

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 4.3 of the European Pressure Equipment Directive PED 2014/68/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						Minimum Burst Pressure						Rated Flow**	Fluid Loss	Air Inclusion	Force to Connect	
		Connected	Plug/ Male Half	Socket/ Female Half	Connected	Plug/ Male Half	Socket/ Female Half	Connected	Plug/ Male Half	Socket/ Female Half	Connected	Plug/ Male Half	Socket/ Female Half					
(mm)	(in)	(bar) (psi)	(bar) (psi)	(bar) (psi)	(bar) (psi)	(bar) (psi)	(bar) (psi)	(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	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	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	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	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	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	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		
-	1½	250 3,625	250 3,625	250 3,625	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	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

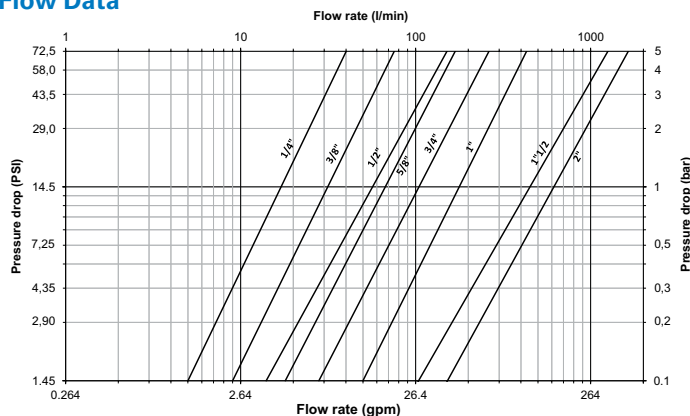
Applications & Markets

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

European Pressure Equipment Directive

All couplings are designed and manufactured under Article 4.3 of the European Pressure Equipment Directive PED 2014/68/EU. Couplings with nominal diameters greater than 25 mm 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		Non hazardous gases Group 2		Hazardous liquids Group 1	
		Plug & Connected	Socket	Plug & Connected	Socket	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)

MLFF Series (Stainless Steel)

ISO 16028 Flat Face/Dry Break

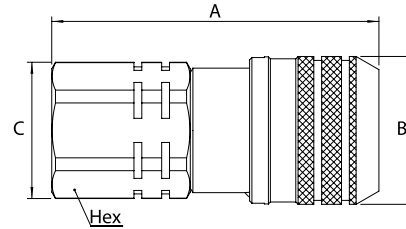


Figure 1

Sockets (Female)

Part Number			Body Size	ISO Size	Nominal Flow Diameter	Thread Size*(Female)		Dimensions								Weight		
NBR+AU	FKM	EPDM	(in)	(mm)	(mm)	NPT	BSP	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	⅝	10	8.6	⅝-18	-	1	2.68	1.26	1.16	1.06	68	32	29.5	27	0.54	245
ML10FFS37BS	ML10FFS37BS143	ML10FFS37BS192	⅝	10	8.6	-	⅝-19	1	2.68	1.26	1.16	1.06	68	32	29.5	27	0.54	245
ML10FFS50BS	ML10FFS50BS143	ML10FFS50BS192	⅝	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	1½-11.5	-	1	4.07	2.36	2.36	2.17	104	60	60	55	2.83	1290
ML40FFS150	ML40FFS150143	-	1 ½	-	30.1	1½-11.5	-	1	5.01	3.13	2.76	2.56	127.4	79.5	70	65	6.16	2767
ML40FFS150BS	ML40FFS150BS143	-	1 ½	-	30.1	1½-11	-	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.

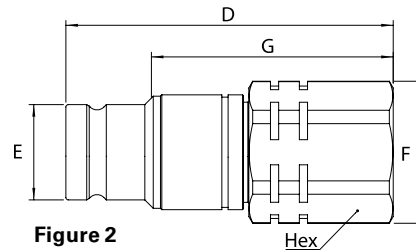


Figure 2

Plugs (Male)

Part Number			Body Size	ISO Size	Nominal Flow Diameter	Thread Size*(Female)		Dimensions							Weight					
NBR+AU	FKM	EPDM	(in)	(mm)	(mm)	NPT	BSP	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	1½-11.5	-	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	1½-11.5	-	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	1½-11	-	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 (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		
¼	6	6FF	CR6FFSLB	CR6FFSRD	CR6FFSYL	CR6FFSDG	CR6FFPLB	CR6FFPRD	CR6FFPYL	CR6FFPDG	CR6FFSP93	CRKIT6FF
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 color coded rings TPE material is used that offers excellent flexibility which allows a very good shock resistance in demanding applications.

Good thermal, chemical and weather resistance provides a great fit on the coupling and a extended life time in toughest conditions.

The color coded rings are easy to install by using the referenced tools. Please refer to the user guide on "eaton.com"

* 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.

