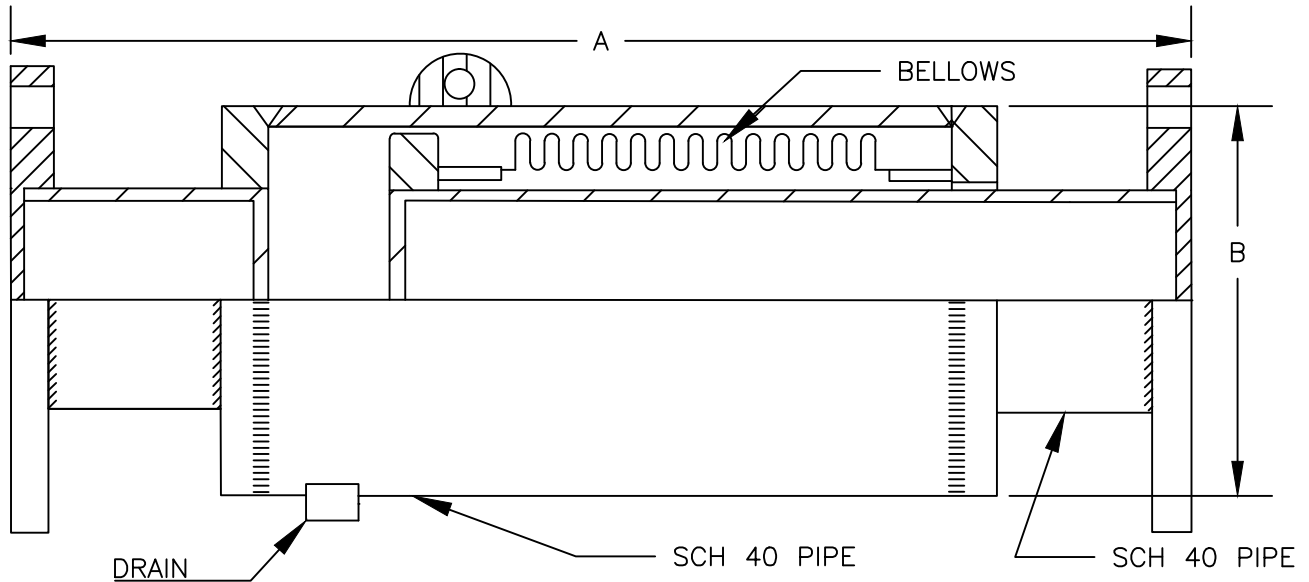


METRAGATOR 150 PSI 4" AXIAL MOVEMENT EXTERNALLY PRESSURIZED EXPANSION JOINT



THE EXPANSION JOINT IS DESIGNED FOR AXIAL MOVEMENT ONLY. PIPE MUST BE PROPERLY GUIDED AND ANCHORED PER THE RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURERS ASSOCIATION.

QTY	PIPE SIZE		OAL "A"			HOUS "B"	EFF. AREA	SPRING RATE	NOTES
	NPS	MM	WELD (in)	FLANGE (in)	GROOVED (in)	(in)	(in ²)	(lb/in)	
	2	50	24 1/4	25	24 1/4	5 1/2	13.2	183.0	
	2.5	65	24 1/2	25	24 1/2	5 1/2	13.2	183.0	
	3	80	23 1/4	24	23 1/4	6 1/2	20.8	343.0	
	4	100	24 1/4	25	24 1/4	8 1/2	36.0	200.0	
	5	130	24 1/4	25	24 1/4	10 3/4	46.4	235.0	
	6	150	24 3/4	25 1/2	24 3/4	12 3/4	58.9	269.0	
	8	200	27 1/4	28 1/4	27 1/4	14	88.8	332.0	
	10	250	26	27	26	16	124.6	400.0	
	12	300	26	27	26	18	166.6	463.0	

DESIGN DATA:

TEMP. 700°F. (370° C)
 PRESS. 150 PSI (1034 KPa)
 TEST PRESS. 225 PSI (1551 KPa)
 AXIAL MOVEMENT 4" COMPRESSION (100 mm)

MILITARY SPECS:


CONFORMS TO MIL-E-17813H
 CONFORMS TO ASTM-F-2934
MATERIAL:
 BELLOWS-MULIT-PLY S.S. 304
 OTHER PARTS-CARBON STEEL

*NOTE: ANCHOR LOADS=
 (MAX PSI X EFFECTIVE AREA) +
 (SPRING RATE X MVMT.)

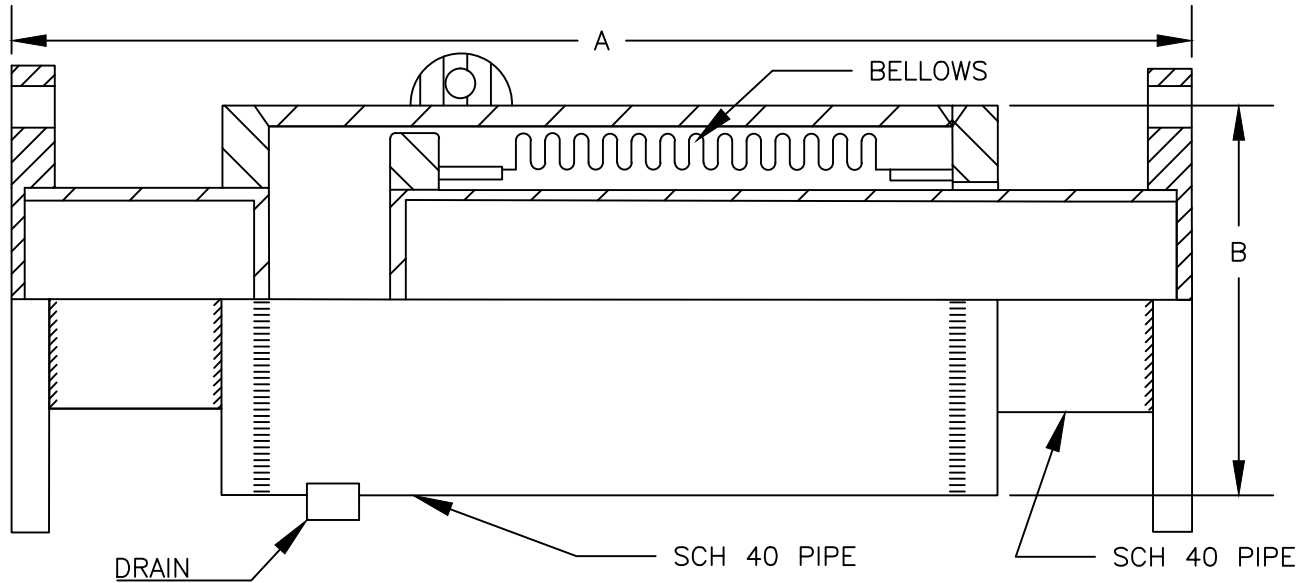
CUSTOMER: _____

PROJECT: _____

ENGINEER: _____

REV.	DATE	DESCRIPTION
		2323 W. HUBBARD ST. CHICAGO, IL 60612 TEL: 312-738-3800 FAX: 312-738-0415 WWW.METRAFLEX.COM
DESCRIPTION: METRAGATOR 150 PSI 4" AXIAL EXTERNALLY PRESURIZED EXPANSION JOINT		
DRAWN BY: DTH		DATE: 7/16/2012
APPROVED: JC		DATE: 1/10/2013
SCALE: NONE	DRAWING NUMBER: GAT 04	

METRAGATOR 150 PSI 6" AXIAL MOVEMENT EXTERNALLY PRESSURIZED EXPANSION JOINT



THE EXPANSION JOINT IS DESIGNED FOR AXIAL MOVEMENT ONLY. PIPE MUST BE PROPERLY GUIDED AND ANCHORED PER THE RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURERS ASSOCIATION.

QTY	PIPE SIZE		OAL "A"			HOUS "B"	EFF. AREA	SPRING RATE	NOTES
	NPS	MM	WELD (in)	FLANGE (in)	GROOVED (in)	(in)	(in ²)	(lb/in)	
	2	50	31	31 1/2	31	5 1/2	13.2	115	
	2.5	65	31 1/4	32	31 1/4	5 1/2	13.2	115	
	3	80	29 1/2	30	29 1/2	6 1/2	20.8	235	
	4	100	30 3/4	31 1/4	30 3/4	8 1/2	36.0	143	
	5	130	30 3/4	31 1/2	30 3/4	10 3/4	46.4	166	
	6	150	31 1/2	32 1/4	31 1/2	12 3/4	58.9	189	
	8	200	33 3/4	34 3/4	33 3/4	14	88.8	235	
	10	250	33	34	33	16	124.6	280	
	12	300	32 1/4	33 1/4	32 1/4	18	166.6	326	

DESIGN DATA:

TEMP. 700°F. (370° C)
 PRESS. 150 PSI (1034 KPa)
 TEST PRESS. 225 PSI (1551 KPa)
 AXIAL MOVEMENT 6" COMPRESSION (150 mm)

MILITARY SPECS:

CONFORMS TO MIL-E-17813H
 CONFORMS TO ASTM-F-2934

MATERIAL:


BELLWS-MULIT-PLY S.S. 304
 OTHER PARTS-CARBON STEEL

*NOTE: ANCHOR LOADS=
 (MAX PSI X EFFECTIVE AREA) +
 (SPRING RATE X MVMT.)

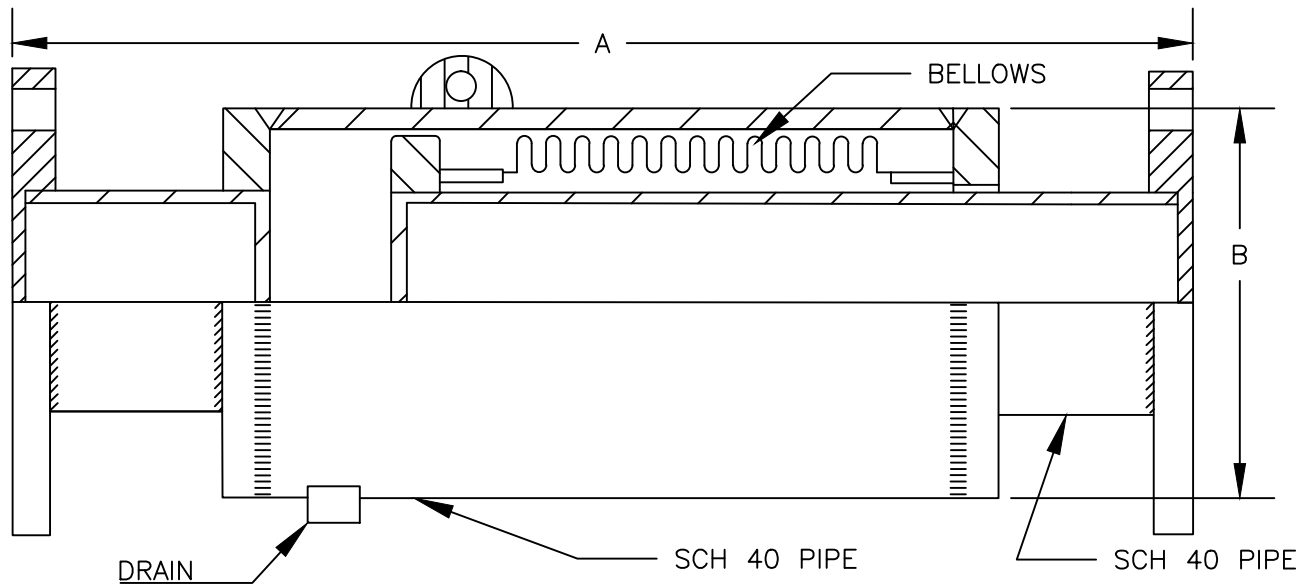
CUSTOMER: _____

PROJECT: _____

ENGINEER: _____

REV.	DATE	DESCRIPTION
		
		2323 W. HUBBARD ST. CHICAGO, IL 60612 TEL: 312-738-3800 FAX: 312-738-0415 WWW.METRAFLEX.COM
DESCRIPTION: METRAGATOR 150 PSI 6" AXIAL EXTERNALLY PRESURIZED EXPANSION JOINT		
DRAWN BY: DTH		DATE: 5/15/2012
APPROVED: JC		DATE: 1/10/2013
SCALE: NONE	DRAWING NUMBER: GAT 06	

METRAGATOR 150 PSI 8" AXIAL MOVEMENT EXTERNALLY PRESSURIZED EXPANSION JOINT



THE EXPANSION JOINT IS DESIGNED FOR AXIAL MOVEMENT ONLY. PIPE MUST BE PROPERLY GUIDED AND ANCHORED PER THE RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURERS ASSOCIATION.

QTY	PIPE SIZE		OAL "A"			HOUS "B" (in)	EFF. AREA (in ²)	SPRING RATE (lb/in)	NOTES
	NPS	MM	WELD (in)	FLANGE (in)	GROOVED (in)				
	2	50	37 3/4	38 1/2	37 3/4	5 1/2	13.2	92.0	
	2.5	65	38	38 1/2	38	5 1/2	13.2	92.0	
	3	80	37 3/4	38 1/2	37 3/4	6 1/2	20.8	172.0	
	4	100	37 1/4	37 3/4	37 1/4	8 1/2	36.0	103.0	
	5	130	37 1/2	38 1/4	37 1/2	10 3/4	46.4	120.0	
	6	150	37 3/4	38 1/2	37 3/4	12 3/4	58.9	138.0	
	8	200	41	42	41	14	88.8	166.0	
	10	250	39 1/4	40 1/4	39 1/4	16	124.6	200.0	
	12	300	38 3/4	39 3/4	38 3/4	18	166.6	235.0	

DESIGN DATA:
 TEMP. 700°F. (370° C)
 PRESS. 150 PSI (1034 KPa)
 TEST PRESS. 225 PSI (1551 KPa)
 AXIAL MOVEMENT 8" COMPRESSION (200 mm)


MILITARY SPECS:
 CONFORMS TO MIL-E-17813H
 CONFORMS TO ASTM-F-2934
 MATERIAL:
 BELLOWS-MULIT-PLY S.S. 304
 OTHER PARTS-CARBON STEEL

*NOTE: ANCHOR LOADS=
 (MAX PSI X EFFECTIVE AREA) +
 (SPRING RATE X MVMT.)

CUSTOMER: _____

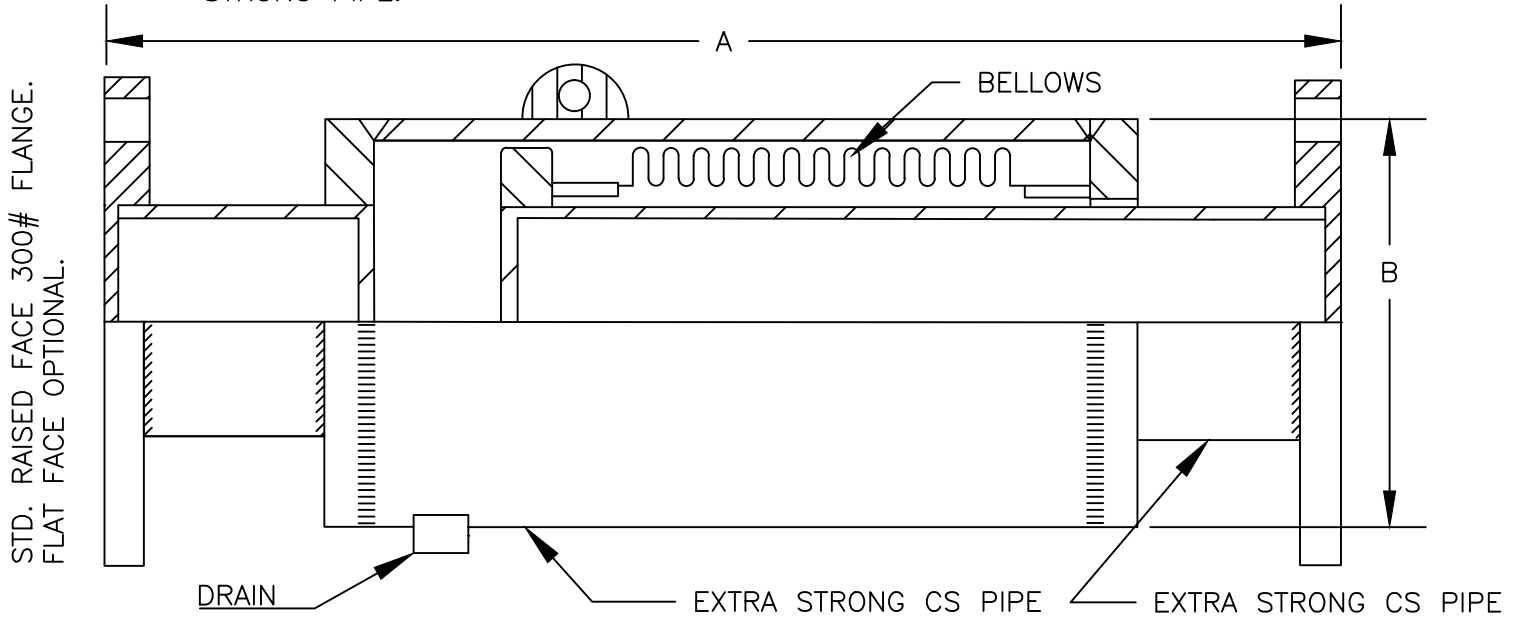
PROJECT: _____

ENGINEER: _____

REV.	DATE	DESCRIPTION
		
		2323 W. HUBBARD ST. CHICAGO, IL 60612 TEL: 312-738-3800 FAX: 312-738-0415 WWW.METRAFLEX.COM
DESCRIPTION: METRAGATOR 150 PSI 8" AXIAL EXTERNALLY PRESURIZED EXPANSION JOINT		
DRAWN BY: DTH		DATE: 5/15/2012
APPROVED: JC		DATE: 1/10/2013
SCALE: NONE	DRAWING NUMBER: GAT 08	

METRAGATOR 300 PSI 4" AXIAL MOVEMENT EXTERNALLY PRESSURIZED EXPANSION JOINT

UP TO 8" SCH. 80 PIPE.
8" AND ABOVE EXTRA
STRONG PIPE.



THE EXPANSION JOINT IS DESIGNED FOR AXIAL MOVEMENT ONLY. PIPE MUST BE PROPERLY GUIDED AND ANCHORED PER THE RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURERS ASSOCIATION.

QTY	PIPE SIZE		OAL "A"		HOUS "B"	EFF. AREA	SPRING RATE	NOTES
	NPS	MM	WELD (in)	FLANGE (in)	(in)	(in ²)	(lb/in)	
	2	50	28 1/2	29	6 5/8	14.3	639.1	
	2.5	65	28 1/2	29	6 5/8	14.3	639.1	
	3	80	27 1/2	28	8 5/8	22.9	823.5	
	4	100	28 1/4	28 3/4	10 3/4	36.4	1223.2	
	5	130	27 3/4	28 1/4	10 3/4	46.7	1615.1	
	6	150	27 3/4	28 1/4	12 3/4	59.4	1803.0	
	8	200	29	29 1/2	14	93.0	2591.7	
	10	250	29 3/4	30 1/4	16	129.7	2833.8	
	12	300	31 1/4	31 3/4	18	172.5	2853.6	

DESIGN DATA:
 TEMP. 850°F. (455° C)
 PRESS. 300 PSI (2068 KPa)
 TEST PRESS. 450 PSI (3102 KPa)
 AXIAL MOVEMENT 4" COMPRESSION (100 mm)


MILITARY SPECS:
 CONFORMS TO MIL-E-17813H
 CONFORMS TO ASTM-F-2934
 MATERIAL:
 BELLWS-MULIT-PLY S.S. 304
 OTHER PARTS-CARBON STEEL

*NOTE: ANCHOR LOADS=
 (MAX PSI X EFFECTIVE AREA) +
 (SPRING RATE X MVMT.)

CUSTOMER: _____

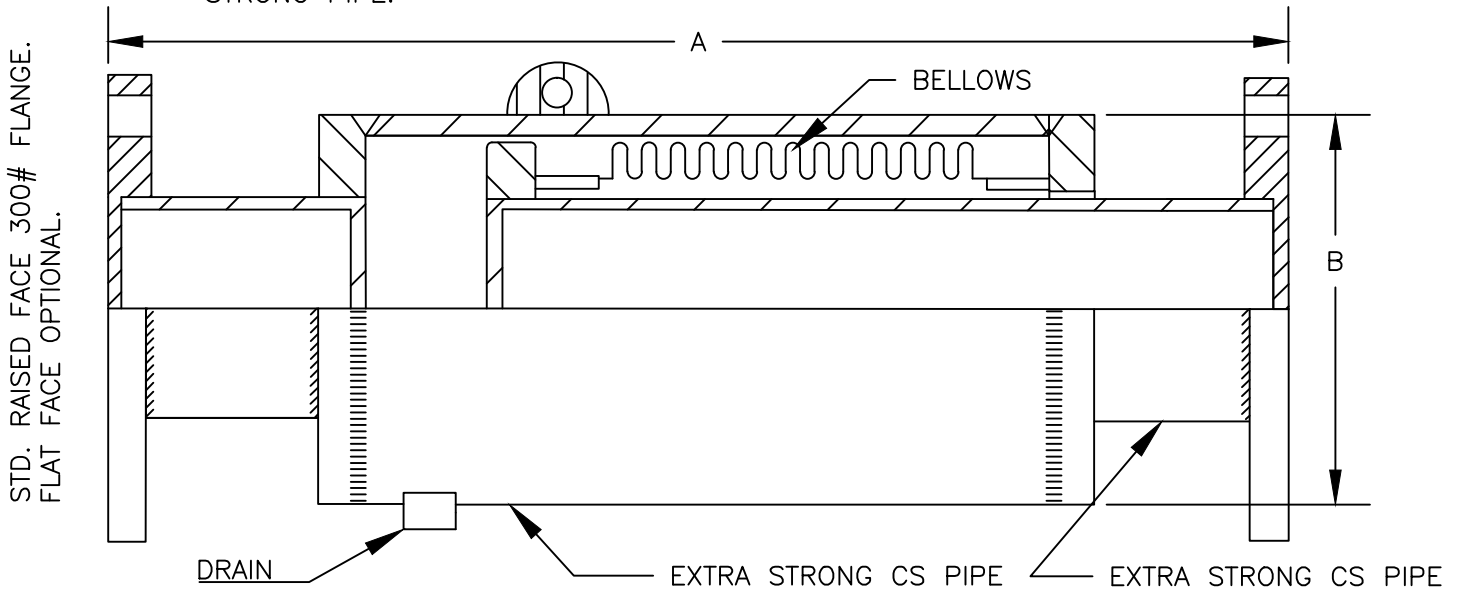
PROJECT: _____

ENGINEER: _____

REV.	DATE	DESCRIPTION
		
		2323 W. HUBBARD ST. CHICAGO, IL 60612 TEL: 312-738-3800 FAX: 312-738-0415 WWW.METRAFLEX.COM
DESCRIPTION: METRAGATOR 300 PSI 4" AXIAL EXTERNALLY PRESURIZED EXPANSION JOINT		
DRAWN BY: DTH		DATE: 4/3/2012
APPROVED: JC		DATE: 5/29/2012
SCALE: NONE	DRAWING NUMBER: GAT 3004	

METRAGATOR 300 PSI 6" AXIAL MOVEMENT EXTERNALLY PRESSURIZED EXPANSION JOINT

UP TO 8" SCH. 80 PIPE.
8" AND ABOVE EXTRA
STRONG PIPE.



THE EXPANSION JOINT IS DESIGNED FOR AXIAL MOVEMENT ONLY. PIPE MUST BE PROPERLY GUIDED AND ANCHORED PER THE RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURERS ASSOCIATION.

QTY	PIPE SIZE		OAL "A"		HOUS "B"	EFF. AREA	SPRING RATE	NOTES
	NPS	MM	WELD (in)	FLANGE (in)	(in)	(in ²)	(lb/in)	
	2	50	36 1/2	37	6 5/8	14.3	434.6	
	2.5	65	36 1/2	37	6 5/8	14.3	434.6	
	3	80	33 1/4	33 3/4	8 5/8	22.9	650.1	
	4	100	34 1/4	34 3/4	10 3/4	36.4	935.4	
	5	130	33 1/4	33 3/4	10 3/4	46.7	1269.0	
	6	150	33 1/4	33 3/4	12 3/4	59.4	1416.7	
	8	200	34 1/2	34 3/4	14	93.0	2036.3	
	10	250	36	36 1/2	16	129.7	2125.4	
	12	300	37 3/4	38 1/4	18	172.5	2219.4	

DESIGN DATA:

TEMP. 850°F. (455° C)
 PRESS. 300 PSI (2068 KPa)
 TEST PRESS. 450 PSI (3102 KPa)
 AXIAL MOVEMENT 6" COMPRESSION (150 mm)

MILITARY SPECS:

CONFORMS TO MIL-E-17813H
 CONFORMS TO ASTM-M-2934

MATERIAL:


BELLOWS-MULTI-PLY S.S. 304
 OTHER PARTS-CARBON STEEL

*NOTE: ANCHOR LOADS=
 (MAX PSI X EFFECTIVE AREA) +
 (SPRING RATE X MVMT.)

CUSTOMER: _____

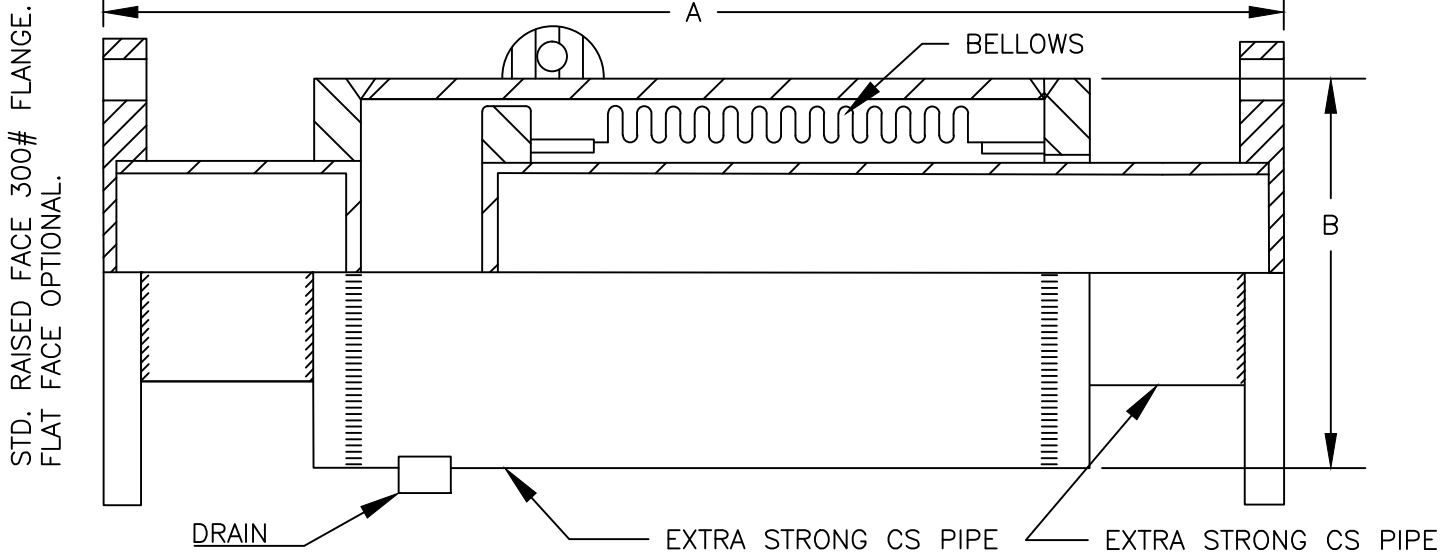
PROJECT: _____

ENGINEER: _____

REV.	DATE	DESCRIPTION
		
		2323 W. HUBBARD ST. CHICAGO, IL 60612 TEL: 312-738-3800 FAX: 312-738-0415 WWW.METRAFLEX.COM
DESCRIPTION: METRAGATOR 300 PSI 6" AXIAL EXTERNALLY PRESURIZED EXPANSION JOINT		
DRAWN BY: DTH		DATE: 4/3/2012
APPROVED: JC		DATE: 5/29/2012
SCALE: NONE	DRAWING NUMBER: GAT 3006	

METRAGATOR 300 PSI 8" AXIAL MOVEMENT EXTERNALLY PRESSURIZED EXPANSION JOINT

UP TO 8" SCH. 80 PIPE.
8" AND ABOVE EXTRA
STRONG PIPE.



THE EXPANSION JOINT IS DESIGNED FOR AXIAL MOVEMENT ONLY. PIPE MUST BE PROPERLY GUIDED AND ANCHORED PER THE RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURERS ASSOCIATION.

QTY	PIPE SIZE		OAL "A"		HOUS "B"	EFF. AREA	SPRING RATE	NOTES
	NPS	MM	WELD (in)	FLANGE (in)	(in)	(in ²)	(lb/in)	
	2	50	45	45 1/2	6 5/8	14.3	339.5	
	2.5	65	45 1/4	45 3/4	6 5/8	14.3	339.5	
	3	80	43 1/4	43 3/4	8 5/8	22.9	441.2	
	4	100	43 3/4	44 1/4	10 3/4	36.4	662.6	
	5	130	40 3/4	41 1/4	10 3/4	46.7	987.0	
	6	150	40 3/4	41 1/4	12 3/4	59.4	1101.9	
	8	200	42 1/2	43	14	93.0	1583.8	
	10	250	47 1/4	47 3/4	16	129.7	1416.9	
	12	300	48 3/4	49 1/4	18	172.5	1539.6	

DESIGN DATA:
 TEMP. 850°F. (455° C)
 PRESS. 300 PSI (2068 KPa)
 TEST PRESS. 450 PSI (3102 KPa)
 AXIAL MOVEMENT 8" COMPRESSION (200 mm)


MILITARY SPECS:
 CONFORMS TO MIL-E-17813H
 CONFORMS TO ASTM-F-2934
 MATERIAL:
 BELLOWS-MULIT-PLY S.S. 304
 OTHER PARTS-CARBON STEEL

*NOTE: ANCHOR LOADS=
 (MAX PSI X EFFECTIVE AREA) +
 (SPRING RATE X MVMT.)

CUSTOMER: _____

PROJECT: _____

ENGINEER: _____

REV.	DATE	DESCRIPTION
		2323 W. HUBBARD ST. CHICAGO, IL 60612 TEL: 312-738-3800 FAX: 312-738-0415 WWW.METRAFLEX.COM
DESCRIPTION: METRAGATOR 300 PSI 8" AXIAL EXTERNALLY PRESURIZED EXPANSION JOINT		
DRAWN BY: DTH		DATE: 4/3/2012
APPROVED: JC		DATE: 5/29/2012
SCALE: NONE	DRAWING NUMBER: GAT 3008	