Eaton 10FFP37BS, Eaton 10FFS37BS

Powering Business Worldwide

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Eaton Quick Disconnect Couplings – Customizing Solutions for the Future... Hydraulics and Beyond

For over 90 years, Eaton has continued to manufacture and supply the highest performing quick disconnect couplings globally for customers serving many industries including agriculture, construction, transportation, and fire and rescue just to name a few. Eaton's quality and performance are never compromised when it comes to engineering and manufacturing its full line of quick disconnect couplings. From traditional industry standards to custom couplings for the next generation of emerging markets and new advanced technologies, Eaton continues to provide quick disconnect coupling solutions to meet your demands.

Custom Design Capability – One Application at a Time

Eaton continues the tradition of developing custom quick disconnect couplings for customers who need a product to perform above and beyond industry standards. Whether it is a custom coupling for the world's most powerful and sophisticated super computers that use electronic cooling or a self-contained breathing apparatus coupling for first responders, Eaton has the ability to work directly with you on a solution. Contact Eaton to see how our dedicated and experienced design engineering team will work with you to develop a quick disconnect coupling solution.

Safety Information for Eaton Quick Disconnect Couplings

1.0 General Instructions.

1.1 Scope. The scope of this safety bulletin is to warn against improper selection, use, installation, etc. of Eaton coupling products.

1.2 Distribution. A copy of this safety bulletin should be distributed to all individuals responsible for using and/or selecting Eaton coupling products.

1.3 Fail-Safe. Design all systems and equipment for fail-safe operation such that failure of any component does not result in personal injury and/or property damage.

1.4 User Responsibility. It is the sole responsibility of the user to select and determine that the Eaton product is compatible with the end use application. The user is responsible for reading and following this safety bulletin as well as any instructions or literature on the Eaton product being used. The user must provide necessary product warnings for Eaton couplings products, used with systems or equipment, to the operators of the systems or equipment.

1.5 Usage with other Manufacturers' Products. When using Eaton coupling products with other manufacturers' adapters, hoses, etc., do not exceed the lowest pressure rating of any of the components being used or rupture may result.

2.0 Selection of Eaton Couplings.

2.1 Pressure. Ensure that the maximum operating pressure of the system or equipment does not exceed the rated operating pressure of the Eaton coupling product or rupture may result.

2.2 Fluid Compatibility. Verify that all components (seals, metals, etc.) are compatible with the fluid being conveyed. Failure to do so may result in high speed fluid discharge and/or leakage of fluids which may be flammable, toxic, at extreme temperatures, or otherwise harmful.

2.3 Temperature. Ensure that the maximum operating temperature of the system or equipment does not exceed the rated operating temperature of the Eaton coupling product (including seals) or rupture may result.

2.4 Coupling Size. Use properly sized couplings such that there is not a large pressure drop across them thus avoiding system damage due to excessive heat generation or failure of internal components.

2.5 Sleeve Lock. Use sleeve locks or threaded couplings where there is the possibility of accidental disconnection. Failure to utilize sleeve locks or threaded couplings in these applications may result in hose whip, expelled components, high speed fluid discharge, system damage, or leakage of fluids which may be flammable, toxic, at extreme temperatures, or otherwise harmful.

2.6 Connect or Disconnect Under Pressure. If connection and/or disconnection of couplings under pressure is a requirement, only use couplings designed for connection/disconnection under pressure. Failure to utilize this type of coupling in that application may result in hose whip, expelled components, high speed fluid discharge, and/or system damage. Be certain not to confuse the rated operating pressure with the rated connect/disconnect under pressure.

2.7 Environment. Ensure that Eaton couplings are compatible with the surrounding environment. The surrounding environment may be heat, salt water, moisture, chemicals, and the like. Failure to protect against an adverse environment may cause system damage, premature failure, and/or leakage of fluids which may be flammable, toxic, at extreme temperatures, or otherwise harmful.

2.8 External Loads. Avoid any external loads such as side loads, tensile loads, vibration, etc. Failure to do so may result in accidental disconnection, premature failure, system damage, and/or leakage of fluids which may be flammable, toxic, at extreme temperatures, or otherwise harmful.

2.9 Welding & Brazing. Extreme heating of plated products above +450°F (+232°C) such as welding, brazing, baking, etc., where the plating is burned off, may result in the release of deadly gases.

3.0 Installation of Eaton Couplings.

3.1 Inspection of Product. Prior to installation, ensure that the Eaton product meets all of the requirements of the system and/or equipment it is to be used on. Ensure you have the correct part number, function test the coupling by connecting it with a mating half. The function test should result in smooth, non-binding operation or premature failure may result.

3.2 Cleanliness. Use end caps and plugs to reduce the risk of system contamination or damage to critical sealing surfaces. Failure to do so may result in leakage of fluids which may be flammable, toxic, at extreme temperatures, or otherwise harmful. Caps and plugs are not a secondary seal unless explicitly noted.

3.3 Location. Place Eaton couplings in a safe location such as not to expose the user to personal injury (slippage, tripping, falling, etc.) during installation, connection, disconnection and maintenance.

4.0 Product Maintenance. A maintenance schedule should be put in place to ensure that Eaton couplings are functioning properly. Eaton is not responsible for product failures resulting from modification or improper maintenance.

4.1 Inspection. Visually inspect to ensure that there is no leakage, cracked components, corrosion build-up, contamination build-up, wear, etc. If any abnormality is encountered, the coupling should be replaced immediately.

Fluid Compatibility

This chart indicates the suitability of various elastomers and metals for use with fluids to be conveyed. It is intended for use with Eaton couplings and should not be used to determine compatibility for other products. It is intended as a guide only and is not a guarantee. Final selection of the proper seal or material of metal components is further dependent on many factors including pressure, fluid and ambient temperature, concentration, duration of exposure, etc.

How to Use the Chart

1. Both the elastomer and the metal must be considered when determining suitability of combination for a coupling.
2. Locate the fluid to be conveyed and determine the suitability of the elastomeric and metal components according to the resistance rating shown for each.
3. Dimensional and operation specifications for each coupling can be found on the catalog pages.
4. Information on seal options for couplings, and how to specify them, are shown in the respective sections of this catalog.
5. Be sure to check the table below for maximum operating temperature range of the elastomer desired.
6. For further details on the products shown in this catalog, and their applications, consult your Eaton Sales Representative or Eaton Technical Support.
7. Coupling component materials may differ from body material. Refer to specific catalog pages.

Seal Elastomer Data*

Seal Elastomer**	Max. Operation Temperature Range
Buna-N	-40°F to +250°F (-40°C to +121°C)
Neoprene	-65°F to +212°F (-54°C to +100°C)
EPDM	-65°F to +300°F (-54°C to +149°C)
FKM	-15°F to +400°F (-29°C to +204°C)

*For reference only, based on Eaton recommended temperatures.

**For seals not listed , contact Eaton.

Contact Eaton technical support for further information.

Resistance Rating Key

E = Excellent – Fluid has little or no effect

G = Good – Fluid has minor to moderate effect

C = Conditional – Service conditions should be described to Eaton for determination of suitability for application

U = Unsatisfactory

The differences between ratings "E" and "G" are relative. Both indicate satisfactory service. Where there is a choice, the materials rated "E" may be expected to give better or longer service than those rated "G".

The charts below are intended for reference use only. The information in this chart pertains strictly to material compatibility and is not intended to be used as an application guide.

E=Excellent
G=Good
C=Conditional
U=Unsatisfactory

Fluid	Seals				Metal			
	Buna-N	Neoprene	FPDM/EPDM	FKM	Steel	Brass	Stainless Steel	Aluminum
Acetaldehyde	U	C	C	U	G	E	E	E
Acetic Acid, 10%	U	U	E	G	U	U	C	C
Acetic Acid, Glacial	U	U	C	U	U	U	C	C
Acetone	U	U	G	U	E	E	E	E
Acetophenone	U	U	E	U	E	E	E	C
Acetyl Acetone	U	U	G	U	U	C	C	C
Acetyl Chloride	U	U	U	E	C	C	C	U
Acetylene (1)	G	U	G	E	E	E	E	E
Air, Hot (Up to +160°F)	E	E	E	E	E	E	E	E
Air, Hot (161°F – 200°F)	C	G	E	E	E	E	E	E
Air, Hot (201°F – 300°F)	U	U	G	E	E	E	E	E
Air Wet, below 160°F	E	E	E	E	U	G	E	E
Aluminum Chloride, 10% aq	E	E	E	E	U	U	U	U
Aluminum Fluoride, 10% aq	E	E	E	E	U	U	U	E
Aluminum Nitrate, 10% aq	E	E	E	E	U	U	C	C

Fluid	Seals				Metal			
	Buna-N	Neoprene	FPDM/EPDM	FKM	Steel	Brass	Stainless Steel	Aluminum
Aluminum Sulfate, 10% aq	E	E	E	E	U	C	E	C
Alums, 10% aq	E	E	E	E	U	C	E	C
Ammonia, Cold	E	E	E	U	E	U	E	E
Ammonia, Hot	U	G	G	U	E	U	E	E
Ammonia, Anhydrous	G	G	E	U	E	U	E	E
Ammonia, Aqueous	E	E	E	U	E	U	E	E
Ammonium Carbonate, 10% aq	U	E	E	U	C	U	C	C
Ammonium Chloride, 10% aq	E	E	E	U	U	U	C	U
Ammonium Hydroxide, 10% aq	C	C	E	C	G	U	C	C
Ammonium Nitrate, 10% aq	E	G	E	U	G	U	G	G
Ammonium Phosphate, 10% aq	E	E	E	–	U	C	G	U
Ammonium Sulfate/Sulfide, 10% aq	E	E	E	U	U	U	G	U
Amyl Acetate	U	U	G	U	E	E	E	E
Amyl Alcohol	G	C	E	G	G	G	E	U
Aniline, Aniline Oil	U	U	G	U	E	U	E	G

Fluid Compatibility

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Fluid	Seals				Metal			
	Buna-N	Neoprene	FPDM/EPDM	FKM	Steel	Brass	Stainless Steel	Aluminum
Aniline Dyes	U	G	G	G	U	C	G	C
Asphalt, < 200°F	G	C	U	E	E	G	E	C
IRM 901 Oil	E	E	C	E	E	E	E	E
IRM 902 Oil	E	G	U	E	E	E	E	E
IRM 903 Oil	E	C	U	E	E	E	E	E
Automatic Trans. Fluid	E	C	U	E	E	E	E	E
Barium Chloride, 10% aq	E	E	E	E	U	G	G	G
Barium Hydroxide, 105 aq	E	E	E	E	G	U	G	U
Barium Sulfide, 10% aq	E	E	E	E	C	U	G	U
Benzene, Benzol	U	U	U	E	G	E	E	G
Benzoic Acid	U	U	U	E	U	G	G	G
Benzyl Alcohol	U	G	G	E	E	G	E	G
BioDiesel (<B20)	G	C	U	E				
BioDiesel (>B20)	G	C	U	E				
Black Sulfate Liquor	C	C	C	E	E	C	E	U
Blast Furnace Gas	U	U	U	E	E	C	E	U
Borax, 10% aq	G	G	E	E	E	E	E	G
Boric Acid, 10% aq	G	G	G	E	U	G	C	C
Brine	E	G	E	E	U	G	G	U
Bromine, Dry	U	U	U	E	U	C	U	C
Butane	E	C	U	E	E	E	E	E
Butyl Acetate	U	U	G	U	E	E	E	E
Butyl Alcohol	E	E	G	E	G	G	G	G
Butyl Cellosolve	U	U	G	U	E	E	E	E
Butylene (Butene)	C	U	U	E	E	E	E	E
Butyl Stearate	G	U	U	E	G	G	G	G
Butyraldehyde	U	U	G	U	E	E	E	E
Calcium Acetate, 10% aq	G	G	E	U	G	G	G	C
Calcium Bisulfate, 10% aq	E	E	U	E	U	C	C	U
Calcium Chloride, 10% aq	E	E	E	E	G	G	G	C
Calcium Hydroxide, 10% aq	E	E	E	E	G	G	G	U
Calcium Hypochlorite, 10% aq	U	U	E	E	U	G	C	U
Calcium Nitrate, 10% aq	E	E	E	E	G	G	G	G
Carbitol	G	G	G	G	E	E	E	E
Carbolic Acid (Phenol)	U	U	G	E	U	E	E	–
Carbonic Acid	G	E	E	E	U	C	E	G
Carbon Dioxide, Dry Gas	G	G	E	E	E	E	E	E
Carbon Disulfide	U	U	U	E	G	G	G	E
Carbon Monoxide	G	G	E	E	E	E	E	E
Carbon Tetrachloride	U	U	U	E	U	G	G	U
Castor Oil	E	E	G	E	E	E	E	E
Cellosolve Acetate	U	U	G	U	U	U	E	G
China Wood Oil (Tung Oil)	G	G	U	E	E	G	E	E
Chlorine Gas, Dry	U	U	U	G	C	C	C	C
Chloroacetic Acid	U	U	G	U	U	U	U	U
Chloroacetone	U	U	E	U	G	G	G	U
Chlorobenzene	U	U	U	G	G	G	G	G
Chloroform	U	U	U	E	G	G	G	G
O-Chlorophenol	U	U	U	E	G	G	G	U
Chlosulfonic Acid	U	U	U	U	G	U	G	G
Chrome Plating Solution	U	U	G	E	C	U	U	U

Fluid	Seals				Metal			
	Buna-N	Neoprene	FPDM/EPDM	FKM	Steel	Brass	Stainless Steel	Aluminum
Chromic Acid	U	U	C	E	C	U	U	U
Citric Acid	E	E	E	E	C	C	C	C
Coke Oven Gas	U	U	U	E	E	C	E	U
Copper Chloride, 10% aq	E	E	E	E	U	U	U	U
Copper Cyanide, 10% aq	E	E	E	E	E	U	G	U
Copper Sulfate, 10% aq	E	E	E	E	U	C	G	U
Cotton Seed Oil	E	G	C	E	E	E	E	E
Creosote (Coal Tar)	G	C	U	E	E	C	E	E
Crude Oil	E	G	U	E	G	U	G	U
Cyclohexanol	E	G	U	E	E	E	E	C
Cyclohexanone	U	U	G	U	E	E	E	C
Detergent/Water Solution	E	E	E	E	G	E	E	E
Diacetone Alchohol (Acetol)	U	U	E	U	E	E	E	E
Dibenzyl Ether	U	U	G	U	G	G	G	G
Diesel Oil	E	C	U	E	E	E	E	E
Diethylamine	G	G	G	U	E	U	E	–
Dioctyl Phthalate (DOP)	U	U	G	G	E	E	E	E
DOT #3 / #4 Brake fluid	C	U	E	U	E	C	E	E
Dowtherm A&E	U	U	U	E	G	U	E	E
Ethyl Alcohol (Ethanol)	E	E	E	E	E	E	E	G
Ethyl Acetate	U	U	G	U	E	E	E	E
Ethyl Benzene	U	U	U	E	E	G	G	G
Ethyl Cellulose	G	G	G	U	E	G	G	G
Ethyl Chloride	U	U	U	E	E	E	E	G
Ethylene Dichloride	U	U	U	G	G	C	G	G
Ethylene Glycol	E	E	E	E	U	G	E	E
Ferric Chloride, 10% aq	E	G	E	E	U	U	U	U
Ferric Nitrate, 10% aq	E	E	E	E	U	U	G	U
Ferric Sulfate, 10% aq	G	G	G	E	U	U	E	U
Formaldehyde	C	C	G	G	E	E	E	G
Formic Acid	C	G	E	U	U	C	C	C
Fuel Oil	E	C	U	E	E	E	E	E
Furfural	C	C	G	U	G	G	G	G
Gallic Acid, Solution	G	G	G	E	U	–	G	C
Gasoline	E	U	U	E	E	E	E	E
Gasohol	G	U	U	E	E	E	E	G
Glycerine/Glycerol	E	E	E	E	E	G	E	E
Green Sulfate Liquor	G	G	E	E	U	U	E	U
Helium (1)	E	E	E	E	E	E	E	E
Heptane	E	G	U	E	E	E	E	E
Hexaldehyde	U	G	G	U	G	G	E	E
Hexane	E	G	U	E	E	E	E	E
Hydraulic Oils, petroleum based	G	C	U	E	E	E	E	E
Ester Blend	E	U	U	E	E	E	E	E
Phos. Ester/Petroleum Blend	U	U	U	C	E	E	E	E
Silicone Oils	E	E	E	E	E	E	E	E
Straight Petroleum Base	E	C	U	E	E	E	E	E
Straight Phosphate Ester	U	U	G	C	E	E	E	E
Water Glycol	E	E	E	E	E	E	E	G
Water Petroleum Emulsion	E	G	U	E	C	E	E	G
Hydrobromic Acid	U	U	E	E	E	U	E	E

Fluid Compatibility

E=Excellent
G=Good
C=Conditional
U=Unsatisfactory

Fluid	Seals				Metal			
	Buna-N	Neoprene	FPDM/EPDM	FKM	Steel	Brass	Stainless Steel	Aluminum
Hydrochloric Acid, Cold	U	U	G	E	U	U	U	U
Hydrocyanic Acid	C	C	E	E	E	E	G	E
Hydrofluoric Acid	U	U	C	U	U	U	U	U
Hydrofluorosilic Acid	G	G	E	E	U	U	U	U
Hydrogen	E	E	E	E	E	E	E	E
Hydrogen Peroxide	G	G	G	E	U	U	G	E
Hydrogen Sulfide, Dry	U	G	E	U	E	G	G	G
Isocyanate	U	U	G	E	G	–	G	–
Iso Octane	E	G	U	E	E	E	E	E
Isopropyl Acetate	U	U	G	U	E	–	E	E
Isopropyl Alcohol	G	G	E	E	E	E	E	G
Isopropyl Ether	G	U	U	U	G	G	G	–
JP-4, JP-5	E	U	U	E	E	E	E	E
Kerosene	E	U	U	E	E	E	E	E
Lacquer/Lacquer Solvents	U	U	U	U	U	E	E	E
Lime Sulfur	U	E	E	E	G	U	G	–
Linseed Oil	E	G	U	E	E	E	E	E
LPG	E	G	U	E	E	E	E	E
Magnesium Chloride, 10% aq	E	E	E	E	E	C	C	G
Magnesium Hydroxide, 10% aq	G	G	E	E	E	G	E	G
Magnesium Sulfate, 10% aq	E	E	E	E	E	E	E	E
Maleic Acid	U	U	U	E	E	G	G	G
Maleic Anhydride	U	U	U	E	G	U	E	G
Malic Acid	G	G	U	G	U	–	E	G
Mercuric Chloride	E	E	E	E	U	U	U	U
Mercury	E	E	E	E	E	U	E	U
Methanol	G	G	E	U	G	G	E	C
Methyl Bromide	G	U	U	E	E	E	G	U
Methyl Chloride	U	U	U	E	E	E	E	U
Methyl Butyl Ketone	U	U	E	U	E	E	E	–
Methyl Ethyl Ketone	U	U	E	U	G	G	G	G
Methylene Chloride	U	U	U	G	G	G	G	G
Methyl Isobutyl Ketone	U	U	U	U	G	G	G	G
Methyl Isopropyl Ketone	U	U	U	U	G	G	G	G
Methyl Salicylate	U	U	C	U	E	G	G	E
MIL-L-2104	E	G	U	E	E	E	E	–
MIL-H-5606	E	G	U	E	E	E	E	E
MIL-H-6083	E	E	U	E	E	E	E	–
MIL-L-7808	G	U	U	E	G	G	E	–
MIL-L-23699	G	U	U	E	E	E	E	E
MIL-H-46170	E	G	U	E	E	E	E	–
MIL-H-83282	E	U	U	E	E	E	E	–
Mineral Oils	E	C	U	E	E	E	E	E
Naphtha	C	U	U	E	–	–	–	–
Naphthalene	U	U	U	E	E	G	E	G
Naphthenic Acid	C	U	U	E	–	G	E	G
Natural Gas	E	E	U	E	G	G	G	G
Nickel Acetate, 10% aq	C	C	E	G	G	C	E	G
Nickel Chloride, 10% aq	E	G	E	E	U	U	G	U
Nickel Sulfate, 10% aq	E	E	E	E	U	G	G	U
Nitric Acid, to 10%	U	U	U	E	U	U	E	U

Fluid	Seals				Metal			
	Buna-N	Neoprene	FPDM/EPDM	FKM	Steel	Brass	Stainless Steel	Aluminum
Nitric Acid, over 10%	U	U	U	G	U	U	E	C
Nitrobenzene	U	U	U	G	E	G	E	E
Nitrogen	E	E	E	E	E	E	E	E
Octyl Alcohol	E	E	E	E	E	E	E	E
Oleic Acid	U	U	C	G	C	E	G	C
Oleum, fuming sulfuric acid	U	U	U	E	E	E	E	E
Ortho-Dichlorobenzene	U	U	U	E	G	G	G	G
Oxalic Acid, 10% aq	G	G	E	E	U	C	C	C
Oxygen	–	–	E	E	G	G	G	G
Palmitic Acid	E	G	G	E	G	–	E	G
Para-Dichlorobenzene	U	U	U	E	G	G	G	G
Pentane	E	E	U	E	G	G	G	E
Perchloric Acid	E	G	G	E	U	U	U	U
Perchloroethylene	U	U	U	E	C	G	G	G
Petroleum Base Oils	E	G	U	E	E	E	E	E
Phenol (Carbolic Acid)	U	U	G	E	U	E	E	E
Phosphate Ester	U	U	G	C	E	E	E	E
Phosphoric Acid 20%	U	U	G	E	U	E	U	C
Phosphorous Trichloride	U	U	E	E	C	U	C	E
Potassium Acetate, 10% aq	G	G	E	U	C	G	C	U
Potassium Chloride, 10% aq	E	E	E	E	E	C	E	U
Potassium Cyanide, 10% aq	E	E	E	E	C	U	G	U
Potassium Dichromate, 10% aq	E	E	E	E	C	C	C	C
Potassium Hydroxide, to 10%	G	G	E	G	G	G	G	U
Potassium Hydroxide, over 10%	C	C	E	U	G	G	G	U
Potassium Nitrate, 10% aq	E	E	E	E	G	G	E	G
Potassium Sulfate, 10% aq	E	E	E	E	–	–	–	–
Propane (Liquified)	C	G	–	E	E	E	E	E
Propyl Acetate	U	U	G	U	E	–	E	E
Propyl Alcohol	E	E	E	E	E	E	E	E
Propylene	U	U	U	E	E	E	E	E
Rapeseed oil (B100)	G	C	U	E				
Refrigerant R-12	G	E	C	E	E	E	E	E
Refrigerant R-13	G	E	C	E	E	E	E	E
Refrigerant R-22	U	E	C	U	E	E	E	E
Refrigerant R-134a	E	C	G	U	E	E	E	E
Sewage	E	E	E	E	G	G	G	G
Silicone Oils	E	E	E	E	E	E	E	E
Soap (Water Solutions)	E	E	E	E	E	E	E	U
Sodium Acetate, 10% aq	G	G	E	U	E	E	G	E
Sodium Bicarbonate, 10% aq	E	E	E	E	G	G	E	G
Sodium Borate, 10% aq	E	E	E	E	E	E	E	G
Sodium Carbonate, 10% aq	E	E	E	E	E	G	E	U
Sodium Chloride, 10% aq	E	E	E	E	U	C	C	C
Sodium Cyanide, 10% aq	E	E	E	E	E	–	C	U
Sodium Hydroxide, to 10%	U	G	E	E	C	G	C	U
Sodium Hydroxide, over 10%	U	U	G	E	C	C	C	U
Sodium Hypochlorite, 10% aq	C	C	E	C	U	U	U	U
Sodium Metaphosphate, 10% aq	E	E	E	E	E	G	G	U
Sodium Nitrate, 10% aq	G	G	E	–	E	C	E	E
Sodium Perborate, 10% aq	G	G	E	E	C	U	C	U

Fluid Compatibility

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Fluid	Seals				Metal			
	Buna-N	Neoprene	FPDM/EPDM	FKM	Steel	Brass	Stainless Steel	Aluminum
Sodium Peroxide, 10% aq	G	G	E	E	U	U	C	C
Sodium Phosphates, 10% aq	E	E	E	E	U	E	G	U
Sodium Silicate, 10% aq	E	E	E	E	E	E	E	E
Sodium Sulfate, 10% aq	E	E	E	E	C	G	G	G
Sodium Sulfide, 10% aq	E	E	E	E	C	U	C	U
Sodium Thiosulfate, 10% aq	G	E	E	E	U	U	C	G
Soy Bean Oil (B100)	E	C	U	E	E	E	E	E
Stannic Chloride	E	G	E	E	U	U	U	U
Steam (up to 388°F)	U	U	C	C	E	E	E	G
Stearic Acid	G	G	G	E	C	C	E	C
Stoddard Solvent	E	G	U	E	E	E	E	E
Styrene	U	U	U	G	E	E	E	E
Sulfur, Slurry	U	E	E	E	E	U	G	E
Sulfur Chloride, Wet	U	U	U	E	G	–	G	G
Sulfur Dioxide, Dry	U	U	G	E	E	G	G	E
Sulfur Trioxide	U	U	G	E	G	C	G	G
Sulfuric Acid, to 10%	U	G	U	E	U	G	C	–
Sulfuric Acid, over 10%	U	U	U	G	C	C	C	U
Sulfurous Acid	C	C	U	G	U	C	C	C
Tannic Acid	G	E	E	E	E	E	E	C
Tar (Bituminous)	G	U	U	E	E	G	E	E

Fluid	Seals				Metal			
	Buna-N	Neoprene	FPDM/EPDM	FKM	Steel	Brass	Stainless Steel	Aluminum
Tartaric Acid	E	G	G	E	U	C	C	E
Tertiary Butyl Alcohol	G	G	G	E	G	G	G	G
Titanium Tetrachloride	C	U	U	E	E	U	G	U
Toluene (Toluol)	U	U	U	E	E	E	E	E
Trichlorethylene	U	U	U	E	E	G	E	E
Tricresyl Phosphate	U	U	E	G	E	–	C	–
Triethanolamine	E	U	E	U	E	U	E	E
Tung Oil	G	G	U	E	E	G	E	E
Turpentine	G	U	U	E	G	G	G	G
Varnish	G	U	U	E	E	G	E	E
Vinyl Chloride	U	U	U	E	E	U	C	E
Water (to +150°F)	E	E	E	E	C	G	E	G
Water (+151°F to +200°F)	E	E	E	E	C	G	E	G
Water (+201°F to +350°F)	U	U	G	G	C	G	E	G
Water Glycol	E	E	E	E	E	E	E	G
Water Petroleum Emulsion	E	G	U	E	C	E	E	G
Xylene	U	U	U	E	E	E	E	E
Zinc Chloride, 10% aq	E	E	E	E	E	U	U	C
Zinc Sulfate, 10% aq	E	E	E	E	U	C	G	C

Seal Information for Eaton Hansen and Gromelle Products

Dash Number	Compound
–***	Buna-N – 90 Durometer
–115	PTFE
–118	Neoprene
–143	FKM
–146	Buna-N – 70 Durometer
–192*	EPDM
–235†	Kalrez®
–236*	EPDM

***No Dash Number required for standard seal material.
*–192 and –236 compounds are not compatible with mineral-based greases or oils.
†Kalrez seals available by special quotation.

FF Series (Steel)
ISO 16028 Interchange

Eaton's FF Series flat face is specifically designed for those applications where quick and easy connections and no-spill performance are essential. The FF Series is ideal for use when global interchangeability with other manufacturers is important and is available in sizes from 1/4" through 2" to best meet your specific size requirements.

Product Features

- Meets or exceeds the ISO 16028 standard
- Push-to-connect
- Standard sleeve lock prevents accidental disconnection
- Color identification rings available to help prevent crossing of lines
- Standard Material: High-resistant carbon steel with Guardian Seal™ plating, a whole new level of corrosion resistance with minimum 720 hours RR protection
- Guardian Seal™ plating:
  - Nickel-free
  - Solvent-free
  - Meets Global RoHS, ELV and REACH requirements
- Standard Seal Material: NBR+AU
- Available seal options: NBR+AU, FKM, EPDM, HNBR (upon request)

Physical Characteristics

ISO Size*	Coupling Size	Maximum Operating Pressure Connected***		Plug/ Male Half		Socket/ Female Half		Minimum Burst Pressure Connected		Plug/ Male Half		Socket/ Female Half		Rated Flow**		Fluid Loss	Air Inclusion	Force to Connect	
(mm)	(in)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(lpm)	(gpm)	ml-cc.	ml-cc.	N	Lbs
6.3	¼	400	5,800	400	5,800	400	5,800	1,400	20,300	1,400	20,300	1,400	20,300	18	4.8	0.004	0.007	80	18.0
10.0	⅜	400	5,800	400	5,800	400	5,800	1,400	20,300	1,400	20,300	1,400	20,300	40	10.6	0.006	0.010	140	31.5
12.5	½	400	5,800	400	5,800	400	5,800	1,400	20,300	1,400	20,300	1,400	20,300	77	20.3	0.012	0.013	195	43.8
16.0	⅝	400	5,800	400	5,800	400	5,800	1,400	20,300	1,400	20,300	1,400	20,300	82	21.7	0.016	0.030	205	46.1
19.0	¾	400	5,800	400	5,800	400	5,800	1,300	18,850	1,300	18,850	1,400	20,300	114	30.1	0.034	0.015	215	48.3
25.0	1	400	5,800	400	5,800	400	5,800	1,260	18,270	1,260	18,270	1,260	18,270	184	48.6	0.032	0.033	260	58.5
-	1"¼	300	4,350	300	4,350	300	4,350	900	13,050	900	13,050	900	13,050	260	68.7	0.170	0.053	200	45.0
-	1"½	300	4,350	300	4,350	270	3,915	900	13,050	900	13,050	810	11,745	450	118.9	0.265	0.445	385	86.6
-	2"	300	4,350	300	4,350	225	3,260	900	13,050	900	13,050	675	9,790	700	184.9	0.390	0.260	375	84.3

* The ISO size corresponds to the internal diameter of the hose or the external diameter of the rigid tube (as defined in ISO 4397 Standard)
** Indicated values refer to a 1 bar/14.5 psi pressure drop
*** 400 bar for static, steady or non-pulsed applications, 350 bar for ISO pressure rating for dynamic applications with moderate hydraulic shock

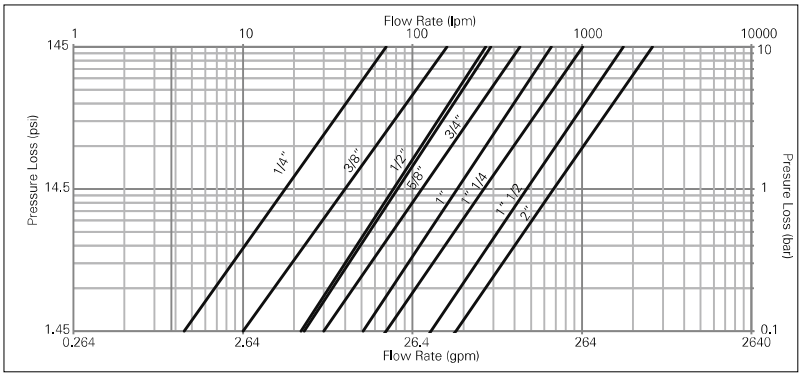
Applications & Markets

- Hydraulic and Fluid Transfer
- Construction Equipment
- Agricultural Equipment
- Utility Vehicles
- On-Highway Vehicles
- Stationary In-plant Hydraulics and Fluid Transfer
- Interchangeable with HTMA couplings in the 3/8" size

European Pressure Equipment Directive

Couplings with nominal diameters up to and including 25mm are designed and manufactured under Article 3.3 of the European Pressure Equipment Directive PED 2014/68/EU. Couplings with nominal diameters greater than 25 mm are designed and manfactured under Article 3.3 of the European pressure Equipment Directive PED 2014/68/EU. They should not be used to convey gases in Group 1 (hazardous).

Flow Data



Seal Elastomer Data*

Seal Elastomer	P/N Code	ISO Size (6FF, 10FF, 12FF, 16FF, 19FF and 25FF) Maximum Operation Temperature Range	Non-ISO Size (32FF, 50FF and 50FF) Maximum Operation Temperature Range
NBR (Nitrile) + AU (Polyurethane)		-25°C +100°C/-13°F +212°F	-20°C +100°C/-4°F +212°F
FKM	-143	-20°C +200°C/-4°F +392°F	-15°C +180°C/+5°F +356°F
EPDM (Ethylene-Propylene)	-192	-40°C +150°C/-40°F +302°F	on request
HNBR	-507	-32°C +150°C/-25°F +302°F	on request
Kalrez® 6375	-242	-20°C +275°C/-4°F +527°F	on request
Generic FFKM (Perfluorocarbon)	-503	-15°C +275°C/+5°F +527°F	on request

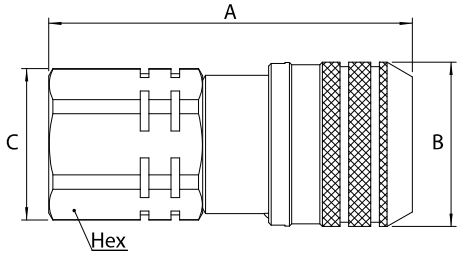
* For reference only, based on Eaton recommended temperatures.
Contact Eaton technical support for further information on fluid compatibility

Maximum Operating Pressure

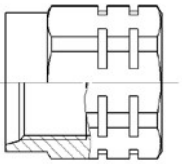
Coupling Size	Nominal Flow Diameter	Non hazardous liquids Group 2 Plug & Connected		Socket		Non hazardous gases Group 2 Plug & Connected		Socket		Hazardous liquids Group 1 Plug & Connected		Socket	
(in)		bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)
1 ½	30.1	300	4350	270	3915	300	4350	270	3915	66	955	66	955
2	39.2	300	4350	225	3260	25	360	25	360	50	725	50	725

* Nominal diameters over 25mm should not be used to convey gases in group 1 (PED 2014/68/EU)

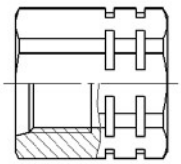
FF Series (Steel)
ISO 16028 Interchange



ISO 6149-1
15° + metric thread



SAE J 1926-1
15° + UN/UNF thread



EATON S013A
15° + BSPP thread

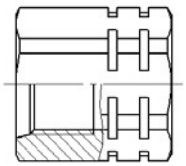


Figure 1

Sockets (Female)

Part Number	Body Size	ISO Size	Nominal Flow Diameter	Thread Size* (Female)						Dimensions								Weight	
NBR+AU	(in)	(mm)	(mm)	NPT	BSPP	ISO 6149-1	SAE J 1926-1	Eaton S013A	Fig.	A (in)	B (in)	C (in)	Hex (in)	A (mm)	B (mm)	C (mm)	Hex (mm)	lbs	grams
6FFS25	¼	6.3	6	¼ 18f					1	2.13	1.06	0.94	0.87	54	27	24	22	-	-
6FFS25BS	¼	6.3	6		¼-19				1	2.13	1.06	0.94	0.87	54	27	24	22	-	-
6FFS25FG	¼	6.3	6					G ¼	1	2.13	1.06	0.94	0.87	54	27	24	22	0.32	143
6FFS56UN	¼	6.3	6				9/16 18f UNF		1	2.17	1.06	0.94	0.87	55	27	24	22	-	-
10FFS16FMET	⅜	10	8.6			M16x1.5			1	2.67	1.26	1.16	1.06	67.8	32	29.5	27	-	-
10FFS37	⅜	10	8.6	⅜ 18f					1	2.67	1.26	1.16	1.06	67.8	32	29.5	27	-	-
10FFS37BS	⅜	10	8.6		⅜-19				1	2.67	1.26	1.16	1.06	67.8	32	29.5	27	-	-
10FFS37FG	⅜	10	8.6					G ⅜	1	2.67	1.26	1.16	1.06	67.8	32	29.5	27	0.56	255
10FFS50	⅜	10	8.6	½ 14f					1	2.79	1.26	1.16	1.06	70.8	32	29.5	27	-	-
10FFS50BS	⅜	10	8.6		½-14				1	2.79	1.26	1.16	1.06	70.8	32	29.5	27	-	-
10FFS50FG	⅜	10	8.6					G ½	1	2.79	1.26	1.16	1.06	70.8	32	29.5	27	0.55	251
10FFS56UN	⅜	10	8.6				9/16 18f UNF		1	2.79	1.26	1.16	1.06	70.8	32	29.5	27	-	-
10FFS75UN	⅜	10	8.6				¾ 16f UNF		1	2.79	1.26	1.16	1.06	70.8	32	29.5	27	-	-
10FFS87UN	⅜	10	8.6				⅞ 14f UNF		1	2.91	1.26	1.30	1.18	73.8	32	33	30	-	-
12FFS106UN	½	12.5	11				1 1/16 12f UN		1	3.50	1.50	1.56	1.42	89	38.2	39.5	36	-	-
12FFS50	½	12.5	11	½ 14f					1	3.27	1.50	1.56	1.42	83	38.2	39.5	36	-	-
12FFS50BS	½	12.5	11		½-14				1	3.27	1.50	1.56	1.42	83	38.2	39.5	36	-	-
12FFS50FG	½	12.5	11					G ½	1	3.27	1.50	1.56	1.42	83	38.2	39.5	36	1.1	498
12FFS75	½	12.5	11	¾ 14f					1	3.39	1.50	1.56	1.42	86	38.2	39.5	36	-	-
12FFS75BS	½	12.5	11		¾-14				1	3.39	1.50	1.56	1.42	86	38.2	39.5	36	-	-
12FFS75FG	½	12.5	11					G ¾	1	3.39	1.50	1.56	1.42	86	38.2	39.5	36	1.08	488
12FFS75UN	½	12.5	11				¾ 16f UNF		1	3.27	1.50	1.56	1.42	83	38.2	39.5	36	-	-
12FFS87UN	½	12.5	11				⅞ 14f UNF		1	3.39	1.50	1.56	1.42	86	38.2	39.5	36	-	-
16FFS106UN	⅝	16	13				1 1/16 12f UN		1	3.50	1.66	1.56	1.42	89	42.2	39.5	36	-	-
16FFS50	⅝	16	13	½ 14f					1	3.27	1.66	1.56	1.42	83	42.2	39.5	36	-	-
16FFS50BS	⅝	16	13		½-14				1	3.27	1.66	1.56	1.42	83	42.2	39.5	36	-	
16FFS75	⅝	16	13	¾ 14f					1	3.39	1.66	1.56	1.42	86	42.2	39.5	36	-	-
16FFS75BS	⅝	16	13		¾-14				1	3.39	1.66	1.56	1.42	86	42.2	39.5	36	-	-
16FFS75FG	⅝	16	13					G ¾	1	3.39	1.66	1.56	1.42	86	42.2	39.5	36	1.20	548
16FFS75UN	⅝	16	13				¾ 16f UNF		1	3.27	1.66	1.56	1.42	83	42.2	39.5	36	-	-
16FFS87UN	⅝	16	13				⅞ 14f UNF		1	3.39	1.66	1.56	1.42	86	42.2	39.5	36	-	-
19FFS100	¾	19	15	1 11,5f					1	3.80	1.82	1.81	1.65	96.6	46.2	46	42	-	-
19FFS100BS	¾	19	15		1-11				1	3.80	1.82	1.81	1.65	96.6	46.2	46	42	-	-
19FFS100FG	¾	19	15					G 1	1	3.80	1.82	1.81	1.65	96.6	46.2	46	42	1.62	737
19FFS106UN	¾	19	15				1 1/16 12f UN		1	3.80	1.82	1.81	1.65	96.6	46.2	46	42	-	-
19FFS131UN	¾	19	15				1 5/16 12f UN		1	3.80	1.82	1.81	1.65	96.6	46.2	46	42	-	-
19FFS75	¾	19	15	¾ 14f					1	3.80	1.82	1.81	1.65	96.6	46.2	46	42	-	-
19FFS75BS	¾	19	15		¾-14				1	3.80	1.82	1.81	1.65	96.6	46.2	46	42	-	-
25FFS100	1	25	18	1 11,5f					1	4.07	2.17	2.36	2.17	103.5	55.2	60	55	-	-
25FFS100BS	1	25	18		1-11				1	4.07	2.17	2.36	2.17	103.5	55.2	60	55	-	-
25FFS125	1	25	18	1 ¼ 11,5f					1	4.07	2.17	2.36	2.17	103.5	55.2	60	55	-	-
25FFS125BS	1	25	18		1 ¼-11				1	4.07	2.17	2.36	2.17	103.5	55.2	60	55	-	-
25FFS125FG	1	25	18					G 1 ¼	1	4.07	2.17	2.36	2.17	103.5	55.2	60	55	2.74	1246
25FFS131UN	1	25	18				1 5/16 12f UN		1	4.07	2.17	2.36	2.17	103.5	55.2	60	55	2.77	126
25FFS162UN	1	25	18				1 5/8 12f UN		1	4.07	2.17	2.36	2.17	103.5	55.2	60	55	-	-
32FFS125	1 ¼	-	22.1	1 ¼-11,5					1	4.93	2.55	2.36	2.17	125.2	64.8	60	55	4.22	1915
32FFS125BS	1 ¼	-	22.1		1 ¼-11				1	4.93	2.55	2.36	2.17	125.2	64.8	60	55	4.18	1897
32FFS162UN	1 ¼	-	22.1				1 5/8 12 UN		1	4.93	2.55	2.36	2.17	125.2	64.8	60	55	4.16	1894
40FFS150	1 ½	-	30.1	1 ½-11,5					1	5.01	3.13	2.76	2.56	127.4	79.5	70	65	6.16	2796
40FFS150BS	1 ½	-	30.1		1 ½-11				1	5.01	3.13	2.76	2.56	127.4	79.5	70	65	6.13	2781
40FFS150FG	1 ½	-	30.1					1 ½	1	5.01	3.13	2.76	2.56	127.4	79.5	70	65	6.12	2775
40FFS187UN	1 ½	-	30.1				1 7/8 12 UN		1	5.01	3.13	2.76	2.56	127.4	79.5	70	65	6.10	2767
50FFS200	2	-	39.2	2-11,5					1	6.17	3.84	3.46	3.15	156.8	97.5	87.8	80	10.87	4931
50FFS200BS	2	-	39.2		2-11				1	6.17	3.84	3.46	3.15	156.8	97.5	87.8	80	10.82	4908
50FFS250UN	2	-	39.2				2 ½ 12 UN		1	6.17	3.84	3.46	3.15	156.8	97.5	87.8	80	10.64	4825

*Alternative end connections available upon request.
To obtain connected length of coupling, add dimensions A (Fig. 1 or Fig. 2) and G (Fig. 3 or 4) together.

FF Series (Steel)
ISO 16028 Interchange

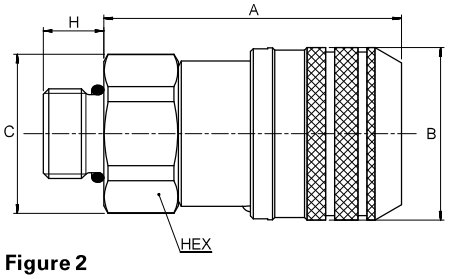
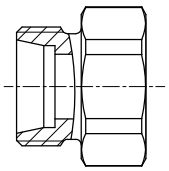
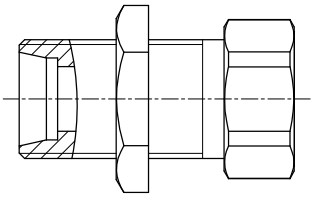


Figure 2

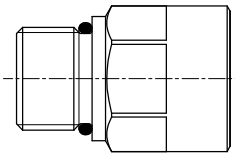
ISO 8434-1
Metric thread



ISO 8434-1 + Bulkhead
Metric thread



SAE J 1926-2
UN/UNF thread



Sockets (Female)

Part Number	Body Size	ISO Size	Nominal Flow Diameter	Thread Size*(Male)			Dimensions										Weight	
NBR+AU	(in)	(mm)	(mm)	ISO 8434-1	SAE J 1926-2	Fig.	A (in)	B (in)	C (in)	H (in.)	Hex (in)	A (mm)	B (mm)	C (mm)	H (mm)	Hex (mm)	lbs	grams
6FFS10LBH	¼	6.3	6	10L - M16x1,5 + bulkhead		2	1.65	1.06	0.94	1.38	0.87	42	27	24	35	22	–	–
10FFS8L	⅜	10	6	8L - M14x1,5		2	2.33	1.26	1.16	0.39	1.06	59.3	32	29.5	10	27	0.52	236
10FFS10L	⅜	10	8	10L - M16x1,5		2	2.33	1.26	1.16	0.43	1.06	59.3	32	29.5	11	27	0.52	234
10FFS12L	⅜	10	10	12L - M18x1,5		2	2.28	1.26	1.16	0.43	1.06	57.8	32	29.5	11	27	0.52	235
10FFS15L	⅜	10	8,6	15L - M22x1,5		2	2.24	1.26	1.16	0.47	1.06	56.8	32	29.5	12	27	0.52	238
10FFS15LBH	⅜	10	8,6	15L - M22x1,5		2	3.24	1.26	1.16	1.50	1.06	82.3	32	29.5	38	27	0.62	282
10FFS16S	⅜	10	8,6	16S - M24x1,5 + bulkhead		2	2.26	1.26	1.16	0.55	1.06	57.3	32	29.5	14	27	0.46	211
10FFS56ORM	⅜	10	8,6		9/16 18f UNF	2	2.61	1.26	1.06	0.47	0.94	66.4	32	27	12	23.8	–	–
10FFS75ORM	⅜	10	8,6		¾ 16f UNF	2	2.61	1.26	1.06	0.55	0.94	66.4	32	27	14	23.8	–	–
12FFS15LBH	½	12	11	15L - M22x1,5 + bulkhead		2	3.66	1.50	1.56	1.50	1.42	93	38.2	39.5	38	36	1.05	478
12FFS16S	½	12	11	16S - M24x1,5		2	2.75	1.50	1.56	0.55	1.42	70	38.2	39.5	14	36	1.01	460
12FFS18LBH	½	12	11	18L - M26x1,5 + bulkhead		2	3.74	1.50	1.56	1.57	1.42	95	38.2	39.5	40.	36	1.17	534
16FFS15LBH	⅝	16	12	15L - M22x1,5 + bulkhead		2	2.68	1.66	1.56	1.50	1.42	68	42.2	39.5	38	36	–	–
16FFS16S	⅝	16	12	16S - M24x1,5		2	2.75	1.66	1.56	0.55	1.42	70	42.2	39.5	14	36	1.11	505
16FFS18LBH	⅝	16	13	18L - M26x1,5 + bulkhead		2	2.68	1.66	1.56	1.57	1.42	68	42.2	39.5	40	36	–	–

* Alternative end connections available upon request.
To obtain connected length of coupling, add dimensions A (Fig. 1 or Fig. 2) and G (Fig. 3 or 4) together.
Note that ISO 8434-1 will restrict usage of coupling to 250 bar for end connection 8L, 10L, 12L and 15L, and to 160 bar for end connection 18L.

FF Series (Steel)
ISO 16028 Interchange

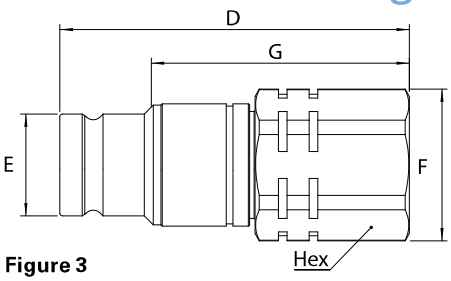
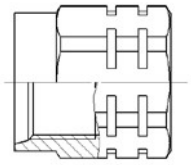
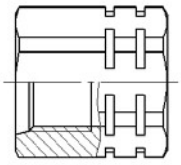


Figure 3

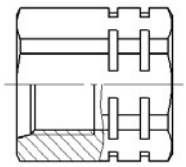
ISO 6149-1
15° + Metric thread



SAE J 1926-1
15° + UN/UNF thread



EATON S013A
15° + BSPP Thread



Plugs (Male)

Part Number	Body Size	ISO Size	Nominal Flow Diameter	Thread Size*(Female)						Dimensions										Weight	
NBR+AU	(in)	(mm)	(mm)	NPT	BSPP	ISO 6149-1	SAE J 1926-1	Eaton S013A	Fig.	D (in)	E (in)	F (in)	G (in)	Hex (in)	D (mm)	E (mm)	F (mm)	G (mm)	Hex (mm)	lbs	grams
6FFP25	¼	6.3	6	¼ 18f					3	2.01	0.64	0.94	1.58	0.87	51	16.2	24	40.1	22	–	–
6FFP25BS	¼	6.3	6		¼-19				3	2.01	0.64	0.94	1.58	0.87	51	16.2	24	40.1	22	–	–
6FFP25FG	¼	6.3	6					G ¼	3	2.01	0.64	0.94	1.58	0.87	51	16.2	24	40.1	22	0.20	90
6FFP56UN	¼	6.3	6				9/16 18f UNF		3	2.05	0.64	0.94	1.62	0.87	52	16.2	24	41.1	22	–	–
10FFP16FMET	⅜	10	8.6			M16x1,5			3	2.56	0.78	1.16	1.96	1.06	65	19.7	29.5	49.7	27	–	–
10FFP37	⅜	10	8.6	⅜ 18f					3	2.56	0.78	1.16	1.96	1.06	65	19.7	29.5	49.7	27	–	–
10FFP37BS	⅜	10	8.6		⅜-19				3	2.56	0.78	1.16	1.96	1.06	65	19.7	29.5	49.7	27	–	–
10FFP37FG	⅜	10	8.6					G ⅜	3	2.56	0.78	1.16	1.96	1.06	65	19.7	29.5	49.7	27	0.35	157
10FFP50	⅜	10	8.6	½ 14f					3	2.68	0.78	1.16	2.08	1.06	68	19.7	29.5	52.7	27	–	–
10FFP50BS	⅜	10	8.6		½-14				3	2.68	0.78	1.16	2.08	1.06	68	19.7	29.5	52.7	27	–	–
10FFP50FG	⅜	10	8.6					G ½	3	2.68	0.78	1.16	2.08	1.06	68	19.7	29.5	52.7	27	0.33	150
10FFP56UN	⅜	10	8.6				9/16 18f UNF		3	2.68	0.78	1.16	2.08	1.06	68	19.7	29.5	52.7	27	–	–
10FFP75UN	⅜	10	8.6				¾ 16f UNF		3	2.68	0.78	1.16	2.08	1.06	68	19.7	29.5	52.7	27	–	–
10FFP87UN	⅜	10	8.6				⅞ 14f UNF		3	2.80	0.78	1.30	2.19	1.18	71	19.7	33	55.7	30	–	–
12FFP106UN	½	12.5	11				1 1/16 12f UN		3	2.95	0.96	1.56	2.28	1.42	75	24.5	39.5	58	36	–	–
12FFP50	½	12.5	11	½ 14f					3	2.71	0.96	1.56	2.05	1.42	69	24.5	39.5	52	36	–	–
12FFP50BS	½	12.5	11		½-14				3	2.71	0.96	1.56	2.05	1.42	69	24.5	39.5	52	36	–	–
12FFP50FG	½	12.5	11					G ½	3	2.71	0.96	1.56	2.05	1.42	69	24.5	39.5	52	36	0.67	305
12FFP75	½	12.5	11	¾ 14f					3	2.83	0.96	1.56	2.16	1.42	72	24.5	39.5	55	36	–	–
12FFP75BS	½	12.5	11		¾-14				3	2.83	0.96	1.56	2.16	1.42	72	24.5	39.5	55	36	–	–
12FFP75FG	½	12.5	11					G ¾	3	2.83	0.96	1.56	2.16	1.42	72	24.5	39.5	55	36	0.65	295
12FFP75UN	½	12.5	11				¾ 16f UNF		3	2.71	0.96	1.56	2.05	1.42	69	24.5	39.5	52	36	–	–
12FFP87UN	½	12.5	11				⅞ 14f UNF		3	2.83	0.96	1.56	2.16	1.42	72	24.5	39.5	55	36	–	–
16FFP106UN	⅝	16	13				1 1/16 12f UN		3	2.95	1.06	1.56	2.28	1.42	75	27	39.5	58	36	–	–
16FFP50	⅝	16	13	½ 14f					3	2.71	1.06	1.56	2.05	1.42	69	27	39.5	52	36	–	–
16FFP50BS	⅝	16	13		½-14				3	2.71	1.06	1.56	2.05	1.42	69	27	39.5	52	36	–	–
16FFP75	⅝	16	13	¾ 14f					3	2.83	1.06	1.56	2.16	1.42	72	27	39.5	55	36	–	–
16FFP75BS	⅝	16	13		¾-14				3	2.83	1.06	1.56	2.16	1.42	72	27	39.5	55	36	–	–
16FFP75FG	⅝	16	13					G ¾	3	2.83	1.06	1.56	2.16	1.42	72	27	39.5	55	36	0.7	317
16FFP75UN	⅝	16	13				¾ 16f UNF		3	2.71	1.06	1.56	2.05	1.42	69	27	39.5	52	36	–	–
16FFP87UN	⅝	16	13				⅞ 14f UNF		3	2.83	1.06	1.56	2.16	1.42	72	27	39.5	55	36	–	–
19FFP100	¾	19	15	1 11,5f					3	3.69	1.18	1.81	2.84	1.65	93.8	29.9	46	72	42	–	–
19FFP100BS	¾	19	15		1-11				3	3.69	1.18	1.81	2.84	1.65	93.8	29.9	46	72	42	–	–
19FFP100FG	¾	19	15					G 1	3	3.69	1.18	1.81	2.84	1.65	93.8	29.9	46	72	42	1.14	518
19FFP106UN	¾	19	15				1 1/16 12f UN		3	3.69	1.18	1.81	2.84	1.65	93.8	29.9	46	72	42	–	–
19FFP131UN	¾	19	15				1 5/16 12f UN		3	3.69	1.18	1.81	2.84	1.65	93.8	29.9	46	72	42	–	–
19FFP75	¾	19	15	¾ 14f					3	3.69	1.18	1.81	2.84	1.65	93.8	29.9	46	72	42	–	–
19FFP75BS	¾	19	15		¾-14				3	3.69	1.18	1.81	2.84	1.65	93.8	29.9	46	72	42	–	–
25FFP100	1	25	18	1 11,5f					3	4.12	1.42	2.36	3.22	2.17	104.6	36	60	81.7	55	–	–
25FFP100BS	1	25	18		1-11				3	4.12	1.42	2.36	3.22	2.17	104.6	36	60	81.7	55	–	–
25FFP125	1	25	18	1 ¼ 11,5f					3	4.12	1.42	2.36	3.22	2.17	104.6	36	60	81.7	55	–	–
25FFP125BS	1	25	18		1 ¼-11				3	4.12	1.42	2.36	3.22	2.17	104.6	36	60	81.7	55	–	–
25FFP125FG	1	25	18					G 1 ¼	3	4.12	1.42	2.36	3.22	2.17	104.6	36	60	81.7	55	2.08	948
25FFP131UN	1	25	18				1 5/16 12f UN		3	4.12	1.42	2.36	3.22	2.17	104.6	36	60	81.7	55	2.09	952
25FFP162UN	1	25	18				1 5/8 12f UN		3	4.12	1.42	2.36	3.22	2.17	104.6	36	60	81.7	55	–	–
32FFP125	1 ¼	-	22.1	1 ¼-11,5					3	4.15	1.73	2.36	3.24	2.17	105.5	44	60	82.3	55	2.63	1193
32FFP125BS	1 ¼	-	22.1		1 ¼-11				3	4.15	1.73	2.36	3.24	2.17	105.5	44	60	82.3	55	2.60	1177
32FFP162UN	1 ¼	-	22.1				1 5/8 12 UN		3	4.15	1.73	2.36	3.24	2.17	105.5	44	60	82.3	55	2.59	1174
40FFP150	1 ½	-	30.1	1 ½ 11,5					3	4.13	2.24	2.61	3.01	2.36	105	57	66.3	76.5	60	3.15	1430
40FFP150BS	1 ½	-	30.1		1 ½-11				3	4.13	2.24	2.61	3.01	2.36	105	57	66.3	76.5	60	3.12	1417
40FFP150FG	1 ½	-	30.1					1" ½	3	4.13	2.24	2.61	3.01	2.36	105	57	66.3	76.5	60	3.11	1412
40FFP187UN	1 ½	-	30.1				1 ⅞ 12 UN		3	4.13	2.24	2.61	3.01	2.36	105	57	66.3	76.5	60	3.10	1406
50FFP200	2	-	39.2	2 11,5					3	5.31	2.87	3.29	3.80	2.95	135	73	83.5	96.6	75	6.01	2725
50FFP200BS	2	-	39.2		2-11				3	5.31	2.87	3.29	3.80	2.95	135	73	83.5	96.6	75	5.97	2706
50FFP250UN	2	-	39.2				2 ½ 12 UN		3	5.31	2.87	3.29	3.80	2.95	135	73	83.5	96.6	75	5.78	2623

*Alternative end connections available upon request.
To obtain connected length of coupling, add dimensions A (Fig. 1 or Fig. 2) and G (Fig. 3 or 4) together.

FF Series (Steel)
ISO 16028 Interchange

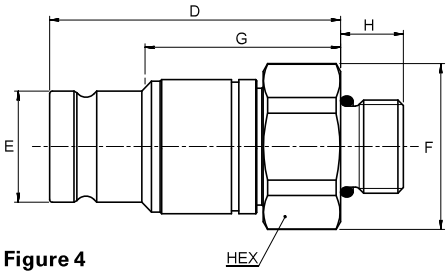
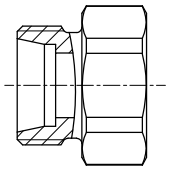
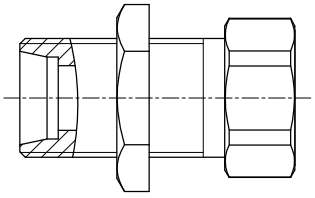


Figure 4

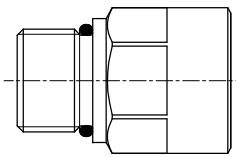
ISO 8434-1
Metric thread



ISO 8434-1 + Bulkhead
Metric thread



SAE J 1926-2
UN/UNF thread



Plugs (Male)

Part Number	Body Size	ISO Size	Nominal Flow Diameter	Thread Size*(Male)			Dimensions												Weight	
NBR+AU	(in)	(mm)	(mm)	ISO 8434-1	SAE J 1926-2	Fig.	D (in)	E (in)	F (in)	G (in.)	H (in)	Hex (in)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	Hex (mm)	lbs	grams
6FFP10LBH	¼	6.3	6	M10L 16x1,5 + bulkhead		4	1.54	0.64	0.94	1.11	1.38	0.87	39	16.2	24	28.1	35	22	0.27	123
10FFP8L	⅜	10	6	8L - M14x1,5		4	2.20	0.78	1.16	1.84	0.39	1.06	56	19.7	29.5	46.7	10	27	0.3	137
10FFP10L	⅜	10	8	10L - M16x1,5		4	2.17	0.78	1.16	1.84	0.43	1.06	55	19.7	29.5	46.7	11	27	0.3	135
10FFP12L	⅜	10	10	12L - M18x1,5		4	2.17	0.78	1.16	1.41	0.43	1.06	55	19.7	29.5	35.7	11	27	0.3	136
10FFP15L	⅜	10	8,6	5L - M22x1,5		4	2.13	0.78	1.16	1.84	0.47	1.06	54	19.7	29.5	46.7	12	27	0.31	139
10FFP15LBH	⅜	10	8,6	15L - M22x1,5 + bulkhead		4	3.5	0.78	1.16	2.9	1.50	1.06	89	19.7	29.5	73.7	38	27	0.4	183
10FFP16S	⅜	10	8,6	16S - M24x1,5		4	2.52	0.78	1.16	1.92	0.55	1.06	64	19.7	29.5	48.7	14	27	0.27	123
10FFP56ORM	⅜	10	8,6		9/16 18f UNF	4	2.5	0.78	1.06	1.9	0.47	0.94	63.6	19.7	27	48.3	12	23.8	0.33	150
10FFP75ORM	⅜	10	8,6		¾ 16f UNF	4	2.	0.78	1.06	1.	0.55	0.94	63.6	19.7	27	48.3	14	23.8	0.34	156
12FFP15LBH	½	12	11	15L - M22x1,5 + bulkhead		4	3.62	0.96	1.56	2.95	1	1.42	92	24.5	39.5	75	38	36	0.65	297
12FFP16S	½	12	11	16S - M24x1,5		4	2.71	0.96	1.56	2.05	0.55	1.42	69	24.5	39.5	52	14	36	0.61	279
12FFP18LBH	½	12	11	18L - M26x1,5 + bulkhead		4	3.70	0.96	1.56	3.03	1.57	1.42	94	24.5	39.5	77	40	36	0.78	353
16FFP15LBH	⅝	16	12	15L - M22x1,5 + bulkhead		4	2.12	1.06	1.56	1.45	1.5	1.42	54	27	39.5	37	38	36	0.65	298
16FFP16S	⅝	16	12	16S - M24x1,5		4	2.71	1.06	1.56	2.05	0.55	1.42	69	27	39.5	52	14	36	0.62	280
16FFP18LBH	⅝	16	13	18L - M26x1,5 + bulkhead		4	2.12	1.06	1.56	1.45	1.57	1.42	54	27	39.5	37	40	36	0.78	353

*Alternative end connections available upon request.
To obtain connected length of coupling, add dimensions A (Fig. 1 or Fig. 2) and G (Fig. 3 or 4) together.
Note that ISO 8434-1 will restrict usage of coupling to 250 bar for end connection 8L, 10L, 12L and 15L, and to 160 bar for end connection 18L.

Socket (Female) Dust Plug

Body Size (in)	Body Size (in) with color ring	Part Number	Coupling Type	Dust Plug Material
¼	–	SDC6FF	Socket/Female	PVC
⅜*	–	SDC10FF	Socket/Female	PVC
½	⅜	SDC12FF	Socket/Female	PVC
⅝	–	SDC16FF	Socket/Female	PVC
¾	½	SDC19FF	Socket/Female	PVC
1	¾	SDC25FF	Socket/Female	PVC

*Dust caps and dust plugs are offered in black.

Plug (Male) Dust Cap

Body Size (in)	Part Number	Coupling Type	Dust Plug Material
¼	PDC6FF	Plug/Male	PVC
⅜*	PDC10FF	Plug/Male	PVC
½	PDC12FF	Plug/Male	PVC
⅝	PDC16FF	Plug/Male	PVC
¾	PDC19FF	Plug/Male	PVC
1	PDC25FF	Plug/Male	PVC

Color Coding Ring Option*

Body Size (in)	ISO Size (mm)	Size	Socket/Female Ring Part Number**				Plug/Male Ring Part Number**				Tool Part Number	Tool & Rings Kit Part Number***
			Blue	Red	Yellow	Green	Blue	Red	Yellow	Green		
⅜	10	10FF	CR10FFSLB	CR10FFSRD	CR10FFSYL	CR10FFSDG	CR10FFPLB	CR10FFPRD	CR10FFPYL	CR10FFPDG	CR10FFSP93	CRKIT10FF
½	12.5	12FF	CR12FFSLB	CR12FFSRD	CR12FFSYL	CR12FFSDG	CR12FFPLB	CR12FFPRD	CR12FFPYL	CR12FFPDG	CR12FFSP93	CRKIT12FF
⅝	16	16FF	CR16FFSLB	CR16FFSRD	CR16FFSYL	CR16FFSDG	CR16FFPLB	CR16FFPRD	CR16FFPYL	CR16FFPDG	CR16FFSP93	CRKIT16FF
¾	19	19FF	CR19FFSLB	CR19FFSRD	CR19FFSYL	CR19FFSDG	CR19FFPLB	CR19FFPRD	CR19FFPYL	CR19FFPDG	CR19FFSP93	CRKIT19FF

* For requests on alternative colors or installation instructions, please contact your Eaton sales representative.
** Orders must be in multiples of 10 pcs.
*** The kit consists of a tool plus 10 socket rings and 10 plug rings of each color.

MLFF Series (Stainless Steel) ISO 16028 Flat Face/Dry Break

Eaton's MLFF Series stainless steel coupling is a flat face dry break coupling used for hydraulic applications. The MLFF Series interchanges with all ISO 16028 profiles. Due to its stainless steel design, it is corrosion resistant and can handle aggressive environments.

Product Features

- Designed and manufactured under Article 3.3 of the European Pressure Equipment Directive PED 201468/EU
- Safety sleeve lock prevents accidental disconnections
- Push to connect with double shut-off valving
- Shock resistant color coding ring option available in sizes 10FF, 12FF, 16FF and 19FF to prevent accidental crossing of lines
- Resistant to aggressive environments and corrosion
- Utilize FF Series dust caps
- Standard body material: 316L Stainless steel corrosion resistant
- Alternative end connections available upon request
- Standard seal material: FKM, EPDM, NBR+AU, HNBR (upon request)

Physical Characteristics

ISO Size*	Coupling Size	Maximum Operating Pressure Connected		Plug/ Male Half		Socket/ Female Half		Minimum Burst Pressure Connected		Plug/ Male Half		Socket/ Female Half		Rated Flow**		Fluid Loss	Air Inclusion	Force to Connect	
(mm)	(in)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(lpm)	(gpm)	ml-cc.	ml-cc.	N	Lbs
6.3	¼	250	3,625	250	3,625	250	3,625	2,335	33,858	1,640	23,780	1,330	19,285	17	4.49	0.004	0.007	80	18.0
10	⅜	250	3,625	250	3,625	250	3,625	1,672	24,244	1,664	24,128	845	12,253	29	7.66	0.006	0.010	140	31.5
12	½	250	3,625	250	3,625	250	3,625	1,679	24,346	997	14,457	993	14,399	55	14.53	0.012	0.013	195	43.8
16	⅝	250	3,625	250	3,625	250	3,625	1,190	17,255	950	13,775	880	12,760	67	17.70	0.016	0.030	205	46.1
19	¾	250	3,625	250	3,625	250	3,625	1,370	19,865	882	12,789	845	12,253	105	27.74	0.034	0.015	215	48.3
25	1	250	3,625	250	3,625	250	3,625	1,690	24,505	1,000	14,500	850	12,325	177	46.76	0.032	0.033	260	58.5
-	1"½	250	3,625	250	3,625	250	3,625	750	10,875	750	10,875	750	10,875	450	118.9	0.265	0.445	385	86.6
-	2"	175	2,535	175	2,535	175	2,535	525	7,610	525	7,610	525	7,610	700	184.9	0.390	0.260	375	84.3

* The ISO size corresponds to the internal diameter of the hose or the external diameter of the rigid tube (as defined in ISO 4397 Standard)
** Indicated values refer to a 1 bar/14.5 psi pressure drop

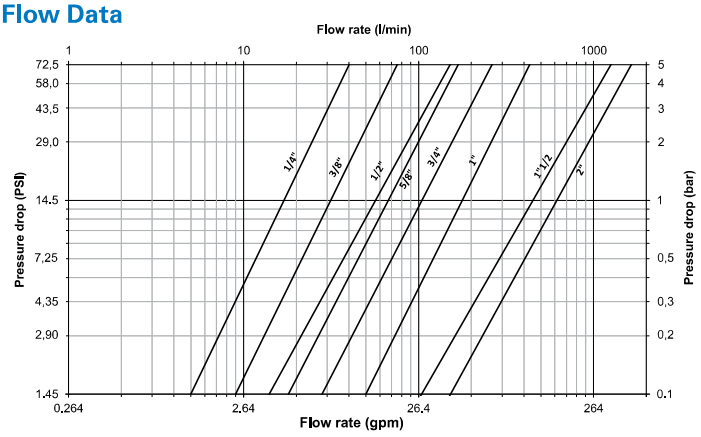
Applications & Markets

- Construction
- Agriculture
- Iron and Steel Industry
- Railway
- Oil and Gas
- Marine
- Material Handling
- General Hydraulic Applications

European Pressure Equipment Directive

Couplings with nominal diameters up to and including 25mm are designed and manufactured under Article 3.3 of the European Pressure Equipment Directive 97/23 EC. Couplings with nominal diameters greater than 25 mm are designed and manfactured under Article 3.3 of the European pressure Equipment Directive 97/23 EC. They should not be used to convey gases in Group 1 (hazardous).

Flow Data



Seal Elastomer Data*

Seal Elastomer	P/N Code	ISO Size (6FF to 25FF) Maximum Operation Temperature Range	Non-ISO Size (40FF and 50FF) Maximum Operation Temperature Range
NBR (Nitrile) + AU (Polyurethane)	-	-25°C +100°C/-13°F +212°F	on request
FKM	-143	-20°C +200°C/-4°F +392°F	-20°C +200°C/-4°F +392°F
EPDM (Ethylene-Propylene)	-192	-40°C +150°C/-40°F +302°F	on request

*For reference only, based on Eaton recommended temperatures.
Contact Eaton technical support for further information on fluid compatibility.

Maximum Operating Pressure

Coupling Size	Nominal Flow Diameter	Non hazardous liquids Group 2 Plug & Connected		Socket		Non hazardous gases Group 2 Plug & Connected		Socket		Hazardous liquids Group 1 Plug & Connected		Socket	
(in)		bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)
1 ½	30.1	300	4350	270	3915	300	4350	270	3915	66	955	66	955
2	39.2	300	4350	225	3260	25	360	25	360	50	725	50	725

* Nominal diameters over 25mm should not be used to convey gases in group 1 (PED 97/23 EC)

MLFF Series (Stainless Steel)
ISO 16028 Flat Face/Dry Break

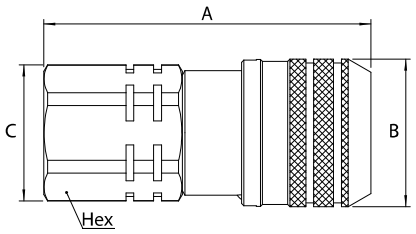


Figure 1

Sockets (Female)

Part Number			Body Size	ISO Size	Nominal Flow Diameter	Thread Size*(Female)			Dimensions								Weight	
NBR+AU	FKM	EPDM	(in)	(mm)	(mm)	NPT	BSPP	Fig.	A (in)	B (in)	C (in)	Hex (in)	A (mm)	B (mm)	C (mm)	Hex (mm)	lbs	grams
ML6FFS25	ML6FFS25143	ML6FFS25192	¼	6.3	6	¼-18	-	1	2.13	1.06	0.94	0.87	54	27	24	22	0.30	135
ML6FFS25BS	ML6FFS25BS143	ML6FFS25BS192	¼	6.3	6	-	¼-19	1	2.13	1.06	0.94	0.87	54	27	24	22	0.30	135
ML10FFS37	ML10FFS37143	ML10FFS37192	⅜	10	8.6	⅜-18	-	1	2.68	1.26	1.16	1.06	68	32	29.5	27	0.54	245
ML10FFS37BS	ML10FFS37BS143	ML10FFS37BS192	⅜	10	8.6	-	⅜-19	1	2.68	1.26	1.16	1.06	68	32	29.5	27	0.54	245
ML10FFS50BS	ML10FFS50BS143	ML10FFS50BS192	⅜	10	8.6	-	½-14	1	2.80	1.26	1.16	1.06	71	32	29.5	27	0.53	240
ML12FFS50	ML12FFS50143	ML12FFS50192	½	12.5	11	½-14	-	1	3.27	1.50	1.56	1.42	83	38	39.5	36	1.03	470
ML12FFS50BS	ML12FFS50BS143	ML12FFS50BS192	½	12.5	11	-	½-14	1	3.27	1.50	1.56	1.42	83	38	39.5	36	1.03	470
ML12FFS75BS	ML12FFS75BS143	ML12FFS75BS192	½	12.5	11	-	¾-14	1	3.39	1.50	1.56	1.42	86	38	39.5	36	1.01	460
ML16FFS75	ML16FFS75143	ML16FFS75192	⅝	16	13	¾-14	-	1	3.39	1.66	1.56	1.42	86	42	39.5	36	1.21	550
ML16FFS75BS	ML16FFS75BS143	ML16FFS75BS192	⅝	16	13	-	¾-14	1	3.39	1.66	1.56	1.42	86	42	39.5	36	1.21	550
ML19FFS75	ML19FFS75143	ML19FFS75192	¾	19	15	¾-14	-	1	3.82	1.81	1.77	1.61	97	46	45	41	1.69	770
ML19FFS75BS	ML19FFS75BS143	ML19FFS75BS192	¾	19	15	-	¾-14	1	3.82	1.81	1.77	1.61	97	46	45	41	1.69	770
ML19FFS100	ML19FFS100143	ML19FFS100192	¾	19	15	1-11.5	-	1	3.80	1.82	1.77	1.61	97	46	45	41	1.56	710
ML19FFS100BS	ML19FFS100BS143	ML19FFS100BS192	¾	19	15	-	1-11	1	3.82	1.81	1.77	1.61	97	46	45	41	1.56	710
ML25FFS100BS	ML25FFS100BS143	ML25FFS100BS192	1	25	18	-	1-11	1	4.07	2.36	2.36	2.17	104	60	60	55	2.83	1290
ML25FFS125	ML25FFS125143	ML25FFS125192	1	25	18	1 ¼-11.5	-	1	4.07	2.36	2.36	2.17	104	60	60	55	2.83	1290
ML40FFS150	ML40FFS150143	-	1 ½	-	30.1	1 ½-11,5		1	5.01	3.13	2.76	2.56	127.4	79.5	70	65	6.16	2767
ML40FFS150BS	ML40FFS150BS143	-	1 ½	-	30.1		1 ½-11	1	5.01	3.13	2.76	2.56	127.4	79.5	70	65	6.13	2752
-	ML50FFS200143	-	2	-	39.2	2 11,5		1	6.17	3.84	3.46	3.15	156.8	97.5	87.8	80	10.87	4883
-	ML50FFS200BS143	-	2	-	39.2		2-11	1	6.17	3.84	3.46	3.15	156.8	97.5	87.8	80	10.82	4861

* Alternative end connections available upon request.
To obtain connected length of coupling, add dimensions A (Fig. 1) and G (Fig. 2) together.

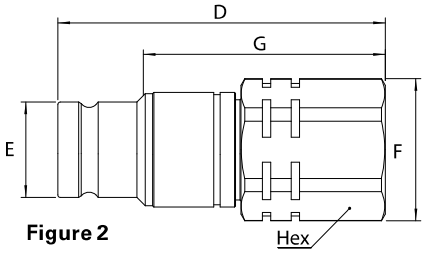


Figure 2

Plugs (Male)

Part Number			Body Size	ISO Size	Nominal Flow Diameter	Thread Size*(Female)			Dimensions									Weight	
NBR+AU	FKM	EPDM	(in)	(mm)	(mm)	NPT	BSPP	Fig.	D (in)	E (in)	F (in)	G (in)	Hex (in)	D (mm)	E (mm)	F (mm)	G (mm)	Hex (mm)	lbs	grams
ML6FFP25	ML6FFP25143	ML6FFP25192	¼	6.3	6	¼-18	-	2	2.01	0.46	0.94	1.58	0.87	51	11.6	24	40.1	22	0.20	90
ML6FFP25BS	ML6FFP25BS143	ML6FFP25BS192	¼	6.3	6	-	¼-19	2	2.01	0.46	0.94	1.58	0.87	51	11.6	24	40.1	22	0.20	90
ML10FFP37	ML10FFP37143	ML10FFP37192	⅜	10	8.6	⅜-18	-	2	2.56	0.78	1.16	1.97	1.06	65	19.7	29.5	50	27	0.33	150
ML10FFP37BS	ML10FFP37BS143	ML10FFP37BS192	⅜	10	8.6	-	⅜-19	2	2.56	0.78	1.16	1.97	1.06	65	19.7	29.5	50	27	0.33	150
ML10FFP50BS	ML10FFP50BS143	ML10FFP50BS192	⅜	10	8.6	-	½-14	2	2.68	0.78	1.16	2.09	1.06	68	19.7	29.5	53	27	0.33	150
ML12FFP50	ML12FFP50143	ML12FFP50192	½	12.5	11	½-14	-	2	2.72	0.96	1.56	2.05	1.42	69	24.5	39.5	52	36	0.61	275
ML12FFP50BS	ML12FFP50BS143	ML12FFP50BS192	½	12.5	11	-	½-14	2	2.72	0.96	1.56	2.05	1.42	69	24.5	39.5	52	36	0.64	290
ML12FFP75BS	ML12FFP75BS143	ML12FFP75BS192	½	12.5	11	-	¾-14	2	2.83	0.96	1.56	2.17	1.42	72	24.5	39.5	55	36	0.61	275
ML16FFP75	ML16FFP75143	ML16FFP75192	⅝	16	13	¾-14	-	2	2.83	1.06	1.56	1.42	1.42	72	27	39.5	36	36	0.69	315
ML16FFP75BS	ML16FFP75BS143	ML16FFP75BS192	⅝	16	13	-	¾-14	2	2.83	1.06	1.56	1.42	1.42	72	27	39.5	36	36	0.69	315
ML19FFP75	ML19FFP75143	ML19FFP75192	¾	19	15	¾-14	-	2	3.70	1.18	1.77	2.83	1.61	94	29.9	45	72	41	1.28	580
ML19FFP75BS	ML19FFP75BS143	ML19FFP75BS192	¾	19	15	-	¾-14	2	3.70	1.18	1.77	2.83	1.61	94	29.9	45	72	41	1.28	580
ML19FFP100	ML19FFP100143	ML19FFP100192	¾	19	15	1-11,5	-	2	3.70	1.18	1.77	2.83	1.61	94	29.9	45	72	41	1.13	515
ML19FFP100BS	ML19FFP100BS143	ML19FFP100BS192	¾	19	15	-	1-11	2	3.70	1.18	1.77	2.83	1.61	94	29.9	45	72	41	1.12	510
ML25FFP100BS	ML25FFP100BS143	ML25FFP100BS192	1	25	18	-	1-11	2	4.12	1.42	2.36	2.17	2.17	104.6	36	60	55	55	2.37	1080
ML25FFP125	ML25FFP125143	ML25FFP125192	1	25	18	1 ¼-11,5	-	2	4.12	1.42	2.36	2.17	2.17	104.6	36	60	55	55	2.37	1080
ML40FFP150	ML40FFP150143	-	1 ½	-	30.1	1 ½-11,5		2	4.13	2.24	2.61	3.01	2.36	105	57	66.3	76.5	60	3.15	1411
ML40FFP150BS	ML40FFP150BS143	-	1 ½	-	30.1		1 ½-11	2	4.13	2.24	2.61	3.01	2.36	105	57	66.3	76.5	60	3.12	1398
-	ML50FFP200143	-	2	-	39.2	2-11,5		2	5.31	2.87	3.29	3.80	2.95	135	73	83.5	96.6	75	6.01	2729
-	ML50FFP200BS143	-	2	-	39.2		2-11	2	5.31	2.87	3.29	3.80	2.95	135	73	83.5	96.6	75	5.97	2710

* Alternative end connections available upon request.
To obtain connected length of coupling, add dimensions A (Fig. 1) and G (Fig. 2) together.

Color Coding Ring Option*†

Body Size	ISO Size	Size	Socket/Female Ring Part Number**				Plug/Male Ring Part Number**				Tool Part Number	Tool & Rings Kit Part Number***
			Blue	Red	Yellow	Green	Blue	Red	Yellow	Green		
(in)	(mm)											
⅜	10	ML10FF	CR10FFSLB	CR10FFSRD	CR10FFSYL	CR10FFSDG	CR10FFPLB	CR10FFPRD	CR10FFPYL	CR10FFPDG	CR10FFSP93	CRKIT10FF
½	12.5	ML12FF	CR12FFSLB	CR12FFSRD	CR12FFSYL	CR12FFSDG	CR12FFPLB	CR12FFPRD	CR12FFPYL	CR12FFPDG	CR12FFSP93	CRKIT12FF
⅝	16	ML16FF	CR16FFSLB	CR16FFSRD	CR16FFSYL	CR16FFSDG	CR16FFPLB	CR16FFPRD	CR16FFPYL	CR16FFPDG	CR16FFSP93	CRKIT16FF
¾	19	ML19FF	CR19FFSLB	CR19FFSRD	CR19FFSYL	CR19FFSDG	CR19FFPLB	CR19FFPRD	CR19FFPYL	CR19FFPDG	CR19FFSP93	CRKIT19FF

* For requests on alternative colors or installation instructions, please contact your Eaton sales representative.
** Orders must be in multiples of 10 pcs.
*** The kit consists of a tool plus 10 socket rings and 10 plug rings of each color.
† For dust caps and dust plugs please refer to page 37.

FFCUP Series
ISO 16028 Connect Under Pressure Flat Face Plug/Male

Eaton's FFCUP Series plug/male coupling is an ISO 16028 standard interchange. The flush face design prevents fluid loss on disconnection and air inclusion on connection guaranteeing excellent flow capability. An integrated patented system allows the FFCUP Series plug to be connected to a socket/female half coupling under 350 bar (5075 psi) residual pressure.

Product Features

- Designed and manufactured in accordance with Article 3.3 of the European Pressure Equipment Directive PED 2014/68/EU
- Meets dimensional requirements of ISO 16028
- Push to connect
- Connect under residual pressure
- Shock resistant color coding ring option available to prevent accidental crossing of lines
- Standard Material: High-resistant carbon steel with Guardian Seal™ plating, a whole new level of corrosion resistance with minimum 720 hours RR protection
- Guardian Seal™ plating:
  - Nickel-free
  - Solvent-free
  - Meets Global RoHS, ELV and REACH requirements
- Alternative end connections available upon request
- Standard seal material: NBR (Nitrile) + AU (Polyurethane)
- Utilize FF Series dust caps

Physical Characteristics

Body Size	ISO Size*	Nominal Flow Diameter	Max. Operating Pressure		Min. Burst Pressure		Rated Flow**		Air Inclusion	Fluid Loss	Force to Connect	
(in)	(mm)	(mm)	(bar)	(psi)	(bar)	(psi)	(lpm)	(gpm)	ml-cc.	ml-cc.	N	lbf
3/8	10	8.6	350	5,075	1,400	20,300	29.4	7.76	0.010	0.006	350	79
1/2	12.5	11	350	5,075	1,400	20,300	46.8	12.36	0.013	0.012	270	60.7

* The ISO size corresponds to the internal diameter of the hose or the external diameter of the rigid tube(as defined in ISO 4397 Standard)
** Indicated values refer to a 1 bar/14.5 psi pressure drop

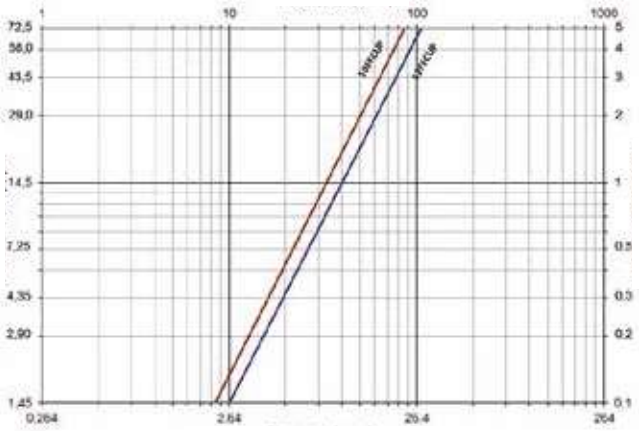
Connect Under Pressure Operating Guidelines

- The plug can be connected against 350 bar/5075 psi residual pressure to sockets/females meeting ISO 16028 standard requirements.
- Plug only is under pressure while connected
- During the connection phase, the socket must not be under pressure
- Disconnection under pressure is strictly forbidden
- Connection under pressure may require a few seconds: the force to connect must be maintained during this lapse of time

Applications & Markets

- Connection to Hydraulic pumps, jacks, distributors and accessories
- Hydraulic Circuits
- Material Handling
- Construction
- Agriculture
- Iron and Steel Industry
- Railway
- Industrial Plants

Flow Data



Seal Elastomer Data*

Seal Elastomer	Max. Operation Temperature Range
NBR (Nitrile) + AU (Polyurethane)	-25°C +100°C/-13°F +212°F

* For reference only, based on Eaton recommended temperatures.
Contact Eaton technical support for further information on fluid compatibility

FFCUP Series
ISO 16028 Connect Under Pressure Flat Face Plug/Male

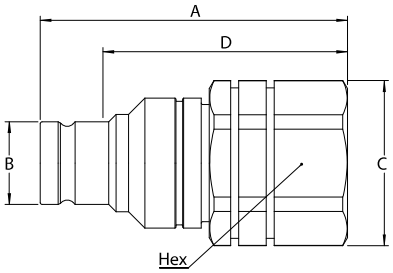


Figure 1

Plugs (Male)

Part Number	Body Size	ISO Size	Nominal Flow Diameter	Thread Size* (Female)				Dimensions									Weight	
NBR+AU	(in)	(mm)	(mm)	NPT	BSPP	SAE J 1926-1	Fig.	A (in)	B (in)	C (in)	D (in)	Hex (in)	A (mm)	B (mm)	C (mm)	D (mm)	Hex (mm)	lbs	grams
10FFPCUP37	3/8	10	8.6	3/8-18	-		1	2.89	0.74	1.55	2.28	1.41	73.5	18.7	39.5	58.0	36	0.69	314
10FFPCUP37BS				-	3/8-19		1	2.89	0.74	1.55	2.28	1.41	73.5	18.7	39.5	58.0	36	0.69	314
10FFPCUP50				1/2-14	-		1	2.89	0.74	1.55	2.28	1.41	73.5	18.7	39.5	58.0	36	0.66	300
10FFPCUP50BS				-	1/2-14		1	2.89	0.74	1.55	2.28	1.41	73.5	18.7	39.5	58.0	36	0.66	300
12FFPCUP50	1/2	12,5	11	1/2-14			1	3,03	0,96	1,55	2,36	1.41	77	24,52	39,5	60	36	0,77	350
12FFPCUP50BS					1/2-14		1	3,03	0,96	1,55	2,36	1.41	77	24,52	39,5	60	36	0,76	346
12FFPCUP56UN						9/16 18f UNF	1	2,87	0,96	1,55	2,2	1.41	73	24,52	39,5	56	36	0,74	336
12FFPCUP75UN						3/4 16f UNF	1	3,03	0,96	1,55	2,36	1.41	77	24,52	39,5	60	36	0,77	351

* Alternative end connections available upon request.

Color Coding Ring Option*

Body Size	ISO Size	Nominal Flow Diameter	Plug/Male Ring Part Number** Blue	Red	Yellow	Green	Tool Part Number
(in)	(mm)	(mm)					
3/8	10	8.6	CR12FFPLB	CR12FFPRD	CR12FFPYL	CR12FFPDG	CR12FFSP93
1/2	12,5	11	CR16FFPLB	CR16FFPRD	CR16FFPYL	CR16FFPDG	CR16FFSP93

* For requests on alternative colours or installation instructions, please contact your Eaton sales representative.
** Orders must be in multiples of 10 pcs.

FD49 Series
NFPA Standard T3.20.15 HTMA Interchange

Eaton's FD49 Series meets NFPA standard T3.20.15 and was developed in conjunction with HTMA (Hydraulic Tool Manufacturer's Association). Eaton's Twin-Guard™ sealing system prevents seepage at low pressures and allows connection and disconnection against pressure up to 500 psi.

Product Features

- Dual flush face valving for minimal fluid loss and air inclusion
- Tubular valve and sleeve construction for high fluid flow with low pressure drop
- Push-to-connect latching for one hand operation
- Standard seal material: Teflon channel seal and Buna-N O-Ring backup
- Standard body material: High-resistance carbon steel with zinc trivalent plating

Physical Characteristics

Body Size	Max. Operating Pressure		Min. Burst Pressure Connected		Vacuum Connected Only	Rated Flow		Air Inclusion	Fluid Loss
(in)	(bar)	(psi)	(bar)	(psi)	(in./Hg)	(lpm)	(gpm)	cc. max.	cc.max.
⅜	207	3,000	621	9,000	28	38	10	.01	.02

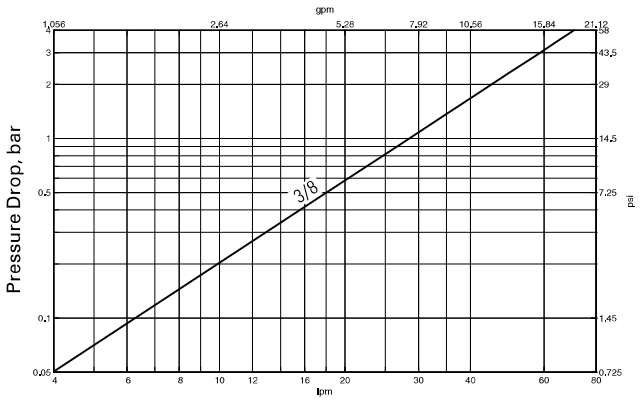
Eaton's Twin-Guard™ seal system consists of channel and Buna-N O-Ring seals. The channel seal prevents blowout during connection and disconnection under pressure to 500 psi. The Buna-N O-Ring seal is a secondary seal eliminating fluid seepage.

Applications & Markets

- Hydraulic Tool (HTMA interchange)
- Hydraulic and Fluid Transfer

Flow Data

Pressure Drop Versus Flow Graph



Gallons Per Minute Flow

Test Fluid: MIL-H-5606 Oil at 100°F

FD49 Series
NFPA Standard T3.20.15 HTMA Interchange

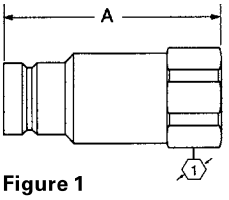


Figure 1

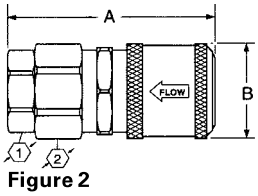


Figure 2

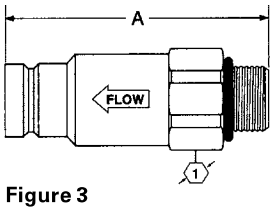


Figure 3

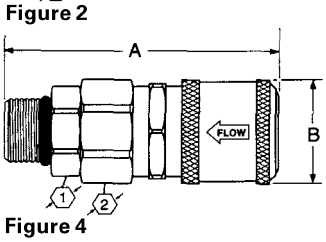


Figure 4

Dimensions (Female NPT, Valved)

Part Number Buna-N	Coupling Type	Body Size	Port Size	Thread	Type	Fig.	Dimensions A		B		Hex ①		Hex ②	
							mm	(in)	mm	(in)	mm	(in)	mm	(in)
FD49-1002-06-06	Plug/Male	⅜	⅜	⅜-18	Female NPT	1	66.5	(2.62)	-	-	25.4	(1.00)	-	-
FD49-1001-06-06	Socket/Female	⅜	⅜	⅜-18	Female NPT	2	69.6	(2.74)	30.5	(1.20)	25.4	(1.00)	26.9	(1.06)
FD49-1002-08-06	Plug/Male	⅜	½	½-14	Female NPT	1	69.9	(2.75)	-	-	26.9	(1.06)	-	-
FD49-1001-08-06	Socket/Female	⅜	½	½-14	Female NPT	2	72.4	(2.85)	30.5	(1.20)	-	-	26.9	(1.06)

Dimensions (Female SAE O-Ring, Valved)

Part Number Buna-N	Coupling Type	Body Size	Port Size	Thread	Type	Fig.	Dimensions A		B		Hex ①		Hex ②	
							mm	(in)	mm	(in)	mm	(in)	mm	(in)
FD49-1004-08-06	Plug/Male	⅜	¾	¾-16	Female SAE O-Ring	1	69.9	(2.75)	-	-	26.9	(1.06)	-	-
FD49-1005-08-06	Socket/Female	⅜	¾	¾-16	Female SAE O-Ring	2	71.6	(2.82)	30.5	(1.20)	-	-	26.9	(1.06)

Dimensions (Male SAE O-Ring, Valved)

Part Number Buna-N	Coupling Type	Body Size	Port Size	Thread	Type	Fig.	Dimensions A		B		Hex ①		Hex ②	
							mm	(in)	mm	(in)	mm	(in)	mm	(in)
FD49-1057-06-06	Plug/Male	⅜	9/16	9/16-18	Male SAE O-Ring	3	75.9	(2.99)	-	-	25.4	(1.00)	-	-
FD49-1014-06-06	Socket/Female	⅜	9/16	9/16-18	Male SAE O-Ring	4	81.8	(3.22)	30.5	(1.20)	25.4	(1.00)	26.9	(1.06)
FD49-1057-08-06	Plug/Male	⅜	¾	¾-16	Male SAE O-Ring	3	75.9	(2.99)	-	-	25.4	(1.00)	-	-
FD49-1014-08-06	Socket/Female	⅜	¾	¾-16	Male SAE O-Ring	4	83.3	(3.28)	30.5	(1.20)	25.4	(1.00)	26.9	(1.06)

Dust Cap/Plug, Standard Coupling

Part Number (Buna-N)	Body Size
FD49-1042-06	⅜

Note: Fits male and female halves.


Dust Cap/Plug

FD96 Series
High Pressure Thread to Connect Flush Face

Eaton's FD96 High Pressure Thread Together Flush Face Series is designed for high pressure and high impulse applications for hydraulic circuits. The FD96 Series design provides low connect and disconnect force in hydraulic circuits where trapped residual pressure must be addressed. The flush face design limits contamination and unwanted fluid loss. The FD96 Series is available in sizes ¼" through 2" to best meet your specific size requirements.

Product Features

- Thread together design allows connection and disconnection under pressure up to 4,300 psi
- Low connection force
- Dual flush-face valving with non-spill design
- Working pressures up to 8,700 psi
- Body material: High-resistance carbon steel with zinc trivalent and black oxide plating

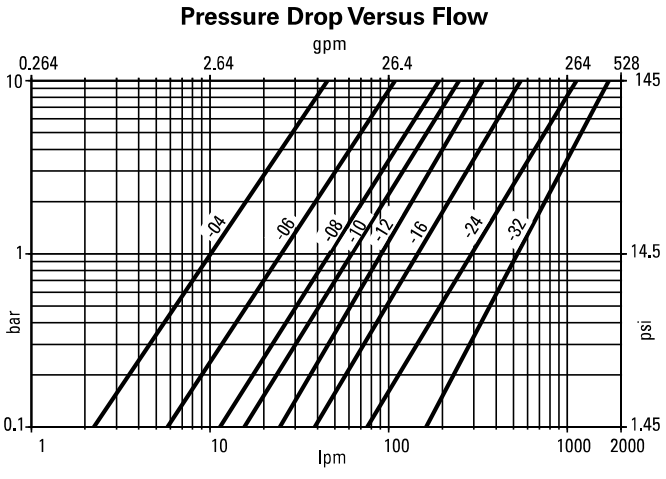
Applications & Markets

- Hydraulic Fluid Transfer
- High-impulse Hydraulics
- Oilfields
- Mining

Physical Characteristics

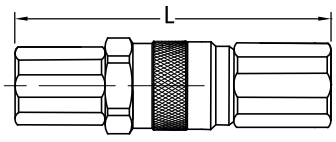
Body Size	Max. Operating Pressure: Connected (bar)	Connected (psi)	Plug/Male Half (bar)	Plug/Male Half (psi)	Socket/Female Half (bar)	Socket/Female Half (psi)	Min. Burst Pressure: Connected (bar)	Connected (psi)	Plug/Male Half (bar)	Plug/Male Half (psi)	Socket/Female Half (bar)	Socket/Female Half (psi)	Rated Flow (lpm)	Fluid Loss (gpm)	Fluid Loss cc.	Req. Torque to Connect lbs.	Req. Torque to Connect (N)
¼	600	8,700	600	8,700	420	6,090	1,500	21,750	1,500	21,750	1,260	18,270	12	3.2	.012	29-37	40-50
⅜	550	7,980	550	7,980	330	4,785	1,400	20,300	1,400	20,300	1,000	14,500	23	6.1	.040	37-44	50-60
½	550	7,980	550	7,980	330	4,785	1,400	20,300	1,400	20,300	1,000	14,500	45	11.9	.025	48-55	65-75
¾	550	7,980	550	7,980	330	4,785	1,400	20,300	1,400	20,300	1,000	14,500	74	19.6	.033	52-59	70-80
1	500	7,250	500	7,250	330	4,785	1,250	18,125	1,250	18,125	1,000	14,500	100	26.5	.018	66-81	90-110
1¼	470	6,800	470	6,800	300	4,350	1,200	17,400	1,200	17,400	800	11,600	189	50.1	.060	92-107	125-145
1½	400	5,800	400	5,800	270	3,915	1,700	15,950	1,100	15,950	800	11,600	288	76.3	.200	114-129	155-175
2	350	5,080	350	5,080	270	3,915	1,100	15,950	1,100	15,950	800	11,600	379	100.4	.350	236-258	320-355

Flow Data



Test Fluid: Oil ISO VG32 40°C

Connected Length



Body Size	Port Size	Connected Length "L" mm	Connected Length "L" (in)
¼	⅜	90.0	(3.54)
⅜	⅜	131.0	(5.16)
⅜	½	131.0	(5.16)
½	½	155.0	(6.10)
½	¾	160.0	(6.30)
¾	¾	165.0	(6.50)
1	1	190.4	(7.50)
1	1¼	170.0	(6.69)
1½	1½	256.0	(10.08)
2	2	363.5	(14.31)

FD96 Series
High Pressure
Thread to Connect Flush Face

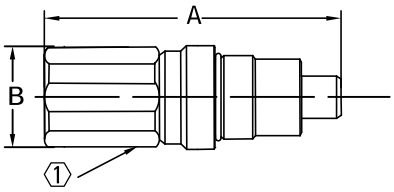


Figure 1

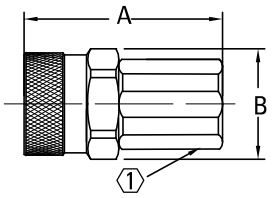


Figure 2

Dimensions (Female NPT)

Part Number	Coupling Type	Body Size	Port Size	Thread	Type	Fig.	Dimensions A		B		Hex ①	
							mm	(in)	mm	(in)	mm	(in)
FD96-1001-06-06	Socket/Female	⅜	⅜	⅜-18	Female NPT	2	65.8	(2.59)	41.8	(1.65)	30	(1.18)
FD96-1002-06-06	Plug/Male	⅜	⅜	⅜-18	Female NPT	1	82.5	(3.25)	37.8	(1.49)	27	(1.06)
FD96-1001-08-06	Socket/Female	⅜	½	½-14	Female NPT	2	70.8	(2.79)	41.8	(1.65)	30	(1.18)
FD96-1002-08-06	Plug/Male	⅜	½	½-14	Female NPT	1	85.0	(3.35)	37.8	(1.49)	27	(1.06)
FD96-1001-08-08	Socket/Female	½	½	½-14	Female NPT	2	77.8	(3.06)	49.8	(1.96)	36	(1.42)
FD96-1002-08-08	Plug/Male	½	½	½-14	Female NPT	1	95.0	(3.74)	45.8	(1.80)	36	(1.42)
FD96-1001-12-08	Socket/Female	½	¾	¾-14	Female NPT	2	84.8	(3.06)	49.8	(1.96)	36	(1.42)
FD96-1002-12-08	Plug/Male	½	¾	¾-14	Female NPT	1	97.4	(3.83)	45.8	(1.80)	36	(1.42)
FD96-1001-12-12	Socket/Female	¾	¾	¾-14	Female NPT	2	84.9	(3.34)	53.8	(2.12)	41	(1.61)
FD96-1002-12-12	Plug/Male	¾	¾	¾-14	Female NPT	1	99.0	(3.90)	49.8	(1.96)	36	(1.42)
FD96-1001-12-16	Socket/Female	1	¾	¾-14	Female NPT	2	96.7	(3.81)	58.8	(2.31)	46	(1.81)
FD96-1002-12-16	Plug/Male	1	¾	¾-14	Female NPT	1	113.6	(4.47)	54.8	(2.16)	46	(1.81)
FD96-1001-16-16	Socket/Female	1	1	1-11 ½	Female NPT	2	99.7	(3.93)	58.8	(2.31)	46	(1.81)
FD96-1002-16-16	Plug/Male	1	1	1-11 ½	Female NPT	1	113.6	(4.47)	54.8	(2.16)	46	(1.81)
FD96-1001-16-20	Socket/Female	1¼	1	1-11 ½	Female NPT	2	105.8	(4.17)	69.8	(2.75)	55	(2.17)
FD96-1002-16-20	Plug/Male	1¼	1	1-11 ½	Female NPT	1	123.4	(4.86)	64.5	(2.54)	55	(2.17)
FD96-1001-20-20	Socket/Female	1¼	1¼	1¼-11 ½	Female NPT	2	106.8	(4.20)	69.8	(2.75)	55	(2.17)
FD96-1002-20-20	Plug/Male	1¼	1¼	1¼-11 ½	Female NPT	1	123.4	(4.86)	64.5	(2.54)	55	(2.17)
FD96-1001-20-24	Socket/Female	1½	1¼	1¼-11 ½	Female NPT	2	133.5	(5.26)	92.0	(3.62)	65	(2.56)
FD96-1002-20-24	Plug/Male	1½	1¼	1¼-11 ½	Female NPT	1	150.0	(5.91)	89.8	(3.54)	65	(2.56)
FD96-1001-24-24	Socket/Female	1½	1½	1½-11 ½	Female NPT	2	133.5	(5.26)	92.0	(3.62)	65	(2.56)
FD96-1002-24-24	Plug/Male	1½	1½	1½-11 ½	Female NPT	1	150.0	(5.91)	89.8	(3.54)	65	(2.56)
FD96-1001-32-32	Socket/Female	2	2	2-11 ½	Female NPT	2	224.8	(8.85)	200.0	(7.87)	90	(3.54)
FD96-1002-32-32	Plug/Male	2	2	2-11 ½	Female NPT	1	218.4	(8.60)	145.0	(5.71)	90	(3.54)

Dimensions (Female SAE O-Ring)

Part Number	Coupling Type	Body Size	Port Size	Thread	Type	Dimensions Fig.	A		B		Hex ①	
							mm	(in)	mm	(in)	mm	(in)
FD96-1004-06-04	Socket/Female	¼	⅜	9⁄16-18 UNF	Female SAE O-Ring	2	57.1	(2.25)	38.8	(1.53)	27	(1.06)
FD96-1005-06-04	Plug/Male	¼	⅜	9⁄16-18 UNF	Female SAE O-Ring	1	72.8	(2.87)	34.8	(1.37)	22	(.87)
FD96-1004-08-06	Socket/Female	⅜	½	¾-16 UNF	Female SAE O-Ring	2	70.8	(2.79)	41.8	(1.65)	30	(1.18)
FD96-1005-08-06	Plug/Male	⅜	½	¾-16 UNF	Female SAE O-Ring	1	87.0	(3.43)	37.8	(1.49)	27	(1.06)
FD96-1004-12-08	Socket/Female	½	¾	11⁄16-12 UNF	Female SAE O-Ring	2	84.8	(3.06)	49.8	(1.96)	36	(1.42)
FD96-1005-12-08	Plug/Male	½	¾	11⁄16-12 UNF	Female SAE O-Ring	1	100.4	(3.95)	45.8	(1.80)	36	(1.42)
FD96-1004-12-12	Socket/Female	¾	¾	11⁄16-12 UNF	Female SAE O-Ring	2	84.9	(3.34)	53.8	(2.12)	41	(1.61)
FD96-1005-12-12	Plug/Male	¾	¾	11⁄16-12 UN	Female SAE O-Ring	1	102.0	(4.02)	49.8	(1.96)	36	(1.42)
FD96-1004-12-16	Socket/Female	1	¾	11⁄16-12 UN	Female SAE O-Ring	2	99.7	(3.93)	58.8	(2.31)	46	(1.81)
FD96-1005-12-16	Plug/Male	1	¾	11⁄16-12 UN	Female SAE O-Ring	1	115.6	(4.55)	54.8	(2.16)	46	(1.81)
FD96-1004-16-16	Socket/Female	1	1	15⁄16-12 UN	Female SAE O-Ring	2	99.7	(3.93)	58.8	(2.31)	46	(1.81)
FD96-1005-16-16	Plug/Male	1	1	15⁄16-12 UN	Female SAE O-Ring	1	113.6	(4.47)	54.8	(2.16)	46	(1.81)
FD96-1004-16-20	Socket/Female	1¼	1	15⁄16-12 UN	Female SAE O-Ring	2	105.8	(4.17)	69.8	(2.75)	55	(2.17)
FD96-1005-16-20	Plug/Male	1¼	1	15⁄16-12 UN	Female SAE O-Ring	1	125.4	(4.94)	64.5	(2.54)	55	(2.17)
FD96-1004-20-20	Socket/Female	1¼	1¼	1⅞-12 UN	Female SAE O-Ring	2	106.8	(4.20)	69.8	(2.75)	55	(2.17)
FD96-1005-20-20	Plug/Male	1¼	1¼	1⅞-12 UN	Female SAE O-Ring	1	123.4	(4.86)	64.5	(2.54)	55	(2.17)
FD96-1004-20-24	Socket/Female	1½	1¼	1⅞-12 UN	Female SAE O-Ring	2	133.5	(5.26)	92.0	(3.62)	65	(2.56)
FD96-1005-20-24	Plug/Male	1½	1¼	1⅞-12 UN	Female SAE O-Ring	1	150.0	(5.91)	89.8	(3.54)	65	(2.56)
FD96-1004-24-24	Socket/Female	1½	1½	17⁄8-12 UN	Female SAE O-Ring	2	133.5	(5.26)	92.0	(3.62)	65	(2.56)
FD96-1005-24-24	Plug/Male	1½	1½	17⁄8-12 UN	Female SAE O-Ring	1	150.0	(5.91)	89.8	(3.54)	65	(2.56)
FD96-1004-32-32	Socket/Female	2	2	21⁄2-12 UN	Female SAE O-Ring	2	224.8	(8.85)	200.0	(7.87)	90	(3.54)
FD96-1005-32-32	Plug/Male	2	2	21⁄2-12 UN	Female SAE O-Ring	1	218.4	(8.60)	145.0	(5.71)	90	(3.54)

Dust Caps and Dust Plugs

Body Size	Part Number	Coupling Type	Cap Material
¼	FD96-1009-04	Socket/Female	Aluminum
⅜	FD96-1009-06	Socket/Female	Aluminum
½	FD96-1009-08	Socket/Female	Aluminum
¾	FD96-1009-12	Socket/Female	Aluminum
1	FD96-1009-16	Socket/Female	Aluminum
1¼	FD96-1009-20	Socket/Female	Aluminum
1½	FD96-1009-24	Socket/Female	Aluminum
2	FD96-1009-32	Socket/Female	Aluminum

Body Size	Part Number	Coupling Type	Cap Material
¼	FD96-1010-04	Plug/Male	Aluminum
⅜	FD96-1010-06	Plug/Male	Aluminum
½	FD96-1010-08	Plug/Male	Aluminum
¾	FD96-1010-12	Plug/Male	Aluminum
1	FD96-1010-16	Plug/Male	Aluminum
1¼	FD96-1010-20	Plug/Male	Aluminum
1½	FD96-1010-24	Plug/Male	Aluminum
2	FD96-1010-32	Plug/Male	Aluminum

MLDB Series (Stainless Steel) Flat Face/Dry Break

Eaton's MLDB Series stainless steel coupling is a flat face/dry break coupling used for fluid transfer applications. The MLDB Series offers the ability to connect with less force, higher sealing performance and are available in multiple configurable end connections.

Product Features

- Designed and manufactured in accordance with Article 3.3 of the European Pressure Equipment Directive PED 201468/EU
- Safety sleeve lock prevents accidental disconnections
- Push to connect with double shut-off valving
- Capable of working under high temperature applications
- Shock-resistant color coding ring option available in 1/2" size
- Serviceable design allows for easy cleaning and seal replacement
- Designed with higher flow capacity and resistance to aggressive fluids and corrosion
- Standard body material: 316/316L Stainless steel corrosion resistant
- Standard seal material: FKM, EPDM, Kalrez® and generic FFKM

Physical Characteristics

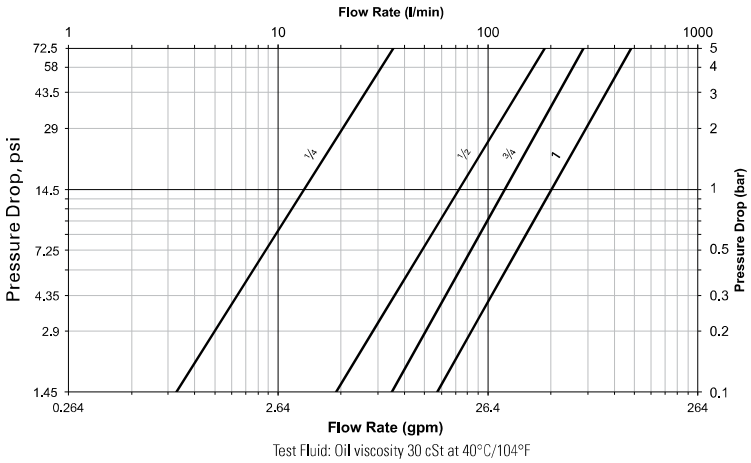
Body Size	Nominal Flow Diameter	Max. Operating Pressure		Rated* Flow		Air Inclusion	Fluid Loss	Force to Connect	
(in)	(mm)	(bar)	(psi)	(lpm)	(gpm)	ml-cc.	ml-cc.	N	lbf
¼	5.9	25	360	15	4	0.002	0.001	85	19
½	11.5	25	360	73	19	0.012	0.025	150	34
¾	15.0	25	360	120	32	0.030	0.050	170	38
1	18.5	25	360	200	53	0.150	0.130	180	41

* Indicated values refer to a 1 bar/14.5 psi pressure drop.

Applications & Markets

- Process/Fluid Transfer
- Cooling
- Corrosive Environments
- Chemicals/ Petrochemicals
- Pharmaceuticals
- Food Processing
- Electrical

Flow Data



Test Fluid: Oil viscosity 30 cSt at 40°C/104°F

Seal Elastomer Data*

Seal Elastomer	Max. Operation Temperature Range
FKM	-20°C +200°C/-4°F +392°F
EPDM (Ethylene-Propylene)	-40°C +150°C/-40°F +302°F
Kalrez® 6375	-20°C +275°C/-4°F +527°F
Generic FFKM (Perfluorocarbon)	-15°C +275°C/+5°F +527°F

* For reference only, based on Eaton recommended temperatures.
Contact Eaton technical support for further information on fluid compatibility

MLDB Series (Stainless Steel)
Flat Face/Dry Break

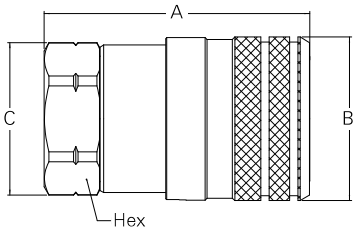


Figure 1

Sockets (Female)

Part Number					Thread Size*(Female)			Dimensions								Weight	
FKM	EPDM	Kalrez 6375	Generic FFKM	Body Size	NPT	BSPP	Fig.	A (in)	B (in)	C (in)	Hex (in)	A (mm)	B (mm)	C (mm)	Hex (mm)	lbs	grams
ML2DBS25FBS	ML2DBS25FBS292	ML2DBS25FBS242	ML2DBS25FBS503	¼	–	¼-19	1	1.79	1.06	0.96	0.87	45.4	26.8	24.5	22	0.26	116
ML2DBS25F	ML2DBS25F292	ML2DBS25F242	ML2DBS25F503	¼	¼-18		1	1.73	1.06	0.96	0.87	43.9	26.8	24.5	22	0.26	116
ML4DBS50FBS	ML4DBS50FBS292	ML4DBS50FBS242	ML4DBS50FBS503	½	–	½-14	1	2.44	1.5	1.4	1.26	61.9	38.2	35.5	32	0.73	330
ML4DBS50F	ML4DBS50F292	ML4DBS50F242	ML4DBS50F503	½	½-14		1	2.44	1.5	1.4	1.26	61.9	38.2	35.5	32	0.73	330
ML6DBS75FBS	ML6DBS75FBS292	ML6DBS75FBS242	ML6DBS75FBS503	¾	–	¾-14	1	3.02	1.89	1.83	1.61	76.8	47.9	46.5	41	1.34	610
ML6DBS75F	ML6DBS75F292	ML6DBS75F242	ML6DBS75F503	¾	¾-14		1	3.02	1.89	1.83	1.61	76.8	47.9	46.5	41	1.34	610
ML8DBS100FBS	ML8DBS100FBS292	ML8DBS100FBS242	ML8DBS100FBS503	1	–	1-11	1	3.54	2.26	2.16	1.97	89.9	57.4	54.9	50	2.31	1050
ML8DBS100F	ML8DBS100F292	ML8DBS100F242	ML8DBS100F503	1	1-11 ½		1	3.42	2.26	2.16	1.97	86.9	57.4	54.9	50	2.31	1050

*Alternative end connections available upon request.
To obtain connected length of coupling, add dimensions A (Fig. 1) and G (Fig. 2) together.

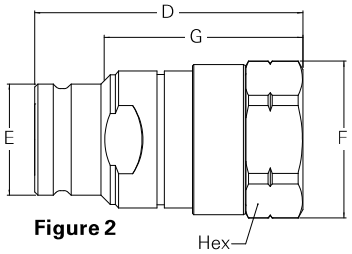


Figure 2

Plugs (Male)

Part Number					Thread Size*(Female)			Dimensions										Weight	
FKM	EPDM	Kalrez® 6375	Generic FFKM	Body Size	NPT	BSPP	Fig.	D (in)	E (in)	F (in)	G (in)	Hex (in)	D (mm)	E (mm)	F (mm)	G (mm)	Hex (mm)	lbs	grams
ML2DBP25FBS	ML2DBP25FBS292	ML2DBP25FBS242	ML2DBP25FBS503	¼	–	¼-19	2	1.72	0.65	0.96	1.31	0.87	43.6	16.5	24.5	33.2	22	0.17	78
ML2DBP25F	ML2DBP25F292	ML2DBP25F242	ML2DBP25F503	¼	¼-18		2	1.66	0.65	0.96	1.25	0.87	42.1	16.5	24.5	31.7	22	0.17	78
ML4DBP50FBS	ML4DBP50FBS292	ML4DBP50FBS242	ML4DBP50FBS503	½	–	½-14	2	2.39	0.99	1.4	1.8	1.26	60.7	25.2	35.5	45.7	32	0.46	210
ML4DBP50F	ML4DBP50F292	ML4DBP50F242	ML4DBP50F503	½	½-14		2	2.39	0.99	1.4	1.8	1.26	60.7	25.2	35.5	45.7	32	0.46	210
ML6DBP75FBS	ML6DBP75FBS292	ML6DBP75FBS242	ML6DBP75FBS503	¾	–	¾-14	2	2.97	1.29	1.83	2.11	1.61	75.5	32.8	46.5	53.6	41	0.87	395
ML6DBP75F	ML6DBP75F292	ML6DBP75F242	ML6DBP75F503	¾	¾-14		2	2.97	1.29	1.83	2.11	1.61	75.5	32.8	46.5	53.6	41	0.87	395
ML8DBP100FBS	ML8DBP100FBS292	ML8DBP100FBS242	ML8DBP100FBS503	1	–	1-11	2	3.52	1.59	2.16	2.60	1.97	89.4	40.4	54.9	66.1	50	1.54	700
ML8DBP100F	ML8DBP100F292	ML8DBP100F242	ML8DBP100F503	1	1-11 ½		2	3.4	1.59	2.16	2.48	1.97	86.4	40.4	54.9	63.1	50	1.54	700

*Alternative end connections available upon request.
To obtain connected length of coupling, add dimensions A (Fig. 1) and G (Fig. 2) together.

Seal Kit and Tool for Servicing Sockets (Female)

Body Size	Tool Part Number	Seal Kit Part Number (includes 5 sets) FKM	Seal Kit Part Number (includes 5 sets) EPDM	Seal Kit Part Number (includes 1 set) Kalrez 6375	Seal Kit Part Number (includes 1 set) Generic FFKM
¼	ML2DBS93	2DBSG143	2DBSG292	2DBSG242	2DBSG503
½	ML4DBS93	4DBSG143	4DBSG292	4DBSG242	4DBSG503
¾	ML6DBS93	6DBSG143	6DBSG292	6DBSG242	6DBSG503
1	ML8DBS93	8DBSG143	8DBSG292	8DBSG242	8DBSG503

For installation instructions, please contact your Eaton sales representative.

Seal Kit for Servicing Plugs (Male)

Body Size	Seal Kit Part Number (includes 5 sets) FKM	Seal Kit Part Number (includes 5 sets) EPDM	Seal Kit Part Number (includes 1 set) Kalrez 6375	Seal Kit Part Number (includes 1 set) Generic FFKM
¼	2DBPG143	2DBPG292	2DBPG242	2DBPG503
½	4DBPG143	4DBPG292	4DBPG242	4DBPG503
¾	6DBPG143	6DBPG292	6DBPG242	6DBPG503
1	8DBPG143	8DBPG292	8DBPG242	8DBPG503

For installation instructions, please contact your Eaton sales representative. No tool required for servicing of the plug(male).

Color Coding Ring Option*

Body Size	Socket/Female Ring** Color	Socket/Female Ring** Part Number	Plug/Male Ring** Color	Plug/Male Ring** Part Number	Tool Part Number	Tool & Rings Kit Part Number***
½	Blue	CR12FFSLB	Blue	CR12FFPLB	CR4DBSP93	CRKIT4DB
	Red	CR12FFSRD	Red	CR12FFPRD		
	Yellow	CR12FFSYL	Yellow	CR12FFPYL		
	Green	CR12FFSDG	Green	CR12FFPDG		

*For requests on other sizes, alternative colors or installation instructions, please contact your Eaton sales representative.
**Orders must be in multiples of 10 pcs.
***The kit consists of a tool plus 10 socket rings and 10 plug rings of each color.