

## 411 Series

### Braided Teflon® Hose



#### Type 411 Teflon® Smooth Bore Hose

The exceptional resistance of Teflon® to high temperatures, permeability, chemical attack, water absorption and its low friction properties make it an ideal choice for most motorsport applications.

Other benefits include high working pressures and an extremely wide range of end fitting configurations. JLS Brake Hose 411-03 has a Teflon® core, with an improved closely controlled braid specification that provides a greatly increased resistance to volumetric expansion, resulting in a positive and responsive brake and clutch pedal.

For larger size hose on fuel and lubrication applications JLS T62 Teflon® hose also has many advantages. Because of its smooth bore, this series provides an uninterrupted passage for fuels and oils, thus eliminating the starvation and cavitation problems sometimes associated with convoluted hoses when high flow rates are used. The stainless steel outer braid offers excellent resistance to heat, abrasion and mechanical damage and will not absorb oil and fuel into its braiding, thus eliminating weight gain.

#### Construction:

- Inner Core: Extruded smooth bore Teflon® T62 Resin
- Reinforcement: One layer of 304 wire braid
- Temperature Rating: -55°C To +232°C (-67°F To +450°F)
- Couplings: Re-usable or permanently attached
- Applications: Brake, Clutch, Instrumentation, Fuel, Lubrication & Power Transmission Systems
- HBT: Extruded outer cover of black polyester elastomer
- PC: Clear extruded outer cover to prevent damage to the stainless steel braid
- C: Carbon lined to prevent static build up
- Colours: BE - Blue, GN - Green, PU - Purple, RD - Red, YW - Yellow

Code	Type	I.D. (mm)	O.D. (mm)	Operating Pressure (PSI)	Min. Burst Pressure (PSI)
4011-03	Standard	3.2	6.4	3000	12,000
4011-03-BE	Blue	3.2	6.7	3000	12,000
4011-03-HB-T	Black	3.2	6.7	3000	12,000
4011-03-GN	Green	3.2	6.7	3000	12,000
4011-03-PC	Clear	3.2	6.7	3000	12,000
4011-03-PU	Purple	3.2	6.7	3000	12,000
4011-03-RD	Red	3.2	6.7	3000	12,000
4011-03-TB	Translucent Black	3.2	6.7	3000	12,000
4011-04	Standard	4.8	7.6	3000	12,000
4011-04-HB	Black	4.8	7.6	3000	12,000
4011-06	Standard	8.1	10.9	2500	10,000
4011-06-C	Carbon	8.1	10.9	2500	10,000
4011-08	Standard	10.6	13.7	2500	8000

Please note a full range of Hose Assemblies are available to customer requirements in Crimped configuration. Please call us for details.



#### Material Identification:

Z = Zinc Plated Mild Steel EN = Electroless Nickel Plated Mild Steel HC = Stainless Steel D = Aluminium TI = Titanium Alloy B = Brass

## 411 Series Hose Fittings



### Standard Banjo Series 2

Code	Banjo Bolt Sizes Accepted	Hose Dash Size	Material
A15-3HC	3/8 UNF, M10, 1/8 BSP	3	HC
A15-3TI	3/8 UNF, M10, 1/8 BSP	3	TI
A15-3Z	3/8 UNF, M10, 1/8 BSP	3	Z
A15-3-4HC	7/16 UNF	3	HC
A15-3-4Z	7/16 UNF	3	Z
A15-4-3Z	3/8 UNF, M10, 1/8 BSP	4	Z
A15-4HC	7/16 UNF	4	HC
A15-4Z	7/16 UNF	4	Z
A15-4M	M12	4	Z



### Straight Extended Neck Banjo Series 1

Code	Banjo Bolt Sizes Accepted	Hose Dash Size	Material
A08-3HC	M8 x 1.0	3	HC
A08-3Z	M8 x 1.0	3	Z
A11-3D	3/8 UNF, M10, 1/8 BSP	3	D
A11-3EN	3/8 UNF, M10, 1/8 BSP	3	EN
A11-3HC	3/8 UNF, M10, 1/8 BSP	3	HC
A11-3TI	3/8 UNF, M10, 1/8 BSP	3	TI
A11-3Z	3/8 UNF, M10, 1/8 BSP	3	Z



### 20° Extended Neck Banjo Series 1

Code	Banjo Bolt Sizes Accepted	Hose Dash Size	Material
A12-3D	3/8 UNF, M10, 1/8 BSP	3	D
A12-3EN	3/8 UNF, M10, 1/8 BSP	3	EN
A12-3HC	3/8 UNF, M10, 1/8 BSP	3	HC
A12-3TI	3/8 UNF, M10, 1/8 BSP	3	TI
A12-3Z	3/8 UNF, M10, 1/8 BSP	3	Z



### 20° Side Extended Neck Banjo Series 1

Code	Banjo Bolt Sizes Accepted	Hose Dash Size	Material
A14-3D	3/8 UNF, M10, 1/8 BSP	3	D
A14-3EN	3/8 UNF, M10, 1/8 BSP	3	EN
A14-3HC	3/8 UNF, M10, 1/8 BSP	3	HC
A14-3TI	3/8 UNF, M10, 1/8 BSP	3	TI
A14-3Z	3/8 UNF, M10, 1/8 BSP	3	Z



### 40° Extended Neck Banjo Series 1

Code	Banjo Bolt Sizes Accepted	Hose Dash Size	Material
A13-3D	3/8 UNF, M10, 1/8 BSP	3	D
A13-3EN	3/8 UNF, M10, 1/8 BSP	3	EN
A13-3HC	3/8 UNF, M10, 1/8 BSP	3	HC
A13-3TI	3/8 UNF, M10, 1/8 BSP	3	TI
A13-3Z	3/8 UNF, M10, 1/8 BSP	3	Z



### 90° Extended Neck Banjo Series 1

Code	Banjo Bolt Sizes Accepted	Hose Dash Size	Material
A82-3D	3/8 UNF, M10, 1/8 BSP	3	D
A82-3HC	3/8 UNF, M10, 1/8 BSP	3	HC
A82-3Z	3/8 UNF, M10, 1/8 BSP	3	Z

## 411 Series

### 411 Series Hose Fittings – continued



#### Double Extended Neck Banjo Series 1

Code	Banjo Bolt Sizes Accepted	Hose dash Size	Material
A59-3D	3/8 UNF, M10, 1/8 BSP	3	D
A59-3HC	3/8 UNF, M10, 1/8 BSP	3	HC
A59-3Z	3/8 UNF, M10, 1/8 BSP	3	Z



#### Double Take Off Series 2

Code	Banjo Bolt Sizes Accepted	Hose Dash Size	Material
A16-3HC	3/8 UNF, M10, 1/8 BSP	3	HC
A16-3Z	3/8 UNF, M10, 1/8 BSP	3	Z



#### 45° Swept Female (Swivel)

Includes Multi-Seal Face

Code	Thread	Hose Dash Size	Material
A20-3Z	1/8 BSP	3	Z
A88-3D	3/8 JIC x 24 TPI	3	D
A88-3EN	3/8 JIC x 24 TPI	3	EN
A88-3HC	3/8 JIC x 24 TPI	3	HC
A88-3Z	3/8 JIC x 24 TPI	3	Z
A88-3-2HC	M10 x 1.0	3	HC
A88-3-2Z	M10 x 1.0	3	Z
A20-4Z	1/4 BSP	4	Z



#### 90° Swept Female (Swivel)

Includes Multi-Seal Face

Code	Thread	Hose Dash Size	Material
A19-3Z	1/8 BSP	3	Z
A86-3D	3/8 JIC x 24 TPI	3	D
A86-3EN	3/8 JIC x 24 TPI	3	EN
A86-3HC	3/8 JIC x 24 TPI	3	HC
A86-3Z	3/8 JIC x 24 TPI	3	Z
A86-3-2Z	M10 x 1.0	3	Z
A19-4Z	1/4 BSP	4	Z



#### 45° 'Block' Female (Adjustable)

Includes Multi-Seal Face.

Code	Thread	Hose Dash Size	Material
A581-3HC	3/8 JIC x 24 TPI	3	HC
A58-3HC	3/8 JIC x 24 TPI	3	HC
A58-3-2HC	M10 x 1.0	3	HC
A581-3-2HC	M10 x 1.0	3	HC
A58-3-3HC	M10 x 1.25	3	HC
A581-3-3HC	M10 x 1.25	3	HC
A58-4HC	7/16 JIC x 20 TPI	4	HC
A58-6HC	9/16 JIC x 18 TPI	6	HC



### 90° 'Block' Female (Adjustable)

Includes Multi-Seal Face

Code	Thread	Hose Dash Size	Material
A561-3HC	3/8 JIC x 24 TPI	3	HC
A56-3HC	3/8 JIC x 24 TPI	3	HC
A56-3-2HC	M10 x 1.0	3	HC
A561-3-2HC	M10 x 1.0	3	HC
A561-3-3HC	M10 x 1.25	3	HC
A56-4HC	7/16 JIC x 20 TPI	4	HC
A56-6HC	9/16 JIC x 18 TPI	6	HC



### Bulkhead Male, Inverted Flare

Code	Thread	Hose Dash Size	Material
A32-3HC	3/8 UNF x 24 TPI	3	HC
A32-3Z	3/8 UNF x 24 TPI	3	Z
A33-3HC	M10 x 1.0	3	HC
A33-3Z	M10 x 1.0	3	Z



### Double Banjo Bolt With Bleed Nipple Series 1

Code	Thread	Hose Dash Size	Material
A138-3EN	3/8 UNF x 24 TPI	3	EN
A138-3HC	3/8 UNF x 24 TPI	3	HC
A138-3Z	3/8 UNF x 24 TPI	3	Z
A139-3EN	M10 x 1.0	3	EN
A139-3HC	M10 x 1.0	3	HC
A139-3Z	M10 x 1.0	3	Z
A140-3HC DBL	M10 x 1.25	3	HC
A140-3Z	M10 x 1.25	3	Z



### Bulkhead Male, Flare

Code	Thread	Hose Dash Size	Material
A30-3HC	3/8 UNF x 24 TPI	3	HC
A30-3Z	3/8 UNF x 24 TPI	3	Z
A31-3HC	M10 x 1.0	3	HC
A31-3Z	M10 x 1.0	3	Z



### Banjo Bolt With Bleed Nipple Series 1

Code	Thread	Hose Dash Size	Material
A135-3EN	3/8 UNF x 24 TPI	3	EN
A135-3HC	3/8 UNF x 24 TPI	3	HC
A135-3Z	3/8 UNF x 24 TPI	3	Z
A136-3EN SGL	M10 x 1.0	3	EN
A136-3HC SGL	M10 x 1.0	3	HC
A136-3Z	M10 x 1.0	3	Z
A137-3EN	M10 x 1.25	3	EN
A137-3HC	M10 x 1.25	3	HC
A137-3Z	M10 x 1.25	3	Z



### Double Banjo Bolts For Series 1 Banjos

Code	Thread	Hose Dash Size	Material
A49-3D	3/8 UNF x 24 TPI	3	D
A49-3EN	3/8 UNF x 24 TPI	3	EN
A49-3HC	3/8 UNF x 24 TPI	3	HC
A49-3Z	3/8 UNF x 24 TPI	3	Z
A50-3D	M10 x 1.0	3	D
A50-3EN	M10 x 1.0	3	EN
A50-3HC	M10 x 1.0	3	HC
A50-3Z	M10 x 1.0	3	Z
A51-3D	M10 x 1.25	3	D
A51-3EN	M10 x 1.25	3	EN
A51-3HC	M10 x 1.25	3	HC
A51-3Z	M10 x 1.25	3	Z

## 411 Series

### 411 Series Hose Fittings – continued



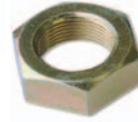
Single Banjo Bolts

Code	Thread	Hose Dash Size	Material
<i>Series 1 - Standard Length</i>			
A43-3D	3/8 UNF x 24 TPI	3	D
A43-3EN	3/8 UNF x 24 TPI	3	EN
A43-3HC	3/8 UNF x 24 TPI	3	HC
A43-3Z	3/8 UNF x 24 TPI	3	Z
A44-3D	M10 x 1.0	3	D
A44-3EN	M10 x 1.0	3	EN
A44-3HC	M10 x 1.0	3	HC
A44-3Z	M10 x 1.0	3	Z
A45-3D	M10 x 1.25	3	D
A45-3EN	M10 x 1.25	3	EN
A45-3HC	M10 x 1.25	3	HC
A45-3Z	M10 x 1.25	3	Z
A46-3Z	1/8 BSP	3	Z
A47-4HC	7/16 UNF	4	HC
A47-4Z	7/16 UNF	4	Z
A48-4Z	M12 x 1.0	4	Z
A48-4HC	M12 x 1.0	4	HC
A48-4-15Z	M12 x 1.5	4	Z
<i>Series 2 - Extra Length</i>			
A43-3LHC	3/8 UNF x 24 TPI	3	HC
A43-3LZ	3/8 UNF x 24 TPI	3	Z
A44-3LHC	M10 x 1.0	3	HC
A44-3LZ	M10 x 1.0	3	Z



Female Bulkhead, Clip Fixing

Code	Thread	Hose Dash Size	Material
A85-3HC	M10 x 1.0 Inverted Flare	3	HC
A85-3Z	M10 x 1.0 Inverted Flare	3	Z
A84-3Z	3/8 UNF Inverted Flare	3	Z
A87-3Z	M10 x 1.0 Concave Flare	3	Z
A95-3Z	M10 x 1.25 Inverted Flare	3	Z



Female Bulkhead, Locknut

Code	Thread	Hose Dash Size	Material
A54-3Z	5/8 x 26 TPI	3	Z



Female Bulkhead, Locknut Fixing

Code	Thread	Hose Dash Size	Material
A38-3HC	3/8 UNF Concave Flare	3	HC
A38-3Z	3/8 UNF Concave Flare	3	Z
A39-3Z	M10 x 1.0 Concave Flare	3	Z
A40-3Z	M10 x 1.0 Inverted Flare	3	Z
A55-3Z	3/8 UNF Inverted Flare	3	Z



Fixed Female

Code	Thread	Hose Dash Size	Material
A91-3HC	M10 x 1.0 Concave Flare	3	HC
A91-3Z	M10 x 1.0 Concave Flare	3	Z
A120-3Z	3/8 UNF Concave Flare	3	Z



Male, Flare

Code	Thread	Hose Dash Size	Material
A22-3HC	3/8 UNF x 24 TPI	3	HC
A22-3Z	3/8 UNF x 24 TPI	3	Z
A23-3D	M10 x 1.0	3	D
A23-3HC	M10 x 1.0	3	HC
A23-3Z	M10 x 1.0	3	Z
A24-3D	M10 x 1.25	3	D
A24-3HC	M10 x 1.25	3	HC
A24-3Z	M10 x 1.25	3	Z



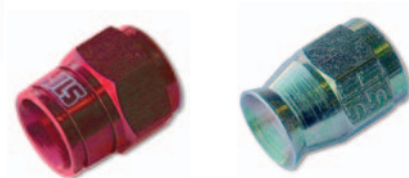
### Male, Inverted Flare

Code	Thread	Hose Dash Size	Material
A26-3HC	3/8 UNF x 24 TPI	3	HC
A26-3Z	3/8 UNF x 24 TPI	3	Z
A27-3D	M10 x 1.0	3	D
A27-3EN	M10 x 1.0	3	EN
A27-3HC	M10 x 1.0	3	HC
A27-3Z	M10 x 1.0	3	Z
A28-3D	M10 x 1.25	3	D
A28-3EN	M10 x 1.25	3	EN
A28-3HC	M10 x 1.25	3	HC
A28-3Z	M10 x 1.25	3	Z
A37-3HC	1/8 BSP	3	HC
A37-3Z	1/8 BSP	3	Z



### Olive

Code	Hose Dash Size	Material
A43-3B	3	B
A42-3D	3	D
A42-3HC	3	HC
A42-4B	4	B
A42-4D	4	D
A42-6B	6	B
A42-6D	6	D
A42-8B	8	B
A42-8D	8	D



### Socket

Code	Hose Dash Size	Material
A41-3D	3	D
A41-3EN	3	EN
A41-3HC	3	HC
A41-3TI	3	TI
A41-3Z	3	Z
A41-4HC	4	HC
A41-4Z	4	Z
A41-6Z	6	Z
A41-8Z	8	Z



### Straight Female (Swivel)

Includes Multi-Seal Face

Code	Thread	Hose Dash Size	Material
A18-3Z	1/8 BSP	3	Z
A21-3D	3/8 JIC x 24 TPI	3	D
A21-3EN	3/8 JIC x 24 TPI	3	EN
A21-3HC	3/8 JIC x 24 TPI	3	HC
A21-3Z	3/8 JIC x 24 TPI	3	Z
A21-3-2HC	M10 x 1.0	3	HC
A21-3-2Z	M10 x 1.0	3	Z
A21-3-3HC	M10 x 1.25	3	HC
A18-4Z	1/4 BSP	4	Z
A21-4HC	7/16 JIC x 20 TPI	4	HC
A21-4Z	7/16 JIC x 20 TPI	4	Z
A21-6HC	9/16 JIC x 18 TPI	6	HC
A21-6Z	9/16 JIC x 18 TPI	6	Z
A21-8HC	3/4 JIC x 16 TPI	8	HC
A21-8Z	3/4 JIC x 16 TPI	8	Z

## 411 Series

### 411 Series Hose Fittings – continued



#### Tee - Hose Connection

Male Thread Bracketed

Code	Point A	Point B	Point C	Hose Dash Size	Material
A104-3HC	Hose Connection	Hose Connection	3/8 JIC	3	HC
A114-3HC	3/8 JIC	3/8 JIC	3/8 JIC	3	HC



#### Tee, Male All Points

Code	Point A	Point B	Point C	Hose Dash Size	Material
A94-3B	1/8 BSP	1/8 BSP	1/8 BSP	3	B



#### Washers

JLS carry a full and extensive range of Copper, Alloy, Dowty and O Ring seals to suit internal and external thread sizes. For further details please ring us.

#### Material Identification:

Z = Zinc Plated Mild Steel EN = Electroless Nickel Plated Mild Steel HC = Stainless Steel D = Aluminium TI = Titanium Alloy B = Brass

## Adaptors: Calliper, Clutch & other applications



Male, Flare

Code	Description	Material
815-3HC	-3 JIC x -3 JIC	HC
815-3Z	-3 JIC x -3 JIC	Z
815-3MZ	M10 x 1.00 x M10 x 1.00	Z
919-4-3Z	-4 JIC x -3 JIC	Z



Flare To UNF, Metric & BSP Flat Face

Code	Description	Material
A62-3Z	3/8 JIC Flare x 1/8 BSP	Z
A63-3Z	M10 x 1.00 Flare x 1/8 BSP	Z
A64-3Z	M10 x 1.25 Flare x 1/8 BSP	Z
A72-3HC	3/8 JIC Flare x 3/8 UNF Flat Face	HC
A72-3Z	3/8 JIC Flare x 3/8 UNF Flat Face	Z
A73-3HC	3/8 JIC Flare x M10 x 1.00 Flat Face	HC
A73-3Z	3/8 JIC Flare x M10 x 1.00 Flat Face	Z
A74-3HC	3/8 JIC Flare x M10 x 1.25 Flat Face	HC
A74-3Z	3/8 JIC Flare x M10 x 1.25 Flat Face	Z
A89-3Z	3/8 JIC Flare x M12 x 1.0 Inverted	Z
A89-4Z	7/16 JIC Flare x M12 x 1.0 Inverted	Z



BSP To UNF & Metric Flat Face

Code	Description	Material
A60-3Z	1/8 BSP x 3/8 UNF Flat Face	Z
A61-3Z	1/8 BSP x M10 x 1.00 Flat Face	Z
A70-3Z	1/8 BSP x M10 x 1.25 Flat Face	Z



JIC (AN) Male x NPT Male

Code	Description	Material
816-3-02HC	-3 Male x 1/8 NPT Male	HC
816-3-02Z	-3 Male x 1/8 NPT Male	Z



Inverted Flare To BSP

Code	Description	Material
A65-3Z	3/8 UNF Inverted x 1/8 BSP	Z
A66-3Z	M10 x 1.00 Inverted x 1/8 BSP	Z
A76-3Z	M10 x 1.25 Inverted x 1/8 BSP	Z
A69-3Z	M12 x 1.00 Inverted x 1/8 BSP	Z



JIC / Metric Bulkhead, Flare

Code	Description	Material
832-3D	-3 JIC x -3 JIC	D
832-3HC	-3 JIC x -3 JIC	HC
832-3Z	-3 JIC x -3 JIC	Z
A77-3Z	M10 x 1.00 x M10 x 1.00	Z

## 411 Series

### Adaptors: Calliper, Clutch & other applications – continued



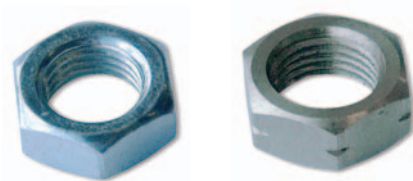
90° JIC Bulkhead, Flare

Code	Description	Material
833-3D	-3 JIC x -3 JIC	D
833-3HC	-3 JIC x -3 JIC	HC
833-3Z	-3 JIC x -3 JIC	Z



Bulkhead Tee

Code	Point A	Point B	Point C	Hose Dash Size	Material
834-3D	3/8 JIC	3/8 JIC	3/8 JIC	3	D
834-3HC	3/8 JIC	3/8 JIC	3/8 JIC	3	HC
834-3Z	3/8 JIC	3/8 JIC	3/8 JIC	3	Z



Locknut

Code	Description	Material
A52-3HC	3/8 UNF Locknut	HC
A52-3Z	3/8 UNF Locknut	Z
A53-3HC	M10 x 1.00 Locknut	HC
A53-3Z	M10 x 1.00 Locknut	Z



Banjo Adaptor

For Series 2 Banjo Bolts

Code	Material
<i>Banjo Bolt Ø to accept 3/8 UNF, M10 &amp; 1/8 BSP Bolt</i>	
A150-3D	D
A150-3HC	HC
A150-3Z	Z
<i>Banjo Bolt Ø to accept M12 Bolt</i>	
A152-3D	D
A152-3HC	HC
A152-3Z	Z
<i>Banjo Bolt Ø to accept 7/16 UNF Bolt</i>	
A157-3HC	HC
A157-3Z	Z



BSP Male Adaptors

Code	Description	Material
MM-02-02	1/8 BSP x 1/8 BSP	Z



### Banjo Adaptor, Double Extended Reach

For Series 1 Banjo Bolts

Code	Description	Material
A155-3D	Double Extended Neck Banjo Adaptor -3 JIC	D



### Banjo Adaptor, Double

Code	Description	Material
A151-3D	Double Banjo Adaptor -3 JIC	D
A151-3HC	Double Banjo Adaptor -3 JIC	HC
A151-3Z	Double Banjo Adaptor -3 JIC	Z



### Power Steering Systems Adaptors

Code	Description	Material
791415	9/16 (-6)JIC Flare x M14 x 1.5	D
791615	9/16 (-6)JIC Flare x M16 x 1.5	D
791815	9/16 (-6)JIC Flare x M18 x 1.5	D
4802Z	9/16 (-6)JIC Flare x 5/8 UNF Inverted Flare	Z



### Gauge Adaptor

Code	Description	Material
705-003	-3JIC x 1/8 Female NPT	Z