

ENGINEERING  
TOMORROW

*Danfoss*

Catalog

# Aeroquip® Performance Products by Danfoss

Setting the bar for the competition

 **Aeroquip**  
Performance Products  
by Danfoss



## Spotlight

### Black Anodized Socketless™ Hose Fittings

Aeroquip's AQP *Socketless* performance hose and fittings are extremely easy to work with. Connecting the two is a snap. Simply slip the hose onto the fittings. It's that simple. Also available in electroless nickel plating or red/blue anodized finish.

#### Features

- Cap is anodized aluminum, not plastic
- Unique 3-barb fitting in -10 and -12 sizes
- -06 and -08 feature 2 barbs
- Easy to assemble, no wrench required
  - No clamp needed
  - Reusable
- One-piece design
  - Allows for improved flow
  - Eliminates two potential leak points (brazed joints)



#### Benefits

- Lightweight and economical
- Soaking or warming hose is not necessary
- No additional band clamps are necessary

#### Applications

- Gasoline, fuel, and lubricating oils
- Air and water

*Starting on page 12*

### 624 Firesleeve

624 Firesleeve is a silicone-coated, braided-glass sleeving manufactured using a unique proprietary process. The durable rubber finish resists tears and abrasion in addition to providing a reliable, no-slip clamping surface. The firesleeve hose flame shield can prevent or delay hose lines from burning. See hose specifications shown in this catalog for the correct firesleeve to match each hose size. For other hose styles, select firesleeve with an I.D. slightly larger than the hose O.D.

#### Features

- Ease of installation: 624 Firesleeve can be slid over line or cable before, during, or after construction or during a line or cable replacement
- Standard sizes available: .31 inch to 3.75 inches I.D.

#### Benefits

- Protection of lines that carry hot or volatile fluids
- Protection of lines, cable, and pipe in hostile environments where there is:
  - Exposure to excessive vibration friction
  - Exposure to molten steel
  - Exposure to industrial solvents
  - Exposure to temperature extremes



*See page 36*

### ET1000 — Portable Crimp Machine

Relaunched with a sleek new housing, the new high-performance crimper will compliment your high performance shop, race trailer, or garage.

#### Features

- Pusher slides out of position
- Red powder coated housing protects user from moving machinery and provides a sleek, aerodynamic design
- Crimper body has a clear zinc finish to protect against corrosion
- Utilizes 2-piece collet assemblies
- Spacer rings control the crimp diameter
- Qualified to crimp Aeroquip's top selling hoses: AQP Stainless Braid, StartLite, and PTFE hoses with Aeroquip's qualified aluminum crimp fittings

#### Benefits

- Sliding pusher allows for easier fitting insertion into the machine
- Simple positive-stop crimp diameter control system for consistent crimping time after time with no operator adjustments required
- Easily transported between job sites
- Versatile power source options Electricity is required only when using an electric style pump



*See page 40*

## Introduction

### Table of Contents

Application Guide .....	3
AQP® and StartLite® Racing Hose and Fittings .....	6
StreetLite Performance Hose .....	7
AQP®Socketless™ Hose and Fittings .....	11
A/C Hose and Fittings.....	13
Racing Hose, PTFE, and Fittings .....	15
High Pressure (Power Steering) Hose and Fittings.....	18
Adapters .....	19
Fuel System Components.....	31
Couplings .....	35
Accessories .....	37
Assembly Equipment.....	40
Assembly Instructions .....	44
Technical Data.....	49
Plan-O-Grams .....	56
Part Number Index.....	57

### Warranty

For warranty information, please visit [www.danfoss.com](http://www.danfoss.com)

### Warning



Danfoss fitting tolerances are engineered to match Danfoss hose tolerances. The use of Danfoss fittings on hose supplied by other manufacturers and/or the use of Danfoss hose with fittings supplied by other manufacturers may result in the production of unreliable and unsafe hose assemblies and is neither recommended or authorized by Danfoss.  
DANFOSS SHALL NOT BE SUBJECT TO AND DISCLAIMS ANY OBLIGATION OR LIABILITIES (INCLUDING BUT NOT LIMITED TO

ALL CONSEQUENTIAL, INCIDENTAL AND CONTINGENT DAMAGES) ARISING OUT OF BREACH OF CONTRACT OR OF WARRANTY OR ARISING FROM TORT CLAIMS (INCLUDING WITHOUT LIMITATION NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORIES OF LAW WITH RESPECT TO ANY HOSE ASSEMBLIES NOT PRODUCED FROM GENUINE DANFOSS APPROVED EQUIPMENT, AND IN CONFORMANCE WITH DANFOSS PROCESS AND PRODUCT

INSTRUCTIONS FOR EACH SPECIFIC HOSE ASSEMBLY.

Failure to follow Danfoss process and product instructions and limitations could lead to premature hose assembly failures resulting in property damage, serious injury or death.

Note: Part numbers in this bulletin are not certified or recommended for aircraft applications.

*This page is part of a complete catalog containing technical and safety data that must be reviewed when selecting a product.*

### Bulk or Retail Packaged Parts

FB-prefixed part numbers indicate bulk-packaged products. FC-prefixed part numbers indicate carded/clam shelled (retail-packaged) products. Most products in this catalog can be ordered in either package style by changing the prefix accordingly.

# Application Guide

## AQP® Racing Hose



See page 6

- Aeroquip Performance most popular racing hose
- Stainless steel outer cover for excellent abrasion resistance
- Excellent pressure rating (1000 psi -04 to -12)
- AQP elastomer smooth bore inner tube
- -45 °F to +300 °F temperature rating
- Approved with reusable and crimp fittings
- Full vacuum sizes, -10, -12, and -16
- **Applications:** fuel, lube, coolant, and air lines

## StartLite® Racing Hose



See page 6

- Aeroquip Performance product's popular lightweight racing hose
- Up to 45% lighter than stainless steel braided hose
- 350-500 psi pressure ratings
- Fire-resistant cover with aramid fiber
- AQP elastomer smooth bore inner tube
- -45 °F to +300 °F temperature rating
- Approved with reusable and lightweight crimp fittings
- **Applications:** fuel, lube, coolant, and air lines

## AQP® Socketless™ Racing Hose



See page 12

- Easy to assemble with reusable socketless fittings
- Textile braid reinforcement available in a blue or black AQP elastomer cover
- AQP elastomer smooth bore inner tube
- -45 °F to +300 °F temperature rating
- Available in sizes blue -04 to -12; black -06 to -12
- Vacuum rated up to 28 in. Hg. in sizes -04 to -08
- Operating pressure for all sizes at 250 psi
- Never needs a clamp
- **Applications:** fuel, lube, coolant, and air lines

## A/C Hose



See page 14

- Stainless steel braided for a professional and custom look
- Nylon inner tube for superior refrigerant performance
- Extensively lab and field tested with R134a refrigerants
- Specifically designed for use with our A/C fittings to provide a superior performing combination
- **Applications:** air conditioning lines

## Racing Hose, PTFE (Off-Road Brake and Power Trim Lines)



See page 16

- Superior fluid compatibility, abrasion and corrosion resistance for reliable service
- Stainless steel outer cover for excellent abrasion resistance
- Extruded PTFE smooth bore inner tube
- -100 °F to +450 °F temperature rating
- Approved with reusable and crimp fittings
- Excellent pressure rating (2500 psi in dash -06)
- **Applications:** off road brake, transmission, clutch, gauge, N<sub>2</sub>O, power steering, hydraulic, and air conditioning

## AQP® High Pressure Hose (Power Steering)

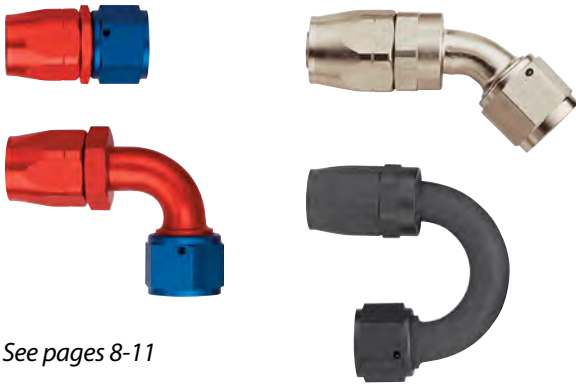


See page 18

- Your best choice for high pressure applications
- Excellent pressure rating (2250 psi in dash -06)
- Abrasion resistant fabric cover
- AQP elastomer smooth bore inner tube
- -45 °F to +300 °F temperature rating
- Approved with reusable steel fittings
- **Applications:** power steering, hydraulics, fuel, lube, coolant, air tools, and DOT approved air brakes

# Application Guide

## Reusable Aluminum Fittings



See pages 8-11

- One-piece design
- Allows for improved flow
- Eliminates two potential leak points (brazed joints)
- Significantly improved appearance
- Electroless nickel plating, red/blue and black anodized finish
- Swivel and non-swivel styles available
- Designed to be re-used without damage to the fitting
- Easier to install than cutter style, more user friendly. See page 50 for details
- Nipple pilot prevents damage to the inner tube
- No seal is broken between nipple and tube when swiveled due to nipple design; ensuring integrity of the seal
- Compression style specially designed for performance applications
- Wide range of applications

### Approved hose styles

- AQP® Stainless Steel Racing Hose
- StartLite® Racing Hose

## Crimp Aluminum Fittings (lightweight)



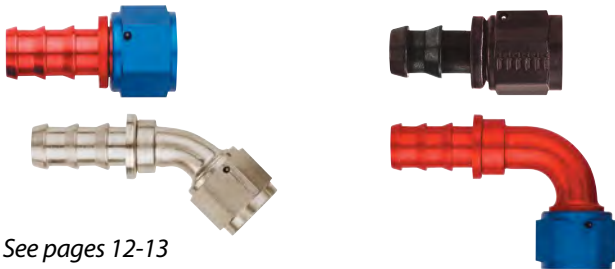
See pages 8-11

- Lightweight and easy to use design
- One-piece design
- Allows for improved flow
- Available in swivel and non-swivel
- Eliminates two leak points (brazed joints)
- Significantly improved appearance
- Assembled with ProCrimp® crimp machines

### Approved hose styles

- AQP® Stainless Steel Racing Hose
- StartLite® Racing Hose

## Aluminum Socketless™ Fittings



See pages 12-13

- Used with AQP Socketless hose
- Easy to assemble, no wrench required
- No clamp needed
- Reusable
- One-piece design
- Allows for improved flow
- Eliminates two potential leak points (brazed joints)
- Significantly improved appearance
- Electroless nickel plating or red/blue anodized finish

### Approved hose styles

- AQP® Socketless Racing Hose

## A/C Fittings



See page 15

- Nickel plated for an eye-appealing look and corrosion resistance
- Reusable to allow you to make your own assemblies
- Available refrigerant charge ports to allow you to position the ports where you want them
- Female O-ring pilot terminal ends fit perfectly with the majority of A/C components
- O-ring ferrule ensures a superior seal when assembled with our A/C hose

### Approved hose styles

- A/C Racing Hose

## Bulk or Retail Packaged Parts

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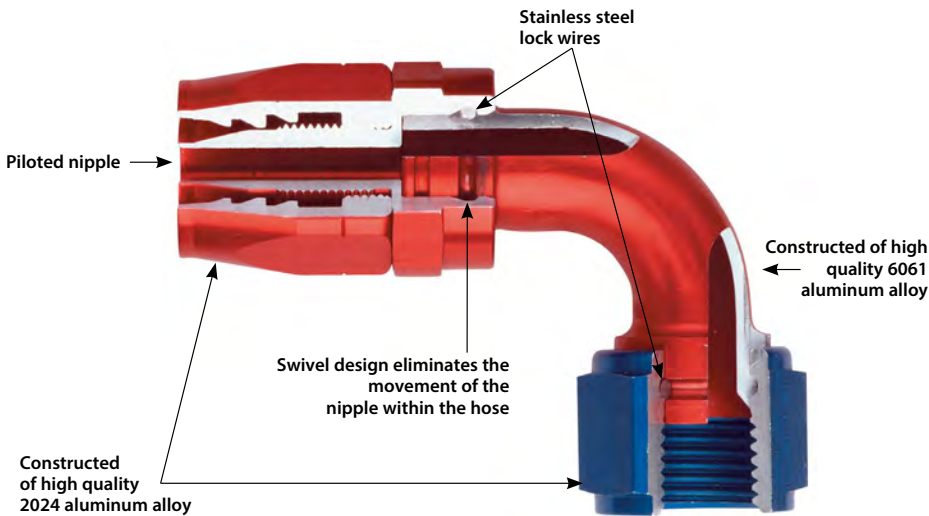
# Application Guide

## Compression-Style Design Provides Simple, Trouble-free Assembly

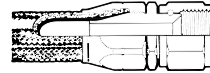
Danfoss' Aeroquip Performance Products anodized aluminum reusable fittings are engineered to match Danfoss' Aeroquip hose tolerances, providing superior performance. The smooth tube design allows excellent fluid flow. Their compression-style design provides simple, trouble-free assembly.

Danfoss' compression style design was specially designed for performance applications. They are reliable, easier to use and more forgiving than cutter-style fittings. A comparison of the two styles is shown at right.

For applications involving methanol and nitromethane fuel mixtures, Aeroquip offers zinc-plated carbon steel fittings designed precisely for these situations. These fittings feature a steel nipple, nut and tube with an anodized aluminum hose socket. High quality aluminum carburetor adapters and banjo fittings are also available.

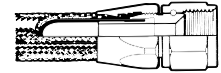


## Danfoss Compression Style Design



- Designed to be re-used without damage to the fitting
- Nipple pilot prevents damage to the inner tube
- More user friendly, for consistently excellent hose/fitting connections
- Nipple does not move with this design on swivel fittings

## Competition's Cutter Style Design

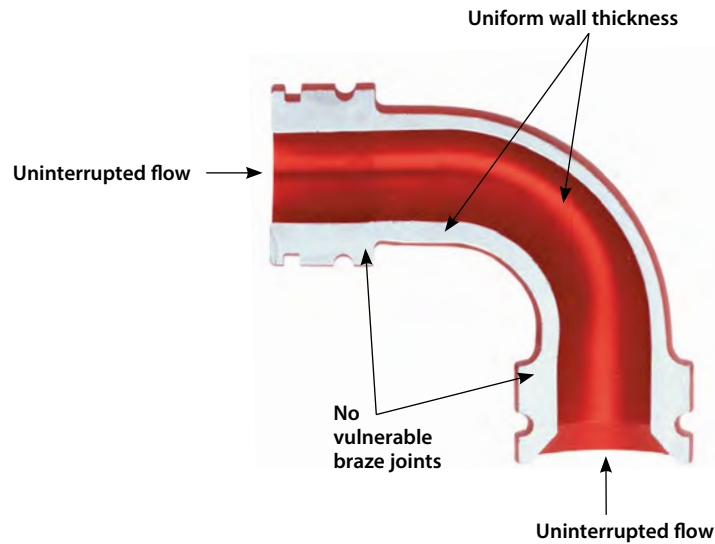


- Cutting edge dulls with each use, which can cause an incomplete connection
- For re-use the inner tube must be removed from the lip seal area without damage to the cutter. A damaged or dull cutter can mean a leaky fitting
- Excessive lube oil applied during installation can cause hydraulic lock in the lip seal area, preventing complete fitting connection
- When used with swivel style fittings, the nipple moves inside the hose, disrupting the integrity of this critical seal

## One-Piece Design\*

- Allows for improved flow
- Eliminates two leak points (braze joints)
- Significantly improved appearance

\*Available in the majority of Aeroquip Performance Products aluminum fittings. Contact Danfoss for additional information.



# AQP® Racing Hose and Fittings

## StartLite® Hose and Fittings

### AQP® Racing Hose

The most popular racing hose in the market for over 75 years – made in the U.S.A.



### Great Looks, Proven Performance.

**Stainless steel braid for superior performance.**

AQP Racing Hose is compatible with petroleum and synthetic lubricants, hydrocarbon fuels and liquid engine coolants. It operates at higher temperatures for longer periods. Light and flexible, it is easy to work with, and its stainless steel cover will ensure long-lasting durability. AQP Racing Hose also features an AQP elastomer inner tube that is resistant to oxidation, the effects of ozone and other various agents present in the air. Changes in physical properties due to shelf aging are nonexistent. Applications: Fuel, lube, coolant, air.

#### HOSE SPECIFICATIONS

Hose Dash Size	Hose I.D. in	Max. Hose O.D. in	Max. Operating Pressure psi	Weight Bend Radius in	Per Foot lbs	Vacuum Service in/hq	Bulk Part Number	Package Length Part Number							
								2 ft	3 ft	6 ft	10 ft	15 ft	20 ft	50 ft	REEL
-04	.22	.44	1000/750 <sup>1</sup>	2.00	.11	21	FBA0400	—	FCA0403	FCA0406	FCA0410	FCA0415	FCA0420	FCA0450	FBA0400RL
-06	.34	.55	1000/750 <sup>1</sup>	2.50	.16	21	FBA0600	—	FCA0603	FCA0606	FCA0610	FCA0615	FCA0620	FCA0650	FBA0600RL
-08	.44	.65	1000/750 <sup>1</sup>	3.50	.17	21	FBA0800	—	FCA0803	FCA0806	FCA0810	FCA0815	FCA0820	FCA0850	FBA0800RL
-10	.56	.80	1000/750 <sup>1</sup>	4.00	.21	28	FBA1000	—	FCA1003	FCA1006	FCA1010	FCA1015	FCA1020	FCA1050	FBA1000RL
-12	.69	.94	1000/750 <sup>1</sup>	4.50	.29	28	FBA1200	—	FCA1203	FCA1206	FCA1210	FCA1215	FCA1220	FCA1250	FBA1200RL
-16	.88	1.15	750/750 <sup>1</sup>	5.50	.38	28	FBA1600	—	FCA1603	FCA1606	FCA1610	FCA1615	FCA1620	FCA1650	FBA1600RL
-20	1.13	1.41	500	8.00	.49	21	FBA2000	—	FCA2003	FCA2006	FCA2010	FCA2015	FCA2020	—	—
-24	1.34	1.70	50	9.00	.80	21	FBA2400	FCA2402	FCA2403	FCA2406	—	—	—	—	—
-32	1.75	2.09	50	12.50	.98	15	FBA3200	FCA3202	FCA3203	FCA3206	—	—	—	—	—

**Construction:** AQP elastomer inner tube, partial stainless steel wire inner braid and a full stainless steel outer braid reinforcement

**Temperature Range:** Continuous operating temperature from -55 °F to +300 °F (-49 °C to +150 °C). See Page 31 for banjo fitting for fuel systems

### StartLite® Racing Hose

The lightweight alternative — 45% lighter than AQP® Racing Hose — made in the U.S.A.



### The Professional's Choice

#### Features:

- Up to 45% lighter than stainless steel braided hose
- Fire-resistant cover with aramid fiber
- AQP smooth bore inner tube
- -45 °F to 300 °F temperature rating
- Flexible bend radius
- Race proven — approved by NASCAR, NHRA, IHRA, ADRL, and other sanctioning bodies
- Three to five times better abrasion protection
- Non-swivel and swivel crimp fittings (no phase angles to calculate)
- Rated to 20 in/Hg or 28 in/Hg with stainless steel support coil

#### Applications:

- Fuel, lube, coolant, and air lines

#### HOSE SPECIFICATIONS

Hose Dash Size	Hose I.D. in	Hose O.D. in	Max. Operating Pressure psi	Min. Bend Radius in	Weight Per Foot lbs.	Vacuum Service in/hq	Bulk Part Number	Package Length Part Number					
								3 ft	6 ft	10 ft	15 ft	20 ft	50 ft
-04	.22	.43	500	2.00	.05	20	FBU0400	FCU0403	FCU0406	FCU0410	FCU0415	FCU0420	FCU0450
-06	.34	.55	500	2.50	.08	20	FBU0600	FCU0603	FCU0606	FCU0610	FCU0615	FCU0620	FCU0650
-08	.44	.64	500	3.50	.09	20	FBU0800	FCU0803	FCU0806	FCU0810	FCU0815	FCU0820	FCU0850
-10	.56	.80	500	4.00	.14	20	FBU1000	FCU1003	FCU1006	FCU1010	FCU1015	FCU1020	FCU1050
-12	.69	.93	350	4.50	.16	20	FBU1200	FCU1203	FCU1206	FCU1210	FCU1215	FCU1220	FCU1250
-16	.88	1.15	350	5.50	.19	20	FBU1600	FCU1603	FCU1606	FCU1610	FCU1615	FCU1620	FCU1650
-20	1.13	1.41	350	5.50	.25	20	FBU2000	FCU2003	FCU2006	FCU2010	FCU2015	FCU2020	FCU2050

**Construction:** AQP elastomer inner tube and fire-resistant hose construction

**Temperature Range:** -45 °F to +300 °F (-43 °C to +150 °C)

For ultimate weight savings, select AQP lightweight crimp fittings

See pages 42-46 for assembly instructions. AQP® Racing and StartLite® Racing Hoses are both qualified with the same reusable and crimp fittings on the following pages.

#### Bulk or Retail Packaged Parts

**FB**-prefixed part numbers indicate bulk-packaged products. **FC**-prefixed part numbers indicate carded/clam shelled (retail-packaged) products. Most products in this catalog can be ordered in either package style by changing the prefix accordingly.

## StreetLite Performance Hose



### STREETLITE PERFORMANCE HOSE

Hose Size	Hose I.D.		Hose O.D.		Operating Pressure		Min. Burst Pressure		Min. Bend Radius		Vacuum (without support coil)		Weight		Part Numbers Bulk and Cut Lengths			
	MM	IN	MM	IN	BAR	PSI	BAR	PSI	MM	IN	KPA	IN/HG	KG/M	LBS/FT	BULK	CUT 6 FT	CUT 10 FT	CUT 20 FT
04	5.60	0.22	11.2	0.44	35	500	140	2000	38.10	1.50	94.80	28.00	0.07	0.05	FBB0400	FCB0406	FCB0410	FCB0420
06	8.60	0.34	14.2	0.56	35	500	140	2000	50.80	2.00	94.80	28.00	0.12	0.08	FBB0600	FCB0606	FCB0610	FCB0620
08	10.90	0.43	16.8	0.66	35	500	140	2000	63.50	2.50	94.80	28.00	0.13	0.09	FBB0800	FCB0806	FCB0810	FCB0820
10	13.90	0.55	20.6	0.81	35	500	140	2000	88.90	3.50	94.80	28.00	0.18	0.12	FBB1000	FCB1006	FCB1010	FCB1020
12	16.50	0.65	23.10	0.91	24	350	72	1050	101.60	4.00	67.70	20.00	0.25	0.17	FBB1200	FCB1206	FCB1210	FCB1220
16	21.60	0.85	25.70	1.01	24	350	72	1050	139.70	5.50	50.80	15.00	0.30	0.20	FBB1600	FCB1606	FCB1610	FCB1620

AQP Racing, StartLite, and StreetLite are both qualified with the same reusable and crimp fittings on the following pages.

See pages 42-46 for assembly instructions.

#### HOSE SIZES

-4 through -16

#### CONSTRUCTION

HNBR inner tube, insulation layer, nylon barrier layer, and black single fabric braid cover with identification tracer

#### APPLICATION

Fuel (including E85), oil, coolant, and air

### Top level performance, headed to the street

It is all the hose you need. Performance of a professional in a multi-purpose hose designed for the street motor enthusiast.

- Reformulated tube for E85 fuel compatibility
- Near-zero permeation barrier eliminates gas smell
- Competitive market pricing for less stress on the wallet








# AQP® Racing Hose and Fittings






## StartLite® Racing Hose and Fittings



### STRAIGHT FITTING

Hose Size	Reusable Black Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable** Steel Swivel S.A.E. 37° (JIC/AN)	Aluminum Nickel-Plated Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Swivel S.A.E. 37° (JIC/AN)
					
	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number	Bulk Part Number
-04	—	—	FCM1011	—	FBM4211
-06	FCM4412	FCM1012	FCM1075	FCE1012	FBM4212
-08	FCM4413	FCM1013	FCM1076	FCE1013	FBM4213
-10	FCM4414	FCM1014	—	FCE1014	FBM4214
-12	FCM4415	FCM1015	—	FCE1015	FBM4215
-16	FCM4416	FCM1016	—	—	FBM4216
-20	—	FCM1017	—	—	FBM4217

### 30° ELBOW FITTING

Hose Size	Reusable Black Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Non-Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Non-Swivel S.A.E. 37° (JIC/AN)
					
	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number	Bulk Part Number
-06	FCM4472	FCM4072	—	FBM4272	—
-08	FCM4473	FCM4073	—	FBM4273	—
-10	FCM4474	FCM4074	—	FBM4274	FBM4174
-12	FCM4475	FCM4075	—	FBM4275	FBM4175
-16	FCM4476	FCM4076	—	—	—
-20	—	—	FCM1147	—	—



### Do not put your performance at risk

Do not mix and match hose and fitting manufacturers with your hose assemblies. Each manufacturer of hose and fittings builds their product to specific tolerances and does not recommend them for use with other brands. Doing this puts your performance at risk and voids any warranty on your product.



See pages 42-46 for assembly instructions. \*\*Aluminum socket

# AQP® Racing Hose and Fittings

## StartLite® Racing Hose and Fittings



### 45° ELBOW FITTING

	Reusable Black Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Non-Swivel S.A.E. 37° (JIC/AN)	Reusable** Steel Non-Swivel S.A.E. 37° (JIC/AN)	Nickel-Plated Aluminum Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Non-Swivel S.A.E. 37° (JIC/AN)
Hose Size	Packaged Part Number	Packaged Part Number	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number	Bulk Part Number
-04	—	—	—	FCM1021	—	—	FBM4121
-06	FCM4422	FCM4022	FCM1022	FCM1079	FCE4022	FBM4222	—
-08	FCM4423	FCM4023	FCM1023	FCM1080	FCE4023	FBM4223	—
-10	FCM4424	FCM4024	FCM1024	—	FCE4024	FBM4224	FBM4124
-12	FCM4425	FCM4025	FCM1025	—	FCE4025	FBM4225	FBM4125
-16	FCM4426	FCM4026	FCM1026	—	—	FBM4226	—
-20	—	—	FCM1027	—	—	—	FBM4127

### 60° ELBOW FITTING

	Reusable Black Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Non-Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Non-Swivel S.A.E. 37° (JIC/AN)
Hose Size	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number	Bulk Part Number
-06	FCM4482	FCM4082	—	FBM4282	—
-08	FCM4483	FCM4083	—	FBM4283	—
-10	FCM4484	FCM4084	—	FBM4284	FBM4184
-12	FCM4485	FCM4085	—	FBM4285	FBM4185
-16	FCM4486	FCM4086	—	—	—
-20	—	—	FCM1148	—	—

## Tech Tip

### Weight savings

Up to 12 lbs can be saved by using StartLite hose assemblies in lieu of a stainless steel braided hose assemblies on the average circle track car.

See pages 42-46 for assembly instructions.  
\*\*Aluminum socket

### Direct Port Fitting 45° ORB FITTING

Reusable Aluminum Swivel O-ring



Hose Size	Bulk Part Number	Thread Size
-08	FBM1348	9/16-18
-08	FBM1349	3/4-16
-10	FBM1350	1 1/16-12
-10	FBM1351	7/8-14
-12	FBM1352	7/8-14
-12	FBM1353	1 1/16-12



### Bulk or Retail Packaged Parts

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# AQP® Racing Hose and Fittings

## StartLite® Racing Hose and Fittings



### 90° ELBOW FITTING

	Reusable Black Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Non-Swivel S.A.E. 37° (JIC/AN)	Reusable** Steel Swivel S.A.E. 37° (JIC/AN)	Aluminum Nickel-Plated Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Non-Swivel S.A.E. 37° (JIC/AN)
Hose Size	Packaged Part Number	Packaged Part Number	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number	Bulk Part Number
-04	—	—	—	FCM1031	—	—	FBM4131
-06	FCM4432	FCM4032	FCM1032	FCM1083	FCE4032	FBM4232	—
-08	FCM4433	FCM4033	FCM1033	FCM1084	FCE4033	FBM4233	—
-10	FCM4434	FCM4034	FCM1034	—	FCE4034	FBM4234	FBM4134
-12	FCM4435	FCM4035	FCM1035	—	FCE4035	FBM4235	FBM4135
-16	FCM4436	FCM4036	FCM1036	—	—	FBM4236	—
-20	—	—	FCM1037	—	—	—	FBM4137

### 120° ELBOW FITTING

	Reusable Black Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Swivel S.A.E. 37° (JIC/AN)	Reusable Red/Blue Anodized Aluminum Non-Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Swivel S.A.E. 37° (JIC/AN)	Lightweight Crimp Non-Swivel S.A.E. 37° (JIC/AN)
Hose Size	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number	Bulk Part Number
-04	—	—	—	—	FBM4141
-06	FCM4442	FCM4042	FCM1042	FBM4242	—
-08	FCM4443	FCM4043	FCM1043	FBM4243	—
-10	FCM4444	FCM4044	FCM1044	FBM4244	FBM4144
-12	FCM4445	FCM4045	FCM1045	FBM4245	FBM4145
-16	FCM4446	FCM4046	FCM1046	FBM4246	—
-20	—	—	FCM1047	—	—

### Direct Port Fitting 90° MALE PIPE FITTING

Reusable Aluminum Swivel Male Pipe



Hose Size	Packaged Part Number	Pipe Thread Size
-06	FCM1343	3/8 NPTF
-08	FCM1344	1/2 NPTF
-12	FCM1345	3/4 NPTF

### Direct Port Fitting 90° ORB FITTING

Reusable Aluminum Swivel O-ring



Hose Size	Bulk Part Number	Thread Size
-08	FBM1355	9/16-18
-08	FBM1356	3/4-16
-10	FBM1357	1 1/16-12
-10	FBM1358	7/8-14
-12	FBM1359	7/8-14
-12	FBM1360	1 1/16-12

See pages 42-46 for assembly instructions. \*\*Aluminum socket

# AQP® Racing Hose and Fittings

## StartLite® Racing Hose and Fittings



### 150° ELBOW FITTING

Reusable  
Black Anodized  
Aluminum Swivel  
S.A.E. 37° (JIC/AN)



Reusable  
Red/Blue Anodized  
Aluminum Swivel  
S.A.E. 37° (JIC/AN)



Reusable  
Red/Blue Anodized  
Aluminum Non-Swivel  
S.A.E. 37° (JIC/AN)



Lightweight  
Crimp Swivel  
S.A.E. 37° (JIC/AN))



Hose Size	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number
-04	—	—	—	FBM4151 <sup>1</sup>
-06	FCM4452	FCM4052	FCM1052	FBM4252
-08	FCM4453	FCM4053	FCM1053	FBM4253
-10	FCM4454	FCM4054	FCM1054	FBM4254
-12	FCM4455	FCM4055	FCM1055	FBM4255
-16	FCM4456	FCM4056	FCM1056	FBM4256

### 180° ELBOW FITTING

Reusable  
Black Anodized  
Aluminum Swivel  
S.A.E. 37° (JIC/AN)



Reusable  
Red/Blue Anodized  
Aluminum Swivel  
S.A.E. 37° (JIC/AN)



Reusable  
Red/Blue Anodized  
Aluminum Non-Swivel  
S.A.E. 37° (JIC/AN)



Lightweight  
Crimp Swivel  
S.A.E. 37° (JIC/AN))



Hose Size	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number
-06	FCM4462	FCM4062	FCM1062	—
-08	FCM4463	FCM4063	FCM1063	FBM4263
-10	FCM4464	FCM4064	FCM1064	FBM4264
-12	FCM4465	FCM4065	FCM1065	FBM4265
-16	FCM4466	FCM4066	FCM1028	FBM4266

## Tech Tip

### Routing made easy with swivel design

Many hose assemblies require angled fittings on both ends to make a connection. Our angled fittings all have a swivel option that eliminates the need to calculate phase angles when attaching the ends and makes installation easier.

See pages 42-46 for assembly instructions.



### Bulk or Retail Packaged Parts

FB-prefixed part numbers indicate bulk-packaged products. FC-prefixed part numbers indicate carded/clam shelled (retail-packaged) products. Most products in this catalog can be ordered in either package style by changing the prefix accordingly.

# AQP® Racing Hose and Fittings

## StartLite® Racing Hose and Fittings

### AQP® Socketless™ Hose

The fastest and easiest to assemble.



### A Lightweight and Economical Choice

Quick and easy assembly that can save you time.

Danfoss' AQP Socketless Performance Hose and Fittings are extremely easy to work with. Connecting the two is a snap since not even a wrench is needed! Simply slip the hose onto the fittings. It is that simple.

Applications: Gasoline, fuel and lubricating oils, air, and water.

#### HOSE SPECIFICATIONS

#### ORDERING INFORMATION

Hose Dash Size	Hose I.D.	Hose O.D.	Max. Operating Pressure	Min. Bend Radius	Vacuum Service*	Bulk Part Number		Package Length Part Number				
						Blue	Black	Blue 15 FEET	Black 15 FEET	Blue 20 FEET	Black 20 FEET	REEL
-04	.25	.49	250	3.00	28	FBV0400	—	—	—	—	—	—
-06	.38	.62	250	3.00	28	FBV0600	FBN0600	FCV0615	FCN0615	FCV0620	FCN0620	FBV0600RL <sup>1</sup>
-08	.50	.75	250	5.00	28	FBV0800	FBN0800	FCV0815	FCN0815	FCV0820	FCN0820	FBV0800RL <sup>2</sup>
-10	.63	.91	250	6.00	18	FBV1000	FBN1000	FCV1015	FCN1015	FCV1020	FCN1020	—
-12	.75	1.03	250	7.00	18	FBV1200	FBN1200	FCV1215	FCN1215	FCV1220	FCN1220	—

**Construction:** AQP elastomer inner tube, textile braid reinforcement, AQP elastomer cover.

**Temperature Range:** -40 °F to +300 °F (-40 °C to +150 °C). Air not to exceed +250 °F (+121 °C) and water not to exceed +180 °F (+82 °C).

<sup>1</sup> Order in 560-foot increments.

<sup>2</sup> Order in 600-foot increments.

#### Features:

- Easy to assemble and disassemble
- No socket wrench required
- Lightweight
- Reusable
- Operating pressure for all sizes at 250 psi
- Never uses a clamp

#### STRAIGHT FITTING

Hose Size	Socketless Black Anodized Aluminum S.A.E. 37° (JIC/AN)		Socketless Red/Blue Anodized Aluminum S.A.E. 37° (JIC/AN)		Socketless Nickel-Plated Aluminum		Socketless Brass Male Pipe		Socketless Brass Male Flare S.A.E. 37° (JIC/AN)		Socketless Brass Swivel S.A.E. 37° (JIC/AN)		Socketless Brass Male Inverted Flare	
	Bulk Part Number	Packaged Part Number	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number	Thread Size	Bulk Part Number	Pipe Bulk Part Number	Bulk Part Number	Bulk Part Number			
-04	—	—	—	—	—	FBM1200	1/8	FBM1444	FBM1231*	FBM1211				
						FBM1201	1/4							
-06	FBL1512	FCL1512	FCM1512	FCE1512		FBM1207	1/4	FBM1445	FBM1222	FBM1212				
						FBM1202	3/8							
-08	FBL1513	FCL1513	FCM1513	FCE1513		FBM1206	3/8	—	FBM1233*	FBM1213				
						FBM1203	1/2							
-10	FBL1514	FCL1514	FCM1514	FCE1514		FBM1204	1/2	—	FBM1234*	FBM1214				
-12	FBL1515	FCL1515	FCM1515	FCE1515		FBM1205	3/4	—	FBM1225	—				

\*These fittings mate with both 37° and 45° male flares.

AQP® Socketless™ Hose is qualified with the socketless fittings above and on the following page.

See pages 42-46 for assembly instructions.

# AQP® Socketless™ Hose and Fittings



## 45° ELBOW FITTING

Socketless  
Black Anodized  
Aluminum  
S.A.E. 37° (JIC/AN)



Socketless  
Red/Blue Anodized  
Aluminum  
S.A.E. 37° (JIC/AN)



Socketless  
Nickel-Plated Aluminum  
S.A.E. 37° (JIC/AN)



Socketless  
Steel Swivel  
S.A.E. 37° (JIC/AN)



Hose Size	Bulk Part Number	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number
-04	—	—	—	—	FBM1438
-06	FBL1522	FCL1522	FCM1522	FCE1522	FBM1439
-08	FBL1523	FCL1523	FCM1523	FCE1523	FBM1440
-10	FBL1524	FCL1524	FCM1524	FCE1524	—
-12	FBL1524	FCL1524	FCM1525	FCE1525	—

## 90° ELBOW FITTING

Socketless  
Black Anodized  
Aluminum  
S.A.E. 37° (JIC/AN)



Socketless  
Red/Blue Anodized  
Aluminum  
S.A.E. 37° (JIC/AN)



Socketless  
Nickel-Plated Aluminum  
S.A.E. 37° (JIC/AN)



Socketless  
Steel Swivel  
S.A.E. 37° (JIC/AN)



Hose Size	Bulk Part Number	Packaged Part Number	Packaged Part Number	Packaged Part Number	Bulk Part Number
-04	—	—	—	—	FBM1441
-06	FBL1532	FCL1532	FCM1532	FCE1532	FBM1442
-08	FBL1533	FCL1533	FCM1533	FCE1533	FBM1443
-10	FBL1534	FCL1534	FCM1534	FCE1534	—
-12	FBL1534	FCL1534	FCM1535	FCE1535	—

## 120° ELBOW FITTING

Socketless  
Black Anodized  
Aluminum  
S.A.E. 37° (JIC/AN)



Socketless  
Red/Blue Anodized  
Aluminum  
S.A.E. 37° (JIC/AN)



Hose Size	Bulk Part Number	Packaged Part Number	Packaged Part Number
-06	FBL1542	FCL1542	FCM1542
-08	FBL1543	FCL1543	FCM1543
-10	FBL1544	FCL1544	FCM1544
-12	FBL1545	FCL1545	FCM1545

## 150° ELBOW FITTING

Socketless  
Black Anodized  
Aluminum  
S.A.E. 37° (JIC/AN)



Socketless  
Red/Blue Anodized  
Aluminum  
S.A.E. 37° (JIC/AN)



Hose Size	Bulk Part Number	Packaged Part Number	Packaged Part Number
-06	FBL1552	FCL1552	FCM1552
-08	FBL1553	FCL1553	FCM1553
-10	FBL1554	FCL1554	FCM1554
-12	FBL1555	FCL1555	FCM1555

## 180° ELBOW FITTING

Socketless  
Black Anodized  
Aluminum  
S.A.E. 37° (JIC/AN)



Socketless  
Red/Blue Anodized  
Aluminum  
S.A.E. 37° (JIC/AN)



Hose Size	Bulk Part Number	Packaged Part Number	Packaged Part Number
-06	FBL1562	FCL1562	FCM1562
-08	FBL1563	FCL1563	FCM1563
-10	FBL1564	FCL1564	FCM1564
-12	FBL1565	FCL1565	FCM1565

## STRAIGHT -08 TO 06<sup>1</sup>

Socketless  
Brass  
Female Flare



Hose Size	Bulk Part Number	Thread Size
-06	FBM1232	3/4-16

See pages 42-46 for assembly instructions. <sup>1</sup>These fittings mate with both 37° and 45° male flares.

### Bulk or Retail Packaged Parts

**FB**-prefixed part numbers indicate bulk-packaged products. **FC**-prefixed part numbers indicate carded/clam shelled (retail-packaged) products. Most products in this catalog can be ordered in either package style by changing the prefix accordingly.

# A/C Hose and Fittings

## A/C HOSE AND FITTINGS

Custom look and superior performance



### Even Our A/C Lines Look Cool.






Specifically designed for your A/C component applications.

This new and innovative product offers discriminating motorsport enthusiasts a superior hose and fitting combination specifically designed for A/C component applications. This attractive hose has a stainless steel outer braid with a nylon inner tube for superior refrigerant performance. Custom designed nickel-plated steel reusable fittings, with available charge ports, are an eye appealing compliment to complete these field serviceable hose assemblies.

Applications: Air conditioning

### HOSE SPECIFICATIONS

### ORDERING INFORMATION

Hose Dash Size						Bulk Part Number	Package	Length	Part Number
	INCHES	INCHES	PSI	INCHES	POUNDS				
-06	.33	.44	500	4.00	.08	FBF0600	FCF0603	FCF0606	FCF0609
-08	.43	.54	500	5.25	.10	FBF0800	FCF0803	FCF0806	FCF0809
-10	.51	.63	500	6.50	.14	FBF1000	FCF1003	FCF1006	FCF1009

Temperature Range: -40 °F to +250 °F (-40 °C to +121 °C).



### Look As Cool As You Feel.

Your street rod is "cool" because of your demanding attention to detail. And although perfection is your goal, up until now you have been forced to accept industrial-looking A/C hose and fittings, or worse yet, stainless steel braided versions that did not work.

Danfoss' Aeroquip Performance Products has responded to your endless pursuit of detail and perfection with the development of an A/C hose and fitting product designed specifically for street rod A/C components, and your impeccable standards.

#### Features:

- Superior appearance with stainless steel covered hose available in sizes -6, -8, and -10
- Nylon tube for outstanding refrigerant performance
- Nickel-plated steel reusable fittings, with reusable charge ports, offer field serviceability
- Female O-ring pilot terminal ends for precise connections with existing A/C components
- O-ring seal between the hose and fitting nipple increases fitting and hose assembly integrity
- Trusted Aeroquip Performance Product quality
- Extensively field and lab tested with R-134a refrigerant
- Reusable fittings allow you to make custom hose assemblies for your specific applications

## Tech Tip

### Lubricant selection

Always be sure to use the correct system lubricant for your A/C system. Most R-12 systems use mineral oil, while most R-134a systems use a synthetic lubricant called Polyalkylene Glycol (PAG).

A/C hose is qualified with the A/C fittings on the following page.

See pages 42-46 for assembly instructions.

# A/C Hose and Fittings



## STRAIGHT FITTING

Reusable Nickel-Plated Steel Female O-ring Pilot



Hose Size      Packaged Part Number

-06	FCE1712
-08	FCE1713
-10	FCE1714

Reusable Nickel-Plated Steel Female O-ring Pilot w/ Charge Port



Packaged Part Number

FCE1812 (High Side)
FCE1813 (High Side)
FCE1814 (Low Side)

Reusable Nickel-Plated Steel Hose to Hose w/ Charge Port



Packaged Part Number

FCE1912
FCE1913
FCE1914

## 45° FITTING

Reusable Nickel-Plated Steel Female O-ring Pilot



Hose Size      Packaged Part Number

-06	FCE1722
-08	FCE1723
-10	FCE1724

## 90° FITTING

Reusable Nickel-Plated Steel Female O-ring Pilot



Hose Size      Packaged Part Number

-06	FCE1732
-08	FCE1733
-10	FCE1734

Reusable Nickel-Plated Steel Female O-ring Pilot with Charge Port



Packaged Part Number

FCE1832
FCE1833
FCE1834

## 135° FITTING

Reusable Nickel-Plated Steel Female O-ring Pilot



Hose Size      Packaged Part Number

-08	FCE1793
-10	FCE1794

Reusable Nickel-Plated Steel Female O-ring Pilot with Charge Port



Packaged Part Number

FCE1893
FCE1894

## REPLACEMENT BRASS SLEEVE\*



Size	Part Number	Quantity
-06	FCM2430	6
-08	FCM2431	6
-10	FCM2432	6

\*The brass sleeves have a HNBR O-ring inside.

## REPLACEMENT O-rings (HNBR)



Size	Part Number	Quantity
-06	FCM3416	6
-08	FCM3417	6
-10	FCM3418	6

See pages 42-46 for assembly instructions.

## Bulk or Retail Packaged Parts

FB-prefixed part numbers indicate bulk-packaged products. FC-prefixed part numbers indicate carded/clam shelled (retail-packaged) products. Most products in this catalog can be ordered in either package style by changing the prefix accordingly.





# Racing Hose and Fittings

## RACING HOSE, PTFE

For the most extreme applications



### Our Strongest, Most Compatible Hose.

Superior fluid compatibility, abrasion and corrosion resistance for reliable service.

Made with an extruded PTFE inner tube that is compatible with a wide range of fluids, including hydraulic brake fluids. The hose has a bright stainless steel wire-braid cover that resists abrasion and corrosion, providing optimum dependability.

Applications: Offroad brake, transmission, clutch, gauge, N2O, power steering, hydraulic.

### HOSE SPECIFICATIONS

### ORDERING INFORMATION

Hose Dash Size	Hose Dimensions		Maximum Operating Pressure (PSI)	Minimum Bend Radius (INCHES)	Vacuum Service (INCHES/HG)	Bulk Part Number	Package Length				
	Hose I.D. (INCHES)	Hose O.D. (INCHES)					3 FEET	6 FEET	10 FEET	15 FEET	20 FEET
-03	.14	.25	3,000	1.50	28	FBC0300	FCC0303	FCC0306	FCC0310	FCC0315	FCC0320
-04	.19	.30	3,000	2.00	28	FBC0400	FCC0403	FCC0406	FCC0410	FCC0415	FCC0420
-06	.32	.43	2,500	4.00	28	FBC0600	FCC0603	FCC0606	FCC0610	FCC0615	FCC0620
-08	.42	.54	2,000	5.25	28	FBC0800	FCC0803	FCC0806	FCC0810	FCC0815	FCC0820

**Construction:** Extruded PTFE inner tube with stainless steel wire-braid cover.

**Temperature Range:** -100 °F to +450 °F (-73 °C to +232 °C).



## Tech Tip

### Hose assembly

After cutting PTFE and A/C hose, be sure to clean all burrs or debris from the end of the hose. This helps to ensure a secure and leak free seal between the tube and sleeve.

### Features:

- Unmatched strength and ultimate flexibility
- Functions smoothly at extreme temperatures
- Withstands constant flexing and vibration
- Resists fatigue and failure under high pressure
- Carries fluids of all kinds without contamination



See pages 42-46 for assembly instructions.

# Racing Hose and Fittings



## STRAIGHT FITTING

Hose Size	Reusable Steel Male Pipe1	Reusable Steel Swivel S.A.E. 37° (JIC/AN)1	Reusable Steel Swivel S.A.E. 45°	Reusable Steel Inverted Flare S.A.E. Male	Reusable Stainless Steel Swivel S.A.E. 37° (JIC/AN)	Steel Crimp S.A.E. 37° (JIC/AN)
-03	—	FCM1100	—	—	FCM1130	FBM1124
-04	FCM3088 FCM3089	1/8 1/4	FCM1101	—	FCM1102	FBM1125
-06	—	—	FCM1103	FCM1134	FCM1137 FCM1138	—
-08	—	—	FCM1104	FCM1135	FCM1139	—

## STRAIGHT

Hose Size	Reusable Steel 10mm Banjo
-03	FCM3091

## 17° ELBOW

Hose Size	Reusable Steel 10mm Banjo
-03	FCM3092

## 45° ELBOW

Hose Size	Reusable Steel S.A.E. 37° (JIC/AN)	Reusable Steel S.A.E. 45°	Reusable Steel Inverted Flare S.A.E. Male	Forged Adjustable Reusable Stainless Steel Swivel S.A.E. 37° (JIC/AN)	Steel Crimp S.A.E. 37° (JIC/AN)
-03	FCM1110	—	—	FCM1140	FBM1126
-04	FCM1111	—	—	FCM1146	FBM1127
-06	FCM1112	FCM1114	FCM1155 FCM1141	—	—
-08	FCM1113 <sup>1</sup>	FCM1113 <sup>1</sup>	FCM1142	—	—

## 90° ELBOW

Hose Size	Reusable Steel S.A.E. 37° (JIC/AN)	Reusable Steel S.A.E. 45°	Reusable Steel Inverted Flare S.A.E. Male	Forged Adjustable Reusable Stainless Steel Swivel S.A.E. 37° (JIC/AN)	Steel Crimp S.A.E. 37° (JIC/AN)
-03	FCM1120	—	—	FCM1150	FBM1128
-04	FCM1121	—	—	FCM1151	FBM1129
-06	FCM1122	FCM1136	FCM1143 FCM1144	—	—
-08	FCM1123 <sup>1</sup>	FCM1123 <sup>1</sup>	FCM1145	—	—

Replacement Sleeves for PTFE Fittings

## REPLACEMENT SLEEVES (5 PER PACKAGE)

Brass Packaged Part Number	Hose Fitting Dash Size
FCM3720	-03
FCM3721	-04
FCM3823	-06
FCM3824	-08

Stainless Steel Packaged Hose Fitting Part Number	Hose Fitting Dash Size
FCM3821	-03
FCM3822	-04

See pages 42-46 for assembly instructions.

<sup>1</sup>This fitting mates with both 37° (AN) and 45° male flares.

# AQP® High Pressure Hose and Fittings

## AQP® High Pressure Hose and Fittings (Power Steering)



### Abrasion resistant fabric cover for longer life.

AQP High Pressure Hose is ideal for power steering, hydraulics, air, fuel, and lubricating oil applications. It has a blue abrasion resistant fabric cover and an AQP synthetic rubber inner tube. It uses standard steel and brass reusable fittings.

Applications: Power steering lines, hydraulics, air, gasoline, fuel and lubricating oils, over-the-wall air tools and DOT-approved air brake.

### HOSE SPECIFICATIONS

Hose Dash Size	Hose Dimensions		Maximum Operating Pressure (PSI)	Minimum Bend Radius (INCHES)	Vacuum Service (INCHES/HG)	Bulk Part Number	Package Length Part Number			
	Hose I.D. (INCHES)	Hose O.D. (INCHES)					6 FEET	10 FEET	15 FEET	20 FEET
-06	.31	.67	2,250	4.00	28	FBG0600	FCG0606	FCG0610	FCG0615	FCG0620
-08	.41	.77	2,000	4.62	28	FBG0800	FCG0806	FCG0810	FCG0815	FCG0820
-10	.50	.92	1,750	5.50	28	FBG1000	FCG1006	FCG1010	FCG1015	FCG1020
-12	.62	1.08	1,500	6.50	28	FBG1200	FCG1206	FCG1210	FCG1215	FCG1220

### ORDERING INFORMATION

**Construction:** AQP elastomer inner tube, polyester inner braid, single wire-braid reinforcement and blue polyester braid cover.

**Temperature Range:** Suitable for many applications between -55 °F to +300 °F (-49 °C to +150 °C), except air +250 °F (+121 °C).

### STRAIGHT FITTING

Reusable Steel Swivel S.A.E. 37° (JIC/AN)



Reusable Steel Male Inverted Flare S.A.E.



Hose Size	Bulk Part Number	Thread Size	Bulk Part Number	Thread Size
-06	FBM1302	9/16-18	FBM1363	5/8-18
-08	FBM1305	3/4-16	FBM1365	3/4-18
-10	FBM1307	7/8-14	—	—
-12	FBM1310	1 1/16-12	—	—

### 45° ELBOW FITTING

Reusable Steel S.A.E. 37° (JIC/AN)



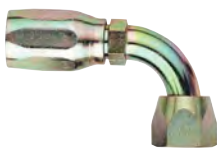
Reusable Steel Male Inverted Flare S.A.E.



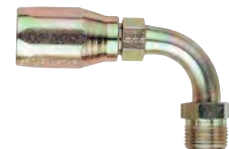
Hose Size	Bulk Part Number	Thread Size	Bulk Part Number	Thread Size
-06	FBM1386	9/16-18	FBM1382	5/8-18
-08	FBM1384	3/4-16	FBM1383	3/4-18
-10	FBM1338	7/8-14	—	—
-12	FBM1339	1 1/16-12	—	—

### 90° ELBOW FITTING

Reusable Steel S.A.E. 37° (JIC/AN)





Reusable Steel Male Inverted Flare S.A.E.



Hose Size	Bulk Part Number	Thread Size	Bulk Part Number	Thread Size
-06	FBM1389	9/16-18	FBM1392	5/8-18
-08	FBM1387	3/4-16	FBM1394	3/4-18
-10	FBM1374	7/8-14	—	—
-12	FBM1376	1 1/16-12	—	—



### HIGH PRESSURE ADAPTERS

#### Metric Conversion

A	B	Steel Packaged Dash Part Number	"A" Dash Size	"B" Size
		FCM2608	-06	M16 x 1.5
		FCM2609	-06	M18 x 1.5

Note: Used for Saginaw Power Steering Adapter (metric); also G.M. fuel injection conversion adapter for metric O-ring style porting

#### Inverted Flare

A	B	Steel Packaged Dash Part Number	"A" Dash Size	"B" Size
		FCM2963	-06	1/2-20
		FCM2964	-06	5/8-18
		FCM2965	-06	1 1/16-18

See pages 42-46 for assembly instructions.

# Adapters

## Tech Tip

### Too tight and leaking

One of the most common ways the seat or cone on aluminum fittings and adapters can be easily damaged is by over-tightening (see Torque specifications information on page 49). If a fitting has been over-tightened, it may be damaged and prone to leaks. Dirt and debris on the sealing surface are also common sources of leaks. Always use Danfoss' Aeroquip Performance Products dust caps (Page 36) when disconnecting a hose or fitting to help keep contaminants out of hose and adapters.



### AN to Pipe Fittings MALE AN TO PIPE (AN 816)

Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Dash Size INCHES
FCM2000	FCM5000	FCE2000	FCM2511	-03	1/8
FCM2001	FCM5001	FCE2001	FCM2512	-04	1/8
FCM2002	FCM5002	FCE2002	FCM2515	-04	1/4
FCM2371	—	—	FCM2519	-04	3/8
—	—	—	FCM2524	-04	1/2
—	—	—	FCM2513	-05	1/8
—	—	—	FCM2516	-05	1/4
—	—	—	FCM2520	-05	3/8
FCM2003	FCM5003	FCE2003	FCM2514	-06	1/8
FCM2004	FCM5004	FCE2004	FCM2517	-06	1/4
FCM2005	FCM5005	FCE2005	FCM2521	-06	3/8
FCM2013	FCM5013	FCE2013	FCM2525	-06	1/2
—	—	—	FCM2529	-06	3/4
FCM2006	FCM5006	FCE2006	FCM2518	-08	1/4
FCM2007	FCM5007	FCE2007	FCM2522	-08	3/8
FCM2008	FCM5008	FCE2008	FCM2526	-08	1/2
FCM2372	—	—	FCM2530	-08	3/4
FCM2185	FCM5185	FCE2185	FCM2523	-10	3/8
FCM2009	FCM5009	FCE2009	FCM2527	-10	1/2
—	—	—	FCM2531	-10	3/4
FCM2010	FCM5010	FCE2010	FCM2528	-12	1/2
FCM2011	FCM5011	FCE2011	FCM2532	-12	3/4
FCM2014	FCM5014	FCE2014	FCM2534	-12	1
—	—	—	FCM2539	-12	1 ¼
—	—	—	FCM2544	-12	1 ½
FCM2015	FCM5015	FCE2015	FCM2533	-16	3/4
FCM2012	FCM5012	FCE2012	FCM2535	-16	1
—	—	—	FCM2540	-16	1 ¼
—	—	—	FCM2545	-16	1 ½
—	—	—	FCM2536	-20	1
FCM2374	—	—	FCM2541	-20	1 ¼
—	—	—	FCM2546	-20	1 ½
—	—	—	FCM2537	-24	1
—	—	—	FCM2542	-24	1 ¼
—	—	—	FCM2547	-24	1 ½
—	—	—	FCM2538	-32	1
—	—	—	FCM2543	-32	1 ¼

### AN TO PIPE PRESSURE GAUGE ADAPTER

Aluminum Blue Anodized Packaged Part Number	"A" Dash Size	"B" Pipe Size INCHES	NPT Port Size INCHES
FCM2276	-6	1/4	1/8
FCM2277	-6	3/8	1/8
FCM2278	-8	1/4	1/8
FCM2279	-8	3/8	1/8

AN numbers are for configuration reference only.

# Adapters



## 45° MALE AN TO PIPE (AN 823)

Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Dash Size INCHES
FCM2020	FCM5020	FCE2020	FCM2581	-03	1/8
FCM2021	FCM5021	FCE2021	FCM2582	-04	1/8
FCM2440	—	—	FCM2584	-04	1/4
FCM2441	—	—	FCM2588	-04	3/8
—	—	—	FCM2583	-05	1/8
—	—	—	FCM2585	-05	1/4
FCM2022	FCM5022	FCE2022	FCM2586	-06	1/4
FCM2442	—	—	FCM2589	-06	3/8
FCM2443	—	—	FCM2592	-06	1/2
FCM2444	—	—	FCM2587	-08	1/4
FCM2023	FCM5023	FCE2023	FCM2590	-08	3/8
FCM2445	—	—	FCM2593	-08	1/2
FCM2446	—	—	FCM2596	-08	3/4
FCM2447	—	—	FCM2591	-10	3/8
FCM2024	FCM5024	FCE2024	FCM2594	-10	1/2
FCM2448	—	—	FCM2597	-10	3/4
FCM2449	—	—	FCM2595	-12	1/2
FCM2025	FCM5025	FCE2025	FCM2598	-12	3/4
FCM2450	—	—	FCM2600	-12	1
—	—	—	FCM2599	-16	3/4
FCM2026	—	—	FCM2601	-16	1
—	—	—	FCM2602	-20	1
FCM2451	—	—	FCM2603	-20	1 ¼

## FEMALE PIPE TO MALE AN



Steel Packaged Part Number	"A" Dash Size	"B" Dash Size INCHES
FCM2719	-03	1/8
FCM2720	-03	1/4
FCM2721	-04	1/8
FCM2722	-05	1/8
FCM2723	-04	1/4
FCM2724	-05	1/4
FCM2725	-06	1/4
FCM2726	-08	1/4
FCM2727	-06	3/8
FCM2728	-08	3/8
FCM2729	-06	1/2
FCM2730	-08	1/2
FCM2731	-10	1/2
FCM2732	-12	1/2
FCM2733	-08	3/4
FCM2734	-10	3/4
FCM2735	-12	3/4
FCM2736	-16	1
FCM2737	-20	1 ¼

AN numbers are for configuration reference only.

### Bulk or Retail Packaged Parts

FB-prefixed part numbers indicate bulk-packaged products. FC-prefixed part numbers indicate carded/clam shelled (retail-packaged) products. Most products in this catalog can be ordered in either package style by changing the prefix accordingly.



## 90° AN TO PIPE (AN 822)

Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Dash Size INCHES
FCM2030	FCM5030	FCE2030	FCM2610	-03	1/8
FCM2031	FCM5031	FCE2031	FCM2611	-04	1/8
FCM2032	FCM5032	FCE2032	FCM2614	-04	1/4
—	—	—	FCM2618	-04	3/8
—	—	—	FCM2624	-04	1/2
—	—	—	FCM2612	-05	1/8
—	—	—	FCM2615	-05	1/4
—	—	—	FCM2619	-05	3/8
FCM2033	FCM5033	FCE2033	FCM2613	-06	1/8
FCM2034	FCM5034	FCE2034	FCM2616	-06	1/4
FCM2035	FCM5035	FCE2035	FCM2620	-06	3/8
FCM2290	—	—	FCM2625	-06	1/2
FCM2036	FCM5036	FCE2036	FCM2617	-08	1/4
FCM2037	FCM5037	FCE2037	FCM2621	-08	3/8
FCM2038	FCM5038	FCE2038	FCM2626	-08	1/2
FCM2291	—	—	FCM2629	-08	3/4
FCM2016	FCM5016	FCE2016	FCM2622	-10	3/8
FCM2039	FCM5039	FCE2039	FCM2627	-10	1/2
FCM2292	—	—	FCM2630	-10	3/4
—	—	—	FCM2623	-12	3/8
FCM2017	FCM5017	FCE2017	FCM2628	-12	1/2
FCM2040	FCM5040	FCE2040	FCM2631	-12	3/4
FCM2293	—	—	FCM2633	-12	1
FCM2018	—	—	FCM2632	-16	3/4
FCM2041	—	—	FCM2634	-16	1
—	—	—	FCM2636	-16	1 ¼
—	—	—	FCM2635	-20	1
FCM2294	—	—	FCM2637	-20	1 ¼
—	—	—	FCM2639	-20	1 ½
—	—	—	FCM2638	-24	1 ¼



# Adapters

## AN to AN Fittings

### FLARE UNION (AN 815)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2050	FCM5050	FCE2050	FCM2750	-03	-03
FCM2051	FCM5051	FCE2051	FCM2751	-04	-04
—	—	—	FCM2753	-05	-05
FCM2052	FCM5052	FCE2052	FCM2756	-06	-06
FCM2053	FCM5053	FCE2053	FCM2759	-08	-08
FCM2054	FCM5054	FCE2054	FCM2761	-10	-10
FCM2055	FCM5055	FCE2055	FCM2763	-12	-12
FCM2056	FCM5056	FCE2056	FCM2765	-16	-16
—	—	—	FCM2766	-20	-20

### UNION REDUCER (AN 919)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2048	FCM5048	FCE2048	FCM2749	-04	-03
—	—	—	FCM2752	-05	-04
FCM2156	FCM5156	FCE2156	FCM2754	-06	-04
—	—	—	FCM2755	-06	-05
FCM2049	FCM5049	FCE2049	FCM2757	-08	-04
FCM2160	FCM5160	FCE2160	FCM2758	-08	-06
FCM2188	—	—	—	-10	-04
FCM2162	FCM5162	FCE2162	—	-10	-06
FCM2163	FCM5163	FCE2163	FCM2760	-10	-08
FCM2189	—	—	—	-12	-04
FCM2165	—	—	—	-12	-06
FCM2166	FCM5166	FCE2166	—	-12	-08
FCM2167	FCM5167	FCE2167	FCM2762	-12	-10
FCM2169	—	—	—	-16	-10
FCM2170	FCM5170	FCE2170	FCM2764	-16	-12

### REDUCER AN FLARE SWIVEL/AN FLARE (JIC/AN)



Steel Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2408	-06	-04
FCM2409	-08	-04
FCM2410	-08	-06
FCM2411	-10	-06
FCM2413	-12	-06
FCM2414	-12	-08
FCM2416	-16	-06

### REDUCER AN FLARE/AN FLARE (JIC/AN)



Steel Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2421	-10	-08
FCM2422	-12	-10

AN numbers are for configuration reference only.



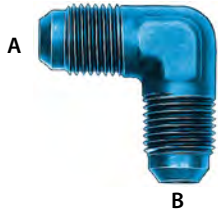
## Tech Tip

### AN (Army-Navy)

The AN (Army-Navy) standard was established many years ago by the U.S. military to set a common measurement for hose and fittings. It designates the outside diameter (O.D.) of the ridged metal tube that is compatible with each size of fitting. Still today, this AN dash standard is the benchmark measurement for military, industrial and the performance hose applications. These dash sizes are expressed as the numerator of the fraction, with the denominator always being 16. For example, a -04 port is 4/16 or 1/4-inch.

# Adapters

## 90° ELBOW UNION (AN 821)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2186	FCM5186	FCE2186	-03	-03
FCM2119	FCM5119	—	-04	-04
FCM2120	FCM5120	FCE2120	-06	-06
FCM2190	FCM5190	FCE2190	-08	-08
FCM2191	—	—	-12	-12

## 90° MALE AN TO AN PRESSURE GAUGE ADAPTER



Blue Anodized Packaged Part Number	"A" Dash Size	"B" Dash Size	NPT Port Size INCHES
FCM2272	-6	-6	1/8
FCM2273	-8	-8	1/8
FCM2274	-10	-10	1/8

## AN Swivel Adapters FEMALE FLARE SWIVEL



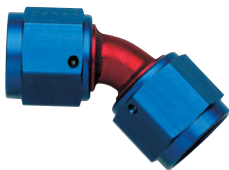
Aluminum Blue Anodized Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2914	-04	-04
FCM2915	-06	-06
FCM2916	-08	-08
FCM2917	-10	-10
FCM2918	-12	-12
FCM2919	-16	-16

## 45° MALE AN TO FEMALE SWIVEL FLARE



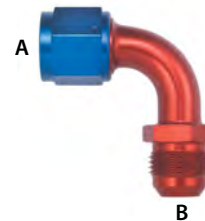
Aluminum Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM3148	-6	-6
FCM3149	-8	-8
FCM3150	-10	-10
FCM3151	-12	-12

## 45° FEMALE FLARE SWIVEL



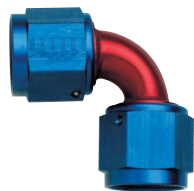
Aluminum Blue/Red Anodized Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2971	-06	-06
FCM2972	-08	-08
FCM2973	-10	-10
FCM2974	-12	-12
FCM2975	-16	-16

## 90° MALE AN TO FEMALE SWIVEL FLARE



Aluminum Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM3155	-6	-6
FCM3156	-8	-8
FCM3157	-10	-10
FCM3158	-12	-12

## 90° FEMALE FLARE SWIVEL



Aluminum Blue/Red Anodized Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2978	-06	-06
FCM2979	-08	-08
FCM2980	-10	-10
FCM2981	-12	-12
FCM2982	-16	-16



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### Bulk or Retail Packaged Parts

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# Adapters

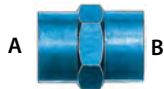
## Pipe to Pipe

### MALE PIPE NIPPLE (AN 911)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Pipe Size INCHES	"B" Pipe Size INCHES
FCM2132	FCM5132	FCE2132	1/8	1/8
FCM2133	FCM5133	FCE2133	1/4	1/4
FCM2134	FCM5134	FCE2134	3/8	3/8
FCM2135	FCM5135	FCE2135	1/2	1/2

### PIPE COUPLING (AN 910)



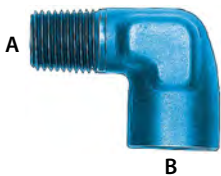
Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Pipe Size INCHES	"B" Pipe Size INCHES
FCM2129	FCM5129	FCE2129	1/8	1/8
FCM2130	FCM5130	FCE2130	1/4	1/4
FCM2131	FCM5131	—	3/8	3/8

### PIPE BUSHING (AN 912)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Pipe Size INCHES	"B" Pipe Size INCHES
FCM2136	FCM5136	FCE2136	1/4	1/8
FCM2137	FCM5137	FCE2137	3/8	1/4
FCM2138	FCM5138	FCE2138	3/8	1/8
FCM2139	FCM5139	FCE2139	1/2	3/8
FCM2140	FCM5140	FCE2140	1/2	1/4
FCM2141	FCM5141	FCE2141	1/2	1/8
FCM2144	—	—	3/4	1/4
FCM2143	—	—	3/4	3/8
FCM2142	FCM5142	FCE2142	3/4	1/2
FCM2146	—	—	1	1/2
FCM2145	—	—	1	3/4

### 90° ELBOW, FEMALE TO MALE PIPE ELBOW (AN 914)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Pipe Size INCHES	"B" Pipe Size INCHES
FCM2147	FCM5147	FCE2147	1/8	1/8
FCM2148	FCM5148	—	1/4	1/4
FCM2149	FCM5149	—	3/8	3/8

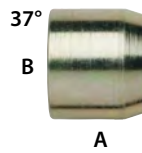
## Tube Fittings

### VERSIL-FLARE™ FLARELESS TUBE NUT<sup>1</sup>



Part Number	Dash Size	Tube O.D.	Thread	A
FCM2496	-04	.25	7/16-20	.82
FCM2497	-06	.38	9/16-18	.86
FCM2498	-08	.50	3/4-16	1.08
FCM2499	-10	.63	7/8-14	1.12
FCM2500	-12	.75	1 1/16-12	1.35

### VERSIL-FLARE™ FLARELESS TUBE FERRULE<sup>1</sup>



Part Number	Dash Size	Tube O.D.	A	B
FCM2491	-04	.25	.82	.25
FCM2492	-06	.38	.86	.38
FCM2493	-08	.50	1.08	.50
FCM2494	-10	.63	1.12	.62
FCM2495	-12	.75	1.36	.75


<sup>1</sup>Versil-Flare tube nut and tube sleeve are only to be used together.

AN numbers are for configuration reference only.




# Adapters

## TUBE NUT (AN 818)<sup>1</sup>


	Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	No. Per Pkg. Alum.	No. Per Pkg. Steel
	FCM3554	FCM5554	FCM3591	-03	6	1
	FCM3555	FCM5555	FCM3570	-04	6	1
	—	—	FCM3571	-05	—	1
	FCM3675	FCM5675	FCM3572	-06	2	1
	FCM3676	—	FCM3573	-08	2	1
	FCM3677	FCM5677	FCM3574	-10	2	1
	FCM3678	FCM5678	FCM3575	-12	2	1
	—	—	FCM3576	-14	—	1
	FCM3829	FCM5829	FCM3577	-16	—	1
	FCM3830	FCM5830	FCM3578	-20	—	1

## Caps and Plugs

### CAP (AN 929)<sup>2</sup>

	Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	No. Per Pkg. Alum.	No. Per Pkg. Steel
	FCM3751	FCM5751	FCM3479	-03	2	6
	FCM3752	FCM5752	FCM3480	-04	2	6
	—	—	FCM3601	-05	—	2
	FCM3740	FCM5740	FCM3602	-06	1	2
	FCM3741	FCM5741	FCM3603	-08	1	2
	FCM3742	FCM5742	FCM3604	-10	1	2
	FCM3743	FCM5743	FCM3605	-12	1	2
	FCM3744	FCM5744	FCM3566	-16	1	1
	FCM3567	FCM5567	FCM3567	-20	—	1

### O-ring BOSS PLUG (AN 814)

	Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	"A" Dash Size
	FCM3722	FCM5722	-03
	FCM3723	FCM5723	-04
	FCM3724	FCM5724	-06
	FCM3725	FCM5725	-08
	FCM3726	FCM5726	-10
	FCM3727	FCM5727	-12
	FCM3827	FCM5827	-16
	FCM3828	FCM5828	-20


For replacement O-rings see page 36.

## Tech Tip


### Abrasion concerns

Abrasion is one of the leading causes of hose failures. AQP Racing Hose offers a great steel "armor cover", and StartLite offers the industry's best abrasion resistance of any lightweight hose. Regardless of the type of hose, always route the hose correctly and use support clamps where needed. See page 50 for routing tips.


## TUBE SLEEVE (AN 819)<sup>1</sup>

	Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	Number Per Package
	FCM3669	FCM5669	FCM3667	-03	6
	FCM3670	FCM5670	FCM3668	-04	6
	—	—	FCM3679	-05	2
	FCM3671	FCM5671	FCM3680	-06	2
	FCM3672	FCM5672	FCM3681	-08	2
	FCM3673	FCM5673	FCM3682	-10	2
	FCM3674	FCM5674	FCM3683	-12	2
	—	—	FCM3696	-14	1
	FCM3831	FCM5831	FCM3697	-16	1
	FCM3832	FCM5832	FCM3698	-20	1

## ALLEN HEAD PIPE PLUG (AN 932)

	Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	"A" Pipe Size INCHES	Number Per Package
	FCM3684	FCM5684	1/16	2
	FCM3685	FCM5685	1/8	2
	FCM3686	FCM5686	1/4	2
	FCM3687	FCM5687	3/8	2
	FCM3749	FCM5749	1/2	1
	FCM3750	FCM5750	3/4	1

## FLARE PLUG (AN 806)

	Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Steel Packaged Part Number	"A" Dash Size
	FCM3712	FCM5712	FCM3701	-03
	FCM3713	FCM5713	FCM3702	-04
	FCM3714	FCM6714	FCM3703	-06
	FCM3715	FCM5715	FCM3704	-08
	FCM3716	FCM5716	FCM3705	-10
	FCM3717	FCM5717	FCM3706	-12
	FCM3718	FCM5718	FCM3707	-16
	FCM3719	FCM5719	FCM3708	-20



<sup>1</sup>Tube nut and tube sleeve are only to be used together.

<sup>2</sup>Aluminum tube caps are 2 pieces.

AN numbers are for configuration reference only.

# Adapters

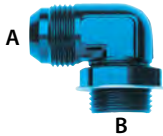
## O-ring Boss (ORB) to Male AN

### O-ring BOSS TO MALE 37°



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2992*	FCM5992*	—	—	-04	-04
FCM2993*	FCM5993*	—	—	-06	-06
FCM2995*	FCM5995*	—	—	-08	-08
FCM2996*	FCM5996*	—	—	-06	-06
FCM2997*	FCM5997*	—	—	-08	-08
FCM2998*	FCM5998*	—	—	-10	-08
FCM2999*	FCM5999*	—	—	-08	-10
FCM2953*	FCM5953*	FCE2953*	FCM2957*	-10	-10
FCM2954*	FCM5954*	FCE2954*	FCM2958*	-10	-12
FCM3001*	FCM6001*	—	—	-12	-10
FCM2955*	FCM5955*	FCE2955*	FCM2959*	-12	-12
FCM2956*	FCM5956*	FCE2956*	FCM2960*	-12	-16
FCM3002*	FCM6002*	—	—	-16	-12
FCM3003*	FCM6003*	—	—	-16	-16

### LOW PROFILE 90° O-ring BOSS TO MALE 37°



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2263*	FCM5263*	FCE2263*	-12	-12

## AN to Metric

### AN FLARE TO METRIC ADAPTERS



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Dash Size	"B" Pipe Size
FCM2239	—	—	-04	10MM x 1.0
FCM2246	FCM5246	FCE2246	-06	12MM x 1.5
FCM2240	FCM5240	FCE2240	-06	14MM x 1.5
FCM2241	FCM5241	—	-06	16MM x 1.5
FCM2242	—	—	-06	18MM x 1.5
FCM2243	FCM5243	FCE2243	-08	16MM x 1.5
FCM2244	FCM5244	—	-08	18MM x 1.5
FCM2245	FCM5245	—	-10	18MM x 1.5

### METRIC CONVERSION ADAPTERS



Steel Packaged Part Number	"A" Dash Size	"B" Pipe Size
FCM2608	-06	M16 x 1.5
FCM2609	-06	M18 x 1.5

Note: Used for Saginaw Power Steering Adapter (metric); also G.M. fuel injection conversion adapter for metric O-ring style porting.

\*O-ring material is Viton.

## High Pressure Adapters

### INVERTED FLARE



Steel Packaged Part Number	"A" Dash Size	"B" Pipe Size INCHES
FCM2963	-06	1/2-20
FCM2964	-06	5/8-18
FCM2965	-06	11/16-18

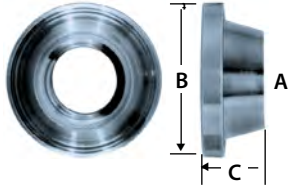
# Adapters

## Aluminum Tank Welding Bungs

**AN NUMBERS ARE FOR CONFIGURATION REFERENCE ONLY.**

Connects to Male AN Flare with hex and O-ring (AN 816, AN 919, AN 832 and O-ring Boss Plug). Refer to Page 24 for O-rings.

### TANK WELDING BUNGS (AN 871)



Packaged Part Number	"A" Dash Size	"B"	"C"
FCM2403	-06	1.56	.59
FCM2404	-08	1.75	.68
FCM2405	-10	1.87	.75
FCM2406	-12	2.00	.90
FCM2407	-16	2.25	.93

## Special Flare Adapters

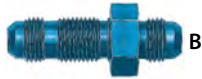
**FLARE TO BRAZE (UNPLATED)**

Steel Packaged Part Number	"A" Dash Size	"B" Tube O.D. INCHES	"C" Counterbore Depth
FCM2871	-04	1/4	.16
FCM2872	-06	3/8	.16
FCM2873	-06	1/2	.16
FCM2874	-08	1/2	.16
FCM2875	-10	5/8	.16
FCM2876	-10	3/4	.25
FCM2877	-12	3/4	.25
FCM2878	-12	1	.25
FCM2879	-16	1	.25
FCM2880	-20	1 1/4	.25



## Bulkhead Adapters

### BULKHEAD UNION<sup>2</sup> (AN 832)



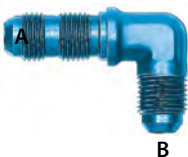
Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2769	FCM5769	FCE2769	FCM2770	-03	-03
FCM2071	FCM5071	FCE2071	FCM2771	-04	-04
—	—	—	FCM2772	-04	-06
—	—	—	FCM2773	-05	-05
FCM2072	FCM5072	FCE2072	FCM2774	-06	-06
FCM2073	FCM5073	FCE2073	FCM2775	-08	-08
FCM2074	FCM5074	FCE2074	FCM2776	-10	-10
FCM2075	FCM5075	FCE2075	FCM2777	-12	-12
FCM2076	FCM5076	FCE2076	FCM2778	-16	-16
FCM2077	FCM5077	FCE2077	FCM2779	-20	-20

### 45° ELBOW BULKHEAD UNION<sup>1</sup> (AN 837)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2893	FCM5893	—	-03	-03
FCM2127	—	FCM2781	-04	-04
—	—	FCM2782	-05	-05
FCM2128	—	FCM2783	-06	-06
FCM2425	—	FCM2784	-08	-08
FCM2426	—	FCM2785	-10	-10
—	—	FCM2786	-12	-12
—	—	FCM2787	-16	-16
—	—	FCM2788	-20	-20

### 90° ELBOW BULKHEAD UNION<sup>1</sup> (AN 833)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2799	FCM5799	FCE2799	FCM2790	-03	-03
FCM2081	FCM5081	FCE2081	FCM2791	-04	-04
—	—	—	FCM2792	-05	-05
FCM2082	FCM5082	FCE2082	FCM2793	-06	-06
FCM2083	FCM5083	FCE2083	FCM2794	-08	-08
FCM2084	FCM5084	FCE2084	FCM2795	-10	-10
FCM2085	FCM5085	—	FCM2796	-12	-12
FCM2086	—	—	FCM2797	-16	-16
—	—	—	FCM2798	-20	-20

AN numbers are for configuration reference only.

### Bulk or Retail Packaged Parts

FB-prefixed part numbers indicate bulk-packaged products. FC-prefixed part numbers indicate carded/clam shelled (retail-packaged) products.

Most products in this catalog can be ordered in either package style by changing the prefix accordingly.

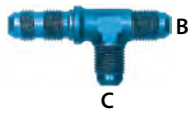
# Adapters

## BULKHEAD TEE<sup>1</sup> (AN 834)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Dash Size	"C" Dash Size
FCM2808	—	FCM2800	-03	-03	-03
FCM2091	FCM5091	FCM2801	-04	-04	-04
—	—	FCM2802	-05	-05	-05
FCM2092	—	FCM2803	-06	-06	-06
FCM2093	—	FCM2804	-08	-08	-08
FCM2899	—	FCM2805	-10	-10	-10
—	—	FCM2806	-12	-12	-12
—	—	FCM2807	-16	-16	-16

## BULKHEAD RUN TEE<sup>1</sup> (AN 804)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	Steel Packaged Part No.	"A" Dash Size	"B" Dash Size	"C" Dash Size
FCM2815	FCM5815	FCE2815	FCM2809	-03	-03	-03
FCM2117	—	—	—	-04	-04	-04
FCM2118	—	—	FCM2811	-06	-06	-06
FCM2180	—	—	FCM2812	-08	-08	-08
FCM2816	—	—	FCM2813	-12	-12	-12
—	—	—	FCM2814	-16	-16	-16

## BULKHEAD MALE CONNECTOR<sup>2</sup>



Steel Packaged Part Number	"A" Dash Size	"B" Pipe Size
FCM2831	-04	1/4
FCM2832	-08	3/8
FCM2833	-10	1/2
FCM2834	-12	3/4
FCM2835	-16	1

## BULKHEAD FEMALE CONNECTOR<sup>2</sup>



Steel Packaged Part Number	"A" Dash Size	"B" Pipe Size
FCM2821	-04	1/8
FCM2822	-08	3/8
FCM2823	-10	1/2
FCM2824	-12	3/4
FCM2825	-16	1

## LOCKNUT (AN 924)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	Steel Packaged Part Number	Dash Size	Number Per Package
FCM3556	FCM5556	FCE3556	FCM2095	-03	2
FCM2099	FCM5099	FCE2099	FCM2096	-04	2
—	—	—	FCM2097	-05	2
FCM2100	FCM5100	FCE2100	FCM2098	-06	2
FCM2103	FCM5103	FCE2103	FCM3584	-08	1
FCM2104	FCM5104	FCE2104	FCM3585	-10	1
FCM2105	FCM5105	FCE2105	FCM3586	-12	1
FCM2106	FCM5106	FCE2106	FCM3587	-16	1
FCM3833	—	—	FCM3588	-20	1

AN numbers are for configuration reference only.

<sup>1</sup>Aluminum part numbers do NOT include locknut. Locknut must be ordered separately for aluminum parts. Steel parts DO include nuts.

<sup>2</sup>Locknut included.

# Adapters

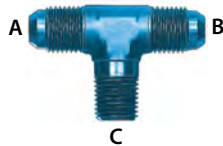
## Tee Adapters

### UNION TEE (AN 824)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Dash Size	"B" Dash Size	"C" Dash Size
FCM2060	FCM5060	FCE2060	-03	-03	-03
FCM2061	FCM5061	FCE2061	-04	-04	-04
FCM2062	FCM5062	FCE2063	-06	-06	-06
FCM2063	FCM5063	FCE2064	-08	-08	-08
FCM2064	FCM5064	—	-10	-10	-10
FCM2065	FCM5065	—	-12	-12	-12
FCM2066	—	—	-16	-16	-16

### MALE BRANCH TEE (AN 825)



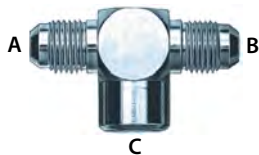
Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Dash Size	"B" Dash Size	"C" Pipe Size INCHES
FCM2187	FCM5187	FCE2187	-03	-03	1/8
FCM2121	FCM5121	FCE2121	-04	-04	1/8
FCM2122	FCM5122	FCE2122	-06	-06	1/4
FCM2123	FCM5123	—	-08	-08	3/8
FCM2251	—	—	-10	-10	3/8
FCM2252	—	—	-12	-12	3/4

### MALE RUN TEE (AN 826)



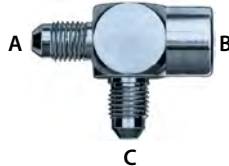
Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Pipe Size	"C" Dash Size INCHES
FCM2714	FCM5714	FCM2700	-03	1/8	-03
FCM2124	FCM5124	FCM2701	-04	1/8	-04
—	—	FCM2703	-04	1/4	-04
—	—	FCM2702	-05	1/8	-05
FCM2125	FCM5125	FCM2704	-06	1/4	-06
—	—	FCM2705	-06	3/8	-06
FCM2126	FCM5126	FCM2706	-08	3/8	-08
—	—	FCM2707	-08	1/2	-08
—	—	FCM2708	-10	1/2	-10
FCM2298	—	FCM2709	-10	3/4	-10
FCM2299	—	FCM2710	-12	3/4	-12
—	—	FCM2711	-16	1	-16
—	—	FCM2712	-20	1 1/4	-20

### FEMALE PIPE FLARE TEE



Steel Packaged Part Number	"A" Dash Size	"B" Dash Size INCHES	"C" Pipe Size
FCM2881	-03	-03	1/8
FCM2882	-04	-04	1/8
FCM2883	-04	-04	1/4
FCM2884	-06	-06	1/4
FCM2885	-08	-08	3/8

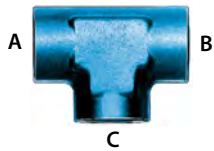
### FEMALE PIPE FLARE TEE



Steel Packaged Part Number	"A" Dash Size	"B" Pipe Size	"C" Dash Size INCHES
FCM2817	-03	1/8	-03
FCM2818	-04	1/8	-04
FCM2819	-04	1/4	-04

# Adapters

## FEMALE FLARE TEE



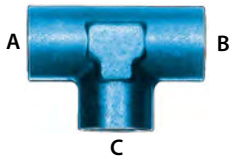
Aluminum Blue Anodized Packaged Part Number	"A" Dash Size	"B" Dash Size	"C" Dash Size
FCM2173	-04	-04	-04
FCM2174	-06	-06	-06
FCM2175	-08	-08	-08
FCM2176	-10	-10	-10
FCM2177	-12	-12	-12

## TEE WITH FEMALE ON THE BOTTOM



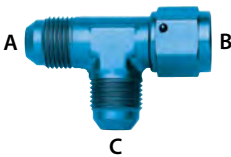
Aluminum Blue Anodized Packaged Part Number	"A" Dash Size	"B" Dash Size	"C" Dash Size
FCM2281	-4	-4	-4
FCM2282	-6	-6	-6
FCM2283	-8	-8	-8
FCM2284	-10	-10	-10
FCM2285	-12	-12	-12
FCM2286	-16	-16	-16

## FEMALE PIPE TEE (AN 917)



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Pipe Size INCHES	"B" Pipe Size INCHES	"C" Pipe Size INCHES
FCM2150	FCM5150	FCE2150	1/8	1/8	1/8
FCM2151	FCM5151	—	1/4	1/4	1/4
FCM2152	FCM5152	—	3/8	3/8	3/8

## FEMALE ON THE RUN TEE



Aluminum Blue Anodized Packaged Part Number	Aluminum Black Packaged Part Number	"A" Dash Size	"B" Dash Size	"C" Dash Size
FCM2254	FCM5254	-04	-04	-04
FCM2255	FCM5255	-06	-06	-06
FCM2256	FCM5256	-08	-08	-08
FCM2257	—	-10	-10	-10
FCM2258	—	-12	-12	-12
FCM2259	—	-16	-16	-16

## Inverted Flare Brake Adapters

### S.A.E. 37° MALE FLARE TO 42° INVERTED FLARE

[Short; 2 per package]

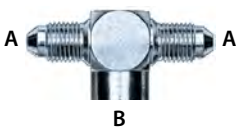


Steel Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size	Length INCHES
FCM2926	-03	3/8 - 24	1.07
FCM2927	-04	3/8 - 24	1.14
FCM2928	-03	3/8 - 24	1.07
FCM2929	-03	7/16 - 24	1.14
FCM2930	-04	7/16 - 24	1.14
FCM2931	-04	1/2 - 20	1.16

Note: FCM2926 has a 9/16" hex and FCM2928 has a 7/16" hex.

### S.A.E. 37° MALE FLARE TO FEMALE INVERTED FLARE TEE

[1 per package]



Steel Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size
FCM2909	-03	3/8 - 24
FCM2910	-04	3/8 - 24

### S.A.E. 37° MALE FLARE TO 42° MALE INVERTED FLARE

[Long 2-3/8"; 2 per package]



Steel Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size
FCM2932	-03	3/8 - 24
FCM2933	-04	3/8 - 24
FCM2934	-03	7/16 - 24
FCM2935	-04	7/16 - 24

### S.A.E. 37° MALE FLARE TO 30° INVERTED FLARE

[Short; 2 per package]



Steel Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size	Length INCHES
FCM2950	-04	7/16 - 20	2.50
FCM2925	-04	7/16 - 20	1.33

### S.A.E. 37° MALE FLARE TO FEMALE INVERTED FLARE

[2 per package]



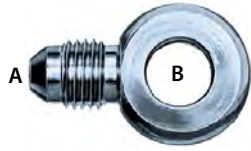
Steel Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size
FCM2936	-03	3/8 - 24
FCM2937	-04	3/8 - 24

# Adapters

## S.A.E. Banjo Brake Adapters

### S.A.E. 37° FLARE TO BANJO

[2 per package]



Steel Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size
FCM2949	-03	3/8
FCM2938	-04	3/8
FCM2939	-03	7/16
FCM2940	-04	7/16

### S.A.E. BANJO BOLT

[1 per package]



Steel Packaged Part Number	"A" Thread Size	Crushwasher <sup>1</sup> Part Number
FCM2921	3/8-24	FCM3642
FCM2922	7/16-20	FCM3513

## Metric Brake Adapters

### S.A.E. 37° MALE FLARE TO METRIC FLARE

[2 per package]



Steel Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size
FCM2941	-03	10mm x 1
FCM2942	-03	10mm x 1.25
FCM2966	-03	10mm x 1.5
FCM2943	-04	10mm x 1
FCM2944	-04	10mm x 1.25
FCM2967	-04	10mm x 1.5

### S.A.E. 37° MALE FLARE TO FEMALE METRIC FLARE

[2 per package]



Steel Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size
FCM2945	-03	10mm x 1
FCM2946	-04	10mm x 1

## Metric Banjo Brake Adapters

### S.A.E. 37° MALE FLARE TO METRIC BANJO

[2 per package]



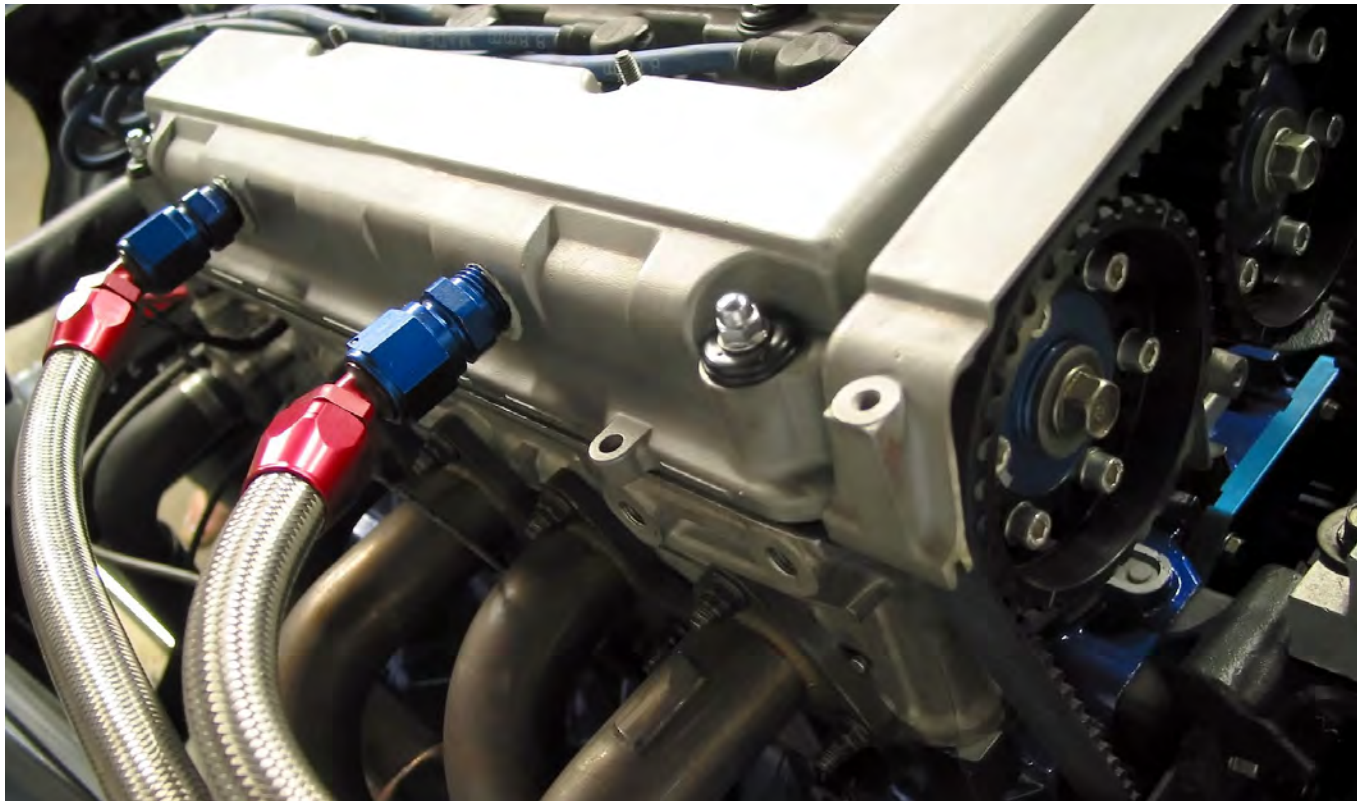
Steel Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size
FCM2947	-03	10mm
FCM2948	-04	10mm

### METRIC BANJO BOLT

[1 per package]



Steel Packaged Part Number	"A" Thread Size	Crushwasher <sup>1</sup> Part Number
FCM2923	10mm x 1.25	FCM3642
FCM2968	10mm x 1.5	FCM3642








<sup>1</sup>Two crushwashers are required.

# Fuel System Components



## Aluminum Banjo Fittings

**BANJO FITTINGS** – For Use with AQP® and StartLite® Racing Hose




	Packaged Part Number	Hose Fitting Size	Application
	FCM1066	-06	Banjo Fitting for Holley Single Feed 600-660 Series and all two barrel series with 9/16 -24 thread Replacement Crushwasher FCM3627
	FCM1067	-06	Banjo Fitting for Weber bowls with 12mm x 1.5 thread Replacement Crushwasher
	FCM1070	-06	Banjo Fitting for Solex with 12mm x 1.25 thread Replacement Crushwasher FCM3627
	FCM1069	-06	Banjo Fitting for multiple carb application Holley 600-660 Series with 9/16 - 24 thread  Replacement Crushwasher FCM3627
	FCM1068	-06	Banjo Fitting for multiple carb application Weber 12mm x 1.5 thread  Replacement Crushwasher FCM3627

Refer to page 36 for Replacement Crushwashers and Replacement O-rings.





## Aluminum Fuel Pump Adapters


**FUEL PUMP ADAPTERS**

	Blue Anodized Packaged Part Number	Hose Fitting Size	Application
	FCM2108	-06	Inverted Flare 5/8-18 thread
	FCM2111	-06	Inverted Flare 1/2-20 thread
	FCM2185	-10	3/8 Male pipe to Flare for Holley Electric Fuel Pumps

## S.A.E. 37° MALE FLARE TO 42° INVERTED FLARE

	Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size	Length INCHES
	FCM2181	-03	1/2-20	1.07
	FCM2182	-04	1/2-20	1.14

## MALE NICKEL-PLATED FUEL PUMP ADAPTER

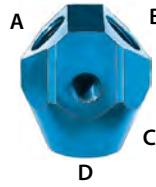
	Packaged Part Number	Hose Fitting Dash Size	Thread Size INCHES
	FCE2185	-10	3/8



# Fuel System Components

## Aluminum Fuel Blocks

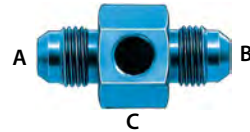
### FUEL BLOCKS



Blue Anodized Packaged Part Number	Black Packaged Part Number	Nickel-Plated Packaged Part Number	"A" Pipe Size INCHES	"B" Pipe Size INCHES	"C" Pipe Size INCHES	"D" Pipe Size INCHES
FCM2178	—	—	1/4	1/4	1/8	3/8
FCM2179	FCM5179	FCE2179	3/8	3/8	1/8	1/2

## Aluminum In-Line Fuel Pressure Adapter

### IN-LINE FUEL PRESSURE ADAPTER



Blue Anodized Packaged Part Number	Black Packaged Part Number	Nickel-Plated Packaged Part Number	"A" Dash Size	"B" Dash Size INCHES	"C" Pipe Size
FCM2183	FCM5183	FCE2183	-06	-06	1/8
FCM2184	FCM5184	FCE2184	-08	-08	1/8

Note: Ports A and B to carburetor; C = gauge port; and D = main feed.

## Fuel Pump to Carburetor Hose Kits

### GM PRODUCTS WITH QUAD THROUGH 1974



Packaged Part Number	Description
FCP0138	30" FBA0600 AQP® Racing Hose FBM1012 Aluminum Fitting FBM4032 Aluminum Fitting FBM2114 Adapter FBM2108 Adapter

### FORD PRODUCTS WITH HOLLEY CARBURETORS



Packaged Part Number	Description
FCP0140	30" FBA0600 AQP® Racing Hose FBM1012 Aluminum Fitting FBM4032 Aluminum Fitting FBM1066 Aluminum Fitting FBM2111 Adapter

### GM PRODUCTS WITH QUAD AFTER 1974










Packaged Part Number	Description
FCP0139	30" FBA0600 AQP® Racing Hose FBM1012 Aluminum Fitting FBM4032 Aluminum Fitting FBM2108 Adapters (2)



# Fuel System Components

## Aluminum Carburetor Adapters

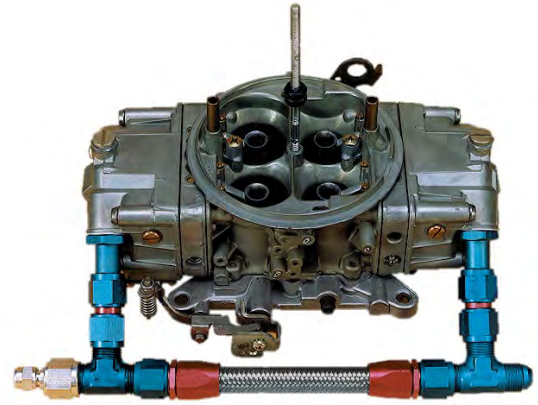
### CARBURETOR ADAPTERS

	Blue Anodized Packaged Part Number	Black Anodized Packaged Part Number	Nickel-Plated Packaged Part Number	Hose Fitting Size	Application
	FCM2113	FCM5113	FCE2113	-06	Holley Single Feed 600-660 Series, 4010/4011 Series and all two barrel series with 9/16-24 thread; fits Demon carburetors Replacement Crushwasher FCM3514
	FCM2114	FCM5114	FCE2114	-06	Holley Dual Feed 750 through Dominator 1350 Series and Quadrajets up to 1974 with 7/8-20 thread Replacement Crushwasher FCM3516
	FCM2961	—	—	-08	Holley Dual Feed 750 through Dominator 1350 Series and Quadrajets up to 1974 with 7/8-20 thread; available in steel only Replacement Crushwasher FCM3516
	FCM2110	FCM5110	FCE2110	-08	Holley Dual Feed 750 through Dominator 1350 Series and Quadrajets up to 1974 with 7/8-20 thread Replacement Crushwasher FCM3516
	FCM2193	FCM5193	—	-06	Holley Dual Feed 750 through Dominator 1350 Series and Quadrajets up to 1974 with 7/8-20 thread Replacement Crushwasher FCM3516
	FCM2192	FCM5192	FCE2192	-08	Holley Dual Feed 750 through Dominator 1350 Series and Quadrajets up to 1974 with 7/8-20 thread Replacement Crushwasher FCM3516
	FCM2107	FCM5107	FCE2107	-06	Quadrajets 1975 and later 1-20 thread Replacement Crushwasher FCM3517
	FCM2112	FCM5112	FCE2112	-06	Carter AFB two and four barrel with 5/8-20 thread Replacement O-ring FCM3489
	FCM2116	FCM5116	FCE2116	-06	Weber Bowl Fitting 12mm x 1.5 thread
	FCM2247	FCM5247	FCE2247	-06	Demon carburetors or applications with 9/16-24 threads and -06 female swivel Replacement Crushwasher FBM3514
	FCM2248	FCM5248	FCR2248	-08	Demon carburetors or applications with 9/16-24 threads and -08 female swivel Replacement Crushwasher FBM3514
	FCM2249	—	—	-08	Demon carburetors or applications with 9/16-24 threads and -08 male swivel Replacement Crushwasher FBM3514

# Fuel System Components

## Dual Feed Carburetor Assemblies

Completely assembled—ready to install.



### CARBURETOR KIT FOR USE WITH HOLLEY'S 4010/4011 CARBURETOR SERIES



Packaged Part Number	Carburetor Application	Distance Between Bowl Fittings INCHES	Hose and Fitting Dash Size
FCP0129	Holley 4010/4011	8.25	-06

### DUAL FEED HOLLEY CARBURETOR ASSEMBLY



Packaged Part Number	Carburetor Application	Distance Between Bowl Fittings INCHES	Hose and Fitting Dash Size
FCP0101	800 and 850 CFM Holley	9.25	-06
FCP0102	600 and 650 CFM Holley	8.62	-06

### 1/20 DUAL FEED ASSEMBLY FOR HOLLEY CARBURETORS



Packaged Part Number	Carburetor Application	Distance Between Bowl Fittings INCHES	Hose and Fitting Dash Size
FCP0134	750, 800 and 850 CFM Holley	9.25	-08

#### Bulk or Retail Packaged Parts

FB-prefixed part numbers indicate bulk-packaged products. FC-prefixed part numbers indicate carded/clam shelled (retail-packaged) products. Most products in this catalog can be ordered in either package style by changing the prefix accordingly.

# Couplings

## Quick-Disconnect Radiator/Cooling Refill Coupling



### Female Half:

- Aluminum female quick-disconnect coupling is 50% lighter than standard version\*
- Viton seals allows higher temperatures
- Stainless steel internal components significantly increase corrosion resistance

- Blue anodized 6061 aluminum body
- Easy connect/disconnect with positive locking
- For use with aluminum male coupling half (FBM1153)

### Male Half:

- Replacing previous carbon steel components with stainless steel material

- significantly improve the corrosion resistance of the popular coupling
- Red anodized 6061 aluminum body
- 54% lighter than standard steel version
- Viton seals allows higher temperatures

### RADIATOR/COOLING REFILL COUPLING – 1/2" THREAD

Bulk Number	Description	Working Pressure PSI	Temperature DEGREES F	Weight OUNCES	Seal Material
FBM1153	Male Aluminum Lightweight Quick Disconnect Coupling	250	-15 to +300	1.73	Viton
FBM3113	Female Steel Quick Disconnect Coupling	250	-15 to +300	1.60	Viton
FBM3114	Female Aluminum Quick Disconnect Coupling	250	-15 to +300	3.97	Viton

## Pressure Sensing Coupling

The primary feature of FCM3080 series Quick-Disconnect coupling is self-sealing valves in both halves, allowing connection and disconnection with minimal fluid loss and virtually no air inclusion. The FCM3080 series quick-disconnect coupling is ideal for gauge, diagnostic, wing and chassis adjustment applications.



### ORDERING INFORMATION

Packaged Part Number	Coupling Body Size INCHES	Description	Thread Size INCHES	Maximum Operating Pressure PSI	Air Inclusion (C.C. Max)	Fluid Loss (C.C. Max)	Length INCHES
FCM3081	1/4	Female Coupling to Female Pipe	1/8-27-NPTF	7000	.02	.1	1.95
FCM3082	1/4	Female Coupling to Female Pipe	1/4-18-NPTF	7000	.02	.1	2.25
FCM3083	1/4	Male Coupling to Male Pipe	1/8-27-NPTF	7000	.02	.1	1.60
FCM3084	1/4	Male Coupling to Male Pipe	1/4-18-NPTF	7000	.02	.1	1.49
FCM3085	1/4	Male Coupling to Female Pipe	1/8-27-NPTF	7000	.02	.1	1.70
FCM3086	1/4	Male Coupling to Female Pipe	1/4-18-NPTF	7000	.02	.1	1.90
FCM3087	1/4	Male Coupling — Dust Cap	—	—	—	—	—

Note: Not for use with brake fluid.

### SPECIFICATIONS

## Fuel Check Coupling

Ideal for use to meet NHRA fuel check requirements. Male half mounts in the fuel line.

Ideal for use with FCM2178, FCM2179, FCM2183 and FCM2184.



### ORDERING INFORMATION AND SPECIFICATIONS

Packaged Part Number	Description	Max. Thread Size INCHES	Operating Pressure PSI	Air Inclusion (C.C. Max.)	Fluid Loss (C.C. Max.)	Length INCHES
FCM3081	Female Coupling to Female Pipe	1/8-27 NPTF	7000	.02	.1	1.95
FCM3083	Male Coupling to Male Pipe	1/8-27 NPTF	7000	.02	.1	1.60

## Hydraulic Coupling

PUSH-PULL™ Self-Sealing Couplings are ideal for most hydraulic and fluid applications requiring a quick connect/disconnect

coupling. The coupling bodies are constructed of high quality plated steel. Coupling uses Buna-N seals.



### ORDERING INFORMATION AND SPECIFICATIONS

Steel Bulk Part Number	Pipe Thread Size INCHES	Max. Operating Pressure PSI	Air Inclusion (C.C. Max.) PSI	Fluid Loss (C.C. Max.) GPM	Rated Flow INCHES	Coupled Vacuum INCHES	Service INCHES/HG
FBM3011	1/4-18	5000	.5	.5	1	2.53	28
FBM3012	3/8-18	4000	1.5	1.3	6	2.80	28
FBM3013	1/2-14	4000	2.8	2.8	12	3.78	28
FBM3015	3/4-14	4000	10.0	8.2	28	4.56	28
FBM3016	1 1/2-11	4000	14.2	14.2	50	5.54	28

Note: Not recommended for brake system applications.

### Bulk or Retail Packaged Parts

FB-prefixed part numbers indicate bulk-packaged products. FC-prefixed part numbers indicate carded/clam shelled (retail-packaged) products. Most products in this catalog can be ordered in either package style by changing the prefix accordingly.

# Accessories

## Aluminum Caps and Plugs for Fitting and Adapter Thread Protection

### THREADED ALUMINUM DUST CAPS



Part Number	Fitting and Adapter Dash Size	Dimensions INCHES			Pkg. Of
		Thread	A	B	
FBM3647	-03	3/8-24	.43	.36	20
FBM3648	-04	7/16-20	.54	.46	20
FBM3649	-06	9/16-18	.54	.46	20
FBM3650	-08	3/4-16	.64	.55	20
FBM3651	-10	7/8-14	.74	.65	12
FBM3652	-12	11/16-12	.85	.76	10
FBM3653	-16	15/16-12	.86	.78	10

### THREADED ALUMINUM DUST PLUGS



Part Number	Fitting and Adapter Dash Size	Thread	Dimensions INCHES			Pkg. Of
			A	B	C	
FBM3654	-03	3/8-24	.37	.57	.61	20
FBM3655	-04	7/16-20	.46	.61	.71	20
FBM3656	-06	9/16-18	.50	.76	.77	20
FBM3657	-08	3/4-16	.61	.94	.90	20
FBM3658	-10	7/8-14	.70	1.11	.95	12
FBM3659	-12	11/16-12	.65	1.38	.99	10
FBM3660	-16	15/16-12	.71	1.53	1.08	10

### Support Clamps

Vinyl-coated steel support clamps provide security for supporting hose in long runs and critical bends. See hose specifications shown in this catalog for the correct hose clamp to match each hose size. For other hose types, match the clamp I.D. and hose O.D. as close as possible.

### SPECIFICATIONS



Packaged Part Number	I.D. INCHES	Number Per Package
FCM3481	.25	5
FCM3482	.44	5
FCM3483	.50	5
FCM3484	.56	5
FCM3485	.63	5
FCM3486	.75	5
FCM3487	.81	5
FCM3488	.94	5
FCM3534	1.00	2
FCM3535	1.06	2
FCM3536	1.13	2
FCM3537	1.25	2
FCM3538	1.50	2

### 624 Firesleeve Hose Cover

Firesleeve hose flame shield can prevent or delay hose lines from burning. See hose specifications shown in this catalog for the correct firesleeve to match each hose size. For other hose styles, select firesleeve with an I.D. slightly larger than the hose O.D.

### SPECIFICATIONS



Bulk *Part Number*	I.D. INCHES
FBS0700	.44
FBS0800	.50
FBS0900	.56
FBS1000	.62
FBS1100	.69
FBS1200	.75
FBS1300	.81
FBS1400	.88
FBS1600	1.00
FBS1800	1.12
FBS2000	1.25
FBS2200	1.38
FBS2400	1.50

### Replacement Aluminum Crushwashers

For use with Banjo Fittings and Carburetor Adapters

### SPECIFICATIONS

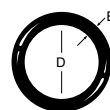
[5 per package]



Packaged Part Number	Dash Size
FCM3642	-03
FCM3513	-04
FCM3514	-06
FCM3515	-08
FCM3627	-09
FCM3516	-10
FCM3517	-12

### O-rings

### SPECIFICATIONS



10-Piece Package Nitrile <sup>1</sup> Part No.	5-Piece Package EPR <sup>2</sup> Part No.	Dash Size	D INCHES	E INCHES
FCM3472	FCM3462	-03	.301	.064
FCM3473	FCM3463	-04	.351	.072
FCM3474	FCM3464	-06	.468	.078
FCM3475	FCM3465	-08	.644	.087
FCM3476	FCM3466	-10	.755	.097
FCM3477	FCM3467	-12	.924	.116
FCM3497	FCM3468	-16	1.171	.116
FCM3498	FCM3469	-20	1.475	.118
FCM3499	FCM3470	-24	1.720	.118

\*Order by the foot. Packaged firesleeve is available in various lengths. Contact customer service for part numbers and prices.

<sup>1</sup>Nitrile O-rings for use with gasoline fuels.

<sup>2</sup>EPR (Ethylene Propylene Rubber) O-rings to be used with Nitromethane and alcohol fuels.

# Accessories

## Pro Clamp™ Aluminum Hose Connectors



Pro Clamp™ connectors are made of red anodized aluminum to give your band clamp connections a professional look. The Pro Clamp™ connector can be used on any rubber or stainless steel braid hose. Pro Clamp™ connectors should not be used on brake lines, air conditioning, power steering or other high pressure lines. Pro Clamp™ connectors come complete with a quality band clamp.

### SPECIFICATIONS AND ORDERING INFORMATION

Hose Dash Size	Packaged Part Number	Hose I.D. INCHES	Hose O.D. INCHES
-04	FCM1001	.22	.44
-06	FCM1002	.34	.55
-08	FCM1003	.44	.65
-10	FCM1004	.56	.80
-12	FCM1005	.69	.94

Please see Page 46 for assembly instructions.

### SPECIFICATIONS AND ORDERING INFORMATION

Hose Dash Size	Packaged Part Number	Hose I.D. INCHES	Hose O.D. INCHES
-16	FCM1006	.88	1.15
-20	FCM1007	1.13	1.41
-24	FCM1008	1.34	1.70
-28	FCM1010	1.62	1.88
-32	FCM1009	1.75	2.09

## Stainless Steel Overbraid



Stainless Steel Overbraid is used to dress up existing rubber hoses. Stainless Overbraid simply slips over current radiator hoses and can be clamped with the Aeroquip Performance Products PRO CLAMP™ connectors for a finished hose assembly look. Stainless Overbraid provides no additional performance for the hose. Stainless Overbraid does provide added abrasion resistance and good looks.

### SPECIFICATIONS

### ORDERING INFORMATION

Nominal I.D. INCHES	Hose O.D. Range INCHES	Overbraid I.D. INCHES	Bulk Part Number	Packaged Length Part Number				
				3 Feet	6 Feet	10 Feet	15 Feet	20 Feet
3/4	1/2 to 1	3/4	FBR1200	FCR1203	FCR1206	FCR1210	FCR1215	FCR1220
1 1/2	1 1/2 to 2 1/4	1 1/2	FBR2400	FCR2403	FCR2406	FCR2410	FCR2415	FCR2420

Please see Page 46 for assembly instructions.

## Stainless Steel Internal Support Coils

Extra support for extreme vacuum applications.

### SPECIFICATIONS AND ORDERING INFORMATION

Hose Dash Size	Bulk Part Number	Description	Length FEET
-08	FBM3412	.51" OD	20
-12	FBM3413	.73" OD	20
-16	FBM3414	.94" OD	20



## Tech Tip

### Vacuum

One of the most severe applications of a hose is in vacuum service. Modern dry sump oil systems are pulling more vacuum than ever. It is extremely important that you match the hose you are using with the vacuum rating of your application. Danfoss offers racing hoses with vacuum rating of up to 28 in./HG (Check hose specifications for vacuum rating). Great care should be taken in the handling and routing of hoses used

in vacuum service. If a hose is installed beyond the minimum bend radius the vacuum rating will be reduced. Also, if a hose has been kinked or damaged and then put in vacuum service, the area that was kinked or damaged will be a weak spot and the vacuum rating of the hose will be reduced. For severe vacuum applications, an internal support coil may be needed. Contact Danfoss Technical Support for additional information.

### Bulk or Retail Packaged Parts

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# Assembly Equipment

## Port and Identification Kit

### FCM3644

To help mechanics, engineers and salespeople quickly and accurately identify ports and connectors used in racing plumbing, Performance Products is offering the FCM3644 Port and Identification Kit. Measuring and identifying both USA and foreign threads is made easy. The kit consists of five components:

1. A unique caliper, featuring four angle gauges that are built into the ID/OD measuring fingers. Angles include 37°, 45°, 12° (24° included) and 30° (60° included).
2. Bulletin JA 110, How to Identify Fluid Ports and Connectors. This bulletin provides port and connectors information with inch dimensions given in both fractions and decimals. Metric dimensions are given in both millimeters and inch decimals.
3. A handy, compact thread gauge, featuring 14 fold out blades with the following pitches per inch: 11, 11 1/2, 12, 14, 16, 18, 19, 20, 24, 27, and 28. Metric 1.0, 1.5 and 2.0 thread pitches are also included.
4. A flexible Fresnel magnifying lens (3x) for hard-to-read part numbers.
5. A vinyl pocket size carrying case.



## Hand-Held Hose Cutter

### FCM3362

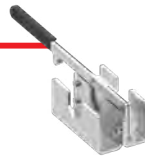
Danfoss' hand-held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as Danfoss' Aeroquip Performance Products StartLite™ and Socketless™ hose styles. The cutter's compact size makes it ideal for working in confined areas. It provides fast, accurate easy cuts—every time.

- Features a replaceable stainless steel blade that closes into its own handle for safe carrying and handling
- Includes tough, durable nylon handles
- Offered with an optional tool pouch
- Saves time and effort due to its small size and lightweight design



### FT1258

Bench mounted cut-off tool for all non-wire reinforced hose.



## SPECIFICATIONS AND ORDERING INFORMATION

Part Number	Description
FCM3662	Hand-Held Hose Cutter
FCM3663	Replacement Blade
FCM3664	Tool Pouch



The rotating/rocking technique produces fast easy cuts.

## Tech Tip

### Keep your fittings looking new

Aluminum wrenches, FCM3410, and vise jaw inserts, FCM3661, are great for protecting the anodized coloring on your reusable fittings. Check out the assembly equipment section for more details.

### Bulk or Retail Packaged Parts

**FB**-prefixed part numbers indicate bulk-packaged products. **FC**-prefixed part numbers indicate carded/clam shelled (retail-packaged) products. Most products in this catalog can be ordered in either package style by changing the prefix accordingly.

# Assembly Equipment

## Socketless™ Fitting Assembly Tool

### FBM3632

The FBM3632 hand-held assembly tool is especially designed for quick and easy assembly of FBV Socketless Hose in sizes -04, -06, and -08. The hose is held in position by a manually operated clamp, and the fitting is positioned on the mandrel assembly lever. The socketless fitting is pushed into the hose by compressing the mandrel assembly lever.



## PTFE Hose Tool

### FBM3646

The FCM3646 hand-held tool is designed to seat PTFE tube against a sleeve. Use with smooth bore PTFE hose in sizes -03, -04, -05, -06, -08, -10 and -12.



## Aluminum Wrenches

### FCM3410

Sturdy, anodized aluminum wrenches are designed to fit the hexes and minimize marking of Aeroquip Performance Products anodized aluminum fittings for AQP® Racing Hose in sizes 6 through -20. Color coded by size.



## Hose Assembly Lube

### FBM3553

Danfoss' Aeroquip Performance Products Hose Assembly Lube is a specially compounded lubricant superior to any other lubricant used in hose assembly work. Available in pint containers. Use for either hand or machine assembly.



## Vise-Jaw Inserts for Anodized Fitting Protection

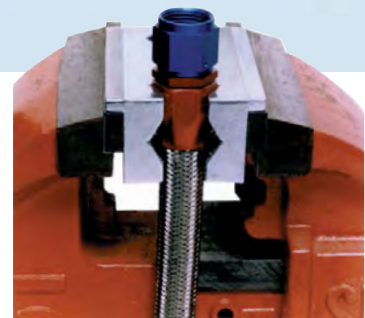
### FCM3661

FCM3661 vise-jaw inserts are a must for race teams, engine builders and street rodders. Keep your good-looking Aeroquip Performance Products fittings looking good even after assembly. FCM3661 vise-jaw inserts firmly hold the hex of the fitting during assembly, without marring the anodized finish. Made of aluminum with angled pockets, FCM3661 vise-jaw inserts can be used with any size fitting from -03 to -32.

A horizontal pocket the length of FCM3661 vise-jaws is ideal for securely holding steel braided hose in place, making straight cuts fast and simple.



FCM3661 vise-jaw inserts also feature magnetic backs, allowing quick set-ups and easy transfer between vises.





# Assembly Equipment

## ET1000 — Portable Crimp Machine

Relaunched with a sleek new housing, the new high performance crimper will compliment your high performance shop, race trailer, or garage. This crimper machine has been approved to crimp:

- Danfoss Aeroquip AQP® Racing and StartLite® hose in sizes -4 through -16 straight, through 120° swivel. The StartLite hose is also qualified in -20 swivel.
- Aeroquip Racing Hose PTFE Hose in -3, -4 and -6 sizes straight through 90°.



The performance version of the ET1000 builds on the success of Danfoss portable crimp machines by using a 2-piece split half collet assembly in lieu of traditional one-piece die cages. The correct hose assembly crimp diameter is obtained using a spacer ring that controls the stroke length of the cylinder during the crimping operation.

This ET1000 may be ordered separately or with one of two different power sources: a two-stage hand pump or the Air-

Hydraulic pump. The crimper housing has been expanded to allow for a direct mount on the pump to the housing.

### Features

- Pusher slides out of position.
- Red powder coated housing protects user from moving machinery and provides a sleek, aerodynamic design
- Crimper body has a clear zinc finish to protect against corrosion
- Utilizes 2-piece collet assemblies
- Spacer rings control the crimp diameter
- Qualified to crimp Aeroquip's top selling hoses: AQP Stainless Braid, StartLite, and PTFE hoses with Aeroquip's qualified aluminum crimp fittings

### Benefits

- Sliding pusher allows for easier fitting insertion into the machine
- Simple positive-stop crimp diameter control system for consistent crimping time after time with no operator adjustments required
- Easily transported between job sites
- Versatile power source options. Electricity is required only when using an electric style pump

### SPECIFICATIONS

<b>Dimensions</b>	22" high, 16" wide, 14" in depth
<b>Weight</b>	80 lbs. (without pump)

### ET1000 CRIMP MACHINE PART NUMBERS

ET1000-PHP-002	No pump, no tooling (basic machine only)
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### ET1000 CRIMP MACHINE PACKAGE PART NUMBERS

The machine packaged part numbers offer a variety of pumps with the same tooling package including all collets and spacer rings to crimp:

- AQP Racing and StartLite Hoses (sizes -4 thru -16), straight through 120° swivel fittings.
- AQP StartLite has been qualified up to -20, straight through 120° swivel fittings.
- Aeroquip Racing Hose, PTFE (sizes -3, -4 and -6), straight fitting.

ET1000-PHP-012	ET1000-PHP-002 with hand pump. Includes collet and spacer ring tooling packages
ET1000-PHP-013	ET1000-PAP-003 with air/hydraulic pump. Includes collet and spacer ring tooling packages

### COLLET PART NUMBERS

T-400-2C	T-400-5C
T-400-3C	T-400-6C
T-400-120C	
ET1000DC-M065S	ET1000DC-M195S
ET1000DC-M150S	ET1000DC-M1230S
ET1000AR-001(Die Ring Adapter)	

### SPACER RING PART NUMBERS

ET1010SR-M305A	ET1010SR-M205A
ET1010SR-M100A	ET1010SR-M055A
ET1010SR-M115D	ET1010SR-M240D
ET1010SR-M395D	

### ACCESSORY PART NUMBERS

140-06701	1.5 oz. Tube, high efficiency PTFE grease
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Hose Style	Hose End	Collet Assembly	Spacer Ring P/N	Flat Side (Up/Down)	Crimp Diameter Range (in)		Die Ring Adapter Required
FBA0400	Lightweight Crimp	T-400-2C	ET1010SR-M305A	FSU	0.488	0.498	Yes
FBU0400	Lightweight Crimp	T-400-2C	ET1010SR-M305A	FSU	0.488	0.498	Yes
FBA0600	Lightweight Crimp	ET1000DC-M150S	ET1010SR-M100S	FSU	0.609	0.619	Yes
FBU0600	Lightweight Crimp	ET1000DC-M150S	ET1010SR-M100S	FSU	0.609	0.619	Yes
FBA0800	Lightweight Crimp	T-400-3C	ET1010SR-M055A	FSU	0.715	0.725	Yes
FBU0800	Lightweight Crimp	T-400-3C	ET1010SR-M055A	FSU	0.715	0.725	Yes
FBA1000	Lightweight Crimp	ET1000DC-M195S	ET1010SR-M395D	FSU	0.891	0.901	Yes
FBU1000	Lightweight Crimp	ET1000DC-M195S	ET1010SR-M395D	FSU	0.891	0.901	Yes
FBA1200	Lightweight Crimp	ET1000DC-M230S	ET1010SR-M395D	FSU	1.015	1.025	Yes
FBU1200	Lightweight Crimp	ET1000DC-M230S	ET1010SR-M395D	FSU	1.015	1.025	Yes
FBA1600	Lightweight Crimp	T-400-5C	ET1010SR-M240D	FSU	1.200	1.210	Yes
FBU1600	Lightweight Crimp	T-400-5C	ET1010SR-M240D	FSU	1.200	1.210	Yes
FBU2000	Lightweight Crimp	T-400-6C	ET1010SR-M115D	FSU	1.460	1.470	Yes
FBC0300	Steel Crimp	ET1000DC-M065S	ET1010SR-M205A	FSU	0.272	0.278	Yes
FBC0400	Steel Crimp	ET1000DC-M065S	ET1010SR-M115D	FSU	0.334	0.340	Yes
FBC0600	Steel Crimp	T-400-120C	ET1010SR-M055A	FSU	0.464	0.470	Yes

# Assembly Equipment

## ProCrimp® 1380

The ProCrimp FT1380 is the industry's easiest and fastest means of assembling Danfoss' Aeroquip Performance Products hose and fittings. The ProCrimp 1380 is electronically controlled to give fast, accurate crimps each and every time you need a hose assembly.

### FT1380 DIE CRIMP ORDERING INFORMATION

FT1380-1-1	Includes machine, five die cages (-4, -16), instruction video.
FT1380-115	Crimp machine only.
FT1380-275-M370	-20 crimp die cage

### Features

- Fast, quite easy to use
- Crimp -4 through -20, 4-spiral hose
- Crimps Danfoss' Aeroquip Performance Products StartLite® and AQP® Racing Hose, and Racing Hose, PTFE
- Pre-set crimp settings
- Programmable electronic controls
- Easy to calibrate
- Upright design
- Standard work light
- Simple die cage insertion
- Full flow hydraulics with spring return
- "Soft" retract position
- ENERPAC® hydraulics

### Benefits

- Minimizes training and mistakes
- Crimp popular hose styles
- Fast setup time
- Simplified crimping
- Minimal maintenance
- Minimal effort calibrating machine
- Easy hose insertion
- Easy to see work
- Fast cycle time
- Minimum cycle distance and time
- Reliable/serviceable/standardized

Danfoss ProCrimp® 1380 sets a new standard for simplified, fast crimping of hose assemblies. This machine can be set up in any shop, garage or work area to crimp 1 and 2 wire braid, 4 spiral, and many other hose styles offered by Danfoss.



The ProCrimp® 1380 is totally compatible with Danfoss' MatchMate® Plus hose assembly program. Matching and mating hose to fittings and to the tooling in the ProCrimp® 1380 make hose assembly simpler than ever. Decals have been prepared to fit the ProCrimp® 1380 with all the MatchMate Plus hose styles, including MatchMate BLUE.®

The standard work light on the ProCrimp® 1380 illuminates the top of the fittings being crimped in this upright crimp machine. The work area is highly visible due to the upright design. Viewing of the fitting during the crimping operation is easier than ever. And the ever popular FT1330XL "Oxley Locator" can be added to the die cages for use with MatchMate Plus TTC fittings for even easier location.

The ProCrimp® 1380 uses an ENERPAC® 10,000 psi hydraulic pump and cylinder which provide quiet, efficient crimping. When the power unit is on, the electronic display and work light are lighted to indicate setup for crimping. The pump does not actually begin to operate until the crimp toggle switch is activated, saving energy and motor wear.

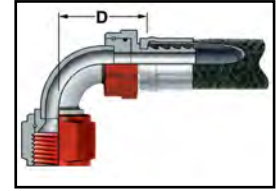
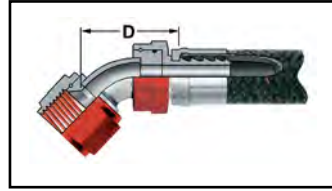
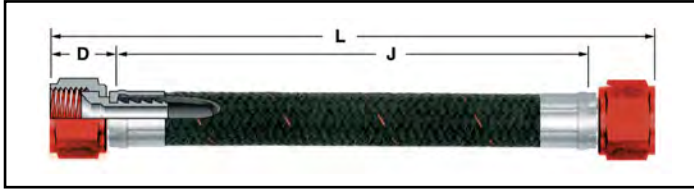
# Assembly Instructions



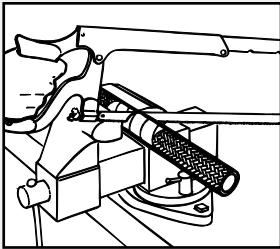
## How To Determine Hose Assembly Lengths

To determine the "J" length (cut length of hose) from "L" length (overall length), deduct "D" dimensions of both end fittings. Consult fitting information tables for "D" dimensions.

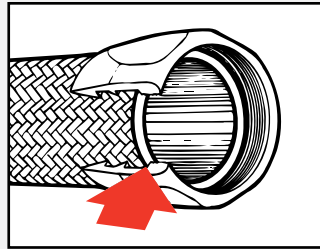
L = Overall Length  
 J = Cut Length of Hose  
 D = Fitting Length



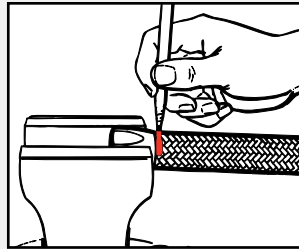
## AQP® Racing Hose (with Reusable Fittings)



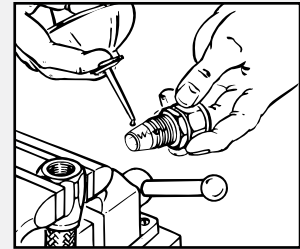
**Step 1.** Cut hose square to length with fine-tooth hack saw or cut-off wheel. To minimize wire braid flare out, wrap hose with masking tape and cut through tape. Remove tape before next step.



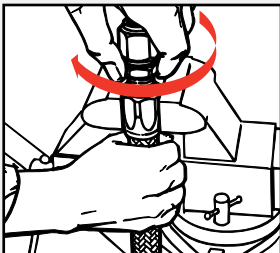
**Step 2.** Insert hose in socket with twisting, pushing motion until hose is in line with back of socket threads.



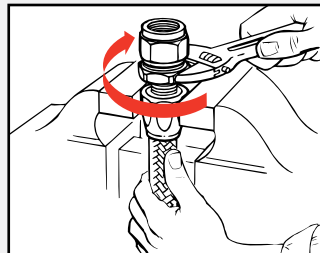
**Step 3.** Important—Mark position around hose at rear of socket with a grease pencil, paint or tape.



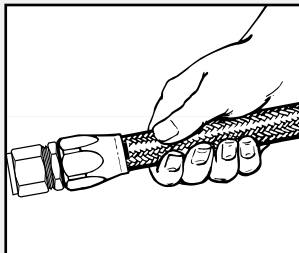
**Step 4.** Lubricate inside of hose and nipple threads liberally using S.A.E. 30 lubricating oil or Aeroquip FBM3553 Hose Assembly Lube.



**Step 5.** Carefully insert nipple and engage nipple and socket threads while holding hose in position with other hand. Make sure hose does not push out of socket by observing mark made in Step 3.



**Step 6.** Complete assembly using wrench while continuing to hold hose in position. Maximum allowable gap is .031 inches. Your thumbnail is a convenient measuring device.



**Step 7.** Important—Check hose for pushout by observing hose position mark. Pushout should not be evident. CLEAN, PROOF TEST TO TWICE OPERATING PRESSURE AND INSPECT ALL ASSEMBLIES. Disassemble in reverse order.



Danfoss' Aeroquip Performance Products Hose Assembly Lube is a specially compounded lubricant superior to any other lubricant used in hose assembly work. Available in pint containers.

Use for either hand or machine assembly.

# Assembly Instructions



## StartLite® Racing Hose and AQP® Racing Hose (with Lightweight Crimp Fittings)

### ProCrimp® 1380 Crimp Machine

The ProCrimp 1380 machine is designed to assemble StartLite and AQP® Racing Hose assemblies. It is electronically controlled to give fast, accurate crimps and incorporates programmable crimp settings and a simple die cage insertion to reduce setup time and errors.

### ProCrimp® 1380 Target Settings

The target settings for Danfoss' Aeroquip Performance Products crimp machines are provided to aid in establishing actual settings. While the settings on this chart will give crimp diameters close to, or at, specified value, the machine operator must check to verify the actual diameter. Before using these target settings, the crimp machine must be within proper calibration. If needed, consult your Danfoss Aeroquip Performance Products equipment manual for calibration procedures.

### PROCRIMP 1380 CRIMP MACHINE TARGET SETTINGS

Hose Dash Size	Die Cage	Crimp Diameter (±.005 Inches) INCHES	Target Setting
-04	-M120	.493	088
-06	-M150	.614	078
-08	-M150	.719	187
-10	-M210	.896	142
-12	-M240	1.020	116
-16	-M280	1.205	155
-20	-M370	1.465	040

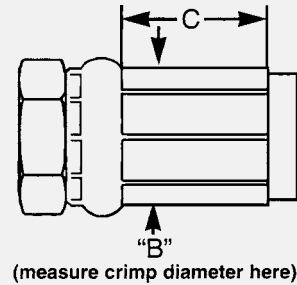
**Note:** It is recommended that all hose assemblies be proof pressure checked at twice the operating pressure using a proof test stand such as the Danfoss' Aeroquip Performance Products FT1058 stand.

To ensure a proper crimp, the StartLite and AQP Racing Hose (FBU and FBA) must have a clean cut with no frayed ends and must be fully inserted into the fitting. Position your scribe line level with the top of the die. Follow target setting for the size of hose to be crimped. Check your crimp diameter with a dial caliper.



### Crimp Diameter Measurement Locations

Diameter measurements are to be taken at the center (top to bottom, side to side) of the specified fitting selection.



### Determining Crimp Diameter

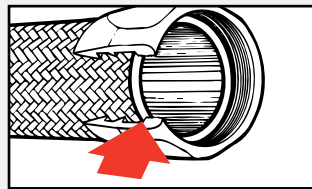
The crimp diameter is the average of the four diameter measurements around the fitting. These measurements are to be taken at the same relative locations indicated in the illustration above right.

$$\frac{\text{Measurement 1} + \text{Measurement 2} + \text{Measurement 3} + \text{Measurement 4}}{4} = \text{Crimp Diameter}$$

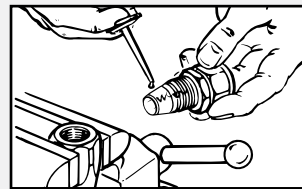
## StartLite® Racing Hose (with Reusable Fittings)



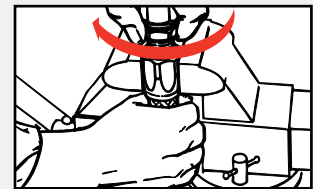
**Step 1.** Cut hose square to length with Aeroquip Performance Products Cut Off Tool (FT1258) or similar cutting device.



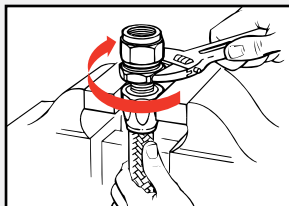
**Step 2.** Insert hose in socket with twisting, pushing motion until hose is in line with back of socket threads.



**Step 3.** Lubricate inside of hose and nipple threads liberally using S.A.E. 30 lubricating oil or Aeroquip Performance Products FBM3553 Hose Assembly Lube and socket threads while holding hose in position with other hand. Make sure hose does not push out of socket.



**Step 4.** Carefully insert nipple and engage nipple and socket threads while holding hose in position with other hand. Make sure hose does not push out of socket.



**Step 5.** Complete assembly using wrench while continuing to hold hose in position. Maximum allowable gap is .031 inches. Your thumbnail is a convenient measuring device. Do not overtighten to a point where there is no gap.

### Notes:

- V** Greater resistance can be expected as compared to Aeroquip Performance Products AQP® Racing Hose.
- V** To disassemble, reverse steps.
- V** It is recommended that all hose assemblies be proof pressure checked at twice the operating pressure using a proof test stand such as the Aeroquip Performance Products FT1058 stand.

### FBM3553 Hose Assembly Lube

Aeroquip Performance Products Hose Assembly Lube is a specially compounded lubricant superior to any other lubricant used in hose assembly work. Available in pint containers.

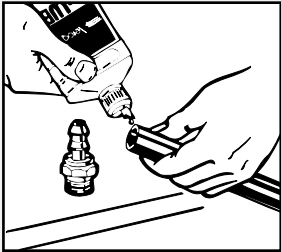
Use for either hand or machine assembly.



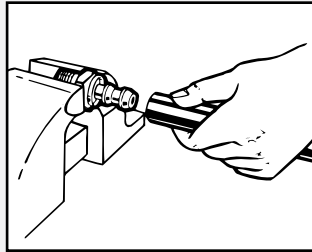
### StartLite® Hose Routing Procedure

In most vibration applications, it may be necessary to restrain, protect, or guide the hose to protect it from damage caused by unnecessary flexing or contact with other mechanical components. Care must be taken to ensure such restraints do not introduce additional stress or wear points. StartLite® hose, when used with reusable fittings in a high vibration applications, should be supported approximately every 12 to 14 inches.

## Socketless™ Hose<sup>1</sup>



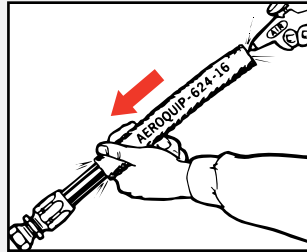
**Step 1.** Cut hose to required length with a sharp knife. Oil inside of hose and outside of nipple liberally.



**Step 2.** Push hose on fitting until hose end bottoms underneath protective cap as shown. Clean, proof test to twice operating pressure and inspect all assemblies.

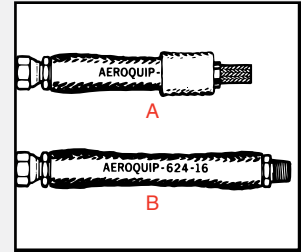
<sup>1</sup>Never use a hose clamp with FBV Socketless™

## Firesleeve



**Step 1.** Follow the appropriate hose assembly instructions through the assembly of one end fitting. Cut firesleeve to same length as hose. Start firesleeve over cut end of hose.

**Note:** If applying sleeve over PTFE or stripped cover assemblies, wrap exposed wire with tape. Grasp sleeve and slip over the hose assembly as illustrated.

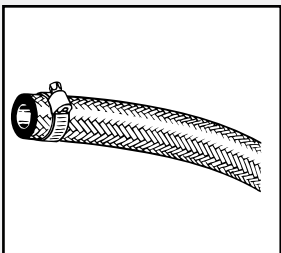


**Step 2.** Skin sleeve back from cut end of hose enough to allow assembly of one end fitting. (2A)

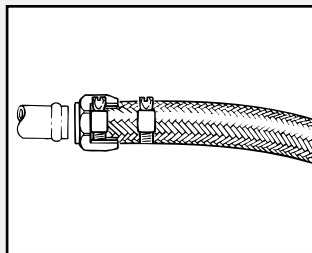
Then center sleeve so that it completely covers both sockets. (2B)

Step 3. Position nylon wire tie or band clamp over sleeve on each end of the hose assembly and draw tight.

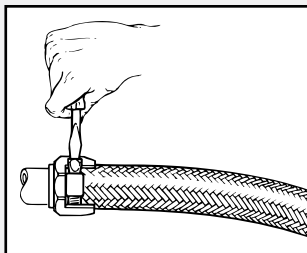
## Pro Clamp™



**Step 1.** Slide clamp onto hose.

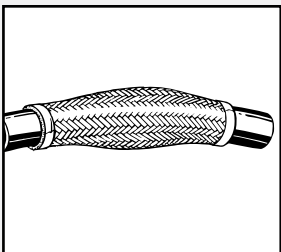


**Step 2.** Push cap (socket) onto hose until it bottoms. Then slide clamp under cap.

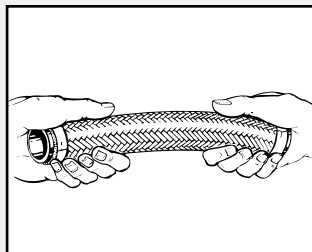


**Step 3.** Push assembly onto beaded tube. Position clamp for appearance. Tighten with a screwdriver.

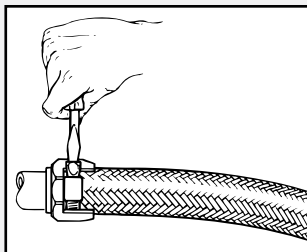
## Overbraid



**Step 1.** Disconnect the radiator hose. Slide overbraid over the radiator hose.



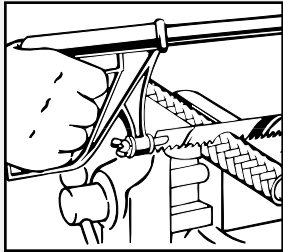
**Step 2.** Stretch until snug, mark length and cut with tin snips.



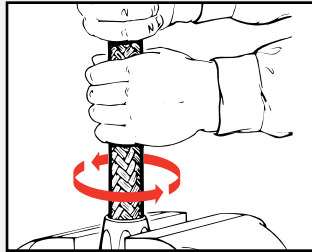
**Step 3.** Reconnect radiator hose and secure hose and overbraid with clamp or Pro Clamp clamp.



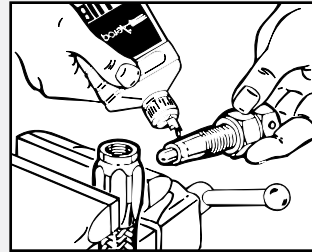
## AQP® High Pressure Hose (Power Steering)



**Step 1.** Cut hose square with fine-tooth hacksaw or cut-off wheel.



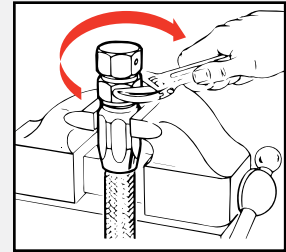
**Step 2.** Put socket in vise. Screw hose counterclockwise into socket until it bottoms. When assembling long lengths of hose, it may be preferred to put hose in vise just tight enough to prevent from turning, and screw socket onto the hose counterclockwise until it bottoms. Back off 1/4 turn.



**Step 3.**  
**Male Ends:** Push assembly tool into nipple.

**Swivel Ends:** Tighten nipple and nut on assembly tool.

Lubricate nipple, mandrel and inside of hose liberally with Aeroquip Performance Products assembly lube.



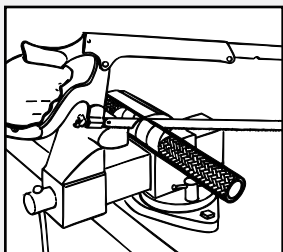
**Step 4.**  
**Male Ends:** Screw nipple clockwise into socket and hose. Leave a 1/32 clearance between nipple hex and socket.

**Swivel Ends:** Screw nipple clockwise into socket and hose. Leave 1/32 to 1/16 clearance between nut and socket. Clean, proof test to twice operating pressure and inspect all assemblies.

**Note:** It is recommended that all hose assemblies be proof pressure checked at twice the operating pressure using a proof test stand such as the Aeroquip Performance Products FT1058 stand.

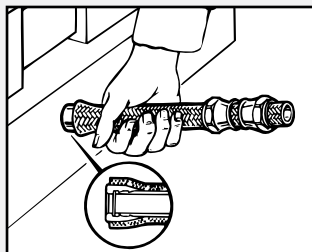
**To disassemble:**  
Reverse steps.

## Racing Hose, PTFE with Reusable Fitting

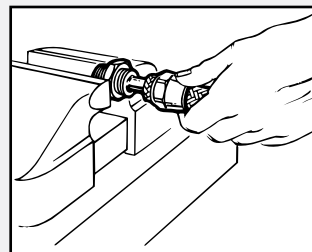


**Step 1.** Cut hose square to length with fine-tooth hack saw or cut-off wheel. To minimize wire braid flare out, wrap hose with masking tape and cut through tape. Remove tape, trim loose wires and flush with lube before next step. Burrs on bore of tube should be removed with a knife. Clean the hose bore.

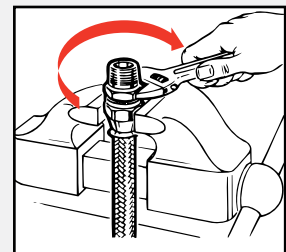
Sometimes wire braid hose will "neck down" on one end and "flare out" on the other end. This can be used to an advantage. Slip two sockets back-to-back over the "necked down" end of the hose, position approximately 3 inches from each end. Mount nipple hex in a vise. Work the hose bore over the nipple to size the tube and aid in separating the braid prior to fitting the sleeve. Remove hose from nipple.



**Step 2.** Push the sleeve over the end of the tube and under the wire braid by hand. Complete positioning of the sleeve by pushing the hose end against a flat surface. Visually inspect to see that the tube butts against the inside shoulder of the sleeve. Set the sleeve barbs into the PTFE tube by pushing a round nose tapered punch into the end of the sleeve and tube.



**Step 3.** Lubricate nipple and socket threads. Use a molydisulfide base lubricant for stainless steel fittings (e.g. Molykote Type G); lubricants containing chloride are not recommended. Other material combinations use standard petroleum lubricants. Hold the nipple with hex in the vise. Push hose over nipple with twisting motion until seated against nipple chamfer. Push socket forward and start threading of socket to nipple.



**Step 4.** Wrench tighten hex until clearance with socket hex is at .031 inches. Your thumbnail is a convenient measuring device. Tighten further to align corners of nipple and socket hexes. CLEAN, PROOF TEST TO TWICE OPERATING PRESSURE AND INSPECT ALL ASSEMBLIES.

To disassemble: Unscrew and remove nipple; slide socket back on hose by tapping against flat surface; remove sleeve with pliers.

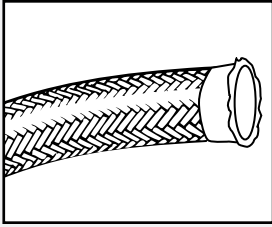
**Important:** Fittings may be disassembled and reused at least once. However, all such fittings should be carefully examined for distortion, thread damage and I.D. dimensions. New sleeve is recommended upon reuse of fitting.

Replacement brass sleeves are available. Refer to Page 15.

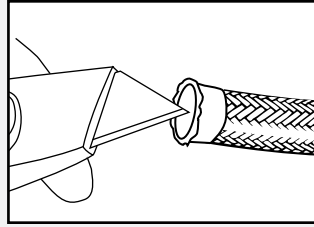
# Assembly Instructions



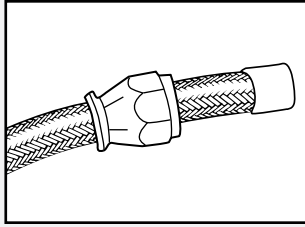
## A/C Hose and Fittings



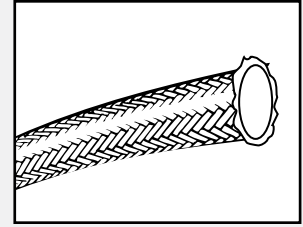
**Step 1.** Wrap a piece of tape around the hose twice and mark to the correct length for cutting. Using a cut-off saw, cut the hose through the tape where marked. This must be a clean, straight cut.



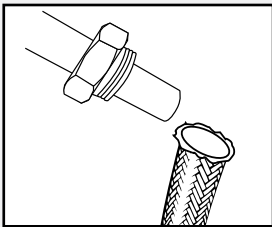
**Step 2.** Using a knife, remove any burrs or debris from the end of the hose. Clean the hose out thoroughly before assembling fittings.



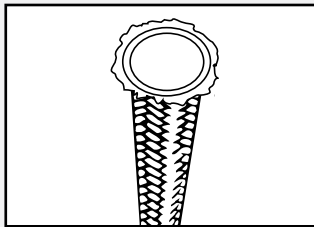
**Step 3.** Once the hose is cut and cleaned, insert the hose through the socket (the threads should be facing in the direction that the nipple will be inserted).



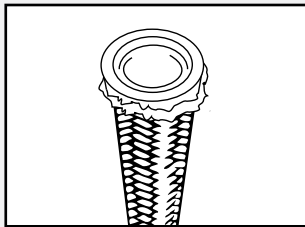
**Step 4.** With the socket slid on the hose, remove the tape. Be sure to remove all the tape. Use a knife if necessary.



**Step 5.** Insert the FT1038A hose tool or fitting nipple gently into the end of the hose.

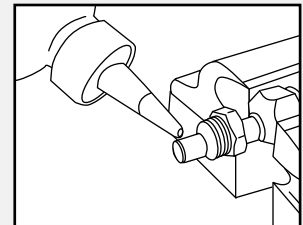


**Step 6.** Using a slow rotating motion, roll the hose tool or fitting nipple around inside the hose so that the braid separates from the tube as shown. Be careful not to stretch the tube out too much, or it will not fit into the sleeve in Step 7.

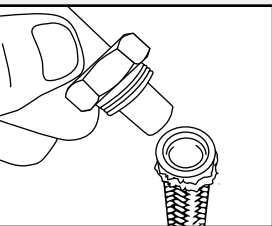


**Step 7.** Push the sleeve over the end of the blue tube and under the wire braid by hand. Complete positioning of the sleeve by pushing the hose end against a flat surface. Visually inspect to see that the tube stock butts against the O-ring on the inside of the sleeve.

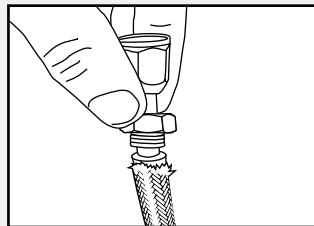
Be careful not to kink or damage the hose during this process. If the hose is damaged, a new piece must be cut and used.



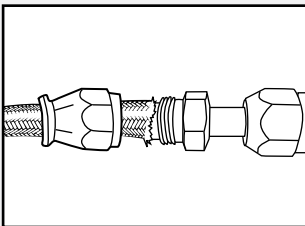
**Step 8.** Lubricate the nipple with refrigerant oil.



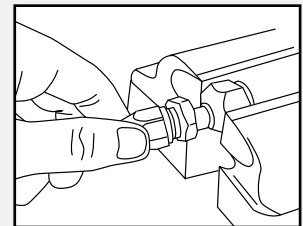
**Step 9.** Insert the lubricated nipple into the hose.



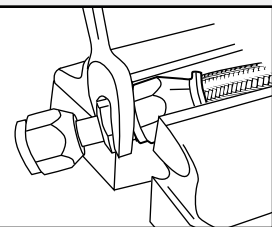
**Step 10.** Use a rotating motion until the nipple has bottomed out into the sleeve. Be very careful not to kink or crush the hose.



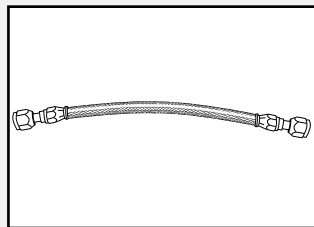
**Step 11.** With the nipple fully inserted, slide the socket back up the hose to the nipple threads.



**Step 12.** Hand tighten the socket to the nipple.



**Step 13.** Using a wrench, tighten the nipple the rest of the way onto the socket. It is ok if the hose rotates during this process. Be careful not to over-tighten the threads, this could cause stripping.

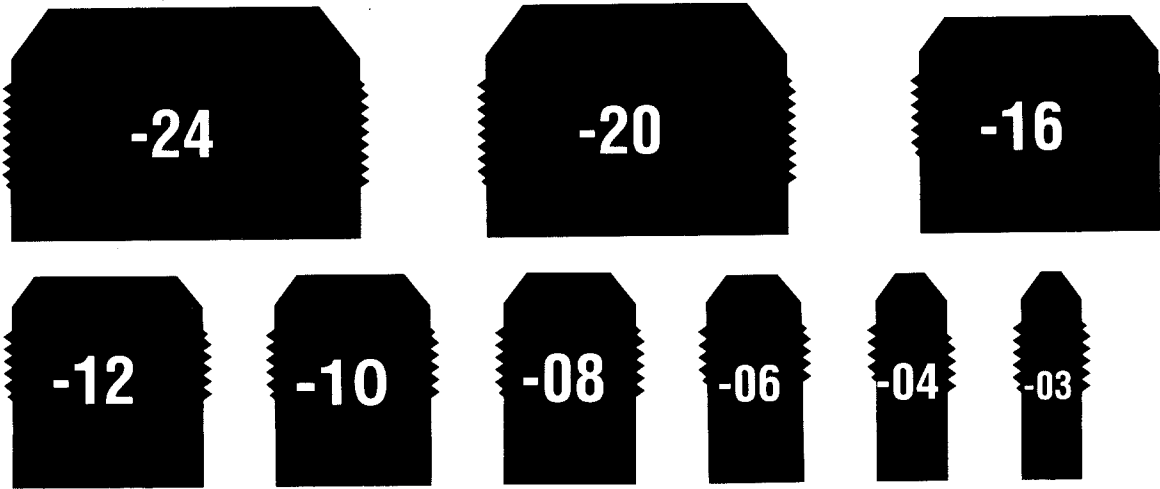


**Step 14.** Repeat Steps 2 thru 13 to complete the other end of hose assembly. Once assembled, remove any contaminants from the hose before installing it into the A/C system.

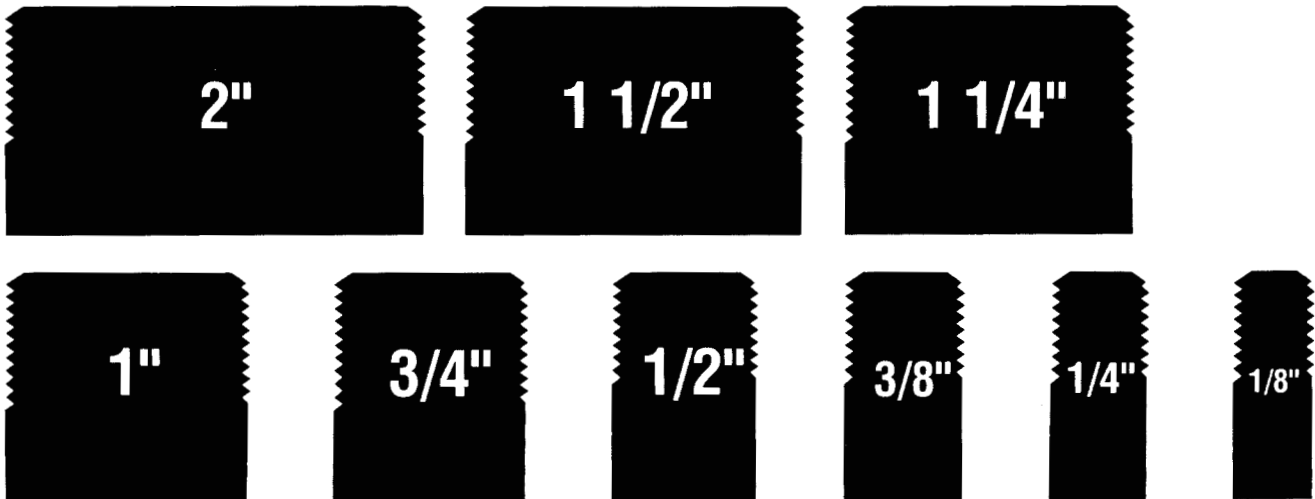
# Technical Data

## Actual Fitting Sizes

### SAE 37° AN FITTINGS



### PIPE THREADS



### “Dash” Size/Fractional Equivalent Guide

The following chart gives fractional equivalents to hose and fitting dash sizes. Dash sizes are the numerators of fractions with a denominator of 16.

For example, -08 is equal to 8/16 which is equal to 1/2.

#### DASH SIZE/FRACTIONAL EQUIVALENT GUIDE

S.A.E. 37° (AN) Dash Size	Nominal Fractional Equivalent INCHES
-02	1/8
-03	3/16
-04	1/4
-05	5/16
-06	3/8
-08	1/2
-10	5/8

#### DASH SIZE/FRACTIONAL EQUIVALENT GUIDE

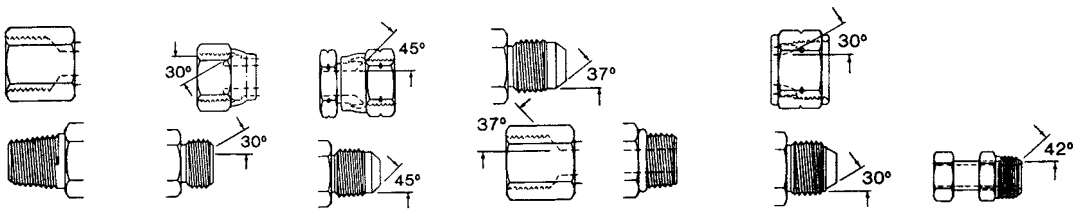
S.A.E. 37° (AN) Dash Size	Nominal Fractional Equivalent INCHES
-12	3/4
-14	7/8
-16	1
-20	1 1/4
-24	1 1/2
-32	2



# Technical Data

## Thread Size Chart

The following chart is intended as a quick reference guide for thread size by dash size.




Dash Size	N.P.T.F.	N.P.S.M. Approximate Diameter	SAE 45° Automotive Refrigeration	SAE 37° AN	S.A.E. O-ring Boss	P.T.T. 30° Automotive	S.A.E. Inverted Flare	Tubing O.D. Size INCHES
-02	1/8-27	1/8-27	5/16-24	5/16-24	5/16-24		5/16-24	1/8
-03			3/8-24	3/8-24	3/8-24		3/8-24	3/16
-04	1/4-18	1/4-18	7/16-20	7/16-20	7/16-20		7/16-24	1/4
-05			1/2-20	1/2-20	1/2-20		1/2-20	5/16
-06	3/8-18	3/8-18	5/8-18	9/16-18	9/16-18		5/8-18	3/8
-07			11/16-24				1 1/16-18	
-08	1/2-14	1/2-14	3/4-16	3/4-16	3/4-16		3/4-18	1/2
-10			7/8-14	7/8-14	7/8-14		7/8-18	5/8
-12	3/4-14	3/4-14	1 1/16-14	1 1/16-12	1 1/16-12		1 1/16-16	3/4
-14				1 3/16-12	1 3/16-12			
-16	1 11-1/2	1 11-1/2		1 5/16-12	1 5/16-12	1 5/16-14		1
-20	1 1/4-11 1/2	1 1/4-11 1/2		1 5/8-12	1 5/8-12	1 5/8-14		1 1/4
-24	1 1/2-11 1/2	1 1/2-11 1/2		1 7/8-12	1 7/8-12	1 7/8-14		1 1/2
-32	2 11-1/2	2 11-1/2		2 1/2-12	2 1/2-12	2 1/2-12		2

## Through Hole Dimensions

All dimensions are nominal. In jump size bodies, minimum through hole dimensions will correspond to the smallest dash size.

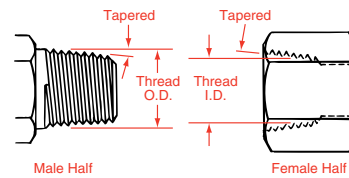
### E THROUGH HOLE



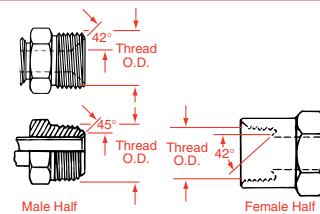
S.A.E. 37°	Dash Size	S.A.E. 37°
	-03	.12
	-04	.17
	-05	.23
	-06	.30
	-08	.39
	-10	.48
	-12	.61
	-16	.84
	-20	1.08
	-24	1.31
	-32	1.78

## Common Thread Connections

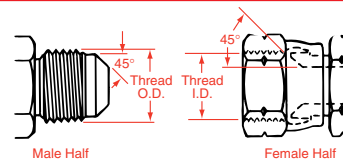
### NPTF (NATIONAL PIPE TAPERED FUEL)



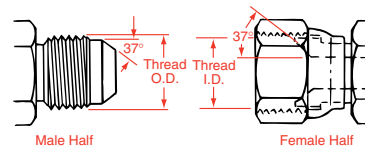
### S.A.E. INVERTED FLARE



### S.A.E. 45°



### S.A.E. 37° (AN)



# Technical Data

## Torque Specifications for Aluminum Fittings

One of the most frequently asked questions is how tight should the connection between the fitting and the adapter be?

The correct answer is to follow the specification guidelines listed below. This will give the proper tightness to allow for a good seal but prevents damage to the fitting by over torque.

### TORQUE SPECIFICATION GUIDELINES

Nut Size	Minimum Torque <sup>1</sup>	Maximum Torque <sup>1</sup>
-02	50	80
-03	70	105
-04	100	140
-05	130	180
-06	150	195
-08	270	350
-10	360	430
-12	460	550
-16	700	840
-20	850	1020
-24	900	1080
-32	1800	2000

<sup>1</sup>Torque values are shown in inch pounds for aluminum fittings.

There may be times when the correct torque wrench may not be available. In these cases you can follow one of the alternate tightening methods listed at right. Please note that these methods are for aluminum performance fittings and adapters.

Remember, overtightening will result in possible damage to the fitting, resulting in possible leaks.

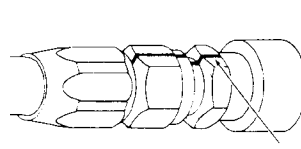
### ALTERNATE TIGHTENING METHOD ONE

#### Flats Method

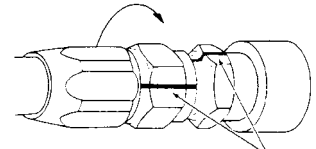
Here are the steps for an excellent method of tightening. Anyone can tell if the joint was tightened and how much.

1. Tighten the nut by hand until it bottoms the seats.
2. Using a marker, draw a line lengthwise on the nut and extend it onto the adapter.
3. Using a wrench, rotate the nut to tighten. Turn the nut the amount shown on the chart.

Size	Number of Hex Flats Rotations
-04	1 1/2 to 1 3/4
-06	1 to 1 1/2
-08	1 1/4 to 1 3/4
-10	1 1/4 to 1 3/4
-12	1 to 1 1/2
-16	3/4 to 1
-20	1/2 to 3/4
-24	1/2 to 3/4



Mark a line on the nut and adapter before torquing.



Misalignment of the mark shows the amount which the nut was tightened.

#### Alternate Tightening Method Two

The second alternate method of tightening is very simple and easy to remember. Bring the nut to hand tight and then rotate a quarter of a turn. This applies to all sizes. Mark the fitting as indicated in the flat method to confirm the quarter turn.

## Conversion Tables

### INCH AND MILLIMETER EQUIVALENTS

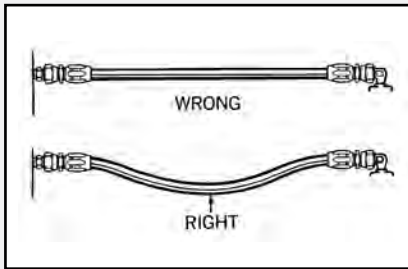
Inches Fractions	Inches Decimals	Millimeters Decimals	Inches Fractions	Inches Decimals	Millimeters Decimals
1/64	.016	.397	7/32	.219	5.556
1/32	.031	.794	15/64	.234	5.953
3/64	.047	1.191	1/4	.250	6.350
1/16	.063	1.588	17/64	.266	6.747
5/64	.078	1.984	9/32	.281	7.144
3/32	.094	2.381	19/64	.297	7.541
7/64	.109	2.778	15/16	.313	7.938
1/8	.125	3.175	21/64	.328	8.334
9/64	.141	3.572	11/32	.344	8.731
5/32	.156	3.969	23/64	.359	9.128
11/64	.172	4.366	3/8	.375	9.525
3/16	.188	4.763	25/64	.391	9.922
13/64	.203	5.159	13/32	.406	10.319

### CONVERTING UNITS OF MEASURE

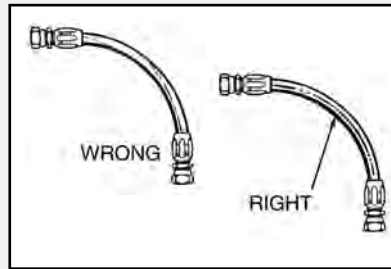
Multiply	By	To Obtain	Multiply	By	To Obtain
Atmospheres	14.70	Pounds/square inch	Liters	0.2642	Gallons
Atmospheres	1.013	Bars	Meters	3.281	Feet
Bars	0.9869	Atmospheres	Meters	39.37	Inches
Bars	14.50	Pounds/square inch	Microns	10 <sup>-6</sup>	Meters
Centimeters	0.3937	Inches	Miles	5280	Feet
Feet	0.3048	Meters	Miles	1.609	Kilometers
Gallons	231	Cubic inches	Miles/hour	1.609	Kilometers/hour
Gallons	3.785	Liters	Miles/hour	0.8684	Knots
Gallons (Imperial)	1.20105	U.S. gallons	Ounces	0.0625	Pounds
Gallons (U.S.)	0.83267	Imperial gallons	Ounces (fluid)	1.805	Cubic inches
Gallons (water)	8.3453	Pounds of water	Ounces (fluid)	0.02957	Liters
Gallons/feet/hour	8.0208	Cubic minute	Pounds	453.5924	Grams
Horsepower	745.7	Watts	Pounds of water	0.1198	Gallons
Inches of mercury	1.133	Feet of water	Pounds of water	0.06804	Atmospheres
Kilometers	0.6214	Miles	Pounds/square inch	0.06804	Atmospheres
Liters	0.03531	Cubic feet	Temp. (°C)	1.8	+32 Temp. (°F)
Liters	61.02	Cubic inches	Temp. (°F)	-32	5/9
			Temp. (°C)		

# Technical Data

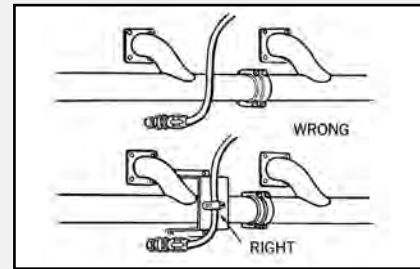
## Hose Routing and Installation



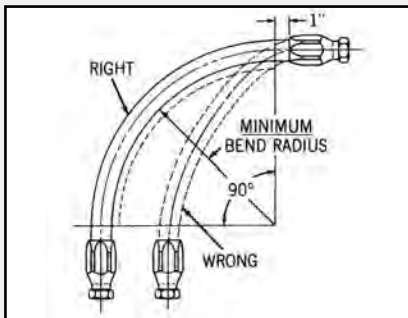
Under pressure, a hose may change in length. Always provide some slack in the hose to allow for this shortening or elongation. (However, excessive slack in hose lines may cause poor appearance.)



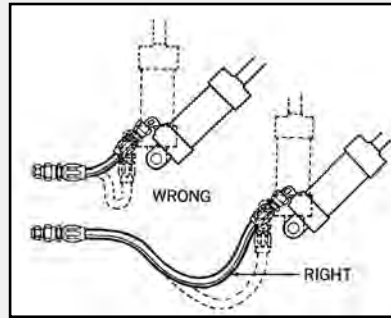
If a hose is installed with a twist in it, operating pressures tend to force it straight. This can loosen the fitting nut. Twisting can cause reinforcement separation, and the hose could burst at the point of strain.



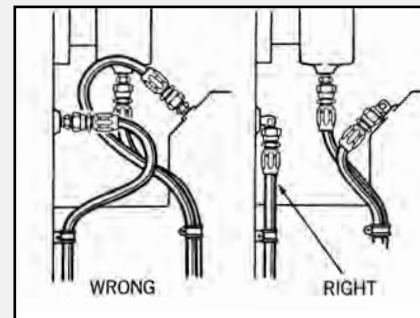
When hose lines pass near an exhaust manifold or other heat source, they should be insulated by a heat resistant boot, firesleeve or a metal baffle. In any application, brackets and clamps keep hose in place and reduce abrasion. For installations where abrasion to the hose cover cannot be prevented with the use of clamps or brackets, a steel protective coil or abrasion resistant sleeve should be placed over the hose.



At bends, provide sufficient hose so that it does not have a bend radius less than its recommended minimum bend radius. Too tight a bend may kink the hose and restrict or stop the fluid flow. In many cases, the proper use of adapters and hose fittings can eliminate tight bends or kinks.



In applications where there is considerable vibration or flexing, allow additional hose length. Metal hose fittings, of course, are not flexible, and proper installation protects metal parts from undue stress and avoids kinks in the hose.



When 90° adapters were used, this assembly became neater-looking and easier to inspect and maintain. It uses less hose, too!

## Hose Maintenance

### Maintenance

Hose assemblies in operation should be inspected frequently for leakage, kinking, abrasion, corrosion or any other signs of wear or damage. Worn or damaged hose assemblies should be replaced immediately.

### Cleaning

Clean assembly by blowing out with clean compressed air. Assemblies may be rinsed out with mineral spirits if the tube stock is compatible with oil; otherwise, hot water at

+150 °F maximum may be used. Consult Danfoss for special cleaning equipment.

### Inspection

Examine hose assembly internally for cut or bulged tube, obstructions and cleanliness. For segment style fittings, be sure the hose butts up against the nipple shoulder, band and retaining ring are properly set and tight, and segments are properly spaced. Check for proper gap between nut and socket or hex and socket. Nuts should swivel freely. Check the layline

of the hose to be sure the assembly is not twisted. Cap the ends of the hose with plastic covers to keep them clean.

### Hydrostatic Proof Testing

The hose assembly should be hydrostatically tested at twice the recommended working pressure of the hose. Test pressure should be held for not more than one minute and not less than 30 seconds. When test pressure is reached, visually inspect hose assembly for any leaks or signs of weakness and any

movement of the hose fitting in relation to the hose. Any of these defects are cause for rejection.

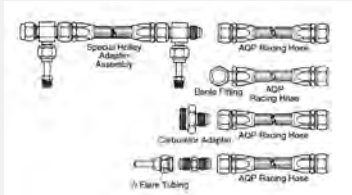
### Caution

Testing should be conducted in approved test stands with adequate guards to protect the operator.

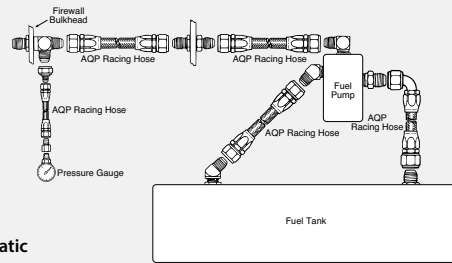
# Technical Data

## AQP® Racing Hose System Schematics

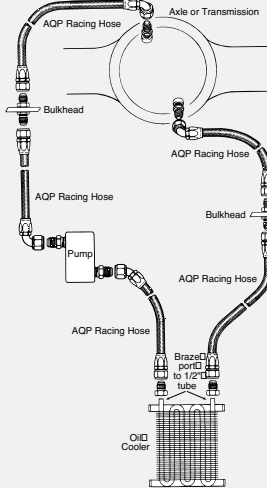
Typical Fuel System Connection Schematic



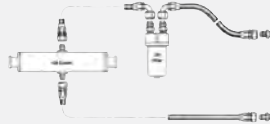
Typical Fuel System Schematic



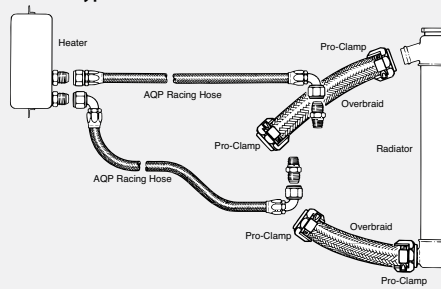
Typical Transmission or Axle Cooler Schematic



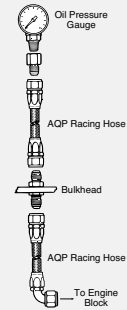
Typical Oil Cooler Schematic



Typical Radiator and Heater Schematic

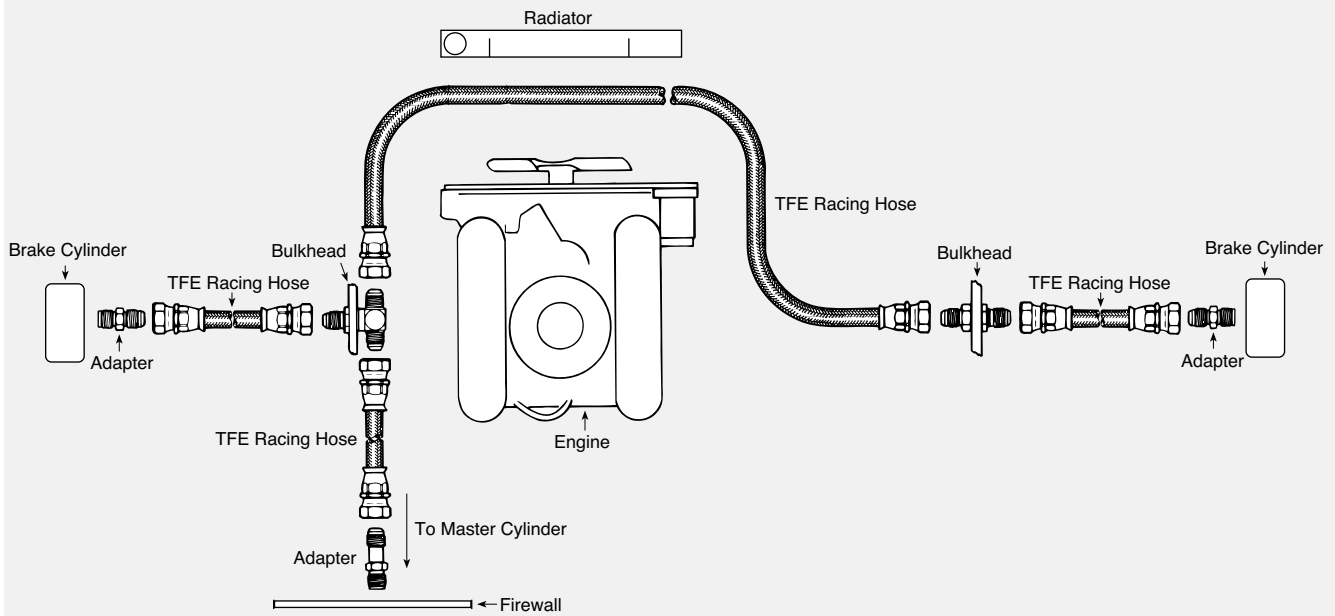


Typical Pressure Gauge Schematic



## Racing Hose, PTFE System Schematics

Typical Brake System Connection Schematic



# Technical Data

## Flow Capacities of Hose Assemblies at Suggested Flow Velocities

This chart is provided as an aid for determining correct hose sizes.

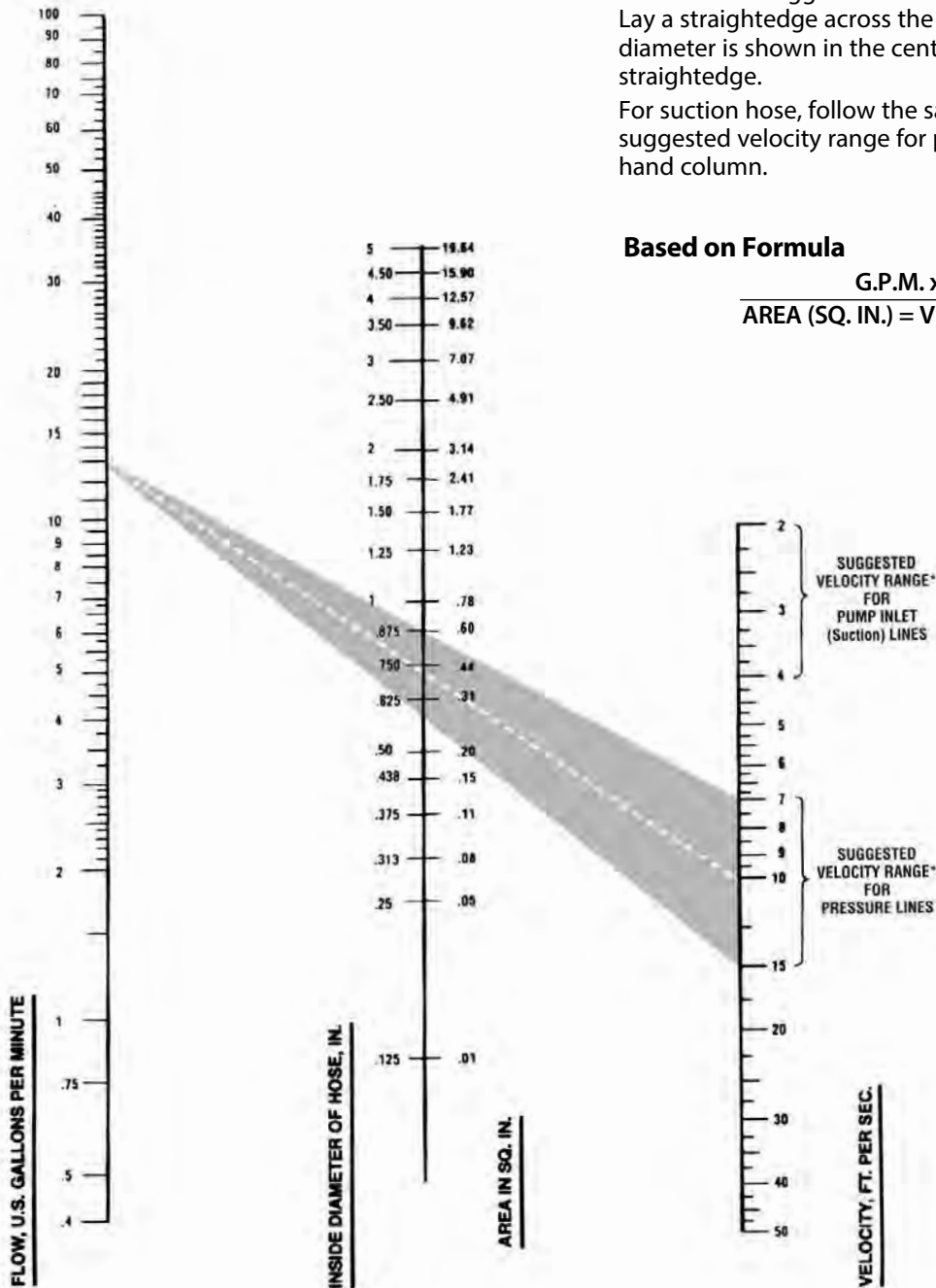
### Example

At 13 U.S. gallons per minute, what is the proper hose size within the suggested velocity range for pressure lines?

### Solution

Locate 13 U.S. gallons per minute in the left-hand column and 10 feet per second in the right-hand column (the center of the suggested velocity range for pressure lines). Lay a straightedge across the two points. The inside diameter is shown in the center column nearest the straightedge.

For suction hose, follow the same procedure except use suggested velocity range for pump inlet lines in the right-hand column.



### Based on Formula

$$\text{AREA (SQ. IN.)} = \frac{\text{G.P.M.} \times 0.3208}{\text{VELOCITY (FT./SEC.)}}$$

### Conversion Factors

- V** To convert U.S. gallons into Imperial gallons, multiply U.S. gallons by 0.83267.
- V** To convert Imperial gallons into U.S. gallons, multiply Imperial gallons by 1.20105.
- V** To convert U.S. gallons into liters, multiply U.S. gallons by 3.785.
- V** To convert liters into U.S. gallons, multiply liters by 0.2642.

\*Suggestions are for oils having a maximum viscosity of 315 S.S.U. at +100 °F (+38 °C) and operating at temperatures between +65 °F to +155 °F (+54 °C to +69 °C). Under certain conditions, velocities in pressure lines can be increased up to 25 feet per second. Contact Danfoss with specific information on your application.

# Technical Data

## Service Life Factors

Hose assemblies, like other products, have a finite service life. The actual service life of a given hose assembly in a given application is dependent on many variable factors, including the following:

### Operating Pressure

Danfoss' Aeroquip Performance Products hose assemblies are rated for continuous operation at the maximum operating pressure specified for the hose. Generally, the operating pressure is one fourth the hose minimum burst pressure.

### Pressure Surges

Almost all hydraulic systems develop pressure surges which may exceed relief valve settings. Exposing the hose to surge pressure above the maximum operating pressure will shorten hose life and must be considered. A surge (rapid and transient rise in pressure) will not be indicated on many common pressure gauges but can be measured using electronic measuring devices. In systems where surges are severe, select a hose with a higher maximum operating pressure.

### Burst Pressure

These are test values only and apply to hose assemblies that have not been used and have been assembled for less than 30 days.

### High Pressure

High pressure gaseous systems especially over 250 psi are very hazardous and should be adequately protected from external shock and mechanical or chemical damage. They should also be suitably protected to prevent whiplash action in the event of failure.

### Operating Temperatures

Operating temperatures specified refer to the maximum temperature of the fluid or gas being conveyed. High heat conditions may have an adverse effect on hoses due to degradation of the rubber which will limit hose usefulness and reduce fitting retention. In some cases, the fluid being conveyed will slow down this degradation, whereas other fluids may accelerate it. Therefore, the maximum temperature of each hose does not apply to all fluids or gases. Continuous use at maximum temperatures together with maximum pressures should always be avoided.

Continuous use at or near the maximum temperature rating will cause a deterioration of physical properties of the tube and cover of most hose. This deterioration will reduce the service life of the hose.

## Ambient Temperatures

Very high or low ambient (outside of hose) temperatures will affect cover and reinforcement materials, thus reducing the life of the hose.

Ambient temperatures in conjunction with internal temperatures are also an important factor. For specific recommendations, please consult Danfoss.

### Bend Radius

Recommended minimum bend radii are based on maximum operating pressures with no flexing of the hose. Safe operating pressure decreases when bend radius is reduced below the recommended minimum. Flexing the hose to less than the specified minimum bend radius will reduce hose life.

### Chemical Resistance

Consider the chemical resistance of the fitting, O-ring, hose cover and tube stock. Covers are resistant to mildew, cleaning solvents, oils and fuels.

### Vacuum Service

Maximum negative pressures shown for hose -16 and larger are suitable only for hose that has suffered no external damage or kinking. If greater negative pressures are required for -16 and larger hose, the use of an internal support coil is recommended.

## IMPORTANT

### Hose Assembly Inspection

Hose assemblies in service should be inspected frequently for leakage, kinking, corrosion, abrasion or any other signs of wear or damage. Hose assemblies that are worn or damaged should be removed from service and replaced immediately.

### A Caution about Fuel Injection

All hose listed in this catalog is suitable for use with leaded and unleaded fuels. However, caution must be used in fuel injection systems that recirculate fuel. This causes fuel to oxidize which can attack the hose inner tube. To increase service life, keep the time of exposure to the oxidized fuel to a minimum. Drain hose line or flush with original fuel or other suitable material.

# Plan-O-Grams

## Traditional Performance Products

### FF13333

The 29x49 Plan-O-Gram comes complete with all the inventory, signage and support material needed to get you on the fast track of selling the hose and fitting line that has been the professionals' choice for over 60 years.

#### INVENTORY

Part Number	Description	Qty.	Part Number	Description	Qty.	Part Number	Description	Qty.
FCM1012	-6 Strt Reus Fitting	2	FCM1013	-8 Strt Reus Fitting	2	FCM4025	-12 45° Reus Fitting	2
FCM4022	-6 45° Reus Fitting	2	FCM4023	-8 45° Strt Reus Fitting	2	FCM4035	-12 90° Reus Fitting	2
FCM4032	-6 90° Reus Fitting	2	FCM4033	-8 90° Strt Reus Fitting	2	FCM2010	FStrt -12 AN to -1/2 Pipe	2
FCM4042	-6 120° Reus Fitting	2	FCM2007	Strt -8 AN to -3/8 Pipe	2	FCM2017	F90° -12 AN to -1/2 Pipe	2
FCM2002	Strt -4 AN to 1/4 Pipe	2	FCM4037	-8 AN to -3/8 Pipe	2	FCM3671	Allen Plug 1/29 Pipe	2
FCM2006	Strt -6 AN to -3/8 Pipe	2	FCM2110	Carb -8 AN to 7/8-20	2	FCM3675	Tube Nut -6	2
FCM2022	45° -6 AN to -1/4 Pipe	2	FCM1014	-10 Strt Reus Fitting	2	FCM3676	Tube Sleeve -6	2
FCM2035	90° -6 AN to -3/8 Pipe	2	FCM4024	-10 45° Reus Fitting	2	FCM3672	Tube Sleeve -8	2
FCM2114	Carb -6 AN to 7/8-20	2	FCM4034	-10 90° Reus Fitting	2	FCA0606	-6 AQP Racing Hose (69)	2
FCM2111	Fuel -6 to 1/2-20 Inv. Flare	2	FCM2010	Strt -10 AN to 1/2 Pipe	2	FCA0803	-8 AQP Racing Hose (39)	2
FCM2052	Flare Union -6 AN/-6 AN	2	FCM2039	90° -10 AN to -1/2 Pipe	2	FCA0806	-8 AQP Racing Hose (69)	2
FCM3749	Allen Plug 1/29 Pipe	2	FCM1015	-12 Strt Reus Fitting	2	FF13365	Merchandiser	1

## Nickel-Plated Products

### FF14619

The 29x29 Nickel-Plated Fitting and Socketless™ Hose Plan-O-Gram comes complete with all the inventory, signage and support material needed to get you on the fast track of selling the hose and fitting line that has been the professionals' choice for over 60 years.

#### INVENTORY

Part Number	Description	Qty.	Part Number	Description	Qty.	Part Number	Description	Qty.
FCE1512	-6 Strt Sktls Fitting	2	FCE1533	-8 90° Sktls Fitting	2	FCE2035	-6 90° Adapter	2
FCE1513	-8 Strt Sktls Fitting	2	FCE1534	-10 90° Sktls Fitting	2	FCE2037	-8 90° Adapter	2
FCE1514	-10 Strt Sktls Fitting	2	FCE2005	-6 AN to Pipe Adapter	2	FCE2039	-10 90° Adapter	2
FCE1522	-6 45° Sktls Fitting	2	FCE2007	-8 AN to Piper Adapter	2	FCN0615	-6 Sktls Hose	159
FCE1523	-8 45° Sktls Fitting	2	FCE2010	-10 AN to Pipe Adapter	2	FCN0815	-8 Sktls Hose	159
FCE1524	-10 45° Sktls Fitting	2	FCE2022	-6 45° Adapter	2	FCN1015	-10 Sktls Hose	159
FCE1532	-6 90° Sktls Fitting	2	FCE2023	-8 45° Adapter	2	FF13365	Merchandiser	1

## A/C Hose Products

### FF13565

The 29x29 A/C Fitting and Hose Plan-O-Gram comes complete with all the inventory, signage and support material needed to get you on the fast track of selling the hose and fitting line that has been the professionals' choice for over 60 years.

#### INVENTORY

Part Number	Description	Qty.	Part Number	Description	Qty.	Part Number	Description	Qty.
FCE1712	-6 Strt Reus Fitting	2	FCE1724	-10 45° Reus Fitting	2	FCM3417	-8 Refrigerant O-rings	2
FCE1713	-8 Strt Reus Fitting	2	FCE1732	-6 90° Reus Fitting	2	FCM3418	-10 Refrigerant O-rings	2
FCE1714	-10 Strt Reus Fitting	2	FCE1733	-8 90° Reus Fitting	2	FCF0603	-6 A/C Hose (39)	2
FCE1722	-6 45° Strt Reus Fitting	2	FCE1734	-10 90° Reus Fitting	2	FCF0803	-8 A/C Hose (39)	2
FCE1723	-8 45° Strt Reus Fitting	2	FCM3416	-6 Refrigerant O-rings	2	FCF1003	-10 A/C Hose (39)	2

## Stand-Alone Merchandising Kit (Make Your Own)

### FF13365

- "Aeroquip Performance Products Sold Here" cling-on window decal
- Header card for Plan-O-Gram
- Aeroquip Performance Products 29x59 banner
- 35 Reorder tags

# Part Number Index

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
FBA0400	6	FBM1204	12	FBM3015	35	FBM4243	10
FBA0600	6	FBM1205	12	FBM3016	35	FBM4244	10
FBA0800	6	FBM1206	12	FBM3113	35	FBM4245	10
FBA1000	6	FBM1207	12	FBM3114	35	FBM4246	10
FBA1200	6	FBM1211	12	FBM3412	37	FBM4252	11
FBA1600	6	FBM1212	12	FBM3413	37	FBM4253	11
FBA2000	6	FBM1213	12	FBM3414	37	FBM4254	11
FBA2400	6	FBM1214	12	FBM3647	36	FBM4255	11
FBA3200	6	FBM1222	12	FBM3648	36	FBM4256	11
FBC0300	16	FBM1225	12	FBM3649	36	FBM4263	11
FBC0400	16	FBM1231	12	FBM3650	36	FBM4264	11
FBC0600	16	FBM1232	12	FBM3651	36	FBM4265	11
FBC0800	16	FBM1233	12	FBM3652	36	FBM4266	11
FBF0600	14	FBM1234	12	FBM3653	36	FBM4272	8
FBF0800	14	FBM1302	18	FBM3654	36	FBM4273	8
FBF1000	14	FBM1305	18	FBM3655	36	FBM4274	8
FBG0600	18	FBM1307	18	FBM3656	36	FBM4275	8
FBG0800	18	FBM1310	18	FBM3657	36	FBM4282	9
FBG1000	18	FBM1338	18	FBM3658	36	FBM4283	9
FBG1200	18	FBM1339	18	FBM3659	36	FBM4284	9
FBL1512	12	FBM1348	9	FBM3660	36	FBM4285	9
FBL1513	12	FBM1349	9	FBM4121	9	FBN0600	12
FBL1514	12	FBM1350	9	FBM4124	9	FBN0800	12
FBL1515	12	FBM1351	9	FBM4125	9	FBN1000	12
FBL1522	13	FBM1352	9	FBM4127	9	FBN1200	12
FBL1523	13	FBM1353	9	FBM4131	10	FBR1200	37
FBL1524	13	FBM1355	10	FBM4134	10	FBR2400	37
FBL1525	13	FBM1356	10	FBM4135	10	FBS0700	36
FBL1532	13	FBM1357	10	FBM4137	10	FBS0800	36
FBL1533	13	FBM1358	10	FBM4141	10	FBS0900	36
FBL1534	13	FBM1359	10	FBM4144	10	FBS1000	36
FBL1535	13	FBM1360	10	FBM4145	10	FBS1100	36
FBL1542	13	FBM1363	18	FBM4151	11	FBS1200	36
FBL1543	13	FBM1365	18	FBM4174	8	FBS1300	36
FBL1544	13	FBM1374	18	FBM4175	8	FBS1400	36
FBL1545	13	FBM1376	18	FBM4184	9	FBS1600	36
FBL1552	13	FBM1382	18	FBM4185	9	FBS1800	36
FBL1553	13	FBM1383	18	FBM4211	8	FBS2000	36
FBL1554	13	FBM1384	18	FBM4212	8	FBS2200	36
FBL1555	13	FBM1386	18	FBM4213	8	FBS2400	36
FBL1562	13	FBM1387	18	FBM4214	8	FBU0400	6, 40
FBL1563	13	FBM1389	18	FBM4215	8	FBU0600	6, 40
FBL1564	13	FBM1392	18	FBM4216	8	FBU0800	6, 40
FBL1565	13	FBM1394	18	FBM4217	8	FBU1000	6, 40
FBM1124	17	FBM1438	13	FBM4222	9	FBU1200	6, 40
FBM1125	17	FBM1439	13	FBM4223	9	FBU1600	6, 40
FBM1126	17	FBM1440	13	FBM4224	9	FBU2000	6, 40
FBM1127	17	FBM1441	13	FBM4225	9	FBV0400	12
FBM1128	17	FBM1442	13	FBM4226	9	FBV0600	12
FBM1129	17	FBM1443	13	FBM4232	10	FBV0800	12
FBM1153	35	FBM1444	13	FBM4233	10	FBV1000	12
FBM1200	12	FBM1445	13	FBM4234	10	FBV1200	12
FBM1201	12	FBM3011	35	FBM4235	10	FCA0403	6
FBM1202	12	FBM3012	35	FBM4236	10	FCA0406	6
FBM1203	12	FBM3013	35	FBM4242	10	FCA0410	6



# Part Number Index

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
FCA0415	6	FCC0606	16	FCE2008	19	FCE2105	27
FCA0420	6	FCC0610	16	FCE2009	19	FCE2106	27
FCA0450	6	FCC0615	16	FCE2010	19	FCE2107	33
FCA0603	6	FCC0620	16	FCE2011	19	FCE2110	33
FCA0606	6	FCC0803	16	FCE2012	19	FCE2112	33
FCA0610	6	FCC0806	16	FCE2013	19	FCE2113	33
FCA0615	6	FCC0810	16	FCE2014	19	FCE2114	33
FCA0620	6	FCC0815	16	FCE2015	19	FCE2116	33
FCA0650	6	FCC0820	16	FCE2016	20	FCE2120	22
FCA0803	6	FCE1012	8	FCE2017	20	FCE2121	28
FCA0806	6	FCE1013	8	FCE2020	20	FCE2122	28
FCA0810	6	FCE1014	8	FCE2021	20	FCE2129	23
FCA0815	6	FCE1015	8	FCE2022	20	FCE2130	23
FCA0820	6	FCE1512	12, 54	FCE2023	20	FCE2132	23
FCA0850	6	FCE1513	12, 54	FCE2024	20	FCE2133	23
FCA1003	6	FCE1514	12, 54	FCE2025	20	FCE2134	23
FCA1006	6	FCE1515	12	FCE2030	20	FCE2135	23
FCA1010	6	FCE1522	13, 54	FCE2031	20	FCE2136	23
FCA1015	6	FCE1523	13, 54	FCE2032	20	FCE2137	23
FCA1020	6	FCE1524	13, 54	FCE2033	20	FCE2138	23
FCA1050	6	FCE1525	13	FCE2034	20	FCE2139	23
FCA1203	6	FCE1532	13, 54	FCE2035	20	FCE2140	23
FCA1206	6	FCE1533	13, 54	FCE2036	20	FCE2141	23
FCA1210	6	FCE1534	13, 54	FCE2037	20	FCE2142	23
FCA1215	6	FCE1535	13	FCE2038	20	FCE2147	23
FCA1220	6	FCE1712	15, 54	FCE2039	20	FCE2150	29
FCA1250	6	FCE1713	15, 54	FCE2040	20	FCE2160	21
FCA1603	6	FCE1714	15, 54	FCE2048	21	FCE2162	21
FCA1606	6	FCE1722	15, 54	FCE2049	21	FCE2163	21
FCA1610	6	FCE1723	15, 54	FCE2050	21	FCE2166	21
FCA1615	6	FCE1724	15, 54	FCE2051	21	FCE2167	21
FCA1620	6	FCE1732	15, 54	FCE2052	21	FCE2170	21
FCA1650	6	FCE1733	15, 54	FCE2053	21	FCE2179	32
FCA2003	6	FCE1734	15, 54	FCE2054	21	FCE2183	32
FCA2006	6	FCE1793	15	FCE2055	21	FCE2184	32
FCA2010	6	FCE1794	15	FCE2056	21	FCE2185	19, 31
FCA2015	6	FCE1812	15	FCE2060	28	FCE2186	22
FCA2020	6	FCE1813	15	FCE2061	28	FCE2187	28
FCA2402	6	FCE1814	15	FCE2063	28	FCE2190	22
FCA2403	6	FCE1832	15	FCE2064	28	FCE2192	33
FCA2406	6	FCE1833	15	FCE2071	26	FCE2240	25
FCA3202	6	FCE1834	15	FCE2072	26	FCE2243	25
FCA3203	6	FCE1893	15	FCE2073	26	FCE2246	25
FCA3206	6	FCE1894	15	FCE2074	26	FCE2247	33
FCC0303	16	FCE1912	15	FCE2075	26	FCE2248	33
FCC0306	16	FCE1913	15	FCE2076	26	FCE2263	25
FCC0310	16	FCE1914	15	FCE2077	26	FCE2769	26
FCC0315	16	FCE2000	19	FCE2081	26	FCE2799	26
FCC0320	16	FCE2001	19	FCE2082	26	FCE2815	27
FCC0403	16	FCE2002	19	FCE2083	26	FCE2953	25
FCC0406	16	FCE2003	19	FCE2084	26	FCE2954	25
FCC0410	16	FCE2004	19	FCE2099	27	FCE2955	25
FCC0415	16	FCE2005	19	FCE2100	27	FCE2956	25
FCC0420	16	FCE2006	19	FCE2103	27	FCE3556	27
FCC0603	16	FCE2007	19	FCE2104	27	FCE4022	9

# Part Number Index

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
FCE4023	9	FCL1565	13	FCM1079	9	FCM1545	13
FCE4024	9	FCM1001	37	FCM1080	9	FCM1552	13
FCE4025	9	FCM1002	37	FCM1083	10	FCM1553	13
FCE4032	10	FCM1003	37	FCM1084	10	FCM1554	13
FCE4033	10	FCM1004	37	FCM1100	17	FCM1555	13
FCE4034	10	FCM1005	37	FCM1101	17	FCM1562	13
FCE4035	10	FCM1006	37	FCM1102	17	FCM1563	13
FCF0603	14, 54	FCM1007	37	FCM1103	17	FCM1564	13
FCF0606	14	FCM1008	37	FCM1104	17	FCM1565	13
FCF0609	14	FCM1009	37	FCM1110	17	FCM2000	19
FCF0803	14, 54	FCM1010	37	FCM1111	17	FCM2001	19
FCF0806	14	FCM1011	8	FCM1112	17	FCM2002	19
FCF0809	14	FCM1012	8	FCM1113	17	FCM2003	19
FCF1003	14, 54	FCM1013	8	FCM1114	17	FCM2004	19
FCF1006	14	FCM1014	8	FCM1120	17	FCM2005	19
FCF1009	14	FCM1015	8	FCM1121	17	FCM2006	19
FCG0606	18	FCM1016	8	FCM1122	17	FCM2007	19
FCG0610	18	FCM1017	8	FCM1123	17	FCM2008	19
FCG0615	18	FCM1021	9	FCM1130	17	FCM2009	19
FCG0620	18	FCM1022	9	FCM1134	17	FCM2010	19
FCG0806	18	FCM1023	9	FCM1135	17	FCM2011	19
FCG0810	18	FCM1024	9	FCM1136	17	FCM2012	19
FCG0815	18	FCM1025	9	FCM1137	17	FCM2013	19
FCG0820	18	FCM1026	9	FCM1138	17	FCM2014	19
FCG1006	18	FCM1027	9	FCM1139	17	FCM2015	19
FCG1010	18	FCM1028	11	FCM1140	17	FCM2016	20
FCG1015	18	FCM1031	10	FCM1141	17	FCM2017	20
FCG1020	18	FCM1032	10	FCM1142	17	FCM2018	20
FCG1206	18	FCM1033	10	FCM1143	17	FCM2020	20
FCG1210	18	FCM1034	10	FCM1144	17	FCM2021	20
FCG1215	18	FCM1035	10	FCM1145	17	FCM2022	20
FCG1220	18	FCM1036	10	FCM1146	17	FCM2023	20
FCL1512	12	FCM1037	10	FCM1147	8	FCM2024	20
FCL1513	12	FCM1042	10	FCM1148	9	FCM2025	20
FCL1514	12	FCM1043	10	FCM1150	17	FCM2026	20
FCL1515	12	FCM1044	10	FCM1151	17	FCM2030	20
FCL1522	13	FCM1045	10	FCM1155	17	FCM2031	20
FCL1523	13	FCM1046	10	FCM1343	10	FCM2032	20
FCL1524	13	FCM1047	10	FCM1344	10	FCM2033	20
FCL1525	13	FCM1052	11	FCM1345	10	FCM2034	20
FCL1532	13	FCM1053	11	FCM1512	12	FCM2035	20
FCL1533	13	FCM1054	11	FCM1513	12	FCM2036	20
FCL1534	13	FCM1055	11	FCM1514	12	FCM2037	20
FCL1535	13	FCM1056	11	FCM1515	12	FCM2038	20
FCL1542	13	FCM1062	11	FCM1522	13	FCM2039	20
FCL1543	13	FCM1063	11	FCM1523	13	FCM2040	20
FCL1544	13	FCM1064	11	FCM1524	13	FCM2041	20
FCL1545	13	FCM1065	11	FCM1525	13	FCM2048	21
FCL1552	13	FCM1066	31	FCM1532	13	FCM2049	21
FCL1553	13	FCM1067	31	FCM1533	13	FCM2050	21
FCL1554	13	FCM1068	31	FCM1534	13	FCM2051	21
FCL1555	13	FCM1069	31	FCM1535	13	FCM2052	21
FCL1562	13	FCM1070	31	FCM1542	13	FCM2053	21
FCL1563	13	FCM1075	8	FCM1543	13	FCM2054	21
FCL1564	13	FCM1076	8	FCM1544	13	FCM2055	21

# Part Number Index

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
FCM2056	21	FCM2130	23	FCM2241	25	FCM2426	26
FCM2060	28	FCM2131	23	FCM2242	25	FCM2430	15
FCM2061	28	FCM2132	23	FCM2243	25	FCM2431	15
FCM2062	28	FCM2133	23	FCM2244	25	FCM2432	15
FCM2063	28	FCM2134	23	FCM2245	25	FCM2440	20
FCM2064	28	FCM2135	23	FCM2246	25	FCM2441	20
FCM2065	28	FCM2136	23	FCM2247	33	FCM2442	20
FCM2066	28	FCM2137	23	FCM2248	33	FCM2443	20
FCM2071	26	FCM2138	23	FCM2249	33	FCM2444	20
FCM2072	26	FCM2139	23	FCM2251	28	FCM2445	20
FCM2073	26	FCM2140	23	FCM2252	28	FCM2446	20
FCM2074	26	FCM2141	23	FCM2254	29	FCM2447	20
FCM2075	26	FCM2142	23	FCM2255	29	FCM2448	20
FCM2076	26	FCM2143	23	FCM2256	29	FCM2449	20
FCM2077	26	FCM2144	23	FCM2257	29	FCM2450	20
FCM2081	26	FCM2145	23	FCM2258	29	FCM2451	20
FCM2082	26	FCM2146	23	FCM2259	29	FCM2491	23
FCM2083	26	FCM2147	23	FCM2263	25	FCM2492	23
FCM2084	26	FCM2148	23	FCM2272	22	FCM2493	23
FCM2085	26	FCM2149	23	FCM2273	22	FCM2494	23
FCM2086	26	FCM2150	29	FCM2274	22	FCM2495	23
FCM2091	27	FCM2151	29	FCM2276	19	FCM2496	23
FCM2092	27	FCM2152	29	FCM2277	19	FCM2497	23
FCM2093	27	FCM2156	21	FCM2278	19	FCM2498	23
FCM2095	27	FCM2160	21	FCM2279	19	FCM2499	23
FCM2096	27	FCM2162	21	FCM2281	29	FCM2500	23
FCM2097	27	FCM2163	21	FCM2282	29	FCM2511	19
FCM2098	27	FCM2165	21	FCM2283	29	FCM2512	19
FCM2099	27	FCM2166	21	FCM2284	29	FCM2513	19
FCM2100	27	FCM2167	21	FCM2285	29	FCM2514	19
FCM2103	27	FCM2169	21	FCM2286	29	FCM2515	19
FCM2104	27	FCM2170	21	FCM2290	20	FCM2516	19
FCM2105	27	FCM2173	29	FCM2291	20	FCM2517	19
FCM2106	27	FCM2174	29	FCM2292	20	FCM2518	19
FCM2107	33	FCM2175	29	FCM2293	20	FCM2519	19
FCM2108	31	FCM2176	29	FCM2298	28	FCM2520	19
FCM2110	33, 54	FCM2177	29	FCM2299	28	FCM2521	19
FCM2111	31, 54	FCM2178	32	FCM2371	19	FCM2522	19
FCM2112	33	FCM2179	32	FCM2372	19	FCM2523	19
FCM2113	33	FCM2180	27	FCM2374	19	FCM2524	19
FCM2114	33	FCM2181	31	FCM2403	26	FCM2525	19
FCM2116	33	FCM2182	31	FCM2404	26	FCM2526	19
FCM2117	27	FCM2183	32	FCM2405	26	FCM2527	19
FCM2118	27	FCM2184	32	FCM2406	26	FCM2528	19
FCM2119	22	FCM2185	19, 31	FCM2407	26	FCM2529	19
FCM2120	22	FCM2186	22	FCM2408	21	FCM2530	19
FCM2121	28	FCM2187	28	FCM2409	21	FCM2531	19
FCM2122	28	FCM2188	21	FCM2410	21	FCM2532	19
FCM2123	28	FCM2189	21	FCM2411	21	FCM2533	19
FCM2124	28	FCM2190	22	FCM2413	21	FCM2534	19
FCM2125	28	FCM2191	22	FCM2414	21	FCM2535	19
FCM2126	28	FCM2192	33	FCM2416	21	FCM2536	19
FCM2127	26	FCM2193	33	FCM2421	21	FCM2537	19
FCM2128	26	FCM2239	25	FCM2422	21	FCM2538	19
FCM2129	23	FCM2240	25	FCM2425	26	FCM2539	19

# Part Number Index

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
FCM2540	19	FCM2632	20	FCM2763	21	FCM2824	27
FCM2541	19	FCM2633	20	FCM2764	21	FCM2825	27
FCM2542	19	FCM2634	20	FCM2765	21	FCM2831	27
FCM2543	19	FCM2635	20	FCM2766	21	FCM2832	27
FCM2544	19	FCM2636	20	FCM2769	26	FCM2833	27
FCM2545	19	FCM2637	20	FCM2770	26	FCM2834	27
FCM2546	19	FCM2638	20	FCM2771	26	FCM2835	27
FCM2547	19	FCM2639	20	FCM2772	26	FCM2871	26
FCM2581	20	FCM2700	28	FCM2773	26	FCM2872	26
FCM2582	20	FCM2701	28	FCM2774	26	FCM2873	26
FCM2583	20	FCM2702	28	FCM2775	26	FCM2874	26
FCM2584	20	FCM2703	28	FCM2776	26	FCM2875	26
FCM2585	20	FCM2704	28	FCM2777	26	FCM2876	26
FCM2586	20	FCM2705	28	FCM2778	26	FCM2877	26
FCM2587	20	FCM2706	28	FCM2779	26	FCM2878	26
FCM2588	20	FCM2707	28	FCM2781	26	FCM2879	26
FCM2589	20	FCM2708	28	FCM2782	26	FCM2880	26
FCM2590	20	FCM2709	28	FCM2783	26	FCM2881	28
FCM2591	20	FCM2710	28	FCM2784	26	FCM2882	28
FCM2592	20	FCM2711	28	FCM2785	26	FCM2883	28
FCM2593	20	FCM2712	28	FCM2786	26	FCM2884	28
FCM2594	20	FCM2714	28	FCM2787	27	FCM2885	28
FCM2595	20	FCM2719	20	FCM2788	26	FCM2893	26
FCM2596	20	FCM2720	20	FCM2790	26	FCM2899	27
FCM2597	20	FCM2721	20	FCM2791	26	FCM2909	29
FCM2598	20	FCM2722	20	FCM2792	26	FCM2910	29
FCM2599	20	FCM2723	20	FCM2793	26	FCM2914	22
FCM2600	20	FCM2724	20	FCM2794	26	FCM2915	22
FCM2601	20	FCM2725	20	FCM2795	26	FCM2916	22
FCM2602	20	FCM2726	20	FCM2796	26	FCM2917	22
FCM2603	20	FCM2727	20	FCM2797	26	FCM2918	22
FCM2608	18, 25	FCM2728	20	FCM2798	26	FCM2919	22
FCM2609	18, 25	FCM2729	20	FCM2799	26	FCM2921	30
FCM2610	20	FCM2730	20	FCM2800	27	FCM2922	30
FCM2611	20	FCM2731	20	FCM2801	27	FCM2923	30
FCM2612	20	FCM2732	20	FCM2802	27	FCM2925	29
FCM2613	20	FCM2733	20	FCM2803	27	FCM2926	29
FCM2614	20	FCM2734	20	FCM2804	27	FCM2927	29
FCM2615	20	FCM2735	20	FCM2805	27	FCM2928	29
FCM2616	20	FCM2736	20	FCM2806	27	FCM2929	29
FCM2617	20	FCM2737	20	FCM2807	27	FCM2930	29
FCM2618	20	FCM2749	21	FCM2808	27	FCM2931	29
FCM2619	20	FCM2750	21	FCM2809	27	FCM2932	29
FCM2620	20	FCM2751	21	FCM2811	27	FCM2933	29
FCM2621	20	FCM2752	21	FCM2812	27	FCM2934	29
FCM2622	20	FCM2753	21	FCM2813	27	FCM2935	29
FCM2623	20	FCM2754	21	FCM2814	27	FCM2936	29
FCM2624	20	FCM2755	21	FCM2815	27	FCM2937	29
FCM2625	20	FCM2756	21	FCM2816	27	FCM2938	30
FCM2626	20	FCM2757	21	FCM2817	28	FCM2939	30
FCM2627	20	FCM2758	21	FCM2818	28	FCM2940	30
FCM2628	20	FCM2759	21	FCM2819	28	FCM2941	30
FCM2629	20	FCM2760	21	FCM2821	27	FCM2942	30
FCM2630	20	FCM2761	21	FCM2822	27	FCM2943	30
FCM2631	20	FCM2762	21	FCM2823	27	FCM2944	30

# Part Number Index

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
FCM2945	30	FCM3151	22	FCM3573	24	FCM3716	24
FCM2946	30	FCM3155	22	FCM3574	24	FCM3717	24
FCM2947	30	FCM3156	22	FCM3575	24	FCM3718	24
FCM2948	30	FCM3157	22	FCM3576	24	FCM3719	24
FCM2949	30	FCM3158	22	FCM3577	24	FCM3720	17
FCM2950	29	FCM3416	15, 54	FCM3578	24	FCM3721	17
FCM2953	25	FCM3417	15, 54	FCM3584	27	FCM3722	24
FCM2954	25	FCM3418	15, 54	FCM3585	27	FCM3723	24
FCM2955	25	FCM3462	36	FCM3586	27	FCM3724	24
FCM2956	25	FCM3463	36	FCM3587	27	FCM3725	24
FCM2957	25	FCM3464	36	FCM3588	27	FCM3726	24
FCM2958	25	FCM3465	36	FCM3591	24	FCM3727	24
FCM2959	25	FCM3466	36	FCM3601	24	FCM3740	24
FCM2960	25	FCM3467	36	FCM3602	24	FCM3741	24
FCM2961	33	FCM3468	36	FCM3603	24	FCM3742	24
FCM2963	18, 25	FCM3469	36	FCM3604	24	FCM3743	24
FCM2964	18, 25	FCM3470	36	FCM3605	24	FCM3744	24
FCM2965	18, 25	FCM3472	36	FCM3627	36	FCM3749	24
FCM2966	30	FCM3473	36	FCM3642	36	FCM3750	24
FCM2967	30	FCM3474	36	FCM3667	24	FCM3751	24
FCM2968	30	FCM3475	36	FCM3668	24	FCM3752	24
FCM2971	22	FCM3476	36	FCM3669	24	FCM3821	17
FCM2972	22	FCM3477	36	FCM3670	24	FCM3822	17
FCM2973	22	FCM3479	24	FCM3671	24	FCM3823	17
FCM2974	22	FCM3480	24	FCM3672	24	FCM3824	17
FCM2975	22	FCM3481	36	FCM3673	24	FCM3827	24
FCM2978	22	FCM3482	36	FCM3674	24	FCM3828	24
FCM2979	22	FCM3483	36	FCM3675	24	FCM3829	24
FCM2980	22	FCM3484	36	FCM3676	24	FCM3830	24
FCM2981	22	FCM3485	36	FCM3677	24	FCM3831	24
FCM2982	22	FCM3486	36	FCM3678	24	FCM3832	24
FCM2992	25	FCM3487	36	FCM3679	24	FCM3833	27
FCM2993	25	FCM3488	36	FCM3680	24	FCM4022	9, 54
FCM2995	25	FCM3489	36	FCM3681	24	FCM4023	9, 54
FCM2996	25	FCM3497	36	FCM3682	24	FCM4024	9, 54
FCM2997	25	FCM3498	36	FCM3683	24	FCM4025	9, 54
FCM2998	25	FCM3499	36	FCM3684	24	FCM4026	9
FCM2999	25	FCM3513	36	FCM3685	24	FCM4032	10, 54
FCM3001	25	FCM3514	36	FCM3686	24	FCM4033	10, 54
FCM3002	25	FCM3515	36	FCM3687	24	FCM4034	10, 54
FCM3003	25	FCM3516	36	FCM3696	24	FCM4035	10, 54
FCM3081	35	FCM3517	36	FCM3697	24	FCM4036	10
FCM3082	35	FCM3534	36	FCM3698	24	FCM4042	10
FCM3083	35	FCM3535	36	FCM3701	24	FCM4043	10
FCM3084	35	FCM3536	36	FCM3702	24	FCM4044	10
FCM3085	35	FCM3537	36	FCM3703	24	FCM4045	10
FCM3086	35	FCM3538	36	FCM3704	24	FCM4046	10
FCM3087	35	FCM3554	24	FCM3705	24	FCM4052	11
FCM3088	17	FCM3555	24	FCM3706	24	FCM4053	11
FCM3089	17	FCM3556	27	FCM3707	24	FCM4054	11
FCM3091	17	FCM3566	24	FCM3708	24	FCM4055	11
FCM3092	17	FCM3567	24	FCM3712	24	FCM4056	11
FCM3148	22	FCM3570	24	FCM3713	24	FCM4062	11
FCM3149	22	FCM3571	24	FCM3714	24	FCM4063	11
FCM3150	22	FCM3572	24	FCM3715	24	FCM4064	11

# Part Number Index

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
FCM4065	11	FCM5003	19	FCM5082	26	FCM5256	29
FCM4066	11	FCM5004	19	FCM5083	26	FCM5263	25
FCM4072	8	FCM5005	19	FCM5084	26	FCM5554	24
FCM4073	8	FCM5006	19	FCM5085	26	FCM5555	24
FCM4074	8	FCM5007	19	FCM5091	27	FCM5556	27
FCM4075	8	FCM5008	19	FCM5119	22	FCM5567	24
FCM4076	8	FCM5009	19	FCM5120	22	FCM5669	24
FCM4082	9	FCM5010	19	FCM5121	28	FCM5670	24
FCM4083	9	FCM5011	19	FCM5122	28	FCM5671	24
FCM4084	9	FCM5012	19	FCM5123	28	FCM5672	24
FCM4085	9	FCM5014	19	FCM5124	28	FCM5673	24
FCM4086	9	FCM5013	19	FCM5125	28	FCM5674	24
FCM4412	8	FCM5015	19	FCM5126	28	FCM5675	24
FCM4413	8	FCM5016	20	FCM5129	23	FCM5677	24
FCM4414	8	FCM5017	20	FCM5130	23	FCM5678	24
FCM4415	8	FCM5020	20	FCM5131	23	FCM5684	24
FCM4416	8	FCM5021	20	FCM5132	23	FCM5685	24
FCM4422	9	FCM5022	20	FCM5133	23	FCM5686	24
FCM4423	9	FCM5023	20	FCM5134	23	FCM5687	24
FCM4424	9	FCM5024	20	FCM5135	23	FCM5712	24
FCM4425	9	FCM5025	20	FCM5136	23	FCM5713	24
FCM4426	9	FCM5030	20	FCM5137	23	FCM5714	28
FCM4432	10	FCM5031	20	FCM5138	23	FCM5715	24
FCM4433	10	FCM5032	20	FCM5139	23	FCM5716	24
FCM4434	10	FCM5033	20	FCM5140	23	FCM5717	24
FCM4435	10	FCM5034	20	FCM5141	23	FCM5718	24
FCM4436	10	FCM5035	20	FCM5142	23	FCM5719	24
FCM4442	10	FCM5036	20	FCM5147	23	FCM5722	24
FCM4443	10	FCM5037	20	FCM5148	23	FCM5723	24
FCM4444	10	FCM5038	20	FCM5149	23	FCM5724	24
FCM4445	10	FCM5039	20	FCM5150	29	FCM5725	24
FCM4446	10	FCM5040	20	FCM5151	29	FCM5726	24
FCM4452	11	FCM5048	21	FCM5152	29	FCM5727	24
FCM4453	11	FCM5049	21	FCM5156	21	FCM5740	24
FCM4454	11	FCM5050	21	FCM5160	21	FCM5741	24
FCM4455	11	FCM5051	21	FCM5162	21	FCM5742	24
FCM4456	11	FCM5052	21	FCM5163	21	FCM5743	24
FCM4462	11	FCM5053	21	FCM5166	21	FCM5744	24
FCM4463	11	FCM5054	21	FCM5167	21	FCM5749	24
FCM4464	11	FCM5055	21	FCM5170	21	FCM5750	24
FCM4465	11	FCM5056	21	FCM5179	32	FCM5751	24
FCM4466	11	FCM5060	28	FCM5183	32	FCM5752	24
FCM4472	8	FCM5061	28	FCM5184	32	FCM5769	26
FCM4473	8	FCM5062	28	FCM5185	19	FCM5799	26
FCM4474	8	FCM5063	28	FCM5186	22	FCM5815	27
FCM4475	8	FCM5064	28	FCM5187	28	FCM5827	24
FCM4476	8	FCM5065	28	FCM5190	22	FCM5828	24
FCM4482	9	FCM5071	26	FCM5240	25	FCM5829	24
FCM4483	9	FCM5072	26	FCM5241	25	FCM5830	24
FCM4484	9	FCM5073	26	FCM5243	25	FCM5831	24
FCM4485	9	FCM5074	26	FCM5244	25	FCM5832	24
FCM4486	9	FCM5075	26	FCM5245	25	FCM5893	26
FCM5000	19	FCM5076	26	FCM5246	25	FCM5953	25
FCM5001	19	FCM5077	26	FCM5254	29	FCM5954	25
FCM5002	19	FCM5081	26	FCM5255	29	FCM5955	25

# Part Number Index

Part Number	Page	Part Number	Page
FCM5956	25	FCU1215	6
FCM5992	25	FCU1220	6
FCM5993	25	FCU1606	6
FCM5995	25	FCU1610	6
FCM5996	25	FCU1615	6
FCM5997	25	FCU1620	6
FCM5998	25	FCU2006	6
FCM5999	25	FCU2010	6
FCM6001	25	FCU2015	6
FCM6002	25	FCU2020	6
FCM6003	25	FCV0615	12
FCM6714	24	FCV0620	12
FCN0615	12, 54	FCV0815	12
FCN0620	12	FCV0820	12
FCN0815	12	FCV1015	12
FCN0820	12	FCV1020	12
FCN1015	12		
FCN1020	12		
FCN1215	12		
FCN1220	12		
FCP0101	34		
FCP0102	34		
FCP0129	34		
FCP0134	34		
FCP0138	32		
FCP0139	32		
FCP0140	32		
FCR1203	37		
FCR1206	37		
FCR1210	37		
FCR1215	37		
FCR1220	37		
FCR2403	37		
FCR2406	37		
FCR2410	37		
FCR2415	37		
FCR2420	37		
FCU0406	6		
FCU0410	6		
FCU0415	6		
FCU0420	6		
FCU0606	6		
FCU0610	6		
FCU0615	6		
FCU0620	6		
FCU0806	6		
FCU0810	6		
FCU0815	6		
FCU0820	6		
FCU1006	6		
FCU1010	6		
FCU1015	6		
FCU1020	6		
FCU1206	6		
FCU1210	6		



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