

EXPERIENCE THE DIFFERENCE

Engineered. Tested. Qualified.

100 Proof

Engineered • Tested • Qualified

Over the years our customers have experienced a difference in quality, industry support, depth of product line, and customer service from Eaton's Aeroquip® Performance Products. Aeroquip is the professional's choice and is the only company that manufacturers their own hose and fittings. Don't be misled by other brands that claim performance, but buy all their products overseas. 100% of our hose is made in the USA and all of our fittings and adapters are distributed from our warehouse in Van Wert, OH. We encourage you to experience the difference with Eaton's Aeroquip Performance Products, you'll be glad you did.



Engineered

Eaton's fitting and hose tolerances are engineered to match for a compatibility exclusive to Aeroquip Performance Products

Tested

Hose and fitting assemblies tested to rigorous 4:1 factor of safety

Hose lengths are proof tested to 2X rated working pressure
State-of-the-art testing capabilities and ISO 9001 and QS9000 quality certified facilities are Eaton® hallmarks

Qualified

We know it because we make it
Made in the U.S.A. for over 65 years
Exclusively approved by NHRA and IHRA as a product line of choice



www.eaton.com/aeroquipperformance

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

EATON Aeroquip Performance Products A-SPPE-MC001-E5 November 2010

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Warranty

For warranty information, please visit www.eaton.com/hydraulics/warranty

Warning

Eaton fitting tolerances are engineered to match Eaton hose tolerances. The use of Eaton fittings on hose supplied by other manufacturers and/or the use of Eaton 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 Eaton. EATON 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 EATON APPROVED EQUIPMENT,

AND IN CONFORMANCE WITH EATON PROCESS AND PRODUCT INSTRUCTIONS FOR EACH SPECIFIC HOSE ASSEMBLY. Failure to follow Eaton 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.

*Teflon is a registered trademark of Dupont and under license by Eaton.

APPLICATION GUIDE

AQP® Racing Hose



See page 6

- Aeroquip Performance Product's 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



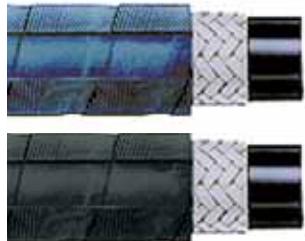
See page 6

- Aeroquip Performance Product's popular light-weight racing hose
- Up to 45% lighter than stainless steel braided hose
- 350-500 psi pressure ratings

- Flame retardant Nomex* cover with Kevlar*
- 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 11

- 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 13

- 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

Teflon® Racing Hose
(Off-Road Brake and Power Trim Lines)

See page 15

- Superior fluid compatibility, abrasion and corrosion resistance for reliable service
- Stainless steel outer cover for excellent abrasion resistance

- Extruded Teflon® 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, N₂O, power steering, hydraulic, 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

*Nomex, Kevlar and Teflon are DuPont trademarks

Reusable Aluminum Fittings



- 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

See pages 7-10

Crimp Aluminum Fittings (lightweight)



- 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

See pages 7-10

Aluminum SOCKETLESS™ Fittings



- 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

See page 12

A/C Fittings



- 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

See page 14

Bulk or Retail Packaged Parts

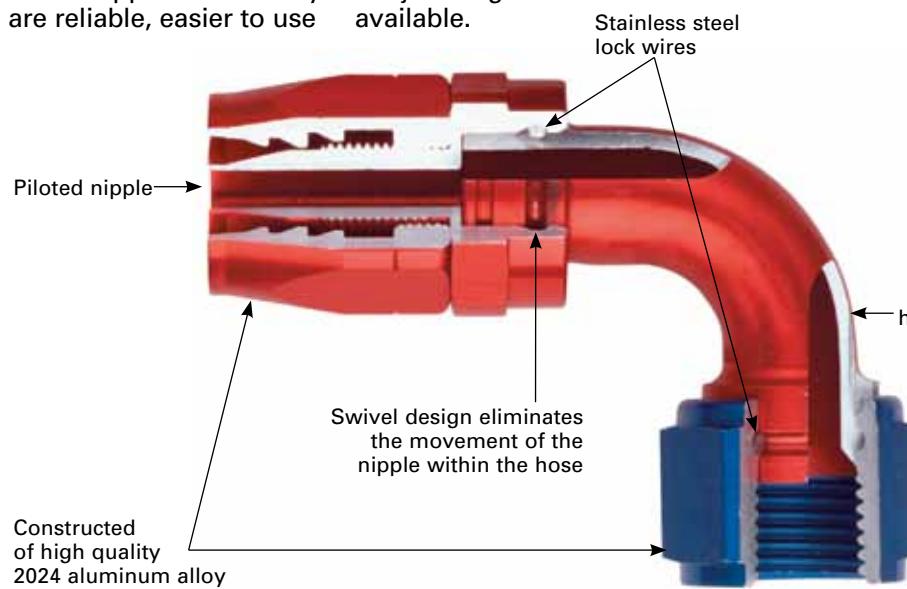
FB-prefixed part numbers indicate bulk-packaged products. FC-prefixed part numbers indicate carded/clam shelled (retail-packaged) products. Most products in this catalog can be ordered in either package style by changing the prefix accordingly.

APPLICATION GUIDE (CONT.)

Compression-Style Design Provides Simple, Troublefree Assembly

Eaton's Aeroquip Performance Products anodized aluminum reusable fittings are engineered to match Eaton hose tolerances, providing matchless performance. The smooth tube design allows excellent fluid flow. Their compression-style design provides simple, troublefree assembly. Eaton's compression style design was specially designed for performance applications. They are reliable, easier to use

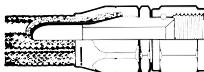
and more forgiving than cutter-style fittings. A comparison of the two styles is shown at right. For applications involving methanol and nitromethane fuel mixtures, Aeroquip offers zinc-plated carbon steel fittings designed precisely for these situations. These fittings feature a steel nipple, nut and tube with an anodized aluminum hose socket. High quality aluminum carburetor adapters and banjo fittings are also available.



One-Piece Design*

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

Eaton's Compression Style Design

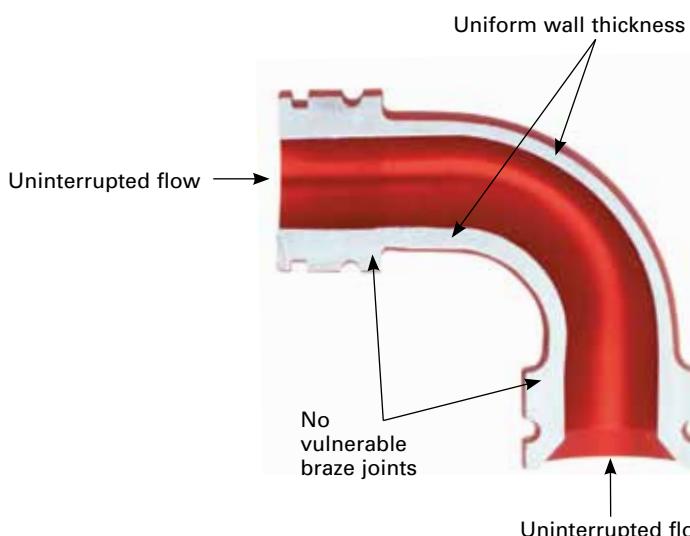


- Designed to be re-used without damage to the fitting
- Nipple pilot prevents damage to the inner tube
- More user friendly, for consistently excellent hose/fitting connections
- Nipple does not move with this design on swivel fittings

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.



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

AQP® RACING HOSE AND FITTINGS

STARTLITE® RACING HOSE AND FITTINGS

AQP® RACING HOSE

The most popular racing hose in the market for over 60 years — made in the U.S.A.



HOSE SPECIFICATIONS

Hose Dash Size	Hose I.D.	Max. Hose O.D.	Max. Operating Pressure	Weight Per Foot	Vacuum Service	Bulk Part Number	Package Length	Part Number	2 FEET	3 FEET	6 FEET	10 FEET	15 FEET	20 FEET	50 FEET	REEL
-04	.22	.44	1000/750 ¹	2.00	.11	21	FBA0400	—	FCA0403	FCA0406	FCA0410	FCA0415	FCA0420	FCA0450	FBA0400RL	
-06	.34	.55	1000/750 ¹	2.50	.16	21	FBA0600	—	FCA0603	FCA0606	FCA0610	FCA0615	FCA0620	FCA0650	FBA0600RL	
-08	.44	.65	1000/750 ¹	3.50	.17	21	FBA0800	—	FCA0803	FCA0806	FCA0810	FCA0815	FCA0820	FCA0850	FBA0800RL	
-10	.56	.80	1000/750 ¹	4.00	.21	28	FBA1000	—	FCA1003	FCA1006	FCA1010	FCA1015	FCA1020	FCA1050	FBA1000RL	
-12	.69	.94	1000/750 ¹	4.50	.29	28	FBA1200	—	FCA1203	FCA1206	FCA1210	FCA1215	FCA1220	FCA1250	FBA1200RL	
-16	.88	1.15	750/750 ¹	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.



HOSE SPECIFICATIONS

Hose Dash Size	Hose I.D.	Hose O.D.	Max. Operating Pressure	Min. Bend Radius	Weight Per Foot	Vacuum Service	Bulk Part Number	Package Length	Part Number	3 FEET	6 FEET	10 FEET	15 FEET	20 FEET	50 FEET
-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 Nomex® hose construction.

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

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

ORDERING INFORMATION

The Professional's Choice.

Features:

- Up to 45% lighter than stainless steel braided hose
- Flame retardant Nomex and Kevlar cover
- AQP smooth bore inner tube
- 45° to 300°F temperature rating
- Flexible band radius
- Race proven — approved by NASCAR, NHRA, IHRA, ADRL and other sanctioning bodies

- Three to five times better abrasion protection*
- Fastest and easiest crimp machine on the market (FT1380)
- 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

ORDERING INFORMATION

AQP® Racing and Startlite® Racing hoses are both qualified with the same reusable and crimp fittings on the following pages.

Please see Pages 44-48 for assembly instructions. *Nomex is a Dupont trademark.

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 (CONT.)
STARTLITE® RACING HOSE AND FITTINGS (CONT.)
**STRAIGHT 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** 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)	
Hose Size	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

Reusable Back 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	FCM4472	FCM4072	—	FBM4272	—
-08	FCM4473	FCM4073	—	FBM4273	—
-10	FCM4473	FCM4074	—	FBM4274	FBM4174
-12	FCM4475	FCM4075	—	FBM4275	FBM4175
-16	FCM4476	FCM4076	—	—	—
-20	—	—	FCM1147	—	—



Please see Pages 44-48 for assembly instructions. **Aluminum socket


TechTip
**Don't Put
Your Performance
at Risk**

Don't 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.



AQP® RACING HOSE AND FITTINGS (CONT.)
STARTLITE® RACING HOSE AND FITTINGS (CONT.)

45° 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)	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

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)
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	—	—

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

Please see Pages 44-48 for assembly instructions. **Aluminum socket

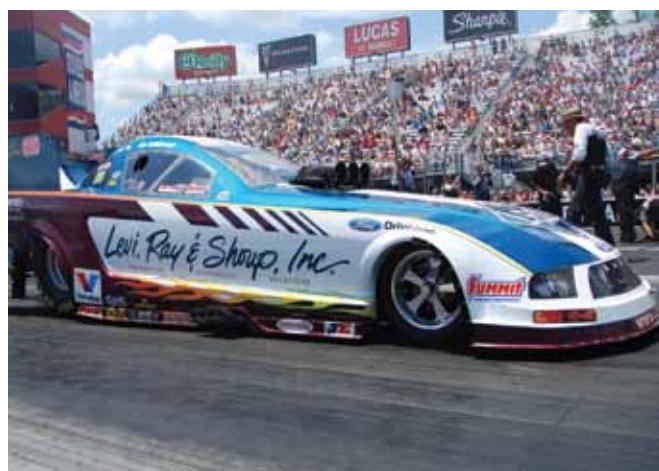
Bulk or Retail Packaged Parts

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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.



AQP® RACING HOSE AND FITTINGS (CONT.)
STARTLITE® RACING HOSE AND FITTINGS (CONT.)



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

Please see Pages 44-48 for assembly instructions. **Aluminum socket

Direct Port Fitting

90° ORB FITTING

Reusable Aluminum Swivel O-ring



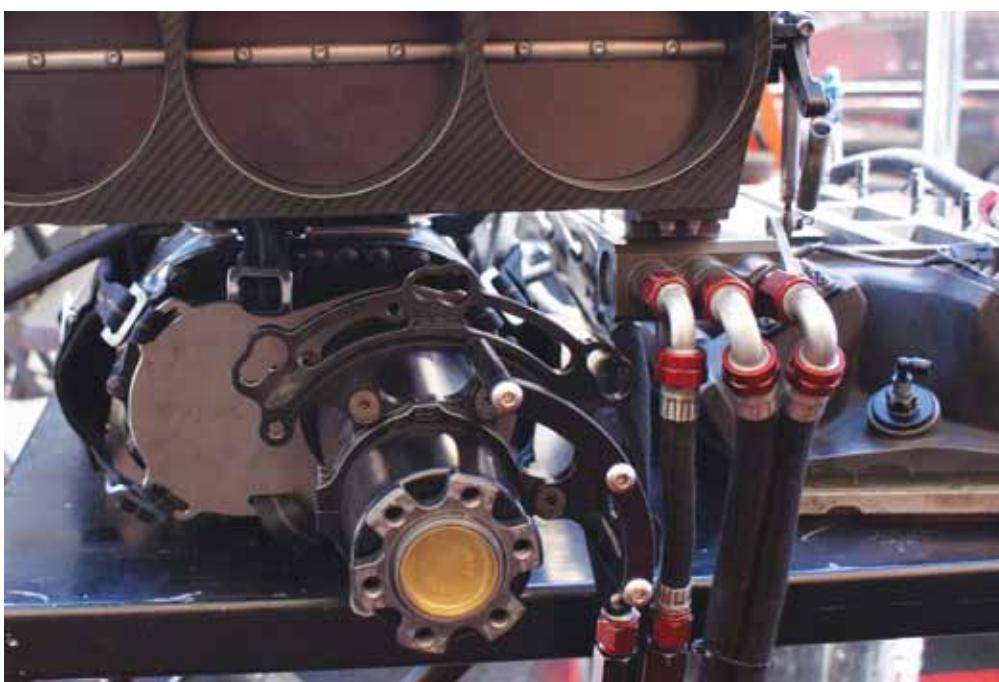
Hose Size	Bulk Part Number	Thread Size
-08	FBM1355	9/16-18
-08	FBM1356	3/4-16
-10	FBM1357	1 1/16-12
-10	FBM1358	7/8-14
-12	FBM1359	7/8-14
-12	FBM1360	1 1/16-12

**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 ¹
-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 FITTINGReusable
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

**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.

Please see Pages 44-48 for assembly instructions.

Bulk or Retail Packaged Parts

FB-prefix part numbers indicate bulk-packaged products. FC-prefix 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® SOCKETLESS™ 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.

Eaton's 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's 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			
	INCHES	INCHES	PSI	INCHES	INCHES/HG	Blue	Black	Blue	20 FEET	20 FEET	REEL
-04	.25	.49	250	3.00	28	FBV0400	—	—	—	—	—
-06	.38	.62	250	3.00	28	FBV0600	FBN0600	FCV0615	FCN0615	FCV0620	FCN0620
-08	.50	.75	250	5.00	28	FBV0800	FBN0800	FCV0815	FCN0815	FCV0820	FCN0820
-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).

¹Order in 560-foot increments.

²Order 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



AQP® SOCKETLESS™ hose is qualified with the SOCKETLESS fittings on the following page.

Please see Pages 44-48 for assembly instructions. **Aluminum socket

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



AQP® SOCKETLESS™ HOSE AND FITTINGS (CONT.)

STRAIGHT FITTING

SOCKETLESS Aluminum S.A.E. 37° (JIC/AN)		SOCKETLESS Nickel-Plated Aluminum S.A.E. 37° (JIC/AN)		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	
Hose Size	Packaged Part Number	Packaged Part Number	Bulk Part Number	Pipe Thread Size	Bulk Part Number	Bulk Part Number	Bulk Part Number	Bulk Part Number	Bulk Part Number	Bulk Part Number	
-04	—	—	FBM1200 FBM1201	1/8 1/4	FBM1444	FBM1231 ¹	FBM1211				
-06	FCM1512	FCE1512	FBM1207 FBM1202	1/4 3/8	FBM1445	FBM1222	FBM1212				
-08	FCM1513	FCE1513	FBM1206 FBM1203	3/8 1/2	—	FBM1233 ¹	FBM1213				
-10	FCM1514	FCE1514	FBM1204	1/2	—	FBM1234 ¹	FBM1214				
-12	FCM1515	FCE1515	FBM1205	3/4	—	FBM1225	—				

45° ELBOW FITTING

SOCKETLESS 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))		SOCKETLESS Aluminum S.A.E. 37° (JIC/AN)	
Hose Size	Packaged Part Number	Packaged Part Number	Bulk Part Number	Hose Size	Packaged Part Number		
-04	—	—	FBM1438	-06	FCM1542		
-06	FCM1522	FCE1522	FBM1439	-08	FCM1543		
-08	FCM1523	FCE1523	FBM1440	-10	FCM1544		
-10	FCM1524	FCE1524	—	-12	FCM1545		
-12	FCM1525	FCE1525	—				

90° ELBOW FITTING

SOCKETLESS 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))		SOCKETLESS Aluminum S.A.E. 37° (JIC/AN)	
Hose Size	Packaged Part Number	Packaged Part Number	Bulk Part Number	Hose Size	Packaged Part Number		
-04	—	—	FBM1441	-06	FCM1552		
-06	FCM1532	FCE1532	FBM1442	-08	FCM1553		
-08	FCM1533	FCE1533	FBM1443	-10	FCM1554		
-10	FCM1534	FCE1534	—	-12	FCM1555		
-12	FCM1535	FCE1535	—				



TechTip

Aerolube

AQP SOCKETLESS hose and fittings are manufactured for a tight tolerance. Always apply a liberal amount of Aerolube on the barbed nipple as well as the inside of the hose. This will allow for a smoother assembly.

Please see Pages 44-48 for assembly instructions. ¹These fittings mate with both 37° and 45° male flares.

Bulk or Retail Packaged Parts

FB-prefix part numbers indicate bulk-packaged products. FC-prefix 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.

STRAIGHT -08 TO -06¹

SOCKETLESS Brass Female Flare		
Hose Size	Bulk Part Number	Thread Size
-06	FBM1232	3/4-16

180° ELBOW FITTING

SOCKETLESS Aluminum S.A.E. 37° (JIC/AN)	
Hose Size	Packaged Part Number
-06	FCM1562
-08	FCM1563
-10	FCM1564
-12	FCM1565

A/C HOSE AND FITTINGS

A/C HOSE AND FITTINGS
Custom look and superior performance



HOSE SPECIFICATIONS

Hose Dash Size	Hose I.D.	Hose O.D.	Maximum Operating Pressure	Minimum Bend Radius	Weight Per Foot	Bulk Part Number	Package Length	Part Number	
	INCHES	INCHES	PSI	INCHES	POUNDS		3 FEET	6 FEET	9 FEET
-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).



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).

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 outerbraid with a nylon inner tube for supe-

rior 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

ORDERING INFORMATION

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 & fittings, or worse yet, stainless steel braided versions that didn't work.

Eaton's Aeroquip Performance Products has responded to your endless pursuit of detail and perfection with the development of an A/C hose & 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

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

Please see Pages 44-48 for assembly instructions.

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



A/C HOSE AND FITTINGS (CONT.)

STRAIGHT FITTING

Reusable Nickel-Plated Steel Female O-ring Pilot	Reusable Nickel-Plated Steel Female O-ring Pilot w/ Charge Port	Reusable Nickel-Plated Steel Hose to Hose w/ Charge Port	Reusable Nickel-Plated Steel Female O-ring Pilot	
Hose Size	Packaged Part Number	Packaged Part Number	Hose Size	
-06	FCE1712	FCE1812 (High Side)	-06	FCE1722
-08	FCE1713	FCE1813 (High Side)	-08	FCE1723
-10	FCE1714	FCE1814 (Low Side)	-10	FCE1724

90° FITTING

Reusable Nickel-Plated Steel Female O-ring Pilot	Reusable Nickel-Plated Steel Female O-ring Pilot with Charge Port
Hose Size	Packaged Part Number
-06	FCE1732
-08	FCE1733
-10	FCE1734

135° FITTING

Reusable Nickel-Plated Steel Female O-ring Pilot	Reusable Nickel-Plated Steel Female O-ring Pilot with Charge Port
Hose Size	Packaged Part Number
-08	FCE1793
-10	FCE1794

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



Please see Pages 44-48 for assembly instructions.

Bulk or Retail Packaged Parts

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TEFLON* RACING HOSE AND FITTINGS

TEFLON* RACING HOSE For the most extreme applications



Our Strongest, Most Compatible Hose.

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

Made with an extruded Teflon* inner tube that's 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

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

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

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



Hose Assembly

After cutting Teflon* 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.

Unmatched Strength. Ultimate Flexibility.

No other product offers the performance and efficiency of Teflon* racing hose.

Features:

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



Teflon* hose is qualified with the Aeroquip Teflon* fittings on the following page.

Please see Pages 44-48 for assembly instructions.

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

EATON Aeroquip Performance Products A-SPPE-MC001-E5 November 2010



TEFLON* RACING HOSE AND FITTINGS (CONT.)

STRAIGHT FITTING

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)	
Hose Size	Packaged Part Number	Pipe Thread Size	Packaged Part Number	Packaged Part Number	Packaged Part Number Fitting Size	Packaged Part Number	Bulk Part Number
-03	—	—	FCM1100	—	—	FCM1130	FBM1124
-04	FCM3088 FCM3089	1/8 1/4	FCM1101	—	—	FCM1102	FBM1125
-06	—	—	FCM1103	FCM1134	FCM1137 -05 FCM1138 -06	—	—
-08	—	—	FCM1104	FCM1135	FCM1139 -08	—	—

STRAIGHT

Reusable Steel 10mm Banjo		Reusable Steel 10mm Banjo	
Hose Size	Packaged Part Number	Hose Size	Packaged Part Number
-03	FCM3091	-03	FCM3092

45° ELBOW

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)	
Hose Size	Packaged Part Number	Packaged Part Number	Packaged Part Number	Fitting Size	Packaged Part Number	Bulk Part Number
-03	FCM1110	—	—	—	FCM1140	FBM1126
-04	FCM1111	—	—	—	FCM1146	FBM1127
-06	FCM1112	FCM1114	FCM1155 FCM1141	-05 -06	—	—
-08	FCM1113 ¹	FCM1113 ¹	FCM1142	-08	—	—

90° ELBOW

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)	
Hose Size	Packaged Part Number	Packaged Part Number	Packaged Part Number	Fitting Size	Packaged Part Number	Bulk Part Number
-03	FCM1120	—	—	—	FCM1150	FBM1128
-04	FCM1121	—	—	—	FCM1151	FBM1129
-06	FCM1122	FCM1136	FCM1143 FCM1144	-05 -06	—	—
-08	FCM1123 ¹	FCM1123 ¹	FCM1145	-08	—	—

Replacement Sleeves for
Teflon* Fittings

REPLACEMENT SLEEVES (5 PER PACKAGE)

Brass Packaged Part Number	Hose Fitting Dash Size	Stainless Steel Packaged Part Number	Hose Fitting Dash Size
FCM3720	-03	FCM3821	-03
FCM3721	-04	FCM3822	-04
FCM3823	-06		
FCM3824	-08		

Please see Pages 44-48 for assembly instructions. *Teflon is a registered trademark of Dupont and under license by Eaton.
¹This fitting mates with both 37° (AN) and 45° male flares.

Bulk or Retail Packaged Parts

FB-prefix part numbers indicate bulk-packaged products. FC-prefix 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.

PRE-MADE OFF-ROAD BRAKELINES AND POWER TRIM ASSEMBLIES

Off-Road Teflon® Brakelines Completely assembled, ready to install.



SPECIFICATIONS

AQP Part Number		Maximum Operating Pressure
Teflon® Hose Straight-Straight AN Swivel Ends		
FBPA0030-10	-03 Teflon Hose, 10 inch, Str-Str	3,000 psi
FBPA0030-12	-03 Teflon Hose, 12 inch, Str-Str	3,000 psi
FBPA0030-14	-03 Teflon Hose, 14 inch, Str-Str	3,000 psi
FBPA0030-15	-03 Teflon Hose, 15 inch, Str-Str	3,000 psi
FBPA0030-16	-03 Teflon Hose, 16 inch, Str-Str	3,000 psi
FBPA0030-18	-03 Teflon Hose, 18 inch, Str-Str	3,000 psi
FBPA0030-20	-03 Teflon Hose, 20 inch, Str-Str	3,000 psi
FBPA0030-21	-03 Teflon Hose, 21 inch, Str-Str	3,000 psi
FBPA0030-22	-03 Teflon Hose, 22 inch, Str-Str"	3,000 psi
FBPA0030-24	-03 Teflon Hose, 24 inch, Str-Str	3,000 psi
FBPA0030-26	-03 Teflon Hose, 26 inch, Str-Str	3,000 psi
FBPA0030-28	-03 Teflon Hose, 28 inch, Str-Str	3,000 psi
FBPA0030-30	-03 Teflon Hose, 30 inch, Str-Str	3,000 psi
FBPA0030-32	-03 Teflon Hose, 32 inch, Str-Str	3,000 psi
FBPA0030-36	-03 Teflon Hose, 36 inch, Str-Str	3,000 psi
FBPA0030-42	-03 Teflon Hose, 42 inch, Str-Str	3,000 psi
FBPA0030-48	-03 Teflon Hose, 48 inch, Str-Str	3,000 psi
FBPA0030-50	-03 Teflon Hose, 50 inch, Str-Str	3,000 psi

AN Swivel Ends

FBPA0039-10	-03 Teflon Hose, 10 inch, Str-90"	3,000 psi
FBPA0039-12	-03 Teflon Hose, 12 inch, Str-90	3,000 psi
FBPA0039-14	-03 Teflon Hose, 14 inch, Str-90	3,000 psi
FBPA0039-15	-03 Teflon Hose, 15 inch, Str-90	3,000 psi
FBPA0039-16	-03 Teflon Hose, 16 inch, Str-90	3,000 psi
FBPA0039-18	-03 Teflon Hose, 18 inch, Str-90	3,000 psi
FBPA0039-20	-03 Teflon Hose, 20 inch, Str-90	3,000 psi
FBPA0039-21	-03 Teflon Hose, 21 inch, Str-90	3,000 psi
FBPA0039-22	-03 Teflon Hose, 22 inch, Str-90	3,000 psi
FBPA0039-24	-03 Teflon Hose, 24 inch, Str-90	3,000 psi
FBPA0039-26	-03 Teflon Hose, 26 inch, Str-90	3,000 psi
FBPA0039-28	-03 Teflon Hose, 28 inch, Str-90	3,000 psi
FBPA0039-30	-03 Teflon Hose, 30 inch, Str-90	3,000 psi
FBPA0039-32	-03 Teflon Hose, 32 inch, Str-90	3,000 psi
FBPA0039-36	-03 Teflon Hose, 36 inch, Str-90	3,000 psi
FBPA0039-42	-03 Teflon Hose, 42 inch, Str-90	3,000 psi
FBPA0039-48	-03 Teflon Hose, 48 inch, Str-90	3,000 psi
FBPA0039-50	-03 Teflon Hose, 50 inch, Str-90	3,000 psi

Applications: Off-road brake, clutch, gauge, N₂O

Marine Power Trim Hose Line



Eaton's Aeroquip Performance Products Teflon*/stainless steel marine power trim hose assemblies for I/O power trim systems are completely factory-assembled in standard 14½" lengths in both 90° and 45° elbow configurations.

Application: Inboard/outboard power trim systems

HOSE SPECIFICATIONS ORDERING INFORMATION

Hose Dash Size	Hose I.D.	Hose O.D.	Max. Operating Pressure	Min. Bend Radius	Vacuum Service	Packaged Part Number	Fitting Dash Size	Overall Length	Fitting End Configuration
	INCHES	INCHES	PSI	INCHES	INCHES/HG		INCHES		
-04	.19	.30	2,500	2.00	28	FCP0108	-03	14½	Inverted Flare Straight to Inverted Flare 90° Elbow
-04	.19	.30	2,500	2.00	28	FCP0107	-03	14½	Inverted Flare Straight to Inverted Flare 45° Elbow

Construction: Extruded Teflon® inner tube with stainless steel single wire-braid cover.

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

*Teflon is a registered trademark of Dupont and under license by Eaton.

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

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 I.D.	Hose O.D.	Maximum Operating Pressure	Minimum Bend Radius	Vacuum Service	Bulk Part Number	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

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).

ORDERING INFORMATION

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	Thread Size
-06	FBM1302
9/16-18	FBM1363
-08	FBM1305
3/4-16	FBM1365
-10	FBM1307
7/8-14	—
-12	FBM1310
11/16-12	—

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	Thread Size
-06	FBM1386
9/16-18	FBM1382
-08	FBM1384
3/4-16	FBM1383
-10	FBM1338
7/8-14	—
-12	FBM1339
11/16-12	—

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	Thread Size
-06	FBM1389
9/16-18	FBM1392
-08	FBM1387
3/4-16	FBM1394
-10	FBM1374
7/8-14	—
-12	FBM1376
11/16-12	—

HIGH PRESSURE ADAPTERS

Metric Conversion			
A	B	Steel Packaged Part Number	"A" Dash Size "B" Dash 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 Part Number	"A" Dash Size "B" Dash Size
		FCM2963	-06 1/2-20
		FCM2964	-06 5/8-18
		FCM2965	-06 11/16-12

Please see Pages 44-48 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.

ADAPTERS



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 51). 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 Eaton's 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 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
FCM2010	FCM5009	FCE2010	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 1/4
—	—	—	FCM2544	-12	1 1/2
FCM2015	FCM5015	FCE2015	FCM2533	-16	3/4
FCM2012	FCM5012	FCE2012	FCM2535	-16	1
—	—	—	FCM2540	-16	1 1/4
—	—	—	FCM2545	-16	1 1/2
—	—	—	FCM2536	-20	1
FCM2374	—	—	FCM2541	-20	1 1/4
—	—	—	FCM2546	-20	1 1/2
—	—	—	FCM2537	-24	1
—	—	—	FCM2542	-24	1 1/4
—	—	—	FCM2547	-24	1 1/2
—	—	—	FCM2538	-32	1
—	—	—	FCM2543	-32	1 1/4



AN TO PIPE PRESSURE GAUGE ADAPTER

Aluminum Blue Anodized Packaged Part Number	"A" Dash Size	"B" Pipe Size	NPT Port Size
		INCHES	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.

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

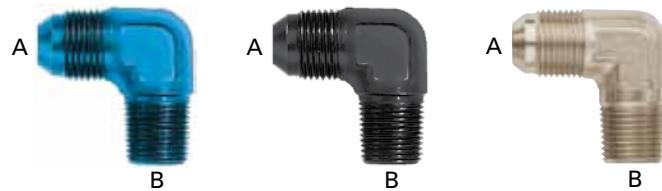


45° MALE AN TO PIPE (AN 823)

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 1/4	

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 1/4	



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 1/4	
—	—	—	FCM2635	-20	1	
FCM2294	—	—	FCM2637	-20	1 1/4	
—	—	—	FCM2639	-20	1 1/2	
—	—	—	FCM2638	-24	1 1/4	



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Bulk or Retail Packaged Parts

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ADAPTERS (CONT.)

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 (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.

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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 INCHES	"B" Dash Size INCHES	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° FEMALE FLARE SWIVEL

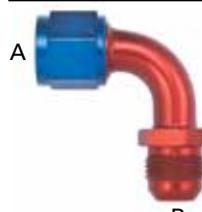
Aluminum Blue/Red Anodized Packaged Part Number	"A" Dash Size	"B" Dash Size
FCM2971	-06	-06
FCM2972	-08	-08
FCM2973	-10	-10
FCM2974	-12	-12
FCM2975	-16	-16

90° 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

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

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



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ADAPTERS (CONT.)

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 Sizes INCHES
FCM2132	FCM5132	FCE2132	1/8	1/8
FCM2133	FCM5133	FCE2133	1/4	1/4
FCM2134	FCM5134	FCE2134	.38	.38
FCM2135	FCM5135	FCE2136	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	—	.38	.38

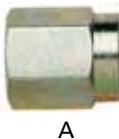
PIPE BUSHING (AN 912)

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	.38	1/4
FCM2138	FCM5138	FCE2138	.38	.38
FCM2139	FCM5139	FCE2139	.12	.38
FCM2140	FCM5140	FCE2140	.12	.14
FCM2141	FCM5141	FCE2141	.12	.18
FCM2144	—	—	.34	.14
FCM2143	—	—	.34	.38
FCM2142	FCM5142	FCE2142	.34	.12
FCM2146	—	—	1	.12
FCM2145	—	—	1	.34

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	—	.14	.14
FCM2149	FCM5149	—	.38	.38

Tube Fittings

VERSIL•FLARE™ FLARELESS TUBE NUT¹

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	11/16-12	1.35

VERSIL•FLARE™ FLARELESS TUBE FERRULE¹

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

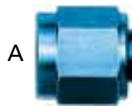
¹Versil•Flare tube nut and tube sleeve are only to be used together.

AN numbers are for configuration reference only.

TUBE NUT (AN 818)¹

Aluminum Blue	Aluminum Black	Steel Anodized Packaged Part Number	Packaged Part Number	"A" Dash Size	No. Per Pkg.	No. Pkg. Alum. 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)²

Aluminum Blue	Aluminum Black	Steel Anodized Packaged Part Number	Packaged Part Number	"A" Dash Size	No. Per Pkg.	No. Pkg. Alum. 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	Aluminum Black	Steel Anodized Packaged Part Number	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 37.

**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 52 for routing tips.

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Bulk or Retail Packaged Parts

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TUBE SLEEVE (AN 819)¹

Aluminum Blue	Aluminum Black	Steel Anodized Packaged Part Number	Packaged Part Number	"A" Dash Size	No. 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	Aluminum Black	Steel Anodized Packaged Part Number	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	FCM4750	3/4		1	

FLARE PLUG (AN 806)

Aluminum Blue	Aluminum Black	Steel Anodized Packaged Part Number	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	



1Tube nut and tube sleeve are only to be used together.

2Aluminum tube caps are 2 piece.

ADAPTERS (CONT.)

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

Note: O-ring material is Viton.

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

Note: O-ring material is Viton.

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.

High Pressure Adapters

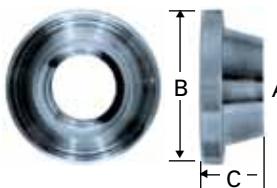
INVERTED FLARE



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

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	

Bulkhead Adapters**BULKHEAD UNION² (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"	"B"
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 UNION¹ (AN 837)

Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Steel Packaged Part Number	"A"	"B"
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 UNION¹ (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"	"B"
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.

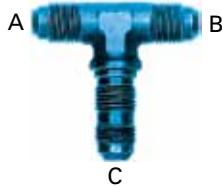
Bulk or Retail Packaged Parts

FB-prefix part numbers indicate bulk-packaged products. FC-prefix 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.

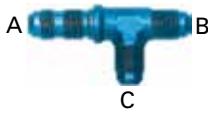
Special Flare Adapters**FLARE TO BRAZE (UNPLATED)**

	Steel Packaged Part Number	"A" Dash Size	"B" Tube O.D. INCHES	"C" Counterbore Depth
A	FCM2871	-04	1/4	.16
B	FCM2872	-06	3/8	.16
C	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

ADAPTERS (CONT.)

BULKHEAD TEE¹ (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 TEE¹ (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 CONNECTOR²

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

BULKHEAD FEMALE CONNECTOR²

Steel Packaged Part Number	"A" Dash Size	"B" Pipe Size INCHES
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

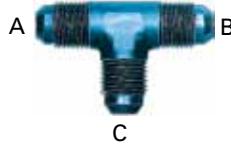
AN numbers are for configuration reference only.

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

²Locknut included.

Tee Adapters

UNION TEE (AN 824)



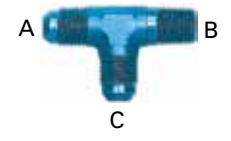
Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Dash Size	"B" Dash Size	"C" Dash Size
FCM2060	FCM5060	FCE2060	-03	-03	-03
FCM2061	FCM5061	FCE2061	-04	-04	-04
FCM2062	FCM5062	FCE2063	-06	-06	-06
FCM2063	FCM5063	FCE2064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

MALE BRANCH TEE (AN 825)



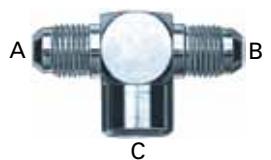
Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Aluminum Nickel-Plated Packaged Part Number	"A" Dash Size	"B" Dash Size	"C" Pipe Size INCHES
FCM2187	FCM5187	FCE2187	-03	-03	1/8
FCM2121	FCM5121	FCE2121	-04	-04	1/8
FCM2122	FCM5122	FCE2122	-06	-06	1/4
FCM2123	FCM5123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

MALE RUN TEE (AN 826)



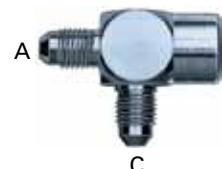
Aluminum Blue Anodized Packaged Part Number	Aluminum Black Anodized Packaged Part Number	Steel Packaged Part Number	"A" Dash Size	"B" Pipe Size	"C" Dash Size INCHES
FCM2714	FCM5714	FCM2700	-03	1/8	-03
FCM2124	FCM5124	FCM2701	-04	1/8	-04
—	—	FCM2703	-04	1/4	-04
—	—	FCM2702	-05	1/8	-05
FCM2125	FCM5125	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	"C" Pipe Size INCHES
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

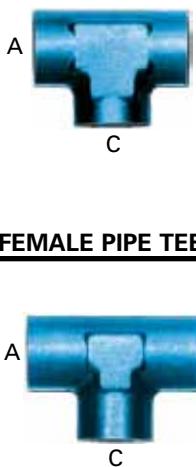


Steel Packaged Part Number	"A" Dash Size	"B" Pipe Size	"C" Dash Size INCHES
FCM2817	-03	1/8	-03
FCM2818	-04	1/8	-04
FCM2819	-04	1/4	-04

Bulk or Retail Packaged Parts

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ADAPTERS (CONT.)

FEMALE FLARE TEE¹

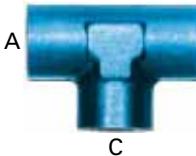
Aluminum Blue Anodized Packaged Part Number	"A" Dash Size	"B" Dash Size	"C" Dash Size
FCM2173	-04	-04	-04
FCM2174	-06	-06	-06
FCM2175	-08	-08	-08
FCM2176	-10	-10	-10
FCM2177	-12	-12	-12

TEE WITH FEMALE ON THE BOTTOM



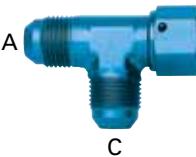
Aluminum Blue Anodized Packaged Part Number	"A" Dash Size	"B" Dash Size	"C" Dash Size
FCM2281	-4	-4	-4
FCM2282	-6	-6	-6
FCM2283	-8	-8	-8
FCM2284	-10	-10	-10
FCM2285	-12	-12	-12
FCM2286	-16	-16	-16

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

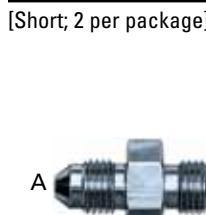
FEMALE ON THE RUN TEE



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



Steel Packaged Part Number	"A" Hose Dash Size	"B" Brake Thread Size	Length INCHES
FCM2926	-03	38 - 24	1.07
FCM2927	-04	38 - 24	1.14
FCM2928	-03	38 - 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



Steel Packaged Part Number	"A" Hose Dash Size	"B" Brake Thread Size
FCM2909	-03	38 - 24
FCM2910	-04	38 - 24

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



Steel Packaged Part Number	"A" Hose Dash Size	"B" Brake Thread Size
FCM2932	-03	38 - 24
FCM2933	-04	38 - 24
FCM2934	-03	7/16 - 24
FCM2935	-04	7/16 - 24

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



Steel Packaged Part Number	"A" Hose 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

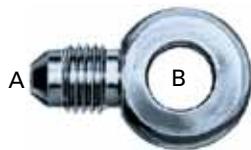


Steel Packaged Part Number	"A" Hose Dash Size	"B" Brake Thread Size
FCM2936	-03	38 - 24
FCM2937	-04	38 - 24

¹Connects to Male AN Flare with hex and O-ring. (AN 816, AN 919, AB 832 and O-ring Boss Plug). Refer to Page 24 for O-rings.

S.A.E. Banjo Brake Adapters**S.A.E. 37° FLARE TO BANJO**

[2 per package]



Steel Packaged	"A" Hose Fitting	"B" Brake Thread Size
Part Number	Dash Size	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	"A" Thread Size	Crushwasher ¹ Part Number
Part Number	Dash Size	
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	"A" Hose Fitting	"B" Brake Thread Size
Part Number	Dash Size	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	"A" Hose Fitting	"B" Brake Thread Size
Part Number	Dash Size	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	"A" Hose Fitting	"B" Brake Thread Size
Part Number	Dash Size	Size
FCM2947	-03	10mm
FCM2948	-04	10mm

METRIC BANJO BOLT

[1 per package]



Steel Packaged	"A" Thread Size	Crushwasher ¹ Part Number
Part Number	Dash Size	
FCM2923	10mm x 1.25	FCM3642
FCM2968	10mm x 1.5	FCM3642

¹Two crushwashers are required.**Bulk or Retail Packaged Parts**

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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 Carburetors 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 37 for Replacement Crushwashers and Replacement O-rings.

Aluminum Fuel Pump Adapters

FUEL PUMP ADAPTERS

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

A	Packaged Part Number	"A" Hose Fitting Dash Size	"B" Brake Thread Size	Length INCHES
B	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

Aluminum Fuel Blocks

FUEL BLOCKS

A	B	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

A	B	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)

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FUEL SYSTEM COMPONENTS (CONT.)

Aluminum Carburetor Adapters

CARBURETOR ADAPTERS

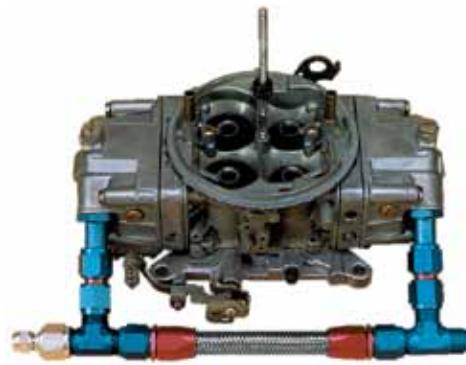
Blue Anodized Packaged Part Number	Black Anodized Packaged Part Number	Nickel-Plated Packaged Part Number	Hose Fitting Size	Application
	FCM2113	FCM5113	FCE2113	-06 Holley Single Feed 600-660 Series, 4010/4011 Series and all two barrel series with 9/16-24 thread; fits Demon carburetors Replacement Crushwasher FCM3514
	FCM2114	FCM5114	FCE2114	-06 Holley Dual Feed 750 through Dominator 1350 Series and Quadrajet up to 1974 with 7/8-20 thread Replacement Crushwasher FCM3516
	FCM2961	—	—	-08 Holley Dual Feed 750 through Dominator 1350 Series and Quadrajet 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 Quadrajet up to 1974 with 7/8-20 thread Replacement Crushwasher FCM3516
	FCM2193	FCM5193	—	-06 Holley Dual Feed 750 through Dominator 1350 Series and Quadrajet up to 1974 with 7/8-20 thread Replacement Crushwasher FCM3516
	FCM2192	FCM5192	FCE2192	-08 Holley Dual Feed 750 through Dominator 1350 Series and Quadrajet up to 1974 with 7/8-20 thread Replacement Crushwasher FCM3516
	FCM2107	FCM5107	FCE2107	-06 Quadrajet 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 Crushwater FBM3514
	FCM2248	FCM5248	FCR2247	-08 Demon carburetors or applications with 9/16-24 threads and -08 female swivel Replacement Crushwater FBM3514
	FCM2249	—	—	-08 Demon carburetors or applications with 9/16-24 threads and -08 male swivel Replacement Crushwater FBM3514

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

EATON Aeroquip Performance Products A-SPPE-MC001-E5 November 2010

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 INCHES	Distance Between Bowl Fittings	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 & 850 CFM Holley	9.25	-06
FCP0102	600 & 650 CFM Holley	8.62	-06

1/2" DUAL FEED ASSEMBLY FOR HOLLEY CARBURETORS

Packaged Part Number	Carburetor Application	Distance Between Bowl Fittings INCHES	Hose and Fitting Dash Size
FCP0134	750, 800 & 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

The Easy, Quick, and High-Tech Way to Change Your Oil —
Eaton's Aeroquip Performance Product's QUICK-DRAIN Oil Pan Coupling

Great for street cars, hot rods, boats, race-cars, anything that you need to drain fluid from in a clean and efficient way. Eliminates the potential of spillage — drains directly into a waste container. Makes changing your oil quick, clean, and fun!



Flow Rate (17°F 10W30 Oil)

* Approximately 0.24 GPM

** Approximately 0.68 GPM

QUICK-DRAIN OIL PAN COUPLINGS

Packaged Part Number	Description	Thread Size	A Dimension INCHES	B Dimension INCHES	Hex Size INCHES	Min. Assembly Torque POUNDS/FOOT
FCM3126^	Full Flow Male Half	1/2-20-UNF-2A*	1.52"	.96"	1 1/16"	20-24†
FCM3127	Full Flow Male Half	M18 x 1.5 6g*	1.52"	.96"	1 1/4"	20-40†
FCM3128	Full Flow Male Half	M14 x 1.25 6g*	1.52"	.96"	1 1/16"	20-24†
FCM3129	Full Flow Male Half	5/8-18-UNF-2A*	1.52"	.96"	1 1/16"	20-40†
FCM3130	Full Flow Male Half	3/4-16-UNF-2A**	1.52"	.96"	1 1/4"	30-50†
FCM3131	Full Flow Male Half	7/8-14-UNF-2A**	1.52"	.96"	1 1/4"	30-60†
FCM3132	Full Flow Male Half	M20 x 1.5 6g**	1.52"	.96"	1 1/4"	30-60†
FCM3133	Full Flow Male Half	M22 x 1.5 6g**	1.52"	.96"	1 1/4"	30-60†
FCM3134	Full Flow Male Half	1 1/16-12-UN-2A**	1.52"	.96"	1 1/2"	30-60†
FCM3135	Full Flow Male Half	M12 x 1.5 6g*	1.52"	.96"	1 1/16"	20-24†
FCM3136	Full Flow Male Half	M14 x 1.5 6g*	1.52"	.96"	1 1/16"	20-24†
FCM3137	Full Flow Male Half	M12 x 1.75 6g*	1.52"	.96"	1 1/16"	20-24†
FCM3117	Full Flow Female Half	Fits All	2.34	1.50	—	—
FCM3118	Replacement Cap	Fits All	0.726	1.25	—	—
FCM3119	Replacement Gasket	Fits: 1/2-20, M12 x 1.5, M12 x 1.75	—	—	—	—
FCM3120	Replacement Gasket	Fits: M14 x 1.25, M14 x 1.50	—	—	—	—
FCM3121	Replacement Gasket	Fits: 5/8 -18	—	—	—	—
FCM3122	Replacement Gasket	Fits: 3/4 -16, M18 x 1.50	—	—	—	—
FCM3123	Replacement Gasket	Fits: M20 x 1.50	—	—	—	—
FCM3124	Replacement Gasket	Fits: 7/8 -18, M22 x 1.50	—	—	—	—
FCM3125	Replacement Gasket	Fits: 1 1/16 -12 UN	—	—	—	—
FBV1000	Blue SOCKETLESS™ Hose (dash 10)		—	—	—	—

[^]Male half comes complete with anodized aluminum cap and gasket

[†]Failure to meet minimum assembly torque could result in fluid leakage. Caution: Do not over torque.

Quick-Disconnect Brake and Clutch Coupling

This coupling allows rapid connection/disconnection of brake and clutch lines without fluid loss, air inclusion and the need to bleed the line. It also includes a safety clip on the lanyard to prevent accidental disconnection.



tion. Available with -03 or -04 S.A.E. 37° (JIC/AN) threads. The male half includes a jam nut for bulkhead mounting. Temperature range -40°F to +250°F. For use with non-petroleum brake fluids.



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

HYDRAULIC BRAKE AND CLUTCH COUPLING

Steel Bulk Part Number	Hose Fitting Dash Size	Maximum Operating Pressure	Air Inclusion (C.C. Max.)	Fluid Loss (C.C. Max.)	Length Connector	Total Weight	Seal Material
		PSI			INCHES	INCHES	
FBM1073-03	3000	.02	.10	4.10	.34	EPR	
FBM1074-04	3000	.02	.10	4.25	.36	EPR	

Replacement Parts

FBM1115 -03 Male Half (Bulkhead Mount)

FBM1116 -04 Male Half (Bulkhead Mount)

FBM1117 -03 Female Half

FBM1118 -04 Female Half

**Quick-Disconnect Radiator/
Cooling Refill Coupling**



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.

Fuel Check Coupling

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



Hydraulic Coupling

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



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

Bulk or Retail Packaged Parts

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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)

rial 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

Male Half:

- Replacing previous carbon steel components with stainless steel mate-

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



ORDERING INFORMATION

SPECIFICATIONS

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.

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

ORDERING INFORMATION AND SPECIFICATIONS

Steel Bulk Part Number	Pipe Thread Size	Max. Operating Pressure PSI	Air Inclusion (C.C. Max.)	Fluid Loss (C.C. Max.)	Rated Flow GPM	Coupled Length INCHES	Vacuum 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 11-1/2	4000	14.2	14.2	50	5.54	28

Note: Not recommended for brake system applications.

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	

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

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

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

¹Nitrile O-rings for use with gasoline fuels.

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

THREADED ALUMINUM DUST PLUGS



Part Number	Fitting and Adapter Dash Size	Dimensions INCHES			Pkg. Of
		Thread	A	B	
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

Firesleeve

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

O-rings

SPECIFICATIONS



10-Piece Package Nitrile ¹ Part No.	5-Piece Package EPR ² 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

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



TechTip

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. Eaton 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 Eaton Technical Support for additional information.

Bulk or Retail Packaged Parts

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ACCESSORIES (CONT.)

Toggle Switches

Switches with the widest selection of features and design flexibility

These environmentally sealed toggle switches offer the widest selection of features and the design flexibility to meet a variety of performance applications. Our product is designed to meet Aerospace specifications, delivering the quality and level of consistent execution that is above all others.

All Eaton's Aeroquip® Toggle switches are completely sealed to moisture, dust, grease and a variety of other contaminants that can be harmful to the inner electronics. Don't take a chance with your vehicle's equipment, go with the name you trust, use Eaton's Aeroquip Performance Products.

Features and Benefits

- Completely sealed against dust, moisture and other contaminants
- One, two and three pole circuitry
- One hole mounting for easy installation
- Multi-circuits offered
- Two and three position with maintained and momentary action
- Molded-in terminal inserts
- Molded-in terminal numbers

CURRENT RATINGS

No of Poles	Catalog No.	Type of Operation	28VDC Lamp Load	Resistive Load	Inductive Load	115VAC 60 or 400Hz Lamp Load	Resistive Load	Inductive Load
1	8510	Maintained	5	20	15	3	15	10
		Momentary	4	15	10	2	15	7
2	8511	Maintained	7	20	15	4	15	15
		Momentary	5	18	10	2	11	8
4	8512	Maintained	5	20	12	4	15	15
		Momentary	4	18	10	2	11	8

Up Position	Center Position	Down Position Position (Keyway)	Catalog Number	Catalog Number	Catalog Number
ON	OFF	ON	8510K1	8511K1	8512K1
ON	NONE	OFF	K9	K9	K9
ON	NONE	ON	K4	K4	K4
ON	OFF	NONE	K6	K6	K6
ON	OFF*	NONE	K8	K8	K8
ON	NONE	ON*	8510K5	8511K5	8512K5
ON*	OFF	ON*	K2	K2	K2
NONE	OFF	ON*	K7	K7	K7
ON	NONE	OFF	K10	K10	K10
OFF	NONE	ON*	K11	K11	K11
ON	OFF	ON*	8510K3	8511K3	8512K3
ON*	ON	NONE	K12	K12	K12
ON	ON	NONE	K13	K13	K13
ON	ON	ON	—	8511K14	8512K16
ON	ON	ON*	—	K15	K16
ON*	ON	ON*	—	K16	K17
ON	ON	ON	—	8511K17	—
ON	ON	ON*	—	K18	—
ON*	ON	ON*	—	K19	—

Catalog number 8497KIC switch guard prevents accidental operation of switches in safety-critical applications.

*Momentary contact



Applications

- Ignition/Start
- Accessory Controls: lights, pump, fan, etc.

Specifications

- Water-tight seal per MIL-STD-108E and designed to meet IP68
- Thermoset molding materials meet flame retardant requirements
- Temperature range: -500°F to +1500°F (-460°C to +660°C)
- Life: 20,000 operations at rated load
- Bushing: 15/32" -32 thread

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.



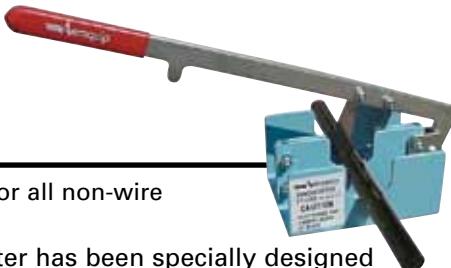
Hand-Held Hose Cutter

FCM362

Cut-Off Tool

FT1258

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



Eaton's hand-held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as Eaton's 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



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.



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

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ASSEMBLY EQUIPMENT (CONT.)

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.



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.



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.

Teflon* Hose Tool

FBM3646

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



Hose Assembly Lube

FBM3553

Eaton's 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.



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



*Teflon is a registered trademark of Dupont and under license by Eaton.

ProCrimp® 1380

The ProCrimp FT1380 is the industry's easiest and fastest means of assembling Eaton's 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 Eaton's Aeroquip Performance Products StartLite®, Teflon* and AQP® racing hose
- 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

Eaton 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 Eaton.



The ProCrimp® 1380 is totally compatible with Eaton's 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 of 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 Locater" 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 doesn't actually begin to operate until the crimp toggle switch is activated, saving energy and motor wear.

ASSEMBLY EQUIPMENT (CONT.)

ET1000 — Portable Crimp Machine

While being our most economical crimp machine to-date, the new Performance ET1000 machine boasts a broad crimp capability with an ease-of-use that is sure to please hose assemblers.

This crimp machine has been approved to crimp:

- Eaton 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 Teflon Racing hose in -3, -4 and -6 sizes, straight through 90°



The ET1000 crimp machine builds on the success of Eaton 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 by the use of a spacer ring that controls the stroke length of the cylinder during the crimping operation.

SPECIFICATIONS

Dimensions	22" high, 16" wide, 14" in depth
Weight	70 lbs. (without pump)

ET1000 CRIMP MACHINE PART NUMBERS

ET1000-001	No pump, no tooling (basic machine only)
ET1000-002	Hand-pump, no tooling
ET1000-003	Air-hydraulic pump, no tooling
ET1000-004	110 volt 1/2HP electric pump, no tooling
ET1000-005	12 V DC pump, no tooling

* All part numbers above include the base crimp machine.

ET1000 CRIMP MACHINE PACKAGE PART NUMBERS

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

- AQP Racing & 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 Teflon Racing Hoses (sizes -3, -4 and -6), straight fitting.

ET1000-011	No pump, but includes complete Collet and Spacer Ring Tooling package described above.
ET1000-012	2-Stage Hand pump, and complete Collet and Spacer Ring Tooling package described above.
ET1000-013	Air/Hydraulic pump, and complete Collet and Spacer Ring Tooling package described above.
ET1000-014	110 Volt Electric pump, and complete Collet and Spacer Ring Tooling package described above.
ET1000-015	12 Volt DC pump, and complete Collet and Spacer Ring Tooling package described above.

This ET1000 may be ordered separately or with one of four power supplies: hand-pump, air/hydraulic pump, 12-volt DC power unit, or a 110-volt AC power unit.

Features

- Pusher slides out of position.
- Compatible with the Aeroquip Performance Product hose and fitting line.
- Can be mounted on service vehicles due to its portable design.
- Can be powered with virtually any 10,000 psi hydraulic power source.
- Utilizes 2-piece collet assemblies.
- Spacer rings control the crimp diameter.

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.

COLLET PART NUMBERS

T-400-2C	T-400-5C
T-400-3C	T-400-6C
T-400-120C	
ET1000DC-M150S	ET400DC
ET1000DC-M145S	ET400DC
ET1000DC-M230S	ET400DC
ET1000AR-001(Die Ring Adapter)	

SPACER RING PART NUMBERS

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

PUMP PART NUMBERS*

ET1000PK-001	2-stage hand pump
ET1000PK-002	Air/hydraulic pump
ET1000PK-003	110 volt electric pump
ET1000PK-004	12 volt DC pump

* These pump kits include the pump, connecting hose assembly, and all of the adapters necessary to connect to the ET1000 crimp machine cylinder.

ACCESSORY PART NUMBERS

140-06701	1.5 oz. Tube, high efficiency PTFE grease
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LOCATOR KIT

ET1000LK-001	includes the knob, jam nut, a 3" set screw and a 4" set screw.
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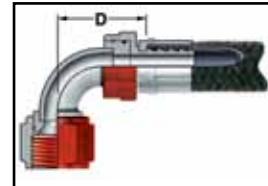
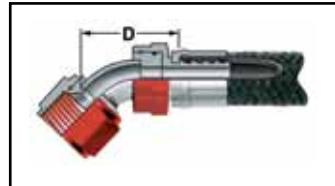


ASSEMBLY INSTRUCTIONS

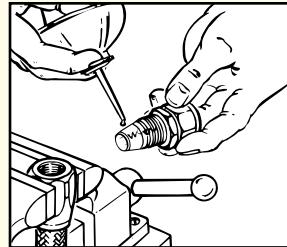
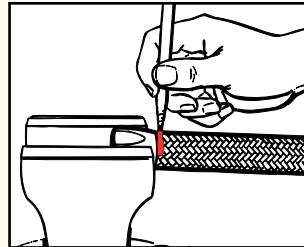
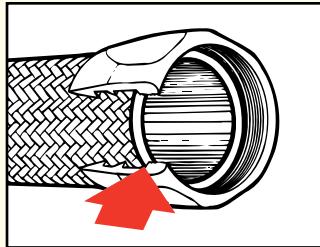
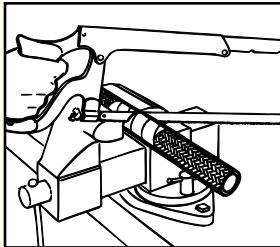
How To Determine Hose Assembly Lengths

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)

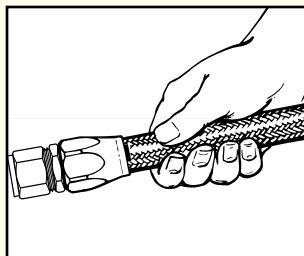
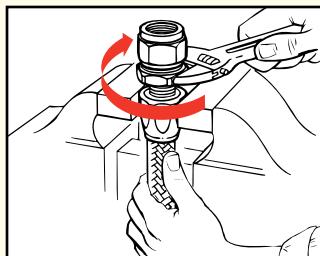
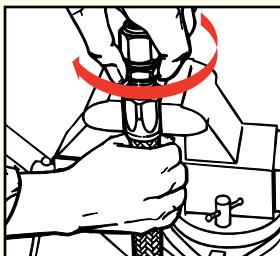


Step 1. Cut hose square to length with fine-tooth hack saw or cut-off wheel. To minimize wire braid flare out, wrap hose with masking tape and cut through tape. Remove tape before next step.

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.

Eaton's 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 (CONT.)



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 Eaton's 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 Eaton 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

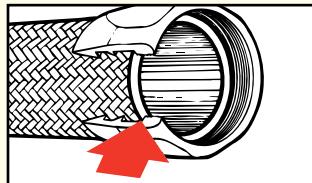
Note: It is recommended that all hose assemblies be proof pressure checked at twice the operating pressure using a proof test stand such as the Eaton's Aeroquip Performance Products FT1058 stand.

To ensure a proper crimp, the StartLite and AQP Racing Hose (FBU & 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.

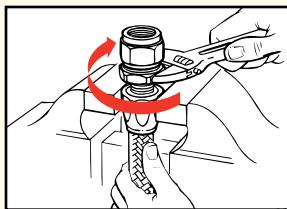
StartLite® Racing Hose (with Reusable Fittings)



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.



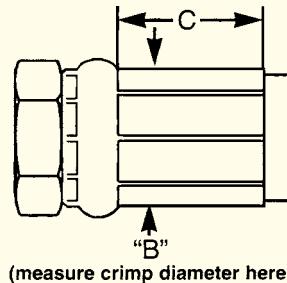
Step 5. Complete assembly using wrench while continuing to hold hose in position. Maximum allowable gap is .031 inches. Your thumbnail is a convenient measuring device. Do not overtighten to a point where there is no gap.

Notes:

- Greater resistance can be expected as compared to Aeroquip Performance Products AQP® Racing Hose.
- To disassemble, reverse steps.
- 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.

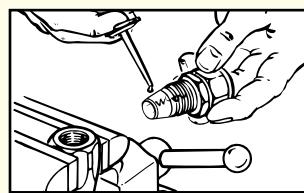
**Crimp Diameter Measurement Locations**

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

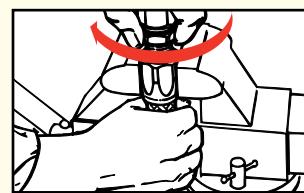
**Determining Crimp Diameter**

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.

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



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.

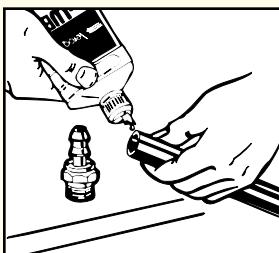
StartLite® Hose Routing Procedure

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.

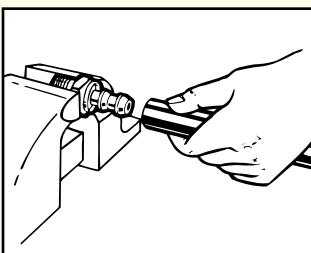
**FBM3553 Hose Assembly Lube**

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.

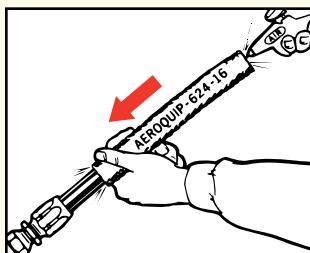
SOCKETLESS™ Hose¹

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

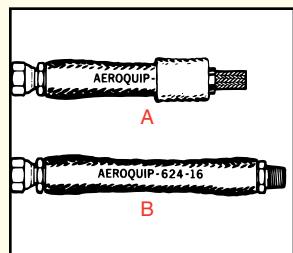


Step 2. Push hose on fitting until hose end bottoms underneath protective cap as shown. Clean, proof test to twice operating pressure and inspect all assemblies.

Firesleeve



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



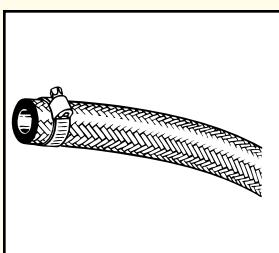
Step 2. Skin sleeve back from cut end of hose enough to allow assembly of second end fitting. (2A)

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

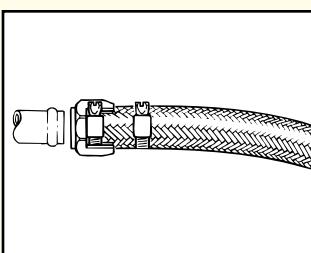
Step 3. Position nylon wire tie or band clamp over sleeve on each end of the hose assembly and draw tight.

¹Never use a hose clamp with FBV SOCKETLESS.™

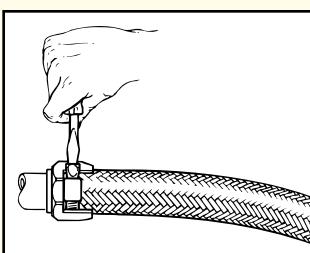
Pro Clamp™



Step 1. Slide clamp onto hose.

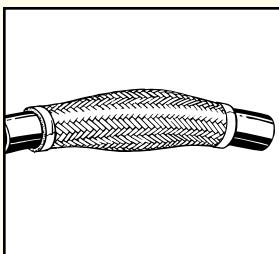


Step 2. Push cap (socket) onto hose until it bottoms. Then slide clamp under cap.

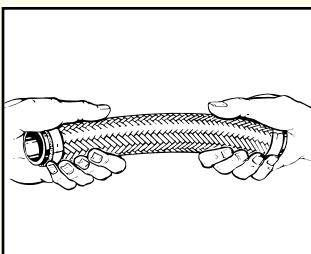


Step 3. Push assembly onto beaded tube. Position clamp for appearance. Tighten with a screwdriver.

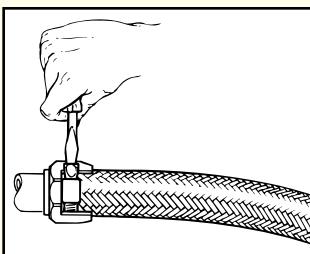
Overbraid



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



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

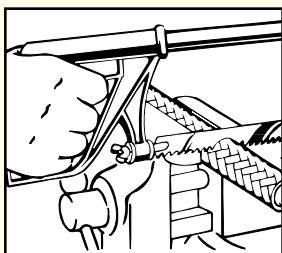


Step 3. Reconnect radiator hose and secure hose and overbraid with clamp or ProClamp clamp.

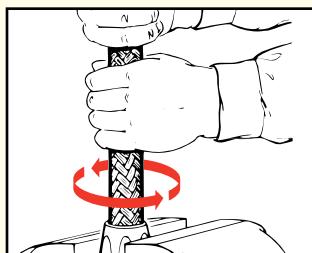
ASSEMBLY INSTRUCTIONS (CONT.)



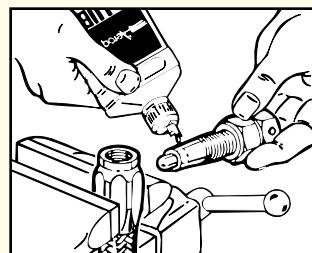
AQP® High Pressure Hose (Power Steering)



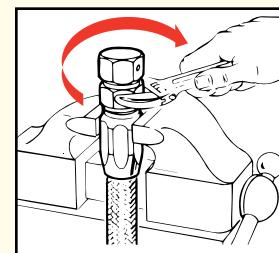
Step 1. Cut hose square with fine-tooth hacksaw or cut-off wheel.



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.



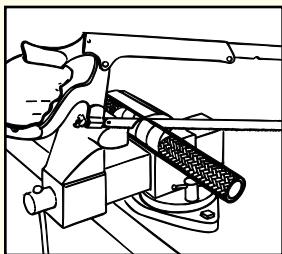
Step 4. Male Ends: Screw nipple clockwise into socket and hose. Leave a $1/32\text{\"}$ clearance between nipple hex and socket.

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

To disassemble:
Reverse steps.

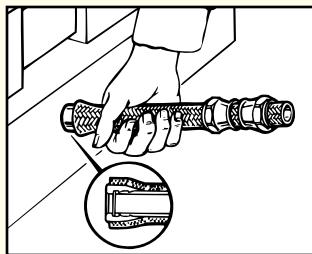
Note: It is recommended that all hose assemblies be proof pressure checked at twice the operating pressure using a proof test stand such as the Aeroquip Performance Products FT1058 stand.

Teflon® Racing Hose with Reusable Fitting

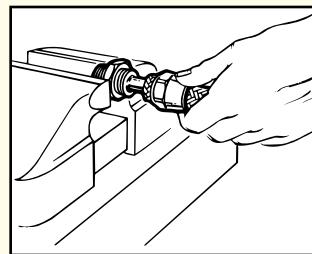


Step 1. Cut hose square to length with fine-tooth hack saw or cut-off wheel. To minimize wire braid flare out, wrap hose with masking tape and cut through tape. Remove tape, trim loose wires and flush with lube before next step. Burrs on bore of tube should be removed with a knife. Clean the hose bore.

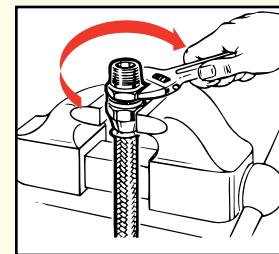
Sometimes wire braid hose will "neck down" on one end and "flare out" on the other end. This can be used to an advantage. Slip two sockets back to back over the "necked down" end of the hose, position approximately 3 inches from each end. Mount nipple hex in a vise. Work the hose bore over the nipple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

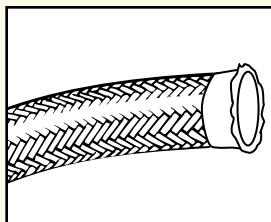
Important: Fittings may be disassembled and reused at least once. However, all such fittings should be carefully examined for distortion, thread damage and I.D. dimensions. New sleeve is recommended upon reuse of fitting.

Replacement brass sleeves are available. Refer to Page 15.

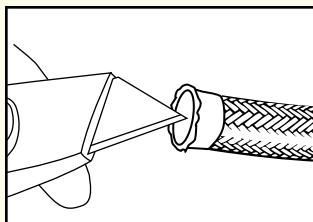


ASSEMBLY INSTRUCTIONS (CONT.)

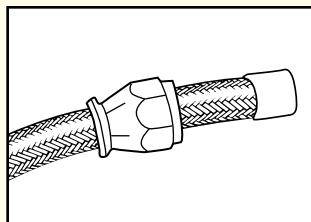
A/C Hose and Fittings



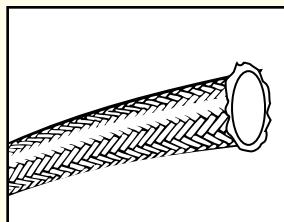
Step 1. Wrap a piece of tape around the hose twice and mark to the correct length for cutting. Using a cut-off saw, cut the hose through the tape where marked. This must be a clean, straight cut.



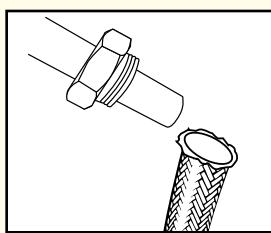
Step 2. Using a knife, remove any burrs or debris from the end of the hose. Clean the hose out thoroughly before assembling fittings.



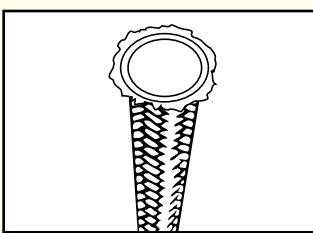
Step 3. Once the hose is cut and cleaned, insert the hose through the socket (the threads should be facing in the direction that the nipple will be inserted).



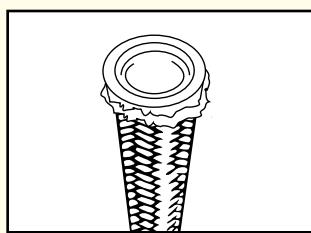
Step 4. With the socket slid on the hose, remove the tape. Be sure to remove all of the tape. Use a knife if necessary.



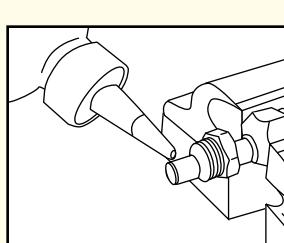
Step 5. Insert the FT1038A hose tool or fitting nipple gently into the end of the hose.



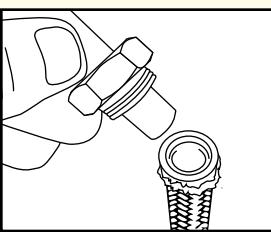
Step 6. Using a slow rotating motion, roll the hose tool or fitting nipple around inside the hose so that the braid separates from the tube as shown. Be careful not to stretch the tube out too much, or it will not fit into the sleeve in Step 7.



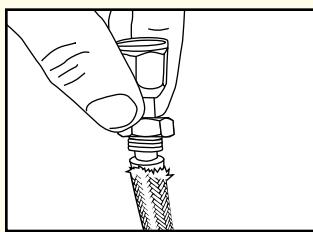
Step 7. Push the sleeve over the end of the blue tube and under the wire braid by hand. Complete positioning of the sleeve by pushing the hose end against a flat surface. Visually inspect to see that the tube stock butts against the O-ring



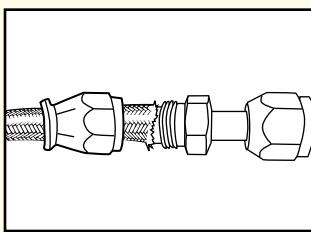
Step 8. Lubricate the nipple with refrigerant oil.



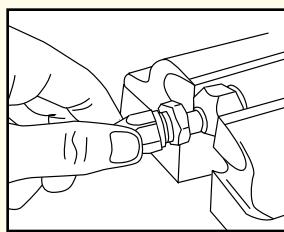
Step 9. Insert the lubricated nipple into the hose.



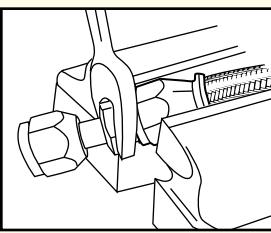
Step 10. Use a rotating motion until the nipple has bottomed out into the sleeve. Be very careful not to kink or crush the hose.



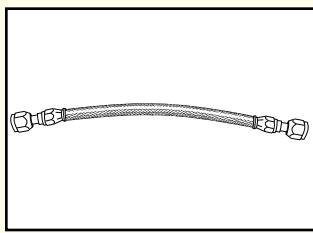
Step 11. With the nipple fully inserted, slide the socket back up the hose to the nipple threads.



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.



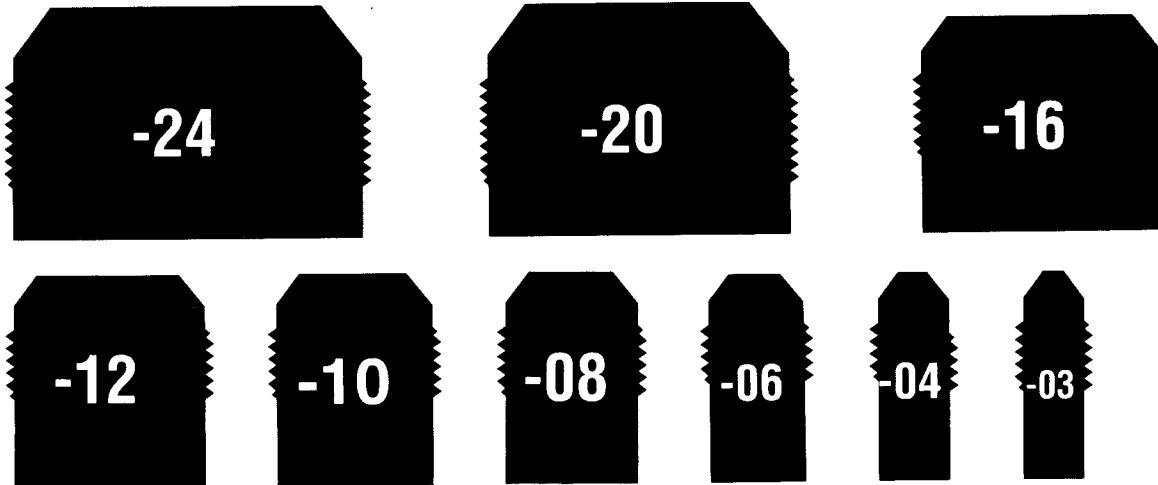
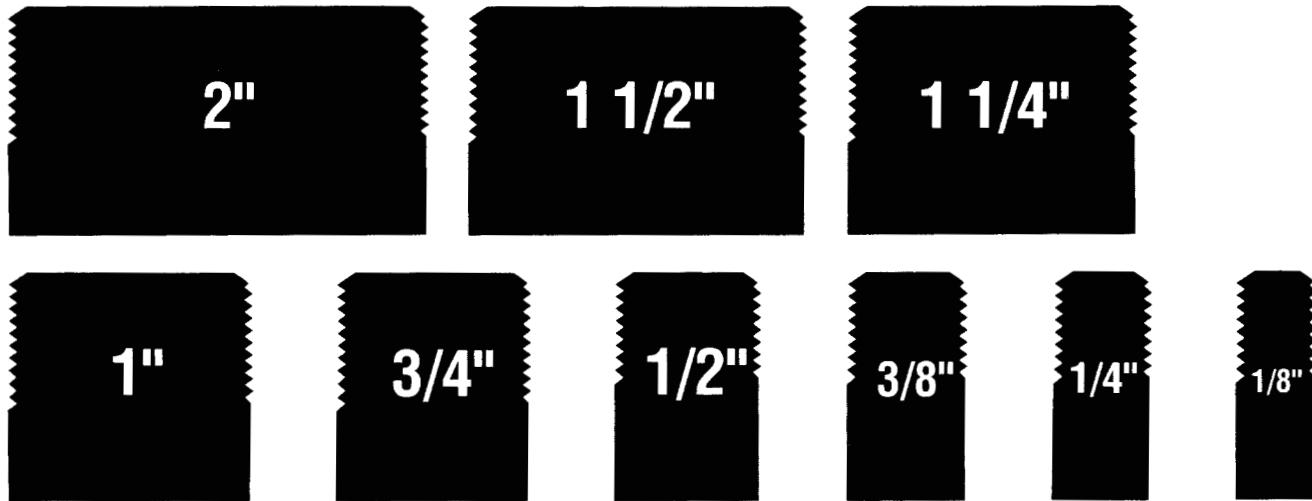
Step 14. Repeat Steps 2 thru 13 to complete the other end of hose assembly. Once assembled, remove any contaminants from the hose before installing it into the A/C system.

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.

TECHNICAL DATA

Actual Fitting Sizes

SAE 37° AN FITTINGSPIPE 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

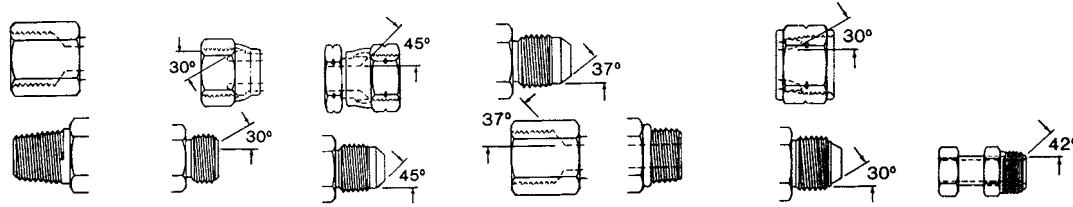
S.A.E. 37° (AN) Dash Size	Nominal Fractional Equivalent INCHES
-02	1/8
-03	3/16
-04	1/4
-05	5/16
-06	3/8
-08	1/2
-10	5/8

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

Thread Size Chart

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



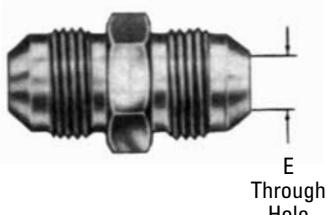
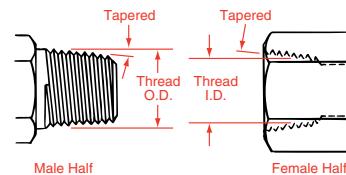
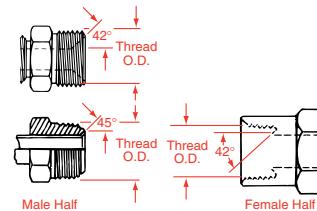
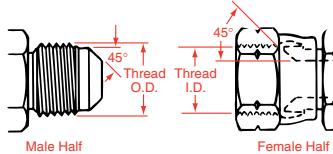
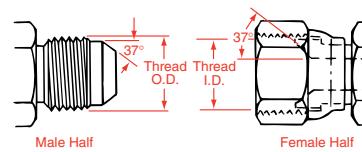
Dash Size	N.P.T.F.	N.P.S.M. Approximate Diameter	SAE 45° Automotive Refrigeration	SAE 37° AN	S.A.E. O-ring Boss	P.T.T. 30° Automotive	S.A.E. Inverted Flare	Tubing O.D. Size INCHES
-02	1/8-27	1/8-27	5/16-24	5/16-24	5/16-24	5/16-24	5/16-24	1/8
-03			3/8-24	3/8-24	3/8-24	3/8-24	3/8-24	3/16
-04	1/4-18	1/4-18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

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 ¹	Maximum Torque ¹
-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

¹Torque 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.

Conversion Tables

INCH AND MILLIMETER EQUIVALENTS

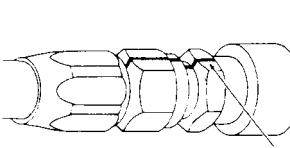
Inches Fractions	Inches Decimals	Millimeters Decimals	Inches Fractions	Inches Decimals	Millimeters Decimals
1/64	.016	.397	7/32	.219	5.556
1/32	.031	.794	15/64	.234	5.953
3/64	.047	1.191	1/4	.250	6.350
1/16	.063	1.588	17/64	.266	6.747
5/64	.078	1.984	9/32	.281	7.144
3/32	.094	2.381	19/64	.297	7.541
7/64	.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

ALTERNATE TIGHTENING METHOD ONE

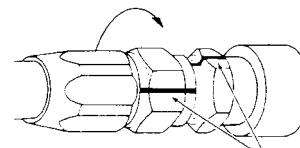
Flats Method

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.



Mark a line on the nut and adapter before torquing.



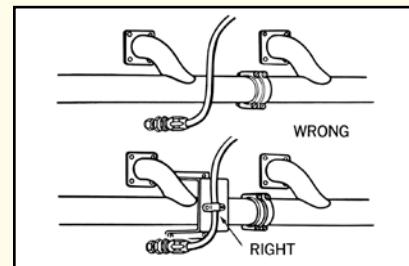
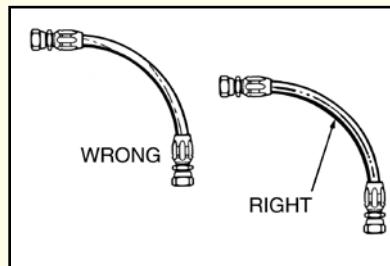
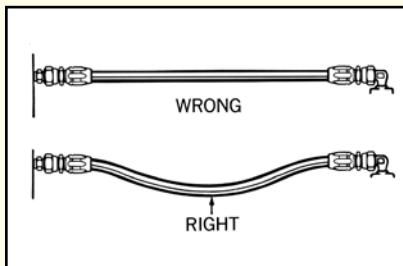
Misalignment of the mark shows the amount which the nut was tightened.

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.

CONVERTING UNITS OF MEASURE

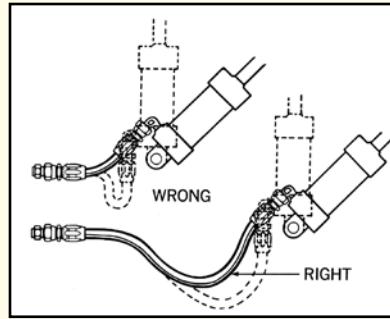
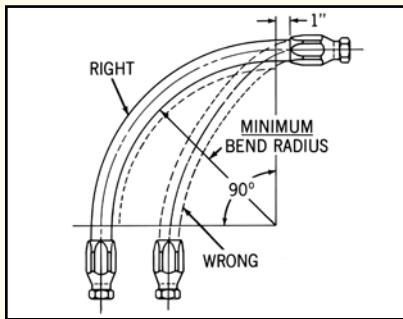
Multiply	By	To Obtain	Multiply	By	To Obtain
Atmospheres	14.70	Pounds/square inch	Liters	0.2642	Gallons
Atmospheres	1.013	Bars	Meters	3.281	Feet
Bars	0.9869	Atmospheres	Meters	39.37	Inches
Bars	14.50	Pounds/square inch	Microns	10 ⁻⁶	Meters
Centimeters	0.3937	Inches	Miles	5280	Feet
Feet	0.3048	Meters	Miles	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	28.34952	Grams
Gallons (water)	8.3453	Pounds of water	Ounces (fluid)	1.805	Cubic inches (fluid)
Gallons/feet/hour	8.0208	Cubic minute	Ounces (fluid)	0.02957	Liters
Horsepower	745.7	Watts	Pounds	453.5924	Grams
Inches of mercury	1.133	Feet of water	Pounds	0.1198	Gallons
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)		

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.)

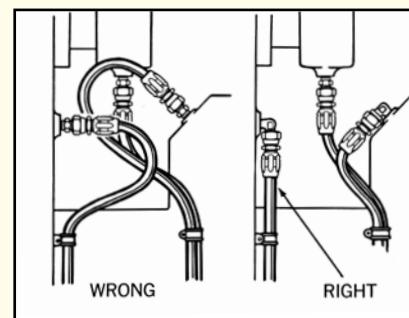
If a hose is installed with a twist in it, operating pressures tend to force it straight. This can loosen the fitting nut. Twisting can cause reinforcement separation, and the hose could burst at the point of strain.

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 Eaton 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.

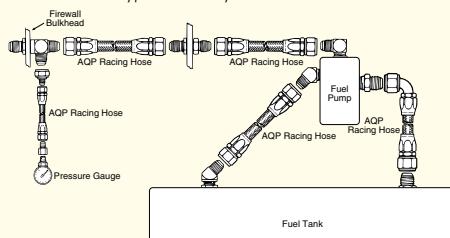
TECHNICAL DATA (CONT.)

AQP® Racing Hose System Schematics

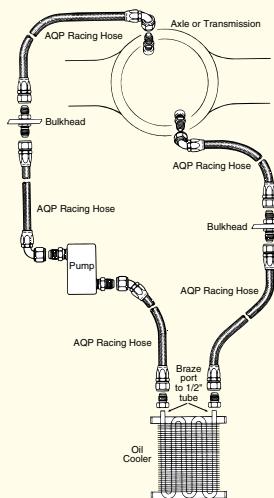
Typical Fuel System Connection Schematic



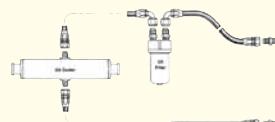
Typical Fuel System Schematic



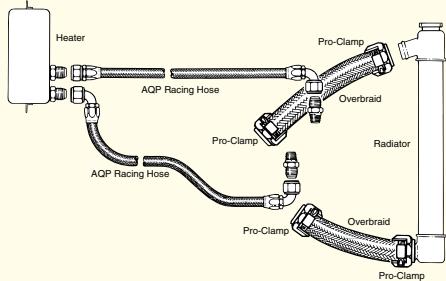
Typical Transmission or Axle Cooler Schematic



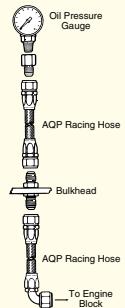
Typical Oil Cooler Schematic



Typical Radiator and Heater Schematic

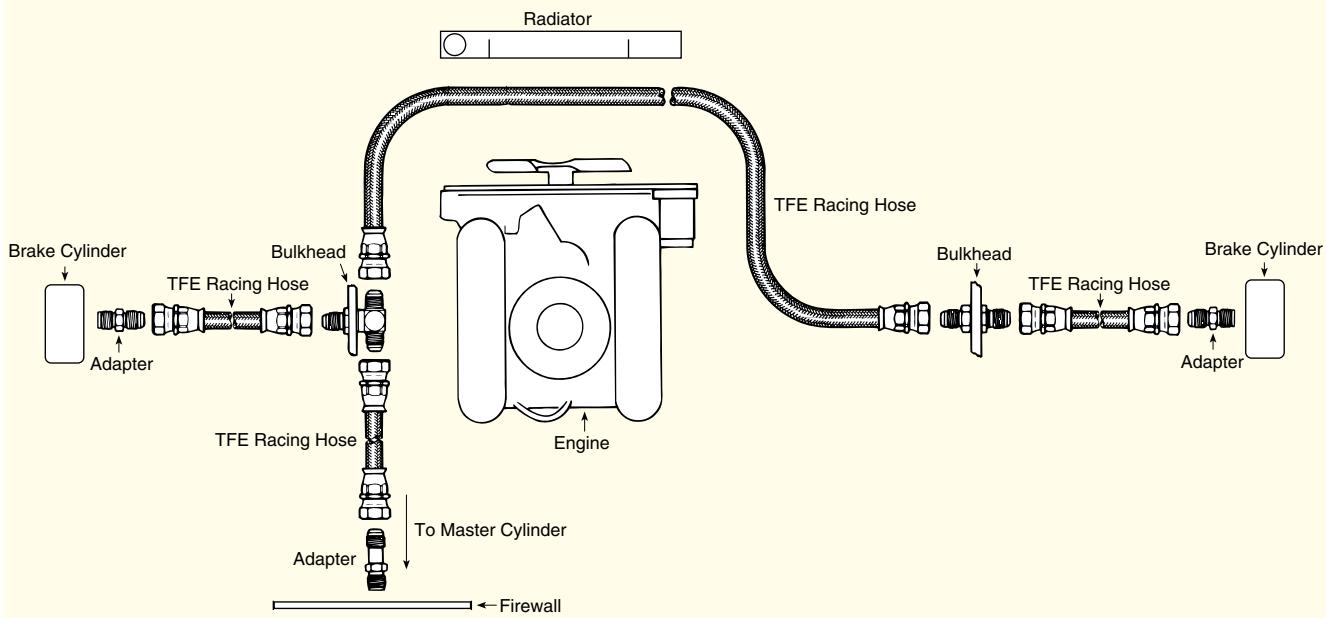


Typical Pressure Gauge Schematic



Teflon® Racing Hose System Schematics

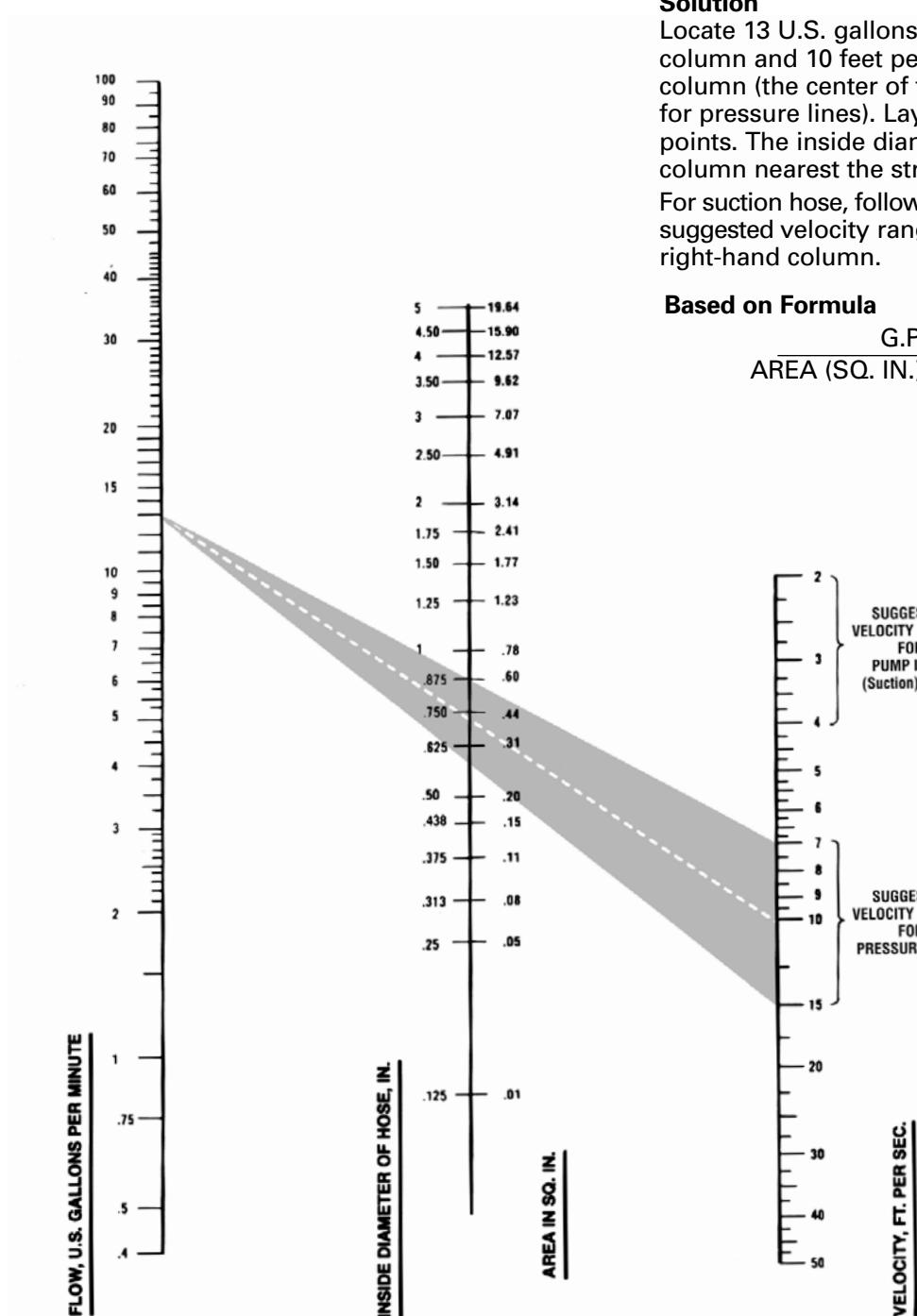
Typical Brake System Connection Schematic



*Teflon is a registered trademark of Dupont and under license by Eaton.

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

- To convert U.S. gallons into Imperial gallons, multiply U.S. gallons by 0.83267.
- To convert Imperial gallons into U.S. gallons, multiply Imperial gallons by 1.20105.
- To convert U.S. gallons into liters, multiply U.S. gallons by 3.785.
- 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 and +155°F (+54°C to +69°C). Under certain conditions, velocities in pressure lines can be increased up to 25 feet per second. Contact Eaton with specific information on your application.

TECHNICAL DATA (CONT.)

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

Eaton's 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 Eaton.

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.

Traditional Performance Products**FF13333**

The 2"x4" Plan-O-Gram comes complete with all of 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 1/2" 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 (6")	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 (3")	2
FCM2052	Flare Union -6 AN/-6 AN	2	FCM2039	90° -10 AN to -1/2 Pipe	2	FCA0806	-8 AQP Racing Hose (6")	2
FCM3749	Allen Plug 1/2" Pipe	2	FCM1015	-12 Strt Reus Fitting	2	FF13365	Merchandiser	1

**Nickel-Plated Products****FF14619**

The 2"x2" Nickel-Plated Fitting and *SOCKETLESS™* Hose Plan-O-Gram comes complete with all of 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 Fittin	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	15"
FCE1523	-8 45° Sktls Fitting	2	FCE2010	-10 AN to Pipe Adapter	2	FCN0815	-8 Sktls Hose	15"
FCE1524	-10 45° Sktls Fitting	2	FCE2022	-6 45° Adapter	2	FCN1015	-10 Sktls Hose	15"
FCE1532	-6 90° Sktls Fitting	2	FCE2023	-8 45° Adapter	2	FF13365	Merchandiser	1

**A/C Hose Products****FF13565**

The 2"x2" A/C Fitting and Hose Plan-O-Gram comes complete with all of 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 (3")	2
FCE1722	-6 45° Strt Reus Fitting	2	FCE1734	-10 90° Reus Fitting	2	FCF0803	-8 A/C Hose (3")	2
FCE1723	-8 45° Strt Reus Fitting	2	FCM3416	-6 Refrigerant O-rings	2	FCF1003	-10 A/C Hose (3")	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 2"x5" banner
- 35 Reorder tags

Bulk or Retail Packaged Parts

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FCM2918	22	FCM2982	22	FCM3469	37	FCM3604	24
FCM2919	22	FCM2992	25	FCM3470	37	FCM3605	24
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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.

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