

# FD89 Series

ISO 16028 Interchange



Eaton's FD89 Series flush face is specifically designed for those applications where quick and easy connections and no-spill performance are essential. The FD89 is ideal for use where global interchangeability with other manufacturers is important and is available in sizes from 1/4" through 2" to best meet your specific size requirements. (For higher pressure applications and additional size requirements, refer to FD99 on page 44.)

### Product Features

- Meets dimensional requirements of ISO 16028
- Push-to-connect latching
- Dual flush-face valving
- Anti-extrusion Teflon seal
- Safety sleeve lock
- Interchangeable with HTMA couplings (3/8")
- Standard seal material – Buna-N
- Standard body material – High resistance carbon steel with zinc trivalent plating

### Physical Characteristics

ISO Size (mm)	Body Size	Max. Operating Pressure			Min. Burst Pressure			Rated Flow L/min (gpm)	Fluid Loss cc.	Air Inclusion cc.	Force to Connect	
		Connected bar (psi)	Male Half bar (psi)	Female Half bar (psi)	Connected bar (psi)	Male Half bar (psi)	Female Half bar (psi)				N	(lbs)
6.3	1/4	300 (4,350)	300 (4,350)	120 (1,740)	1,200 (17,400)	1,200 (17,400)	480 (6,960)	12 (3.2)	0.006	0.005	179	(40.2)
10.0	3/8	300 (4,350)	300 (4,350)	120 (1,740)	1,200 (17,400)	1,200 (17,400)	480 (6,960)	23 (6.1)	0.012	0.280	173	(38.9)
12.5	1/2	250 (3,625)	250 (3,625)	100 (1,450)	1,000 (14,500)	1,000 (14,500)	400 (5,800)	45 (11.9)	0.020	0.040	181	(40.7)
16.0	3/4	250 (3,625)	220 (3,190)	100 (1,450)	1,000 (14,500)	880 (12,760)	400 (5,800)	74 (19.5)	0.026	0.270	195	(43.8)
19.0	1	250 (3,625)	200 (2,900)	100 (1,450)	1,000 (14,500)	800 (11,600)	400 (5,800)	100 (26.4)	0.032	0.040	224	(50.4)
25.0	1 1/4	250 (3,625)	200 (2,900)	100 (1,450)	1,000 (14,500)	800 (11,600)	400 (5,800)	189 (49.9)	0.010	0.140	304	(68.3)
31.5	1 1/2	200 (2,900)	160 (2,320)	80 (1,160)	800 (11,600)	640 (9,280)	320 (4,640)	288 (76.1)	0.050	0.980	427	(96.0)
40.0	2	200 (2,900)	160 (2,320)	80 (1,160)	800 (11,600)	640 (9,280)	320 (4,640)	379 (100.0)	N/A	N/A	488	(110.0)

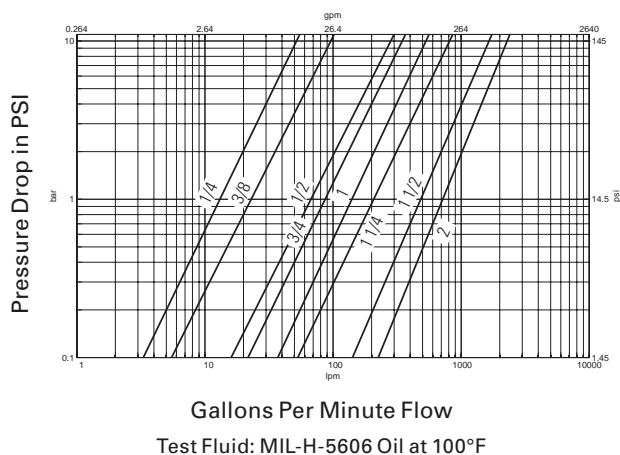


### Applications

- Hydraulic and fluid transfer
- Construction equipment
- Agricultural equipment
- Utility vehicles
- On-highway vehicles
- Stationary in-plant hydraulics and fluid transfer
- Interchangeable with HTMA couplings (3/8")

### Flow Data

Pressure Drop Versus Flow Graph



# FD89 Series

ISO 16028 Interchange

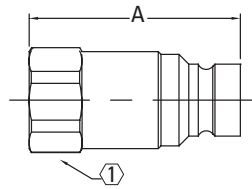


Figure 1

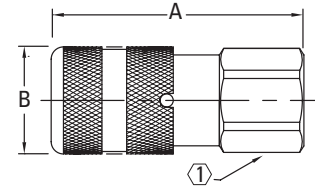


Figure 2

## Dimensions (Female NPT)

Part Number	Coupling Type	Body Size	Port Size	Thread	Type	Fig.	Dimensions A		B		Hex Ⓛ	
							mm	(in)	mm	(in)	mm	(in)
FD89-1001-04-04	Female	1/4	1/4	1/4 - 18	Female NPT	2	48.1	(1.89)	28.0	(1.10)	22	(0.86)
FD89-1002-04-04	Male	1/4	1/4	1/4 - 18	Female NPT	1	47.9	(1.88)			22	(0.86)
FD89-1001-06-06	Female	3/8	3/8	3/8 - 18	Female NPT	2	64.2	(2.53)	32.0	(1.26)	27	(1.06)
FD89-1002-06-06	Male	3/8	3/8	3/8 - 18	Female NPT	1	60.0	(2.36)			24	(0.94)
FD89-1001-08-06	Female	3/8	1/2	1/2 - 14	Female NPT	2	69.2	(2.72)	32.0	(1.26)	27	(1.06)
FD89-1002-08-06	Male	3/8	1/2	1/2 - 14	Female NPT	1	62.5	(2.46)			27	(1.06)
FD89-1001-08-08	Female	1/2	1/2	1/2 - 14	Female NPT	2	73.8	(2.91)	38.0	(1.49)	32	(1.26)
FD89-1002-08-08	Male	1/2	1/2	1/2 - 14	Female NPT	1	68.0	(2.67)			32	(1.26)
FD89-1001-12-08	Female	1/2	3/4	3/4 - 14	Female NPT	2	80.8	(3.18)	38.0	(1.49)	36	(1.42)
FD89-1002-12-08	Male	1/2	3/4	3/4 - 14	Female NPT	1	70.5	(2.78)			36	(1.42)
FD89-1001-12-10	Female	3/4	3/4	3/4 - 14	Female NPT	2	78.5	(3.09)	42.0	(1.65)	36	(1.42)
FD89-1002-12-10	Male	3/4	3/4	3/4 - 14	Female NPT	1	70.5	(2.78)			36	(1.42)
FD89-1001-16-12	Female	1	1	1 - 11 1/2	Female NPT	2	93.2	(3.67)	48.0	(1.89)	45	(1.77)
FD89-1002-16-12	Male	1	1	1 - 11 1/2	Female NPT	1	82.3	(3.24)			45	(1.77)
FD89-1001-20-16	Female	1 1/4	1 1/4	1 1/4 - 11 1/2	Female NPT	2	106.0	(4.17)	55.0	(2.17)	55	(2.17)
FD89-1002-20-16	Male	1 1/4	1 1/4	1 1/4 - 11 1/2	Female NPT	1	89.8	(3.54)			55	(2.17)
FD89-1001-24-24	Female	1 1/2	1 1/2	1 1/2 - 11 1/2	Female NPT	2	132.4	(5.21)	80.0	(3.15)	65	(2.56)
FD89-1002-24-24	Male	1 1/2	2	1 1/2 - 11 1/2	Female NPT	1	111.1	(4.37)			65	(2.56)
FD89-1001-32-32	Female	2	2	2 - 11 1/2	Female NPT	2	156.6	(6.17)	100.0	(3.94)	80	(3.15)
FD89-1002-32-32	Male	2	2	2 - 11 1/2	Female NPT	1	123.8	(4.87)			75	(2.95)

## Dimensions (Female BSP)

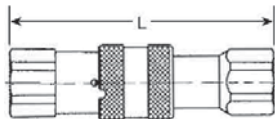
Part Number	Coupling Type	Body Size	Port Size	Thread	Type	Fig.	Dimensions A		B		Hex Ⓛ	
							mm	(in)	mm	(in)	mm	(in)
FD89-1006-04-04	Female	1/4	1/4	G 1/4	Female BSP	2	48.1	(1.89)	28.0	(1.10)	22	(0.86)
FD89-1007-04-04	Male	1/4	1/4	G 1/4	Female BSP	1	47.9	(1.88)			22	(0.86)
FD89-1006-06-06	Female	3/8	3/8	G 3/8	Female BSP	2	64.2	(2.53)	32.0	(1.26)	27	(1.06)
FD89-1007-06-06	Male	3/8	3/8	G 3/8	Female BSP	1	60.0	(2.36)			24	(0.94)
FD89-1006-08-06	Female	3/8	1/2	G 1/2	Female BSP	2	69.2	(2.72)	32.0	(1.26)	27	(1.06)
FD89-1007-08-06	Male	3/8	1/2	G 1/2	Female BSP	1	62.5	(2.46)			27	(1.06)
FD89-1006-08-08	Female	1/2	1/2	G 1/2	Female BSP	2	73.8	(2.91)	38.0	(1.49)	32	(1.26)
FD89-1007-08-08	Male	1/2	1/2	G 1/2	Female BSP	1	68.0	(2.67)			32	(1.26)
FD89-1006-12-08	Female	1/2	3/4	G 3/4	Female BSP	2	80.8	(3.18)	38.0	(1.49)	36	(1.42)
FD89-1007-12-08	Male	1/2	3/4	G 3/4	Female BSP	1	70.5	(2.78)			36	(1.42)
FD89-1006-12-10	Female	3/4	3/4	G 3/4	Female BSP	2	78.5	(3.09)	42.0	(1.65)	36	(1.42)
FD89-1007-12-10	Male	3/4	3/4	G 3/4	Female BSP	1	70.5	(2.78)			36	(1.42)
FD89-1006-16-12	Female	1	1	G 1	Female BSP	2	93.2	(3.67)	48.0	(1.89)	45	(1.77)
FD89-1007-16-12	Male	1	1	G 1	Female BSP	1	82.3	(3.24)			45	(1.77)
FD89-1006-20-16	Female	1 1/4	1 1/4	G 1 1/4	Female BSP	2	106.0	(4.17)	55.0	(2.17)	55	(2.17)
FD89-1007-20-16	Male	1 1/4	1 1/4	G 1 1/4	Female BSP	1	89.9	(3.54)			55	(2.17)
FD89-1006-24-24	Female	1 1/2	1 1/2	G 1 1/2	Female BSP	2	132.4	(5.21)	80.0	(3.15)	65	(2.56)
FD89-1007-24-24	Male	1 1/2	1 1/2	G 1 1/2	Female BSP	1	111.1	(4.37)			65	(2.56)
FD89-1006-32-32	Female	2	2	G 2	Female BSP	2	156.6	(6.17)	100.0	(3.94)	80	(3.15)
FD89-1007-32-32	Male	2	2	G 2	Female BSP	1	123.8	(4.87)			75	(2.95)

# FD89 Series

ISO 16028 Interchange

## Dimensions (Female SAE O-ring)

Part Number	Coupling Type	Body Port Size		Thread	Type	Fig.	Dimensions					
							A		B		Hex ①	
							mm	(in)	mm	(in)	mm	(in)
FD89-1005-06-04	Female	1/4	9/16	9/16 - 18 UNF	Female SAE O-ring	2	53.1	(2.09)	28.0	(1.10)	22	(0.86)
FD89-1004-06-04	Male	1/4	9/16	9/16 - 18 UNF	Female SAE O-ring	1	50.9	(2.00)			22	(0.86)
FD89-1005-08-06	Female	3/8	3/4	3/4 - 16 UNF	Female SAE O-ring	2	69.2	(2.72)	32.0	(1.26)	27	(1.06)
FD89-1004-08-06	Male	3/8	3/4	3/4 - 16 UNF	Female SAE O-ring	1	62.5	(2.46)			27	(1.06)
FD89-1005-10-06	Female	3/8	7/8	7/8 - 14 UNF	Female SAE O-ring	2	71.2	(2.80)	32.0	(1.26)	30	(1.18)
FD89-1004-10-06	Male	3/8	7/8	7/8 - 14 UNF	Female SAE O-ring	1	64.0	(2.52)			30	(1.18)
FD89-1005-10-08	Female	1/2	7/8	7/8 - 14 UNF	Female SAE O-ring	2	76.3	(3.00)	38.0	(1.49)	32	(1.26)
FD89-1004-10-08	Male	1/2	7/8	7/8 - 14 UNF	Female SAE O-ring	1	70.0	(2.76)			32	(1.26)
FD89-1005-12-08	Female	1/2	1 1/16	1 1/16 - 12 UN	Female SAE O-ring	2	83.3	(3.28)	38.0	(1.49)	36	(1.42)
FD89-1004-12-08	Male	1/2	1 1/16	1 1/16 - 12 UN	Female SAE O-ring	1	72.0	(2.83)			36	(1.42)
FD89-1005-12-10	Female	3/4	1 1/16	1 1/16 - 12 UN	Female SAE O-ring	2	83.5	(3.29)	42.0	(1.65)	36	(1.42)
FD89-1004-12-10	Male	3/4	1 1/16	1 1/16 - 12 UN	Female SAE O-ring	1	72.0	(2.83)			36	(1.42)
FD89-1005-16-12	Female	1	1 5/16	1 5/16 - 12 UN	Female SAE O-ring	2	93.2	(3.67)	48.0	(1.89)	45	(1.77)
FD89-1004-16-12	Male	1	1 5/16	1 5/16 - 12 UN	Female SAE O-ring	1	82.3	(3.24)			45	(1.77)
FD89-1005-20-16	Female	1 1/4	1 5/8	1 5/8 - 12 UN	Female SAE O-ring	2	106.0	(4.17)	55.0	(2.17)	55	(2.17)
FD89-1004-20-16	Male	1 1/4	1 5/8	1 5/8 - 12 UN	Female SAE O-ring	1	89.8	(3.54)			55	(2.17)
FD89-1005-24-24	Female	1 1/2	1 7/8	1 7/8 - 12 UN	Female SAE O-ring	2	132.4	(5.21)	80.0	(3.15)	65	(2.56)
FD89-1004-24-24	Male	1 1/2	2	1 7/8 - 12 UN	Female SAE O-ring	1	111.1	(4.37)			65	(2.56)
FD89-1005-32-32	Female	2	2 1/2	2 1/2 - 12 UN	Female SAE O-ring	2	156.6	(6.17)	100.0	(3.94)	80	(3.15)
FD89-1004-32-32	Male	2	2 1/2	2 1/2 - 12 UN	Female SAE O-ring	1	123.8	(4.87)			75	(2.95)



## Dimensions — Connected Length

Body Size	Dimensions NPT & BSP		SAE O-ring	
	mm	(in)	mm	(in)
1/4	85.5	(3.37)	-	-
3/8 - 1/4	-	-	93.2	(3.67)
3/8 - 3/8	109.0	(4.29)	-	-
1/2 - 3/8	116.5	(4.59)	116.2	(4.57)
1/2 - 1/2	125.0	(4.92)	-	-
5/8 - 3/8	-	-	119.7	(4.71)
5/8 - 1/2	-	-	129.1	(5.08)
3/4 - 1/2	134.5	(5.30)	138.1	(5.44)
3/4	132.0	(5.2)	138.0	(5.43)
1	154.0	(6.06)	153.7	(6.05)
1 1/4	173.0	(6.81)	172.8	(6.80)
1 1/2	215.0	(8.46)	215.2	(8.47)
2	241.5	(9.51)	241.6	(9.51)

## Female Half Dust Caps

Part Number	Coupling Type	Body Size	Cap Material
FD89-1009-04	Female	1/4	PVC
FD89-1009-06	Female	3/8	PVC
FD89-1009-08-08	Female	1/2, 1/2	PVC
FD89-1009-12-08	Female	3/4, 1/2	PVC
FD89-1009-12	Female	3/4	PVC
FD89-1009-16	Female	1	PVC
FD89-1009-20	Female	1 1/4	PVC

## Male Half Dust Cap

Part Number	Coupling Type	Body Size	Cap Material
FD89-1008-04	Male	1/4	PVC
FD89-1008-06-06	Male	3/8, 3/8	PVC
FD89-1008-08-06	Male	1/2, 3/8	PVC
FD89-1008-08-08	Male	1/2, 1/2	PVC
FD89-1008-12-08	Male	3/4, 1/2	PVC
FD89-1008-12	Male	3/4	PVC
FD89-1008-16	Male	1	PVC
FD89-1008-20	Male	1 1/4	PVC

# FD89 - 2000 Series

316 Stainless Steel  
ISO 16028 Interchange



The FD89 Stainless Steel Series is designed for those applications where quick and easy connections and non-spill performance are critical. Ideal for use where global interchangeability with other manufactures is important. The 316 stainless steel material is suitable for applications where high corrosion resistance and long product life is essential. The FD89 2000 Series is available in sizes 1/4" through 2" to best meet your specific size requirements.

### Product Features

- Meets dimensional requirements of ISO 16028
- Push-to-connect latching
- Dual flush-face valving with non-spill design
- Safety sleeve lock
- Anti-extrusion Teflon® seal
- Body material – 316 stainless steel
- Standard seal material – Viton, other material available on request

### Physical Characteristics

ISO Size	Body Size	Max. Operating Pressure						Min. Burst Pressure						Rated Flow L/min (gpm)	Fluid Loss cc.	Force to Connect N (lbs.)		
		Connected		Male Half		Female Half		Connected		Male Half		Female Half						
		bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)					
6.3	1/4	350	(5,075)	350	(5,075)	120	(1,740)	1,400	(20,300)	1,200	(17,400)	480	(6,960)	12	(3.2)	.006	160	(36)
10.0	3/8	350	(5,075)	350	(5,075)	150	(2,175)	1,400	(20,300)	1,200	(17,400)	600	(8,700)	23	(6.1)	.012	160	(36)
12.5	1/2	350	(5,075)	350	(5,075)	150	(2,175)	1,200	(17,400)	1,100	(15,950)	600	(8,700)	45	(11.9)	.020	200	(45)
16.0	5/8	350	(5,075)	300	(4,350)	120	(1,740)	1,200	(17,400)	1,000	(14,500)	480	(6,960)	74	(19.6)	.026	200	(45)
19.0	3/4	330	(4,785)	230	(4,060)	120	(1,740)	1,000	(14,500)	800	(11,600)	480	(6,960)	100	(26.5)	.032	200	(45)
25.0	1	280	(4,060)	280	(4,060)	120	(1,740)	900	(13,050)	800	(11,600)	480	(6,960)	189	(50.1)	.035	280	(63)
31.5	1 1/4	230	(3,335)	230	(3,335)	80	(1,160)	800	(11,600)	700	(10,150)	320	(4,640)	288	(76.3)	.050	580	(131)
40.0	2	150	(2,175)	150	(2,175)	70	(1,015)	600	(8,700)	600	(8,700)	280	(4,060)	379	(100.5)	.100	490	(110)

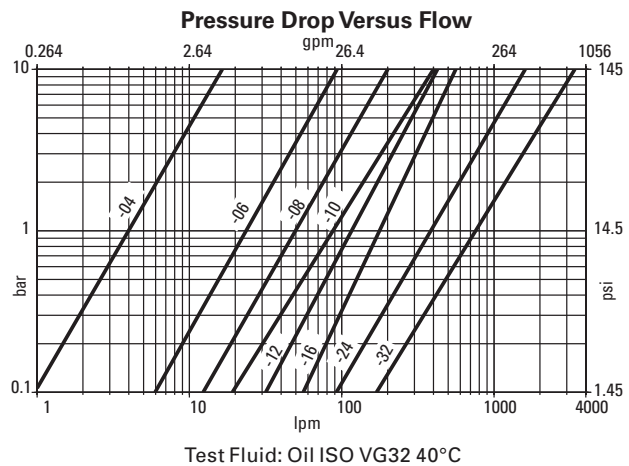


### Applications

- Hydraulic fluid transfer
- Chemical processing
- Pharmaceutical transfer
- Oil field

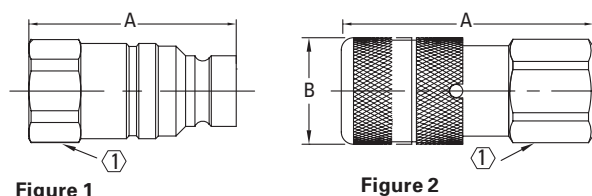


### Flow Data



# FD89 - 2000 Series

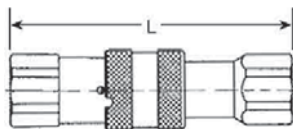
316 Stainless Steel  
ISO 16028 Interchange



## Dimensions

Part Number	Coupling Type	Body Size	Port Thread	Type	Fig. A	Dimensions						
						B		Hex ①				
						mm	(in)	mm	(in)	mm	(in)	
FD89-2001-04-04	Female	1/4	1/4	1/4-18	Female NPT	2	48.3	(1.90)	28.0	(1.10)	22	(.87)
FD89-2002-04-04	Male	1/4	1/4	1/4-18	Female NPT	1	47.9	(1.89)			22	(.87)
FD89-2001-06-06	Female	3/8	3/8	3/8-18	Female NPT	2	64.2	(2.53)	32.0	(1.26)	27	(1.06)
FD89-2002-06-06	Male	3/8	3/8	3/8-18	Female NPT	1	60.0	(2.36)			24	(.94)
FD89-2001-08-08	Female	1/2	1/2	1/2-14	Female NPT	2	73.8	(2.91)	38.0	(1.50)	32	(1.26)
FD89-2002-08-08	Male	1/2	1/2	1/2-14	Female NPT	1	68.0	(2.68)			32	(1.26)
FD89-2001-12-10	Female	5/8	3/4	3/4-14	Female NPT	2	80.9	(3.19)	42.0	(1.65)	36	(1.42)
FD89-2002-12-10	Male	5/8	3/4	3/4-14	Female NPT	1	70.5	(2.78)			36	(1.42)
FD89-2001-16-12	Female	3/4	1	1-11 1/2	Female NPT	2	92.9	(3.67)	48.0	(1.89)	46	(1.81)
FD89-2002-16-12	Male	3/4	1	1-11 1/2	Female NPT	1	82.2	(3.24)			46	(1.81)
FD89-2001-20-16	Female	1	1 1/4	1 1/4-11 1/2	Female NPT	2	106.2	(4.18)	55.0	(2.17)	55	(2.17)
FD89-2002-20-16	Male	1	1 1/4	1 1/4-11 1/2	Female NPT	1	90.0	(3.54)			55	(2.17)
FD89-2001-24-24	Female	1 1/2	1 1/2	1 1/2-11 1/2	Female NPT	2	132.4	(5.21)	80.0	(3.15)	65	(2.56)
FD89-2002-24-24	Male	1 1/2	1 1/2	1 1/2-11 1/2	Female NPT	1	111.0	(4.37)			70	(2.76)
FD89-2001-32-32	Female	2	2	2-11 1/2	Female NPT	2	156.6	(6.17)	100.0	(3.94)	80	(3.15)
FD89-2002-32-32	Male	2	2	2-11 1/2	Female NPT	1	123.8	(4.87)			75	(2.95)

## Connected Length



Body Size	Port Size	Connected Length "L"	
		mm	(in)
1/4	1/4	85.2	(3.35)
3/8	3/8	108.6	(4.28)
1/2	1/2	124.5	(4.90)
5/8	3/4	133.8	(5.27)
3/4	1	153.3	(6.04)
1	1 1/4	173.0	(6.81)
1 1/2	1 1/2	214.8	(8.46)
2	2	241.5	(9.51)

## Dust Caps and Dust Plugs

Body Size	Part Number	Coupling Type	Cap Material
1/4 - 1/4	FD89-1009-04	Female	PVC
3/8 - 3/8	FD89-1009-06	Female	PVC
1/2 - 1/2	FD89-1009-08-08	Female	PVC
3/4 - 5/8	FD89-1009-12	Female	PVC
1 - 3/4	FD89-1009-16	Female	PVC
1 1/4 - 1	FD89-1009-20	Female	PVC
1 1/2 - 1 1/2	FD89-1009-24	Female	Aluminum
2 - 2	FD89-1009-32	Female	Aluminum

Body Size	Part Number	Coupling Type	Cap Material
1/4 - 1/4	FD89-1008-04	Male	PVC
3/8 - 3/8	FD89-1008-06-06	Male	PVC
1/2 - 1/2	FD89-1008-08-08	Male	PVC
3/4 - 5/8	FD89-1008-12	Male	PVC
1 - 3/4	FD89-1008-16	Male	PVC
1 1/4 - 1	FD89-1008-20	Male	PVC
1 1/2 - 1 1/2	FD89-1008-24	Male	Aluminum
2 - 2	FD89-1008-32	Male	Aluminum



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