dash 2	8 mm	648.400
Dash 3	10 mm	648.401
Dash 4	12 mm	648.402
Dash 6	16 mm	648.403
Dash 8	18 mm	648.404
Dash 10	22 mm	648.405
Dash 12	27 mm	648.406
Dash 16	33 mm	648.407
Dash 20	42 mm	648.408

## Textalu® 1202 Heat Sleeve

Glass Fibre Braid with Integral Aluminium Coating, Self-extinguishing, Operating Temperature: -40°C to 200°C, Grey Silicone



ID	Thickness	Part No.
5 mm	0.55 mm	648.510
8 mm	0.65 mm	648.511
10 mm	0.75 mm	648.512
12 mm	0.75 mm	648.513
15 mm	0.75 mm	648.514
18 mm	1.00 mm	648.515
20 mm	1.50 mm	648.516
22 mm	1.50 mm	648.517

## Raychem® DR-25 Heat shrink

Operating Temperature: -75° C to +150° C, Shrink Ratio: 2 : 1, Black Elastomer



Hose Size	Pre-Shrink Size	Post-Shrink Size	Part No.
3/16"	4.8 mm	2.4 mm	648.520
1/4"	6.4 mm	3.2 mm	648.521
3/8"	9.5 mm	4.8 mm	648.522
1/2"	12.7 mm	6.4 mm	648.523
3/4"	19.0 mm	9.5 mm	648.524
1"	25.4 mm	12.7 mm	648.525
1 1/2"	38.0 mm	19.0 mm	648.526

## Raychem® RW-200-E Heat shrink

Operating Temperature: -55° C to +200° C, Shrink Ratio: 2 : 1, Black Fluorelastomer



Hose Size	Pre-Shrink Size	Post-Shrink Size	Part No.
3/16"	4.8 mm	2.4 mm	648.527
1/4"	6.4 mm	3.2 mm	648.528
3/8"	9.5 mm	4.8 mm	648.529
1/2"	12.7 mm	6.4 mm	648.530
3/4"	19.0 mm	9.5 mm	648.531
1"	25.4 mm	12.7 mm	648.532
1 1/2"	38.0 mm	19.0 mm	648.533

## Raychem® HFT5000 Heat shrink

Operating Temperature: -40° C to +125° C (3000hrs), -40° C to +150° C (1000hrs), Shrink Ratio: 2 : 1, Black Polyester/Polyolefin



## Raychem® RNF-3000 Heat shrink

Operating Temperature: -55° C to +135° C, Shrink Ratio: 3 : 1, Black Polyolefin or Clear



## Raychem® RNF-100 Heat shrink

Operating Temperature: -55° C to +135° C, Shrink Ratio: 2 : 1, Polyolefin, Black or Clear



## Raychem® HTAT Heat shrink

Adhesive Lined Tubing, Operating Temperature: -55° C to +125° C, Shrink Ratio: 4 : 1, Black Polyolefin



## CBR Fluid Connector

### Technical characteristics

- max. working pressure ..... 300 bar
- version with copper seals ..... 120 bar
- shut-off ..... double

### Weight

- socket DASH 2 ..... 10.9 g
- socket DASH 3 ..... 11.8 g
- plug UNF 5/16 - 24" ..... 3.8 g
- plug UNF 3/8 - 24" ..... 4.8 g
- plug M 10 x 1 ..... 5.3 g
- plug M 8 x 1 ..... 3.8 g
- plug DASH 2 and DASH 3 ..... 6.7 g
- cap ..... 3.5 g

### Construction

- plug: titanium (green or blue)
  - socket: titanium with green or blue locking rings
  - plug caps: green or blue titanium locking rings and stainless steel indicator
  - seals in fluorocarbon (JV), ethylene-propylene (JE) or perfluoroelastomer (JK).
- Bonded seals available: JVA or JEA.



	Threads F	Dimensions (mm)			Seals			Part-Numbers	
		Diameter D	L1	L2	JV	JE	JK	Blue Color KB	Green Color KV
<b>Socket</b>	UNF 5/16-24" JIC DASH 2	12.5	31.5	11.5	•			CBR 02.1651/TI/KB/JV	CBR 02.1651/TI/KV/JV
	UNF 3/8-24" JIC DASH 3					•		CBR 02.1651/TI/KB/JE	CBR 02.1651/TI/KV/JE
	UNF 5/16-24"	12.5	31.5	12.2	•			CBR 02.1652/TI/KB/JV	CBR 02.1652/TI/KV/JV
	UNF 3/8-24"					•		CBR 02.1652/TI/KB/JE	CBR 02.1652/TI/KV/JE
	M 8 x 1							CBR 02.7408/TI/KB/JV	CBR 02.7408/TI/KV/JV
<b>Plug</b>	UNF 5/16-24"	10.5	7.5	15	•			CBR 02.7408/TI/KB/JV/UN	CBR 02.7408/TI/KV/JV/UN
	UNF 3/8-24"					•		CBR 02.7408/TI/KB/JE/UN	CBR 02.7408/TI/KV/JE/UN
	M 8 x 1					•		CBR 02.7408/TI/KB/JK/UN	CBR 02.7408/TI/KV/JK/UN
	UNF 5/16-24"	12	7	16	•			CBR 02.7409/TI/KB/JV/UN	CBR 02.7409/TI/KV/JV/UN
	UNF 3/8-24"					•		CBR 02.7409/TI/KB/JE/UN	CBR 02.7409/TI/KV/JE/UN
	M 8 x 1					•		CBR 02.7409/TI/KB/JK/UN	CBR 02.7409/TI/KV/JK/UN
<b>Plug with copper seal</b>	UNF 5/16-24" JIC DASH 2	12	11.5	21.7	•			CBR 02.7410/TI/KB/JV/M	CBR 02.7410/TI/KV/JV/M
	UNF 3/8-24" JIC DASH 3					•		CBR 02.7410/TI/KB/JE/M	CBR 02.7410/TI/KV/JE/M
	M 10 x 1					•		CBR 02.7410/TI/KB/JK/M	CBR 02.7410/TI/KV/JK/M
<b>Plug for hose</b>	UNF 5/16-24" JIC DASH 2	12	11.5	21.7	•			CBR 02.7651/TI/KB/JV	CBR 02.7651/TI/KV/JV
	UNF 3/8-24" JIC DASH 3					•		CBR 02.7651/TI/KB/JE	CBR 02.7651/TI/KV/JE
	M 10 x 1					•		CBR 02.7651/TI/KB/JK	CBR 02.7651/TI/KV/JK
	UNF 5/16-24" JIC DASH 2	12	12.2	19.7	•			CBR 02.7652/TI/KB/JV	CBR 02.7652/TI/KV/JV
	UNF 3/8-24" JIC DASH 3					•		CBR 02.7652/TI/KB/JE	CBR 02.7652/TI/KV/JE
	M 10 x 1					•		CBR 02.7652/TI/KB/JK	CBR 02.7652/TI/KV/JK
<b>Tight plug cap</b>	UNF 5/16-24" JIC DASH 2	12	11.5	21.7	•			CBR 02.8550/TI/KB/JV	CBR 02.8550/TI/KV/JV
	UNF 3/8-24" JIC DASH 3					•		CBR 02.8550/TI/KB/JE	CBR 02.8550/TI/KV/JE
	M 10 x 1					•		CBR 02.8550/TI/KB/JK	CBR 02.8550/TI/KV/JK
<b>Plug mounting tool</b>		–	12.5	14.3	–			CBR 02.9000	

We reserve the right to make any changes or modifications to our products without prior notice.

## HPR Fluid Connector



## Technical characteristics

	HPR 02	HPR 04
Nominal diameter (mm)	02	04
Operating pressure (bar)	350	250
Fluid speed (m/s)	30	30

## Construction

- body of plug in hardened stainless steel and back adaptator in titanium
- body of socket in titanium
- seals:
  - perfluoroelastomer (JK) for hydraulics circuits and brake lines (HPR 02)
  - fluorocarbon (JV) for hydraulics circuits (HPR 04)

HPR 02	Thread F (mm)	L1 (mm)	Ø (mm)	Hex. (mm)	Weight (g)	Part-numbers
<b>socket UNF male thread with reinforced locking</b> 	Dash 02 UNF 5/16 24" JIC	11.5	12.9	-	10.3	HPR 02.1651/TI/VS/JK
	Dash 03 UNF 3/8 24" JIC	12.2	12.9	-	11.2	HPR 02.1652/TI/VS/JK
<b>socket UNF male thread</b> 	Dash 02 UNF 5/16 24" JIC	11.5	12.7	-	10.7	HPR 02.1651/TI/JK
	Dash 03 UNF 3/8 24" JIC	12.2	12.7	-	11.6	HPR 02.1652/TI/JK
<b>plug UNF male thread, JIC profile</b> 	Dash 02 UNF 5/16 24" JIC	11.5	11	10	6.0	HPR 02.7651/TI/JK
	Dash 03 UNF 3/8 24" JIC	12.2	12	11	7.1	HPR 02.7652/TI/JK
<b>plug UNF male thread</b> 	UNF 5/16 24"	7.5	11	10	5.7	HPR 02.7408/UN/TI/JK
	UNF 3/8 24"	8	12	10	6.6	HPR 02.7409/UN/TI/JK

## JAC Fluid Connector

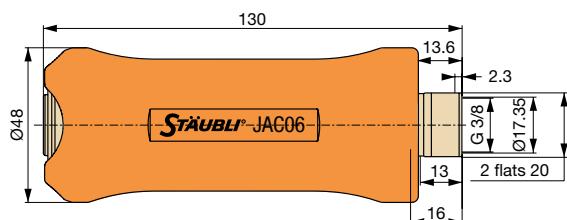


Technical characteristics	
<b>Fluids :</b>	Compressed Air and Nitrogen.
<b>Operating pressure (bar)</b> of the complete line	15 to 40
<b>Operating temperature (°C)</b>	-5 to +50
<b>Connection force (N)</b> of Airjack socket with plug	80
<b>Hose length (m)</b> of equipped hose	5 or 8

## Socket

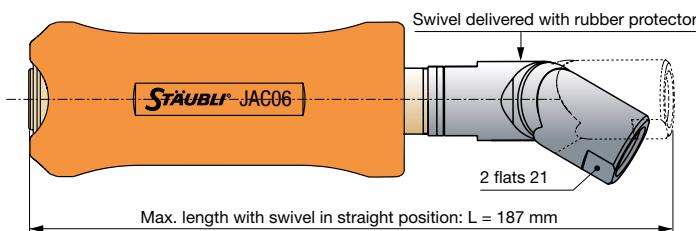
## Part Numbers

JAC lance



JAC 06.1102

### **Swivel version JAC lance**

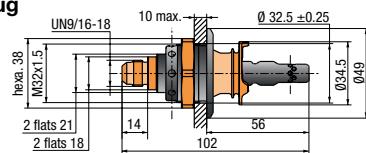


JAC 06.1102/MSW

# 1 Plug

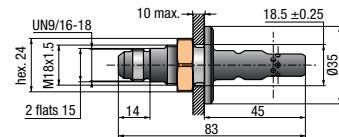
## Part Numbers

### JAC valved safety plug



JAC 06.5655

## JAC plug with integrated venting



JAC 06.4655

**RMI/EA/L Fluid Connector****Technical characteristics****Construction**

- Mainly high resistance aluminium
- Tightness: Fluorocarbon (Viton®) seals (FPM) - JV code.

**Fluids**

- Water or Oil
- Don't use the RMI / EA range on fuel. Consult our SPT range designed for fuel applications.

	<b>RMI 09</b>	<b>RMI 12</b>	<b>RMI 16</b>
Nominal diameter (mm)	09	12	16
Shut-off system	double	double	double
Max. working pressure (bar)	16	16	16

For other conditions of use (pressure, fluid...) please consult us.



## Part-numbers

### RMI 09/EA

	Threads F	D (mm)	L1 (mm)	L2 (mm)	Flats (mm)	Part-numbers
<b>Male thread socket</b>	UNF 9/16 18" JIC DASH 6	25	14	52.3	22	<b>RMI 09.1655/EA/L/JV</b>
	UNF 3/4 16" JIC DASH 8	25	17	52	22	<b>RMI 09.1656/EA/L/JV</b>
<b>Male thread plug</b>	UNF 9/16 18" JIC DASH 6	21	14	49	19	<b>RMI 09.7655/EA/L/JV</b>
	UNF 3/4 16" JIC DASH 8	21	16.7	49	17	<b>RMI 09.7656/EA/L/JV</b>

### RMI 12/EA

	Threads F	D (mm)	L1 (mm)	L2 (mm)	Flats (mm)	Part-numbers
<b>Male thread socket</b>	UNF 7/8 14" JIC DASH 10	31	19.3	62.5	27	<b>RMI 12.1657/EA/L/JV</b>
	UN 1 1/16 12" JIC DASH 12	31	22	53	27	<b>RMI 12.1658/EA/L/JV</b>
<b>Male thread plug</b>	UNF 7/8 14" JIC DASH 10	29.5	19.3	58.7	27	<b>RMI 12.7657/EA/L/JV</b>
	UN 1 1/16 12" JIC DASH 12	29.5	22	55	27	<b>RMI 12.7658/EA/L/JV</b>

### RMI 16/EA

	Threads F	D (mm)	L1 (mm)	L2 (mm)	Flats (mm)	Part-numbers
<b>Male thread socket</b>	UN 1 1/16 12" JIC DASH 12	38	22	81	32	<b>RMI 16.1658/EA/L/JV</b>
	UN 1 5/16 12" JIC DASH 16	38	23	68	32	<b>RMI 16.1659/EA/L/JV</b>
<b>Male thread plug</b>	UN 1 1/16 12" JIC DASH 12	37	23	75	34	<b>RMI 16.7658/EA/L/JV</b>
	UN 1 5/16 12" JIC DASH 16	37	23	75	34	<b>RMI 16.7659/EA/L/JV</b>

## SPH/BA Fluid Connector



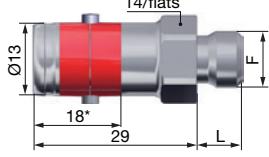
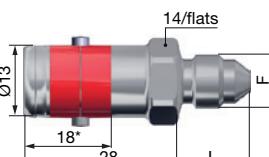
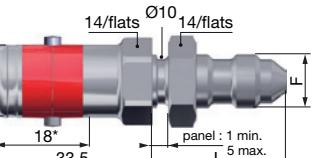
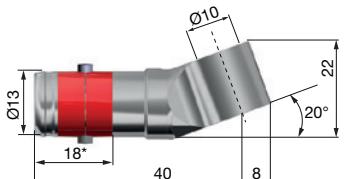
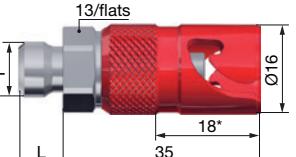
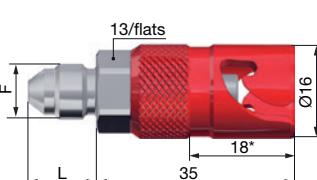
## Technical characteristics

	SPH 03/BA		SPH 05/BA	
<b>Flow diameter (mm)</b>	03		05	
<b>Cross section (mm<sup>2</sup>)</b>	7.1		19.6	
<b>Shut-off system</b>	Double		Double	
<b>Max. operating pressure (bar)</b>	aluminium	titanium or stainless steel	aluminium	titanium or stainless steel
	200	350	160	220

	SPH 08/BA		SPH 12/BA		SPH 16/BA	
08			12		16	
50.3			113		201.0	
Double			Double		Double	
aluminium			aluminium		aluminium	
80			50		50	

Construction	3 constructions				2 types of seals	
	High strength aluminium code L	Main parts in titanium code TI	Main parts in stainless steel code IA		For brake fluid	Ethylene propylene (EPDM)
available colors					For oils, mineral greases, nitrogen, gazoline...	Fluorocarbon (FPM)
					Add /JV at the end of the part number	

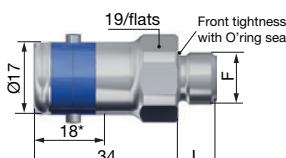
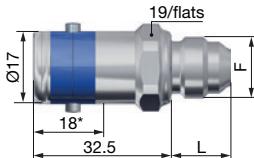
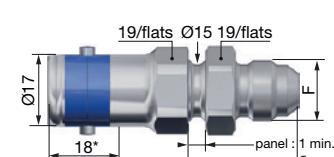
## Part-numbers: SPH 03/BA

	F	L (mm)	Version**	Weight (g)	Part-numbers	
<b>Socket, metric male thread</b>		<b>M 10 x 1,0</b>	8	L	11	 SPH 03.1410/BA/L/KR  SPH 03.1410/BA/L/KJ
				TI	16	 SPH 03.1410/BA/TI/KB  SPH 03.1410/BA/TI/KV
<b>Socket, UNF male thread</b>		<b>UNF 3/8 - 24" JIC DASH 3</b>	12	L	11	 SPH 03.1652/BA/L/KR  SPH 03.1652/BA/L/KJ
				TI	16	 SPH 03.1652/BA/TI/KB  SPH 03.1652/BA/TI/KV
				IA	27	 SPH 03.1652/BA/IA -
<b>Panel mounted socket, UNF male thread</b>		<b>UNF 3/8 - 24" JIC DASH 3</b>	24	L	12	 SPH 03.1653/BA/L/KR  SPH 03.1653/BA/L/KJ
				TI	18	 SPH 03.1653/BA/TI/KB  SPH 03.1653/BA/TI/KV
				IA	34	 SPH 03.1653/BA/IA -
<b>Socket, Banjo connection</b>		<b>Banjo Connection</b>	22	L	14.2	 SPH 03.1021/BA/L/KR/BJ  SPH 03.1021/BA/L/KJ/BJ
<b>Plug, metric male thread</b>		<b>M 10 x 1,0</b>	8	L	12	 SPH 03.7410/BA/L/KR  SPH 03.7410/BA/L/KJ
<b>Plug, UNF male thread</b>		<b>UNF 3/8 - 24" JIC DASH 3</b>	12	L	12	 SPH 03.7652/BA/L/KR  SPH 03.7652/BA/L/KJ
				TI	18	 SPH 03.7652/BA/TI/KB  SPH 03.7652/BA/TI/KV
				IA	30	 SPH 03.7652/BA/IA -
		<b>UNF 7/16 - 20" JIC DASH 4</b>	14	L	12	 SPH 03.7653/BA/L/KR  SPH 03.7653/BA/L/KJ
				TI	29	 SPH 03.7653/BA/TI/KB  SPH 03.7653/BA/TI/KV
				IA	32	 SPH 03.7653/BA/IA -

\*socket/plug in connected position

\*\*L = aluminium / TI = titanium / IA = stainless steel

## Part-numbers: SPH 05/BA

	F	L (mm)	Version**	Weight (g)	Part-numbers
<b>Socket, metric male thread</b> 	M 12 x 1.0	9	L	19	■ SPH 05.1412/BA/L/KR ■ SPH 05.1412/BA/L/KJ
			TI	28	■ SPH 05.1412/BA/TI/KB ■ SPH 05.1412/BA/TI/KV
<b>Socket, UNF male thread</b> 	UNF 7/16 - 20"JIC DASH 4	14	L	18	■ SPH 05.1653/BA/L/KR ■ SPH 05.1653/BA/L/KJ
			TI	29	■ SPH 05.1653/BA/TI/KB ■ SPH 05.1653/BA/TI/KV
			IA	44	■ SPH 05.1653/BA/IA -
	UNF 9/16 - 18"JIC DASH 6	14	L	19	■ SPH 05.1655/BA/L/KR ■ SPH 05.1655/BA/L/KJ
			TI	27	■ SPH 05.1655/BA/TI/KB ■ SPH 05.1655/BA/TI/KV
			IA	47	■ SPH 05.1655/BA/IA -
<b>Panel mounted socket, UNF male thread</b> 	UNF 7/16 - 20"JIC DASH 4	26	L	23	■ SPH 05.2653/BA/L/KR ■ SPH 05.2653/BA/L/KJ
			TI	36	■ SPH 05.2653/BA/TI/KB ■ SPH 05.2653/BA/TI/KV
			L	24	■ SPH 05.2655/BA/L/KR ■ SPH 05.2655/BA/L/KJ
	UNF 9/16 - 18"JIC DASH 6	26	TI	38	■ SPH 05.2655/BA/TI/KB ■ SPH 05.2655/BA/TI/KV
			L	17	■ SPH 05.7653/BA/L/KR ■ SPH 05.7653/BA/L/KJ
			TI	26	■ SPH 05.7653/BA/TI/KB ■ SPH 05.7653/BA/TI/KV
<b>Plug, UNF male thread</b> 	UNF 7/16 - 20"JIC DASH 4	14	IA	46	■ SPH 05.7653/BA/IA -
			L	19	■ SPH 05.7655/BA/L/KR ■ SPH 05.7655/BA/L/KJ
			TI	28	■ SPH 05.7655/BA/TI/KB ■ SPH 05.7655/BA/TI/KV
	UNF 9/16 - 18"JIC DASH 6	14	IA	50	■ SPH 05.7655/BA/IA -

\*socket/plug in connected position

\*\*L = aluminium / TI = titanium / IA = stainless steel

**Part numbers construction:**with EPDM seals, add /JE at the end of the part numbers  
with FPM seals, add /JV at the end of the part numbers

We reserve the right to modify product specifications without prior notice.

## Part-numbers: SPH 08/BA

	F	L (mm)	Version**	Weight (g)	Part-numbers
<b>Socket, UNF male thread</b>	<b>UNF 9/16 – 18"JIC DASH 6</b>	14	L	32	■ SPH 08.1655/BA/L/KR
					■ SPH 08.1655/BA/L/KJ
	<b>UNF 3/4 – 16"JIC DASH 8</b>	16.5	L	36	■ SPH 08.1656/BA/L/KR
					■ SPH 08.1656/BA/L/KJ
<b>Panel mounted socket, UNF male thread</b>	<b>UNF 9/16 – 18"JIC DASH 6</b>	27	L	43	■ SPH 08.2655/BA/L/KR
					■ SPH 08.2655/BA/L/KJ
	<b>UNF 3/4 – 16"JIC DASH 8</b>	30	L	46	■ SPH 08.2656/BA/L/KR
					■ SPH 08.2656/BA/L/KJ
<b>Plug, UNF male thread</b>	<b>UNF 9/16 – 18"JIC DASH 6</b>	14	L	29	■ SPH 08.7655/BA/L/KR
					■ SPH 08.7655/BA/L/KJ
	<b>UNF 3/4 – 16"JIC DASH 8</b>	16.5	L	33	■ SPH 08.7656/BA/L/KR
					■ SPH 08.7656/BA/L/KJ

\*socket/plug in connected position

\*\*L = aluminium

## Part-numbers: SPH 12/BA

	F	L (mm)	L1 (mm)	Version**	Weight (g)	Part-numbers
<b>Socket, male thread</b>						
<b>Socket, UNF male thread</b>	<b>G 1/2</b>	14	55.9	L	105	■ SPH 12.1153/BA/L/KJ
						■ SPH 12.1657/BA/L/KJ
<b>Plug, male thread</b>	<b>G 1/2</b>	14	72.9	L	91	■ SPH 12.7153/BA/L/KJ
						■ SPH 12.7657/BA/L/KJ
<b>Plug, UNF male thread</b>	<b>UNF 7/8 - 14"JIC DASH 10</b>	19.3	55.9	L	108	■ SPH 12.1658/BA/L/KJ
						■ SPH 12.7658/BA/L/KJ

\*socket/plug in connected position

\*\*L = aluminium

## Part-numbers: SPH 16/BA

	F	L (mm)	Version**	Weight (g)	Part-numbers
<b>Socket, male thread</b>	G 3/4	16	L	167	■ SPH 16.1154/BA/L/KJ
<b>Socket, UNF male thread</b>	UNF 1 1/16 – 12" JIC DASH 12	22	L	170	■ SPH 16.1658/BA/L/KJ
<b>Plug, male thread</b>	G 3/4	16	L	160	■ SPH 16.7154/BA/L/KJ
<b>Plug, UNF male thread</b>	UNF 1 1/16 – 12" JIC DASH 12	22	L	163	■ SPH 16.7658/BA/L/KJ

\*socket/plug in connected position  
For other threads, please consult Stäubli

\*\*L = aluminium

## SPT Fluid Connector



**Construction**  
**High strength aluminium**

**Seals:**

- JKV version: Perfluoroelastomer in the fluid (other: Fluorosiliconelastomer).
- JV version: all Fluorocarbon.

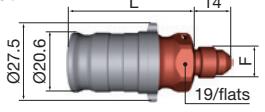
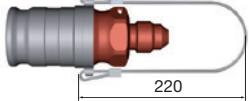
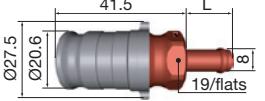
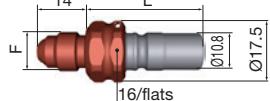
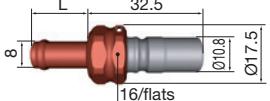
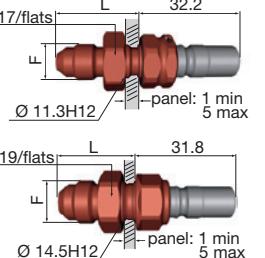
## Technical characteristics

	SPT 05	SPT 08	SPT 12	SPT 12 RALLYE RAID
<b>Nominal diameter (mm)</b>	05	08	12	12
<b>Max. working pressure* (bar)</b>	40	20	20	20
<b>Weight* socket + plug (g)</b>	41	80	260	295
<b>Cross section (mm<sup>2</sup>)</b>	19.6	50.2	113	113
<b>Shut-off system</b>	Double	Double	Double	Double
<b>Option break-away (g)</b>	■	■	-	-

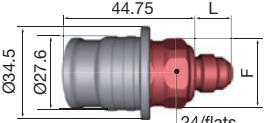
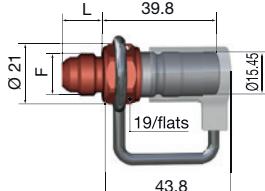
\*depends on references

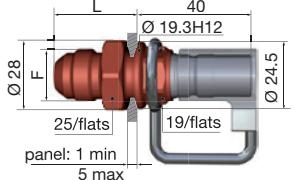
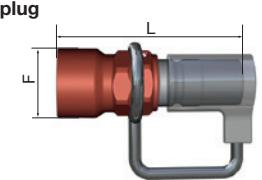
## Select your couplings

	Motorbike	Car
<b>Safety break-away</b>	SPT05	SPT08
<b>Fuel connection</b>	SPT05	SPT08
<b>Fuel sampling</b>	SPT05	SPT08
<b>Refuelling</b>		SPT12
<b>Rallye raid version</b>		SPT12

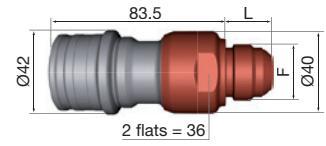
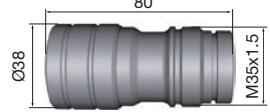
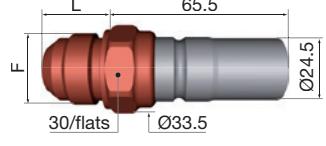
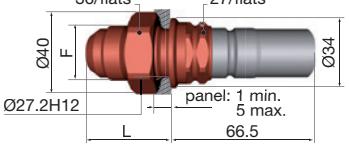
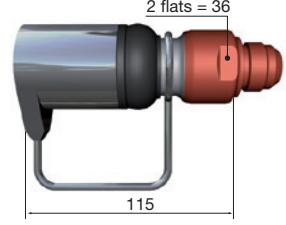
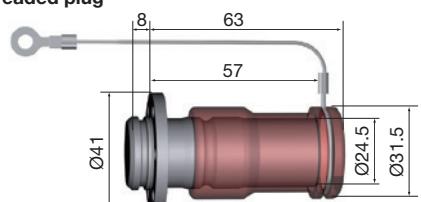
SPT 05	Threads F	L (mm)	JV	JKV
<b>Male thread socket</b> 	UNF 7/16 - 20" JIC DASH 04	41.5	SPT 05.1653/L/JV	SPT 05.1653/L/JKV
	UNF 9/16 - 18" JIC DASH 06	40.2	SPT 05.1655/L/JV	SPT 05.1655/L/JKV
<b>Male thread socket with safety break-away lanyard</b> 	UNF 7/16 - 20" JIC DASH 04	14	SPT 05.3653/L/JV	SPT 05.3653/L/JKV
	UNF 9/16 - 18" JIC DASH 06	14	SPT 05.3655/L/JV	SPT 05.3655/L/JKV
<b>Socket for hose</b> 	hose 08 (mm)	16.5	SPT 05.1808/L/JV/RG	SPT 05.1808/L/JKV/RG
	hose 08 (mm)	16.5	SPT 05.3808/L/JV/RG	SPT 05.3808/L/JKV/RG
<b>Male thread plug*</b> 	UNF 7/16 - 20" JIC DASH 04	32.5	SPT 05.7653/L/JV	SPT 05.7653/L/JKV
	UNF 9/16 - 18" JIC DASH 06	32	SPT 05.7655/L/JV	SPT 05.7655/L/JKV
<b>Plug for hose*</b> 	hose 08 (mm)	16.5	SPT 05.7808/L/JV/RG	SPT 05.7808/L/JKV/RG
<b>Panel mounted plug</b> 	UNF 7/16 - 20" JIC DASH 04	25.7	SPT 05.5653/L/JV	SPT 05.5653/L/JKV
	UNF 9/16 - 18" JIC DASH 06	26	SPT 05.5655/L/JV	SPT 05.5655/L/JKV

\*Plugs available with aluminium dust cap: add /BM at the end of the part number.

SPT 08	Threads F	L (mm)	JV	JKV
<b>Male thread socket</b> 	UNF 9/16 - 18" JIC DASH 06	14	SPT 08.1655/L/JV	SPT 08.1655/L/JKV
	UNF 3/4 - 16" JIC DASH 08	16.7	SPT 08.1656/L/JV	SPT 08.1656/L/JKV
<b>Male thread socket with safety break-away lanyard</b> 	UNF 9/16 - 18" JIC DASH 06	14	SPT 08.3655/L/JV	SPT 08.3655/L/JKV
	UNF 3/4 - 16" JIC DASH 08	16.7	SPT 08.3656/L/JV	SPT 08.3656/L/JKV
<b>Male thread plug with rubber tight dust cap*</b> 	UNF 9/16 - 18" JIC DASH 06	14	SPT 08.7655/L/JV	SPT 08.7655/L/JKV
	UNF 3/4 - 16" JIC DASH 08	16.7	SPT 08.7656/L/JV	SPT 08.7656/L/JKV

SPT 08	Threads F	L (mm)	JV	JKV
<b>Panel mounted plug</b> 	UNF 9/16 - 18" JIC DASH 06	27	<b>SPT 08.5655/L/JV</b>	<b>SPT 08.5655/L/JKV</b>
	UNF 3/4 - 16" JIC DASH 08	30	<b>SPT 08.5656/L/JV</b>	<b>SPT 08.5656/L/JKV</b>
<b>Female thread plug</b> 	UNF 9/16 - 18" JIC DASH 06	53.8	<b>SPT 08.7355/L/JV</b>	<b>SPT 08.7355/L/JKV</b>
	UNF 3/4 - 16" JIC DASH 08	58.9	<b>SPT 08.7356/L/JV</b>	<b>SPT 08.7356/L/JKV</b>

\*Plugs available with aluminium dust cap: add /BM at the end of the part number.

SPT 12	Threads F	L (mm)	JV	JKV
<b>Male thread socket</b> 	UNF 7/8 - 14" JIC DASH 10	19	<b>SPT 12.1657/L/JV</b>	<b>SPT 12.1657/L/JKV</b>
	UNF 1 1/16 - 12" JIC DASH 12	21.9	<b>SPT 12.1658/L/JV</b>	<b>SPT 12.1658/L/JKV</b>
<b>Male thread socket</b> 	M 35 x 1.5	-	<b>N 009 161 98</b>	<b>N 010 830 07</b>
<b>Male thread plug</b> 	UNF 7/8 - 14" JIC DASH 10	19	<b>SPT 12.7657/L/JV</b>	<b>SPT 12.7657/L/JKV</b>
	UNF 1 1/16 - 12" JIC DASH 12	21.9	<b>SPT 12.7658/L/JV</b>	<b>SPT 12.7658/L/JKV</b>
<b>Non threaded plug</b> 	No thread	-	<b>N 009 162 98</b>	<b>N 010 831 07</b>
<b>Panel mounted plug</b> 	UNF 7/8 - 14" JIC DASH 10	36	<b>SPT 12.5657/L/JV</b>	<b>SPT 12.5657/L/JKV</b>
	UNF 1 1/16 - 12" JIC DASH 12	39	<b>SPT 12.5658/L/JV</b>	<b>SPT 12.5658/L/JKV</b>
SPT 12 rallye raid	Threads F	L (mm)	JV	JKV
<b>Male thread socket</b> 	UNF 1 1/16 - 12" JIC DASH 12	-	<b>SPT 12.1658/L/JV/PP/BC</b>	<b>SPT 12.1658/L/JKV/PP/BC</b>
<b>Non threaded plug</b> 	No thread	-	<b>N 010 428 03</b>	<b>N 012 223 07</b>

# Pumps & Filters

We stock a range of fuel pumps from Bosch and the ingenious ATEC-designed mounting kits, which are available in single or twin pump setups for the commonly used 979 and 044 pumps. Flow data is available for these kits, please contact us for details. For Historic applications, we also offer Facet pumps and Filter King Regulators.



Without Take-Off



## Twin Pump Pack

Complete Kit: Twin Pumps, Single Filter, **Without** Sample Take Off. Including Bosch Fuel Pumps and Filter

Thread In	Thread Out	Description	Part No.
Dash 6	Dash 6	0 580 254 979	648.550
Dash 8	Dash 6	0 580 254 044	648.551

Complete Kit: Twin Pumps, Single Filter, **With** Sample Take Off Including Bosch Fuel Pumps and Filter. **Without** Stäubli and Anti-Vibration Mount

Thread In	Thread Out	Description	Part No.
Dash 6	Dash 6	0 580 254 979	648.550S
Dash 8	Dash 6	0 580 254 044	648.551S

Parts Kit: Bracket Assembly with all Adaptors **Without** Sample Take Off



Thread In	Thread Out	Description	Part No.
Dash 6	Dash 6	0 580 254 979	648.552
Dash 8	Dash 6	0 580 254 044	648.553S

Parts Kit: Bracket Assembly with all Adaptors **With** Sample Take Off. **Without** Stäubli and Anti-Vibration Mounts

Thread In	Thread Out	Description	Part No.
Dash 6	Dash 6	0 580 254 979	648.552S
Dash 8	Dash 6	0 580 254 044	648.553S

## Technical Note

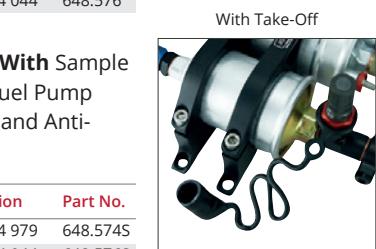
All 044 kits accept the Bosch motor sport pump B261 205 413



## Single Pump Pack

Complete Kit: Pump, Filter, **Without** Sample Take Off. Including Bosch Fuel Pump and Filter

Thread In	Thread Out	Description	Part No.
Dash 6	Dash 6	0 580 254 979	648.574
Dash 8	Dash 6	0 580 254 044	648.576



Parts Kit: Bracket Assembly with all Adaptors **Without** Sample Take Off

Thread In	Thread Out	Description	Part No.
Dash 6	Dash 6	0 580 254 979	648.570
Dash 8	Dash 6	0 580 254 044	648.571



Parts Kit: Bracket Assembly with all Adaptors **With** Sample Take Off. **Without** Stäubli and Anti-Vibration Mounts

Thread In	Thread Out	Description	Part No.
Dash 6	Dash 6	0 580 254 979	648.570S
Dash 8	Dash 6	0 580 254 044	648.571S

## Single Pump Brackets

Parts Kit: Brackets Only  
2 Brackets per kit

Description	Part No.
979, 044 & 261	648.569



Pump not included

## Anti-Vibration Mount

For All Fuel Pump Packs

Thread #1	Thread #2	Part No.
M6x16	M6x16	1616/SS/3





## Bosch Fuel Pumps

Press/Flow	Thread In Size Female	Thread Out Size	Description	Part No.
5 bar @ 205ltr/hr @ 22°C	M14x1.5	M12x1.5	0 580 254 979	648.006
5 bar @ 260ltr/hr @ 22°C	M18x1.5	M12x1.5	0 580 254 044	648.012
8 bar @ 220ltr/hr @ 22°C	M18x1.5	M12x1.5	B261 205 413	648.047



## Bosch Fuel Filter

To fit all ATEC Pump Packs

Filters have double folded seams,  
operating pressures up to 5 bar  
(2000 kpa) max. and filtration @ 5 microns.

Thread In Size Female	Thread Out Size Female	Description	Part No.
M14x1.5	M12x1.5	0 450 905 021	648.014

## Bosch One Way Valve

Zinc Plated Steel



## ATEC Fuel Filter

Fitted with a xμ Paper Filter,  
Aluminium Anodised, Blue or Black



Thread #1 Size	Thread #2 Size	Part No. Blue	Part No. Black
Dash 6 JIC Male	Dash 6 JIC Male	648.023	648.023BK
Dash 6 JIC Bulkhead Male	Dash 6 JIC Bulkhead Male	648.021	-
M14x1.5 Male	M14x1.5 Male	-	648.026
M18x1.5 Male	M18x1.5 Male	-	648.027
M18x1.5 Female	M18x1.5 Female	648.025	-

## ATEC Filter Replacement Parts

Description	Part No.
Paper Filter Element	648.024
O-Ring for Housing Seal	648.028



## ATEC In-Line Fuel Filter

Aluminium Anodised, Black

Thread In Size Male	Thread Out Size Male	Description	Part No.
Dash 6 JIC	Dash 6 JIC	100µm	648.001
Dash 8 JIC	Dash 8 JIC	100µm	648.048
Dash 10 JIC	Dash 10 JIC	100µm	648.046
Dash 6 JIC	M14x1.5	100µm	648.010
Dash 8 JIC	M14x1.5	100µm	648.066
Dash 8 JIC	M18x1.5	100µm	648.043
M14x1.5	Dash 6 JIC	100µm	648.017
M14x1.5	M14x1.5	100µm	648.011

## Dome Nut

Aluminium Anodised, Black

Thread Size Female	Part No.
M12x1.5	649.738



## Double Banjo Bridge

Aluminium Anodised, Blue or Black

Thread Size Male	Spacing	Banjo Size	Part No. Blue	Part No. Black
Dash 6 JIC	70 mm	2x d 14 mm	648.581	648.554
Dash 8 JIC	70 mm	2x d 14 mm	648.583	648.556
Dash 6 JIC	70 mm	2x d 18 mm	648.582	648.555
Dash 8 JIC	70 mm	2x d 18 mm	648.584	648.557
M18x1.5	75 mm	2x d 18 mm	-	648.580



## Triple Banjo Bridge

2x 75 mm Spacing,  
Aluminium Anodised,  
Blue

Banjo Size #1	Banjo Size #2	Banjo Size #3	Part No.
d 12 mm	d 14 mm	d 12 mm	648.559



## Double Female JIC Bridge

70 mm Spacing,  
Aluminium Anodised,  
Blue or Black

Thread Size Male	Thread Size Female	Thread Size Female	Part No. Blue	Part No. Black
Dash 6 JIC	Dash 6 JIC Swivel	Dash 6 JIC Swivel	648.585	648.558

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Build your online quote from any mobile device, using the new ATEC responsive website



## Breather Valves

For Fuel Cells and Catch Tank Breathers, not compliant with FIA Article 253-3.4,  
Aluminium Anodised, Blue



Thread In Size	Thread Out Size	Part No.
Dash 6 JIC Male	Dash 6 JIC Male	648.051
Dash 8 JIC Male	Dash 8 JIC Male	648.050
Dash 10 JIC Male	Dash 10 JIC Male	648.002
Dash 12 JIC Male	Dash 12 JIC Male Wiggins	648.053
M16x1.5 Female	M16x1.5 Female	648.052

## Breather Valves

Very Small and Compact for Fuel Cells and Catch Tank Breathers, Aluminium Anodised, Black



Thread In Size Male	Thread Out Size Male	Part No.
Dash 6 JIC	Dash 6 JIC	648.055

## One Way Check Valves

Fitted with a Flap, Aluminium Anodised



Thread In Size Male	Thread Out Size Male	Part No.
Dash 4 JIC	Dash 4 JIC	648.009
Dash 6 JIC	Dash 6 JIC	648.008
Dash 8 JIC	Dash 8 JIC	648.075

## In Tank Baffle Gate

4x M3 Fixing Points, FKM O-Ring, Aluminium Anodised, Red



Description	Part No.
36.5 mm Gate	648.082



# Facet

## Facet Cube Pump

Galvanised Steel Body



Type	Description	Part No.
Road Pump	12v, 2.0-4.0 Psi, 25 US Gallons/hr, 1/8" NPT Ports	SS501
Fast Road Pump	12v, 3.0-4.5 Psi, 30 US Gallons/hr, 1/8" NPT Ports	SS502
Competition Pump	12v, 2.0-4.0 Psi, 32 US Gallons/hr, 1/8" NPT Ports	SS503



## Facet Cylindrical Pump

Galvanised Steel Body

Type	Description	Part No.
Silver Top Road Pump	12v, 4.0-5.5 Psi, 30 US Gallons/hr, 1/8" NPT Ports	ST504
Silver Top Fast Road Pump	12v, 6.0-7.0 Psi, 35 US Gallons/hr, 1/8" NPT Ports	ST505
Red Top Competition Pump	12v, 6.0-8.0 Psi, 40 US Gallons/hr, 1/4" NPT Ports	RTW506
Blue Top	12v, 6.0-8.0 Psi, 40 US Gallons/hr, 1/4" NPT Ports	BTP001

## Facet Fuel Pump Mounting Kit

2x AV Mounts, 1x Electrical Strap



Thread #1 Size	Thread #2 Size	Part No.
M6x15	M6x19	FPA905

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*Malpassi*  
di A. MALPASSI & C. snc



## Petrol King Low Pressure Fuel Regulator

Adjustable pressure range between 1.5 and 5 Psi suitable for most fuel except methanol fuel, Aluminium Body

Description	Thread #1 Size	Part No.
Max Input Range: 1-7 Psi	8 mm Tails	FPR008B
Max Input Range: 1-7 Psi	1/8" NPT Female Ports	FPR008F

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**Malpassi**  
 di A. MALPASSI & C. snc

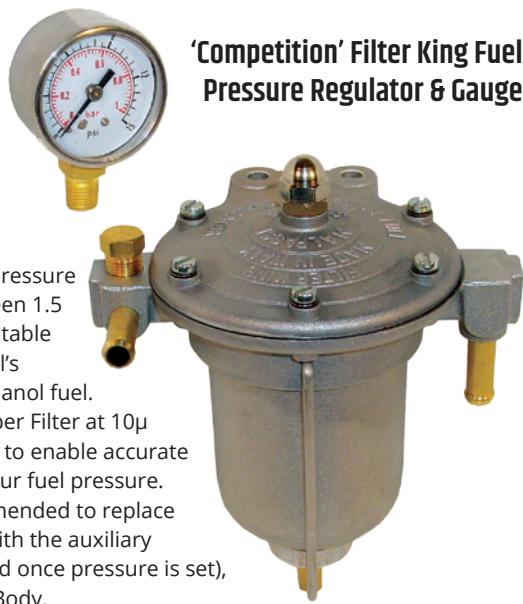


## Filter King Fuel Pressure Regulator

Adjustable pressure range between 1.5 and 5 Psi suitable for most fuel except methanol fuel, Aluminium Body

Description	Thread #1 Size Male	Thread #2 Size	Part No.
Max Input Range: 1-7 Psi	8 mm Tails	67 mm Transparent Bowl	FPR004
Max Input Range: 1-7 Psi	8 mm Tails	85 mm Transparent Bowl	FPR006

## 'Competition' Filter King Fuel Pressure Regulator & Gauge



Adjustable pressure range between 1.5 and 7 Psi suitable for most fuel's except methanol fuel.  
 Includes Paper Filter at 10 $\mu$  and a gauge to enable accurate setting of your fuel pressure.  
 (It is recommended to replace the gauge with the auxiliary plug supplied once pressure is set),  
 Aluminium Body,  
 Corrosion Resistant Finish

Description	Thread #1 Size Male	Thread #2 Size	Part No.
Max Input Range: 1-7 Psi	8 mm Tails	85 mm Bowl	FPR007/G
Max Input Range: 1-7 Psi	1/8" NPT Female Ports	85 mm Bowl	FPRV8/NPT/G



## Regulator Accessories

Replacement parts for Filter King fuel pressure regulators

Picture No.	Description	Part No.
1	Paper Filter Element - FPR004/5	RA001
2	Metal Filter Element - FPR004/5	RA001/2
3	Paper Filter Element - FPR006/7/V8	RA002
4	Metal Filter Element - FPR006/7/V8	RA003
5	Regulator Mounting Kit	RA004
6	Glass Bowl - FPR004/5	RA005
7	Glass Bowl - FPR006/7/V8	RA006
8	Aluminium Bowl - FPR004/5	RA007
9	Aluminium Bowl - FPR006/7/V8	RA008
10	Bowl Seal - FPR004/5	RA009
11	Bowl Seal - FPR006/7/V8	RA010
12	Filter Seals - All	RA011
13	Bowl Clamp - FPR004/5	RA012

Picture No.	Description	Part No.
14	Bowl Clamp - FPR006/7/V8	RA013
15	Diaphragm - FPR004/5	RA014
16	Diaphragm - FPR006/7/V8	RA015
17	Cap & Nut Adjuster Assembly - All	RA016
18	Chrome Dome Nut - All	RA016/1
19	Lock Nut - All	RA016/2
20	Adjuster Screw - All	RA016/3
21	Seal for Adjuster Screw	RA016/4
22	#4 Spring - FPR006/7	RA020
23	#5 Spring - FPR006/7	RA020/1
24	Low Pressure Spring - FPR004/5	RA021
25	Filter Element Spring - All	RA024

# Accessories & Ancillaries

From lances and valves for air jack systems, to high quality Setrab oil coolers this is the section where you will find all those parts which can't be categorised anywhere else!



## Air Lance

ATEC Manufactured  
Aluminium Anodised Black

Description	Thread Size	Part No.
60 Series	3/8" BSP Female	648.029
100 Series	3/8" BSP Female	648.031



## Air Valve

ATEC Manufactured  
Aluminium Anodised Black

Description	Thread Size	Part No.
60 Series	Dash 6 JIC Male	648.033
100 Series	Dash 6 JIC Male	648.032

## Shut Off Valve

ATEC Manufactured, Not for brake fluid. Aluminium Anodised Black

Thread Size #1	Thread Size #2	Part No.
Dash 6 JIC Male	Dash 6 JIC Male	648.202



## Seat Eye Bolts

ATEC Manufactured  
Titanium

Thread Size	Additional Info	Part No.
7/16"UNF x 21.5 mm	Weight = 34g	658.090

## Aluminium Panel Holders - Top

Ideal for panel attachment in low stress areas or as an auxiliary bonnet holder. Aluminium Anodised Red, Black, Blue or Silver

Info	Part No.
Red	648.150
Black	648.151
Blue	648.152
Silver	648.153



## Aluminium Panel Holders - Bottom

Ideal for panel attachment in low stress areas or as an auxiliary bonnet holder. Aluminium Anodised Red, Black, Blue or Silver

Info	Part No.
Red	648.156
Black	648.157
Blue	648.158
Silver	648.159



## Aluminium Panel Holders - Pip Pin

Ideal for panel attachment in low stress areas or as an auxiliary bonnet holder. Zinc Plated Steel

Info	Part No.
A 8 mm x L 25 mm	648.171
A 8 mm x L 40 mm	648.172
A 8 mm x L 50 mm	648.170



## Radiator Neck

To suit Small Racing Radiator Cap. Aluminium

Part No.
648.250



## Radiator Caps

Small Racing Caps. Steel

Info	Part No.
0 - 0.9 bar	648.253
0 - 1.3 bar	648.257
0 - 1.5 bar	648.254
0 - 2.1 bar	648.255
0 - 2.8 bar	648.256

## ATEC In-Line Oil Filter

Washable 450µm Stainless Mesh Filter. Aluminium Anodised Black

Thread Size #1 Male	Thread Size #2 Male	Part No.
Dash 6 JIC	Dash 6 JIC	648.000
Dash 8 JIC	Dash 8 JIC	648.084
M14x1.5	M14x1.5	648.013
Nippon Denso	Dash 6 JIC	648.003



## Oil Circulation Pump

Marco

Thread Size #1	Thread Size #2	Part No.
3/8" BSP (G)	3/8" BSP (G)	648.380



## Oil Pump Fitting

This is a special adaptor machined to clear the ports correctly on the pump sealing with a Dowty washer. Aluminium Anodised Black

Thread Size #1 Male	Thread Size #2 Male	Part No.
Dash 6 JIC	3/8" BSP (G)	648.381



## Setrab Oil Coolers

These 'Nocoloc' brazed coolers have a black epoxy finish and all come with M22x1.5 female ports. Aluminium Black Epoxy

Description	Part No.
115 mm Matrix, 7 Row (h 52 mm)	50-107-7612
115 mm Matrix, 10 Row (h 76 mm)	50-110-7612
115 mm Matrix, 13 Row (h 99 mm)	50-113-7612
115 mm Matrix, 16 Row (h 122 mm)	50-116-7612
115 mm Matrix, 19 Row (h 146 mm)	50-119-7612
115 mm Matrix, 25 Row (h 193 mm)	50-125-7612
115 mm Matrix, 50 Row (h 389 mm)	50-150-7612
115 mm Matrix, 72 Row (h 562 mm)	50-172-7612
235 mm Matrix, 7 Row (h52 mm)	50-607-7612
235 mm Matrix, 10 Row (h 76 mm)	50-610-7612
235 mm Matrix, 13 Row (h 99 mm)	50-613-7612
235 mm Matrix, 16 Row (h 122 mm)	50-616-7612
235 mm Matrix, 19 Row (h 146 mm)	50-619-7612
235 mm Matrix, 25 Row (h 193 mm)	50-625-7612
235 mm Matrix, 34 Row (h 264mm)	50-634-7612
235 mm Matrix, 40 Row (h 310 mm)	50-640-7612
235mm Matrix, 44 Row (h 342 mm)	50-644-7612
235 mm Matrix, 50 Row (h 389 mm)	50-650-7612
310 mm Matrix, 10 Row (h 76 mm)	50-910-7612
310 mm Matrix, 13 Row (h 99 mm)	50-913-7612
310 mm Matrix, 15 Row (h 115 mm)	50-915-7612
310 mm Matrix, 19 Row (h 146 mm)	50-919-7612
310 mm Matrix, 25 Row (h 193 mm)	50-925-7612
310 mm Matrix, 34 Row (h 264mm)	50-934-7612

## Oil Cooler Adaptors

Setrab. Aluminium Anodised Black

Thread Size #1 Male	Thread Size #2	Hex Size	Part No.
Dash 6 JIC	M22x1.5 ORB	27 mm	MMA2-6-105S
Dash 8 JIC	M22x1.5 ORB	27 mm	MMA2-8-105S
Dash 10 JIC	M22x1.5 ORB	27 mm	MMA2-10-105S
Dash 12 JIC	M22x1.5 ORB	27 mm	MMA2-12-105S
Dash 16 JIC	M22x1.5 ORB	27 mm	MMA2-16-105S
1/2" BSP (G)	M22x1.5 ORB	27 mm	MMA5-8-105S
5/8" BSP (G)	M22x1.5 ORB	27 mm	MMA5-10-105S



## Oil Sandwich Plates

Cast Aluminium

Thread Size #1 Male	Thread Size #2 Male	Description	Part No.
1/2" BSP (G)	1/2" BSP (G)	3/4" UNF Centre Bolt, No take off	SP1
1/2" BSP (G)	1/2" BSP (G)	5/8" UNF Centre Bolt, No take off	SP1A
1/2" BSP (G)	1/2" BSP (G)	M16 Centre Bolt, No take off	SP1B
1/2" BSP (G)	1/2" BSP (G)	M18 Centre Bolt, No take off	SP1D
1/2" BSP (G)	1/2" BSP (G)	M20 Centre Bolt, No take off	SP1F
1/2" BSP (G)	1/2" BSP (G)	M22 Centre Bolt, No take off	SP1G
1/2" BSP (G)	1/2" BSP (G)	3/4" UNF Centre Bolt, with 5/8" UNF take off	OTSP1
1/2" BSP (G)	1/2" BSP (G)	5/8" UNF Centre Bolt, with 5/8" UNF take off	OTSP1A
1/2" BSP (G)	1/2" BSP (G)	M16 Centre Bolt, with 5/8" UNF take off	OTSP1B
1/2" BSP (G)	1/2" BSP (G)	M18 Centre Bolt, with 5/8" UNF take off	OTSP1D
1/2" BSP (G)	1/2" BSP (G)	M20 Centre Bolt, with 5/8" UNF take off	OTSP1F
1/2" BSP (G)	1/2" BSP (G)	M22 Centre Bolt, with 5/8" UNF take off	OTSP1G
		Rubber Oil Seal	569A



## Remote Oil Filter Heads

Mocal Remote Filter Head to fit a 3/4" UNF Oil Filter. Various Female Ports, Optional Take Off Port for Oil Temperature or Oil Pressure.

Cast Aluminium

Description	Flow	Part No.
1/2" BSP (G) Ports, with 3/8" BSP (G) take off	Flows L to R	RFH1G
1/2" BSP (G) Ports, with 3/8" BSP (G) take off	Flows R to L	RFH1H
1/2" BSP (G) Ports, with 5/8" UNF take off	Flows L to R	RFH1A
1/2" BSP (G) Ports, with 5/8" UNF take off	Flows R to L	RFH1B
1/2" BSP (G) Ports, with M14 take off	Flows L to R	RFH1C
1/2" BSP (G) Ports, with M14 take off	Flows R to L	RFH1D
1/2" BSP (G) Ports, without take off	Flows L to R	RFH1E
1/2" BSP (G) Ports, without take off	Flows R to L	RFH1F
1/2" BSP (G) Ports, without take off	Flows L to R	RFH2E
3/4" UNF Ports, without take off	Flows L to R	RFH2G
1/2" BSP (G) Ports, without take off	Flows Left Hand In & Out	RFH3A
1/2" NPT Ports, without take off	Flows Right Hand In & Out	RFH3B
1/2" NPT Ports, without take off	Flows In & Out on the Top	RFH4

## Early Warning Pressure Switch

Activate a warning when pressure falls below a chosen point

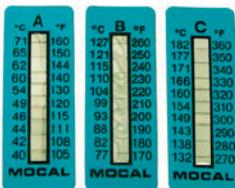
Thread Size #1 Male	Part No.
1/8" NPT	EWS1B
1/8" NPT	EWS1C
1/8" NPT	EWS1D



## Temperature Strips

Available in 3 temperature ranges to cover all measurements required.  
Sticker, sold individually

Description	Part No.
40°C to 71°C	TS2
77°C to 127°C	TS1
132°C to 182°C	TS3



## Hurst Roll Control Valve

Electronically control holding brake pressure on either the front or rear axle.

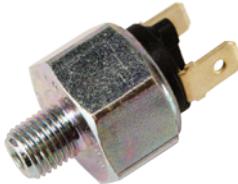
Description	Part No.
Not suitable for vehicles with ABS	1745000



## Brake Light Switch

Steel

Thread Size Male	Description	Part No.
M10x1	Washer Sealing	BLS31
3/8"-24UNF	Washer Sealing	BLS7-3
1/8" NPT	Taper Sealing	BLS8-3



## Brake Light Banjo Bolt

Steel

Thread Size	Part No.
3/8"-24 UNF Single	BLSBBS1-3
M10x1 Single	BLSBBS2-31
M10x1.25 Single	BLSBBS2-32



## Brake Fluid Reservoir

Tilton, Plastic

Thread Size	Part No.
Dash 4 JIC Male	72-577
7.5 mm Push On Barb	72-576

## Brake Proportioning Valves

Tilton Aluminium Anodised

Thread Size #1 Female	Description	Part No.
M10x1 Ports	Lever Type	90-1003
M10x1 Ports	Knob Type	90-2003
	Repair Kit	90-1100



## Throttle Cables

Blue Cover, Nylon Inner Sleeve

Description	Part No.
3 ft / 1.3 m	TLK001
10 ft / 3 m	TLK002/10



## Throttle Cable Accessories

Zink Plated Steel

Thread Size	Description	Part No.
M6x25 mm	Including Lock Nuts	TLK003.25
M6x35 mm	Including Lock Nuts	TLK003.35
-	Return Spring	TLK010



## Hose & Hardline Clamps

The cost effective solution for securing hoses & hardlines. Polyamide - Fire Retardant

Tube Diameter	Description	Part No.
8 mm	Single Clamp - Size 2	RON-208
10 mm	Single Clamp - Size 2	RON-210
12 mm	Single Clamp - Size 2	RON-212
12 mm	Single Clamp - Size 3	RON-312
12.7 mm	Single Clamp - Size 3	RON-3127
13.5 mm	Single Clamp - Size 3	RON-3135
14 mm	Single Clamp - Size 3	RON-314
15 mm	Single Clamp - Size 3	RON-315
16 mm	Single Clamp - Size 3	RON-316
17.2 mm	Single Clamp - Size 4	RON-4172
18 mm	Single Clamp - Size 4	RON-418
19 mm	Single Clamp - Size 4	RON-419
20 mm	Single Clamp - Size 4	RON-420
21.3 mm	Single Clamp - Size 4	RON-4213
22 mm	Single Clamp - Size 4	RON-422
8 mm	Double Clamp - Size 2	ROND-208
10 mm	Double Clamp - Size 2	ROND-210
12 mm	Double Clamp - Size 2	ROND-212
12 mm	Double Clamp - Size 3	ROND-312
12.7 mm	Double Clamp - Size 3	ROND-3127
13.5 mm	Double Clamp - Size 3	ROND-3135
14 mm	Double Clamp - Size 3	ROND-314
15 mm	Double Clamp - Size 3	ROND-315
16 mm	Double Clamp - Size 3	ROND-316
17.2 mm	Double Clamp - Size 4	ROND-4172
18 mm	Double Clamp - Size 4	ROND-418
19 mm	Double Clamp - Size 4	ROND-419
20 mm	Double Clamp - Size 4	ROND-420
21.3 mm	Double Clamp - Size 4	ROND-4213
22 mm	Double Clamp - Size 4	ROND-422

# Tools

ATEC offer custom made installations to your exact specifications, manufactured and assembled by our team of specialist technicians. We also supply all the tools you will need to assemble your own flexible hoses and solid tubes,



## Aluminium Dash Spanners

The Best Tools to use to do up all Dash B-Nuts, Lightweight Aluminium, Red Anodized

Size	Part No.
Dash 4	656.002
Dash 6	656.003
Dash 8	656.004
Dash 10	656.005
Dash 12	656.006
Dash 16	656.007
Dash 20	656.008

## Aluminium Hose Mandrels

This aids spreading the Hose Liner to receive the Olive for the 600 Series Hose, Lightweight Aluminium/Stainless Steel, Red Anodized

Size	Part No.
Dash 3	656.030
Dash 4	656.031
Dash 6	656.032
Dash 8	656.033



## Hose Cutters

Gives a nice clean cut up to Dash 16 400/410 Series & 600 Series Hose, Strong Steel, can be re-sharpened

Description	Part No.
All	656.041



## Tube Cutters

The Best Tools to use to cut all types of Tube, Polished Aluminium.

Description	Part No.
Small	656.018
Large	656.019
Spare Cutting Wheel	656.017



## Tube Flaring Machine

Strong Stable, Expandable Platform to Flare all types of Tube, Aluminium/Stainless Steel/Steel

Size	Part No.
Call for details	656.020



## Tube Benders

1 Tool with 3 Tube Sizes, Aluminium

Size	Part No.
1/8" - 3/16" - 1/4"	656.023
6 - 8 - 10 mm	656.021

## Swagelok Tube Benders

As used by the Professionals this is a far superior Tube Bender with Rollers, Stainless Steel



Size	Part No.
6 mm	656.024-06
8 mm	656.024-08
10 mm	656.024-10
12 mm	656.024-12

# How To Guide

## 400/410 Series Hose

1. Wrap hose tightly with masking tape to prevent fraying and cut squarely in the middle of the tape with a fine tooth hacksaw, shears or cut off saw. Remove tape and clean with compressed air before starting assembly of fitting.



2. Hold socket in vise and insert hose by pushing and twisting to the depth of the mark indicated on the outside of the socket – just behind the threads. Mark or tape the hose behind the socket to indicate any backing out on assembly.



3. Lightly lubricate the fitting threads and the inside of the hose with clean lubricating oil. Hold the fitting horizontally in a vise and thread the hose and socket on by hand as far as possible - taking care not to cross the threads.



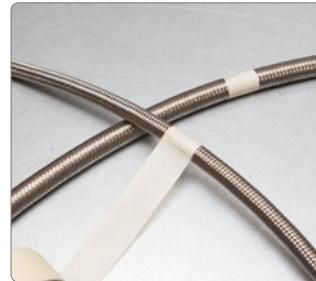
4. Complete the assembly using the correct size spanner and tighten until there is a maximum gap between socket and fitting of 1-2mm. Check the mark behind socket for backing out of the hose, none should be evident.

5. Pressure test the assembly to 2 x maximum working pressure, clean, inspect and plug ends for storage.



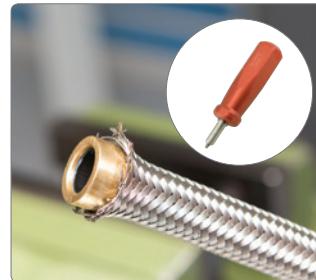
## 600 Series Hose

1. Wrap hose tightly with masking tape to prevent fraying and cut squarely in the middle of the tape with a fine tooth hacksaw, shears or cut off saw. Remove tape and clean with compressed air before starting assembly of fitting.



2. The hose will naturally rosette at one end, from the un-flared end slip the socket over and using the appropriate mandrel flare the braid away from the PTFE inner core.

3. Carefully slip the olive over the end of the PTFE tube ensuring that there is no braid trapped underneath and that it is fully seated by pushing against a flat surface. Push the socket over the olive checking that the olive remains positioned correctly.



4. Lightly lubricate the fitting threads with clean lubricating oil. Hold the fitting horizontally in a vise and thread the hose and socket on by hand as far as possible - taking care not to cross the threads.



5. Complete the assembly using the correct size spanner and tighten until there is a maximum gap between socket and fitting of 1mm.

**Under no circumstances undo the fitting to adjust the alignment.**

6. Pressure test the assembly to 2 x maximum working pressure, clean, inspect and plug ends for storage.



# Technical Information

## Common Fitting Thread Sizes

Nominal Tube Size Metric	Nominal Tube Size Imperial	AN Dash Reference	JIC, AN Thread Size	NPT Thread Size	BSP Thread Size
3.20 mm	1/8	Dash 2	5/16 x 24	1/8 x 27	1/8 x 28
4.76 mm	3/16	Dash 3	3/8 x 24	-	-
6.00 mm	1/4	Dash 4	7/16 x 20	1/4 x 18	1/4 x 19
8.00 mm	5/16	Dash 5	1/2 x 20	-	-
10.00 mm	3/8	Dash 6	9/16 x 18	3/8 x 18	3/8 x 19
12.00 mm	1/2	Dash 8	3/4 x 16	1/2 x 14	1/2 x 14
15.00 mm	5/8	Dash 10	7/8 x 14	-	5/8 x 14
18.00 mm	3/4	Dash 12	1 1/16 x 12	3/4 x 14	3/4 x 14
-	1	Dash 16	1 5/16 x 12	1 x 11.5	1 x 11
-	1 1/4	Dash 20	1 5/8 x 12	1 1/4 x 11.5	1 1/4 x 11
-	1 1/2	Dash 24	1 7/8 x 12	1 1/2 x 11.5	1 1/2 x 11
-	2	Dash 32	2 1/2 x 12	2 x 11.5	2 x 11

## O-Ring Material - Selection Guide

The appropriate selection of O-Ring material is important. Failure to select the correct material may lead to a shortened service life or, in an extreme case, seal failure.

The following table is offered as a guide only, the information is not intended to be comprehensive. Operating conditions, temperature and fluid combinations should be considered when selecting the material.

For specific application advice please contact us.

O-Ring Material code	O-Ring Material	Temperature Range	Application Recommended for	Application Not Recommended For
Rubber	Nitrile (Buna N)	-40°C to + 135°C	Mineral based hydraulic oils & greases Engine oils SEA 10 to 50 multigrades Pneumatics Cold water Silicone oils & greases Ethylene glycol based fluids (anti- freeze) Di-ester based lubricants Gasoline Nitrous oxide	Brake Fluid Phosphate ester hydraulic fluids Ketones (acetone)
FKM	Fluorocarbon	-25°C to + 250°C	Mineral based hydraulic oils & greases Engine oils SAE 10 to 50 & multigrades Pneumatics Di-ester based lubricants Phosphate ester hydraulic fluids Silicate ester base lubricants Silicone oils & greases Gasoline Aviation fuels High temperature air	Brake fluid Ketones (acetone)
EPDM	Ethylene Propylene	-54°C to + 135°C	Brake fluid Water (hot & cold) Phosphate ester hydraulic fluids Methanol Nitromethane Nitrous oxide Ketones (acetone)	Petroleum oils Di-ester base lubricants

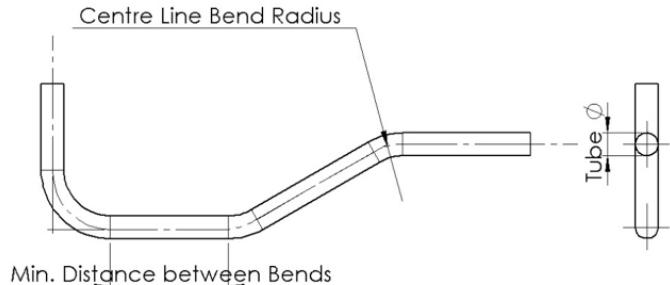
## CNC Bend Data

We offer in-House CNC Tube bending. Our current standard tooling is listed below, but we are always adding to the list.

Please refer to diagram 'A' for minimum distances between bends.

These vary depending on tube size being used.

## Diagram 'A'



We work our bending machine using X, Y, Z co-ordinates. The information supplied can be CAD Global, it does not need to be Local ie; X-0, Y-0, Z-0

If possible, supply the length of the Centre line along the Hardline to speed up the quoting process.

Bend points are measured from Centre Line intersection points.

Please contact us to discuss if you have any specific requirements. We can bend tubes up to 25mm diameter.

#### Remarks:

- A) Different tube dimensions, smaller minimum bending radius and minimum distance between bends on request.
- B) Greater bending radius on request.
- C) All information correct when printing this Issue 2 catalogue.

Tube Ø mm	Hycot	Aluminium	Stainless Steel	Titanium	minimum Bend Radius (other radius on request)	Min. Distance
					RM (mm)	Between Bends (mm)
3.18x0.56	-	-	Yes	-	8.5	10
3.18x0.56	-	-	Yes	Yes	12	10
3.5x0.5	-	-	-	Yes	12	12
3.5x0.5	-	-	-	Yes	15	15
3.97x0.71	-	-	-	Yes	12	12
4.3x0.5	-	-	-	Yes	12	12
4.76x0.71	-	-	Yes	-	10	12
4.76x0.71	-	-	Yes	Yes	12	12
4.76x0.71	-	-	Yes	Yes	20	18
4.76x0.9	-	Yes	-	-	12	12
4.76x0.9	-	Yes	-	-	20	18
6x0.5	-	-	-	Yes	18	15
6x0.8	-	-	Yes	-	12	15
6x0.8	-	-	Yes	Yes	14	15
6x1	-	Yes	-	-	12	15
6x1	Yes	Yes	-	-	14	15
8x0.6	-	-	-	Yes	16	22
8x0.6	-	-	-	Yes	20	22
8x0.8	-	-	Yes	-	16	22
8x0.8	-	-	Yes	-	20	22
8x1	Yes	Yes	-	-	16	22
8x1	Yes	Yes	-	-	20	22
8x1	-	-	Yes	-	16	20
8x1.5	-	-	Yes	-	16	20
10x0.8	-	-	Yes	Yes	20	25
10x0.8	-	-	Yes	Yes	25	25
10x1	Yes	Yes	-	-	20	25
10x1	Yes	Yes	-	-	25	25
12x0.8	-	-	-	Yes	24	35
12x1	Yes	Yes	Yes	-	20	20
12x1	Yes	Yes	-	-	24	35
12x1	Yes	Yes	-	-	30	40
13x1.5	-	Yes	-	-	30	40
14x1	-	Yes	-	-	21	40
15x1	-	Yes	-	-	30	40
16x1	-	Yes	-	-	32	40
16x1	-	Yes	-	-	40	40
18x1	-	-	Yes	-	32	40
19x1	-	Yes	-	-	29	40

## Bespoke Hose Assembly Information

When ordering bespoke hose assemblies, it is important to specify the length and fitting alignment (orientation).

The information should be given as described on page 80 and is recognised in the industry as the standard method.

The drawing on page 80 shows how to measure the overall length of the assembly with various end fitting combinations. Assemblies ordered without further definition will be produced to these standards.

### Fitting Orientation/Alignment

When an assembly is required which uses an elbow or Banjo you need to advise us of the orientation required.

Please see diagram 'B' for guidance on how to determine fitting alignment. The alignment is measured from the centre line of the nearest fitting when this fitting is pointing down at the 6 o'clock position, then measure anticlockwise until the desired orientation is achieved. In this example the orientation is 180°.

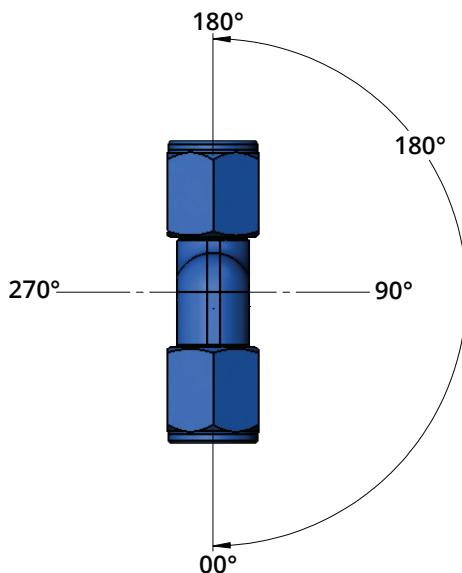
### Assembly Length

Diagram 'C' illustrates how to measure the length of an assembly. A selection of styles and configurations are shown -

Assembly lengths given to ATEC without further definition will be produced to these standards.

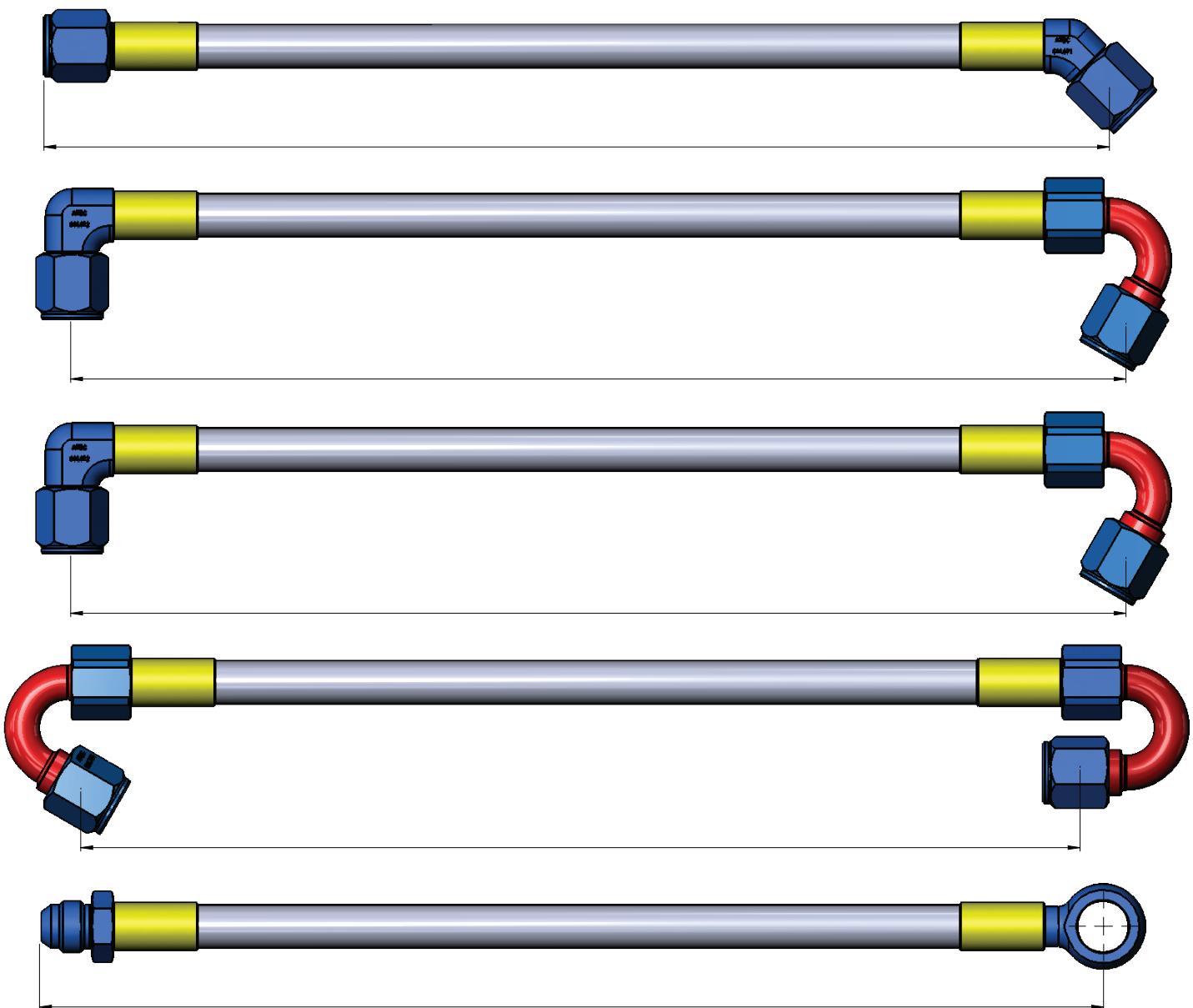
## Bespoke Hose Assembly Information cont.

Diagram 'B'



In this diagram an orientation of 180° is shown

Diagram 'C'



## Notes:

## Notes:

# Returns & Refunds

## **RETURNED GOODS AUTHORISATION:**

All returned products, whatever the reason, must be accompanied by a Returned Goods Authorisation number (RGA:), this can be obtained by contacting the office from where the goods were purchased, by telephone

(Germany: +49 (0) 6327 97890 or UK: +44 (0) 1280 704525) or by email (Germany: [verkauf@atecfluidsysteme.de](mailto:verkauf@atecfluidsysteme.de) or UK: [returns@atecautotechnic.com](mailto:returns@atecautotechnic.com)).

The parcel should be securely wrapped to protect the contents and be clearly marked on the outside with the word "Returns" followed by the RGA number.

Complete purchase details including your name and address and contact details should be included within

#### **EXCHANGE OF GOODS:**

Whilst we endeavour to supply the correct goods, inevitably on occasions an exchange is required, we will happily exchange all stock items once you have returned the goods in their original condition with all packaging.

**GOODS NO LONGER REQUIRED:**

If for any reason you are not completely satisfied with your

goods you may return them to us within 14 days, complete with all packaging in original condition, for a refund, credit or exchange at our discretion, after the issue of a RGA number.

This does not apply to non-stock items which have been specially obtained to fill your order.

Goods should be returned using a recorded delivery service, we cannot be held responsible for any goods lost or damaged in transit to us and in the event of us having no record of receipt of the return a refund, credit or exchange will only be considered if proof of return is provided. Goods returned which have been correctly supplied will be subject to a 15% restocking charge and carriage costs will not be refunded.

#### **GOODS INCORRECTLY SUPPLIED & WARRANTY CLAIMS:**

Goods returned due to incorrect supply or failure under warranty will be dealt with as a matter of priority. They should be accompanied by a valid proof of purchase and details of your preferred remedy.

ATEC is not responsible for any carriage charges, labour charges or consequential costs of any kind associated with the fitment or removal of suspected faulty, incorrectly ordered, incorrectly supplied or fitted parts.

# STANDARD TERMS AND CONDITIONS FOR GOODS AND SERVICES

## 1. Application of Terms and Conditions

1.1 The Supplier – Atec Autotechnic Ltd - shall supply and the Customer shall purchase the Goods and Services in accordance with the order and/or quotation which shall be subject to these Terms and Conditions; and

1.2 The Contract shall be to the exclusion of any other terms and conditions subject to which any such quotation is accepted or purported to be accepted, or any such order is made or purported to be made, by the Customer.

## 2. Definitions and Interpretation

2.1 In these Terms and Conditions, unless the context otherwise requires, the following expressions have the following meanings:

“Business Day” means any day other than a Saturday, Sunday or bank holiday;

“Commencement Date” means the commencement date for the Contract as set out in the accepted order;

“Confidential Information” means, in relation to either Party, information which is disclosed to that Party by the other Party pursuant to or in connection with this Agreement (whether orally or in writing or any other medium, and whether or not the information is expressly stated to be confidential or marked as such);

“Contract” means the contract for the purchase and sale of the Goods and supply of the Services under these Terms and Conditions;

“Contract Price” means the price stated in the Contract payable for the Goods;

“Customer” means the person who accepts a quotation or offer of the Supplier for the sale of the Goods and supply of the Services, or whose order for the Goods and Services is accepted by the Supplier;

“Delivery Date” means the date on which the Goods are to be delivered as stipulated in the Customer’s order and accepted by the Supplier;

“Goods” means the goods (including any instalment of the goods or any parts for them) which the Supplier is to supply in accordance with these Terms and Conditions;

“Month” means a calendar month;

“Services” means the Services to be provided to the Customer as set out in the quotation and/or accepted order; and

“Supplier” means Atec Autotechnic Ltd, a company registered in England under 3442399 of Unit 3, Top Station Road, Brackley, Northants, NN13 7UG and includes all employees and agents of Atec Autotechnic Ltd and Atec Fluid Systems Ltd.

2.1 Unless the context otherwise requires, each reference in these Terms and Conditions to:

2.1.1 “writing”, and any cognate expression, includes a reference to any communication effected by electronic or facsimile transmission or similar means;

2.1.2 a statute or a provision of a statute is a reference to that statute or provision as amended or re-enacted at the relevant time;

2.1.3 “these Terms and Conditions” is a reference to these Terms and Conditions and any Schedules as amended or supplemented at the relevant time;

2.1.4 a Schedule is a schedule to these Terms and Conditions; and

2.1.5 a Clause or paragraph is a reference to a Clause of these Terms and Conditions (other than the Schedules) or a paragraph of the relevant Schedule.

2.1.6 a “Party” or the “Parties” refer to the parties to these Terms and Conditions.

2.2 The headings used in these Terms and Conditions are for convenience only and shall have no effect upon the interpretation of these Terms and Conditions.

2.3 Words imparting the singular number shall include the plural and vice versa.

2.4 References to any gender shall include the other gender.

## 3. Basis of Sale and Service

3.1 The Supplier’s employees or agents are not authorised to make any representations concerning the Goods or Services unless confirmed by the Supplier in writing. In entering into the Contract the Customer acknowledges that it does not rely on, and waives any claim for breach of, any such representations which are not so confirmed.

3.2 No variation to these Terms and Conditions shall be binding unless agreed in writing between the authorised representatives of the Customer and the Supplier.

3.3 Sales literature, price lists and other documents issued by the Supplier in relation to the Goods and Services are subject to alteration without notice and do not constitute offers to sell the Goods which are capable of acceptance. No contract for the sale of the Goods and Services shall be binding on the Supplier unless the Supplier has issued a quotation which is expressed to be an offer to sell the Goods and Services or has accepted an order placed by the Customer by whichever is the earlier of:

3.3.1 the Supplier’s written acceptance;

3.3.2 delivery of the Goods; or

3.3.3 provision of the Services; or

3.3.4 the Supplier’s invoice.

3.4 Any typographical, clerical or other accidental errors or omissions in any sales literature, quotation, price list, acceptance of offer, invoice or other document or information issued by the Supplier shall be subject to correction without any liability on the part of the Supplier.

## 4. The Goods

4.1 No order submitted by the Customer shall be deemed to be accepted by the Supplier unless and until confirmed in writing by the Supplier’s authorised representative.

4.2 The specification for the Goods shall be that set out in the Supplier’s sales documentation unless varied expressly in the Customer’s order (if such variation(s) is/are accepted by the Supplier). (The Goods will only be supplied in the minimum units thereof stated in the Supplier’s price list or in multiples of those units. Orders received for quantities other than these will be adjusted accordingly.)

4.3 [Illustrations, photographs or descriptions whether in catalogues, brochures, price lists or other documents issued by the Supplier are intended as a guide only and shall not be binding on the Supplier.]

4.4 The Supplier reserves the right to make any changes in the specification of the Goods which are required to conform with any applicable safety or other statutory or regulatory requirements or, where the Goods are to be supplied to the Supplier’s specification, which do not materially affect their quality or performance.

4.5 No order which has been accepted by the Supplier may be cancelled by the Customer except with the agreement in writing of the Supplier on the terms that the Customer shall indemnify the Supplier in full against all loss (including loss of profit), costs (including the cost of all labour and materials used), damages, charges and expenses incurred by the Supplier as a result of such cancellation.

## 5. The Services

5.1 With effect from the Commencement Date the Supplier shall, in consideration of the price being paid in accordance with Clauses 6 and 7 will provide the Services expressly identified in the quotation and/or accepted order.

5.2 The Supplier will use reasonable care and skill to perform the Services identified in the quotation and/or accepted order.

5.3 The Supplier shall use all reasonable endeavours to complete its obligations under the Contract, but time will not be of the essence in the performance of such obligations.

## 6. Price

6.1 The price of the Goods and Services shall be the price current at the date of acceptance of the Customer’s order or such other price as may be agreed in writing by the Supplier and the Customer.

6.2 Where the Supplier has quoted a price for the Goods the price quoted shall be valid for 30 days only or such lesser time as the Supplier may specify.

6.3 The Supplier reserves the right, by giving written notice to the Customer at any time before delivery or provision, to increase the price of the Goods and/or Services to reflect any increase in the cost to the Supplier which is due to any factor beyond the control of the Supplier (including, without limitation, any foreign exchange fluctuation, currency regulation, alteration of duties, significant increase in the costs of labour, materials or other costs of manufacture), any change in delivery dates, quantities or specifications for the Goods and Services which are requested by the Customer, or any delay caused by any instructions of the Customer or failure of the Customer to give the Supplier adequate information or instructions.

6.4 Except as otherwise stated under the terms of any quotation and/or accepted order, and unless otherwise agreed in writing between the Customer and the Supplier, all prices are exclusive of the Supplier’s charges for packaging and transport.

6.5 The price is exclusive of any applicable value added tax, excise, sales taxes or levies of a similar nature which are imposed or charged by any competent fiscal authority in respect of the Goods and Services, which the Customer shall be additionally liable to pay to the Supplier.

## 7. Payment

7.1 Subject to any special terms agreed in writing between the Customer and the Supplier, the Supplier shall invoice the Customer for the price of the Goods and Services on or at any time after delivery of the Goods and/or the Provision of the Services (as applicable), unless, in the case of Goods, the Goods are to be collected by the Customer or the Customer wrongfully fails to take delivery of the Goods, in which event the Supplier shall be entitled to invoice the Customer for the price at any time after the Supplier has notified the Customer that the Goods are ready for collection or (as the case may be) the Supplier has tendered delivery of the Goods.

7.2 The Customer shall pay the price of the Goods (less any discount or credit allowed by the Supplier, but without any other deduction, credit or set off) within 30 Business Days of the date of the Supplier’s invoice or otherwise in accordance with such credit terms as may have been agreed in writing between the Customer and the Supplier in respect of the Contract. Payment shall be made on the due date notwithstanding that delivery or provision may not have taken place and/or that the property in the Goods has not passed to the Customer. The time for the payment of the price shall be of the essence of the Contract. Receipts for payment will be issued only upon request.

7.3 All payments shall be made to the Supplier as indicated on the form of acceptance or invoice issued by the Supplier.

7.4 The Supplier is not obliged to accept orders from any customer or buyer who has not supplied the Supplier with references satisfactory to the Supplier. If at any time the Supplier is not satisfied as to the creditworthiness of the Customer it may give notice in writing to the Customer that no further credit will be allowed to the Customer in which event no further goods or services will be delivered or provided to the Customer other than against cash payment and notwithstanding sub-Clause 7.2 of these conditions, all amounts owing by the Customer to the Supplier shall be immediately payable in cash.

## 8. Delivery and Performance

8.1 Delivery of the Goods shall be made by the Supplier delivering the Goods to the place in the United Kingdom specified in the accepted order or, if no place of delivery is so specified, by the Customer collecting the Goods at the Supplier’s premises at any time after the Supplier has notified the Customer that the Goods are ready for collection.

8.2 The Delivery Date is approximate only and time for delivery shall not be of the essence unless previously agreed by the Supplier in writing. The Goods are to be delivered by the Supplier in advance of the Delivery Date upon giving reasonable notice to the Customer.

8.3 If the Customer fails to take delivery of the Goods or any part of them on the Delivery Date and/or fails to provide any instructions, documents, licences, consents or authorisations required to enable the Goods to be delivered on that date, the Supplier shall be entitled upon given written notice to the Customer to store or arrange for the storage of the Goods and then notwithstanding the provisions of sub-Clause 10.1 of these Conditions risk in the Goods shall pass to the Customer, delivery shall be deemed to have taken place and the Customer shall pay to the Supplier all costs and expenses including storage and insurance charges arising from such failure.

8.4 With effect from the Commencement Date the Supplier shall, in consideration of the price being paid in accordance with these Terms and Conditions and the quotation and/or accepted order, provide the Services expressly identified in the quotation and/or accepted order.

## 9. Non-Delivery of Goods and Services

9.1 If the Supplier fails to deliver the Goods or provide the Services or any part of them on the Delivery Date (or Commencement Date, as appropriate) other than for reasons outside the Supplier’s reasonable control or the Customer’s or its carrier’s fault:

9.1.1 if the Supplier delivers the Goods and/or provides the Services (as applicable) at any time thereafter the Supplier shall have no liability in respect of such late delivery.

## 10. Risk and Retention of Title

10.1 Risk of damage to or loss of the Goods shall pass to the Customer at:

10.1.1 in the case of Goods to be delivered at the Supplier’s premises, the time when the Supplier notifies the Customer that the Goods are available for collection;

10.1.2 in the case of Goods to be delivered otherwise than at the Supplier’s premises, the time of delivery or, if the Customer wrongfully fails to take delivery of the Goods, the time when the Supplier has tendered delivery of the Goods;

10.1.3 in the case of Goods being installed by the Supplier, the time that the Supplier notifies the Customer that the installation is complete.

10.2 Notwithstanding delivery and the passing of risk in the Goods, or any other provision of these Terms and Conditions, legal and beneficial title of the Goods shall not pass to the Customer until the Supplier has received in cash or cleared funds payment in full of the price of the Goods.

10.3 Sub-Clause 10.2 notwithstanding, legal and beneficial title of the Goods shall not pass to the Customer until the Supplier has received in cash or cleared funds payment in full of the price of the Goods and any other goods supplied by the Supplier and the Customer has repaid all moneys owed to the Supplier, regardless of how such indebtedness arose.

10.4 Until payment has been made to the Supplier in accordance with these Conditions and title in the Goods has passed to the Customer, the Customer shall be in possession of the Goods as bailee for the Supplier and the Customer shall store the Goods separately and in an appropriate environment, shall ensure that they are identifiable as being supplied by the Supplier and shall insure the Goods against all reasonable risks.

10.5 The Customer shall not be entitled to pledge or in any way charge by way of security for any indebtedness any of the Goods which remain the property of the Supplier, but if the Customer does so all money owing by the Customer to the Supplier shall (without prejudice to any other right or remedy of the Supplier) forthwith become due and payable.

10.6 The Supplier reserves the right to repossess any Goods in which the Supplier retains title without notice. In the event of repossession the Customer shall deliver up to the Supplier all Goods in which title has not passed, the cost of which shall be borne by the Customer.

10.7 The Customer’s right to possession of the Goods in which the Supplier maintains legal and beneficial title shall terminate if:

10.7.1 the Customer commits or permits any material breach of his obligations under these Conditions;

10.7.2 the Customer is or becomes the subject of a bankruptcy order or takes advantage of any other statutory provision for the relief of insolvent debtors.

## 11. Assignment

11.1 The Supplier may assign the Contract or any part of it to any person, firm or company without the prior consent of the Customer.

11.2 The Customer shall not be entitled to assign the Contract or any part of it without the prior written consent of the Supplier.

## 12. Defective Goods

12.1 If on delivery any of the Goods are defective in any material respect and either the Customer lawfully refuses delivery of the defective Goods or, if they are signed for on delivery as “condition and contents unknown” the Customer gives written notice of such defect to the Supplier within 5 Business Days of such delivery, the Supplier shall at its option:

12.1.1 replace the defective Goods within 5 Business Days of receiving the Customer’s notice; or

12.1.2 refund to the Customer the price for those Goods which are defective;

but the Supplier shall have no further liability to the Customer in respect thereof and the Customer may not reject the Goods if delivery is not refused or notice given by the Customer as set out above.

12.2 No Goods may be returned to the Supplier without the prior agreement in writing of the Supplier. Subject thereto any Goods returned which the Supplier is satisfied were supplied subject to defects of quality or condition which would not be apparent on inspection shall either be replaced free of charge or, at the Supplier’s sole discretion the Supplier shall refund or credit to the Customer the price of such defective Goods but the Supplier shall have no further liability to the Customer.

12.3 The Supplier shall be under no liability in respect of any defect arising from fair wear and tear, or any wilful damage, negligence, subjection to normal conditions, failure to follow the Supplier’s instructions (whether given orally or in writing), misuse or alteration of the Goods without the Supplier’s prior approval, or any other act or omission on the part of the Customer, its employees or agents or any third party.

12.4 Goods, other than defective Goods returned under sub-Clauses 12.1 or 12.2, returned by the Customer and accepted by the Supplier may be credited to the Customer at the Supplier’s sole discretion and without any obligation on the part of the Supplier.

12.5 Subject as expressly provided in these Terms and Conditions, and except where the Goods are sold under a consumer sale, all warranties, conditions or other terms implied by statute or common law are excluded to the fullest extent permitted by law.

12.6 The Customer shall be responsible for ensuring that, except to the extent that instructions as to the use or sale of the Goods are contained in the packaging or labelling of the Goods, any use or sale of the Goods by the Customer is in compliance with all applicable statutory requirements and that handling and sale of the Goods by the Customer is carried out in accordance with directions given by the Supplier or any competent governmental or regulatory authority and the Customer will indemnify the Supplier against any liability loss or damage which the Supplier might suffer as a result of the Customer’s failure to comply with this condition.

## 13. Right to Return the Goods and to Receive a Refund

13.1 If the Customer is not satisfied with any Goods purchased from the Supplier, the Customer may cancel the Contract and return the Goods to the Supplier and obtain a refund of the price of the returned Goods, provided:

13.1.1 the Customer informs the Supplier of the decision to cancel the Contract within 5 calendar days of delivery of the Goods; and

13.1.2 the Goods are returned in their original condition; and

13.1.3 the Goods are returned in accordance with sub-Clause 13.3 below.

13.2 While the Goods remain in the Customer’s possession the Customer is under a duty to ensure that the Goods are kept safe and secure.

13.3 Where the Goods are custom made to the order of the Customer, the Customer shall not be entitled to return the Goods and receive a refund unless the Goods are faulty. The statutory rights of the Customer are unaffected.

## 14. Customer’s Default

14.1 If the Customer fails to make any payment on the due date then, without prejudice to any other right or remedy available to the Supplier, the Supplier shall be entitled to:

14.1.1 cancel the order or suspend any further deliveries of Goods or provision of Services to the Customer;

14.1.2 appropriate any payment made by the Customer to such of the Goods and/or Services (or the goods and and/or services supplied under any other contract between the Customer and the Supplier) as the Supplier may think fit (notwithstanding any purported appropriation by the Customer); and

14.1.3 charge the Customer interest (both before and after any judgement) on the amount unpaid, at the rate of 4% per annum above Barclays Bank base rate from time to time, until payment in full is made (a part of a month being treated as a full month for the purpose of calculating interest).

14.2 This condition applies if:

14.2.1 the Customer fails to perform or observe any of its obligations hereunder or is otherwise in breach of the Contract; or

14.2.2 the Customer becomes subject to an administration order or makes any voluntary arrangement with its creditors (within the meaning of the Insolvency Act 1986) or becomes bankrupt; or

14.2.3 an encumbrancer takes possession, or a receiver is appointed, of any of the property or assets of the Customer; or

14.2.4 the Supplier reasonably apprehends that any of the events mentioned above is about to occur in relation to the Customer and notifies the Customer accordingly.

14.3 If sub-Clause 14.2 applies then, without prejudice to any other right or remedy available to the Supplier, the Supplier shall be entitled to cancel the Contract or suspend any further deliveries under the Contract without any liability to the Customer, and if the Goods have been delivered but not paid for the price shall become immediately due and payable notwithstanding any previous agreement or arrangement to the contrary.

## 15. Liability

15.1 If the Supplier fails to perform the Services with reasonable care and skill it will carry out remedial action at no extra cost to the Customer.

15.2 The Customer shall indemnify the Supplier against all damages, costs, claims and expenses suffered by the Supplier arising from loss or damage to any equipment (including that of third parties) caused by the Customer, or its agents.

## 16. Communication

16.1 All notices under these Terms and Conditions and under the Contract shall be in writing and be deemed duly given if signed by, or on behalf of, a duly authorised officer of the Party giving the notice.

16.2 Notices shall be deemed to have been duly given:

16.2.1 when delivered, if delivered by courier or other messenger (including registered mail) during the normal business hours of the recipient; or

16.2.2 when, if transmitted by facsimile or e-mail and a successful transmission report or return receipt is generated; or

16.2.3 on the fifth business day following mailing, if mailed by national ordinary mail, postage prepaid; or

16.2.4 on the tenth business day following mailing, if mailed by airmail, postage prepaid.

16.3 All notices under this Agreement shall be addressed to the most recent address, e-mail address, or facsimile number notified to the other Party.

## 17. Force Majeure

Neither Party shall be liable for any failure or delay in performing their obligations where such failure or delay results from any cause that is beyond the reasonable control of that Party. Such causes include, but are not limited to: power failure, Internet Service Provider failure, industrial action, civil unrest, fire, flood, storms, earthquakes, acts of terrorism, acts of war, governmental action or any other event that is beyond the control of the Party in question.

## 18. Waiver

The Parties agree that no failure by either Party to enforce the performance of any provision in these Terms and Conditions or under the Contract shall constitute a waiver of the right to subsequently enforce that provision or any other provision. Such failure shall not be deemed to be a waiver of any preceding or subsequent breach and shall not constitute a continuing waiver.

## 19. Severance

The Parties agree that, in the event that one or more of the provisions of these Terms and Conditions or the Contract are found to be unlawful, invalid or otherwise unenforceable, that / those provisions shall be deemed severed from the remainder of these Terms and Conditions (and, by extension, the Contract). The remainder of these and the Contract shall be valid and enforceable.

## 20. Third Party Rights

A person who is not a party to the Contract shall have no rights under the Contract pursuant to the Contracts (Rights of Third Parties) Act 1999.

## 21. Law and Jurisdiction

21.1 These Terms and Conditions and the Contract (including any non-contractual matters and obligations arising therefrom or associated therewith) shall be governed by, and construed in accordance with, the laws of England and Wales.

21.2 Any dispute, controversy, proceedings or claim between the Parties relating to these Terms and Conditions or to the Contract (including any non-contractual matters and obligations arising therefrom or associated therewith) shall fall within the jurisdiction of the courts of England and Wales.

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