

Maximum Material Condition (MMC)

$$Position\ deviation = 2 \sqrt{X^2 + Y^2} = 2 \sqrt{(0.0102)^2 + (0.0137)^2} = 0.0341$$

MMC = Nominal + MMC tolerance = 1.0000 + (-0.005) = 0.995
 Bonus = Measured - MMC = 1.0004 - 0.995 = 0.0054

Diametric tolerance zone

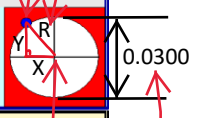
Pc		PART NAME : Handout-5_Lab-5_Demo		April 05, 2023	15:17
		REV NUMBER :	SER NUMBER :	STATS COUNT :	1
FCFLOC-1 Size		IN	Ø 1 +0.005/-0.005	DEFAULT	ASME Y14.5

Feature	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	BONUS
CYL1	1.0000	0.0050	0.0050	1.0004	0.0004	0.0000	

Position deviation = 2R
 R = Radius

RFS	FCFLOC-1	IN	Ø 0.03 A B C	DEFAULT	ASME Y14.5
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Feature	AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	BONUS
CYL1 (END PT)	X	1.0000			0.9898	-0.0102		
	Y	1.0000			1.0137	0.0137		
	TP	0.0000	0.0300	0.0000	0.0341	0.0341	0.0041	0.0000



FCFLOC-1M Size		IN	Ø 1 +0.005/-0.005	DEFAULT	ASME Y14.5
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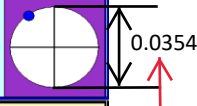
Feature	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	BONUS
CYL1	1.0000	0.0050	0.0050	1.0004	0.0004	0.0000	

Nominal
 Diametric tolerance zone

MMC	FCFLOC-1M	IN	Ø 0.03 M A B C	DEFAULT	ASME Y14.5
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Diametric tolerance zone + Bonus

Feature	AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	BONUS
CYL1 (END PT)	X	1.0000			0.9898	-0.0102		
	Y	1.0000			1.0137	0.0137		
	TP	0.0000	0.0300	0.0000	0.0341	0.0341	0.0000	0.0054



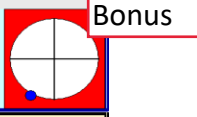
FCFLOC-3 Size		IN	Ø 1 +0.005/-0.005	DEFAULT	ASME Y14.5
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Feature	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	BONUS
CYL3	1.0000	0.0050	0.0050	1.0003	0.0003	0.0000	

Diametric tolerance zone + Bonus

FCFLOC-3		IN	Ø 0.035 A B C	DEFAULT	ASME Y14.5
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Feature	AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	BONUS
CYL3 (START PT)	X	8.0080			7.9985	-0.0095		
	Y	1.0000			0.9839	-0.0161		
	TP	0.0000	0.0350	0.0000	0.0374	0.0374	0.0024	0.0000



FCFLOC-3M Size		IN	Ø 1 +0.005/-0.005	DEFAULT	ASME Y14.5
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Feature	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	BONUS
CYL3	1.0000	0.0050	0.0050	1.0003	0.0003	0.0000	

FCFLOC-3M		IN	Ø 0.035 M A B C	DEFAULT	ASME Y14.5
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Feature	AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	BONUS
CYL3 (START PT)	X	8.0080			7.9985	-0.0095		
	Y	1.0000			0.9839	-0.0161		
	TP	0.0000	0.0350	0.0000	0.0374	0.0374	0.0000	0.0053

