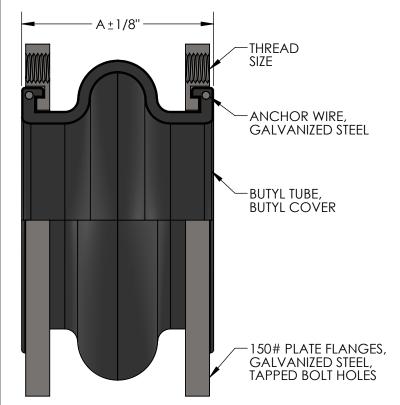
MODEL MSOBB, STYLE "O" METRASPHERE BUTYL EXPANSION JOINT, TAPPED BOLT HOLES



MAXIMUM OPERATING CONDITIONS

TEMPERATURE	PRESSURE (PSI)			
IEMFERATURE	1" - 12"	14" AND UP		
170°	225	125		
180°	200	115		
190°	175	105		
200°	150	95		
210°	125	40		
220°	100	35		
230°	75	25		

MAXIMUM WORKING TEMPERATURE 230°F

NOTES:

WWW.METRAFLEX.COM FOR INSTALLATION INSTRUCTIONS.
JOINT MUST BE INSTALLED AT ITS NEUTRAL LENGTH.
BOLTS MUST BE PROPERLY TORQUED.
NOT SUITABLE FOR STEAM OR VACUUM APPLICATIONS.
IF CONNECTING PIPE IS NOT ANCHORED AND GUIDED,

TO BE FURNISHED WITH CONTROL UNITS:

	YES		NO
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CONTROL UNITS MUST BE USED.

PART		1	Α	AXIAL	FORCE	AXIAL	FORCE (LRS)		FORCE	ANGULAR	WEIGHT	THREAD SIZE (UNC)
NOWIDER			 '		(LDS)	·	(LD3)		(LD3)		(LDS)	
MSOBB0100	1"	25	3-3/4"	1/4"	N/A	3/32"	N/A	1/4"	N/A	15°	5	1/2"
MSOBB0125	1-1/4"	32	3-3/4"	1/4"	N/A	3/32"	N/A	1/4"	N/A	15°	6	1/2"
MSOBB0150	1-1/2"	38	3-3/4"	1/4"	N/A	3/32"	N/A	1/4"	N/A	15°	7	1/2"
MSOBB0200	2"	50	4-1/8"	3/8"	55	1/4"	73	3/8"	55	15°	8	5/8"
MSOBB0250	2-1/2"	65	4-1/2"	1/2"	102	1/4"	68	3/8"	97	15°	13	5/8"
MSOBB0300	3"	80	5-1/8"	1/2"	136	1/4"	115	3/8"	108	15°	14	5/8"
MSOBB0400	4"	100	5-3/8"	3/4"	145	3/8"	242	1/2"	275	15°	18	5/8"
MSOBB0500	5"	125	6-3/4"	3/4"	172	3/8"	196	1/2"	308	15°	23	3/4"
MSOBB0600	6"	150	7-1/8"	3/4"	293	3/8"	563	1/2"	484	15°	28	3/4"
MSOBB0800	8"	200	8-1/8"	1"	372	1/2"	587	7/8"	688	15°	40	3/4"
MSOBB1000	10"	250	9-3/8"	1"	398	1/2"	455	7/8"	781	15°	68	7/8"
MSOBB1200	12"	300	10-1/4"	1"	390	1/2"	356	7/8"	842	15°	94	7/8"
MSOBB1400	14"	350	10-1/2"	1"	N/A	5/8"	N/A	7/8"	N/A	15°	105	1"
MSOBB1600	16"	400	10-1/2"	1"	N/A	5/8"	N/A	7/8"	N/A	15°	120	1"
MSOBB1800	18"	450	10-1/2"	1"	N/A	5/8"	N/A	7/8"	N/A	15°	125	1-1/8"
MSOBB2000	20"	500	10-1/2"	1"	N/A	5/8"	N/A	7/8"	N/A	15°	145	1-1/8"
MSOBB2400	24"	600	10-1/2"	1"	N/A	5/8"	N/A	7/8"	N/A	15°	265	1-1/4"
	NUMBER MSOBB0100 MSOBB0125 MSOBB0150 MSOBB0250 MSOBB0250 MSOBB0300 MSOBB0400 MSOBB0500 MSOBB0600 MSOBB0600 MSOBB1000 MSOBB1200 MSOBB1400 MSOBB1400 MSOBB1600 MSOBB1600 MSOBB1800 MSOBB1800 MSOBB1800	NUMBER INCH MSOBB0100 1" MSOBB0125 1-1/4" MSOBB0150 1-1/2" MSOBB0200 2" MSOBB0250 2-1/2" MSOBB0300 3" MSOBB0400 4" MSOBB0500 5" MSOBB0600 6" MSOBB0600 6" MSOBB1000 10" MSOBB1200 12" MSOBB1400 14" MSOBB1400 16" MSOBB1800 16" MSOBB1800 18" MSOBB1800 18" MSOBB1800 20"	NUMBER INCH MM MSOBB0100 1" 25 MSOBB0125 1-1/4" 32 MSOBB0150 1-1/2" 38 MSOBB0200 2" 50 MSOBB0250 2-1/2" 65 MSOBB0300 3" 80 MSOBB0400 4" 100 MSOBB0500 5" 125 MSOBB0600 6" 150 MSOBB0800 8" 200 MSOBB1000 10" 250 MSOBB1200 12" 300 MSOBB1400 14" 350 MSOBB1600 16" 400 MSOBB1800 18" 450 MSOBB2000 20" 500	NUMBER INCH MM A MSOBB0100 1" 25 3-3/4" MSOBB0125 1-1/4" 32 3-3/4" MSOBB0150 1-1/2" 38 3-3/4" MSOBB0200 2" 50 4-1/8" MSOBB0250 2-1/2" 65 4-1/2" MSOBB0300 3" 80 5-1/8" MSOBB0400 4" 100 5-3/8" MSOBB0500 5" 125 6-3/4" MSOBB0600 6" 150 7-1/8" MSOBB0800 8" 200 8-1/8" MSOBB1000 10" 250 9-3/8" MSOBB1200 12" 300 10-1/4" MSOBB1400 14" 350 10-1/2" MSOBB1600 16" 400 10-1/2" MSOBB1800 18" 450 10-1/2" MSOBB2000 20" 500 10-1/2"	NUMBER INCH MM A COMP. MSOBB0100 1" 25 3-3/4" 1/4" MSOBB0125 1-1/4" 32 3-3/4" 1/4" MSOBB0150 1-1/2" 38 3-3/4" 1/4" MSOBB0200 2" 50 4-1/8" 3/8" MSOBB0250 2-1/2" 65 4-1/2" 1/2" MSOBB0300 3" 80 5-1/8" 1/2" MSOBB0400 4" 100 5-3/8" 3/4" MSOBB0500 5" 125 6-3/4" 3/4" MSOBB0600 6" 150 7-1/8" 3/4" MSOBB0800 8" 200 8-1/8" 1" MSOBB1000 10" 250 9-3/8" 1" MSOBB1400 14" 350 10-1/4" 1" MSOBB1600 16" 400 10-1/2" 1" MSOBB1800 18" 450 10-1/2" 1" MSOBB1800 20"<	NUMBER INCH MM A COMP. (LBS) MSOBB0100 1" 25 3-3/4" 1/4" N/A MSOBB0125 1-1/4" 32 3-3/4" 1/4" N/A MSOBB0150 1-1/2" 38 3-3/4" 1/4" N/A MSOBB0200 2" 50 4-1/8" 3/8" 55 MSOBB0250 2-1/2" 65 4-1/2" 1/2" 102 MSOBB0300 3" 80 5-1/8" 1/2" 136 MSOBB0400 4" 100 5-3/8" 3/4" 145 MSOBB0500 5" 125 6-3/4" 3/4" 172 MSOBB0600 6" 150 7-1/8" 3/4" 293 MSOBB1000 10" 250 9-3/8" 1" 372 MSOBB1000 10" 250 9-3/8" 1" 390 MSOBB1400 14" 350 10-1/2" 1" N/A MSOBB1600	NUMBER INCH MM A COMP. (LBS) EXT. MSOBB0100 1" 25 3-3/4" 1/4" N/A 3/32" MSOBB0125 1-1/4" 32 3-3/4" 1/4" N/A 3/32" MSOBB0150 1-1/2" 38 3-3/4" 1/4" N/A 3/32" MSOBB0200 2" 50 4-1/8" 3/8" 55 1/4" MSOBB0250 2-1/2" 65 4-1/2" 1/2" 102 1/4" MSOBB0300 3" 80 5-1/8" 1/2" 136 1/4" MSOBB0400 4" 100 5-3/8" 3/4" 145 3/8" MSOBB0500 5" 125 6-3/4" 3/4" 172 3/8" MSOBB0600 6" 150 7-1/8" 3/4" 172 3/8" MSOBB1000 10" 250 9-3/8" 1" 372 1/2" MSOBB1200 12" 300 10-1/4"	NUMBER INCH MM A COMP. (LBS) EXT. (LBS)	NUMBER INCH MM A COMP. (LBS) EXT. (LBS) OFFSET	NUMBER N	NUMBER INCH MM A COMP. (ILBS) EXT. (ILBS) OFFSET (ILBS) ANGULAR	NUMBER INCH MM A COMP. (ILBS) EXT. (ILBS) OFFSET (ILBS) ANGULAR (ILBS) MSOBB0100 1" 25 3-3/4" 1/4" N/A 3/32" N/A 1/4" N/A 15° 5 MSOBB0125 1-1/4" 32 3-3/4" 1/4" N/A 3/32" N/A 1/4" N/A 15° 6 MSOBB0150 1-1/2" 38 3-3/4" 1/4" N/A 3/32" N/A 1/4" N/A 15° 7 MSOBB0200 2" 50 4-1/8" 3/8" 55 1/4" 73 3/8" 55 15° 8 MSOBB0250 2-1/2" 65 4-1/2" 1/2" 102 1/4" 68 3/8" 97 15° 13 MSOBB0300 3" 80 5-1/8" 1/2" 136 1/4" 115 3/8" 108 15° 14 MSOBB0400 4" 100 5-3/8" 3/4" 145 3/8" 242 1/2" 275 15° 18 MSOBB0500 5" 125 6-3/4" 3/4" 172 3/8" 196 1/2" 308 15° 23 MSOBB0600 6" 150 7-1/8" 3/4" 293 3/8" 563 1/2" 484 15° 28 MSOBB0000 8" 200 8-1/8" 1" 372 1/2" 587 7/8" 688 15° 40 MSOBB1000 10" 250 9-3/8" 1" 398 1/2" 455 7/8" 781 15° 68 MSOBB1400 14" 350 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB1800 16" 400 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB1800 18" 450 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB1800 20" 500 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB2000 20" 500 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB2000 20" 500 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB2000 20" 500 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB2000 20" 500 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB2000 20" 500 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB2000 20" 500 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB2000 20" 500 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB2000 20" 500 10-1/2" 1" N/A 5/8" N/A 7/8" N/A 15° 125 MSOBB2000 20" 500 10-1/2" 1" N/A 5/8" N/

NSF 372 - LEAD FREE

The wetted surface of this product contacted by consumable water contains less than one quarter of one percent (0.25%) of lead by weight. Material complies with state codes and standards, where applicable, requiring reduced lead content.

CUSTOMER:
PROJECT:
ENGINEER:

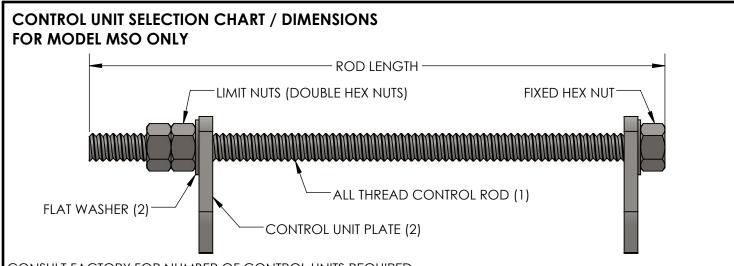
REV. DATE 2323 W. HUBBARD ST. CHICAGO, IL 60612 TEL: 312-738-3800 FAX: 312-738-0415 WWW.METRAFLEX.COM			
Metrotex CHICAGO, IL 60612 TEL: 312-738-3800 FAX: 312-738-0415	REV.		DATE
	Met for pipes in	raflex	CHICAGO, IL 60612 TEL: 312-738-3800 FAX: 312-738-0415

METRASPHERE MODEL MSOBB

BUTYL EXPANSION JOINT, TAPPED BOLT HOLES

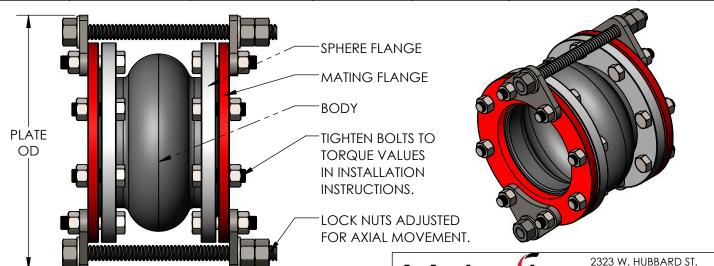
DRAWN BY: **DKISH**DATE: 1/19/2017

APPROVED: JC	3	DATE: 1/23/2017	
scale: N/A	DRAWING NUMB	BER: MSOBB-1	



CONSULT FACTORY FOR NUMBER OF CONTROL UNITS REQUIRED

OO1100E1171	CONTROL IN TOTAL TOTAL OF CONTROL OF THE REGULES								
PIPE SIZE	ROD TYPE	ROD THICKNESS	ROD LENGTH	PLATE TYPE	PLATE THICKNESS	PLATE OD			
1"	GUSRD058X120	5/8"	12"	GUSPLT01	3/8"	8-3/8"			
1-1/4"	GUSRD058X120	5/8"	12"	GUSPLT01	3/8"	8-3/4"			
1-1/2"	GUSRD058X120	5/8"	12"	GUSPLT01	3/8"	9-1/8"			
2"	GUSRD058X120	5/8"	12"	GUSPLT0204	3/8"	10-1/8"			
2-1/2"	GUSRD058X120	5/8"	12"	GUSPLT2503	3/8"	11-1/8"			
3"	GUSRD058X120	5/8"	12"	GUSPLT2503	3/8"	11-5/8"			
4"	GUSRD058X120	5/8"	12"	GUSPLT0204	3/8"	13-1/8"			
5"	GUSRD058X120	5/8"	12"	GUSPLT0506	1/2"	14-1/8"			
6"	GUSRD058X140	5/8"	14"	GUSPLT0506	1/2"	15-1/8"			
8"	GUSRD100X170	1"	1 <i>7</i> "	GUSPLT0800	1/2"	19-1/8"			
10"	GUSRD100X190	1"	19"	GUSPLT1012	3/4"	21-5/8"			
12"	GUSRD100X190	1"	19"	GUSPLT1012	3/4"	24-5/8"			
14"	GUSRD100X210	1"	21"	GUSPLT1400	3/4"	26-5/8"			
16"	GUSRD125X215	1-1/4"	21-1/2"	GUSPLT1600	3/4"	30-1/8"			
18"	GUSRD125X215	1-1/4"	21-1/2"	GUSPLT1800	3/4"	31-5/8"			
20"	GUSRD125X215	1-1/4"	21-1/2"	GUSPLT2000	3/4"	34-1/8"			
24"	GUSRD125X215	1-1/4"	21-1/2"	GUSPLT2400	1"	38-5/8"			



CUSTOMER:		
_		

PROJECT:_____

ENGINEER:_____



2323 W. HUBBARD ST. CHICAGO, IL 60612 TEL: 312-738-3800 FAX: 312-738-0415 WWW.METRAFLEX.COM

CONTROL UNITS FOR MSO

DRAWN BY: DKISH	DATE: 1/5/2017
APPROVED: JC	DATE: 1/6/2017

CALE: DRAWING NUMBER: CONTROLUNIT-MSO